

# CA0010

## Click Analyzer



### Main Features

- Discontinuous disturbance (click) analysis
- Four independent frequency channels measuring simultaneously
- Each channel with embedded preselector, attenuator and preamplifier
- Designed to fully match CISPR 16-1-1 and CISPR 14-1 Standards
- Highly flexible selection of number of rates, quartiles and runs operating mode
- Test duration reduced to the minimum theoretically achievable
- Built-in two-lines 16A Line Impedance Stabilization Network (LISN)
- User port for driving any external LISNs
- Embedded switch operation counting unit
- CISPR 16-1-1 embedded click and pulse generator output for internal or external use
- Autocheck and calibration
- Stand alone or PC driven operations
- Free PCA PMM Click Analysis software
- Free PCG PMM Click Generation software
- Full IF and QP history 500us resolution
- Compact yet sturdy construction
- 140 dB $\mu$ V (2 W) maximum input level without damage

The innovative CA0010 is the full compliance companion for the 9010 EMI FFT receiver allowing performing any kind of click (discontinuous disturbance) analysis and measurement.

The conjunction of the 9010F FFT EMI receiver with this click analyzer is capable of four simultaneous measurements at the frequencies of 150 kHz, 500 kHz, 1.4 MHz and 30 MHz and can work as a standalone setup for compliant tests. In addition, when connected to a PC, a dedicated software produces a full trace with additional information like IF and QP time diagram of every channel, graph of the detected clicks for each channel and a complete trace with offline Rewind-Play-Pause-Forward capability for any possible use.

This software can also manage a unique internal click calibrator able to generate all the signals required to check the analyzer performance in compliance with CISPR 16-1-1 requirements. It is possible to set all the relevant parameters such as amplitude and duration of each click, the interval between them, the number of click repetition and, last but not least, the amplitude of CISPR pulses. Indeed, unique on the market the CA0010 Calibrator embeds a full compliance B-Band Cispr16-1-1 pulse generator allowing thus performing the test #2 and #3 of table 14 Cispr16-1-1 without the need of any external additional generator.

The internal click generator is full compliance with the requirements specified in CISPR 16-1-1 and can be used to self-calibrate the CA0010 or any other external click meter.

The same high versatility is also reflected in the User selectable operating modes: two rates/two upper quartiles, two rates/four upper quartiles, four rates/four upper quartiles and single run/double run (not conditioned by the previous ones).

Full compliant to all old and new "click" existing standards: CISPR 16-1-1:2015 Ed. 4 and previous editions, CISPR 14-1:2016 Ed. 6 and previous editions, CENELEC old and new equivalent versions of these two standards (EN 55016-1-1 and EN 55014-1). This Click Meter also features an internal 16 ampere LISN (although an external one can always be connected) and a switch operations counting unit, too.

The CA0010 has an outstanding dynamic range and saturation control, thanks to the internal tailored preselection, guaranteed by its CISPR full compliance RF front end.

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## Click Analyzer

### SPECIFICATIONS

<b>Frequency range</b>	150 kHz; 500 kHz; 1.4 MHz; 30 MHz
<b>RF Input</b>	Zin 50 Ω, Internal switch from LISN or BNC fem.
VSWR	< 1,2
Attenuator	0 dB to 35 dB (5 dB steps) one per channel, independent setting
Preamplifier	15 dB one per channel, independent setting
<b>RF Output</b>	Zout 50 Ω, BNC fem.
VSWR	< 1,2
<b>Max input level</b> (without equipment damage)	140 dBμV (2 W)
<b>Preselector</b> (Permanent built-in)	(four BP filters) 150 kHz / 60 kHz BW@6dB 500 kHz / 120 kHz BW@6dB 1.4 MHz / 220 kHz BW@6dB 30 MHz / 180 kHz BW@6dB
<b>Insertion loss (Att 0 dB)</b>	< 10 dB
<b>RF generator</b>	
CW	
Frequency range	150 kHz to 30 MHz
Frequency resolution	100 Hz
Accuracy	10 ppm
Amplitude range	20 to 95 dBμV
Amplitude resolution	0.1 dB
Click (OOK)	
Minimum ON time	100 us
Minimum separation	100 us
Time resolution	10 us
CISPR PULSES	
Spectral density range	80 to 101 dBμV/MHz
Amplitude resolution	0.1 dB
Flatness	1.8 dB from 150 kHz to 30 MHz
PRF	1 to 500 Hz
PRF resolution	1 Hz
RF output	Internal switch or BNC fem.
<b>Autocalibration</b>	Embedded generator for autocalibration and system test
<b>CISPR conformity</b>	CISPR 14-1, CISPR 16-1-1, CISPR 16-1-2
<b>I/O Interface</b>	USB 2.0, RS-232
<b>Application software</b>	PCA PMM Click Analysis software. Four channels IF and QP time diagram with click detection and analysis Measurement log and report PCG PMM Click Generation software. CISPR 16-1-1 standard, annex F and user's definable test generation
<b>Operating temperature</b>	-5° to +45°C
<b>Power supply</b>	12 Volt DC, 0,7 A (AC universal adapter)
<b>Built-in LISN (compliant to CISPR 16-1-2)</b>	
Frequency range	150 kHz to 30 MHz
Continuous rated output current	16 A
Max permissible operating voltage	250 Vac – 350 Vdc
EUT supply frequency range	DC to 60 Hz
CISPR equivalent circuit	50 Ω // 50 μH
EUT power connector	Schuko 2P+E
Line plug	IEC 60320 C20
Artificial hand	4 mm socket
RF Output	Internal switch or BNC fem.
<b>Dimensions (W x H x D)</b>	235 x 105 x 335 mm
<b>Weight</b>	4,1 kg



### Ordering information:

#### CA0010 Click Analyzer

Includes: LISN mains cable, DB9 male - DB9 male cable for 9010F, USB cable, BNC-BNC cable, AC/DC power adapter, PCA PMM Click Analysis software, PCG PMM Click Generation software, 9010F Click option Dongle code, soft carrying case, user's manual, standard calibration certificate

### Optional accessories:

#### LISN service kit

(AC-BNC adapter for LISN verification and calibration)

## Related products and services

### Generators/Receivers/Systems

- 1008: Magnetic field generator system
- 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
- 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
- COND-IS: RF Conducted Immunity System
- RAD-IS: RF Radiated Immunity System
- AUT-IS: Automotive Immunity System

### Antennas/Calibration services

- BC-01: Biconical Antenna 30 to 200 MHz
- 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
- TR-01: 60-180 cm wooden extendable tripod
- VDH-01: Van der Hoofden Test Head 20 kHz to 10 MHz
- 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)
- 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
- Ansi 63.5 Antenna Factor
- SAE ARP 958-D
- Free-Space Antenna Factor
- CAL-6630: Traceable calibration
- LAT-6630: Accredited calibration

### 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
- L2-D: Delta LISN for telecom, 2 A, 150 Ω
- RF-300: Van Veen Loop
- 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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