

LPDA “Shark Fin” Antennas

ALP500

- Economical design ideal for fixed applications



ALP620

- Skeletal design for decreased wind loading



ALP650

- Onboard amplifier ideal for long cable runs - phantom powered from Venue, UMC16 or Bias T



The ALP Series antennas are a Log Periodic Dipole Array (LPDA) design that provides a useful directional pattern over a broad frequency bandwidth. Most “gain antennas” (those designs with a directional pattern) are limited in bandwidth. This makes them awkward for use in multi-channel wireless systems and with frequency agile wireless systems.

With VSWR below 2:1 from 450 to 850 MHz, the broad bandwidth of the ALP Series covers the entire UHF band used for Lectrosonics wireless microphone and IFB systems, yet still provides the directional pattern needed to cover long distances.

All ALP Series antennas are constructed of 1/8" FR4 fiberglass board and are extremely rugged. The ALP620 and ALP650 antennas are best suited for portable applications including temporary setups for field shoots, while the more economical ALP500 is well-suited for more permanent indoor installation. Additionally, the perforated design of the ALP620 makes it highly resistant to wind loading. None of the antennas in the ALP Series are intended to be left outdoors indefinitely. A sturdy aluminum housing protects the 50 Ohm BNC connector on the ALP620 and ALP650 models.

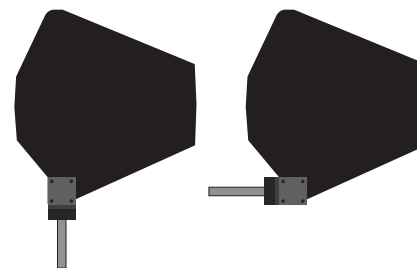
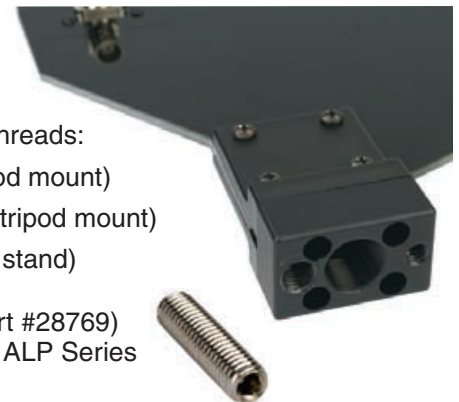
An optional adapter kit is available for all three models that provides a variety of mounting options with the mounting block. The antennas can be mounted on horizontal or vertical surfaces by removing four screws and repositioning the mounting block. This helps to optimize the mounting away from nearby surfaces to reduce the effect of reflections and preserve more of the natural pattern of the antenna design.

Versatile Mounting Block

The mounting block on all ALP Series antennas can accept three common sizes of threads:

- 1/4"-20 (tripod mount)
- 3/8"-16 (pro tripod mount)
- 5/8"-27 (mic stand)

A 3/8"-16 stud (Part #28769) is included with all ALP Series antennas.

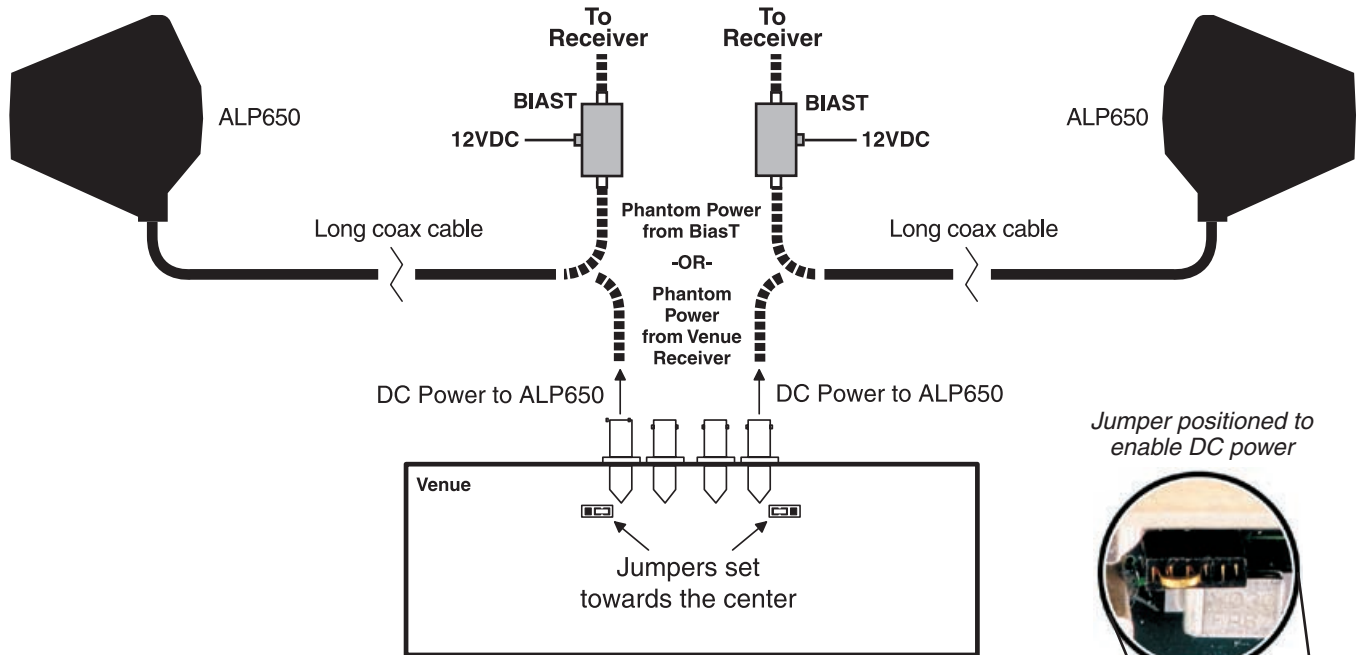


The mounting block can be rotated to allow horizontal or vertical mounting.

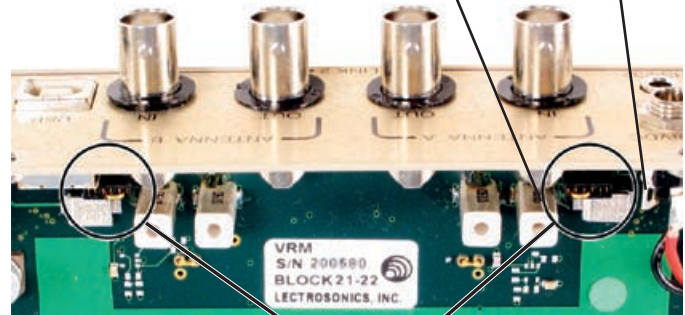
Phantom Power

The amplifier in the APL650 must be powered by “phantom power” supplied through the coaxial cable connected to the antenna. This can be accomplished with the BiasT, Venue receiver or UMC16B multicoupler.

Phantom Power from the Venue Receiver or BiasT



Power for the antenna amplifier can be supplied by the VRM assembly through the coaxial cable by setting jumpers on the main PC board toward the center of the board as shown. Disconnect power from the VRM, then remove the top cover for access to the jumpers.



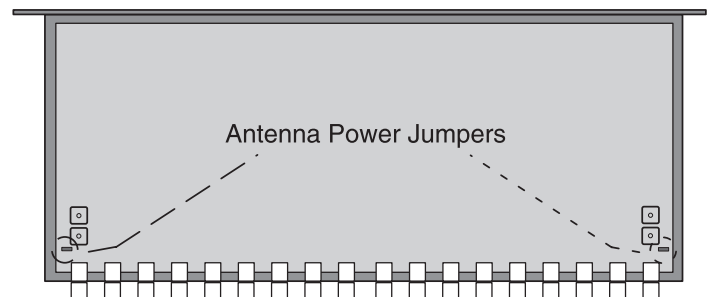
Location of Jumpers

UMC16B Antenna Power Jumpers

NOTE: These jumpers and the phantom power are **ONLY** to be used with the Lectrosionics UFM50, UFM230 or ALP650.

NOTE: If a splitter/combiner is used between the antenna and the UMC16B, it will not pass the DC power to the antennas.

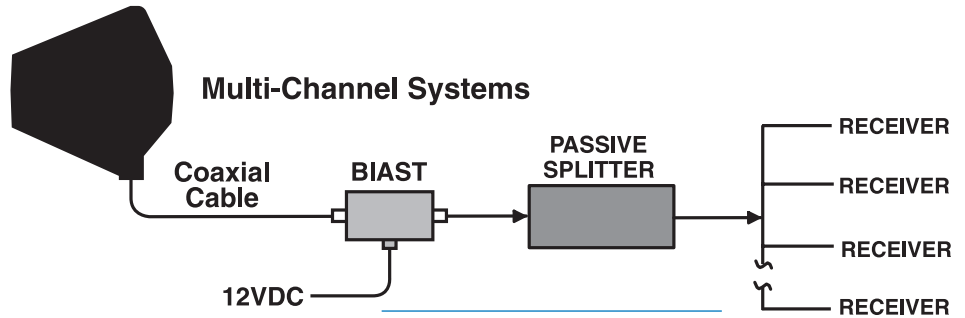
1. To enable the DC antenna power, unplug the power cord and place the UMC16B so that the front panel faces away from you. Remove the cover (12 screws).
2. Locate the jumpers on the circuit board (see illustration). The power is applied to the BNC jack when the jumper is connected to both pins. To disable the power, remove it from both pins and replace it so that one end fits one of the pins and the other end of the jumper hangs freely.



Example 1

The amplifier provides 12 dB of gain. Using the supplied attenuators, the gain can also be set to 8 dB or 5 dB. To determine the correct amount of gain needed for a particular application, first determine the total loss in dB due to connectors, splitters, cabling, etc. Then install the attenuator to set the gain in dB as close to the total loss figure as possible. This example shows a 4-way passive splitter (ZFSC41) with 6 db of loss and a coax cable (ARG15) with 2 db of loss, for a total loss of 8 dB.

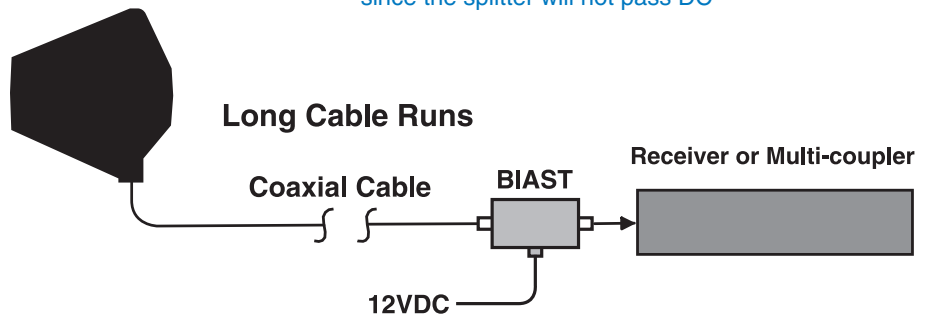
In this case, the amplifier should be used with the 4 dB attenuator to produce the needed 8 dB of gain ($12 - 4 = 8$). The acceptable range is typically 0 to 3 dB of gain.



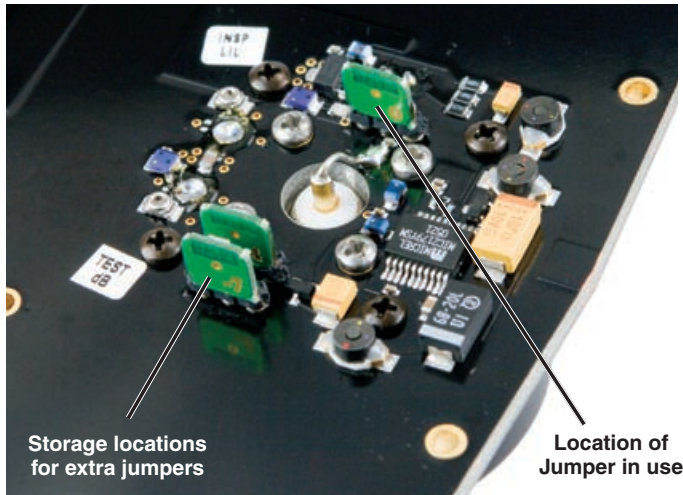
Note: The BiasT must be placed between the antenna and splitter since the splitter will not pass DC

Example 2

The amplifier provides 12 dB of gain. This example shows the UFM230 used to offset the loss in a long coaxial cable (ARG100). The cable presents 4.6 dB of loss, which can be rounded to 5 dB. This requires a gain of 5 dB to offset the loss in the cable. Using the 7 dB attenuator, you now have 5 dB of gain ($12 - 7 = 5$) which is ideal.

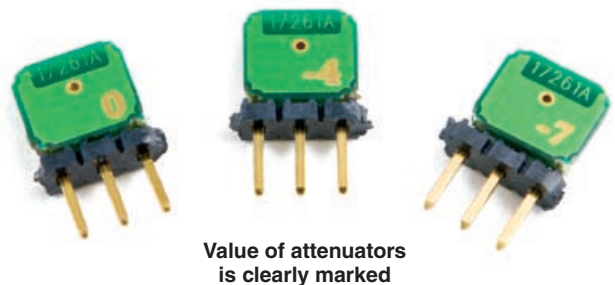


ALP650 Attenuator Location

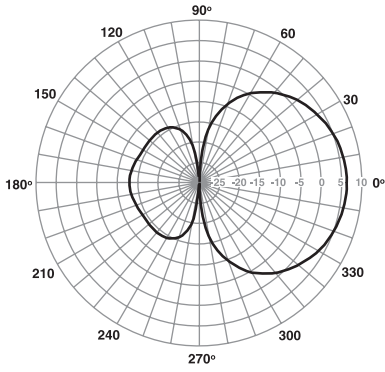


Optional Accessories

Lectrosonics Passive Splitters	Loss
ZSC24 (2-way)	3 dB
ZSC41 (4-way)	6 dB
ZSC843 (8-way)	9 dB
Lectrosonics Coaxial Cables	Loss
ARG2 (RG174)	1 dB
ARG15 (RG174)	2 dB
ARG25 (Belden 9913F)	1.9 dB
ARG50 (Belden 9913F)	2.8 dB
ARG100 (Belden 9913F)	4.6 dB



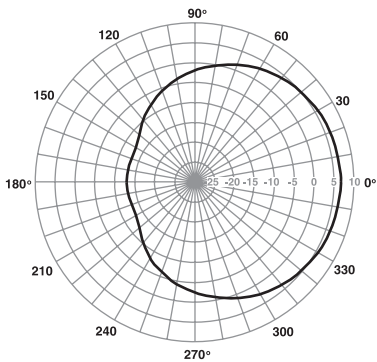
Antenna Pattern



Antenna pattern side view



Side view



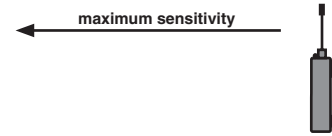
Antenna pattern top view



Top view

Orientation

The antenna is most sensitive at the smaller end, so it should be "aimed" at the transmitter for maximum signal strength.



A belt pack wireless transmitter antenna is generally oriented vertically, therefore, the ALP antenna should also be positioned with the elements oriented vertically. Note the "vertical" arrow on the antenna body.

The antenna on a hand held transmitter moves about wildly while being used, so there is less polarization than on a belt pack model. It is, however, still good practice to position the ALP antenna with the elements oriented vertically to provide more of a circular horizontal coverage pattern.

Optional Mounting Adapter Kit

A mounting adapter kit is available (part # ALPKIT) that contains four adapters threaded to fit the stud supplied with the antenna. The kit allows mounting on photo and video tripods, lighting equipment, and standard microphone stands. Constructed of stainless steel for durability.

Threaded adapter for standard lighting clamps. 1/2" diameter x 6 inch long. 3/8"-16 thread - both ends. (Part #26311-1)

Microphone stand adapter, 1 1/2" long. 5/8"- 27 thread on one end, with 3/8"-16 thread in other end. Knurled finish. (Part #26313-1)

Threaded adapter for photo/video tripod mounting. 1/2" diameter x 1 3/4" long. 3/8"-16 thread on one end, 1/4"-20 on the other. (Part #26312-1)

1/4" - 20 threaded adapter (Part #28770)



Specifications

Gain:	+7dBi (isotropic) +4dBd (over dipole)
Range:	450-850 MHz
Weight:	ALP500: 15.6 ozs ALP620: ALP650:
Connector:	50 Ohm BNC
Dimensions:	13.5" L x 12.25" W 10.75" x 11" T

RF Amplifier (ALP650 only)

Third Order Intercept:	+27 dBm @ input (+41 dBm output)
Filter Bandwidth:	230.0 MHz, factory set.
RF Gain:	+12 dB with 0dB attenuator +8 dB with 4dB attenuator +5 dB with 7dB attenuator
Power Requirements:	8V to 16V DC at the input jack; auto reset poly fuse protection circuit; constant power switching supply • 8V DC (125 to 145 mA) • 12V DC (83 to 106 mA) • 14.4V DC (69 to 89 mA) • 16V DC (60 to 80 mA)
Phantom Powering:	DC voltage supplied via coaxial cable by UMC16B or VRM input jack or BIAS-T power inserter (70 to 80 mA)
Power Consumption:	1 Watt nominal (switching regulator)

