MSB Design

Specification For The MSB Design Ringing Test Generator RTG-2

Introduction

Any item of telecommunications equipment connected to the Public Switched Telephone Network (PSTN) will be subjected at some time to incoming ringing voltages, and depending on the nature and function of the apparatus, will either have to withstand the applied signal or detect and deal with it in some way.

In order to check apparatus under such conditions a source of ringing voltage is required, and for those uses that do not require testing at the extreme limits of the ringing specification, (for those cases see the MSB Design Ringing Test Generator RTG-1) the RTG-2 provides such a source.

Provision is made for both internally generated cadencing and externally derived, and signal gateing can be either ac, dc or contact closure. These features make the unit very versatile to suit all the test requirements of a basic Ringing Generator.

Features

The RTG-2 is a fixed frequency power oscillator providing a sinusoidal output at 25Hz at a nominal level of 55 to 60v rms. The sinewave is of high purity to closely emulate what should be expected from the PSTN, although of course at the end of a long line this often becomes distorted, but the tests should be carried out assuming the correct signal.

In addition to a continuous output, the signal can be cadenced by selecting the required period on the front panel rotary switch. Selecting PSTN will give the standard UK cadence of 400mS on, 200mS off, 400mS on and 2S off. Selecting PABX will give the common extension cadence of 1S on and 2S off.

In order to give the unit the most possible flexibility, in addition to the internally generated cadences it is possible to use external gateing in the following way. If any of the lower three options on the front panel rotary switch are selected, then the cadences shown (i.e. continuous, PABX and PSTN) will be enabled whenever a positive voltage in the required range is applied to the 'GATE' terminal (see specification for voltage range). This can be achieved by one of two methods; either a voltage can be applied between 0v and the gate input, or a relay or switch can be connected between the 5v terminal and the gate terminal.

If the lower 'continuous' is selected then the output will directly follow any cadence applied to the gate input, and in this way either your own cadence can be derived, or for automated test purposes the RTG-2 can be controlled externally. (MSB Design produce a Cadence Generator CG-1 for this very purpose).

Note that the enable signal can be either ac or dc and the specification section gives details of the range applicable to the unit.

The output is presented both on a pair of 4mm screw terminals and a line jack socket, both being in parallel and giving output on pins 3 and 5. The output is capacitively coupled via a 1.5uF capacitor and has a series resistor of 470 ohms. Thus the output resembles that seen from a domestic master jack unit, and the inherit current limiting provides indefinite short-circuit protection.

Only the chassis of the unit is connected to Earth, the output being totally isolated and floating with respect to Earth. Thus connection can be made to earthed equipment without fear of voltage reference problems, and this is especially useful with regard to the external gating signals.

Uses

The uses that such a unit are put to always depend on the requirements of the user, but there follow some suggestions as an indication :-

a) a source of ringing voltage for product development

b) go / no-go testing in goods in / out

c) automated end-of-line testing

etc.

Specification

output frequency	25Hz +/- 2Hz
output voltage	55 - 60v RMS
waveform	sinusoidal
output	capacitively coupled via 1.5uF
outputs	1 off line jack 1 pair 4mm screw terminals
short circuit	indefinite
gate input	dc 2v to 140v ac 25v to 100v RMS
cadence options	continuous PSTN PABX user defined gateing

The unit is housed in a steel / aluminium enclosure, with all switches and connectors on the front and rear panels. It is mains powered, via an IEC connector on the rear panel. Enclosure dimensions are 220mm x 220mm x 70mm.