

# FreeSpace<sup>®</sup> Integrated Zone Amplifier / Zone Amplifier


Models IZA 2120-HZ, IZA 2120-LZ  
ZA 2120-HZ, ZA 2120-LZ (non-AmpLink)  
ZA 2120HZA, ZA 2120LZA (AmpLink)



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# SAFETY INFORMATION

1. Parts that have special safety characteristics are identified by the  symbol on schematics or by special notes on the parts list. Use only replacement parts that have critical characteristics recommended by the manufacturer.

2. Refer to the Hi-Pot and Ground Bond test information located on page 124 of this service manual.

The Hi-Pot test **MUST** be performed on any unit where the repair required removal of the amplifier's top cover.

The ground bond test **MUST** be performed on any unit where the repair affects the ground wire connection inside the chassis.

These tests **MUST** be performed to ensure that the product is safe to return to the customer after a repair.

**CAUTION: The Bose® FreeSpace® Integrated Zone Amplifier and Zone Amplifier contain no user-serviceable parts. To prevent warranty infractions, refer servicing to warranty service stations or factory service.**

## PROPRIETARY INFORMATION

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION OF BOSE CORPORATION WHICH IS BEING FURNISHED ONLY FOR THE PURPOSE OF SERVICING THE IDENTIFIED BOSE PRODUCT BY AN AUTHORIZED BOSE SERVICE CENTER AND SHALL NOT BE REPRODUCED OR USED FOR ANY OTHER PURPOSE.

## WARRANTY

The Bose FreeSpace Integrated Zone Amplifier and Zone Amplifier are covered by a 5-year limited warranty.

## PCB Usage Per Amplifier Version

# Product Information

### Overview:

The FreeSpace® IZA/ZA 2120-HZ/LZ and ZA 2120-LZA/HZA amplifiers are Pro installed business music systems. All of these units are 120W x 2 channels, Supporting Hi-z and Lo-z speakers.

Of these amplifiers, two have internal DSP with switch selections for Bose® Professional speakers (Hi-Z Master and Lo-Z Master) as well as a paging input along with 2 channels of amplifier output. The other 2 chassis are slave amplifier units, also Hi-Z and Lo-Z capable. They have only 2 analog inputs (and AmpLink input/thru connections in the case of the ZA 2120-LZA and ZA 2120-HZA) and are meant to be driven by one of the master amp versions.

In addition, as of late 2017, there are two new versions of the ZA 2120-LZ and ZA 2120-HZ, designated the ZA 2120-LZA and ZA 2120-HZA. The new versions replace the previous versions, and add AmpLink functionality by means of an added PCB assembly inside the chassis. AmpLink is a Bose® proprietary digital audio communications protocol that allows the amplifier to receive up to 8 channels of digital audio via a shielded CAT-5 cable.

### PCB Usage Per Amplifier Version

All amplifier versions share a similar architecture. As a result, some of the PCB assemblies are common across product versions.

In the IZA 2120-HZ, ZA 2120-HZ and ZA 2120-HZA, the SMPS PCB, Amplifier PCB and the LED PCB are common. The Rear Panel PCB is different for these two amplifiers. The ZA 2120-HZ and ZA 2120-HZA do not have a DSP PCB or a Front Panel PCB.

In the IZA 2120-LZ, ZA 2120-LZ and ZA 2120-LZA, the SMPS PCB, Amplifier PCB and the LED PCB are common. The Rear Panel PCB is different for these two amplifiers. The ZA 2120-LZ and ZA 2120-LZA do not have a DSP PCB or a Front Panel PCB.

### FreeSpace IZA 2120-LZ / IZA 2120-HZ Integrated Zone Amplifiers

The FreeSpace IZA 2120-LZ / IZA 2120-HZ integrated zone amplifiers provide signal processing, routing, paging, zoning and amplification for a wide range of commercial applications such as retail stores, restaurants and bars, hospitality venues, conference rooms, schools and auxiliary zones.

The integrated zone amplifiers offer a variety of input connections (mic/line/page), input gain and output level adjustments, and operational modes. Built-in Bose FreeSpace FS3/HPF, DS 16, DS 40, DS 100, FS3B, and RoomMatch® Utility RMU105 loudspeaker EQ presets can be selected for loudspeaker optimization.

### FreeSpace ZA 2120-LZA / ZA 2120-HZA Zone Amplifiers

The FreeSpace ZA 2120-LZA / ZA 2120-HZA zone amplifiers make system expansion easy.

Simply connect the auxiliary output of an IZA integrated zone amplifier to the input of a ZA zone amplifier. The two amplifiers will function together as one system sharing the same music, paging sources, master volume control and optional loudspeaker equalization.

ZA zone amplifiers are designed to expand sound systems that utilize front end signal processing from products such as the Bose FreeSpace® IZA 2120-LZ, IZA 2120-HZ, IZA 250-LZ and IZA 190-HZ integrated zone amplifiers and Bose ControlSpace® engineered sound processors. With the inclusion of AmpLink, up to the first 8 digital audio channels can be sent to the amplifier from a Bose DSP via a shielded CAT 5 cable. The FreeSpace ZA 2120-LZA / ZA 2120-HZA zone amplifiers can also be used as stand-alone amplifiers from any balanced or unbalanced line-level source.

# Product Information

## Included Items

	IZA 2120-LZ	IZA 2120-HZ	ZA 2120-LZ / LZA	ZA 2120-HZ / HZA
Feet with locking pins	4	4	4	4
5-pin Euroblock	2	2	1	1
4-pin Euroblock	1 black, 1 green	2 black, 1 green		
2-pin Euroblock	1 black, 2 green	1 black, 2 green	1 black, 2 green	1 black, 2 green
RCA cable			1	1
AC power cord*	1	1	1	1
Owners Guide	1	1	1	1

\*The appropriate power cord for your region is included.

## Manufactured Versions

Material Master #	Description	Region
719782-1420	FREESPACE IZA 2120-LZ 120V NA	120V US
719782-2420	FREESPACE IZA 2120-LZ 230V EU	230V EU
719782-3420	FREESPACE IZA 2120-LZ 100V JPN	100V JPN
719782-4420	FREESPACE IZA 2120-LZ 230V UK	230V UK
719782-5420	FREESPACE IZA 2120-LZ 240V AUS	240V AU
722196-1420	FREESPACE ZA 2120-LZ 120V NA	120V US
722196-2420	FREESPACE ZA 2120-LZ 230V EU	230V EU
722196-3420	FREESPACE ZA 2120-LZ 100V JPN	100V JPN
722196-4420	FREESPACE ZA 2120-LZ 230V UK	230V UK
722196-5420	FREESPACE ZA 2120-LZ 240V AUS	240V AU
719782-1410	FREESPACE IZA 2120-HZ 120V NA	120V US
719782-2410	FREESPACE IZA 2120-HZ 230V EU	230V EU
719782-3410	FREESPACE IZA 2120-HZ 100V JPN	100V JPN
719782-4410	FREESPACE IZA 2120-HZ 230V UK	230V UK
719782-5410	FREESPACE IZA 2120-HZ 240V AUS	240V AU
722196-1410	FREESPACE ZA 2120-HZ 120V NA	120V US
722196-2410	FREESPACE ZA 2120-HZ 230V EU	230V EU
722196-3410	FREESPACE ZA 2120-HZ 100V JPN	100V JPN
722196-4410	FREESPACE ZA 2120-HZ 230V UK	230V UK
722196-5410	FREESPACE ZA 2120-HZ 240V AUS	240V AU
719354-1410	FREESPACE ZA 2120-LZA 120V NA	120V US
719354-2410	FREESPACE ZA 2120-LZA 230V EU	230V EU
719354-3410	FREESPACE ZA 2120-LZA 100V JPN	100V JPN
719354-4410	FREESPACE ZA 2120-LZA 230V UK	230V UK
719354-5410	FREESPACE ZA 2120-LZA 240V AUS	240V AU
719355-1410	FREESPACE ZA 2120-HZA 120V NA	120V US
719355-2410	FREESPACE ZA 2120-HZA 230V EU	230V EU
719355-3410	FREESPACE ZA 2120-HZA 100V JPN	100V JPN
719355-4410	FREESPACE ZA 2120-HZA 230V UK	230V UK
719355-5410	FREESPACE ZA 2120-HZA 240V AUS	240V AU

# Product Information

## FreeSpace® IZA 2120-HZ Integrated Zone Amplifier



### Product Description

For background/foreground music and paging applications, Bose® FreeSpace® IZA 2120-HZ integrated zone amplifier elevates the audio experience when using FreeSpace® loudspeakers. Optimized for commercial applications, FreeSpace IZA amplifiers feature selectable Loudspeaker EQ to enrich audio quality, Opti-voice® paging for clear speech intelligibility while providing seamless transitions and Dynamic EQ that ensures full and balanced music at any volume level.

### Key Features

- **True two-zone capability** provides two independent outputs that each support volume/source selection remotes, EQ, tone controls, and paging/auxiliary routing options.
- **Opti-voice® paging** equalizes the vocal frequency range for clear speech intelligibility while providing seamless transitions.
- **Dynamic EQ** ensures full and balanced music at any volume level.
- **Independent Loudspeaker EQ per output** enriches audio quality and simplifies connection to Bose® loudspeakers: FreeSpace® 3 systems, FS3 subwoofer, DS 16, DS 40 and DS 100.
- **Dual remotes** support optional volume/source selection for independent, or combined, zone control which eliminates the need for bulky, inefficient, and sound-altering 70/100V in-line volume controls.
- **Expansion-ready connectivity** with FreeSpace ZA amplifiers to drive additional zones.
- **Reliable 2 x 120 W Class-D amplification** optimized for 70/100V high-impedance applications.
- **Intuitive feature setup** enables the amplifier to be configured without a PC for remote, paging, auxiliary input/output and automatic standby options.
- **Auto-Standby feature** allows the amplifier to consume less power when not in use.
- **Simplified front panel interface** provides end users with tone, source selection and master volume controls as well as a connection to mobile sources via a 3.5 mm connector.
- **Remote muting** allows the amplifier to be muted via a centralized control system.

### Applications

- Designed for a wide range of applications, including:
- Retail stores
- Restaurants and bars
- Hospitality venues
- Conference centers
- Schools
- Auxiliary zones

# Product Information

## FreeSpace® IZA 2120-HZ Integrated Zone Amplifier

### Technical Specifications

<b>Power Rating</b>			
Amplifier Power	2 x 120 W @ 70/100V		
<b>Audio Performance</b>			
Frequency Response	55 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz)		
THD+N	≤ 0.3 % (at rated power)		
Channel Separation (Crosstalk)	≤ -58 dBu (below rated power, 1 kHz)		
Dynamic Range	88 dB		
<b>Integrated DSP</b>			
A/D and D/A Converters	24-bit / 48 kHz		
Processing Functions	Loudspeaker EQ, Bass Opti-voice, Dynamic equalization		
Loudspeaker Presets	FreeSpace FS3/HPF, DS 16, DS 40, DS 100, and FS3B		
Audio Latency	10.4 ms (any input to speaker output or aux output)		
<b>Audio Inputs</b>			
	Line Inputs	Page Input	Auxiliary Input
Input Channels	2 unbalanced, 2 balanced	1 balanced mic/line	1 unbalanced line
Connectors	Stereo RCA, 5-pin Euroblock	4-pin Euroblock	1/8" (3.5mm) TRS
Input Range	-8 dBu to 22 dBu	-58 dBu to 12 dBu	-60 dBu to -1 dBu
Adjustment Range	0 dB to -30 dB	0 dB to +50 dB	Fixed
Input Impedance	20 kΩ	2 kΩ	20 kΩ
Maximum Input Level	22 dBu	12 dBu	-1 dBu
Sensitivity	-8 dBu	n/a	-3 dBu
Nominal Input Level	4 dBu	-38 dBu	-8 dBu
<b>Audio Outputs</b>			
	Amplifier Outputs	Auxiliary Output	
Outputs	2	1 unbalanced	
Connectors	2-pin inverted Euroblock	Stereo RCA	
Output Impedance	n/a	400 Ω	
Nominal Output Level	2 x 120 W @ 70/100V	2 dBu	
<b>Indicators and Controls</b>			
Power LED	Solid blue indicates power is on, blinking blue indicates standby mode		
Input Signal Clip LED	Green indicates input signal is within -37 dBu to 11 dBu, red indicates signal is over 11 dBu, master level set to 5		
Output Signal Clip LED	Green indicates output signal is within -46 dBFS to -2 dBFS, red indicates signal is over -2 dBFS, approximately 80 W/channel, for each output 120 watts is 0 dBFS		
Controls, Front Panel	Power On/Off, Input Select (A/B), Treble/Bass Tone Controls (x2), Master Level		
Controls, Rear Panel	Amplifier Mode DIP switches, Loudspeaker EQ preset selector, Input Gain (A/B/Page), Output trims, Remote (x2)		
<b>Electrical</b>			
Mains Voltage	100 VAC – 240 VAC (±10%, 50/60 Hz)		
AC Power Consumption	26 W (Standby), 300 W (Max)		
Mains Connector	Standard IEC (C14)		
Maximum Inrush Current	12.6 Amps (230 VAC / 50 Hz), 6.6 Amps (120 VAC / 60 Hz)		
Overload Protection	High temperature, output short, excessively low or high AC line voltage		
<b>Physical</b>			
Dimensions	1.7" H x 19.0" W x 12.8" D (44 mm x 483 mm x 324 mm)		
Shipping Weight	12.0 lb (5.4 kg)		
Net Weight	9.0 lb (4.1 kg)		
Cooling System	Single fan creates continuous left-to-right air flow		
<b>General</b>			
Inputs (Control)	Remote input for Volume Control with A/B Select user interface (PC041967), Volume Control user interface (PC041966), Mute input control via a normally open contact closure		



# Product Information

## FreeSpace® IZA 2120-HZ Integrated Zone Amplifier



- 1 POWER switch – ON/OFF AC power.
- 2 Power LED – Solid blue LED indicates the unit is ON. Blinking blue LED indicates the unit is in standby mode.
- 3 INPUT SIGNAL LED – LED is green from  $-37$  dBu to  $11$  dBu, LED goes red over  $11$  dBu. MASTER LEVEL set to 5.
- 4 OUTPUT LIMIT LED – LED is green from  $-46$  dBFS to  $-2$  dBFS, LED goes red over  $-2$  dBFS, approximately  $80$  W/channel. For each output  $120$  watts is  $0$  dBFS.
- 5 AUX INPUT –  $1/8"$  ( $3.5$  mm) stereo line-level input connector. A cable insertion mutes INPUT A and INPUT B for priority override. Pages can still be made from the PAGE INPUT. AUX INPUT does not have any gain adjustment, therefore, all gain adjustments must be done from the external source device.
- 6 INPUT A/B Switch – Selects either INPUT A or INPUT B on the rear panel when the rear panel A/B SELECT DIP switch is set to FRONT.
- 7 TREBLE/BASS Controls – Allows tonal adjustments of both outputs simultaneously. First order shelving filters provide a  $\pm 6$  dB adjustment at  $7$  kHz and above (TREBLE) and  $100$  Hz and below (BASS). They have a slope of approximately  $6$  dB/octave.
- 8 Master level Control – Controls the overall system volume for both the loudspeakers and the AUX OUTPUT when the AUXOUTPUT DIP switch is set to VARIABLE. If the AUX OUTPUT DIP switch is set to FIXED, the AUX OUTPUT maintains maximum level. When using a REMOTE volume connection, the front panel MASTER LEVEL control becomes disabled.



- 1 INPUT A/B – Balanced and unbalanced line-level input connectors. Each input is summed to mono.
- 2 INPUT GAIN – Allows for  $0$  dB to  $-30$  dB of adjustment to each INPUT A/B.
- 3 PAGE INPUT – Euroblock mic/line input that supports dynamic microphones with voice activation (VOX) or a trigger contact closure for use with push-to-talk (PTT) microphones.
- 4 MUTE – Contact closure connection that upon trigger (short) will mute all outputs (including AUX OUTPUT).
- 5 PAGE INPUT GAIN – Allows for  $0$  dB to  $+50$  dB of gain control of PAGE INPUT signal.
- 6 EQ – Provides loudspeaker equalization presets: FS3/HPF, DS 16, DS 40, DS 100 and FS3B. The FS3/HPF is the flat setting. Use this setting for loudspeakers that are not Bose or that do not require EQ. The HPF is set at  $55$  Hz.
- 7 PAGE INPUT THRESHOLD – Adjusts the level at which the VOX PAGE INPUT signal causes other inputs to be lowered. A  $10$  dB adjustment range lifts the page trigger level away from the noise floor to prevent false triggers. At minimum setting, a  $-70$  dBu signal will trigger a VOX page. At maximum setting, a  $-60$  dBu signal will trigger a VOX page. When in PTT page mode this adjustment is not active.
- 8 DIP Switches – A bank of switches to set the amplifier configuration. All switches set to the left position is the standard configuration.
- 9 AUX OUTPUT – Variable or fixed, unbalanced line-level output signal for use with ZA zone amplifiers or for routing the signal to additional audio equipment.
- 10 70V/100V – Changes the outputs from  $70$  V to  $100$  V.
- 11 REMOTE – Input connector for either a Bose® volume control with A/B switch user interface accessory (PC 041967) or a Bose volume control user interface accessory (PC 041966).
- 12 OUTPUT 1/OUTPUT 2 TRIM – Allows for up to  $40$  dB attenuation of the individual loudspeaker outputs relative to the master level.
- 13 OUTPUT – Two inverted 2-pin Euroblock connectors for loudspeaker connections. Outputs are not bridgeable.
- 14 AC Mains receptacle – AC line voltage input.



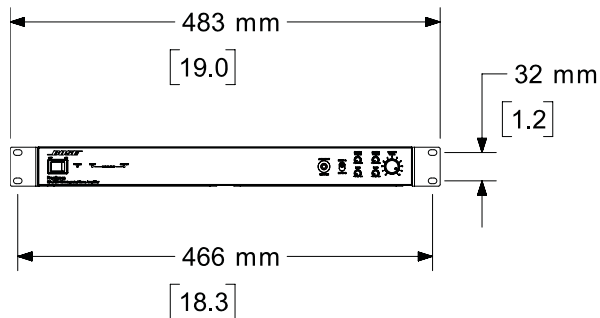
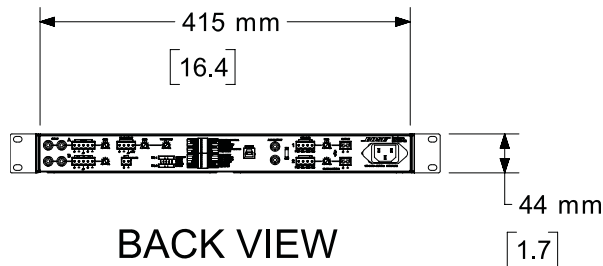
# Product Information

## FreeSpace® IZA 2120-HZ Integrated Zone Amplifier

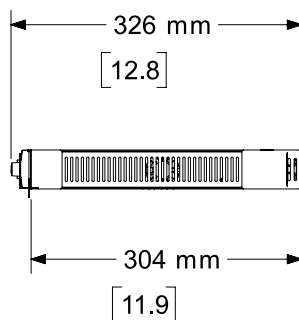
### AC Current Draw and Thermal Dissipation Information

IZA 2120-HZ, AC Current Draw and Thermal Dissipation							
Test Signal & Power Level	Load Configuration (Both IZA channels driven)	Total Audio Output, W	120VAC 60Hz. Line Current, A	230VAC 50Hz. Line Current, A	Thermal Dissipation, Max		
					Watts	BTU/hr.	kCal/hr.
Power On, Idling		0	0.27	0.17	40	136	34
1/8th Rated Power IEC65 Bandlimited Pink Noise	70V / Ch	30	0.55	0.30	69	235	59
6 dB Crest Factor DS 16 EQ Enabled	100V / Ch	30	0.61	0.33	76	259	65
1/3rd Rated Power IEC65 Bandlimited Pink Noise	70V / Ch	80	1.15	0.60	138	471	119
6 dB Crest Factor DS 16 EQ Enabled	100V / Ch	80	1.15	0.64	147	502	127

### Mechanical Diagrams



### RIGHT VIEW



### Safety and Regulatory Compliance

The FreeSpace IZA 2120-HZ integrated zone amplifier complies with CE requirements and is UL listed according to UL60065 (7th edition) and CAN/CSA C22.2 No. 60065-03; CB approved, according to IEC60065 (7th edition), including group and national differences. This model also complies with FCC Part 15B Class A (2003), EN55103-1 (1997), EN55103-2 (1996), and CISPR13 (2003) requirements.

### Product Codes

FreeSpace IZA 2120-HZ integrated zone amplifier

120V – US	719782-1410
230V – EU	719782-2410
100V – Japan	719782-3410
230V – UK	719782-4410
240V – AU	719782-5410

### Accessories

Volume control user interface (PC041966)

Volume control with A/B switch user interface (PC041967)

# Product Information

## FreeSpace® ZA 2120-HZ Zone Amplifier



### Product Description

The Bose® FreeSpace® ZA 2120-HZ zone amplifier is designed to provide basic amplification and sound system expansion when using front-end Bose products such as FreeSpace® integrated zone amplifiers and ControlSpace® engineered sound processors.

### Key Features

- **Reliable 2 x 120 W Class-D amplification** optimized for 70/100V high-impedance applications.
- Dual remotes support optional volume adjustment for independent, or combined, zone control which eliminates the need for bulky, inefficient, and sound-altering 70/100V in-line volume controls.
- Expansion-ready connectivity with FreeSpace® IZA amplifiers when additional sources and loudspeaker processing is required.
- Intuitive feature setup enables the amplifier to be configured without a PC for remote, input, output and automatic standby options.
- Auto-Standby feature allows the amplifier to consume less power when not in use.
- Remote muting allows the amplifier to be muted via a centralized control system.

### Applications

- Designed for a wide range of applications, including:
  - Retail stores
  - Restaurants and bars
  - Hospitality venues
  - Conference centers
  - Schools
  - Auxiliary zones

# Product Information

## FreeSpace® ZA 2120-HZ Zone Amplifier

### Technical Specifications

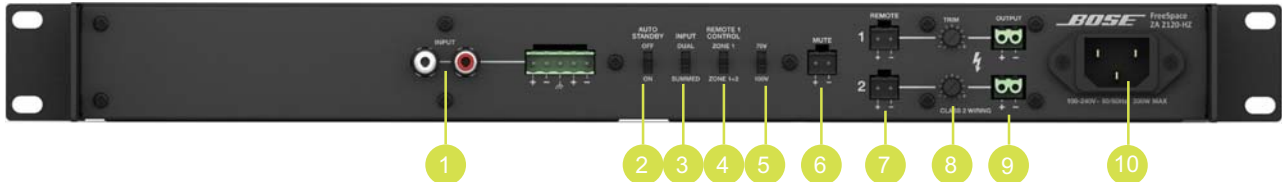
<b>Power Rating</b>	
Amplifier Power	2 x 120 W @ 70/100V
<b>Audio Performance</b>	
Frequency Response	55 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz)
THD+N	≤ 0.3 % (at rated power)
Channel Separation (Crosstalk)	-58 dBu (below rated power, 1 kHz)
Dynamic Range	88 dB
<b>Audio Inputs</b>	
Input Channels	1 unbalanced, 1 balanced
Connectors	Stereo RCA, 5-pin Euroblock
Input Range	-8 dBu to 22 dBu
Input Impedance	20 kΩ
Maximum Input Level	22 dBu
Nominal Input Level	4 dBu
<b>Audio Outputs</b>	
Outputs	2
Connectors	2-pin inverted Euroblock
Nominal Output Level	2 x 120 W @ 70/100V
<b>Indicators and Controls</b>	
Power LED	Solid blue indicates power is on, blinking blue indicates standby mode
Input Signal Clip LED	Green indicates input signal is within -37 dBu to 11 dBu, red indicates signal is over 11 dBu
Output Signal Clip LED	Green indicates output signal is within -46 dBFS to -2 dBFS, red indicates signal is over -2 dBFS, approximately 80 W/channel, for each output 120 watts is 0 dBFS
Controls, Front Panel	Power On/Off
Controls, Rear Panel	Auto Standby: On/Off switch, Input: Dual/Summed switch, Remote 1 Control: Zone 1/Zone 1+2 switch, Output Voltage: 70/100V switch, Mute, Output trims, Remote (x2)
<b>Electrical</b>	
Mains Voltage	100 VAC - 240 VAC (±10%, 50/60 Hz)
AC Power Consumption	23 W (Standby), 300 W (Max)
Mains Connector	Standard IEC (C14)
Maximum Inrush Current	12.6 Amps (230 VAC / 50 Hz), 7.8 Amps (120 VAC / 60 Hz)
Overload Protection	High temperature, output short, excessively low or high AC line voltage
<b>Physical</b>	
Dimensions	1.7" H x 19.0" W x 12.8" D (44 mm x 483 mm x 324 mm)
Shipping Weight	11.5 lb (5.2 kg)
Net Weight	8.5 lb (3.9 kg)
Cooling System	Single fan creates continuous left-to-right air flow
<b>General</b>	
Inputs (Control)	2 remote inputs for Volume Control user interface (PC041966), Mute input control via a normally open contact closure

## Product Information

# FreeSpace® ZA 2120-HZ Zone Amplifier



- 1 POWER switch – ON/OFF AC power.
- 2 Power LED – Solid blue LED indicates the unit is ON. Blinking blue LED indicates the unit is in standby mode.
- 3 INPUT SIGNAL LED – LED is green from  $-37$  dBu to  $11$  dBu, LED goes red over  $11$  dBu.
- 4 OUTPUT LIMIT LED – LED is green from  $-46$  dBFS to  $-2$  dBFS, LED goes red over  $-2$  dBFS, approximately  $80$  W/channel. For each output,  $120$  watts is  $0$  dBFS.



- 1 INPUT – Balanced and unbalanced line-level input connectors.
- 2 AUTO STANDBY – If enabled (ON) the amplifier will go into standby mode after twenty minutes without an input signal. If in standby mode and an audio signal is detected, the amplifier will automatically wake and amplify audio within  $0.7$  seconds. The OFF position disables the feature.
- 3 INPUT – The input can be set to either DUAL mono inputs or SUMMED to one mono input.
- 4 REMOTE 1 CONTROL – Sets the REMOTE 1 input to control both outputs (or zones) simultaneously (ZONE 1+2), or allows each REMOTE input to control its own output (ZONE 1). If only one remote is being used, then this switch must be set to ZONE 1+2.
- 5 70V/100V – The output can be set to  $70$ V or  $100$ V.
- 6 MUTE – Contact closure connection that upon trigger (short) will mute all outputs.
- 7 REMOTE – Input connectors for the Bose® volume control user interface accessory (PC 041966).
- 8 OUTPUT TRIM – Allows for up to  $40$  dB attenuation of each loudspeaker output.
- 9 OUTPUT – Two inverted 2-pin Euroblock connectors for loudspeaker connections. Outputs are not bridgeable.
- 10 AC Mains receptacle – AC line voltage input.

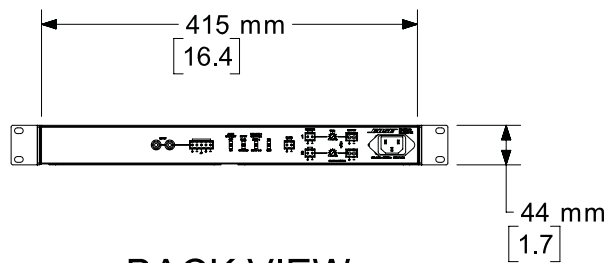
# Product Information

## FreeSpace® ZA 2120-HZ Zone Amplifier

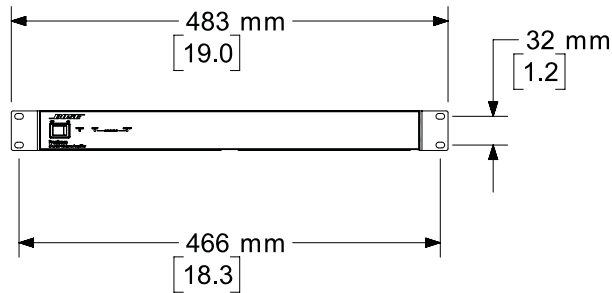
### AC Current Draw and Thermal Dissipation Information

Test Signal & Power Level	Load Configuration (Both IZA channels driven)	Total Audio Output, W	120VAC 60Hz. Line Current, A	230VAC 50Hz. Line Current, A	Thermal Dissipation, Max		
					Watts	BTU/hr.	kCal/hr.
Power On, Idling		0	0.20	0.15	34	116	29
1/8th Rated Power IEC65 Bandlimited Pink Noise	70V / Ch	30	0.57	0.31	71	242	61
6 dB Crest Factor DS 16 EQ Enabled	100V / Ch	30	0.66	0.35	81	276	71
1/3rd Rated Power IEC65 Bandlimited Pink Noise	70V / Ch	80	1.13	0.58	133	454	114
6 dB Crest Factor DS 16 EQ Enabled	100V / Ch	80	1.25	0.65	150	512	129

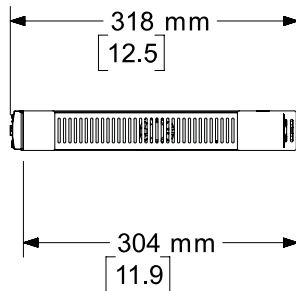
### Mechanical Diagrams



BACK VIEW



FRONT VIEW



RIGHT VIEW

### Safety and Regulatory Compliance

The FreeSpace ZA 2120-HZ zone amplifier complies with CE requirements and is UL listed according to UL60065 (7th edition) and CAN/CSA C22.2 No. 60065-03; CB approved, according to IEC60065 (7th edition), including group and national differences. This model also complies with FCC Part 15B Class A (2003), EN55103-1 (1997), EN55103-2 (1996), and CISPR13 (2003) requirements.

### Product Codes

FreeSpace ZA 2120-HZ integrated zone amplifier

120V – US	722196-1410
230V – EU	722196-2410
100V – Japan	722196-3410
230V – UK	722196-4410
240V – AU	722196-5410

### Accessories

Volume control user interface (PC041966)

# Product Information

## FreeSpace® IZA 2120-LZ Integrated Zone Amplifier



### Product Description

For background/foreground music and paging applications, Bose® FreeSpace® IZA 2120-LZ integrated zone amplifier elevates the audio experience when using FreeSpace® loudspeakers. Optimized for commercial applications, FreeSpace IZA amplifiers feature selectable Loudspeaker EQ to enrich audio quality, Opti-voice® paging for clear speech intelligibility while providing seamless transitions and Dynamic EQ that ensures full and balanced music at any volume level.

### Key Features

- Opti-voice® paging equalizes the vocal frequency range for clear speech intelligibility while providing seamless transitions.
- Dynamic EQ ensures full and balanced music at any volume level.
- Loudspeaker EQ enriches audio quality and simplifies connection to Bose® loudspeakers: FreeSpace® DS 16, DS 40, DS 100 and RoomMatch® Utility RMU105.
- Remote option for volume/source selection eliminates the need for bulky, inefficient, and sound-altering in-line volume controls.
- Expansion-ready connectivity with FreeSpace ZA amplifiers to drive additional zones.
- **Reliable 2 x 120 W Class-D amplification** optimized for low-impedance applications.
- Intuitive feature setup enables the amplifier to be configured without a PC for output, remote, paging, auxiliary input/output and automatic standby options.
- Auto-Standby feature allows the amplifier to consume less power when not in use.
- **Simplified front panel interface** provides end users with tone, source selection and master volume controls as well as a connection to mobile sources via a 3.5 mm connector.
- Remote muting allows the amplifier to be muted via a centralized control system.

### Applications

- Designed for a wide range of applications, including:
- Retail stores
- Restaurants and bars
- Hospitality venues
- Conference centers
- Schools
- Auxiliary zones

# Product Information

## FreeSpace® IZA 2120-LZ Integrated Zone Amplifier

### Technical Specifications

<b>Power Rating</b>			
Amplifier Power	2 x 120 W @ 4 Ω, 2 x 60 W @ 8 Ω		
<b>Audio Performance</b>			
Frequency Response	20 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz)		
THD+N	≤ 0.5 % (at rated power)		
Channel Separation (Crosstalk)	≤ -58 dBu (below rated power, 1 kHz)		
Dynamic Range	88 dB		
<b>Integrated DSP</b>			
A/D and D/A Converters	24-bit / 48 kHz		
Processing Functions	Loudspeaker EQ, Bose®Opti-voice®paging, Dynamic equalization		
Loudspeaker Presets	Flat, FreeSpace®DS 16, DS 40, DS 100, and RoomMatch®Utility RMU105		
Audio Latency	10.4 ms (any input to speaker output or aux output)		
<b>Audio Inputs</b>			
	Line Inputs	Page Input	Auxiliary Input
Input Channels	2 unbalanced, 2 balanced	1 balanced mic/line	1 unbalanced line
Connectors	Stereo RCA, 5-pin Euroblock	4-pin Euroblock	1/8" (3.5mm) TRS
Input Range	-8 dBu to 22 dBu	-58 dBu to 12 dBu	-60 dBu to -1 dBu
Adjustment Range	0 dB to -30 dB	0 dB to +50 dB	Fixed
Input Impedance	20 kΩ	2 kΩ	20 kΩ
Maximum Input Level	22 dBu	12 dBu	-1 dBu
Sensitivity	-8 dBu	n/a	-3 dBu
Nominal Input Level	4 dBu	-38 dBu	-8 dBu
<b>Audio Outputs</b>			
	Amplifier Outputs	Auxiliary Output	
Outputs	2	1 unbalanced	
Connectors	2-pin inverted Euroblock	Stereo RCA	
Output Impedance	4 Ω	150 Ω	
Nominal Output Level	2 x 120 W @ 4 Ω, 2 x 60 W @ 8 Ω	2 dBu	
<b>Indicators and Controls</b>			
Power LED	Solid blue indicates power is on, blinking blue indicates standby mode		
Input Signal Clip LED	Green indicates input signal is within -37 dBu to 11 dBu, red indicates signal is over 11 dBu		
Output Signal Clip LED	Green indicates output signal is within -46 dBFS to -2 dBFS, red indicates signal is over -2 dBFS, approximately 80 W/channel, for each output 120 watts is 0 dBFS		
Controls, Front Panel	Power On/Off, Input Select (A/B), Treble/Bass Tone Controls, Master Level		
Controls, Rear Panel	Amplifier Mode DIP switches, Loudspeaker EQ preset selector, Input Gain (A/B/Page), Output trims, Remote		
<b>Electrical</b>			
Mains Voltage	100 VAC – 240 VAC (±10%, 50/60 Hz)		
AC Power Consumption	24 W (Standby), 300 W (Max)		
Mains Connector	Standard IEC (C14)		
Maximum Inrush Current	12.6 Amps (230 VAC / 50 Hz), 6.6 Amps (120 VAC / 60 Hz)		
Overload Protection	High temperature, output short, excessively low or high AC line voltage		
<b>Physical</b>			
Dimensions	1.7" H x 19.0" W x 12.8" D (44 mm x 483 mm x 324 mm)		
Shipping Weight	12.0 lb (5.4 kg)		
Net Weight	9.0 lb (4.1 kg)		
Cooling System	Single fan creates continuous left-to-right air flow		
<b>General</b>			
Inputs (Control)	Remote input for Volume Control with A/B Select user interface (PC041967), Volume Control user interface (PC041966), Mute input control via contact closure (normally open)		

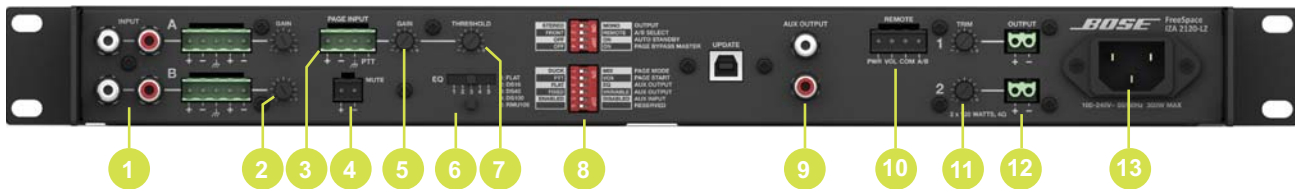


## Product Information

# FreeSpace® IZA 2120-LZ Integrated Zone Amplifier



- 1 **POWER switch** – ON/OFF AC power.
- 2 **Power LED** – Solid blue LED indicates the unit is ON. Blinking blue LED indicates the unit is in standby mode.
- 3 **INPUT SIGNAL LED** – LED is green from  $-37$  dBu to  $11$  dBu, LED goes red over  $11$  dBu.
- 4 **OUTPUT LIMIT LED** – LED is green from  $-46$  dBFS to  $-2$  dBFS, LED goes red over  $-2$  dBFS, approximately  $80$  W/channel. For each output  $120$  watts is  $0$  dBFS.
- 5 **AUX INPUT** –  $1/8"$  ( $3.5$  mm) stereo line-level input connector. A cable insertion mutes INPUT A and INPUT B for priority override. Pages can still be made from the PAGE INPUT. AUX INPUT does not have any gain adjustment, therefore, all gain adjustments must be done from the external source device.
- 6 **INPUT A/B Switch** – Allows selection of rear line-input channels A or B.
- 7 **TREBLE/BASS Controls** – Allows tonal adjustments of both outputs simultaneously. These are 1st order shelving filters that provide  $\pm 6$  dB adjustment at  $7$  kHz and above (TREBLE) and  $100$  Hz and below (BASS). They have a slope of approximately  $6$  dB/octave.
- 8 **MASTER LEVEL Control** – Controls the overall system volume for both the loudspeakers and the AUX OUTPUT when the AUX OUTPUT DIP switch is set to VARIABLE. If the AUX OUTPUT DIP switch is set to FIXED, the AUX OUTPUT maintains maximum level. When using a REMOTE volume connection, the front panel MASTER LEVEL control becomes disabled.



- 1 **INPUT A/B** – Balanced and unbalanced line-level input connectors.
- 2 **INPUT GAIN** – Allows for  $0$  dB to  $-30$  dB of adjustment to each INPUT A/B.
- 3 **PAGE INPUT** – Euroblock mic/line input that supports dynamic microphones with voice activation (VOX) or a trigger contact closure for use with push-to-talk (PTT) microphones.
- 4 **MUTE** – Contact closure connection that upon trigger (short) will mute all outputs (including AUX OUTPUT).
- 5 **PAGE INPUT GAIN** – Allows for  $0$  dB to  $+50$  dB of gain control of PAGE INPUT signal.
- 6 **EQ** – Provides loudspeaker equalization presets: Flat, DS 16, DS 40, DS 100 and RMU105. Use the Flat setting for loudspeakers that are not Bose or that do not require EQ.
- 7 **PAGE INPUT THRESHOLD** – Adjusts the level at which the VOX PAGE INPUT signal causes other inputs to be lowered. A  $10$  dB adjustment range lifts the page trigger level away from the noise floor to prevent false triggers. At minimum setting, a  $-70$  dBu signal will trigger a VOX page. At maximum setting, a  $-60$  dBu signal will trigger a VOX page. When in PTT page mode this adjustment is not active.
- 8 **DIP Switches** – A bank of switches to set the amplifier configuration. All switches set to the left position is the standard configuration.
- 9 **AUX OUTPUT** – Variable or fixed, unbalanced line-level output signal for use with ZA zone amplifiers or for routing the signal to additional audio equipment.
- 10 **REMOTE** – Input connector for either a Bose® volume control with A/B switch user interface accessory (PC 041967) or a Bose volume control user interface accessory (PC 041966).
- 11 **OUTPUT 1/OUTPUT 2 TRIM** – Allows for up to  $40$  dB attenuation of the individual loudspeaker outputs relative to the master level.
- 12 **OUTPUT** – Two inverted 2-pin Euroblock connectors for loudspeaker connections. Outputs are not bridgeable.
- 13 **AC Mains receptacle** – AC line voltage input.

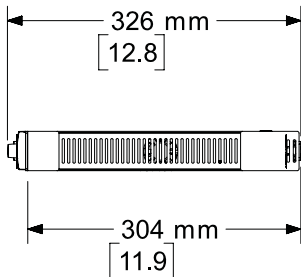
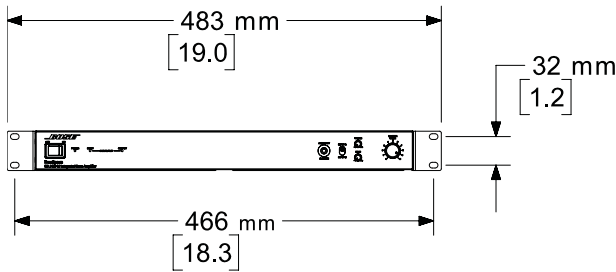
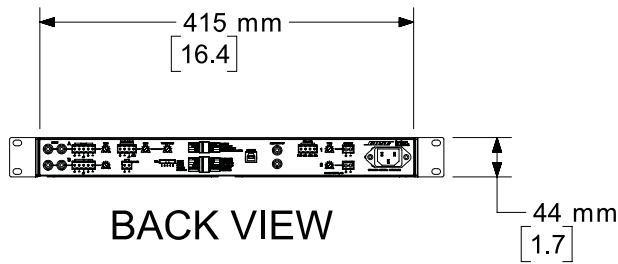
# Product Information

## FreeSpace® IZA 2120-LZ Integrated Zone Amplifier

### AC Current Draw and Thermal Dissipation Information

Test Signal & Power Level	Load Configuration (Both IZA channels driven)	Total Audio Output, W	120VAC 60Hz. Line Current, A	230VAC 50Hz. Line Current, A	Thermal Dissipation, Max		
					Watts	BTU/hr.	kCal/hr.
Power On, Idling		0	0.16	0.13	30	102	26
1/8th Rated Power IEC65 Bandlimited Pink Noise	8Ω / Ch	15	0.19	0.15	34	116	29
6 dB Crest Factor DS 16 EQ Enabled	4Ω / Ch	30	0.50	0.28	64	218	55
1/3rd Rated Power IEC65 Bandlimited Pink Noise	8Ω / Ch	40	0.25	0.17	39	133	34
6 dB Crest Factor DS 16 EQ Enabled	4Ω / Ch	80	1.00	0.539	136	464	117

### Mechanical Diagrams



### Safety and Regulatory Compliance

The FreeSpace IZA 2120-LZ integrated zone amplifier complies with CE requirements and is UL listed according to UL60065 (7th edition) and CAN/CSA C22.2 No. 60065-03; CB approved, according to IEC60065 (7th edition), including group and national differences. This model also complies with FCC Part 15B Class A (2003), EN55103-1 (1997), EN55103-2 (1996), and CISPR13 (2003) requirements.

### Product Codes

FreeSpace IZA 2120-LZ integrated zone amplifier	
120V – US	719782-1420
230V – EU	719782-2420
100V – Japan	719782-3420
230V – UK	719782-4420
240V – AU	719782-5420

### Accessories

- Volume control user interface (PC041966)
- Volume control with A/B switch user interface (PC041967)

## Product Information

# FreeSpace® ZA 2120-LZ Zone Amplifier



## Product Description

The Bose® FreeSpace® ZA 2120-LZ zone amplifier is designed to provide basic amplification and sound system expansion when using front-end Bose products such as FreeSpace® integrated zone amplifiers and ControlSpace® engineered sound processors.

## Key Features

- **Reliable 2 x 120 W Class-D amplification** optimized for low-impedance applications.
- **Remote** option for volume control eliminates the need for bulky, inefficient, and sound-altering in-line volume controls.
- **Expansion-ready connectivity** with FreeSpace® IZA amplifiers when additional sources and loudspeaker processing is required.
- **Intuitive feature setup** enables the amplifier to be configured without a PC for output and automatic standby options.
- **Auto-Standby feature** allows the amplifier to consume less power when not in use.
- **Remote muting** allows the amplifier to be muted via a centralized control system.

## Applications

Designed for a wide range of applications, including:

- Retail stores
- Restaurants and bars
- Hospitality venues
- Conference centers
- Schools
- Auxiliary zones

# Product Information

## FreeSpace® ZA 2120-LZ Zone Amplifier

### Technical Specifications

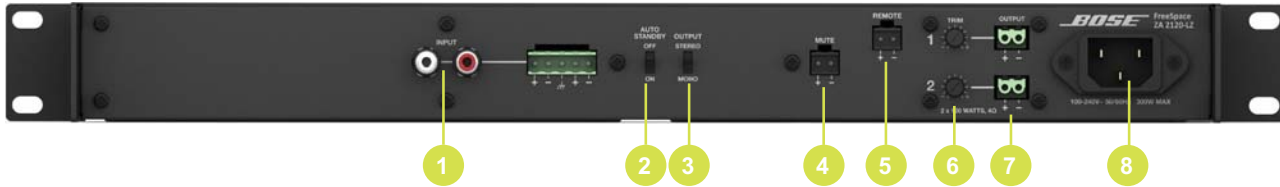
Power Rating	
Amplifier Power	2 x 120 W @ 4 Ω, 2 x 60 W @ 8 Ω
Audio Performance	
Frequency Response	20 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz)
THD+N	≤ 0.5 % (at rated power)
Channel Separation (Crosstalk)	≤ -58 dBu (below rated power, 1 kHz)
Dynamic Range	88 dB
Audio Inputs	
Input Channels	1 unbalanced, 1 balanced
Connectors	Stereo RCA, 5-pin Euroblock
Input Range	-8 dBu to 22 dBu
Input Impedance	20 kΩ
Maximum Input Level	22 dBu
Nominal Input Level	4 dBu
Audio Outputs	
Outputs	2
Connectors	2-pin inverted Euroblock
Nominal Output Level	2 x 120 W @ 4 Ω, 2 x 60 W @ 8 Ω
Indicators and Controls	
Power LED	Solid blue indicates power is on, blinking blue indicates standby mode
Input Signal Clip LED	Green indicates input signal is within -37 dBu to 11 dBu, red indicates signal is over 11 dBu
Output Signal Clip LED	Green indicates output signal is within -46 dBFS to -2 dBFS, red indicates signal is over -2 dBFS, approximately 80 W/channel, for each output 120 watts is 0dBFS
Controls, Front Panel	Power On/Off
Controls, Rear Panel	Auto Standby: On/Off switch, Output: Stereo/Mono switch, Mute, Output trims, Remote
Electrical	
Mains Voltage	100 VAC - 240 VAC (±10%, 50/60 Hz)
AC Power Consumption	21 W (Standby), 300 W (Max)
Mains Connector	Standard IEC (C14)
Maximum Inrush Current	12.6 Amps (230 VAC / 50 Hz), 7.8 Amps (120 VAC / 60 Hz)
Overload Protection	High temperature, output short, excessively low or high AC line voltage
Physical	
Dimensions	1.7" H x 19.0" W x 12.8" D (44 mm x 483 mm x 324 mm)
Shipping Weight	11.5 lb (5.2 kg)
Net Weight	8.5 lb (3.9 kg)
Cooling System	Single fan creates continuous left-to-right air flow
General	
Inputs (Control)	Remote input for Volume Control (PC041966), Mute input control via a normally open contact closure

## Product Information

# FreeSpace® ZA 2120-LZ Zone Amplifier



- 1 **POWER switch** – ON/OFF AC power.
- 2 **Power LED** – Solid blue LED indicates the unit is ON. Blinking blue LED indicates the unit is in standby mode.
- 3 **INPUT SIGNAL LED** – LED is green from  $-37$  dBu to  $11$  dBu, LED goes red over  $11$  dBu.
- 4 **OUTPUT LIMIT LED** – LED is green from  $-46$  dBFS to  $-2$  dBFS, LED goes red over  $-2$  dBFS, approximately  $80$  W/channel. For each output,  $120$  watts is  $0$  dBFS.



- 1 **INPUT** – Balanced and unbalanced line-level input connectors.
- 2 **AUTO STANDBY** – If enabled (ON) the amplifier will go into standby mode after twenty minutes without an input signal. If in standby mode and an audio signal is detected, the amplifier will automatically wake and amplify audio within  $0.7$  seconds. The OFF position disables the feature.
- 3 **OUTPUT** – The output can be set to STEREO or MONO.
- 4 **MUTE** – Contact closure connection that upon trigger (short) will mute all outputs.
- 5 **REMOTE** – Input connector for the Bose® volume control user interface accessory (PC 041966).
- 6 **OUTPUT TRIM** – Allows for up to  $40$  dB attenuation of each loudspeaker output.
- 7 **OUTPUT** – Two inverted 2-pin Euroblock connectors for loudspeaker connections. Outputs are not bridgeable.
- 8 **AC Mains receptacle** – AC line voltage input.

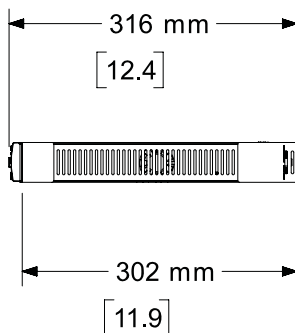
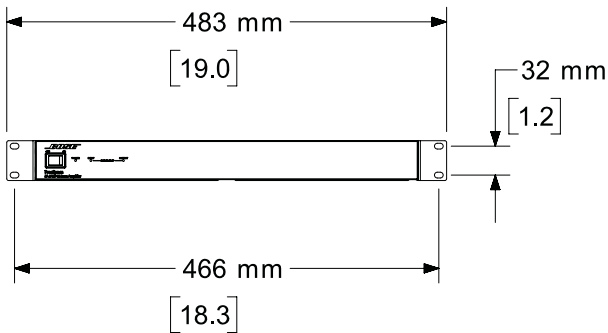
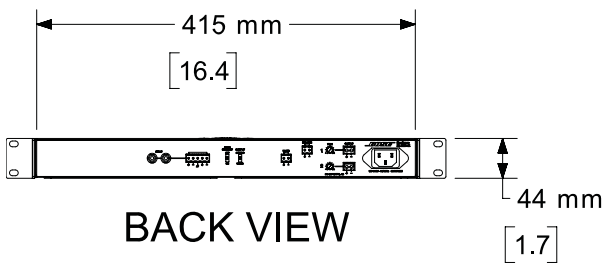
# Product Information

## FreeSpace® ZA 2120-LZ Zone Amplifier

### AC Current Draw and Thermal Dissipation Information

Test Signal & Power Level	Load Configuration (Both IZA channels driven)	Total Audio Output, W	120VAC 60Hz. Line Current, A	230VAC 50Hz. Line Current, A	Thermal Dissipation, Max		
					Watts	BTU/hr.	kCal/hr.
<b>Power On, Idling</b>		0	0.13	0.12	28	96	24
1/8th Rated Power IEC65 Bandlimited Pink Noise	8Ω / Ch	15	0.18	0.14	32	109	28
6 dB Crest Factor DS 16 EQ Enabled	4Ω / Ch	30	0.50	0.27	62	212	53
1/3rd Rated Power IEC65 Bandlimited Pink Noise	8Ω / Ch	40	0.24	0.17	39	133	34
6 dB Crest Factor DS 16 EQ Enabled	4Ω / Ch	80	1.00	0.55	127	433	109

### Mechanical Diagrams



### Safety and Regulatory Compliance

The FreeSpace ZA 2120-LZ zone amplifier complies with CE requirements and is UL listed according to UL60065 (7th edition) and CAN/CSA C22.2 No. 60065-03; CB approved, according to IEC60065 (7th edition), including group and national differences. This model also complies with FCC Part 15B Class A (2003), EN55103-1 (1997), EN55103-2 (1996), and CISPR13 (2003) requirements.

### Product Codes

FreeSpace ZA 2120-LZ integrated zone amplifier

120V – US	722196-1420
230V – EU	722196-2420
100V – Japan	722196-3420
230V – UK	722196-4420
240V – AU	722196-5420

### Accessories

Volume control user interface (PC041966)

# Product Information

## FreeSpace® ZA 2120-HZA Zone Amplifier



### Product Description

The Bose® FreeSpace® ZA 2120-HZA zone amplifier is designed to provide basic amplification and sound system expansion when using front-end Bose products such as FreeSpace® integrated zone amplifiers and ControlSpace® engineered sound processors. With the inclusion of AmpLink, up to 8 digital audio channels can be sent to the amp from a Bose DSP via a shielded CAT 5 cable.

### Key Features

- **Reliable 2 x 120 W Class-D amplification** optimized for 70/100V high-impedance applications.
- **AmpLink** transports up to 8 uncompressed, near zero latency, digital audio channels between Bose DSPs and the ZA 2120-HZA via shielded CAT 5 cable. The amp also supports a THRU path for daisy-chaining digital audio to other Bose AmpLink products at a distance of up to 10 m between products.
- **Dual Remotes** support optional volume adjustment for -independent, or combined, zone control which eliminates the need for bulky, -inefficient, and sound-altering 70/100V in-line volume controls.
- **Expansion-ready connectivity** with FreeSpace® IZA amplifiers and ControlSpace® engineered sound processors when additional sources and loudspeaker processing is required.
- **Intuitive feature setup** enables the amplifier to be configured without a PC for remote, input, output and automatic standby options.
- **Auto-Standby feature** allows the amplifier to consume less power when not in use.
- **Remote muting** allows the amplifier to be muted via a centralized control system.

### Applications

Designed for a wide range of applications, including:

- Retail stores
- Restaurants and bars
- Hospitality venues
- Conference centers
- Schools
- Auxiliary zones



# Product Information

## FreeSpace® ZA 2120-HZA Zone Amplifier

### Technical Specifications

POWER RATING		
Amplifier Power	2 x 120 W @ 70/100V	
AUDIO PERFORMANCE		
Frequency Response	55 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz)	
THD+N	≤ 0.3 % (at rated power)	
Channel Separation (Crosstalk)	≤ -58 dBu (below rated power, 1 kHz)	
Dynamic Range	88 dB	
Audio Latency	1 ms (any analog input to loudspeaker output); 1.5 ms (Amplink input to loudspeaker output)	
AUDIO INPUTS		
	ANALOG	AMPLINK
Input Channels	1 unbalanced, 1 balanced	8 digital
Connectors	Stereo RCA, 5-pin Euroblock	RJ-45 (Input)
Input Range	-8 dBu to 22 dBu	
Input Impedance	20 kΩ	
Maximum Input Level	22 dBu	
Nominal Input Level	4 dBu	
AUDIO OUTPUTS		
	ANALOG	AMPLINK
Outputs	2	8 digital
Connectors	2-pin inverted Euroblock	RJ-45 (Thru)
Nominal Output Level	2 x 120 W @ 70/100V	
INDICATORS AND CONTROLS		
Power LED	Solid blue indicates power is on, blinking blue indicates standby mode.	
Input Signal Clip LED	Green indicates input signal is within -37 dBu to 11 dBu, red indicates signal is over 11 dBu.	
Output Signal Clip LED	Green indicates output signal is within -46 dBFS to -2 dBFS, red indicates signal is over -2 dBFS, approximately 80 W/channel, for each output 120 watts is 0 dBFS.	
AmpLink ERR LED	Solid yellow indicates muted audio from the mute connector. Blinking yellow indicates an error, which will also mute the audio.	
AmpLink LNK LED	Solid green indicates normal operation.	
Controls, Front Panel	Power On/Off	
Controls, Rear Panel	Auto Standby On/Off switch, Input: Dual/Summed switch, Remote 1 Control: Zone 1/Zone 1+2 switch, Output Voltage: 70/100V switch, Mute, Output trims, Remote RJ-45	
ELECTRICAL		
Mains Voltage	100 VAC - 240 VAC (±10%, 50/60 Hz)	
AC Power Consumption	13 W (Standby)	300 W (Max)
Mains Connector	Standard IEC (C14)	
Maximum Inrush Current	12.6 Amps (230 VAC / 50 Hz), 7.8 Amps (120 VAC / 60 Hz)	
Overload Protection	High temperature, output short, excessively low or high AC line voltage	
PHYSICAL		
Dimensions (H x W x D)	1.7" H x 19.0" W x 12.8" D (44 mm x 483 mm x 324 mm)	
Shipping Weight	11.7 lb (5.3 kg)	
Net Weight	9.5 lb (4.3 kg)	
Cooling System	Single fan creates continuous left-to-right air flow	
GENERAL		
Inputs (Control)	1 RJ-45 input connector for the CC-1 ControlCenter zone controller, or the CV41 4-to-1 converter. Mute input control via a normally open contact closure.	

For additional specifications and application information, please visit [pro.Bose.com](http://pro.Bose.com). Specifications subject to change without notice

# Product Information

## FreeSpace® ZA 2120-HZA Zone Amplifier



- 1 POWER SWITCH - ON/OFF AC power.
- 2 POWER LED - Solid blue LED indicates the unit is ON. Blinking blue LED indicates the unit is in standby mode.
- 3 INPUT SIGNAL LED - LED is green from -37 dBu to 11 dBu, LED goes red over 11 dBu.
- 4 OUTPUT LIMIT LED - LED is green from -46 dBFS to -2 dBFS, LED goes red over -2 dBFS, approximately 80 W/channel. For each output 120 watts is 0 dBFS.



- 1 AMPLINK - INPUT RJ-45 connector that receives up to 8 digital audio channels from a Bose Amplink product. The amp also supports a THRU path for daisy-chaining the 8 digital audio channels to other Bose Amplink products.  
**CAUTION:** Shielded EIA/TIA 568B straight CAT 5 cable, or equivalent, is required for proper Amplink operation. Unshielded cable is not supported and may cause Amplink to operate improperly. Do NOT connect either RJ-45 port to an Ethernet-based network.
- 2 AMPLINK ERR LED - Solid yellow indicates muted audio from the mute connector. Blinking yellow indicates an error, which will also mute the audio.
- 3 AMPLINK LNK LED - Solid green indicates normal operation.
- 4 INPUT SELECT - Switch selects if analog or two consecutive Amplink audio inputs are used. Choose from Amplink channels 1-2, 3-4, 5-6, or 7-8. The default state is analog.
- 5 ANALOG INPUT - Balanced and unbalanced line-level input connectors.
- 6 AUTO STANDBY - If enabled (ON) the amplifier will go into standby mode after twenty minutes without an input signal. If in standby mode and an audio signal is detected, the amplifier will automatically wake and amplify audio within 0.7 seconds. The OFF position disables the feature.
- 7 INPUT - The input can be set to either DUAL or SUMMED mode.
- 8 REMOTE 1 CONTROL - Sets the REMOTE 1 input to control both outputs (or zones) simultaneously (ZONE 1+2), or allows each REMOTE input to control its own output (ZONE 1). Each remote has independent A/B selection capability. If only one remote is being used, then this switch must be set to ZONE 1+2.
- 9 70V/100V - The output can be set to 70V or 100V.
- 10 REMOTE - RJ-45 input connector for the CC-1 ControlCenter zone controller, or the CV41 if connecting to two non-ganged CC-1s. If the two CC-1s are ganged together, then the CV41 is not needed.
- 11 MUTE - Contact closure connection that upon trigger (short) will mute all outputs.
- 12 OUTPUT TRIM - Allows for up to 40 dB attenuation of each loudspeaker output.
- 13 OUTPUT - Two inverted 2-pin Euroblock connectors for loudspeaker connections. Outputs are not bridgeable.
- 14 AC MAINS RECEPTACLE - AC line voltage input.

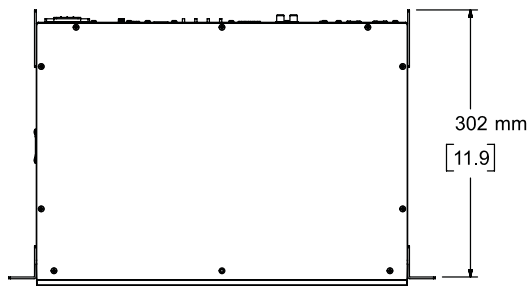
# Product Information

## FreeSpace® ZA 2120-HZA Zone Amplifier

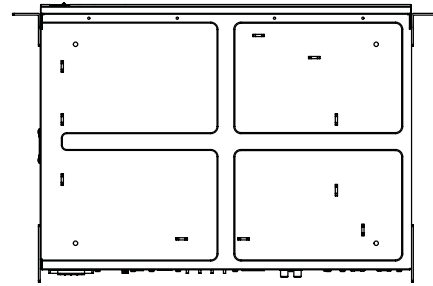
### AC Current Draw and Thermal Dissipation Information

ZA 2120-HZA, AC Current Draw and Thermal Dissipation							
Test Signal & Power Level	Load Configuration (Both ZA channels driven)	Total Audio Output, W	120 VAC 60 Hz Line Current, A	230 VAC 50 Hz Line Current, A	Thermal Dissipation, Max		
					Watts	BTU/hr	kCal/hr
<b>Power On, Idling</b>		0	0.20	0.14	32	110	28
<b>1/8th Rated Power</b> IEC65 Bandlimited Pink Noise <b>6 dB Crest Factor</b> DS 16 EQ Enabled	70V/Ch	30	0.50	0.30	37	125	32
	100V/Ch	30	0.60	0.30	41	141	36
<b>1/3rd Rated Power</b> IEC65 Bandlimited Pink Noise <b>6 dB Crest Factor</b> DS 16 EQ Enabled	70V/Ch	80	1.10	0.60	58	198	50
	100V/Ch	80	1.10	0.60	58	198	50

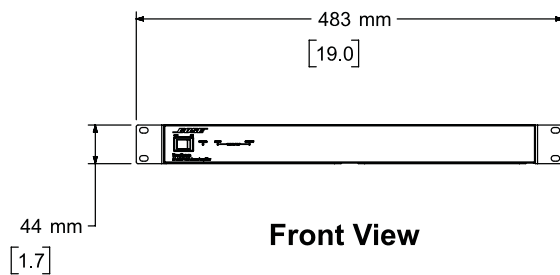
### Mechanical Diagrams



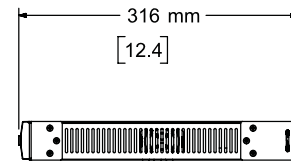
Top View



Bottom View

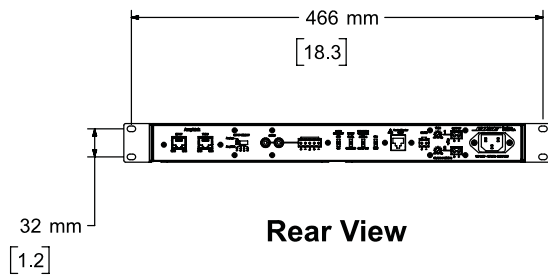


Front View



Right View

DIMENSIONS APPLY TO BOTH SIDES



Rear View



Left View

# Product Information

## FreeSpace® ZA 2120-HZA Zone Amplifier

### Architects' and Engineers' Specifications

The amplifier shall employ Class-D amplification topology. The amplifier shall incorporate a switch-mode power supply allowing normal operation from AC outlets ranging from 100 – 240 V ( $\pm 10\%$ ) at 50/60 Hz. The amplifier shall have an IEC 320-C14 electrical power inlet and shall be equipped with a removable power supply cord. A power switch shall be located on the front panel. The product shall include protection from shorted loads and general overheating. The amplifier's physical size shall be 1 RU in height by 1 RU in width and be capable of rack mounting. The product shall have venting with a single fan, continuous left-to-right airflow. Each output channel shall have output trim controls.

The amplifier shall have two output channels with a frequency response of 55 Hz to 20 kHz ( $+0/-3$  dB) and drive 70/100V distributed audio systems. The amplifier shall have THD+N at rated power less than or equal to 0.3%. Output connections shall be made via 2-pin touch-proof Euroblock connectors.

The amplifier shall meet or exceed the following performance specifications: channel separation (crosstalk) less than or equal to  $-58$  dB below rated power at 1 kHz and dynamic range of 88 dB. The amplifier shall have 1 line-level input (RCA stereo or 5-pin Euroblock), one AmpLink digital audio input (RJ-45), one AmpLink digital audio thru connection (RJ-45), and 1 remote control input (RJ-45). Three LEDs shall be visible on the front panel – one (blue) for power/standby indication, the second (red) for input level over 11 dBV, and the third (red) for output level over  $-2$  dBFS.

The amplifier shall have a 2 remote control inputs intended for use with the Bose Volume control user interface or third party 10k ohm linear taper potentiometers. The amplifier shall offer a master mute connection for use with external dry contacts to mute output of the amplifier. The rear panel shall contain a dual/summed input switch that allows optimization of the amplifier output.

The amplifier chassis shall be constructed of painted steel. The dimensions of the amplifier shall allow for 19-inch (483 mm) EIA standard rack mounting. The chassis shall be 1.7 inches (44 mm) in height, 19.0 inches (483 mm) in width and 12.8 inches (324 mm) in depth. The amplifier chassis shall weigh 8.5 pounds (3.9 kg). The amplifier shall be the Bose FreeSpace ZA 2120-HZA zone amplifier.

### Safety and Regulatory Compliance

The FreeSpace ZA 2120-HZA zone amplifier complies with CE requirements and is UL listed according to UL60065 (8th edition) and CAN/CSA C22.2 No. 60065-16; CB approved, according to IEC60065 (8th edition), including group and national differences. This model also complies with FCC Part 15B Class A, ICES-003 Class A, EN55032, EN55103-2:2009, CISPR 13: Ed. 5.0 (2009-06), and CISPR-32 requirements. The product must be used indoors. It is neither designed nor tested for use outdoors, in recreational vehicles, or on boats.

### Product Codes

FreeSpace ZA 2120-HZA integrated zone amplifier

120V – US	791355-1410
230V – EU	791355-2410
100V – Japan	791355-3410
230V – UK	791355-4410
240V – AU	791355-5410

### Accessories

ControlCenter CC-1 zone controller

US-Black	768932-0110
US-White	768932-0210
EU-Black	768932-2110
EU-White	768932-2210
JP-Black	768928-3110
JP-White	768928-3210
ControlCenter CV41 4-to-1 converter	768928-0010
6' (1.8M) Shielded F/UTP CAT-5E Cable	804380-0010
33' (10M) Shielded F/UTP CAT-5E Cable	804380-0010

# Product Information

## FreeSpace® ZA 2120-HZA Zone Amplifier



### Product Description

The Bose® FreeSpace® ZA 2120-HZA zone amplifier is designed to provide basic amplification and sound system expansion when using front-end Bose products such as FreeSpace® integrated zone amplifiers and ControlSpace® engineered sound processors. With the inclusion of AmpLink, up to 8 digital audio channels can be sent to the amp from a Bose DSP via a shielded CAT 5 cable.

### Key Features

- **Reliable 2 x 120 W Class-D amplification** optimized for 70/100V high-impedance applications.
- **AmpLink** transports up to 8 uncompressed, near zero latency, digital audio channels between Bose DSPs and the ZA 2120-HZA via shielded CAT 5 cable. The amp also supports a THRU path for daisy-chaining digital audio to other Bose AmpLink products at a distance of up to 10 m between products.
- **Dual Remotes** support optional volume adjustment for -independent, or combined, zone control which eliminates the need for bulky, -inefficient, and sound-altering 70/100V in-line volume controls.
- **Expansion-ready connectivity** with FreeSpace® IZA amplifiers and ControlSpace® engineered sound processors when additional sources and loudspeaker processing is required.
- **Intuitive feature setup** enables the amplifier to be configured without a PC for remote, input, output and automatic standby options.
- **Auto-Standby feature** allows the amplifier to consume less power when not in use.
- **Remote muting** allows the amplifier to be muted via a centralized control system.

### Applications

Designed for a wide range of applications, including:

- Retail stores
- Restaurants and bars
- Hospitality venues
- Conference centers
- Schools
- Auxiliary zones

# Product Information

## FreeSpace® ZA 2120-HZA Zone Amplifier

### Technical Specifications

<b>POWER RATING</b>		
Amplifier Power	2 x 120 W @ 70/100V	
<b>AUDIO PERFORMANCE</b>		
Frequency Response	55 Hz - 20 kHz (+0/-3 dB, @ 1 W reference 1 kHz)	
THD+N	≤ 0.3 % (at rated power)	
Channel Separation (Crosstalk)	≤ -58 dBu (below rated power, 1 kHz)	
Dynamic Range	88 dB	
Audio Latency	1 ms (any analog input to loudspeaker output); 1.5 ms (Amplink input to loudspeaker output)	
<b>AUDIO INPUTS</b>	<b>ANALOG</b>	<b>AMPLINK</b>
Input Channels	1 unbalanced, 1 balanced	8 digital
Connectors	Stereo RCA, 5-pin Euroblock	RJ-45 (Input)
Input Range	-8 dBu to 22 dBu	
Input Impedance	20 kΩ	
Maximum Input Level	22 dBu	
Nominal Input Level	4 dBu	
<b>AUDIO OUTPUTS</b>	<b>ANALOG</b>	<b>AMPLINK</b>
Outputs	2	8 digital
Connectors	2-pin inverted Euroblock	RJ-45 (Thru)
Nominal Output Level	2 x 120 W @ 70/100V	
<b>INDICATORS AND CONTROLS</b>		
Power LED	Solid blue indicates power is on, blinking blue indicates standby mode.	
Input Signal Clip LED	Green indicates input signal is within -37 dBu to 11 dBu, red indicates signal is over 11 dBu.	
Output Signal Clip LED	Green indicates output signal is within -46 dBFS to -2 dBFS, red indicates signal is over -2 dBFS, approximately 80 W/channel, for each output 120 watts is 0 dBFS.	
AmpLink ERR LED	Solid yellow indicates muted audio from the mute connector. Blinking yellow indicates an error, which will also mute the audio.	
AmpLink LNK LED	Solid green indicates normal operation.	
Controls, Front Panel	Power On/Off	
Controls, Rear Panel	Auto Standby On/Off switch, Input: Dual/Summed switch, Remote 1 Control: Zone 1/Zone 1+2 switch, Output Voltage: 70/100V switch, Mute, Output trims, Remote RJ-45	
<b>ELECTRICAL</b>		
Mains Voltage	100 VAC - 240 VAC (±10%, 50/60 Hz)	
AC Power Consumption	13 W (Standby)	300 W (Max)
Mains Connector	Standard IEC (C14)	
Maximum Inrush Current	12.6 Amps (230 VAC / 50 Hz), 7.8 Amps (120 VAC / 60 Hz)	
Overload Protection	High temperature, output short, excessively low or high AC line voltage	
<b>PHYSICAL</b>		
Dimensions (H x W x D)	1.7" H x 19.0" W x 12.8" D (44 mm x 483 mm x 324 mm)	
Shipping Weight	11.7 lb (5.3 kg)	
Net Weight	9.5 lb (4.3 kg)	
Cooling System	Single fan creates continuous left-to-right air flow	
<b>GENERAL</b>		
Inputs (Control)	1 RJ-45 input connector for the CC-1 ControlCenter zone controller, or the CV41 4-to-1 converter. Mute input control via a normally open contact closure.	

For additional specifications and application information, please visit [pro.bose.com](http://pro.bose.com). Specifications subject to change without notice

# Product Information

## FreeSpace® ZA 2120-LZA Zone Amplifier



- 1 POWER SWITCH - ON/OFF AC power.
- 2 POWER LED - Solid blue LED indicates the unit is ON. Blinking blue LED indicates the unit is in standby mode.
- 3 INPUT SIGNAL LED - LED is green from -37 dBu to 11 dBu, LED goes red over 11 dBu.
- 4 OUTPUT LIMIT LED - LED is green from -46 dBFS to -2 dBFS, LED goes red over -2 dBFS, approximately 80 W/channel. For each output 120 watts is 0 dBFS.



- 1 AMPLINK - INPUT RJ-45 connector that receives up to 8 digital audio channels from a Bose AmpLink product. The amp also supports a THRU path for daisy-chaining the 8 digital audio channels to other Bose AmpLink products.  
**CAUTION:** Shielded EIA/TIA 568B straight CAT 5 cable, or equivalent, is required for proper AmpLink operation. Unshielded cable is not supported and may cause AmpLink to operate improperly. Do NOT connect either RJ-45 port to an Ethernet-based network.
- 2 AMPLINK ERR LED - Solid yellow indicates muted audio from the mute connector. Blinking yellow indicates an error, which will also mute the audio.
- 3 AMPLINK LNK LED - Solid green indicates normal operation.
- 4 INPUT SELECT - Switch selects if analog or two consecutive AmpLink audio inputs are used. Choose from AmpLink channels 1-2, 3-4, 5-6, or 7-8. The default state is analog.
- 5 ANALOG INPUT - Balanced and unbalanced line-level input connectors.
- 6 AUTO STANDBY - If enabled (ON) the amplifier will go into standby mode after twenty minutes without an input signal. If in standby mode and an audio signal is detected, the amplifier will automatically wake and amplify audio within 0.7 seconds. The OFF position disables the feature.
- 7 OUTPUT - The output can be set to either STEREO or MONO mode.
- 8 REMOTE - RJ-45 input connector for the CC-1 ControlCenter zone controller.
- 9 MUTE - Contact closure connection that upon trigger (short) will mute all outputs.
- 10 OUTPUT TRIM - Allows for up to 40 dB attenuation of each loudspeaker output.
- 11 OUTPUT - Two inverted 2-pin Euroblock connectors for loudspeaker connections. Outputs are not bridgeable.
- 12 AC MAINS RECEPTACLE - AC line voltage input.



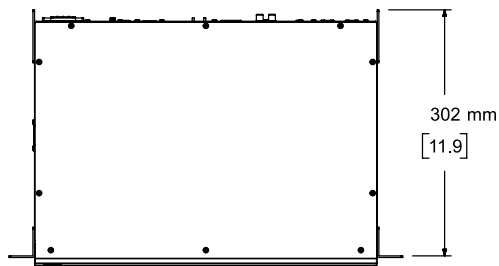
# Product Information

## FreeSpace® ZA 2120-LZA Zone Amplifier

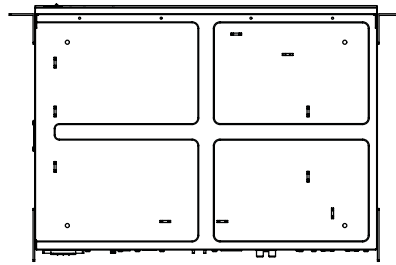
### AC Current Draw and Thermal Dissipation Information

ZA 2120-LZA, AC Current Draw and Thermal Dissipation							
Test Signal & Power Level	Load Configuration (Both ZA channels driven)	Total Audio Output, W	120 VAC 60 Hz Line Current, A	230 VAC 50 Hz Line Current, A	Thermal Dissipation, Max		
					Watts	BTU/hr	kCal/hr
<b>Power On, Idling</b>		0	0.15	0.11	25	86	22
<b>1/8th Rated Power</b> IEC65 Bandlimited Pink Noise <b>6 dB Crest Factor</b> DS 16 EQ Enabled	8Ω / Ch	15	0.33	0.19	29	98	25
	4Ω / Ch	30	0.52	0.28	34	117	30
<b>1/3rd Rated Power</b> IEC65 Bandlimited Pink Noise <b>6 dB Crest Factor</b> DS 16 EQ Enabled	8Ω / Ch	40	0.57	0.31	31	107	27
	4Ω / Ch	80	1.00	0.56	49	167	42

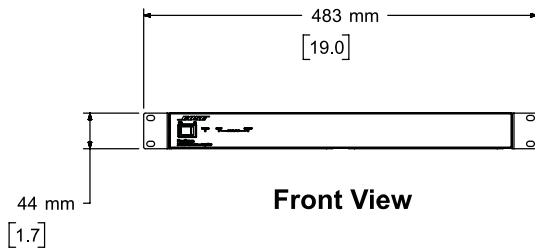
### Mechanical Diagrams



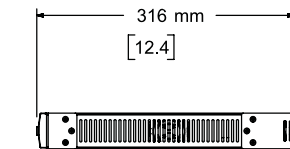
Top View



Bottom View

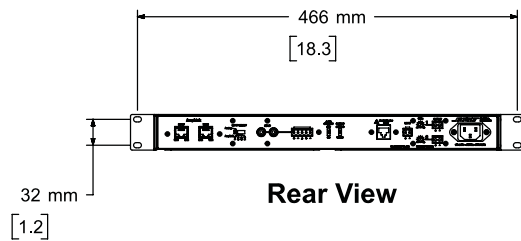


Front View



Right View

DIMENSIONS APPLY TO BOTH SIDES



Rear View



Left View

# Product Information

## FreeSpace® ZA 2120-LZA Zone Amplifier

### Architects' and Engineers' Specifications

The amplifier shall employ Class-D amplification topology. The amplifier shall incorporate a switch-mode power supply allowing normal operation from AC outlets ranging from 100 – 240 V ( $\pm 10\%$ ) at 50/60 Hz. The amplifier shall have an IEC 320-C14 electrical power inlet and shall be equipped with a removable power supply cord. A power switch shall be located on the front panel. The product shall include protection from shorted loads and general overheating. The amplifier's physical size shall be 1 RU in height by 1 RU in width and be capable of rack mounting. The product shall have venting with a single fan, continuous left-to-right airflow. Each output channel shall have output trim controls.

The amplifier shall have two output channels with a frequency response of 20 Hz to 20 kHz ( $+0/-3$  dB) and drive 4 ohm loads at 120 watts per channel or 60 watts per channel into 8 ohm loads. The amplifier shall have THD+N at rated power less than or equal to 0.5%. Output connections shall be made via two 2-pin touch-proof Euroblock connectors.

The amplifier shall meet or exceed the following performance specifications: channel separation (crosstalk) less than or equal to  $-58$  dB below rated power at 1 kHz and dynamic range of 88 dB. The amplifier shall have 1 line-level input (RCA stereo or 5-pin Euroblock), one AmpLink digital audio input (RJ-45), one AmpLink digital audio thru connection (RJ-45), and 1 remote control input (RJ-45). Three LEDs shall be visible on the front panel - one (blue) for power/standby indication, the second (red) for input level over 11 dBV, and the third (red) for output level over  $-2$  dBFS.

The amplifier shall have a remote control input intended for use with the Bose Volume control user interface or third party 10k ohm linear taper potentiometers. The amplifier shall offer a master mute connection for use with external dry contacts to mute output of the amplifier. The rear panel shall contain a stereo/mono switch that allows optimization of the amplifier output.

The amplifier chassis shall be constructed of painted steel. The dimensions of the amplifier shall allow for 19-inch (483 mm) EIA standard rack mounting. The amplifier shall be 1.7 inches (44 mm) in height, 19.0 inches (483 mm) in width and 12.8 inches (324 mm) in depth. The amplifier chassis shall weigh 8.5 pounds (3.9 kg). The amplifier shall be the Bose FreeSpace ZA 2120-LZA zone amplifier

### Safety and Regulatory Compliance

The FreeSpace ZA 2120-LZA zone amplifier complies with CE requirements and is UL listed according to UL60065 (8th edition) and CAN/CSA C22.2 No. 60065-16; CB approved, according to IEC60065 (8th edition), including group and national differences. This model also complies with FCC Part 15B Class A, ICES-003 Class A, EN55032, EN55103-2:2009, CISPR 13: Ed. 5.0 (2009-06), and CISPR-32 requirements. The product must be used indoors. It is neither designed nor tested for use outdoors, in recreational vehicles, or on boats.

### Product Codes

FreeSpace ZA 2120-LZA integrated zone amplifier

120V - US	791354-1410
230V - EU	791354-2410
100V - Japan	791354-3410
230V - UK	791354-4410
240V - AU	791354-5410

### Accessories

ControlCenter CC-1 zone controller


US-Black	768932-0110
US-White	768932-0210
EU-Black	768932-2110
EU-White	768932-2210
JP-Black	768928-3110
JP-White	768928-3210
6' (1.8M) Shielded F/UTP CAT-5E Cable	804380-0010
33' (10M) Shielded F/UTP CAT-5E Cable	804380-0010

# ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICE HANDLING

This unit contains ESDS devices. We recommend the following precautions when repairing, replacing or transporting ESDS devices:

- Perform work at an electrically grounded work station.
- Wear wrist straps that connect to the station or heel straps that connect to conductive floor mats.
- Avoid touching the leads or contacts of ESDS devices or PC boards even if properly grounded. Handle boards by the edges only.
- Transport or store ESDS devices in ESD protective bags, bins, or totes. Do not insert unprotected devices into materials such as plastic, polystyrene foam, clear plastic bags, bubble wrap or plastic trays.

## PART LIST NOTES

1. The individual parts located on the PCBs are listed in the Electrical Part List.
2. This part is referenced for informational purposes only. It is not stocked as a repair part. Refer to the next higher assembly for a replacement part.
3.  This part is critical for safety purposes. Failure to use a substitute replacement with the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards.

# PACKAGING PART LIST

IZA 2120-HZ and IZA 2120-LZ Amplifiers (refer to Figure 1)

Item Number	Description	Part Number	Qty.	Note
1	PE FOAM, REAR, 508X107X56	740151-001S	1	
2	CARTON, LINE CORD/ACCESSORIES	753016-001S	1	
3	PLUG, 4P, GREEN (PAGE INPUT)	-	1	
4	PLUG, 4P, BLACK (REMOTES)			
	IZA 2120-HZ	-	2	
	IZA 2120-LZ	-	1	
5	PLUG, 2P, BLACK (MUTE)	-	1	
6	PLUG, 2P, GREEN (OUTPUTS)	-	2	
7	PLUG, 5P, GREEN (INPUTS)	-	2	
8	RUBBER FOOT	348623-0010	4	
9	ZIPLOC BAG, CONNECTORS	-	1	
10	CARTON, AMP ASSY, FS IZA 2120-HZ	750854-001S	1	
10	CARTON, AMP ASSY, FS IZA 2120-LZ	750857-001S	1	
11	PE FOAM, FRONT, 508X107X93	740150-001S	1	
12	CABLE, LINE CORD, IEC C13, NA	350745-0010	1	3
	CABLE, LINE CORD, IEC C13, EU	350747-0010		
	CABLE, LINE CORD, IEC C13, JP	350749-0010		
	CABLE, LINE CORD, IEC C13, UK	350748-0010		
	CABLE, LINE CORD, IEC C13, AU	350746-0010		⚠
13	POLYBAG, OWNER'S MANUAL	-	1	
14	GUIDE, INSTALL & OPERATION, IZA/ZA, 2120-HZ/LZ	747973-0010	1	
-	KIT, CONNECTOR, IZA 2120-HZ, SVCE	769408-001S	1	
-	KIT, CONNECTOR, IZA 2120-LZ, SVCE	769409-001S	1	

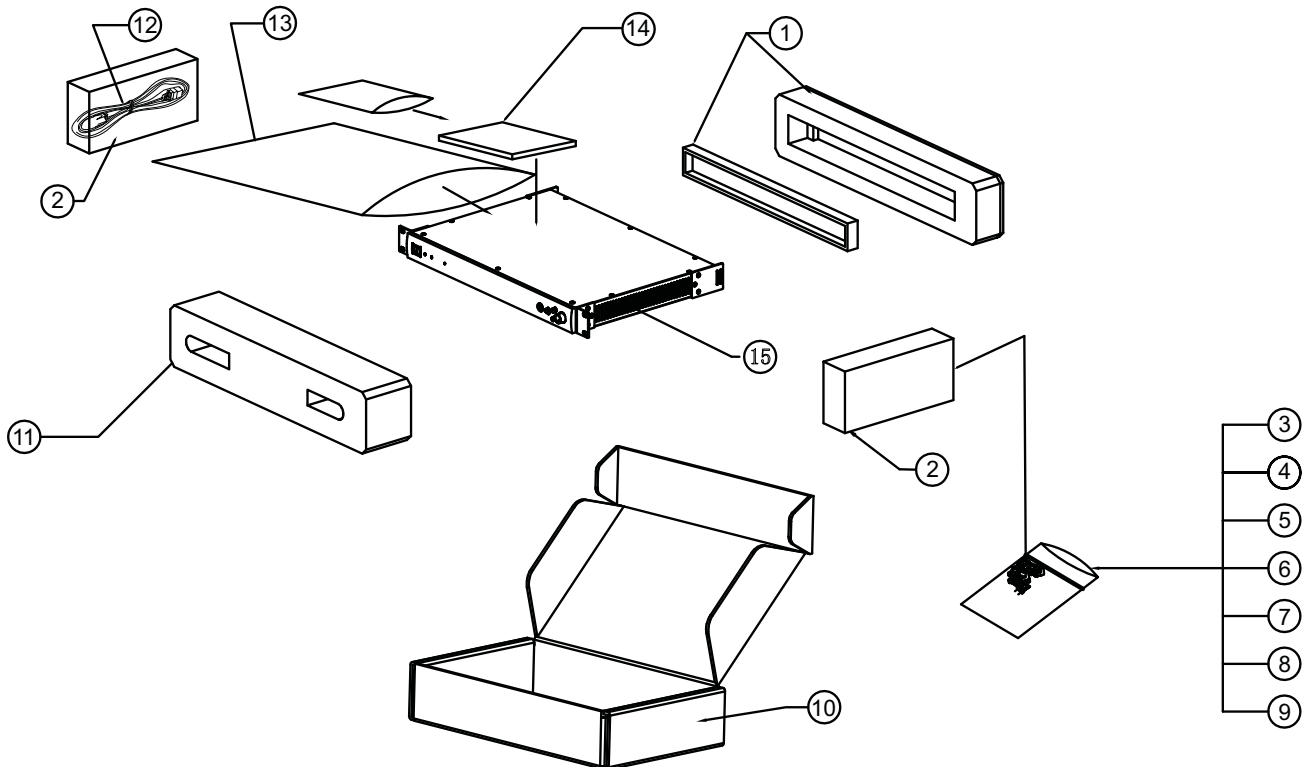


Figure 1. IZA 2120-HZ and IZA 2120-LZ Packing View

# PACKAGING PART LIST

ZA 2120-HZ/HZA and ZA 2120-LZ/LZA Amplifiers (refer to Figure 2)

Item Number	Description	Part Number	Qty.	Note
1	PE FOAM, REAR, 508X107X56	740151-001S	1	
2	RCA CABLE	351448-0010	1	
3	ZIP LOCK BAG	-	1	
4	PLUG, 2P, GREEN (OUTPUTS)	-	2	
5	PLUG, 2P, BLACK (REMOTES AND MUTE)	-	3	
	ZA 2120-HZ (non-AmpLink)	-	2	
	ZA 2120-LZ (non-AmpLink)	-	2	
6	PLUG, 2P, BLACK (MUTE)	-	1	
	ZA 2120-HZA and ZA 2120-LZA (AmpLink vers.)	-	1	
7	PLUG, 5P, GREEN (INPUT)	-	1	
8	FOOT, RUBBER	348623-001S	4	
9	CARTON, LINE CORD/ACCESSORIES	753016-001S	1	
9	CARTON, AMP ASSY, ZA 2120-HZ (non-AmpLink)	750859-001S	1	
	CARTON, AMP ASSY, ZA 2120-LZ (non-AmpLink)	750861-001S	1	
	CARTON, AMP ASSY, ZA 2120-HZA (AmpLink vers.)	795645-001S	1	
	CARTON, AMP ASSY, ZA 2120-LZA (AmpLink vers.)	795646-001S	1	
10	PE FOAM, FRONT, 508X107X93	740150-001S	1	
11	POLY BAG, AMPLIFIER	-	1	
12	POLY BAG, GUIDE	-	1	
13	INSTALLATION AND OPERATING GUIDE	747973-0010	1	
-	CABLE, LINE CORD, IEC C13, NA	350745-0010	1	3
-	CABLE, LINE CORD, IEC C13, EU	350747-0010		
-	CABLE, LINE CORD, IEC C13, JP	350749-0010		
-	CABLE, LINE CORD, IEC C13, UK	350748-0010		
-	CABLE, LINE CORD, IEC C13, AU	350746-0010		
-	KIT, CONNECTOR, ZA 2120-HZ/HZA, SVCE	769410-001S	1	
-	KIT, CONNECTOR, ZA 2120-LZ/LZA, SVCE	769411-001S	1	

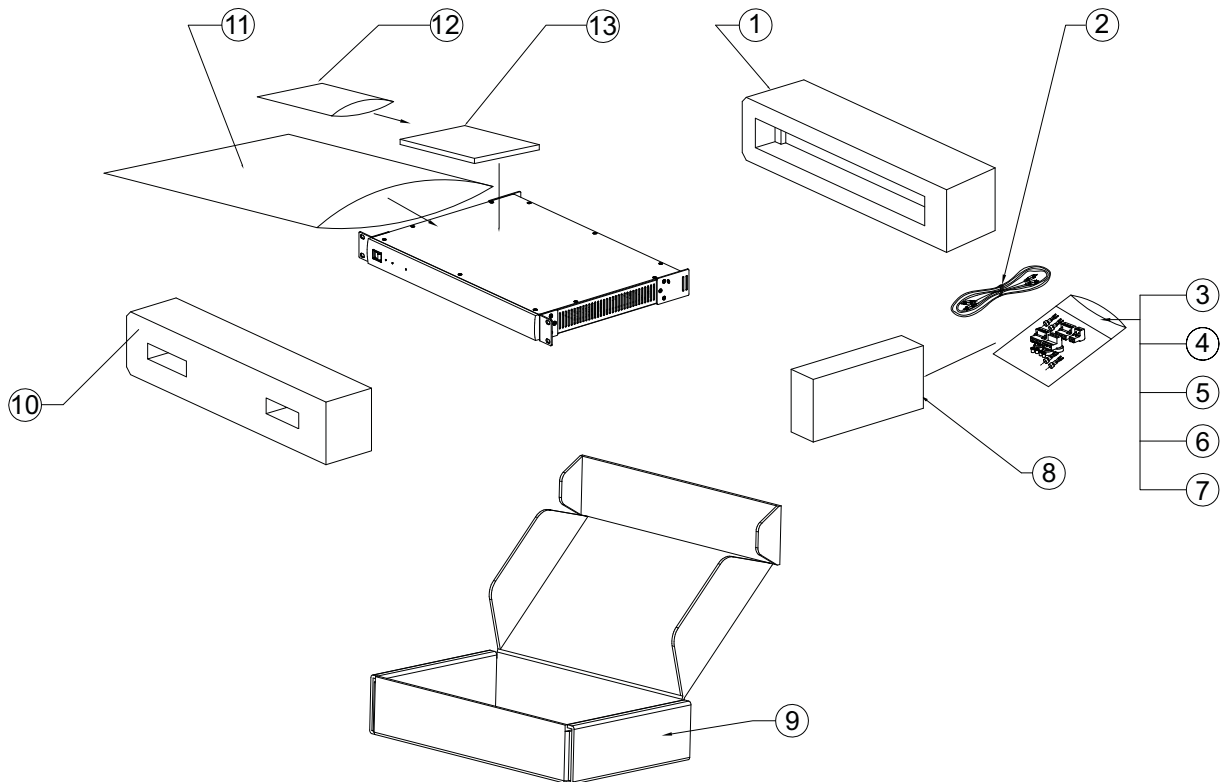




Figure 2. ZA 2120-HZ/HZA and ZA 2120-LZ/LZA Packing View

# MAIN PART LIST

IZA 2120-HZ and IZA 2120-LZ Amplifiers (refer to Figure 3)

Item Number	Description	Part Number	Qty.	Note
1	TOP COVER (with foam)	719961-031S	1	
2	SCREW, M3x5, MACHINE, FLAT-CS	-	20	
3	PCB ASSY, REAR PANEL OUTPUT, SVCE	729597-001S	1	
4	BRASS TUBE, M3x6.3	-	2	
5	PCB ASSY, USB, SERV	729593-001S	1	
6	PCB ASSY, REAR, MASTER HI-Z, SVCE PCB ASSY, REAR, MASTER LO-Z, SVCE	729421-001S 729421-002S	1	
7	BRASS TUBE, M3x10	-	10	
8	RING, PLASTIC, RCA JACK	-	3	
9	PCB ASSY, SMPS, HI-Z MASTER, SVCE PCB ASSY, SMPS, LO-Z, SVCE	729409-001S 729409-002S	1	
10	SCREW, M3x6	-	6	
11	FAN DC 5V, 4200RPM	740103-001S	1	
12	SCREW, M3.5x16, B-TITE	-	4	
13	BRACKET REAR	750326-031S	2	
14	CONN, ASSY, IEC, FS4400, SERVICE	301396	1	3 
15	SCREW, M3x8	-	2	
16	LOCK NUT, M8	-	2	
17	SCREW, M3x6.0MM	-	24	
18	BRACKET FRONT (RACK EAR)	740102-031S	2	
19	SCREW, M3x6, BLK (RACK EAR)	-	6	
20	CRINKLE WASHER	-	1	
21	PLAIN WASHER	-	1	
22	SPRING WASHER	-	1	
23	NUT, M4	-	1	
24	PCB ASSY, LED, SVCE	729412-001S	1	
25	SCREW, B-TITE, PAN, M2.3x8	-	8	
26	PCB ASSY, FRONT, HI-Z, SVCE PCB ASSY, FRONT, LO-Z, SVCE	729601-001S 729601-002S	1	
27	KNOB, VR	348611-0310	1	
28	NUT, VOLUME KNOB	-	1	
29	WASHER, PLAIN	-	1	
30	PANEL, PLASTIC, FRONT, HI-Z MASTER, SILVER PANEL, PLASTIC, FRONT, LO-Z MASTER, SILVER	719984-031S 719984-032S	1	
31	SWITCH, ROCKER, 2 POLE, 10A, 240V, BLACK	348612-0010	1	3 
32	LIGHT PIPE (LED PCB)	-	3	
33	INTERNAL TOOTH WASHER	-	2	
34	SCREW, M3x6	-	2	
35	PCB ASSY, DSP, HI-Z, SVCE PCB ASSY, DSP, LO-Z, SVCE	729410-001S 729410-002S	1	
36	PCB ASSY, AMP, HI-Z MASTER, SVCE PCB ASSY, AMP, LO-Z AMPO, SVCE	729612-001S 740163-001S	1	
37	INSULATOR, PC BOARD	748404-001S	1	
38	BRASS TUBE, M3x3.5MM	-	2	
39	BRASS TUBE, M3x18MM	-	2	
-	ASSY, CABLE FFC, DSP TO AMP	753377-001S	1	
-	ASSY, CABLE FFC, DSP TO FRONT PANEL	753376-001S	1	
-	ASSY, CABLE FFC, DSP TO REAR PANEL-1	753372-001S	1	
-	ASSY, CABLE FFC, DSP TO REAR PANEL-2	753375-001S	1	

# MAIN PART LIST

IZA 2120-HZ and IZA 2120-LZ Amplifiers (refer to Figure 3)

Item Number	Description	Part Number	Qty.	Note
-	ASSY, CABLE, GROUND INLET	753371-001S	1	3 ⚠
-	ASSY, HARNESS, DSP TO AMP	753370-001S	1	
-	ASSY, HARNESS, DSP TO PS	753369-001S	1	
-	ASSY, HARNESS, IEC TO SWITCH	753367-001S	1	3 ⚠
-	ASSY, HARNESS, PS TO AMP	753368-001S	1	
-	CLAMP IC 65MN	740002-001S	9	

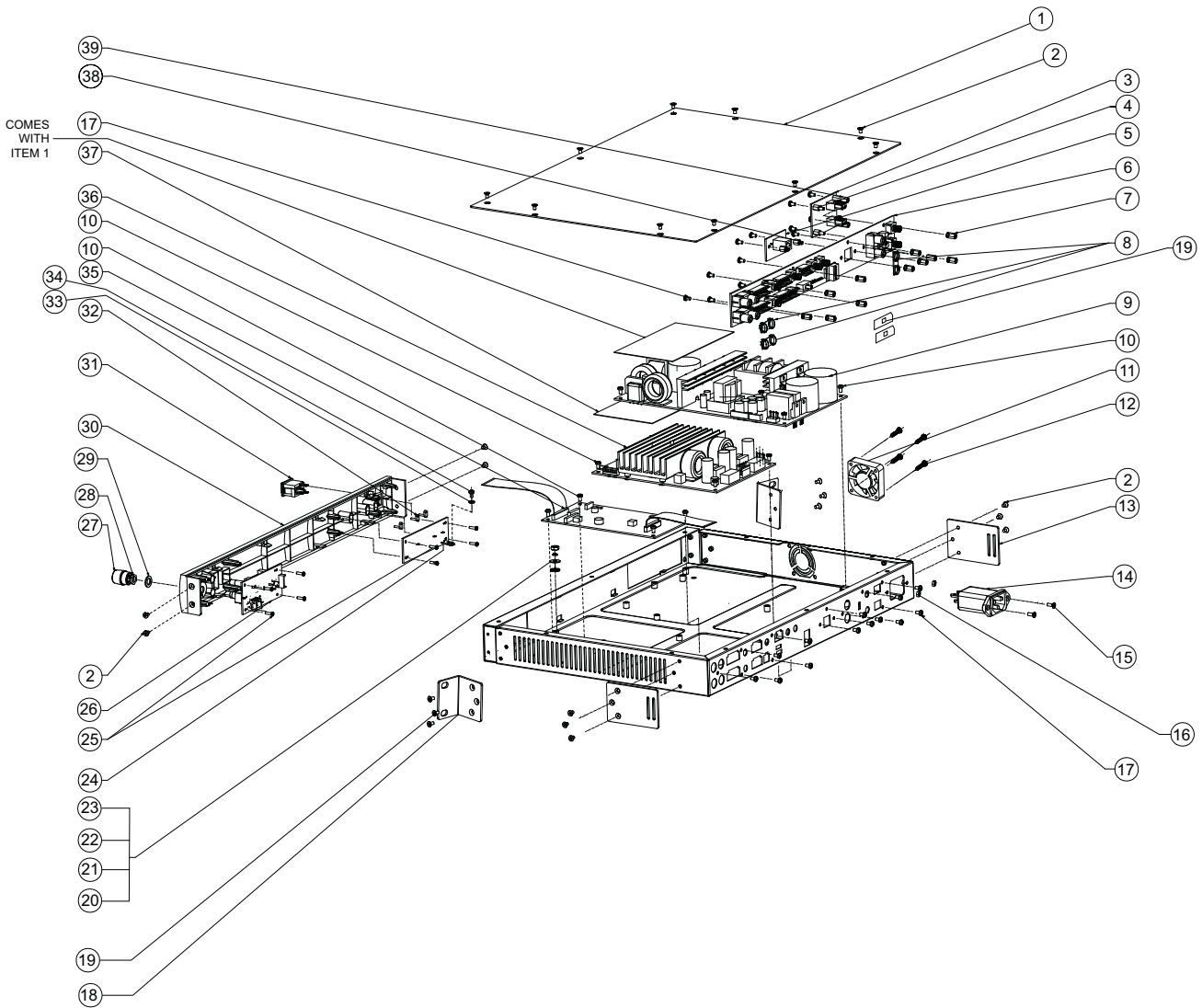






Figure 3. IZA 2120-HZ and IZA 2120-LZ Amplifiers Exploded View



# MAIN PART LIST

ZA 2120-HZ / ZA 2120-LZ, non-AmpLink Versions (refer to Figure 4)

Item Number	Description	Part Number	Qty.	Note
1	TOP COVER ASSY, SVCE (INCLUDES INSULATING SHEET)	719961-031S	1	
2	SCREW, MACHINE, M3x5, FLAT-CS	-	20	
3	PCB ASSY, REAR PANEL OUTPUT, HI-Z, SVCE	729597-001S	1	
4	BRASS TUBE, M3x18	-	2	
5	PCB ASSY, REAR, AMPO HI-Z, SVCE PCB ASSY, REAR, AMPO LO-Z, SVCE_	729421-003S 729421-004S	1	
6	BRASS TUBE, M3x10	-	8	
7	PLASTIC CIRCLE FOR RCA JACKS	-	1	
8	SCREW, M3x6	-	10	
9	PCB ASSY, SMPS, HI-Z, SVCE PCB ASSY, SMPS, LO-Z, SVCE	729409-001S 729409-002S	1	
10	SCREW, M3x6, SMPS	-	11	
11	SCREW, M3.5x16, B-TITE	-	4	
12	FAN DC 5V, 4200RPM	740103-001S	1	
13	NUT, HEX, M4	-	1	
14	EXTERNAL TOOTH WASHER, M4	-	1	
15	PLAIN WASHER, M4	-	1	
16	SPRING WASHER, M4	-	1	
17	SCREW, M3x8	-	2	
18	CONN, ASSY, IEC, FS4400, SERVICE	301396	1	3 
19	NUT, M3	-	2	
20	BRACKET REAR	750326-031S	2	
21	BRACKET FRONT (RACK EAR)	740102-031S	2	
22	SCREW, M3x6, BLK	-	6	
23	PANEL, FRONT, HI-Z AMPO, SILVER PANEL, FRONT, LO-Z AMPO, SILVER	719987-033S 719987-034S	1	
24	LIGHT PIPE	-	3	
25	SWITCH, ROCKER, 2 POLE, 10A, 240V, BLACK	348612-0010	1	3 
26	PCB ASSY, LED, MAIN, SVCE	729412-001S	1	
27	SCREW, M2.3x8	-	4	
28	PCB ASSY, AMP, HI-Z MASTER, SVCE PCB ASSY, AMP, LO-Z AMPO, SVCE	729612-001S 740163-001S	1	
29	PC INSULATING SHEET, CHASSIS	-	1	
30	BRASS TUBE, M3x6.3	-	2	
-	CLAMP IC 65MN	740002-001S	9	
-	INSULATOR, TOP COVER (INCLUDED WITH ITEM 1)	748404-001S	1	
-	ASSY, HARNESS, IEC TO SWITCH	753367-001S	1	3 
-	ASSY, HARNESS, PS TO AMP	753368-001S	1	
-	ASSY, CABLE, GROUND INLET	753371-001S	1	3 
-	ASSY, CABLE, FFC, AMP TO REAR PANEL	753387-001S	1	

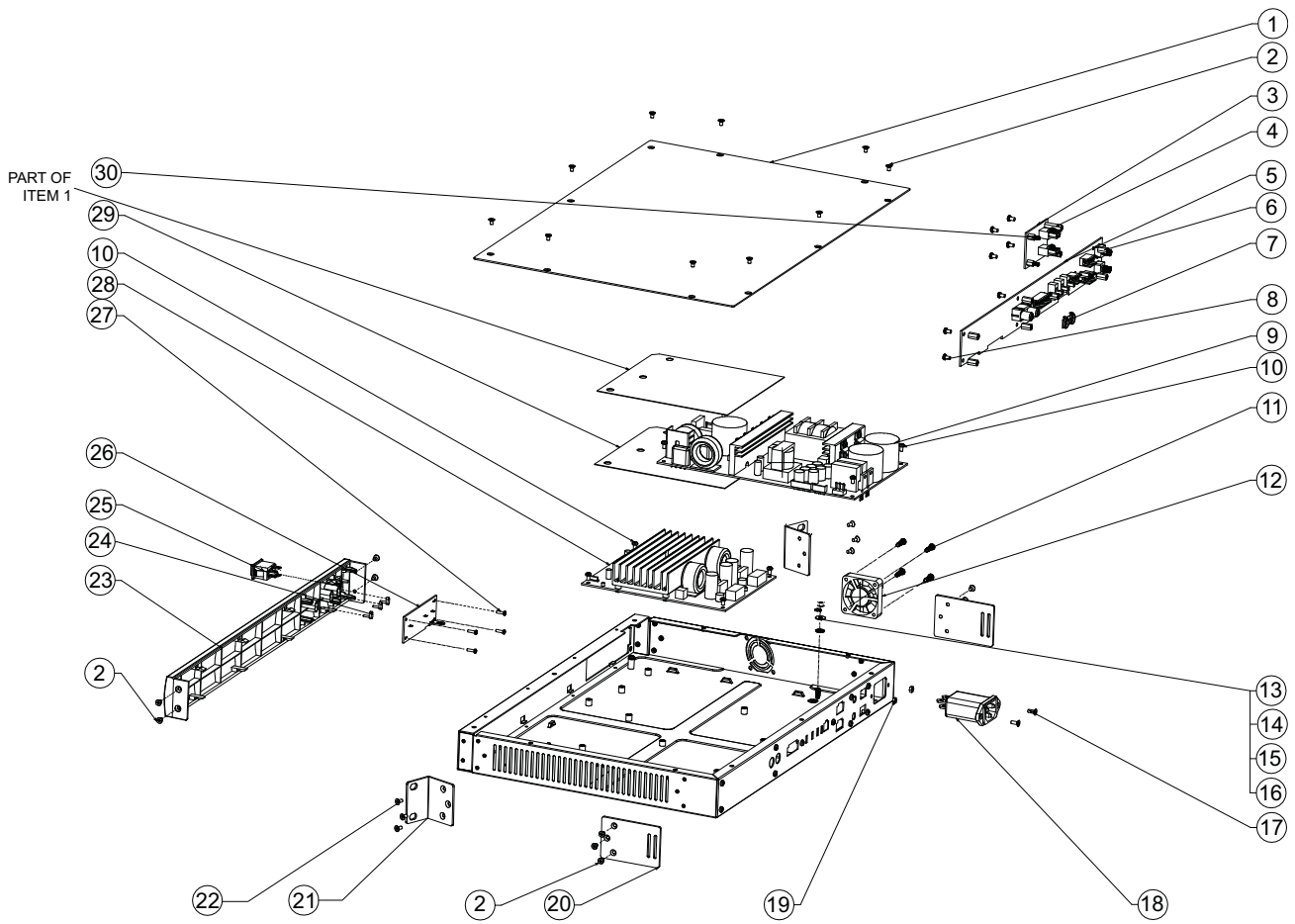





Figure 4. ZA 2120-HZ / ZA 2120-LZ Amplifiers Exploded View

# MAIN PART LIST

ZA 2120-HZA / ZA 2120-LZA , AmpLink Versions (refer to Figure 5)

Item Number	Description	Bose® Part Number	Vendor Part Number	Qty.	Note
1	TOP COVER ASSY, SVCE (INCLUDES ITEM 44)	719961-031S	SVC-HMINMX4+COVE	1	
2	SCREW, MACHINE, M3x5, FLAT-CS	-	2901-3005+3000	20	
3	PCB ASSY, SMPS, HI-Z, SVCE PCB ASSY, SMPS, LO-Z, SVCE	729409-001S 729409-002S	PCB-HMINMX4+SMPS PCB-LMINMX4+SMPS	1	1
4	SCREW, M3X8, BLACK ZINC	-	2A04-0001+00Z0	6	
5	PCB ASSY, AMP, HI-Z MASTER, SVCE PCB ASSY, AMP, LO-Z AMPO, SVCE	729612-001S 740163-001S	PCB-HMINMX4+AMP PCB-LMINMX4+AMP	1	1
6	SCREW, M3X8, AMP	-	2A04-0001+00Z0	5	
7	CONN, ASSY, IEC, FS4400, SERVICE	301396	2113-3050+0	1	3 
8	SCREW, M3X8	-	2901-3008+3000	2	
9	NUT, M3	-	2604-3002+0540	2	
10	BRASS TUBE, M3X18	-	4134-8421+0	2	
11	BRASS TUBE, M3X6.5	-	4135-9171+0	2	
12	SCREW, M2.6X4	-	2904-2604+4000	2	
13	BRASS TUBE, M3X3.5	-	4136-1031+1	2	
14	SCREW FOR REAR PCB, M3X6	-	2900-3006+3000	21	
15	BRASS TUBE, M3X10	-	4135-9721+0	9	
16	PLASTIC CIRCLE FOR RCA JACK	-	4155-2151+0	1	
17	PC SHEET, INSULATOR, CHASSIS	-	4155-6311+0	1	
18	REAR PANEL PCB, ZA 2120-LZA, SVCE REAR PANEL PCB, ZA 2120-HZA, SVCE	797529-001S 797529-002S	PCB-HMINAX4+REAR PCM-HMINAX4+REAR	1	1
19	SCREW FOR AMPLINK PCB, M3X6	-	2900-3006+3000	2	
20	PCB ASSY, AMPLINK, ZA 2120-LZA PCB ASSY, AMPLINK, ZA 2120-HZA	797530-001S 797530-002S	PCB-HMINDX4+AMPL PCBLMINDX4+AMPL	1	1
21	SCREW, MACH, BIND, M3X8, CR	-	2A04-0001+00Z0	4	
22	BRACKET, REAR, SECC, T=2.0MM	750326-031S	1408-7401+0	2	
23	SCREW, MACH, M3X5, FLAT-CS	-	2901-3005+3000	6	
24	CHASSIS, ZA 2120-HZA/LZA	-	REF	1	
25	SCREW, MACH, M3X5, FLAT-CS	-	2901-3005+3000	2	
26	BRACKET, FRONT (RACK EAR)	740102-031S	1408-7301+0	2	
27	SCREW, MACH, M3X5, FLAT-CS	-	2901-3005+3000	4	
28	PANEL, PLASTIC, FRONT, ZA 2120-LZA PANEL, PLASTIC, FRONT, ZA 2120-HZA	795644-041S 795644-042S	1469-3606+0 1469-3607+0	1	
29	SCREW, M2.3X8	-	2950-2308+3000	4	
30	PCB ASSY, LED, MAIN, SVCE	729412-001S	PCB-HMINX4LED	1	
31	LIGHT PIPE	-	4155-1861+0	3	
32	SWITCH, ROCKER, 2 POLE, 10A, 240V, BLACK, SVC	348612-001S	5200-4969+1	1	3 
33	SCREW, PCB AND FRONT GND	-	2904-3006+0000	1	
34	NUT, HEX, M4	-	2640-4030+0704	1	
35	EXTERNAL TOOTH WASHER, M4	-	2605-4008+0850	1	
36	PLAIN WASHER, M4	-	2600-4008+1000	1	
37	SPRING WASHER, M4	-	2607-4008+0650	1	
38	SCREW, M3X14	-	2954-3014+3000	4	
39	FAN, DC, 5V, 4200 RPM	740103-001S	8913-0100+0	1	3 
40	GASKET, FAN	-	4149-9321+0	0.3	
41	BRACKET, FAN, 40X40X13	769588-0110	1469-8901+0	1	
42	SCREW, B-TITE, NIND, M3X6	-	2954-3006+3000	4	
43	PC SHEET, CHASSIS	-	3101-0591+0	1	

# MAIN PART LIST

ZA 2120-HZA / ZA 2120-LZA , AmpLink Versions (refer to Figure 5)

Item Number	Description	Bose® Part Number	Vendor Part Number	Qty.	Note
44	PC SHEET, TOP COVER (INCLUDED W/ITEM 1)	748404-001S	3101-0691+0	1	
-	ASSY, HARNESS, IEC TO SWITCH	753367-001S	7013-4430+0	1	3 ⚠
-	ASSY, CABLE, GROUND INLET	753371-001S	7012-7152+2	1	3 ⚠
-	ASSY, HRNSS, PS TO AMP, LOZ, SVCE	760154-001S	7013-4250+1 (LoZ)	1	
-	ASSY, HRNSS, PS TO AMP, HIZ, SVCE	753368-001S	7013-4240+1 (HiZ)	1	
-	ASSY, CABLE, FCC, AMPLINK TO REAR PANEL, L=95MM	798702-001S	7013-3984+0	1	
-	ASSY, HARNESS, DSP TO AMP	753370-001S	7013-4260+1 (HiZ)	1	
-	ASSY, CABLE, FCC, AMP TO DSP, 95LG, 10-PIN (HI-Z AMP)	765531-001S	7013-3984+0	1	
-	ASSY, CABLE, FCC, AMP TO DSP, 230LG, 10-PIN (LO-Z AMP)	765531-002S	7013-3985+0	1	
-	ASSY, CABLE, FCC, REAR PANEL TO DSP, 70LG, 20-PIN	765535-001S	7013-4333+0	1	

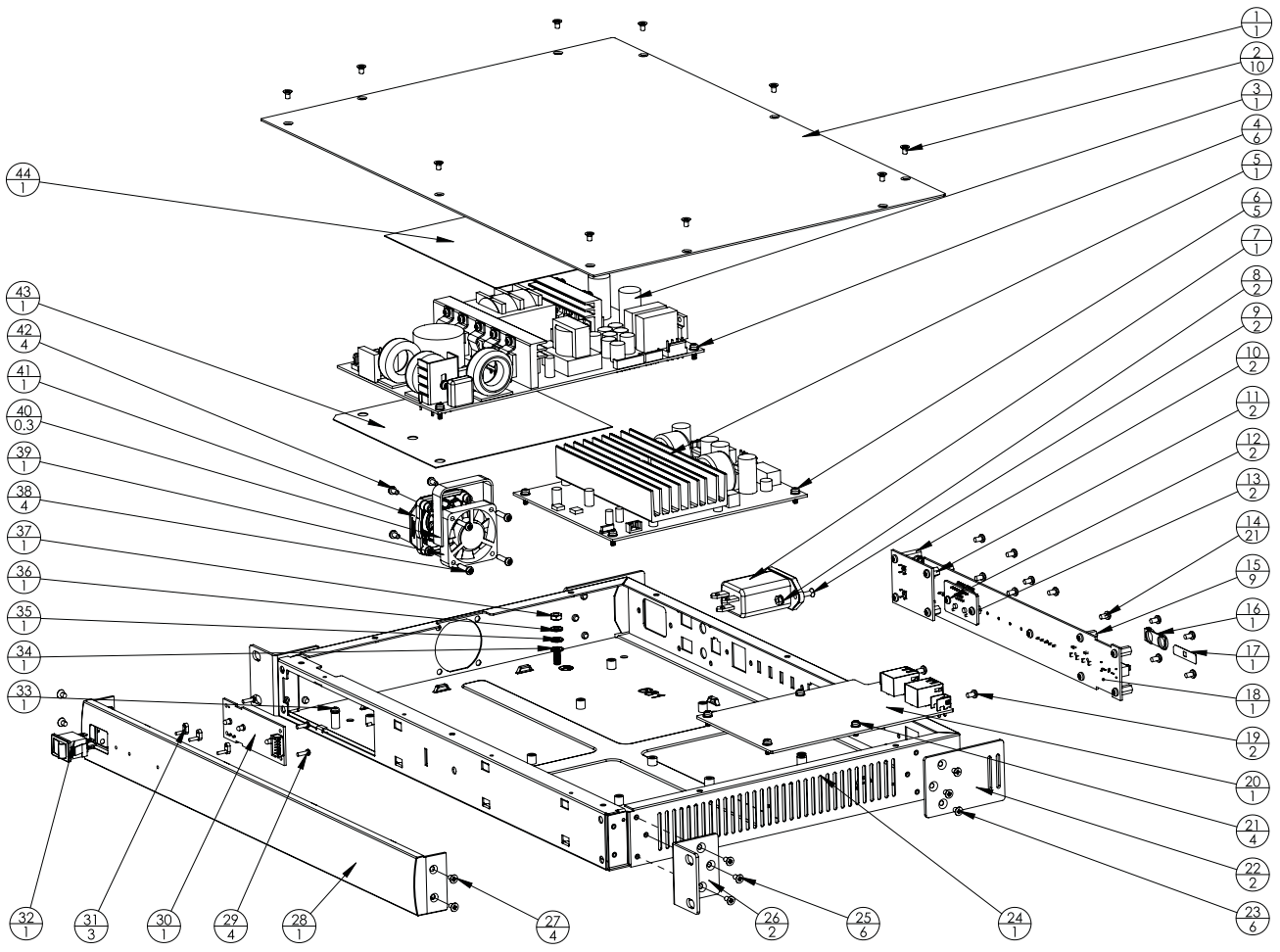


Figure 5. ZA 2120-HZA and ZA 2120-LZA Amplifiers Exploded View

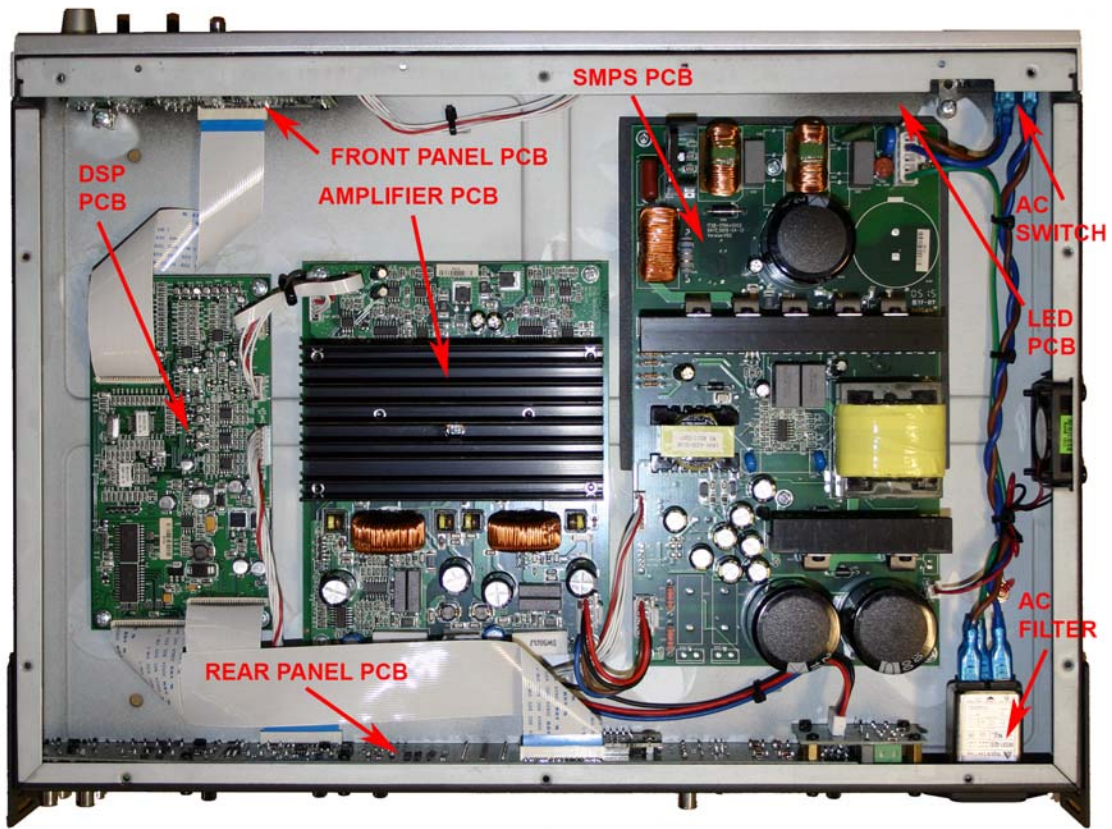


Figure 6. IZA 2120-HZ Chassis View

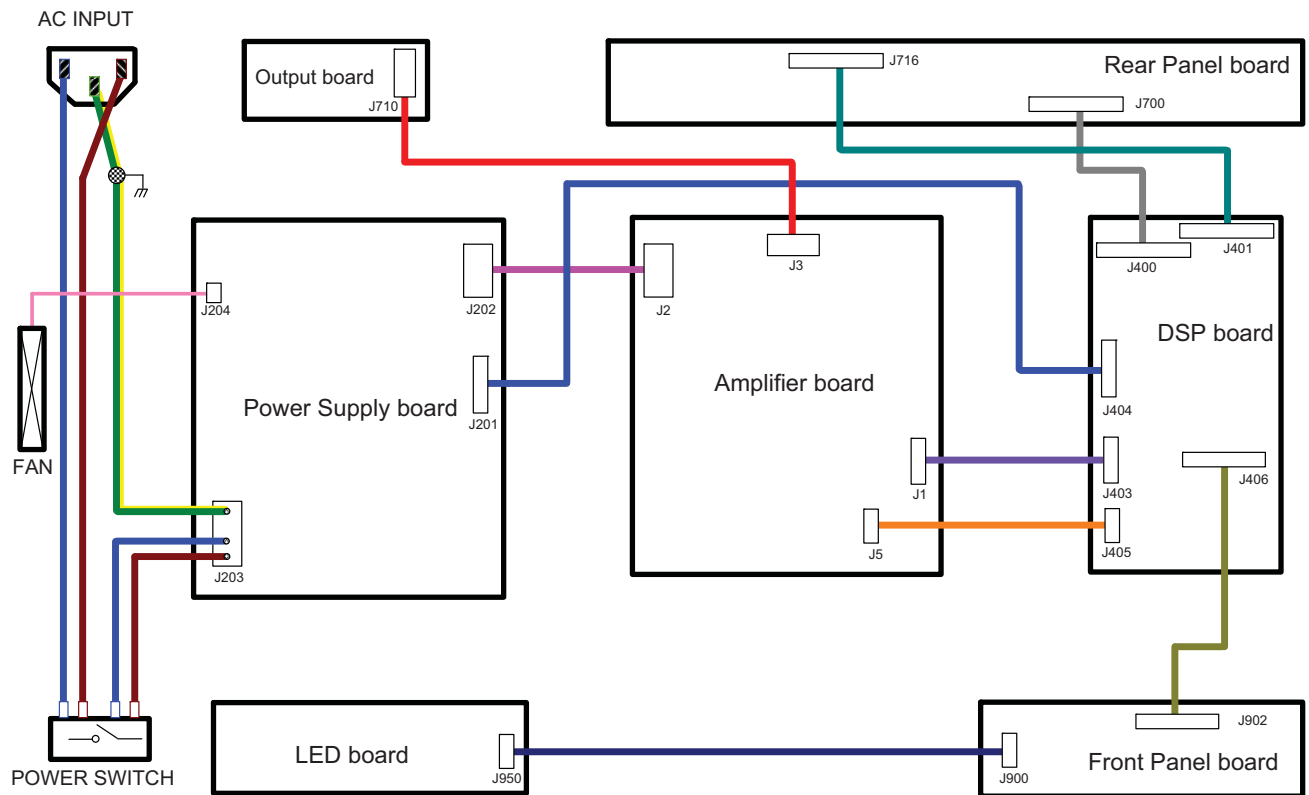


Figure 7. IZA 2120-HZ Wiring Diagram



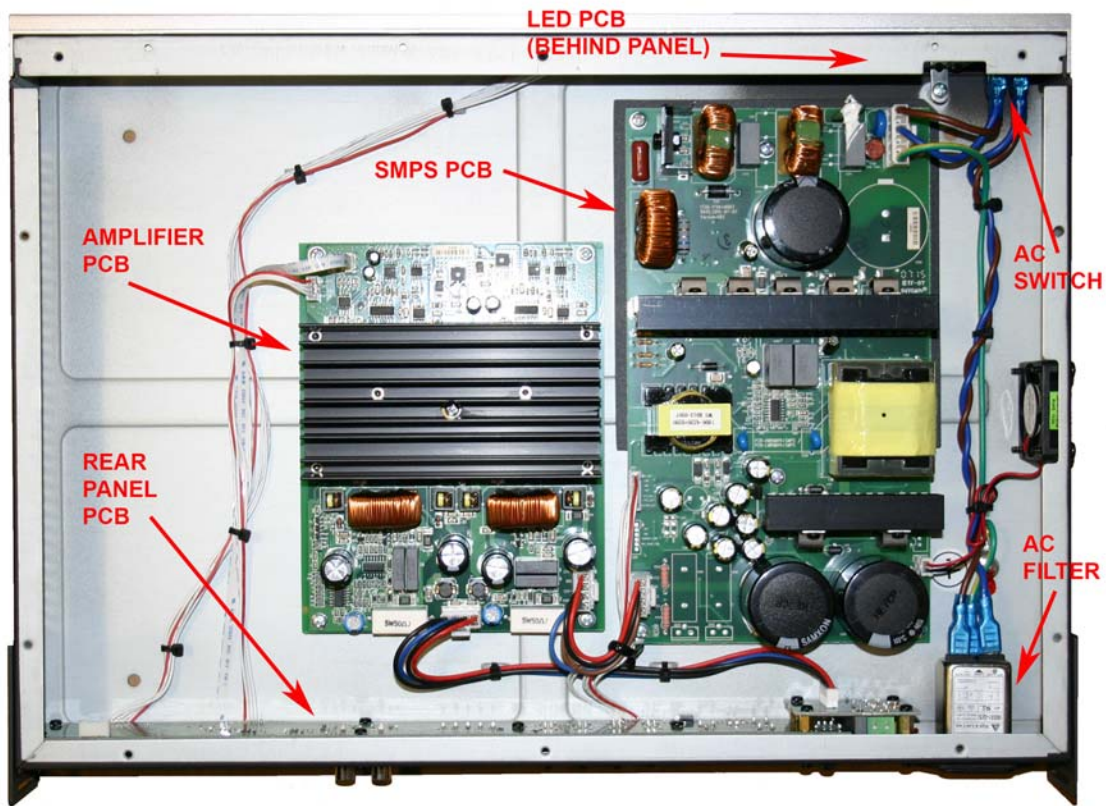


Figure 8. ZA 2120-HZ Chassis View

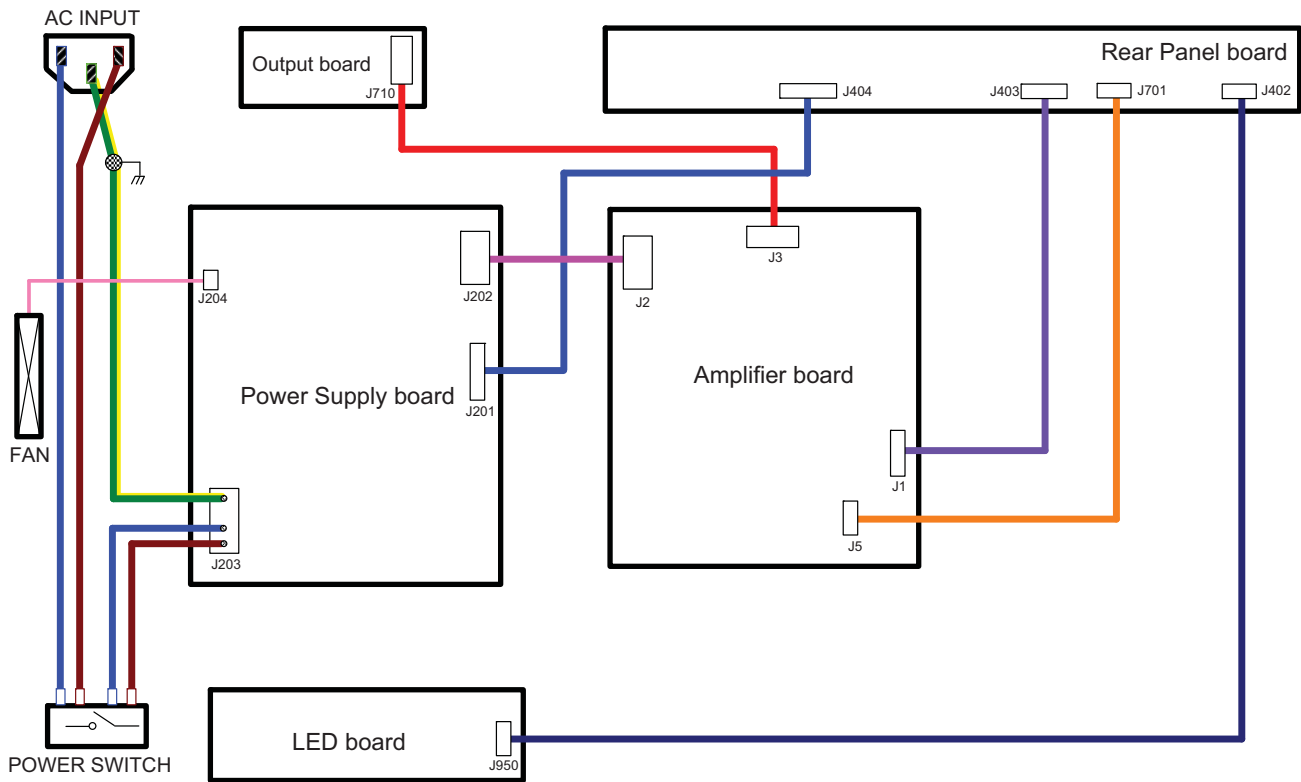


Figure 9. ZA 2120-HZ Wiring Diagram

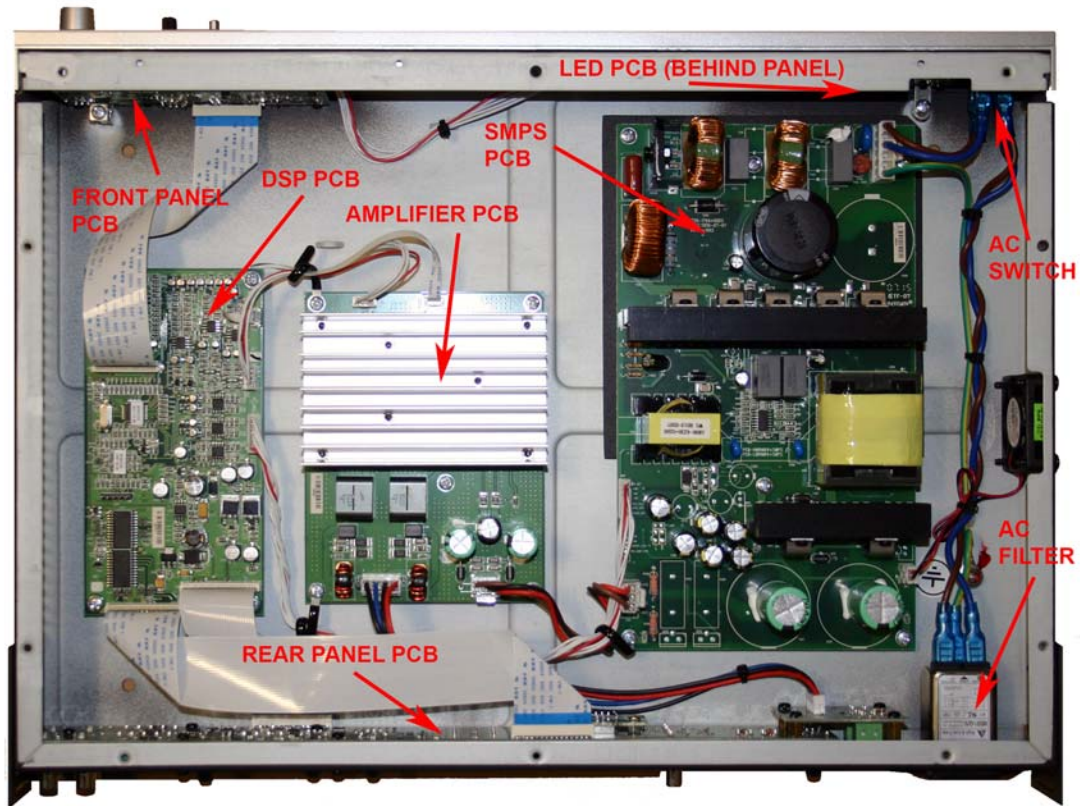


Figure 10. IZA 2120-LZ Chassis View

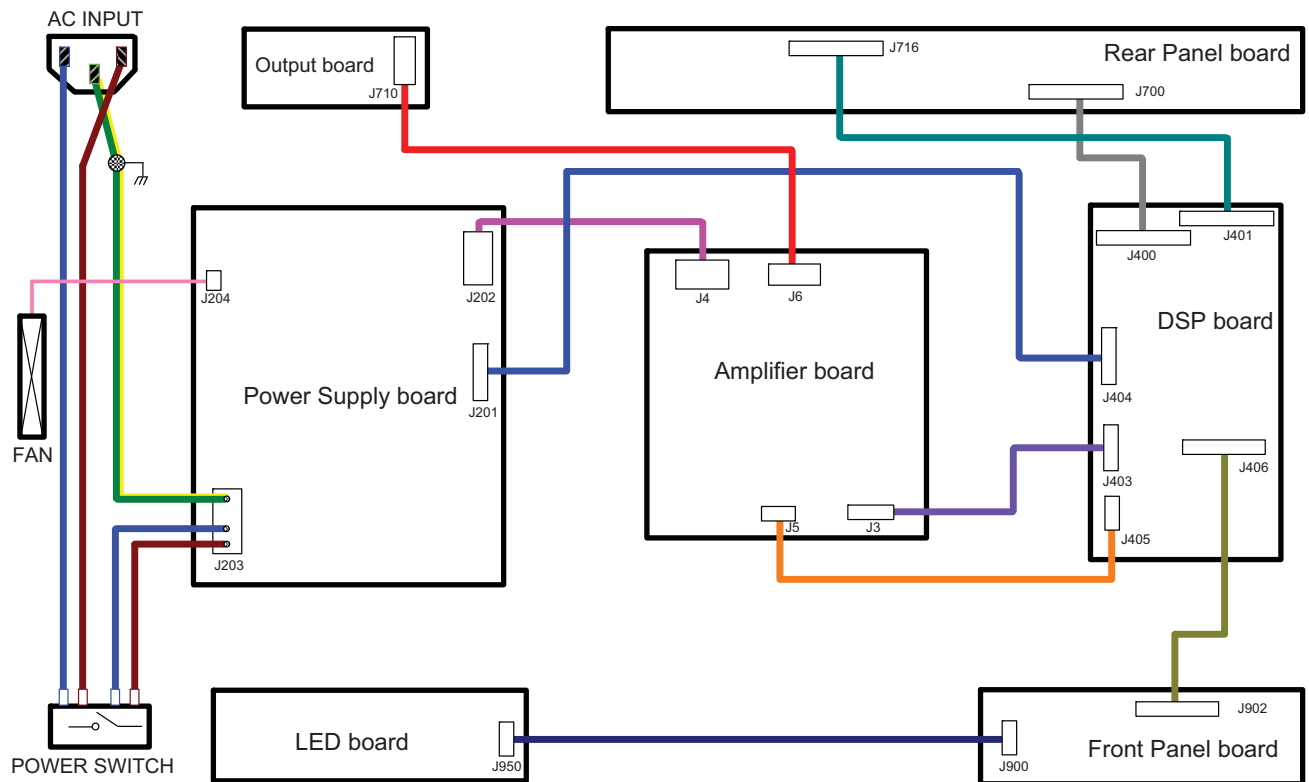


Figure 11. IZA 2120-LZ Wiring Diagram

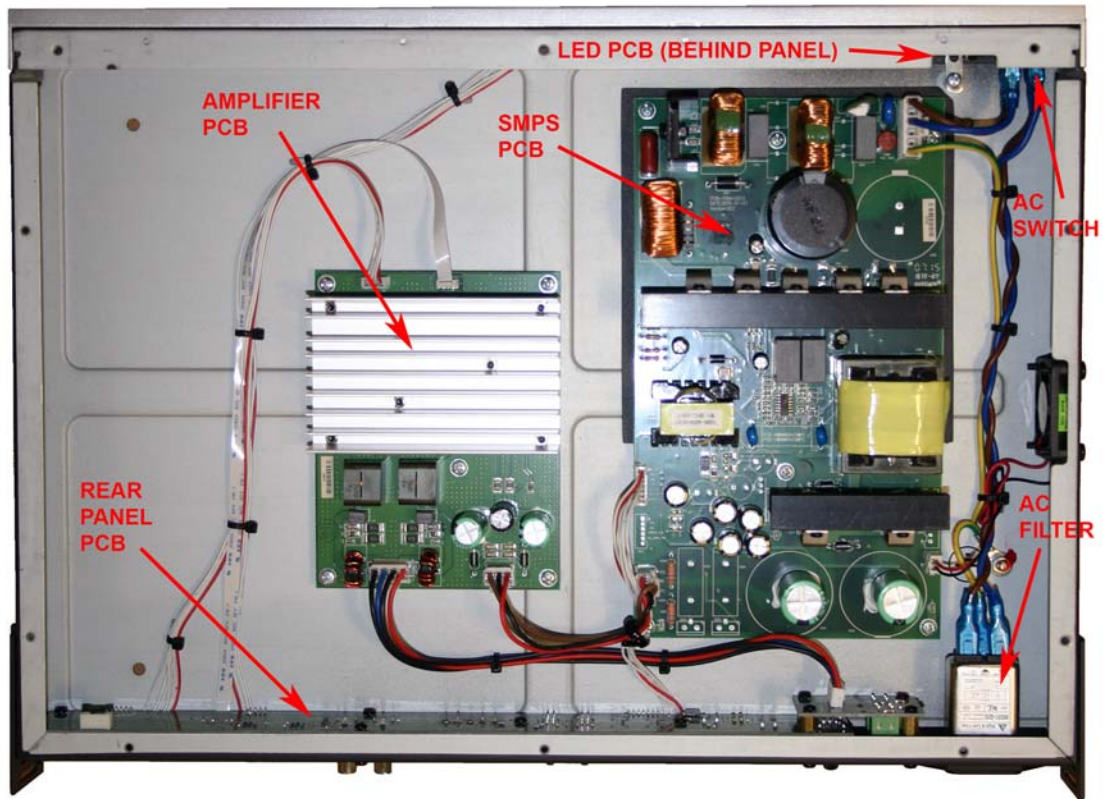


Figure 12. ZA 2120-LZ Chassis View

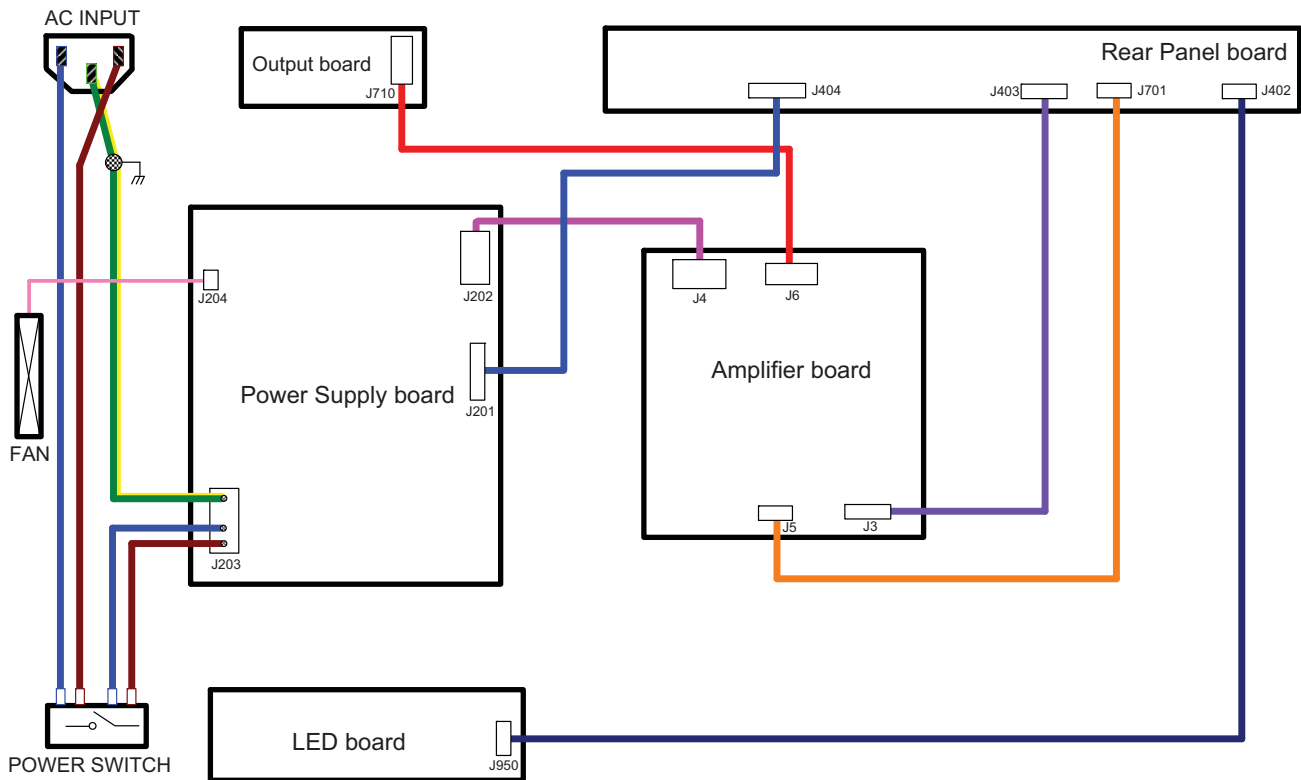


Figure 13. ZA 2120-LZ Wiring Diagram



# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ SMPS PCB Assembly

## Resistors

Reference Designator	Description	Vendor Part Number	Note
R200	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R202	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A	
R203	RMG, 1/16W, 3K, 1%, 0603	4723-302A	
R204	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A	
R206	RMG, 1/10W, 82R, 5%, 0805	4720-820J	
R207	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R208	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R209	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R210	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R211	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R212	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R213	RMG, 1/10W, 91K, 1%, 0603	4720-913A	
R214	RMG, 1/10W, 75R, 5%, 0805	4720-750J	
R215	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R216	RMG, 1/8W, 0R, 1%, 1206	4721-000A	
R217	RMG, 1/16W, 30K, 1%, 0603/1608	4723-303A	
R220	RMG, 1/8W, 1.5K, 5%, 1206	4721-152J	
R221	RMG, 1/8W, 1.5K, 5%, 1206	4721-152J	
R222	RMG, 1/16W, 6.2K, 1%, 0603/1608	4723-622A	
R223	RMG, 1/16W, 51K, 1%, 0603/16	4723-513A	
R224	RMG, 1/16W, 56K, 1%, 0603	4723-563AR	
R225	RMG, 1/16W, 560K, 1%, 0603/1608	4723-564A	
R226	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R227	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R228	RMG, 1/10W, 15R, 1%, 0805	4720-150A	
R229	RMG, 1/10W, 15R, 1%, 0805	4720-150A	
R230	RMG, 1/10W, 62K, 5%, 0805	4720-623J	
R232	RMG, 1/10W, 18K, 5%, 0805	4720-183J	
R233	RMG, 1/4W, 100R, 1%, 1206	4725-101A	
R234	RMG, 1/4W, 100R, 1%, 1206	4725-101A	
R235	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R236	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R240	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R241	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R242	RMG, 1/8W, 2.2R, 5%, 1206	4721-2R2J	
R243	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R244	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R245	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R246	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R248	RMG, 1/8W, 47R, 5%, 1206	4721-470J	
R249	RMG, 1/8W, 47R, 5%, 1206	4721-470J	
R251	RMG, 1/8W, 47R, 5%, 1206	4721-470J	
R253	RMG, 1W, 20K, 5%, 2512	4728-203J	
R254	RMG, 1/4W, 5.1K, 5%, 1206	4725-512J	
R257	RMG, 1/4W, 5.1K, 5%, 1206	4725-512J	
R262	RMG, 1/16W, 10R, 1%, 0603	4723-100AR	
R263	RMG, 1/16W, 10R, 1%, 0603	4723-100AR	
R264	RMG, 1/16W, 10R, 1%, 0603	4723-100AR	
R265	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R266	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R267	RMG, 1W, 20K, 5%, 2512	4728-203J	
R268	RMG, 1/10W, 100R, 1%, 0805	4720-101A	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ SMPS PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R270	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R271	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R272	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R273	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R274	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R275	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R276	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R277	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R278	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R282	RCF, 1/4W, 100K, 5%, AT	4705-104J	
R283	RCF, 1/4W, 100K, 5%, AT	4705-104J	
R284	RMG, 1/10W, 10K, 1%, 0805	4720-103A	
R285	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R286	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R287	RMG, 1W, 0.33R, 1%, 2512	4728-R33A	
R288	RMG, 1/16W, 16K, 1%, 0603/1608	4723-163A	
R289	RMG, 1/16W, 16K, 1%, 0603/1608	4723-163A	
R290	RMG, 1/16W, 470K, 1%, 0603	4723-474A	
R291	RMG, 1/16W, 2K, 1%, 0603/1608	4723-202A	
R292	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R293	RMG, 1/16W, 12K, 1%, 0603	4723-123AR	
R294	RMG, 1/16W, 12K, 1%, 0603	4723-123AR	
R297	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R298	RMG, 1/16W, 2K, 1%, 0603/1608	4723-202A	
R299	RWR, 3W, 0.06R, 5%, ATSW, NON, INDUCTIVE	474A-R06JH	
R306	RMG, 1/10W, 220R, 5%, 0805	4720-221J	
R307	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R308	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R309	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R310	RMG, 1/16W, 560K, 5%, 0603/1608	4723-564J	
R311	RMG, 1/16W, 560K, 5%, 0603/1608	4723-564J	
R312	RMG, 1/16W, 16K, 1%, 0603/1608	4723-163A	
R313	RMG, 1/16W, 43K, 5%, 0603/1608	4723-433J	
R323	RMG, 1/16W, 47K, 1%, 0603	4723-473AR	
R324	RMG, 1/16W, 47K, 1%, 0603	4723-473AR	
R325	RMG, 1/16W, 47K, 1%, 0603	4723-473AR	
R326	RMG, 1/16W, 18K, 1%, 0603/1608	4723-183A	
R337	RMG, 1/10W, 6.2K, 1%, 0805	4720-622A	
R338	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R339	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R340	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R345	RCF, 1/4W, 100K, 5%, AT	4705-104J	
R346	RCF, 1/4W, 100K, 5%, AT	4705-104J	
R347	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R348	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A	
R349	RMF, 1W, 56K, 5%, ATS, METAL, OXIDE	4718-563JX	
R350	RMF, 1W, 56K, 5%, ATS, METAL, OXIDE	4718-563JX	
R353	RMG, 1/8W, 100R, 1%, 1206	4721-101A	
R354	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R356	VARISTOR, 320V, 10%, 6KV, 3KA, 10MM, RL	4735-0016	
R357	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R358	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	



# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ SMPS PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R359	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R360	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R361	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R362	RMG, 1/16W, 47K, 1%, 0603	4723-473AR	
R363	RMG, 1/8W, 4.7R, 1%, 1206	4721-4R7A	
R364	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R365	RMG, 1/8W, 47R, 5%, 1206	4721-470J	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C200	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C201	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C202	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C204	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C205	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C206	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C207	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C208	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C209	CC, 50V, 1000pF, 5%, 0603, X7R	150F-102JAC	
C210	CC, 50V, 1000pF, 5%, 0603, X7R	150F-102JAC	
C211	CC, 50V, 1000pF, 5%, 0603, X7R	150F-102JAC	
C212	CC, 50V, 1000pF, 5%, 0603, X7R	150F-102JAC	
C213	CC, 50V, 120pF, 5%, 0603, C0G	150F-121JAC	
C214	CE, 50V, 10uF, 20%, RLT, 5X11, 105C, RX	157F-106MIUTU	
C215	CC, 25V, 10uF, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C216	CC, 25V, 10uF, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C218	CC, 50V, 0.01uF, 5%, 0603	150F-103JAC	
C219	CC, 50V, 0.01uF, 5%, 0603	150F-103JAC	
C220	CE, 220V, 1000uF, 20%, RL, 35X30, SNAP-105C	1576-108M^\$T	
C221	CE, 220V, 1000uF, 20%, RL, 35X30, SNAP-105C	1576-108M^\$T	
C225	CC, 500V, 0.022uF, 10%, 1206	150L-223KCF	
C226	CC, 500V, 0.022uF, 10%, 1206	150L-223KCF	
C227	CC, 630V, 0.1uF, 10%, 1812, X7R	150M-104KHF	
C232	CC, 100V, 100pF, 10%, 0805, 1.2X2, NPO	150H-101KBD	
C234	CC, 100V, 100pF, 10%, 0805, 1.2X2, NPO	150H-101KBD	
C235	CC, 100V, 100pF, 10%, 0805, 1.2X2, NPO	150H-101KBD	
C239	CE, 35V, 100uF, 20%, RLT, 6.3X11, 105C, LOW, ESR	157Q-107MLUTR	
C243	CC, 630V, 100pF, 5%, 1206, 3.2X1.6	150M-101JCF	
C244	CC, 630V, 100pF, 5%, 1206, 3.2X1.6	150M-101JCF	
C245	CC, 630V, 100pF, 5%, 1206, 3.2X1.6	150M-101JCF	
C246	CC, 630V, 100pF, 5%, 1206, 3.2X1.6	150M-101JCF	
C247	CC, 400V, 470pF, +20%, RL, 9.5X8.0, AH09B471KLO	150T-471MRO	3 
C248	CC, 400V, 470pF, +20%, RL, 9.5X8.0, AH09B471KLO	150T-471MRO	3 
C249	CE, 450V, 220uF, 20%, RL, 35X30, SNAP-105C	1574-227M^\$T	
C251	CP, 275V, 0.47uF, 20%, RB, 18X16	158Z-474M75	
C252	CP, 275V, 0.47uF, 20%, RB, 18X16	158Z-474M75	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ SMPS PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C254	CC, 1000V, 2200P, 10%, 1206, X7R	150N-222KCF	
C255	CC, 1000V, 2200P, 10%, 1206, X7R	150N-222KCF	
C256	CC, 50V, 1500pF, 10%, 0805, 1.2x2.0	150F-152KBD	
C257	CM, 400V, 0.47U, 5%RB, 16X16, X7, METALLIZED, FARATRONIC	153T-474J55M4	
C259	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C260	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C261	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C262	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C264	CC, 50V, 2200P, 5%, 0603, 0.8X1.6	150F-222JAC	
C265	CC, 50V, 0.47U, 10%, 0805, 1.25X2, X7R	150F-474KBD	
C266	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C267	CE, 25V, 470U, 20%, RLT, 10X16, 105C, RX, NOVER	157E-477MS5TU	
C268	CE, 25V, 470U, 20%, RLT, 10X16, 105C, RX, NOVER	157E-477MS5TU	
C269	CE, 25V, 470U, 20%, RLT, 10X16, 105C, RX, NOVER	157E-477MS5TU	
C270	CE, 25V, 470U, 20%, RLT, 10X16, 105C, RX, NOVER	157E-477MS5TU	
C271	CE, 35V, 100U, 20%, RLT, 6.3X11, 105C, LOW ESR	157Q-107MLUTR	
C273	CC, 50V, 0.47U, 10%, 0805, 1.25X2, X7R	150F-474KBD	
C274	CC, 500V, 0.022U, 10%, 1206	150L-223KCF	
C275	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C276	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C277	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C278	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C279	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C280	CE, 35V, 47U, 20%, RLT, 6.3X11, 105C, RX, NOVER	157Q-476MLUTU	
C282	CM, 630V, 0.1U, 10%, RB, 17X16X10, P15, FARATRONIC	153M-104K654	
C283	CM, 630V, 0.1U, 10%, RB, 17X16X10, P15, FARATRONIC	153M-104K654	
C284	CC, 50V, 1U, 10%, 0805	150F-105KBD	
C285	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C287	CC, 250V, 0.1U, 10%, X7R, 1206, 1.6X3.2	150R-104KCF	
C288	CC, 250V, 0.1U, 10%, X7R, 1206, 1.6X3.2	150R-104KCF	
C289	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C290	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C293	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C294	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C295	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C296	CE, 16V, 470U, 20%, RLT, 10X12.5, 105C, LOW, ESR	157D-477MSXTR	
C297	CE, 16V, 470U, 20%, RLT, 10X12.5, 105C, LOW, ESR	157D-477MSXTR	
C298	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C299	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C303	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C306	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ SMPS PCB Assembly


Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C307	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C308	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C310	CER2, 1206, X7R, 50V, 100N, PM10, R	150F-104KCF	
C311	CER2, 1206, X7R, 50V, 100N, PM10, R	150F-104KCF	
C312	CC, 630V, 0.1U, 10%, 1812, X7R	150M-104KHF	
C313	CC, 50V, 0.47U, 10%, 0805, 1.25X2, X7R	150F-474KBD	
C314	CC, 500V, 0.022U, 10%, 1206	150L-223KCF	
C315	CC, 630V, 0.1U, 10%, 1812, X7R	150M-104KHF	
C318	CC, 100V, 100pF, 10%, 0805, 1.2X2, NPO	150H-101KBD	
C319	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C320	CE, 25V, 470U, 20%, RLT, 10X16, 105C, RX, NOVER	157E-477MS5TU	
C321	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C322	CE, 25V, 470U, 20%, RLT, 10X16, 105C, RX, NOVER	157E-477MS5TU	
C323	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	

Inductors

Reference Designator	Description	Vendor Part Number	Note
L202	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L203	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L204	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L205	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L208	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L210	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L211	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L212	FERRITE BEAD, INDUCTOR, BL01RN1A1F1J	1808-0680	
L213	FERRITE BEAD, INDUCTOR, BL01RN1A1F1J	1808-0680	

Diodes

Reference Designator	Description	Vendor Part Number	Note
BR200	DIODE, BRIDGE, 600V, 8A, GBU8J, RL	4840-9211	3 
D200	DIODE, IN5408-B, 3A, 1000V	4805-4080	
D201	DIODE, SCHOTTKY, SK16, DO-214AA, 60V, 1A, SMD, PANJIT	480S-K160	
D202	DIODE, SCHOTTKY, 650V, 6A, IDH06G65C5, TO-220, RL	4806-5C50	
D203	DIODE, ULTRAFast, 600V, 16A, ER1606CT, RL, PANJIT	4800-6CT0	
D204	DIODE, ULTRAFast, 600V, 16A, ER1606CT, RL, PANJIT	4800-6CT0	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ SMPS PCB Assembly

Diodes (continued)

Reference Designator	Description	Vendor Part Number	Note
D205	DIODE, ULTRAFAST, 600V, 16A, ER1606CT, RL, PANJIT	4800-6CT0	
D206	DIODE, ULTRAFAST, 600V, 16A, ER1606CT, RL, PANJIT	4800-6CT0	
D207	DIODE, SCHOTTKY, 40V, 2A, SK24, SMB, SM, PANJIT	480S-K240	
D208	DIODE, BAV99, SOT23, PHILIPS	4840-8970	
D209	DIODE, ULTRA, 600V, 1A, MURS160T3, SMB, CASE403A, SM	4806-0T30	
D210	DIODE, ULTRA, 600V, 1A, MURS160T3, SMB, CASE403A, SM	4806-0T30	
D211	DIODE, ULTRA, 600V, 1A, MURS160T3, SMB, CASE403A, SM	4806-0T30	
D212	DIODE, ULTRA, 600V, 1A, MURS160T3, SMB, CASE403A, SM	4806-0T30	
D213	DIODE, SUPPRESSOR, 200V, P6KE200A, AT	4802-00A0	
D214	DIODE, 600V, 1A, 75NS, US1J, SOD124	480U-S1J0	
D216	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D217	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D218	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D219	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D223	DIODE, RECT, 200V, 2A, ER2D, SMB/DO-214AA, SM	480E-R2D0	
D224	DIODE, RECT, 200V, 2A, ER2D, SMB/DO-214AA, SM	480E-R2D0	
D226	RECTIFIER, ES1D, 200V, 1.1A, SMD	4840-9190	
D228	RECTIFIER, ES1D, 200V, 1.1A, SMD	4840-9190	
D232	DIODE, SCHOTTKY, SK16, DO-214AA, 60V, 1A, SMD, PANJIT	480S-K160	
DZ202	DZ, 1/2W, 15V, 5%, SOD-123C, MMSZ5245BT1G	4837-15V9	
Z200	DZ, 1/2W, 15V, 5%, SOD-123C, MMSZ5245BT1G	4837-15V9	
Z201	DZ, 1/2W, 18V, 5%, SOD-123C, MMSZ5248BT1G	4837-18V9	
Z203	DZ, 1/2W, 18V, 5%, SOD-123C, MMSZ5248BT1G	4837-18V9	
Z204	DZ, 1/2W, 12V, 5%, SM	4837-1209	

Transistors

Reference Designator	Description	Vendor Part Number	Note
Q200	MOSFET, N-CH, 600V, 12A, FQPF12N60C, TO-220F, RL	490N-60C0	
Q201	MOSFET, N-CH, 600V, 12A, FQPF12N60C, TO-220F, RL	490N-60C0	
Q205	TR, NPN, BCP56-10, SOT223	485C-P560	
Q206	MOSFET, N-CH, 800V, TK6A80E, 6A, TO-220SIS, RL	490A-80E0	
Q207	TR, 3904, HFE, 100-300, SM	4860-0640	
Q208	TR, 3904, HFE, 100-300, SM	4860-0640	
Q209	MOSFET, N-CH, 600V, 10A, STP11NM60ND, TO-220, RL	4906-0ND0	
Q211	TR, NPN, BCP56-10, SOT223	485C-P560	
Q212	MOSFET, N-CH, 60V, 115MA, 2N7002, SOT-23, SM	4907-0020	





# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ SMPS PCB Assembly



Transistors (continued)

Reference Designator	Description	Vendor Part Number	Note
Q213	TR, 3904, HFE, 100-300, SM	4860-0640	
Q214	TR, MMBTA92, PNP, SOT23, KEC	4860-5360	
Q215	TR, NPN, 2SC2655Y, HFE, 40, TO-92MOD, RLT	4856-55Y0	
Q216	TR, MMBTA42-7-F, NPN, SMD, SOT23	485T-A420	

Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U200	IC, DRIVER, NCP5181DR2G, SOIC-8	3132-8471	
U201	IC, LM19, THERMAL, SENSOR, TO-92, NS	3132-2581	
U202	IC, LM339, SMD, COMPARATORS	3132-1250	
U203	PHOTOCOUPLER, EL817S1, S1	4818-17S1	
U204	PHOTOCOUPLER, EL817S1, S1	4818-17S1	3 
U205	PHOTOCOUPLER, EL817S1, S1	4818-17S1	3 
U206	IC, REGULATOR, 5V, LM78L05ACM, SO-8	3131-3390	
U207	IC, PFC, CONTROLER, IR1155S, SO8	3132-9880	
U208	IC, POWER, NCP1271, SO-8, ONSEMI	3132-806111	
U209	IC, LLC, SMPS, UCC25600, SOIC-8	3132-8371	
U210	IC, REGULATOR, TL432BIDBZR, SOT-23-3, TI	3132-769116	
U211	IC, REGULATOR, TL432BIDBZR, SOT-23-3, TI	3132-769116	
U212	PHOTOCOUPLER, EL817S1, S1	4818-17S1	3 
U213	IC, NJM78M05DL1A-#ZZZB, REGULATOR	3132-2101	






Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
CLAMP, SMPS	CLAMP, IC, SUS301, T=1, NATURAL, 3/4H	4136-0932	
F200	FUSE, 4A, 250V, 8.5X8, EU/CC, C, RLT	5120-1180	3 
HEATSINK	SCREW, MACHINE, BIND, HEAD, M3X8, CROSS-RECESS, BZ	2904-3008	
HS, SMPS	HEATSINK, SMPS, 14X30, L120, AL-EXT, ANODIZE, BLACK	5401-0701	
HS, SMPS	HEATSINK, SMPS, 14X30, L=70, AL-EXT, ANODIZE, BLACK	5401-0702	
HS200	HEATSINK, IC, 25.4X12.7X30, AL, PLATE, MSMGMA100	5401-0181	
J201	7, PIN, WAFER, P2.0(COULUMB)	2102-070S	
J202	WAFER, 4P, P3.96, STRAIGHT, MALE	2101-3053	
J203	WAFER, 3P, P7.92/11.88, STRAIGHT	2101-3097	
J204	JM24182-2P, WAFER	2101-9120	
NTC200	THERMISTOR, NTC, 10R, 20%, 240VAC, 5A, -40-200C, AL	5202-0028	3 
NUT	NUT, HEX, M3X22X5.4, YZ	2640-3022	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ SMPS PCB Assembly

Miscellaneous (continued)

Reference Designator	Description	Vendor Part Number	Note
SCREW	SCREW, M3X10, W/S&F, WASHER, (BLK)	2900-3010	
SCREW, M3	SCREW, MACHINE, PAN, M3X8, CROSS-RECESS, BZ	2900-3008	
SILICON	INSULATN-SHEET, SIL-PAD, 800, 18X13	3101-0611	
T200	TRANS, PWR, 385V/160V, 300W, 1A, ER40	1806-4233	3 
T201	CHOKE, COMMON, MODE, 10MH, MIN, 5A, AT	1805-0090	3 
T202	CHOKE, COIL, 940UH, 15%, 8A, MIN	1805-0520	3 
T203	CHOKE, COMMON, MODE, 10MH, MIN, 5A, AT	1805-0090	3 
T204	TRANS, PWR, 385V, 40W, ER28	1806-4236	3 
WASHER	WASHER, METAL, ID, 3.3, OD8, T=0.5	2600-3005	



# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ Amplifier PCB Assembly

## Resistors

Reference Designator	Description	Vendor Part Number	Note
R1	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R2	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R3	RMG, 1/16W, 30K, 1%, 0603/1608	4723-303A	
R4	RMG, 1/16W, 330K, 5%, 0603/1608	4723-334J	
R5	RMG, 1/16W, 330K, 5%, 0603/1608	4723-334J	
R6	RMG, 1/16W, 30K, 1%, 0603/1608	4723-303A	
R7	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R8	RMG, 1/16W, 30K, 1%, 0603/1608	4723-303A	
R9	RMG, 1/16W, 47K, 1%, 0603	4723-473AR	
R10	RMG, 1/16W, 47K, 1%, 0603	4723-473AR	
R12	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R13	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R14	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R15	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R16	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R17	RMG, 1/16W, 7.5K, 1%, 0603/1608	4723-752A	
R18	RMG, 1/16W, 7.5K, 1%, 0603/1608	4723-752A	
R19	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R20	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R21	RMG, 1/16W, 56K, 1%	4723-563A	
R22	RMG, 1/16W, 510R, 1%, 0603	4723-511A	
R23	RMG, 1/16W, 510R, 1%, 0603	4723-511A	
R24	RMF, 1/10W, 150K, 1%, 0805	4720-154A	
R25	RMF, 1/10W, 150K, 1%, 0805	4720-154A	
R26	RMG, 1/16W, 7.5K, 1%, 0603/1608	4723-752A	
R27	RMG, 1/16W, 7.5K, 1%, 0603/1608	4723-752A	
R28	RMG, 1/10W, 20K, 1%, 0603	4720-203A	
R29	RMG, 1/10W, 20K, 1%, 0603	4720-203A	
R30	RMG, 1/10W, 20K, 1%, 0603	4720-203A	
R31	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R32	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R33	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R34	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R35	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R36	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R37	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R38	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R39	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R40	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R41	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R42	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R43	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R44	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R45	RMG, 1/8W, 680K, 1%, 1206	4721-684A	
R46	RMG, 1/8W, 680K, 1%, 1206	4721-684A	
R47	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R48	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R49	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R50	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R51	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R52	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R53	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ Amplifier PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R54	RMG, 1/16W, 7.5K, 1%, 0603/1608	4723-912A	
R55	RMG, 1/16W, 7.5K, 1%, 0603/1608	4723-912A	
R56	RMG, 1/16W, 7.5K, 1%, 0603/1608	4723-912A	
R57	RMG, 1/16W, 7.5K, 1%, 0603/1608	4723-912A	
R58	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R59	RMG, 1/10W, 100R, 1%, 0805	4720-101A	
R60	RMG, 1/10W, 100R, 1%, 0805	4720-101A	
R61	RMG, 1/8W, 10R, 1%1206	4721-100A	
R62	RMG, 1/8W, 10R, 1%1206	4721-100A	
R63	RMG, 1/8W, 10R, 1%1206	4721-100A	
R64	RMG, 1/8W, 10R, 1%1206	4721-100A	
R65	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R66	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R67	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R72	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R73	RMG, 1W, 20K, 5%, 2512	4728-203J	
R74	RMG, 1W, 20K, 5%, 2512	4728-203J	
R75	RMG, 1W, 20K, 5%, 2512	4728-203J	
R76	RMG, 1W, 20K, 5%, 2512	4728-203J	
R78	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R79	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R80	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R81	RMG, 1/16W, 12K, 1%, 0603	4723-123AR	
R82	RMG, 1/16W, 12K, 1%, 0603	4723-123AR	
R83	RMG, 1/10W, 100K, 1%, 0805	4720-104A	
R84	RMG, 1/10W, 100K, 1%, 0805	4720-104A	
R85	RMG, 1/10W, 51R, 1%, 0805	4720-510A	
R86	RMG, 1/10W, 51R, 1%, 0805	4720-510A	
R87	RWR, 5W, 50R, 5%, AL, VERTICAL	474B-500J	
R88	RWR, 5W, 50R, 5%, AL, VERTICAL	474B-500J	
R89	RMG, 1/10W, 499K, 1%, 0805	4720-4993	
R90	RMG, 1/10W, 499K, 1%, 0805	4720-4993	
R99	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R100	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R101	RMG, 1/4W, 47K, 1%, 1206	4725-473A	
R102	RMG, 1/4W, 47K, 1%, 1206	4725-473A	
R103	RMG, 1/4W, 47K, 1%, 1206	4725-473A	
R104	RMG, 1/4W, 47K, 1%, 1206	4725-473A	
R105	RMG, 1W, 47R, 5%, 2512	4728-470J	
R106	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R107	RMG, 1/4W, 47K, 1%, 1206	4725-473A	
R108	RMG, 1/4W, 47K, 1%, 1206	4725-473A	
R109	RMG, 1/4W, 47K, 1%, 1206	4725-473A	
R11	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R110	RMG, 1/4W, 47K, 1%, 1206	4725-473A	
R111	RMG, 1W, 47R, 5%, 2512	4728-470J	
R112	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R113	RMG, 1/16W, 1M, 1%, 0603	4723-105A	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ Amplifier PCB Assembly

## Capacitors

Reference Designator	Description	Vendor Part Number	Note
C1	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C2	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C3	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C4	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C5	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C6	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C7	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C8	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C9	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C10	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C11	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C12	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C13	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C14	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C15	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C16	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C25	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C26	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C27	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C28	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C29	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C30	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C31	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C32	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C33	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C34	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C35	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C36	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C37	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C38	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C40	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C41	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C42	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C43	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C44	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C45	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C46	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C47	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C50	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C51	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C52	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C53	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C54	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C55	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C57	CC, 50V, 1U, 10%, 1206, X7R	150F-105KCFM	
C58	CC, 50V, 1U, 10%, 1206, X7R	150F-105KCFM	
C59	CC, 50V, 1U, 10%, 1206, X7R	150F-105KCFM	
C61	CC, 50V, 1U, 10%, 1206, X7R	150F-105KCFM	
C64	CE, 16V, 100U, 20%, RLT, 6.3X11, 105C, RX, NOVER	157D-107MLUTU	
C65	CE, 16V, 100U, 20%, RLT, 6.3X11, 105C, RX, NOVER	157D-107MLUTU	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ Amplifier PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C66	CM, 400V, 0.1U, 5%, RB, 17.5X11X5	153T-104J7U	
C67	CM, 400V, 0.1U, 5%, RB, 17.5X11X5	153T-104J7U	
C68	CM, 400V, 0.1U, 5%, RB, 17.5X11X5	153T-104J7U	
C69	CM, 400V, 0.1U, 5%, RB, 17.5X11X5	153T-104J7U	
C74	CE, 16V, 10U, 20%, RLT, 5X11	157D-106MIU	
C75	CE, 16V, 10U, 20%, RLT, 5X11	157D-106MIU	
C76	CE, 6.3V, 330U, 20%, RLT, 8X7	157B-337MOM	
C77	CE, 6.3V, 330U, 20%, RLT, 8X7	157B-337MOM	
C78	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C79	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C80	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C81	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C82	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C83	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C84	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C85	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C86	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C87	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C88	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C89	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C90	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C91	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C92	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C93	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C94	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C95	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C96	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C97	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C98	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C99	CC, 250V, 0.1U, 10%, X7R	150R-104KCF	
C100	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C101	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C102	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C103	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C104	CC, 50V, 75PF, 5%, 0603, C0G	150F-750JAC	
C105	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C106	CC, 50V, 75PF, 5%, 0603, C0G	150F-750JAC	
C107	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C108	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C109	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C110	CE, 250V, 47U, 20%, RLT, 12.5X25, UVR2E470MHA, NCC	157R-476MX&C	
C111	CE, 250V, 47U, 20%, RLT, 12.5X25, UVR2E470MHA, NCC	157R-476MX&C	
C112	CE, 250V, 47U, 20%, RLT, 12.5X25, UVR2E470MHA, NCC	157R-476MX&C	
C113	CE, 250V, 47U, 20%, RLT, 12.5X25, UVR2E470MHA, NCC	157R-476MX&C	
C114	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C115	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C116	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C117	CC, 630V, 1000P, 10%, 1206	150M-102KCF	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ Amplifier PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C118	CC, 50V, 0.1uF, 10%, 0805	150F-104KBD	
C119	CC, 50V, 0.1uF, 10%, 0805	150F-104KBD	
C120	CC, 50V, 0.1uF, 10%, 0805	150F-104KBD	
C121	CC, 50V, 0.1uF, 10%, 0805	150F-104KBD	
C122	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	
C123	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	

Inductors

Reference Designator	Description	Vendor Part Number	Note
L3	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L4	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L5	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L6	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L7	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L8	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L9	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L10	CHOKE, COIL, 60UH, 10%, 6A, MIN	1805-0510	
L11	CHOKE, COIL, 60UH, 10%, 6A, MIN	1805-0510	
L12	INDUCTOR, 22UH, 20%, 8.1X8, B1000AS-220M=P3, SMD, TOKO	1803-0103	
L13	INDUCTOR, 22UH, 20%, 8.1X8, B1000AS-220M=P3, SMD, TOKO	1803-0103	

Diodes

Reference Designator	Description	Vendor Part Number	Note
D5	DIODE, SW, HS, DOUBLE, 0.45A, 75V, 1/4W, BAV70, SOT23, SM	480A-V700	
D6	DIODE, SW, HS, DOUBLE, 0.45A, 75V, 1/4W, BAV70, SOT23, SM	480A-V700	
D7	DIODE, SW, HS, DOUBLE, 0.45A, 75V, 1/4W, BAV70, SOT23, SM	480A-V700	
D8	DIODE, 200V, 0.2A, BAV21W, SOD-123, SMD, PANJIT	480V-21W0	
D9	DIODE, 200V, 0.2A, BAV21W, SOD-123, SMD, PANJIT	480V-21W0	
D10	DIODE, LL4148, SM	4804-1480	
D11	DIODE, LL4148, SM	4804-1480	
D12	DIODE, ULTRA, 600V, 1A, MURS, 160T3, SMB, CASE403A, SM	4806-0T30	
D13	DIODE, ULTRA, 600V, 1A, MURS, 160T3, SMB, CASE403A, SM	4806-0T30	
D14	DIODE, LL4148, SM	4804-1480	
D15	DIODE, LL4148, SM	4804-1480	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ Amplifier PCB Assembly

Diodes (continued)

Reference Designator	Description	Vendor Part Number	Note
D16	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D18	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D19	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D20	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D21	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D22	DIODE, LL4148, SM	4804-1480	
D23	DIODE, LL4148, SM	4804-1480	
D24	DIODE, LL4148, SM	4804-1480	
D25	DIODE, LL4148, SM	4804-1480	
Z1	DIODE, 200V, 0.2A, BAV21W, SOD-123, SMD, PANJIT	4837-4V38	
Z2	DIODE, 200V, 0.2A, BAV21W, SOD-123, SMD, PANJIT	4837-4V38	
Z3	DIODE, 200V, 0.2A, BAV21W, SOD-123, SMD, PANJIT	4837-4V38	

Transistors

Reference Designator	Description	Vendor Part Number	Note
Q1	TR, 3904, HFE, 100-300, SM	4860-0640	
Q2	TR, 3904, HFE, 100-300, SM	4860-0640	
Q3	TR, 3904, HFE, 100-300, SM	4860-0640	
Q4	TR, 3904, HFE, 100-300, SM	4860-0640	
Q5	TR, 3904, HFE, 100-300, SM	4860-0640	
Q6	TR, 3904, HFE, 100-300, SM	4860-0640	
Q7	TR, 3904, HFE, 100-300, SM	4860-0640	
Q8	TR, 3906, PNP, SM	4853-9060	
Q10	MOSFET, N-CH, 400V, IRF740, 10A, TO-220, RL	490F-7400	
Q11	MOSFET, N-CH, 400V, IRF740, 10A, TO-220, RL	490F-7400	
Q12	MOSFET, N-CH, 400V, IRF740, 10A, TO-220, RL	490F-7400	
Q13	MOSFET, N-CH, 400V, IRF740, 10A, TO-220, RL	490F-7400	

Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U1	IC, DUAL, OP, AMP, NE5532D, SOIC-8	3132-6021	
U2	IC, CLASS, D, DRIVER, SI8244, SOIC-16	3132-9890	
U3	IC, CLASS, D, DRIVER, SI8244, SOIC-16	3132-9890	
U4	IC, DUAL, OP, AMP, NE5532D, SOIC-8	3132-6021	
U5	IC, DUAL, OP, AMP, NE5532D, SOIC-8	3132-6021	
U6	IC, OPERATIONAL, AMPLIFIER, TLC082AID, SO8	3132-9900	
U7	IC, OPERATIONAL, AMPLIFIER, TLC082AID, SO8	3132-9900	
U8	IC, COMPARATOR, NJM360, SOIC-8S2	3132-9910	
U9	IC, COMPARATOR, NJM360, SOIC-8S2	3132-9910	
U10	IC, NJM78M05DL1A-#ZZZB, REGULATOR	3132-2101	
U11	IC, NJM79M05DL1A-T-#ZZ, ZB, REGULATOR	3132-3012	
U12	IC, LM19, THERMAL, SENSOR, TO-92, NS	3132-2581	
U13	IC, LM339, SMD, COMPARATORS	3132-1250	
U14	IC, 2IN, SHM, NAND, GT, 74VHC132M, SO14, ST	3132-4001	



# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ and ZA 2120-HZ Amplifier PCB Assembly

## Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
AMP HIZ	SCREW, MACHINE, PAN, M3X8, CROSS-RECESS, BZ	2900-3008	
HS AMP HIZ	SCREW, MACHINE, PAN, M3X8, CROSS-RECESS, BZ	2900-3008	
HS AMP HIZ	HEATSINK, AMP, 62X23.1, L=	5401-0282	
J1	WAFER, 4P, P2.0, STRAIGHT	2102-040S	
J2	WAFER, 4P, P3.96, STRAIGHT, MALE	2101-3053	
J3	WAFER, 4P, P3.96, STRAIGHT, MALE	2101-3053	
J5	CONN, FFC, 10P, P0.5, SMT, ST	2101-3375	
SILICON	INSULATN-SHEET, SLI-800, 96X21	3101-0701	
T1	TRANS, CURRENT, SENSE, 20A, EE8.3	1806-4237	
T2	TRANS, CURRENT, SENSE, 20A, EE8.3	1806-4237	
T3	TRANS, CURRENT, SENSE, 20A, EE8.3	1806-4237	
T4	TRANS, CURRENT, SENSE, 20A, EE8.3	1806-4237	

FreeSpace IZA 2120-HZ and ZA 2120-HZ LED & Output PCB Assembly

## Capacitors

Reference Designator	Description	Vendor Part Number	Note
C701	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C702	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C703	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C704	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C705	CM, 400V, 0.1U, 5%, RB, 17.5X11X5	153T-104J7U	
C706	CM, 400V, 0.1U, 5%, RB, 17.5X11X5	153T-104J7U	

## Diodes

Reference Designator	Description	Vendor Part Number	Note
D950	LED, SP, 3X5, RD/GN, SUPER WHITE, DIFFUSED, EVERLIGHT	3700-2861	
D951	LED, 3MM, BLUE, SP, SLR343BB, T 225419, ROHM	3700-2824	
D952	LED, SP, 3X5, RD/GN, SUPER WHITE, DIFFUSED, EVERLIGHT	3700-2861	

## Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J720	SOCKET, F, 2P, P5.08, 300V, 12A, GRN, ST	2113-3420	
J721	SOCKET, F, 2P, P5.08, 300V, 12A, GRN, ST	2113-3420	
J710	WIRE-CONN, 4P, P3.96, #18, UL1007, L=230, F/M	7013-3991	
J903	SHEET, GROUND BRASS, T=0.8, TIN PLATED	4136-0991	
J950	WAFER, 6 PIN, P2.0	2102-060R	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ DSP PCB Assembly

## Resistors

Reference Designator	Description	Vendor Part Number	Note
R400	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R401	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R402	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R403	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R404	RMG, 1/16W, 30.9K, 1%, 0603/1608	4723-3092	
R405	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R407	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A	
R408	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A	
R409	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A	
R410	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A	
R411	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A	
R412	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A	
R413	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A	
R414	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A	
R415	RMG, 1/16W, 33R, 1%, 0603	4723-330A	
R416	RMG, 1/16W, 33R, 1%, 0603	4723-330A	
R417	RMG, 1/16W, 33R, 1%, 0603	4723-330A	
R418	RMG, 1/16W, 33R, 1%, 0603	4723-330A	
R419	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R420	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R421	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R422	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R423	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R424	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R425	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R426	RMG, 1/16W, 715R, 1%, 0603	4723-7150	
R427	RMG, 1/16W, 715R, 1%, 0603	4723-7150	
R428	RMG, 1/16W, 8.2K, 1%, 0603/1608	4723-822A	
R429	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R430	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R431	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R432	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R433	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R434	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R435	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R436	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R437	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R438	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R439	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R440	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R441	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R442	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R443	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R444	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R454	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R456	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R457	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R458	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R460	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R462	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R463	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R467	RMG, 1/16W, 0R, 1%, 0603	4723-000A	



# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R469	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R470	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R471	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R472	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R473	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R479	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R480	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R481	RMG, 1/16W, 200K, 1%, 0603/1608	4723-221A	
R482	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R483	RMG, 1/16W, 200K, 1%, 0603/1608	4723-221A	
R484	RMG, 1/16W, 200K, 1%, 0603/1608	4723-221A	
R485	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R486	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R487	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R488	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R489	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R490	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R491	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R492	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R493	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R494	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R495	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R496	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R497	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R498	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R499	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R500	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R501	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R502	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R503	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R504	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R505	RMG, 1/16W, 200K, 1%, 0603/1608	4723-221A	
R506	RMG, 1/16W, 200K, 1%, 0603/1608	4723-221A	
R509	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R510	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R511	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R512	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R513	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R514	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R515	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R516	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R517	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R518	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R519	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R520	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R522	RMG, 1/16W, 200K, 1%, 0603/1608	4723-221A	
R529	RMG, 1/16W, 47R, 1%, 0603	4723-470A	
R530	RMG, 1/16W, 200K, 1%, 0603/1608	4723-221A	
R531	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R533	RMG, 1/16W, 200K, 1%, 0603/1608	4723-222A	
R534	RMG, 1/16W, 200K, 1%, 0603/1608	4723-222A	
R535	RMG, 1/16W, 200K, 1%, 0603/1608	4723-222A	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R536	RMG, 1/16W, 200K, 1%, 0603/1608	4723-222A	
R537	RMG, 1/16W, 22K, 1%, 0603	4723-223AR	
R549	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R550	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R551	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R552	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R553	RMG, 1/16W, 392R, 1%, 0603	4723-3920	
R554	RMG, 1/16W, 392R, 1%, 0603	4723-3920	
R555	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R556	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R557	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R558	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R559	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R561	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R565	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R568	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R569	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R572	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R573	RMG, 1/10W, 13.7K, 1%, 0603	4720-1372	
R574	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R575	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R576	RMG, 1/10W, 13.7K, 1%, 0603	4720-1372	
R577	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R578	RMG, 1/10W, 13.7K, 1%, 0603	4720-1372	
R579	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R580	RMG, 1/10W, 13.7K, 1%, 0603	4720-1372	
R581	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R582	RMG, 1/10W, 20K, 1%, 0603	4720-203A	
R583	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R584	RMG, 1/10W, 20K, 1%, 0603	4720-203A	
R585	RMG, 1/10W, 20K, 1%, 0603	4720-203A	
R586	RMG, 1/10W, 20K, 1%, 0603	4720-203A	
R587	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R588	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R589	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R590	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R591	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R592	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R597	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R598	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R599	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R600	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R601	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R602	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R603	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R604	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R605	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R606	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R607	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R608	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R609	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R610	RMG, 1/16W, 100R, 1%, 0603	4723-101A	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R611	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R612	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R613	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R614	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R615	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R616	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R617	RMG, 1/16W, 1R, 5%, 0603	4723-1R0J	
R618	RMG, 1/16W, 1R, 5%, 0603	4723-1R0J	
R621	RMG, 1/16W, 200K, 1%, 0603/1608	4723-221A	
R622	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R623	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R635	RMG, 1/16W, 22K, 1%, 0603	4723-223AR	
R646	RMG, 1/16W, 1.5K, 1%, 0603	4723-152AR	
R648	RMG, 1W, 5.1R, 5%, 2512	4728-5R1J	
R649	RMG, 1W, 5.1R, 5%, 2512	4728-5R1J	
R650	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R651	RMG, 1/16W, 47K, 1%, 0603	4723-473AR	
R652	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R653	RMG, 1/16W, 3.9K, 5%, 0603	4723-392JR	
R654	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R655	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A	
R656	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R657	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R658	RMG, 1/10W, 20K, 1%, 0603	4720-203A	
R659	RMG, 1/16W, 47R, 1%, 0603	4723-470A	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C400	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C401	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C402	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C403	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C404	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C405	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C406	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C407	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C408	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C409	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C410	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C411	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C412	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C413	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C414	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C415	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C416	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106MCF	
C417	CT, 16V, 47U, 10%, SMD, 85C, 6.0X3.2	154D-476KKF	
C418	CE, 10V, 22U, 20%, SM, 3X5.3, 85C-2000H	157C-226MEJ	
C419	CC, 6.3V, 22U, 10%, 1206, 3.2X1.6	150B-226KCF	
C420	CC, 6.3V, 22U, 10%, 1206, 3.2X1.6	150B-226KCF	
C426	CC, 16V, 1U, 10%, 0603, 0.8X1.6	150D-105KAC	
C427	CC, 50V, 33PF, 5%, 0603, COG	150F-330JAC	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C428	CC, 50V, 33PF, 5%, 0603, C0G	150F-330JAC	
C430	CC, 6.3V, 4.7U, 10%, 0603	150B-475KAC	
C431	CC, 6.3V, 4.7U, 10%, 0603	150B-475KAC	
C432	CC, 6.3V, 4.7U, 10%, 0603	150B-475KAC	
C433	CC, 6.3V, 4.7U, 10%, 0603	150B-475KAC	
C434	CC, 6.3V, 4.7U, 10%, 0603	150B-475KAC	
C435	CC, 50V, 2700PF, 10%, 0603	150F-272KAC	
C436	CC, 50V, 270P, 10%, 0603, 1x2	150F-271KAC	
C437	CC, 50V, 270P, 10%, 0603, 1x2	150F-271KAC	
C438	CC, 50V, 270P, 10%, 0603, 1x2	150F-271KAC	
C439	CC, 50V, 270P, 10%, 0603, 1x2	150F-271KAC	
C440	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C441	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C442	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C443	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C444	CT, 6.3V, 100uF, 20%, SMD, 3.5X2.8MM	154B-107MFE	
C445	CE, 35V, 47U, 20%, SM, 6.6X5.7, LOW, ESR, LELON	157Q-476MMKR5	
C446	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C447	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C448	CE, 35V, 47U, 20%, SM, 6.6X5.7, LOW, ESR, LELON	157Q-476MMKR5	
C449	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C450	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C451	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C452	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C453	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C454	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C455	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C456	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C457	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C458	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C461	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C462	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C463	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C464	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C465	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C466	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C467	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C468	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C469	CC, 50V, 22P, 5%, 0603, C0G	150F-220JAC	
C470	CC, 50V, 22P, 5%, 0603, C0G	150F-220JAC	
C471	CC, 50V, 22P, 5%, 0603, C0G	150F-220JAC	
C472	CC, 50V, 22P, 5%, 0603, C0G	150F-220JAC	
C473	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C474	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C475	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C476	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C477	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C479	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C481	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C482	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C483	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C484	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C485	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C486	CE, 25V, 220U, 20%, SM, 8.4X10, LOW, ESR, LELON	157E-227MPSR5	
C487	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107MLO	
C488	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107MLO	
C489	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C490	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C491	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C492	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C493	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C494	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C495	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C496	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C497	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C498	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C499	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C500	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C503	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C504	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C505	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C511	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C512	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C513	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C514	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C515	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C516	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C517	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C518	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C519	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C520	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C521	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C522	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C523	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C524	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C525	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C526	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C527	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C528	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C529	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C530	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C531	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C534	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C535	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C536	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C537	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C538	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C539	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C540	CC, 50V, 560P, 10%, 0603/1608, 1X2	150F-561KAC	
C541	CC, 50V, 560P, 10%, 0603/1608, 1X2	150F-561KAC	
C542	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C543	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C544	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C545	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C546	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C547	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C548	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C549	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C550	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C551	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C552	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C553	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C554	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C555	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C556	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C557	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C558	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C559	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C560	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C561	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C562	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C563	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C564	CE, 25V, 10U, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106MJJC	
C565	CE, 35V, 47U, 20%, SM, 6.6X5.7, LOW, ESR, LELON	157Q-476MMKR5	

Inductors

Reference Designator	Description	Vendor Part Number	Note
L400	INDUCTOR, 22UH, 20%, 8.1X8, B1000AS-220M=P3, SMD, TOKO	1803-0103	
L401	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L404	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L405	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L407	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L408	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L409	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	
L410	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	
L411	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	
L412	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	
L415	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	
L416	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	



# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ DSP PCB Assembly

## Diodes

Reference Designator	Description	Vendor Part Number	Note
D400	DIODE, SCHOTTKY, SK16, DO-214AA, 60V, 1A, SMD, PANJIT	480S-K160	
D401	DIODE, SCHOTTKY, 40V, 3A, ST, PS3L40S, DO-214AB, SMD, ST	480L-40S0	
D402	DIODE, BAV99, SOT23	4840-8970	
D403	DIODE, BAV99, SOT23	4840-8970	
D404	DIODE, BAV99, SOT23	4840-8970	
D405	DIODE, BAV99, SOT23	4840-8970	
D407	LED, SMD, 2.0X1.25X0.8, RD, SUPER, EVLITE	3700-7839	
D408	LED, SMD, 2.0X1.25X0.8, GN, SUPER, EVLITE	3700-7839	
D409	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D410	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D411	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D412	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D413	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D414	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D415	LED, SMD, 2.0X1.25X0.8, RD, SUPER, EVLITE	3700-7839	

## Transistors

Reference Designator	Description	Vendor Part Number	Note
Q405	TR, NPN, 2SC3326, HFE:, 350-1200, 2-3F1A, SM	4860-1890	
Q406	TR, NPN, 2SC3326, HFE:, 350-1200, 2-3F1A, SM	4860-1890	
Q408	TR, KTA1504Y	4851-504Y	
Q409	TR, MMBT4403LT1G, SMD	4854-4030	
Q410	TR, MMBT3906LT1G, SMD	4860-1980	

## Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U400	IC, MCU, LPC111U35FBD48, LQF, P48	3132-9481	
U401	IC, FLASH, MX25L4006EM1, 8-SOP	3132-8711	
U402	IC, DSP, AUDIO, TAS3204, PQFP-64	3132-8131	
U403	IC, REG, NCP1117ST33T3G, 3.3V, SOT-223, ONSEMI	3132-148111	
U404	IC, 16-CH, DEMULTIPLEXER, 74HC4067M96, SO24, TEXAS	3132-3021	
U405	IC, 16-CH, DEMULTIPLEXER, 74HC4067M96, SO24, TEXAS	3132-3021	
U406	IC, OP, AMP, SMD, 105C, BA4560RF, SOP8	3132-7011	
U407	IC, SETP-DOWN, CONVERTER, MP1591DN, SOIC8N, MPS	3132-4711	
U408	IC, ASIC, SN74LVC2G17, DCK	3132-7450	
U409	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U410	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U411	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U413	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-HZ DSP PCB Assembly

Integrated Circuits (continued)

Reference Designator	Description	Vendor Part Number	Note
U414	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U415	IC, REGULATOR, 7815, DPAK/TO-252, AUK	3132-816149	
U416	IC, REGULATOR, -15V, 7915, DPAK/TO-252, AUK	3132-817149	

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J400	FFC, CONN., 30PIN, P1.0, TOP, ENTRY	2101-3073	
J401	FFC, CONN., 30PIN, P1.0, TOP, ENTRY	2101-3073	
J402	CONN, PIN, HEADER, 5P, P2.54, DIP, ST, M, 1X5P, H11.6	2101-3422	
J403	WAFER, 4P, P2.0, STRAIGHT	2102-040S판	
J404	7, PIN, WAFER, P2.0, (COULUMB)	2102-070S판	
J405	CONN, FFC, 10P, P0.5, SMT, ST, F	2101-3375	
J406	CONNECTOR, FFC, 25P, P1.0, TOP, ENTRY	2101-3043	
X400	CRYSTAL, 24.576MHZ20PPM, SM, HC-49-SMD	2300-3290	
X401	CRYSTAL, 12MHZ, -40, C, SMD	2300-2430	

FreeSpace IZA 2120-HZ Front PCB Assembly

Resistors

Reference Designator	Description	Vendor Part Number	Note
R900	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R901	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R902	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R903	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R904	RMG, 1/16W, 715R, 1%, 0603	4723-7150	
R905	RMG, 1/16W, 715R, 1%, 0603	4723-7150	
R906	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R907	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R908	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R909	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R910	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R911	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R912	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R913	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R914	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R915	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R916	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R917	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R918	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R919	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R920	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R921	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R922	RMG, 1/10W, 100R, 1%, 0805	4720-101A	
R923	RMG, 1/10W, 100R, 1%, 0805	4720-101A	
R924	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R925	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R926	RMG, 1/10W, 24.3K, 1%, 0603	4720-2432	



# ELECTRICAL PART LIST

FreeSpace IZA 2120-HZ Front PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R927	RMG, 1/10W, 24.3K, 1%, 0603	4720-2432	
R928	RMG, 1/16W, 1R, 5%, 0603	4723-1R0J	
R929	RMG, 1/16W, 1R, 5%, 0603	4723-1R0J	
R930	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R931	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R938	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R939	RMG, 1/16W, 100R, 1%, 0603	4723-101A	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C900	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C901	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C902	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C903	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C904	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C905	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C906	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C907	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C908	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C909	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C910	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C911	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C912	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C913	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C914	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	
C915	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	
C916	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	
C917	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	
C918	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C919	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C920	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C921	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C922	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C923	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C924	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C925	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C926	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C927	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C928	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C929	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C930	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C931	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C932	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-104KAC	
C933	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	
C934	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	

# ELECTRICAL PART LIST

FreeSpace IZA 2120-HZ Front PCB Assembly

## Diodes

Reference Designator	Description	Vendor Part Number	Note
D900	DIODE, BAV99, SOT23	4840-8970	
D901	DIODE, BAV99, SOT23	4840-8970	
D902	DIODE, BAV99, SOT23	4840-8970	
D903	DOUBLE, DIODE, BAT54S, SOT-23, SCHOTTKY, SMD	480T-54S0	
D904	DOUBLE, DIODE, BAT54S, SOT-23, SCHOTTKY, SMD	480T-54S0	

## Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U710	IC, ESD, PROTECTION, TPD2E001, SOT533	3132-7831	
U900	IC, OP, AMP, SMD, 105C, BA4560RF, SOP8	3132-7011	
U901	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U902	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U903	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	

## Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J711A	CONNECTOR, PIN, HEADER, 4P	2101-3295	
J714	USB-B, CONN, F, 4PIN, P2.5	2113-3428	
J900	WIRE-CONN, 6P, P2.0, #28, UL1007, L=220, RD/WH, F/M	7013-4531	
J901	INLET, EARPHONE, 50V, 1A, 3.5MM	2113-3332	
J902	CONNECTOR, FFC, 25P, P1.0, TOP, ENTRY	2101-3043	
J951	BRACKET, GROUND, BRASS, T=0.8, TIN, PLATED	4132-6223	
SW702	SW, DIP, SPST, 24V, 25MA, P2.54, 6P	5200-5077	
SW704	SW, DIP, SPST, 24V, 25MA, P2.54, 6P	5200-5077	
SW900	SWITCH, SLIDE, DPDT, 50V0.5A, L=14, METAL, ROCKER	5200-5013	
VR900	VR, ROTARY, B20KX1, 20%, C.C, V, L=30, 40TEETH, CTR	4751-227E	
VR901	VR, ROTARY, B20KX1, 20%, C.C, V, L=30, 40TEETH, CTR	4751-227E	
VR902	VR, ROTARY, B20KX1, 20%, V, L=15	4751-2280	
VR903	VR, ROTARY, B20KX1, 20%, C.C, V, L=30, 40TEETH, CTR	4751-227E	
VR904	VR, ROTARY, B20KX1, 20%, C.C, V, L=30, 40TEETH, CTR	4751-227E	

# ELECTRICAL PART LIST

FreeSpace IZA 2120-HZ Rear Panel PCB Assembly

## Resistors

Reference Designator	Description	Vendor Part Number	Note
R700	RMG, 1/16W, 27K, 1%, 0603/1608	4723-273A+P	
R701	RMG, 1/16W, 27K, 1%, 0603/1608	4723-273A+P	
R702	RMG, 1/16W, 3K, 1%, 0603	4723-302A+P	
R703	RMG, 1/16W, 3K, 1%, 0603	4723-302A+P	
R704	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R706	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R707	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R708	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R709	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R710	RMG, 1/8W, 0R, 1%, 1206	4721-000A+6	
R711	RMG, 1/8W, 0R, 1%, 1206	4721-000A+6	
R714	RMG, 1/16W, 4.99K, 1%, 0603	4723-4991+P	
R715	RMG, 1/16W, 4.99K, 1%, 0603	4723-4991+P	
R716	RMG, 1/16W, 4.99K, 1%, 0603	4723-4991+P	
R717	RMG, 1/16W, 4.99K, 1%, 0603	4723-4991+P	
R719	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761+P	
R720	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R721	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R727	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R729	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R731	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R732	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R739	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R742	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R743	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R744	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R745	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R746	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R747	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R749	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R752	RMG, 1/16W, 10R, 1%, 0603	4723-100A+P-R	
R753	RMG, 1/16W, 10R, 1%, 0603	4723-100A+P-R	
R754	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R755	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R756	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R757	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R758	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R759	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R760	RMG, 1/16W, 1.5K, 1%, 0603	4723-152A+P-R	
R761	RMG, 1/16W, 2.7K, 1%, 0603/1608	4723-272A+P	
R762	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R763	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R764	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R765	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R766	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R778	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R779	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R780	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R781	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R782	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R783	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R784	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	

# ELECTRICAL PART LIST

FreeSpace IZA 2120-HZ Rear Panel PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R785	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R786	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R787	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R794	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R795	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R796	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R797	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R798	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R799	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R800	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R801	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R802	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R803	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R804	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R805	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R806	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R807	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R808	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R809	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R814	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R815	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R816	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R817	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R820	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R821	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R822	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R823	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R824	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R825	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R842	RMG, 1/16W, 15R, 5%, 0603	4723-150J+P-R	
R847	RMG, 1/16W, 150R, 1%, 0603	4723-151A+P-R	
R848	RMG, 1/16W, 150R, 1%, 0603	4723-151A+P-R	
R849	RMG, 1/16W, 150R, 1%, 0603	4723-151A+P-R	
R850	RMG, 1/16W, 150R, 1%, 0603	4723-151A+P-R	
R852	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A+P	
R854	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A+P	
R857	RMG, 1/16W, 2K, 1%, 0603/1608	4723-202A+P	
R858	RMG, 1/16W, 2K, 1%, 0603/1608	4723-202A+P	
R864	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R868	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R869	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R870	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R871	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R872	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R873	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R876	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R877	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R878	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R879	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R880	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R881	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R882	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	

# ELECTRICAL PART LIST

FreeSpace IZA 2120-HZ Rear Panel PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R883	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R884	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R885	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R891	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R892	RMG, 1/16W, 1.5K, 1%, 0603	4723-152A+P-R	
R893	RMG, 1/16W, 2.7K, 1%, 0603/1608	4723-272A+P	
R894	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R895	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R896	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C700	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C701	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C702	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C710	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C711	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C712	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C713	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C714	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C717	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C718	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C721	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C722	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C723	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C724	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C725	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C726	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C727	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C728	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C729	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C730	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C735	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C739	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C741	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C743	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C746	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C747	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C749	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C750	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C755	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C757	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C760	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C761	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C762	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C765	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C767	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C768	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-102J+J-BDM	
C769	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-102J+J-BDM	
C771	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C772	CC, 50V, 22P, 5%, 0603, C0G	150F-220J+P-AC	

# ELECTRICAL PART LIST

FreeSpace IZA 2120-HZ Rear Panel PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C773	CC, 50V, 22P, 5%, 0603, C0G	150F-220J+P-AC	
C774	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C775	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C776	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C777	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C778	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C779	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C780	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C785	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C786	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C788	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C789	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C790	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C795	CE, 6.3V, 220U, 20%, SM, 6.3X5.3, NOVER	157B-227M+3-LJU	
C796	CE, 6.3V, 220U, 20%, SM, 6.3X5.3, NOVER	157B-227M+3-LJU	
C797	CE, 6.3V, 220U, 20%, SM, 6.3X5.3, NOVER	157B-227M+3-LJU	
C798	CE, 6.3V, 220U, 20%, SM, 6.3X5.3, NOVER	157B-227M+3-LJU	
C800	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C802	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C804	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C805	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C810	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C814	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C815	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C816	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C817	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C818	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C821	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C822	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C823	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C824	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C825	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C826	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C827	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C828	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C833	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C834	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C835	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C836	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C837	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C840	CC, 50V, 470PF, 5%, 0603, C0G	150F-471J+P-AC	
C841	CC, 50V, 470PF, 5%, 0603, C0G	150F-471J+P-AC	
C844	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C845	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C846	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C847	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C848	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C849	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C850	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C851	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C852	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C853	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	



# ELECTRICAL PART LIST

FreeSpace IZA 2120-HZ Rear Panel PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C854	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C855	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C856	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C857	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-103K+P-AC	
C860	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C861	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C862	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C863	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C864	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C865	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C866	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C867	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C868	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C869	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C870	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	

Diodes

Reference Designator	Description	Vendor Part Number	Note
D704	DIODE, BAV99, SOT23	4840-8970+3	
D705	DIODE, BAV99, SOT23	4840-8970+3	
D706	DIODE, BAV99, SOT23	4840-8970+3	
D707	DIODE, BAV99, SOT23	4840-8970+3	
D710	DIODE, BAV99, SOT23	4840-8970+3	
D711	DIODE, BAV99, SOT23	4840-8970+3	
D712	DIODE, BAV99, SOT23	4840-8970+3	
D713	DIODE, BAV99, SOT23	4840-8970+3	
D714	DIODE, BAV99, SOT23	4840-8970+3	
D715	DIODE, BAV99, SOT23	4840-8970+3	
D716	DOUBLE, DIODE, BAT54S, SOT-23, SCHOTTKY, SMD	480T-54S0+3	
Z700	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM(RLZTE-116.2B)	4837-6V21+3	
Z701	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM(RLZTE-116.2B)	4837-6V21+3	
Z702	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM(RLZTE-116.2B)	4837-6V21+3	
Z703	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM(RLZTE-116.2B)	4837-6V21+3	

Transistors

Reference Designator	Description	Vendor Part Number	Note
Q708	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q709	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q710	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q711	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q712	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q713	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q714	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q715	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q719	TR, NPN, MMBT4401, SOT-23, HFE:, 20-300, SM	4854-4010+3	
Q720	TR, NPN, MMBT4401, SOT-23, HFE:, 20-300, SM	4854-4010+3	



# ELECTRICAL PART LIST

FreeSpace IZA 2120-HZ Rear Panel PCB Assembly

Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U701	IC, NJM2068M-#ZZZB, DUAL, OP, AMP	3130-6890+0	
U702	IC, OP, AMP, SWITCH, NJM2120M, SOIC8, JRC	3132-3711+0	
U703	IC, OP, AMP, SWITCH, NJM2120M, SOIC8, JRC	3132-3711+0	
U706	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U708	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U709	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J701	SOCKET, M, 2P, P5, 300V, 15A, BLACK	2113-3361+1	
J702	RCA, JACK, F, 2P, P15, 30V, 0.3A, H=10+9.5, R/W	2113-3153+2	
J703	RCA, JACK, F, 2P, P15, 30V, 0.3A, H=10+9.5, R/W	2113-3153+2	
J704	RCA, JACK, F, 2P, P15, 30V, 0.3A, H=10+9.5, R/W	2113-3153+2	
J705	SOCKET, EURO, BLOCK, 4P, P5, STRAIGHT, GREEN	2113-3148+0	
J707	SOCKET, SPEAKER, 4P, P5, 250V, 12A, BLACK	2113-3148+1	
J711B	CONNECTOR, PIN, HEADER, 4P, P2.54, ST, F	2101-3294+0	
J712	SOCKET, M, 5P, P5, 250V, 12A, GRN, ST	2113-3421+0	
J713	SOCKET, M, 5P, P5, 250V, 12A, GRN, ST	2113-3421+0	
J715	SOCKET, SPEAKER, 4P, P5, 250V, 12A, BLACK	2113-3148+1	
J717	CONN, HEADER, 12P, P2.54, DIP, ST, M, L=8.54	2101-3410+0	
J718	CONN, HEADER, 12P, P2.54, DIP, ST, M, L=8.54	2101-3410+0	
SW700	SW, SLIDE, 1P5T, DC50V, 0.5A	5200-5085+0	
SW702	SW, SLIDE, 1P5T, DC50V, 0.5A	5200-5085+0	
SW703	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
VR700	VR, ROTARY, 100KAX2, 20%, V, L=15, 18TEETH, 90C, CTR	4751-225E+1	
VR701	VR, ROTARY, 100KAX2, 20%, V, L=15, 18TEETH, 90C, CTR	4751-225E+1	
VR702	VR, ROTARY, 10K/10CX1, 20%, V, L=15, 18TEETH, CTR	4751-224E+0	
VR704	VR, ROTARY, 10K/10CX1, 20%, V, L=15, 18TEETH, CTR	4751-224E+0	
VR705	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	
VR706	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZ Rear Panel PCB Assembly

## Resistors

Reference Designator	Description	Vendor Part Number	Note
R402	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R403	RMF, 1/4W, 2R2, 1%, 1206	4715-2R2A+6	
R404	RMG, 1/16W, 8.2K, 1%	4723-822A+P	
R405	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R406	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R407	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R408	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R409	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R410	RMG, 1/16W, 820R, 1%, 0603	4723-821A+P-R	
R411	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R412	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R413	RMG, 1/16W, 200K, 1%, 0603/1608	4723-221A+P	
R414	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R415	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R416	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R417	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R418	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R419	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R420	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R421	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R422	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R423	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R424	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R425	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R428	RMG, 1/16W, 22K, 1%, 0603	4723-223A+P-R	
R429	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R430	RMF, 1/4W, 2R2, 1%, 1206	4715-2R2A+6	
R431	RMG, 1/16W, 5.1K, 5%, 0603/1608	4723-512J+P	
R432	RMG, 1/16W, 5.1K, 5%, 0603/1608	4723-512J+P	
R433	RMG, 1/16W, 5.1K, 5%	4723-512J+P	
R436	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R437	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R438	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R441	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R442	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R443	RMG, 1/16W, 200K, 1%, 0603/1608	4723-222A+P	
R444	RMG, 1/16W, 200K, 1%, 0603/1608	4723-222A+P	
R445	RMG, 1/16W, 1K, 1%0603/1608	4723-102A+P	
R447	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R448	RMG, 1/16W, 22K, 1%, 0603	4723-223A+P-R	
R700	RMG, 1/16W, 1K, 1%0603/1608	4723-102A+P	
R701	RMG, 1/16W, 1K, 1%0603/1608	4723-102A+P	
R702	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R703	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R704	RMG, 1/16W, 3.3K, 1%, 0603	4723-332A+P-R	
R705	RMG, 1/10W, 4.7M, 1%, 0603	4720-475A+P	
R706	RMG, 1/10W, 4.7M, 1%, 0603	4720-475A+P	
R707	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R708	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R709	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R710	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZ Rear Panel PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R711	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R712	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R713	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R714	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R715	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R716	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R717	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R718	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R719	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R720	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R721	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R722	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R723	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R724	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R725	RMG, 1/16W, 560K, 1%, 0603/1608	4723-564A+P	
R726	RMG, 1/16W, 560K, 1%, 0603/1608	4723-564A+P	
R727	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R728	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R729	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R730	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R731	RMG, 1/16W, 82K, 5%, 0603/1608	4723-823J+P	
R732	RMG, 1/16W, 51K, 1%, 0603/16	4723-513A+P	
R733	RMG, 1/16W, 82K, 5%, 0603/1608	4723-823J+P	
R734	RMG, 1/16W, 51K, 1%, 0603/16	4723-513A+P	
R739	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R740	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R741	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R742	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R743	RMG, 1/16W, 1K, 1%0603/1608	4723-102A+P	
R744	RMG, 1/16W, 1K, 1%0603/1608	4723-102A+P	
R745	RMG, 1/16W, 1K, 1%0603/1608	4723-102A+P	
R746	RMG, 1/16W, 1K, 1%0603/1608	4723-102A+P	
R747	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R748	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R749	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R751	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R752	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R753	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R754	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R755	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R756	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R757	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R758	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R759	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R762	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R765	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R767	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R768	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R769	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R771	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R772	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZ Rear Panel PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R773	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R774	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R776	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R777	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R778	RMG, 1/16W, 9.53K, 1%, 0603/1608	4723-9531+P	
R779	RMG, 1/16W, 9.53K, 1%, 0603/1608	4723-9531+P	
R780	RMG, 1/16W, 12K, 1%, 0603	4723-123A+P-R	
R781	RMG, 1/16W, 12K, 1%, 0603	4723-123A+P-R	
R782	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R783	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R786	RMG, 1/16W, 270K, 1%, 0603	4723-274A+P	
R787	RMG, 1/16W, 270K, 1%, 0603	4723-274A+P	
R788	RMG, 1/16W, 3.9K, 1%, 0603/1608	4723-392A+P	
R789	RMG, 1/16W, 3.9K, 1%, 0603/1608	4723-392A+P	
R790	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R791	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R792	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R793	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R794	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R795	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R796	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R797	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R798	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R799	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R804	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R805	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R806	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R807	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R808	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R809	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R810	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R811	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R812	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R813	RMG, 1/10W, 43K, 1%, 0805	4720-433A+J	
R814	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R815	RMG, 1/10W, 43K, 1%, 0805	4720-433A+J	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C402	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C404	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C406	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C408	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C409	CE, 25V, 10U, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106M+3-JJC	
C411	CE, 25V, 10U, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106M+3-JJC	
C414	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C415	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C417	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZ Rear Panel PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C739	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C740	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C741	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C742	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C743	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C744	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C745	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C746	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C747	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C748	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C750	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C751	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C752	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C753	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C754	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C755	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C756	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C757	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C758	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C759	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C760	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C761	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C764	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C765	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C766	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C767	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C768	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C769	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C770	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C771	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C772	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C773	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C774	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C775	CT, 16V, 10U, 20%, SMD	154D-106M+3-CF	
C776	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C777	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C778	CC, 50V, 0.1U, 5%, 0603	150F-104J+P-AC	
C779	CC, 50V, 0.1U, 5%, 0603	150F-104J+P-AC	
C780	CC, 50V, 0.1U, 5%, 0603	150F-104J+P-AC	
C781	CC, 50V, 0.1U, 5%, 0603	150F-104J+P-AC	
C782	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C783	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C784	CC, 50V, 470PF, 5%, 0603, C0G	150F-471J+P-AC	
C785	CC, 50V, 470PF, 5%, 0603, C0G	150F-471J+P-AC	

Inductors

Reference Designator	Description	Vendor Part Number	Note
L402	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZ Rear Panel PCB Assembly

## Diodes

Reference Designator	Description	Vendor Part Number	Note
D402	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D403	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D404	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D405	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D706	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D707	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D708	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D709	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D710	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D711	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D712	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D713	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D714	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D715	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D716	DIODE, BAV99, SOT23	4840-8970+3	
D717	DIODE, BAV99, SOT23	4840-8970+3	
D718	DIODE, BAV99, SOT23	4840-8970+3	
D719	DIODE, BAV99, SOT23	4840-8970+3	
Z402	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM(RLZTE-116.2B)	4837-6V21+3	
Z403	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM(RLZTE-116.2B)	4837-6V21+3	
Z700	DZ, 1/2W, 5V1, MMSZ5231B, SOD-123, SMD, PANJIT	4837-5V18+3	
Z701	DZ, 1/2W, 5V1, MMSZ5231B, SOD-123, SMD, PANJIT	4837-5V18+3	

## Transistors

Reference Designator	Description	Vendor Part Number	Note
U400	IC, ASIC, SN74LVC2G17, DCK	3132-7450+0	
U401	IC, REGULATOR, NJM7805DLA, TO-252	3132-7310+0	
U402	IC, MCU, S3F94C4, SOP20, SAM	3132-9660+0-13	
U403	IC, NJM79M05DL1A-T-#ZZ, ZB, REG	3132-3012+0	
U404	IC, CD74HC4051M96, SOIC	3132-0780+0	
U405	IC, REGULATOR, +15V, 7815, DPAK/TO-252, AUK	3132-8161+0-49	
U406	IC, REGULATOR, -15V, 7915, DPAK/TO-252, AUK	3132-8171+0-49	
U700	IC, LM358AM, OPAMP, SO-8	3132-2501+0	
U701	IC, LM358AM, OPAMP, SO-8	3132-2501+0	
U702	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD	3130-8020+0	
U703	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD	3130-8020+0	
U704	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD	3130-8020+0	
U705	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD	3130-8020+0	
U706	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD	3130-8020+0	
U707	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD	3130-8020+0	



# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZ Rear Panel PCB Assembly

Transistors (continued)

Reference Designator	Description	Vendor Part Number	Note
U708	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD	3130-8020+0	
U709	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD	3130-8020+0	
U710	IC, LM13700M/NOPB, TRANSCONDUCTANCE, AMP	3132-1981+0	
U711	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD	3130-8020+0	
U712	IC, 2CH, VOLUME, BD3812F, SOP14	3132-6071+0	
U713	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD	3130-8020+0	

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J401	5P, ST., WAFER, P=2.0, COULOMB	2102-050S+003	
J402	WIRE-CONN, 6P, P2.0, #28, UL1007, L=480, RD/WH, F/M	7013-4530+0	
J403	WIRE-CONN, 4P, P2.0, #28, UL1007, L=230, RD/WH, F/M	7013-4540+0	
J404	WIRE-CONN, 7P, P2.0, #28, UL1007, L=140, RD/WH, F/M	7013-4520+0	
J405	SOCKET, M, 2P, P5, 300V, 15A, BLACK	2113-3361+1	
J406	SOCKET, M, 2P, P5, 300V, 15A, BLACK	2113-3361+1	
J407	SOCKET, M, 2P, P5, 300V, 15A, BLACK	2113-3361+1	
J700	RCA, JACK, F, 2P, P15, 30V, 0.3A, H=10+9.5, R/W	2113-3153+2	
J701	CONN, FFC, 10P, P0.5, SMT, ST, F	2101-3375+1	
J702	SOCKET, M, 5P, P5, 250V, 12A, GRN, ST	2113-3421+0	
SW400	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
SW401	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
SW700	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
SW701	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
VR400	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	
VR401	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	



# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ and ZA 2120-LZ SMPS PCB Assembly

## Resistors

Reference Designator	Description	Vendor Part Number	Note
R200	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R202	RMG, 1/16W, 6.8K, 1%, 0603/1608	4723-682A	
R203	RMG, 1/16W, 3K, 1%, 0603	4723-302A	
R204	RMG, 1/16W, 4.7K, 1%.0603/1608	4723-472A	
R206	RMG, 1/10W, 82R, 5%, 0805	4720-820J	
R207	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R208	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R209	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R210	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R211	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R212	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R213	RMG, 1/10W, 91K, 1%, 0603	4720-913A	
R214	RMG, 1/10W, 75R, 5%, 0805	4720-750J	
R215	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R216	RMG, 1/8W, 0R, 1%, 1206	4721-000A	
R217	RMG, 1/16W, 30K, 1%, 0603/1608	4723-303A	
R220	RMG, 1/8W, 1.5K, 5%, 1206	4721-152J	
R221	RMG, 1/8W, 1.5K, 5%, 1206	4721-152J	
R222	RMG, 1/16W, 4.7K, 1%.0603/1608	4723-472A	
R223	RMG, 1/16W, 51K, 1%, 0603/1608	4723-513A	
R224	RMG, 1/16W, 56K, 1%, 0603	4723-563AR	
R225	RMG, 1/16W, 560K, 1%, 0603/1608	4723-564A	
R226	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R227	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R228	RMG, 1/10W, 15R, 1%, 0805	4720-150A	
R229	RMG, 1/10W, 15R, 1%, 0805	4720-150A	
R230	RMG, 1/10W, 62K, 5%, 0805	4720-623J	
R232	RMG, 1/10W, 18K, 5%, 0805	4720-183J	
R233	RMG, 1/4W, 100R, 1%, 1206	4725-101A	
R234	RMG, 1/4W, 100R, 1%, 1206	4725-101A	
R235	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R236	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R240	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R241	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R242	RMG, 1/8W, 2.2R, 5%, 1206	4721-2R2J	
R243	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R244	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R245	RMG, 1/8W, 330K, 5%, 1206	4721-334J	
R246	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R248	RMG, 1/8W, 47R, 5%, 1206	4721-470J	
R249	RMG, 1/8W, 47R, 5%, 1206	4721-470J	
R251	RMG, 1/8W, 47R, 5%, 1206	4721-470J	
R253	RMG, 1W, 6.2K, 5%, 2512	4728-622J	
R254	RMG, 1/4W, 5.1K, 5%, 1206	4725-512J	
R257	RMG, 1/4W, 5.1K, 5%, 1206	4725-512J	
R262	RMG, 1/16W, 10R, 1%, 0603	4723-100AR	
R263	RMG, 1/16W, 10R, 1%, 0603	4723-100AR	
R264	RMG, 1/16W, 10R, 1%, 0603	4723-100AR	
R265	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R266	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R267	RMG, 1W, 6.2K, 5%, 2512	4728-622J	
R268	RMG, 1/10W, 100R, 1%, 0805	4720-101A	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ and ZA 2120-LZ SMPS PCB Assembly



Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R270	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R271	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R272	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R273	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R274	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R275	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R276	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R277	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R278	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R282	RCF, 1/4W, 100K, 5%, AT	4705-104J	
R283	RCF, 1/4W, 100K, 5%, AT	4705-104J	
R284	RMG, 1/10W, 10K, 1%, 0805	4720-103A	
R285	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R286	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R287	RMG, 1W, 0.33R, 1%, 2512	4728-R33A	
R288	RMG, 1/16W, 16K, 1%, 0603/1608	4723-163A	
R289	RMG, 1/16W, 16K, 1%, 0603/1608	4723-163A	
R290	RMG, 1/16W, 470K, 1%, 0603	4723-474A	
R291	RMG, 1/16W, 2K, 1%, 0603/1608	4723-202A	
R292	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R293	RMG, 1/16W, 12K, 1%, 0603	4723-123AR	
R294	RMG, 1/16W, 12K, 1%, 0603	4723-123AR	
R297	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R298	RMG, 1/16W, 2K, 1%, 0603/1608	4723-202A	
R299	RWR, 3W, 0.06R, 5%, ATSW, NON INDUCTIVE	474A-R06JH	
R306	RMG, 1/10W, 220R, 5%, 0805	4720-221J	
R307	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R308	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R309	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R310	RMG, 1/16W, 560K, 1%, 0603/1608	4723-564J	
R311	RMG, 1/16W, 560K, 1%, 0603/1608	4723-564J	
R312	RMG, 1/16W, 16K, 1%, 0603/1608	4723-163A	
R313	RMG, 1/16W, 43K, 5%, 0603/1608	4723-433J	
R323	RMG, 1/16W, 47K, 1%, 0603	4723-473AR	
R324	RMG, 1/16W, 47K, 1%, 0603	4723-473AR	
R325	RMG, 1/16W, 47K, 1%, 0603	4723-473AR	
R326	RMG, 1/16W, 18K, 1%, 0603/1608	4723-183A	
R338	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R339	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R340	RMG, 1/4W, 200K, 1%, 1206	4725-204A	
R345	RCF, 1/4W, 100K, 5%, AT	4705-104J	
R346	RCF, 1/4W, 100K, 5%, AT	4705-104J	
R347	RMG, 1/8W, 68K, 1%, 1206	4721-683A	
R348	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A	
R349	RMF, 1W, 56K, 5%, ATS, METAL, OXIDE	4718-563JX	
R350	RMF, 1W, 56K, 5%, ATS, METAL, OXIDE	4718-563JX	
R353	RMG, 1/8W, 100R, 1%, 1206	4721-101A	
R354	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R356	VARISTOR, 320V, 10%, 6KV, 3KA, 10MM, RL	4735-0016	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ and ZA 2120-LZ SMPS PCB Assembly

## Capacitors

Reference Designator	Description	Vendor Part Number	Note
C200	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C201	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C202	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C204	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C205	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C206	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C207	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C208	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C209	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C210	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C211	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C212	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C213	CC, 50V, 120PF, 5%, 0603, COG	150F-121JAC	
C214	CE, 50V, 10U, 20%, RLT, 5X11, 105C, RX, NOVER	157F-106MIUTU	
C215	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C216	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C218	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C219	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C220	CE, 50V, 2200UF, 20%, RL, 18X31, 105C	157F-228M7\$T	
C221	CE, 50V, 2200UF, 20%, RL, 18X31, 105C	157F-228M7\$T	
C225	CC, 500V, 0.022U, 10%, 1206	150L-223KCF	
C226	CC, 500V, 0.022U, 10%, 1206	150L-223KCF	
C227	CC, 630V, 0.1U, 10%, 1812, X7R	150M-104KHF	
C232	CC, 100V, 100pF, 10%, 0805, 1.2X2, NPO	150H-101KBD	
C234	CC, 100V, 100pF, 10%, 0805, 1.2X2, NPO	150H-101KBD	
C235	CC, 100V, 100pF, 10%, 0805, 1.2X2, NPO	150H-101KBD	
C239	CE, 35V, 100U, 20%, RLT, 6.3X11, 105C, LOW, ESR	157Q-107MLUTR	
C243	CC, 630V, 100P, 5%, 1206, 3.2X1.6	150M-101JCF	
C244	CC, 630V, 100P, 5%, 1206, 3.2X1.6	150M-101JCF	
C245	CC, 630V, 100P, 5%, 1206, 3.2X1.6	150M-101JCF	
C246	CC, 630V, 100P, 5%, 1206, 3.2X1.6	150M-101JCF	
C247	CC, 400V, 470P, +20%, RL, 9.5X8.0, AH09B471KLO	150T-471MRO	3 
C248	CC, 400V, 470P, +20%, RL, 9.5X8.0, AH09B471KLO	150T-471MRO	3 
C249	CE, 450V, 220U, 20%, RL, 35X30, SNAP-105C	1574-227M^\$T	
C251	CP, 275V, 0.47U, 20%, RB, 18X16	158Z-474M75	
C252	CP, 275V, 0.47U, 20%, RB, 18X16	158Z-474M75	
C254	CC, 1000V, 2200P, 10%, 1206, X7R	150N-222KCF	
C255	CC, 1000V, 2200P, 10%, 1206, X7R	150N-222KCF	
C256	CC, 50V, 1500pF, 10%, 0805, 1.2x2.0	150F-152KBD	
C257	CM, 400V, 0.47U, 5%RB, 16X16, X7, METALLIZED, FARATRONIC	153T-474J55M4	
C259	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C260	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C261	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C262	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C264	CC, 50V, 2200P, 5%, 0603, 0.8X1.6	150F-222JAC	
C265	CC, 50V, 0.47U, 10%, 0805, 1.25X2, X7R	150F-474KBD	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ and ZA 2120-LZ SMPS PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C266	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C267	CE, 25V, 470U, 20%, RLT, 10X16, 105C, RX, NOVER	157E-477MS5TU	
C268	CE, 25V, 470U, 20%, RLT, 10X16, 105C, RX, NOVER	157E-477MS5TU	
C269	CE, 25V, 470U, 20%, RLT, 10X16, 105C, RX, NOVER	157E-477MS5TU	
C270	CE, 25V, 470U, 20%, RLT, 10X16, 105C, RX, NOVER	157E-477MS5TU	
C271	CE, 35V, 100U, 20%, RLT, 6.3X11, 105C, LOW, ESR	157Q-107MLUTR	
C273	CC, 50V, 0.47U, 10%, 0805, 1.25X2, X7R	150F-474KBD	
C274	CC, 500V, 0.022U, 10%, 1206	150L-223KCF	
C275	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C276	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C277	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C278	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C279	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C280	CE, 35V, 47U, 20%, RLT, 6.3X11, 105C, RX, NOVER	157Q-476MLUTU	
C282	CM, 630V, 0.1U, 10%, RB, 17X16X10, P15, FARATRONIC	153M-104K654	
C283	CM, 630V, 0.1U, 10%, RB, 17X16X10, P15, FARATRONIC	153M-104K654	
C284	CC, 50V, 1U, 10%, 0805	150F-105KBD	
C285	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C287	CC, 250V, 0.1U, 10%, X7R, 1206, 1.6X3.2	150R-104KCF	
C288	CC, 250V, 0.1U, 10%, X7R, 1206, 1.6X3.2	150R-104KCF	
C289	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C290	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C293	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C294	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C295	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C296	CE, 16V, 470U, 20%, RLT, 10X12.5, 105C, LOW ESR	157D-477MSXTR	
C297	CE, 16V, 470U, 20%, RLT, 10X12.5, 105C, LOW ESR	157D-477MSXTR	
C298	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C299	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C303	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C306	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C307	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C308	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C310	CER2, 1206, X7R, 50V, 100N, PM10, R	150F-104KCF	
C311	CER2, 1206, X7R, 50V, 100N, PM10, R	150F-104KCF	
C312	CC, 630V, 0.1U, 10%, 1812, X7R	150M-104KHF	
C313	CC, 50V, 0.47U, 10%, 0805, 1.25X2, X7R	150F-474KBD	
C314	CC, 500V, 0.022U, 10%, 1206	150L-223KCF	
C315	CC, 630V, 0.1U, 10%, 1812, X7R	150M-104KHF	


# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ and ZA 2120-LZ SMPS PCB Assembly

## Inductors

Reference Designator	Description	Vendor Part Number	Note
L202	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L203	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L204	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L205	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L208	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L211	FERRITE BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L212	FERRITE BEAD, INDUCTOR, BL01RN1A1F1J	1808-0680	
L213	FERRITE BEAD, INDUCTOR, BL01RN1A1F1J	1808-0680	

## Diodes

Reference Designator	Description	Vendor Part Number	Note
BR200	DIODE, BRIDGE, 600V, 8A, GBU8J, RL	4840-9211	3 
D200	DIODE, IN5408-B, 3A, 1000V	4805-4080	
D201	DIODE, SCHOTTKY, SK16, DO-214AA, 60V, 1A, SMD, PANJIT	480S-K160	
D202	DIODE, SCHOTTKY, 650V, 6A, IDH06G65C5, TO-220, RL	4806-5C50	
D203	DIODE, SCHOTTKY, 200V, 20A, MBR20200FCT, ITO-220AB, RL	4800-FCT0	
D204	DIODE, SCHOTTKY, 200V, 20A, MBR20200FCT, ITO-220AB, RL	4800-FCT0	
D205	DIODE, SCHOTTKY, 200V, 20A, MBR20200FCT, ITO-220AB, RL	4800-FCT0	
D206	DIODE, SCHOTTKY, 200V, 20A, MBR20200FCT, ITO-220AB, RL	4800-FCT0	
D207	DIODE, SCHOTTKY, 40V, 2A, SK24, SMB, SM, PANJIT	480S-K240	
D208	DIODE, BAV99, SOT23, PHILIPS	4840-8970	
D209	DIODE, ULTRA, 600V, 1A, MURS, 160T3, SMB, CASE403A, SM	4806-0T30	
D210	DIODE, ULTRA, 600V, 1A, MURS, 160T3, SMB, CASE403A, SM	4806-0T30	
D211	DIODE, ULTRA, 600V, 1A, MURS, 160T3, SMB, CASE403A, SM	4806-0T30	
D212	DIODE, ULTRA, 600V, 1A, MURS, 160T3, SMB, CASE403A, SM	4806-0T30	
D213	DIODE, SUPPRESSOR, 200V, P6KE200A, AT	4802-00A0	
D214	DIODE, 600V, 1A, 75NS, US1J, SOD124	480U-S1J0	
D216	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D217	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D218	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D219	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D223	DIODE, RECT, 200V, 2A, ER2D, SMB/DO-214AA, SM	480E-R2D0	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ and ZA 2120-LZ SMPS PCB Assembly




Diodes (continued)

Reference Designator	Description	Vendor Part Number	Note
D224	DIODE, RECT, 200V, 2A, ER2D, SMB/DO-214AA, SM	480E-R2D0	
D226	RECTIFIER, ES1D, 200V, 1.1A, SMD	4840-9190	
D232	DIODE, SCHOTTKY, SK16, DO-214AA, 60V, 1A, SMD, PANJIT	480S-K160	
DZ202	DZ, 1/2W, 15V, 5%, SOD-123C, MMSZ5245BT1G	4837-15V9	
Z200	DZ, 1/2W, 15V, 5%, SOD-123C, MMSZ5245BT1G	4837-15V9	
Z201	DZ, 1/2W, 18V, 5%, SOD-123C, MMSZ5248BT1G	4837-18V9	
Z203	DZ, 1/2W, 18V, 5%, SOD-123C, MMSZ5248BT1G	4837-18V9	

Transistors

Reference Designator	Description	Vendor Part Number	Note
Q200	MOSFET, N-CH, 600V, 12A, FQPF12N60C, TO-220F, RL	490N-60C0	
Q201	MOSFET, N-CH, 600V, 12A, FQPF12N60C, TO-220F, RL	490N-60C0	
Q205	TR, NPN, BCP56-10, SOT223	485C-P560	
Q206	MOSFET, N-CH, 800V, TK6A80E, 6A, TO-220SIS, RL	490A-80E0	
Q207	TR, 3904, HFE, 100-300, SM	4860-0640	
Q208	TR, 3904, HFE, 100-300, SM	4860-0640	
Q209	MOSFET, N-CH, 600V, 10A, STP11NM60ND, TO-220, RL	4906-0ND0	
Q211	TR, NPN, BCP56-10, SOT223	485C-P560	
Q212	MOSFET, N-CH, 60V, 115MA, 2N7002, SOT-23, SM	4907-0020	








Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U200	IC, DRIVER, NCP5181DR2G, SOIC-8	3132-8471	
U201	IC, LM19, THERMAL SENSOR, TO-92, NS	3132-2581	
U202	IC, LM339, SMD, COMPARATOR	3132-1250	
U203	PHOTOCOUPLER, EL817S1, S1	4818-17S1	
U204	PHOTOCOUPLER, EL817S1, S1	4818-17S1	3 
U205	PHOTOCOUPLER, EL817S1, S1	4818-17S1	3 
U206	IC, REGULATOR, 5V, LM78L05ACM, SO-8	3131-3390	
U207	IC, PFC, CONTROLLER, IR1155S, SO8	3132-9880	
U208	IC, POWER, NCP1271, SO-8, ONSEMI	3132-806111	
U209	IC, LLC, SMPS, UCC25600, SOIC-8	3132-8371	
U210	IC, REGULATOR, TL432BIDBZR, SOT-23-3, TI	3132-769116	
U211	IC, REGULATOR, TL432BIDBZR, SOT-23-3, TI	3132-769116	
U212	PHOTOCOUPLER, EL817S1, S1	4818-17S1	3 
U213	IC, NJM78M05DL1A-#ZZZB, REGULATOR	3132-2101	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ and ZA 2120-LZ SMPS PCB Assembly

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
CLAMP SMPS	CLAMP, IC, SUS301, T=1, NATURAL, 3/4H	4136-0932	
F200	FUSE, 4A, 250V, 8.5X8, EU/CCC, RLT	5120-1180	3 
HEATSINK	SCREW, MACHINE, BIND, HEAD, M3X8, CROSS-RECESS, BZ	2904-3008	
HS SMPS	HEATSINK, SMPS, 14X30, L120, AL-EXT, ANODIZE, BLACK	5401-0701	
HS SMPS	HEATSINK, SMPS, 14X30, L=70, AL-EXT, ANODIZE, BLACK	5401-0702	
HS200	HEATSINK, IC, 25.4X12.7X30, AL, PLATE, MSMGMA100	5401-0181	
J201	7, PIN, WAFER, P2.0(COULUMB)	2102-070S	
J202	WAFER, 3PIN, P=3.96	2101-3065	
J203	WAFER, 3P, P7.92/11.88, STRAIGHT	2101-3097	
J204	JM24182-2P, WAFER	2101-9120	
NTC200	THERMISTOR, NTC, 10R, 20%, 240VAC, 5A, -40-200C, AL	5202-0028	3 
NUT	NUT, HEX, M3X22X5.4, YZ	2640-302	
SCREW	SCREW, M3X10, W/S&F, WASHER, (BLK)	2900-3010	
SCREW M3	SCREW, MACHINE, PAN, M3X8, CROSS-RECESS, BZ	2900-3008	
SILICON	INSULATN-SHEET, SIL-PAD, 800, 18X13	3101-0611	
T200	TRANS, PWR, 385V/40V, 40W, 4A, ER40	1806-4234	3 
T201	CHOKER, COMMON MODE, 10MH, MIN, 5A, AT	1805-0090	3 
T202	CHOKER, COIL, 940UH, 15%, 8A, MI	1805-0520	3 
T203	CHOKER, COMMON MODE, 10MH, MIN, 5A, AT	1805-0090	3 
T204	TRANS, PWR, 385V, 40W, ER28	1806-4236	3 
WASHER	WASHER, METAL, ID, 3.3, OD8, T=0.5	2600-3005	



# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ and ZA 2120-LZ Amplifier PCB Assembly

## Resistors

Reference Designator	Description	Vendor Part Number	Note
R1	RMF, 1/2W, 10R, 1%, 1210	4717-100A	
R2	RMF, 1/2W, 10R, 1%, 1210	4717-100A	
R3	RMG, 1/16W, 4.7K, 5%, 0603	4723-472JR	
R4	RMG, 1/16W, 470K, 5%, 0603	4723-474JR	
R5	RMG, 1/16W, 470K, 5%, 0603	4723-474JR	
R6	RMG, 1/10W, 0R, 1%, 0805	4720-000A	
R14	RMG, 1/4W, 20R, 1%, 1206	4725-200A	
R15	RMG, 1/4W, 20R, 1%, 1206	4725-200A	
R16	RMG, 1/4W, 20R, 1%, 1206	4725-200A	
R17	RMG, 1/4W, 20R, 1%, 1206	4725-200A	
R18	RMG, 1/8W, 4.7K, 1%, 1206	4721-472A	
R19	RMG, 1/8W, 4.7K, 1%, 1206	4721-472A	
R20	RMG, 1/16W, 10K, 5%, 0603	4723-103JR	
R21	RMG, 1/16W, 10K, 5%, 0603	4723-103JR	
R22	RMG, 1/16W, 100R, 5%, 0603	4723-101JR	
R23	RMG, 1/16W, 100K, 5%, 0603	4723-104JR	
R24	RMG, 1/16W, 100K, 5%, 0603	4723-104JR	
R25	RMG, 1/16W, 100K, 5%, 0603	4723-104JR	
R26	RMG, 1/16W, 100K, 5%, 0603	4723-104JR	
R27	RMG, 1/16W, 100K, 5%, 0603	4723-104JR	
R28	RMG, 1/10W, 30K, 5%, 0805	4720-303J	
R29	RMG, 1W, 47R, 5%, 2512	4728-470J	
R30	RMG, 1W, 47R, 5%, 2512	4728-470J	
R31	RMG, 1W, 47R, 5%, 2512	4728-470J	
R32	RMG, 1W, 47R, 5%, 2512	4728-470J	
R33	RMG, 1/16W, 15K, 5%, 0603, HK	4723-153JR	
R34	RMG, 1/16W, 15K, 5%, 0603, HK	4723-153JR	
R35	RMG, 1/16W, 15K, 5%, 0603, HK	4723-153JR	
R36	RMG, 1/16W, 15K, 5%, 0603, HK	4723-153JR	
R37	RMG, 1/16W, 20K, 1%, 0603/1608	4723-203A	
R38	RMG, 1/16W, 11K, 1%, 0603/1608	4723-113A	
R40	RMG, 1/16W, 10K, 5%, 0603	4723-103JR	
R41	RMG, 1/16W, 11K, 1%, 0603/1608	4723-113A	
R42	RMG, 1/16W, 10K, 5%, 0603	4723-103JR	
R43	RMG, 1/16W, 10K, 5%, 0603	4723-103JR	
R44	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R45	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R46	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R47	RMG, 1/16W, 0R, 1%, 0603	4723-000A	

## Capacitors

Reference Designator	Description	Vendor Part Number	Note
C1	CC, 50V, 0.015U, 5%, 0603, 0.8X1.6	150F-153JAC	
C2	CC, 50V, 0.015U, 5%, 0603, 0.8X1.6	150F-153JAC	
C3	CC, 100V, 0.1U, 10%, 0805, X7R	150H-104KBD	
C4	CC, 100V, 0.1U, 10%, 0805, X7R	150H-104KBD	
C5	CC, 100V, 470N, 10%, 1210, X7R	150H-474KDF	
C6	CT, 16V, 47U, 10%, SMD, 85C, 6.0X3.2	154D-476KKF	
C7	CC, 50V, 1U, 10%, 0805	150F-105KBD	
C8	CC, 50V, 1U, 10%, 0805	150F-105KBD	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ and ZA 2120-LZ Amplifier PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C9	CE, 100V, 47U, 20%, RLT10X16, LOW ESR, 105C, WB, SAMWHA	157H-476MS5RT	
C10	CC, 25V, 4.7U, 10%, 0805, X5R	150E-475KBD	
C11	CC, 25V, 4.7U, 10%, 0805, X5R	150E-475KBD	
C12	CC, 25V, 4.7U, 10%, 0805, X5R	150E-475KBD	
C13	CC, 25V, 4.7U, 10%, 0805, X5R	150E-475KBD	
C14	CER2, 1206, X7R, 50V, 100N, PM10, R	150F-104KCF	
C15	CER2, 1206, X7R, 50V, 100N, PM10, R	150F-104KCF	
C16	CER2, 1206, X7R, 50V, 100N, PM10, R	150F-104KCF	
C17	CER2, 1206, X7R, 50V, 100N, PM10, R	150F-104KCF	
C18	CER2, 1206, X7R, 50V, 100N, PM10, R	150F-104KCF	
C19	CER2, 1206, X7R, 50V, 100N, PM10, R	150F-104KCF	
C20	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C21	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C22	CC, 100V, 0.22uF, 20%, 1206, Y5V	150H-224MCF	
C23	CC, 100V, 0.22uF, 20%, 1206, Y5V	150H-224MCF	
C24	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C25	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C26	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C27	CC, 50V, 0.1uF, 10%, 0805, 1.2X2.0	150F-104KBD	
C30	CE, 50V, 820U, 20%, RLT, 12.5X25, 105C	157F-827MX&T	
C31	CE, 50V, 820U, 20%, RLT, 12.5X25, 105C	157F-827MX&T	
C32	CC, 50V, 220pF, 5%, 0805, 1.2X2.0	150F-221JBD	
C33	CC, 50V, 220pF, 5%, 0805, 1.2X2.0	150F-221JBD	
C34	CC, 50V, 220pF, 5%, 0805, 1.2X2.0	150F-221JBD	
C35	CC, 50V, 220pF, 5%, 0805, 1.2X2.0	150F-221JBD	
C36	CM, 100V, 0.47U, 5%, RBT, 7.2X10X5	153H-474JNS	
C37	CM, 100V, 0.47U, 5%, RBT, 7.2X10X5	153H-474JNS	
C38	CC, 50V, 47pF, 5%, 0805, 1.2x2	150F-470JBD	
C39	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C40	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C41	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C42	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C43	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C44	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C45	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C46	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C47	CC, 100V, 0.22uF, 20%, 1206, Y5V	150H-224MCF	

## Inductors

Reference Designator	Description	Vendor Part Number	Note
L1	INDUCTOR, 22UH, 20%, 29.5X11, AL	1803-0122	
L2	INDUCTOR, 22UH, 20%, 29.5X11, AL	1803-0122	
L3	FERRITE, BEAD, INDUCTOR, BL01RN1A1F1J	1808-0680	
L4	FERRITE, BEAD, INDUCTOR, BL01RN1A1F1J	1808-0680	

## Diodes

Reference Designator	Description	Vendor Part Number	Note
Z1	DZ, 1/2W, 5.6V, SMD	4837-5V69	
Z2	DZ, 1/2W, 27V, 10%, SM	4837-2709	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ and ZA 2120-LZ Amplifier PCB Assembly

## Transistors

Reference Designator	Description	Vendor Part Number	Note
Q1	TR, 2N2222, SMD, MMBT2222ALT1G	4860-5410	

## Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U1	IC, POWER, 8954TH, SOP24, NXP	3132-923151	
U2	IC, TL072CDR, DUAL J-FET, INPUT, OP-AMP, (SMD)	3130-8020	

## Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
HS LZ AMP	HEATSINK, AMP, LOZ, 62X23.1, L=100, AL-EXT	5401-0284	
J3	WAFER, 4P, P2.0, STRAIGHT	2102-040S	
J4	WAFER, 3PIN, P=3.96	2101-3065	
J5	CONN, FFC, 10P, P0.5, SMT, ST, F	2101-3375	
J6	WAFER, 4P, P3.96, STRAIGHT, MALE	2101-3053	
SCREW	SCREW, MACHINE, PAN, M3X8, CROSS-RECESS, BZ	2900-3008	
SILICON	INSULATN-SHEET, SIL-PAD, 800, 28X45	3101-0601	
T1	CHOKE-COMMON MODE, 2X16UH, 8A, FT50-43	1806-3913	
T2	CHOKE-COMMON MODE, 2X16UH, 8A, FT50-43	1806-3913	

FreeSpace IZA 2120-LZ and ZA 2120-LZ LED & Output PCB Assembly

## Capacitors

Reference Designator	Description	Vendor Part Number	Note
C701	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C702	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C703	CC, 630V, 1000P, 10%, 1206	150M-102KCF	
C704	CC, 630V, 1000P, 10%, 1206	150M-102KCF	

## Diodes

Reference Designator	Description	Vendor Part Number	Note
D950	LED, SP, 3X5, RD/GN, SUPER, WHITE, DIFFUSED, EVERLIGHT	3700-2861	
D951	LED, 3MM, BLUE, SP, SLR343BB, T, 225419, ROHM	3700-2824	
D952	LED, SP, 3X5, RD/GN, SUPER, WHITE, DIFFUSED, EVERLIGHT	3700-2861	

## Diodes

Reference Designator	Description	Vendor Part Number	Note
J710	WIRE-CONN, 4P, P3.96, #18, UL1007, L=230, F/M	7013-3991	
J720	SOCKET, F, 2P, P5.08, 300V, 12A, GRN, ST	2113-3420	
J721	SOCKET, F, 2P, P5.08, 300V, 12A, GRN, ST	2113-3420	
J903	SHEET, GROUND, BRASS, T=0.8, TIN, PLATED	4136-0991	
J950	WAFER, 6, PIN, P2.0	2102-060R	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ DSP PCB Assembly

## Resistors

Reference Designator	Description	Vendor Part Number	Note
R400	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R401	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R402	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R403	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R404	RMG, 1/16W, 30.9K, 1%, 0603/1608	4723-3092	
R406	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R407	RMG, 1/16W, 4.7K, 1%.0603/1608	4723-472A	
R408	RMG, 1/16W, 4.7K, 1%.0603/1608	4723-472A	
R409	RMG, 1/16W, 4.7K, 1%.0603/1608	4723-472A	
R410	RMG, 1/16W, 4.7K, 1%.0603/1608	4723-472A	
R411	RMG, 1/16W, 4.7K, 1%.0603/1608	4723-472A	
R412	RMG, 1/16W, 4.7K, 1%.0603/1608	4723-472A	
R413	RMG, 1/16W, 4.7K, 1%.0603/1608	4723-472A	
R414	RMG, 1/16W, 4.7K, 1%.0603/1608	4723-472A	
R415	RMG, 1/16W, 33R, 1%, 0603	4723-330A	
R416	RMG, 1/16W, 33R, 1%, 0603	4723-330A	
R417	RMG, 1/16W, 33R, 1%, 0603	4723-330A	
R418	RMG, 1/16W, 33R, 1%, 0603	4723-330A	
R419	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R420	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R421	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R422	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R423	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R424	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R425	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761	
R426	RMG, 1/16W, 715R, 1%, 0603	4723-7150	
R427	RMG, 1/16W, 715R, 1%, 0603	4723-7150	
R428	RMG, 1/16W, 8.2K, 1%, 0603/1608	4723-822A	
R429	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R430	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R431	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R432	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R433	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R434	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R435	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R436	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R437	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R438	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R439	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R440	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R454	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R456	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R457	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R458	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R460	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R462	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R463	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R467	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R469	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R470	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R471	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R472	RMG, 1/16W, 0R, 1%, 0603	4723-000A	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R473	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R479	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R480	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R481	RMG, 1/16W, 220R, 1%, 0603/1608	4723-221A	
R482	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R483	RMG, 1/16W, 220R, 1%, 0603/1608	4723-221A	
R484	RMG, 1/16W, 220R, 1%, 0603/1608	4723-221A	
R485	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R486	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R487	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R488	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R489	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R490	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R491	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R492	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R493	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R494	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R495	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R496	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R497	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R498	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R499	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R500	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R501	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R502	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R503	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R504	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R505	RMG, 1/16W, 220R, 1%, 0603/1608	4723-221A	
R506	RMG, 1/16W, 220R, 1%, 0603/1608	4723-221A	
R509	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R510	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R511	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R512	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R513	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R514	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R515	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R516	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R517	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R518	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R519	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R520	RCFA, 1/16W, 47RX4, 5%, 0603	4703-470J04	
R522	RMG, 1/16W, 220R, 1%, 0603/1608	4723-221A	
R529	RMG, 1/16W, 47R, 1%, 0603	4723-470A	
R530	RMG, 1/16W, 220R, 1%, 0603/1608	4723-221A	
R531	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R533	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A	
R534	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A	
R535	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A	
R536	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A	
R537	RMG, 1/16W, 22K, 1%, 0603	4723-223AR	
R549	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R550	RMG, 1/16W, 0R, 1%, 0603	4723-000A	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R551	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R552	RMG, 1/16W, 0R, 1%, 0603	4723-000A	
R553	RMG, 1/16W, 392R, 1%, 0603	4723-3920	
R554	RMG, 1/16W, 392R, 1%, 0603	4723-3920	
R555	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R556	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R557	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R558	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R559	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R561	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R565	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R568	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R569	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R572	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A	
R573	RMG, 1/10W, 13.7K, 1%, 0603	4720-1372	
R574	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R575	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R576	RMG, 1/10W, 13.7K, 1%, 0603	4720-1372	
R577	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R578	RMG, 1/10W, 13.7K, 1%, 0603	4720-1372	
R579	RMG, 1/16W, 3.3K, 1%, 0603	4723-332AR	
R580	RMG, 1/10W, 13.7K, 1%, 0603	4720-1372	
R581	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R582	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R583	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R584	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R585	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R586	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R587	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R588	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R589	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R590	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R591	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R592	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R597	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R598	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R599	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R600	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R601	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R602	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R603	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R604	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R605	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R606	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R607	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R608	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R609	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R610	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R611	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R612	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R613	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R614	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	



# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R615	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R616	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R617	RMG, 1/16W, 1R, 5%, 0603	4723-1R0J	
R618	RMG, 1/16W, 1R, 5%, 0603	4723-1R0J	
R621	RMG, 1/16W, 220R, 1%, 0603/1608	4723-221A	
R622	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R623	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R635	RMG, 1/16W, 22K, 1%, 0603	4723-223AR	
R646	RMG, 1/16W, 1.5K, 1%, 0603	4723-152AR	
R648	RMG, 1W, 5.1R, 5%, 2512	4728-5R1J	
R649	RMG, 1W, 5.1R, 5%, 2512	4728-5R1J	
R650	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R651	RMG, 1/16W, 47K, 1%, 0603	4723-473AR	
R652	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R653	RMG, 1/16W, 3.9K, 5%, 0603	4723-392JR	
R654	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R655	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A	
R656	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R657	RMG, 1/16W, 100K, 1%, 0603	4723-104AR	
R658	RMG, 1/10W, 20K, 1%, 0603	4720-203A	
R659	RMG, 1/16W, 47R, 1%, 0603	4723-470A	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C400	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C401	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C402	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C403	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C404	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C405	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C406	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C407	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C408	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C409	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C410	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C411	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C412	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C413	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106KCF	
C414	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C415	CC, 50V, 0.01U, 5%, 0603	150F-103JAC	
C416	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106MCF	
C417	CT, 16V, 47U, 10%, SMD, 85C, 6.0X3.2	154D-476KKF	
C418	CE, 10V, 22U, 20%, SM, 3X5.3, 85C-2000H	157C-226MEJ	
C419	CC, 6.3V, 22U, 10%, 1206, 3.2X1.6	150B-226KCF	
C420	CC, 6.3V, 22U, 10%, 1206, 3.2X1.6	150B-226KCF	
C426	CC, 16V, 1U, 10%, 0603, 0.8X1.6	150D-105KAC	
C427	CC, 50V, 33PF, 5%, 0603, C0G	150F-330JAC	
C428	CC, 50V, 33PF, 5%, 0603, C0G	150F-330JAC	
C430	CC, 6.3V, 4.7U, 10%, 0603	150B-475KAC	
C431	CC, 6.3V, 4.7U, 10%, 0603	150B-475KAC	
C432	CC, 6.3V, 4.7U, 10%, 0603	150B-475KAC	



# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C433	CC, 6.3V, 4.7U, 10%, 0603	150B-475KAC	
C434	CC, 6.3V, 4.7U, 10%, 0603	150B-475KAC	
C435	CC, 50V, 2700PF, 10%, 0603, X7R	150F-272KAC	
C436	CC, 50V, 270P, 10%, 0603, 1x2	150F-271KAC	
C437	CC, 50V, 270P, 10%, 0603, 1x2	150F-271KAC	
C438	CC, 50V, 270P, 10%, 0603, 1x2	150F-271KAC	
C439	CC, 50V, 270P, 10%, 0603, 1x2	150F-271KAC	
C440	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C441	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C442	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C443	CC, 50V, 220PF, 5%, 0603, C0G	150F-221JAC	
C444	CT, 6.3V, 100uF, 20%, SMD, 3.5X2.8MM	154B-107MFE	
C445	CE, 35V, 47U, 20%, SM, 6.6X5.7, LOW ESR, LELON	157Q-476MMKR5	
C446	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C447	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C448	CE, 35V, 47U, 20%, SM, 6.6X5.7, LOW ESR, LELON	157Q-476MMKR5	
C449	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C450	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C451	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C452	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C453	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C454	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C455	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C456	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C457	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C458	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C461	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C462	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C463	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C464	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C465	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C466	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C467	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C468	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C469	CC, 50V, 22P, 5%, 0603, C0G	150F-220JAC	
C470	CC, 50V, 22P, 5%, 0603, C0G	150F-220JAC	
C471	CC, 50V, 22P, 5%, 0603, C0G	150F-220JAC	
C472	CC, 50V, 22P, 5%, 0603, C0G	150F-220JAC	
C473	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C474	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C475	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C476	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C477	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C479	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C481	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C482	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C483	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C484	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C485	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C486	CE, 25V, 220U, 20%, SM, 8.4X10, LOW ESR, LELON	157E-227MPSR5	
C487	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107MLO	
C488	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107MLO	
C489	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C490	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C491	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C492	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C493	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C494	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C495	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C496	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C497	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C498	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C499	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C500	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C503	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C504	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C505	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C511	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C512	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C513	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C514	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C515	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C516	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C517	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C518	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C519	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C520	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C521	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C522	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C523	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C524	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C525	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C526	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C527	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C528	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C529	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C530	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C531	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C534	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C535	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C536	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C537	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C538	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C539	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C540	CC, 50V, 560P, 10%, 0603/1608, 1X2	150F-561KAC	
C541	CC, 50V, 560P, 10%, 0603/1608, 1X2	150F-561KAC	
C542	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C543	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C544	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C545	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C546	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C547	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C548	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C549	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C550	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C551	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C552	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C553	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C554	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C555	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C556	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C557	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C558	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C559	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C560	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C561	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C562	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C563	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C564	CE, 25V, 10U, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106MJJC	
C565	CE, 35V, 47U, 20%, SM, 6.6X5.7, LOW ESR, LELON	157Q-476MMKR5	

Inductors

Reference Designator	Description	Vendor Part Number	Note
L400	INDUCTOR, 22UH, 20%, 8.1X8, B1000AS-220M=P3, SMD, TOKO	1803-0103	
L401	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L404	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L405	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L407	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L408	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872	
L409	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	
L410	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	
L411	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	
L412	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	
L415	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	
L416	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ DSP PCB Assembly

## Diodes

Reference Designator	Description	Vendor Part Number	Note
D400	DIODE, SCHOTTKY, SK16, DO-214AA, 60V, 1A, SMD, PANJIT	480S-K160	
D401	DIODE, SCHOTTKY, 40V, 3A, ST, PS3L40S, DO-214AB, SMD, ST	480L-40S0	
D402	DIODE, BAV99, SOT23, PHILIPS	4840-8970	
D403	DIODE, BAV99, SOT23, PHILIPS	4840-8970	
D404	DIODE, BAV99, SOT23, PHILIPS	4840-8970	
D405	DIODE, BAV99, SOT23, PHILIPS	4840-8970	
D407	LED, SMD, 2.0X1.25X0.8, RD, SUPER, EVLITE	3700-7839	
D408	LED, SMD, 2.0X1.25X0.8, GN, SUPER, EVLITE	3700-7839	
D409	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D410	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D411	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D412	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D413	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D414	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160	
D415	LED, SMD, 2.0X1.25X0.8, RD, SUPER, EVLITE	3700-7839	

## Transistors

Reference Designator	Description	Vendor Part Number	Note
Q405	TR, NPN, 2SC3326, HFE:, 350-1200, 2-3F1A, SM	4860-1890	
Q406	TR, NPN, 2SC3326, HFE:, 350-1200, 2-3F1A, SM	4860-1890	
Q408	TR, KTA1504Y	4851-504Y	
Q409	TR, MMBT4403LT1G, SMD	4854-4030	
Q410	TR, MMBT3906LT1G, SMD	4860-1980	

## Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U400	IC, MCU, LPC111U35FBD48, LQF	3132-9481	
U401	IC, FLASH, MX25L4006EM1, 8-SOP	3132-8711	
U402	IC, DSP, AUDIO, TAS3204, PQFP-64	3132-8131	
U403	IC, REG, NCP1117ST33T3G, 3.3V, SOT-223, ONSEMI	3132-148111	
U404	IC, 16-CH, DEMULTIPLEXER, 74HC4067M96, SO24, TEXAS	3132-3021	
U405	IC, 16-CH, DEMULTIPLEXER, 74HC4067M96, SO24, TEXAS	3132-3021	
U406	IC, OP, AMP, SMD, 105C, BA4560RF, SOP8	3132-7011	
U407	IC, SETP-DOWN, CONVERTER, MP1591DN, SOIC8N, MPS	3132-4711	
U408	IC, ASIC, SN74LVC2G17, DCK	3132-7450	
U409	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U410	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U411	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U413	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ DSP PCB Assembly

Integrated Circuits (continued)

Reference Designator	Description	Vendor Part Number	Note
U414	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U415	IC, REGULATOR, 7815, DPAK/TO-252, AUK	3132-816149	
U416	IC, REGULATOR, -15V, 7915, DPAK/TO-252, AUK	3132-817149	

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J400	FFC, CONN., 30PIN, P1.0, TOP, ENTRY	2101-3073	
J401	FFC, CONN., 30PIN, P1.0, TOP, ENTRY	2101-3073	
J402	CONN, PIN, HEADER, 5P, P2.54, DIP, ST, M, 1X5P, H11.6	2101-3422	
J403	WAFER, 4P, P2.0, STRAIGHT	2102-040S	
J404	7, PIN, WAFER, P2.0(COULUMB)	2102-070S	
J405	CONN, FFC, 10P, P0.5, SMT, ST, F	2101-3375	
J406	CONNECTOR, FFC, 25P, P1.0, TOP, ENTRY	2101-3043	
X400	CRYSTAL, 24.576MHZ, 20PPM, SM, HC-49-SMD	2300-3290	
X401	CRYSTAL, 12MHZ, -40, C, SMD	2300-2430	

FreeSpace IZA 2120-LZ Front Panel PCB Assembly

Resistors

Reference Designator	Description	Vendor Part Number	Note
R900	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R901	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R902	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R903	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A	
R904	RMG, 1/16W, 715R, 1%, 0603	4723-7150	
R905	RMG, 1/16W, 715R, 1%, 0603	4723-7150	
R906	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R907	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R908	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R909	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R910	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R911	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R912	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R913	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R914	RMG, 1/16W, 10K, 1%, 0603	4723-103AR	
R915	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R916	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R917	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R918	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R919	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R920	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R921	RMG, 1/16W, 100R, 1%, 0603	4723-101A	
R922	RMG, 1/10W, 100R, 1%, 0805	4720-101A	
R923	RMG, 1/10W, 100R, 1%, 0805	4720-101A	
R924	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R925	RMG, 1/16W, 1M, 1%, 0603	4723-105A	
R926	RMG, 1/10W, 24.3K, 1%, 0603	4720-2432	
R927	RMG, 1/10W, 24.3K, 1%, 0603	4720-2432	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ DSP Front Panel Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R928	RMG, 1/16W, 1R, 5%, 0603	4723-1R0J	
R929	RMG, 1/16W, 1R, 5%, 0603	4723-1R0J	
R930	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	
R931	RMG, 1/16W, 13K, 1%, 0603	4723-133AR	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C900	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C901	CC, 50V, 1000P, 5%, 0603, X7R	150F-102JAC	
C902	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C903	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C904	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C905	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C906	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C907	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C908	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C909	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C910	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C911	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C912	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C913	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	
C914	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	
C915	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	
C916	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	
C917	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103KAC	
C918	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C919	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C920	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C921	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C922	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C923	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106MEJ	
C924	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C925	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C926	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C927	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C928	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C929	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C930	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C931	CC, 50V, 100PF, 5%, 0603, C0G	150F-101JAC	
C932	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104KAC	

Diodes

Reference Designator	Description	Vendor Part Number	Note
D900	DIODE, BAV99, SOT23	4840-8970	
D901	DIODE, BAV99, SOT23	4840-8970	
D902	DIODE, BAV99, SOT23	4840-8970	
D903	DOUBLE, DIODE, BAT54S, SOT-23, SCHOTTKY, SMD	480T-54S0	
D904	DOUBLE, DIODE, BAT54S, SOT-23, SCHOTTKY, SMD	480T-54S0	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ Front Panel PCB Assembly

Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U710	IC, ESD, PROTECTION, TPD2E001, SOT533	3132-7831	
U900	IC, OP, AMP, SMD, 105C, BA4560RF, SOP8	3132-7011	
U901	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U902	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	
U903	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020	

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J711A	CONNECTOR, PIN, HEADER, 4P, P2.54, ST, M, L=15	2101-3295	
J714	USB-B, CONN, F, 4PIN, P2.5, 30V, 1.5A, 12X11, SIL	2113-3428	
J900	WIRE-CONN, 6P, P2.0, #28, UL1007, L=220, RD/WH, F/M	7013-4531	
J901	INLET, EARPHONE, 50V, 1A, 3.5MM	2113-3332	
J902	CONNECTOR, FFC, 25P, P1.0, TOP, ENTRY	2101-3043	
J951	BRACKET, GROUND, BRASS, T=0.8, TIN, PLATED	4132-6223	
SW702	SW, DIP, SPST, 24V, 25MA, P2.54, 6P	5200-5077	
SW704	SWITCH, DIP, SPST, 24V, 25MA, P2.54, 4PIN	5200-5019	
SW900	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=14, METAL, ROCKER	5200-5013	
VR900	VR, ROTARY, B20KX1, 20%, C.C, V, L=30, 40TEETH, CTR	4751-227E	
VR901	VR, ROTARY, B20KX1, 20%, C.C, V, L=30, 40TEETH, CTR	4751-227E	
VR902	VR, ROTARY, B20KX1, 20%, V, L=15	4751-2280	



# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ Rear Panel PCB Assembly

## Resistors

Reference Designator	Description	Vendor Part Number	Note
R700	RMG, 1/16W, 27K, 1%, 0603/1608	4723-273A+P	
R701	RMG, 1/16W, 27K, 1%, 0603/1608	4723-273A+P	
R702	RMG, 1/16W, 3K, 1%, 0603	4723-302A+P	
R703	RMG, 1/16W, 3K, 1%, 0603	4723-302A+P	
R704	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R705	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R706	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R707	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R708	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R709	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R710	RMG, 1/8W, 0R, 1%, 1206	4721-000A+6	
R711	RMG, 1/8W, 0R, 1%, 1206	4721-000A+6	
R714	RMG, 1/16W, 4.99K, 1%, 0603	4723-4991+P	
R715	RMG, 1/16W, 4.99K, 1%, 0603	4723-4991+P	
R716	RMG, 1/16W, 4.99K, 1%, 0603	4723-4991+P	
R717	RMG, 1/16W, 4.99K, 1%, 0603	4723-4991+P	
R719	RMG, 1/16W, 9.76K, 1%, 0603	4723-9761+P	
R720	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R721	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R727	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R729	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R731	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R732	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R739	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R740	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R741	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R742	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R743	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R744	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R745	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R746	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R747	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R749	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R752	RMG, 1/16W, 10R, 1%, 0603	4723-100A+P-R	
R753	RMG, 1/16W, 10R, 1%, 0603	4723-100A+P-R	
R754	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R755	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R756	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R757	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R758	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R759	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R760	RMG, 1/16W, 1.5K, 1%, 0603	4723-152A+P-R	
R761	RMG, 1/16W, 2.7K, 1%, 0603/1608	4723-272A+P	
R762	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R763	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R764	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R765	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R766	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R771	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R778	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R779	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R780	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ Rear Panel PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R781	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R782	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R783	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R784	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R785	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R786	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R787	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R794	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R795	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R796	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R797	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R798	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R799	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R800	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R801	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R802	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R803	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R804	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R805	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R806	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R807	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R808	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R809	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R814	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R815	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R816	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R817	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R820	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R821	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R822	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R823	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R824	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R825	RMG, 1/10W, 100R, 1%, 0805	4720-101A+J	
R842	RMG, 1/16W, 15R, 5%, 0603	4723-150J+P-R	
R847	RMG, 1/16W, 150R, 1%, 0603	4723-151A+P-R	
R848	RMG, 1/16W, 150R, 1%, 0603	4723-151A+P-R	
R849	RMG, 1/16W, 150R, 1%, 0603	4723-151A+P-R	
R850	RMG, 1/16W, 150R, 1%, 0603	4723-151A+P-R	
R852	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A+P	
R854	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A+P	
R857	RMG, 1/16W, 2K, 1%, 0603/1608	4723-202A+P	
R858	RMG, 1/16W, 2K, 1%, 0603/1608	4723-202A+P	
R864	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R868	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R869	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R870	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R871	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R882	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R883	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R884	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R885	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R887	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ Rear Panel PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R888	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R889	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R892	RMG, 1/16W, 1.5K, 1%, 0603	4723-152A+P-R	
R893	RMG, 1/16W, 2.7K, 1%, 0603/1608	4723-272A+P	
R894	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R895	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C700	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C701	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C702	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C709	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C710	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C711	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C712	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C713	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C714	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C717	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C718	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C721	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C722	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C723	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C724	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C725	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C726	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C727	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C728	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C729	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C730	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C735	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C739	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C741	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C743	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C746	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C747	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C749	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C750	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C755	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C757	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C760	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C761	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C762	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C765	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C767	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C768	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-102J+J-BDM	
C769	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-102J+J-BDM	
C771	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C772	CC, 50V, 22P, 5%, 0603, C0G	150F-220J+P-AC	
C773	CC, 50V, 22P, 5%, 0603, C0G	150F-220J+P-AC	
C774	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ Rear Panel PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C775	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C776	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C777	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C778	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C779	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C780	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C785	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C786	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C787	CC, 6.3V, 4.7U, 10%, 0603	150B-475K+P-AC	
C788	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C789	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C790	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C795	CE, 6.3V, 220U, 20%, SM, 6.3X5.3, NOVER	157B-227M+3-LJU	
C796	CE, 6.3V, 220U, 20%, SM, 6.3X5.3, NOVER	157B-227M+3-LJU	
C797	CE, 6.3V, 220U, 20%, SM, 6.3X5.3, NOVER	157B-227M+3-LJU	
C798	CE, 6.3V, 220U, 20%, SM, 6.3X5.3, NOVER	157B-227M+3-LJU	
C800	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C802	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C804	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C805	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C810	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C814	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C815	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C816	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C817	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C818	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C821	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C822	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C823	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C824	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C825	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C826	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C827	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C828	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C833	CC, 50V, 100PF, 5%, 0603, COG	150F-101J+P-AC	
C834	CC, 50V, 100PF, 5%, 0603, COG	150F-101J+P-AC	
C835	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C836	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C837	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C840	CC, 50V, 470PF, 5%, 0603, COG	150F-471J+P-AC	
C841	CC, 50V, 470PF, 5%, 0603, COG	150F-471J+P-AC	
C844	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C845	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C846	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C847	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C856	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C860	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C861	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C862	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C863	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C864	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C865	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ Rear Panel PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C866	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C867	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C868	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C869	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C870	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	

Diodes

Reference Designator	Description	Vendor Part Number	Note
D704	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D705	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D706	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D707	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D710	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D711	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D712	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D713	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D714	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D715	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D716	DOUBLE, DIODE, BAT54S, SOT-23, SCHOTTKY, SMD	480T-54S0+3	
Z700	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM(RLZTE-116.2B)	4837-6V21+3	
Z701	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM(RLZTE-116.2B)	4837-6V21+3	

Transistors

Reference Designator	Description	Vendor Part Number	Note
Q708	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q709	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q710	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q711	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q712	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q713	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q714	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q715	TR, MMBT4403LT1G, SMD	4854-4030+3	
Q718	TR, NPN, MMBT4401, SOT-23, HFE:20-300, SM	4854-4010+3	
Q719	TR, NPN, MMBT4401, SOT-23, HFE:20-300, SM	4854-4010+3	
Q720	TR, NPN, MMBT4401, SOT-23, HFE:20-300, SM	4854-4010+3	

Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U701	IC, NJM2068M-#ZZZB, DUAL, OP, AMP	3130-6890+0	
U702	IC, OP, AMP, SWITCH, NJM2120M, SOIC8, JRC	3132-3711+0	
U703	IC, OP, AMP, SWITCH, NJM2120M, SOIC8, JRC	3132-3711+0	
U706	IC, TL072CDR, DUAL J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U708	IC, TL072CDR, DUAL J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U709	IC, TL072CDR, DUAL J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	

# ELECTRICAL PART LIST

FreeSpace® IZA 2120-LZ Rear Panel PCB Assembly

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J701	SOCKET, M, 2P, P5, 300V, 15A, BLACK	2113-3361+1	
J702	RCA, JACK, F, 2P, P15, 30V, 0.3A, H=10+9.5, R/W	2113-3153+2	
J703	RCA, JACK, F, 2P, P15, 30V, 0.3A, H=10+9.5, R/W	2113-3153+2	
J704	RCA, JACK, F, 2P, P15, 30V, 0.3A, H=10+9.5, R/W	2113-3153+2	
J705	SOCKET, EURO, BLOCK, 4P, P5, STRAIGHT, GREEN	2113-3148+0	
J707	SOCKET, SPEAKER, 4P, P5, 250V, 12A, BLACK	2113-3148+1	
J711B	CONNECTOR, PIN, HEADER, 4P, P2.54, ST, F	2101-3294+0	
J712	SOCKET, M, 5P, P5, 250V, 12A, GRN, ST	2113-3421+0	
J713	SOCKET, M, 5P, P5, 250V, 12A, GRN, ST	2113-3421+0	
J717	CONN, HEADER, 12P, P2.54, DIP, ST, M, L=8.54	2101-3410+0	
J718	CONN, HEADER, 12P, P2.54, DIP, ST, M, L=8.54	2101-3410+0	
SW700	SW, SLIDE, 1P5T, DC50V, 0.5A	5200-5085+0	
VR700	VR, ROTARY, 100KAX2, 20%, V, L=15, 18TEETH, 90C, CTR	4751-225E+1	
VR701	VR, ROTARY, 100KAX2, 20%, V, L=15, 18TEETH, 90C, CTR	4751-225E+1	
VR702	VR, ROTARY, 10K/10CX1, 20%, V, L=15, 18TEETH, CTR	4751-224E+0	
VR704	VR, ROTARY, 10K/10CX1, 20%, V, L=15, 18TEETH, CTR	4751-224E+0	
VR705	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	
VR706	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	



# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZ (non-AmpLink) Rear Panel PCB Assembly

## Resistors

Reference Designator	Description	Vendor Part Number	Note
R402	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R403	RMF, 1/4W, 2R2, 1%, 1206	4715-2R2A+6	
R404	RMG, 1/16W, 8.2K, 1%, 0603/1608	4723-822A+P	
R405	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R406	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R407	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R408	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R409	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R410	RMG, 1/16W, 820R, 1%, 0603	4723-821A+P-R	
R411	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R412	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R413	RMG, 1/16W, 220R, 1%, 0603/1608	4723-221A+P	
R414	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R415	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R416	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R417	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R418	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R419	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R420	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R421	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R422	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R423	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R424	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R425	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R428	RMG, 1/16W, 22K, 1%, 0603	4723-223A+P-R	
R429	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R430	RMF, 1/4W, 2R2, 1%, 1206	4715-2R2A+6	
R431	RMG, 1/16W, 5.1K, 5%	4723-512J+P	
R432	RMG, 1/16W, 5.1K, 5%	4723-512J+P	
R433	RMG, 1/16W, 5.1K, 5%	4723-512J+P	
R436	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R437	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R438	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R441	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R442	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R443	RMG, 1/16W, 220R, 1%, 0603/1608	4723-222A+P	
R444	RMG, 1/16W, 220R, 1%, 0603/1608	4723-222A+P	
R446	RMG, 1/16W, 5.6K, 1%, 0603/1608	4723-562A+P	
R448	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R700	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R701	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R702	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R703	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R704	RMG, 1/16W, 3.3K, 1%, 0603	4723-332A+P-R	
R705	RMG, 1/10W, 4.7M, 1%, 0603	4720-475A+P	
R706	RMG, 1/10W, 4.7M, 1%, 0603	4720-475A+P	
R707	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R708	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R709	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R710	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R711	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R712	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	



# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZ (non-AmpLink) Rear Panel PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R713	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R714	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R715	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R716	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R717	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R718	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R719	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R720	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R721	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R722	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R723	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R724	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R725	RMG, 1/16W, 5.6K, 1%, 0603/1608	4723-564A+P	
R726	RMG, 1/16W, 5.6K, 1%, 0603/1608	4723-564A+P	
R727	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R728	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R729	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R730	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R731	RMG, 1/16W, 82K, 5%, 0603/1608	4723-823J+P	
R732	RMG, 1/10W, 39K, 1%, 0603	4720-393A+P	
R733	RMG, 1/16W, 82K, 5%, 0603/1608	4723-823J+P	
R734	RMG, 1/10W, 39K, 1%, 0603	4720-393A+P	
R737	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R738	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R739	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R740	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R741	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R742	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R743	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R744	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R745	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R746	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R747	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R748	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R749	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R751	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R752	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R753	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R754	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R755	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R756	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R757	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R758	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R759	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R762	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R765	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R767	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R768	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R769	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R771	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R772	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R773	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZ (non-AmpLink) Rear Panel PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R774	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R776	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R777	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R778	RMG, 1/16W, 20K, 1%, 0603/1608	4723-203A+P	
R779	RMG, 1/16W, 20K, 1%, 0603/1608	4723-203A+P	
R780	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R781	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R782	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R783	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R786	RMG, 1/16W, 270K, 1%, 0603	4723-274A+P	
R787	RMG, 1/16W, 270K, 1%, 0603	4723-274A+P	
R788	RMG, 1/16W, 3.9K, 1%, 0603/1608	4723-392A+P	
R789	RMG, 1/16W, 3.9K, 1%, 0603/1608	4723-392A+P	
R790	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R791	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R792	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R793	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R794	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R795	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R796	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R797	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R798	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R799	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R804	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R805	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R806	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R807	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R808	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R809	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R810	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R811	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C402	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C404	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C406	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C408	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C409	CE, 25V, 10U, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106M+3-JJC	
C411	CE, 25V, 10U, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106M+3-JJC	
C414	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C415	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C417	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C419	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C420	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107M+3-LO	
C421	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107M+3-LO	
C425	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C426	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C427	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZ (non-AmpLink) Rear Panel PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C430	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C431	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C432	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C433	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C434	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C435	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C439	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C440	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C700	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C701	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C702	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C703	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C704	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C705	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C706	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C707	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C708	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C709	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C710	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C711	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C712	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C713	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C714	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C715	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C716	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C717	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C718	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C719	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C720	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C721	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C722	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C723	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C724	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C725	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C726	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C727	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C728	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C729	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C730	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C731	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C732	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C733	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C734	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C735	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C736	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C739	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C740	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C741	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C742	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C743	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C744	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C745	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZ (non-AmpLink) Rear Panel PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C746	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C747	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C748	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C750	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C751	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C752	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C753	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C754	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C755	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C756	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C757	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C758	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C759	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C760	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C761	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C764	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C765	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C766	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C767	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C768	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C769	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C770	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C771	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C772	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C773	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C774	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C775	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C782	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C783	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C784	CC, 50V, 470PF, 5%, 0603, C0G	150F-471J+P-AC	
C785	CC, 50V, 470PF, 5%, 0603, C0G	150F-471J+P-AC	

Inductors

Reference Designator	Description	Vendor Part Number	Note
L402	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	

Diodes

Reference Designator	Description	Vendor Part Number	Note
D402	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D403	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D404	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D405	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D706	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D707	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D708	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D709	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D710	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D711	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D712	DIODE, 1SS355TE-17, ROHM	4840-1660+0	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZ (non-AmpLink) Rear Panel PCB Assembly

Diodes (continued)

Reference Designator	Description	Vendor Part Number	Note
D713	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D714	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D715	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D716	DIODE, BAV99, SOT23	4840-8970+3	
D717	DIODE, BAV99, SOT23	4840-8970+3	
D718	DIODE, BAV99, SOT23	4840-8970+3	
D719	DIODE, BAV99, SOT23	4840-8970+3	
Z402	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM (RLZTE-116.2B)	4837-6V21+3	
Z403	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM(RLZTE-116.2B)	4837-6V21+3	
Z700	DZ, 1/2W, 5V1, MMSZ5231B, SOD-123, SMD, PANJIT	4837-5V18+3	
Z701	DZ, 1/2W, 5V1, MMSZ5231B, SOD-123, SMD, PANJIT	4837-5V18+3	

Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U400	IC, ASIC, SN74LVC2G17, DCK	3132-7450+0	
U401	IC, REGULATOR, NJM7805DLA, TO-252	3132-7310+0	
U402	IC, MCU, S3F94C4, SOP20, SAMSUNG	3132-9660+0-13	
U403	IC, NJM79M05DL1A-T-#ZZ, ZB, REGULATOR	3132-3012+0	
U404	IC, CD74HC4051M96, SOIC	3132-0780+0	
U405	IC, REGULATOR, +15V, 7815, DPAK/TO-252, AUK	3132-8161+0-49	
U406	IC, REGULATOR, -15V, 7915, DPAK/TO-252, AUK	3132-8171+0-49	
U700	IC, LM358AM, OPAMP, SO-8	3132-2501+0	
U701	IC, LM358AM, OPAMP, SO-8	3132-2501+0	
U702	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U703	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U704	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U705	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U706	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U707	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U708	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U709	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U710	IC, LM13700M/NOPB, TRANSCONDUCTANCE, AMP	3132-1981+0	
U711	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U712	IC, 2CH, VOLUME, BD3812F, SOP14	3132-6071+0	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZ (non-AmpLink) Rear Panel PCB Assembly

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J401	5P, ST., WAFER, P=2.0, COULOMB	2102-050S+003	
J402	WIRE-CONN, 6P, P2.0, #28, UL1007, L=480, RD/WH, F/M	7013-4530+0	
J403	WIRE-CONN, 4P, P2.0, #28, UL1007, L=320, RD/WH, F/M	7013-4541+0	
J404	WIRE-CONN, 7P, P2.0, #28, UL1007, L=140, RD/WH, F/M	7013-4520+0	
J405	SOCKET, M, 2P, P5, 300V, 15A, BLACK	2113-3361+1	
J407	SOCKET, M, 2P, P5, 300V, 15A, BLACK	2113-3361+1	
J700	RCA, JACK, F, 2P, P15, 30V, 0.3A, H=10+9.5, R/W	2113-3153+2	
J701	CONN, FFC, 10P, P0.5, SMT, ST	2101-3375+1	
J702	SOCKET, M, 5P, P5, 250V, 12A, GRN, ST	2113-3421+0	
SW400	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
SW700	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
VR400	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	
VR401	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	



# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA (AmpLink) Rear Panel PCB Assembly  
Resistors

Reference Designator	Description	Vendor Part Number	Note
R500	RMG, 1/16W, 3.3K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-332A+P-R	
R501	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R502	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R505	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R506	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R507	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R508	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R509	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R510	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R511	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R512	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R513	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R514	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R515	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R516	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R517	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R518	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R519	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R520	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R521	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R522	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R523	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R524	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R525	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R526	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R527	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R528	RMG, 1/16W, 5.6K, 1%, 0603/1608	4723-562A+P	
R530	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R534	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R535	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R543	RMG, 1/16W, 100K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-104A+P-R	
R544	RMG, 1/16W, 100K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-104A+P-R	
R545	RMG, 1/16W, 100K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-104A+P-R	
R546	RMG, 1/16W, 100K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-104A+P-R	
R551	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A+P	
R552	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A+P	
R554	RMG, 1/10W, 5.1K, 1%, 0805	4720-512A+J	

## Capacitors

Reference Designator	Description	Vendor Part Number	Note
C500	CC, 50V, 0.1U, 5%, 0603	150F-104J+P-AC	
C502	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C503	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C505	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C506	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107M+3-LO	
C507	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107M+3-LO	
C508	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C510	CE, 25V, 10U, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106M+3-JJC	
C511	CE, 25V, 10U, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106M+3-JJC	
C512	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	



# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA (AmpLink) Rear Panel PCB Assembly  
Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C513	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C514	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C515	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C516	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C517	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C520	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C521	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C522	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C523	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C524	CE, 10V, 100uF, 20%, SM, 6.3X5.4	157C-107M+3-LJ	
C525	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C526	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C528	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C529	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C530	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C531	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C532	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C533	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C534	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C537	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C538	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C539	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C540	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C541	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C542	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C543	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C544	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C545	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C546	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C547	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C548	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C549	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C550	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	

## Inductors

Reference Designator	Description	Vendor Part Number	Note
L500	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	

## Diodes

Reference Designator	Description	Vendor Part Number	Note
D500	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D501	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D502	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D503	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D504	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D505	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D506	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
Z501	DZ, 1/2W, 6.2VB, SMD, LL-34, , ROHM(RLZTE-116.2B)	4837-6V21+3	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA (AmpLink) Rear Panel PCB Assembly  
Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U500	IC, REGULATOR, -15V, 7915, DPAK/TO-252, AUK	3132-8171+0-49	
U501	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U502	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U503	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U504	IC, REGULATOR, +15V, 7815, DPAK/TO-252, AUK	3132-8161+0-49	

## Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J500	SOCKET, M, 2P, P5, 300V, 15A, BLACK	2113-3361+1	
J501	RJ45, F, 8P, P2.54, 12VAC, 1.5A, 17X16, SIL, ST	2113-3451+0	
J502	RCA, JACK, F, 2P, P15, 30V, 0.3A, H=10+9.5, R/W	2113-3153+2	
J503	CONN, FFC, 10P, P0.5, SMT, ST, F	2101-3375+1	
J504	WIRE-CONN, 7P, P2.0, #26, UL, 1007, L=140, RD/WH, F/M	7013-4520+0	
J505	CONN, FFC, 20P, P0.5, SMT, ST, F	2101-3376+1	
J506	CONNECTOR, PIN, HEADER, 4P, P2.54, ST, F	2101-3294+0	
J507	CONNECTOR, PIN, HEADER, 4P, P2.54, ST, F	2101-3294+0	
J508	CONNECTOR, PIN, HEADER, 4P, P2.54, ST, M, L=15	2101-3295+0	
J509	CONNECTOR, PIN, HEADER, 4P, P2.54, ST, M, L=15	2101-3295+0	
J510	SOCKET, M, 5P, P5, 250V, 12A, GRN, ST	2113-3421+0	
SW500	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
SW502	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
SW504	SW, SLIDE, 2P5T, 12V, 1A, L=4	5200-5118+0	
VR500	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	
VR501	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA (AmpLink) Rear Panel PCB Assembly  
Resistors

Reference Designator	Description	Vendor Part Number	Note
R500	RMG, 1/16W, 3.3K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-332A+P-R	
R501	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R502	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R505	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R506	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R507	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R508	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R509	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R510	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R511	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R512	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R513	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R514	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R515	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R516	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R517	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R518	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R519	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R520	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R521	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R522	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R523	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R524	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R525	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R526	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R527	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R529	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R530	RMG, 1/16W, 22K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-223A+P-R	
R534	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R535	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R543	RMG, 1/16W, 100K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-104A+P-R	
R544	RMG, 1/16W, 100K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-104A+P-R	
R545	RMG, 1/16W, 100K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-104A+P-R	
R546	RMG, 1/16W, 100K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-104A+P-R	
R551	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A+P	
R552	RMG, 1/16W, 2.2K, 1%, 0603/1608	4723-222A+P	
R553	RMG, 1/16W, 10K, 1%, 0603, HK, RESISTOR/SAMSUNG	4723-103A+P-R	
R554	RMG, 1/10W, 5.1K, 1%, 0805	4720-512A+J	
R555	RMG, 1/10W, 5.1K, 1%, 0805	4720-512A+J	

## Capacitors

Reference Designator	Description	Vendor Part Number	Note
C500	CC, 50V, 0.1U, 5%, 0603	150F-104J+P-AC	
C501	CC, 50V, 0.1U, 5%, 0603	150F-104J+P-AC	
C502	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C503	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C504	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C505	CC, 50V, 1000P, 5%, 0603, X7R	150F-102J+P-AC	
C506	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107M+3-LO	
C507	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107M+3-LO	
C508	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA (AmpLink) Rear Panel PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C510	CE, 25V, 10U, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106M+3-JJC	
C511	CE, 25V, 10U, 20%, 5.3X5.4, SMD, UWX1E100MCR1GB, NCC	157E-106M+3-JJC	
C512	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C513	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C514	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C515	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C516	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C517	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C520	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C521	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C522	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C523	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C524	CE, 10V, 100uF, 20%, SM, 6.3X5.4	157C-107M+3-LJ	
C525	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C526	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C527	CC, 100V, 0.1U, 10%, 1206, AVX	150H-104K+6-CFD	
C528	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C529	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C530	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C531	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C532	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C533	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C534	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C537	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C538	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C539	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C540	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C541	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C542	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C543	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C544	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C545	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C546	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C547	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C548	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C549	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C550	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	

## Inductors

Reference Designator	Description	Vendor Part Number	Note
L500	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA (Amplink) Rear Panel PCB Assembly

## Diodes

Reference Designator	Description	Vendor Part Number	Note
D500	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D501	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D502	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D503	DIODE, BAV99, SOT23, PHILIPS	4840-8970+3	
D504	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D505	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D506	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
Z500	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM, (RLZTE-116.2B)	4837-6V21+3	
Z501	DZ, 1/2W, 6.2VB, SMD, LL-34, ROHM, (RLZTE-116.2B)	4837-6V21+3	

## Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U500	IC, REGULATOR, -15V, 7915, DPAK/TO-252, AUK	3132-8171+0-49	
U501	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U502	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U503	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U504	IC, REGULATOR, +15V, 7815, DPAK/TO-252, AUK	3132-8161+0-49	

## Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J500	SOCKET, M, 2P, P5, 300V, 15A, BLACK	2113-3361+1	
J501	RJ45, F, 8P, P2.54, 12VAC, 1.5A, 17X16, SIL, ST	2113-3451+0	
J502	RCA, JACK, F, 2P, P15, 30V, 0.3A, H=10+9.5, R/W	2113-3153+2	
J503	CONN, FFC, 10P, P0.5, SMT, ST, F	2101-3375+1	
J504	WIRE-CONN, 7P, P2.0, #26, UL, 1007, L=140, RD/WH, F/M	7013-4520+0	
J505	CONN, FFC, 20P, P0.5, SMT, ST, F	2101-3376+1	
J506	CONNECTOR, PIN, HEADER, 4P, P2.54, ST, F	2101-3294+0	
J507	CONNECTOR, PIN, HEADER, 4P, P2.54, ST, F	2101-3294+0	
J508	CONNECTOR, PIN, HEADER, 4P, P2.54, ST, M, L=15	2101-3295+0	
J509	CONNECTOR, PIN, HEADER, 4P, P2.54, ST, M, L=15	2101-3295+0	
J510	SOCKET, M, 5P, P5, 250V, 12A, GRN, ST	2113-3421+0	
SW500	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
SW501	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
SW502	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
SW503	SWITCH, SLIDE, DPDT, 50V, 0.5A, L=7	5200-5012+0	
SW504	SW, SLIDE, 2P5T, 12V, 1A, L=4	5200-5118+0	
VR500	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	
VR501	VR, ROTARY, 20BKX1, 20%, V, L=15, 18TEETH, CTR	4751-226E+0	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA AmpLink PCB Assembly

Resistors

Reference Designator	Description	Vendor Part Number	Note
R301	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R302	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R304	RMG, 1/10W, 4.7M, 1%, 0603	4720-475A+P	
R305	RMG, 1/10W, 4.7M, 1%, 0603	4720-475A+P	
R306	RMG, 1/16W, 4.7K, 1%., 0603/1608.	4723-472A+P	
R307	RMG, 1/16W, 4.7K, 1%., 0603/1608.	4723-472A+P	
R308	RMG, 1/16W, 4.7K, 1%., 0603/1608.	4723-472A+P	
R309	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R310	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R311	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R312	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R313	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R314	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R315	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R317	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R319	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R322	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R323	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R324	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R325	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R326	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R327	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R328	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R329	RMG, 1/10W, 47K, 1%, 0805	4720-473A+J	
R330	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R331	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R332	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R333	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R334	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R335	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R336	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R337	RMG, 1/16W, 330R, 1%, 0603	4723-331A+P	
R338	RMG, 1/16W, 330R, 1%, 0603	4723-331A+P	
R339	RMG, 1/16W, 330R, 1%, 0603	4723-331A+P	
R340	RMG, 1/16W, 330R, 1%, 0603	4723-331A+P	
R341	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R342	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R343	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R344	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R345	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R346	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R347	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R348	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R349	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R350	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R351	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R352	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R353	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R354	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R355	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R356	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R357	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	



# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA AmpLink PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R358	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R359	RMF, 1/4W, 2R2, 1%, 1206	4715-2R2A+6	
R360	RMF, 1/4W, 2R2, 1%, 1206	4715-2R2A+6	
R361	RMG, 1/10W, 750R, 1%, 0805	4720-751A+J	
R362	RMG, 1/16W, 560K, 1%, 0603/1608	4723-564A+P	
R363	RMG, 1/16W, 560K, 1%, 0603/1608	4723-564A+P	
R364	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R365	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R366	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R367	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R368	RMG, 1/16W, 4R7, 1%, 0603	4723-4R7A+P	
R369	RMG, 1/16W, 82K, 5%, 0603/1608	4723-823J+P	
R370	RMG, 1/16W, 82K, 5%, 0603/1608	4723-823J+P	
R371	RMG, 1/16W, 20K, 1%, 0603/1608	4723-203A+P	
R372	RMG, 1/16W, 20K, 1%, 0603/1608	4723-203A+P	
R373	RMG, 1/16W, 820R, 1%, 0603	4723-821A+P-R	
R374	RMG, 1/16W, 8.2K, 1%, 0603/1608	4723-822A+P	
R375	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R376	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R377	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R378	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R379	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R385	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R386	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R387	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R388	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R389	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R390	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R391	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R392	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R393	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R394	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R395	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R396	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R397	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R398	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R399	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R400	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R401	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R403	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R405	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R406	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R407	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R408	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R409	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R410	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R411	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R412	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R413	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R414	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R415	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R416	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	



# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA AmpLink PCB Assembly  
Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R417	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R418	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R419	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R420	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R421	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R422	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R423	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R424	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R427	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R428	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R429	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R433	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R434	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R435	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R436	RMG, 1/16W, 4.7K, 1%, 0603/1608	4723-472A+P	
R438	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R439	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R440	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R441	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R442	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R443	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R444	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R445	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R446	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R447	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R448	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R449	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R450	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R451	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R452	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R453	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R454	RMG, 1/10W, 39K, 1%, 0603	4720-393A+P	
R455	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R456	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R457	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R458	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R459	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R460	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R461	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R462	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R463	RMG, 1/10W, 39K, 1%, 0603	4720-393A+P	
R464	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R465	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R468	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R469	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R472	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R473	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R474	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R475	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R476	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R477	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R478	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA AmpLink PCB Assembly  
Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R479	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R480	RMG, 1/10W, 10.2K, 1%, 0603	4720-1022+P	
R481	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R483	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R484	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R485	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R487	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R488	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R489	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R490	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R491	RMG, 1/10W, 2.55K, 1%, 0603	4720-2551+P	
R492	RMG, 1/10W, 2.55K, 1%, 0603	4720-2551+P	
R493	RMG, 1/10W, 2.55K, 1%, 0603	4720-2551+P	
R494	RMG, 1/10W, 2.55K, 1%, 0603	4720-2551+P	
R495	RMG, 1/16W, 220R, 1%, 0603/1608	4723-221A+P	
R496	RMG, 1/10W, 2.49K, 1%, 0805	4720-2491+J	
R497	RMG, 1/10W, 100K, 1%, 0805	4720-104A+J	
R498	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R499	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R500	RMG, 1/10W, 29.4K, 1%, 0805	4720-2942+J	
R501	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R502	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R503	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R504	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R505	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R506	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R507	RMG, 1/16W, 1.5K, 1%, 0603	4723-152A+P-R	
R508	RMG, 1/16W, 22K, 1%, 0603	4723-223A+P-R	
R509	RMG, 1/16W, 270K, 1%, 0603	4723-274A+P	
R510	RMG, 1/16W, 270K, 1%, 0603	4723-274A+P	
R511	RMG, 1/16W, 3.9K, 1%, 0603/1608	4723-392A+P	
R512	RMG, 1/16W, 3.9K, 1%, 0603/1608	4723-392A+P	

## Capacitors

Reference Designator	Description	Vendor Part Number	Note
C304	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C305	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C306	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C307	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C308	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C309	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C310	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C311	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C312	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C313	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106K+6-CF	
C314	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C315	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C316	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C317	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C318	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C319	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C320	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA AmpLink PCB Assembly  
Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C321	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C322	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C323	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C324	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C325	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C326	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C327	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C328	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C329	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C330	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C331	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C332	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C333	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C334	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C335	CC, 10V, 4.7U, 10%, 0805, X7R	150C-475K+J-BD	
C336	CC, 50V, 0.1U, 5%, 0805, 1.25X2	150F-104J+J-BD	
C337	CC, 50V, 0.1U, 5%, 0805, 1.25X2	150F-104J+J-BD	
C338	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C339	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C343	CE, 10V, 100uF, 20%, SM, 6.3X5.4	157C-107M+3-LJ	
C344	CT, 16V, 1UF, 20%, SM, 1.6X3.2	154D-105M+3-CF	
C345	CT, 16V, 1UF, 20%, SM, 1.6X3.2	154D-105M+3-CF	
C347	CC, 50V, 18PF, 5%, 0603, C0G	150F-180J+P-AC	
C348	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C349	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C350	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C351	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C352	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C353	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C355	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-102J+J-BDM	
C356	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C357	CC, 50V, 2700PF, 10%, 0603, X7R	150F-272K+P-AC	
C358	CC, 50V, 680PF, 5%, 0603, C0G	150F-681J+P-AC	
C359	CC, 50V, 2700PF, 10%, 0603, X7R	150F-272K+P-AC	
C360	CC, 50V, 2700PF, 10%, 0603, X7R	150F-272K+P-AC	
C361	CC, 50V, 680PF, 5%, 0603, C0G	150F-681J+P-AC	
C362	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C363	CC, 50V, 2700PF, 10%, 0603, X7R	150F-272K+P-AC	
C364	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C365	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C366	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C367	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C368	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C369	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C370	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C371	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C372	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C373	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C374	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C375	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C376	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C377	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA AmpLink PCB Assembly  
Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C378	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C379	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C380	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C381	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C382	CC, 50V, 47pF, 5%, 0805, 1.2x, 2.0	150F-470J+J-BD	
C383	CC, 50V, 0.01U, 5%, 0805	150F-103J+J-BD	
C384	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C385	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C386	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C388	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C389	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C390	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C391	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C392	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C393	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C394	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C395	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C396	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C397	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C398	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C399	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C400	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C401	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C402	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C403	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C404	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C405	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C406	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C407	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C408	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C409	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C410	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C411	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C412	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C413	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C416	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C417	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C418	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C423	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C424	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C425	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C426	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C427	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C428	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C429	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C430	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C431	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C432	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C433	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C434	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C435	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C436	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA AmpLink PCB Assembly  
Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C437	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C440	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C441	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C442	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C443	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C444	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C445	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C446	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C447	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C448	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C449	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C450	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C451	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C452	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C453	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C454	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C455	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C456	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C457	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C458	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C459	CC, 50V, 470PF, 5%, 0603, C0G	150F-471J+P-AC	
C460	CC, 50V, 470PF, 5%, 0603, C0G	150F-471J+P-AC	
C461	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107M+3-LO	
C462	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107M+3-LO	
C463	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C464	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C465	CC, 50V, 680PF, 5%, 0603, C0G	150F-681J+P-AC	
C466	CC, 50V, 680PF, 5%, 0603, C0G	150F-681J+P-AC	
C468	CC, 50V, 150PF, 5%, 0603, C0G	150F-151J+P-AC	
C471	CC, 50V, 150PF, 5%, 0603, C0G	150F-151J+P-AC	

## Inductors

Reference Designator	Description	Vendor Part Number	Note
L300	INDUCTOR, 10UH, +/-20%, 7X7, X4.5, CER7042BA-100M, SM	1803-0152+0-3	
L301	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	
L302	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	
L303	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	
L304	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	
L305	INDUCTOR, 2.2UH, 20%, 3X3X, 1.2, 1.1A, SM	1803-0064+0-3	
L306	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878+0	
L307	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878+0	
L312	CHOKE, COMMON, MODE, 90R@10, 0MHZ, 100MA, 1.1R, SMD, 0504	1805-0700+0	
L313	CHOKE, COMMON, MODE, 90R@10, 0MHZ, 100MA, 1.1R, SMD, 0504	1805-0700+0	



# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA AmpLink PCB Assembly

## Diodes

Reference Designator	Description	Vendor Part Number	Note
D300	DIODE, SCHOTTKY, 40V, 2A, SK24, SMB, SM, PANJIT	480S-K240+3	
D301	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D302	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D303	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D304	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D305	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D306	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D307	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D308	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D309	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D310	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D311	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D312	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
Z300	DZ, 1/2W, 5V1, MMSZ5231B, SOD-123, SMD, PANJIT	4837-5V18+3	
Z301	DZ, 1/2W, 5V1, MMSZ5231B, SOD-123, SMD, PANJIT	4837-5V18+3	

## Transistors

Reference Designator	Description	Vendor Part Number	Note
Q300	TR, 3904, HFE, 100-300, SM	4860-0640+3	
Q301	TR, 3904, HFE, 100-300, SM	4860-0640+3	
Q302	TR, 3904, HFE, 100-300, SM	4860-0640+3	
Q303	TR, 3906, PNP, SM	4853-9060+3	

## Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
MCU	MCU, ASSY, MCU, CONTROL, COM, ZA-A	MCU-HMINDX4+MCU	
U300	IC, CD74HC4051M96, SOIC	3132-0780+0	
U301	IC, NJM2068M-#ZZZB, DUAL, OP, AMP	3130-6890+0	
U302	IC, ANALOG-SW, DG211BDY-E3, SOIC-16	3133-0661+0	
U303	IC, ASIC, NCP301LSN09T1, SOT23-5	3133-1521+0	
U304	IC, CS4392-KZZ, DAC, 2CH24B, IT192K, DSD, 114DB, TSSOP20	3132-0730+0	
U305	IC, LM358AM, OPAMP, SO-8	3132-2501+0	
U306	IC, LM358AM, OPAMP, SO-8	3132-2501+0	
U307	IC, TPS54331DR, REG, SW, ADJ, 3A, SO8	3132-9491+0-16	
U308	IC, M-LVDS, SN65MLVD203DR, SOIC14	3133-1421+0	
U311	IC, ASIC, SN74LVC2G17, DCK	3132-7450+0	
U312	IC, XL208-256-TQ64-C10, MC, U, 32-BIT, HI, PWR, TQFP64	3133-1411+0-64	
U313	IC, REGULATOR, NJM7805DLA, TO-252	3132-7310+0	
U314	IC, S3F94C4EZZ-SK94, MCU, 8-BIT, SOP20	3132-9660+0-13	
U316	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U317	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U318	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U319	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U320	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U321	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U322	IC, TRIPLE, BUFFER, SN74LVC3G34DCUR, VSSOP8	3133-1431+0	
U323	IC, LM3674MF-ADJ, REG, SW, 5.5V, ADJ, 0.6A, SOT-23	3133-1391+0	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-LZA AmpLink PCB Assembly  
Integrated Circuits (continued)

Reference Designator	Description	Vendor Part Number	Note
U324	IC, NJM79M05DL1A-T-#ZZ, ZB, REGULATOR	3132-3012+0	
U326	IC, ESD, PROTECTION, TPD2E001, SOT533	3132-7831+0	
U330	IC, ESD, PROTECTION, TPD2E001, SOT533	3132-7831+0	
U331	IC, LM13700M/NOPB, TRANSCONDUCTANCE, AMP	3132-1981+0	
U332	IC, 2CH, VOLUME, BD3812F, SOP14	3132-6071+0	
U333	IC, W25X20CLSNIG, FLASH, 2MBIT, SO8	3133-1401+0-30	

## Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J301	BRACKET-GROUNDING, PCB, SPCC, BSMPEXPO+05CS11	4132-6221+1	
J302	BRACKET-GROUNDING, PCB, SPCC, BSMPEXPO+05CS11	4132-6221+1	
J303	CONN, FFC, 10P, P0.5, SMT, ST, F	2101-3375+1	
J304	CONN, FFC, 10P, P0.5, SMT, ST, F	2101-3375+1	
J305	WIRE-CONN, 6P, P2.0, #26, UL1007, 480MM, RD/WH, F/M	WR-7013-4530+0	
J306	CONN, FFC, 20P, P0.5, SMT, ST, F	2101-3376+1	
J307	WIRE-CONN, 4P, P2.0, #26, UL1007, 230MM, RD/WH, F/M	WR-7013-4540+0	
J309	RJ45, F, 8P8C, 21.1X15.9X, 13.35, W/LED, S-USA	2113-3481+0	
J310	RJ45, F, 8P8C, 21.1X15.9X, 13.35, W/LED, S-USA	2113-3481+0	
WIRE	UL1007, AWG#26, RED	1681-4020+A	
WIRE	UL1007, AWG#26, WHITE	1681-4090+A	
WIRE	PLUG, HOUSING, 6P, P2.0, 100V, 2A, WHITE, PH2.0	2113-1420+06	
WIRE	PLUG, HOUSING, 6P, P2.0, 250V, 2A, WHITE, SAN2.0	2113-1422+06	
WIRE	TERMINAL, 0.9*0.9*8.8, BRASS, TIN, SAN2.0	4124-1360+0	
WIRE	TERMINAL, 1.45*2.08*5.7, BRASS, TIN, PH2.0, 22-28AWG	4124-1370+0	
WIRE	UL1007, AWG#26, RED	1681-4020+A	
WIRE	UL1007, AWG#26, WHITE	1681-4090+A	
WIRE	CONN, 4P, P2.0, WHITE, SAN2.0	2113-1397+0	
WIRE	CONN, 4P, P2, 100V, 2A, WHITE, PH2.0	2113-1409+0	
WIRE	TERMINAL, 0.9*0.9*8.8, BRASS, TIN, SAN2.0	4124-1360+0	
WIRE	TERMINAL, 1.45*2.08*5.7, BRASS, TIN, PH2.0, 22-28AWG	4124-1370+0	
X300	CRYSTAL, 24.576MHZ, +/-25PPM, 7.0X5.0X1.5, SM	2300-3323+0	



# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA AmpLink PCB Assembly  
Resistors

Reference Designator	Description	Vendor Part Number	Note
R300	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R301	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R302	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R303	RMG, 1/16W, 36K, 1%, 0603	4723-363A+P	
R304	RMG, 1/10W, 4.7M, 1%, 0603	4720-475A+P	
R305	RMG, 1/10W, 4.7M, 1%, 0603	4720-475A+P	
R306	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R307	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R308	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R309	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R310	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R311	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R312	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R313	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R314	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R315	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R317	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R319	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R322	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R323	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R324	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R325	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R326	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R327	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R328	RMG, 1/16W, 33R, 1%, 0603	4723-330A+P	
R329	RMG, 1/10W, 47K, 1%, 0805	4720-473A+J	
R330	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R331	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R332	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R333	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R334	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R335	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R336	RMG, 1/16W, 270R, 1%, 0603	4723-271A+P-R	
R337	RMG, 1/16W, 330R, 1%, 0603	4723-331A+P	
R338	RMG, 1/16W, 330R, 1%, 0603	4723-331A+P	
R339	RMG, 1/16W, 330R, 1%, 0603	4723-331A+P	
R340	RMG, 1/16W, 330R, 1%, 0603	4723-331A+P	
R341	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R342	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R343	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R344	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R345	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R346	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R347	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R348	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R349	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R350	RMG, 1/16W, 47K, 1%, 0603	4723-473A+P-R	
R351	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R352	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R353	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R354	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R355	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA AmpLink PCB Assembly  
Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R356	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R357	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R358	RMG, 1/16W, 470R, 1%, 0603	4723-471A+P-R	
R359	RMF, 1/4W, 2R2, 1%, 1206	4715-2R2A+6	
R360	RMF, 1/4W, 2R2, 1%, 1206	4715-2R2A+6	
R361	RMG, 1/10W, 750R, 1%, 0805	4720-751A+J	
R362	RMG, 1/16W, 560K, 1%, 0603/1608	4723-564A+P	
R363	RMG, 1/16W, 560K, 1%, 0603/1608	4723-564A+P	
R364	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R365	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R366	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R367	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R368	RMG, 1/16W, 4R7, 1%, 0603	4723-4R7A+P	
R369	RMG, 1/16W, 82K, 5%, 0603/1608	4723-823J+P	
R370	RMG, 1/16W, 82K, 5%, 0603/1608	4723-823J+P	
R371	RMG, 1/16W, 9.53K, 1%, 0603/1608	4723-9531+P	
R372	RMG, 1/16W, 9.53K, 1%, 0603/1608	4723-9531+P	
R373	RMG, 1/16W, 820R, 1%, 0603	4723-821A+P-R	
R374	RMG, 1/16W, 8.2K, 1%, 0603/1608	4723-822A+P	
R375	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R376	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R377	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R378	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R379	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R386	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R387	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R388	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R389	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R390	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R391	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R392	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R393	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R394	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R395	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R396	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R397	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R398	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R399	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R400	RMG, 1/16W, 0R, 1%, 0603	4723-000A+P	
R403	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R405	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R406	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R407	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R408	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R409	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R410	RMG, 1/16W, 1K, 1%, 0603/1608	4723-102A+P	
R411	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R412	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R413	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R414	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R415	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R416	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA AmpLink PCB Assembly  
Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R417	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R418	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R419	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R420	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R421	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R422	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R423	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R424	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R427	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R428	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R429	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R433	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R434	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R435	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R436	RMG, 1/16W, 4.7K, 1%, 0603/1608.	4723-472A+P	
R438	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R439	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R440	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R441	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R442	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R443	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R444	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R445	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R446	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R447	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R448	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R449	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R450	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R451	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R452	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R453	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R454	RMG, 1/16W, 51K, 1%, 0603/16, 08	4723-513A+P	
R455	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R456	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R457	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R458	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R459	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R460	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R461	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R462	RMG, 1/16W, 10K, 1%, 0603	4723-103A+P-R	
R463	RMG, 1/16W, 51K, 1%, 0603/16, 08	4723-513A+P	
R464	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R465	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R468	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R469	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R472	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R473	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R474	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R475	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R476	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R477	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R478	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA AmpLink PCB Assembly  
Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R479	RMG, 1/16W, 100R, 1%, 0603	4723-101A+P	
R480	RMG, 1/10W, 10.2K, 1%, 0603	4720-1022+P	
R481	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R483	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R484	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R485	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R487	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R488	RMG, 1/16W, 100K, 1%, 0603	4723-104A+P-R	
R489	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R490	RMG, 1/16W, 5.1K, 1%, 0603/1608	4723-512A+P	
R491	RMG, 1/10W, 2.55K, 1%, 0603	4720-2551+P	
R492	RMG, 1/10W, 2.55K, 1%, 0603	4720-2551+P	
R493	RMG, 1/10W, 2.55K, 1%, 0603	4720-2551+P	
R494	RMG, 1/10W, 2.55K, 1%, 0603	4720-2551+P	
R495	RMG, 1/16W, 220R, 1%, 0603/1608	4723-221A+P	
R496	RMG, 1/10W, 2.49K, 1%, 0805	4720-2491+J	
R497	RMG, 1/10W, 100K, 1%, 0805	4720-104A+J	
R498	RMG, 1/16W, 12K, 1%, 0603	4723-123A+P-R	
R499	RMG, 1/16W, 12K, 1%, 0603	4723-123A+P-R	
R500	RMG, 1/10W, 29.4K, 1%, 0805	4720-2942+J	
R501	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R502	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R503	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R504	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R505	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R506	RMG, 1/16W, 200K, 1%, 0603/1608	4723-204A+P	
R507	RMG, 1/16W, 1.5K, 1%, 0603	4723-152A+P-R	
R508	RMG, 1/16W, 22K, 1%, 0603	4723-223A+P-R	
R509	RMG, 1/16W, 270K, 1%, 0603	4723-274A+P	
R510	RMG, 1/16W, 270K, 1%, 0603	4723-274A+P	
R511	RMG, 1/16W, 3.9K, 1%, 0603/1608	4723-392A+P	
R512	RMG, 1/16W, 3.9K, 1%, 0603/1608	4723-392A+P	
R513	RMG, 1/10W, 43K, 1%, 0805	4720-433A+J	
R514	RMG, 1/10W, 43K, 1%, 0805	4720-433A+J	

## Capacitors

Reference Designator	Description	Vendor Part Number	Note
C300	CC, 50V, 0.1U, 5%, 0603	150F-104J+P-AC	
C301	CC, 50V, 0.1U, 5%, 0603	150F-104J+P-AC	
C302	CC, 50V, 0.1U, 5%, 0603	150F-104J+P-AC	
C303	CC, 50V, 0.1U, 5%, 0603	150F-104J+P-AC	
C304	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C305	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C306	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C307	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C308	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C309	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C310	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C311	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C312	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C313	CC, 25V, 10U, 10%, 1206, 3.2X1.6, X5R	150E-106K+6-CF	
C314	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA AmpLink PCB Assembly  
Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C315	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C316	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C317	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C318	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C319	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C320	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C321	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C322	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C323	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C324	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C325	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C326	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C327	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C328	CT, 16V, 10U, 20%, SMD, 1.6X3.2	154D-106M+3-CF	
C329	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C330	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C331	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C332	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C333	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C334	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C335	CC, 10V, 4.7U, 10%, 0805, X7R	150C-475K+J-BD	
C336	CC, 50V, 0.1U, 5%, 0805, 1.25X2	150F-104J+J-BD	
C337	CC, 50V, 0.1U, 5%, 0805, 1.25X2	150F-104J+J-BD	
C338	CC, 50V, 0.01uF, 10%, 0603, X7R	150F-103K+P-AC	
C339	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C343	CE, 10V, 100uF, 20%, SM, 6.3X5.4	157C-107M+3-LJ	
C344	CT, 16V, 1UF, 20%, SM, 1.6X3.2	154D-105M+3-CF	
C345	CT, 16V, 1UF, 20%, SM, 1.6X3.2	154D-105M+3-CF	
C347	CC, 50V, 18PF, 5%, 0603, C0G	150F-180J+P-AC	
C348	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C349	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C350	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C351	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C352	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C353	CE, 16V, 10U, 20%, SM, 3X5.4, 85C-2000H	157D-106M+3-EJ	
C355	CC, 50V, 1000p, 5%, 0805, 1.25X2.0, MURATA	150F-102J+J-BDM	
C356	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C357	CC, 50V, 2700PF, 10%, 0603, X7R	150F-272K+P-AC	
C358	CC, 50V, 680PF, 5%, 0603, C0G	150F-681J+P-AC	
C359	CC, 50V, 2700PF, 10%, 0603, X7R	150F-272K+P-AC	
C360	CC, 50V, 2700PF, 10%, 0603, X7R	150F-272K+P-AC	
C361	CC, 50V, 680PF, 5%, 0603, C0G	150F-681J+P-AC	
C362	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C363	CC, 50V, 2700PF, 10%, 0603, X7R	150F-272K+P-AC	
C364	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C365	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C366	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C367	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C368	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C369	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C370	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C371	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	



# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA AmpLink PCB Assembly  
Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C372	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C373	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C374	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C375	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C376	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C377	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C378	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C379	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C380	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C381	CC, 50V, 100PF, 5%, 0603, C0G	150F-101J+P-AC	
C382	CC, 50V, 47pF, 5%, 0805, 1.2x, 2.0	150F-470J+J-BD	
C383	CC, 50V, 0.01U, 5%, 0805	150F-103J+J-BD	
C384	CC, 6.3V, 10U, 10%, 0805, X5R	150B-106K+J-BD	
C385	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C386	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C388	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C389	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C390	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C391	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C392	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C393	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C394	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C395	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C396	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C397	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C398	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C399	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C400	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C401	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C402	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C403	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C404	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C405	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C406	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C407	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C408	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C409	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C410	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C411	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C412	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C413	CC, 50V, 1U, 10%, 0805	150F-105K+J-BD	
C416	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C417	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C418	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C423	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C424	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C425	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C426	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C427	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C428	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C429	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C430	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	



# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA AmpLink PCB Assembly  
Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C431	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C432	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C433	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C434	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C435	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C436	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C437	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C438	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C439	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C440	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C441	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C442	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C443	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C444	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C445	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C446	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C447	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C448	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C449	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C450	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C451	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C452	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C453	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C454	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C455	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C456	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C457	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C458	CC, 50V, 0.1uF, 10%, 0603, X7R	150F-104K+P-AC	
C459	CC, 50V, 470PF, 5%, 0603, C0G	150F-471J+P-AC	
C460	CC, 50V, 470PF, 5%, 0603, C0G	150F-471J+P-AC	
C461	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107M+3-LO	
C462	CE, 25V, 100UF, 20%, 6.3X7.7, SMD	157E-107M+3-LO	
C463	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C464	CC, 50V, 0.01U, 5%, 0603	150F-103J+P-AC	
C465	CC, 50V, 680PF, 5%, 0603, C0G	150F-681J+P-AC	
C466	CC, 50V, 680PF, 5%, 0603, C0G	150F-681J+P-AC	
C468	CC, 50V, 150PF, 5%, 0603, C0G	150F-151J+P-AC	
C471	CC, 50V, 150PF, 5%, 0603, C0G	150F-151J+P-AC	

## Inductors

Reference Designator	Description	Vendor Part Number	Note
L300	INDUCTOR, 10UH, +/-20%, 7X7, X4.5, CER7042BA-100M, SM	1803-0152+0-3	
L301	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	
L302	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	
L303	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	
L304	FERRITE, BEAD, CHIP, SEBW201209U121MT, 0805	1808-0872+0	
L305	INDUCTOR, 2.2UH, 20%, 3X3X, 1.2, 1.1A, SM	1803-0064+0-3	
L306	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878+0	
L307	FERRITE, CHIP, 0603, BLM18AG102SN1D, MURATA	1808-0878+0	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA AmpLink PCB Assembly  
Inductors (continued)

Reference Designator	Description	Vendor Part Number	Note
L312	CHOKE, COMMON MODE, 90R@100MHZ, 100MA, 1.1R, SMD, 0504	1805-0700+0	
L313	CHOKE, COMMON MODE, 90R@100MHZ, 100MA, 1.1R, SMD, 0504	1805-0700+0	

## Diodes

Reference Designator	Description	Vendor Part Number	Note
D300	DIODE, SCHOTTKY, 40V, 2A, SK24, SMB, SM, PANJIT	480S-K240+3	
D301	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D302	DIODE, FAST, 75V, 0.5A, BAS316, SOD323, SM	480S-3160+3	
D303	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D304	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D305	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D306	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D307	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D308	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D309	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D310	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D311	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
D312	DIODE, 1SS355TE-17, ROHM	4840-1660+0	
Z300	DZ, 1/2W, 5V1, MMSZ5231B, SOD-123, SMD, PANJIT	4837-5V18+3	
Z301	DZ, 1/2W, 5V1, MMSZ5231B, SOD-123, SMD, PANJIT	4837-5V18+3	

## Transistors

Reference Designator	Description	Vendor Part Number	Note
Q300	TR, 3904, HFE, 100-300, SM	4860-0640+3	
Q301	TR, 3904, HFE, 100-300, SM	4860-0640+3	
Q302	TR, 3904, HFE, 100-300, SM	4860-0640+3	
Q303	TR, 3906, PNP, SM	4853-9060+3	

## Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
MCU	MCU, ASSY, MCU, CONTROL, COM, ZA-A	MCU-HMINDX4+MCU	
U300	IC, CD74HC4051M96, SOIC	3132-0780+0	
U301	IC, NJM2068M-#ZZZB, DUAL, OP, AMP	3130-6890+0	
U302	IC, ANALOG-SW, DG211BDY-E3, SOIC-16	3133-0661+0	
U303	IC, ASIC, NCP301LSN09T1, SOT23-5	3133-1521+0	
U304	IC, CS4392-KZZ, DAC, 2CH24B, IT192K, DSD, 114DB, TSSOP20	3132-0730+0	
U305	IC, LM358AM, OPAMP, SO-8	3132-2501+0	
U306	IC, LM358AM, OPAMP, SO-8	3132-2501+0	
U307	IC, TPS54331DR, REG, SW, ADJ, 3A, SO8	3132-9491+0-16	
U308	IC, M-LVDS, SN65MLVD203DR, SOIC14	3133-1421+0	
U311	IC, ASIC, SN74LVC2G17, DCK	3132-7450+0	
U312	IC, XL208-256-TQ64-C10, MC, U, 32-BIT, HI, PWR, TQFP64	3133-1411+0-64	
U313	IC, REGULATOR, NJM7805DLA, TO-252	3132-7310+0	
U314	IC, S3F94C4EZZ-SK94, MCU, 8-BIT, SOP20	3132-9660+0-13	
U315	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	

# ELECTRICAL PART LIST

FreeSpace® ZA 2120-HZA AmpLink PCB Assembly  
Integrated Circuits (continued)

Reference Designator	Description	Vendor Part Number	Note
U316	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U317	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U318	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U319	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U320	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U321	IC, TL072CDR, DUAL, J-FET, INPUT, OP-AMP, (SMD)	3130-8020+0	
U322	IC, TRIPLE, BUFFER, SN74LVC3G34DCUR, VSSOP8	3133-1431+0	
U323	IC, LM3674MF-ADJ, REG, SW, 5.5V, ADJ, 0.6A, SOT-23	3133-1391+0	
U324	IC, NJM79M05DL1A-T-#ZZ, ZB, REGULATOR	3132-3012+0	
U326	IC, ESD, PROTECTION, TPD2E001, SOT533	3132-7831+0	
U330	IC, ESD, PROTECTION, TPD2E001, SOT533	3132-7831+0	
U331	IC, LM13700M/NOPB, TRANSCONDUCTANCE, AMP	3132-1981+0	
U332	IC, 2CH, VOLUME, BD3812F, SOP14	3132-6071+0	
U333	IC, W25X20CLSNG, FLASH, 2MBIT, SO8	3133-1401+0-30	

## Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
J301	BRACKET-GROUNDING, PCB, SPCC, BSMPEXPO+05CS11	4132-6221+1	
J302	BRACKET-GROUNDING, PCB, SPCC, BSMPEXPO+05CS11	4132-6221+1	
J303	CONN, FFC, 10P, P0.5, SMT, ST, F	2101-3375+1	
J304	CONN, FFC, 10P, P0.5, SMT, ST, F	2101-3375+1	
J305	WIRE-CONN, 6P, P2.0, #26, UL1007, 480MM, RD/WH, F/M	WR-7013-4530+0	
J306	CONN, FFC, 20P, P0.5, SMT, ST, F	2101-3376+1	
J307	WAFER, 4P, P2.0, STRAIGHT	2102-040S+003	
J309	RJ45, F, 8P8C, 21.1X15.9X, 13.35, W/LED, S-USA	2113-3481+0	
J310	RJ45, F, 8P8C, 21.1X15.9X, 13.35, W/LED, S-USA	2113-3481+0	
WIRE	UL1007, AWG#26, RED	1681-4020+A	
WIRE	UL1007, AWG#26, WHITE	1681-4090+A	
WIRE	PLUG, HOUSING, 6P, P2.0, 100V, 2A, WHITE, PH2.0	2113-1420+06	
WIRE	PLUG, HOUSING, 6P, P2.0, 250V, 2A, WHITE, SAN2.0	2113-1422+06	
WIRE	TERMINAL, 0.9*0.9*8.8, BRASS, TIN, SAN2.0	4124-1360+0	
WIRE	TERMINAL, 1.45*2.08*5.7, BRASS, TIN, PH2.0, 22-28AWG	4124-1370+0	
X300	CRYSTAL, 24.576MHZ, +/-25PPM, 7.0X5.0X1.5, SM	2300-3323+0	

# DISASSEMBLY PROCEDURES

**Note:** The IZA 2120-HZ, IZA 2120-LZ, ZA 2120-HZ and ZA 2120-LZ all share a similar design. As a result, the disassembly procedures are similar for all four models. Any differences in disassembly are detailed in the following procedures. Unless otherwise stated, these procedures are common across all four models. Refer to the chassis views at right for board locations.

## 1. Top Cover Removal

1.1 Remove the 10 screws that secure the top cover. Lift off the top cover.

**CAUTION:** Ensure that the insulating sheet is properly installed on the top cover over the SMPS PCB. This is to prevent arcing to the top cover from the high voltage section of the SMPS.

## 2. SMPS PCB Removal

2.1 Perform procedure 1.

2.2 Disconnect the wiring harnesses at J201, J202, J203 and J204.

2.3 Remove the six screws that secure the PCB assembly to the chassis. Lift out the PCB assembly.

**CAUTION:** Ensure that the insulating sheet is properly installed in the chassis under the SMPS PCB. This is to prevent arcing to the chassis from the high voltage section of the SMPS.

## 3. Amplifier PCB Removal

3.1 Perform procedure 1.

3.2 Disconnect the ribbon cable at J5. Disconnect the wiring harnesses at J1, J2 and J3.

3.3 Remove the five screws that secure the PCB assembly to the chassis.

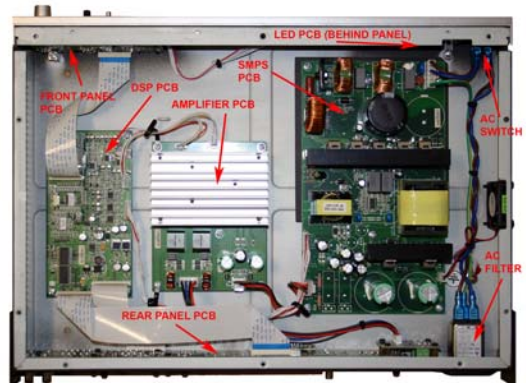
**Note:** There is one screw located in the middle of the heatsink.



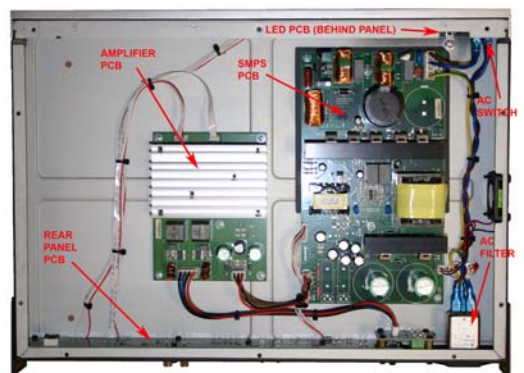
IZA 2120-HZ Chassis View



ZA 2120-HZ Chassis View



IZA 2120-LZ Chassis View



ZA 2120-LZ Chassis View

# DISASSEMBLY PROCEDURES

## 4. DSP PCB Removal

(IZA 2120-HZ and IZA 2120-LZ units only)

**4.1** Perform procedure 1.

**4.2** Unplug the ribbon cables at J400, J401, J405 and J406. Disconnect the wiring harnesses at J403 and J404.

**4.3** Remove the four screws that secure the PCB assembly to the chassis. Lift out the PCB assembly.

## 5. LED PCB Removal

**5.1** Perform procedures 1 and 2.

**5.2** Remove the four screws that secure the PCB assembly to the front panel. Remove the one ground screw to the chassis. Lift out the PCB assembly.

**5.3** Unplug the wiring harness at J950.

## 6. Front Panel Removal

**6.1** Perform procedure 1.

**6.2** Make a note of the wiring configuration, and disconnect the four Faston connectors on the back of the AC switch.

**6.3** Remove the four screws located on the sides of the plastic front panel that secure it to outside of the chassis.

**Note:** You may need to remove the front rack ears to access these screws. If so, remove the three rack ear screws and lift off the rack ear.

**6.4** Remove the LED PCB using procedure 5.

**6.5** Release the front panel retaining tabs that are located inside the chassis. Slide off the front panel.

## 7. Front Panel PCB Removal

(IZA 2120-HZ and IZA 2120-LZ units only)

**7.1** Perform procedures 1, 2 and 4.

**7.2** Unplug the ribbon cable at J902.

**7.3** Remove the plastic front panel using procedure 6.

**7.4** Remove the front panel knob. Using a 10mm nut driver, remove the hex nut and washer that secure the Master Level potentiometer to the plastic front panel.

**7.5** Remove the six screws that secure the PCB assembly to the front panel. Remove the one ground screw to the chassis. Lift off the PCB assembly.

## 8A. Rear Panel PCB Assembly Removal

(IZA 2120-HZ and IZA 2120-LZ units only)

**8.1A** Perform procedure 1.

**8.2A** Unplug the ribbon cables at J716 and J700. Disconnect the wiring harness at J3 on the amplifier PCB assembly.

**8.3A** Remove the eleven screws that secure the rear panel jacks to the chassis. Lift out the PCB assembly.

**IMPORTANT NOTE:** Do not remove the screws located on the inside of the chassis that are on the PCB assembly itself. These screws are mounted to standoffs used to keep the board at the proper spacing from the chassis.

## 8B. Rear Panel PCB Assembly Removal

(ZA 2120-HZ and ZA 2120-LZ non-AmpLink version units only)

**8.1B** Perform procedure 1.

**8.2B** Disconnect the wiring harness at J201 on the SMPS PCB assembly. Disconnect the wiring harnesses at J1, J3 and J5 on the amplifier PCB assembly. Disconnect the wiring harness at J950 on the LED PCB.



# DISASSEMBLY PROCEDURES

**8.3B** Remove the ten screws that secure the rear panel jacks to the chassis. Lift out the PCB assembly.

**IMPORTANT NOTE:** Do not remove the screws located on the inside of the chassis that are on the PCB assembly itself. These screws are mounted to standoffs used to keep the board at the proper spacing from the chassis.

## 8C. Rear Panel PCB Assembly Removal

(ZA 2120-HZA and ZA 2120A-LZ AmpLink version units only)

**8.1BC** Perform procedure 1.

**8.2C** Disconnect the wiring harness at J201 on the SMPS PCB assembly. Disconnect the wiring harness at J5 on the amplifier PCB assembly. Disconnect the ribbon cables at J304 and J306 on the AmpLink PCB.

**8.3C** Remove the eleven screws that secure the rear panel jacks to the chassis. Lift out the PCB assembly.

**IMPORTANT NOTE:** Do not remove the screws located on the inside of the chassis that are on the PCB assembly itself. These screws are mounted to standoffs used to keep the board at the proper spacing from the chassis.

## 9. AmpLink PCB Removal

**9.1** Perform procedure 1.

**9.2** Disconnect the ribbon cables at J303, J304 and J306 on the AmpLink PCB. Disconnect the wiring harness that runs from the AmpLink PCB to the LED PCB. Disconnect the wiring harness at J305 on the Amplifier PCB.

**9.3** Remove the two screws that secure the PCB to the rear of the chassis. Remove the four screws that secure the PCB to the standoffs inside the chassis. Lift out the PCB assembly.

## 10. AC Switch Removal

**10.1** Perform procedure 1.

**10.2** Make a note of the wiring, and disconnect the four Faston connections from the AC wiring harness.

**10.3** Press in the plastic tabs located on the sides of the switch, and slide the switch out through the front panel.

## 11. AC IEC Filter Removal

**11.1** Perform procedure 1.

**11.2** Make a note of the wiring configuration and disconnect the three Faston connectors located on the back of the filter.

**11.3** Remove the two screws that secure the filter to the chassis. Lift out the filter.

## 12. Fan Removal

**12.1** Perform procedure 1.

**12.2** Unplug the fan wiring harness from the SMPS PCB at J204.

**12.3** Remove the four screws that secure the fan to the chassis. Lift out the fan.

**Re-assembly Note:** Be sure to mount the replacement fan for correct air flow. The label on the fan should face the inside of the chassis.



# TEST PROCEDURES

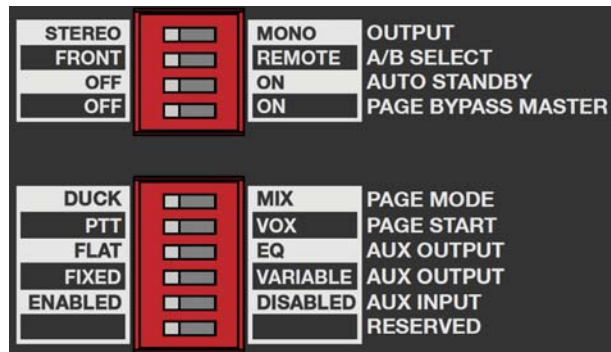
## IZA 2120-LZ Amplifier Tests

### Required Equipment:

- Audio Precision ATS-1 or equivalent
- Audio Precision AUX-0025 digital filter or equivalent
- Remote Volume control with A/B Select User Interface (Bose® PC 041967)
- 2- 4 ohm, 250 Watt load resistors

### Test Setup:

- Bass and Treble control, set at 12:00 o'clock position.
- Set EQ to "1" FLAT.
- Load 4 ohms per channel.
- Output gain trim set to max, master volume set to max.
- Rear panel input gain trim set to max.
- DIP switch setting: as shown at right.
- All measurements for power amp need to use the AUX-0025 digital filter.



### 1. Input Sensitivity and THD+N Tests

- 1.1 Set the front panel Input A / Input B switch to Input A. Apply a -10dBV +/- 2dBV, 1kHz sine wave to the input A RCA input jacks.
- 1.2 Verify that the output level is 120W from both channels and that the THD+N is  $\leq 0.5\%$ .
- 1.3 Repeat steps 1.1 and 1.2 for the Input B RCA jacks.
- 1.4 Set the front panel Input A / Input B switch to Input A. Apply a -10dBV +/- 2dBV, 1kHz sine wave to the input A Euro block input jacks.
- 1.5 Verify that the output level is 120W from both channels. Verify that the THD+N is  $\leq 0.5\%$ .
- 1.6 Repeat steps 1.4 and 1.5 for the Input B Euro block input jacks.
- 1.7 Apply a -58dBV +/- 3dBV, 1kHz sine wave to the Page Input.
- 1.8 Verify that the output level is 120W from both channels and that the THD+N is  $\leq 0.5\%$ .
- 1.9 Apply a -5dBV +/- 2dBV, 1kHz sine wave to the 1/8" Aux input jack on the front panel.
- 1.10 Verify that the output level is 120W from both channels and that the THD+N is  $\leq 0.5\%$ .

### 2. Frequency Response and Output Noise Tests

- 2.1 Set the front panel Input A / Input B switch to Input A. Apply a -30dBV, 1kHz sine wave to the input A RCA jacks. Adjust the Input A gain rear panel control to allow a 1W output level. Reference the dB meter to this output level.

# TEST PROCEDURES

**2.2** Change the input frequency to 40Hz. Verify that the output level is -1dBr +/- 1.

**2.3** Change the input frequency to 18kHz. Verify that the output level is -1dBr +/- 1.

**2.4** Turn off the signal generator output. Measure the noise level with a 20kHz filter and A-weighting. Verify that it is  $\leq 65$ dBV.

**2.5** Repeat steps 2.1 to 2.4 for Input B.

**2.6** Set the front panel Input A / Input B switch to Input A. Apply a -30dBV, 1kHz sine wave to the input A Euro block jacks. Adjust the Input A gain rear panel control to allow a 1W output level. Reference the dB meter to this output level.

**2.7** Change the input frequency to 40Hz. Verify that the output level is -1dBr +/- 1.

**2.8** Change the input frequency to 18kHz. Verify that the output level is -1dBr +/- 1.

**2.9** Turn off the signal generator output. Measure the noise level with a 20kHz filter and A-weighting. Verify that it is  $\leq 65$ dBV.

**2.10** Repeat steps 2.6 to 2.9 for Input B.

**2.11** Apply a -30dBV, 1kHz sine wave to the Page Input jack. Adjust the Page Input gain rear panel control to allow a 1W output level. Reference the dB meter to this output level.

**2.12** Change the input frequency to 40Hz. Verify that the output level is -3dBr +/- 1.

**2.13** Change the input frequency to 18kHz. Verify that the output level is -3dBr +/- 1.

**2.14** Turn off the signal generator output. Measure the noise level with a 20kHz filter and A-weighting. Verify that it is  $\leq 60$ dBV.

**2.15** Apply a -30dBV, 1kHz sine wave to the Aux Input jack located on the front panel. Reference the dB meter to this output level.

**2.16** Change the input frequency to 40Hz. Verify that the output level is -1dBr +/- 1.

**2.17** Change the input frequency to 18kHz. Verify that the output level is -1dBr +/- 1.

**2.18** Turn off the signal generator output. Measure the noise level with a 20kHz filter and A-weighting. Verify that it is  $\leq 65$ dBV.

## **3. Tone Control Frequency Response Tests**

**3.1** Set the front panel Treble and Bass controls to the 12 o'clock position. Set the front panel Input A / Input B switch to Input A.

**3.2** Apply a -30dBV, 7kHz sine wave to the input A RCA jacks. Adjust the Input A gain rear panel control to allow a 1W output level. Reference the dB meter to this output level.

# TEST PROCEDURES

**3.3** Rotate the Treble control fully CCW (counter-clockwise). Verify that the output level is -5 dBr, +/- 1.5.

**3.4** Rotate the Treble control fully CW (clockwise). Verify that the output level is +5dBr, +/- 1.5dBr.

**3.5** Apply a -30dBV, 100Hz sine wave to the input A RCA jacks. Adjust the Input A gain rear panel control to allow a 1W output level. Reference the dB meter to this output level.

**3.6** Rotate the Bass control fully CCW (counter-clockwise). Verify that the output level is -5 dBr, +/- 1.5.

**3.7** Rotate the Bass control fully CW (clockwise). Verify that the output level is +5dBr, +/- 1.5dBr.

## 4. Input Signal Clip Level Test

**4.1** Set the front panel Input A / Input B switch to Input A.

**4.2** Apply a -52dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.

**4.3** Verify that the Input Signal / Clip LED on the front panel is lit GREEN.

**4.4** Apply a -9dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.

**4.5** Verify that the Input Signal / Clip LED on the front panel is lit RED.

**4.6** Set the front panel Input A / Input B switch to Input B and repeat steps 4.2 to 4.5.

## 5. Output Signal Clip Level Test

**5.1** Set the front panel Input A / Input B switch to Input A.

**5.2** Apply a -49dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.

**5.3** Verify that the Output Signal / Clip LED on the front panel is lit GREEN.

**5.4** Apply a -11.0dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.

**5.5** Verify that the Output Signal / Clip LED on the front panel is lit RED.

**5.6** Set the front panel Input A / Input B switch to Input B and repeat steps 5.2 to 5.5.

## 6. Aux Output Tests

**6.1** Set the Input A/B switch to Input A. Apply a -12dBV, 1kHz sine wave to the input A RCA jacks. Adjust the Input A gain rear panel control to maximum.

**6.2** Verify that the output level at the Aux Output RCA jack is -3dBV +/- 1dBV.

**6.3** Using a 20Hz to 20kHz audio filter, measure the THD+N level. Verify that it is  $\leq 0.1\%$ .

# TEST PROCEDURES

**6.4** Reference a dB meter to the output level. Change the input frequency to 40Hz. Verify that the output level is -1dBr +/- 1dBr. Change the input frequency to 18kHz. Verify that the output level is -1dBr +/- 1dBr.

**6.5** Remove the input signal. Measure the output noise level using a 20kHz filter and A-weighting. Verify that it is  $\leq$  -88dBV.

## 7. Input Priority Test

**7.1** On the front panel, set the Input A / Input B select switch to Input A. On the rear panel, set the Aux Input dip switch to the ENABLED position.

**7.2** Apply an audio input to the Input A Euro block connector.

**7.3** While the audio from input A is playing, apply an audio input to the 1/8" Aux Input jack on the front panel. Verify that the audio input to the Input A Euro block connector is muted and that the audio input to the Aux Input jack is now heard instead.

**7.4** Remove the audio input to the Aux Input jack. Verify that the audio input to the Input A Euro block connector is now heard.

**7.5** Remove the audio inputs. Set the Page Mode dip switch on the rear panel to the DUCK position.

**7.6** Apply an audio input to the Input A Euro block connector. While the audio from input A is playing, apply an audio input to the Page Input Euro block connector on the rear panel. Verify that the audio input to the Input A Euro block connector is muted and that the audio input to the Page Input jack is now heard instead.

**7.7** Remove the audio input to the Aux Input jack. Verify that the audio input to the Input A Euro block connector is now heard.

**7.8** Remove the audio inputs. Set the Page Mode dip switch on the rear panel to the MIX position.

**7.9** Apply an audio input to the Input A Euro block connector. While the audio from input A is playing, apply an audio input to the Page Input Euro block connector on the rear panel. Verify that the audio input to the Input A Euro block connector and the audio input to the Page Input jack are now both heard together. Return all dip switches to the default positions.

## 8. Remote Control Test

**8.1** Connect a volume control with A/B Select User Interface (Bose® PC 041967) to the Remote Control input jack located on the rear panel. Set the A/B Select dip switch to the REMOTE position.

**8.2** Apply two different audio inputs to the Input A and Input B Euro block connectors.

**8.3** Verify that you can control the volume level as well as switch between the audio from Input A and Input B using the remote volume control with A/B switch, and that it overrides these controls on the amplifier chassis.

# TEST PROCEDURES

**8.4** Remove the audio inputs. Move the A/B Select dip switch to the FRONT position. Re-apply the audio inputs. Verify that the remote control is now inactive and that the controls on the amplifier chassis are now working again.

## **9. Mute Control Test**

**9.1** Connect a SPST toggle switch, or similar, to the MUTE input jack located on the rear panel.

**9.2** Set the Input A / Input B switch on the front panel to Input A. Apply an audio input to the Input A RCA jacks.

**9.3** While audio is playing, close the toggle switch. Verify that the audio output is now muted. Open the toggle switch.

**9.4** Remove the audio input to the Input A RCA jacks.

**9.5** Apply an audio input to the Aux Input jack located on the front panel. Close the toggle switch. Verify that the audio output is now muted.

## **10. Auto Standby Test**

**10.1** Set the Auto Standby dip switch to the ON position. Turn the power switch ON.

**10.2** With no input signal applied, verify that the amplifier goes into standby mode after twenty minutes. When the unit is in standby mode, the Power LED will be blinking blue. It is lit solid blue when the unit is in operate mode.

**Proceed to the Hi-Pot and Ground Bond tests on page 170. These are mandatory tests.**

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# TEST PROCEDURES

**1.10** Verify that the output level is 120W from both channels and that the THD+N is  $\leq 0.3\%$ .

## 2. Frequency Response and Output Noise Tests

**2.1** Set the front panel Input A/ Input B switch to Input A. Apply a -30dBV, 1kHz sine wave to the input A RCA jacks. Adjust the Input A gain rear panel control to allow a 1W output level. Reference the dB meter to this output level.

**2.2** Change the input frequency to 55Hz. Verify that the output level is -3dB  $\pm$  1.

**2.3** Change the input frequency to 18kHz. Verify that the output level is -2dB  $\pm$  1.

**2.4** Turn off the signal generator output. Measure the noise level with a 20kHz filter and A-weighting. Verify that it is  $\leq -51$ dBV.

**2.5** Repeat steps 2.1 to 2.4 for Input B.

**2.6** Set the front panel Input A/ Input B switch to Input A. Apply a -30dBV, 1kHz sine wave to the input A Euro block jacks. Adjust the Input A gain rear panel control to allow a 1W output level. Reference the dB meter to this output level.

**2.7** Change the input frequency to 55Hz. Verify that the output level is -3dB  $\pm$  1.

**2.8** Change the input frequency to 18kHz. Verify that the output level is -2dB  $\pm$  1.

**2.9** Turn off the signal generator output. Measure the noise level with a 20kHz filter and A-weighting. Verify that it is  $\leq -51$ dBV.

**2.10** Repeat steps 2.6 to 2.9 for Input B.

**2.11** Apply a -30dBV, 1kHz sine wave to the Page Input jack. Adjust the Page Input gain rear panel control to allow a 1W output level. Reference the dB meter to this output level.

**2.12** Change the input frequency to 55Hz. Verify that the output level is -5dB  $\pm$  1.

**2.13** Change the input frequency to 18kHz. Verify that the output level is -3.5dB  $\pm$  1.

**2.14** Turn off the signal generator output. Measure the noise level with a 20kHz filter and A-weighting. Verify that it is  $\leq -48$ dBV.

**2.15** Apply a -30dBV, 1kHz sine wave to the Aux Input jack located on the front panel. Reference the dB meter to this output level.

**2.16** Change the input frequency to 55Hz. Verify that the output level is -3dB  $\pm$  1.

**2.17** Change the input frequency to 18kHz. Verify that the output level is -2dB  $\pm$  1.

**2.18** Turn off the signal generator output. Measure the noise level with a 20kHz filter and A-weighting. Verify that it is  $\leq -51$ dBV.

# TEST PROCEDURES

## 3. Tone Control Frequency Response Tests

- 3.1 Set the front panel Treble and Bass controls to the 12 o'clock position. Set the front panel Input A / Input B switch to Input A.
- 3.2 Apply a -30dBV, 7kHz sine wave to the input A RCA jacks. Adjust the Input A gain rear panel control to allow a 1W output level. Reference the dB meter to this output level.
- 3.3 Rotate the Treble control fully CCW (counter-clockwise). Verify that the output level is -5 dBr, +/- 1.5.
- 3.4 Rotate the Treble control fully CW (clockwise). Verify that the output level is +5dBr, +/- 1.5dBr.
- 3.5 Apply a -30dBV, 100Hz sine wave to the input A RCA jacks. Adjust the Input A gain rear panel control to allow a 1W output level. Reference the dB meter to this output level.
- 3.6 Rotate the Bass control fully CCW (counter-clockwise). Verify that the output level is -5 dBr, +/- 1.5.
- 3.7 Rotate the Bass control fully CW (clockwise). Verify that the output level is +5dBr, +/- 1.5dBr.

## 4. Input Signal Clip Level Test

- 4.1 Set the front panel Input A / Input B switch to Input A.
- 4.2 Apply a -52dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.
- 4.3 Verify that the Input Signal / Clip LED on the front panel is lit GREEN.
- 4.4 Apply a -9dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.
- 4.5 Verify that the Input Signal / Clip LED on the front panel is lit RED.
- 4.6 Set the front panel Input A / Input B switch to Input B and repeat steps 4.2 to 4.5.

## 5. Output Signal Clip Level Test

- 5.1 Set the front panel Input A / Input B switch to Input A.
- 5.2 Apply a -11.0dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.
- 5.3 Verify that the Output Signal / Clip LED on the front panel is lit GREEN.
- 5.4 Apply a -49.0dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.
- 5.5 Verify that the Output Signal / Clip LED on the front panel is lit RED.
- 5.6 Set the front panel Input A / Input B switch to Input B and repeat steps 5.2 to 5.5.

# TEST PROCEDURES

## 100V Output Mode with 83 Ohm Loads

### 6. Input Sensitivity and THD+N Tests

- On the rear panel, set the 70V / 100V switch to 100V

**6.1** Set the front panel Input A / Input B switch to Input A. Apply a -10dBV +/- 2dBV, 1kHz sine wave to the input A RCA input jacks.

**6.2** Verify that the output level is 120W from both channels and that the THD+N is  $\leq 0.3\%$ .

**6.3** Repeat steps 6.1 and 6.2 for the Input B RCA jacks.

### 7. Frequency Response and Output Noise Tests

**7.1** Set the front panel Input A / Input B switch to Input A. Apply a -30dBV, 1kHz sine wave to the input A RCA jacks. Adjust the Input A gain rear panel control to allow a 1W output level. Reference the dB meter to this output level.

**7.2** Change the input frequency to 55Hz. Verify that the output level is -3dB +/- 1.

**7.3** Change the input frequency to 18kHz. Verify that the output level is -2dB +/- 1.

**7.4** Turn off the signal generator output. Measure the noise level with a 20kHz filter and A-weighting. Verify that it is  $\leq -48$ dBV.

**7.5** Repeat steps 7.1 to 7.4 for Input B.

### 8. Output Signal Clip Level Test

**8.1** Set the front panel Input A / Input B switch to Input A.

**8.2** Apply a -11.0dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.

**8.3** Verify that the Output Signal / Clip LED on the front panel is lit GREEN.

**8.4** Apply a -49.0dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.

**8.5** Verify that the Output Signal / Clip LED on the front panel is lit RED.

**8.6** Set the front panel Input A / Input B switch to Input B and repeat steps 8.2 to 8.5.

### 9. Aux Output Tests

**9.1** Set the Input A/B switch to Input A. Apply a -12dBV, 1kHz sine wave to the input A RCA jacks. Adjust the Input A gain rear panel control to maximum.

**9.2** Verify that the output level at the Aux Output RCA jack is -3dBV +/- 1dBV.

**9.3** Using a 20Hz to 20kHz audio filter, measure the THD+N level. Verify that it is  $\leq 0.1\%$ .

# TEST PROCEDURES

**9.4** Reference a dB meter to the output level. Change the input frequency to 55Hz. Verify that the output level is -1dBr +/- 1dBr. Change the input frequency to 18kHz. Verify that the output level is -1dBr +/- 1dBr.

**9.5** Remove the input signal. Measure the output noise level using a 20kHz filter and A-weighting. Verify that it is  $\leq -88$ dBV.

## 10. Input Priority Test

**10.1** On the front panel, set the Input A / Input B select switch to Input A. On the rear panel, set the Aux Input dip switch to the ENABLED position.

**10.2** Apply an audio input to the Input A Euro block connector.

**10.3** While the audio from input A is playing, apply an audio input to the 1/8" Aux Input jack on the front panel. Verify that the audio input to the Input A Euro block connector is muted and that the audio input to the Aux Input jack is now heard instead.

**10.4** Remove the audio input to the Aux Input jack. Verify that the audio input to the Input A Euro block connector is now heard.

**10.5** Remove the audio inputs. Set the Page Mode dip switch on the rear panel to the DUCK position.

**10.6** Apply an audio input to the Input A Euro block connector. While the audio from input A is playing, apply an audio input to the Page Input Euro block connector on the rear panel. Verify that the audio input to the Input A Euro block connector is muted and that the audio input to the Page Input jack is now heard instead.

**10.7** Remove the audio input to the Aux Input jack. Verify that the audio input to the Input A Euro block connector is now heard.

**10.8** Remove the audio inputs. Set the Page Mode dip switch on the rear panel to the MIX position.

**10.9** Apply an audio input to the Input A Euro block connector. While the audio from input A is playing, apply an audio input to the Page Input Euro block connector on the rear panel. Verify that the audio input to the Input A Euro block connector and the audio input to the Page Input jack are now both heard together. Return all dip switches to the default positions.

## 11. Remote Control Test

**11.1** Connect a volume control with A/B Select User Interface (Bose® PC 041967) to the Remote Control input jack located on the rear panel. Set the A/B Select dip switch to the REMOTE position.

**11.2** Apply two different audio inputs to the Input A and Input B Euro block connectors.

**11.3** Verify that you can control the volume level as well as switch between the audio from Input A and Input B using the remote volume control with A/B switch, and that it overrides these controls on the amplifier chassis.

# TEST PROCEDURES

**11.4** Remove the audio inputs. Move the A/B Select dip switch to the FRONT position. Re-apply the audio inputs. Verify that the remote control is now inactive and that the controls on the amplifier chassis are now working again.

## **12. Mute Control Test**

**12.1** Connect a SPST toggle switch, or similar, to the MUTE input jack located on the rear panel.

**12.2** Set the Input A/ Input B switch on the front panel to Input A. Apply an audio input to the Input A RCA jacks.

**12.3** While audio is playing, close the toggle switch. Verify that the audio output is now muted. Open the toggle switch.

**12.4** Remove the audio input to the Input A RCA jacks.

**12.5** Apply an audio input to the Aux Input jack located on the front panel. Close the toggle switch. Verify that the audio output is now muted.

## **13. Auto Standby Test**

**13.1** Set the Auto Standby dip switch to the ON position. Turn the power switch ON.

**13.2** With no input signal applied, verify that the amplifier goes into standby mode after twenty minutes. When the unit is in standby mode, the Power LED will be blinking blue. It is lit solid blue when the unit is in operate mode.

**Proceed to the Hi-Pot and Ground Bond tests on page 170. These are mandatory tests.**

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# TEST PROCEDURES

## ZA 2120-LZ Amplifier Tests

### Required Equipment:

- Audio Precision ATS-1 or equivalent
- Audio Precision AUX-0025 digital filter or equivalent
- Bose® Volume Control User Interface (PC 041966)
- 2- 4 ohm, 250 Watt load resistors

### Test Setup

- Output mode set to stereo, unless otherwise specified.
- Load 4 ohms.
- Auto standby switch set to “OFF”
- Output gain trim set to max.
- All measurements for power amp needs to use an AUX-0025 Filter.

### 1. Output Gain Test

- 1.1 Place the Mono / Stereo output switch to the Stereo position.
- 1.2 Apply a 1kHz, 1.0dBV sine wave to the RCA input jacks.
- 1.3 Measure the output level. Verify that it is +26.8dBV +/- 0.5 dBV.
- 1.4 Place the Mono / Stereo output switch to the Mono position.
- 1.5 Apply a 1kHz, -5.0dBV sine wave to the RCA input jacks.
- 1.6 Measure the output level. Verify that it is +26.8dBV +/- 0.5 dBV.
- 1.7 Measure the THD+N level. Verify that it is  $\leq 0.5\%$ .

### 2. Frequency Response Test

- 2.1 Apply a -21dBV, 1kHz sine wave to the RCA input jacks. Adjust the signal input level to provide a 1W output across the 4 ohm loads. Reference a dB meter to this output level.
- 2.2 Change the input frequency to 40Hz. Measure the output level. Verify that it is -1dBr +/- 1dBr.
- 2.3 Change the input frequency to 18kHz. Measure the output level. Verify that it is -1dBr +/- 1dBr.

### 3. Signal to Noise Test

- 3.1 Apply a -1.0dBV, 1kHz sine wave to the input RCA jacks. Verify that you have a 120W output from both channels.
- 3.2 Measure the signal-to-noise level, using a 20kHz filter and A-weighting. Verify that it is  $\geq 88$ dBV.



# TEST PROCEDURES

## 4. Input Signal Clip Level Test

- 4.1 Apply a -36dBV +/- 3.5dBV, 1kHz sine wave to the RCA input jacks.
- 4.2 Verify that the Input Signal / Clip LED on the front panel is lit GREEN.
- 4.3 Apply a +10dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.
- 4.4 Verify that the Input Signal / Clip LED on the front panel is lit RED.

## 5. Output Signal Clip Level Test

- 5.1 Apply a -33dBV +/- 2.5dBV, 1kHz sine wave to the RCA input jacks.
- 5.2 Verify that the Output Signal / Clip LED on the front panel is lit GREEN.
- 5.3 Apply a +14.8dBV +/- 2.5dBV, 1kHz sine wave to the RCA input jacks.
- 5.4 Verify that the Output Signal / Clip LED on the front panel is lit RED.

## 6. Remote Control Test

- 6.1 Connect a volume control with A/B Select User Interface (Bose® PC 041967) to the Remote Control input jack located on the rear panel. Set the A/B Select dip switch to the REMOTE position.
- 6.2 Apply two different audio inputs to the Input A and Input B Euro block connectors.
- 6.3 Verify that you can control the volume level as well as switch between the audio from Input A and Input B using the remote volume control with A/B switch, and that it overrides these controls on the amplifier chassis.
- 6.4 Remove the audio inputs. Move the A/B Select dip switch to the FRONT position. Re-apply the audio inputs. Verify that the remote control is now inactive and that the controls on the amplifier chassis are now working again.

## 7. Mute Control Test

- 7.1 Connect a SPST toggle switch, or similar, to the MUTE input jack located on the rear panel.
- 7.2 Set the Input A / Input B switch on the front panel to Input A. Apply an audio input to the Input A RCA jacks.
- 7.3 While audio is playing, close the toggle switch. Verify that the audio output is now muted. Open the toggle switch.
- 7.4 Remove the audio input to the Input A RCA jacks.
- 12.5 Apply an audio input to the Aux Input jack located on the front panel. Close the toggle switch. Verify that the audio output is now muted.

# TEST PROCEDURES

## 13. Auto Standby Test

**13.1** Set the Auto Standby dip switch to the ON position. Turn the power switch ON.

**13.2** With no input signal applied, verify that the amplifier goes into standby mode after twenty minutes. When the unit is in standby mode, the Power LED will be blinking blue. It is lit solid blue when the unit is in operate mode.

**Proceed to the Hi-Pot and Ground Bond tests on page 170. These are mandatory tests.**

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# TEST PROCEDURES

## ZA 2120-HZ Amplifier Tests

### Required Equipment:

- Audio Precision ATS-1 or equivalent
- Audio Precision AUX-0025 digital filter or equivalent
- Bose® Volume Control User Interface (PC 041966)
- 2 - 42 ohm (for 70V units) or 83 ohm (for 100V units), 250 Watt load resistors

### Test Setup

- Output gain trim set to max.
- Output mode set to "DUAL", unless otherwise specified.
- Load 42 ohms/ch for 70V and 83 ohms/ch for 100V output.
- Auto standby switch set to "OFF"
- All measure including power amp needs add an AUX-0025 Filter.

### 70V Output Mode Tests

- Set the 70V / 100V output switch to 70V output.
- Connect the amplifier outputs to 42 ohm, 250W loads.

#### 1. Output Gain Test

- 1.1 Place the Input Mode switch to the Dual position.
- 1.2 Apply a 1kHz, -2.5dBV sine wave to the RCA input jacks.
- 1.3 Measure the output level. Verify that it is +37.0dBV +/- 0.5 dBV.
- 1.4 Measure the THD+N level. Verify that it is  $\leq 0.3\%$ .

#### 2. Frequency Response Test

- 2.1 Apply a -23dBV, 1kHz sine wave to the RCA input jacks. Adjust the signal input level to provide a 1W output across the 42 ohm loads. Reference a dB meter to this output level.
- 2.2 Change the input frequency to 55Hz. Measure the output level. Verify that it is -3dBr +/- 1dBr.
- 2.3 Change the input frequency to 18kHz. Measure the output level. Verify that it is -1.5dBr +/- 1dBr.

#### 3. Signal to Noise Test

- 3.1 Apply a -2.5dbV, 1kHz sine wave to the input RCA jacks. Verify that you have a 120W output from both channels.
- 3.2 Measure the signal-to-noise level, using a 20kHz filter and A-weighting. Verify that it is  $\geq 88$ dBV.

# TEST PROCEDURES

## 4. Input Signal Clip Level Test

- 4.1 Apply a -36dBV +/- 3.5dBV, 1kHz sine wave to the RCA input jacks.
- 4.2 Verify that the Input Signal / Clip LED on the front panel is lit GREEN.
- 4.3 Apply a +10dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.
- 4.4 Verify that the Input Signal / Clip LED on the front panel is lit RED.

## 5. Output Signal Clip Level Test

- 5.1 Apply a +1.5dBV +/- 2.5dBV, 1kHz sine wave to the RCA input jacks.
- 5.2 Verify that the Output Signal / Clip LED on the front panel is lit GREEN.
- 5.3 Apply a +35.0dBV +/- 2.5dBV, 1kHz sine wave to the RCA input jacks.
- 5.4 Verify that the Output Signal / Clip LED on the front panel is lit RED.

## 100V Output Mode Tests

- Set the 70V / 100V output switch to 100V output.
- Connect the amplifier outputs to 83 ohm, 250W loads.

## 1. Output Gain Test

- 1.1 Place the Input Mode switch to the Dual position.
- 1.2 Apply a 1kHz, 0.5dBV sine wave to the RCA input jacks.
- 1.3 Measure the output level. Verify that it is +40.0dBV +/- 0.5 dBV.
- 1.4 Measure the THD+N level. Verify that it is  $\leq 0.3\%$ .

## 2. Frequency Response Test

- 2.1 Apply a -20dBV, 1kHz sine wave to the RCA input jacks. Adjust the signal input level to provide a 1W output across the 42 ohm loads. Reference a dB meter to this output level.
- 2.2 Change the input frequency to 55Hz. Measure the output level. Verify that it is -3dBr +/- 1dBr.
- 2.3 Change the input frequency to 18kHz. Measure the output level. Verify that it is -1.5dBr +/- 1dBr.

## 3. Signal to Noise Test

- 3.1 Apply a 0.5dBV, 1kHz sine wave to the input RCA jacks. Verify that you have a 120W output from both channels.

# TEST PROCEDURES

**3.2** Measure the signal-to-noise level, using a 20kHz filter and A-weighting. Verify that it is  $\geq 88\text{dBV}$ .

## 4. Input Signal Clip Level Test

**4.1** Apply a  $-36\text{dBV} \pm 3.5\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

**4.2** Verify that the Input Signal / Clip LED on the front panel is lit GREEN.

**4.3** Apply a  $+10\text{dBV} \pm 2\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

**4.4** Verify that the Input Signal / Clip LED on the front panel is lit RED.

## 5. Output Signal Clip Level Test

**5.1** Apply a  $+4.5\text{dBV} \pm 2.5\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

**5.2** Verify that the Output Signal / Clip LED on the front panel is lit GREEN.

**5.3** Apply a  $+38.0\text{dBV} \pm 2.5\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

**5.4** Verify that the Output Signal / Clip LED on the front panel is lit RED.

## 6. Remote Control Test

**6.1** Connect a Bose® Volume Control User Interface (PC 041966) to the Remote Control input jack located on the rear panel. Set the Remote 1 control switch on the rear panel to Zone 1+2.

**6.2** Apply an audio input to the RCA input jacks.

**6.3** Verify that you can control the volume level of the audio outputs.

## 7. Mute Control Test

**7.1** Connect a SPST toggle switch, or similar, to the MUTE input jack located on the rear panel.

**7.2** Apply an audio input to the Input RCA jacks.

**7.3** While audio is playing, close the toggle switch. Verify that the audio output is now muted. Open the toggle switch.

## 8. Auto Standby Test

**8.1** Set the Auto Standby switch to the ON position. Turn the power switch ON.

**8.2** With no input signal applied, verify that the amplifier goes into standby mode after twenty minutes. When the unit is in standby mode, the Power LED will be blinking blue. It is lit solid blue when the unit is in operate mode.

**Proceed to the Hi-Pot and Ground Bond tests on page 170. These are mandatory tests.**

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# TEST PROCEDURES

## ZA 2120-LZA (AmpLink version) Amplifier Tests

### Required Equipment:

- Audio Precision ATS-1 or equivalent
- Audio Precision AUX-0025 digital filter or equivalent
- Windows® PC with Bose® ControlSpace® Designer version 5.0 or greater installed
- Bose ControlCenter CC-1, part number 768932-0110 or similar
- 2- 4 ohm, 150 Watt load resistors
- Bose ControlSpace ESP-880 digital processor or other AmpLink source, i.e. CS EX-1280C

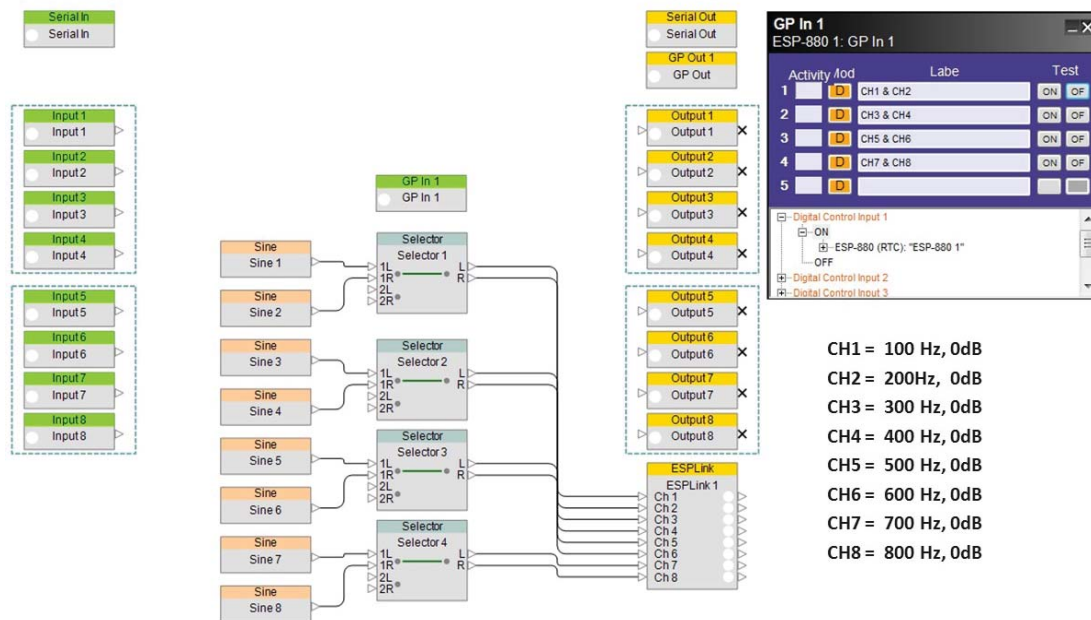
### UUT Switch Settings

- Input select set to Analog
- Output mode set to stereo, unless otherwise specified
- Auto standby switch set to "OFF"
- Output gain trim set to max
- Load 4 ohms/150W

**Note:** All measurements for power amp require a AUX-0025 Digital Filter (or equivalent) with a 20Hz-20kHz filter in order to get the correct output noise and level readings.

### AmpLink Test Setup

1. Open the ControlSpace Designer software. Configure the ESP-880 (or similar) as an AmpLink signal source. Refer to the diagram below.

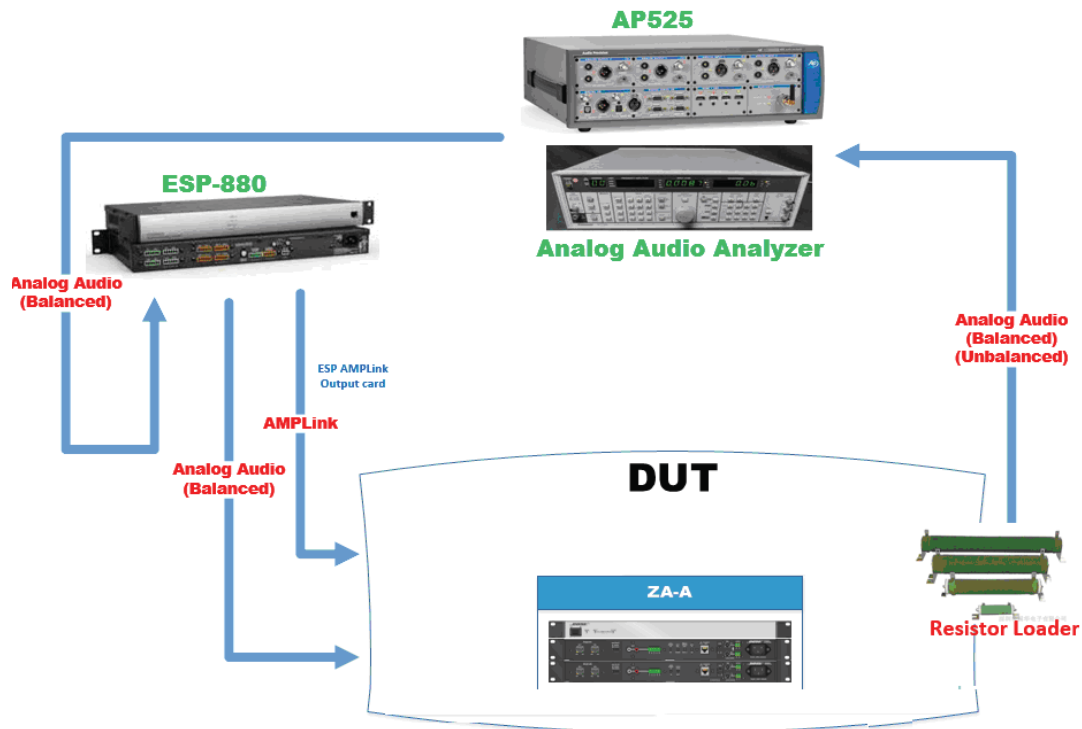


ESP-880 in ControlSpace Designer window - Open CSD and double-click to view.



# TEST PROCEDURES

2. Set up the unit under test (UUT) as shown in the below diagram.



## 1. Output Gain Test

- 1.1 Place the Mono / Stereo output switch to the Stereo position.
- 1.2 Apply a 1kHz, 0dBV sine wave to the RCA input jacks.
- 1.3 Measure the output level. Verify that it is +26.8dBV +/- 0.5 dBV.
- 1.4 Place the Mono / Stereo output switch to the Mono position.
- 1.5 Apply a 1kHz, -6.0dBV sine wave to the RCA input jacks.
- 1.6 Measure the output level. Verify that it is +26.8dBV +/- 0.5 dBV.
- 1.7 Measure the THD+N level. Verify that it is  $\leq 0.5\%$ .

## 2. Frequency Response Test

- 2.1 Apply a -21dBV, 1kHz sine wave to the RCA input jacks. Adjust the signal input level to provide a 1W output across the 4 ohm loads. Reference a dB meter to this output level.
- 2.2 Change the input frequency to 40Hz. Measure the output level. Verify that it is -1dB +/- 1dB.
- 2.3 Change the input frequency to 18kHz. Measure the output level. Verify that it is -1dB +/- 1dB.

# TEST PROCEDURES

## 3. Signal to Noise Test

3.1 Apply a -1.0dBV, 1kHz sine wave to the input RCA jacks. Verify that you have a 120W output from both channels.

3.2 Measure the signal-to-noise level, using a 20kHz filter and A-weighting. Verify that it is  $\geq 88$ dBV.

## 4. Input Signal Clip Level Test

4.1 Apply a -37dBV +/- 3.5dBV, 1kHz sine wave to the RCA input jacks.

4.2 Verify that the Input Signal / Clip LED on the front panel is lit GREEN.

4.3 Apply a +10dBV +/- 2dBV, 1kHz sine wave to the RCA input jacks.

4.4 Verify that the Input Signal / Clip LED on the front panel is lit RED.

## 5. Output Signal Clip Level Test

5.1 Apply a -8.5dBV +/- 2.5dBV, 1kHz sine wave to the RCA input jacks.

5.2 Verify that the Output Signal / Clip LED on the front panel is lit GREEN.

5.3 Apply a +24.8dBV +/- 2.5dBV, 1kHz sine wave to the RCA input jacks.

5.4 Verify that the Output Signal / Clip LED on the front panel is lit RED.

## 6. AmpLink Output Level Test using a 4 ohm load

6.1 Using the ControlSpace ESP-880 (or similar) as an AmpLink signal source, set the output of the ESP-880 to supply a 1kHz, 0dB signal.

6.2 Verify that the output level from the amplifier is  $7.6\text{dBV} \pm 0.1\text{dBV}$ .

## 7. AmpLink THD+N Test

7.1 Set the ESP-880 output level to get a 120W per channel output at 1kHz from the amplifier.

7.2 Measure the THD+N level. Verify that it is  $\leq 0.5\%$ .

## 8. Output Noise Test

8.1 Using an Audio Precision AUX-0025 digital filter (or equivalent) with a 20kHz filter and A-weighting, measure the output noise level at the amplifier's output jacks. Verify that it is  $< 60$ dBV.

## 9. Remote Control Test

9.1 Connect a Bose CC-1 controller (P/N: 768932-0110) to the ControlCenter jack located on the rear panel.

# TEST PROCEDURES

**9.2** Apply two different audio inputs to the Input A and Input B Euro block connectors.

**9.3** Verify that you can control the volume level as well as switch between the audio from Input A and Input B using the remote volume control with A/B switch, and that it overrides these controls on the amplifier chassis.

**9.4** Remove the audio inputs. Move the A/B Select dip switch to the FRONT position. Re-apply the audio inputs. Verify that the remote control is now inactive and that the controls on the amplifier chassis are now working again.

## 10. Mute Control Test

**10.1** Connect a SPST toggle switch, or similar, to the MUTE input jack located on the rear panel.

**10.2** Set the Input A / Input B switch on the front panel to Input A. Apply an audio input to the Input A RCA jacks.

**10.3** While audio is playing, close the toggle switch. Verify that the audio output is now muted. Open the toggle switch.

**10.4** Remove the audio input to the Input A RCA jacks.

**10.5** Apply an audio input to the Aux Input jack located on the front panel. Close the toggle switch. Verify that the audio output is now muted.

## 11. Auto Standby Test

**11.1** Set the Auto Standby dip switch to the ON position. Turn the power switch ON.

**11.2** With no input signal applied, verify that the amplifier goes into standby mode after twenty minutes. When the unit is in standby mode, the Power LED will be blinking blue. It is lit solid blue when the unit is in operate mode.

**Proceed to the Hi-Pot and Ground Bond tests on page 170. These are mandatory tests.**

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# TEST PROCEDURES

## ZA 2120-HZA (AmpLink version) Amplifier Tests

### Required Equipment:

- Audio Precision ATS-1 or equivalent
- Audio Precision AUX-0025 digital filter or equivalent
- Windows® PC with Bose® ControlSpace® Designer version 5.0 or greater installed
- Bose ControlCenter CC-1, part number 768932-0110 or similar
- 2 - 42 ohm (for 70V units) or 83 ohm (for 100V units), 250 Watt load resistors
- Bose ControlSpace ESP-880 digital processor or other AmpLink source, i.e. CS EX-1280C

### Test Setup

- Output gain trim set to max.
- Output mode set to “DUAL”, unless otherwise specified.
- Load 42 ohms/ch for 70V and 83 ohms/ch for 100V output.
- Auto standby switch set to “OFF”

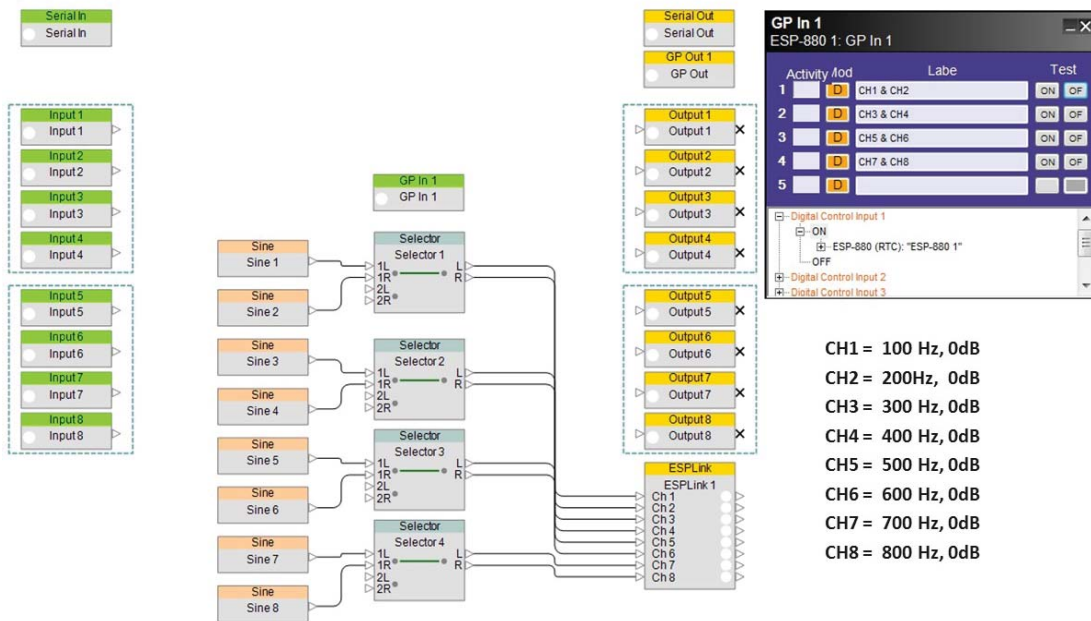
**Note:** All measurements for power amp require a AUX-0025 Digital Filter (or equivalent) with a 20Hz-20kHz filter in order to get the correct output noise and level readings.

### 70V Output Mode Tests

- Set the 70V / 100V output switch to 70V output.
- Connect the amplifier outputs to 42 ohm, 250W loads.

### AmpLink Test Setup

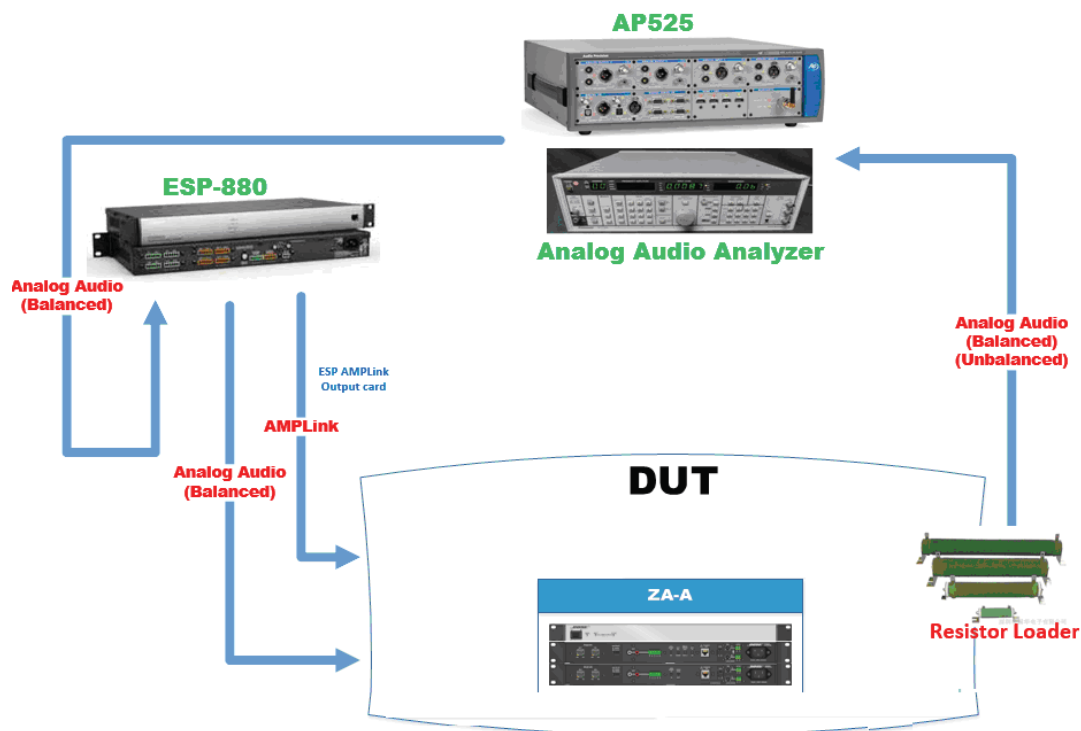
1. Open the ControlSpace Designer software. Configure the ESP-880 (or similar) as an AmpLink signal source. Refer to the diagram below.



ESP-880 in ControlSpace Designer window - Open CSD and double-click to view.

# TEST PROCEDURES

2. Set up the unit under test (UUT) as shown in the below diagram.



## 1. Output Gain Test

- 1.1 Place the Input Mode switch to the Dual position.
- 1.2 Apply a 1kHz, 0dBV sine wave to the RCA input jacks.
- 1.3 Measure the output level. Verify that it is +37.0dBV +/- 0.5 dBV.
- 1.4 Measure the THD+N level. Verify that it is  $\leq 0.3\%$ .

## 2. Frequency Response Test

- 2.1 Apply a -23dBV, 1kHz sine wave to the RCA input jacks. Adjust the signal input level to provide a 1W output across the 42 ohm loads. Reference a dB meter to this output level.
- 2.2 Change the input frequency to 55Hz. Measure the output level. Verify that it is -3dB +/- 1dB.
- 2.3 Change the input frequency to 18kHz. Measure the output level. Verify that it is 1.5dB +/- 1dB.

## 3. Signal to Noise Test

- 3.1 Apply a -2.5dBV, 1kHz sine wave to the input RCA jacks. Verify that you have a 120W output from both channels.

# TEST PROCEDURES

**3.2** Measure the signal-to-noise level, using a 20kHz filter and A-weighting. Verify that it is  $\geq 88\text{dBV}$ .

## **4. Input Signal Clip Level Test**

**4.1** Apply a  $-37\text{dBV} \pm 3.5\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

**4.2** Verify that the Input Signal / Clip LED on the front panel is lit GREEN.

**4.3** Apply a  $+10\text{dBV} \pm 2\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

**4.4** Verify that the Input Signal / Clip LED on the front panel is lit RED.

## **5. Output Signal Clip Level Test**

**5.1** Apply a  $+1.5\text{dBV} \pm 2.5\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

**5.2** Verify that the Output Signal / Clip LED on the front panel is lit GREEN.

**5.3** Apply a  $+35.0\text{dBV} \pm 2.5\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

**5.4** Verify that the Output Signal / Clip LED on the front panel is lit RED.

## **6. AmpLink Output Level Test in 70 Volt Mode using a 42 ohm load**

**6.1** Using the ControlSpace ESP-880 (or similar) as an AmpLink signal source, set the output of the ESP-880 to supply a 1kHz, 0dB signal.

**6.2** Verify that the output level from the amplifier is  $17.6\text{dBV} \pm 1\text{dBV}$ .

## **7. AmpLink THD+N Test**

**7.1** Set the ESP-880 output level to get a 120W per channel output at 1kHz from the amplifier.

**7.2** Measure the THD+N level. Verify that it is  $\leq 0.5\%$ .

## **8. Output Noise Test**

**8.1** Using an Audio Precision AUX-0025 digital filter (or equivalent) with a 20kHz filter and A-weighting, measure the output noise level at the amplifier's output jacks. Verify that it is  $< -52\text{dBV}$ .

## **9. Remote Control Test**

**9.1** Connect a Bose CC-1 controller (P/N: 768932-0110) to the ControlCenter jack located on the rear panel.

**9.2** Apply an audio input to the RCA input jacks.

**9.3** Verify that you can control the volume level of the audio outputs.



# TEST PROCEDURES

## 10. Mute Control Test

10.1 Connect a SPST toggle switch, or similar, to the MUTE input jack located on the rear panel.

10.2 Apply an audio input to the Input RCA jacks.

10.3 While audio is playing, close the toggle switch. Verify that the audio output is now muted. Open the toggle switch.

## 11. Auto Standby Test

11.1 Set the Auto Standby switch to the ON position. Turn the power switch ON.

11.2 With no input signal applied, verify that the amplifier goes into standby mode after twenty minutes. When the unit is in standby mode, the Power LED will be blinking blue. It is lit solid blue when the unit is in operate mode.

3.2 Measure the signal-to-noise level, using a 20kHz filter and A-weighting. Verify that it is  $\geq 88\text{dBV}$ .

## 4. Input Signal Clip Level Test

4.1 Apply a  $-36\text{dBV} \pm 3.5\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

4.2 Verify that the Input Signal / Clip LED on the front panel is lit GREEN.

4.3 Apply a  $+10\text{dBV} \pm 2\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

4.4 Verify that the Input Signal / Clip LED on the front panel is lit RED.

## 5. Output Signal Clip Level Test

5.1 Apply a  $+1.5\text{dBV} \pm 2.5\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

5.2 Verify that the Output Signal / Clip LED on the front panel is lit GREEN.

5.3 Apply a  $+35.0\text{dBV} \pm 2.5\text{dBV}$ , 1kHz sine wave to the RCA input jacks.

5.4 Verify that the Output Signal / Clip LED on the front panel is lit RED.

## 100V Output Mode Tests

- Set the 70V / 100V output switch to 100V output.
- Connect the amplifier outputs to 83 ohm, 250W loads.

## 1. Output Gain Test

1.1 Place the Input Mode switch to the Dual position.

1.2 Apply a 1kHz, 0.5dBV sine wave to the RCA input jacks.

# TEST PROCEDURES

**1.3** Measure the output level. Verify that it is +40.0dBV +/- 0.5 dBV.

**1.4** Measure the THD+N level. Verify that it is  $\leq 0.3\%$ .

## **2. Frequency Response Test**

**2.1** Apply a -20dBV, 1kHz sine wave to the RCA input jacks. Adjust the signal input level to provide a 1W output across the 42 ohm loads. Reference a dB meter to this output level.

**2.2** Change the input frequency to 55Hz. Measure the output level. Verify that it is -3dBr +/- 1dBr.

**2.3** Change the input frequency to 18kHz. Measure the output level. Verify that it is -1.5dBr +/- 1dBr.

## **3. Signal to Noise Test**

**3.1** Apply a 0.5dbV, 1kHz sine wave to the input RCA jacks. Verify that you have a 120W output from both channels.

**Proceed to the Hi-Pot and Ground Bond tests on page 170. These are mandatory tests.**

----->

# TEST PROCEDURES

## Hi-Pot Test

### **THIS IS A MANDATORY TEST**

**Note:** If an the unit under test requires disassembly as part of the repair, it **MUST** be Hi-Pot tested before being returned to the customer to ensure that there is no potential shock hazard. This test requires a Hi-Pot tester with a ground bond attachment to perform this test.

Connections:

The Hi-Pot tester connects to the unit under test (UUT) by means of a wiring harness. The AC line cord of the UUT plugs into the Hi-Pot tester AC adapter box. The return line connects to all output connectors.

### **Hi-Pot Tester Settings:**

#### **AC Input to Earthed Parts**

All units - 1500 VAC, rise time = 1 sec., dwell = 3 seconds, current limit = 5.0 mA

- Connect the AC mains cord to loudspeaker under test. Plug the other end of the AC cord into the Hi-Pot tester AC adapter box. The AC adapter box connects to the High Voltage (HV) connection on the Hi-Pot tester.
- Connect the Hi-Pot tester RETURN line to a ground point on the chassis.
- With the tester set to the above parameters, perform the test. If the unit fails, troubleshoot it and repair the problem. If it passes this portion of the test, proceed to the below test.

#### **AC Input to Output Connectors**

All units - 2500 VAC, rise time = 1 sec., dwell = 3 seconds, current limit = 5.0 mA

- Connect the AC mains cord to loudspeaker under test. Plug the other end of the AC cord into the Hi-Pot tester AC adapter box. The AC adapter box connects to the High Voltage (HV) connection on the Hi-Pot tester.
- Connect the Hi-Pot tester RETURN line to all output connectors.
- With the tester set to the above parameters, perform the test. If the unit fails, troubleshoot it and repair the problem. Once the unit is repaired, repeat the Hi-Pot and the ground bond test to ensure the unit is safe to return to the customer.

## **Ground Bond Test**

**Note:** This test only needs to be performed if the chassis ground wire from the AC IEC connector to the inside of the chassis of the unit has been removed or disturbed as part of a repair. If it has not, this test does not need to be performed. This test measures current handling capability between the ground blade on the AC inlet or mains plug and the earth bond point on the chassis of the unit.

### **Ground Bond Tester Settings:**

10A, < 12VAC open circuit, < 0.1 Ohms from AC earth terminal on IEC connector in chassis, to earth bond point on rear of chassis. Test duration = 3 seconds.

- Connect the AC mains cord to the back of the amplifier under test. Plug the other end of the AC cord into the ground bond test box.
- With the tester set to the above parameters, perform the test. If the unit fails, remove the top cover and repair the problem. Once the unit is repaired, repeat the Hi-Pot and the ground bond tests to ensure the unit is safe to return to the customer.

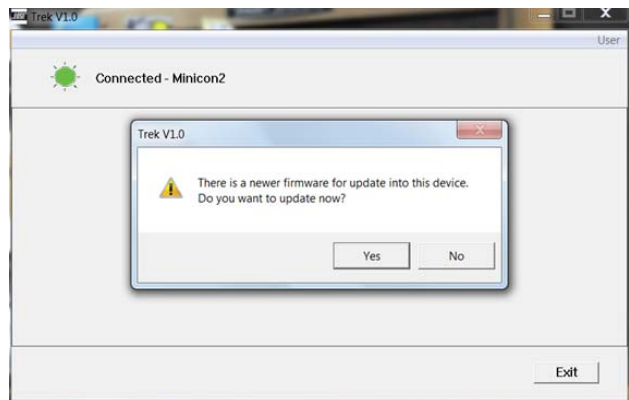
# SOFTWARE UPDATE PROCEDURES

This update procedure uses a Trek update program for the IZA amplifier family.

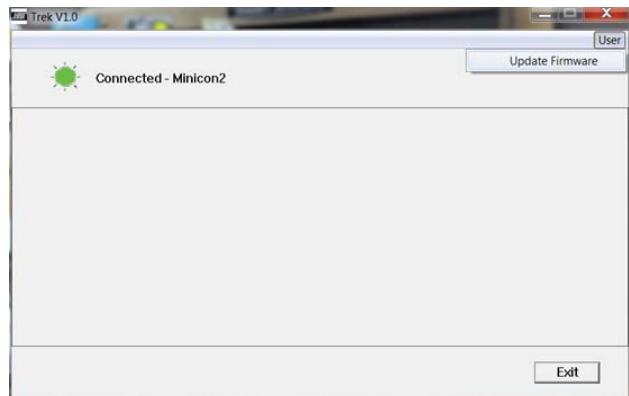
**Step 1:** Download the Trek updater program from the IZA/ZA 2120-HZ/LZ product page on the Bose Service web site at <http://intranet.bose.com/tsg> or <http://serviceops.bose.com>. Install the program by double-clicking on the Trek V1.0.exe file. After installing the Trek program, start the application by opening **Trek V1.0.exe**. Connect the IZA 2120 to the computer using a standard USB A to B cable.



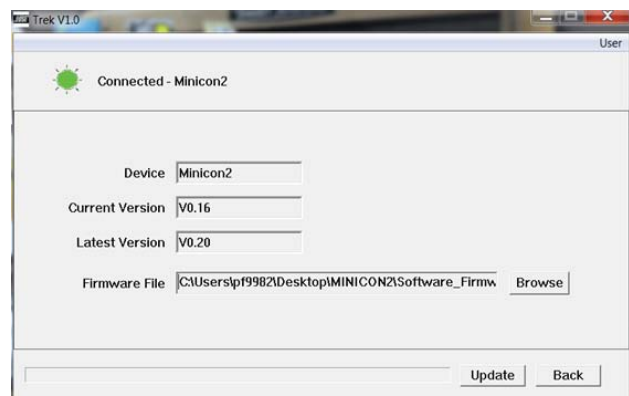
**Step 2:** Turn on power the IZA 2120 and make sure it connects to the Trek program. The program should detect that the firmware needs to be updated. Click on the “Yes” button to continue.



**Step 3:** If the last step was successful you can move on to step 4, but if the program does not detect that the amplifier requires an update or if the user wants to load an older version of code, click on the “User” button and select “Update Firmware” to proceed to the next window.

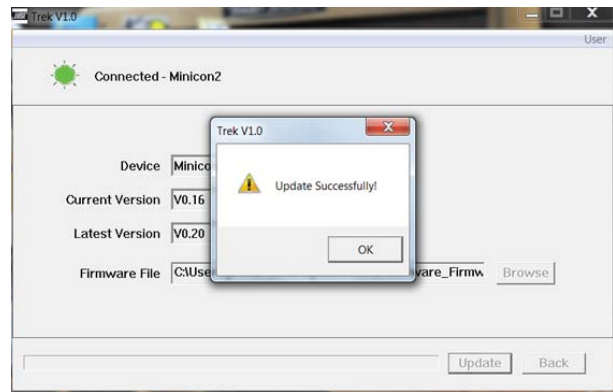


**Step 4:** The version of code that was released at SOP is **MiniCon MCU+DSP V0.22.bin**. If a different version is desired the user would click the “Browse” button and search and select the file version as you would with any typical windows program. Once the file is selected click the “Update” button to start the update.



# SOFTWARE UPDATE PROCEDURES

**Step 5:** When the update is complete, click the “OK” button.

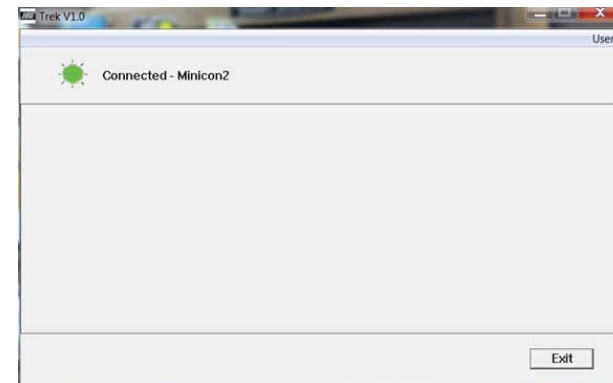


**Step 6:** The amplifier will reset itself.



**Step 7:** The installation is complete when the Trek program gets back to the connected screen. The user can now unplug the USB cable and the IZA 2120 is ready to use. There is no need to power cycle the amplifier.

**End of Update Procedure**



## SERVICE MANUAL REVISION HISTORY

<b>Date</b>	<b>Revision Level</b>	<b>Description of Change</b>	<b>Change Driven By</b>	<b>Pages Affected</b>
10/15	00	Document released at revision 00.	Service manual release	All
7/16	01	- Packing and Main parts list changes - Test procedure changes	Updates	22-26 107-123
11/17	02	Added AmpLink PCB information for ZA 2120-LZA and -HZA product versions	New product versions	Various

SPECIFICATIONS AND FEATURES SUBJECT TO CHANGE WITHOUT NOTICE

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