OTHER PMM PRODUCTS

1000 	1008 	2000 
2010 	3000 	6000N 
6000S 	6600 	7000 
8052 	8053 	9000 

COMPETENT BODY

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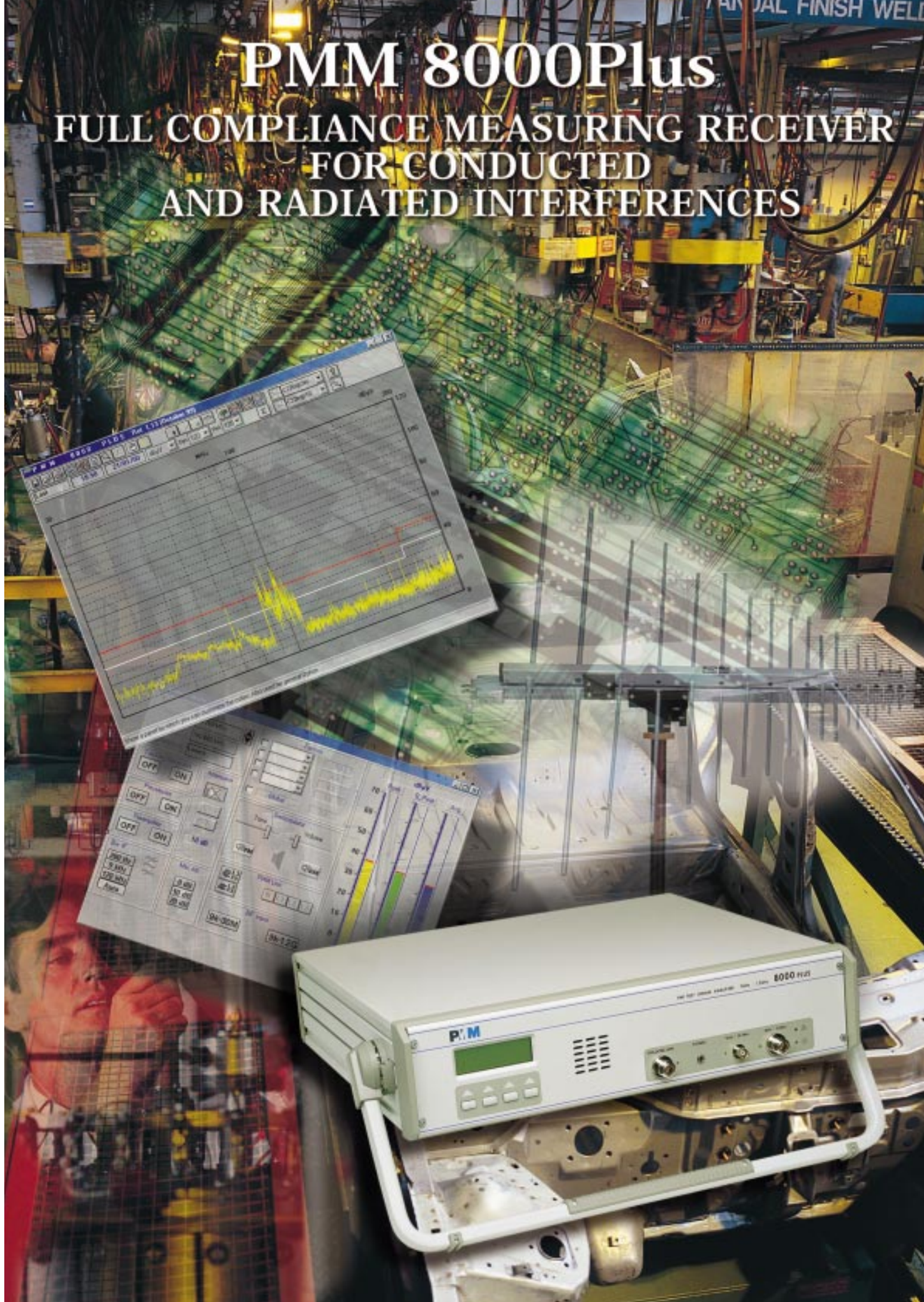
Distributed by:

PMM 8000Plus

FULL COMPLIANCE MEASURING RECEIVER FOR CONDUCTED AND RADIATED INTERFERENCES



The evolution of the well known PMM 9000 high performances receiver.
Low cost, full compliant to C.I.S.P.R. 16-1, even with single pulse test in the 9 kHz - 1,2 GHz frequency range

The PMM 8000Plus measuring system for conducted and radiated interferences performs either manually or automatically all the measurements requested by several standards in the 9 kHz - 1,2 GHz frequency range.

The PMM 8000Plus system is driven via RS232 interface from every Windows™ based PC, for easy one click operations. Both digital and analog data are displayed on the PC screen with simultaneous Peak, Quasi-Peak and Average detectors. The automatic mode of operation allows accurate and fast measurements: the operator is only requested to preset the frequency band and the standard; the receiver will execute a high speed sweep with Peak detection: when, on those frequencies where the level was found close or exceeding the specification reference mask, the PMM 8000Plus will turn on the Quasi-Peak detector.

FRONT PANEL

FEATURES

- Fully CISPR 16 compliance
- From 9 kHz o 1.2 GHz
- 3 simultaneous detectors
- Two inputs
- PC driven
- Small size and weight
- Automatic Correlation for GTEM to OATS
- Automatic LISN control
- Built in 10 dB Preamplifier
- Up to 4 antenna factors tables
- Tracking generator

BENEFITS

- Final certification
- Conducted and radiated emissions
- Fast measurement
- High input voltage protection
- Low cost
- Windows™
- Ideal for on site testing
- High testing throughput
- Time saving
- Low level signal measurement
- Automatic correction of antenna, cables, connectors or preamplifier
- Filter measurement and insertion loss according to EN55015 testing
- Auto Calibration

REAR PANEL

SMART QUASI-PEAK FOR INTELLIGENT MEASUREMENT

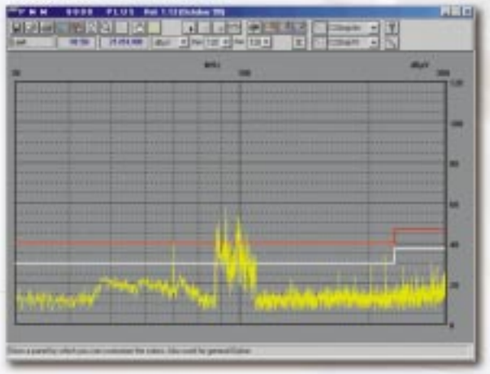
This innovative approach offers an incomparable help to the designer to perform fast and smart measurements. The PMM 8000Plus can turn on the Qpeak detector only when the interference signals are over or close to the selected limit of a user defined distance in dB; but instead of capturing all signals (like conventional receivers or spectrum analyzers), a specific maximum number of measurements can be selected. For example, if your interferences are all almost over the limit, the PMM 8000Plus has to perform an extremely high number of measurements consuming a lot of time (500 ms for each points measured). Instead, if you select 20 or 30 peaks, you spend only 10 or 15 seconds.

Also, all these frequencies can be automatically saved into a sweep table for future use. In fact, PMM 8000Plus allows the user to sweep trough any frequency table using one or all three detectors.

When the application requires to perform fast measurements without comparing them to the limit, the user can select the second feature of SmartQPeak menu called Highest N Peaks. First of all, 8000Plus performs a fast sweep with Peak detector and then repeats the sweep using Qpeak for only number of peaks definable by user.
Then you can use the WORST together with Through Table functions. In this way the designer can perform any action to reduce the interferences by adding filters or putting shielding material and see in "quasi" real time the result of circuitry modifications.

PMM “EASY TO USE” APPROACH

PMM 8000Plus has been designed according to the famous PMM easy to use concept.
All operations can be performed just clicking the function you wish.
Every function is under user control in a very comprehensive operating mode.
All measurement files can be exported to any spread sheet or data base application software for further manipulation.
Marker and Zoom modes enhance the analysis of any complex signals.



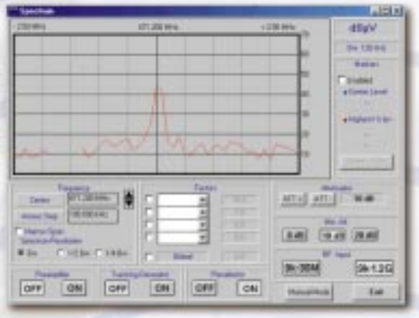
SWEEP MODE

All standards are preloaded by PMM.
Just choose conducted or radiated setup and the standard, the PMM 8000Plus will be automatically settled.
Push EXECUTE button to get the PMM 8000Plus working for you.
In SWEEP MODE you can activate a multiscan mode with a WAIT command to help you to accomplish some manual operations (i.e. change the antenna, turn on/off the EUT etc.) or to sweep through up to 3 different setup configurations.
With the ZOOM function you can enlarge a portion of your graph and, thanks to the MARKER function, you can perform a very precise reading of frequency and level, simply positioning the marker on top of the selected peak.

In SWEEP mode the user can enable the automatic switching of the LISN’s phases, find the WORST case of several sweeps or sweep through a user definable table. It is also possible to perform the measurements using the Q-peak detector only when the signal exceeds the chosen limit.
In this menu the user has access and control of all parameters.

SPECTRUM MODE

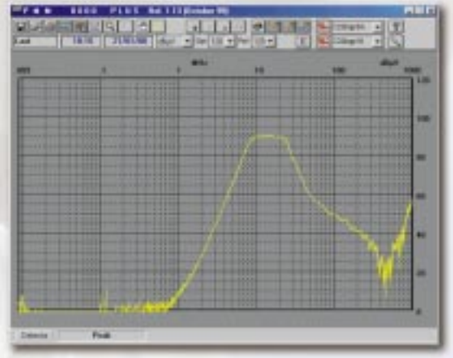
In Spectrum Mode, the hardware and software capabilities are fully exploited,



in order to provide a limited display useful for debugging purposes, for example to see, in real time, modifications made on power line, filter or shielding material.
You can select the appropriate span, enable or disable the correction factor tables, increase or decrease the input attenuator.

TRACKING GENERATOR

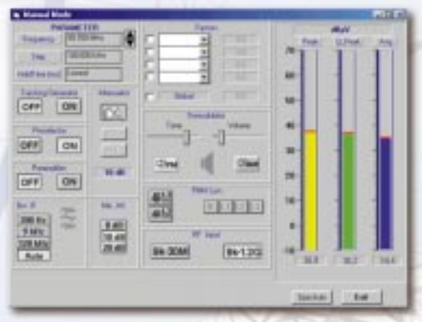
Automatic self calibration is provided



thanks to PMM 8000Plus high accuracy tracking generator output. Filter characterization and insertion loss measurement can be performed quickly and precisely.

MANUAL MODE

In Manual Mode the user can read the level of each detector simultaneously in both analogue and digital readouts.
All measurements can automatically be corrected thanks to the 4 factor tables.
The user can define the Center frequency, the Step and the Hold time.
The Hold time feature is useful when the signals are intermittent or unstable.



Thanks to his internal demodulator you can listen any broadcasting station using AM or FM demodulation capability, to make sure that the signal is not due to your device under test (EUT).

OPEN AREA TEST SITE CORRELATION

If you are using an EMCO GTEM, you can automatically correlate the X, Y and Z measurements to the OATS with our correlation software, just clicking the appropriate 8000’s icon.

PMM 8000PLUS MAIN SPECIFICATIONS

Electrical Characteristics	Performance Limits
Frequency range	9 kHz to 1,2 GHz (Input A) 9 kHz to 30 MHz (Input B with Pulse Limiter)
Resolution	10 Hz (Range 9 kHz to 150 kHz) 100 Hz (Range 150 kHz to 1,2 GHz)
Setting error	< 2 x 10^{-6}
RF input	Z_{in} 50Ω, built in N connector (Input A) Z_{in} 50Ω, built in BNC connector (Input B)
VSWR	< 1,2 with ≥ 10 dB RF attenuation; < 2 with 0 dB RF attenuation
Oscill. reradiation at RF inp.	< 20 dBµV
Interference rejection	> 80 dB
Preamplifier gain	10 dB
Preselector	(7 fixed-tuned and 5 tracking filters)
Fixed-tuned bandpass filters	9 kHz to < 40 kHz 40 kHz to < 150 kHz 150 kHz to < 500 kHz 500 kHz to < 3 MHz 3 MHz to < 10 MHz 10 MHz to < 20 MHz 20 MHz to < 30 MHz
Tracking bandpass filters	30 MHz to < 70 MHz 70 MHz to < 170 MHz 170 MHz to < 330 MHz 330 MHz to < 600 MHz 600 MHz to < 1000 MHz
Maximum input level	(without equipment damage)
Sine wave AC voltage	127 dBµV
Pulse spectral density	90 dBµV/MHz
Display units	dBµV, dBµV/m, dBm, dBµA, dBpW, dBµA/m
Noise indication	

RF output (tracking gener.)	Z_{out} into 50Ω, N connector
Frequency range	9 kHz to 1,2 GHz
Level	90 dBµV ±1 dB
Measuring error	(after calibration)
Frequency range	9 kHz to 150 kHz ±1.5 dB 150 kHz to 500 MHz ±1 dB 500 MHz to 1 GHz ±1.5 dB 1 GHz to 1.2 GHz ±2 dB
Intermediate frequency	
Range 9 kHz to 30 MHz…	139,3 / 10,7 / 0,455 MHz
Range 30 MHz to 1,2 GHz	1889,3 / 139,3 / 10,7 MHz
IF bandwidth (- 6 dB)	0,2 / 9 / 120 kHz (CISPR tolerance)
Level measuring time	Peak, Quasi-peak and Average parallel detectors: 2 ms to 30 sec. (CISPR default)
Demodulation	AM/FM with built-in loudspeaker
Spectrum	
Frequency range	150 kHz to 1.2 GHz
Frequency step (depending upon the span)	2.5 kHz to 10 MHz
Span (depending upon the Center Frequency)	250 kHz to 10 MHz
Markers	Center and highest frequency
Measuring error	See receiver section

GENERAL DATA PMM 8000PLUS

I/O Interface	RS-232 standard
Output User port	8 bit, TTL level, user programmable
Power supply	85 to 264 Vac/120 to 370 Vdc 12.5 to 15 Vdc
Power consumption	60 VA max
Operating frequency	47 to 440 Hz
Protection fuse	T 3.15 A - 85 to135 VAC
Protection fuse	T 1.6 A - 175 to 264 VAC
Loudspeaker	Built-in
Operating temperature	10° to 40°C
Size (W x L x H)	470 x 430 x 110 mm
Weight	8 Kg.

Freq (MHz)	IF BW (kHz)	Peak (dBµV) Preamp. OFF	Peak (dBµV) Preamp. ON	Qpeak (dBµV) Preamp. OFF	Qpeak (dBµV) Preamp. ON	AVG (dBµV) Preamp. OFF	AVG (dBµV) Preamp. ON
0,009 ÷ 0,05	0,2	-2	-7	-5	-10	-7	-12
0,05 ÷ 0,15		-7	-12	-9	-14	-12	-17
0,15 ÷ 30	9	-2	-7	-7	-12	-9	-14
30 ÷ 300		8	3	3	-2	1	-4
300 ÷ 1000	120	12	7	6	1	4	-1
1000 ÷ 1200		14	9	8	3	6	-1

ORDERING INFORMATIONS

8000PLUS	9 kHz – 1.2 GHz EMI receiver
L1-150	Single line LISN, 150A (50Ω//1Ω + 5µH)
L2-16A	Two lines, Single phase, 16A LISN, (50Ω//5Ω + 50µH)
L3-32	Four lines, 3-phase, 32A LISN, (50Ω//5Ω + 50µH)
L3-64	Four lines, 3-phase, 64A LISN, (50Ω//5Ω + 50µH)
L3-100	Four lines, 3-phase, 100A LISN, (50Ω//5Ω + 50µH)
L3-500	Four lines, 3-phase, 350A LISN, (50Ω//5Ω + 50µH)
SHC-1	35 dB Voltage probe, 1500Ω
PL-01	Pulse Limiter
SHC-2	30 dB Voltage probe, 1500Ω
F-201	Absorbing clamp, 30 MHz – 1 GHz
AS-02	Antenna set (Biconic, log-periodic, tripod, 5 m. cable, carrying case)
7405	Set of EMCO Near Field Probes
CTK-015	Set of active Credence Technology. Near Field Probes
RF-300	Van Veen Loop
DL-XX	Dummy lamp (specify size)
TRF-1	Balanced to unbalanced transformer
VNET-150	VNET
RA-01	Rod Antenna

ACCESSORIES


L1-150 (1 line, 5µH, 150A LISN)


L2-16A (single-phase, 16A LISN)


L3-32 (3-phase, 32A LISN)


L3-64/100 (3-phase, 64/100A LISN)


L3-500 (4 lines, 3-phase, 350A LISN)


SHC-1&SHC-2 (35 or 30 dB probe)


F-201 (Absorbing Clamp, 30 MHz - 1GHz)


AS-02 (30 MHz-2,7GHz Antenna Set)


7405 (Near Field Probe)


RA-01 (10kHz-30MHz, rod antenna)


VNET-150 & TRF-1 (insertion loss LISN & balance to unbalance transformer)


RF-300 (Van Veen Loop)


CTK-015 (Set of active Credence Technology)


PL-01 (pulse limiter)