MFJ-762 STEP ATTENUATOR

Introduction

The MFJ-762 Step Attenuator is ideal for any application requiring a low power 50 ohm attenuator that operates from dc to lower UHF.

The MFJ-762 Step Attenuator can be used to prevent front end overload or as an "isolation pad" to properly terminate filters and/or preselectors. Common uses include receive signal reduction for transmitter hunting, a standard dB reference for S meter scale calibration, a dB change reference for antenna comparisons, and many other low-power signal level attenuation applications.

The MFJ-762 Step Attenuator provides attenuation values to 81dB in one dB steps. The maximum power rating is 125 milliwatts (1/8 watt) and the usable frequency range extends into the UHF range. The input and output connectors are standard 50 ohm BNC females.

Specifications

Connectors	BNC female
VSWR (worse case for all values of attenuation)	<1.25:1 from dc to 170 MHz (typically <1.1:1) <1.6:1 from 170 to 500 MHz (typically <1.1:1)
Bypass Loss	<0.65 dB at 170 MHz <2 at 500 MHz
Power Rating	125 milliwatts continuous
Attenuation Steps	1dB, 2dB, 3dB, 5dB, 10dB, and (3) 20dB steps.
Attenuation Accuracy	0.2 dB or 5% of total attenuation, whichever is greater

Operation

The MFJ-762, like all constant impedance "pi" or "T" attenuators, is a bi-directional device. It simply connects in series with the signal path, the direction is not important.

Be sure to never exceed 125 milliwatts of applied power, especially with higher attenuation values.

Like all 50 ohm attenuators, the attenuation is most accurate when the attenuator is correctly terminated. If the load impedance is unknown or the impedance is not perfectly matched, use at least 10 dB of attenuation before depending on accurate level changes. If this advice is not followed, the first several dB of attenuation might produce more or less attenuation than expected. In other words, if you have a receiver with unknown input impedance and you want to accurately check the S-meter, start the reference with a 10 dB (or larger) attenuator in-line before making any changes. This simple step ensures any additional attenuation will provide very close to the marked signal level change, even if the receiver input impedance is other than 50 ohms pure resistance.

WARNING: Never transmit through the MFJ-762.

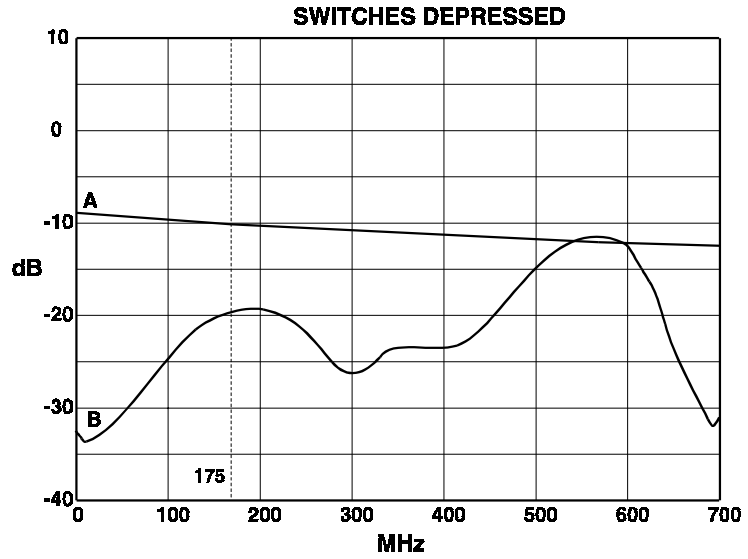
Technical Assistance

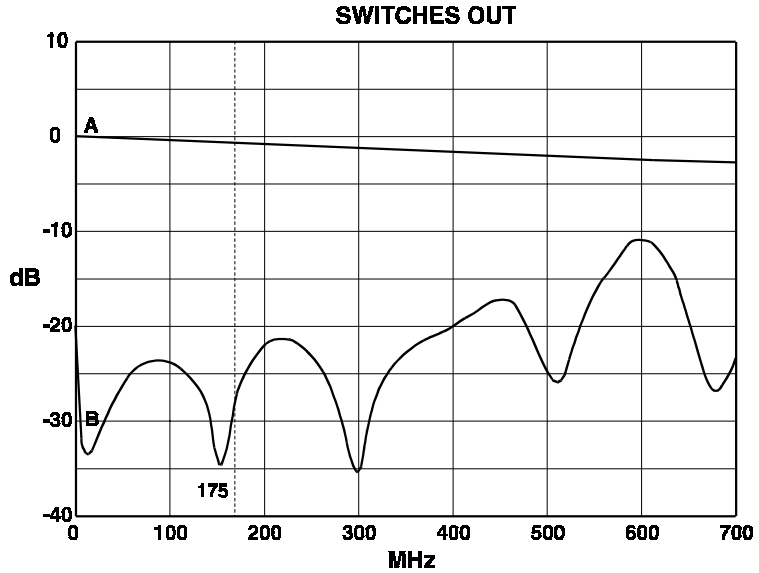
If you have any problem with this unit first check the appropriate section of this manual. If the manual does not reference your problem or your problem is not solved by reading the manual you may call *MFJ Technical Service* at **601-323-0549** or the *MFJ Factory* at **601-323-5869**. You will be best helped if you have your unit, manual and all information on your station handy so you can answer any questions the technicians may ask.

You can also send questions by mail to MFJ Enterprises, Inc., 300 Industrial Park Road, Starkville, MS 39759; by Facsimile to 601-323-6551; or by email to techinfo@mfjenterprises.com. Send a complete description of your problem, an explanation of exactly how you are using your unit, and a complete description of your station.

Transmission/Return Loss Graphs

A: Transmission Loss Lines
B: Return Loss Lines





Schematic

Parts List

Designator	Description	P/N
R1	Resistor, 5.62 Ohm	100S-0562
R17, R20, R23	Resistor, 10 Ohm	100S-1100
R4	Resistor, 12.1 Ohm	100S-1121
R7	Resistor, 18.2 Ohm	100S-1182
R13, R15	Resistor, 27.4 Ohm	100S-1274
R10	Resistor, 30.1 Ohm	100S-1301
R14	Resistor, 36.5 Ohm	100S-1365
R16, R18, R19, R21, R22, R24	Resistor, 39.2 Ohm	100S-1392
R11, R12	Resistor, 182 Ohm	100S-2182
R8, R9	Resistor, 301 Ohm	100S-2301
R5, R6	Resistor, 470 Ohm	100S-2470
R2, R3	Resistor, 825 Ohm	100S-2825
SW1, SW2, SW3, SW4 ,SW5	Switch, Vertical, 2P2P	504-4022
SW6 ,SW7 ,SW8	Switch, Vertical, 2P2P	504-4022
J1, J2	Connector, BNC	610-1016