UFM19-941

TECHNICAL DATA

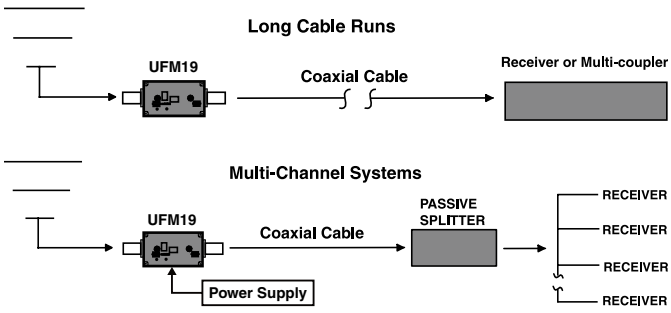
UHF 950 Mhz Filter/Amplifier Module

- **19 MHz passband from 941 to 960 MHz**
- **Ceramic resonator filters**
- **GaAsFET RF amplifier**
- **+27 dBm (input) and +41 dBm (output) 3rd Order Intercept**
- **Switching regulator for 8-16V power at constant power dissipation to minimize heat**
- **Gain control switches for +5dB, +8dB or +12dB**
- **Powered from external DC source or DC bias from Lectrosonics multicouplers and rack receivers**

The UFM19-941 is used to configure antenna systems requiring long cable runs or distribution to multiple receivers. A SAW filter, with a 19 mHz bandwidth, minimizes intermodulation (IM) products and prevents overload from strong out-of-band RF transmissions. Following this SAW filter is a low noise (LNA) GaAsFET amplifier that provides +12 dB of overall module gain with excellent +41 dBm output IP3.

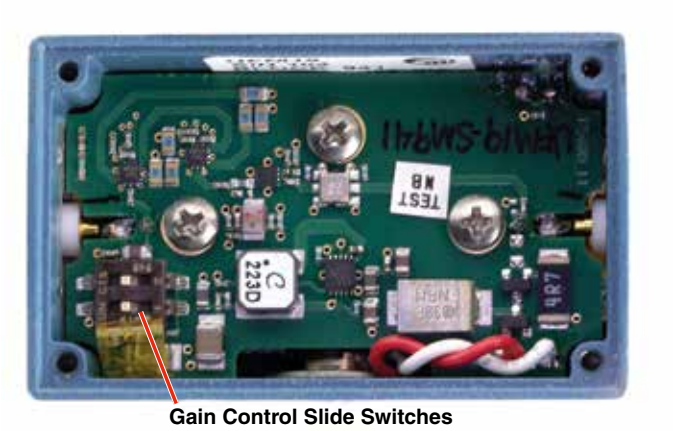
Power can be applied to a side panel connector, or from DC bias on the RF output jack from a receiver or multicoupler. A switching regulator is used in the power supply to control current consumption over an input voltage range of 8 to 16 volts. The regulator maintains low current consumption and low heat dissipation which is especially useful in mobile field production applications.

The housing is constructed of cast aluminum with a brushed aluminum cover plate. Two rugged BNC connectors and a threaded, locking power jack provide secure connections for reliability in field production and long-term installations.



The UFM19-941 is placed near the antenna to apply gain ahead of long cable runs, or to compensate for splitter and cable loss in a multi-channel signal distribution system. A power supply for the UFM19-941 must be used since the passive splitter will not pass DC supplied by the receivers.

RF gain is adjustable. Adjustments are made by electronic switching in-line attenuators that either reduce the gain from +12 dB to 8 dB or to +5 dB. To adjust the gain, remove the four screws attaching the bottom cover for access to the gain control switches. The switches may be covered by a protective tape, which can be removed using tweezers and discarded. See settings below.



Gain Control Slide Switches

+12 dB (full gain)

+8 dB gain

+5 dB gain

< -30 dB gain (disconnects/amplifies output)

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The power input on the side panel is a thread-locking (LZR type) connector.

Calculating Required Gain

Long Cable Runs

Connect the RF input of the UFM19-941 to the antenna with a short coaxial cable and the RF output to the receiver or splitter with an appropriate coaxial cable. Set the gain control switches to achieve a gain value as close as possible to the loss in the coaxial cable connected to the RF output, but no more than that.

Optional Lectrosonics coaxial cables:

Model	Attenuation (loss)
ARG2	1 dB
ARG15	2 dB
ARG25	1.9 dB
ARG50	2.8 dB
ARG100	4.6 dB

Multi-channel Signal Distribution

An effective antenna multicoupler can be configured with the UFM19-941 and a passive splitter. Add up the loss through the coaxial cable and the splitter (total loss) and set the gain switches in the UFM19-941 for a gain value as close to the total loss as possible but not over.

For example, using a 4-way passive splitter (ZFSC41) with 6 dB of loss at each output and a coaxial cable (ARG15) with 2 dB of loss, the total loss is 8 dB between the antenna and the receiver input. In this case, the two switch positions that provide +8 dB gain compensate for these losses.

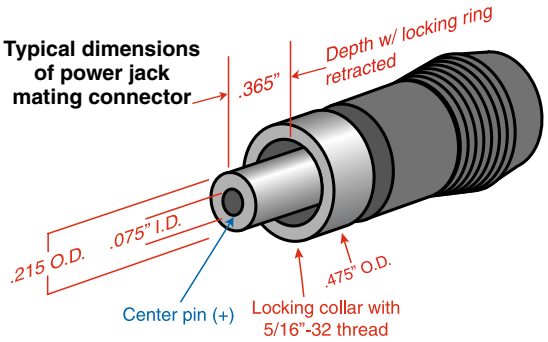
Optional Mini-Circuits passive splitters:

Model	Attenuation (loss)
ZSC24 (2-way)	3 dB
ZSC41 (4-way)	6 dB
ZSC843 (8-way)	9 dB

NOTE: Mini-Circuits splitters are available from Lectrosonics and various parts distributors

Specifications

Third Order Intercept:	Input IP3 = +27 dBm (+41 dBm output)
Connectors:	
RF IN:	50 ohm BNC
DC IN:	2.1 mm locking power jack
RF OUT (phantom power in):	50 ohm BNC
Freq Range:	941 - 960 MHz
Filter Bandwidth:	19 MHz, factory set.
RF Gain:	+12 dB with gain control setting +8 dB with gain control setting +5 dB with gain control setting
Power Requirements:	8V to 16V DC at the input jack; auto reset poly fuse protection circuit; constant power switching supply • 8V DC (105 to 120 mA) • 12V DC (68 to 75 mA) • 14.4V DC (55 to 65 mA) • 16V DC (50 to 56 mA)
DC Bias/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)
Dimensions:	2.26 x 1.39 x 1.14 inches (not including BNC connectors)
Weight:	3.3 ozs.; 94 grams



Mating split-pin on side panel jack may need to be widened slightly for a secure fit

FCC Compliance

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 undesired operation.

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 this equipment and receiver
- Connect this equipment into an outlet on a circuit different from that which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

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