

4 Functional Tests

This Section details test procedures will confirm that the T2000 has been adjusted correctly and is fully operational.

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4.1 Test Equipment Required

The following equipment is required for functional testing.

- Power supply cord, wired as shown in Section 8.3.
- Power supply adjustable between 9 & 16V DC, with a capacity of at least 8A.
- VHF or UHF signal generator: good quality FM 50 Ω , usable from 0.1V (-127dBm) to 200mV (0dBm) pd (e.g. HP8640B, Marconi 2019).
- Frequency counter: 10Hz to 650MHz, 2ppm stability, with at least a 2s time base resolution (e.g. Opto).
- Audio signal generator: 600 Ω output, -50 to 0dB level, fully adjustable, sine wave output 10Hz to 100kHz (e.g. Trio 203, HP204C/D).
- FM deviation meter (e.g. Sayrosa 257 or 252), with the following specifications:
 - low residual FM
 - resolution down to a full scale of 1kHz and a minimum of 10kHz
 - maximum positive and negative peak display
 - 15kHz low pass filter
 - detected audio output facility.

Note: When using with LTR or DCS, the deviation meter must have a good low frequency response, to avoid incorrect deviation readings.

- Sinad meter or audio distortion analyser, 1kHz notch type (e.g. HP334A, HP339A or Helper Instruments Sinadder).
- AC millivoltmeter (e.g. Trio VT-106).
- Digital multimeter (e.g. Fluke 75).
- 20MHz dual channel oscilloscope and X10 . X1 scope probes (e.g. Trio CS1022).
- RF power meter, 50 Ω ; RF detecting element 50W and 5W for appropriate frequency ranges (e.g. Bird Meter 6154 or 611).
- RF power attenuator, 50 Ω , total attenuation 30dB (e.g. Weinschel 40-40-33 30dB, 150W).
- Microphone test box (refer to Figure 4.1).

A multifunction test set may be used as long as it has the appropriate function to perform the calibration correctly e.g. Rhode & Schwarz CMS52 Radio Communications Test Set, with a high stability oscillator.