![MPB WE ELECTRONIC!]

CCM
CONTACT CURRENT METER

FREQUENCY RANGE 40 Hz - 110 MHz

The CCM (Contact Current Meter) measures the contact current flowing through the human body, as the latter makes contact with a conductive object charged by an EM field.

This instrument can verify the compliance with the limits for the exposition to contact current for workers and general public, shown in the ICNIRP guidelines and compliant with the European Parliament directive 2013/35/EU.

The display indication provides the value of the current in mA and the percentage value in relation to the standard.
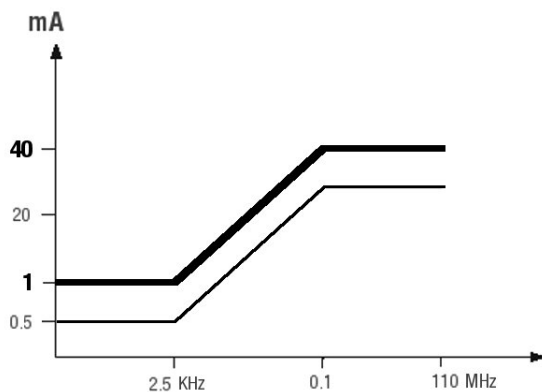
Frequency Range	Reference level for Workers I_C (mA)	Reference level for Public I_C (mA)
0 - 2,5 kHz	1	0,5
2,5 - 100 kHz	0,4f	0,2f
0,1 - 110 MHz	40	20

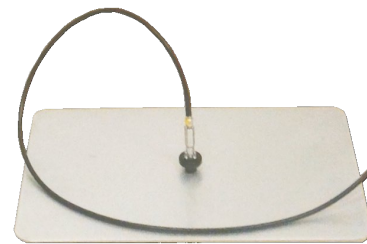# MEASUREMENT

Contact current measurement:
HAND mode

The CCM measures the current flowing
through the operator (human body
impedance).

Contact current measurement:
GROUND PLANE mode

The CCM measures the current flowing
through the ground plane (human body
simulation impedance).

STANDARD CONFIGURATION

Rigid case
CCM
1,5 V batteries (2 pcs)
RG316 cable (length 3 m) sma(M) sma(M)
Body simulation impedance (Z-2251)
Ground plane plate (dimensions 360 X 239 mm)
Ground plane cover
USB cable for PC connection
USB key with:
      - User manual
      - Datasheet
Calibration certificate

OPTIONS

CCM-JIG kit including:
  - Calibration JIG
  - Standard resistance (R45)
  - Cable (length 1m) N(M)-sma(M)
IEC-60990 (50 mA) body simulation impedance
IEC-60990 (120 mA) body simulation impedance
CCM-TIC hand grab simulation

CCM JIG SETUP

This option enables to calibrate the CCM through signal
generators in the frequency range 40 Hz - 110 MHz.
To verify the limit over 40 mA at 10 MHz, a power amplifier
is also required.

R45

RG316 cable

CALIBRATION JIG
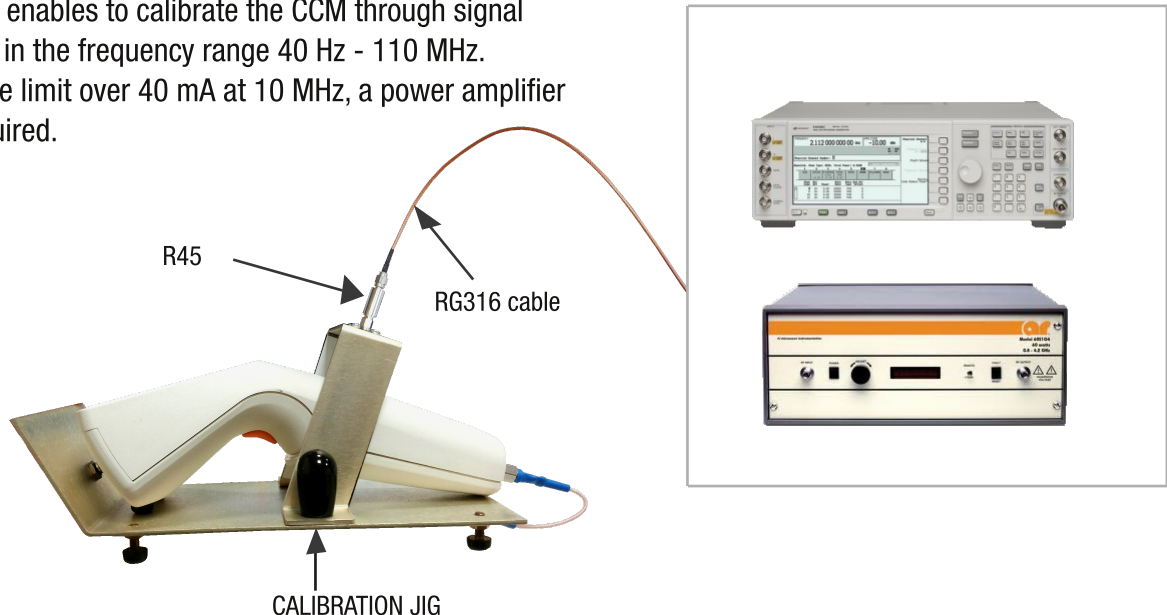
MEASURE STORAGE

The CCM allows storing all measures, in an exportable
file (CSV extension) including date, time, Workers
value, General public value, both LF and HF ranges
value and setup used.

MBP CCM FW 1.04					
date time	Workers	G.Public	LF	HF	Input
GG/MM/AAAA hh:	%	%	mA	mA	from
15/01/2016 10.02	1.5	3.1	0.013	0.06	gnd
18/01/2016 13.02	50	100.1	0.014	20.03	gnd
11/02/2016 10.33	49.9	99.9	0.013	19.99	gnd
17/02/2016 16.07	50.4	100.8	0.013	20.17	hand
17/02/2016 16.10	103.2	206.5	1.032	0.06	hand
13/03/2016 08.46	103.5	207	1.035	0.06	hand
13/03/2016 10.26	103.4	206.8	1.034	0.06	hand

TECHNICAL SPECIFICATIONS

Frequency Range	40 Hz ... 110 MHz
Low band	40 Hz…2.5 kHz
Medium band	2.5 kHz…100 kHz
High band	100 kHz…110 MHz
Frequency Response	
Low band (40 Hz 2.5 KHz) @ 1 mA	< ±1.5 dB
Medium band (2.5 KHz 100 KHz) @ 100%	< ±1.5 dB
High band (100 KHz 110 MHz) @ 20 mA	< ±1.5 dB
Measurement Range	
Low band	(40 Hz…2.5 kHz)
Level range	0.01…3 mA (ICNIRP limit 1 mA)
Damage level	100 mA
Resolution	1 nA
Dynamic range @ 500 Hz	50 dB
Linearity error @ 500 Hz 0.3 ... 3mA	< ± 1 dB
Medium band	(2.5 kHz…100 kHz)
Level range	1…300 % (ICNIRP limit 1 to 40 mA) (Ty)
Damage level	500 %
Resolution	1 nA
Dynamic range @ 25 kHz	50 dB
Linearity error @ 25 kHz 10 ... 200%	< ± 1 dB
High band	(100 kHz…110 MHz)
Level range	0.4…120 mA (ICNIRP limit 40 mA)
Damage level	300 mA
Resolution	10 nA
Dynamic range @ 10 MHz	50 dB
Linearity error @ 10 MHz 12 ... 120mA	< ± 1 dB
Input signal attenuation	200 MHz -> 7 dB
	300 MHz -> 18 dB
	400 MHz -> 31 dB
	500 MHz .... 3 GHz -> 45 dB
Measurement modes	Hand and Ground Plane
Display	Graphic LCD with led backlight
Alarm sound	Programmable level
Detectors	RMS
Contact tip	Tip radius 2 mm interchangeable
USB Interface	Micro USB Connector
Standard	Directive 2013/35/EU
Operating Temperature	From 10°C to 40°C
Power supply	
Battery	2 pcs Alkaline AA
Operation Time	48 h
Dimensions	205 x 90 x 45 mm
Weight	200 g
Recommended calibration interval	24 months
Built-in self-test	Safety front-end functionality test

Subject to change without notice

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