

7010

EMI Receiver with built-in LISN



Main Features

- 7010 Opt.00: 150 kHz to 1 GHz frequency range
- 7010 Opt.01: 9 kHz to 1 GHz frequency range
- 7010 Opt.02: 9 kHz to 30 MHz frequency range
- 7010 Opt.03: 9 kHz to 3 GHz frequency range
- Built to CISPR 16-1-1 and CISPR 16-1-2 Standards
- Conducted and radiated emission tests
- Two built-in 16A Line Impedance Stabilization Networks (LISN)
- User port for driving external LISNs
- Free PES PMM Emission Suite Software with Smart Detector function (*)
- Combination of EMI test receiver and spectrum analyzer
- Direct analog to digital conversion up to 30 MHz
- Robust, compact construction
- 140 dBμV (2 W) maximum input level without damage

The 7010 EMI Receiver is a highly flexible and easy-to-use device suitable for conducted and radiated measurements from 9 kHz up to 3 GHz. Thanks to its built-in 16 A Line Impedance Stabilization Network (LISN), the 7010 performs complete conducted emission measurements and characterization of EUT with no external or additional equipment. The compact, rugged design makes the 7010 a perfect companion for product designers in-site testing, and laboratory EMI measurements.

The innovative 7010 EMI Receiver combines state-of-the-art digital technology with an RF front-end as required by CISPR standards, thus combining excellent accuracy with high flexibility.

The PMM Emission Suite software features a full set of user-friendly functions for all EMI applications.

The receiver can be ordered with four different frequency ranges: 150 kHz to 1 GHz (7010 opt.00), 9 kHz to 1 GHz (7010 opt.01), 9 kHz to 30 MHz (7010 opt.02) and 9 kHz to 3 GHz (7010 opt.03). Users can upgrade from one version to another at any time.

*The innovative Smart Detector function in PMM receivers reduces test time and increases the productivity of the lab.

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SPECIFICATIONS

Frequency range	150 kHz to 1 GHz (Opt.00) 9 kHz to 1 GHz (Opt.01) 9 kHz to 30 MHz (Opt.02) 9 kHz to 3 GHz (Opt.03)		
Resolution	10 Hz		
Frequency accuracy	< 3 ppm		
RF Input	Zin 50 Ω, N fem.		
VSWR 10 dB RF att.	< 1,2; < 2 over 1 GHz		
0 dB RF att.	< 1,2; < 1,4 over 30 MHz; < 2 over 1 GHz		
Attenuator	0 dB to 35 dB (5dB steps) 0 dB to 50 dB (2dB steps) over 30 MHz Built-in up to 30 MHz		
Pulse limiter	Built-in up to 30 MHz		
Max input level (without equipment damage)	140 dBμV (2 W)		
Sinewave AC voltage	140 dBμV/MHz		
Preselector (Permanent built-in)	9 kHz to 30 MHz 30 MHz to 1 GHz 1 GHz to 3 GHz		
IF bandwidth	1 (Opt.01, 02 & 03), 3, 10, 30, 100, 300 kHz, 1 MHz (Opt.03) 200 Hz (Opt.01, 02 & 03), 9 kHz and 120 kHz		
6dB bandwidth	1 (Opt.01, 02 & 03), 3, 10, 30, 100, 300 kHz, 1 MHz (Opt.03)		
CISPR 16-1-1	200 Hz (Opt.01, 02 & 03), 9 kHz and 120 kHz		
Noise level (Att 0 dB, 50 Ω term, Hold time 1 s)	0,009 to 0,15 MHz (200 Hz RBW)	< 0 dBμV (QP) (-130 dBm/Hz)	< -3 dBμV (AV) (-133 dBm/Hz)
	0,15 to 30 MHz (9 kHz RBW)	< 14 dBμV (QP) (-128 dBm/Hz)	< 7 dBμV (AV) (-135 dBm/Hz)
	30 to 1000 MHz (120 kHz RBW)	< 14 dBμV (QP) (-144 dBm/Hz)	< 7 dBμV (AV) (-151 dBm/Hz)
	1000 to 2700 MHz (1 MHz RBW)	< 16 dBμV (AV) (-151 dBm/Hz)	
	2700 to 3000 MHz (1 MHz RBW)	< 19 dBμV (AV) (-148 dBm/Hz)	
Spurious response (Att 0 dB, 50 Ω term, det. PK, Hold time 10 ms)	< 20 dBμV; < 23 dBμV over 2700 MHz		
Detectors	Peak, Quasi-Peak, Average, RMS, RMS-Avg (optional), C-Avg, Smart Detector function		
Level measuring time (hold time)	0,2 ms to 120 s (CISPR 16-1-1 as default)		
Measurement accuracy S/N > 20 dB	9 kHz to 1 GHz ± 1,0 dB		
	1 GHz to 3 GHz ± 1,5 dB		
Main measuring functions (With included PMM Emission Suite SW)	<ul style="list-style-type: none"> • Marker, marker peak, marker to centre, highest peaks, move peak to Analyzer or Manual modes, automatic test report. • 80 to 200 dB selectable dynamic range. • Display unit: dBm, dBμV, dBμA, dBμV/m, dBpT, dBμA/m, dBpW. • Store-Load: traces, panels, conversion factors, limits. 		
CISPR 16-1-1 compliance	Standard compliant detectors down to 20 Hz PRF		
Demodulation	Built-in AM and FM demodulators (internal loudspeaker)		
I/O Interface (protocol available for software developers)	USB 2.0, RS-232, user port (drives LISNs and accessories)		
Operating temperature	-5° to 45°C		
Power supply	12 Volt DC, 0,8A (AC universal adapter)		
Built-in LISN (compliant to CISPR 16-1-2)	<ul style="list-style-type: none"> Frequency range: 9 kHz to 30 MHz Continuous rated output current: 16A Max permissible operating voltage: 250 Vac – 350 Vdc EUT supply frequency range: DC to 60 Hz CISPR equivalent circuit: 50 Ω // (5 Ω + 50 μH) EUT power connector: Schuko 2P+E Line plug: IEC 60320 C20 Artificial hand: 4 mm socket Dimensions (W x H x D): 235 x 105 x 335 mm Weight: 5,0 kg 		



Ordering information:

7010 Option 00 (150 kHz to 1 GHz)
7010 Option 01 (9 kHz to 1 GHz)
7010 Option 02 (9 kHz to 30 MHz)
7010 Option 03 (9 kHz to 3 GHz)
Includes: LISN mains cable, RS232 cable, USB-RS232 serial converter, USB cable, N-m to BNC-f adapter, AC/DC power adapter, PES PMM Emission Suite Software, soft carrying case, user's manual, standard calibration certificate

Optional accessories:

9010/RAV RMS-Avg detector, **9010-RMA** rack mount adapter for 19" rack
Upgrades:
7010/UP/01 from 7010 to 7010 Opt. 01 (9 kHz to 1 GHz)
7010/00/UP/01 from 7010 Opt. 00 to 7010 Opt. 01 (9 kHz to 1 GHz)
7010/02/UP/01 from 7010 Opt. 02 to 7010 Opt. 01 (9 kHz to 1 GHz)
7010/UP/03 from 7010 to 7010 Opt. 03 (9 kHz to 3 GHz)
7010/00/UP/03 from 7010 Opt. 00 to 7010 Opt. 03 (9 kHz to 3 GHz)
7010/01/UP/03 from 7010 Opt. 01 to 7010 Opt. 03 (9 kHz to 3 GHz)
7010/02/UP/03 from 7010 Opt. 02 to 7010 Opt. 03 (9 kHz to 3 GHz)

Related products

Receivers

- 9010: EMI Receiver 10 Hz to 30 MHz
- 9010F: EMI Receiver 10 Hz to 30 MHz
- 9010/03P: EMI Receiver 10 Hz to 300 MHz
- 9010/30P: EMI Receiver 10 Hz to 3 GHz
- 9010/60P: EMI Receiver 10 Hz to 6 GHz
- 9030: EMI Receiver 30 MHz to 3 GHz
- 9060: EMI Receiver 30 MHz to 6 GHz
- 9180: EMI Receiver 6 GHz to 18 GHz
- FR4003: Field Receiver 9 kHz to 30 MHz

Antennas

- BC-01: Biconical Antenna 30 to 200 MHz
- BL-01: Biconical Log Periodic Antenna 30 MHz to 6 GHz
- DR-01: Double-ridged Horn Antenna 6 to 18 GHz
- LP-02: Log Periodic Antenna 200 MHz to 3 GHz
- LP-03: Log Periodic Antenna 800 MHz to 6 GHz
- LP-04: Log Periodic Antenna 200 MHz to 6 GHz
- VDH-01: Van der Hoofden Test Head 20 kHz to 10 MHz
- TR-01: Antenna Tripod
- Antenna Set AS-02 (BC01+LP02+TR01)
- Antenna Set AS-03 (BC01+LP02+LP03+TR01)
- Antenna Set AS-04 (BC01+LP04+TR01)
- Antenna Set AS-05 (BC01+LP04+DR01+TR01)
- Antenna Set AS-06 (BC01+LP02+LP03+DR01+TR01)
- Antenna Set AS-07 (BL01+TR01)
- Antenna Set AS-08 (BL01+DR01+TR01)
- RA-01: Rod Antenna 9 kHz to 30 MHz
- RA-01-HV: Rod Antenna 150 kHz to 30 MHz
- RA-01-MIL: Rod Antenna 9 kHz to 30 MHz

LISNs/Probes

- L2-16B: single phase AMN, 16 A
- L3-32: 4 lines, 3-phase AMN, 32 A
- L3-64: 4 lines, 3-phase AMN, 63 A
- L3-64/690V: 4 lines, 3-phase AMN, 63 A
- L3-100: 4 lines, 3-phase AMN, 100 A
- L1-150M: single-path, 50 Ohm AMN, 150 A
- L1-150M1: single-path, 50 Ohm AMN, 150 A
- L1-500: single phase AMN, 500 A
- L3-500: 4 lines, 3-phase AMN, 500 A
- SBRF4: RF Switching Box
- SHC-1/1000: Voltage probe, 1000 Vac, 35 dB
- SHC-2/1000: Voltage probe, 1000 Vac, 30 dB

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