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Cert. 5518.01

MODEL NUMBER:
# ECO

# DIGITAL STORAGE OSCILLOSCOPE


## PRODUCT OVERVIEW

The EMC Shop's ECO series Digital Storage Oscilloscopes are available in bandwidths of 2 GHz, 1 GHz and 500 MHz, have sample rate of 5 GSa/s (10 GSa/s ESR) at each channel, maximum record length of 500 Mpts/ch, and display up to 4 analog channels + 16 digital channels mixed signal analysis ability.

The ECO series employs The EMC Shop SPO technology with a maximum waveform capture rate of up to 170,000 wfm/ s (normal mode, up to 750,000 wfm/s in Sequence mode), 256-level intensity grading display function plus a color temperature display mode.
It also employs an innovative digital trigger system with high sensitivity and low jitter. The trigger system supports multiple powerful triggering modes including serial bus triggering. Tools such as History waveform recording, Search and Navigate functions, Mask Test, Bode Plot, Power Analysis and Eye/Jitter Analysis allow for extended waveform records to be captured, stored, and analyzed. An impressive array of measurement and math capabilities, options for a 25 MHz arbitrary waveform generator, as well as serial decoding are also features of the ECO.

The large 12.1" display capacitive touch screen supports multi- touch gestures, with the addition of user-friendly UI design, can greatly improve the operation efficiency. It also supports mouse control, and remote web control over LAN.

## KEY FEATURES

- 4 analog channels, up to 2 GHz bandwidth with 5 GSa/s (10 GSa/s ESR) sample rate at each channel
- Low background noise, supports 0.5 mV/div to 10 V/div vertical scales
- SPO technology
  - Waveform capture rates up to 170,000 wfm/s (normal mode), and 750,000 wfm/s (sequence mode)
  - Supports 256-level intensity grading and color temperature display modes
  - 500 Mpts Record length in total for all 4 channels
  - Digital trigger system
- Intelligent trigger: Edge, Slope, Pulse, Window, Runt, Interval, Dropout, Pattern, Qualified, Nth edge, Setup/hold, Delay and Video (HDTV supported). Zone Trigger simplifies advanced triggering
- Serial bus triggering and decoder, supports protocols I2C, SPI, UART, CAN, LIN, CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT and Manchester
- Segmented acquisition (Sequence) mode, dividing the maximum record length into multiple segments (up to 80,000), according to trigger conditions set by the user, with a very small dead time between segments to capture the qualifying event
- History waveform record (History) function, the maximum recorded waveform length is 80,000 frames
- Automatic measurements on 50+ parameters, supports statistics with histogram, track, trend, Gating measurement, and measurements on Math, History and Ref
- 4 Math traces (8 Mpts FFT, addition, subtraction, multiplication, division, integration, differential, square root, etc.), supports formula editor
- Abundant data analysis functions such as Search, Navigate, Digital Voltmeter, Counter, Waveform Histogram, Bode plot, Power Analysis and Eye/Jitter Analysis
- High Speed hardware-based Average, Hi-Res; High Speed hardware-based Mask Test function, with Mask Editor tool for creating user-defined masks
- 16 digital channels (optional)
- 25 MHz function / arbitrary waveform generator, built-in multiple predefined waveforms
- Large 12.1" TFT-LCD display with 1280 * 800 resolution; Capacitive touch screen supports multi-touch gestures
- Interfaces include: USB Hosts, USB Device (USBTMC), LAN(VXI-11/Telnet/Socket), micro SD card, Pass/Fail, Trigger Out, HDMI
- Built-in web server supports remote control over the LAN port using a web browser. Supports SCPI remote control commands. Supports external mouse and keyboard

## KEY SPECIFICATIONS

| | | | |
|---|---|---|---|
| Analog channels | 4 + EXT | | |
| Bandwidth | ECO500M | ECO | ECO2G |
| | 500 MHz | 1 GHz | 2 GHz |
| Sample rate (Max.) | 5 GSa/s (10 GSa/s ESR) @ each channel | | |
| Memory depth (Max.) | 500 Mpts/ch (single-channel)<br>250 Mpts/ch (dual-channel)<br>125 Mpts/ch (3 or 4 channels) | | |
| Waveform capture rate (Max.) | Normal mode: 170,000 wfm/s;<br>Sequence mode: 750,000 wfm/s | | |
| Vertical resolution | 8-bit, up to 16-bit in Hi-Res mode | | |
| Trigger type | Edge, Slope, Pulse width, Window, Runt, Interval, Dropout, Pattern, Video, Qualified, Nth edge, Setup/hold, Delay, Serial | | |
| Serial trigger and decode | Standard: $I^2C$, SPI, UART, CAN, LIN<br>Optional: CAN FD, FlexRay, I2S, MIL-STD-1553B, SENT, Manchester (decode only) | | |
| Measurement | 50+ parameters, statistics, histogram, trend, and track supported | | |
| Math | 4 traces<br>8 Mpts FFT, +, -, x, ÷, ∫dt, d/dt, √, Identity, Negation, Absolute, Sign, ex, 10x, ln, lg, Interpolation, MaxHold, MinHold, ERES, Average. Supports formula editor | | |
| Data analysis | Search, Navigate, History, Mask Test, Digital Voltmeter, Counter, Waveform Histogram, Bode plot and Power Analysis, Eye/Jitter Analysis | | |
| Digital channel (optional) | 16-channel; maximum sample rate up to 1 GSa/s; record length up to 50 Mpts | | |
| Waveform generator (optional) | Single-channel external USB isolated waveform generator, frequency up to 25 MHz, 125 MSa/s sample rate, 16 kpts waveform memory | | |
| I/O | USB 3.0 Host x2, USB 2.0 Host x2, USB 2.0 Device, LAN, micro SD card, HDMI, External trigger, Auxiliary output (TRIG OUT,PASS/FAIL) | | |
| Probe (Standard) | 500 MHz, 1 probe supplied for each channel | | |
| Display | 12.1 TFT-LCD with capacitive touch screen (1280*800) | | |