OSCILLOSCOPES

RIGOL
DIGITAL OSCILLOSCOPES
70MHz/100MHz/200MHz/300MHz

LOGIC ANALYZER MODULE (OPTIONAL)

RIGOL 2000 Series digital oscilloscope are new high-quality dual-channel oscilloscopes. These compact lightweight digital oscilloscopes provide exceptionally accurate waveform viewing and measurements. They provides up to 50,000 wfms/s waveform acquisition rate.

The 2000 Series digital oscilloscope is ideal for production tests, field service, research, design and all other applications involving analog/digital circuit tests and troubleshooting, as well as education and training.

- **Bandwidth**: 70 - 300MHz. 2 Channels. Real-time sample rates: 2 GSa/s.
- **Memory depth**: 14 Mpts.
- **Innovative UltraVision technology. Vertical sensitivity: 500μV/div - 10V/div. 8-inch color LCD**
- **Waveform acquisition rate up to 50,000 wfms/s.**
- **Math functions**: Add, Subtract, Multiply, FFT.
- **Standard interface**: USB host & device, LAN, AUX. Recommended calibration interval period is 1 year.
- **Real-time waveform recording, waveform playback, and waveform analysis. Compact design**
- **Function/Arb Generator Board (OPTIONAL)**
- **Logic Analyzer (16 bit) optional**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>01DS2072A</td>
<td>70MHz, 2ch scope</td>
<td>$839.00</td>
</tr>
<tr>
<td>01DS2072A-S</td>
<td>70MHz, 2ch w/ 1MHz Function Arbitrary Generator</td>
<td>$1,189.00</td>
</tr>
<tr>
<td>01MS02072A</td>
<td>70MHz, 2ch scope w/ Logic Analyzer 16bit</td>
<td>$1,239.00</td>
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<tr>
<td>01MS02072A-S</td>
<td>70MHz, 2ch scope w/ Logic Analyzer 16bit</td>
<td>$1,589.00</td>
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<tr>
<td>01DS2102A</td>
<td>100MHz, 2ch scope</td>
<td>$1,260.00</td>
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<tr>
<td>01DS2102A-S</td>
<td>100MHz, 2ch scope w/ 1MHz Function Arbitrary Generator</td>
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<tr>
<td>01MS2102A</td>
<td>100MHz, 2ch w/ Logic Analyzer</td>
<td>$1,543.00</td>
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<tr>
<td>01MS2102A-S</td>
<td>100MHz, 2ch w/ Logic Analyzer</td>
<td>$1,893.00</td>
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<tr>
<td>01DS2202A</td>
<td>200MHz, 2 ch scope</td>
<td>$1,790.00</td>
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<tr>
<td>01DS2202A-S</td>
<td>200MHz, 2 ch w/ 1MHz Function Arbitrary Generator</td>
<td>$2,180.00</td>
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<tr>
<td>01MS2202A</td>
<td>200MHz, 2 ch w/ Logic Analyzer</td>
<td>$2,026.00</td>
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<tr>
<td>01MS2202A-S</td>
<td>200MHz, 2 ch w/ Logic Analyzer</td>
<td>$2,376.00</td>
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<tr>
<td>01DS2302A</td>
<td>300MHz, 2 ch scope</td>
<td>$2,450.00</td>
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<tr>
<td>01DS2302A-S</td>
<td>300MHz, 2 ch w/ 1MHz Function Arbitrary Generator</td>
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<td>01MS2302A</td>
<td>300MHz, 2 ch w/ Logic Analyzer</td>
<td>$2,621.00</td>
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<td>01MS2302A-S</td>
<td>300MHz, 2 ch w/ Logic Analyzer</td>
<td>$2,971.00</td>
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</tbody>
</table>

RIGOL
DIGITAL OSCILLOSCOPES
70MHz/100MHz/200MHz

LOGIC ANALYZER MODULE (OPTIONAL)

DS1000Z series are a 4-channel digital oscilloscope bandwidth 50MHz ~ 200MHz, sample rates up to 1GSa /s, while both deep storage depth and high waveform capture rate, high performance economical general purpose digital oscilloscopes.

DS1000Z series uses many of today’s advanced technology and processes, the overall performance reached the international advanced level, for the most widely used digital oscilloscope markets including communications, semiconductor, automotive electronics, site maintenance, research/education and man other areas of universal design / debugging / testing requirements and design an oscilloscope.

- **1GSa/s Sample Rate**
- **UltraVision**: Deeper memory(Std.12Mpts,Opt.24Mpts) **UltraVision**: Up to 30,000 wfms/s Waveform capture rate**
- **UltraVision**: Multi-Level intensity grading display **UltraVision**:Realtime waveform Record,Replay, function (Opt.)
- **A variety of Math Functions**
- **A variety of Trigger Functions**
- **Optional Serial Bus Triggering and Decoding functions(RS232,I2C,SPI)**
- **Standard Mask test function**
- **Automatic Measurements with Statistics**
- **Optional Function/Arbitrary Generator**

<table>
<thead>
<tr>
<th>Part No.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>01DS1054Z</td>
<td>50MHz, 4ch scope</td>
<td>$399.00</td>
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<tr>
<td>01DS1074Z</td>
<td>70MHz, 4ch scope</td>
<td>$585.00</td>
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<tr>
<td>01DS1074Z-S</td>
<td>70MHz, 4ch w/ 25MHz Function Arbitrary Generator</td>
<td>$818.00</td>
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<tr>
<td>01MS01074Z</td>
<td>70MHz, 4ch w/ Logic Analyzer</td>
<td>$835.00</td>
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<td>01MS01074Z-S</td>
<td>70MHz, 4ch w/ Logic Analyzer</td>
<td>$1,068.00</td>
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<td>01DS1104Z</td>
<td>100MHz, 4ch scope</td>
<td>$1,080.00</td>
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<td>01DS1104Z-S</td>
<td>100MHz, 4ch w/ 25MHz Function Arbitrary Generator</td>
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<td>01MS01104Z</td>
<td>100MHz, 4ch w/ Logic Analyzer</td>
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<tr>
<td>01MS01104Z-S</td>
<td>100MHz, 4ch w/ Logic Analyzer</td>
<td>$1,229.00</td>
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<tr>
<td>01DS1204B</td>
<td>200MHz, 4 ch, 2GS/s Scope</td>
<td>$1,395.00</td>
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<tr>
<td>01DSRACK</td>
<td>Rack Maintaining Kit for DS1000Z</td>
<td>$137.00</td>
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</tbody>
</table>
OSCILLOSCOPES

RSR-4IN-1  4-IN-1 INSTRUMENT
LAB BENCH SET-UP

MODEL RSR 4-IN-1

CONTAINS ALL FOLLOWING
BENCH TYPE INSTRUMENTS:

- Sweep Function Generator
- Triple Output Power Supply
- Digital Multimeter
- Oscilloscope

- Save time AND MONEY by ordering the 4-IN-1
- All quality, best selling models included
- Simplify your ordering process
- Analog and Digital Storage Scope versions available
- Customized packages available for ten or more
  units (add or substitute other models). Call for
  custom package quote (10 + required)

DETAILS ON INSTRUMENTS:

Sweep Function Generator – Model FG-32.
Best value, top seller. 3MHz with digital display. Six waveform functions (sine, triangle,
square, ramp, pulse). Internal/External frequency counter function

Triple Output Power Supply – Model PHSY3002-3.
Best value, top seller. DC outputs are variable 0 ~ 30VDC @ 0 ~ 2 amps (two outputs), and a fixed 5V @ 3 amp.

Digital Multimeter – Model DM9803R.
Best value, top seller. Bench DMM with large, 3 LCD display with back light and 42 segment bar graph. RS232 computer interface included with software and cable. DC, AC, Resistance, Capacitance, Frequency functions. AC or DC (battery) operation possible.

Oscilloscope – Model GOS-620 (included with 01RSRANA4).
Best value and top seller in its class. 20MHz, dual channel analog scope. High sensitivity with ALT trigger function

Oscilloscope – GW Instek Model GDS1052U (included with 01RSRDIG4).
50MHz, 2 channel digital scope

Part No. Description    Price
01RSRANA4 Four-In-One Bench Set-up w/20MHz Analog Scope $750.00
01RSRDIG4 Four-In-One Bench Set-up w/50Mhz Digital Scope 735.00

DIGITAL OSCILLOSCOPE
SMALL PORTABLE 1 CHANNEL 1MHZ / 10MHZ
Models: DSO 062, DSO 082

Features

- 1MHz bandwidth (5 Ms/s sampling rate)-Model-DSO 062
- 10 MHz Bandwidth (50Ms/s sampling rate) - Model-DSO 082
- 100 mv/div. to 5V/div. sensitivity
  - Model-DSO 062
- 10mv/div. to 5V/div. sensitivity
  - Model-DSO 082
- 50V peak to peak max. input
- DC/AC coupling
- Probe and adaptor included
- Save / recall up to 4 captures
- FFT with selectable points
  (Model-DSO 082)

- Size: 5” x 2.7” x 1.2”; Wt. 5 oz. (DSO82)
- Size: 4.3” x 2.6” x 1” Wt. 4.5 oz. (DSO62)

Part No. Description    Price
01DS062 DSO62 - 1MHz Oscilloscope 69.95
01DS082 DSO82 - 10MHz Oscilloscope 125.00

GW INSTEK

OSCILLOSCOPE TRAINING KIT

MODEL GDB03

The GDB-03 training kit is designed to work with the
INSTEK GDS2xxx series oscilloscopes and the
INSTEK GDS3xxx series oscilloscopes. It enables
the user to learn both the basic and the advanced
functions of these Digital Storage Oscilloscopes
(DSO’s). Following the training procedures of this
training kit, you will quickly understand basic oper-
ations. Many advanced operations and unique fea-
tures of these scopes are also covered. (3) types
of bus signals, (9) basic and (18) advanced scope
training signals are provided

Part No. Description    Price
01GDB03 Oscilloscope training kit for INSTEK for 2xxx and
3xxx series scopes $285.00

RSR-4IN– SCOPE PROBE SWITCHABLE
60, 100, 250 MHZ

B.W. DC to 60/100/150 MHz. BNC to IC Test Hook, with selectable X1,
X10 switch. Includes 1 ea. probe, spring hook, ground lead, insulating
tip, measuring tip, IC tip, adjusting tool, channel identifier clips.

Part No. Description    1-9 10-99 100+
05SPAK220 60 MHz  $13.95 $11.95 $9.95
05SPAK510 100 MHz  $17.95 $15.95 $13.95
05SPGL250 250 MHz  21.95 19.95 17.95

52 ELECTRONIX EXPRESS / RSR • 900 Hart Street, Rahway, NJ 07065
**OWON HANDHELD OSCILLOSCOPE**

**20 MHZ SINGLE/DUAL CHANNEL**

This is a handheld electrical test device that combines a 20MHz, handheld digital oscilloscope for viewing electrical signals with a manual- and auto-ranging digital multimeter for measuring AC and DC voltage to 400V, AC and DC current to 10 amp, resistance to 40 MO, and capacitance to 100 F. The oscilloscope has a maximum real-time sample rate of 100 MS/s and a record length of 6,000 points per channel for acquiring detailed waveforms. Its four math functions—add, subtract, multiply, and divide—plus FFT (fast Fourier transform) and 20 automatic measurements such as period, frequency, and peak-to-peak enable an in-depth analysis of waveforms. Up to four waveforms can be stored in the internal memory. The multimeter has two ranging modes: manual, which allows the user to select the operating range, and auto, which automatically selects the appropriate operating range. The delta relative function allows a measurement to be set as a reference value and displays subsequent measurements as a positive or negative deviation from that value, and the data-hold function freezes a reading on the display to aid documentation. A continuity buzzer confirms that the circuit conducts electricity, and a diode check detects whether a circuit’s diodes are working properly. Additional specifications include a rise time of 17.5 ns and various triggering features. The unit has a 3.5” color TFT (thin film transistor).

Maximum real-time sampling rate 100 Ms/s & 6,000 points record length per channel

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>01HDS1021M</td>
<td>20 Mhz; single channel</td>
<td>$295</td>
</tr>
<tr>
<td>01HDS1022M-N</td>
<td>20 Mhz; 2 channel</td>
<td>$435</td>
</tr>
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</table>

**GW INSTEK 20MHz, DUAL CHANNEL**

**HANDHELD DIGITAL SCOPE AND DMM**

**MODEL GDS-122**

Equipped with a 3.8” color LCD, this is a powerful handheld DSO and DMM combined. The color display helps to clearly show 2 different channel waveforms simultaneously. With 100 MS/s real-time sampling rate and Dual Waveform Math (DWM) function it provides users with fast analyzing capability. 6K memory (per channel) gives this model impressively accurate data-capture to satisfy diverse industrial requirements. It also serves as a 3 ½ digit, 4,000 count DMM with auto or manual range options. Among many other features are a self calibration function and free PC software.

- 20MHz, dual channel Digital Storage Scope
- 100MS/s real-time sampling
- 6K memory points per channel
- Dual Waveform Math (DWM)
- 5 automatic measurements, cursors, USB and RS232 interface
- 6 hours running time on battery, charger included
- Multimeter functions: voltage, current, resistance, continuity, diode, capacitance, true RMS
- Isolated inputs between scope and multimeter

Part No. 01GDS122 • Price: $720.00

**SIGLENT HANDHELD OSCILLOSCOPE**

**60MHz/100MHz/150MHz**

SHS800 Series Handheld Digital Oscilloscopes offers a powerful high-performance oscilloscope and a high precision multimeter. Some outstanding features and applications include a data recorder function with 7M internal storage up to 18 hrs recording time, a 32 measurement trend plot analyzer and can be utilized for automotive electronics, power system electricity test and plant automation control systems.

Features:
- Real time sampling rate: 1GSa/s
- Memory Depth: 2 Mpts
- Triggering: Edge, Pulse, Video, Slope
- Interface: USB Device, USB Host
- Accurate measurement of DCV, ACV, DCI, ACI
- Accurate measurement of resistance, diode, capacitance
- Display: 6000 Counts

<table>
<thead>
<tr>
<th>Part No.</th>
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</tr>
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<tbody>
<tr>
<td>01SHS806</td>
<td>60 Mhz Bandwidth</td>
<td>$465.00</td>
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<tr>
<td>01SHS810</td>
<td>100 Mhz Bandwidth</td>
<td>$573.00</td>
</tr>
<tr>
<td>01SHS815</td>
<td>150 Mhz Bandwidth</td>
<td>$608.00</td>
</tr>
</tbody>
</table>

**HANDELED DIGITAL SCOPE AND DMM**

**60 MHZ BW / 2 CHANNELS**

- 60 Mhz bandwidth with 2 channels
- 150Msa/s real-time sampling rate
- 5 Gsa/s equivalent-time sampling rate
- Large 5.7” TFT color display
- 6000-count DMM resolution
- USB host/device 2.0 interface
- Memory: 32K single channel, 16K at dual
- Multi-language support
- Battery power operation
- Vertical: Rise time <5.8ns
- Cursors / Measurements: Vpp, Vmax, Vmin, Vrms, Vbase, Vmid, preshoot, overshoot
- Time Measurement: Freq., period, rise, fall, width, duty cycle.
- Dimension: 245x163x52mm; 3 lbs

Part No 01DSMM1 • Price: $395.00

Call Toll Free: 1 (800) 972-2225 • In NJ: (732) 381-8020 • Fax: (732) 381-1006 (732) 381-1572
LOGIC ANALYZER / OSCILLOSCOPES

PERSONAL SCOPE

MODEL HPS50
Designed By electronics enthusiasts
For electronics enthusiasts! Powerful, compact and USB connectivity. The large keyboard and bright LCD makes this unit a breeze to use.
- 40MHz sampling rate
- 12MHz analog bandwidth
- 0.1mV sensitivity
- 5mV to 20V/div in 12 steps
- 50ns to 1hour/div time base in 34 steps
- Ultra fast full auto set up option
- Adjustable trigger level
- X and Y position signal shift
- DVM readout
- Audio power calculation (rms and peak) in 2, 4, 8, 16 & 32 ohm
- dBm, dBV, DC, rms ...measurements
- Signal markers for Volt and Time
- Frequency readout (through markers)
- Recorder function (roll mode)
- Signal storage (2 memories)
- High resolution LCD 192x112 pixels
- LCD backlight
- Galvanically separated USB output for PC
- Data or bitmap download to PC

Part No. 01VHPS50  •  Price: $295.00

LOGIC ANALYZER PORTABLE

FEATURES:
- A portable small-sized analyzer
- Easy to use; makes debugging convenient
- Provides a PC-LINK interface to observe and print waveforms using your PC
- 5.6" color TFT display

SPECIFICATIONS:
- 250MHz timing and 100MHz state analysis (LA2025)
- 500MHz timing and 200MHz state analysis (LA2050)
- Saved Waveform: 512K x 32 (LA2025)
- Saved Waveform: 1M x 32 (LA2050)
- Memory: 2M (LA2025), 4M (LA2050)
- Skew: Typically less than 2.0 ns, maximum: 3.0 ns
- Speed of scanning: 5s/div – 14 ns/div
- Trigger channel: 32CH (8CHx4)
- DPI: 1 bit
- Trigger signal: 5ns
- Various ways to collect data: Single, Run, Autostore
- Size: 12.2 x 2.8 x 5.9 (inches)
- Weight: 5 lbs.
- Power: 90–240 VAC, 50–60 Hz

Applications: View industrial signals, capture noise spikes and glitches, monitor power quality, audio/video, digital circuitry, communications.

Part No 01LA2025  •  Price: $1,850.00
01LA2050  •  Price: $2,695.00

HAND HELD DMM/SCOPE

WITH TRUE RMS, AUTORANGING

MODEL SCOPE PLUS 440
Versatile, combination unit, featuring a 1 MHz hand-held oscilloscope plus a wide range of both standard and special DMM functions. Unit comes complete with rubber holster and stand, NiCad battery and charger/ adaptor, test leads and 38 page manual.

1 MHZ OSCILLOSCOPE
Glitch Capture (25 ms/s), continuous autoset, real time display, cursor measurements, flexible triggering, roll mode, optional RS-232 output.

TRUE RMS DMM
- **Voltage**  – 1,000VDC, 5 Ranges;
  750VAC, 4 Ranges, True RMS
- **Current**  – 10A AC/DC, 6 Ranges
- **Resistance**  – 40M, 6 Ranges
- **Capacitance**  – 400µF, 6 Ranges
- **Frequency**  – 2 MHz, 5 Ranges
- Diode test, continuity buzzer, component test, logic test, REL function, peak hold, minmax record, compare mode, trend, joystick function selector, auto-ranging, built-in true RMS, 4,000 count display, back light, on board help text switch

Applications: View industrial signals, capture noise spikes and glitches, monitor power quality, audio/video, digital circuitry, communications.

Part No. Description 1-4 5+
01OSDM440  •  Model 440 DMM/Scope $355.00 $345.00
01A900  •  Soft Carrying Case 21.95 20.90
01A402  •  Software & Cable For Scope Plus 59.95 56.95

HANDHELD DIGITAL SCOPE METER

MODELS S2401 (1MHZ) AND S2405 (5MHZ)
With built-in autoranging true RMS DMM
- Dual channel and auto calibration
- Oscilloscope PE Bandwidth:
  DC to 1MHz (S2401)
  DC to 5MHz (S2405)
- Sampling Time:
  Dual CH Mode: 25Ms/s
  Single CH Mode: 50Ms/s
- Automatic setting for horizontal and vertical division
- Roll and single shot mode
- Excellent internal noise reduction
- Real time update
- 16 shot waveform and setup memories
- Max voltage between input and ground: DC or AC 600Vpeak
- USB interfaces for transferring measurement data and waveform
- DMM Features:
  DC V: 5V – 1000V
  AC V: 3V – 750V
- Resistance: 5K ohm – 5M Ohm
- Continuity buzzer [Frequency (full auto range) 10MHz is for S2405 only]
- Power Requirement: Ni-MH batteries 4.8V (1.2V x 4 cell)
- Dimensions/Weight: 90 (W) x 195 (H) x 40 (D) mm / 1 lb.

Part No. Description  Price
01OSS2401  •  1MHz Digital Scope Meter $399.00
01OSS2405  •  5MHz Digital Scope Meter 439.00
POCKET HANDHELD
OSCILLOSCOPE
DSO NANO V3 / USB

The DSO Nano V3 is a pocket-size compatible 32bit digital storage oscilloscope. Based on ARM -M3, it's equipped with 320*240 color display, SD card, USB port and recharging function. It's compact, simple to operate; meets the basic demands of school lab, electronic troubleshooting, etc.

Features:
- Portable and lightweight
- Color display
- Waveform storage and playback
- 6 triggering modes
- 200Khz Analog Bandwidth
- Built-in Signal Generator
- Display: 2.8” color TFT LCD
- Vertical Sensitivity: 10mv/Div~10V/Div(x1 probe)
- 0.5V/Div~10V/Div(x10 probe)
- Input Resistance: >500KO
- Max. Input Voltage: 80Vpp(x1 probe) 400Vpp(x10 probe)
- Triggering Mode: Auto, Normal, Single, None
- Auto Measurement: Frequency, cycle, duty, Vpp, Vram, Vavg, DC voltage; Vertical Precise Measurement Cursor; Horizontal Precise Measurement Cursor; Rising/Falling Edge Trigger; Triggering Cursor; Triggering Sensitivity Cursor; Hold/Run
- Inbuilt Test Signal: 10Hz-1MHz (1-2-5 stepping)
- PC Connection Interface: Connection through USB
- Recharging Method: Through USB interface
- Dimensions: 105mm x 53mm x 8mm

Part No. 01DSONANO • Price $99.50

RSR™— SCOPE PROBE
SWITCHABLE

60, 100, 250 MHZ
- B.W. DC to 60/100/150 MHz.
- BNC to IC Test Hook, with selectable X1, X10 switch.

Includes:
- 1 ea. probe
- Spring hook
- Ground lead
- Insulating tip
- Measuring tip
- IC tip
- Adjusting tool
- Channel identifier clips.

Part No. Description 1-9 10-99 100+
05SPAK220 60 MHz $13.95 $11.95 $9.95
05SPAK510 100 MHz $17.95 $15.95 $13.95
05SPGL250 250 MHz $21.95 19.95 17.95

Call Toll Free: 1 (800) 972-2225 • In NJ: (732) 381-8020 • Fax: (732) 381-1006 (732) 381-1572
OSCILLOSCOPES

VELLEMAN POCKET HANDHELD SCOPE

MODEL HPS140I

FEATURES:
• 40 Mega samples/sec in real time
• Bandwidth up to 10 MHz
• Full auto range option
• Sensitivity down to 0.1 mV
• Signal markers for amplitude and time
• Memory Hold function
• Direct audio power measurement
• USB battery charger included
• X10 measuring probe included
• Optional: Carrying Bag BAGPS

SPECIFICATIONS:
• Bandwidth: up to 10 MHz (3 dB or -4 dB at selected ranges)
• Input range: 1 mV to 20 V/division in 14 steps
• Input coupling: DC, AC and GND
• Real-time sample rate up to 40 MS/s
• AD resolution: 8 bits
• Time base: 250 ns to 1 division per second
• Auto-set-up function (or manual)
• Probe x10 readout option
• Readouts: DC, AC + DC, True RMS, dBm, Vpp, Min-Max. (2.5%)
• Audio power measurement from 2 to 32 ohms
• Hold & store function
• Time and Voltage markers readout
• Max. 100 Vp AC + DC
• White LED backlight
• Operates on NiMH rechargeable battery pack (included)
• Operates up to 8 hours on one charge
• Charging power supply: 9 Vdc/200 mA
• For use on CLASS II pollution degree II installations
• Dimensions: 74 x 114 x 29 mm / 2.9 x 4.5 x 1.14"
• Weight: 200 g, (7 oz)

Part No. 01OSHPTS1401 • Price: $169.00

VELLEMAN POCKET, HANDHELD SCOPE

MODEL PPS10

• Measurements: dBm, dBV, DC, rms...
• Trigger mode: run, normal, once, roll, slope +/-
• X and Y position signal shift
• Audio power calculation (rms and peak)
• Signal markers for Volt and Time
• Frequency readout (through markers)
• Recorder function (roll mode)
• Signal storage (2 memories)
• Full auto set up
• LCD: 128 x 64 pixels / high-contrast
• DVM read-out with x10 option
• Time base: 200 ns to 1 hour/div in 32 steps
• 5 mV to 20 V/div in 12 steps
• 0.1 mV sensitivity
• 10 MS/s sampling rate
• Up to 2 MHz analogue bandwidth
• Joystick operation
• Optical isolated RS232 output for PC
• Weight: 0.87 lbs.
• 5 – 1.5 V AAA battery or Nicd / NiMH (not included)
• Includes internal battery charging circuit
• 9 V adapter/300 mA optional (not included)

Part No. 01PPS10 • Price: $165.00

VELLEMAN ADVANCED PERSONAL SCOPE

MODEL APS230 - 30 MHZ, DUAL CHANNEL

The Advanced Personal Scope comes complete with two sets of probes, software CD, cable to connect to PC and battery pack. A fast charge is possible, and you may use the scope during charging.

• 2 – input channels. 30 MHz bandwidth. 240 MS/s per channel sampling
• Step markers. 8 bit vertical resolution. 300 mV min sensitivity
• 1 mV ~ 20 V/div volts per div. 25 ns ~ 1 hr/div time base
• AC/DC input coupling. RS232 communication with PC
• Dimensions: 9.1” x 5.9” x 2”. 30 oz
• Battery pack included. Fast charge possible
• High contrast LCD with white backlight
• Full auto set-up for volt/div and time/div
• Recorder roll mode up to 170 hour per screen, trigger mode (run, normal, once, roll), adjustable trigger level and slope
• Peak measurements: max, min, peak to peak
• Measurements: ms, dB (ref), dBV, dBm, dBG. Direct audio power measurements
• Complete with probes, software, cable, battery pack

Part No. 01OSAPS230 • Price: $495.00

VELLEMAN OSCILLOSCOPE TRAINING KIT

Learn how to get the most out of your digital oscilloscope. The board generates a number of safe ‘real-world’ signals, which we will use to perform measurements. Get familiarized with AC, DC and frequency measurements, sine and square waves, power supply ripple, full and half wave rectifiers, oscillators etc...

Learn what terms such as V/div, Time/div, trigger level, auto-setup etc...

Some experiments can be performed with your thumb. With interface for PC connectivity, it has 10 Ms/s sampling rate, and 2 MHz bandwidth with 0.1 mV sensitivity.

Part No. 32VKEDU06 • Price: $29.50

Part No. 01APS230 • Price: $165.00
OSCILLOSOPES

OSCILLOSCOPE PC BASED

DUAL CHANNEL
40 MHZ / 100 MHZ

- USB-powered 2 channel digital storage scopes.
- Real-time sampling ~ 100MS/s and 250Ms/s
- Buffer size 10K ~ 28K.
- Measurements: Vp-p, Vmax-, Vmin, Vmean, Vamp, Vhigh, Vlow, positive/negative overshoot, cycle mean, cycle rms, period, frequency pulse width, rise time (10% ~ 90%), fall time (10% ~ 90%), positive negative duty cycle.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>01DSO2090</td>
<td>40 MHz BW</td>
<td>$199.00</td>
</tr>
<tr>
<td>01OSDSO2250</td>
<td>100 MHz BW</td>
<td>$319.00</td>
</tr>
</tbody>
</table>

2-CHANNEL USB PC OSCILLOSCOPE, 60MHZ

MODEL PCSU1000

The PCSU1000 digital storage oscilloscope uses the power of your PC to visualize electrical signals. Its high sensitive display resolution, down to 0.15mV, combined with a high bandwidth and sampling frequency up to 1GHz give this unit all the power you need. The USB connection makes this PC based instrument a snap to set-up, no external power required! In-the-field measurements, using a lap-top, have never been this easy. Comes in a stylish vertical space saving design.

Powerful software will fulfill all your needs, but for those who like a challenge; a DLL is supplied, which allows you to create your own application.

- Inputs: 2 channels, 1 external trigger input
- Input impedance: 1Mohm // 30pF
- Bandwidth: DC to 60 MHz -3dB
- Max. input voltage: 30V (AC + DC)
- Input coupling: DC, AC and GND
- Supply from USB port (500mA)
- Minimum system requirements:
  - IBM compatible PC
  - Needs Win98SE or higher
  - SVGA display card (min. 800x600, 1024x768 recommended)
  - Mouse
  - USB port 1.1 or 2.0 compatible
  - CD Rom player

Includes:
- USB PC oscilloscope
- 2 x 60MHz scope probe
- USB cable
- Software on CD
- Getting started manual
- Translations on CD

Part No. 01OSPCSU1000 • Price: $379.00

PC OSCILLOSCOPE /
FUNCTION GENERATOR

MODEL PCSGU250

A complete USB-powered lab-in-a-box Feature-packed PcLab2000-LT software for two channel oscilloscope, spectrum analyser, recorder, function generator and bode plotter. With the generator, you can create your own waveforms using the integrated signal wave editor. For automated measurements, it is even possible to generate wave sequences, using file or computer RS232 input.

- Oscilloscope:
  - BW: DC to 12MHz
  - auto set-up function and X10 option
  - pre-trigger function
  - readouts: True RMS, dBV, dBm, p to p, Duty cycle, Frequency
  - Sampling frequency: Up to 25MHz

- Function Generator
  - Crystal-based stability
  - Standard waveforms: sine, square and triangle
  - Predefined library waveform included: sine(x)/x, DCV, sweep

- Spectrum Analyser:
  - Linear or logarithmic timescale
  - Operating principle: FFT (Fast Fourier Transform)
  - FFT input channel: CH1 or CH2
  - Zoom function

- Bode Plotter:
  - Automated sync between oscilloscope and generator
  - Logarithmic scale option
  - Volt or dB display scale
  - Phase plot option

- Transient Recorder
  - Linear or logarithmic timescale
  - Operating principle: FFT (Fast Fourier Transform)
  - FFT input channel: CH1 or CH2
  - Zoom function

- System Requirements
  - IBM compatible PC
  - Windows™ 2000, XP, Vista

Part No. 01PCSGU250 • Price: $195.00

USB PC OSCILLOSCOPE
WITH SIGNAL GENERATOR

Features

- Function generator:
  - Crystal-based stability
  - Standard waveforms: sine, square and triangle
  - Predefined library wave forms included: sine(x)/x, sweep...

- Oscilloscope:
  - Auto set-up function and X10 option
  - Pre-trigger function
  - Readouts: True RMS, dBV, dBm, p to p, Duty cycle, Frequency
  - Persistence options: color

- Transient recorder:
  - Automatic data storage automatic recording for more than 1 year

- Bode Plotter:
  - Automated sync between oscilloscope and generator
  - Logarithmic scale option
  - Volt or dB display scale
  - Phase plot option

- Spectrum analyzer:
  - Linear or logarithmic time scale

- System Requirements
  - IBM compatible PC

Part No. 01PCSU200 • Price: $149.00

Call Toll Free: 1 (800) 972-2225 • In NJ: (732) 381-8020 • Fax: (732) 381-1006 (732) 381-1572
**OSCILOSCOPES**

**HANDHELD DIGITAL SCOPE AND DMM**

**60 MHZ BW / 2 CHANNELS**

- 60 MHz bandwidth with 2 channels
- 150Msa/s real-time sampling rate
- 5 Gsa/s equivalent-time sampling rate
- Large 5.7” TFT color display
- 6000-count DMM resolution
- USB host/device 2.0 interface
- Memory: 32K single channel, 16K at dual
- Multi-language support
- Battery power operation
- Vertical: Rise time <5.8ns
- Cursors / Measurements: Vpp, Vmax, Vmin, Vrms, Vbase, Vmid, preshoot, overshoot
- Time Measurement: Freq., period, rise, fall, width, duty cycle.
- Dimension: 245x163x52mm; 3 lbs

Part No 01DSMM1 • Price: $395.00

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**FLUKE HANDHELD DIGITAL STORAGE OSCILLOSCOPE SCOPE METER®**

**40 MHZ WITH DMM**

The compact ScopeMeter 120 Series is the rugged solution for industrial troubleshooting and installation applications. It’s a truly integrated test tool, with oscilloscope, multimeter and “paperless recorder in one affordable, easy-to-use instrument. Find fast answers to problems in machinery, instrumentation, control and power systems.

- Dual-input 40 MHz or 20 MHz digital oscilloscope
- Two 5,000 counts true-RMS digital multimeters
- Automatic measurements
- A dual-input TrendPlot™ recorder
- Connect-and-View™ trigger simplicity for hands-off operation
- Shielded test leads for oscilloscope, voltage, resistance and continuity measurements
- 10:1 Voltage Probe included with Fluke 124 and 125 for high frequency measurements
- Up to 7 hours battery operation
- 600 V CAT III safety certified
- Optically-isolated interface for PC connection
- Rugged, compact case
- Fluke 125 gives bus health and power measurements

Part No. | Description | Price
---|---|---
01FK124 | 40MHz Scopemeter® | $1,715.00
01FK124S | 40MHz Scopemeter® w/Software, Case & RS232 Cable | 2,095.00

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**FLUKE SCOPEMETER® OSCILLOSCOPES MODELS 190-062, 062/S, 190-202, 202/S**

As the first two and four-channel portable scopes safety rated CAT III 1000V / CAT IV 600V, the new Fluke ScopeMeter® 190 Series II combines an unprecedented level of performance, ruggedness, and portability. You can choose from 60MHz, 100MHz or 200MHz bandwidth models, both with real-time sampling rates up to 2.5 GS/s and 400 ps resolution to capture noise and other disturbances. Both models feature deep memory—up to 10,000 samples per channel—so you can examine very small parts of the waveform in detail. And both are IP-51 rated to withstand dust, drips, humidity, and wide temperature variations. Fluke ScopeMeter test tools are hand-held battery operated, designed to meet the demands of field service professionals.

Part No. | Description | Price
---|---|---
01FLK190-062 | Fluke 190-062 ScopeMeter® (60MHz) | $2,895
01FLK190-062/S | Fluke 190-062 ScopeMeter® (60-MHz) with SCC-290 kit included | 3,385
01FLK190-202 | Fluke 190-202 ScopeMeter® (200MHz) | 3,690
01FLK190-202/S | Fluke 190-202 ScopeMeter® (200MHz) with SCC-290 kit included | 4,295

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**FLUKE HANDHELD DIGITAL STORAGE OSCILLOSCOPE SCOPE METER®**

- 1.25GS/sec repetitive sampling rate
- Connect-and-View™ hands-off operation
- Dual channel TrendPlot™ for “cause & result” troubleshooting
- Single test leads for all measurements — waveform display, multiple meter readings, capacitance, resistance and continuity
- Optical-to-RS232 interface port, 600V isolation
- 2-channel, True RMS, 5000 count DMM

This 20MHz digital storage scope is the ideal choice for technicians troubleshooting industrial machinery, instrumentation, control and power systems including: AC/DC motor drives, sensors and actuators, power lines, transformers and converters, and analog and digital control loops. The patented Connect-and-View hands-off operation saves time in fault finding by providing a stable, reliable, and repeatable display of signals without touching a button. Works for even the most complex signals including motor drives and video. Dual channel TrendPlot tracks intermittents by recording readings from minutes to days with time and date stamped minimum and maximum readouts. The built-in dual channel DMM measures VDC, True RMS VAC, AC/DC current, resistance, frequency, capacitance, temperature, continuity, diode, duty cycle, pulse width, phase A to B, crest factor, dBV and dBm.

Part No. | Description | Price
---|---|---
01FK123 | 20MHz Scopemeter® | $1,395.00
01FK123S | 20MHz Scopemeter® w/Software, Case & RS232 Cable | 1,850.00

Detailed Specs Available Upon Request

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58 ELECTRONIX EXPRESS / RSR • 900 Hart Street, Rahway, NJ 07065
SUBSTITUTION BOXES, RESISTANCE, CAP AND INDUCTANCE

COST EFFECTIVE

Affordable decade boxes with rugged quality and high precision. Perfect for educational use, R & D, service, production line testing and maintenance.

All Units Feature:
- Sturdy, multi-way binding posts
- Slide switches add/subtract for desired value
- Durable ABS plastic housing case

Model RBOX-408 Resistance Decade Box
- 1 ohm to 11 Meg
- 1 ohm per step, 1% resistors 0.3W
- Seven decades of resistance

Model CBOX-406 Capacitance Decade Box
- 100 pF to 11 F
- 100 pF per step, 5% caps, 50V
- Five decades of capacitance

Model LBOX-405 Inductance Decade Box
- 10 H to 111.1 mH, wide range and high resolution
- Four decades of inductance
- Slide switches that allow the user to simply add or subtract for desired value.

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SUBSTITUTION BOXES

RESISTANCE, CAPACITANCE
& INDUCTANCE

SUBSTITUTION BOXES

RC-Box L-Box R-Box C-Box

Dial in the desired value using the convenient side-by-side thumb-wheel switches. Color-coded switches separate various ranges. High-impact plastic cases.

RESISTANCE

Model RS200 – 1% Accuracy
Model RS201 – 0.1% Accuracy
1Ω to 9,999,999Ω in 1Ω steps. Rated 0.5W. Residual impedance 0.3Ω. 3⅛” x 3⅛” x 2⅛”.

CAPACITANCE

Model CS300 – 4% Accuracy
Model CS301 – 1% Accuracy
100pF to 99.9999µF in 100pF steps. Rating 100V (20V for 10-100 F scale). Residual impedance 30pF. 4⅛” x 3⅛”

COMBINED RESISTANCE/CAPACITANCE

Combines the features of a resistance and capacitance. Resistance and capacitance can be used independently, in series, or in parallel. Shorting link allows them to be coupled or separated. 7⅛” x 4⅛” x 2⅛”

Model RCS500
Combines the features and specifications of RS200 and CS300.

Model RCS502
Combines the features and specifications of RS201 and CS301.

INDUCTANCE

Models LS400A and LS400

Model LS400A (Standard Model) features 0-999mH in 1mH steps. Model LS400 (Wide Range Model) features 0-9.9999H in 1 mH steps. Both models have:
- 1% accuracy (1.5% max)
- Residual impedance 0.2Ω typical
- 4⅛” x 3⅛” x 2⅛”

Affordable decade boxes with rugged quality and high precision. Perfect for educational use, R & D, service, production line testing and maintenance.

All Units Feature:
- Sturdy, multi-way binding posts
- Slide switches add/subtract for desired value
- Durable ABS plastic housing case

Part No. Description 1-9 10+
01RBOX408 Res. Sub. Box $90.00 $85.00
01CBOX406 Cap. Sub. Box 115.00 110.00
01LBOX405 Ind. Sub. Box 128.00 119.00

Global Specialties

SUBSTITUTION BOX RESISTANCE & CAP

- Convenient selection of standard resistors and capacitor values separately or in series and parallel RC combinations
- 36 resistor ranges in values from 15 ohms to 10M, 1 watt 10%
- 18 capacitor ranges in values from 100pf to .22 F, 600V 10%
- Perfect for educational experiments and circuit designs.
- Compact design
- Test leads with alligator clip connectors included

Part No. 01RC10 • Price: $170.00
AC POWER SUPPLY

POWER SUPPLY/BATTERY ELIMINATOR

3.3 / 4.5 / 6 / 7.5 / 9 / 12V, 1A

MODEL 1513

This heavy duty battery eliminator can provide DC voltages up to 12 volts with a max output current of 1 amp.

Part No. 01BK1513 • Price: $34.00

AC POWER SUPPLY

This safe, low voltage AC Power Supply features a CT transformer, panel-mounted fuse holder, on/off toggle switch, 2 wire line cord and a high impact styrene case. Output is 6.3 or 12.6V AC and is accessed from cover mounted binding posts.

Part No. Description 1-9 10+
3200ACPSK (Kit) $16.95 $15.95
3200ACPSA (Assembled) 26.00 25.00

LOW COST, BATTERY ELIMINATOR POWER SUPPLIES

MODEL 1501 – 1.5V or 3V (3 Amp)
MODEL 1502 – 1.5V, 3V, 4.5V, 6V, 9V, 14V (1 Amp)

- Perfect for educational use. Eliminates need for batteries for projects, kits and prototyping.
- Use to power up circuit boards for service and repair
- Assembly and quality control applications for operation parameters of equipment and final testing.

Part No. Description Price
01BKPS1501 Dual Voltage, 3A $105.00
01BKPS1502 Multi Voltage, 1A 166.00

DIGITAL WATTMETERS

MODELS 1522 AND 1523

Accurate and inexpensive instruments designed to measure power consumption of equipment operating directly from standard 115VAC 60Hz. Also measures true RMS AC voltage and true RMS AC current. Functions easily selectable via front panel pushbutton switches.
- Measures True power up to 1999 watts (Model 1522); 2600 watts (Model 1523).
- Measures True RMS AC voltage and True RMS AC current up to 20 amps.
- Touch activated switches
- Green, 3.5 digit LED display (Model 1522); Backlit LCD display (Model 1523)
- Front and rear outlets
- Power over range indication.
- 20 Amp (35A peak) AC current.

Model 1523 Only
- Special measurement range for frequency and volt amps
- Autoscan feature

Part No. Description Price
01WM1522 Model 1522 $550.00
01WM1523 Model 1523 615.00

VARIABLE LINE AC SOURCES

MODEL 1510 & 1515

- Continuous current ratings of 10A & 15A (1515 Model)
- Wide (47-450Hz) output frequency suitable for avionics testing and other stable high frequency applications
- Analog metering for determining fluctuations
- Special output ON/OFF voltage load switch enables or disables load at set voltage
- 0-130V continuously variable output
- Separate input and output fuses for double protection
- Rugged, portable design

Part No. Description Price
01PS1510 10 Amp Model $345.00
01PS1515 15 Amp Model 425.00