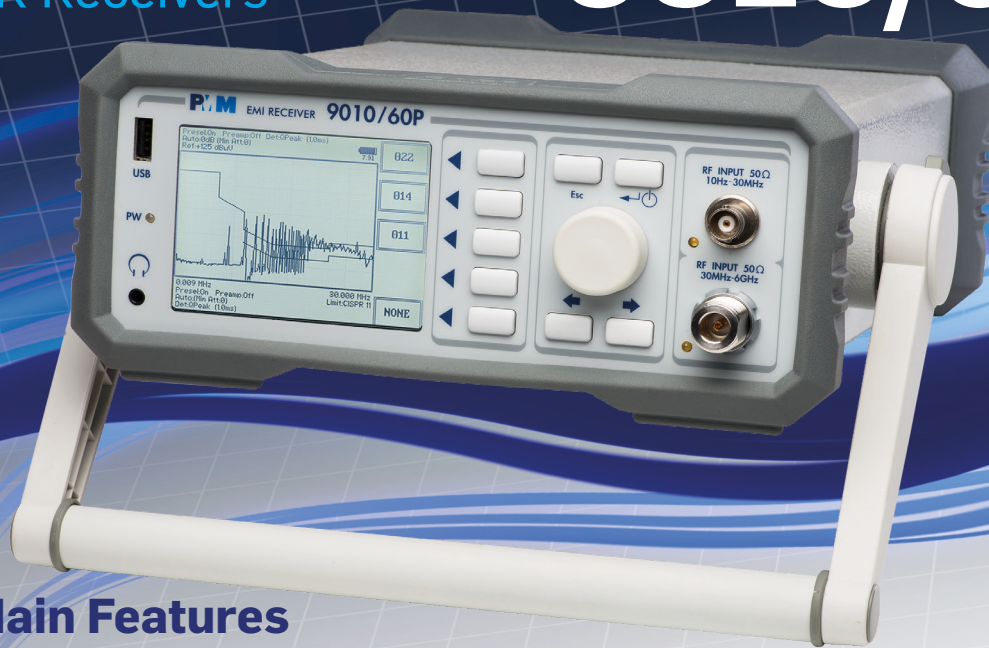


# 9010/03P

# 9010/30P

# 9010/60P

## EMI CISPR Receivers



## Main Features

- 9010/03P: 10 Hz to 300 MHz frequency range
- 9010/30P: 10 Hz to 3 GHz frequency range
- 9010/60P: 10 Hz to 6 GHz frequency range
- Full compliance with CISPR 16-1-1 Standard up to 30 MHz (A and B band)
- Compliance with CISPR 16-1-1 Standard (PRF  $\geq$  10 Hz) above 30 MHz (\*)
- Conducted and radiated emission tests
- User port for driving external LISNs
- Free PES Emission Suite software with Smart Detector function (\*\*)
- Click mode, RMS-AVG detector and MIL-STD RBW filters (options)
- Direct analog to digital conversion up to 30 MHz
- Robust, compact construction

The 9010/03P, 9010/30P and 9010/60P EMI Receivers are perfect tools for compliance conducted and radiated measurements from 10 Hz up to 300 MHz (03P), 3 GHz (30P) or 6 GHz (60P) with the possibility to upgrade from one range to the next.

The compact, rugged design makes it a perfect companion for product designers, in-situ testing, and laboratory EMI measurements.

The EMI Receiver is designed to showcase cutting-edge technology and the finest components. It features a fully digital architecture that immediately follows the analog RF preselector and attenuator required by the CISPR standards, and combines the superior precision and accuracy of a numerical approach with the flexibility and user friendliness of a modern instrument.

\*CISPR 16-1-1 compliant for DUTs; does not emit broadband signals of PRF of 20 Hz or lower.

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



# 9010/03P, 9010/30P, 9010/60P

## EMI CISPR Receiver

SPECIFICATIONS	Input 10 Hz to 30 MHz	Input 30 MHz to 300 MHz (9010/03P)	Input 30 MHz to 3 GHz (9010/30P)	Input 30 MHz to 6 GHz (9010/60P)
<b>Frequency range</b>	10 Hz to 30 MHz	30 MHz to 300 MHz	30 MHz to 3 GHz	30 MHz to 6 GHz
Resolution, Freq. accuracy	0,1 Hz, < 1 ppm	100 Hz, < 2 ppm	100 Hz, < 2 ppm	100 Hz, < 2 ppm
<b>RF Input</b>	Zin 50 Ω, BNC fem.	Zin 50 Ω, N fem.	Zin 50 Ω, N fem.	Zin 50 Ω, N fem.
VSWR 10 dB RF att.	< 1,2	< 1,2	< 1,2, < 2,0 over 1 GHz	< 1,2, < 2,0 over 1 GHz
0 dB RF att.	< 2,0	< 1,2	< 1,2, < 2,0 over 1 GHz	< 2,0, < 3,0 over 1 GHz
Attenuator	0 dB to 35 dB (5dB steps)	0 dB to 50 dB (2dB steps)	0 dB to 50 dB (2 dB steps)	0 dB to 55 dB (5 dB steps)
Pulse limiter	Built in (selectable)	n.a.	n.a.	n.a.
Preamplifier gain	20 dB (after preselector, selectable)	n.a.	n.a.	n.a.
<b>Max input level</b>	(without equipment damage)			
Sinewave AC voltage	137 dBμV (1 W)			
Pulse spectral density	97 dBμV/MHz			
<b>Preselector</b>	< 9 kHz			
One lowpass filter	9 to 150 kHz, 150 to 500 kHz,	n.a.	n.a.	n.a.
Six bandpass filters	500 kHz to 3 MHz, 3 to 10 MHz, 10 to 20 MHz, 20 to 30 MHz			
<b>IF bandwidth</b>				
Standard 3/6 dB	(3 dB BW) 3, 10, 30, 100, 300 kHz	(6 dB BW) 3, 10, 30, 100, 300 kHz, 1 MHz	(6 dB BW) 3, 10, 30, 100, 300 kHz, 1 MHz	(6 dB BW) 3, 10, 30, 100, 300 kHz, 1 MHz
CISPR-16-1-1	200 Hz, 9 kHz	120 kHz	120 kHz	120 kHz
MIL-STD-461 (option)	10, 100 Hz, 1, 10 kHz	100 kHz, 1 MHz	100 kHz, 1 MHz	100 kHz, 1 MHz
<b>Noise level</b>	(Preamplifier ON)			
9 to 150 kHz	< - 8 dBμV (QP) (200 Hz RBW)	30 MHz to 300 MHz < 8 dBμV (QP) (120 kHz RBW)	30 MHz to 3 GHz < 8 dBμV (QP) (120 kHz RBW)	30 MHz to 300 MHz < 10 dBμV (QP) (120 kHz RBW)
	< - 15 dBμV (AV)	< 4 dBμV (AV)	< 4 dBμV (AV)	< 7 dBμV (AV)
0,15 to 30 MHz	< - 4 dBμV (QP) (9 kHz RBW)			300 MHz to 3 GHz < 13 dBμV (QP) (120 kHz RBW)
	< - 10 dBμV (AV)			< 7 dBμV (AV)
				3 GHz to 6 GHz < 15 dBμV (QP) (120 kHz RBW)
				< 10 dBμV (AV)
<b>Measuring detectors</b>	Peak, Quasi-Peak, Average, RMS, RMS-Average(Optional), CISPR-Average, APD and Smart Detec-			
<b>Level measuring time</b>	1 ms to 30 s. (CISPR 16-1-1 default)			
Peak, Quasi-Peak, AVG, RMS (simultaneous detectors)				
<b>Display units</b>	dBm, dBμV (as stand-alone); dBm, dBμV, dBμV/m, dBmA, dBmA/m, dBpW (through 9010 SW Utility on PC)			
<b>Spurious response</b>	< 0 dBuV, < 10dBuV over 150 kHz	< 15 dBμV	< 15 dBμV	< 10 dBμV, < 15 dBμV over 2 GHz
<b>Measurement accuracy</b>	10 Hz to 9 kHz ± 1,0 dB typical	± 1 dB	30 MHz to 1 GHz ± 1,0 dB	30 MHz to 1 GHz ± 1,0 dB
S/N > 20 dB	9 kHz to 30 MHz ± 1,0 dB		1 GHz to 3 GHz ± 1,5 dB	1 GHz to 3 GHz ± 1,5 dB
			3 GHz to 6 GHz ± 2,0 dB	3 GHz to 6 GHz ± 2,0 dB
<b>Demodulation</b>	Built-in AM demodulator (headphone jack)			
<b>RF output</b> (tracking generator)	Zout 50 Ω, BNC fem.			
Frequency range	10 Hz to 50 MHz			
Level	60 dBμV to 90 dBμV (0,1 dB steps)			
Level accuracy	± 0,5 dB (10 Hz to 30 MHz)			
<b>I/O Interface</b>	USB 2.0 (rear), USB 2.0 (front; only for future implementation), RS-232, high-speed optical link (2 channels; 2nd channel for future implementation), user port (for LISN connection, etc.), Bluetooth through optional adapter, IEEE-488 (GPIB) optional			
<b>Operating temperature</b>	0 °C to 40 °C			
<b>Power supply</b>	10 - 15 Volt DC, 2,5 A; optional Li-ion interchangeable battery (8h use, typical)			
<b>Dimensions (W x H x D)</b>	235 x 105 x 335 mm			
<b>Weight</b>	4,1 kg			

### Ordering information:

9010/03P - 9010/30P - 9010/60P EMI CISPR Receivers

Includes: RS232 cable, USB-RS232 serial converter, USB cable, BNC-BNC cable, N-m to BNC-f adapter, AC/DC power adapter, PES Emission Suite software, soft carrying case, user's manual, standard calibration certificate.

### Optional accessories:

BP-02 Li-ion battery pack, 9010-BTA serial Bluetooth adapter, 9010-RMA rack mount adapter for 19" rack.

Options: 9010/MIL, 9010/RAV, 9010/CLICK.

Fully compliant frequency extension modules: 9030, 9060, 9180.

Upgrades: 9010/03P/UP/30P, 9010/03P/UP/60P, 9010/30P/UP/60P.

Accredited calibrations: 9010/UKAS, 9010/UKAS-Click

## Related products

### Receivers

- 7010/00: EMI Receiver 150 kHz to 1 GHz
- 7010/01: EMI Receiver 9 kHz to 1 GHz
- 7010/02: EMI Receiver 9 kHz to 30 MHz
- 7010/03: EMI Receiver 9 kHz to 3 GHz
- 9010: EMI Receiver 10 Hz to 30 MHz
- 9010F: EMI Receiver 10 Hz to 30 MHz
- 9030: EMI Receiver 30 MHz to 3 GHz
- 9060: EMI Receiver 30 MHz to 6 GHz
- 9180: EMI Receiver 6 GHz to 18 GHz
- 9010/Click4E: Four Channels Click Meter
- 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

- 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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