### ITS 6006

**RADIATED IMMUNITY TEST SYSTEM 6 GHz**

The ITS 6006 consist of an integrated RF signal generator, RF switch and EUT monitoring interfaces. The unit is designed for various radiated EMC applications in the 80 MHz to 6 GHz frequency range. In addition to the generator, the system includes the AM and PM modulators necessary for EMC testing. Other modulators can be connected to the external modulation input of the ITS 6006. The RF signal can be switched to one of four outputs, where up to four power amplifiers can be connected directly. Additional RF switches are available for combining two amplifier paths into a single antenna connection. Two of these relays are included for the four amplifier paths.

ITS 6006 interlock outputs ensure the activation of the power amplifier for only the selected signal path. The 3.5” color display shows the generator parameters. LEDs indicate the state of further functions.

The EUT monitoring is provided by six digital, one analog and one optical input, as well as four digital outputs. Up to three power meters PMR 6006 can be connected directly to the ITS 6006. The ITS 6006 provides remote control through its network, RS232 and USB interfaces.

- Integrated signal generator 80 MHz to 6 GHz
- Integrated RF switch network
- Multiple EUT monitoring options
- 3.5” TFT color display
- Safety interlock function
- Remote control via USB, RS232 or LAN

### ITS 6006 Features

- 3 power meter inputs for PMR 6006
- Indicators for RF-switch network and interlock functions
- 3.5” color display
- EUT monitoring ports and user port for 4 TTL inputs, 4 TTL outputs and supply voltages
- Remote control via RS232, LAN or USB
- Inputs for trigger, external modulation, 10 MHz ref out
- Interlock
- RF-switch network with 2x SPDT relays
- 4 generator outputs
**ITS 6006**

**RADIATED IMMUNITY TEST SYSTEM 6 GHz**

### ITS 6006 Block diagram

- **10 MHz reference**
- **External modulation**
- **Trigger**
- **User-Port-IN 0-3**
  - Digital 1 & 2
  - Optical input
  - Analog input
  - User-Port-OUT 0-3
- **Signal generator**
- **EUT monitoring interface**
- **Control unit**
- **4 RF outputs**
- **RF switch**
- **3x PMR 6006 power meter**
- **Remote control:** LAN, RS232, USB

### Technical specifications

#### Generator

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF</td>
<td>80 MHz – 6 GHz</td>
</tr>
<tr>
<td>Resolution</td>
<td>1 Hz</td>
</tr>
<tr>
<td>Reference frequency</td>
<td>10 MHz</td>
</tr>
<tr>
<td>Max. adjustment deviation</td>
<td>±50 Hz</td>
</tr>
<tr>
<td>Aging</td>
<td>5 ppm</td>
</tr>
<tr>
<td>Level range</td>
<td>-60 dBm to +10 dBm (-60 dBm to +8 dBm at f&gt;3 GHz &amp; ϑ&gt;30°C)</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1 dB</td>
</tr>
<tr>
<td>Accuracy</td>
<td>&lt;1 dB, typ. &lt;0.5 dB (+15 to +25°C)</td>
</tr>
<tr>
<td>Spectral distortion</td>
<td></td>
</tr>
<tr>
<td>Harmonics (level ≤0 dBm)</td>
<td>&lt;-30 dBC, typ. &lt;-35 dBC</td>
</tr>
<tr>
<td>Harmonics (level ≤+10 dBm)</td>
<td>&lt;-25 dBC</td>
</tr>
<tr>
<td>Non harmonics</td>
<td>&lt;-35 dBC</td>
</tr>
<tr>
<td>Amplitude modulation</td>
<td></td>
</tr>
<tr>
<td>Modulation depth</td>
<td>0 – 100%</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.5%</td>
</tr>
<tr>
<td>Modulation frequency range</td>
<td>1 Hz – 20 kHz</td>
</tr>
<tr>
<td>Frequency resolution</td>
<td>1 Hz</td>
</tr>
</tbody>
</table>
### Generator (continued)

<table>
<thead>
<tr>
<th>Modulation frequency range:</th>
<th>1 Hz – 2 kHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency resolution:</td>
<td>1 Hz</td>
</tr>
<tr>
<td>Duty cycle:</td>
<td>10% to 90%</td>
</tr>
<tr>
<td>External modulation</td>
<td></td>
</tr>
<tr>
<td>Level:</td>
<td>1 Vpp to get 100% AM, 1 Hz – 10 kHz</td>
</tr>
</tbody>
</table>

### Analog ports

**Front panel**
- Monitoring input analog: BNC socket, 0-24 V, Ri=15 kΩ, 6 mV resolution
- User port: D-Sub 15 pole
  - PIN 15: +12 V / max. 200 mA
  - PIN 14: -12 V / max. 200 mA
  - PIN 13: +5 V / max. 200 mA
  - PIN 5 and 10: GND

**Back panel**
- Generator outputs: 4x N sockets 50 Ω, 80 MHz – 6 GHz
- Interlock outputs: 4x BNC sockets
- External modulation input: BNC socket, impedance >10 kΩ
- 10 MHz reference output: BNC socket, approx. 0 dBm / 50 Ω
- RF Switch network: Relay type 2x SPDT, N sockets 50 Ω
  - Power up to 100 MHz: 1500 W
  - Power up to 400 MHz: 800 W
  - Power up to 1 GHz: 500 W
  - Power up to 3 GHz: 300 W
  - Power up to 6 GHz: 200 W

### Digital ports

**Front panel**
- Power meter inputs 1 to 3: for connecting up to 3 Teseq PMR 6006
- Monitoring digital input 1 and 2: BNC socket, 0-24 V via optical coupler Ri=1.5 kΩ, switching threshold approx. 2-3 V
Digital ports (continued)

Monitoring optical input: POF (Polymeric optical fiber), HP versatile link HFBR0501 series 40 kBd, (avoid scattered light on the front panel)
User port: D-Sub 15 pole, 4 TTL inputs, 4 TTL outputs

Back panel
Trigger input: BNC socket, TTL for external triggering, max. frequency 100 Hz, trigger delay <50 ms
Remote ports
RS232: D-Sub 9 pole, up to 115200 Bd
USB device connector: connector type “B”
Network: RJ45, Ethernet 10/100 BASE-T

Power supply

Operating range: 100 - 240 VAC, 50 / 60 Hz, autoranging
Power consumption: 90 VA
Fuse: 1.5 A (slow) for 110 V, 1 A (slow) for 230 V

General data

Operating temperature range: 0°C to 40°C
Storage temperature range: -20°C to 60°C
Relative humidity: 95% / 30°C (no moisture condensation)
EMC: DIN/EN 61326-1:2006
Shock: DIN/EN 60068-2-27
Vibration: DIN/EN 60068-2-6
Protection class: DIN/EN 61010-1/IEC 61010-1

Mechanical specifications

Size (W x H x D): 45 cm (19”) x 10.6 cm (2HU) x 42.3 cm
Weight: approx. 9.5 kg
Cardboard box: 60 cm x 55 cm x 37 cm (additional space for option PMR 6006 available), weight of cardboard box approx. 2.3 kg (empty)
**ITS 6006**

RADIATED IMMUNITY TEST SYSTEM 6 GHz

**Software**

The included software allows configuration and application of the ITS 6006 as a signal generator with many additional features like scalar quadripole measurements for measuring, for example, the insertion loss of the RF cable. For EMC testing, the ITS 6006 can be used in combination with Teseq’s WIN 6000 or Compliance comprehensive test system software.

**Application with 2 power amplifiers and 1 antenna**

**Application with 3 power amplifiers and 1 antenna**
ITS 6006
RADIATED IMMUNITY TEST SYSTEM 6 GHz

Application with 3 power amplifiers and 2 antennas

Application with 4 power amplifiers and 2 antennas

EUT monitoring: analog, digital, optical to ITS 6006

EUT monitoring: analog, digital, optical to ITS 6006

EUT monitoring: analog, digital, optical to ITS 6006
**ITS 6006**

**RADIATED IMMUNITY TEST SYSTEM 6 GHz**

Application with up to 3 GHz with 2 power amplifiers, GTEM cell and connection to the emissions measuring system

Application with 3 power amplifiers and GTEM cell
## ITS 6006
### RADIATED IMMUNITY TEST SYSTEM 6 GHz

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>254005</td>
<td>ITS 6006 Immunity test system ITS 6006, 80 MHz to 6 GHz RF generator, RF switch network, EUT monitoring system, country version EU, UK, US/JP</td>
</tr>
<tr>
<td>97-254005</td>
<td>ITS 6006-TC Traceable calibration (ISO17025), order only with the device</td>
</tr>
<tr>
<td>98-254005</td>
<td>ITS 6006-DKD DKD calibration (ISO17025), order only with the device</td>
</tr>
<tr>
<td>254725</td>
<td>PMR 6006 Power meter PM 6006, 1 MHz to 6 GHz, version R for direct connection to ITS 6006, cable LE 243-2 included (length 2 m)</td>
</tr>
<tr>
<td>254746</td>
<td>PMR 6006-10 Power meter PM 6006, 1 MHz to 6 GHz, version R for direct connection to ITS 6006, cable LE 243-10 included (length 10 m)</td>
</tr>
<tr>
<td>254726</td>
<td>PMU 6006 Power meter PM 6006, 1 MHz to 6 GHz, version USB for direct connection to PC, cable LE 244 (length 2 m) and storage case included</td>
</tr>
<tr>
<td>97-254725</td>
<td>PM 6006-TC Traceable calibration (ISO17025), order only with the device</td>
</tr>
<tr>
<td>98-254725</td>
<td>PM 6006-DKD DKD calibration (ISO17025), order only with the device</td>
</tr>
<tr>
<td>253892</td>
<td>SW 6012 Option for ITS 6006: RF-Switch network 2x SPDT</td>
</tr>
<tr>
<td>254747</td>
<td>USO 4013-RS232-20 Converter USB-to-serial/optical, 20 m POF, optical-to-RS232</td>
</tr>
<tr>
<td>254700</td>
<td>IOB 4000 Input/output box, battery operated EUT monitoring system with optical interface, incl. USO 4013, 10 m fiber optical cable and storage case included</td>
</tr>
<tr>
<td>253715</td>
<td>WIN 6000 Test house software with 15 months support</td>
</tr>
</tbody>
</table>

For power amplifiers, directional couplers and antennas see www.teseq.com.

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**Model range and options**

**Power meter PM 6006**, available as PMR 6006 or PMU 6006

**RF-Switch network SW 6012**

**USO 4013-RS232-20**, USB to serial/optical converter

**WIN 6000**, Test house software for using NSG 4070 and ITS 6006