Virtual MTX Series

SCOPEin@BOX Digital Analyser-Recorder Oscilloscopes
MTX 1032-B & MTX 1032-C Differential Probes
MTX 1050-PC Spectrum Analyser

Offering high performance at low cost, the new virtual MTX digital measurement instruments are at the cutting edge of technology!

- **SCOPEin@BOX oscilloscopes with FFT analysis, harmonic analysers and recorders**
  - 2 or 4 channels / 150 MHz
  - Vertical sensitivity 250 µV-100 V/div
  - Advanced trigger modes and SPO analysis

- **MTX 1032 differential probes for measuring signals not referenced to earth**
  - Input voltage 600 V and 600 Vrms in common mode,
  - Attenuation 1/10 and 1/100
  - Bandwidth 50 MHz and 30 MHz

- **MTX 1050-PC 400 kHz – 1 GHz spectrum analyser**
  - Suitable for EMC prequalification tests,
  - Built-in FM demodulator

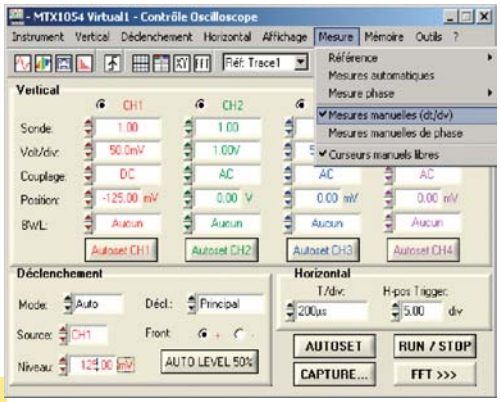
SCOPEin@BOX Digital Analyser-Recorder Oscilloscopes

Ergonomics

The **SCOPEin@BOX** models are genuine "oscilloscopes in a box". They are easy to use and transport and require minimum space. Compact and lightweight, the casings can be stacked. These virtual measurement instruments operate by means of PC software. Indeed, the **SCOPEin@BOX** models and the **MTX 1050-PC** are connected directly to a PC via a USB interface. In this way, users can enjoy all the advantages of a PC in terms of storage capacity and display. Accessible to all users, the Windows environment simplifies use of the oscilloscope

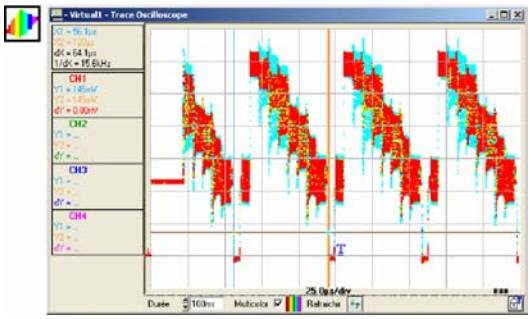
Simplified use

All the **SCOPEin@BOX** functions are accessible directly via “Windows” menus and “Windows” toolbars. Users control the oscilloscope via the “instrument” control panel. This contains a list of the commands, which are identical to those on a normal oscilloscope: instrument, vertical, trigger, measurement, etc. **“Unlimited” storage** of the measurements can be carried out by simply saving files in one of the various formats proposed: “.TRC”, “.TXT”, “.CFG”, “.FCT”, “.JPG”, etc



>> SCOPEin@BOX CONTROL PANEL
General Commands

Display

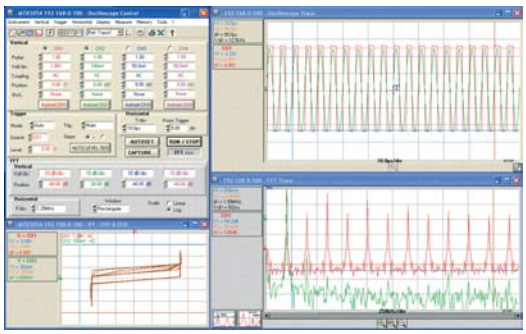


>> SCOPEin@BOX,
Display of “X(t)” traces in “SPO” mode

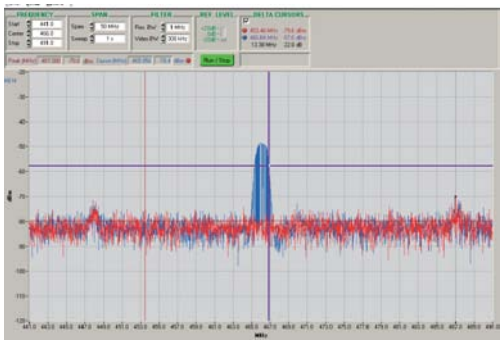
The **SCOPEin@BOX** models offer multi-windowing, simultaneous display of the traces, the zoom, the FFT analysis, the measurements, etc. In this way, users can choose a broad range of combinations among:

- “X(t)” traces according to a single or double time base,
- “Advanced Math” functions
- X(t) and XY simultaneously
- X(t) and FFT simultaneously
- X(t) in SPO (Smart Persistence Oscilloscope) mode
- measurement cursors
- harmonic analysis
- simple recording mode or recording with capture of 100 faults using a double time base

The use of the PC screen as the display (minimum resolution 1024x768) makes the curves more accurate and clearer.



>> SCOPEin@BOX,
simultaneous “X(t)”, “XY” and “FFT” display



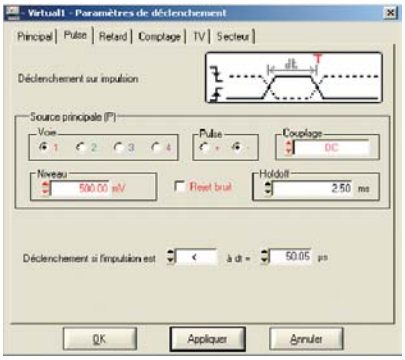
>> MTX 1050,
display of the cursors and recall of traces

MTX 1032-B and **MTX 1032-C** differential probes,
The essential accompaniment for analogue or digital oscilloscopes to view signals not referenced to earth. These "laboratory-grade" probes, powered by the mains, are intended for use separately or linked mechanically to MTX Compact or SCOPEin@BOX oscilloscopes.

Specifications:
- 2 differential channels
- 30 MHz bandwidth for the MTX 1032-B, 50 MHz for the MTX 1032-C
- Diff. input voltage ±600 V
- Attenuation 1/10 and 1/100
- Electrical safety IEC61010-1 600 V CAT III

SCOPEin@BOX Digital Analyser-Recorder Oscilloscopes

Multiple functions

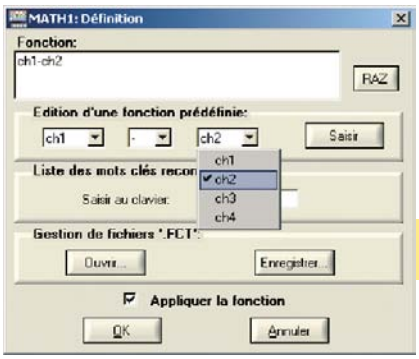


>> The control panel
The “Trigger” tabs

Developed from the **MTX Compact** range, these oscilloscopes provide the same performance. They are simultaneously oscilloscopes with FFT analysis, Harmonic Analysers and Recorders. The **MTX 1052** has **2** input channels, whereas the **MTX 1054** has **4**.

Their bandwidth is **150 MHz** and the sampling rate is **200 MS/s** in one-shot mode and 100 GS/s in repetitive mode.

The two models offer advanced trigger modes and the SPO display mode. The “Advanced Math” functionalities are also included in these oscilloscopes.



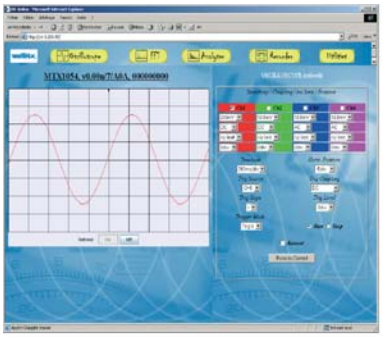
>> The “Advanced MATH” functions

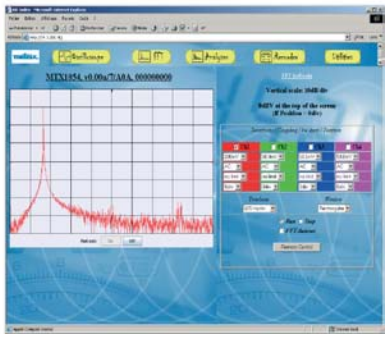
Communication

The **SCOPEin@BOX** models benefit from a universal USB communication mode linking them to the PC and a 10 Mb Ethernet interface for integration in a local or remote network. The firmware updates will be automatic.

With just one or two clicks, it is possible to **export the results into Excel** and print them in Word.

Thanks to the “Web server”, users can **control the oscilloscope remotely** without special software or exchange files via FTP very simply.





>> The “Web Server”:
Remote control without software

>> SCOPEin@BOX rear view

MTX 1050-PC Spectrum Analyser linked to SCOPEin@BOX

The SCOPEin@BOX models are ideal for use with the MTX Compact range, and particularly the **MTX 1050** Spectrum Analyser.
Lightweight, portable and **suitable for general applications**, the **MTX 1050** offers accurate results by means of **4 simultaneous measurement cursors:** Peak detection mode, automatic marker and two delta cursors.
Alongside all the usual applications, the Q-Peak detection mode can be used for measurements in the context of **EMC prequalification** testing.

The versatile **MTX 1050** offers genuine performance:
- 5,000-point display with horizontal resolution
- frequency range from 400 kHz to 1 GHz
- measurement dynamic from –90 dBm to +20 dBm
- high stability (negligible frequency drift of approximately ± 5 ppm/year)
- 6 sweep speeds and 3 video filters
- integrated FM demodulation with built-in loudspeaker

Virtual MTX Series

	MTX 1052	MTX 1054
MAN-MACHINE INTERFACE		
	Colour PC screen / 8 x 10 div / Multi-windowing / Up to 4 curves on screen / “Windows-like” & online help	
OSCILLOSCOPE MODE VERTICAL DEVIATION		
Bandwidth	150 MHz (Bandwidth limiter: 15 MHz, 1,5 MHz ou 5 kHz)	
Number of channels	2 channels, class 1, common earths	4 channels, class 1, common earths
Vertical sensitivity	2.5 mV – 100 V/div, up to 250 µV/div with vertical expansion	
HORIZONTAL DEVIATION		
Sweep rate	35 calibres from 1 ns to 200 s/div	
Horizontal zoom	x1 to x100, 1-2-5 sequence (display of 500 for 10 div)	
TRIGGER		
Mode	Auto, Triggered, One-shot	
Source	CH1, CH2, EXT, Mains	CH1, CH2, CH3, CH4, Mains
Type	Edge, Pulse Width or Delay (40 ns-10.5 s), Counting (2-16,384 events), TV (525 = NTSC, 625=PAL/SECAM), Pre-trigger adjustable from 0 to 100%, Hold-off (40 ns-10.5 s)	
DIGITAL MEMORY		
Maximum sampling rate	Repetitive= 100 GS/s – One-shot = 200 MS/s	
Vertical resolution	10-bit A/D converter (9 bits used)	
Memory capacity	Depth = 50,000 points – storage capacity depends on PC configuration used	
SPO (Smart Persistence Oscilloscope)		
Duration of persistence	100 ms, 200 ms, 500 ms, 1 s, 2 s, 5 s, 10 s and Infinite	
Performance	Acquisition rate 50 kwaveforms/s/channel, no. of samples acquired: 19 MS/s/channel	
MEASUREMENT PROCESSING		
FFT analyser / MATH functions	FFT (calculation over 2,048 points), + , - , x , / - "Made-to-measure" function editor	
Manual cursors	(dv, dt), PHASE and free	
Automatic measurements	2 or 19 measurements out of 19 + automatic phase – On any type of curve - Markers and limits	
RECORDER MODE		
Duration / Sampling frequency	2 s to 31 days / Sampling interval from 40 µs to 53,57 s	
HARMONIC ANALYSER MODE		
Range of analysis	Fundamental + 31 orders, on 1 to 4 channels, and fundamental from 40 Hz to 1 kHz simultaneously	
Data processing	Permanent display: total RMS value & THD – Order selected: %F, phase, freq, Vrms	

GENERAL SPECIFICATIONS - MTX 1052 / MTX 1054	
Memory & printing	"Not limited" but depending on PC configuration / Via "Windows" environment
USB communication with PC	USB to RS232 (921.6 kbauds), HARD protocol / local or remote Ethernet 10 Mb
Power supply	100 to 240 Vac / 47-63 Hz / <16 W
Electrical safety	IEC 61010-1 / CAT II 300 V
Casing / Environment	270 x 213 x 63 mm – 1.8 kg / Storage –20 °C to 60 °C / Use 0 °C to 40 °C
Warranty / Origin	3 years / France

MTX1050	
FREQUENCY	
Frequency range	400 kHz – 1 GHz
Frequency excursion	Zero span, 1 MHz to 100 MHz/div – 1-2-5 sequence
Sweep	Normal or single – 30 ms, 50 ms, 100 ms, 200 ms, 500 ms, 1 ms
Detection modes	Peak or Q-Peak (EMC analysis),
ANALYSIS BAND	
RBW resolution filter	12 kHz, 120 kHz or 1 MHz
Video filter (VBW)	1 kHz, 10 kHz or 300 kHz
AMPLITUDE	
Reference level	-20 dB, 0 dB or +20 dB / Measurement range –90dB to +20dB
MEASUREMENT PROCESSING	
Cursor	1 automatic "Peak" detection marker, 1 cursor locked to the trace and 2 delta cursors
Trace functions	Averaging (factor 2 to 64), Comparison with a reference trace, calculation of the difference between two traces, data transfer into Excel, screen shots with all settings
FUNCTIONS	
Trace memory	On PC with no limitation – Traces: back-up and comparison – Configuration: back-up and recall of complete configs
Demodulation	FM with built-in loudspeaker
COMMUNICATION	
Interface	“Plug & Play” USB as standard
Processing software	"Real time" for control and analysis– 5 languages (FR, GB, GER, IT , SPA)

GENERAL SPECIFICATIONS - MTX 1050	
Display	Colour PC screen, high-resolution, large size / Up to 5,000 pts with horizontal resolution
Power supply	100 to 240 Vac / 47-63 Hz / approx. 7 W
Electrical safety	IEC 61010-1 / CAT II 300 V
Casing / Warranty / Origin	270 x 213 x 63 mm – 1.8 kg / 3 years / France

To order:

MTX1052-PC: Digital Analyser-Oscilloscope, Ethernet, 2 channels, 150 MHz, colour, SCOPEin@BOX PC software, mains power lead, voltage probe 1/1 1/10 200MHz 300V (x2), crossed Ethernet network cable, straight Ethernet network cable, USB cable
MTX1054-PC: Digital Analyser-Oscilloscope, Ethernet, 4 channels, 150 MHz, colour, SCOPEin@BOX PC software, mains power lead, voltage probes 1/1 1/10 200 MHz 300 V (x2), crossed Ethernet network cable, straight Ethernet network cable, USB cable
MTX1050-PC: 1 MTX1050 spectrum analyser, 1 USB communication lead, 1 mains power cable, 1 CD-ROM containing the PC application software and the operating manual, 1 FM antenna with DNC connection.

CHAUVIN ARNOUX GROUP

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