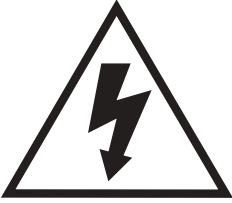




XD-AD8 Antenna Distribution

Pilot's Handbook

Important Safety Instructions



CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN



WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT REMOVE SCREWS.
NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING : TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THE
APPLIANCE TO RAIN OR MOISTURE.

CERTIFICATION

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRE OPERATION.

Warning: Changes or modifications not expressly approved in writing by Line 6 may void the users authority to operate this equipment.

RF Exposure Statement: This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.



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Calabasas, CA 91302-1921 USA



**You should read these Important Safety Instructions.
Keep these instructions in a safe place**



Before using your XD-AD8 Digital Wireless System, carefully read the applicable items of these operating instructions and the safety suggestions.

1. Obey all warnings in the XD-AD8 manual.
2. Do not perform service operations beyond those described in the XD-AD8 Manual. Service is required when the apparatus has been damaged in any way, such as:
 - liquid has been spilled or objects have fallen into the apparatus
 - the unit has been exposed to rain or moisture
 - the unit does not operate normally or changes in performance in a significant way
 - the unit is dropped or the enclosure is damaged
3. Do not place near heat sources, such as radiators, heat registers, or appliances which produce heat.
4. Guard against objects or liquids entering the device. Do not use or place unit near water.
5. Do not step on cords. Do not place items on top of cords so that they are pinched or leaned on. Pay particular attention to the cord at the plug end and the point where it connects to the device.
6. Clean only with a damp cloth.
7. Only use attachments/accessories specified by the manufacturer.
8. Prolonged listening at high volume levels may cause irreparable hearing loss and/or damage. Always be sure to practice “safe listening.”

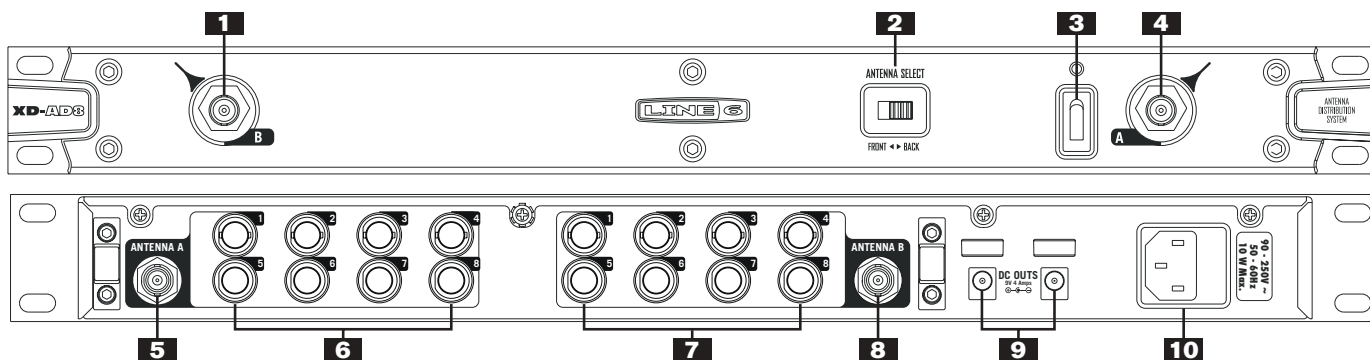
Thank you for your purchase of the XD-AD8 antenna distribution system. The system allows multiple wireless receivers to share the same pair of antennas, giving greater flexibility in the configuration of multi-wireless installations. With rack-mounted wireless systems, setup is easier and the wiring connections are uncluttered, with the added convenience of powering the receivers from the AD8. Use the antenna distribution system with XD-V75, XD-V55, and XD-V70 digital wireless microphone systems, and the Relay G90 and Relay G55 digital wireless guitar system.

- Optimized for use with Line 6 wireless systems operating in the 2.4 GHz band.
- Uses one pair of external antennas to feed up to eight receivers (V70/75 Receivers can make additional use of built in daisy chain capability supporting up to 14 receivers from a single AD8).
- Using the supplied cables, up to eight receivers can be powered from the antenna distribution system, eliminating the need for their external power supplies.
- Use either front- or rear-panel antenna connections, with selector switch.
- The antenna distribution system provides the necessary current to power the electronics in the P180 and P360 remote antennas.
- For use with Line 6 directional or omnidirectional remote paddle antennas or other equivalent 2.4 GHz antennas.
- Rack-mountable, 1 RU chassis.

SUPPLIED COMPONENTS

XD-AD8 antenna distribution system IEC power cable; two (2) power distribution cables, twelve 50 ohm terminators for unused outputs.

XD-AD8 QUICK SETUP



1. **Front Antenna B BNC connector**
2. **Antenna Select** – Switch from front or back pair
3. **Power** – Toggle switch and LED
4. **Front Antenna A BNC connector**
5. **Rear Antenna A BNC connector**
6. **Antenna A Distribution Connectors** – Eight BNC distribution connectors for Antenna A
7. **Antenna B Distribution Connectors** – Eight BNC distribution connectors for Antenna B
8. **Rear Antenna B BNC connector**
9. **9v DC Power** – Two output connectors to power receivers (use supplied cables)
10. **IEC Power Connector** – Use a grounded 3-prong IEC power cable (powers the XD-AD8)
 - Connect the XD-AD8 antenna distribution system to a power source, 90 – 260 VAC, 50 – 60 Hz.
 - Attach one end of the supplied receiver power distribution cables to the **9v DC Power** connectors on the rear panel of the XD-AD8, and plug the remaining barrel connectors into up to four Line 6 receivers; repeat with the second supplied cable for up to four more receivers.
 - Using 50 ohm BNC-to-BNC cables, connect the rear panel **Antenna A** and **Antenna B Distribution Connectors** – beginning with the connectors labeled “1” – to the **Antenna A** and **Antenna B** inputs of up to eight Line 6 receivers.
 - Attach Line 6 rubber duck, directional or omnidirectional remote antennas to the rear panel **In A** and **In B** BNC connectors, and place them in line-of-sight with the area(s) where transmitters will be used.
 - Connect supplied 50 ohm terminators to any unused **Antenna A** and **Antenna B** distribution connectors.
 - Move the front-panel **Antenna Select** slide switch to **Back**; alternately, use the front panel connectors for the antennas and move the switch to **Front**.
 - Turn on the antenna distribution system **Power**, and check that it and all connected receivers and antennas are receiving power.
 - Turn on the transmitters in the performing area, and check for coverage and that all receivers have signal from the transmitters; reposition antennas as necessary.

Note, The antenna distribution system and above setup procedure is typically used for rack-mounted wireless systems, in either a fixed or portable application.

Note, The XD-AD8 antenna distribution system is for use with XD-V75, XD-V55, and XD-V70 digital wireless microphone systems, and the Relay G50, Relay G55 or Relay G90 digital wireless guitar system.

SETTING UP ANTENNAS

The XD-AD8 allows multiple wireless receivers to share a single pair of remote antennas, achieving the same RF signal level and isolation possible with individual pairs of remote antennas connected to each receiver.

- Mount the XD-AD8 in a rack.
- Attach one end of a BNC-to-BNC antenna cable (provided with the digital wireless microphone system) to position 1 of the **Antenna A Distribution Connectors** on the rear panel, and attach the other end to the **Antenna A** input on the digital wireless receiver.
- Attach a second BNC-to-BNC cable similarly between position 1 of the **Antenna B Distribution Connectors**, and then to the **Antenna B** input on the same receiver.
- Continue in this manner for the other digital wireless receivers.
- Attach the BNC cable / connector from a remote antenna (P180 directional or P360 omnidirectional) to the **In A** BNC connector on the rear panel – the stand-alone BNC connector on the left side of the XD-AD8. The antenna will be mounted remotely in line-of-sight with the area where the transmitters will be used. Attach the second remote antenna similarly to the stand-alone **In B** connector on the right.
- Attach the IEC power cable to the XD-AD8 and to a 90V – 260V, 50 or 60 Hz AC power source.
- Turn on the **Power** switch on the front panel; the blue LED will light when the unit is on.
- Check that the power LEDs are lit on the P180 or P360 remote antennas.

SELECTING FRONT OR REAR ANTENNAS

Antenna connections are provided on both the front and rear panels of the XD-AD8, with a selector switch that determines which connection is active. Remote antennas will typically be connected to the rear panel **In A** and **In B** connectors, but also can be connected to the front panel. Articulating half-wave antennas, such as the ones supplied with the Line 6 wireless receivers, can also be used on the front panel connectors.

- When using remote antennas, connect them to the rear panel **In A** and **In B** BNC connectors, especially for more permanent installations, as they will be more protected.
- For convenience in portable applications, remote antennas may also be attached to the **Front Antenna A and B BNC connector**.
- Position the front-panel **Antenna Select** switch appropriately to **Back** or **Front**, depending on where the antennas are connected.
- If you are using a pair of articulating half-wave antennas supplied with the wireless receivers, attach them to the front-panel connectors and position in a “rabbit ear” configuration. Slide the switch to **Front**, and make sure the XD-AD8 is positioned near the top of the rack and the antennas are line-of-sight with the transmitters for the best performance.

Note, Connecting antennas to both front and rear antenna inputs at the same time is not recommended.

Note, When viewing the XD-AD8 from the rear, antenna **In A** is on the left and **In B** is on the right. This placement corresponds with the front-panel connector placement of **A** on the right and **B** on the left.

POWERING RECEIVERS FROM THE XD-AD8

In addition to providing antenna distribution, the XD-AD8 has the capacity to power up to eight Line 6 receivers, including models XD-V75, XD-V70, XD-V55, Relay G55 and Relay G50. When powered in this manner, the external power supply that comes with the receiver need not be used. Two power distribution cables are included with the antenna distribution system.



- The cables containing five barrel-type power plugs are used for distributing power from the XD-AD8 to the receivers. Plug one end of the daisy-chained cable into the left-hand **9v DC Power** connector on the rear panel of the AD8.
- Plug the next barrel connector into the **9v DC Power** connection on the rear panel of the nearest receiver. Then plug the remaining connectors on the cable into additional receivers. Now four receivers are being powered.
- For an additional four receivers, repeat the process by plugging into the right-hand **9v DC Power** connector on the AD8.
- To securely attach the power cable to each receiver for mobile rack configurations, use a cable tie or similar method to loop around the cable and through the cable holder located above or next to the receiver's power input connector.
- If not all of the connectors on the supplied power distribution cable are connected to receivers, the remaining cable can be looped together and a cable tie used to secure it.

Note, The Relay G90 guitar wireless has an internal power supply, so is not powered by the XD-AD8.

RACK MOUNTING

For convenience of connecting cables, and especially when using articulating half-wave antennas directly attached to the XD-AD8, mount it near the top of the rack. The front panel of the 1 RU unit provides slotted holes for four rack screws. Mount the wireless receivers in the spaces below the antenna distribution system using their own rack mounting hardware, and make sure they are close enough so that the provided power distribution cables and BNC-to-BNC antenna cables can reach. Avoid placing WiFi devices, computers, or digital signal processors in the same rack.

REMOTE ANTENNA PLACEMENT

The XD-AD8 antenna distribution system is typically used with remote antennas, so that the receivers can be located where convenient – even at a distance from where the transmitters are being used – yet the antennas can be placed nearer to the transmitters for better RF reception. Remote antennas become important especially when the distance is significant between the transmitters and receivers, there are walls or other obstacles between them, or when the receivers are “permanently” mounted in an equipment room or production vehicle and the transmitters are used at various and changing locations and distances. Both omnidirectional and directional (cardioid) remote antennas are available.

To connect remote antennas to the XD-AD8, use low-loss 50-ohm coaxial cable with the appropriate BNC connector on each end. Place the antennas with clear line-of sight to the location where the transmitters will be used; the Line 6 models P360 omnidirectional and P180 directional active antennas provide the convenience of mic-stand mounting. Attach one end of the cable to the antenna, and run it the shortest possible distance to the IN A / IN B connectors on the front or rear of the XD-AD8.

Note the length of antenna cable used and set the gain to the appropriate setting on the antenna; 6 dB

for 25 feet, 15 dB for 50 feet, and 26 dB for 100 feet. Once connected and with the receiver on, confirm that the blue light on the front of the antenna is lit. Walk-test the area after the antennas are placed to make sure that it is properly covered without interference or dropouts.

Note, As the RF signal travels through the cable to the antenna distribution system, there will be some loss of signal level, which at greater lengths and with higher loss cables can be significant. With an active antenna that provides additional gain, set it to the proper amplification for the cable length, and try not to exceed 100 feet (30 meters) of cable.

Omnidirectional antennas are best applied when the users will be transmitting from a wider area – in front, to the sides, and even behind the antenna. Directional antennas provide greater signal strength at the front of the antenna, and greater rejection of the signal at the rear – in the case of the P180, a cardioid coverage pattern of approximately 90 degrees with a rolloff to the sides. Use them when the users are in a more confined area or not roaming as much. They can also be used to minimize an interfering signal source by facing the back of the antenna toward the interferer and the front toward the transmitters.

TROUBLESHOOTING

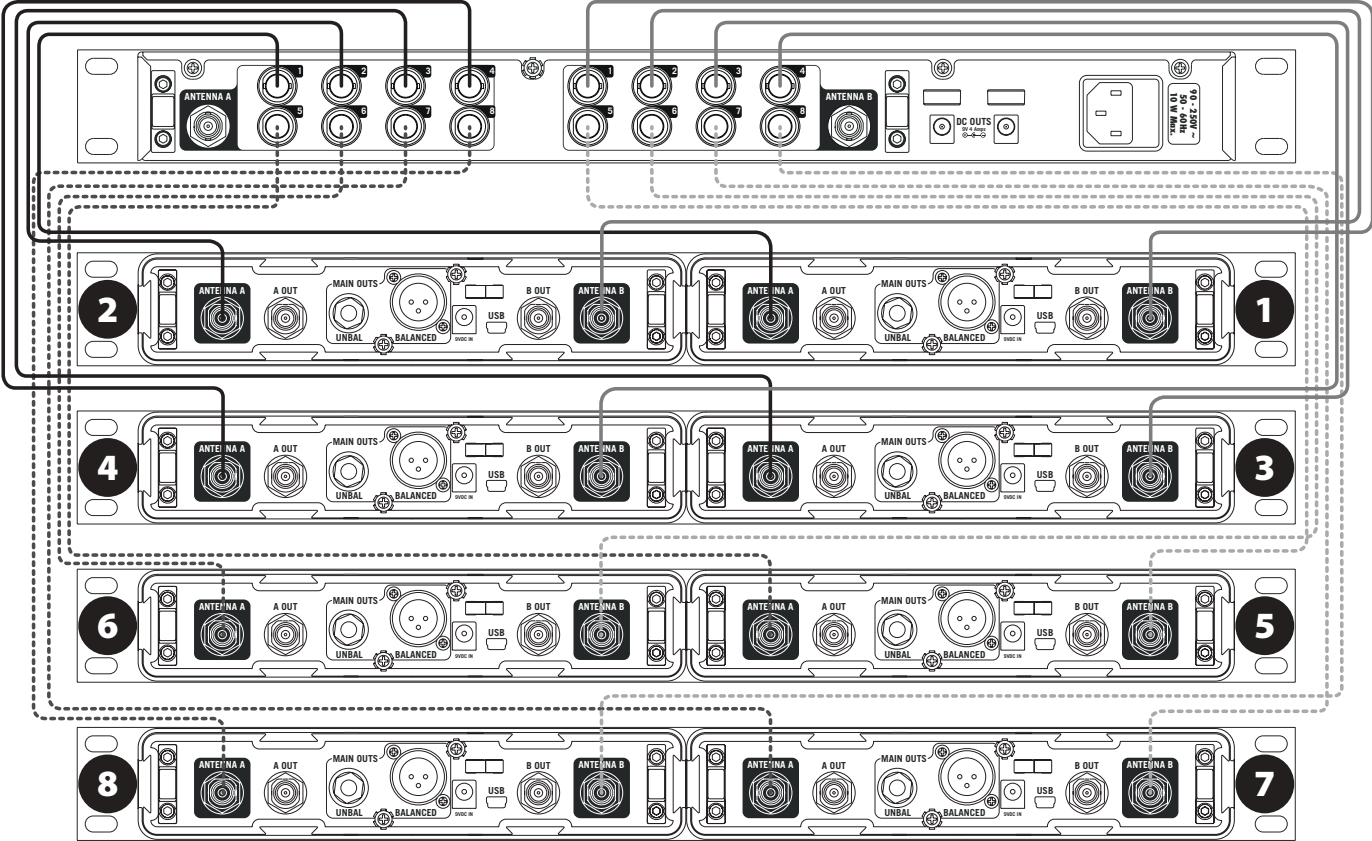
Problem	Solution
Little or No Antenna Signal at Receiver	<p>XD-AD8 not turned on.</p> <p>Antennas not connected to XD-AD8.</p> <p>Antenna cable is too long, incorrect impedance, defective or is not a low-loss type.</p> <p>Gain setting on remote antenna set at improper level.</p> <p>ANTENNA SELECT switch not set to connected antennas.</p> <p>BNC-to-BNC cables not attached between XD-AD8 and receivers, or loose connection.</p> <p>Connections between XD-AD8 and receivers mixed up; make sure each receiver has a connection from the antenna A and antenna B block.</p> <p>Antennas not in line-of-sight with receivers, or at too great a distance.</p> <p>Incorrect channel settings between transmitters and receivers.</p>
Receivers Not Being Powered by XD-AD8	<p>XD-AD8 not turned on.</p> <p>Power distribution cable not plugged in or loose.</p> <p>Receiver power switch not turned on.</p>
Range or Interference Issues	<p>Move antennas away from potential interfering sources such as WiFi routers, computers, and other 2.4 GHz equipment.</p> <p>Move the antennas closer to the location where the transmitters are being used, or raise so that they are in line-of-sight</p>

SPECIFICATIONS

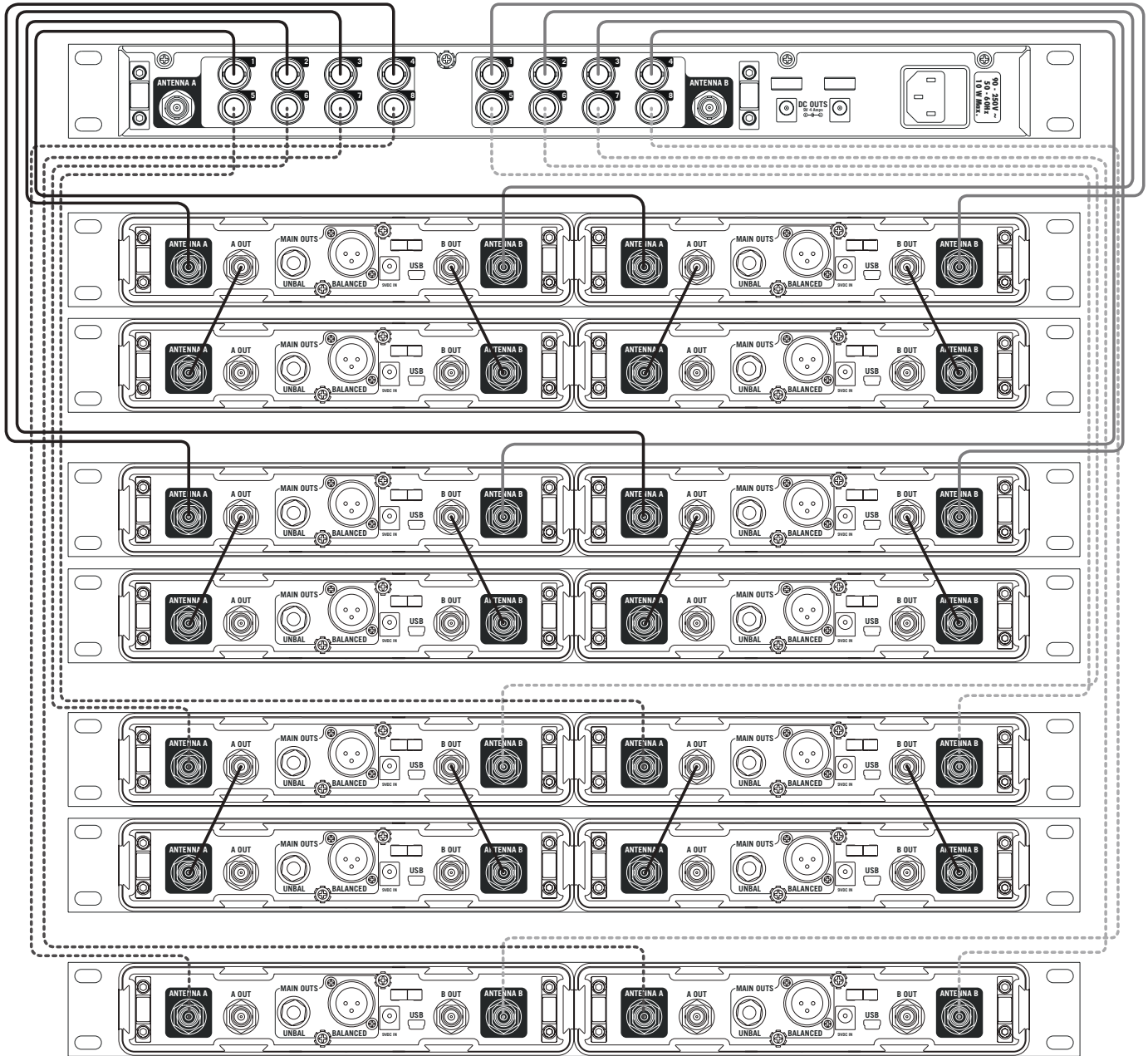
Input Connectors	Two (2) pairs BNC connectors for antennas A and B, front & rear panels
Output Connectors	Two (2) sets of eight (8) BNC connectors for antenna signal distribution
Power Distribution Connectors	Two (2) female barrel connectors, able to power up to eight receivers
Power Supply	Internal universal power supply, 90 – 260 VAC, 50 – 60 Hz
Power Connector	Grounded IEC male
Dimensions	1RU (1.75”H x 19”L x 7.7”D)

HOOKUP DIAGRAMS

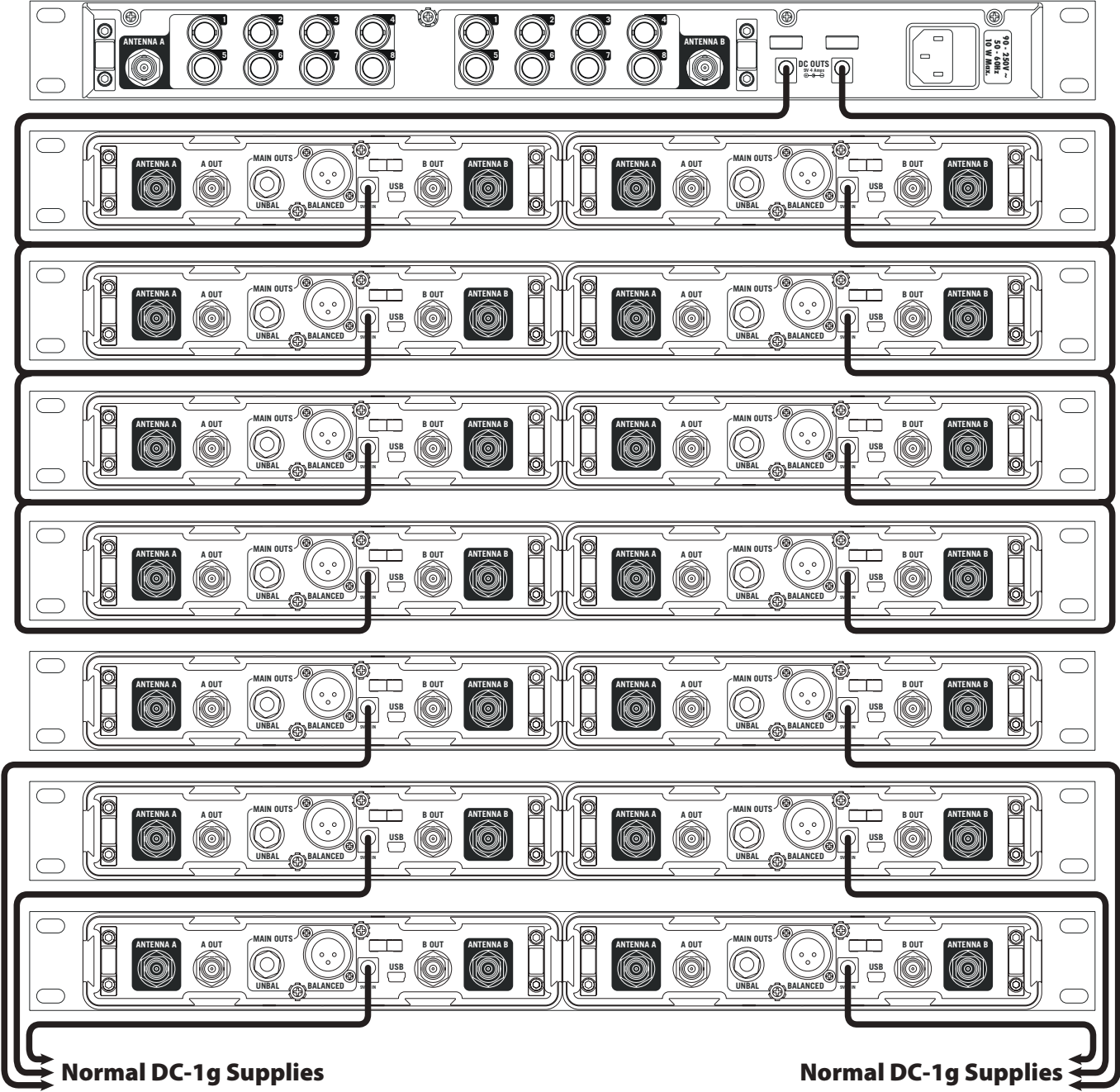
Connecting to 8 Wireless Receivers



Connecting to 14 Wireless Receivers



Powering Wireless Receivers



Connecting to 14 Wireless Receivers Using 2 XD-AD8s

