

UHF Filter/Amplifier Module



The UFM50 provides a unique, high performance solution for antenna systems requiring long cable runs or distribution to multiple receivers or locations. The unit can be used to apply RF gain at the antenna ahead of a long run of coaxial cable to compensate for signal loss through the cable. A compact, high performance multicoupler can also be configured using the UFM50 ahead of an RF splitter to offset the loss through the splitter.

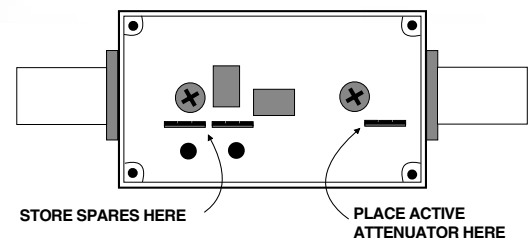
The UFM50 design places RF filtering before gain to minimize intermodulation (IM) products and prevent overload. Two transmission line ceramic resonators at the input provide filtering with a 50 MHz bandwidth.

Following the filters, 12dB of gain is applied with a high quality GasFET RF amplifier with an excellent +41dBm IP3. The result is outstanding RF performance without IM or overload problems.

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 portable audio mixing common in field production and ENG.

The UFM50 can be powered from external DC or via phantom power through a coaxial cable connected to the UMC16A Multicoupler. 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 rugged field conditions and for long-term installations.

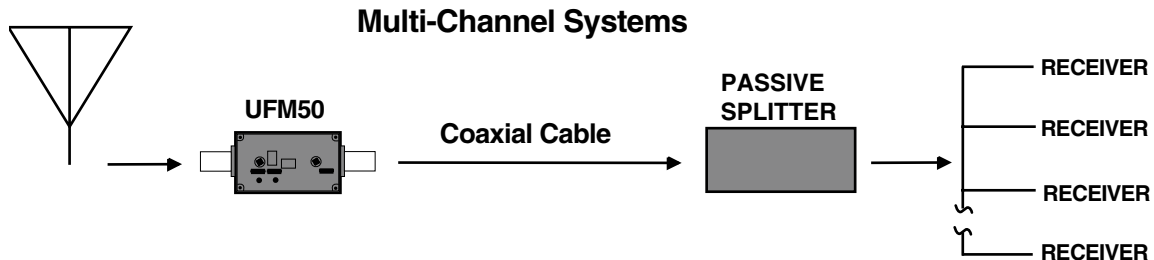
- 50 MHz passband on center frequencies from 560 to 865 MHz
- Ceramic resonator filters
- GasFET RF amplifier
- +41dBm 3rd Order Intercept
- Switching regulator for 8-16V power at constant power dissipation to minimize heat at high voltage
- Jumperable attenuators for +5dB, +8dB and +12dB total gain
- Cast aluminum housing
- External power or phantom power at output jack from UMC16A Multicoupler
- Includes 6 ft DC locking style mating connector assembly for powering



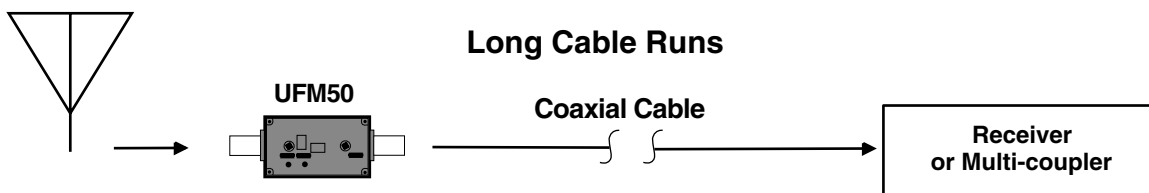
The gain of the RF amplifier can be adjusted with internal attenuators for +5dB, +8dB and +12dB total gain. Remove the four screws and the bottom cover for access to the internal jumpers.

Operating Instructions

The UFM50 amplifier provides 12 dB of gain. By 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. Example #1 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 UFM50 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.



The UFM50 amplifier provides 12 dB of gain. This example shows the UFM50 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.



Specifications

| | |
|-------------------------------|---|
| Third Order Intercept: | +27 dBm @ input (+41 dBm output) |
| Inputs: | RF In - BNC DC In - 2.1 mm locking power jack |
| Output: | RF out - BNC (and phantom power in) |
| Freq Range: | 560-865 MHz, factory set. See unit for frequency range of your particular unit. |
| Filter Bandwidth: | 50 MHz, factory set. |
| RF Gain: | +12 dB with 0dB attenuator +8 dB with 4dB attenuator +5 dB with 7dB attenuator |
| Power Requirements: | 8V DC (130 mA) up to 16 volts DC (70 mA) at the DC input jack; Auto reset circuit breaker |
| Phantom Power: | DC voltage supplied by UMC16A BNC input jack or BIAS-T power inserter |
| Power Consumption: | 1.075 Watts nominal (switching regulator) |
| Dimensions: | 2.26 x 1.39 x 1.14 inches (not including BNCs) Weight: 3.3 ozs |

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.

| Passive Splitters | Loss |
|-------------------|------|
| ZSC24 (2-way) | 1 dB |
| ZFSC41 (4-way) | 6 dB |
| ZFSC843 (8-way) | 9 dB |

| Coax Cables | Loss |
|-------------|--------|
| ARG2 | 1 dB |
| ARG15 | 2 dB |
| ARG25 | 1.9 dB |
| ARG50 | 2.8 dB |
| ARG100 | 4.6 dB |

