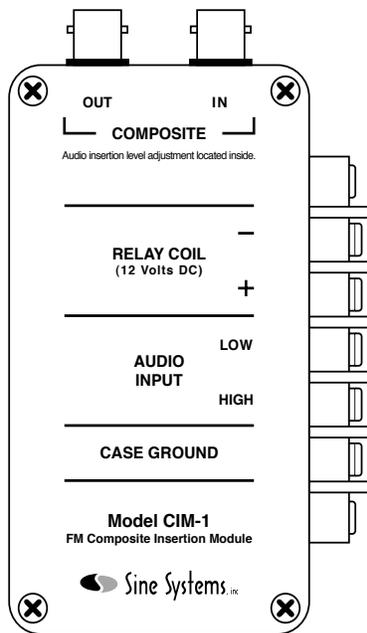


Description

The Sine Systems model CIM-1 Composite Insertion Module provides a means to insert an audio signal into a composite FM system. This may be necessary when using a DAI-2 Dialup Audio Interface at a facility where the FM stereo generator is remotely located and discrete audio signals are not available.

The CIM-1 has two BNC jacks; one for composite input and the other for composite output. Switching is controlled by an internal reed relay which, in its relaxed state, passes the composite FM signal through the unit without modification. When the relay is energized, the source for the composite output jack is switched to a separate balanced audio input connection. This connection is transformer-isolated and has a manual level-adjustment and soft clipper.

The metal case of the CIM-1 is electrically isolated from the outer conductor of the composite jacks. There is no ohmic connection between any of the five screw terminal connections on the CIM-1 and the composite connections. To avoid ground loops, the outer conductor of the coaxial cable used for the composite connections should not electrically contact the station ground system at any point except at the transmitter itself. In most applications, the audio level required at the CIM-1 Audio Input terminals will be in the range of 0 dBm to +4 dBm.



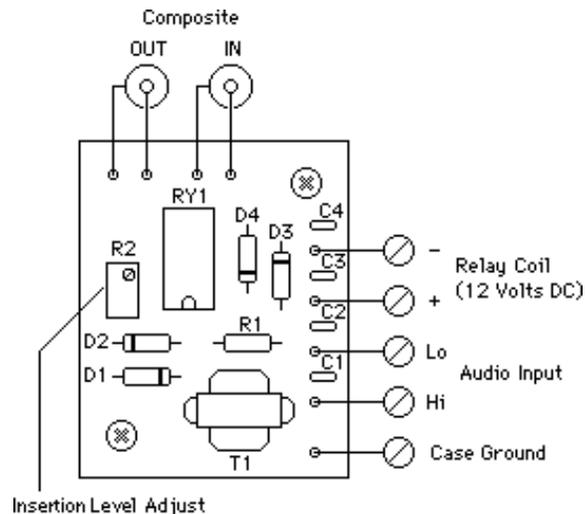
Installation

Installing the CIM-1 is not difficult. Inputs and outputs are marked clearly on the chassis. The composite audio signal loops through the BNC jacks. Under normal operating conditions, this path looks like nothing more than a straight wire.

The Insertion Relay is activated when 12VDC is present on the RELAY COIL inputs. This voltage controls a relay inside the CIM-1 that breaks the composite audio path and inserts the audio from the AUDIO INPUT.

Adjustment

The insertion level adjustment control is a 22 turn potentiometer located inside the CIM-1. Open the case by removing the four screws from the lid. From the factory, this control is set to the extreme counterclockwise position (full off). With the insertion audio present and the insertion relay activated, slowly turn this control clockwise (increasing level) while observing modulation. When a satisfactory modulation level is achieved, replace the cover on the CIM-1. For accurate results, use the same audio that would normally be present when the CIM-1 is used. Do not use a steady-state tone to adjust modulation level.



Parts List

C1,2,3,4	capacitor, monolythic ceramic, 0.01μF, 50V
R1	resistor, carbon film, 1/4W, 470Ω, 5%
R2	resistor, cermet trimmer, 1KΩ, 22 turn
D1,2	diode, 2.4 volt zener, 1/2W, 1N5221B
D3,4	diode, 1N4005
T1	transformer, 600:1, 500Ω