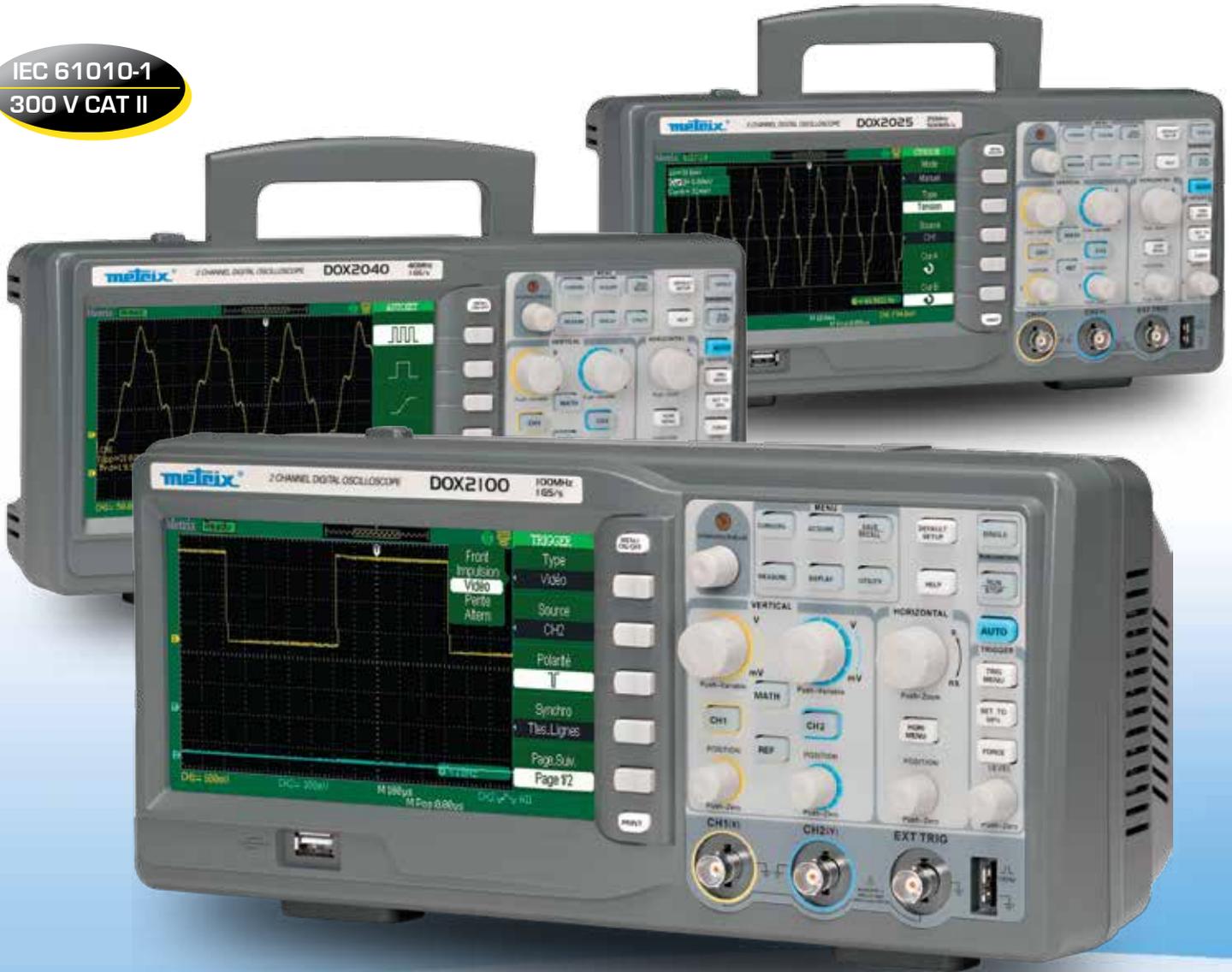# metrix®

TWO-CHANNEL
DIGITAL OSCILLOSCOPES

**IEC 61010-1
300 V CAT II**

Complete, simple, and economical,
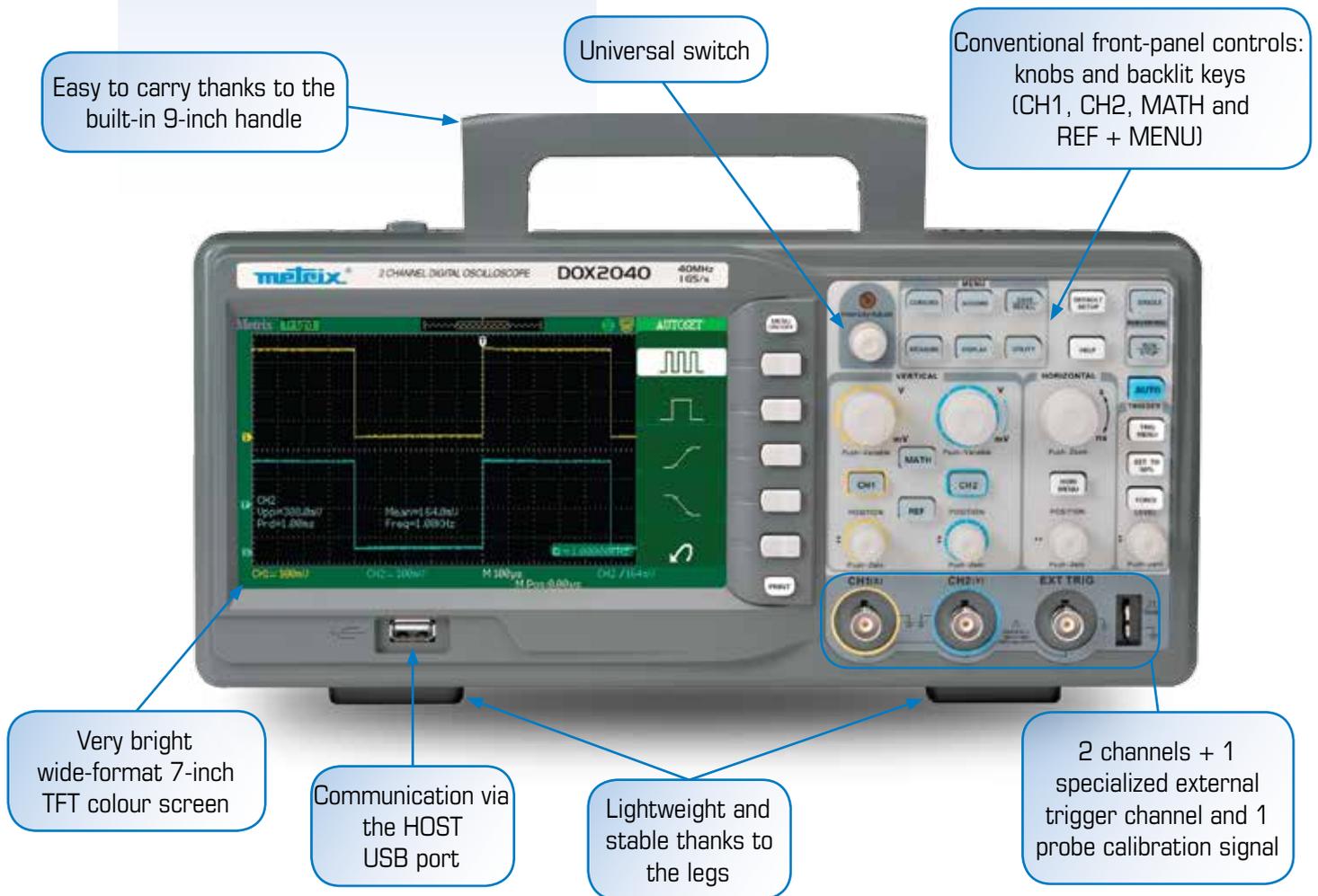## DOX benchtop oscilloscopes process all signals

- **High performance** and multiple acquisition and analysis functions:
  - Maximum sampling rate **up to 1 GS/s in one-shot mode and up to 50 GS/s in ETS**
  - **Choice of 3 acquisition levels**, in **2 modes**, Real Time and Equivalent Time
  - Acquisition memory depth from **32k to 2M points to optimize your analyses**
  - Vertical sensitivity from **2 mV/div. to 10 V/div. in 12 ranges, horizontal sensitivity from 2.5 ns to 50 s/div**
  - 5 trigger modes: edge, pulse, video, slope, and alternate

- **Simple MATH functions (+, -, x, /) and "real time" FFT function** with simultaneous display of the traces

- **Optimized signal analysis:**
  - Selection of programmable digital filters
  - Slow signal recorder (ROLL > 100 ms) on 6Mpoints

metrix®

Ergonomics

Very simple to use, the oscilloscopes in the DOX2000 series have a large display unit, with 18 div. horizontally in full-screen mode. It lets you customize the display: choice of normal or persistent display, YT or XY format, adjustment of the colours, of the graticule, of the brightness, of the contrast, etc.

You can choose among 5 languages for the menus (French, English, Spanish, Italian, German). To save energy; switching on and off take less than 10s.

The "soft keys", icons to the right of the screen, are intuitive and give immediate access to the type of signal you want to display.

Easy to carry thanks to the built-in 9-inch handle

Universal switch

Conventional front-panel controls: knobs and backlit keys (CH1, CH2, MATH and REF + MENU)

Very bright wide-format 7-inch TFT colour screen

Communication via the HOST USB port

Lightweight and stable thanks to the legs

2 channels + 1 specialized external trigger channel and 1 probe calibration signal

Performance and value for money

The **DOX2000** Series oscilloscopes have 2MB of extended memory and multiple acquisition and analysis modes with advanced triggering functions. Thanks to bandwidths from 25 MHz to 100 MHz on 2 channels, a sampling rate of 2 GS/s, and a waveform memory having a maximum capacity of 1Mpts/channel (2Mpts in interlaced mode), the DOX2000 models offer you the best value for money on the market for oscilloscopes with a protective earth.

The display unit lets you view 32 measurements simultaneously with the measurement dashboard. Analysis is facilitated by the 32 standard measurements available and can be refined with measurement cursors tied to the trace or not, as required. The extensive range of advanced timing parameters allows comparison between the signals on two

distinct channels and a zoom. For a more sophisticated analysis, the DOX2000 oscilloscopes have 5 mathematical functions for real-time analysis on 2 different displays: addition, subtraction, multiplication, division, and FFT.

### Instantaneous display of the measurement result
The built-in pass/fail mask test allows rapid identification of problems in a signal. This Pass/Fail function can be used to track the evolution of a signal. For example, it can be used to determine whether or not the input signal remains within a specified profile.

Advanced measurement functions

- **Auto-calibration** is a procedure used to optimize the accuracy of the acquisition system for channels CH1 and CH2

- The "**Pass/Fail**" function, which compares the real-time signal to a predefined profile (MASK) and instantaneously indicates its Pass or Fail status

- The **Record** mode of the Pass/Fail function
  - records signals over a maximum recording length of 2,500 points
  - can be triggered by an output of the Pass/Fail test signal, and so record the signals for long periods

- The **ROLL recorder** mode allows continuous real-time surveillance of slow signals.
  Time base ranges > 100ms.
  The internal recording memory depth of this mode is 6Mpoints maximum.
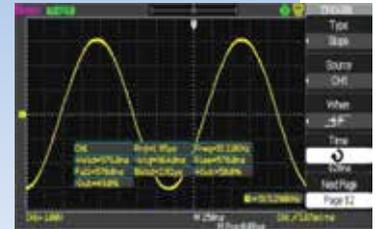
Advanced performance for refined analysis (acquisition depth and zoom, selection from among 32 automatic measurements).
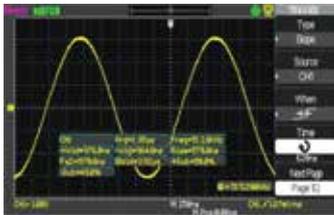
The FFT function can be displayed in four different windows and on two different vertical scales to provide a pertinent view of the frequency domain.
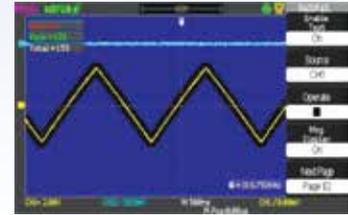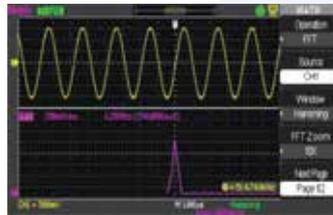
Communication

On the front panel, the user has direct access to the HOST USB port, to optimize the recording storage capacity.

The USB port on the back is used for communication with a PC running associated software for control, tests, and the recovery of trace files and screenshots. These oscilloscopes have 20 setups and 20 waveforms in internal memory.

For greater security, there is a locking system (**Kensington** lock). There is a **security slot** to receive a plug-in padlock. This means that the device can be immobilized.

Planned with a Kensington anti-theft system

USB port to communicate with a PC
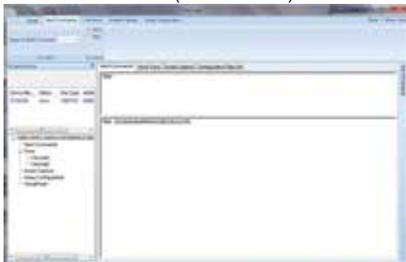
EASYSCOPE PC software

With **Easyscope**,
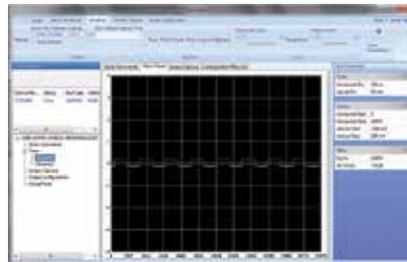the user accesses many complementary functions.
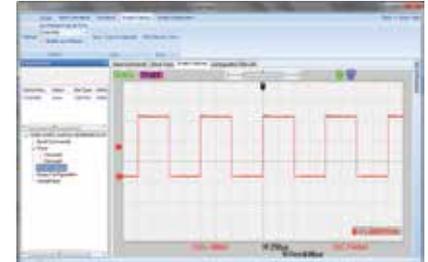
Test remote commands - VIRTUAL PANEL

Send programming commands
SEND COMMAND (SCPI format)

Recover files - TRACES

Recover screenshots - SCREEN CAPTURE
(BMP format)

Technical specifications	DOX2025	DOX2040 / DOX2100
HUMAN-MACHINE INTERFACE		
Type of display	7-inch TFT LCD colour screen (resolution 480x234)/Brightness and contrast adjustments	
Display of the traces on screen	Trace zone, 8x18 divisions/2 traces + reference + Maths function - Complete graticule or borders Display mode - Samples or Vectors with interpolation, or Persistence Mode	
Commands	Usual direct commands by buttons/knobs on front panel/System of menus on right side of the screen with selection by 5 buttons next to them – "Menus On/Off" and "Print" commands	
Choice of language	By menu, 5 languages (FR/EN/DE/IT/ES), on-line help in English	
VERTICAL DEVIATION/DEFLECTION		
Bandwidth	25 MHz	40 MHz/100 MHz 20 MHz bandwidth limiter
Number of channels	2 channels, common earths	
Impedance	1MΩ/18 pF and External Trig channel	
Display of the traces	Channel number, earth reference indicator, and trace in the colour of the channel	
Maximum input voltage	± 300 Vp-p (without probe)	
Vertical sensitivity	12 ranges, from 2 mV to 10 V/div – Basic accuracy ±3%	
Rise time	< 14 ns	< 8 ns (DOX2040) <3.5 ns (DOX2100)
Compensated probe factors	1/5/10/50/100/500/1.000	
HORIZONTAL DEVIATION/DEFLECTION		
Sweep rate	From 25 ns/div. to 50 s/div.	From 25 ns/div. to 50 s/div. (Oscilloscope mode)
Scan or ROLL mode	from 100 ms/div. to 50 s/div. (Recorder mode - Scan)	
Horizontal zoom	YES	
TRIGGERING		
Sources / Modes	CH1, CH2, Ext, Ext/5, mains /Automatic, Triggered, Single - XY	
Roll mode	from 100 ms/div. to 50 s/div.	
Type	Front, pulse width (20ns-10s), video (PAL, SECAM, NTSC), slope, alternate	
Coupling	AC, DC, HFR (HF rejection), LFR (LF rejection)	
DIGITAL STORAGE		
Maximum sampling	One-shot = 250 MS/s (2 channels), 500 MS/s (one channel) Repetitive = 10 GS/s	One-shot = 500 MS/s (2 channels), 1 GS/s (one channel) Repetitive = 50 GS/s
Vertical resolution	8 bits (vertical resolution 0.4%)	
Memory depth	Max depth = 32K points "Unlimited" storage capacity (USB key)	Max depth = 2M points (long MEM) "Unlimited" storage capacity (USB key)
User storage	2MB to store files: trace, text, configuration, math functions, print files, image files, etc.	
File management	Trace files (proprietary format and spreadsheet-compatible ".CSV" format) for the signals/Complete configuration files of the instrument/Screen grab files (Windows-compatible "BMP" format)	
PEAK DETECT mode (capture of transients)	Minimum duration of events = 10ns	
Display modes	Points or vectors Persistence modes (1s, 2s, 5s, 10s, 20s, or infinite) or Averaging (factor from 4 to 256)	
XY mode	YES	
OTHER FUNCTIONS		
AUTOSET	**AUTO** Adjustment of the amplitude, the time base, and the triggering position	
MATH functions on the channels	Trace calculated in "real time": CH1 and CH2: addition, subtraction, multiplication, division	
FFT analyzer	FFT calculated on 1024 points/Simultaneous display of trace + FFT/4 windows (rectangle, Hamming, Hanning, Blackman)	
Manual measurement cursors	Manual, tracking, and automatic modes	
PASS/FAIL	Pass/Fail test using a limit envelope	
RECORDER	Slow signal recording mode >100ms (ROLL, 6M points)	
Automatic measurements	32 time or level measurements	
Probe calibration signal	YES	
Warranty	3 years	

Delivery condition:

- 1 DSO digital oscilloscope with European power cord,
- 2 probes, switchable 1/1 and 1/10 voltage attenuation,
- 1 USB cord for communication,
- 1 CD with operating instructions, EASYSCOPE software
- Tutorial
- 1 quick startup guide (paper)

To order:

DOX2025 2x25MHz Digital Oscilloscope
DOX2040 2x40MHz Digital Oscilloscope
DOX2100 2x100MHz Digital Oscilloscope

Optional accessories:

MTX1032-B Differential probe, 2x30MHz, banana jack inputs
MTX1032-C Differential probe, 2x50MHz BNC inputs
MTX9030-Z Differential probe, 1x30MHz, self-contained, BNC
HX0074 Signal generator demonstrator board kit

CHAUVIN ARNOUX
GROUP

For information and ordering