Passive Receiver Multicoupler

Models: MC102, MC104, MC202, MC204

Application Data

Description

The basic application of an antenna multicoupler is to enable the use of one antenna system for several monitoring receivers, or scanners. The advantages of the multicoupler in those applications requiring several monitoring receivers are in the port-to-port **isolation** of the coupler. This will ensure that possible interaction between each receiver local oscillator (or other mixing products) is reduced or eliminated, and that the front-end of each receiver is properly loaded at 50 ohm. The second obvious benefit in using the coupler is that only one major antenna system has to be maintained, and if a pre-amplifier is used at VHF/UHF, only one is needed to feed up to four receivers.

Models MC102, 104, 202 and 204 are ***Passive Couplers*** and therefore needs no external power to operate. However, because of the passive design each coupler will exhibit some signal loss from input to output ports. A 2-port device has slightly more than **3 dB signal loss**, and a 4-port device slightly more than **6 dB signal loss**. On a receiver with a calibrated S-meter this will result in a reduction of meter reading of half an S-unit for a 2-port coupler, and about one S-unit for a 4-port coupler, approximately. (Examples of receivers with calibrated S-meters; ICOM R71A, R7100, R7000, R9000, R8500, R9500, AOR AR5000A JRC NRD535/545, WJ. HF-1000, WJ-8711A, RX-340, etc.)

Connections

The basic connection for multi receiver use is to connect the antenna to **Port 0** and the receivers to **Ports 1** through **4**. Unused ports may be left open with little effect on receiver performance (isolation and loss in the coupler will suffer), but to reduce the effect of extra loss a 50 ohm terminator should be connected to the unused port(s).

Because of the passive design of the coupler this device may be used as a signal combiner as well. For example, two antennas may be combined in a two-port device resulting in signal energy added in phase to the summing port (port 0).

Stridsberg Engineering

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General Specifications

Nominal Impedance: 50 Ohms.
Phase (input/output): Zero degree
Port-to-Port Isolation (min): 25dB
Insertion Loss (total): 2-port = 4dB, 4-port = 7dB (+/- 1.5dB)
Return Loss (all ports): > 22dB
Connectors: BNC (standard), TNC (optional).
Mechanical: 4-3/8 X 2-3/8 X 1-1/4 Inches (L W H)
Case: Die-cast Aluminum, Black Powder Coating.

Frequency Range & Port Configuration

MC102:	**100 kHz to 500 MHz**	**2 Ports**
MC104:	**100 kHz to 500 MHz**	**4 Ports**
MC202:	**10 MHz to 1 GHz**	**2 Ports**
MC204:	**10 MHz to 1 GHz**	**4 Ports**

Warranty

Standard three (3) year.

For application help please contact:

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