Test Equipment Solutions Ltd specialise in the second user sale, rental and distribution of quality test & measurement (T&M) equipment. We stock all major equipment types such as spectrum analyzers, signal generators, oscilloscopes, power meters, logic analysers etc from all the major suppliers such as Agilent, Tektronix, Anritsu and Rohde & Schwarz.

We are focused at the professional end of the marketplace, primarily working with customers for whom high performance, quality and service are key, whilst realising the cost savings that second user equipment offers. As such, we fully test & refurbish equipment in our in-house, traceable Lab. Items are supplied with manuals, accessories and typically a full no-quibble 2 year warranty. Our staff have extensive backgrounds in T&M, totalling over 150 years of combined experience, which enables us to deliver industry-leading service and support. We endeavour to be customer focused in every way right down to the detail, such as offering free delivery on sales, covering the cost of warranty returns BOTH ways (plus supplying a loan unit, if available) and supplying a free business tool with every order.

As well as the headline benefit of cost saving, second user offers shorter lead times, higher reliability and multivendor solutions. Rental, of course, is ideal for shorter term needs and offers fast delivery, flexibility, try-before-you-buy, zero capital expenditure, lower risk and off balance sheet accounting. Both second user and rental improve the key business measure of Return On Capital Employed.

We are based near Heathrow Airport in the UK from where we supply test equipment worldwide. Our facility incorporates Sales, Support, Admin, Logistics and our own in-house Lab.

All products supplied by Test Equipment Solutions include:
- No-quibble parts & labour warranty (we provide transport for UK mainland addresses).
- Free loan equipment during warranty repair, if available.
- Full electrical, mechanical and safety refurbishment in our in-house Lab.
- Certificate of Conformance (calibration available on request).
- Manuals and accessories required for normal operation.
- Free insured delivery to your UK mainland address (sales).
- Support from our team of seasoned Test & Measurement engineers.
- ISO9001 quality assurance.

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Signal Generator SMT

SMT02: 5 kHz to 1.5 GHz
SMT03: 5 kHz to 3 GHz
SMT06: 5 kHz to 6 GHz
For receiver and EMS measurements

Brief description

Signal Generator SMT covers the complete range of conventional analog receiver measurements. It provides an exceptionally high signal quality for a generator in this price category, as well as outstanding level accuracy, a wide variety of modulation and signal generation modes, customized configuration, and great ease of operation. Features such as programmable RF, LF and level sweeps as well as the correction of external frequency response make the SMT an ideal source for EMS measurements.

Main features

- Ideal EMS signal source with specified frequency range from 5 kHz
- AM, FM, ϕM, pulse modulation
- FM DC with high carrier frequency accuracy
- Broadband FM from DC to 8 MHz, broadband ϕM from DC to 2 MHz
- Convenient RF/ LF/ level sweep
- Programmable level correction (compensation of external frequency response)
- VO R/ ILS generator (option SM-B6)
  - phase resolution 0.01°
  - DDM resolution 0.0001
- Stereo generator (option SM-B6) for measurements on FM sound broadcast transmitters and receivers
- Large, backlit LCD for clear display of all relevant settings
- Minimum RF leakage due to special shielding measures
- Calibration interval of three years

Overview of options

<table>
<thead>
<tr>
<th>Designation, functions</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Oscillator OCXO: aging &lt;1 x 10^-9/day</td>
<td>SM-B1</td>
</tr>
<tr>
<td>LF Generator: supplies sinewave, noise 0.1 Hz to 500 kHz, triangular, squarewave 0.1 Hz to 50 kHz signals</td>
<td>SM-B2</td>
</tr>
<tr>
<td>Pulse Modulator: on/ off ratio &gt;80 dB, rise/ fall time &lt;10 ns</td>
<td>SMT02: SM-B3, SMT03: SM-B8, SMT06: SM-B9</td>
</tr>
<tr>
<td>Pulse Generator: only in conjunction with SM-B3/ SM-B8/ SM-B9; provides single, delayed and double pulses</td>
<td>SM-B4</td>
</tr>
<tr>
<td>Multifunction Generator: produces stereo multiplex and VO R/ ILS signals as well as sinewave, noise 0.1 Hz to 1 MHz, triangular, sawtooth, squarewave 0.1 Hz to 50 kHz signals</td>
<td>SM-B6</td>
</tr>
<tr>
<td>Rear Connectors for RF and LF: to replace front-panel connectors</td>
<td>SMT-B19</td>
</tr>
</tbody>
</table>

Specifications in brief

<table>
<thead>
<tr>
<th>Frequency Range</th>
<th>SMT02</th>
<th>SMT03</th>
<th>SMT06</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 kHz to 1.5 GHz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 kHz to 3 GHz</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>5 kHz to 6 GHz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1 Hz adjustable in 1° steps</td>
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</tbody>
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<td>Temperature effect (0 to 55°C)</td>
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<th>Option SM-B1</th>
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<td>Temperature effect (0 to 55°C)</td>
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</tbody>
</table>
Signal Generator SMT

Spectral purity

Spurious signals

Harmonics

<30 dBc, with SM-B8/ B9: <-26 dBc

N onharmonics

f=1.5 GHz
f=3.5 GHz
f=4.5 GHz
f=7.5 GHz

<120 dBc
<134 dBc
<136 dBc
<109 dBc
<103 dBc

SSB phase noise at 20 kHz from carrier, 1 Hz bandwidth

<67.5 MHz
125 MHz
250 MHz
500 MHz
1000 MHz
2000 MHz
3000 MHz
6000 MHz

<120 dBc
<134 dBc
<136 dBc
<109 dBc
<103 dBc

Level (EMF) at LF socket

0.4 /1 /3 /15 kHz ±3%  
1 V ±1% (Rout=10 Ω, Rs>200 Ω)

Overload protection

protects the unit from externally applied RF power (50 Ω source) and AC voltages. SM-T02 and SM-T03 with SM-B6, SM-B4:

Power supply

90 to 132/180 to 265 V, 47 to 440 Hz (300 VA)

Frequency range of L, R signal

0.1 Hz to 15 kHz

Distortion (20 Hz to 100 kHz)

0.1% (level >0.5 V)

Sweep

<1.5 dB
<1.5% of reading ±0.01% of full scale

Stereo multiplex signal

Stereo operating modes

R, L, R=1, R=2, L, R=1, R=2

Ambiguity of R, L (pilot tone or MPX signal can be connected to LF socket)

Residual FM, rms (f=1 GHz)

<0.1% (Rout=10 Ω, Rs>200 Ω)

Multifunction generator

Modulation signals

Sinewave, noise

Triangular, sawtooth, squarewave

Distortion (20 Hz to 100 kHz)

Level (EMF) at LF socket

Pulse modulation

with option SM-B3, SM-B8, SM-B9

Maximum deviation depending on carrier frequency

Stereo modulation

Crosstalk attenuation

Unweighted S/N ratio

Carrier frequency offset (FM DC)

Phase modulation

Maximum deviation

µM range 1: DC to 100 kHz
µM range 2: DC to 2 MHz

Pulse modulation

Operating modes

0/0

Rise/ fall time (10/90%) &

Internal modulation generator

Level (EMF) at LF socket

0.4 /1 /3 /15 kHz ±3%  
1 V ±1% (Rout=10 Ω, Rs>200 Ω)

Level Resolution

Accuracy for levels >127 dBm

f=1.5 GHz
f=3 GHz

<80 dBc
<74 dBc
<68 dBc

Simultaneous modulation

Setting error at 1 kHz (m <80%)

AM distortion at 1 kHz

m=10%

m=20%

m=30%

m=50%

m=80%

Modulation frequency range

DC to 100 kHz

Carrier frequency offset (FM DC)

Multifunction generator (SM-B6)

Option SM-B2

0.1 Hz to 500 kHz

0.1 Hz to 50 kHz

<0.1% (level >0.5 V)

1 mV to 4 V (Rout=10 Ω, Rs>200 Ω)

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