



# TE3000/1

## NETWORK/IMPEDANCE ANALYZER

Model Number	TE3000/TE3001
Frequency range	0.03-300 MHz
Frequency resolution	1Hz
Frequency Accuracy	+/-10PPM
Output Signal	<p>TE3000: User adjustable to 150% Normal output (100%) is 230mVpp open circuit</p> <p>TE3001: User adjustable to 150% Normal output (100%) is 1Vpp open circuit</p>
Input Protection	<p>TE3000: Diodes begin clamping the input signal at 1Vpp Max input voltage is 50VDC or AC peak</p> <p>TE30001: Diodes begin clamping the input signal at 4Vpp Max input voltage is 50VDC or AC peak</p>
Source Impedance	Approx 35 Ohms
Impedance range	<p>Angle: -90 to +90 degrees</p> <p>Magnitude: 0.1 Ohms to 100k Ohms</p>
Measurement Resolution	<p>Z: 3 Significant figures to 0.001 Ohms, 0.1 Degrees</p> <p>C: 3 Significant figures to 0.1 pF</p> <p>L: 3 Significant figures to 0.1 nH</p> <p>S11: 3 Significant figures to 0.001 Mag, 0.1 Degrees</p>

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Typical Measurement Accuracy	<p>The accuracy depends on the load being measured, the quality of calibration and degree of averaging. Typical accuracy for 3 standard loads at 36 points over the available frequency range is tabled below in polar reflection coefficient format, after factory calibration, with averaging = 64 and 100% power output.</p> <p>TE3000:  1 Ohm, magnitude +/-7%, angle +/- 3 degrees  10 Ohm, magnitude +/-1%, angle +/- 0.5 degrees  50 Ohm, magnitude +/-0.2%, angle +/- 0.2 degrees  1k Ohm, magnitude +/-2%, angle +/- 1 degrees  10k Ohm, magnitude +/-5%, angle +/- 2 degrees  100k Ohm, magnitude +/-7%, angle +/- 3 degrees</p> <p>TE3001:  S11=1.0, magnitude +/-0.005 angle +/-0.6 degrees  S11=0.6, magnitude +/-0.006 angle +/-0.4 degrees  S11=0.0, magnitude +/-0.007</p>
System Impedance Zo (user defined)	User defined - must be a real positive number (used to calculate VSWR, return loss and reflection coefficient)
Measurement speed	25ms (no averaging)
Averaging (user defined)	1-1000
Calibration	<p>512 point, 3 error bilinear transform correction held in non-volatile memory with user adjustable frequency span.  Comes factory calibrated against 5 known loads, referenced to a HP8753D network analyzer with HP85032B Cal kit. The unit is supplied with a full calibration certificate.</p> <p>Optional custom calibration can be performed using one of the available calibration kits (see optional accessories).</p> <p>Cal files can be up or down loaded and saved to disc.</p>
Measurement Modes and Formats	Impedance -Polar, rectangular, parallel Admittance -Polar, rectangular RLC series or parallel equivalent VSWR Reflection coefficient -Polar, rectangular Return loss -dB Mismatch loss -dB Quality factor Cable Loss -dB Cable length -Degrees, %Lambda Swept measurements to PC via USB or RS232 serial port
Special Functions (run from software)	Interference spectrum scan Distance to fault Time domain impulse response Velocity Factor Characteristic impedance
Power source	DC plug-pack or internal battery (auto power-save in battery mode)
Display	4x20 character alphanumeric LCD

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Measurement method	V/I technique
Interface	USB
Software	<p>"Java software runs on Windows7/XP and includes all drivers. It provides plotting/saving/retrieving of all parameters, multi series plotting, difference plotting, cursors and annotations. Files are saved in .csv format and may be opened by excel. Sweep modes available:  Single frequency sweep  Linear sweep  Logarithmic sweep  Signal scan  Loop function"</p>
Battery	2.2Ah, ~2 hours of battery operation at full charge. Charging time: 20mins
Weight	1.9kg
Dimensions	250w x 200d x 80h (mm)
Included Accessories	UK/US/EU Mains power pack USB cable Serial Cable Java based PC software 3 piece N type SOL calibration kit Protective hard carry case with shoulder strap
Optional Accessories	TE3001: <ul style="list-style-type: none"> <li>• 3 piece N type Male SOL custom calibration kit</li> <li>• 3 piece N type Female SOL custom calibration kit</li> <li>• N to BNC male adaptor</li> <li>• N to BNC female adaptor</li> </ul> TE3000: <ul style="list-style-type: none"> <li>• TM5200 Tweezer Attachment</li> <li>• TM5201 Passive Probe Head</li> <li>• TM5202 Test Cable</li> <li>• 3 piece N type Male SOL custom calibration kit</li> <li>• 3 piece N type Female SOL custom calibration kit</li> <li>• N to BNC male adaptor</li> <li>• N to BNC female adaptor</li> </ul>

Specifications subject to change

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