Description

The CCSCOPE-22XX range provides a convenient solution to housing oscilloscopes within the Time Electronics CalBench. The scope is situated inside the primary or secondary console with connection via BNC terminals on a 50 mm wide module panel.

Each scope features internal communication to a control centre (standard with 8060 or 7051) and operation is via a dedicated software application. This software is pre-loaded on the control centre. The interface provides the user with a large display that is easy to use and control the scope.

There are five standard modules up to 100 MHz. Additional versions for higher bandwidths and more channels are also available.

Features

- Models up to 100 MHz bandwidth
- 2 channels
- Up to 1 GS/s sampling rate
- Internal Arbitrary waveform generator included
- Advanced digital triggers
- Persistence display modes
- Integrally fitted and operated via the control centre
- Supplied with software application for operation
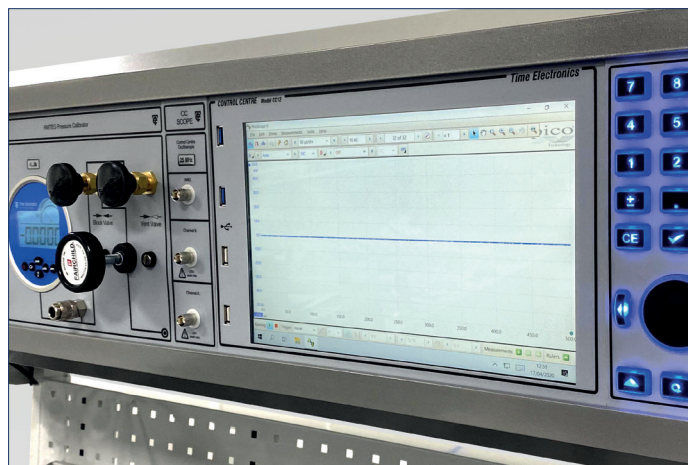- Mask limit testing
- Serial bus decoding

Modules

CCSCOPE-2204A: Control Centre Oscilloscope (10 MHz, 2 channel)

CCSCOPE-2205A: Control Centre Oscilloscope (25 MHz, 2 channel)

CCSCOPE-2206B: Control Centre Oscilloscope (50 MHz, 2 channel)

CCSCOPE-2207B: Control Centre Oscilloscope (75 MHz, 2 channel)

CCSCOPE-2208B: Control Centre Oscilloscope (100 MHz, 2 channel)

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Time Electronics
CCSCOPE-22XX Specifications

Modules	CCSCOPE-2204A	CCSCOPE-2205A	CCSCOPE-2206B	CCSCOPE-2207B	CCSCOPE-2208B
VERTICAL					
Bandwidth (−3 dB)	10 MHz	25 MHz	50 MHz	70 MHz	100 MHz
Rise time (calculated)	35 ns	14 ns	7 ns	5 ns	3.5 ns
Software lowpass filter	Not applicable		Configurable software lowpass filter		
Vertical resolution	8 bits		8 bits		
Enhanced vertical resolution	Up to 12 bits		Up to 12 bits		
Input ranges	±50 mV, ±100 mV, ±200 mV, ±500 mV, ±1 V, ±2 V, ±5 V, ±10 V, ±20 V		±20 mV, ±50 mV, ±100 mV, ±200 mV, ±500 mV, ±1 V, ±2 V, ±5 V, ±10 V, ±20 V		
Input sensitivity	10 mV/div to 4 V/div (10 vertical divisions)		4 mV/div to 4 V/div (10 vertical divisions)		
Input coupling	AC / DC		AC / DC		
Input connector	Single-ended, BNC(f)		Single-ended, BNC(f)		
Input characteristics	1 MΩ ± 1% ‖ 14 pF ± 2 pF		1 MΩ ± 1% ‖ 16 pF ± 1 pF		
Analog offset range (vertical position adjustment)	None		±250 mV (20 mV to 200 mV ranges) ±2.5 V (500 mV to 2 V ranges) ±25 V (5 V to 20 V ranges)		
Analog offset control accuracy	Not applicable		±1% of offset setting, additional to basic DC accuracy		
DC accuracy	±3% of full scale ±200 µV		±3% of full scale ±200 µV		
Overvoltage protection	±100 V (DC + AC peak) up to 10 kHz		±100 V (DC + AC peak) up to 10 kHz		
HORIZONTAL (TIMEBASE)					
Maximum sampling rate (real-time) 1 ch. 2 ch.	100 MS/s 50 MS/s	200 MS/s (Ch. A) 100 MS/s	500 MS/s 250 MS/s	1 GS/s 500 MS/s	
Equivalent-time sampling rate (ETS)	2 GS/s	4 GS/s	5 GS/s	10 GS/s	
Maximum sampling rate (USB streaming)	1 MS/s		9.6 MS/s (31 MS/s with SDK)		
Shortest timebase	10 ns/div	5 ns/div	2 ns/div	1 ns/div	
Longest timebase	5000 s/div		5000 s/div		
Buffer memory (block mode, shared between active channels)	8 kS	16 kS	32 MS	64 MS	128 MS
Buffer memory (USB streaming mode, PicoScope software)	100 MS (shared between active channels)		100 MS (shared between active channels)		
Buffer memory (USB streaming mode, SDK)	Up to available PC memory		Up to available PC memory		
Waveform buffers (PicoScope software)	10 000		10 000		
Maximum waveforms per second	2000		80 000		
Initial timebase accuracy	±100 ppm		±50 ppm		
Timebase drift	±5 ppm/year		±5 ppm/year		
Sample jitter	30 ps RMS typical		20 ps RMS typical	3 ps RMS typical	
ADC sampling	Simultaneous sampling on all enabled channels		Simultaneous sampling on all enabled channels		
DYNAMIC PERFORMANCE (typical)					
Crosstalk (full bandwidth, equal ranges)	Better than 200:1		Better than 300:1		
Harmonic distortion	< −50 dB at 100 kHz, full-scale input, typical		< −50 dB at 100 kHz, full-scale input, typical		
SFDR (100 kHz, full-scale input, typical)	> 52 dB		±20 mV range: > 44 dB ±50 mV range and higher: > 52 dB		
Noise	< 150 µV RMS (±50 mV range)		< 220 µV RMS (±20 mV range)	< 300 µV RMS (±20 mV range)	
Bandwidth flatness	(+0.3 dB, −3 dB) from DC to full bandwidth		(+0.3 dB, −3 dB) from DC to full bandwidth		
TRIGGERING					
Sources	Ch A, Ch B		Ch A, Ch B		
Trigger modes	None, auto, repeat, single		None, auto, repeat, single, rapid (segmented memory)		
Advanced triggers	Edge, window, pulse width, window pulse width, dropout, window dropout, interval, logic		Edge, window, pulse width, window pulse width, dropout, window dropout, interval, runt pulse, logic		
Trigger types, ETS	Rising or falling edge		Rising or falling edge (available on Ch A only)		
Segmented memory buffers (SDK)	N/A		128 000	256 000	500 000
Segmented memory buffers (PicoScope software)	N/A		10 000		
Trigger sensitivity, real-time	Digital triggering provides 1 LSB accuracy up to full bandwidth		Digital triggering provides 1 LSB accuracy up to full bandwidth		
Trigger sensitivity, ETS	10 mV p-p, typical, at full bandwidth		10 mV p-p, typical, at full bandwidth		
Maximum pre-trigger capture	100% of capture size		100% of capture size		
Maximum post-trigger delay	4 billion samples		4 billion samples		
Trigger rearm time	PC-dependent		< 2 µs at 500 MS/s sampling rate	< 1 µs at 1 GS/s sampling rate	
Maximum trigger rate	PC-dependent		10 000 waveforms in a 12 ms burst, at 500 MS/s sampling rate, typical	10 000 waveforms in a 6 ms burst, at 1 GS/s sampling rate, typical	