emzer
Innovate Lab Instruments

CLICKMETER

Discontinuous Disturbances Analyzer

OVERVIEW

The Clickmeter is an advanced measurement option available for the EMSCOPE platform, activated through a dedicated software license.

Designed and manufactured in accordance with the CISPR 16 international standard for measuring discontinuous disturbances (“clicks”), it fully meets CISPR 14-1 requirements.

Compact and fully integrated, the Clickmeter combines precision, automation, and ease of use, enabling complete and highly accurate disturbance evaluation, simplifying compliance verification and R&D analysis.

Built on a self-contained web-based architecture, the Clickmeter requires no external PC or software installation.

Users simply open a browser, enter the instrument’s IP address, and start testing immediately — making setup fast, intuitive, and efficient.

ADVANCED EMC ANALYSIS

Engineered for professional EMC applications, the Clickmeter simultaneously measures Line and Neutral, and provides both common-mode and differential-mode information.

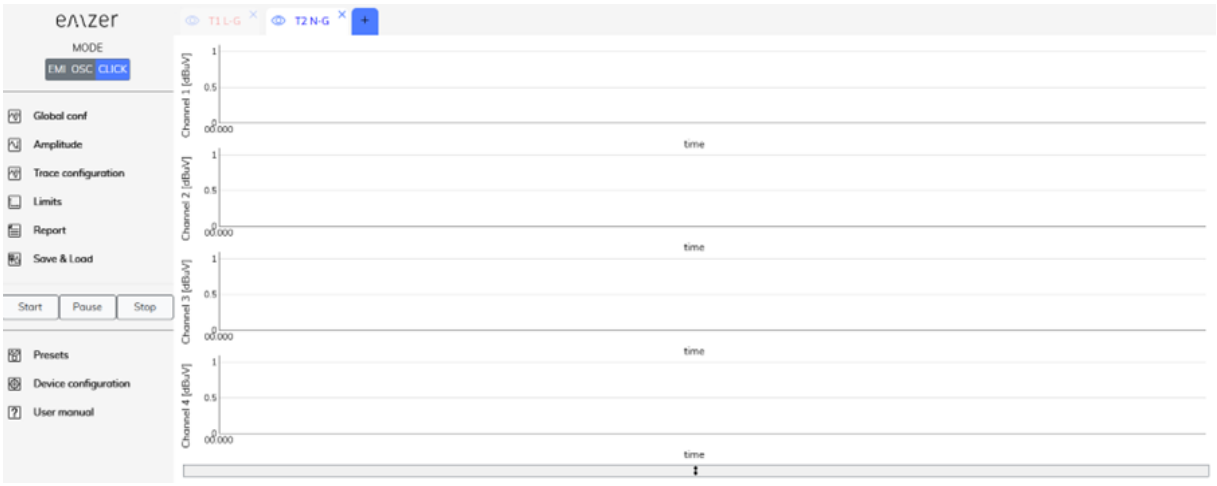
This dual-channel capability not only reduces overall test time but also delivers deeper modal insight, which is essential for optimizing power-line filters and diagnosing complex emission issues during design and development.

Combining precision, autonomy, and intuitive operation, the Clickmeter is a powerful tool for detailed click analysis and efficient compliance verification in demanding EMC environments.

USER INTERFACE AND OPERATION

Intuitive Web Application

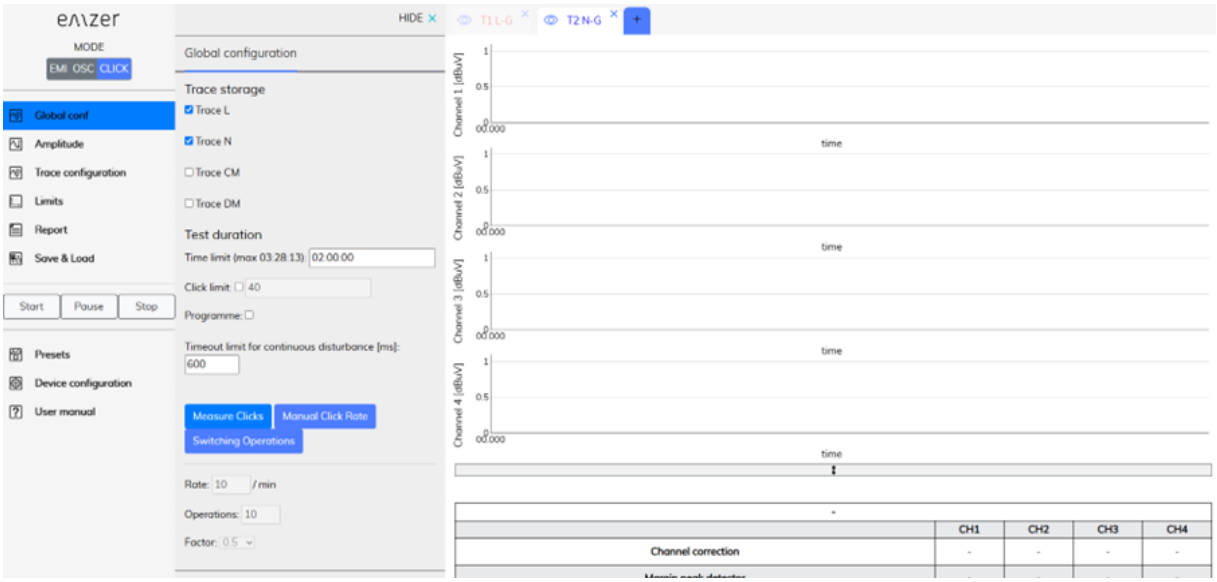
Before starting a measurement, the web-based interface displays a clear overview of menus and plots, providing an intuitive workspace for quick and error-free setup.



Web app interface 1
Menus and plots

Easy configuration menu

All test parameters — such as number of traces, test duration, click rate, and other key settings — can be effortlessly configured with a single click, ensuring fast, repeatable, and reliable test preparation.

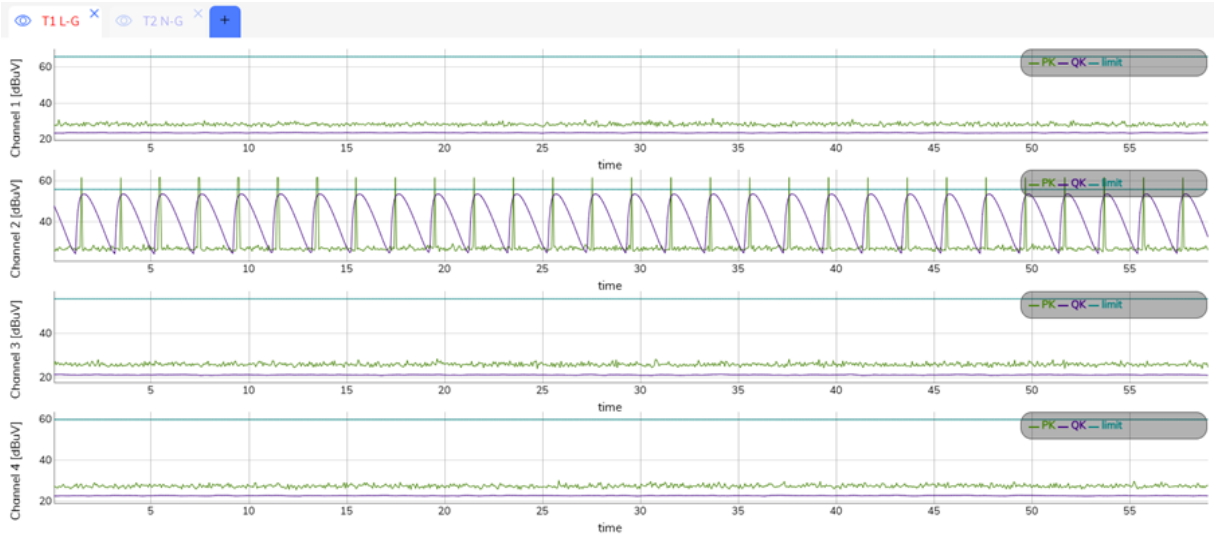


Web app interface 2
All test parameters

MEASUREMENT RESULTS

Within the same interface, the Clickmeter displays four simultaneous measurement plots corresponding to the frequencies 150 kHz, 500 kHz, 1.4 MHz, and 30 MHz.

Each plot includes the selected regulatory limit (CISPR 14-1 or any user-defined standard) along with Peak and Quasi-Peak detectors, allowing an immediate visual interpretation of the test results.



Four simultaneous measurement plots
150 kHz, 500 kHz, 1.4 MHz, and 30 MHz

A summary table, located just below the plots, provides a concise and comprehensive overview of all measurements — enabling quick verification and clear comparison at a glance.

	CH1	CH2	CH3	CH4
Channel correction	0	0	0	0
Margin peak detector	0	0	0	0
QPK L [dBµV]	66	56	56	60
QPK Lq [dBµV]	110	100	100	104
Click rate [1/min]	0	0	0	0
Clicks	0	0	0	0
Clicks > Lq	0	0	0	0
Click > Lq [%]	0	0	0	0
Max allowed NBR of clicks > Lq	0	0	0	0
Clicks (≤ 10ms)	0	0	0	0
Clicks (> 10ms ≤ 20ms)	0	0	0	0
Clicks (> 20ms ≤ 200ms)	0	0	0	0
Clicks (> 200ms ≤ 600ms)	0	0	0	0
600 ms Rule (E2)	0	0	0	0
5.4.3.4 Rule (E3)	0	0	0	0
Fridge Rule (E4)	0	0	0	0
Disturbances (ms)	0	0	0	0
Test Result	Passed	Passed	Passed	Passed

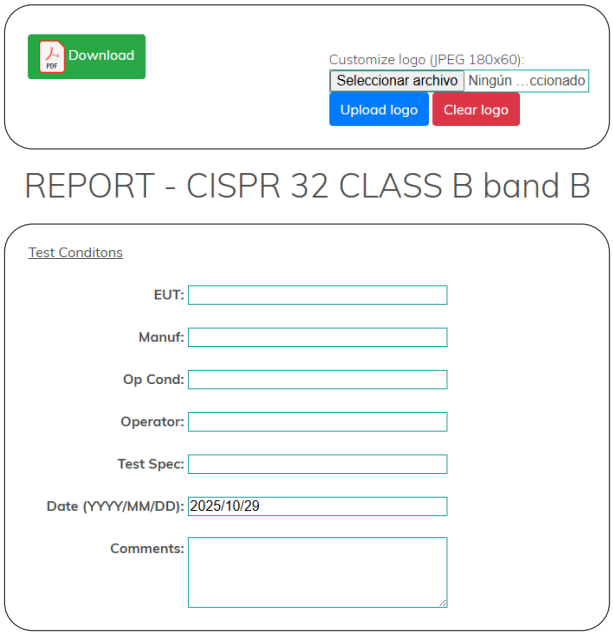
CISPR 32 CLASS B band B
Summary table

AUTOMATED TEST REPORTING

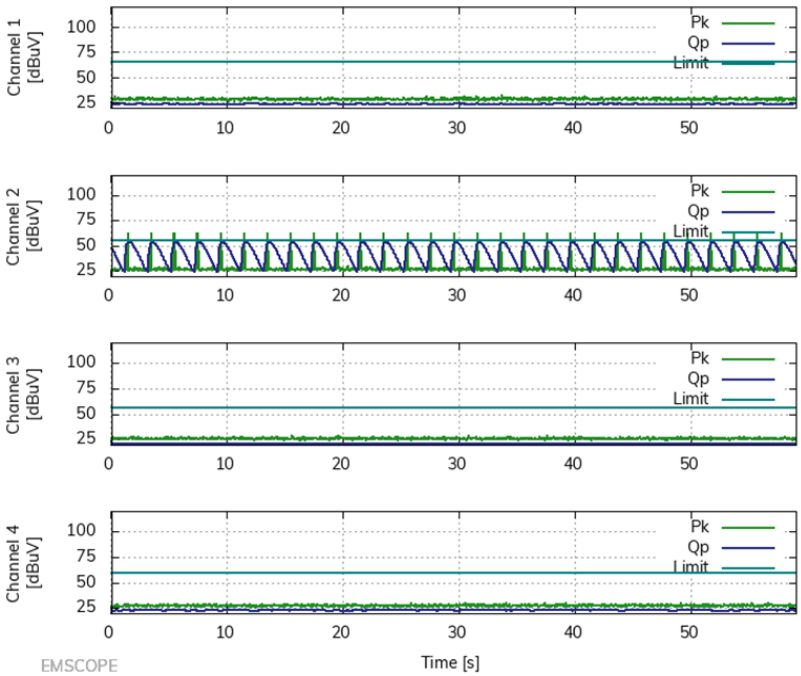
The Clickmeter features an automatic report generation system that compiles all measurement data — including plots and summary tables — into a single, ready-to-share document.

Each report also includes a flow chart representation of the measurement sequence for every channel, following the structure defined in the CISPR 14-1 standard.

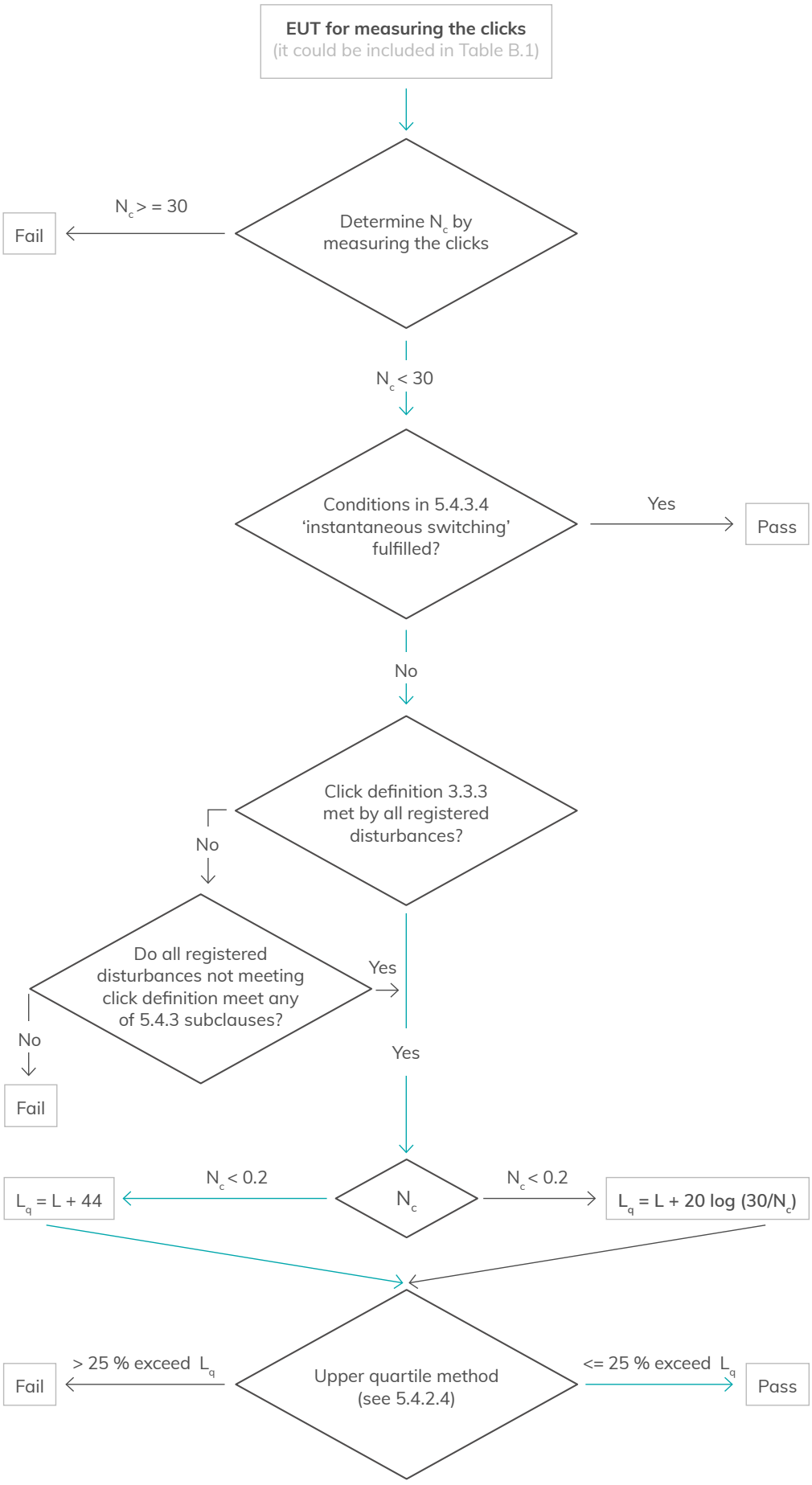
The complete report can be easily exported in PDF format for documentation, traceability, or customer delivery.



Automatic report generation system
Single, ready-to-share document



CISPR 14-1
PDF format


EUT for measuring the clicks
(it could be included in Table B.1)
Determine N_c by measuring the clicks
N_c > = 30
Fail
N_c < 30
Conditions in 5.4.3.4 'instantaneous switching' fulfilled?
Yes
Pass
No
Click definition 3.3.3 met by all registered disturbances?
No
Do all registered disturbances not meeting click definition meet any of 5.4.3 subclauses?
Yes
No
Fail
Yes
N_c
N_c < 0.2
L_q = L + 44
N_c < 0.2
L_q = L + 20 log (30/N_c)
Upper quartile method (see 5.4.2.4)
> 25 % exceed L_q
Fail
<= 25 % exceed L_q
Pass

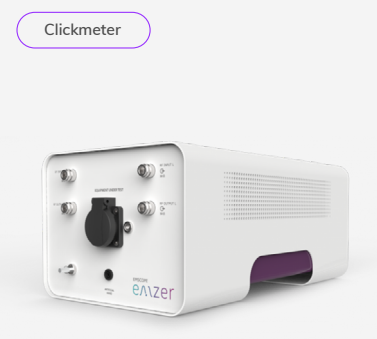
LICENSING

The Clickmeter functionality is available as a licensed software option for the EMSCOPE platform.

Existing EMSCOPE users can activate Clickmeter at any time by purchasing the corresponding license, unlocking all features for discontinuous disturbance (“click”) measurement and analysis.

TECHNICAL SPECIFICATIONS

Parameter	Specification
Channel measurements	Line and Neutral simultaneously
Frequency measurements	150 kHz, 500 kHz, 1.4 MHz, 30 MHz
Detectors	Peak and Quasi-Peak conforming to CISPR 16-1-1
RF Input	50 Ω Impedance, 2xN Female Connector
VSWR	< 1,2
Transient limiter	Built in up to 30 MHz, 1dB compression point: 23dBm
Max input level (without equipment damage)	144 dBµV (5W, 37 dBm)
Type of measurements	Physical (line and neutral) and Modal (Common/Differential-mode) conducted emissions (simultaneously).
I/O Interface	SFP Optical
Built in LISN	Fully compliant to CISPR 16-1-2 standard
Continuous rated output current	Up to 16 A @ 230 VAC (socket dependent)*
Max permissible operating voltage	Up to 300 VAC – 325 VDC (socket dependent)*
EUT supply frequency range	DC to 60 Hz
CISPR equivalent circuit / Pre-filter Choke	50 Ω / / (50 µH + 5 Ω) / 250 µH
EUT Power connector / mains	Schuko socket (Type F) / IEC C20
Artificial Hand / connector type	510 Ω + 220 pF / 4 mm socket



Operating temperature
0 °C to 40 °C

Weight
8.5 kg

Power supply
110-240 VAC.
Consumption: 25W max

Dimensions

Width	252 mm
Height	195 mm
Deep	438 mm