

UMC 16A

RF DISTRIBUTION SYSTEM

OPERATING INSTRUCTIONS and trouble-shooting guide



INTRODUCTION

The UMC16 multi-coupler combines ceramic filtering with low noise, high intercept point RF distribution to provide outstanding performance and flexibility. Up to eight diversity receivers or up to 16 non-diversity receivers can be utilized in up to a 50MHz passband.

The UMC16 can be powered by 110V AC for stage, studio or installed system applications, or from DC power for field operation.

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GENERAL TECHNICAL DESCRIPTION

A universal power supply provides operation world-wide. An LED on the front panel verifies the presence of power to the internal circuit board.

Selective filtering ahead of the low noise, high intercept RF amplifiers reduces intermodulation problems caused by overload in the RF amplifiers. The filters provide a factory settable bandwidth of 16 to 50MHz.

Note: The frequency range and bandwidth is set at the factory and can be found by the serial number on the rear of the unit.

Each antenna input feeds a ceramic filter assembly. The antenna outputs are coupled to the filter assemblies via "strip lines" (1/4 wave transmission lines) built onto the circuit board, which function as RF power dividers.

Each ceramic filter module feeds eight outputs on the rear panel.

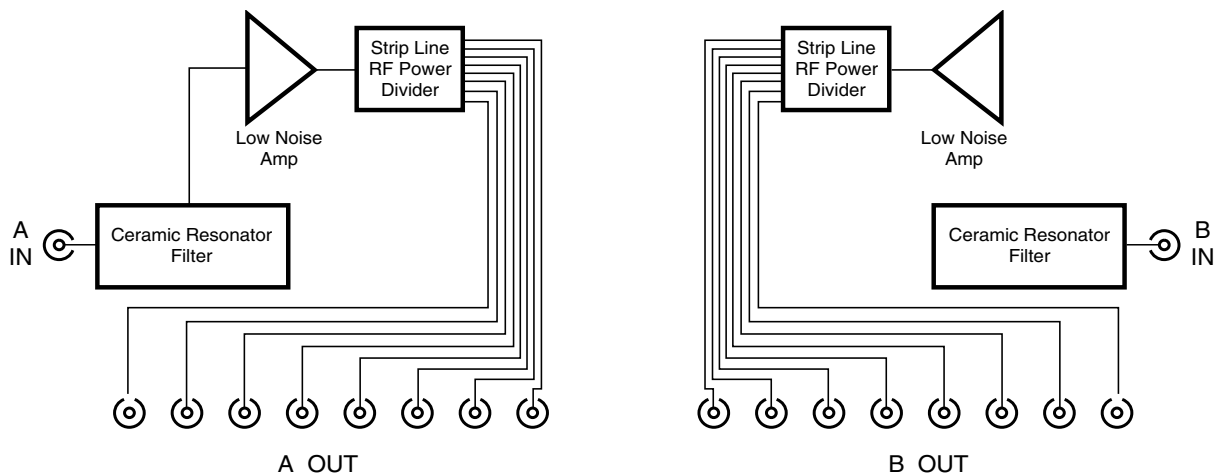


Figure 1 - UMC16a Block Diagram

FRONT PANEL DESCRIPTION



Figure 2 - UMC16a Front Panel

POWER

Main power switch for the UMC16 with indicator LED.

REAR PANEL DESCRIPTION

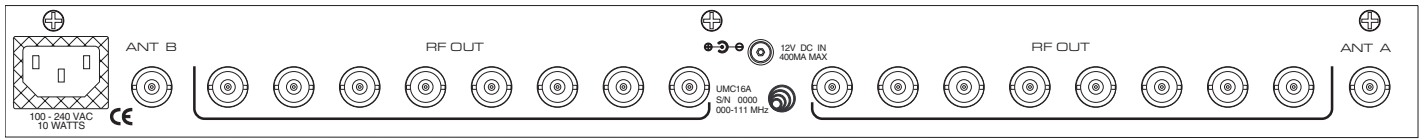


Figure 3 - UMC16a Rear Panel

ANT A / ANT B

RF input jacks. These are standard BNC, quarter-turn twist lock connectors. Each antenna jack is completely separate from the other.

RF OUT

RF output to receiver antenna jack(s). Each group of RF outputs is completely separate from the other.

12V DC IN

Alternate power input jack. The UMC16 can accept any DC voltage from +11 to +14.V DC.

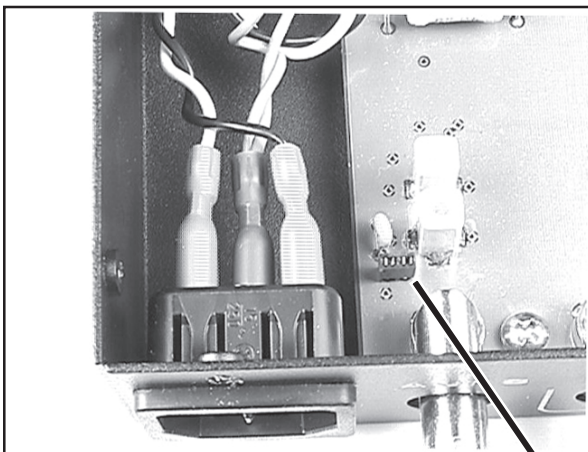
110V AC Power Input Jack

This is a standard 3-prong AC power jack. The unit can accept any voltage in the range of 100 to 240 VAC at 10 Watts.

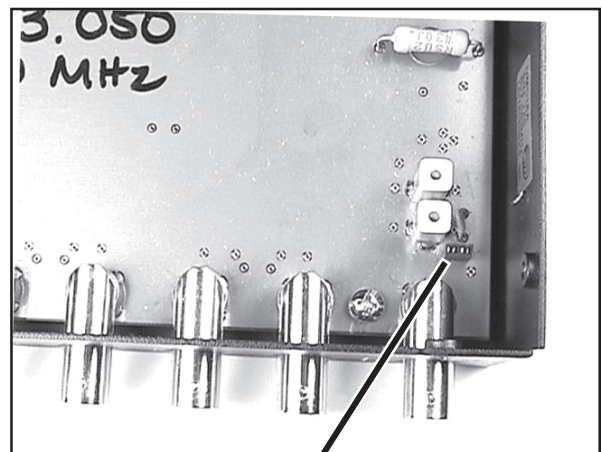
PHANTOM POWER JUMPERS

*NOTE: These jumpers are **ONLY** to be used when the Lectrosonics UFM50 filter/amp module is being powered through the antenna input jacks on the UMC16A multicoupler.*

1. **Unplug the power cord** and place the UMC16A so that the front panel faces away from you. Remove the cover from the UMC16A (12 screws).
2. Locate the socket for antenna B (ANT B) on the circuit board next to the power wires (see photo below left). Install the jumper to enable DC power on the ANT B connector.



Jumper for ANT B
Input Connector



Jumper for ANT A
Input Connector

3. On the other end of the unit, locate the jumper for antenna A (ANT A). (See photo above right.)
4. Install the jumper to enable DC power on the ANT A connector.

ANTENNA USE AND PLACEMENT

Position the antennas so that they are not within 3 or 4 feet of large metal surfaces. If this is not possible, try to position the antennas so that they are as far away from the metal surface as is practical. It is also good to position the receiver so that there is a direct "line of sight" between the transmitter and the receiver antenna. In situations where the operating range is less than about 50 feet, the antenna positioning is much less critical.

A wireless transmitter sends a radio signal out in all directions. This signal will often bounce off nearby walls, ceilings, etc. and a strong reflection can arrive at the receiver antenna along with the direct signal. If the direct and reflected signals are out of phase with each other a cancellation may occur. The result would be a "drop-out." A drop-out sounds like either audible noise (hiss), or in severe cases, may result in a complete loss of the carrier and the sound when the transmitter is positioned in certain locations in the room. A drop-out normally sounds like "hum" or "hiss." Moving the transmitter even a few inches will change the sound of the hum or hiss, or eliminate it. A drop-out situation may be either better or worse as the crowd fills and/or leaves the room, or when the transmitter or receiver is operated in a different location.

Lectrosonics receivers offer a sophisticated design which overcomes drop-out problems in almost any imaginable situation. In the event, however, that you do encounter a dropout problem, first try moving the antenna at least 3 or 4 feet from where it was. This may alleviate the drop-out problem on that antenna. If drop-outs are still a problem, try moving the antenna to an entirely different location in the room or moving the antennas in closer to the transmitter location. By observing the LEDs on the front panel, you can determine which antenna is suffering weak signals.

Lectrosonics transmitters radiate power very efficiently, and the receivers are very sensitive. This reduces drop-outs to an insignificant level. If, however, you do encounter drop-outs frequently, call the factory or consult your dealer. There is probably a simple solution.

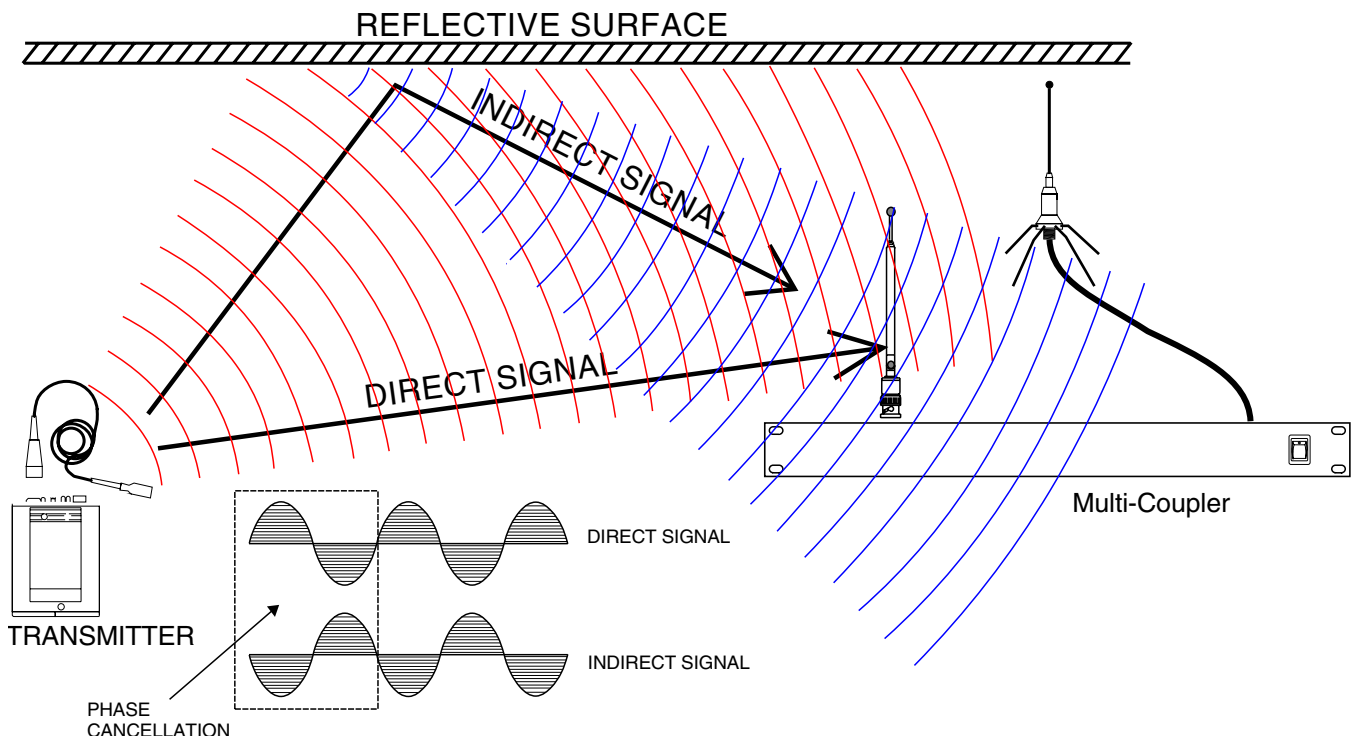


Figure 4 - Multi-path dropout

SPECIFICATIONS

Type:	Active RF distribution system with ceramic filtering
Inputs:	Two 50 Ohm BNC jack on rear panel
Third order intercept:	+27dBm at input
Outputs:	
Type:	16 BNC jacks on rear panel. Eight jacks per antenna.
Isolation:	25dB min, any output to any output Any output can be open, shorted, or terminated without affecting other outputs.
Splitter type:	Wilkinson 1/4 wave
Frequency Range:	470 to 865MHz, factory set (See serial number sticker on side panel for frequency range of your particular unit.)
Filter bandwidth:	16 to 50MHz, factory set
Input/Output RF gain	1 to 2dB at center of band
Power Requirements:	95-240VAC or 11 to 14VDC Overload protection provided by internal auto-reset circuit breaker.
Power consumption:	Nominally 110-220VAC, 10 Watts Nominally 340mA at 12VDC
Dimensions:	19 x 7 x 1.75 inches
Weight:	2 lbs., 9ozs.

Specifications subject to change without notice.

This product meets the CE Compliance Standards - EN55022 and EN50082-1:1998. A copy of the Declaration of Conformity may be requested from your dealer or by contacting the factory directly:
Lectrosonics, Inc.
Marketing Department
581 Laser Rd. NE, Rio Rancho, NM 87124 USA
tel: 505-892-4501 fax: 505-892-6243 e-mail: marketing@lectrosonics.com

SERVICE AND REPAIR

If your system malfunctions, you should attempt to correct or isolate the trouble before concluding that the equipment needs repair. Make sure you have followed the setup procedure and operating instructions. Check out the inter-connecting cords and then go through the TROUBLE SHOOTING section in the manual

We strongly recommend that you do not try to repair the equipment yourself and do not have the local repair shop attempt anything other than the simplest repair. If the repair is more complicated than a broken wire or loose connection, send the unit to the factory for repair and service. Don't attempt to adjust any controls inside the units. Once set at the factory, the various controls and trimmers do not drift with age or vibration and never require readjustment. There are no adjustments inside that will make a malfunctioning unit start working.

LECTROSONICS service department is equipped and staffed to quickly repair your equipment. In-warranty repairs are made at no charge in accordance with the terms of the warranty. Out of warranty repairs are charged at a modest flat rate plus parts and shipping. Since it takes almost as much time and effort to determine what is wrong as it does to make the repair, there is a charge for an exact quotation. We will be happy to quote approximate charges by phone for out of warranty repairs.

RETURNING UNITS FOR REPAIR

You will save yourself time and trouble if you will follow the steps below:

- A. DO NOT return equipment to the factory for repair without first contacting us by letter or by phone. We need to know the nature of the problem, the model number and the serial number of the equipment. We also need a phone number where you can be reached 8 am to 4 pm (Mountain Standard Time).
- B. After receiving your request, we will issue you a return authorization number (R.A.). This number will help speed your repair through our receiving and repair departments. The return authorization number must be clearly shown on the outside of the shipping container.
- C. Pack the equipment carefully and ship to us, shipping costs prepaid. If necessary, we can provide you with the proper packing materials. UPS is usually the best way to ship the units. Heavy units should be "double-boxed" for safe transport.
- D. We also strongly recommend that you insure the equipment, since we cannot be responsible for loss of or damage to equipment that you ship. Of course, we insure the equipment when we ship it back to you.

Mailing address:

Lectrosonics, Inc.
PO Box 15900
Rio Rancho, NM 87174
USA

Shipping address:

Lectrosonics, Inc.
581 Laser Rd.
Rio Rancho, NM 87124
USA

Telephones:

(505) 892-4501
(800) 821-1121
FAX: (505) 892-6243

World Wide Web: <http://www.lectrosonics.com>

email: sales@lectrosonics.com

LIMITED ONE YEAR WARRANTY

The equipment is warranted for one year from date of purchase against defects in materials or workmanship provided it was purchased from an authorized dealer. This warranty does not cover equipment which has been abused or damaged by careless handling or shipping. This warranty does not apply to used or demonstrator equipment.

Should any defect develop, Lectrosonics, Inc. will, at our option, repair or replace any defective parts without charge for either parts or labor. If Lectrosonics, Inc. cannot correct the defect in your equipment, it will be replaced at no charge with a similar new item. Lectrosonics, Inc. will pay for the cost of returning your equipment to you.

This warranty applies only to items returned to Lectrosonics, Inc. or an authorized dealer, shipping costs prepaid, within one year from the date of purchase.

This Limited Warranty is governed by the laws of the State of New Mexico. It states the entire liability of Lectrosonics Inc. and the entire remedy of the purchaser for any breach of warranty as outlined above. NEITHER LECTROSONICS, INC. NOR ANYONE INVOLVED IN THE PRODUCTION OR DELIVERY OF THE EQUIPMENT SHALL BE LIABLE FOR ANY INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL, OR INCIDENTAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THIS EQUIPMENT EVEN IF LECTROSONICS, INC. HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL THE LIABILITY OF LECTROSONICS, INC. EXCEED THE PURCHASE PRICE OF ANY DEFECTIVE EQUIPMENT.

This warranty gives you specific legal rights. You may have additional legal rights which vary from state to state.

