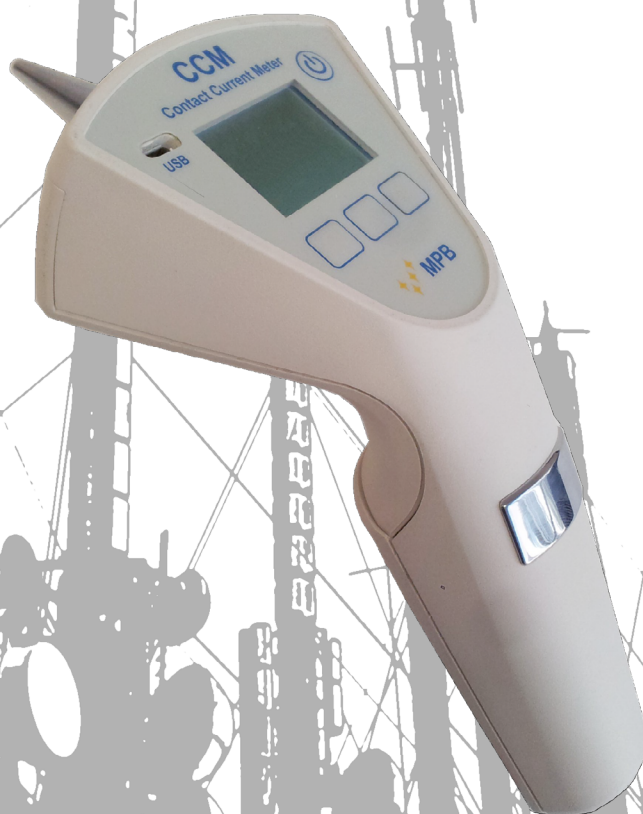




# CCM

## CONTACT CURRENT METER

FREQUENCY RANGE 40Hz - 110MHz



**TELECOMUNICAZIONI ALDENA SRL**

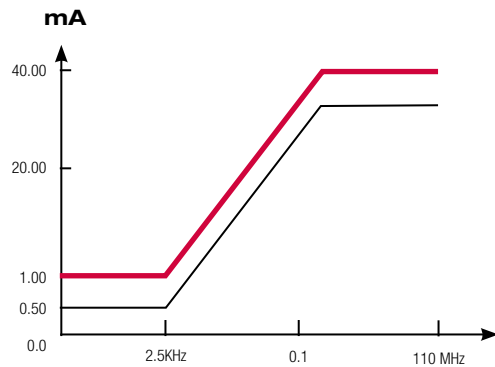
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**CCM (Contact Current Meter)** measures the contact current flowing through the human body, as the latter makes contact with a conductive object charged by an EM field.

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	1.00	0.50
2.5 - 100 kHz	0.40f	0.20f
0.1 - 110 MHz	40.00	20.00

## MEASUREMENT

### HAND SETUP



Contact current measurement:  
HAND mode

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

### GROUND PLANE SETUP



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)

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 certificat

## OPTIONS

CCM-JIG kit including:

- Calibration JIG

- Standard resistance (R45)

- Cable (length 1m) N(M)-sma(M)

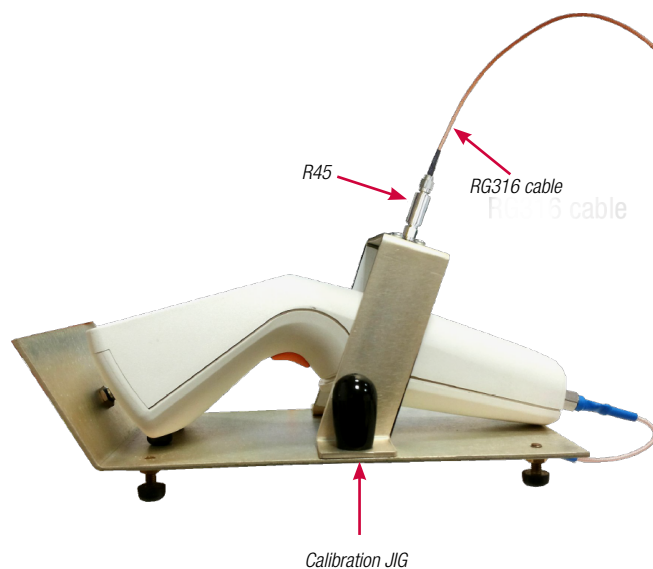
IEC-60990 (50 mA) body simulation impedance

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.



## 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.

### CVS FILE EXAMPLE


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	20.3	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

<b>FREQUENCY RANGE</b>	40 Hz ... 110 MHz
Low band	40 Hz...2.5 kHz
Medium band	2.5 kHz...100 kHz
High band	100 kHz...110 MHz
<b>FREQUENCY RESPONSE</b>	
Low band (40 Hz 2.5 kHz) @ 1mA	< ±1.5 dB
Medium band (2.5 KHz 100 KHz) @ 100%	< ±1.5 dB
High band (100 KHz 110 MHz) @ 20mA	< ±1.5 dB
<b>MEASUREMENT RANGE</b>	
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
<b>INPUT SIGNAL ATTENUATION</b>	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

# CCM

## CONTACT CURRENT METER

CCM is produced by  **MPB**  
WE ELECTRONICS

and it is distributed by:

**TELECOMUNICAZIONI ALDEN A SRL**



Specification are subject to change without notice

**TELECOMUNICAZIONI ALDEN A SRL**

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