

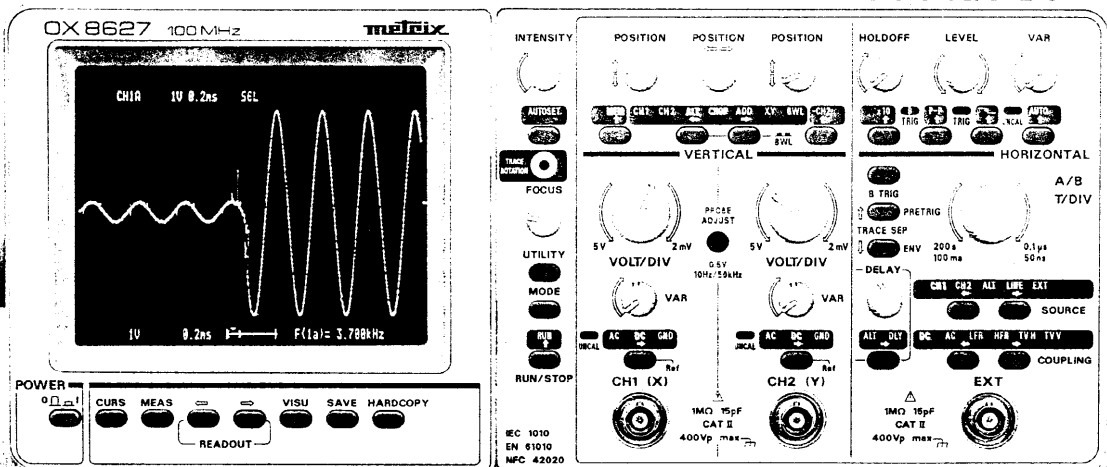
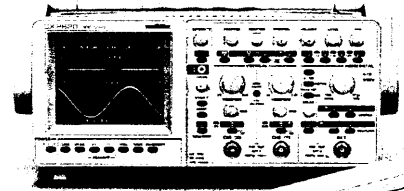
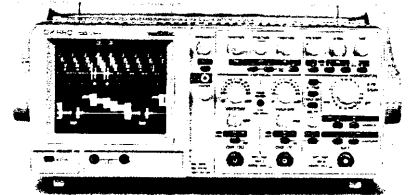
OX860, OX8620, OX8627

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SCOPES

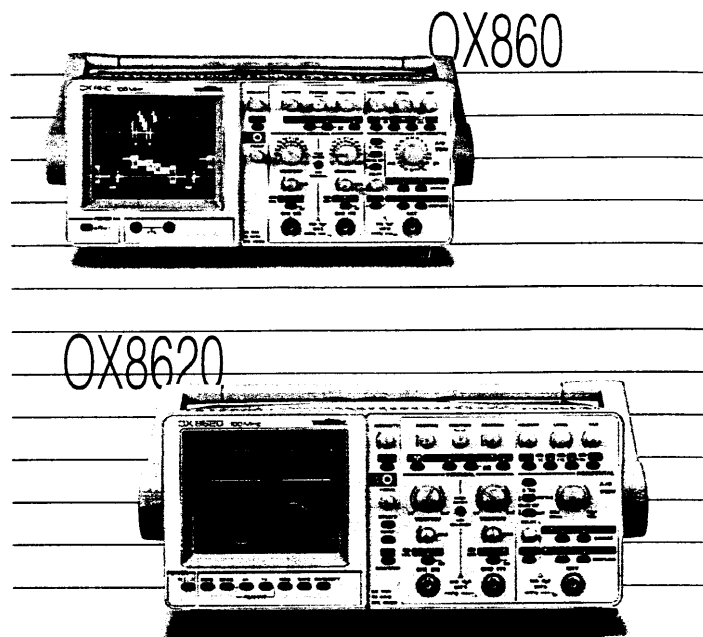
World Class Performance & Value

Dual-Function
100 MHz Analog
40 MS/s Digital
Oscilloscopes



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A 40 MS/s DSO Is Inside This 100 MHz Analog Scope.



A thermoplastic case makes the OX86 Series 40% lighter than other scopes in the same class.

Best of Both Worlds

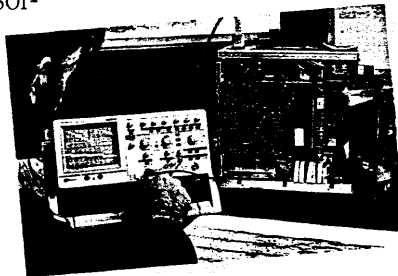
Metrix' dual-function OX86 Series Oscilloscopes offer you the benefits of both digital and analog scopes with the ease-of-use of microprocessor control. A 100 MHz analog scope gives you quick response, real-time signal display and a "feel" for the test. A 40 MS/s digital scope gives you data storage and data manipulation with the ability to measure conditions before and after the trigger. And both digital and analog scopes share the same microprocessor-controlled digital interface for fast automatic setup — all from a single, easy-to-use front control panel.

Microprocessor Control

For reliability, flexibility, data and setup memory, ease of use.

- ☐ AUTOSET to automatically setup time base, vertical axis, and trigger
- ☐ Store setup
- ☐ Automatically performs all manipulations required for function ref 0 to easily show 0V location on screen
- ☐ Scope automatically determines frequency for easier, more reliable calibration of probe
- ☐ RS232, IEEE488, and Centronics output
- ☐ Fully programmable with SCPI
- ☐ LabVIEW®/LabWindows® compatibility
- ☐ LabWindows®/CVI drivers allow user to design own software
- ☐ Turnkey Software running under DOS and/or Windows

In both digital and analog mode, the OX86 series' microprocessor-controlled, digital front panel saves you time and simplifies testing procedures. Just press the AUTOSET button, and the scope automatically sets both the vertical and time scale for optimum measurements. And through its data and setup memory



feature, the scope retains your setup in non-volatile RAM.

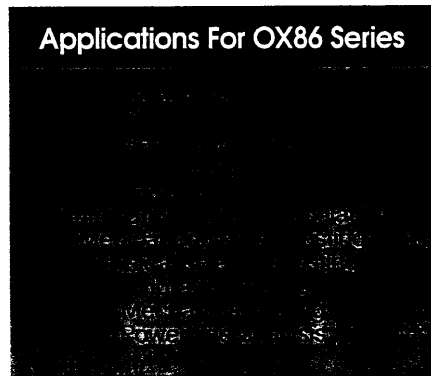
Because both the OX8620 and OX8627 digital/analog models are fully programmable with SCPI (Standard Commands for Programmable Instruments), tests that must be repeatedly performed in sequence can be programmed into your PC. This enables you to use test sequences that would otherwise be too complex and time consuming and makes the DSO/Analog scopes ideal for Incoming, Production, or Quality Assurance testing.

And because the OX8620 and OX8627 scopes are digital, you can record your measurements externally in a number of ways. With RS232 serial interfaces featured on both models and an additional IEEE 488-2 interface included on the OX8627, screen output can be sent in HPGL language to a plotter or saved to a file. With the optional HA1251 Centronics parallel converter, you can send screen output directly to a printer.

Performance Choices

	OX860	OX8620	OX8627
100 MHz analog scope	Yes	Yes	Yes
40 MS/s digital scope		Yes	Yes
Digital memory		2X4Kword	2X8Kword
Glitch capture			>50nS
RS232 interface	Optional	Yes	Yes
IEEE488.2 interface			Yes
Centronics printer output		Optional	Optional

Applications For OX86 Series



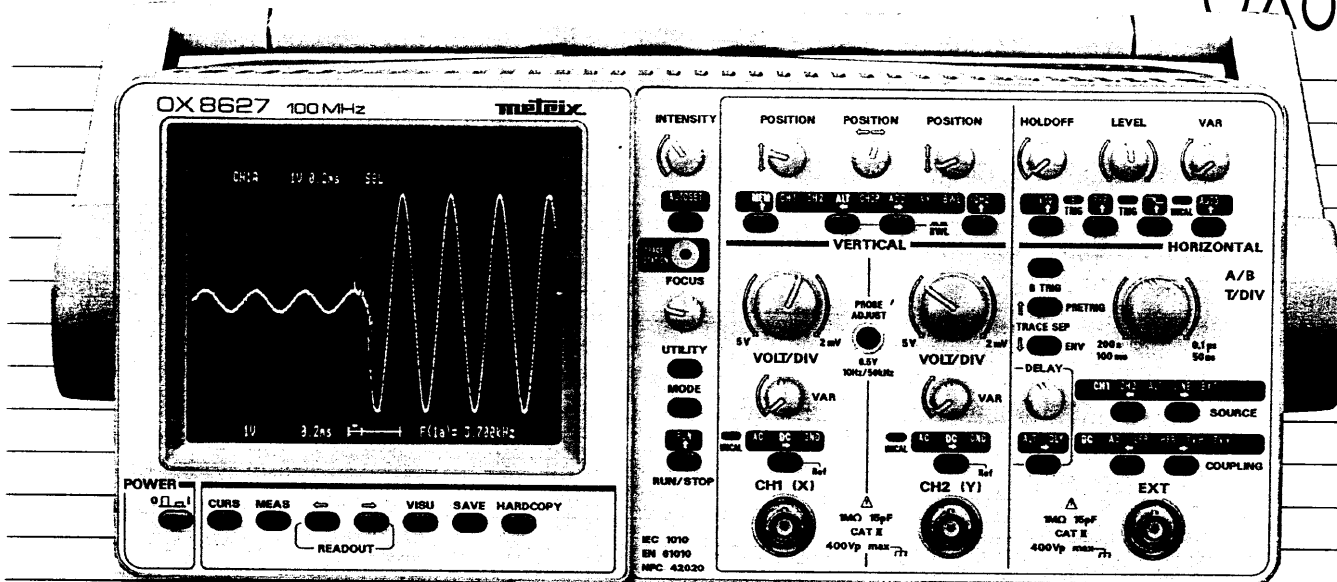
100 MHz Analog Oscilloscope

- ☐ LEDs for ease of use
- ☐ Trigger up to 180 MHz
- ☐ Bandwidth limit gives users high degree of control. Protects signal from noise generated by equipment under test and improves display quality when analyzing noisy signal
- ☐ Dual-time base with one single knob

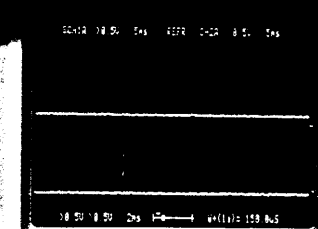
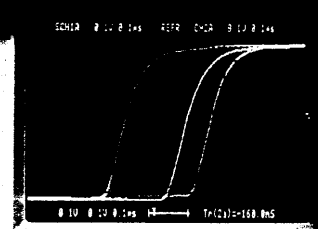
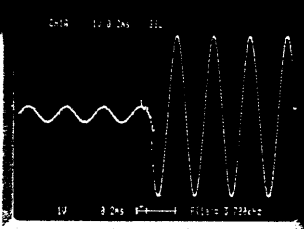
The OX86 series has the familiar look and feel of the analog oscilloscope you've been using for years. In analog mode, signals are displayed in real time. No delay for analog to digital conversion and storage. And because you're able to see all of the signal rather than just a set of points, there's no danger of misinterpretation due to undersampling — a potential hazard with digital scopes. At 100 MHz, fast rising square wave forms will still look square.

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(1)X8627



Single-shot mode (pictured left) for single events. **Envelope mode** (pictured center): Each sweep of a repetitive signal accumulates on the screen, building up an envelope view of the signal variations. **Glitch capture mode** (pictured right) captures transients greater than 50 ns, reducing measurement errors caused by under sampling. It detects and displays min. and max. levels between samples.



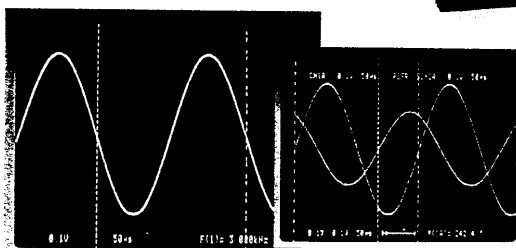
40 MS/s Digital Storage Oscilloscope

- Selectable acquisition modes
- REFRESH: Trace is updated left to right. Display may show only part of record
- ROLL: adds new sample to right side of display. Display always shows what's changing. Useful for slow moving signals.
- SINGLE to store one shot event for analysis
- PRETRIG to see what happened before the trigger
- ENVELOPE to see how signal fluctuates
- GLITCH CAPTURE for short duration voltage "spikes"
- On-CRT readout for ease of use. Works in both analog and digital mode.
- Set cursors or have scope automatically take measurements
- Linear, sinusoidal interpolation: Fills in digital dots between two samples. Good for digital expansion.
- Analog smoothing: Fills gap in an analog manner between two adjacent display dots.

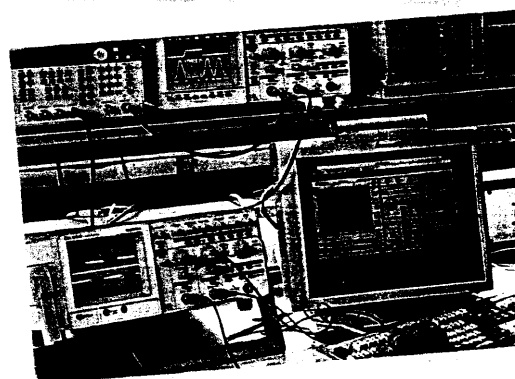
Both OX86 Series digital scopes store waveforms in memory. For one-shot events, you can see what happened before the trigger. You can store up to four waveforms, each 8,000 points long. After acquisition, the data can be manipulated and displayed in many different ways. You can change time base or vertical position. You can select which portion of a waveform you'd like to look at in more depth. You can compare the measured waveform to a "known-good" waveform in memory. Additionally, the

OX8627 incorporates glitch capture to see signals that otherwise would not be seen. You can interpolate or smooth the wave form to "fill in the gaps".

The OX86 Series scopes are ideal for slow sweep speeds. Featuring flicker-free displays, OX86 series scopes can be set up to display sweep speeds that are much slower than would be practical with an analog scope.

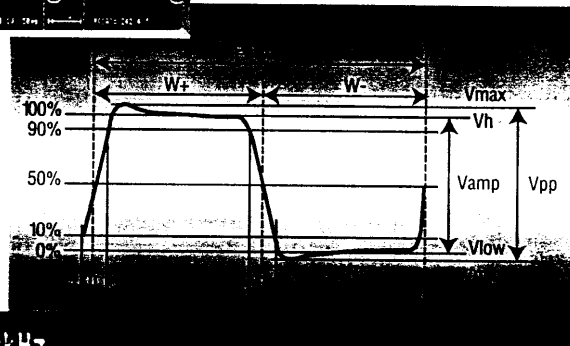


Simply selected by pressing the auto measurement button, these 17 different amplitude and time related functions are available to make automatic calculations on digitized stored waveforms.



All OX86 Series oscilloscopes are fully compatible with LabView® and LabWindows® computer programs.

Two horizontal and vertical cursors allow a choice of measurements on real time and stored waveforms.



F(1a) = 3.700kHz

W+ pulse width	W- pulse width	Vmin minimum voltage	Vamp amplitude
DC+ duty cycle W+/T	DC- duty cycle W-/T	Vmax maximum voltage	Vrms rms voltage
		Vpp peak-to-peak voltage	Vavg average voltage
		Vstable high voltage	φ phase difference
		Vlow stable low voltage	

OX860, OX8620, OX8627 Series Oscilloscopes

Safety

The European Low Voltage Directive now requires all new laboratory measuring equipment to meet the IEC1010 safety standard. Metrix' OX86 series fully complies with the IEC1010 standard which ensures the highest level of user safety and specifies overvoltage CAT II and degree of pollution 2.

Accuracy and Traceability

To ensure that every instrument Metrix manufactures is traceable to national and International standards, Metrix maintains a COFRAC Etalonnage accredited calibration laboratory. All OX86 series oscilloscopes are shipped with a declaration of conformity.

General Specifications

Safety: IEC1010-1 class 1; overvoltage category II; pollution degree 2

EMC: IEC801, level 2; EN55011 class B

Operating: 0° C to + 40° C

Storage: - 20° C to + 70° C

Reference: + 18° C to + 28° C

Humidity: < 80 % relative humidity at + 40° C

Power Supply: 94 V - 264 V (48/440 Hz)

Consumption: < 70 W max. for OX 8620, OX 8627; < 50 W max. for OX 860

Dimensions: 450 x 340 x 155 mm

Weight: OX 860: 5.5 kg; OX 8620, OX 8627: 6 kg

AUTOSSET

Automatic vertical and horizontal configuration of the instrument to match the signals on inputs CH1 and CH2

CALIBRATOR

Waveform: square wave

Amplitude: - 0.5 V \pm 1%

Frequency: 10 Hz to 50 kHz (according to sweep time)

Symmetry: 50 % \pm 1 %

CRT

Screen: 8 x 10 cm, internal graticule

Accelerating: 15.5 kV approx.

Trace rotation

Z-MODULATION

Input (rear panel): BNC

Zin: 10 k Ω

Sensitivity: TTL level (max. \pm 50 V DC)

Input frequency: 20 MHz max.

INTERFACES

RS 232 serial interface (25-way male D-connector) for OX8620 and OX8627

IEEE 488-2 interface for OX 8627

Fully programmable (OX 8620/OX 8627 SCPI)

HPGL screen hard copy plotter output; (OX 8620/OX8627): RS 232, (IEEE: OX8627)

Optional HS1251 converter: for screen hard copy to Centronics printer

Optional HA1259 converter: RS 232 interface for OX860

Warranty 2 years

All models delivered with 2 probes (250 MHz)

Analog Functions

VERTICAL AMPLIFIERS

Bandwidth (- 3 dB):

AC coupled: 10 Hz to 100 MHz (2 mV to 5 V/div.)

DC coupled: 0 Hz to 100 MHz (2 mV to 5 V/div.)

Sensitivity: 2 mV to 5 V/div. \pm 3 % (1-2-5)

Fine adjustment: 1 to 1/2.5 (with "UNCAL" LED)

Input impedance: 1 M Ω / 15 pF

Rise time: < 3.5 ns (2 mV to 5V/div.)

Operating Modes: CH1; \pm CH2; CH1 and \pm CH2 alternate or chopped; add/subtract

Max Input Voltage: \pm 400 V max., (DC or AC peak at 1 kHz); Cat. II

Bandwidth Limit: 20 MHz

X-Y OPERATION

Mode: CH1 in X-axis; CH2 in Y-axis

Sensitivity: 2 mV/div. to 5 V/div.

Bandwidth Channel X (- 3 dB): 0 to 4 MHz

Input Impedance: 1 M Ω /15 pF

Phase Difference: < 3° to 120 kHz

MAIN TIME BASE TB 1

Sweep time: 50 ns/div. to 0.1 s/div. \pm 3% (1-2-5 sequence)

Fine adjustment: 1 to 2.5 (with "UNCAL" LED) up to 0.25 s/div.

Expansion x 10: max. sweep 5 ns/div. \pm 5%

Hold-off: variable 1 - 10.

DELAYED TIME BASE TB 2

Sweep time: 50 ns/div. to 0.1 s/div. \pm 3% (1-2-5 sequence)

Horizontal modes: Intensified alternate; delayed

Run after delay

Trig after delay

TRIGGERING

Trigger indication: "TRIG" LED

Sources: CH1, CH2, ALT (CH1 and CH2 alternate), EXT (external), LINE (net)

Frequency range	CH1, CH2, ALT	EXT
1 KHz	0.5 div.	100 mVrms
100 MHz	1 div.	200 mVrms
160 MHz	2 div.	300 mVrms

Sensitivity: CH1, CH2, ALT, EXT

Modes: normal - peak to peak; triggered - delayed

Coupling: DC, AC, filters LFR, HFR (10 kHz), TV-V, TV-H

Slope: positive, negative

Apparent delay: 20 ns

Trigger delay: TB 2 with intensified trace

Variable delay: 1 to 10 div.

TB 2 triggered on the same signal

Digital Functions (OX8620, 8627 only)

ACQUISITION

Analog to digital conversion:

Vertical resolution is 8-bit (256 levels).

Individual converter for each channel

Accuracy: \pm 3 % overall

Sampling rate: 40 M samples/sec. max.

Memory: OX 8620: two 4 k word buffers; OX 8627: four 8 k word buffers

Save and compare stored waveforms

Acquisition modes:

ROLL: 200 ms to 200 s/div.

REFRESH: 0.1 μ s to 200 s/div.

SINGLE SHOT: 0.1 μ s to 200 s/div.

Pre-trigger in 1 k word steps (0 to 4 k: OX 8620 ; 0 to 8 k: OX 8627)

Envelope mode

Glitch capture (OX 8627): > 50 ns (from 10 μ s/div to 100 ms/div)

DISPLAY

Readout: Applicable in analog and digital modes

Trace selection: depends on the vertical mode (CH1 - CH2 - ALT - CHOP - ADD - XY)

Waveform analysis:

Bargraph indication of the expansion and position of the displayed window

Linear and sinusoidal interpolation

Analog smoothing ("Dot Join")

Vertical shift: display of the vertical shift position (during and after acquisition)

MEASUREMENTS

By cursors: DV, DT, F, ϕ (in analog and digital modes) reference selection (CH1 or CH2)

Automatic measurements: tr, tf, F, T, W+, W-, Vrms, Vavg, Vamp, Vlow, Vh, Vpp, Vmax, Vmin, DC+, DC-, ϕ (phase) on digitised stored waveforms

Specifications subject to change without notice.

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METRIX S.A.

Chemin de la Croix-Rouge - B.P. 2030

F 74010 Annecy Cedex

Tel. 50 33 62 62

Fax: 50 33 62 00

FOR COMPLETE ASSISTANCE AND ORDERING