

Specification For The MSB Design REN Test Module RTM-1

Introduction

When the need arises to carry out the REN determination tests detailed in BS6305, NTR3, and other specifications, it will be seen that the test circuit requires, in addition to a Ringing Generator and Artificial Line, a fixed inductor and associated series resistance.

It is clear that such an inductor will not always be readily available, and also that the form of the circuit does not lend itself to an easy implementation, so the REN Test Module RTM-1 was designed to provide all the necessary sundry hardware associated with the tests.

Features

Reference to the circuit in BS6305 Figure 17, or NTR3 Figure 26, will show that the REN test requires a fixed inductor of 3.6H and series resistance of 1890ohms to be placed in series with the Ringing Generator. Also there has to be provision in the test circuit for the connection of up to 10 items of apparatus in order to assess the REN of the apparatus. In addition, a switchable dummy load of 55H and series resistance of 7000ohms is required.

The purpose of the RTM-1 is to provide all of these sundry items of hardware in one package such that the only additional items required are a Ringing Generator, such as the MSB Design Ringing Test Generator RTG-1, an Artificial Line, such as the MSB Design Artificial Line AL-1 (or AL-2), and a voltage measuring device.

The RTM-1 provides the following :-

- the 3.6H inductor and 1890 ohm series resistor
- the 55H inductor and 7000 ohm series resistor
- 10 off line jack sockets in parallel
- the 1.8uF bell capacitor
- the necessary screw terminal connectors to allow the connection of the other devices.

So, all the operator need do is connect in the Ringing Generator, Artificial Line and voltmeter and then plug in items under test until the test conditions are satisfied. The dummy load can be switched in at will via a front panel toggle switch.

Uses

Clearly the use to which the user puts the unit will depend on the users requirements, but there follow some suggestions:-

- a) REN determination tests - BS6305 appendix D
- b) Ringing detection test - BS6317 appendix B.14
- c) REN determination tests - NTR3 appendix D
- d) general ringing sensitivity tests

etc.

Specification

Connectors	10 off line jack socket 2 off 4mm screw terminals (AL in) 2 off 4mm screw terminals (AL out) 2 off 4mm screw terminals (generator) 2 off 4mm screw terminals (measure o/p)
Dummy load	switchable 55 H in series with 7000 ohms
Series inductor	3.6 H in series with 1890 ohms
Bell capacitor	1.8uF

The unit is housed in a steel / aluminium enclosure, with all switches and connectors on the front panel. Enclosure dimensions are 220mm x 220mm x 70mm.

RTM-1 Block Diagram

The diagram below shows the arrangement that makes up the RTM-1. The 55 Henry inductor and the 7000 ohm resistor make up the dummy load, that can be switched in and out of circuit as required. The diagram shows the load switched in. The Ringing Generator is connected to the terminals marked 'G' and the Artificial Line to the terminals marked 'ALin' and 'ALout'. The apparatus under test is plugged into the 10 off line jack sockets, and the subsequent voltage is measured at the terminals marked 'V'.

