Test Equipment Solutions Datasheet

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.

Test equipment Solutions Ltd
Unit 8 Elder Way
Waterside Drive
Langley
Berkshire
SL3 6EP

T: +44 (0)1753 596000
F: +44 (0)1753 596001

Email: info@TestEquipmentHQ.com
Web: www.TestEquipmentHQ.com
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>SM-T02: SMT03: SMT06:</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-B3 SM-B8 SM-B9</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>SMTB19</td>
</tr>
</tbody>
</table>

**Specifications in brief**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Reference frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>Aging (after 10 days of operation)</td>
</tr>
<tr>
<td>SMT02</td>
<td>5 kHz to 1.5 GHz</td>
</tr>
<tr>
<td>SMT03</td>
<td>5 kHz to 3 GHz</td>
</tr>
<tr>
<td>SMT06</td>
<td>5 kHz to 6 GHz</td>
</tr>
<tr>
<td>Resolution</td>
<td>Temperature effect (0 to 55°C)</td>
</tr>
<tr>
<td>Phase offset</td>
<td>0.1 Hz adjustable in 1° steps</td>
</tr>
</tbody>
</table>
Signal Generator SMT

Spectral purity
Spurious signals
Harmonics
N harmonics
f = 1.5 kHz
f = 1.5 kHz
f = 3 kHz
SSB phase noise at 20 kHz from carrier, 1 kHz bandwidth
<67.5 Hz
125 Hz
250 Hz
500 Hz
1000 Hz
2000 Hz
3000 Hz
6000 Hz
Residual FM, rms (f=1 G Hz)
0.3 to 3 kHz (CCITT)
0.03 to 20 kHz
Level
Resolution
Accuracy for levels >127dBm
f = 1.5 G Hz
f = 1.5 G Hz
f = 3 G Hz
Level frequency response at 0 dbm
<8 Hz
<20 Hz
<144 to +13 dBm
0.1 dB
±1 dB
±1.5 dB
±2 dB
1 dB, typ. 0.3 dB
Overload protection
protects the unit from externally applied RF power (50 Ω source) and DC voltages. SMT02 and 03/05/09 W/35 V, SMT06: ±1 W/0 V
Simultaneous modulation
Amplitude modulation
Modulation depth/resolution
Setting error at 1 kHz (m<80%)
AM distortion at 1 kHz
m=10%
m=80%
Modulation frequency range
DC to 100 kHz
Frequency modulation
Maximum deviation
Setting error at AF=1 kHz (FM AC)
FM distortion at AF=1 kHz and 50% of max. deviation
Modulation frequency response
FM1/2: 20 Hz (DC) to 100 kHz
FM2: 20 Hz (DC) to 8 MHz
Stereo modulation
Crosstalk attenuation
Unweighted S/N ratio
Carrier frequency offset (FM DC)
Phase modulation
Maximum deviation
qM range 1: DC to 100 kHz
qM range 2: DC to 2 MHz
Pulse modulation
Operating modes
On/off ratio
Rise/fall time (10/90%)
Internal modulation generator
Level (EMF) at LF socket
Level generator
Sinusoidal, squarewave
Distortion (20 Hz to 100 kHz)
Level (EMF) at LF socket
Multifunction generator
Modulation signals
Sinusoidal, noise
Triangular, sawtooth, squarewave
Distortion (20 Hz to 100 kHz)
Level (EMF) at LF socket
Stereo multiplex signal
Stereo operating modes
Frequency range of L, R signal
Preemphasis
Pilottone frequency
Pilot phase/resolution
VO channel
VO channel
VO channel
Pilot tone
VO channel
FM distortion, COM/ID tone
ILS modulation signal
Settings
DMM setting range/resolution
DMM error (RF output)
FM deviation, COM/ID tone
marker beacon
Remote control
Command set
General data
Power supply
Dimensions (W x H x D)
Weight
Ordering information
Signal Generator
SMT02
SMT03
SMT06
Options
Reference O scillator O'C XD
LF Generator
Pulse Modulator
for SMT02
for SMT03
for SMT06
Pulse Generator (only in combination with SMT03, SMT06 or SMT06)
Multifunction Generator
Rear Connectors for RF and LF
Rear Connectors for RF and LF

Signal Generation 199

Spectral purity
Spurious signals
Harmonics
N harmonics
f = 1.5 kHz
f = 1.5 kHz
f = 3 kHz
SSB phase noise at 20 kHz from carrier, 1 kHz bandwidth
<67.5 Hz
125 Hz
250 Hz
500 Hz
1000 Hz
2000 Hz
3000 Hz
6000 Hz
Residual FM, rms (f=1 G Hz)
0.3 to 3 kHz (CCITT)
0.03 to 20 kHz
Level
Resolution
Accuracy for levels >127dBm
f = 1.5 G Hz
f = 1.5 G Hz
f = 3 G Hz
Level frequency response at 0 dbm
<8 Hz
<20 Hz
<144 to +13 dBm
0.1 dB
±1 dB
±1.5 dB
±2 dB
1 dB, typ. 0.3 dB
Overload protection
protects the unit from externally applied RF power (50 Ω source) and DC voltages. SMT02 and 03/05/09 W/35 V, SMT06: ±1 W/0 V
Simultaneous modulation
Amplitude modulation
Modulation depth/resolution
Setting error at 1 kHz (m<80%)
AM distortion at 1 kHz
m=10%
m=80%
Modulation frequency range
DC to 100 kHz
Frequency modulation
Maximum deviation
Setting error at AF=1 kHz (FM AC)
FM distortion at AF=1 kHz and 50% of max. deviation
Modulation frequency response
FM1/2: 20 Hz (DC) to 100 kHz
FM2: 20 Hz (DC) to 8 MHz
Stereo modulation
Crosstalk attenuation
Unweighted S/N ratio
Carrier frequency offset (FM DC)
Phase modulation
Maximum deviation
qM range 1: DC to 100 kHz
qM range 2: DC to 2 MHz
Pulse modulation
Operating modes
On/off ratio
Rise/fall time (10/90%)
Internal modulation generator
Level (EMF) at LF socket
Level generator
Sinusoidal, squarewave
Distortion (20 Hz to 100 kHz)
Level (EMF) at LF socket
Multifunction generator
Modulation signals
Sinusoidal, noise
Triangular, sawtooth, squarewave
Distortion (20 Hz to 100 kHz)
Level (EMF) at LF socket
Stereo multiplex signal
Stereo operating modes
Frequency range of L, R signal
Preemphasis
Pilottone frequency
Pilot phase/resolution
VO channel
VO channel
VO channel
Pilot tone
VO channel
FM distortion, COM/ID tone
ILS modulation signal
Settings
DMM setting range/resolution
DMM error (RF output)
FM deviation, COM/ID tone
marker beacon
Remote control
Command set
General data
Power supply
Dimensions (W x H x D)
Weight
Ordering information
Signal Generator
SMT02
SMT03
SMT06
Options
Reference O scillator O'C XD
LF Generator
Pulse Modulator
for SMT02
for SMT03
for SMT06
Pulse Generator (only in combination with SMT03, SMT06 or SMT06)
Multifunction Generator
Rear Connectors for RF and LF
Rear Connectors for RF and LF