Vector Network Analyzer

ONA1000 Series

- 2/4 port test. 100 kHz-8.5 GHz (ONA1085) and 300 kHz-3 GHz (ONA1030).
- Windows 7 operating system interface.
- 10.4 inches TFT color LCD touch screen.
- Fast and simple operation.
- More than 100 independent measurement channels; can test in more than 100 different incentive measurement conditions.
- Various scanning modes: linear sweep, logarithmic scanning, subsection scanning, power scanning.
- Powerful analysis pass/fail function: limit test, surge limit test, bandwidth limit test function.
- Time-domain analysis function.
- Unique calibration method: 4 ports SOLT calibration.
- External interface: USB, LAN, RS232, VGA, and GPIB ports (optional).

Model		ONA1085				ONA1030	
Test Port Output (Source)	Frequency Range	100 kHz ~ 8.5 GHz				300 kHz ~ 3 GHz	
	Frequency Resolution	1 Hz				1 Hz	
	Frequency Accuracy	±5 ppm （23 ℃±5 ℃）				±5 ppm (23 ℃±5 ℃)	
	Level Accuracy	±0.65 dB (50 MHz， 0 dBm)				±0.8 dB (50 MHz， 0 dBm）	
		±1.0 dB (relative 50 MHz, 0 dBm)				±1.0 dB（relative 50 MHz， 0 dBm）	
	Level Linear (0 Dbm)	±0.75 dB (range in-20 dBm～max output level)				±0.75 dB（-5 dBm ~ +10 dBm ）	
	Output Level Range	100 kHz ~ 5 GHz	5-6 GHz	6-7 GHz	7-8.5 GHz	-45 dBm ~ +10 dBm	
		-55 -+10 dBm	-55 -+9 dBm	-55 -+8 dBm	-55 -+7 dBm		
	Level Resolution	0.05 Db				0.05 dB	
	Harmonics (2 Or 3 Times)	<-25 dBc (Freq≤2 GHz ； range in+5 dBm ， typical value)				-25 dBc (+5 dBm, typical value)	
		<-20 dBc (Freq≤8.5 GHz ； range in +5 dBm ， typical value)					
	Non-Harmonics Spurious	<-30 dBc (Freq≤8.5 GHz ； +5 dBm， typical value)				-30 dBc (+5 dBm, typical value)	
Test Port Input	Max Input Level	100 k -5 GHz	5-6 GHz	6-7 GHz	7-8.5 GHz	+10 dBm	
		+10 dBm	+9 dBm	+8 dBm	+7 dBm		
	Input Damage Level	+26 dBm; ±35 VDC				+20 dBm; ±30 VDC	
	Crosstalk	1～10 MHz	10 M～3 GHz	3～6 GHz	6～8.5 GHz	1 MHz～3 GHz	
		-110 dB	-120 dB	-110 dB	-95 dB	-110 dB	
System performance after calibration	System Dynamic Range[1]						
	Test Condition	Frequency range	100 k-10 MHz	10 M-6 GHz	6-8.5 GHz	1 M-1.5 GHz	1.5-3 GHz
		IF Bandwidth	10 Hz/3 kHz	10 Hz/3 kHz	10 Hz/3 kHz	10 Hz/3 kHz	10 Hz/3 kHz
	System Dynamic Range		102/82 dB	115/98 dB	97/92 dB	110/90 dB	110/90 dB
	Mark 1 ： Test port system dynamic range means the difference between test port rms of background noise and max output power of source. Effective dynamic range must consider the uncertainty and disturbance signal of measurement.						
Orientation Index	Frequency	100 kHz～10 MHz	10 MHz～3 GHz	3～6 GHz	6～8.5 GHz	1 MHz～1.5 GHz	1.5 MHz～3 GHz
	Directivity	46	43	37	35	48	44
	Source Matching	41	40	36	35	41	35
	Load Matching	45	43	37	34	48	44
	Transmission Track	±0.041	±0.039	±0.068	±0.136	±0.011	±0.021
	Reflection Track	±0.040	±0.040	±0.060	±0.070	±0.015	±0.029
	Note: IF bandwidth=10 Hz environment temperature is 23 ℃±5 ℃, deviation is less 1 ℃ than calibration temp. 2 ports calibration. Need isolation calibration. N type calibration kit.						
Test Port Input (Curve of Noise)	Test Condition	Max Input Level	+10 dBm	+10 dBm	+7 dBm		
		Frequency Range	100 k-10 MHz	10 M-4.38 GHz	4.38-8.5 GHz		
		IF Bandwidth	3KHz	70 kHz	70 kHz		
	Noise Curve (Amplitude)		0.003 dBrms	0.004 dBrms	0.006 dBrms		
	Noise Curve (Phase)		0.020 ˚rms	0.035 ˚rms	0.050 ˚rms		

Options

ONA1000-A1	N-50J Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A2	N-50 K Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A3	SMA-50J Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A4	SMA-50 K Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A5	N-50J Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A6	N-50 K Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A7	N-75J Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A8	N-75 K Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A9	F-75J Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A10	F-75 K Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A11	SMA-50J Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A12	SMA-50 K Calibration Kit (Open, Short, Load, Adapter)
ONA1000-A13	GPIB Interface

Spectrum Analyzer

OSA92000 Series

- Frequency range: 9 KHz-1.5 GH z/ 3 GHz / 7.5 GHz.
- Displayed average noise level (DANL): <-160 dBm (typical value).
- Phase noise: -100 / -90 / -95 dBc/Hz (offset 10 kHz).
- Full amplitude accuracy: <1.0 dB.
- Minimum resolution bandwidth (RBW): 1 Hz.
- Tracking generator (optional).
- AM/FM demodulation measurement (optional).
- Extensive measurement capabilities and a variety of automatic setting functions.

Model			OSA92015	OSA92115	OSA92030	OSA92130	OSA92075
Frequency Specifications	Frequency Range		9 kHz～1.5 GHz		9 kHz～3 GHz		9 kHz～7.5 GHz
	Internal 10 Mhz Frequency Reference Accuracy	Initial Calibration Accuracy	±1×10 $^{-7}$				
		Aging Rate	±0.1 ppm /year	±1 ppm /year	±0.1 ppm /year		
		Temperature Stability	± 5 × 10 $^{-8}$ Referenced to frequency reading at 0-50 °C				
	Frequency Readout Accuracy with Marker (Start, Stop, Center, Marker)	Marker Resolution	(frequency span)/ (sweep points -1)				
		Uncertainty	± (frequency indication × frequency reference uncertainty +1% × span +10% ×resolution bandwidth + marker resolution+1 Hz)				
		Frequency Reference Uncertainty	= (aging rate × period of time since adjustment + temperature stability				
	Marker Frequency Counter	Resolution	1 Hz				
		Accuracy	± (marker frequency × frequency reference uncertainty + counter resolution)				
		(Marker level to displayed noise level > 25 dB; frequency offset 0 Hz)					
	Frequency Span	Range	0 Hz (zero span), 100 Hz to 3 GHz				
		Resolution	1 Hz				
		Accuracy	±span/ (sweep points -1)				
	SSB Phase Noise		＜- 100 dBc／Hz @10 kHz	＜ - 90 dBc／Hz @ 10 kHz		＜ - 95 dBc／Hz @ 10 kHz	
			(Center frequency 500 MHZ, RBW=100 Hz, VBW=1 Hz 20 °C to 30 °C)				
	Resolution Bandwidth (RBW)	-3 dB Bandwidth	1 Hz ~ 3 MHz	100 Hz ~ 1 MHz		1 Hz ~ 3 MHz	
		Accuracy	± 5%, RBW = 1 Hz to 1 MHz Nominal, ±20%, RBW = 3 MHz				
		Resolution Filter Shape Factor	< 5: 1				
	Video bandwidth (VBW)	-3 dB Bandwidth	1 Hz to 3 MHz, 1-3-10 sequence				
Amplitude Specifications	Measurement range		+30 dBm to displayed average noise level (DANL)				
	Input attenuator range		0 dB to 50 dB, in 10 dB steps				
	Maximum Safe Input Level	Average Continuous Power	+30 dBm, (3 minutes maximum, Input attenuator≥20 dB, preamplifier off)				
		DC Voltage	50 V			25 V	
	Displayed Average Noise Level	Preamp On	≤- 148 dBm -160 dBm Typical value	≤- 128 dBm -140 dBm Typical value		≤- 148 dBm -160 dBm Typical value	
		Preamp Off	≤- 130 dBm	≤- 110 dBm		≤- 130 dBm	
	Level Display Range	Log Scale	10 dB to 100 dB, 10 divisions displayed; 1, 2, 5, 10 dB/division				
		Linear Scale	0% to 100%, 10 divisions displayed				
		Scale Units	dBm, dB mV, dB uV, dB uV/m, uV, mV, V, mW, W				
		Sweep (Trace) Points	501				
	Marker Level Readout Resolution	Log Scale	0.01 dB				
		Linear Scale	≤1% of signal level Nominal				
		Detectors	Normal, Positive peak, Sample, Negative peak				
		Number of Traces	3				
	Level Display Range	Trace Functions	Clear/write, Maximum hold, Minimum hold, View				
		Level Measurement Error	± (0.6 dB+frequency response), all frequency				
		Frequency Response	±1 dB				
	Reference Level	Setting Range	-110 dBm to +30 dBm steps of 1 dB				
		Setting Resolution Log Scale	0.01 dB				
		Linear Scale Same as Log	(2.236 µV to 7.07 V)				
	RF Input VSWR (at Tuned Frequency)		< 1.5: 1, (10 MHz to 3 GHz, 10 dB or 20 dB attenuation)				
	Spurious	Second Harmonic Distortion	< -70 dBc, (Mixer signal level -40 dBm, input attenuation 0 dB, preamp off)				

Model			OSA92015	OSA92115	OSA92030	OSA92130	OSA92075
Amplitude Specifications	Spurious Response	Third Order Intermodulation Distortion	< -70 dBc, (Two -30 dBm tones at input mixer, spaced by 1 MHz input attenuation 0 dB, preamp off)				
		Input Related Spurious	< -60 dBc, (-30 dBm signal at input mixer)				
		Inherent Residual Response	<-88 dBm, (Input terminated 50 Ω and 0 dB RF attenuation, preamp off)				
Sweep Specifications	Sweep Time	Range	10 ms to 3000 s, Span≥100 Hz; 100 µs to 100 s, Span = 0 Hz (zero span)				
		Sweep Mode	Continuous, single				
		Trigger Source	Free run, Line trigger, External trigger				
		Trigger Slope	Positive or Negative edge available				
RF Input	Connector and Impedance		N-Type female, 50 Ω nominal				
	10 MHz Reference	Reference Input Frequency	10 MHz				
		Reference Input Amplitude	0 dBm to +10 dBm				
		Reference Output Frequency	10 MHz				
		Reference Output Amplitude	0 dBm to +10 dBm				
		Connector	BNC female, 50 Ω nominal				
Auto Measurement Functions			Phase noise, Adjacent channel power, Occupied bandwidth.				
			Third order intermodulation distortion, Pass/Fail, Standing wave ratio.				
Interface	Host Connector		USB Type-A female				
	Device Connector		USB type mini AB female, LAN, RS232 or VGA				
General Specifications (Display)	Resolution		800 pixels x 480 pixels				
	Size And Type		8.5 inch TFT color display				
	Languages		On-screen GUI: English				
Power Requirements	Adaptor Voltage		100 V to 240 V AC, Rate 50/60/400 Hz, auto-ranging				
	Power Consumption		Less than 35 W				
Environmental and Size	Temperature Range		0 °C to +40 °C (oerating) -40 °C to +70 °C (storage)				
	Relative Humidity		< 95%				
	Weight		Less than 7 kg				
	Dimensions		410 mm × 210 mm × 136 mm (W x H x D)				
Tracking Generator (Optional)	Frequency Range		5 MHz～1.5 GHz		5 MHz～3 GHz		5 MHz～7.5 GHz
	Output Level		0 dBm to -25 dBm, 1 dB steps				
	Output Flatness		± 3 dB				
	VSWR		< 2.0: 1, nominal				
	Connector and Impedance		N-Type female, 50 Ω				
AM / FM Demodulation Measurement-except OSA92115 (Optional)	AM Demodulation	Modulation Frequency	20 Hz ~ 100 kHz				
		Frequency Accuracy	1 Hz（Modulation Frequency＜1 kHz） 0.1%（Modulation Frequency≥1 kHz）				
		Modulation Depth	5 ~ 95%				
		Depth Measurement Precision	±4%				
	FM Demodulation	Modulation Frequency	20 Hz ~ 200 kHz				
		Frequency Accuracy	1 Hz (modulation frequency＜1 kHz） 0.1%（modulation frequency ≥1 kHz）				
		Frequency Offset	20 Hz ~ 400 kHz				
		Frequency Offset Precision	±4%				
	SINAD	Measurement Range	0 ~ 60 dBc				
		Measurement Precision	±1 dB				

Options

OSA92000-A1	Tracking Generator (Explained In Specification Table)
OSA92000-A2	AM / FM Demodulation Measurement (Except OSA92115)

Spectrum Analyzer

OSA9000 Series

- Frequency range: 9 kHz to 1.5 GHz / 3 GHz; resolution: 1 Hz.
- Amplitude resolution: ±1.0 dB; resolution BW: 10 Hz to 1 MHz (step 1-3-10).
- Phase noise: -80 dBc/Hz.
- Quasi-peak detector, channel power measurement, adjacent channel power measurement, occupied BW measurement.
- USB host, USB device, LAN, RS-232.

Model			OSA9015	OSA9030
Frequency	Range		9 kHz ~ 1.5 GHz	9 kHz ~ 3.0 GHz
	Resolution		1 Hz	
Internal Frequency Reference	Frequency Reference		10 MHz	
Frequency Readout Accuracy	Marker Resolution		Span/ (sweep points-1)	
	Marker Uncertainty		± (frequency indication × frequency reference uncertainty + 1% × span + 10% × resolution bandwidth + marker resolution)	
Frequency Span	Frequency Span Range		0 Hz, 100 Hz ~ 1.5 GHz	0 Hz, 100 Hz ~ 3.0 GHz
	Uncertainty		±span/ (sweep points-1)	
SSB Phase Noise	Input Coupling		-80 dBc/Hz (10 kHz offset, fc=1.0 GHz)	
Bandwidths	Resolution Bandwidth (-3 dB)		10 Hz ~ 1 MHz, step 1-3-10	
			200 Hz, 9 kHz, 120 kHz	
	RBW Uncertainty		<5%, nominal	
	Resolution Filter Shape Factor (60 dB: 3 dB)		<5, nominal	
	Video Bandwidth (-3 dB)		1 Hz to 1 MHz, step 1-3-10	
Measurement Range	Range		DANL to +30 dBm	
Maximum Input Level	CW RF Power		+30 dBm (1.0 W)	
	Max Damage Level		+40 dBm (10 W)	
Displayed Average Noise Level (DANL)	DANL (Preamplifier Off)	100 kHz to 10 MHz	-90 dBm, typ. -110 dBm	
		10 MHz to 3.0 GHz	120 dBm+6 x (f/1 GHz) dB, typ. -125 dBm	
	DANL (Preamplifier On)	100 kHz to 30 MHz	-90 dBm, typ. -110 dBm	
		30 MHz to 3.0 GHz	-135 dBm+6 x (f/1 GHz) dB, typ. -140 dBm	
Level Display	Trace Detectors		Positive-peak, negative-peak, quasi-peak, sample, standard, rms average, voltage average	
	Trace Functions		Clear write, max hold, min hold, average, view, blank	
	Units of Level Axis		dBm, dB mV, dB µV, V, W	
Reference Level	Range		-100 dBm to +30 dBm, step 1 dB	
Spurious	Image Frequency		<-60 dBc	
	Intermediate Frequency		<-60 dBc	
	Spurious Response		<-90 dBm, typ.	
	Input Related Spurious	Mixer level: -30 dBm	<-60 dBc, typ.	
Sweep	Sweep Time Range	100 Hz≤Span≤ 3 GHz	10 ms to 3000 s	
		Span=0 Hz	20 µs to 3000 s	
	Sweep Time Uncertainty	100 Hz≤Span≤3 GHz	5%, nominal	
	Sweep Mode	Span=0 Hz	0.5%, nominal	
			Continuous, single	
Trigger	Trigger Source		Free, Video, External	
	External Trigger Level		5 V TTL level	
Advance Measurement	EMI		9 kHz, 120 kHz, 200 kHz	
General Characteristics	Interface		USB_Host, USB_Device, LAN, RS232	
	Display		7 inch TFT LCD	
	Power Supply	Input Voltage	AC100 V to 240 V	
		Frequency	4 5 Hz to 440 Hz	
		Power Consumption	35 W	
	Environment	Temperature	5 ℃ to 40 ℃	
	Dimension & Weight		364 × 154 × 327 mm (W × H × L), approx. 6.0 kg	
Output	Output Power		-20 dBm to 0 dBm, step 1 dB	
	Output Flatness		20 MHz ~ 2.7 GHz ±3 dB	
			20 MHz ~ 2.2 GHz ±2 dB	
			20 MHz ~ 1.5 GHz ±2 dB	

Accessories

OSA9000 -A1	User Guide
OSA9000 -A2	Measurement Idler Wheels (X2)
OSA9000 -A3	Measurement Touch Tips (X2)
OSA9000 -A4	Lengthening Bar
OSA9000 -A5	Portable Bag
OSA9000 -A6	Plastic Bag

Handheld Spectrum Analyzer

OHSA3200 Series

- Frequency range: 9 kHz ~ 3.2 GHz AC coupled, RBW: 10 Hz to 1 MHz.
- Built-in 3.2 GHz tracking generator.
- Optimal sensitivity: -161 dBm.
- AM / FM audio demodulator, frequency counter.
- Built-in large capacity lithium battery, can work for more than 4 hours.
- 5.6 inch highlight color display, 640x480 resolution.
- USB / LAN communication, easy for long-range control.

Model			OHSA3201	OHSA3202
Frequency	Frequency Range		9 kHz ~ 3.2 GHz AC coupled	9 kHz ~ 3.2 GHz AC coupled 5 M ~ 3.2 GHz TG
	Frequency Resolution		1 Hz	
	Reference Frequency		10 MHz	
	Frequency Readout Accuracy		± (frequency indication*frequency reference uncertainty+1%*span+20%RBW+marker resolution+ 1 Hz)	
	Internal 10 MHz Reference Accuracy	Aging Rate	±1 ppm/year（0 ℃ ~ 50 ℃. Reference is 25 ℃）	
		Temperature Stability	±1 ppm/year	
	Marker Resolution		(Frequency span)/ (number of sweep points-1)	
Resolution Bandwidth (RBW)	-3 dB Bandwidth		1 0 Hz to 1 MHz， 1-3-10 sequence	
	Accuracy		±5% RBW=10 Hz ~ 1 MHz nominal	
	Resolution Filter Shape Factor		＜5: 1 nominal	
	Video Bandwidth（VBW）	-3 dB bandwidth	1 Hz to 1 MHz， 1-3-10 sequence	
		Accuracy	±10% VBM= 1 Hz ~ 1 MHz nominal	
Displayed Average Noise Level (Normalized to 1 Hz)	9K ~ 1 MHz	Preamp off	-108 dBm， Typical -127 dBm	
	1 MHz ~ 10 MHz		-128 dBm， Typical -146 dBm	
	10 MHz ~ 500 MHz		-142 dBm， Typical -146 dBm	
	500 MHz ~ 2.5 GHz		-141 dBm， Typical -145 dBm	
	2.5 GHz ~ 3.2 GHz		-140 dBm， Typical -144 dBm	
	9K ~ 1 MHz	Preamp on	-131 dBm， Typical -150 dBm	
	1 MHz ~ 10 MHz		-148 dBm， Typical -163 dBm	
	10 MHz ~ 500 MHz		-161 dBm， Typical -164 dBm	
	500 MHz ~ 2.5 GHz		-159 dBm， Typical -162 dBm	
	2.5 GHz ~ 3.2 GHz		-158 dBm， Typical -161 dBm	
SSB Phase Noise	Carrier Offset (20 ℃ ~ 30 ℃, 500 MHz Central Frequency)	10 KHz	< -92 dBc/Hz, Typical -95 dBc/Hz	
		30 KHz	< -93 dBc/Hz, Typical -96 dBc/Hz	
		100 KHz	< -95 dBc/Hz, Typical -97 dBc/Hz	
		1 MHz	< -117 dBc/Hz, Typical -119 dBc/Hz	
Sweep Time	Range	Span >100 Hz	2 ms to 1000 s	
		Span=0 Hz	600 ns to 200 s	
	Sweep Mode		Continuous, single	
	Trigger Source		Free run, video, external	
	Trigger Slope		Selectable positive or negative edge	
	Trigger Delay	Span = 0 Hz	±12 ms to ±12 s nominal	
Frequency Counter	Counter Resolution		1 Hz	
	Accuracy		± (marker frequency × frequency reference uncertainty + counter resolution)	
Level Display Range	Log Scale and Units		1 to 10 dB/divisions in 1, 2, 5, 10 dB steps, 10 divisions displayed	
	Linear Scale and Units		0 to 100%, 10 divisions displayed	
	Scale Unit		dBm, dB mV, dB uV, Watts, Volts	
	Sweep (Trace) Points		461	
	Number of Markers		4	
	Detectors		Normal, positive peak, sample, negative peak, RMS	
	Number of Traces		4	
	Trace Functions		Clear/write, maximum hold, minimum hold, average, check, close	
	Level Measurement Error		±1.5 dB (excluding input VSWR mismatch) 20 ~ 30 ℃, peak detector, preamplifier off, input signal -50 dBm to 0 dBm	
Reference Level	Setting Range		-100 dBm to +30 dBm, steps of 1 dB	
	Setting Resolution	Log Scale	0.01 dB	
		Linear Scale	Almost log（2.236 μV to 7.07 V）	
Amplitude	Maximum Safety Input Level	Average Continuous Power	+33 dBm	
		DC Input Voltage	50 VDC	
	Measurement Range	9KHz ~ 2 MHz	Displayed average noise level (DANL) to +10 dB	
		2 MHz ~ 3.2 GHz	Displayed average noise level (DANL) to +20 dB	

Model			OHSA3201	OHSA3202
Spurious Response	Second Harmonic Distortion (SHI)		<65 dBc, 50 MHz to 3.2 GHz（Mixer level -30 dBm, attenuator =0 dB , preamp off, 20 ℃ ~ 30 ℃）	
	Third-Order Intermodulation (TOI)		50 ~ 300 MHz	+8 dBm. Third-order intermodulation products: 2 x -20 dBm; frequency separation 100 kHz: attenuation = 0 dB; preamp off, 20 ℃ ~ 30 ℃
			300 MHz ~ 3.2 GHz	+10 dBm
	Input Related Spurious		<-75 dBc, (input mixer = -30 dBm)	
	Inherent Residual Response		<-90 dBm. Typical -98 dBm (Input terminated and 0 dB RF attenuation, preamplifier off)	
	RF Input VSWR (at Tuned Frequency)		10 MHz to 3.2 GHz	＜1.5: 1, nominal attenuator setting 10 ~ 20 dB
10 MHz Reference/External Trigger Input	Reference Input Frequency		10 MHz	
	Reference Input Amplitude		0 ~ 10 dBm	
	Trigger Voltage		5 V TTL level	
	Connector and Output Impendence		N female (50 Ω)	
General Feature	Interface Language		English	
	Display Index		5.7 inch, 640 x 480 resolution, 64 M color LCD display	
General Feature	Temperature Rang	Working	-10 ℃ to +50 ℃, （battery : 0 ℃ to 50 ℃）	
		Storage	-40 ℃ to +70 ℃, （battery: -20 ℃ to 50 ℃）	
	Relative Humidity		<95%	
	Weight		2.9 kg (with battery); 2.6 kg (without battery）	
	Size		260 mm X 220 mm X 75 mm	
	Power	Input Voltage Range	DC: 12-17 V, maximum 2.8 A input 220 VAC±15%	
		AC Frequency Range	40 Hz to 60 Hz	
		Power Consumption	Maximum 32 W	

Accessories

OHSA3200-A1	Adapter
OHSA3200-A2	Software CD
OHSA3200-A3	Velcro Hanger
OHSA3200-A4	A BNC to BNC Cable
OHSA3200-A5	User Guide
OHSA3200-A6	Aluminum Alloy Cabinet

Handheld Spectrum Analyzer

OHSA1600 Series

- Frequency range: 9 kHz ~ 1.6 GHz AC coupled; RBW: 10 Hz to 1 MHz.
- Optimal sensitivity: -161 dBm.
- Built in 1.6 GHz tracking generator.
- AM / FM audio demodulator, frequency counter.
- Built-in large capacity lithium battery, can work for more than 4 hours.
- 5.6 inch highlight color display, 640 x 480 resolution.
- USB / LAN communication.

Model			OHSA1601	OHSA1602
Frequency	Frequency Range		9KHz ~ 1.6 GHz AC coupled	9KHz ~ 1.6 GHz AC coupled 5 M ~ 1.6 GHz TG
	Frequency Resolution		1 Hz	
	Reference Frequency		10 MHz	
	Frequency Readout Accuracy		± (frequency indication x frequency reference uncertainty + 1% x span+20%RBW + marker resolution + 1 Hz)	
	Internal 10 MHz Reference Accuracy	Aging Rate	±1 ppm/year（0 ℃ ~ 50 ℃， Reference is 25 ℃）	
		Temperature Stability	±1 ppm/year	
	Marker Resolution		(Frequency span)/ (number of sweep points-1)	
Resolution Bandwidth （RBW）	-3 dB Bandwidth		10 Hz to 1 MHz， 1-3-10 sequence	
	Accuracy		±5% RBW=10 Hz ~ 1 MHz nominal	
	Resolution Filter Shape Factor		＜5: 1 nominal	
	Video Bandwidth （VBW）	-3 dB Bandwidth	1 Hz to 1 MHz， 1-3-10 sequence	
		Accuracy	±10% VBM = 1 Hz ~ 1 MHz nominal	
Displayed Average Noise Level (Normalized to 1 H	100 K ~ 1 MHz	Preamp off	-108 dBm, Typical -127 dBm	
	1 MHz ~ 10 MHz		-128 dBm, Typical -146 dBm	
	10 MHz ~ 500 MHz		-142 dBm, Typical -146 dBm	
	500 MHz ~ 1.6 GHz		-141 dBm, Typical -145 dBm	
	100 K ~ 1 MHz	Preamp on	-131 dBm, Typical -150 dBm	
	1 MHz ~ 10 MHz		-148 dBm, Typical -163 dBm	
	10 MHz ~ 500 MHz		-161 dBm, Typical -164 dBm	
	500 MHz ~ 1.6 GHz		-159 dBm, Typical -162 dBm	
SSB Phase Noise	Carrier Offset (20 ℃ ~ 30 ℃, 500 MHz Central Frequency）	10 K	< -92 dBc/Hz, Typical -95 dBc/Hz	
		30 K	< -93 dBc/Hz, Typical -96 dBc/Hz	
		100 K	< -95 dBc/Hz, Typical -97 dBc/Hz	
		1 MHz	< -117 dBc/Hz, Typical -119 dBc/Hz	
Sweep Time	Range	Span >100 Hz	2 ms to 1000 s	
		Span=0 Hz	600 ns to 200 s	
	Sweep Mode		Continuous, single	
	Trigger Source		Free run, video, external	
	Trigger Slope		Selectable positive or negative edge	
	Trigger Delay	**Span = 0 Hz**	±12 ms to ±12 s nominal	
Frequency Counter	Counter Resolution		1 Hz	
	Accuracy		± (marker frequency × frequency reference uncertainty + counter resolution)	
Level Display Range	Log Scale and Units		1 to 10 dB/divisions in 1, 2, 5, 10 dB steps, 10 divisions displayed	
	Linear Scale and Units		0 to 100%, 10 divisions displayed	
	Scale Unit		dBm, dB mV, dB uV, Watts, Volts	
	Sweep (Trace) Points		461	
	Number of Markers		4	
	Detectors		Normal, positive peak, sample, negative peak, RMS	
	Number of Traces		4	
	Trace Functions		Clear/write, maximum hold, minimum hold, average, chec, close	
	Level Measurement Error		±1.5 dB (excluding input VSWR mismatch) 20 ~ 30 ℃ peak detector, preamplifier off input signal -50 dBm to 0 dBm	
Reference Level	Setting Range		-100 dBm to +30 dBm, steps of 1 dB	
	Setting Resolution	Log Scale	0.01 dB	
		Linear Scale	Almost log（2.236 µV to 7.07 V）	
Amplitude	Maximum Safety Input Level	Average Continuous Power	+33 dBm	
		DC Input Voltage	50 Vdc	
	Measurement Range	9KHz ~ 2 MHz	Displayed average noise level (DANL) to +10 dB	
		2 MHz ~ 1.6 GHz	Displayed average noise level (DANL) to +20 dB	
		Input Attenuator Range	0 to 51 dB, 1 dB steps	

Model			OHSA1601	OHSA1602
Spurious Response	Second Harmonic Distortion (SHI		<65 dBc, 50 MHz to 1.6 GHz (Mixer level -30 dBm, attenuator =0 dB, preamp off, 20 ℃ ~ 30 ℃)	
	Third-Order Intermodulation (TOI)		50 ~ 300 MHz	+8 dBm, third-order intermodulation products: 2 x -20 dBm; frequency separation 100 kHz: attenuation = 0 dB; preamp off, 20 ℃ ~ 30 ℃
			300 MHz ~ 1.6 GHz	+10 dBm
	Input Related Spurious		<-75 dBc, (input mixer = -30 dBm)	
	Inherent Residual Response		<-90 dBm, Typical -98 dBm (Input terminated and 0 dB RF attenuation, preamplifier off)	
	RF Input VSWR (at Tuned Frequency)		10 MHz to 1.6 GHz	＜1.5: 1, nominal attenuator setting 10 ~ 20 dB
10 MHz Reference/Externa Trigger Input	Reference Input Frequency		10 MHz	
	Reference Input Amplitude		0 ~ 10 dBm	
	Trigger Voltage		5 V TTL level	
	Connector and Output Impendence		N female (50 Ω)	
General Features	Interface Language		English	
	Display Index		5.7 inch, 640 x 480 resolution, 64 M color LCD display	
	Temperature Range	Working	-10 ℃ to +50 ℃, (battery ： 0 ℃ to 50 ℃)	
		Storage	-40 ℃ to +70 ℃, (battery: -20 ℃ to 50 ℃)	
	Relative Humidity		<95%	
	Weight		2.9 kg (with battery), 2.6 kg (without battery)	
	Size		260 mm x 220 mm x 75 mm	
	Power	Input Voltage Range	DC: 12-17 V, maximum 2.8 A input 220 VAC±15%	
		AC Frequency Range	40 Hz to 60 Hz	
		Power Consumption	Maximum 32 W	

Accessories

OHSA1600-A1	Adapter
OHSA1600-A2	Software CD
OHSA1600-A3	Velcro Hanger
OHSA1600-A4	A BNC to BNC Cable
OHSA1600-A5	User Guide
OHSA1600-A6	Aluminum Alloy Cabinet

Microwave Signal Generator

OSG5000 Series

- 5 MHz to 12, 24, 40 GHz frequency range with resolution 1 Hz.
- High quality spectral performance, phase noise: -119 dBc / Hz at 10 kHz.
- Extremely high frequency stability, aging rate $<\pm 8 \times 10^{-9}$ / day.
- LAN (100 Base T); RS232 interface.

Model		OSG5012	OSG5024	OSG5040	Test Environment
Frequency Range		5 MHz ~12 GHz	5 MHz ~ 24 GHz	5 MHz ~ 40 GHz	
Resolution		1 Hz			
Frequency Switch Speed		≤ 20 ms (nominal value)			
Internal Time Base	Frequency	10 MHz			
	Accuracy	< ± 0.1 ppm (nominal value)			
	Aging Rate	< $\pm 8 \times 10^{-10}$/ days or after 30 days < $\pm 3 \times 10^{-8}$/ years (nominal value)			
	Output Amplitude	10 dBm (nominal value), 50 Ω load			
	Temperature Effect	< $\pm 1 \times 10^{-8}$, -20 to +70 ℃ (nominal value)			
External Reference Input	Frequency	10 MHz			
	Amplitude	5 dBm ± 2 dB (nominal value)			
	Impendence	50 Ω (nominal value)			
	Waveform	Sine wave or square wave			
Amplitude switching speed		Use step attenuator ≤ 20 ms (nominal value); No use step attenuator ≤ 2 ms (nominal value)			
Amplitude Range	≤ 2 GHz	-110 ~ +25 dBm		-110 ~ +25 dBm	The technical measured at temperatures 15 ℃ ~ 35 ℃, in the absence of harmonic options.
	≤ 12 GHz	-110 ~ +20 dBm		-110 ~ +20 dBm	
	≤ 24 GHz			-110 ~ +20 dBm	
	≤ 40 GHz			-110 ~ +15 dBm	
Resolution		0.1 dB (nominal value)			
Absolute Accuracy	≥ -20 dBm	± 0.8 dB (f ≤ 2 GHz); ± 1.3 dB (f ≤ 40 GHz)			
	≥ -75 dBm	± 1 dB (f ≤ 2 GHz)); ± 1.5 dB (f ≤ 40 GHz)			
	<75 dBm	± 2 dB (f ≤ 2 GHz); ± 2.2 dB (f ≤ 40 GHz)			
Standing Wave	≤ 2 GHz	<1.4			ATT = 10 dB
	≤ 24 GHz	<1.5			
	≤ 40 GHz	<1.6			
Phase Noise (SSB) dBc/Hz		100 Hz	1 kHz	10 kHz	100 kHz	1 MHz	10 MHz	
	100 MHz	<-100	-107	-115	-127	-143	-150	
	250 MHz	<-100	-107	-115	-127	-143	-150	At room temperature; Output power Rate measured at 0 dBm.
	500 MHz	<-100	-107	-115	-128	-143	-150	
	1 GHz	<-100	-112	-119	-124	-131	-150	
	10 GHz	<-85	-107	-113	-112	-115	-133	
	20 GHz	<-78	-101	-108	-106	-108	-128	
	40 GHz	<-72	-96	-102	-100	-102	-122	
Harmonic		P=10 dBm						
	70 ～ 200 MHz	<-40 dBc						
	0.2 ～ 2 GHz	<-50 dBc						
	2 ～ 20 GHz	<-50 dBc						
Non-harmonic	1 MHz ～ 2 GHz	<-80 dBc						> 1 MHz offset; Non-harmonic related to power supply line; <-60 dBc, measured in the range of 1 MHz to 40 GHz.
	≤12 GHz	<-70 dBc						
	≤24 GHz	<-65 dBc						
	≤40 GHz	<-60 dBc						
Pulse Modulation	Breaking Ratio	>60 dB (typical value)						
	Minimum Pulse Width	100 ns (typical value)						
	Minimum Period	200 ns (typical value)						
External Pulse Input	Minimum Impedance	DC coupling high impedance						
	Level Logic	3.3 V-CMOS						
Internal Pulse Generator Option GASG	Square Wave Rate	0.1 Hz～5 MHz (nominal value)						
	Pulse Period	20 ns ~ 10 s (rated value)						
	Pulse Width	100 ns ~ 10 s (nominal value)						100 ns～10 s (nominal value)
	Resolution	20 ns						20 ns
	Adjustable Trigger Delay	5 ns ~ 10 s						
	Level Logic	3.3 V-CMOS						

Model	OSG5012	OSG5024	OSG5040	Test Environment
Interface	LAN (100 Base T) , RS232			
Power	198 ~ 242 V (AC); 48 ~ 6 2 Hz; 70 W peak; 60 W mean general feature			
Working Temperature	0 ~ 55 ℃			
Storage Temperature	-40 ~ 70 ℃			
Working and Storage Altitude	Up to 15, 000 feet (or 4, 600 m)			
Weight	Net weight: ≤ 8 kg			
Size	88 mm × 370 mm × 460 mm (H x W x D)			

Options

OSG5000-A1	Pulse Modulation (with Internal Pulse Generator)

RF Signal Generator

OSG25000 Series

- 250 kHz to 3 GHz /4 GHz frequency range with resolution 0.1 Hz.
- Phase Noise: ≤-115 dBc/Hz and ≤-105 dBc/Hz.
- -127 ~ +13 dBm and -115 ~ +17 dBm amplitude output range with 0.01 dB resolution.
- AM / FM, phase and pulse modulation.
- Standard LAN, USB and GPIB interface.

Model		OSG25313	OSG25412	OSG25417	OSG25411
Frequency Features	Frequency Range	250 kHz ~ 3 GHz	250 kHz ~ 4 GHz	250 kHz ~ 4 GHz	250 kHz ~ 4 GHz
	Resolution	0. 1 Hz			
	Internal Time Base	Frequency: 10 MHz; aging rate≤±1 ppm/year; output amplitude ≥0.35 Vrms			
	Accuracy	≤±0.1 ppm			<+1 ppm
	External Reference Input	Frequency: 10 MHz; output amplitude: 0.5 ~ 2 Vrms; connect: BNC female, 50 Ω			
Output Features	Amplitude Range	-127 ~ +13 dBm		-115～+17 dBm	-110 ~ +13 dBm
	Resolution	0.01 dB			
	Accuracy	≤±1 dB (≥-120 dBm); ≤±1.8 dB (≥-127 dBm)			≤±1 dB
	SSB Phase Noise	≤-115 dBc/Hz			≤-105 dBc/Hz
	Residual FM	≤ 10 Hz peak			≤ 30 Hz peak
	Harmonics	≤-30 dBc			
	Non-Harmonics	≤-50 dBc			
	Output Interface	Standing wave ratio ≤ 1.8; impedance: 50 Ω (nominal value; N-type female)			
Modulation Features	AM Modulation	Modulation frequency: 20 Hz ~ 20 kHz; amplitude modulation 0 ~ 100%			
		Amplitude error ≤ ± (set value × 5% + 0.2%); amplitude modulation distortion <2%			
	FM Modulation	Modulation frequency: 20 Hz ~ 80 kHz; frequency offset range of 20 Hz ~ 100 kHz			
		Frequency deviation error: ≤ ± (set value × 5% + 0.2%) FM distortion <1%			
	PM Modulation	Modulation frequency: 0.3 ~ 20 kHz; Phase deviation: 0 ~ 10rad (<10 kHz) 0 ~ 5 rad (≤20 kHz)			
		Phase error: ±(set value × 5% + 0.2rad); phase distortion 1.5%			
	Pulse Modulation	Rise / fall time: ≤ 60 ns; on / off ratio ≥60 dB			
		Pulse period: 1us ~ 2 s; pulse width 400 ns ~ 1 s			
External Modulation Characteristics (Specified Input Level, 1 Vp-p)	3 dB Input Bandwidth	AM / FM ： 20 Hz～20 kHz; PM: 300 Hz～20 kHz			
	Pulse Input	Level: ≥ 1.5 VPP; cycle 10us ~ 1 s			
Rear Panel Input and Output Characteristics	Trigger Input	Waveform: sine wave, square wave; input level ≥ 2.5 VPP			
	Trigger Output	Wave: Pulse wave			
	Scan Output	Waveform: sawtooth wave; output level: 1 ~ 3.5 V			
	Pulse Output	Waveform: the same as the modulation pulse; output level: low level ≤ 0.8 V, high level ≥ 2.4 V			
Low Frequency Function Source Characteristics	Frequency and Waveform Type	20 Hz ~ 100 kHz (sine wave, triangular wave, sawtooth wave)			
		20 Hz ~ 20 kHz (square wave) ； 50 ms～20us (pulse wave)			
	Output Characteristics	Output amplitude: 0 ~ 3 VP-P; amplitude error: ≤ 5%; harmonic distortion: ≤ 70 dBc			
General Features	Interface	Standard LAN, USB and GPIB interface			
	Monitor	7.0 inch TFT, 800 x 480 pixels			
	Power	Voltage ： 100 V～240 V (50/60 Hz);			
		Frequency: (47.5 ~ 52.5)Hz; power consumption≤ 50 W			
	Size / Weight	Size: 426 mm × 133 mm × 450 mm (W x H x D); weight ： ≤10 kg			
	Working Temperature Range	0 ℃～+40 ℃	-10 ℃～+50 ℃	0 ℃ ~ +40 ℃	
	Storage Temperature Range	-40 ℃ ~ +70 ℃			

Synthesized Signal Generator

OSG1310

- Single channel.
- Frequency range: 25 MHz ~ 3 GHz.
- Up to 10 dBm output power.
- Pulse modulation function.
- Linear power and frequency sweep mode.
- USB Device, RS-232 interface.

Model		OSG1310
Frequency	Range	25 MHz ~ 3 GHz
	Resolution	3 Hz
	Accuracy	±5 ppm
	Stability	1×10-7
	Reference Frequency	Reference output:
		Frequency: 10 MHz
		Level: >0 dBm
		Port: BNC connector
		Reference Input:
		Frequency: 10 MHz
		Power: -3 ~ +7 dBm
		Input Port: BNC connector
		Impedance (nominal): 50 Ω
	Phase Noise	-90 dBc ~ -115 dBc offset20 kHz
	Spurious	Harmonic: <-35 dBc (power: ≤-5 dBm)
		Non-harmonic: <-60 dBc
Amplitude	Power Range	-60 dBm ~ +10 dBm
	Resolution	0.25 dB
	Accuracy	± (1.0+2% absolute value of setting value) dB
		Output frequency 25 MHz ~ 2250 MHz
		± (1.0+4% absolute value of setting value) dB
		Output frequency 2250 MHz ~ 3000 MHz
	Input SWR (Standing-wave Ratio)	< 1.5 typical value
	RF Output	Terminal: N type
		Output Impedance: 50 Ω
Pulse Modulation	Break-make Ratio	> 80 dB
	Rising/Falling Time	< 100 ns
	Pulse Width	0.25 s minimum
	Pulse Period	0.5 s minimum
Sweep	Frequency Sweep	Sweep mode: Linear
		Min. step: 3 Hz
	Power Sweep	Sweep mode: Linear
		Min. step: 0.25 dBm
General Characteristics	Display	Resolution: 480 × 272
		Size: 4.3 inch
	Language	English
	Power	Voltage: 200 V ~ 240 V
		Frequency: 50 (1±5%) Hz
		Power Consumption: <20 W
		Warm-up: 30 minutes
	Environment and Dimensions	Working Temperature: +10°C ~ +40 °C
		Storage Temperature: -40°C ~ +70 °C
		Relative Humidity: ≤80%
		Weight: <5 kg approx.
		Dimension: 386 mm × 256 mm × 123mm (L x W x H)

Accessories

OSG1310-A1	Power Cord
OSG1310-A2	N-N Cable
OSG1310-A3	CD (Software+ User Guide)
OSG1310-A4	N-SMA adapter

Synthesized Signal Generator
OSG2113

- Dual channel.
- Frequency range: 1 µHz ~ 1000 MHz.
- Up to 13 dBm output power.
- Complete AM / FM / FSK / PSK modulation.
- Up to 1 ppm frequency accuracy.
- USB Device, RS, 232 interface.

Model			OSG2113
Frequency	Range	Sine	1 μHz ~ 1000 MHz
		Square	1 μHz ~ 80 MHz
	Resolution		1 μHz (carrier frequency ≤80 MHz)
			1 Hz (carrier frequency >80 MHz)
	Accuracy		±1 ppm, frequency ≥ 1.0 kHz
			±50 ppm, frequency ＜1.0 kHz
Sine Output Level	Range	Frequency ≤500 MHz	-127 dBm ~ +13 dBm (-127 dBm ~ -117 dBm typical)
		Frequency ≤1000 MHz	-110 dBm ~ +13 dBm (-100 dBm ~ -110 dBm typical)
		Frequency ≤1500 MHz	-105Bm ~ +10 dBm (-100 dBm ~ -105 dBm typical)
	Resolution		0.1 dB
	Accuracy	Frequency ≤300 MHz	Setting ±1 dBm (output level +13 dBm ~ -105 dBm)
		Frequency ≤1500 MHz	Setting ±1.5 dBm (output level +13 dBm ~ -80 dBm)
			Setting ±2.5 dBm (output level -80 dBm ~ -100 dBm)
	Stationary Wave Ratio (SWR)		< 1.8
Spectrum Purity	Harmonic		< -33 dBc (output level≤4 dBm, typical value)
	Non-Harmonic		< -40 dBc (output level≤4 dBm, deviation CF≤5 kHz)
	Sub-Harmonic		< -40 dBc (output level≤4 dBm)
	Remain Modulating Frequency		< 100 Hz (BW: 0.3 ~ 3 kHz, RMS < 120 MHz)
Square	Rise/Fall Edge Time		≤15 ns
	Overshoot		≤5%
Modulation	Type		AM, FM, FSK, PSK
	External Modulation Input		Voltage Range: ± 2.5 V, Frequency: DC to 10 kHz
Frequency Sweep	Sweep Rate		1 ms ~ 800 s Linear (carrier ≤80 MHz)
			100 ms ~ 800 s Logarithm (carrier ≤80 MHz)
	Step Time		50 ms ~ 10 s Linear
Burst	Burst Count		1 to 10000 cycles
	Interval		0.1 ms to 800 s
	Frequency Range		1 μHz ~ 10 MHz
	Resolution		1 μHz
	Accuracy		±1 ppm, Frequency≤1.0 kHz
			±50 ppm, Frequency＜1.0 kHz
Waveform	Type		Sine, Square, Ramp, Pulse, Sinc, Exp, Noise, DC
	Square	Edge Time	≤50 ns
		Duty Cycle	0.01% ~ 99.99%
	Pulse	Edge Time	≤50 ns
		Pulse Width	20 ns ~ 20 s
	Ramp	Symmetry	0.0% ~ 100.0%
Output	Amplitude		1 mVpp to 10 Vpp (50 Ω), 2 mVpp to 20 Vpp (High Z)
	Offset		±5 Vpk ac+dc (50 Ω), ±10 Vpk ac+dc (High Z)
	Resolution		5 mVpp
	Accuracy		± (1% of setting + 10 mVpp)
	Flatness		± 0.5 dB
General Characteristics	Power		AC100 V ~ 240 V, 50 (1±10%) Hz
	Dimension & Weight		254 mm × 103 mm × 374 mm; 4.2 kg

Accessories

OSG2113-A1	Power Cord
OSG2113-A2	BNC Testing Cable
OSG2113-A3	CD (Software+ User Guide)

Handheld Synthetic Radio Frequency Generator

OHSG30330

- A continuous set of 300 MHz ~ 3000 MHz covers the vast majority of mobile communication frequency band.
- Automatic uninterrupted and continuous scanning can be realized with 1 MHz step by step.
- Main output power up to 30 dBm and the power adjusting range not less than 6 dB.
- Preset with the most commonly used 10 test frequency points; Specific frequencies can be set according to user's requirements.
- Test time is greatly shortened.

Model	OHSG30330
Frequency Range	300 MHz ~ 3000 MHz
Frequency Point Resolution	1 MHz
Continuous Frequency Sweep Range	300 MHz to 3000 MHz
Frequency Accuracy	< ±20 ppm
Frequency Stability	±0.5 ppm/˚C
The Main Output Power	>30 dBm/1w
The Main Output Flatness	±1 dB
The Main Output Stability	0.01 dB/˚C
The Main Output Harmonic Component	< -40 dBc
The Main Output Clutter Component	< -70 dBc
The Main Output Sub-Harmonic Componer	<-80 dBc
Auxiliary Output Power	>-10 dBc/0.1 mW
Auxiliary Output Flatness	±1 dB
Auxiliary Output Stability	0.01 dB/˚C
Nominal Impedance	50 Ω
Output Standing Wave Ratio	<1.5
DC Tolerance	50 V (main output) / 5 V output (auxiliary output)
Internal Power	Lithium ion battery with high reliability
External Power Supply	5 V / 2 A DC
RF Connector	Type N (female)
Auxiliary Output	SMA (female)
Operation Temperature	-20 ~ +50˚C (relative humidity < 95%)
Storage Temperature	-40 ~ +70˚C (relative humidity < 70%)
Operation Altitude	5000 meters
Storage Altitude	14000 meters
ESD	>2KV
Dimensions	120 mm x 200 mm x 50 mm
Weight	700 g

RF Digital Power Meter

OHPM3000 Series

- Support 2G, 3G and 4G (LTE-FDD, LTE-TDD), and railway band GSM-450R.
- Combined power measuring range as high as 70 dB (-20 dBm ~ +50 dBm) and overlapping range of 20 dB.
- Power simulation can be made at any time for different transmitters or remote units (RU) when checking or spotting link power.
- Long time online monitoring.
- Independent online monitoring function.
- User-friendly interface (USB), high-definition color LCD display.

Model	OHPM3202	OHPM3301	OHPM3302	OHPM3201
Instrument Form	In-line Type			Probe Type
Frequency Range	400 MHz - 3 GHz		700 MHz - 3 GHz	
4G Compatibility	2G, 3G	2G, 3G, 4G (LTE-FDD/LTE-TDD)		2G, 3G
RF Power Range	1 mW ~ 250 W	0.001 mW ~ 1300 mW	1 mW ~ 160 W	1 mW ~ 160 W
	(Correction factor = 1)	(Correction factor = 1.0)	(Correction factor = 1)	
Correction Factor	1-100	0.1-10	1-100	
Maximum Input Power	500 W			
Resolution	0.01 dBm or 0.001 W	0.01 dB or 0.001 mW	0.01 dBm or 0.001 W	
Measurement Mode	Average	Peak Value	Burst Average	
Measurement Accuracy	+/- 4% +/- 5 mW	+/- 3% +/- 5 µW	+/- 3% +/- 5 mW	
	(+15 ~ +35°C)	(+15 ~ +35°C)	(+15 ~ +35°C)	
	+/- 6% +/- 5 mW	+/- 6% +/- 5 µW	+/- 6% +/- 5 mW	
	(0 ~ 50°C)	(0 ~ 50°C)	(0 ~ 50°C)	
VSWR Measurement Range	1.05 - 40.0			
Insertion Loss	< 0.05 dB			
Insertion VSWR	< 1.10			
Directivity	> 30 dB			
Peak-To-Average Ratio	> 10 dB			
Burst Pulse Width	150 µs - 4 s			
Burst Frequency	0.2 5 Hz - 1000 Hz			
Pulse Duty Cycle	0.1% - 100%			
CCDF Display Mode	Contrast curve			Non-contrast curve
Nominal Impedance	50 Ω			
RF Connector	Type N (female)			
Auto Power-Off	User selectable			
Internal Memory	150 Files			
Data Storage	50 Days (2 GB SD card)			
Battery Type	Lithium-ion			
Battery Life	> 8 hours (continuous)			
External Power Supply	DC 5 V/2 A			
PC Interface	USB			
Operating Temperature	-10 ~ +50°C (Relative humidity < 95%)			
Storage Temperature	-20 ~ +50°C (Relative humidity < 70%)			
Operating Altitude	5000 m			
Storage Altitude	14000 m			
Esd	> 8 V			
Dimensions	200 mm x 120 mm x 50 mm			105 mm x 94 mm x 43 mm
Weight	800 g			600 g

Arbitrary Waveform Generator

OAWG13700 Series

- Dual channel output.
- Sine waveform frequency range: 1 µHz ~ 80 MHz, 120 MHz, 160 MHz; 1 µHz frequency resolution.
- 6 standard waveforms, 137 arbitrary waveforms.
- Arbitrary Waveform Edit PC Software.
- Full and complete modulation types.
- Built-in 350 MHz frequency counter.
- 500 MSa/s sampling rate; 14 bit vertical resolution.
- USB host, USB device and LAN interface.

Model			OAWG13708	OAWG13712	OAWG13716
Frequency	Range	Sine	1 μHz ~ 80 MHz	1 μHz ~ 120 MHz	1 μHz ~ 160 MHz
		Square, Pulse	1 μHz ~ 30 MHz	1 μHz ~ 40 MHz	1 μHz ~ 50 MHz
		Arbitrary	1 μHz ~ 30 MHz		
		Ramp	1 μHz ~ 5 MHz		
	Resolution		1 μHz, 12 digits		
	Accuracy		±2 ppm+1 μHz		
Waveform	Standard Waveforms		Sine, square, ramp, pulse, noise, DC		
	Arbitrary Waveforms		137 kinds of waveforms including PBRS, exponential rise, exponential fall, logarithm, tangent, Sinc, semi-circle, Gaussian, cardiac, quake and so on		
Sine Wave Spectrum Purity	Harmonic Distortion		≤－60 dBc (＜10 MHz)		
			≤－55 dBc (＜80 MHz)		
			≤－50 dBc (＜100 MHz)		
			≤－45 dBc (≥100 MHz)		
	Total Distortion		≤0.1% (20 Hz ~ 20 kHz, 20 Vpp)		
Square, Pulse and Ramp	Square	Edge Time	≤8 ns		
		Overshoot	≤ 5 %		
		Duty Cycle	0.1% ~ 99.9% mini.pos/neg pulse width 10 ns)		
	Pulse	Edge Time	4 ns ~ 100 μs		
		Pulse Width	10 ns ~ 1000 s		
	Ramp	Symmetry	0.0% ~ 100.0%		
Arbitrary Waveforms	Arbitrary	Length	6-1 M points		
		Sampling Rate	500 MSa/s		
		Vertical Resolution	14 bits		
Amplitude	Range	Frequency≤40 MHz	2 mVpp ~ 20 Vpp (open circuit), 1 mVpp ~ 10 Vpp (50 Ω load)		
		Frequency≤80 MHz	2 mVpp ~ 10 Vpp (open circuit), 1 mVpp ~ 5 Vpp (50 Ω load)		
		Frequency≤120 MHz	2 mVpp ~ 5 Vpp (open circuit), 1 mVpp ~ 2.5 Vpp (50 Ω load)		
		Frequency≤160 MHz	2 mVpp ~ 4 Vpp (open circuit), 1 mVpp ~ 2 Vpp (50 Ω load)		
	Resolution		0.1 mVpp ~ 2 mVpp		
	Accuracy		± (setting value×1%＋2 mVpp)		
	Flatness		±0.2 dBm, frequency＜80 MHz		
	(Sine, relative to 1 MHz)		±0.3 dBm, frequency≥80 MHz		
Offset	Range		±5 Vpk (50 Ω load)		
	Resolution		0.1 mVdc ~ 2 mVdc		
	Accuracy		± (Setting value×1%＋2 mV + 0.5% of amplitude)		
Modulation Output (CHA, CHB)	FM, AM,	Modulation Frequency	1 mHz ~ 100 kHz		
	PM, PWM,	AM Modulating Depth	0% ~ 120%		
	SUM Modulation	Phase Deviation	0° ~ 360°		
		Pulse Width Deviation	0% ~ 99%		
		Sum Amplitude	0% ~ 100%		
		Source	internal, external		
	FSK, 3FSK, 4FSK	Hope Frequency	1 μHz ~ maximum frequency		
		Hope Rate	1 mHz ~ 1 MHz		
		Trigger Source	Internal, external (only FSK, 4FSK)		
Sweep Output (CHA, CHB)	Frequency Sweep	Sweep Time	1 ms ~ 500 s		
		Return/Hold Time	0 ~ 500 s		
		Sweep Type	Linear, log		
	List Sweep	Duration Time	1 ms ~ 500 s		
		Retention Time	0 s ~ 500 s		
Burst Output (CHA, CHB)	Waveform		Sine, square, sawtooth, etc.		
	Burst Period		1 μs ~ 500 s		
	Burst Count		1 ~ 1000000		
	Start/End Phase		0° ~ 360°		
	Trigger Source		Internal, external, manual		
Channel Coupling	Frequency Coupling		Frequency ratio, frequency difference		
	Amplitude Offset Coupling		Amplitude difference, offset difference		
	Waveform Coupling		Combination amplitude, 0% ~ 100%		

Model		OAWG13708	OAWG13712	OAWG13716
Sync	Waveform Characteristics	Square, edge time ≤10 nS		
	Output level	Compatible with TTL		
	Output Impedance	50 Ω nominal		
Modulation and Trigger Input	Modulation Input Voltage	±2.5 Vpp full scale		
	Trigger Input Level	TTL		
	Input Impedance	10 kΩ nominal		
Counter	Frequency Measurement	0. 1 Hz ~ 350 MHz; resolution: 7 digits/s		
	Period, Pulse Width Measurement	100 ns ~ 20 s		
	Duty Cycle Measurement	0.1% ~ 99.6%		
General Characteristics	Power	AC 100 ~ 240 V, 45 ~ 6 5 Hz, ＜30 VA		
	Dimension & Weight	367 mm × 256 mm × 106 mm; 3.7 kg		

Accessories

OAWG13700-A1	Power Cord
OAWG13700-A2	BNC Testing Cable
OAWG13700-A3	CD (Software+ User Guide)

Arbitrary Waveform Generator

OAWG6000 Series

- Dual channel output.
- Sine waveform frequency range: 1 µHz ~ 20 MHz, 60 MHz; 1 µHz frequency resolution.
- 5 standard waveforms, 50 built-in and 5 user-defined arbitrary waveforms.
- Arbitrary Waveform Edit PC software.
- AM, FM, PM, PWM, FSK, BPSK and SUM modulation types.
- Sweep and burst function.
- Built-in 350 MHz frequency counter.
- 120 MSa/s sampling rate; 14 bit vertical resolution.
- Channel coupling and feature combining on Channel B.
- USB device, RS-232 interface.

Model			OAWG6020	OAWG6060
Frequency	Range	Sine	1 μHz ~ 20 MHz	1 μHz ~ 60 MHz
		Square, Pulse	1 μHz ~ 10 MHz	
		Others	1 μHz ~ 5 MHz	
	Resolution		1 μHz	
	Accuracy		± (50 ppm+1 μHz)	
Waveform	Type	Standard	Sine, Square, Ramp, Pulse, Noise	
		Arbitrary	50 built-in waveforms + 5 user-defined waveforms	
	Sine	Harmonic Distortion	≤-60 dBc; Frequency <5 MHz	≤-60 dBc; Frequency <5 MHz
			≤-50 dBc; Frequency ≥5 MHz	≤-50 dBc; Frequency <30 MHz
				≤-45 dBc; Frequency ≥30 MHz
		Total Distortion	≤0.1% (20 Hz to 20 kHz, 20 Vpp)	
	Square	Edge Time	≤20 ns	
	Pulse	Overshoot	≤10%	
		Duty Cycle	0.1% to 99.9%	
		Pulse Width	50 ns to 2000 s	
	Ramp	Symmetry	0.0% to 100.0%	
	Arbitrary	Length	4096 points	
		Sampling Rate	120 MSa/s	
		Vertical Resolution	14 bits (CHA); 10 bits (CHB)	
		Filter Bandwidth	50 MHz	
Amplitude	Range	Frequency ≤20 MHz	0.1 mVpp to 10 Vpp (50 Ω); 0.2 mVpp to 20 Vpp (open circuit)	
		Frequency> 20 MHz	0.1 mVpp to 7.5 Vpp (50 Ω); 0.2 mVpp to 15 Vpp (open circuit)	
	Resolution	50 Ω	1 mVpp (amplitude≥1 Vpp); 0.1 mVpp (amplitude <1 Vpp)	
		Open Circuit	2 mVpp (amplitude≥2 Vpp); 0.2 mVpp (amplitude <2 Vpp)	
	Accuracy	(at 1 kHz, 0 V offset)	±(1% of setting＋1 mVpp)	
	Flatness	(relative to 100 kHz sine)	±0.2 dBm; frequency <5 MHz	
			±0.3 dBm; frequency <20 MHz	
			±0.5 dBm; frequency ≥20 MHz	
DC Offset (Ampl. 0.2 mVpp)	Range		±5 Vdc (50 Ω); ±10 Vdc (High z)	
	Accuracy		±(1% of setting+1 mVdc)	
Modulation (CHA)	FM, AM,	Carrier Waveform	Sine, square, ramp, etc. (only pulse for PWM)	
	PM, PWM,	Modulating Waveform	Sine, square, ramp, etc.	
	SUM	Modulating Frequency	1 μHz ~ 100 kHz	
		Source	Internal / external	
	FSK, BPSK	Carrier Waveform	Sine, Square, Ramp, etc.	
		Hope Frequency	1 μHz ~ 20 MHz	1 μHz ~ 60 MHz
		Hope Rate	1 μHz ~ 100 kHz	
		Source	Internal / external	
Sweep (CHA)	Carrier Waveform		Sine, square, ramp, etc.	
	Sweep Mode		Linear, log	
	Sweep Range		Whole range	
	Sweep Time		5 ms ~ 500 s	
	List Sweep		Length: 600, stop time: 5 ms to 500 s hold time: 0 to 500 s	
	Source		Internal, external and manual	
Burst (CHA)	Burst Waveform		Sine, square, ramp, etc.	
	Burst Count		1 ~ 1000000	
	Internal Period		1 μs ~ 500 s	
	Start/Stop Phase		0° ~ 360°	
	Trigger Source		Internal, external, manual	

Model		OAWG6020	OAWG6060
Double Channels Operation (CHB)	Frequency Coupling	Frequency ratio, frequency difference	
	Amplitude-Offset Coupling	Amplitude difference, offset difference	
	Waveform Combine	Combine amplitude 0% ~ 100%	
SYNC Output	Waveform Characteristic	Square, edge time ≤ 10 ns	
	Output Level	5 V (open circuit) 2.5 V (50 Ω)	
Modulation and Trigger Input	Modulation Input	Voltage: ±5 Vpp (full scale); impedance: 10 kΩ	
	Trigger Input	Level: TTL, impedance: 10 kΩ	
Frequency Counter	Frequency Range	0.0 1 Hz ~ 350 MHz, resolution: 6 digits/s	
	Period, Pulse Width	100 ns ~ 20 s	
	Duty Cycle	1% ~ 99%	
	Trigger Level	-3 V ~ 3 V	
General Characteristics	Power	AC 100 ~ 240 V, 45 ~ 6 5 Hz, < 30 VA	
	Dimension & Weight	256 mm × 102 mm × 322 mm, Approx. 3 kg	

Accessories

OAWG6000-A1	Power Cord
OAWG6000-A2	BNC Testing Cable
OAWG6000-A3	CD (Software+ User Guide)

Options

OAWG6000-A4	Power Amplifier (8 W, Load 8 Ω)
OAWG6000-A5	TCXO (Frequency Stability ±2 ppm)

Function Generator

OFG1600 Series

- 16 commonly used waveforms and AM, FM, PM, PWM, FSK modulation types.
- Sine waveform frequency range: 10 µHz ~ 3, 5, 10, 20 MHz; 10 µHz frequency resolution.
- Economic and lightweight.
- USB interface.

Model			OFG1603	OFG1605	OFG1610	OFG1620
Frequency	Range	Sine	10 µHz ~ 3 MHz	10 µHz ~ 5 MHz	10 µHz ~ 10 MHz	10 µHz ~ 20 MHz
		Square	10 µHz ~ 5 MHz			
		Others	10 µHz ~ 1 MHz			
	Resolution		10 µHz			
	Accuracy		±50 ppm			
Waveform	Type		16 waveform, sine, square, ramp, exp, log, noise, etc.			
	Length		1024 points			
	Sampling Rate		100 MSa/s			
	Vertical Resolution		8 bits			
	Sine	Harmonic Distortion	≤-40 dBc (≤5 MHz) : ≤-35 dBc (>5 MHz)			
		Total Distortion	≤0.5% (20 Hz ~ 20 kHz, 20 Vpp)			
	Square	Rise / Fall Edge Time	≤35 ns; overshoot: ≤ 10 %			
		Duty Cycle	0.1% ~ 99.9%			
	Ramp	Symmetry	0.0% ~ 100.0%			
Amplitude	Range	Frequency≤8 MHz	0 ~ 10 Vpp (50 Ω), 0 ~ 20 Vpp (ppen circuit)			
		Frequency>8 MHz	0 ~ 9 Vpp (50 Ω), 0 ~ 18 Vpp (open circuit)			
	Resolution		5 mVpp (Amplitude>2 Vpp)			
			0.5 mVpp (Amplitude≤2 Vpp)			
DC Offset (Ampl. 0 Vpp)	Range		±5 Vdc (50 Ω), ±10 Vdc (open circuit			
	Resolution		5 mVdc			
Modulation	AM, FM	Carrier Waveform	16 waveforms, sine, square, ramp, etc. (only pulse for PWM)			
	PM, PWM	Modulating Waveform	16 waveforms, sine, square, ramp, etc.			
		Modulating Frequency	40 mHz ~ 20 kHz			
	FSK	Carrier Waveform	16 waveforms, sine, square, ramp, etc.			
		Modulating Waveform	Square			
		FSK Rate	40 mHz ~ 100 kHz			
Frequency Sweep	Sweep Mode		Linear or logarithmic			
	Sweep Range		Start/Stop Frequency can be set arbitrarily			
	Sweep Time		50 ms ~ 500 s			
Burst	Burst Waveform		16 waveforms, Sine, Square, Ramp, etc.			
	Burst Count		1 ~ 1000000			
	Internal Period		1 µs ~ 20 s			
	Start/Stop Phase		0° ~ 360°			
Sync Output	Waveform Characteristic		Square, edge time ≤ 20 ns			
	Output Level		TTL compatible, low level <0.3 V, high level >4 V			
General Characteristics	Power		AC 100 ~ 240 V, 45 ~ 65 Hz, < 20 VA			
	Display		VFD display			
	Dimension & Weight		256 mm × 101 mm × 318 mm; approx. 1.5 kg			

Oscilloscope with Arbitrary Waveform Generator

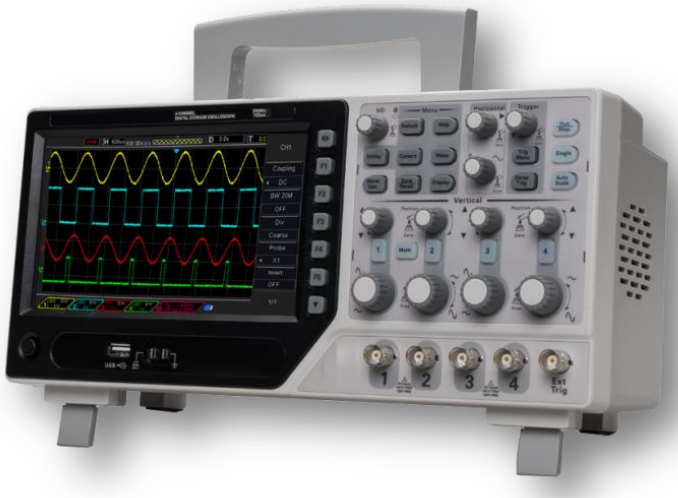
OOSC5000 Series

- 4 channel oscilloscope.
- 250, 200, 100 MHz bandwidths, 1 GSa/s sampling rate.
- Powerful trigger function: Video, edge, pulse width, slope, overtime, alternate trigger.
- 25 MHz arbitrary waveform output (sine wave up to 75 MHz).
- 7-inch 64 K color LCD display.
- 32 kinds of automatic measurements with FFT function.

Model		OOSC5250	OOSC5200	OOSC5100
Horizontal	Bandwidth	250 MHz	200 MHz	100 MHz
	Sampling Rate Range	1 GSa/s		
	Equivalent Sample Rate	25 GSa/s		
	Memory Depth (Sample Points)	40 k		
	SEC/DIV Range	2 ns/div-80 s/div		
	Delay Time Accuracy	±50 ppm in any >1 ms time intervals		
	Delta Time Measurement Accuracy (full bandwidth)	Single-shot, "sampling" mode, ± (1 sampling interval+100 ppm×readings+ 0.6 ns)		
		> 16 times above average, ± (1 sampling interval + 100 ppm × readings + 0.4 ns)		
		Sampling interval = SEC/DIV÷200		
Vertical	A/D Converter	8-bit resolution, each channel sampled simultaneously		
	VOLTS/DIV Range	2 mV/div ~ 10 V/div at input BNC		
	Position Range	±50 V (5 V/div): ±40 V (2 V/div ~ 500 mV/div)		
		±2 V (200 mV/div ~ 50 mV/div); ±400 mv (20 mV/div ~ 2 mV/div)		
	Rise Time at BNC	1.4 ns	1.7 ns	3.5 ns
	DC Gain Accuracy	±4% for sample or average acquisition mode, 5 mV/div to 2 mV/div		
		±3% for sample or average acquisition mode, 5 V/div to 10 mV/div		
Trigger	Trigger Sensitivity (edge Trigger Type)	DC (internal): 1div from DC to 10 MHz, 1.5div from 10 MHz to 100 MHz		
		2 div from 100 MHz to 200 MHz		
		DC (EXT): 200 mV from DC to 100 MHz, 350 mV from 100 MHz to 200 MHz		
		DC (EXT/5): 1 V from DC to 100 MHz, 1.75 V from 100 MHz to 200 MHz		
		AC: Attenuates signals below 10 Hz		
		HF Reject: Attenuates signals when above 80 kHz		
		LF Reject: The same as DC coupling limit when frequency above 150 kHz		
		Attenuates signals when below 150 kHz		
	Trigger Level Range	CH1, CH2, CH3, CH4: ±8 divisions from center of screen; EXT: ±1.2 V; EXT/5: ±6 V		
	Typical accuracy for signals	CH1, CH2, CH3, CH4: ± (0.2div × V/div) (within ±4 divisions from center of screen)		
	Having Rise and Fall Time ³ 20 Ns)	EXT: ± (6% of setting+40 mV): EXT/5: ± (6% of setting+200 mV)		
	Holdoff Range	100 ns - 10 s		
	Set Trigger Level to 50%	For the input signals ≥50 Hz		
	Trigger Type	Video, edge, pulse width, slope, overtime , alternate trigger		
Acquisition	Normal, Peak Detect	Upon single acquisition on all channels simultaneously		
	Average	After N acquisitions on all channels simultaneously, N can be set to 4, 8, 16, 32, 64 or 128		
Input	Input Coupling	DC, AC or GND		
	Input Impedance, DC coupled	1 MΩ±2% for20 pF±3 pF		
	Probe Attenuation	1x, 10x		
	Supported Probe Attenuation Factor	1x, 10x, 100x, 1000x		
	Max. Input Voltage	CAT I and CAT II: Installation type: 300 VRMS (10×); CAT III: 150 VRMS (1×)		
Measurement	Cursors	The difference between voltage cursors ΔV		
		The difference between time cursors ΔT		
		Reciprocal of ΔT in Hz (1/ΔT)		
	Automatic	Frequency, period, mean, pk-pk, Cyc RMS, min, max, rise time, fall time, pulse width, -pulse width, delay 1-2 rise, delay 1-2 fall, +duty, -duty, Vbase, Vtop, Vmid, Vamp, overshoot, preshoot, period mean, period RMS, FOVShoot, RPREShoot, bwidth, FRF, FFR, LRR, LRF, LFR, LFF		
Arbitrary Waveform Generator	Waveform Frequency	DC-25 MHz (sine wave up to 75 M)		
	Waveform Depth	2 KSa		
	Frequency Resolution	0.1%		
	Vertical Resolution	12 bit		
	Frequency Stability	<30 ppm		
	DAC Clock	2K ~ 200 MHz Adjustable		
	Output Impedance	50 Ω		
Other	Display	7 inch 64 k color LCD; 800×400 pixels; adjustable (16 gears) with progress bar		
	Voltage	100-120 VAC RMS (±10%), 4 5 Hz to 440 Hz, CAT II: 120-240 V AC RMS (±10%), 4 5 Hz to 6 6 Hz, CAT II		
	Power	<30 W		
	Fuse	2 A, T rating, 250 V		
	Size & Weight	313 mm × 108 mm × 142 mm (L x W x H); 2.08 kg (without packing)		

Accessories

OOSC5000-A1	Power Cord
OOSC5000-A2	Oscilloscope Probes (x2)
OOSC5000-A3	CD + User Guide



Oscilloscope

OOSC4200

- 4 channel oscilloscope.
- 200 MHz bandwidth, 1 GSa/s sampling rate.
- Powerful trigger function: video, edge, pulse width, slope, overtime, alternate trigger.
- 7-inch 64 K color LCD display.
- 32 kinds of automatic measurements with FFT function.

Model		OOSC4200
Horizontal	Bandwidth	200 MHz
	Sampling Rate Range	1 GSa/s
	Equivalent Sampling Rate	25 GSa/s
	Memory Depth (Sample Points)	40 K
	SEC/DIV Range	2 ns/div ~ 80 s/div
	Delay Time Accuracy	±50 ppm in any ≥ 1 ms time intervals
	Delta time Measurement Accuracy (Full Bandwidth)	Single-shot, "sampling" mode, ± (1 sampling interval + 100 ppm × readings + 0.6 ns)
		>16 times above average, ± (1 sampling interval + 100 ppm × readings + 0.4 ns)
		Sampling interval = SEC/DIV + 200
		8- bit resolution, each channel sampled simultaneously
Vertical	A/D Converter	2 mV/div ~ 10 V/div at input BNC
	VOLTS/DIV range	±50 V (5 V/div); ±40 V (2 V/div ~ 500 mV/div);
	Position Range	±2 V (200 mV/div ~ 50 mV/div); ±400 mV (20 mV/div ~ 2 mV/div)
	Rise Time at BNC	1.7 ns
	DC Gain Accuracy	±4% for sample or average acquisition made, 5 mV/div 2 mV/div
		±3% for sample or average acquisition made, 5 V/div 10 mV/div
Trigger	Trigger Sensitivity (Edge Tigger type)	DC (Internal): 1 div from DC to 10 MHz, 1.5div from 10 MHz to 100 MHz
		2div from 100 MHz to 200 MHz;
		DC (EXT): 200 mV from DC to 100 MHz, 350 mV from 100 MHz to 200 MHz
		DC (EXT/5): 1 V from DC to 100 MHz, 17.5 V from 100 MHz to 200 MHz
		AC: Attenuates signals below 10 Hz
		HF Reject: Attenuates signals when above 80 kHz
		LF Reject: The same as DC coupling limit when frequency above 150 kHz
		Attenuates signals when below 150 kHz
	Trigger Level Range	CH1, CH2, CH3, CH4: ±8 divisions from center of screen; EXT: ±1.2 V; EXT/5: ±6 V
	Typical accuracy for signals	CH1, CH2, CH3, CH4: ± (0.2 div ×V/div) (within ± 4 divisions from center of screen)
	Having Rise and Fall Time ≥20 ns)	EXT: ± (6% of setting + 40 mV); EXT/5: ± (6% of setting + 200 mV)
	Holdoff Range	100 ns-10 s
	Set Trigger Level to 50% (Typical)	For the input signals ≥ 50 Hz
	Trigger Type	Video, edge, pulse width, slope, overtime, alternate trigger
Acquisition	Normal Peak Detect	Upon single acquisition on all channels simultaneously
	Average	After N acquisitions on all channels simultaneously; N can be set to 4, 8, 16, 32, 64 or 128
Input	Input Coupling	DC, AC or GND
	Input Impedance, DC coupled	1 MΩ ±2% for 20 pF ± 3 pF
	Probe Attenuation	1x, 10x
	Supported Probe Attenuation Factor	1x, 10x, 100x, 1000x
	Max Input Voltage	CAT I and CAT II: Installation type: 300 VRMS (10×); CAT III: 150 VRMS (1×)
Measurement	Cursors	The difference between voltage cursors ΔT;
		The difference between time cursors ΔT;
		Reciprocal of Δ T in hertz (1/ΔT)
	Automatic	Frequency, period, mean, pk-pk, cyc rms, minimum, maximum, rise time
		Fall time, +pulse width, -pulse width, delay1-2rise, delay1-2fall, +duty, -duty
		Vbase, Vtop, Vmid, Vamp, overshoot, preshoot, period mean , period RMS,
		FOVShoot, RPREShoot, Bwidth , FRF, FFR, LRR, LRF, LFR, LFF
Other	Display	7-inch 64 K color LCD: 800 × 480 pixels; adjustable (16 gears) with the progress bar
	Voltage	100-120 VACRMS (±10%), 45 Hz to 440 Hz, CAT II; 120-240 VACRMS (±10%), 45 Hz to 6 6 Hz, CAT II
	Power	<30 W
	Fuse	2 A, T rating, 250 V
	Size & Weight	313 mm × 108 mm × 142 mm (L x W x H); 2.08 kg (without packing)

Oscilloscope

OOSC2000 Series

- 2 channel oscilloscope; 40 kb record length.
- 200, 100, 70 MHz bandwidths; 1 GSa/s sampling rate.
- 7-inch 64 K color LCD display; resolution 800 × 480.
- 32 kinds of automatic measurements, with FFT function.
- Powerful trigger function: video, edge, pulse width, slope, overtime, alternate trigger.

Model		OOSC2200	OOSC2100	OOSC2070
Horizontal	Bandwidth	200 MHz	100 MHz	70 MHz
	Sampling Rate Range	1 GSa/s		
	Equivalent Sampling Rate	25 GSa/s		
	Memory Depth (Sample Points)	40 K		
	SEC/DIV Range	2 ns/div ~ 80 s/div	4 ns/div-80 s/div	
	Delay Time Accuracy	±50 ppm in any ≥1 ms time intervals		
	Delta Time Measurement Accuracy (full bandwidth)	Single-shot, "sampling "mode, ± (1 sampling interval+100 ppm×readings+0.6 ns)		
		>16 times above average ± (1 sampling interval+100 ppm×readings+0.4 ns)		
		Sampling interval = SEC/DIV÷200		
Vertical	A/D Converter	8 bit resolution, each channel sampled simultaneously		
	VOLTS/DIV Range	2 mV/ div ~ 10 V/div at input BNC		
	Position Range	±50 V (5 V/div); ±40 V (2 V/div ~ 500 mV/div)		
		±2 V (200 mV/div ~ 50 mV/div); ±400 mV (20 mV/div ~ 2 mV/div)		
	Rise Time at BNC	1.7 ns	3.5 ns	5 ns
	DC Gain Accuracy	±4% for sample or average acquisition mode, 5 mV/div to 2 mV/div		
		±3% for sample or average acquisition mode, 5 V/div to 10 mV/div		
Trigger	Trigger Sensitivity (Edge Trigger Type)	DC (internal) : 1div from DC to 10 MHz, 1.5 div from 10 MHz to 100 MHz, 2 div from 100 MHz to 200 MHz;		
		DC (EXT): 200 mV from DC to 100 MHz, 350 mV from 100 MHz to 200 MHz		
		DC (EXT/5): 1 V from DC to 100 MHz, 1.75 V from 100 MHz to 200 MHz;		
		AC: Attenuates signals below 10 Hz		
		HF Reject: Attenuates signals when above 80 kHz		
		LF Reject: the same as DC coupling limit when frequency above 150 kHz; Attenuates signals when below 150 kHz.		
	Trigger Level Range	CH1, CH2: ±8 divisions from center of screen; EXT: ±1.2 V; EXT/5: ±6 V		
	Typical accuracy for signals	CH1, CH2: ± (0.2div ×V/div) (within±4divisions from center of screen)		
	Having Rise and Fall Time ≥20 ns)	EXT: ± (6%of setting +40 mV); EXT/5: (±6% of setting + 200 mV)		
	Holdoff Range	100 ns ~ 10 s		
	Set Trigger Level to 50% (Typical)	For the input signals ≥50 Hz		
	Trigger Type	Video, edge, pulse width, slope, over time, alternate trigger.		
Acquisition	Normal, Peak Detected	Upon single acquisition on all channels simultaneously		
	Average	After N acquisitions on all channels simultaneously; N can be set to 4, 8, 16, 32, 64 or 128		
Input	Input Coupling	DC, AC or GND		
	Input Impedance, DC coupled	1 MΩ±2% for 20 pF ±3 pF		
	Probe Attenuation	1x, 10x		
	Supported Probe Attenuation Factor	1x, 10x, 100x, 1000x		
	Max. Input voltage	CAT I and CAT II : Installation type : 300 VRMS (10×); CAT III: 150 VRMS (1×)		
Measurement	Cursors	The difference between voltage cursors ΔV;		
		The difference between time cursors ΔT;		
		Reciprocal of ΔT in Hz (1/ΔT).		
	Automatic	frequency, period, mean, pk-pk, cyc rms, minimum, maximum, rise time		
		Fall Time, +pluse width, -pluse width, delay 1-2 rise, delay1-2 fall, +duty, -duty		
		Vbase, Vtop, Vmid, Vamp, overshoot, preshoot, period mean, period RMS,		
		FOVShoot, RPREShoot, Bwidth, FRF, FFR, LRR, LRF, LFR, LFF		
Other	Display	7-inch 64 K color LCD: 800 × 480 pixels; Adjustable (16 gears) with the progress bar		
	Voltage	100-120 VACRMS (±10%), 4 5 Hz to 440 Hz, CAT II 120-240 VACRMS (±10%), 4 5 Hz to 6 6 Hz, CAT II		
	Power	< 30 W		
	Fuse	2 A, T rating, 250 V		
	Size & Weight	313 mm × 108 mm × 142 mm (L x W x H); 2.08 kg (without packing)		

Accessories

OOSC2000-A1	Power Cord
OOSC2000-A2	Oscilloscope Probes (x2)
OOSC2000-A3	CD + User Guide

6 in 1 Handheld Oscilloscope: Recorder, Arbitrary Waveform Generator, DMM, Spectrum Analyzer and Frequency Counter, Arbitrary Waveform Generator

OHUI6000 Series

- High bandwidth 70, 100, 150, 200 MHz oscilloscope; 1GSa/s sampling rate; 2 M memory depth or 1 M memory depth with high refresh rate (2500 frames).
- 6000 count DMM, AC/DC voltage, AC/DC current, resistance, break, capacitance, and diode function.
- 25 MHz arbitrary waveform generator, 200 Mesa/s DDS, 12 bit vertical resolution, easy for simulating transducer.
- USB host / device; 2.0 full-speed interface; supports removable disk; WIFI / LAN option.
- IP-51 rated for dust, drip and shake proof to withstand harsh environments. Anti-theft lock hole, tripod fixed hole, hang rope, flashlight that can be used in the dark.

Model		OHUI6070	OHUI6100	OHUI6150	OHUI6200
Acquisition	Sample Modes	Real-Time Sample			
Acquisition Modes	Normal	Normal data only			
	Peak Detect	High-frequency and random glitch capture			
	Average	Waveform Average, selectable 4, 8, 16, 32, 64, 128			
Inputs	Inputs Coupling	AC, DC, GND			
	Inputs Impedance	1 MΩ±2%, 20 pF±3 pF			
	Probe Attenuation	1X, 10X			
	Supported Probe Attenuation Factor	1X, 10X, 100X, 1000X			
	Maximum Input Voltage	CAT I and CAT II: 300 VRMS (10×), Installation Category; CAT III: 150 VRMS (1×)			
Horizontal System	Sample Rate Range	1 GS/s			
	Waveform Interpolation	(sin x)/x			
	Record Length	2 M			
	SEC/DIV Range	4 ns/div ~ 2000 s/div, in a 2, 4, 8 sequence		2 ns/div ~ 2000 s/div, in a 2, 4, 8 sequence	
	Sample Rate and Delay Time Accuracy	±50 ppm over any ≥1 ms time interval			
	Scanning Speed Range	4 ns/div to 8 ns/div; (-8div x s/div) to 40 ms; 20 ns/div to 80 µs/div; (-8div×s/div) to 40 ms 200 µs/div to 40 s/div; (-8div×s/div) to 400 s		2 ns/div to10 ns/div; (-4div×s/div) to 20 ms;	
	Delta Time Measurement Accuracy (Full Bandwidth)	Single-shot, Normal mode: ± (1 sample interval +100 ppm × reading + 0.6 ns); >16 averages: ± (1 sample interval + 100 ppm × reading + 0.4 ns); Sample interval = s/div ÷ 200			
Vertical System	Vertical Resolution	8-bit resolution, all channel sampled simultaneously			
	Volts Range	2 mV/div to 100 V/div at input BNC			
	Bandwidth	70 MHz	100 MHz	150 MHz	200 MHz
	Rise Time at BNC (typical)	5 ns	3.5 ns	2.3 ns	1.8 ns
	Analog Bandwidth in Normal and Average modes at BNC or with probe, DC Coupled	±400 V (100 V/div-20 V/div); ±50 V (10 V/div-5 V/div); ±40 V (2 V/div-500 mV/div); ±2 V (200 mV/div-50 mV/div); ±400 mV (20 mV/div-2 mV/div);			
	Math	+, -, *, /, FFT			
	FFT	Windows: Hanning, Flat top, Rectangular, Bartlett, Blackman; 1024 sample point			
	Bandwidth Limit	20 MHz			
	Low Frequency Response (-3db)	≤10 Hz at BNC			
	DC Gain Accuracy	±3% for Normal or Average acquisition mode, 100 V/div to 10 mV/div. ±4% for Normal or Average acquisition mode, 5 mV/div to 2 mV/div.			
	DC Measurement Accuracy, Average Acquisition Mode	Measurement Type: Average of ≥16 waveforms with vertical position at zero Accuracy: ± (3% × reading + 0.1div + 1 mV) when 10 mV/div or greater is selected Measurement Type: Average of ≥16 waveforms with vertical position not at zero Accuracy: ± [3% × (reading + vertical position) + 1% of vertical position + 0.2div].			
	Volts Measurement Repeatability, Average Acquisition Mode	Delta volts between any two averages of ≥16 waveforms acquired under same setup and ambient conditions			
Trigger System	Trigger Types	Edge, Video, Pulse, Slope, Over time, Alternative			
	Trigger Source	CH1, CH2, AC Line			
	Trigger Modes	Auto, Normal, Single			
	Coupling Type	DC, AC, HF Reject, LF Reject, Noise Reject			
	Trigger Sensitivity (Edge Trigger Type	DC (CH1, CH2): 1div from DC to 10 MHz; 1.5div from 10 MHz to 100 MHz; 2div from 100 MHz to Full AC: Attenuates signals below 10 Hz; HF Reject: Attenuates signals above 80 kHz; LF Reject: Same as the DC-coupled limits for frequencies above 150 kHz; attenuates signals below 150 kHz			
	Trigger Level Range	CH1/CH2: ±8 divisions from center of screen;			
	Trigger Level Accuracy	(typical)Accuracy is for signals having rise and fall times ≥20 ns CH1/CH2: 0.2div × volts/div within ±4 divisions from center of screen;			
	Set Level to 50% (typical)	Operates with input signals ≥50 Hz			

Model		OHUI6070	OHUI6100	OHUI6150	OHUI6200
Video Trigger	Video Trigger Type	CH1, CH2: Peak-to-peak amplitude of 2 divisions			
	Signal Formats and Field Rates	Supports NTSC, PAL and SECAM broadcast systems for any field or any line			
	Holdoff Range	100 ns ~ 10 s			
Pulse Width Trigger	Pulse Width Trigger Mode	Trigger when (<, >, =, or ≠); Positive pulse or Negative pulse			
	Pulse Width Trigger Point	Equal: The oscilloscope triggers when the trailing edge of the pulse crosses the trigger level. Not Equal: If the pulse is narrower than the specified width, the trigger point is the trailing edge. Otherwise, the oscilloscope triggers when a pulse continues longer than the time specified as the Pulse Width. Less than: The trigger point is the trailing edge. Greater than (also called overtime trigger): The oscilloscope triggers when a pulse continues longer than the time specified as the Pulse Width			
	Pulse Width Range	20 ns ~ 10 s			
General Specifications	Display Resolution	640 horizontal by 480 vertical pixels			
	Display Contrast	Adjustable (16 gears) with the progress bar			
Probe Compensator Output	Output Voltage (typical)	About 2 Vpp into ≥1 MΩ load			
	Output Voltage (typical)	1 kHz			
	Power Supply				
	Supply Voltage	AC Input: 100-240 VACRMS, 0.6 A MAX, 50 Hz ~ 60 Hz; DC Output: 9 V, 2 A			
	Power Consumption	<30 W			
Environmental	Temperature	Operating: 32 °F to 122 °F (0 °C to 50 °C); Nonoperating: -40 °F to 159.8 °F (-40 °C to +71 °C			
	Cooling Method	Convection			
	Humidity	+104 °F or below (+40 °C or below): ≤90% relative humidity; 106 °F to 122 °F (+41 °C to 50 °C): ≤60% relative humidity			
	Altitude	Operating: Below 3, 000 m (10, 000 feet); Nonoperating: <15,000 m (50,000 ft)			
Mechanical	Size	260 mm; 220 mm; 75 mm			
	Weight	2.5 kg (without Packing)			
DMM Mode	Max. Resolution	6000 Counts			
	DMM Testing Modes	Voltage, current, resistance, capacitance, diode & continuity			
	Max. Input Voltage	AC: 600 V, DC: 800 V			
	Max. Input Current	AC: 10 A, DC: 10 A			
	Input Impedance	10 MΩ			
	DMM TrendPlot	1.2 M Point			

Range	Resolution	Accuracy	Resolution
DC Voltage	60.00 mV	±1%±3 digit	10 uV
	600.0 mV		100 uV
	6.000 V		1 mV
	60.00 V		10 mV
	600.0 V		100 mV
	800 V		1 V
AC Voltage	60.00 mV	±1%±3 digit	10 uV
	600.0 mV		100 uV
	6.000 V		1 mV
	60.00 V		10 mV
	600.0 V		100 mV
DC Current	60.00 mA	±1%±5 digit	10 uA
	600.0 mA	±1.5%±5 digit	100 uA
	6.000 A		1 mA
	10.00 A		10 mA
AC Current	60.00 mA	±1%±5 digit	10 uA
	600.0 mA	±1.5%±5 digit	100 uA
	6.000 A		1 mA
	10.00 A		10 mA
Resistance	600 Ω	±1%±3 digit	0.1 Ω
	6.000 KΩ		1 Ω
	60.00 KΩ		10 Ω
	600.0 KΩ		1 KΩ
	6.000 MΩ		10 KΩ
	60.00 MΩ	±1%±5 digit	100 KΩ

Range	Resolution	Accuracy	Resolution
Capacitance	40.00 nF	±2%±5 digit	10 pF
	400.0 nF		100 pF
	4.000 uF		1 nF
	40.00 uF		10 nF
	400.0 uF		100 nF
	Attention: the smallest capacitance value that can be measured in 5 nF.		
Diode	0 V ~ 2.0 V		
On-Off Test	<10 Ω		

Accessories

OHUI6000-A1	Adapter
OHUI6000-A2	Oscilloscope Probes (x2) and Test Leads (x2)
OHUI6000-A3	Software CD
OHUI6000-A4	Portable Bag
OHUI6000-A5	Velcro Hanger
OHUI6000-A6	A BNC to BNC Cable and a Replaceable BNC Head
OHUI6000-A7	Car Power Adapter
OHUI6000-A8	Aluminum Alloy Cabinet

Options

OHUI6000-A9	LAN Interface

5 in 1 Handheld Instrument: Oscilloscope, Arbitrary Waveform generator, Frequency Spectrum Analyzer, Frequency Counter, Digital Multimeter

OHUI5060

- 2 channel oscilloscope; 60 MHz bandwidth, 250 MSa/s sampling rate;
- 22 kinds of auto measurements (functions FFT, + , - , * , / , X-Y); pass / fail check.
- Arbitrary waveform generator: 25 MHz arbitrary waveform output, 200 MSa/s DDS, 12 bits of vertical resolution.
- Hardware frequency counter; 6000 count high precision DMM; separate ground reference.
- 5.7" TFT color LCD display.
- USB host / device 2.0 full-speed interface; supports removable disk.

Model	OHUI-5060		
Bandwidth	60 MHz		
Channel	2		
Real-Sample Rate	250 MSa/s		
Equivalent Sample Rate	50 GSa/s		
Record Length	32K		
Rise Time	≤5.8 ns		
Timebase Accuracy	±50 ppm		
Time Base Range	5 ns/div-1000 s/div		
Input Impedance	1 MΩ II 15 pF		
VOLTS/DIV Range	10 mV/div～ 5 V/div		
A/D Converter	8bit		
Position Range	±50 V (5 V/div), ±40 V (2 V/div～500 mV/div),		
	±2 V (200 mV/div～50 mV/div), ±400 mV (20 mV/div～2 mV/div)		
DC Gain Accuracy	±3% for Normal or Average acquisition mode, 5 V/div to 10 mV/div;		
	±4% for Normal or Average acquisition mode, 5 mV/div to 2 mV/div		
Bandwidth Limit	20 MHz		
Trigger Types	Edge, video, pulse, alternative		
Trigger Source	CH1, CH2		
Math	+, -, x, ÷, FFT, Invert		
Cursor Measurement	Voltage difference between cursors: ΔV;		
	Time difference between cursors: ΔT;		
	Reciprocal of ΔT in Hz (1/ΔT);		
Auto Measurement	Frequency, period, mean, Pk-Pk, cyc RMS, minimum, maximum, rise time, fall time, +pulse width, -pulse width, delay1-2rise, delay1-2fall, +duty, -duty, Vbase, Vtop, Vmid, Vamp, overshoot, preshoot, period mean, period RMS, FOVShoot, RPREShoot		
Waveform Frequency	DC ~ 25 MHz		
DAC Clock	2K ~ 200 MHz adjustable		
Frequency Resolution	0.10%		
Channel Count	1CH waveform output		
Waveform Depth	4 KSa		
Vertical Resolution	12 bit		
Frequency Stability	<30 ppm		
Waveform Range	±3.5 V Max.		
Output Impedance	50 Ω		
Output Current	50 mA Ipeak=50 mA		
System BW	25 M		
Harmonic Distortion	-50 dBc (1 kHz), -40 dBc (10 kHz)		
Frequency Range	DC ~ 60 MHz		
Input Range	400 mVpp ~ 18 Vpp		
Coupling Mode	DC		
Frequency Measurement Accuracy	±Time base error ±1 count		
Input Impedance	> 100 KΩ		
Display	5.7" TFT display, 320 x 240 dots		
Size	245 mm x 163 mm x 52 mm		
Weight	1.3 kg (without package)		
DMM Mode			
Max. Resolution	6000 counts		
DMM Testing Modes	Voltage, current, resistance, capacitance, diode & continuity		
Max. Input Voltage	AC: 600 V, DC: 800 V		
Max. Input Current	AC: 10 A, DC: 10 A		
Input Impedance	10 MΩ		
DMM Trend Plot	1.2 M Point		
Range	Resolution	Accuracy	Resolution
DC Voltage	60.00 mV	±1%±3 digit	10 uV
	600.0 mV		100 uV
	6.000 V		1 mV
	60.00 V		10 mV
	600.0 V		100 mV
	800 V		1 V

Range	Resolution	Accuracy	Resolution
AC Voltage	60.00 mV	±1%±3 digit	10 uV
	600.0 mV		100 uV
	6.000 V		1 mV
	60.00 V		10 mV
	600.0 V		100 mV
	Resolution	**Accuracy**	**Resolution**
Range AC Current	60.00 mA	±1%±5 digit ±1.5%±5 digit	10 uA
	600.0 mA		100 uA
	6.000 A		1 mA
	10.00 A		10 mA
Resistance	600 Ω	±1%±3 digit	0.1 Ω
	6.000 KΩ		1 Ω
	60.00 KΩ		10 Ω
	600.0 KΩ		1 KΩ
	6.000 MΩ		10 KΩ
	60.00 MΩ	±1%±5 digit	100 KΩ
Capacitance	40.00 nF	±2%±5 digit	10 pF
	400.0 nF		100 pF
	4.000 uF		1 nF
	40.00 uF		10 nF
	400.0 uF		100 nF
	Attention: the smallest capacitance value that can be measured in 5 nF.		
Diode	0 V ~ 2.0 V		
On-Off Test	<10 Ω		

Accessories

OHUI5060-A1	Adapter
OHUI5060-A2	Oscilloscope Probes (x2) and Test Leads (x2)
OHUI5060-A3	Software CD
OHUI5060-A4	Portable Bag
OHUI5060-A5	Car Power Adapter

Options

OHUI5060-A6	LAN Interface

2 in 1 Handheld Oscilloscope & Multimeter

OHUI2200

- 2 channel oscilloscope; 200 MHz bandwidth; 500 MSa/s sampling rate.
- 22 kinds of auto measurements (functions FFT, +, -, * , / , X-Y), pass / fail check.
- 6000 count high precision DMM.
- 5.7" TFT color LCD display.
- Can save waveforms in jpg, bmp, MS excel or word file formats.
- USB host/device; 2.0 full-speed interface; supports removable disk.

Model	OHUI2200		
Bandwidth	200 MHz		
Channel	2		
Real-Sample Rate	500 MSa/s		
Equivalent Sample Rate	50 GSa/s		
Record Length	32K		
Rise time	≤1.7 ns		
Timebase Accuracy	±50 ppm		
Time Base Range	5 ns/div-1000 s/div		
Input impedance	1 MΩ II 15 pF		
VOLTS/DIV Range	10 mV/div～5 V/div		
A/D Converter	8bit		
Position Range	±50 V (5 V/div), ±40 V (2 V/div～500 mV/div),		
	±2 V (200 mV/div～50 mV/div), ±400 mV (20 mV/div～2 mV/div)		
DC Gain Accuracy	±3% for Normal or Average acquisition mode, 5 V/div to 10 mV/div;		
	±4% for Normal or Average acquisition mode, 5 mV/div to 2 mV/div		
Bandwidth Limit	20 MHz		
Trigger Types	Edge, Video, Pulse, Alternative		
Trigger Source	CH1, CH2		
Math	+, -, x, ÷, FFT, Invert		
Cursor Measurement	Voltage difference between cursors: ΔV;		
	Time difference between cursors: ΔT;		
	Reciprocal of ΔT in Hz (1/ΔT);		
Auto Measurement	Frequency, period, mean, pk-pk, cyc RMS, minimum, maximum, rise time, fall time, +pulse width, -pulse width, delay1-2rise, delay1-2fall, +duty, -duty, Vbase, Vtop, Vmid, Vamp, overshoot, preshoot, period mean, period RMS, fovshoot, Rpreshoot		
Display	5.7" TFT 16K Color Display, 320 x 240 pixels		
Size	245 mm x 163mm x 52 mm		
Weight	1.3 kg (without package)		
DMM Mode			
Max. Resolution	6000 counts		
DMM Testing Modes	Voltage, current, resistance, capacitance, diode & continuity		
Max. Input Voltage	AC: 600 V, DC: 800 V		
Max. Input Current	AC: 10 A, DC: 10 A		
Input Impedance	10 MΩ		
DMM Trend Plot	1.2 M point		
Range	Resolution	Accuracy	Resolution
DC Voltage	60.00 mV	±1%±3 digit	10 uV
	600.0 mV		100 uV
	6.000 V		1 mV
	60.00 V		10 mV
	600.0 V		100 mV
	800 V		1 V
AC Voltage	60.00 mV	±1%±3 digit	10 uV
	600.0 mV		100 uV
	6.000 V		1 mV
	60.00 V		10 mV
	600.0 V		100 mV
DC Current	60.00 mA	±1%±5 digit	10 uA
	600.0 mA	±1.5%±5 digit	100 uA
	6.000 A		1 mA
	10.00 A		10 mA
AC Current	60.00 mA	±1%±5 digit	10 uA
	600.0 mA	±1.5%±5 digit	100 uA
	6.000 A		1 mA
	10.00 A		10 mA
Resistance	600 Ω	±1%±3 digit	0.1 Ω
	6.000 KΩ		1 Ω
	60.00 KΩ		10 Ω
	600.0 KΩ		1 KΩ
	6.000 MΩ		10 KΩ
	60.00 MΩ	±1%±5 digit	100 KΩ

Range	Resolution	Accuracy	Resolution
Capacitance	40.00 nF	±2%±5 digit	10 pF
	400.0 nF		100 pF
	4.000 uF		1 nF
	40.00 uF		10 nF
	400.0 uF		100 nF
	Attention: the smallest capacitance value that can be measured in 5 nF.		
Diode	0 V ~ 2.0 V		
On-Off Set	<10 Ω		

Accessories

OHUI2200-A1	Adapter
OHUI2200-A2	Oscilloscope Probes (x2) and Test Leads (x2)
OHUI2200-A3	Software CD
OHUI2200-A4	Portable Bag
OHUI2200-A5	Car Power Adapter

Options

OHUI2200-A6	LAN Interface

2 in 1 Handheld Oscilloscope & Multimeter

OHUI2100 Series

- 2 channel oscilloscope. 200/100/60 MHz bandwidth, 1 GSa/s Sample Rate.
- Functions FFT, +, -, *, /.
- 1 M memory depth, high refresh rate (2500 frames).
- 6000 count high precision DMM with an analog barograph.
- 5.6" TFT color LCD display.
- Pass / fail function compares a stored waveform to an unknown input.
- USB host / device; 2.0 full-speed interface, supports removable disks; LAN optional.

Model		OHUI2120	OHUI2110	OHUI2106
Acquisition	Sample Modes	Real-time sample: 1 GS/s; equivalent sample: 25 GS/s		
Acquisition Modes	Normal	Normal data only		
	Peak Detect	High-frequency and random glitch capture		
	Average	Waveform average, selectable 4, 8, 16, 32, 64, 128		
Inputs	Inputs Coupling	AC, DC, GND		
	Inputs Impedance	1 MΩ±2% 20 pF±3 pF		
	Probe Attenuation	1x, 10x		
	Supported Probe Attenuation Factor	1x, 10x, 100x, 1000x		
	Maximum Input Voltage	CAT I and CAT II: 300 VRMS (10×), Installation category; CAT III: 150 VRMS (1×); Installation category II: derate at 20 dB/decade above 100 kHz to 13 V peak AC at 3 MHz and above. For non-sinusoidal waveforms, peak value must be less than 450 V. Excursion above 300 V should be of less than 100 ms duration. RMS signal level including all DC components removed through AC coupling must be limited to 300 V. In order to prevent damage to the instrument, these values shall not be exceeded.		
Horizontal	Sample Rate Range	500 MS/s ~1 GS/s		
	Waveform Interpolation	(sin x)/x		
	Record Length	1 M		
	SEC/DIV Range	2 ns/div ~ 2000 s/div,	4 ns/div ~ 2000 s/div,	
	Sample Rate and Delay Time Accuracy	500ps（at over any ≥1 ms time interval)		
	Position Range	2 ns/div to10 ns/div; (-4div×s/div) to 20 ms	4 ns/div to 8 ns/div; (-8div x s/div) to 40 ms; 20 ns/div to 80 µs /div; (-8div×s/div） to 40 ms; 200 µs/div to 40 s/div; (-8div×s/div） to 400 s;	
	Delta Time Measurement Accuracy (Full Bandwidth)	Single-shot, normal mode: ± (1 sample interval +100 ppm × reading + 0.6 ns); >16 averages: ± (1 sample interval + 100 ppm × reading + 0.4 ns); Sample interval = s/div ÷ 200		
Vertical	Vertical Resolution	8-bit resolution, all channel sampled simultaneously		
	Position Range	2 mV/div to 200 mV/div, ±2 V 200 mV/div to 5 V/div, ±50 V		
	Bandwidth	200 MHz	100 MHz	60 MHz
	Rise Time at BNC (Typical)	1.8 ns	3.5 ns	5.8 ns
	Analog Bandwidth in Normal and Average Modes at BNC or with Probe, DC Coupled	2 mV/div to 20 mV/div, ±400 mV; 50 mV/div to 200 mV/div, ±2 V; 500 mV/div to 2 V/div, ±40 V; 5 V/div, ±50 V		
	Math	+, -, *, /, FFT		
	FFT	Windows: Hanning, flat top, rectangular, Bartlett, Blackman; 1024 sample points		
	Bandwidth Limit	20 MHz		
	Low Frequency Response (-3db)	≤10 Hz at BNC		
	DC Gain Accuracy	±3% for normal or average acquisition mode, 5 V/div to 10 mV/div; ±4% for normal or average acquisition mode, 5 mV/div to 2 mV/div		
	DC Measurement Accuracy, Average Acquisition Mode	When vertical displacement is zero, and N ≥16: ± (3% × reading + 0.1div + 1 mV) only 10 mV/div or greater is selected; When vertical displacement is not zero, and N≥16: ± [3% × (reading + vertical position) + 1% of vertical position + 0.2div]; Add 2 mV for settings from 2 mV/div to 200 mV/div; add 50 mV for settings from 200 mV/div to 5 V/div		
	Volts Measurement Repeatability, Average Acquisition Mode	Delta volts between any two averages of ≥16 waveforms acquired under same setup and ambient conditions		
Trigger	Trigger Types	Edge, video, pulse, slope, over time, alternative		
	Trigger Source	CH1, CH2, AC line		
	Trigger Modes	Auto, normal		
	Coupling Type	DC, AC, Noise Reject, HF Reject, LF Reject		
	Trigger Sensitivity (Edge Trigger Type)	DC (CH1, CH2): 1 div from DC to 10 MHz; 1.5 div from 10 MHz to 100 MHz; 2 div from 100 MHz to Full; AC: Attenuates signals below 10 Hz; HF Reject: Attenuates signals above 80 kHz; LF Reject: Same as the DC-coupled limits for frequencies above 150 kHz; attenuates signals below 150 kHz		

Model		OHUI2120	OHUI2110	OHUI2106
Trigger	Trigger Level Range	CH1/CH2: ±8 divisions from center of screen;		
	Trigger Level Accuracy (typical) Accuracy Is for Signals Having Rise and Fall Times ≥20 ns	CH1/CH2: 0.2 div × volts/div within ±4 divisions from center of screen		
	Set Level to 50% (typical)	Operates with input signals ≥50 Hz		
Video Trigger	Video Trigger Type	CH1, CH2: Peak-to-peak amplitude of 2 divisions;		
	Signal Formats and Field Rates, Video Trigger Type	Supports NTSC, PAL and SECAM broadcast systems for any field or any line		
	Holdoff Range	100 ns ~ 10 s		
Pulse Width Trigger	Pulse Width Trigger Mode	Trigger when (<, >, =, or ≠); positive pulse or negative pulse		
	Pulse Width Trigger Point	Equal: The oscilloscope triggers when the trailing edge of the pulse crosses the trigger level. Not equal: If the pulse is narrower than the specified width, the trigger point is the trailing edge. Otherwise, the oscilloscope triggers when a pulse continues longer than the time specified as the pulse width. Less than: The trigger point is the trailing edge. Greater than (also called overtime trigger): The oscilloscope triggers when a pulse continues longer than the time specified as the Pulse Width		
	Pulse Width Range	20 ns ~ 10 s		
Slope Trigger	Slope Trigger Mode	Trigger when (<, >, =, or ≠); positive slope or negative slope		
	Slope Trigger Point	Equal: The oscilloscope triggers when the waveform slope is equal to the set slope. Not equal: The oscilloscope triggers when the waveform slope is not equal to the set slope. Less than: The oscilloscope triggers when the waveform slope is less than the set slope. Greater than: The oscilloscope triggers when the waveform slope is greater than the set slope		
	Time Range	20 ns ~ 10 s		
Overtime Trigger	Over Time Mode	Rising edge or falling edge		
	Time Range	20 ns ~ 10 s		
Alternative Trigger	Trigger on CH1	Internal trigger: edge, pulse width, video, slope		
	Trigger on CH2	Internal trigger: edge, pulse width, video, slope		
Trigger Frequency Counter	Readout Resolution	6 digits		
	Accuracy (typical)	±30 ppm (including all frequency reference errors and ±1 count errors)		
	Frequency Range	AC coupled, from 4 Hz minimum to rated bandwidth		
	Signal Source	Pulse width or edge trigger modes: all available trigger sources The Frequency counter measures trigger source at all times, including when the oscilloscope acquisition pauses due to changes in the run status, or acquisition of a single shot event has completed. Pulse width trigger mode: The oscilloscope counts pulses of significant magnitude inside the 1 s measurement window that qualify as triggerable events, such as narrow pulses in a PWM pulse train if set to < mode and the width is set to a relatively small time. Edge trigger mode: The oscilloscope counts all edges of sufficient magnitude and correct polarity. Video trigger mode: The frequency counter does not work.		
Display	Display Resolution	640 x 480 pixels		
	Display Contrast	Adjustable (16 gears) with the progress bar		
Probe Compensator Output	Output Voltage (Typical)	About 5 Vpp into ≥1 MΩ load		
	Frequency (Typical)	1 kHz		
Power Supply	Supply Voltage	AC Input: 100-240 VACRMS, 0.6 A MAX, 50 Hz ~ 60 Hz DC Output: 9 V, 2 A		
	Power Consumption	<30 W		
Environmental	Temperature	Operating: 32 °F to 122 °F (0 °C to 50 °C); Nonoperating: -40 °F to 159.8 °F (-40 °C to +71 °C)		
	Cooling Method	Convection		
	Humidity	+104 °F or below (+40 °C or below): ≤90% relative humidity; 106 °F to 122 °F (+41 °C to 50 °C): ≤60% relative humidity		
	Altitude	Operating: < 3,000 m (10,000 ft); Nonoperating: <15,000 m (50,000 ft)		

Model		OHUI2120	OHUI2110	OHUI2106
Mechanical	Size	245 mm x 163 mm x 52 mm		
	Weight	2.8 kg (with packing); 1.2 kg (without packing)		
DMM Mode	Max. Resolution	6000 counts		
	DMM Testing Modes	Voltage, current, resistance, capacitance, diode & continuity		
	Max. Input Voltage	AC: 600 V, DC: 800 V		
	Max. Input Current	AC: 10 A, DC: 10 A		
	Input Impedance	10 MΩ		
	DMM Trend Plot	1.2 M Point		

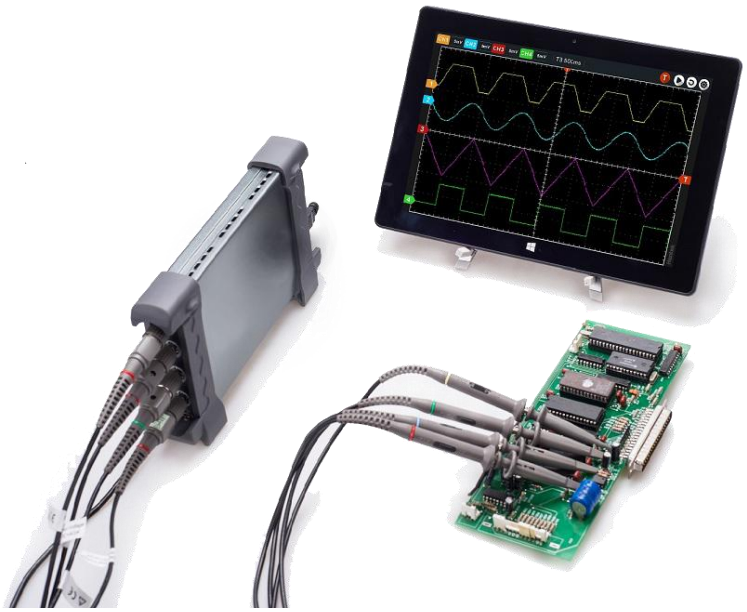
Range	Resolution	Accuracy	Resolution
DC Voltage	60.00 mV	±1%±3 digit	10 uV
	600.0 mV		100 uV
	6.000 V		1 mV
	60.00 V		10 mV
	600.0 V		100 mV
	800 V		1 V
AC Voltage	60.00 mV	±1%±3 digit	10 uV
	600.0 mV		100 uV
	6.000 V		1 mV
	60.00 V		10 mV
	600.0 V		100 mV
DC Current	60.00 mA	±1%±5 digit	10 uA
	600.0 mA	±1.5%±5 digit	100 uA
	6.000 A		1 mA
	10.00 A		10 mA
AC Current	60.00 mA	±1%±5 digit	10 uA
	600.0 mA	±1.5%±5 digit	100 uA
	6.000 A		1 mA
	10.00 A		10 mA
Resistance	600 Ω	±1%±3 digit	0.1 Ω
	6.000 KΩ		1 Ω
	60.00 KΩ		10 Ω
	600.0 KΩ		1 KΩ
	6.000 MΩ		10 KΩ
	60.00 MΩ	±1%±5 digit	100 KΩ
Capacitance	40.00 nF	±2%±5 digit	10 pF
	400.0 nF		100 pF
	4.000 uF		1 nF
	40.00 uF		10 nF
	400.0 uF		100 nF
	Attention: the smallest capacitance value that can be measured in 5 nF.		
Diode	0 V ~ 2.0 V		
On-Off Test	<10 Ω		

Accessories

OHUI2100-A1	Adapter
OHUI2100-A2	Oscilloscope probes (x2) and test leads (x2).
OHUI2100-A3	CD (user's guide)
OHUI2100-A4	Portable bag
OHUI2100-A5	Car power

Options

OHUI2100-A6	LAN interface



PC USB Digital Oscilloscope with Arbitrary Waveform Generator

OHUS5000 Series

- 4 channel oscilloscope. One computer can be connected to multiple oscilloscopes; number of channels can be easily expanded.
- 70, 100, 200 MHz bandwidths; 1 GSa/s sampling rate.
- 25 MHz arbitrary waveform output.
- More than 20 kinds of automatic measurement functions; pass / fail check function.
- Windows 7, 8 and 10 compatible.
- USB 2.0 interface plug and play.

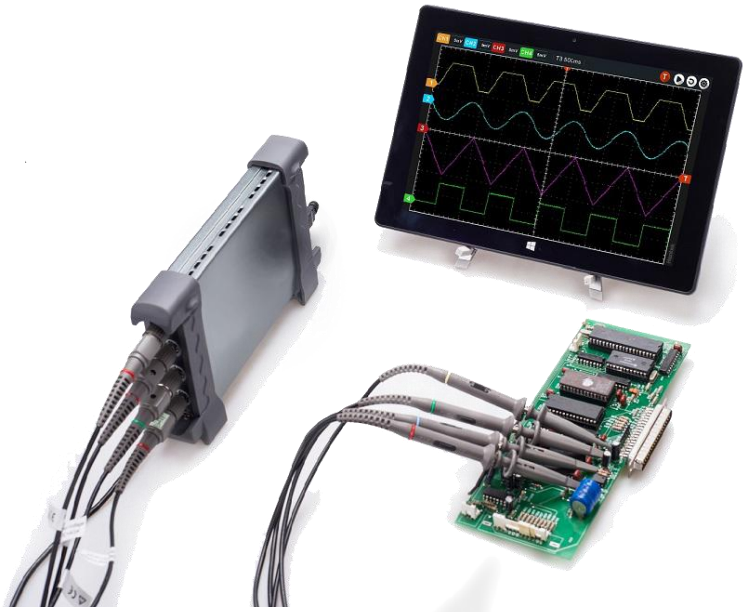
Model		OHUS5070	OHUS5100	OHUS5200	OHUS5250
Input	Analog Channels	4			
	Bandwidth	70 MHz	100 MHz	200 MHz	250 MHz
	Input Impedance	Resistance: 1 MΩ; Capacitance: 25 pF			
	Input Sensitivity	2 mV/div to 10 V/div			
	Input Coupling	AC, DC, GND			
	Vertical Resolution	8 bit			
	Max. Input	400 V (DC+AC peak)			
	Real-time sampling Rate	1 GSa/s			
	Time base range	2 ns/div to 1000 s/div			
	Time base precision	±50 ppm			
Horizontal	Memory Depth	64 k			
	Bandwidth Limit	20 MHz			
	Position Range	± 4division			
	-3 dB	≤ 10 Hz (at input BNC)			
Vertical	DC Gain Accuracy	±3%			
	Probe Attenuation Factors	1×, 10×, 100×, 1000× 10000×, 20; 1			
	Vertical Scale Range	2 mV ~ 10 V/div @ × 1 probe (1, 2, 5 sequence); 20 mV ~ 100v/div @ ×10 probe 2 V ~ 1000 V/div @ ×100 probe; 20 V ~ 10 KV/div @ ×1000 probe; 20 V ~ 100000 V/div @ ×10000 probe; 200 mV ~ 200 V/div @ 20: 1			
Trigger	Trigger Source	CH1, CH2, CH3, CH4			
	Trigger Mode	Auto, Normal and Single			
	Trigger Type	Edge, Pulse, Video, Alternative			
	Trigger Sensitivity	0.02 div increments			
	Trigger Level Range	±4 V			
	Trigger Level Accuracy	±4 division			
	Edge Trigger Slope	Rising, falling			
	Pulse Width Trigger	Trigger Condition: Trigger when <, >, =, or ≠; positive pulse or negative pulse			
		Pulse Width Range: selectable from 10 ns to 10 s			
	Video Trigger	Trigger on an NTSC, PAL, or SECAM standard video signal			
		Line Range: 1-525 (NTSC), 1-625 (PAL/SECAM)			
	Slope Trigger	Trigger (when >, <, =, ≠) on a positive or negative slope; set time: 20 ns- 10 s			
Arbitrary Waveform Generator	Waveform Frequency	DC ~ 25 MHz	DC ~ 25 MHz	DC ~ 25 MHz	DC ~ 25 MHz
	DAC Clock	2K ~ 200 MHz	2K ~ 200 MHz	2K ~ 200 MHz	2K ~ 200 MHz
	Vertical Resolution	12 bit	12 bit	12 bit	12 bit
	Waveform Depth	4 k	4 k	4 k	4 k
	Wave Amplitude	±3.5 V Max	±3.5 V Max	±3.5 V Max	±3.5 V Max
	Output Impedance	50 Ω	50 Ω	50 Ω	50 Ω
Measurement	Waveform Single process	+, -, ×, ÷, FFT			
	Auto Set	Yes			
	Cursor Measure	Amplitude difference between cursors (ΔV); time difference between cursors (Δt);			
		Reciprocal of Δt in Hz (1/Δt) (cross, trace, horizontal, vertical)			
	Auto Measure	Vp-p , Vmax, Vmin, Vmean, Vamp, Vtop, Vbase, Vtop, Vbase, Vmid, Vrms, Vcrms, preshoot, overshoot, frequency, period , rise time (10%-90%), fall time (10%- 90%), positive width, negative width, duty cycle			
General Feature	FFT	Rectangular, Hamming, Blackman window			
	Interface	USB2.0 (USBXI optional)			
	Power Source	No external power, bus-powered from USB			
	Size	175 mm × 105 mm × 25 mm (L x W x H)			
	Wight	0.45 kg (without packaging)			
Includes DEMO code (VC, VB, LABVIEW).					
The waveform data could be output to EXCEL, BMP, JPG, as time and voltage category.					

Accessories

OHUS5000-A1	Two Passive Probes (x1, x10)
OHUS5000-A2	Software CD
OHUS5000-A3	BNC to BNC Cable

Options

OHUS5000-A4	USBXI Interface



PC USB Digital Oscilloscope

OHUS4000 Series

- 4 channel Oscilloscope. One computer can be connected to multiple oscilloscopes; number of channels can be easily expanded.
- 70, 100, 200 MHz bandwidths; 1 GSa/s sampling rate.
- More than 20 kinds of automatic measurement functions; pass / fail check function.
- Windows 7, 8 and 10 compatible.
- USB 2.0 interface plug and play.

Model		OHUS4070	OHUS4100	OHUS4200
Input	Analog Channels	4		
	Bandwidth	70 MHz	100 MHz	200 MHz
	Input Impedance	Resistance: 1 MΩ; Capacitance: 25 pF		
	Input Sensitivity	2 mV/div to 10 V/div		
	Input Coupling	AC, DC, GND		
	Vertical Resolution	8 bit		
	Max. Input	400 V (DC+AC peak)		
	Real-Time Sampling Rate	1 GSa/s		
	Time Base Range	2 ns/div to 1000 s/div		
	Time Base Precision	±50 ppm		
Horizontal	Memory Depth	64 K		
	Bandwidth Limit	20 MHz		
	Position Range	±4 division		
	-3 dB	≤ 10 Hz (at input BNC)		
Vertical	DC Gain Accuracy	±3%		
	Probe Attenuation Factors	1×, 10×, 100×, 1000× 10000×, 20; 1		
	Vertical Scale Range	2 mV ~ 10 V/div @ × 1 probe (1, 2, 5 sequence); 20 mV ~ 100v/div @ ×10 probe 2 V ~ 1000 V/div @ ×100 probe; 20 V ~ 10 KV/div @ ×1000 probe 20 V ~ 100000 V/div @ ×10000 probe; 200 mV ~ 200 V/div @ 20: 1		
Trigger	Trigger Source	CH1, CH2, CH3, CH4		
	Trigger Mode	Auto, normal and single		
	Trigger Type	Edge, pulse, video, alternative		
	Trigger Sensitivity	0.02 div increments		
	Trigger Level Range	±4 V		
	Trigger Level Accuracy	±4 division		
	Edge Trigger Slope	Rising, falling		
	Pulse Width Trigger	Trigger condition: trigger when <, >, =, or ≠; positive pulse or negative pulse		
		Pulse width range: selectable from 10 ns to 10 s		
	Video Trigger	Trigger on an NTSC, PAL, or SECAM standard video signal		
		Line range: 1-525 (NTSC), 1-625 (PAL/SECAM)		
	Slope Trigger	Trigger (when >, <, =, ≠) on a positive or negative slope; set time: 20 ns- 10 s		
Measurement	Waveform Single process	+, -, ×, ÷, FFT		
	Auto Set	Yes		
	Cursor Measure	Amplitude difference between cursors (ΔV); time difference between cursors (Δt);		
		Reciprocal of Δt in Hz (1/Δt) (cross, trace, horizontal, vertical)		
	Auto Measure	Vp-p, Vmax, Vmin, Vmean, Vamp, Vtop, Vbase, Vtop, Vbase, Vmid, Vrms, Vcrms, preshoot, overshoot		
		Frequency, period, rise time (10%-90%), fall time (10%- 90%), positive width, negative width, duty cycle		
General Feature	FFT	Rectangular, Hamming, Blackman window		
	Interface	USB2.0 (USBXI optional)		
	Power source	No external power, bus-powered from USB		
	Size	175 mm × 105 mm × 25 mm (L x W x H)		
	Wight	0.45 kg (without packaging)		
	Includes DEMO code (VC, VB, LABVIEW).			
The waveform data could be output to EXCEL, BMP, JPG, as time and voltage category.				

Accessories

OHUS4000-A1	Two Passive Probes (x1, x10)
OHUS4000-A2	Software CD

Options

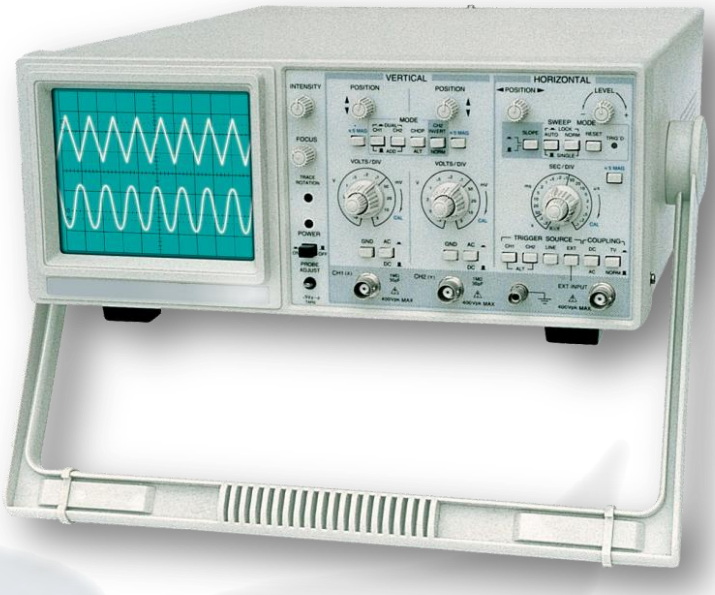
OHUS4000-A3	USBXI Interface

Analog Oscilloscope

OOSC9100 series

- 2 channels, up to 60/100 MHz (5mV/div).
- Panel setup on-screen display, many parameters can be display on CRT directly.
- Cursor measurement, such as ΔV, ΔT, 1/ΔT etc.
- Sweep rate auto-set.
- Build-in frequency counter.

Model	OOSC9121	OOSC9126
Vertical system		
Deflection	2mV/div-5V/div, 1-2-5, 11steps, ±5%	
Variable ratio	≥2.5:1	
Bandwidth :5mV/div	DC-100MHz -3dB	DC-60MHz -3dB
Bandwidth :2mV/div	DC-20MHz -3dB	DC-20MHz -3dB
Rise time	3.5ns	6ns
HF reject	Approx > 20MHz	
Overshot, damp (5mV/div)	5%	
AC coupling F min	10Hz – 3dB	
Impedance	1MΩ ± 5% 25pF ± 5pF	
CMR	More than 10:1 (20MHz)	
Max. input	400V (DC +AC peak) ≤ 1KHz	
Horizontal system		
Sweep rate A:main sweep	0.5s/div – 50ns/div, 1-2-5 22steps ±5%	0.5s/div – 0.1us/div, 1-2-5 21steps ±5%
Sweep rate B:delay sweep	50ms/div – 50ns/div, 1-2-5 19steps ±5%	50ms/div – 0.1us/div, 1-2-5 18steps ±5%
MAG ratio	×10 ± 10%	
Linear	5% after expand 15%	
Variable	≥2:1 (1-2 step) ; ≥2.5 (2-5 step)	
Delay jitter	≤1: 10000	
X external input	0.1V/div 1V/div (÷10)	
Bandwidth	DC – 2MHz -3dB	
Phrase error	<3° (dc – 50 KHz)	
Trig system		
Trig source (int.)	CH1, CH2	
External input impedance	1MΩ ± 5% //30pF ± 5pF	
Max. input voltage	400V(DC+AC peak) ≤ 1KHz	
Trig sensitivity normal	DC-20MHz, 1div; 20MHz- 100MHz, 1.5 div	DC-20MHz, 1div; 20MHz- 60MHz, 1.5 div
Trig sensitivity auto	30Hz-100Hz,1.5div; 100Hz-20MHz, 1div 20MHz-100MHz, 1.5 div	30Hz-100Hz,1.5div; 100Hz-20MHz, 1div 20MHz-60MHz, 1.5 div
Trig sensitivity TV	1.5div	
External Trig sensitivity	<20MHz: 50mVp-p >20MHz (bandwidth) 150mVp-p	
TV external	150mV	
Level adjusted range	Norm. following trig signal; auto ≥4div	
SMT technology, MCU controlled		
Switched power supply, line in voltage can vary between 90 to 250V		



Analog Oscilloscope

OOSC9222

- 2 channels, 20 MHz.
- Auto sweep circuit in full frequency bandwidth in trigger system.
- Flexible trig mode to select one signal or external input signal trig.
- Alt trig function to observe two different signals synchronized.
- Trig output and output the signal of CH1 or CH2.

Model	OOSC9222	
Vertical System	Mode	Y1, Y2, Alt, Chop, sum, X-Y
	Deflection (Y1 or Y2)	5 mV/div～10 V/div, 1-2-5, 11 steps, 5%
	Magnification	×5 ± 10%
	Bandwidth	AC: 10 Hz～20 MHz -3 dB
	Bandwidth at Mag	AC: 10 Hz～5 MHz -3 dB
	Input Capacitance	1±5%MΩ // ≤30 pF (direct)
	Max. Safe Voltage	400 V (DC + AC p-p)
Trigger	Trigger Source	Y1, Y2, Alt, Line, Ext
	Coupling	AC/DC (Ext) normal / TV
	Polarity	+, -
	Sync Frequency	Auto 50 Hz～20 MHz
Horizontal	Sweep Mode	Auto, trig, trig lock, single time
	Sweep Rate	0.1 us/div ~ 0.2 s/div 20 steps (1-2-5) ±5%
	Expansion	×5 error ± 10%
X-Y	Signal Input	X: Y1 Y: Y2
	Deflection	The same with Y1
	Frequency Response	AC: 10 Hz ~ 1 MHz -3 dB DC: 0 ~ 1 MHz -3 dB
	Input Impedance	The same with Y1
	Input Voltage at Mag	The same with Y1
Z-Axis System	V Max	50 V (DC+AC p-p)
	Resistance	10 kΩ
	Frequency	DC ~ 5 MHz
Calibration	Wave Form	Square
	Range	0.5±2%Vp-p
	Frequency	1±2% kHz
Mechanic Character	Weight	7.2 kg
	Dimension	320 mm × 130 mm × 400 mm (WxHxD)

Automotive Diagnostic Equipment

OHAD4000

- 70 MHz bandwidth.
- 4 channel oscilloscope with isolated channels, 1 GSa/s real-time sampling rate.
- Designed and equipped for over 80 types of standard automotive measurement function (ignition action, sensors, bus diagnosis, start-up, charge, etc.).
- 2 mV-10 V/DIV high input sensitivity and large input range.
- Dynamic cursor tracking, waveform recording and replay function.
- USB 2.0 interface plug and play; no need for additional power supply; supports tablet and PC; support Windows 7, 8, 10, etc.; supports USBXI.

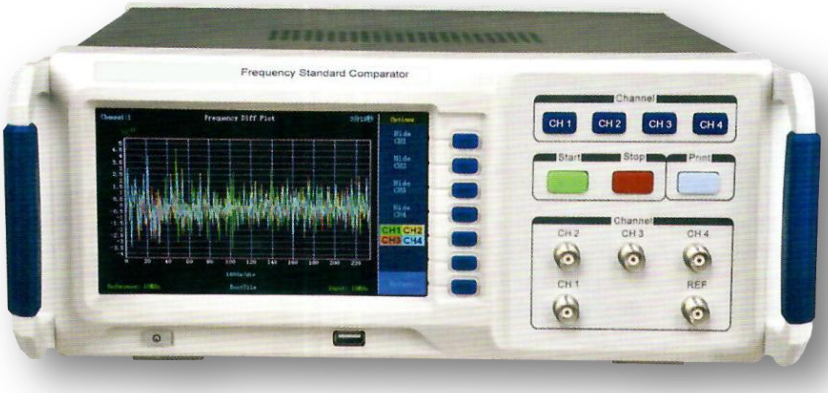
Model	OHAD4000
Bandwidth	70 MHz
Automotive Measurement Functior	Intake manifold vacuum and ignition, petrol fume adjusting valve vacuum and ignition, idle exhaust ignition, starting exhaust ignition Sensors: air flow meter, camshaft, crankshaft, distributor, lambda sensor, throttle position; CAN bus data examination, CAN bus signal integrity, CAN bus LH long time acquisition, LIN bus Performance: Petrol, diesel Starter and charging circuits
Channel	4
Real-time Sampling Rate	1 GSa/s
Memory Depth	64 K
Time Base Precision	±50 ppm
Time Base Range	2 ns/div-1000 s/div (1-2-4 sequences)
Input Impedance	1 MΩ, 25 pF
Input Sensitivity	2 mV/div～10 V/div
Vertical Resolution	8Bit
Vertical Displacement Range	2 mV ~ 10 V/div @ x1 probe; 20 mV ~ 100 V/div @ x10 probe; 200 mV ~ 1000 V/div @ x100 probe; 2 V ~ 10000 V/div @ x1000 probe
DC Gain Accuracy	±3%
Bandwidth limit	20 MHz
Trigger Mode	Edge, pulse, video, alternative
Trigger Source	CH1, CH2, CH3, CH4
Waveform Signal Process	+, -, x, ÷, FFT, invert
Cursors Measurement	Cross, trace, horizontal, vertical
Auto Measurement	Vpp, Vamp, Vmax, Vmin, Vtop, Vmid, Vbase, Vavg, Vrms, Vcrms, preshoot, overshoot, frequency, period, rise time, fall time, positive width, negative width, duty cycle.
Volume	175 mm x 105 mm x 25 mm
Weight	0.9 kg

Accessories

OHAD4000-A1	Large Dolphin / Gator Clip
OHAD4000-A2	Auto High-Pressure Ignition Probe
OHAD4000-A3	Acupuncture Probe Set
OHAD4000-A4	Dolphin/Gator Clip Cable
OHAD4000-A5	Aluminum Case
OHAD4000-A6	Multimeter Probe
OHAD4000-A7	Auto Test Cable
OHAD4000-A8	Coil-on-Plug Extension Cord (with Earth Cord)
OHAD4000-A9	65 A Current Clamp
OHAD4000-A10	20: 1 Attenuator
OHAD4000-A11	Break Out Leads
OHAD4000-A12	Car Power Adapter
OHAD4000-A13	650 A Current Clamp
OHAD4000-A14	Paper Case

OHAD4000 Accessory Kit

Model No.	Accessory						
	OHAD4000-A14	**OHAD4000-A5**	**OHAD4000-A1**	**OHAD4000-A6**	**OHAD4000-A10**	**OHAD4000-A2**	**OHAD4000-A7**
OHAD4000 Kit I	1	0	1	1	0	1	1
OHAD4000 Kit II	0	1	2	2	2	1	4
OHAD4000 Kit III	0	1	4	4	4	4	4
OHAD4000 Kit IV	0	1	4	4	4	4	4
Model No.	**OHAD4000-A11**	**OHAD4000-A3**	**OHAD4000-A8**	**OHAD4000-A12**	**OHAD4000-A4**	**OHAD4000-A9**	**OHAD4000-A13**
OHAD4000 Kit I	0	1	0	0	3	0	0
OHAD4000 Kit II	1	1	0	0	2	0	0
OHAD4000 Kit III	1	1	4	1	2	0	0
OHAD4000 Kit IV	1	1	4	1	2	1	1



Frequency Standard Comparator

OFSC1300 Series

- With dual channel frequency difference measuring technique.
- Up to 4 measurement channels.
- Adjustable sampling time: 1 s to 10^8 s.
- Graphical interface, auto and real-time measurement of Allan Deviation.
- Measurements of daily fluctuation, booting characteristic, aging rate, accuracy, drift, frequency deviation, and difference of daily accuracy; by Cesium, Hydrogen, and Rubidium atomic clock.
- USB and LAN interface.

Model		OFSC1301	OFSC1304
Measuring Channel		1	4
Frequency		5 MHz, 10 MHz	
Input Amplitude		3 dBm ~ 13 dBm, input impedance: 50 Ω	
Max. Frequency Deviation		1×10^{-8}	
Comparison Uncertainty		5×10^{-13} / s	
		5×10^{-14} / 10 s	
		5×10^{-15} / 100 s	
		1×10^{-15} / 1000 s	
		5×10^{-16} / 10000 s	
Measuring Function		Allan standard deviation, accuracy, booting characteristic, aging rate, repeatability	
Built-in Frequency Counter		13 digits / s	
Port		USB: USB-type mouse, keyboard and USB disk	
		LAN: remote control	
General Characteristics	Voltage	220 (1 ± 10%)V	
	Frequency	50 (1 ± 5%)Hz	
	Power Consumption	65 VA max.	
	Working Temperature	10 ~ 30 ˚C	
	Weight	10.5 kg	
	Dimension	365 mm × 154 mm × 467 mm	

Accessories

OFSC1300-A1	Power Cord
OFSC1300-A2	BNC Testing Cable (x5)
OFSC1300-A3	CD (Software+ User Guide)
OFSC1300-A4	Network Cable
OFSC1300-A5	Connector TNC/BNC-JK (x5)

Frequency Counter
OFC3168

- Up to 3 channels, up to 16 GHz. (Maximum frequency measurement can reach to 16 GHz depending on option.)
- High accuracy; minimum measurement resolution 8 digits/s.
- Built-in 16 bit microcontroller for fast data processing.
- Statistics calculation functions: multi-average, maximum, minimum, ppm, standard deviation and Allan Variance

Model			OFC3168	
Measuring Functions	Frequency	CH1	0.001 Hz ~ 150 MHz	
		CH2	Options 3 GHz / 6.5 GHz / 12.4 GHz / 16 GHz	
		CH3	Options 3 GHz / 6.5 GHz / 12.4 GHz / 16 GHz	
	Display		8 digits/s	
	Period		8 ns ~ 1000 s	
	Pulse Width		50 ns ~ 1000 s	
	Duty Cycle		5% ~ 95%	
	Totalize		0 ~ 1×10^{13}	
Input	Dynamic Range		50 mVrms ~ 1.0 Vrms (sine), 150 mVpp ~ 4.5 Vpp (pulse)	
	Input Impedance		1 MΩ//35 pF or 50 Ω	
	Coupling Mode		AC or DC	
	Trigger Mode		Rising edge or falling edge	
	Input attenuation		×1 or ×10	
	Low-pass Filter		Stop frequency approx. 100 kHz	
	Trigger Level		-5.000 V ~ +5.000 V, step 5 mV	
Other Functions	High and Low Limits		"Limit" light ON shows the result out of range, OFF shows within range.	
	Statistics Calculation		Multi-average, max, min, ppm, SD, Allan Variance	
Standard Time Base	Accuracy		1×10^{-5}	
Channel Options			**Frequency Range**	**Dynamic range**
	3.0 GHz		100 MHz ~ 3 GHz	-27 dBm ~ + 19 dBm (100 MHz ~ 2.6 GHz); -15 dBm ~ + 19 dBm (2.6 GHz ~ 3.0 GHz)
	6.5 GHz		200 MHz ~ 6.5 GHz	-15 dBm ~ + 13 dBm
	12.4 GHz		6.5GHz ~ 12.4 GHz	-15 dBm ~ + 10 dBm
	16.0 GHz		6.5GHz ~ 16.0 GHz	-15 dBm ~ + 10 dBm
General Characteristics	Interface	Standard	RS-232	
	Power		AC 220 V (10%) or AC110 V (10%), 50 Hz (5%) or 60 Hz (5%)	
	Dimensions & Weight		375 mm × 105 mm × 235 mm; approx. 3.7 kg	

Accessories

OFC3168-A1	Power Cord
OFC3168-A2	BNC Testing Cable
OFC3168-A3	CD (Software+ User Guide)

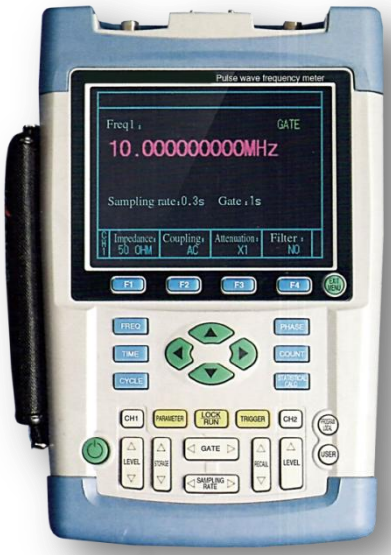
Options

OFC3168-A4	CH2 frequency range: 100 MHz to 3 GHz
OFC3168-A5	CH2 frequency range: 200 MHz to 6.5 GHz
OFC3168-A6	CH2 frequency range: 6.5 GHz to 12.4 GHz
OFC3168-A7	CH2 frequency range: 6.5 GHz to 16 GHz
OFC3168-A8	CH3 frequency range: 100 MHz to 3 GHz
OFC3168-A9	CH3 frequency range: 200 MHz to 6.5 GHz
OFC3168-A10	CH3 frequency range: 6.5 GHz to 12.4 GHz
OFC3168-A11	CH3 frequency range: 6.5 GHz to 16 GHz

Frequency Counter
OFC2038

- 2 channels; frequency measurement up to 3 GHz.
- Built-in microprocessor and micro-SCM for smart and precise measurement.
- Compact, lightweight, easy to handle.

Model		OFC2038
Frequency Range		1 Hz ~ 3 GHz
Cycle Measurement		10 ns - 1 s
Count Capability		10^8 - 1
Input Impedance		Channel A 1 MΩ//40 pF Channel B 50 Ω
Input Coupling Mode		AC
Waveform Adaptability		Sine, triangle, pulse
Dynamic Of Input Voltage	Channel A	30 mVrms ~ 250 Vp-p
	Channel B	30 mVrms ~ 1 Vrms
Frequency Measurement	Channel A	1 Hz ~ 10 MHz / 100 MHz
	Channel B	100 MHz ~ 1 GHz / 1.5 GHz
	Channel A Low Pass Filter	—3 dB bandwidth is about 100 kHz
	Channel A Attenuation	×1 or ×20
	Measurement Error	± time base error ± trigger error ± LSD LSD= $\frac{100\text{ns}}{\text{Strobe Time}} * \text{measured frequency (or measured period)}$
	Trig Error	For signal noise of 40 dB, trigger error ≤0.3%
	Strobe Time	10 ms, 100 ms, 1 s, 10 s
	Count Capability	0 ~ 99, 999, 999
	Crystal Vibrator Frequency	10 MHz
	Frequency Stability Of Crystal Vibrator	1×10^{-5} / d
	Ext Input Frequency	10 MHz
	Ext Frequency Input Amplitude	>1 Vp-p
	Display	8 digits high bright, 0.5-inch numeral tube, 3 units LED indicator, a strobe LED indicator and an external frequency mark LED indicator;
Mechanic Character	Dimension	90 mm × 280 mm × 240 mm (H x W x D)
	Weight	1.5 kg
Low pass filter and attenuator in pre-position circuit.		
Backwards count, fast and precise measurement.		



Handheld Frequency Counter

OHFC3315

- 3 channels, dual intermediate frequencies for CH1 and CH2; pulse wave (continuous wave) on CH3.
- High precision measurement; crystal accuracy up to 1 x 10^{-9} input frequency/s.
- Measurement functions: frequency, time, phase, period, positive and negative pulse width, duty, sum, etc.
- Analysis, auto limit test, max, min, average, max absolute deviation, single absolute deviation, relative deviation, Allen Variance, standard deviation, and RMS.
- 5.7-inch, 640 x 480 TFT display.

Model		OHFC3315
CH1, CH2	Measurement Frequency Range	0.00 1 Hz ~ 225 MHz
	Time Interval	5 ns ~ 100000 s
	Range of Cumulative Count	Counting capacity: 1×10^{15}
	Dynamic range	Sine wave: 30 mVrms ~ 1.5 rms
		Pulse wave: 120 mVp ~ p ~ 4.5 Vp-p
	Accuracy	Frequency measurement accuracy: [± (1 ns / gate-time) ± time base error] × input frequency
		Time base error: $\pm3\times10^{-9}$ / day (or 3.5×10^{-14} / s)
		Time interval measurement accuracy: 1 ns time base error × the measured time interval
	Resolution	Resolution of frequency measurement: (0.1 ns/gate-time) × input frequency
		Resolution of time interval: 0.1 ns
CH3	Input Impedance	50 Ω
	Range of Frequency Measurement	200 MHz ~ 3 GHz
	Dynamic Range	Sine wave: -17 dBm ~ + 13 dBm
EXT Trig Input	Input Impedance	≥1 k
	Input Level	TTL
	Pulse Width	≥200 ns
INT Time Base	Frequency	10 MHz
FSB	Stableness	3×10^{-9} / day (or 1×10^{-9} / day)
Scale Input	Frequency	10 MHz
	Range	3.3 V logic level
Physical	Power Supply	AC110 V-240 V/45-60 Hz
	Lithium Batteries	7.4 V / 4 A, lasting working time ≥4 hours
	Dimension	64 mm × 169 mm × 256 mm (H x W x D)
	Weight	Approx. 2 kg

Logic Analyzer
OLA3200

- 32 data sampling channels, 2 external clock channels.
- Start, trigger, and delay functions for effective data tracking and recording.
- Large scale integrated circuits, FPGA, SOPC; high speed, large memory.
- Fast and effective debugging tool for hardware and software of MCU.
- 5.7-inch color LCD display.
- USB device and RS-232 interface.

Model			OLA3200
Input	Input Channel		32 data sampling channels, 2 external clock channels
	Threshold Voltage		6 independent and adjustable threshold voltages
			Adjustable Range: -6 V ~ +6 V
			Resolution: 0.1 V
	Input Impedance		Resistance >100 k, Capacitor <8 pf
Sample/Memory	Sampling Rate	Timing Rate	1 Hz ~ 100 MHz (Period 10 ns ~ 1 s), Resolution: 10 ns
		State Rate	1 Hz ~ 35 MHz
	Sampling Phase		Rising edge, falling edge
	Memory Depth		256 kbytes / channel
Trigger	Trigger Condition		32 bit start-select, 32bits start-compare word
	Event Count		1 ~ 999 times
	Memory Delay		1 ~ 260000 sampling cycles
Pattern Generator	Pattern Type		CH00 to CH15 are counters with adding 1
			CH16 to CH29 are shift pulse
			CH30 to CH31 monitor external clk1 and clk2
	Pattern Rate		Frequency: 1 Hz ~ 50 MHz (period 20 ns ~ 1 s) resolution: 10 ns
General Characteristics	Power		AC220 V (1 ± 10%), 50 Hz (1 ± 5%), ≤10 VA
	Display		5.7-inch TFT LCD
	Dimension & Weight		329 mm × 283 mm × 155 mm; approx. 4.3 kg

Accessories

OLA3200-A1	3-Core Power Cable
OLA3200-A2	Test Hook (x40)
OLA3200-A3	Test Hook Connecting Cable (x40)
OLA3200-A4	50 Wire Cables and Connectors (x2)
OLA3200-A5	Input Transferring Boxes (x2)
OLA3200-A6	CD (Software + User Guide)

Power Quality Analyzer

OHPQ2108

- Measurement and analysis of power system quality; measured parameters: voltage, current, frequency, crest factor, dip and swell, power and energy, imbalance, harmonic, interruption.
- Monitoring of Vrms, Arms, harmonics, dip, swell, imbalance, interruption, for time duration of 2 hours to 7 days.
- 8 GB memory card.
- USB, LAN interface.

Model		OHPQ2108		
Voltage Input	Input Channels	4 (3 phase + neutral) DC coupling		
	Max. Input Voltage	1000 Vrms		
	Range of nominal voltage	50 to 500 V		
	Max pulse peak voltage	6 kV		
	Bandwidth	>3 kHz		
	Input Impedance	4 MΩ / 5 pF		
Current Input	Numbers of Input	4 (3 phase + neutral) DC coupling		
	Type	Clamp Current Sensor with mV output		
	Input Range	1 to 3000 Arms with supplied current clamp		
	Input Impedance	50 kΩ		
	Bandwidth	>3 kHz		
Sampling System	Resolution	8 channels 16 bits AD		
	Sampling Rate	20 kS/s for each channel, 8 channels sample synchronously		
	RMS Sampling	5000 points for 10 / 12 cycles (according to IEC 61000-4-30)		
	Pl Sync	4096 points for 10 / 12 cycles (according to IEC 61000-4-7)		
Measurement		**Measurement Range**	**Resolution**	**Accuracy**
Voltage/Current/ Frequency	Vrms (AC+DC)	1 ~ 1000 Vrms	0.1 Vrms	±0.5% of nominal voltage
	Vpk	1 ~ 1400 Vpk	0.1 Vpk	±0.5% of nominal voltage
	V (Crest Factor)	1.0 ~ >2.8	0.01	±5%
	Arms (AC)	1 ~ 1000 A/3000 A/SOOOA	1 A	±1% ± 2 A
		1 ~ 100 A	0.1 A	±1% ± 0.2 A
	Apk	1 ~ 4000 Apk	1 A	±1% ± 2 A
	A (Crest Factor)	1 ~ 10	0.01	±5%
	Frequency	42.5 ~ 57.5 Hz (50 Hz nominal)	0.0 1 Hz	±0.01 Hz
		51 ~ 69 Hz (60 Hz nominal)	0.0 1 Hz	±0.01 Hz
Dips & Swells	Vrms1/2	0 ~ 200% of nominal voltage	0.1 Vrms	±1%
	Arms1/2	1 ~ 3000 A	1 A	±1% ±2 A
	Threshold levels	Threshold is settable according to nominal voltage percentage detectable events type: Dips, Swells, Interruption, Voltage Rapid Change		
	Duration	Hour - minute - second - microsecond	0.5 period	1 period
Harmonic	Harmonic Number	1 ~ 50		
	Harmonic Voltage	0.0 ~ 100.0%	0.10%	±0.1% ± nx0.1%
	Harmonic Current	0.0 ~ 100.0%	0.10%	±0.1% ± nx0.1%
	THO	0.0 ~ 100.0%	0.10%	±2.5%
	DC Relative	0.0 ~ 100.0%	0.10%	±0.2%
	Frequency	0 ~ 3500 Hz	1 Hz	1 Hz
	Phase	-360 ° ~ 0 °	1 °	± nx1.5 °
Power and Energy	Active Power/Apparent Power/Reactive Power	1.0 ~ 20.00 MW	0.1 kW	±1.5 ±10 digits
	Energy	0.00 kWh ~ 200 GWh	10 Wh	±1.5 ±10 digits
	Power Factor	0 ~ 1	0.01	±0.03
Unbalance	Voltage	0.0 ~ 5.0%	0.10%	±0.5%
	Current	0.0 ~ 20.0%	0.10%	±1%
	Voltage Phase	-360 ° ~ 0 °	1 °	±2digits
	Current Phase	-360 ° ~ 0 °	1 °	±5digits
	Vrms	10 ~ 1000 Vrms	1 V	±2.2%
	Min. Test Time	Sous		
	Sampling Rate	20 kS/s		
Logger	Recording	User-defined parameters for 4 phases at the same time		
	Memory	Data stored in TF card, 8GB		
Logger	Duration Time	2 hrs to 1 year		
	Interval	1 s to 1 hrs		

Model		OHPQ2108
Wire Combinations	1Ø + NEUTRAL	Single phase with neutral
	1Ø SPLIT PHASE	Split phase
	1Ø IT NO NEUTRAL	Single phase system with two phase voltages without neutral
	3Ø WYE	3-phase 4-wire system, Y type
	3Ø DELTA	3-phase 3-wire system delta (Delta)
	3Ø IT	3-phase Y type without neutral
	3Ø HIGH LEG	4-wire 3-phase delta system (Delta) with center tapped high leg
	3Ø OPEN LEG	Open-delta (Delta)3-wire system with two transformer windings
	2-ELEMENT	3-phase 3-wire system without current sensor on phase L2 / B (2 Watt meter method)
	2 1/2-ELEMENT	3-phase 4-wire system without voltage sensor on phase L2 / B
General Characteristics		
Display	Screen	Color TFT LCD
	Size	5.6-inch
	Resolution	320 x 240
	Brightness	Adjustable
Housing	Protection	Protection shield, strong
	IP	IP51, accords IEC60529
Interface	USB Host	Download file to PC by U disk for analyze with PC software
	LAN	For remote control of the Analyzer and measurement data transmission.
Memory	Flash Memory	128 MB
	TF Card	Standard 8G
Mechanical	Dimension	262 x 173 x 66 mm
	Weight	1.6 kg
Environment	Working temperature	0 ˚C ~ 40 ˚C
	Storage temperature	-20 ˚C ~ 60 ˚C
	Humidity	90% relative humidity
Power	Adapter input	90 ~ 264 V
	Adapter output	9 V 2.2 A
	Battery	Rechargeable NI-MH 7.2 V 3.8 Ah
	Battery Working Time	>7 hours
	Battery Charge Time	4 hours
Standard	Measurement Method	IEC61000-4-30 Class-S
	Measurement Performance	IEC61000-4-30 Class-S
	Power Quality Monitoring	EN50160
	Flicker	IEC61000-4-15
	Harmonic	IEC61000-4-7
Electrical Safety	Comply with	IEC61010-1, Safety Degree: 600 V CAT IV 1000 V CAT III
	Max. voltage at Voltage Input	600 V CAT IV 1000 V CAT III
	Max. voltage at Current Input	30 V

Power Quality Analyzer
OHPQ2113

- Measurement and analysis of power system quality: voltage/current/frequency, crest factor, dips and swell, power/energy, unbalance, harmonic, inter-harmonic, transient voltage, inrush current measurement, flicker, interruption, 400 Hz.
- Captures waveforms at high-resolution during a variety of disturbances, maximum 100 events, sample rate 20 kSa/s
- Captures the surge currents that occur in a large or low-impedance load.
- Monitors Vrms, Arms, harmonics, flicker, dip, swell, rapid voltage change, interruption, unbalance; time duration of 2 hours to 7 days.
- 8 GB memory card, USB, LAN interface.

Model		OHPQ2113		
Display	Screen	Color TFT LCD		
	Size	5.6-inch		
	Resolution	320 × 240		
	Brightness	Adjustable		
	Housing			
	Protection	Protection shield, strong		
	IP	IP51, accords IEC60529		
Interface	USB Host	Download file to PC by U disk for analyze with PC software		
	LAN	For remote control of the Analyzer and measurement data transmission.		
Memory	Flash Memory	128 MB		
	TF Card	Standard 8G		
Mechanical	Dimension	262 mm × 173 mm × 66 mm		
	Weight	1.6 kg		
Environment	Working temperature	0 °C ~ 40 °C		
	Storage temperature	-20 °C ~ 60 °C		
	Humidity	90% relative humidity		
Power	Adapter input	90 ~ 264 V		
	Adapter output	12 V 2 A		
	Battery	Rechargeable NI-MH ion 7.2 V 3.8 Ah		
	Battery Working Time	>7 hours		
	Battery Charge Time	4 hours		
Standard	Measurement Method	IEC61000-4-30 Class-S		
	Measurement Performance	IEC61000-4-30 Class-S		
	Power Quality Monitoring	EN50160		
	Flicker	IEC61000-4-15		
	Harmonic	IEC61000-4-7		
Electrical Safety	Complies with	IEC61010-1, Safety Degree: 600 V CAT IV 1000 V CAT III		
	Max. voltage at Voltage Input	600 V CAT IV 1000 V CAT III		
	Max. voltage at Current Input	42 Vpk		
Wire Combinations	1Ø+NEUTRAL	Single phase with neutral		
	1Ø SPLIT PHASE	Split phase		
	1Ø IT NO NEUTRAL	Single phase system with two phase voltages without neutral		
	3Ø WYE	3-phase 4-wire system, Y type		
	3Ø DELTA	3-phase 3-wire system delta (Delta)		
	3Ø IT	3-phase Y type without neutral		
	3Ø HIGH LEG	4-wire 3-phase delta system (Delta) with center tapped high leg		
	3Ø OPEN LEG	Open-delta (Delta) 3-wire system with two transformer windings		
	2-ELEMENT	3-phase 3-wire system without current sensor on phase L2 / B (2 Watt meter method)		
	2 1/2-ELEMENT	3-phase 4-wire system without voltage sensor on phase L2 / B		
Voltage Input	Input Channels	4 (3 phase + neutral) DC coupling		
	Max. Input Voltage	1000 Vrms		
	Range of nominal voltage	50 to 500 V		
	Max pulse peak voltage	6 kV		
	Bandwidth	>3 kHz		
	Input Impedance	4 MΩ / 5 pF		
Current Input	Numbers of Input	4 (3 phase + neutral) DC coupling		
	Type	Clamp Current Sensor with mV output		
	Input Range	1 to 3000 Arms with supplied current clamp		
	Input Impedance	50 kΩ		
	Bandwidth	3 kHz		
Sampling System	Resolution	8 channels 16 bits AD		
	Sampling Rate	20 kS/s for each channel, 8 channels sample synchronously		
	RMS Sampling	5000 points for 10/12 cycles (according to IEC 61000-4-30)		
	PLL Sync	4096 points for 10/12 cycles (according to IEC61000-4-7)		
Measurement		**Measurement Range**	**Resolution**	**Accuracy**
Voltage, Current, Frequency	Vrms (AC+DC)	1 ~ 1000 Vrms	0.1 Vrms	±0.5% of nominal voltage
	Vpk	1 ~ 1400 Vpk	0.1 Vpk	±0.5% of nominal voltage
	V (Crest Factor)	1.0 ~ 2.8	0.01	±5%

Measurement		Measurement Range	Resolution	Accuracy
Voltage, Current, Frequency	Arms (AC)	1 ~ 1000 A/3000 A/5000 A	1 A	±1% ± 2 A
		1 ~ 100 A	0.1 A	±1% ± 0.2 A
	Apk	1 ~ 4000 Apk	1 A	±1% ± 2 A
	A (Crest Factor)	1 ~ 10	0.01	±5%
	Frequency	42.5 ~ 57.5 Hz (50 Hz nominal)	0.0 1 Hz	±0.0 1 Hz
		51 ~ 69 Hz (60 Hz nominal)	0.0 1 Hz	±0.0 1 Hz
Dips & Swells	Vrms 1/2	0 ~ 200% of nominal voltage	0.1 Vrms	±1%
	Arms 1/2	1 ~ 3000 A	1 A	±1% ±2 A
	Threshold levels	Threshold is settable according to nominal voltage percentage		
		Detectable events type: Dips, Swells, Interruption, Voltage Rapid Change		
	Duration	Hour-minute-second-microsecond	0.5 period	1 period
Harmonic	Harmonic Number	1 ~ 50		
	Inter-Harmonic	1 ~ 49		
	Harmonic Voltage	0.0 ~ 100.0%	0.1%	±0.1% ± nx0.1%
	Harmonic Current	0.0 ~ 100.0%	0.1%	±0.1% ± nx0.1%
	THD	0.0 ~ 100.0%	0.1%	±2.5%
	DC Relative	0.0 ~ 100.0%	0.1%	±0.2%
	Frequency	0 ~ 3500 Hz	1 Hz	1 Hz
	Phase	-360° ~ 0°	1°	± nx1.5°
Power and Energy	Active Power / Apparent Power / Reactive Power	1.0 ~ 20.00 MW	0.1 kW	±1.5 ±10 digits
	Energy	0.00 kWh ~ 200 GWh	10 Wh	±1.5 ±10 digits
	Power Factor	0 ~ 1	0.01	±0.03
	Flicker			
	Pst (1 min), Pst, Plt, PF5	0.00 ~ 20.00	0.01	±5%
Imbalance	Voltage	0.0 ~ 5.0%	0.1%	±0.5%
	Current	0.0 ~ 20.0%	0.1%	±1%
	Voltage Phase	-360 ° ~ 0 °	1 °	±2 digits
	Current Phase	-360 ° ~ 0 °	1 °	±5 digits
Voltage Transient	Vpk	±6000 Vpk	1 V	±15%
	Vrms	10 ~ 1000 Vrms	1 V	±2.5%
	Min. Test Time	50 us		
	Sampling Rate	20 kS/s		
Inrush Current	Arms (AC + DC)	0 ~ 3000 Arms	0.1	±1% ± 5 digits
	Inrush Duration	6 s ~ 32 min selectable	10 ms	±20 ms
Logger	Recording	User-defined parameters for 4 phases at the same time		
	Memory	Data stored in TF card, 8GB		
	Duration Time	2 hrs to 1 year		
	Interval	1 s to 1 hrs		

Accessories

OHPQ2100-A1	Voltage Test Leads (x5)
OHPQ2100-A2	Alligator Clips (x5)
OHPQ2100-A3	CD (Software + User Guide)
OHPQ2100-A4	Power adapter and power patch cord
OHPQ2100-A5	Soft carry bag
OHPQ2100-A6	Hang strap

Options

Clamp Model	Appearance	Measurement Range	Output Voltage Ratio	Working Frequency	Accuracy	Safety	Clamp Radius	Dimensions (mm)
OHPQ2100-A7		5 A	10 mV/A	45 Hz ~ 55 Hz	0.2%	o	8 mm	158×43×24
OHPQ2100-A8		50 A	10 mV/A	50 Hz ~ 400 Hz	0.2%	o	8 mm	171×46×27
OHPQ2100-A9		100 A	1 mV/A	50 Hz ~ 400 Hz	0.2%	o	13 mm	174×52×27
OHPQ2100-A10		1 A ~ 1000 A	1 mV/A	40 Hz ~ 100 kHz	1%	CAT III 600 V	52 mm	111×216×45

Flexible Probes Mode	OHPQ2100-A11	OHPQ2100-A12
Appearance		
Primary Current Rating	3000 A	5000 A
Output Voltage Ratio	65 mV / 1000 A	50 mV / 1000 A
Measurement Range	15 A ~ 3000 A	20 A ~ 5000 A
Accuracy	±1% + position error	±1% + Position Error
Maximum Allowable Input	100 kA	100 kA
Phase Error	<±1°	<±1°
Noise	<2 mVrms (10 Hz ~ 10 kHz)	<2 mVrms (10 Hz ~ 10 Hz)
Frequency Characteristic	10 Hz ~ 10 kHz (-3 dB)	10 Hz ~ 10 kHz (-3 dB)
Weight	130 g	130 g
Length	200 cm	200 cm
CT Perimeter	50 cm	50 cm
Measurement Position Error	±2%	±2%

Programmable DC Power Supply

OPPS3000 Series

- 3 channels; two sets of 0-30 V adjustable voltage values and a set of fixed voltage values 2.5 V, 3.3 V and 5 V (optional).
- Four groups of LED displays: minimum resolution 1 mV/1 mA or 10 mV/10 mA.
- Digital control panel (rotary encoder switch); coarse a fine volume control.
- Selectable modes: independent, series and parallel modes.
- In tracking mode, output of CH1 and CH2 will automatically track each other in series or parallel modes. Doubled output voltage in series mode and doubled output current in parallel mode.
- USB standard interface, PC software.

Model		OPPS3031			OPPS3032			OPPS3051		
Output	Channel	CH1	CH2	CH3	CH1	CH2	CH3	CH1	CH2	CH3
	Voltage	0 ~ 30 V	0 ~ 30 V	2.5/3.3/ 5.0 V	0 ~ 30 V	0 ~ 30 V	2.5/3.3/ 5.0 V	0 ~ 30 V	0 ~ 30 V	2.5/3.3/ 5.0 V
	Current	0 ~ 3 A	0 ~ 3 A	3 A (fixed)	0 ~ 3 A	0 ~ 3 A	3 A (fixed)	0 ~ 5 A	0 ~ 5 A	5 A (fixed)
Fix voltage mode	Fluctuation Ratio	Voltage fluctuation ratio≤0.01% + 3 mV Load variation rate≤0.01% + 3 mV (rated current≤3 A) ≤0.02% + 5 mV (rated current＞3 A)								
	Ripple & Noise	≤1 mVrms (I≤3 A) (5 Hz ~ 1 MHz) ≤2 mVrms (I>3 A) (5 Hz ~ 1 MHz)								
	Recovery Time	≤100 μ S (Load change in 50%, the minimum load 0.5 A)								
	Temperature Coefficient	≤300 ppm/ ℃								
	Output Range	0 ~ setting voltage, Continuously adjustable								
Fix current mode	Fluctuation Ratio	Voltage fluctuation ratio≤0.2% + 3 mA Load variation rate≤0.2% + 3 mA								
	Ripple Current	≤3 mArms								
	Output Range	0 ~ setting current, Continuously adjustable								
Trace mode	Parallel Collection	Power Supply fluctuation ratio ≤0.01% + 3 mV								
		Load variation rate≤0.01% + 3 mV (rated current≤3 A ≤0.02% + 5 mV (rated current＞3 A)								
	Series Connection	tracking error ≤0.5%±10 mV (10 ~ 30 V no load, connection load≤300 mV) ≤0.5%±30 mV (0 ~ 9.99 V empty load, connection load≤300 mV)								
	Tracking Error	≤0.5%±10 mV						≤0.5%±50 mV		
Panel Meter	Display	voltage：32.000 V full scale,5 LED			voltage：32.000 V full scale,3 LED					
		current：3.200 A full scale, 4 LED			current：3.200 A full scale, 3 LED					
	Resolution Ratio	voltage：1 mV current：1 mA			voltage：10 mV current：10 mA			voltage：10 mV current：10 mA		
	Programming Precision (25±5 ℃)	voltage：± (0.03% reading + 10) mV current：± (0.3% reading + 10 mA)			voltage：± (0.2% reading + 3digits) (0 ~ 9.99 V) ±（0.5% readings + 2digits） (10 ~ 30 V) current：± (0.5% reading + 2digits) (0 ~ 3 A) ±（0.5% readings +5 A) (>3 A)					
	Reading Precision (25±5 ℃)	voltage：± (0.03% reading + 10digits) current：± (0.3% reading + 10digits)			voltage：± (0.2% reading + 3digits) (0 ~ 9.99 V) ±（0.5% readings + 2digit s） (10 ~ 30 V) current：± (0.5% reading + 2digits) (0 ~ 3 A) ±（0.5% readings +5 A) (>3 A)					
CH3	**Output Voltage**	(2.5 V/3.3 V/5 V)±8%								
	Output Current	3 A						5 A		
	Fluctuation Ratio (25±5 ℃)	Linearity rating≤25 mV Loading rating ≤25 mV								
	Ripple & Noise	≤2 mVrms								
Key lock		Yes								
Save/Recall		5 groups								
Power voltage		AC 100 V/120 V/220 V/230 V±10%， 50/60 Hz								
Size & weight		250 (W)×150 (H)×310 (D) mm ； about7 kg								

Options

OPPS3000-A1	Ch3: Fixed Voltage Value 2.5 V, 3.3 V And 5 V

Programmable DC Power Supply

OPPS1000 Series

- Low ripple and low noise.
- High resolution and accuracy.
- Built-in high-accuracy 5 1/2 voltmeter and milliohm meter.
- Supports high-accuracy and dynamic programming output.
- High-luminance VFD screen with two lines and four channels on the display.
- Standard SCPI protocol.
- Communication modes: RS232, RS485, USB.

Model	OPPS1051	OPPS1021	OPPS1012	OPPS1601
Input Rating	0-30 V, 0-5 A	0-75 V, 0-2 A	0-150 V, 0-1 A	0-6 V, 0-60 A
Load Regulation	<0.01%+0.5 mV, <0.01%+0.1 mA	<0.01%+0.5 mV, <0.01%+0.1 mA	<0.01%+0.5 mV, <0.01%+0.1 mA	<0.01%+1 mV, <0.01%+0.1 mA
Setting Value Resolution	0.5 mV, 0.1 mA	1 mV, 0.05 mA	2 mV, 0.01 mA	0.1 mV, 1 mA
Readback Value Resolution	0.1 mV, 0.01 mA	0.1 mV, 0.01 mA	1 mV, 0.01 mA	0.1 mV, 0.1 mA
Setting Value Accuracy	0.01%+2 mV, 0.05%+1 mA	0.01%+5 mV, 0.05%+0.5 mA	0.01%+10 mV, 0.05%+0.1 mA	0.01%+1 mV, 0.05%+6 mA
Readback Value Accuracy	0.02%+5 mV, 0.1%+5 mA	0.02%+15 mV, 0.05%+2 mA	0.02%+35 mV, 0.05%+1 mA	0.02%+2 mV, 0.05%+45 mA
Ripple	3 mVp-p, 2 mA rms	5 mVp-p, 1 mA rms	10 mVp-p, 0.5 mA rms	3 mVp-p, 15 mA rms
Voltmeter Accuracy	0-12 V Accuracy: 0.02%+2 mV; 0-58 V Accuracy: 0.02%+5 mV	0-12 V Accuracy: 0.02%+2 mV : 0-58 V Accuracy: 0.02%+5 mV	0-12 V Accuracy: 0.02%+2 mV; 0-58 V Accuracy: 0.02%+5 mV	0-12 V Accuracy: 0.02%+2 mV; 0-58 V Accuracy: 0.02%+5 mV
Milliohm meter Accuracy	10 W 0-1000 mΩ Accuracy: 0.2%+3 mΩ : 1000-10000 mΩ Accuracy: 0.2%+6 mΩ	10 W 0-1000 mΩ Accuracy: 0.2%+3 mΩ : 1000-10000 mΩ Accuracy: 0.2%+6 mΩ	10 W 0-1000 mΩ Accuracy: 0.2%+3mΩ : 1000-10000 mΩ Accuracy: 0.2%+6 mΩ	10 W 0-1000 mΩ Accuracy: 0.2%+3mΩ : 1000-10000 mΩ Accuracy: 0.2%+6 mΩ
Working Condition	0 ~ 40oC; 0 ~ 90%RH	0 ~ 40 ˚C; 0 ~ 90%RH	0 ~ 40 ˚C; 0 ~ 90%RH	0 ~ 40 ˚C; 0 ~ 90%RH
Power Required	AC 120 V/220 V+/-10%; 50/60 Hz	AC 120 V/220 V+/-10%; 50/60 Hz	AC 120 V/220 V+/-10%; 50/60 Hz	AC 120 V/220 V+/-10%; 50/60 Hz
Weight	6.5 kg	6.5 kg	6.5 kg	28 kg
Dimension W x H x D	214 mm x 101.5 mm x 365 mm	214 mm x 101.5 mm x 365 mm	214 mm x 101.5 mmx 365 mm	428 mm x 88 mm x 453.5 mm
Smart fan system fan will be automatically initiated according to the temperature				
Supports remote voltage compensation and multidata storage				
Supports external trigger input and output				
Power-on-self-test, software calibration and standard rack mount				

Model	OPPS1201	OPPS1081	OPPS1602	OPPS1351
Input Rating	0-30 V, 0-20 A	0-75 V, 0-8 A	0-15 V, 0-60 A	0-30 V, 0-35 A
Load Regulation	<0.01%+1 mV, <0.01%+0.1 mA	<0.01%+1 mV, <0.01%+0.1 mA	<0.01%+1 mV, <0.01%+0.1 mA	<0.01%+1 mV, <0.01%+0.1 mA
Setting Value Resolution	0.5 mV, 0.5 mA	1 mV, 0.2 mA	0.1 mV, 1 mA	0.5 mV, 0.5 mA
Readback Value Resolution	0.1 mV, 0.1 mA	0.1 mV, 0.1 mA	0.1 mV, 0.1 mA	0.1 mV, 0.1 mA
Setting Value Accuracy	0.01%+5 mV, 0.05%+2 mA	0.01%+10 mV, 0.05%+2 mA	0.01%+1 mV, 0.05%+6 mA	0.01%+5 mV, 0.05%+2 mA
Readback Value Accuracy	0.05%+2 mV, 0.02%+5 mA	0.02%+15 mV, 0.05%+8 mA	0.03%+3 mV, 0.05%+45 mA	0.03%+5 mV, 0.05%+25 mA
Ripple	5 mVp-p, 7 mA rms	7 mVp-p, 4 mA rms	4 mVp-p, 15 mA rms	5 mVp-p, 8 mA rms
Voltmeter Accuracy	0-12 V Accuracy: 0.02%+2 mV; 0-58 V Accuracy: 0.02%+5 mV	0-12 V Accuracy: 0.02%+2 mV; 0-58 V Accuracy: 0.02%+5 mV	0-12 V Accuracy: 0.02%+2 mV; 0-50 V Accuracy: 0.02%+5 mV	0-12 V Accuracy: 0.02%+2 mV; 0-58 V Accuracy: 0.02%+5 mV
Milliohm meter Accuracy	10 W 0-1000 mΩ Accuracy: 0.2%+3mΩ : 1000-10000 mΩ Accuracy: 0.2%+6 mΩ	10 W 0-1000 mΩ Accuracy: 0.2%+3mΩ : 1000-10000 mΩ Accuracy: 0.2%+6 mΩ	10 W 0-1000 mΩ Accuracy: 0.2%+3mΩ : 1000-10000 mΩ Accuracy: 0.2%+6 mΩ	10 W 0-1000 mΩ Accuracy: 0.2%+3mΩ : 1000-10000 mΩ Accuracy: 0.2%+6 mΩ
Working Condition	0 ~ 40 ˚C; 0 ~ 90%RH	0 ~ 40 ˚C; 0 ~ 90%RH	0 ~ 40 ˚C; 0 ~ 90%RH	0 ~ 40 ˚C; 0 ~ 90%RH
Power Required	AC 120 V/220 V+/-10%; 50/60 Hz	AC 120 V/220 V+/-10%; 50/60 Hz	AC 125 V/220 V+/-10%; 50/60 Hz	AC 125 V/220 V+/-10%; 50/60 Hz
Weight	28 kg	28 kg	45 kg	45 kg
Dimension W x H x D	428 mm x88 mm x 453.5 mm	428 mm x88 mm x 453.5 mm	482mm x 184.5mm x 531mm	482 mm x 184.5 mmx 531 mm
Smart fan system fan will be automatically initiated according to the temperature.				
Supports remote voltage compensation and multidata storage				
Supports external trigger input and output				
Power-on-self-test, software calibration and standard rack mount				

Model	OPPS1151	OPPS1111	OPPS1011
Input Rating	0-75 V, 0-15 A	0-100 V, 0-11 A	0-30 V, 0-1 A
Load Regulation	<0.01%+1 mV, <0.01%+0.1 mA	<0.01%+1 mV, <0.01%+0.1 mA	<0.01%+0.5 mV, <0.01%+0.1 mA
Setting Value Resolution	2 mV, 0.2 mA	2 mV, 0.2 mA	0.5 mV, 0.01 mA
Readback Value Resolution	0.1 mV, 0.1 mA	1 mV, 0.1 mA	0.1 mV, 0.001 mA
Setting Value Accuracy	0.01%+10 mV, 0.05%+1 mA	0.01%+15 mV, 0.05%+1 mA	0.01%+2 mV, 0.05%+0.1 mA
Readback Value Accuracy	0.03%+15 mV, 0.05%+12 mA	0.03%+25 mV, 0.05%+10 mA	0.02%+5 mV, 0.02%+1 mA
Ripple	6 mVp-p, 3 mA rms	8 mVp-p, 2.5 mA rms	10 mVp-p, 0.5 mA rms
Voltmeter Accuracy	0-12 V Accuracy: 0.02%+2 mV; 0-58 V Accuracy: 0.02%+5 mV	0-12 V Accuracy: 0.02%+2 mV; 0-58 V Accuracy: 0.02%+5 mV	0-12 V Accuracy: 0.02%+2 mV; 0-50 V Accuracy: 0.02%+5 mV
Milliohm meter Accuracy	10 W 0-1000 mΩ Accuracy: 0.2%+3mΩ : 1000-10000 mΩ Accuracy: 0.2%+6 mΩ	10 W 0-1000 mΩ Accuracy: 0.2%+3mΩ : 1000-10000 mΩ Accuracy: 0.2%+6 mΩ	10 W 0-1000 mΩ Accuracy: 0.2%+3mΩ 1000-10000 mΩ Accuracy: 0.2%+6 mΩ
Working Condition	0 ~ 40 ˚C; 0 ~ 90%RH	0 ~ 40 ˚C; 0 ~ 90%RH	0 ~ 40 ˚C; 0 ~ 90%RH
Power Required	AC 125 V/220 V+/-10%; 50/60 Hz	AC 125 V/220 V+/-10%; 50/60 Hz	AC 120 V/220 V+/-10%; 50/60 Hz
Weight	45 kg	45 kg	6.5 kg
Dimension W x H x D	482 mm x 184.5 mm x 531 mm	482 mm x 184.5 mm x 531 mm	214mm x 108 mm x 365 mm
Smart fan system fan will be automatically initiated according to the temperature			
Supporting remote voltage compensation and multidata storage			
Supporting external trigger input and output			
Power-on-self-test, software calibration and standard rack mount			

Accessories

OPPS1000-A1	(DB9) TTL to RS232 Interface Converter
OPPS1000-A2	(DB9) TTL to RS485 Interface Converter
OPPS1000-A3	(DB9) TTL to USB Interface Converter

OPPS1000-A1

TTL to RS232			
RS232		TTL	
Pin No.	State	Pin No.	State
1	NC	1	VCC (+5 V)
2	RXD	2	RXD (receive)
3	TXD	3	TXD (send)
4	VCC1	4	NC
5	GND	5	GND
6	NC	6	NC
7	VCC2	7	NC
8	NC	8	NC
9	NC	9	NC

The pin 4 and 7 are paralleled. Each is provided +12V power./The pin 4 is provided +12V when the DTR is enable in process of programming./The pin 7 is provided +12V when the RTS is enable in process of programming./The DTR default is set enable in most serial communication controls.Pins 4 and 7 are paralleled. Each is provided +12 V power./ Pins 4 is provided +12 V when the DTR is enable in process of programming./ Pin 7 is provided +12 V when the RTS is enable in process of programming./ The DTR default is set enable in most serial communication controls.

OPPS1000-A2

TTL to RS485			
Pin No.	**State**	**Pin No.**	**State**
1	A (+)	1	VCC (+5 V)
2	B (-)	2	RXD (receive)
3	NC	3	TXD (send)
4	NC	4	NC
5	GND	5	GND
6	Vout (+5 V)	6	NC
		7	NC
		8	NC
		9	NC
In RS485: Only to connect the pin 1 and pin 2 is able to get the RS485 communicate normally well./The pin 5 and pin 6 provides 5V/100Ma for external use.			

OPPS1000-A3

TTL to USB			
USB		**TTL**	
Pin No.	**State**	**Pin No.**	**State**
1	Vcc (+5 V)	1	VCC (+5 V)
2	-D	2	RXD (receive)
3	+D	3	TXD (send)
4	GND	4	NC
		5	GND
		6	NC
		7	NC
		8	NC
		9	NC
In USB: The type A interface of the standard USB can be directly connected USB interface of the PC. The USB driver can be installed.			

Power Supply
Four Output DC Regulated Power Supply
OPS4330

- Four channels of DC regulated output; two adjustable and two fixed channels.
- Four LED displays for displaying output voltage and current values of each channel.
- Two adjustable outputs with constant voltage and current; automatic status change.
- Adjustable current limiter; overload and short circuit protection.
- Two channels of output voltage can be in series or parallel; can track voltage and current (in parallel) with master power.

Model			OPS4330	
Specification	Output Voltage	Master	0 ~ 30 V	
		Slave		
		Fix	5 V	12 V
	Output Current	Master	0 ~ 3 A	
		Slave		
		Fix	3 A	3 A
Load Effect	CV		5 x 10^{-4} + 2 mV	
	CC		20 mA	
Source Effect	CV		1 x 10^{-4} + 0.5 mV	
	CC		1 x 10^{-3} + 5 mA	
Ripple and Noise	CV		1 mVrms	
	CC		1 mArms	
	Display Accuracy		± 1% + 2 word	
	Work Temperature		0 ~ 40 °c	
	MTBF Reliability		≥2000h	
	Power Voltage		AC 220 V ± 10%; 50 Hz ± 5%	
Mechanical Characteristics	Dimensions		160 mm x 270 mm x 320 mm (HxWxD)	
	Weight		9 kg approx.	

Options

OPS4330-A1	Adjustable Current Limit Point

Power Supply
Triple Output DC Regulated Power Supply
OPS3530

- Three channels output, two adjustable, one fixed.
- Four LED indicate two channels of output voltage and current value of each.
- Two adjustable output has constant voltage and current and auto-switched.
- Overload, short circuit, adjustable current limit protection.
- Two channels of output voltage can be in series or parallel arbitrarily, and track voltage and current with master power.

Model			OPS3530
Specification	Output Voltage	Master	0 ~ 30 V
		Slave	
		Fix	5 V
	Output Current	Master	0 ~ 5 A
		Slave	
		Fix	5 A
Load Effect	CV		5 x 10^{-4} + 2 mV
	CC		20 mA
Source Effect	CV		1 x 10^{-4} + 0.5 mV
	CC		1 x 10^{-3} + 5 mA
Ripple and Noise	CV		1 mVrms
	CC		1 mArms
	Display Accuracy		± 1% + 2 word
	Work Temperature		0 ~ 40 ˚c
	MTBF Reliability		≥2000h
	Power Voltage		AC 220 V ± 10%; 50 Hz ± 5%
Mechanical Characteristics	Dimensions		160 mm x 270 mm x 320 mm (HxWxD)
	Weight		9 kg approx.

Options

OPS3530-A1	Adjustable Current Limit Point

Power Supply
One Output Channel DC Power Supply
OPS1532

- One channel output.
- Two LED digital display output voltage and current value for each one.
- Constant voltage, current-stabilizer; the two states can be auto-changeable.
- Current-limiting adjustable protection.

Model		OPS1532
Specification	Output Voltage	0 ~ 32 V
	Output Current	0 ~ 5 A
Load Effect	CV	≤5 x 10^{-4} + 2 mV
	CC	≤20 mA
Source Effect	CV	≤1 x 10^{-4} + 0.5 mV
	CC	≤1 x 10^{-3} + 5 mA
Ripple And Noise	CV	≤1 mVrms
	CC	≤1 mArms
Display Accuracy	≤ ± 1% + 2 words	
Working Temperature	0 ~ 40 ˚c	
MTBF Reliability	≥2000h	
Dimensions	165 mm x 140 mm x 290 mm (HxWxD)	
Weight	5 kg approx.	

Options

OPS1532-A1	Adjustable Current Limit Point

Programmable DC Electronic Load

OPL Series

- Six high speed operation modes: CC, CR, CV, CW, CC+CV, CR+CV.
- Over current, over voltage, over power, overheating and polarity reversal protection.
- High-luminance vacuum fluorescent display (VFD) screen with a two-line, four-channel display.
- Battery test and short-circuit test functions.
- Rising edge and falling edge dynamic testing.
- Can edit arbitrary waveforms in list function.
- Available with RS232, RS485, USB serial interfaces.

Model		OPL1511		OPL1821		OPL2041	
Input Rating	Power	150 W		1800 W		200000 W	
	Current	0-30 A		0-240 A		0-1000 A	
	Voltage	0-150 V		0-150 V		0-150 V	
CC Mode	Range	0-3 A	0-30 A	0-24 A	0-240 A	0-100 A	0-1000 A
	Resolution	0.1 mA	1 mA	1 mA	10 mA	1 mA	10 mA
	Accuracy	0.03%+0.05%FS	0.03%+0.05%FS	0.05%+0.05%FS	0.1%+0.05%FS	0.1%+0.1%FS	0.2%+0.5%FS
CV Mode	Range	0.1-19.999 V	0.1-150 V	0.1-19.999 V	0.1-150 V	0.1-19.999 V	0.1-150 V
	Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV
	Accuracy	0.03%+0.02%FS	0.03%+0.02%FS	0.03%+0.02%FS	0.03%+0.02%FS	0.03%+0.02%FS	0.03%+0.02%FS
CR Mode (Voltage and Current Input Value >=10% Full Measurement)	Range	0.03-10KΩ	0.03-5KΩ	0.03-10K Ω	0.03-5K Ω	0.03 -2K Ω	0.03 -5K Ω
	Resolution	16 bit	16 bit	16 bit	16 bit	16 digits	16 digits
	Accuracy	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.2%+0.25%FS	0.25%+0.25%FS
CW Mode (Voltage and Current Input Value >=10% Full Measurement)	Range	0-150 W	0-150 W	0-1800 W	0-1800 W	0-15000 W	0-200000 W
	Resolution	1 mW	10 mW	1 mW	10 mW	10 mW	100 mW
	Accuracy	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.2%FS	0.2%+0.25%FS
Voltage Measurement	Voltage	0-19.999 V	0-150 V	0-19.999 V	0-150 V	0-19.999 V	0-150 V
	Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV
	Accuracy	0.015%+0.03%FS	0.015%+0.03%FS	0.015%+0.03%FS	0.015%+0.03%FS	0.015%+0.03%FS	0.015%+0.03%FS
Current Measurement	Current	0-3 A	0-30 A	0-24 A	0-240 A	0-100 A	0-1000 A
	Resolution	0.01 mA	0.1 mA	0. 1 mA	1 mA	10 mA	100 mA
	Accuracy	0.03%+0.05%FS	0.03%+0.08%FS	0.03%+0.05%FS	0.1%+0.1%FS	0.1%+0. 5%FS	0. 5%+0. 5%FS
Power Measurement (Voltage and Current Input Value >=10% Full Measurement)	Power	100 W	150 W	100 W	1800 W	100 W	200000 W
	Resolution	1 mW	10 mW	1 mW	10 mW	1 mW	100 mW
	Accuracy	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.2%+0. 5%FS	0.2%+0. 5%FS
Battery Test	Battery Input: 0.1-150 V; Max. Measurement: Capacity=999 AH; Resolution=0.1 mA; Test Range=1S-16H			Battery Input: 0.5-120 V; Max. Measurement: Capacity=999 AH; Resolution=0.1 mA; Time Range=1S-16H		Battery Input: 0.1-150 V; Max. Measurement: Capacity=999 AH; Resolution=1 mA; Time Range=1S-16H	
Dynamic Test	Transition List: 0-25 kHz; 2.5 A/uS; T1&T2: 60uS-999S; Accuracy: +15% offset+10%FS			Transition List: 0-25 kHz; 2.5 A/uS; T1&T2: 60uS-999S; Accuracy: +15% offset+10%FS		Transition List: 0-25 kHz; 5 A/uS; T1&T2: 60uS-999S; Accuracy: +15% offset+10%FS	
Current soft-startup Time	1 mS; 2 mS; 5 mS; 10 mS; 20 mS; 50 mS; 100 mS; 200 mS; 500 mS; 1000 mS Accuracy: +15% offset+10%FS			1 mS; 2 mS; 5 mS; 10 mS; 20 mS; 50 mS; 100 mS; 200 mS Accuracy: +15% offset+10%FS		1 mS; 2 mS; 5 mS; 10 mS; 20 mS; 50 mS; 100 mS; 200 mS Accuracy: +15% offset+10%FS	
Short Circuit	Current (CC)	3.3 A	33 A	26.4 A	264 A	110 A	1100 A
	Voltage (CV)	0 V		0 V		0 V	
	Resistance (CR)	55 mΩ		6 mΩ		2.3 mΩ	
Temperature	Operating	0 ~ 40 ℃		0 ~ 40 ℃		0 ~ 40 ℃	
	Nonoperating	-10 ℃ ~ 70 ℃		-10 ℃ ~ 70 ℃		-10 ℃ ~ 70 ℃	
Dimension	W x H x D (mm)	214 x 108 x 365		207 x 428 x 453.5		2050 x 800 x 600 x 10	
Weight	kg	3.5		31.6		3600	
Smart fan system will automatically activate based on changing ambient temperatures							
Soft-start time setting, activating the power supply in accordance with the set voltage value							
Supporting external trigger on either input or output							
External current waveform monitor terminal output terminal							
Supports remote voltage compensation and multi-data storage							
Power-on-self-test, software calibration and standard rack mountable							

Model	OPL1511	OPL3011	OPL3012	OPL3013	OPL6011	OPL6012	OPL1221	OPL1222	OPL1821	OPL1822	OPL2421	OPL2422
Power	150 W	300 W	300 W	300 W	600 W	600 W	1200 W	1200 W	1800 W	1800 W	2400 W	2400 W
Current	0-30 A	0-30 A	0-60 A	0-30 A	0-120 A	0-30 A	0-240 A	0-60 A	0-240 A	0-120 A	0-240 A	0-120 A
Voltage	0-150 V	0-150 V	0-150 V	0-500 V	0-150 V	0-500 V	0-150 V	0-500 V	0-150 V	0-500 V	0-150 V	0-500 V
Model	OPL3021	OPL3621	OPL3622	OPL3623	OPL6021	OPL6022	OPL6023	OPL6024	OPL6025	OPL1031	OPL1531	OPL1532
Power	3000 W	3600 W	3600 W	3600 W	6000 W	6000 W	6000 W	6000 W	6000 W	10KW	15KW	15KW
Current	0-480 A	0-240 A	0-120 A	0-500 A	0-240 A	0-120 A	0-240 A	0-120 A	0-480 A	0-500 A	0-500 A	0-240 A
Voltage	0-150 V	0-150 V	0-500 V	0-150 V	0-150 V	0-500 V	0-500 V	0-600 V	0-150 V	0-150 V	0-150 V	0-500 V
Model	OPL2031	OPL2032	OPL3531	OPL3532	OPL5031	OPL5032	OPL1041	OPL1042	OPL2041	OPL2042		
Power	20KW	20KW	35KW	35KW	50KW	50KW	100KW	100KW	200KW	200KW		
Current	0-500 A	0-240 A	0-500 A	0-240 A	0-500 A	0-240 A	0-500 A	0-240 A	0-1000 A	0-500 A		
Voltage	0-150 V	0-500 V	0-150 V	0-500 V	0-150 V	0-500 V	0-150 V	0-500 V	0-150 V	0-500 V		

Programmable LED DC Electronic Load

OLL Series

- Six high speed operation modes: CC, CR, CV, CW, CC+CV, CR+CV.
- Over current, over voltage, over power, overheating and polarity reversal protection.
- High-luminance vacuum fluorescent display (VFD) screen with two lines, four channel displays.
- Battery test and short-circuit test functions.
- Capable of rising edge and falling edge dynamic testing.
- LED mode for LED power driver test, steady reading, compatible with simulating the capacitances, sensitive driver.
- Edits arbitrary waveforms in list function
- Available with RS232/RS485/USB serial interfaces.

Model		OLL2011		OLL3011		OLL3012	
Input Rating	Power	200 W		300 W		300 W	
	Current	0-30 A		0-30 A		0-15 A	
	Voltage	0-150 V		0-150 V		0-500 V	
CC Mode	Range	0-3 A	0-30 A	0-3 A	0-30 A	0-3 A	0-15 A
	Resolution	0.1 mA	1 mA	0.1 mA	1 mA	0.1 mA	1 mA
	Accuracy	0.03%+0.05%FS	0.03%+0.05%FS	0.03%+0.05%FS	0.03%+0.05%FS	0.03%+0.05%FS	0.03%+0.05%FS
CV Mode	Range	0.1-19.999 V	0.1-150 V	0.1-19.999 V	0.1-150 V	0.1-19.999 V	0.1-500 V
	Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV
	Accuracy	0.03%+0.02%FS	0.03%+0.02%FS	0.03%+0.02%FS	0.03%+0.02%FS	0.03%+0.02%FS	0.03%+0.05%FS
CR Mode (Voltage and current input value >=10% full measurement)	Range	0.03-10K Ω	0.03-5K Ω	0.03-10K Ω	0.03-5K Ω	0. 3-10K Ω	0. 3-5K Ω
	Resolution	16 bit	16 bit	16 bit	16 bit	16 bit	16 bit
	Accuracy	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS
CW Mode (Voltage and current input value >=10% full measurement)	Range	0-200 W	0-200 W	0-300 W	0-300 W	0-300 W	0-300 W
	Resolution	1 mW	10 mW	1 mW	10 mW	1 mW	10 mW
	Accuracy	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS
Voltage Measurement	Voltage	0-19.999 V	0-150 V	0-19.999 V	0-150 V	0-19.999 V	0-500 V
	Resolution	1 mV	10 mV	1 mV	10 mV	1 mV	10 mV
	Accuracy	0.015%+0.03%FS	0.015%+0.03%FS	0.015%+0.03%FS	0.015%+0.03%FS	0.015%+0.03%FS	0.015%+0.05%FS
Current Measurement	Current	0-3 A	0-30 A	0-3 A	0-30 A	0-3 A	0-15 A
	Resolution	0.01 mA	0.1 mA	0.01 mA	0.1 mA	0.01 mA	0.1 mA
	Accuracy	0.03%+0.05%FS	0.03%+0.08%FS	0.03%+0.05%FS	0.03%+0.08%FS	0.03%+0.05%FS	0.03%+0.08%FS
Power Measurement (Voltage and current input value >=10% full measurement)	Power	100 W	200 W	100 W	300 W	100 W	300 W
	Resolution	1 mW	10 mW	1 mW	10 mW	1 mW	10 mW
	Accuracy	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS	0.1%+0.1%FS
Battery Test	Battery Input: 0.1-150 V; Max. Measurement: Capacity=999 AH; Resolution=0.1 mA; Test Range=1S-16H			Battery Input: 0.1-150 V; Max. Measurement: Capacity=999 AH; Resolution=0.1 mA; Test time=1S-16H		Battery Input: 0.1-150 V; Max. Measurement: Capacity=999 AH; Resolution=0.1 mA; Time Range=1S-16H	
Dynamic Test	Transition List: 0-25 kHz; 2.5 A/uS; T1&T2: 60uS-999S; Accuracy: +15% offset+10%FS			Transition List: 0-25 kHz; 2.5 A/uS; T1&T2: 60uS-999S; Accuracy: +15% offset+10%FS		Transition List: 0-25 kHz; 2.5 A/uS; T1&T2: 60uS-999S; Accuracy: +15% offset+10%FS	
Current soft-startup Time	1 mS; 2 mS; 5 mS; 10 mS; 20 mS; 50 mS; 100 mS; 200 mS; 500 mS; 1000 mS Accuracy: +15% offset+10%FS			mS; 2 mS; 5 mS; 10 mS; 20 mS; 50 mS; 100 mS; 200 mS; 500 mS; 1000 mS Accuracy: +15% offset+10%FS		1 mS; 2 mS; 5 mS; 10 mS; 20 mS; 50 mS; 100 mS; 200 mS; 500 mS; 1000 mS Accuracy: +15% offset+10%FS	
LED Test	Press shift+ ▲button to enter Led test. Repeat to escape the LED test. A 'D' character shows on lower right of the display in the LED test.						
Short Circuit	Current (CC)	3.3 A	33 A	3.3 A	33 A	3.3 A	18 A
	Voltage (CV)	0 V		0 V		0 V	
	Resistance (CR)	55 mΩ		28 mΩ		200 mΩ	
Temperature	Operating	0 ~ 40 ℃		0 ~ 40 ℃		0 ~ 40 ℃	
	Nonoperating	-10 ℃ ~ 70 ℃		-10 ℃ ~ 70 ℃		-10 ℃ ~ 70 ℃	
Dimension	W x H x D (mm)	214 x 108 x 365		214 x 108 x 365		214 x 108 x 365	
Weight	kg	3.5		3.5		3.5	
Smart fan system will automatically activate based on changing ambient temperatures							
Soft-start time setting, activating the power supply in accordance with the set voltage value							
Supporting external trigger on either input or output							
External current waveform monitor terminal output terminal							
Supports remote voltage compensation and multi-data storage							
Power-on-self-test, software calibration and standard rack mountable							

4 in 1 Universal Instrument: Function Generator, Power Supply, Frequency Meter, Digital Multimeter

OUI4001

- DDS function generator: built-in Linear / logarithmic frequency sweep function.
- With DC offset function, duty adjustable.
- Power supply: four channels of output, one adjustable (0 ~ 30 V/0 ~ 3 A), three fixed (5 V/2 A, ±15 V/1 A).
- Overload function and short-circuit functions.
- Frequency meter: count-down technology; up to 2.7 GHz.
- DMM: 50 kinds of measurement functions regarding voltage, current, resistance, capacitance, etc.
- RS-232 interface.

Model	OUI4001		
Function Generator			
Output Waveform	Sine, square, triangle, pulse, TTL		
Frequency Range	1 Hz ~ 10 MHz		
Output Impedance	50 Ω±10%/600 Ω±10%		
Attenuation	-20 dB		
Output Amplitude Range	100 mVpp～20 Vpp (High impedance)		
DC Offset	-10 V ~ +10 V		
Sine Wave Distortion	<1% (at 1 kHz)		
Square Wave Symmetry	<3% (at 1 kHz)		
Square Wave Rise/Fall Time	<150 ns (5 Vpp, 1 MHz) <50 ns (5 Vpp, 1 MHz)		
Duty Cycle Adjustment	15% ~ 85%		
Triangle Wave Linearity	≤100 kHz: <1%		
TTL Output Level	>3 V		
Sweep Range	1 Hz ~ 10 MHz		
Sweep Type	Linear, logarithmic		
Power Supply			
Ch1			
Output Voltage	0 ~ 30 V		
Output Current	0 ~ 3 A		
Ripple	±1 mVrms		
Load Effect	0.1%＋40 mV		
Source Effect	0.1%＋20 mV		
Max. Output Current	3.3 A		
Display Accuracy	Voltage ±1%＋2 words; Current ±2%＋2 words		
Ch2			
Output Voltage	fix ±15 V		
Output Current	1 A		
Ripple	<2 mVrms		
Load Effect	0.1%＋50 mV		
Source Effect	0.1%＋30 mV		
Max. Output Current	1.2 A		
Ch3			
Output Voltage	fix 5 V		
Output Current	2 A		
Ripple	<1 mVrms		
Load Effect	0.1%＋70 mV		
Source Effect	0.1%＋30 mV		
Max. Output Current	2.2 A		
Frequency Counter			
Freq Measurement Range	CH-A 1 Hz～100 MHz CH-B 100 MHz～2.7 GHz		
Input Sensitivity	CH-A 40 mVrms sine wave or 100 mVpp; CH-B 40 mVrms sine wave or 100 mVpp		
Max. Input Voltage	CH-A 35 Vpp CH-B 3 Vpp		
Input Impedance	CH-A 1 MΩ CH-B 50 Ω		
Resolution	[（$\pm 1\times10^{-7}$/s） × measured signal frequency]/ Strobe time		
Digital Multimeter			
Dc Voltage Measurement	Range	Resolution	Accuracy
	80 mV	1 μV	± (0.3% +10 words)
	800 mV	10 μV	± (0.05% +10 words)
	8 V	0.1 mV	
	80 V	1 mV	
	800 V	10 mV	± (0.08% +10 words)
True RMS Of AC Voltage	80 mV	1 μV	± (0.8% +50 words) (50 Hz ~ 20 kHz) ± (6% +50 words) (20 kHz ~ 50 kHz)
	800 mV	10 μV	± (0.8% +50 words) (50 Hz ~ 20 kHz)
	8 V	0.1 mV	± (5% +50 words) (20 kHz ~ 50 kHz)
	80 V	1 mV	± (5% +50 words) (50 Hz ~ 1 kHz)
	800 V	10 mV	
Dc Current	80 mA	1 μA	± (0.2%g+10 words)
	800 mA	10 μA	
	8 A	0.1 mA	± (0.8% +10 words)
Dc Current	20 A	1 mA	± (1.5% +10 words)

Model	OUI4001		
True RMS of AC Current	80 mA	1 µA	± (1% +20 words)
	800 mA	10 µA	
	8 A	0.1 mA	± (1.5% +20 words)
	20 A	1 mA	± (2.0% +20 words)
Resistor	Range	Resolution	Accuracy
	800 Ω	0.01 Ω	± (0.2% +5 words)
	8 kΩ	0.1 Ω	
	80 kΩ	1 Ω	
	800 kΩ	10 Ω	
	8 MΩ	100 Ω	± (0.3% +10 words)
	80 MΩ	1 kΩ	± (1.5 % +10 words) (0 ~ 40 MΩ) ± (3.0% +10 words) (40 MW ~ 80 MW)
Frequency	99.999 Hz	0.00 1 Hz	± (0.05% +5 words)
	999.99 Hz	0.0 1 Hz	
	9.9999 kHz	0. 1 Hz	
	99.999 kHz	1 Hz	
	999.99 kHz	10 Hz	
	8.0000 MHz	100 Hz	
	10.0 MHz	100 Hz	± (0.1% +5 words)
	100.0 MHz	1 kHz	
	1000.0 MHz	10 kHz	
Capacitor	1 nF	0.1 pF	± (5.0% +50 words)
	10 nF	1 pF	
	100 nF	10 pF	
	1 µF	100 pF	
	10 µF	1 nF	
	100 µF	10 nF	
Diode	3.000 V	0.001 V	± (3.0% +5 words)
Square Wave Output	Output	Description	
	Amplitude	3 V approx.	
	Frequency	0. 5 Hz ~ 5 kHz	
	Duty cycle	1% ~ 99%	
Physical characteristics			
Dimensions	165 mm × 370 mm × 360 mm (HxWxD)		
Quality	12.5 kg approx.		
DDS Function Generator			
Frequency can be displayed directly via keys			
Power Supply			
One output adjustable with stable voltage & current. The both states can be switched automatically			
It use current limit protection and the limited point can be adjusted arbitrarily			
Frequency meter			
Use micro-processing technology			
It has low-pass filter and attenuator in pre-circuit			
DMM			
With multi-display including main & device, analog bar, unit etc.			
Backlight display, auto-refresh to maintain data			

Fusion Splicer

OHOF6009

- 9 s splicing and 28 s heating.
- 310 x magnification.
- Up to 8000 splicing results storage.
- 6-direction 30 inch drop proof.
- 3.7” high resolution color LCD.
- 6-motors core alignment.
- One-key fast automatic splicing.
- 8800 mAh high capacity replaceable battery.

Model	OHOF6009
Applicable Fibers	SM / MM / DS / NZDS / BIF & UBIF (G.657)
Average Loss	0.02 dB (SM) / 0.01 dB (MM) / 0.04 dB (DS) / 0.04 dB (NZDS) / 0.02 dB (G.657)
Return Loss	>60 dB
Operation Methods	Auto, manual
Typical Splicing Time	9 s
Typical Heating Time	28 s
Fiber Alignment	Core alignment / clad alignment
Fiber Diameter	Cladding: 80 ~ 150 µm / Cladding: 100 ~ 1000 µm
Cutting Length	8 ~ 16 mm (fiber diameter: <250 µm) / 16 mm (fiber diameter: 250 ~ 1000 µm))
Magnification	X or Y: 310X / X+Y: 155X
Lcd Display	High performance 3.7 inch. TFT LCD / 640 x 480 resolution
Tension Test	2N
Applicable Sleeve	60 mm / 40 mm / 20 mm or etc.
Battery Capacity	Average: up to 200 cycles (splicing & heating), charging time: 3 hours
Battery Life Cycle	300 ~ 500 charge / discharge cycles
Electrode Life Cycle	Typical 3000 times
Power	Removable battery: 11.1 V 8800 mAH
	AC/DC adapter: input AC100-240 V; output DC 13.5 V/4.0 A
Working Environments	Temp: -10°C ~ +50°C / 14°F ~ 122°F
	Humidity: 95%RH (40°C / 104°F, non-condensing)
	Elevation: 0 ~ 5000 M
Dimensions	135 mm x 160 mm x 150 mm (LxWxH)
Weight	1.8 kg (without battery); 2.3 kg (with battery)

Accessories

OHOF6009-A1	User's guide
OHOF6009-A2	Carrying case
OHOF6009-A3	AC/DC Adapter
OHOF6009-A4	AC Power Cable
OHOF6009-A5	Battery
OHOF6009-A6	Fiber Cleaver
OHOF6009-A7	Fiber Strippers
OHOF6009-A8	Indoor Cable Stripper
OHOF6009-A9	Spare Electrode
OHOF6009-A10	Alcohol Bottle
OHOF6009-A11	Cooling Tray
OHOF6009-A12	Tweezers
OHOF6009-A13	SC Holder
OHOF6009-A14	Hexagon Wrench 0.9mm
OHOF6009-A15	Hexagon Wrench 1.5mm
OHOF6009-A16	USB cable
OHOF6009-A17	3 in 1 Holder

Fusion Splicer

OHOF4008

- Takes only 8 seconds for splicing, 25 seconds for pyrocondensation.
- Simultaneous display of X/Y axis; zoom in up to 304x the original size.
- Can set automatic start of splicing or of pyrocondensation upon close of the cover.
- Long lasting electrode; discharging time up to 4000.
- 5.7 inch digital high resolution LCD.
- With USB and VGA ports.
- Built-in high capacity battery, which enables up to 220 times of splicing and heating.

Model	OHOF4008
Applicable Fiber	SMF (ITU-T G.652), MMF (ITU-T G.651), DSF (ITU-T G.653), NZDSF
Average Splicing Loss	0.02 dB (SM), 0.01 dB (MM), 0.04 dB (DS), 0.04 dB (NZDS)
Return Loss	<-60 dB
Operation Mode	Auto, Half auto, Manual
Align Mode	Advanced PAS align mode
Fiber Diameter	clad diameter: 80 μm~150 μm, coating diameter: 100 μm~1000 μm
Cleave Length	8~16 mm (coating diameter<250 μm), 16 mm (coating diameter 250~1000 μm)
Magnification	Vertical 152times, horizontal 304times
Image Display	5.7" 640 x 480 LCD
Pull Test	Standard 2N (optional)
Pyrocondensation Tube	40 mm, 60 mm and a series of micro Heat-Shrinkable Tubing
Battery Capacity	Typically splice 220 times, charging for 3.5 hour (available when charge)
Battery Lifetime	Cycle life up to 300~500 times, replaceable
Electrode Lifetime	>4000 times, replaceable
Lighting for Construction	Built-in super High-brightness LED supply convenient for night work
Ports	USB, VGA
Power Supply	Built in 11.1 V Lithium Ion Battery.AC adopter (input AC100~240, output DC13.5 V/4.5 A)
Environment Adaptation	Temperature range: -10 ℃~50 ℃; Humidity: 95%RH (40 ℃, no condensing); Altitude: 0~5000 m
Size	160 mm × 150 mm ×140 mm (LxWxH)
Weight	2.3 kg (no battery), 2.8 kg (including battery)
Small in size, lightweight: only 2.8 kg with battery	
Real time discharging for adjustment; no need for further adjustment	
Precise real-time display of remaining battery capacity	

Accessories

OHOF4008-A1	AC Power Adapter
OHOF4008-A2	AC Current Cable
OHOF4008-A3	Standby Electrode
OHOF4008-A4	Blower Brush
OHOF4008-A5	Bottle With Siphon
OHOF4008-A6	Fiber Bracket
OHOF4008-A7	User Manual
OHOF4008-A8	Luxury tote kit
OHOF4008-A9	Fiber Cleaver
OHOF4008-A10	Li-Ion battery
OHOF4008-A11	Tool kit
OHOF4008-A12	Pull test

OTDR

OHOT2400 Series

- 24/22 dB, 28/26 dB, 32/30 dB and 37/35 dB dynamic range (1310 nm/1550 nm).
- Built-in VFL.
- 5 Inch Large LCD touch screen.
- Optical power meter (Optional)
- 832g Ultra-light in weight.
- Large data storage 16GB SD card.
- Mini USB interface.

Model	OHOT2424	OHOT2428	OHOT2432	OHOT2437
Dynamic range	24/22 dB	28/26 dB	32/30 dB	37/35 dB
Optic fiber type	SM			
Wavelength	1310 nm ± 20 nm/ 1550 nm ± 20 nm			
Optic fiber connector	FC/PC, SC/PC (optional)			
LCD	5 inch color LCD			
Pulse width	5 ns ~ 20us			
Measurement time	5 s, 15 s, 30 s, 60 s, 120 s, 180 s			
Attenuation dead zone	6 m			
Event dead zone	3m			
Distance accuracy	± (0.8 + 0.55% * distance + sampling resolution)			
Data storage	Micro SD card, less than 16GB			
Communication connector	Mini USB			
OPM display range (Optional)	-70 ~ +10 dBm /-50 ~ +26 dBm			
VFL power	1 mW			
Power	Lithium battery			
Battery life time	Standby > 15 hours, measurement > 8 hours			
Working temperature	0 ℃ ~ 50 ℃			
Storage temperature	-20 ℃± ~ 70 ℃			
Relative humidity	<90%			
Weight	832g			
Appearance size	218 mm x 165 mm x 45 mm			

Accessories

OHOT2400-A1	Optical Power Meter (-70 ~ 10 dBm or -50 ~ 26 dBm)

Palm OTDR
OHOT6300 Series

- 1310/1383/1490/1550/1625/1650 nm operating wavelengths (depending on model).
- Up to 28 dB dynamic range. 1.6 m extra-short event dead zone.
- Visible fault locating (VFL).
- 0.25 m high resolution, 65534 sampling points.
- Fast automatic measurement, one-button operation.
- FC/UPC interface (FC/APC optional).
- Built-in lithium battery with high capacity for over 10 hours.
- Double USB interfaces; supports USB stick and direct cable download to PC via ActiveSync.

Model	OHOT6321	OHOT6323	OHOT6335	OHOT6332
Center Wavelength	1310 nm/1550 nm ±20 nm	1550 nm/1625 nm ±20 nm (built-in filter)	1310/1550/1490 nm ±20 nm	1310/1550/1625 nm ±10 nm (built-in filter)
Type Of Optical Fiber	SMF	SMF	SMF	SMF
Dynamic Range[1]	28 / 26 dB	26 / 26 dB	28 / 26 / 24 dB	28 / 26 / 25
Distance Measurement Accuracy	± (1 m + sample space + measurement distance×0.003%)			
Event Dead Zone[2]	≤1.6 m			
Sampling Resolution	0.25 , 0.5 , 1 , 2 , 4 , 8 , 16 m			
Distance Range	0.5, 1, 2, 4, 8, 16, 32, 64, 128, 256km			
Pulse Width	10 , 30 , 80 , 160 , 320 , 640 , 1280 , 5120 , 10240 ns			
Loss Threshold	0.01 dB			
Sampling Points	Up to 65k			
Linearity	0.05 dB/ dB			
Memory Capacity	800 traces			
Group Refractive Index Setting	1.00000 - 2.00000 (0.00001 steps)			
Display	Color LCD (touch screen)			
Interface	USB, Min-USB			
Optical Connector	FC/UPC (universal connector)			
VFL	650 nm ± 10 nm, 2 mW (typical); CW/ 1 Hz			
Language	User selectable: simplified Chinese, English, Russian, Korean etc..			
Power Supply	DC: 15 V to 20 V (3 A), (AC adapter 100～240 V, 50/60 Hz, 1.5 A), Built-in Lithium battery: 4400 mAh, 7.4 V, operating time≥10 hours[3]			
Dimensions	210 mm × 100 mm × 60 mm			
Weight	1 kg approx.			
Handheld, lightweight portable				
Advanced anti-reflective TFT LCD				
Automatic communication light check				
Supports Bell core GR196 file format in writing or reading				
Smart battery capacity indicator; gives warning if battery is low				
WinCE operation system				
Universal FC/PC, FC/SC, FC/ST connector type; easy to clean				
Note 1: Pulse width 10240 ns, average times≥300, SNR=1, 23 ℃±2 ℃; Note 2: Dead zone mode, distance range : ≤ 4km, pulse width: 10 ns, terminal reflection loss: ≥40 dB, typical; Note 3: Low brightness, excludes measuring.				

Accessories

OHOT6300-A1	Power Line
OHOT6300-A2	AC/DC Adapter
OHOT6300-A3	Quality Certification
OHOT6300-A4	User Manual
OHOT6300-A5	Trace Analyzing Software (CD)
OHOT6300-A6	Hard Carrying Case (Including Gallus)
OHOT6300-A7	Special Gallus Of Instrument
OHOT6300-A8	USB Stick
OHOT6300-A9	Printer (Hp Laser Jet P2015d Or Hp Laser Jet 1022)
OHOT6300-A10	USB Cable
OHOT6300-A11	Standby Battery Pack
OHOT6300-A12	FC/SC, FC/ST Connectors

Ordering information:

Ordering Number	Operating Wavelength	Optical Fiber Type	Dynamic Range
OHOT6311	1310 nm	SMF	28
OHOT6312	1550 nm	SMF	26
OHOT6313	1625 nm	SMF	26
OHOT6314	1625 nm (built-in filter)	SMF	26
OHOT6315	1650 nm	SMF	26
OHOT6316	1650 nm (built-in filter)	SMF	26
OHOT6317	1490 nm	SMF	24
OHOT6318	1383 nm	SMF	26
OHOT6321	1310 / 1550 nm	SMF	28/26
OHOT6322	1550 / 1625 nm	SMF	26 / 26
OHOT6323	1550 / 1625 nm (built-in filter)	SMF	26 / 26
OHOT6324	1550 / 1650 nm	SMF	26 / 26
OHOT6325	1550 / 1650 nm (built-in filter)	SMF	26 / 26
OHOT6326	1310 / 1550 nm	SMF	28/26
OHOT6327	1550 / 1625 nm	SMF	26 / 26
OHOT6331	1310 / 1550 nm / 1625 nm	SMF	28 / 26 / 26
OHOT6332	1310 / 1550 nm / 1625 nm (built-in filter)	SMF	28 / 26 / 25
OHOT6333	1310 / 1550 / 1650 nm	SMF	28 / 26 / 26
OHOT6334	1310 / 1550 / 1650 nm (built-in filter)	SMF	28 / 26 / 25
OHOT6335	1310 / 1490 / 1550 nm	SMF	28 / 24/ 26
OHOT6336	1310 / 1490 / 1550 nm	SMF	28 / 24/ 26

Optical Laser Source

OHOL7000 Series

- High sensitivity, multi output power.
- Up to 0 dBm output power.
- 650/850/1300/1310/1490/1550/1625 nm wavelength.
- Multi wavelengths optional, up to four wavelengths on two ports.
- Automatic power-off, off time setting range 30 ~ 90 mins.
- LCD display.

Model	OHOL7011	OHOL7021	OHOL7031	OHOL7041	OHOL7051	OHOL7061
Working wavelength (nm)	1310/ 1550	650/ 1310/ 1550	850/ 1310/ 1550	650/ 1300	1310/ 1490/ 1550	1310/ 1550/ 1625
Output power	850/1300/1310/1550/1490/1625: -6 dBm (error: ±0.2)					

Model	OHOL7012	OHOL7022	OHOL7032	OHOL7071	OHOL7052	OHOL7062	OHOL7081
Working wavelength (nm)	1310/ 1550	650/ 1310/ 1550	850/ 1310/ 1550	850/ 1300	1310/ 1490/ 1550	1310/ 1550/ 1625	850/ 1300/ 1310/ 1550
Output power	1310/1550: 0 dBm, -3 dBm, -6 dBm, 650: >0 dBm 850/1300/1490/1625: -6 dBm (error: ±0.2)						
Output tone	850/1300/1310/1550/1490/1625: CW, 270 Hz, 1 kHz, 2KHz : 650: CW						
Spectrum width	≤ 5 nm						
Output stability	±0.03 dB/ 15 min; ±0.05 dB/8h						
Optical identifying distanc	5km : 10km optional (650 nm)						
Display	LCD						
Auto turn-off time	30 ~ 90 mins or none						
Interface	FC, SC, ST						
Power supply	2x1.2 V AA nickel-hydrogen rechargeable batteries						
Luminous parts	LD						
Operating temperature	-10 ~ +50˚C						
Storage temperature	-40 ~ +70˚C						
Dimension	140 mm x 72 mm x 38 mm (L x W x H)						
Weight	0.3 kg						
Low battery alarm.							
New-type conductive rubber switch, suitable for different operation environments.							

Accessories

OHOL7000-A1	User Manual
OHOL7000-A2	Power Supply Adapter
OHOL7000-A3	ST, SC, FC Adapter
OHOL7000-A4	1.2 V # 5 Ni-Mh Rechargeable Battery
OHOL7000-A5	Soft bag

Optical Power Meter
OHOP7000 Series

- 850/980/1300/1310/1490/1550/1625 nm calibrated wavelengths.
- SM or MM applications.
- Wide measurement range, High resolution.
- 2.5 mm universal connector.
- Auto power off (can be disabled).
- Low battery power alarming.

Model	OHOP7010	OHOP7026	OHOP7030	OHOP7410	OHOP7426	OHOP7430
Detector	InGaAs					
Wavelength	800 ~ 1700 nm					
Working Wavelength	850 nm, 980 nm, 1300 nm, 1310 nm, 1490 nm, 1550 nm, 1625 nm					
Dynamic Rang	-70 ~ +10 dBm	-50 ~ +26 dBm	-50 ~ +30 dBm	-70 ~ +10 dBm	-50 ~ +26 dBm	-50 ~ +30 dBm
	0.1 nW ~ 10 mW	10 nW ~ 400 mW	10 nW ~ 1 W	0.1 nW ~ 10 mW	10 nW ~ 400 mW	10 nW ~ 1 W
Measurement Accuracy	±5%					
Optical Interface	FC, ST, SC; MU/LC (optional)					
Resolution	dBm: 0.01 dBm W: (0.1-1) %					
Power Supply	2×1.5 V alkaline cells					
Power-Off Time	None or 5 ~ 60 minutes adjustable					
Power Consumption	30 mW					
Working Temperature	-10 ~ +50 ℃					
Storage Temperature	-40 ~ +70 ℃					
Dimension	140 mm×72 mm×38 mm					
Weight	0.25 kg					
Multi display units: nW, uW, mW, dBm, dB						
Automatic multi wavelength switching						
Automatic turn-off, off time setting range 5-60 mins						
Automatic zero clearing						
Low battery power alarming						
				Automatic frequency detection: 270 Hz, 1 kHz, 2 kHz		
				Data storage up to 1000 items; enables data transfer to PC via RS232		
				Self-calibration function		
				Real-time data monitoring function by PC		

Accessories

OHOP7000-A1	2 Cells Of AA Ni-MH Rechargeable Batteries, Dedicated Adapter

Optical Power Meter

OHOP6000 Series

- 850/1300/1310/1490/1550/1625 nm calibrated wavelengths.
- SM or MM applications.
- Wide measurement range, high resolution.
- 2.5 mm universal connector.
- Auto power off (can be disabled).

Model	OHOP6006	OHOP6026
Display Range	1310/1490/1550/1625 nm: -70 ~ +10 dBm 850/1300 nm: -60 ~ +6 dBm	1310/1490/1550/1625 nm: -50 ~ +26 dBm 850/1300 nm: -40 ~ +26 dBm
Accuracy	± 0.2 dB	
Calibrated Wavelengths	850 nm/1300 nm/1310 nm/1490 nm/1550/nm/1625 nm	
Display Resolving Power	0.01 dB	
Linearity	± 0.2 dB	
OPM Connector	2.5 mm universal	
VFL Connector	2.5 mm universal	
VFL Output (Optional)	1 mW or 10 mW, CW and Glint	
LED Light	SOS code output	
Automatic Power Off	If no operation in 10 minutes (can be disabled) If low battery.	
Battery Charge	Yes	
Battery Life	Above 60 hours (OPM)	
Size	105 mm x 52 mm x 24mm	
Weight	About 100g	
Storage Temperature	-20 ~ +60 ℃	
Operating Temperature	-10 ~ +50 ℃	
Humidity	<90%RH	
Elevation	0 ~ 5000 m	
LED Light		

Accessories

OHOP6000-A1	Visual Fault Locator

Optical Visual Fault Locator
OHOV6500

- Identifying fiber breaks, bend, splices, and other loss fault.
- Larger power up to 650 nm red laser.
- Transmitting continuous light or 1 Hz modulated light.
- Pen- shaped design, small size, light-weight, easy to use.
- Powered by standard AA alkaline batteries.
- 2.5 nm universal connectors.

Model	OHOV6500
Working Wavelength	650 nm ±20 nm
Emitter Type	LD
Output Power	Optional: 2 mW, 10 mW, 20 mW, 30 mW
Spectrum Width	≤5 nm
Working Mode	Continuous light and 1 Hz modulated light (CW and Pulsed)
Distance	Optional: ≥5km, ≥15km, ≥20km, ≥30km
Optical Fiber Type	Single mode fiber (SM) or multimode fiber (MM)
Adapter type	2.5 mm connector (FC/SC/ST)
Power supply	2x1.5 V AA alkaline batteries
Working time	80 hours/50 hours (modulated light/continuous light)
Operating Temperature	-10 ~ +50 ℃
Storage Temperature	-20 ~ +70 ℃
Humidity	0 ~ 95% (non-condensing)
Dimension	Length: 170 mm, Diameter: 24mm
Weight	160 g

Accessories

OHOV6500-A1	User Manual
OHOV6500-A2	Soft Bag

Options

OHOV6500-A3	2 mW Output Power
OHOV6500-A4	10 mW Output Power
OHOV6500-A5	20mW output power
OHOV6500-A6	30mW output power

E1 and Datacom Tester

OHED3000 Series

- 5 inch LCD with backlight.
- Smart auto configuration feature.
- Store 20 test results and 9 test configurations, with power off memory.
- Powerful PC software supports download results to PC, data analysis, report generation, printing, etc. Software updating.
- OHED3010:
  Normal test, pass through testing, audio frequency test.
- OHED3020: provides more two functions than OEDT3010:
  Loop delay test, automatic protection switching time testing.
- OHED3030: provides more three functions than OEDT3020:
  2Mbit/s line level and frequency testing, Datacom test, co-directional 64 kbit/s test.

Model			OHED3010	OHED3020	OHED3030
E1/2 M Technical Specifications					
Signal input rate			2048kbit/s ±50 ppm (G.703 requirement ±100pm)		
Signal code			HDB3, AMI.		
Input jitter tolerance			Up to G.823.		
Input impedance	Unbalance terminating		75 Ω G.703		
	Balance terminating		120 Ω G.703		
Signal structure	Unframed structure				
	Framed structure		PCM30, PCM31, PCM30CRC, PCM31CRC, complied with G.704		
Testing pattern			2^6-1, 2^9-1, 2^{11}-1, 2^{15}-1, 2^{20}-1, 2^{23}-1, and artificial code		
Error code insertion			Bit error, Pattern slip, None single, Ratio 10^{-1} ~ 10^{-7}.		
Alarm insertion			No Signal, Frame Loss, AIS, Patten loss		
Datacom Technical Specifications					
Data interface type			V.24/V.28/RS232, V.35, V.36/RS-449, X.21, RS-485, RS422, EIA-530, EIA-530 A		
Generator	Synch mode	Clock source	Internal and picking-up clock		
		Phase relation between clock and data	Co-direction or reverse direction.		
		Rate	1.2, 2.4, 4.8, 9.6, 14.4, 19.2, 38.4, 48, 56 (kbps), N×64 kbps (N=1 ~ 32)		
		Error	±15 ppm (ppm: parts per million)		
	ASYNCH mode	Rate	50, 75, 110, 150, 200, 300, 600, 1200, 2400, 3600, 4800, 7200, 9600: 14.4 k, 19.2 k, 38.4 k , 57.6 k (bps)		
		Data structure	Word length: 5, 6, 7, 8 (bits); Stop bit: 1, 2 (bits)		
		Odd-even check:	Odd, even, 1, 0, none		
	Error code insertion		None, single, or ratio 10^{-1} ~ 10^{-7}.		
receiver	SYNCH mode	Clock source	Internal and picking up clock		
		Phase relation between receive clock and receive data	Co-direction or reverse direction		
		Clock Rate	2048 kbps maximum		
	ASYNCH mode		The rate and data structure are the same as the generator.		
	Testing pattern		2^6-1, 2^9-1, 2^{11}-1, 2^{15}-1, 2^{20}-1, 2^{23}-1, and artificial code		
Co-Directional 64kbit/S Technical Specifications					
Signal input rate			64Kbit/s±50 ppm (G.703 requirement ±100 ppm)		
Input impedance			Balance 120 Ω, up to G.703		
Input jitter tolerance			Up to G.823		
Impedance of output interface			Balance 120 Ω, up to G.703		
Testing pattern			2^6-1, 2^9-1, 2^{11}-1, 2^{15}-1, 2^{20}-1, 2^{23}-1, and artificial code		
Error code insertion			Bit Error, Pattern Slip, None, Single, Ratio 10^{-1} ~ 10^{-7}		
Alarm Insertion			No Signal, AIS, Patter Loss		
General Specifications					
Power supply	Special power adapter	Input	AC220 V 50 Hz		
		Output	DC 9 V 1.2 A		
Internal rechargeable battery	4000 mAh, 6 Vnickel-hydrogen rechargeable battery				
	Working time		8 hours		
	charging		8 hours at power-off state, and 12 hours at power-on state		
Dimension	L×W×H		220 mm × 162 mm × 48 mm		
	Weight		950g		
Ambient	Operating temperature		-10 ~ 50 ℃		
	Storage temperature		-30 ~ 70 ℃		
	Humidity		5% ~ 90%, non-condensing		
Handheld, easy to operate					
Alarm and Histogram analysis for troubleshooting					
Multi-tasking capabilities					
Automatic power on/off testing by programmable timer					

Accessories

OHED3000-A1	User Manual
OHED3000-A2	75 Ω BNC-J5 Test Cable
OHED3000-A3	Two BNC-L9 Test Wire
OHED3000-A4	RS232 Serial Port Wire
OHED3000-A5	Special Data Test Cable I (V.24, RS-485, EIA-530, EIA-530 A)
OHED3000-A6	Special Data Communication Test Cable Ⅱ(RS-449, V.11)
OHED3000-A7	Special Data Communication Test Cable Ⅲ(X.21)
OHED3000-A8	Special Data Communication Test Cable Ⅳ(V.35)
OHED3000-A10	Power supply Adapter
OHED3000-A11	Portable bag

Handheld Ethernet Analyzer
OHEA6000

- Host analysis: ability to analyze up to 60000 hosts and list the top 1000.
- Conversation analysis: ability to analyze up to 60000 conversations and list the top 1000.
- Protocol analysis: ability to analyze dozens of protocols.
- VLAN Analysis: ability to analyze up to 4096 VLAN and list the top 1000.
- Response time analysis: ability to analyze response time of dozens of protocols.
- TOP/UNP port analysis: ability to analyze up to 120000 ports and list the top 1000.

Model	OHEA6000
Functions	
Traffic Test	
RFC2544 Test	
Y.1564 Test	
BERT	
Application Performance Test	
Data Analysis	
Network Discovery and Analysis Response Time Analysis	
TCP/UDP Analysis	
Common Tools	
Enhanced IP Ping function, support up to 8 destinations	
SNMP inquiry tool, get SNMP into via OID value	
Smart loopback tool, support Ethernet L1 ~ L3 data loopback	
Remote service tool, act as remote tester to cooperate with local tester	
Other Functions	
Optical power measurement	
Ethernet interface rate and duplex mode detection	
Additional Functions	
Remote control via IP network	
Screen snapshot	

Bench Top Digital Multimeter

ODM6500

- 1199999 count, 6 ½ digit, Large-screen dual-display VFD with high brightness display.
- 12 measurement functions, including DCV/ACV (1000 V/750 V), DCI/ACI (10 A/10 A), Ω (100 MΩ), frequency/period, diode, Continuity, dBm, dB, etc.
- True RMS AC voltage and current measurements, bandwidth up to 100 kHz.
- Built-in mX +b, %, dB, dBm math calculation function.
- 512 readings storage and MAX/MIN/AVER/STD statistics.
- RS232 (optional), USB, GPIB (optional) interface.

Model						
				ODM6500		
Test function	Test parameter			DCV, ACV, DCI, ACI, Ω2 W, Ω4 W, freq, peri, cont, diode		
	Mathematics function			mX+b, %, dB, dBm, REL		
	Range			Auto, Manual		
	Display			VFD		
	Trigger Mode			INT/MAN/BUS/EXT		
	Programmable Time Delay			0 – 6000 mS		
	Reading storage and statistics			2 to 512 readings can be stored, loaded and counted Type of statistics: MAX,MIN,AVER,STD		
	Reading Hold			To find out best stable reading for each data block of the given reading number according		
	Limitation measurement			To judge HI,IN,LO and display, with ALARM for HI/LO		
	Setup storage			10 setup files can be stored and loaded		
	Calibration			Recommend Fluke5520 A with Accuracy Calibration software (option)		
	Communication interface			SCPI command support for GPIB (optional), RS232 (optional) and USB (standard) interface		
Full Scale Reading digits and Reading Rate (meas/sec)	**Rate**		**Slow**	**Med**	**Fast**	
	Full scale reading (digits)		1,199,999	119,999	11,999	
	Reading rate (meas/sec)	DC V,DC I	2	16	57	
		AC V,AC I	1.5	4	25	
		Ω 2 W	2	16	47	
		Ω 4 W	1.5	10	33	
DC V	**Range**	**Max. reading**	**Resolution**	**Accuracy**	**Input impedance**	
	100 mV	119.9999	0.1 µV	0.0065+0.0045	>10 GΩ	
	1 V	1.199999	1 µV	0.0040+0.0009	>10 GΩ	
	10 V	11.99999	10 µV	0.0035+0.0005	>10 GΩ	
	100 V	119.9999	100 µV	0.0045+0.0006	10 MΩ	
	1000 V	1010000	1 mV	0.0055+0.0015	10 MΩ	
DC I	**Range**	**Max. reading**	**Resolution**	**Accuracy**	**Burden voltage/shunt resistor**	
	10 mA	11.99999	10 nA	0.05+0.004	<0.15 V/10.1 Ω	
	100 mA	119.9999	0.1 µA	0.05+0.004	<1.5 V / 10.1 Ω	
	1 A	1.199999	1 µA	0.08+0.004	<0.3 V / 0.1 Ω	
	10 A	11.99999	10 µA	0.25+0.004	<0.15 V / 10 mΩ	
AC V	**Range**	**100 mV**	**1 V**	**10 V**	**100 V**	**750 V**
	Max. reading	119.9999	1.199999	11.99999	119.9999	757.5
	Resolution	0.1 µV	1 µV	10 µV	100 µV	1 mV
	10 ~ 20 Hz	1.50+0.20				
	20 ~ 50 Hz	0.50+0.10				
	50 Hz ~ 100 Hz	0.10+0.03				
	100 ~ 20 kHz	0.05+0.03			0.08+0.03	
	20 ~ 50 KHz	0.15+0.05	0.11+0.05		0.18+0.05	
	50 ~ 100 KHz	0.60+0.08				
	100 ~ 300 kHz	4.00+0.05				
AC I	**Range**	**10 mA**	**1 A**	**10 A**		
	Max. reading	11.99999	1.199999	11.99999		
	Resolution	10 nA	1 µA	10 µA		
	10 Hz ~ 20 Hz	1+0.08		1.60+0.10		
	20 Hz ~ 50 Hz	0.50+0.03		0.60+0.30		
	50 Hz ~ 100 Hz	0.10+0.3	0.12+0.03	0.15+0.03		
	100 Hz ~ 2 kHz	0.05+0.03	0.10+0.04	0.12+0.04		
	2 kHz ~ 5 kHz	0.10+0.03	0.50+0.03	0.60+0.05		
	5 kHz ~ 10 kHz	0.20+0.03	2.00+0.10	2.50+0.10		
	Burden voltage/shunt Resistor	<0.15 V/10 Ω	<0.3 V/0.1 Ω	<0.15 V/10 mΩ		
Ω 2 W/Ω 4 W	**Range**	**Max. Reading**	**Resolution**	**Measurement current**	**Accuracy**	
	100 Ω	119.9999	100 µΩ	1 Ma	0.010+0.004	
	1 kΩ	1.199999	1 mΩ	1 mA	0.010+0.001	
	10 kΩ	11.99999	10 mΩ	100 µA	0.010+0.001	

Model			ODM6500		
Ω 2 W/Ω 4 W	Range	Max. Reading	Resolution	Accuracy	Sensitivity (Sine Wave)
	100 kΩ	119.9999	100 m Ω	10 μA	0.010+0.001
	1 MΩ	1.199999	1 Ω	10 μA	0.010+0.001
	10 MΩ	11.99999	10 Ω	7.0×Rx/ (10 M+Rx)	0.040+0.001
	100 MΩ	119.9999	100 Ω	7.0×Rx/ (10 M+Rx)	0.800+0.010
Frequency	Range	Max. Reading	Resolution	Accuracy	Sensitivity (Sine Wave)
	5 Hz ~ 10 Hz	9.999999	1 μHz	0.05+0.1	200 mV rms
	10 Hz ~ 100 Hz	99.99999	10 μHz	0.01+0.01	40 mV rms
	100 Hz ~ 100 kHz	999.9999	10 mHz	0.005+0.002	40 mV rms
	100k ~ 1.1 MHz	1099.999	0. 1 Hz	0.005+0.002	100 mV rms
Measurement condition		Calibration interval	one year		
		Operation Humidity	8°C–28°C , ≤90%RH; When resistor range is 10 M and 100 M, ≤70%RH		
		Warming up time	30 min		
		Accuracy is expressed as	± % of reading +% of range)		
		Temperature coefficient	°C~18°C & 28°C~40°C,+0.1%×accuracy /°C		
		This is the specification at slow mode.			
General Specifications	Operating Temperature and Humidity		0°C–40°C, ≤90%RH		
	Power Requirements	Voltage	99 V–121 V AC ,198 V–242 V AC		
		Frequency	47. 5 Hz–6 3 Hz		
	Power Consumption		20 VA max.		
	Dimensions		277 mmx115 mmx365 mm (W×H×D)		
	Weight		2.5 kg Approx.		

Accessories

ODM6500-A1	Test Leads One Pair (Black And Red) Power Cord
ODM6500-A2	GPIB Interface Board
ODM6500-A3	RS232C Control Software
ODM6500-A4	Glided Shorting Plate
ODM6500-A5	4 Terminal Kelvin Test Clip
ODM6500-A6	SMD Component Test Clip
ODM6500-A7	Accuracy Calibration software

Bench Top Digital Multimeter

ODM5500

- 119999 count, 5 ½ digit, Large-screen dual-display VFD with high brightness display.
- 12 measurement functions, including DCV/ACV (1000 V/750 V), DCI/ACI (10 A/10 A), Ω (100 MΩ), frequency/period, diode, Continuity, dBm, dB, etc.
- True RMS AC voltage and current measurements, bandwidth up to 100 kHz.
- Built-in mX +b, %, dB, dBm math calculation function.
- 512 readings storage and MAX/MIN/AVER/STD statistics.
- RS232 (optional), USB, GPIB (optional) interface.

Model				ODM5500		
Test function	Test parameter			DCV, ACV, DCI, ACI, Ω2 W, Ω4 W, FREQ, PERI, CONT, DIODE		
	Mathematics function			mX+b, %, dB, dBm, REL		
	Range			Auto, Manual		
	Display			VFD		
	Trigger Mode			INT/MAN/BUS/EXT		
	Programmable Time Delay			0 – 6000 mS		
	Reading storage and statistics			2 to 512 readings can be stored, loaded and counted Type of statistics: MAX,MIN,AVER,STD		
	Reading Hold			To find out best stable reading for each data block of the given reading number according		
	Limitation measurement			To judge HI,IN,LO and display, with ALARM for HI/LO		
	Setup storage			10 setup files can be stored and loaded		
	Calibration			Recommend Fluke5520 A with Accuracy Calibration software (option)		
	Communication interface			SCPI command support for GPIB (optional), RS232 (optional) and USB (standard) interface		
Full Scale Reading digits and Reading Rate (meas/sec)	**Rate**		**Slow**	**Med**	**Fast**	
	Full scale reading (digits)		119,999	119,999	11,999	
	Reading rate (meas/sec)	DC V,DC I	4	16	57	
		AC V,AC I	3	4	25	
		Ω 2 W	4	16	47	
		Ω 4 W	3	10	33	
DC V	**Range**	**Max. reading**	**Resolution**	**Accuracy**	**Input impedance**	
	100 mV	119.999	1 µV	0.02+0.008	>10 GΩ	
	1 V	1.19999	10 µV	0.01+0.004	>10 GΩ	
	10 V	11.9999	100 µV	0.01+0.004	>10 GΩ	
	100 V	119.999	1 mV	0.01+0.004	10 MΩ	
	1000 V	1010.00	10 mV	0.01+0.004	10 MΩ	
DC I	**Range**	**Max. reading**	**Resolution**	**Accuracy**	**Burden voltage/shunt resistor**	
	10 mA	11.9999	0.1 µA	0.05+0.008	<0.15 V/10.1 Ω	
	100 mA	119.999	1 µA	0.05+0.004	<1.5 V / 10.1 Ω	
	1 A	1.19999	10 µA	0.10+0.004	<0.3 V / 0.1 Ω	
	10 A	11.9999	100 µA	0.25+0.004	<0.15 V/10 mΩ	
AC V	**Range**	**100 mV**	**1 V**	**10 V**	**100 V**	**750 V**
	Max. reading	119.999	1.19999	11.9999	119.999	757.5
	Resolution	1 µV	10 µV	100 µV	1 mV	10 mV
	10 ~ 20 Hz	1.5+0.1				
	20 ~ 50 Hz	0.5+0.1				
	50 Hz ~ 20 KHz	0.1+0.1				
	20 ~ 50 KHz	0.3+0.15	0.3+0.1			
	50 ~ 100 KHz	1+0.15	1+0.1			
AC I	**Range**		**10 mA**	**1 A**	**10 A**	
	Max. reading		11.9999	1.19999	11.9999	
	Resolution		0.1 µA	10 µA	100 µA	
	10 Hz ~ 20 Hz		1+0.08			
	20 Hz ~ 50 Hz		0.5+0.08			
	50 Hz ~ 2 kHz		0.25+0.08			
	2 kHz ~ 10 kHz		2+0.08			
	Burden voltage/shunt Resistor		<0.15 V/10 Ω	<0.3 V/0.1 Ω	<0.15 V/10 mΩ	
Ω 2 W/Ω 4 W	**Range**		**Max Rreading**	**Resolution**	**Measurement Current**	**Accuracy**
	100 Ω		119.999	1 mΩ	1 mA	0.05+0.008
	1 kΩ		1.19999	10 mΩ	1 mA	0.03+0.004
	10 kΩ		11.9999	100 mΩ	100 µA	0.03+0.004
	100 kΩ		119.999	1 Ω	10 µA	0.03+0.004
	1 MΩ		1.19999	10 Ω	10 µA	0.03+0.004

Model			ODM5500		
Ω 2 W/Ω 4 W	Range	Max Rreading	Resolution	Measurement Current	Accuracy
	10 MΩ	11.9999	100 Ω	7.0×Rx/ (10 M+Rx)	0.1+0.004
	100 MΩ	119.999	1 KΩ	7.0×Rx/ (10 M+Rx)	0.5+0.008
Frequency	Range	Max Reading	Resolution	Accuracy	Sensitivity (Sine Wave)
	5 Hz ~ 10 Hz	9.99999	10 µHz	0.05+0.1	200 mV rms
	10 Hz ~ 100 Hz	9.99999	100 µHz	0.01+0.01	40 mV rms
	100 Hz ~ 100 kHz	9.99999	1 mHz	0.005+0.002	40 mV rms
	100k ~ 1.1 MHz	1099.99	1 Hz	0.005+0.002	100 mV rms
Measurement condition		Calibration interval	one year		
		Operation Humidity	8°C–28°C , ≤90%RH; When resistor range is 10 M and 100 M, ≤70%RH		
		Warming up time	30 min		
		Accuracy is expressed as	± % of reading +% of range)		
		Temperature coefficient	°C~18°C & 28°C~40°C,+0.1%×accuracy /°C		
		This is the specification at slow mode.			
General Specifications	Operating Temperature and Humidity		0°C–40°C, ≤90%RH		
	Power Requirements	Voltage	99 V–121 V AC ,198 V–242 V AC		
		Frequency	47. 5 Hz–6 3 Hz		
	Power Consumption		20 VA max.		
	Dimensions		277 mm x 115 mm x 365 mm (W×H×D)		
	Weight		2.5 kg approx.		

Accessories

ODM5500-A1	Test Leads One Pair (Black and Red) Power Cord
ODM5500-A2	GPIB Interface Board
ODM5500-A3	RS232C Control Software
ODM5500-A4	Glided Shorting Plate
ODM5500-A5	4 terminal kelvin test clip
ODM5500-A6	SMD component test clip
ODM5500-A7	Accuracy Calibration software

Bench Top Digital Multimeter
ODM4500

- 21000 count, 4 ½ digit, Large-screen dual-display VFD with high brightness display.
- Measurement functions, including DCV/ACV (1200 V/750 V), DCI/ACI (20 /20A), Ω (50 MΩ), frequency/period, diode, Continuity, dBm, dB, etc.
- Measurement speed up to 25 meas/sec.
- True RMS AC voltage and current measurements, bandwidth up to 100 kHz.
- Parameters, such as AC+DC, AC+Hz, Readout+dB, Readout+dBm,displayed synchronously.
- RS232C interface.

Model							
		ODM4500					
Measurement Functions	Measurement Parameters	DC/AC Voltage,DC/AC Current, Resistance, Frequency, Period, Continuity, Diode					
	Math function	%, dB, dBm,REL					
	Range	Auto, Manual					
	Display	VFD,dual display					
	Reading mode	Single display: all measurement parameters Dual display: ACV+DCV, ACI+DCI, ACV+Hz,ACI+Hz, Readout+ dB/ dBm, Readout+Max/Min					
	Trigger mode	INT/MAN/BUS					
	Reading hold	TO find out the best stable reading for each data block of the given reading number according to given accuracy					
	Comparator	To judge HI,IN,LO and display with ALARM at HI/LO (selectable)					
	Interface	RS232C,supporting SCPI command					
		Slow	Middle	Fast			
Speed (Counts/Second)	DCV,DCI	5	10	25			
	ACV,ACI	5	10	25			
	Ω	5	10	25			
	AC+DC	1.2	1.4	1.5			
	Freq	1	2	3.9			
			Max. Reading	Resolution	Accuracy	Input Impedance	
DC Voltage	Range	200 mV/500 mV	210.00	10 µV	0.03+0.04	10 MΩ	
		2 V/5 V	2.1000	100 µV	0.03+0.02	11.1 MΩ	
		20 V/50 V	21.000	1 mV	0.03+0.02	10.1 MΩ	
		200 V/500 V	210.00	10 mV	0.03+0.02	10 MΩ	
		1000 V	1200.00	100 mV	0.03+0.02	10 MΩ	
			Max. Reading	Resolution	Accuracy	Load Voltage/Shunt Resistance	
DC Current	Range	2 mA/5 mA	2.1000	0.1 µA	0.08+0.025	<0.3 V/100 Ω	
		20 mAV/50 mA	21.000	1 µA	0.08+0.020	<0.04 V / 1 Ω	
		200 mA/500 mA	210.00	10 µA	0.08+0.020	<0.3 V / 1 Ω	
		2 A/5 A	2.1000	100 µA	0.3+0.025	<0.05 V / 10 mΩ	
		20 A	20.000	1 mA	0.3+0.025+	<0.6 V / 10 mΩ	
		200 mV	2 V	20 V	200 V	750 V	
AC Voltage	Resolution	10 µV	100 µV	1 mV	10 mV	100 mV	
	Accuracy	20 ~ 50 Hz	1.0+0.2				
		50 ~ 20 kHz	0.5+0.15	0.4+0.05	0.8+0.075		
		20k ~ 50 kHz	1.8+0.25	1.5+0.10			
		50k ~ 100 kHz	3.0+0.75	3.0+0.25			
		2 mA	20 mA	200 mA	2 A	20 A	
AC Current	Resolution	0.1 µA	1 µA	10 µA	100 µA	1 mA	
	Accuracy	20 ~ 50 Hz	1.50+0.5		2.00+0.5		
		50 ~ 2 kHz	0.5+0.3		0.5+0.3		
		2k ~ 20 kHz	2+0.5	2+0.38			
	Load Voltage/Shunt Resistance	Same As DC Current					
			Max. Reading	Resolution	Test current	Accuracy	
Resistance	Range	200 Ω/500 Ω	210.00	10 mΩ	0.5 mA	0.10+0.05	
		2 kΩ/5 KΩ	2.1000	100 mΩ	0.45 mA	0.10+0.025	
		20 kΩ/50 kΩ	21.000	1 Ω	45 µA	0.10+0.025	
		200 kΩ/500 kΩ	210.00	10 Ω	4.5 µA	0.10+0.025	
		2 MΩ/5 MΩ	2.1000	100 Ω	450 nA	0.15+0.025	
		20 MΩ/50 MΩ	21.000	1 kΩ	45 nA	0.30+0.05	
			Max. Reading	Resolution	Accuracy	Sensitivity	
Frequency	Range	500 Hz	510.00	0.0 1 Hz	0.01+0.02	200 mV rms	
		5 kHz	5.1000	0. 1 Hz	0.01+0.02	300 mV rms	

Model			ODM4500			
			Max. Reading	Resolution	Accuracy	Sensitivity
Frequency	Range	50 kHz	51.000	1 Hz	0.01+0.008	300 mV rms
		500 kHz	999.99	10 Hz	0.01+0.008	500 mV rms
Measurement condition	Calibration cycle: one year					
	Operation Humidity 18°C~28°C , ≤90%RH When resistor range is 10 M and 100 M, ≤70%RH					
	Warming up time: 30 min					
	Accuracy is expressed as: +/- (% of reading + % of range)					
	Temperature coefficient: 0°C~18°C & 28°C~40°C,+0.1%×accuracy /°C					
	Following is the specification at slow mode, others please refer the operation manual.					
General Specifications	Working temperature & humidity		0°C-40°C, ≤90%RH			
	Power supply	Voltage 198 V-242 VAC,99 V-121 VAC				
		Frequency 47. 5 Hz-6 3 Hz				
	Power consumption		≤ 10 VA			
	Dimensions		277 mm x 115 mm x 340 mm (W×H×D)			
	Weight		Approx. 2.2 kg			

Accessories

ODM4500-A1	1 Pair Of Test Lead (Red And Black), 3 Cord Power Line
ODM4500-A2	According To Different Regions
ODM4500-A3	RS232C Interface Connection Cable
ODM4500-A4	RS232C Communication Software
ODM4500-A5	Accuracy Calibration Software

Handheld Digital Multimeter

OHDM3751

- Auto range.
- 6000 counts and barograph display.
- Measurement including DCV/ACV (600 V/600 V), DCI/ACI (600 mA/600 mA), Ω (10 MΩ), capacitance (6 mF), continuity test, duty cycle, etc.

Model		OHDM3751
SPECIFICATIONS	RANGE	ACCURACY
DC Voltage	6 V/60 V/600 V	± (0.8%+3)
AC Voltage	6 V/60 V/600 V	± (1.2 %+3)
DC Current	600 mA	± (1.0%+3)
AC Current	600 mA	± (1.5%+3)
Resistance (Ω)	6kΩ/60kΩ/600kΩ/6 MΩ/10 MΩ	± (1.0%+3)
Capacitance (C)	60 nF/600 nF/6 µF/60 µF/600 µF/6 mF	± (4%+5)
Frequency	30~1000 Hz	± (0.5%+2)
Temperature (˚C/˚F)	-20˚C~ 1300˚C	± (1.0%+3)
	-4˚F~ 2372˚F	± (1.0%+3)
Power supply	3x1.5 V AAA batteries	
Weight	Approx. 250g (without batteries)	
Size	169 mmx83mmx53mm	
Safety Rating	EN61010-1, -2-030, EN61010-2-2003 EN1326-1, CAT.III 600 V	
Display	6000 counts	
Auto range		
Barograph display		
True RMS		
Transistor		
NCV		
Live test		
Data hold		
Work light		
Back light		
Auto power off		

Handheld Digital Multimeter

OHDM3752

- 6000 counts display.
- NCV (high, medium and low) Sound and LED Alarm.
- Measurement including DCV/ACV (1000 V/750 V), DCI/ACI (20 A/20 A), Ω (60 MΩ), capacitance (100 mF), diode, continuity (Sound and LED Alarmed), duty cycle, etc.

Model		OHDM3752
Specification	**Range**	**Accuracy**
DC Voltage	600 mV/60 V/600 V/1000 V	± (0.5%+3)
AC voltage	6 V/60 V	± (0.8%+3)
	600 V/750 V	± (1.0%+10)
Resistance (Ω)	600/6k/60k/600k/6 M	± (0.8%+3)
	60 MΩ	± (1.2%+30)
Capacitance	6 nF	± (4.0%+30)
	60 nF/600 nF/6 uF/60 uF/600 uF/6 mF	± (4.0%+3)
	100 mF	± (5.0%+3)
Frequency	60/600/6k/60k/600k/6 M/10 MHz	± (1.0%+3)
Duty	5%~95%	± (2.0%+3)
˚C / ˚F	-20 ˚C ~ 1000 ˚C/-4 ˚F ~ 1832 ˚F	± (1.0%+3)
ACA	60 mA/600 mA	± (1.0%+3)
	20 A	± (1.5%+3)
DCA	60 uA/60 mA/600 mA	± (0.8%+3)
	20 A	± (1.2%+3)
HFE	0-1000	± (1.0%+3)
Power Supply	4 × 1.5 V AAA	
Weight	380 g	
Size	190 mm × 89 mm × 50 mm	
Safety rating	EN61010-1,-2-030, EN610110-2-033 CAT III 1000 V CAT IV 600 V	
Display	6000 Counts	
ACV (bandwidth)	1 kHz	
HZ	10 MHz	
ACV/ACV TRMS		
HFE		
Live Line Test (high, medium and low) Sound and LED Alarm		
Worklight		
Low Battery Indication		

Accessories

OHDM3752-A1	Test Leads
OHDM3752-A2	Portable Bag
OHDM3752-A3	User Manual

Handheld Digital Multimeter

OHDM3753

- Auto and manual range.
- 6000 counts display with barograph.
- Measurement including DCV/ACV (1000 V/750 V), DCI/ACI (10 A/10 A), Ω (60 MΩ), capacitance (10 mF), diode, Continuity (sound and LED alarmed), duty cycle, True RMS, max., min., etc.
- USB interface.

Model		OHDM3753
Specification	**Range**	**Accuracy**
DC Voltage	60 mV/600 mV/6 V/60 V/1000 V	± (0.7%+2)
AC voltage	60 mV/600 mV/6 V/60 V/600 V/750 V	± (0.8%+3)
DC Current	600 uA/6000 uA/6 mA/600 mA	± (1.2%+3)
	6 A/10 A	± (2.0%+10)
AC Current	600 uA/6000 uA/60 mA/600 mA	± (1.5%+3)
	6 A/10 A	± (3.0%+10)
Resistance	600Ω/6kΩ/60kΩ/600kΩ/6 MΩ/60 MΩ	± (1.2%+5)
Capacitance	10 nF/100 nF/1000 nF/10 µF/100 µF/1000 µF/10 mF	± (3.0%+3)
Frequency	10 Hz/100 Hz/1000 Hz/10 kHz/100 kHz/1000 kHz/10 MHz	± (1.0%+5)
Duty cycle	0.1% ~ 99.9%	± (3.0%+2)
Temperature (˚C/ ˚F)	-20 ˚C~ 1000 ˚C	± (2.0%+2)
	-4 ˚F ~ 1832 ˚F	± (2.0%+2)
Power Supply	4×1.5 V AA batteries	
Weight	360 g approx.	
Size	204mm × 93mm ×57 mm	
Safety Rating	EN61010-1,-2-030, EN61010-2-033,EN61326-1,CAT.III 1000 V	
Display	6000 counts	
Auto and manual range		
Barograph display		
Relative Measurement		
True RMS		
MAX/MIN		
Data hold		
transistor		
Continuity		
Back light		

Accessories

OHDM3753-A1	Test Leads
OHDM3753-A2	Portable Bag
OHDM3753-A3	User Manual
OHDM3753-A4	USB Cable
OHDM3753-A5	Disk

AC Millivolt Meter

OACM4503

- Dual channel.
- Measuring of RMS value voltage of Sine waveform (frequency range is 5Hz ~ 5 MHz and 50µV ~ 300 V AC voltage).
- Auto/manual ranging.
- 4 1/2 digits display.
- RS-232 interface.

Model		OACM4503
Frequency Range		5 Hz ~ 5 MHz
Measurement Range	AC Voltage	50 μV ~ 300 V
	Scale	3 mV, 30 mV, 300 mV, 3 V, 30 V, 300 V
	dBV	-86 dBV ~ 50 dBV (0 dBV=1 V)
	dBm	-83 dBm ~ 52 dBm (0 dBm=1 mW 600 Ω)
	Vpp	140 μV ~ 850 V
Voltage Measurement Error	≥ 5 Hz ~ 100 Hz	±2.5% reading ± 0.8% range
	>100 Hz ~ 500 kHz	±1.5% reading ± 0.5% range
	>500 kHz ~ 2 MHz	±2.0% reading ± 1.0% range
	>2 MHz ~ 3 MHz	±3.0% reading ± 1.0% range
	>3 MHz ~ 5 MHz	±4.0% reading ± 2.0% range
Resolution	Range	4 1/2 digits Display
	3 mV	0.0001 mV
	30 mV	0.001 mV
	300 mV	0.01 mV
	3 V	0.0001 V
	30 V	0.001 V
	300 V	0.01 V
Damage Voltage	3 V ~ 300 V	350 Vrms (5 Hz ~ 5 MHz)
	3 mV ~ 300 mV	350 Vrms (5 Hz ~ 1 kHz)
		35 Vrms (1 kHz ~ 10 kHz)
		10 Vrms (10 kHz ~ 5 MHz)
General Characteristics	Power	AC220 (±10%)V, 50 (1±5%)Hz, < 20 VA
	Interface	RS-232
	Display	VFD display
	Dimension & Weight	260 mm × 106 mm × 375 mm; 3.0 kg approx.

Accessories

OACM4503-A1	Power Cord
OACM4503-A2	BNC Testing cable
OACM4503-A3	CD (Software+ User's Guide)

Analog AC Millivolt Meter

OACM1003

- Measurement range 100 uV ~ 300 V.
- Low noise, high input impedance and accuracy, fine frequency characters.
- Single pointer millivoltmeter.
- Signal output monitor.

Model	OACM1003
Voltage	100 uV ~ 300 V
Frequency of voltage	5 Hz ~ 2 MHz
Graticule	Sine wave virtual value 1 V =0 dB; 1 mW =0 dBm
Voltage scale	12 class 1 mV ~ 300 V
dB scale	12 class -60 dB ~ +50 dB
Voltage error	≤ full graticule ± 3% (1 kHz as base)
Max. input voltage (DC+ACp-p)	300 V 1 mV ~ 1 V scale 500 V 3 V ~ 300 V scale
Input impedance	≥ 10 MΩ
Input capacitance	≤ 50 pF
Output voltage	1 Vrms ± 10%
Output voltage frequency response	10 Hz ~ 200 kHz ≤ ± 3% (1 kHz is norm, no load)
Power voltage	AC 220 V ± 10%; 50 Hz ± 4%
Dimension and weight	140 mm × 270 mm × 210 mm (WxLxH)
Digital Coding switch, light handle, high reliability	
LED indicates scale and state	

Analog AC Millivolt Meter
OACM1001

- Measurement range 30 uV ~ 100 V.
- Dual pointers indicate the measured signal separately.
- Digital Coding switch , light handle, high reliability.
- Low noise, high input impedance & accuracy, fine frequency characters.
- Two independent voltage measures amplify circuit and scale switch.
- Convenient to observe the signal differ via tracking.
- Signal output monitor.

Model	OACM1001
Voltage	30 uV ~ 100 V
Frequency of Voltage	5 Hz ~ 2 MHz
Graticule	Sine wave virtual value 1 V =0 dB; 1 mW =0 dBm
Voltage Scale	12 class 300 uV ~ 100 V
Db Scale	12 class -70 dB ~ +40 dB
Voltage Error	≤ full graticule ± 3% (1 kHz as base)
Max. Input Voltage (DC+ACp-p)	300 V 300 uV ~ 1 V scale 500 V 3 V ~ 100 V scale
Input Impedance	≥ 1 MΩ
Input Capacitance	≤ 50 pF
Output Voltage	0.1 Vrms ± 10%
Output Voltage Frequency Response	10 Hz ~ 200 kHz ≤ ± 3% (1 kHz is norm, no load)
Power Voltage	AC 220 V ± 10%; 50 Hz ± 4%
Dimension And Weight	140 mm × 270 m × 210 mm (WxLxH) 3 kg approx.

Earth Resistance Tester

OHRT6400

- Measurement range0 Ω ~ 1.2 kΩ.
- Up to 40 A current measurement.

Model		OHRT6400	
Specifications	**Range**	**Accuracy**	**Resolution**
Resistance	0.01 Ω ~ 0.999 Ω	± (1.5%+0.01 Ω)	0.001 Ω
	1 Ω ~ 9.999 Ω	± (1.05%+0.1 Ω)	0.01 Ω
	10 Ω ~ 99.9 Ω	± (2.0%+0.3 Ω)	0.1 Ω
	100 Ω ~ 199.9 Ω	± (3.0%+1 Ω)	1 Ω
	200 Ω ~ 400 Ω	± (6.0%+5 Ω)	5 Ω
	400 Ω ~ 600 Ω	± (10%+10 Ω)	10 Ω
	600 Ω ~ 1200 Ω	Approx.20%	20 Ω
Current	100 mA	± (2.5%+1 mA)	0.1 mA
	300 mA	± (2.5%+2 mA)	0.3 mA
	1 A	± (2.5%+0.003 A)	0.001 A
	3 A	± (2.5%+0.01 A)	0.003 A
	10 A	± (2.5%+0.03 A)	0.01 A
	20 A	± (2.5%+0.05 A)	0.03 A
	30 A	± (2.5%+0.5 A)	0.03 A
	40 A	± (10%+0.5 A)	0.03 A
General Specifications			
Power Supply	DC9 V 6F22 Battery		
Product Size	54mm×104mm×276 mm		
Product Weight	Approx.1050g		
Safety Rating	En61010-1, EN61557-3,EN61326-1 CAT.II 600 V		
Display	9999Counts		
Data Logging and Recall	99Groups		
Alarm Limit Setting	Setting Alarm Threshold In 1 Ω to100 Ω		
Jaw Opening	45 mm x 32 mm/ 1.8”x1.3		
Low battery display			
Data hold			
Auto ranging			

Accessories

OHRT6400-A1	Test Leads (15 M Red, 10 M Green, 5 M Black)
OHRT6400-A2	Auxiliary Earth Bars
OHRT6400-A3	Ground Pole

Clamp Earth Resistance Tester

OHRC4120

- Measurement range 0 Ω ~ 4.00 KΩ earth ground resistance.
- Max., min., average, /REL measurement functions.
- Earth resistance by constant current inverter 80 0 Hz/3 mA.
- Digital display & analog bars display.

Model		OHRC4120	
Specifications	**Range**	**Accuracy**	**Resolution**
Earth Ground Resistance	0 Ω ~ 29.99 Ω	± (2%+6dgt)	0.01 Ω
	30 Ω ~ 99.9 Ω	± (3%+3dgt)	0.1 Ω
	100 Ω ~ 999 Ω	± (3%+3dgt)	1 Ω
	1.00 KΩ ~ 4.00 KΩ	± (3%+3dgt)	10 Ω
Earth Voltage	0 V ~ 200 V (50 ~ 60 Hz)	± (1%+5dgt)	0.1 V
General Specifications			
Power Supply	6×1.5 AA batteries		
Product Size	180 mm × 140 mm × 65 mm		
Product Weight	950 g approx.		
Safety Rating	EN61010-1, EN61557-3,EN61326-1 CAT.III 1000 V		
2 pole and 3 pole Mode			
Data Logging: 100 group			

Accessories

OHRC4120-A1	Resistance Detector Ring 1 Ω
OHRC4120-A2	Resistance Detector Ring 5 Ω
OHRC4120-A3	Resistance Detector Ring 10 Ω
OHRC4120-A4	Instrument Aluminum Box
OHRC4120-A5	User Manual

Digital Insulation Tester

OHIT1010

- Measuring up to 10 GΩ (1000 V voltage).
- Timer function for insulation test.
- Lock function for insulation test.
- Auto discharge for capacitive load; store/load function; compare function.
- DCV and ACV test.

Model		OHIT1010
Insulation Tests	Source Output Voltage	Measuring Range
	50 V (0% ~ +20%)	0.01 MΩ ~ 50 MΩ± (3%+5)
	100 V (0% ~ +20%)	0.01 MΩ ~ 100 MΩ± (3%+5)
	250 V (0% ~ +20%)	0.01 MΩ ~ 250 MΩ± (3%+5)
	500 V (0% ~ +20%)	0.01 MΩ ~ 500 MΩ± (3%+5)
		1.00 GΩ ~ 5.00 GΩ± (5%+0.1 GΩ)
	1000 V (0% ~ +20%)	5.00 GΩ ~ 10.00 GΩ± (10%+0.2 GΩ)
Short Circuit Current	Approx. 2 mA	
Multimeter Functions	DC Voltage Test	0.1 ~ 1000 V±0.5%
	AC Voltage Test	0.1 ~ 750 V±1%
	Continuity Test	0.01 Ω ~ 200 Ω±0.5%
General Specifications		
Power Supply	6×1.5 VAA batteries	
Product Size	180 mm × 140 mm × 65 mm	
Product Weight	950 g approx.	
Safety Rating	EN61010-1, EN61557-1, EN61326-1 CAT.III 1000 V CAT.IV 600 V	
Auto calculation PI and DAR		
Continuity test		
Digital and analog display		

Accessories

OHIT1010-A1	Test Leads, Alligator Clip/Black
OHIT1010-A2	Portable Bag
OHIT1010-A3	User Manual

Digital High Voltage Insulation Tester

OHIT5050

- Measuring Up to 5 TΩ (5 kV voltage).
- Checking the insulation of high-voltage electrical equipment (electric motor, transformer, and cable).
- Short current up to 5 mA.
- Auto calculate PI (polarization index) and DAR (dielectric absorption ratio)
- Step voltage measurement, temperature measurement, temperature compensation for insulation test, leakage current measurement, timer function, data storage function.

Model		OHIT5050	
Insulation Test	Operating Voltage (DCV)	Measure Range	Accuracy
	250 V	0.01 MΩ ~ 2.5 GΩ	± (5.0%+5)
		2.51 GΩ ~ 250 GΩ	± (10%+15)
	500 V	0.01 MΩ ~ 5.0 GΩ	± (5.0%+5)
		5.01 GΩ ~ 500 GΩ	± (10%+10)
	1000 V	0.01 MΩ ~ 10 GΩ	± (5.0%+5)
		10.1 GΩ ~ 500 GΩ	± (10%+10)
		501 GΩ ~ 999 GΩ	± (15%+10)
	2.5KV	0.01 MΩ ~ 25 GΩ	± (5.0%+5)
		25.1 GΩ ~ 500 GΩ	± (10%+10)
		501 GΩ ~ 999 GΩ	± (15%+30)
		1TΩ ~ 2.5TΩ	± (15%+40)
	5KV	0.01 MΩ ~ 50 GΩ	± (5.0%+5)
		50.1 GΩ ~ 500 GΩ	± (10%+10)
		501 GΩ ~ 999 GΩ	± (15%+20)
		1TΩ ~ 5TΩ	± (20%+40)
Leakage Current Test	Range	Measure Range	Accuracy
	10 nA	1.00 nA ~ 9.99 nA	± (15%+1 nA)
	100 nA	9.0 nA ~ 99.9Na	± (15%+5)
	1000 nA	100 nA ~ 999 nA	± (2.5%+5)
	10 µA	0.90 µA ~ 9.99 µA	
	100 µA	9.0 µA ~ 99.9 µA	
	1000 µA	90 µA ~ 999 µA	
	3 mA	0.9 mA ~ 3.00 mA	
Voltage Test	Measure Mode	DC Voltage	AC Voltage
	Measure Range	± (50 V ~ 1000 V)	50 V ~ 1000 V (50 Hz ~ 60 Hz)
	Accuracy	± (5.0%+5)	± (5.0%+5)
	Input Impedance	Approx.10 MΩ	Approx.10 mΩ
Temperature Test	Measure Range	Accuracy	
	-10°C ~ 0.1°C	±1.5°C	
	0.0°C ~ 40.0°C	±1.0°C	
	40.1° ~ 70.0°C	±1.5°C	
General Specifications			
Power Supply	1.5 V (LR14) × 10 batteries		
Size	285 mm × 230 mm × 125 mm		
Weight	2100 g approx.		
Safety Rating	EN61010-1, EN61557-1,EN61326-1 CAT.III 1000 V CAT.IV 600 V		

Digital Power Clamp Meter

OHPC6001

- Active Power 0.1 kW ~ 600 kW; reactive power 0.1 kVAr ~ 600 kVAr measurement.
- 9999 counts display.
- Auto ranging, data hold.
- RS232 interface.

Model	OHPC6001	
AC Voltage	0.1 ~ 600 V	± (1.2%+5)
AC Current	0.1 A ~ 1000 A	± (2.0%+5)
Active Power	0.1kW ~ 600 kW	± (3.0%+5)
Apparent Power	0.1kVA ~ 600 kVA	± (3.0%+5)
Reactive Power	0.1 kVAr ~ 600 kVAr	± (3.0%+5)
Power Factor	0.3 ~ 1	± (0.02+2)
Active Energy	0.001 kWh ~ 10000 kWh	± (3.0%+2)
Frequency	20 Hz ~ 1000 Hz	±0.5%
General Specifications		
Power Supply	4×1.5 VAA Batteries	
Product Size	300 mm×103mm×51 mm	
Product Weight	Approx.640g	
Safety Rating	EN61010-1 ,-2-030,EN61010-2-032, EN61326 -1 ,CAT.III 600 V	
Jaw Opening	Ø50 mm/2.0”	
Data Logging And Recall	28 groups	
True RMS	True Root Mean Square Measurement	
Display	9999 counts	
Max/min		
Display back light		
Low battery indication		

Accessories

OHPC6001-A1	Test Leads
OHPC6001-A2	Portable Bag
OHPC6001-A3	User Manual
OHPC6001-A4	RS232 interface cable
OHPC6001-A5	Disk (PC data record graph software)

Digital Power Clamp Meter

OHPC6002

- Active power 0.1 kW ~ 600 kW; reactive power 0.1 kVAr ~ 600 kVAr measurement.
- Harmonic measurement.
- 6000 counts display.
- Auto ranging, data hold.
- RS232 Interface.

Model	OHPC6002	
Measurement	**Range**	**Accuracy**
AC Voltage	0.1 ~ 600 V	± (1.2%+5)
AC Current	0.1 A ~ 1000 A	± (2.0%+5)
Active Power	0.1 kW ~ 600 kW	± (3.0%+5)
Apparent	0.1 kVA ~ 600 kVA	± (3.0%+5)
Reactive Power	0.1 kVAr ~ 600 kVAr	± (3.0%+5)
Power Factor	0.3 ~ 1	± (0.02+2)
Harmonic Measurement 4 5 Hz ~ 6 5 Hz (fundamental frequency)	Harmonic NO .1	± (3.0%+10)
	Harmonic NO .2-6	± (3.5%+10)
	Harmonic NO .7-8	± (4.5%+10)
	Harmonic NO .9-10	± (5.0%+10)
	Harmonic NO .11-15	± (7.0%+10)
	Harmonic NO .16-20	± (10%+10)
General Specifications		
Power Supply	4×1.5 VAA Batteries	
Product Size	300 mm × 103 mm × 51 mm	
Product Size	Approx.640g	
Safety Rating	EN61010-1 , -2-030,EN61010-2-032, EN61326 -1 ,CAT.III 600 V	
Jaw opening	Ø50 mm/2.0”	
Data logging And recall	100groups	
LBD	Low Battery indication	
True RMS	True Root Mean Square Measurement	
Display	6000 counts	
Auto power off		
Display back light		

Accessories

OHPC6002-A1	Test Probe and Clip.
OHPC6002-A2	Portable Bag.
OHPC6002-A3	User Manual.
OHPC6002-A4	RS232 interface cable.
OHPC6002-A5	Disk (PC software).

Smart AC Digital Clamp Meter

OHAC4006

- Measuring DCV (0.5 ~ 600.0 V), ACV (1.0 ~ 600 V), R (0 ~ 10 MΩ), ACA (10 mA ~ 600 A).
- Dual display.
- 6000 counts display.
- Data hold, auto range.

Model	OHAC4006	
Measurement	Range	Accuracy
DCV	0.5 ~ 600.0 V	± (0.5%+3)
AC Voltage (40 ~ 6 5 Hz)	1.0 ~ 600 V	± (0.8%+5)
Resistance	0 ~ 10 MΩ	± (0.8%+3)
Continuity	<30 Ω	<30 Ω
AC Current (40 ~ 6 5 Hz)	10 mA ~ 400 A	± (2.5%+5)
	400 A ~ 600 A	± (3%+5)
Frequency	40 Hz-1000 Hz	1%rdg
PEAK ACA	10 ~ 900 A	±10%rdg+3
General specifications		
Power Supply	2×1.5 VAAA Battery	
Weight	250g	
Size	187 mm × 65 mm × 38 mm	
Jaw Size	Ø 24mm	
Safety Rating	EN61010-1,-2030, EN61010-2-032, EN1326-1,CAT .III 600 V	
Counts	6000	
ACA (AC+DC)	6 A/60 A/600 A	
DCV	6 V/60 V/600 V	
ACV (AC+DC)	6 V/60 V/600 V	
Ω	6 KΩ/60 KΩ/600 KΩ/6 MΩ/10 MΩ	
Frequency (Clamp)	1 kHz	
Frequency (Voltage)	1 kHz	
LPF (1 khz-3 dB)		
Back light		
NCV		
Peak max		
Low battery indication		
Auto power off		
V/Ω/A auto scan		

Accessories

OHAC4006-A1	Test Leads (1000 V, 10 A)
OHAC4006-A2	Cloth Bag
OHAC4006-A3	User Manual

AC/DC Digital Clamp Meter

OHAC4066

- Measuring DCV (0.5 ~ 660 V), ACV (1.0 ~ 660 V), resistance (0 ~ 66 MΩ), ACA (10 mA ~ 600 A).
- Dual display.
- 6600 counts display.
- Data hold, auto and manual range.
- Diode and continuity test.

Model	OHAC4066	
	Range	Accuracy
DC Voltage	660 mV/6.6 V/66 V	± (0.8%+3)
	660 V	± (1.0%+5)
AC Voltage	660 mV/6.6 V/66 V/660 V	± (1.5%+5)
AC Current	66 A/600 A	± (3.0%+10)
DC Current	66 A/600 A	± (3.0%+10)
Inrush Current (100 ms)	66 A/600 A	± (10.0%+60)
Resistance	660 Ω/6.6 kΩ/66 kΩ/660 kΩ/6.6 MΩ	± (1.2%+2)
	66 MΩ	± (2.0%+5)
Capacitance	66 nF/6.6 µF/66 µF/660 µF/6.6 mF/66 mF	± (4.0%+3)
Frequency	10 kHz	± (1.5%+5)
Duty Cycle	10% ~ 95%	± (3.0%+2)
Power Supply	3×1.5 VAAA Battery	
Weight	Approx.245g	
Size	180 mm × 78 mm × 35 mm	
Jaw Size	Ø 26 mm	
Safety Rating	EN61010-1,-2-030,EN61010-2-032, EN61326 -1 ,CAT.III 600 V	
Inrush current		
True RMS		
Work light		
Back light		

Accessories

OHAC4066-A1	Test leads (1000V, 10A).
OHAC4066-A2	User Manual.

Digital Tachometer (Non-Contact Type)

OHTM5009

- Non-contact measurement: 50 ~ 9999 rpm.
- Max., min., average, and hold functions.
- Rotation speed via reflected light sampling process.
- Stable performance, high reliability and high safety performance.
- Compact design.

Model	OHTM5009
Non -Contact Measurement	50 ~ 9999RPM ± (0.03%+2)
Measuring Distance	50 mm ~ 250 mm
Auto Power off	30S
Data Logging	100groups
Power Supply	4×1.5 VAAA Batteries
Product Size	193 mm × 60 mm × 29 mm
Product Weight	120 g approx.
Category	EN61010-1 ,EN 61326-1
m/min m/sec ft/min ft/Sec in/min unit selection	
Display Back light	
Low Battery in indication	

Accessories

OHTM5009-A1	User Guide
OHTM5009-A2	Reflective Sheeting
OHTM5009-A3	Portable Bag
OHTM5009-A4	Plastic Bag

Digital Tachometer (Contact Type)

OHTM5019

- Contact measurement: 50 ~ 19999 rpm.
- Max., min., average, data hold functions.
- Stable performance, high reliability and high safety performance.
- Compact design.

Model	OHTM5019
Contact Measurement	50 ~ 19999RPM ± (0.03%+2)
Auto Power off	30S
Power Supply	4×1.5 VAAA Batteries
Product Size	193 mm × 60 mm × 29 mm
Data Logging	100 groups
Product Weight	120 g approx.
Category	EN61010-1 ,EN 61326-1
Max/min/avg functions	
m/min m/sec ft/min ft/Sec in/min unit selection	
Data hold	
Display Back light	
Contact type test probe	
Low Battery in indication	

Accessories

OHTM5019-A1	User Guide
OHTM5019-A2	2 Measurement Idler Wheels
OHTM5019-A3	2 Measurement Touch Tips
OHTM5019-A4	Lengthening Bar
OHTM5019-A5	Portable bag
OHTM5019-A6	Plastic bag

Sound Level Meter

OHSM0130

- A and C sound pressure frequency weighting.
- 30 ~ 130 dB at A and 35 ~ 130 dB at C sound pressure measurement.
- Wireless transmission of measurement data via Bluetooth.

Model	OHSM0130
Sound Pressure Measurement Scope	30 ~ 130 dB at A,35 ~ 130 dB at C
Sound Pressure Frequency Response	30 Hz ~ 8 kHz
Sound Pressure Frequency Weighting	A and C characteristics
Accuracy	±1.5 dB (Sound Pressure standard, 94 dB @1 kHz)
	±5 dB (Sound Pressure standard, 94 dB @8KHz)
Dynamic Range of Sound Pressure	50 dB (for each measurement gear level)
Dynamic Characteristic of Sound Pressure	FAST 125 ms , SLOW 1 sec
Power Supply	AAA 1.5 V×4 Battery
Size	202 mm × 48 mm × 26 mm
Safety Rating	CE RoHS
Wireless transmission of measurement data to your smartphone or tablet PC via Bluetooth. The measurement data can be easily viewed by means of APP installed.	

Infrared Thermometer (with K-type Thermocouple)

OHTO5080

- Infrared temperature measurement -50˚ C ~ 800˚ C.
- K-type thermocouple: -40 ~ 500˚ C.
- Max., min., average, hold data.
- 4 line digital color display.

Model	OHTO5080
IRT Temperature	-50°C ~ 800°C (±1.5%)
	-58°F ~ 1022°F (±1.5%)
K-type	-40 ~ 500°C
	-40°F ~ 932°F
Ambient Temperature	-20 ~ 60°C (±0.5°C/1.0°F)
	-4 ~ 140°F (±0.5°C/1.0°F)
General Specifications	
Power Supply	6F22 9 VBatteries
Weight	130g
Size	163×97×33mm
Laser Target Pointer	Circle (<1 mW 630 nm ~ 650 nm)
Safety Rating	EN61326,EN60825
D: S	12: 1
Emissivity	0.10 ~ 1.00
Spectral Response	8 ~ 14um
Response Time	<0.5 s
°C/°F	
Ambient temperature	
Temperature bridge alarm (red/green LED)	
Back light	
Auto power off	
Low battery indication	
UV light	

Accessories

OHTO5080-A1	Plastic Bag
OHTO5080-A2	Portable Bag

Industrial Digital Thermometer

OHTI72017

- Suitable for various thermocouples, such as K, J, T, E, R, S, N.
- Self-calibration, thermocouple deviation compensation.
- Results in units °C, °F and °K.
- Max., min., average, data hold.
- USB Interface.

Model		OHTI72017	
	Range	Resolution	Accuracy
J-type	-200 ~ 0°C	0.1°C/°F	± (0.2%+1°C)
	0 ~ 1200°C	0.1°C/°F	± (0.2%+0.5°C)
K-type	-200 ~ 0°C	0.1°C/°F	± (0.2%+1°C)
	0 ~ 1370°C	0.1°C/°F	± (0.2%+0.5°C)
T-type	-200 ~ °0C	0.1°C/°F	± (0.2%+1°C)
	0 ~ 400°C	0.1°C/°F	± (0.2%+0.5°C)
E-type	-150 ~ 0°C	0.1°C/°F	± (0.2%+1°C)
	0 ~ 1000°C	0.1°C/°F	± (0.2%+0.5°C)
R-type	0 ~ 1750°C	1°C/°F	± (0.2%+1°C)
S-type	0 ~ 1750°C	1°C/°F	± (0.2%+1°C)
N-type	-200 ~ 0°C	0.1°C/°F	± (0.2%+1°C)
	0 ~ 1300°C	0.1°C/°F	± (0.2%+0.5°C)
General Specifications			
Power Supply	4×1.5 VAAA Batteries		
Weight	510 g approx.		
Size	204 mm × 93 mm × 57 mm		
Safety Rating	CE RoHS		
Data logging and Recall	1000 groups		
Backlight			
Dual channel			

Temperature, Humidity Meter

OHHT2060

- Measuring Ambient Temperature (-20˚ C ~ 60˚ C).
- ±4.0% accuracy relative humidity measurement.
- Wireless transmission of measurement data via Bluetooth.

Model	OHHT2060	
	Range	Accuracy
Ambient temperature	-20°C-0°C (-4°F ~ 32°F)	±1.5°C
	0°C ~ 45°C (32°F ~ 113°F)	±0.5°C
	45°C ~ 60°C (113°F ~ 140°F)	±1.5°C
Relative Humidity	0% ~ 20%	±4.0%
	20% ~ 80%	±3.0%
	80% ~ 100%	±4.0%
Power Supply	AAA 1.5 V × 4 Battery	
Size	172 mm × 48 mm × 51 mm	
Safety Rating	CE RoHS	
Wireless transmission of measurement data to your smartphone or tablet PC via Bluetooth. The measurement Data can be easily viewed by means of the app.		

Digital Anemometer

OHAV0430

- Measures air velocity up to 30 m/s.
- Wireless transmission of measurement data via Bluetooth.

Model	OHAV0430	
Measurement	**Range**	**Accuracy**
AIR Velocity	0.40 ~ 30.0 m/s	± (2.0%+50)
	80 ~ 5900 ft/m	
	1.4 ~ 108.0 Km/h	
	0.9 ~ 67.0 mile/h	
	0.8 ~ 58.0 Knots	
AIR Flow	0 to 9999 CFM	
General Specification		
Power Supply	AAA 1.5 V × 4 Battery	
Size	172 mm × 48 mm × 51 mm	
Safety Rating	CE RoHS	
Wireless transmission of measurement data to your smartphone or tablet PC via Bluetooth. The measurement Data can be easily viewed by means of the app.		

Component Parameter Tester

OCT3000 Series

- 7 inch TFT LCD display.
- 20 Hz to 1 MHz or 2 MHz test frequency.
- High stability and consistency: up to 15 ranges.
- Multi parameter graphic sweep function, 201 points list sweep function.
- Arithmetical operations.
- Highest test speed 5.6 meas/time.
- 100 groups of internal setting files, 10 groups of gif image files storage.
- RS232, USB, LAN, HANDLER, GPIB (option), SCANNER (option).

Model		OCT3200	OCT3100
Test Signal Source			
Output Impedance		100 Ω, ±1% @1 kHz	
Frequency	**Range**	20 Hz-2 MHz	20 Hz-1 MHz
	Resolution	20.0000 Hz - 99.9999 Hz 0.1 mHz	
		100.000 Hz - 999.999 Hz 1 mHz	
		1.00000 kHz - 9.99999 kHz 10 mHz	
		10.0000 kHz - 99.9999 kHz 0. 1 Hz	
		100.000 kHz - 999.999 kHz 1 Hz	
		1.00000 MHz - 2.00000 MHz 10 Hz	
AC Test Signal		Rated value (ALC OFF): Set the voltage as the Hcur voltage when the test terminal is open Set the current as the Hcur current when the test terminal is short Constant value (ALC ON): Keep the voltage in DUT is the same as the set value Keep the current in DUT is the same as the set value	
AC signal	**Voltage Range**	5 mVrms ~ 2 Vrms	5 mVrms ~ 2 Vrms
	Resolution	5 mVrms ~ 0.2 Vrms 100 µVrms	
		0.2 Vrms ~ 0.5 Vrms 200 µVrms	
		0.5 Vrms ~ 1 Vrms 500 µVrms	
		1 Vrms ~ 2 Vrms 1 mVrms	
		2 Vrms ~ 5 Vrms 2 mVrms	
		5 Vrms ~ 10 Vrms 5 mVrms	
		10 Vrms ~ 20 Vrms 10 mVrms	
	Current Range	50 µArms ~ 20 mArms	50 µArms ~ 20 mArms
	Resolution	50 µArms ~ 2 mArms 1 µArms	
		2 mArms ~ 5 mArms 2 µArms	
		5 mArms ~ 10 mArms 5 µArms	
		10 mArms ~ 20 mArms 10 µArms	
		20 mArms ~ 50 mArms 20 µArms	
		50 mArms~100 mArms 50 µArms	
Rdc Test	**Voltage Range**	100 mV — 2 V	
	Resolution	100 µV	
	Current Range	0 mA— 20 mA	
	Resolution	1 µA	
DC Bias	**Voltage Range**	0 V — ± 10 V	0 V — ± 10 V
	Resolution	0 V ~ 5 V 100 µV	
		5 V ~ 10 V 1 mV	
		10 V ~ 20 V 2 mV	
		20 V ~ 40 V 5 mV	
	Current range	0 mA— ± 100 mA	
	Resolution	0 A ~ 50 mA 1 µA	
		50 mA ~ 100 mA 10 µA	
Display			
Dimensions /Typ		7- inch (diagonal)TFT LCD display	
Proportion		16: 9	
Resolution		RGB, 800×480	
Test Function			
Test Parameter		Cp-D,Cp-Q,Cp-G,Cp-Rp Cs-D,Cs-Q,Cs-Rs Lp-D, Lp-Q, Lp-G, Lp-Rp, Lp-Rdc Ls-D, Ls-Q, Ls-Rs, Ls-Rdc, Rdc R-X, Z-θd, Z-θr G-B, Y-θd, Y-θr Vdc-Idc	
Mathematics Function		A (X+B)+C, X is test parameter, A, B,C is input parameter	
Equivalent Circuit		Series, parallel	
Deviation Measurement		Absolute deviation Δ compared with the nominal value Percentage deviation Δ% compared with the nominal value	
Calibration Function		OPEN, SHORT, LOAD	
Range Selection		AUTO, HOLD	

Model		OCT3200			OCT3100			
Range	LCR	100 mΩ, 1 Ω, 10 Ω, 20 Ω, 50 Ω, 100 Ω, 200 Ω, 500 Ω, 1 kΩ, 2 kΩ, 5 kΩ, 10 kΩ, 20 kΩ, 50 kΩ, 100 kΩ, total 15 ranges						
	Rdc	1 Ω, 10 Ω, 20 Ω, 50 Ω, 100 Ω, 200 Ω, 500 Ω, 1 kΩ, 2 kΩ, 5 kΩ, 10 kΩ, 20 kΩ, 50 kΩ, 100 kΩ, total 15 ranges						
Trigger Mode		INT, MAN, EXT, BUS						
Trigger Delay		0 s ~ 999 s, resolution 100us						
Test Terminal Configuration		Four-pair						
Test Cable Length		0 m, 1 m						
Test Average		1-255 times						
Test Time (ms)	Speed Mode	20 Hz	100 Hz	1 kHz	10 kHz	100 kHz	1 MHz	2 MHz
	FAST	330	100	20	7.7	5.7	5.6	5.6
	MED	380	180	110	92	89	88	88
	LONG	480	300	240	230	220	220	220
Test display range a 1×10^{-18}; E 1×10^{18}								
Cs, Cp		±1.000000 aF ~ 999.9999 EF						
Ls,Lp		±1.000000 aH ~ 999.9999 EH						
D		±0.000001 ~ 9.999999						
Q		±0.01 ~ 99999.99						
R, Rs, Rp, X, Z, Rdc		±1.000000 aΩ ~ 999.9999 EΩ						
G,B,Y		±1. 000000 aS ~ 999.9999 ES						
Vdc		±1.000000 aV ~ 999.9999 EV						
Idc		±1.000000 aA ~ 999.9999 EA						
θ r		±1.000000 a rad ~ 3.141593 rad						
θ d		±0.0001 deg ~ 180.0000 deg						
Δ%		±0.0001% ~ 999.9999%						
t		-99.99°C ~ 1000.00°C						
Turn Ratio (Extension Pending)		±0.000000 ~ 1000.000						
Basic Test Accuracy		0.05%						
List Sweep								
Sweep Points		Up to 201 points						
Sweep Parameters		Test frequency, AC voltage, AC current, DC BIAS voltage, DC BIAS current						
Trigger Mode	SEQ	Once triggered, test at the sweep points. /EOM/INDEX will be output one time.						
	STEP	Once triggered, test at one sweep point. /EOM/INDEX will be output at each point, but the list sweep comparator results only be output at the last /EOM.						
List Sweep Comparator		Set one pair of lower limit and upper limit for each sweep point. Optional: judge through the first sweep parameter / judge through the second sweep parameter / not used in each limit.						
List Sweep Time Tag		In SEQ mode, set the trigger point to 0, by defining the time, the test start time can be recorded at each measurement point.						
Graph sweep analysis								
Sweep Points		51, 101, 201, 401 or 801	~~~					
Sweep Trace		Primary or secondary parameters	~~~					
Display Range		AUTO, HOLD	~~~					
Coordinate Scale		Logarithm, linearity	~~~					
Sweep Parameters		Test frequency, ACV, ACI, DCV BIAS/DCI BIAS, DC voltage source	~~~					
Sweep Result Display		Maximum value/ minimum value of primary/secondary parameter, primary/secondary value of the setting point	~~~					
Sweep Graph Storage		Sweep graphs can be saved to the interior FLASH, external USB storage or uploaded to the upper computer.	~~~					
Comparator								
Bin Sorting	Primary Parameter	9 BIN, OUT_OF_BINS, AUX_BIN, LOW_C_REJECT						
	Secondary Parameter	HIGH, IN, LOW						
Bin Limit Setup		Absolute value, deviation value, percentage deviation value						
Bin Count		0 – 999999						
PASS/FAIL Indication		When the primary parameter is one of the 9 BINs and the secondary parameter is IN, the						

	PASS light on the front panel is ON, or FAIL light is ON.
Test Auxiliary Function	
Data Buffer Storage Function	201 test results can be read in batches
Storage/Calling Function	100 groups of test setting files in the internal nonvolatile memory 0~99 100 groups of test setting files in the USB storage 0—99
Keyboard Lockout Function	Front panel keys can be locked
USB HOST Port	Universal Serial Bus socket, A class; FAT16/FAT32 format. USB flash disk storage or barcode scanning
USB Device Port	Universal Serial Bus socket, small size B class (4 contact position); Correspond to USBTMC-USB488 and USB 2.0 The female joint is used for connecting the external control unit.
Lan	10/100BaseT Ethernet, 8pins, two selectable speed mode
HANDLER Interface	Be used for bin sorting signal output
RS232	
GPIB (Option)	24 pin D-Sub port (D-24 class), the female joint is compatible with IEEE488.1, 2 and SCPI.
Scanner	
External 100 groups of setting files through USB storage.	
10 bins sorting, sorting result with sound and light alarm.	
High compatibility: support SCPI commands, compatible with KEYSIGHT E4980 A, E4980 AL, HP4284 A etc.	

Options

OCT3000-A1	GPIB
OCT3000-A2	SCANNER
OCT3000-A3	List Sweep Comparator: judge through the first sweep parameter/ judge through the second sweep parameter/ not used in each limit.

Component Parameter Tester

OCT2000 series

- 4.3 inch TFT LCD display.
- 20Hz to 300 kHz or 500 kHz test frequency, resolution of 10 mHz.
- Max 6 digit reading resolution.
- Balance Test, Transformer Parameter test function.
- Highest test speed 13ms/time.
- Selectable 30/50/100Ω internal resistance.
- V/I monitor and Automatic level control.
- RS232C, USB, LAN, HANDLER, GPIB or DCI (option).

Model			OCT2030	OCT2050
Display			RGB 800x480, 7 inch TFT LCD	
Frequency of test signal	Range		20 Hz-300kHz	20Hz-500kHz
	Minimum resolution		10mHz, 4-digit frequency input	
	Accuracy		0.01%	
AC Level	Voltage range of test signal		10 mV – 2Vrms	
	Minimum resolution of voltage		100μV, 3-digit input	
	Accuracy	ALC ON	10% x set voltage + 2mV	
		ALC OFF	6% x set voltage + 2mV	
	Current range of test signal		100μA-20mA	
	Minimum resolution of current		1μA, 3-digit input	
	Accuracy	ALC ON	10% x set current + 20μA	
		ALC OFF	6% x set current + 20μA	
DC bias voltage source	Voltage/Current range		0V- ±5V / 0mA- ±50mA	
	Resolution		0.5mV / 5μA	
	Voltage accuracy		1% x set voltage + 5mV	
	ISO ON		Be used for the bias test of inductance and transformer	
AC Source impedance	ISO ON		100Ω	
	ISO OFF		30Ω, 50Ω, 100Ω selectable	
DCR source impedance			30Ω, 50Ω, 100Ω selectable	
Test parameter of LCR			|Z|, |Y|, C, L, X, B, R, G, D, Q, Θ, DCR, Vdc-Idc	
Parameter display of test page			One set of main/sub parameter, 10-point list sweep	
Test parameter of transformer			DCR1 (primary, 2-terminal), DCR2 (secondary, 2-terminal), M (mutual inductance), N, 1/N, Phase, Lk(leakage inductance), C (primary, secondary capacitance), Balance test	
Basic accuracy	LCR test parameter		0.05%	
	N		0.1%	
	Calibration		Warm-up time ≥ 30 second; Environment temperature: 23±5˚C; Signal voltage: 0.3Vrms-1Vrms; Zeroing: After OPEN or SHORT; Length of test cable: 0m	
Measurement time (≥10kHz)			Fast: 13 ms/time Medium: 67 ms/time Slow: 187ms/time Plus the refresh time if display character	
Display range of LCR parameter	|Z|, R, X, DCR		0.00001Ω– 99.9999MΩ	
	|Y|, G, B		0.00001μs – 99.9999s	
	C		0.00001pF – 9.99999 F	
	L		0.00001μH – 99.9999kH	
	D		0.00001 – 9.99999	
	Q		0.00001 – 99999.9	
	Θ(DEG)		-179.999˚ - 179.999˚	
	Θ(RAD)		-3.14159 – 3.14159	

Model		OCT2030	OCT2050
	Δ%	-999.999% - 999.999%	
Equivalent circuit		Serial, Parallel	
Range mode		Auto, Hold	
Trigger time		Internal, Manual, External, Bus	
Average time		1-255	
Calibration function		Open,short calibration with full frequency or dot frequency, Load	
Math operation		Direct reading, ΔABS, Δ%	
Delay time setup		0-999, minimum resolution: 100us	
Comparator		10-bin sorting, BIN1-BIN9, NG, AUX	
		Bin counter	
		PASS/FAIL on front panel, LED indication	
List sweep		·10 points list sweep ·Frequency, AC voltage/current, Internal/external bias voltage/current can be swept. ·Each sweep point can be sorted separately.	
Internal non voltage memory		100 sets of LCRZ setting files 201 times test results	
External USB memory		GIF files LCRZ setting files Test data can be stored via USB memory directly	
Interface	I/O interface	HANDLER on rear panel	
	SCI	USB, RS232C	
	PCI	GPIB (option)	
	NI	LAN	
	Memory interface	USB HOST (front panel)	
	Bias current source control interface DCI	External DC bias current source can be controlled by using DCI interface. The maximum bias current can reach 120A.	
		Option. Only choose either DCI or GPIB	
General Specifications			
Operating temperature and humidity		0˚C – 40˚C, ≤90%RH	
Power supply	Voltage	99V-121V, 198V-242V AC	
	Frequency	47Hz-63Hz	
Consumption		Max. 80 VA	
Dimension (WxHxD)		280mm x 88mm x 370mm (with no sheath) 369mm x 108mm x 408mm (with sheath)	
Weight		Approx. 5kg	

Options

OCT2000-A1	GPIB interface
OCT2000-A2	DCI interface

Component Parameter Tester

OCT1010

- 4.3 inch TFT LCD display.
- 20Hz to 300 kHz or 500 kHz test frequency, resolution of 10 mHz.
- Max 6 digit reading resolution.
- Balance Test, Transformer Parameter test function.
- Highest test speed 13ms/time.
- Selectable 30/50/100Ω internal resistance.
- V/I monitor and Automatic level control.
- RS232C, USB, LAN, HANDLER, GPIB or DCI (option).

Model		OCT1010
Basic measurement accuracy (See details in technical specification)	LCRZ	0.05%
	DCR	0.1%
	Calibration condition	Warm up time: ≥ 30 minutes; Environment temperature: 23±5˚C Signal level: 1Vrms; Correction: after OPEN, SHORT Testing cable length: 0 m
Test signal frequency		50Hz-100kHz, 34points 50Hz, 60Hz, 75Hz, 100Hz,120Hz,150Hz,200Hz,250Hz,300Hz,400Hz, 500Hz,600Hz,750Hz,1kHz,1.2kHz,1.5kHz, 2kHz, 2.5kHz, 3kHz, 4kHz,5kHz, 6kHz,7.5kHz,10kHz,12kHz,15kHz,20kHz,25kHz, 30kHz,40kHz,50kHz,60kHz,75kHz,100kHz,
Signal source output impedance		Selectable 30Ω, 100Ω, ±1% @1kHz
AC test signal level	Normal	10mV—2Vrms
		Resolution: 10mV, Accuracy: 10% x setting voltage+2mV
		100μA—20mArms
		Resolution: 0.1mA
DCR test signal level		1V DC
Test parameters		|Z|, |Y|, C, L, X, B, R, G, D, Q, θ, DCR
DCR display range		0.00001 Ω – 99.9999 MΩ
LCR parameters display range		|Z|, R, X 0.00001Ω — 99.9999MΩ |Y|, G, B 0.00001μs — 99.9999s C 0.00001pF — 9.99999F L 0.00001μH — 99.9999kH D 0.00001 — 9.99999 Q 0.00001 — 99999.9 θ(DEG) -179.999˚ — 179.999 ˚ θ(RAD) -3.14159 — 3.14159 Δ% -999.999% — 999.999%
Display digits		6
Measurement time (≥10 kHz)		Fast: 75 meas/sec(13ms), Medium:11 meas/sec (90 ms), Slow: 2.7meas/sec (370 ms)
Equivalent circuit		Serial, Parallel
Range mode		Auto, Hold
Trigger mode		Internal, Manual, External, Bus
Average time		1–255
Correction		Open, Short, Load
Math operation		Direct reading, ΔABS, Δ%
Trigger delay time setting		0 - 60.000s, 1ms steps
Step delay time setting		0 - 60.000s, 1ms steps
List Sweep		•10 points list sweep •Frequency, AC voltage/current, internal/ external bias voltage/ current can be swept. •Each sweep point can be sorted separately.
Comparator function		10 bins, BIN1–BIN9, NG, AUX
		Bin count function
		PASS, FAIL LED display on front panel
Built-in Storage		Internal 100 LCRZ instrument setting files, 201 times test results
USB Storage		Instrument setting files, measurement result CSV files, printed screen (GIF format)
Interface	Control interface	HANDLER
	Communication interface	USB HOST, RS232C, RS485(option), GPIB(option)
	Storage interface	USB DEVICE (U-disk storage)
Low cost, high performance, small size		
Soft power switch		
10mVrms-2.0Vrms programmable signal level,built-in 0 - ± 5V/50mA bias source		
DCR, 50mV-2V programmable test level, resolution 10μΩ		
Built-in comparator, 10 bins sorting and count function		
File storage and firmware update through U disk		

Options

OCT1010-A1	RS485 interface
OCT1010-A2	GPIB interface

Handheld Component Parameter Tester

OHCT1001

- Maximum test signal frequency: 1 kHz.
- Selectable test signal level.
- 40000 counts for primary parameter, D/Q resolution 0.0001.
- AC test speed up to 4 meas/sec, fast automatic range switch design.
- Percentage display and 4-tolerance comparator 1/5/10.
- Data-hold, Max./Min./Average value recording.
- Standard configuration Mini-USB communication interface and SCPI command set.

Model	OHCT1001
Test Parameter	Primary parameter: L/C/R/Z Secondary parameter: D/Q/R/Θ/ESR
Equivalent Circuit	Series and parallel
Parameter And Equivalent Mode	Hold, Auto
Ranging Mode	Auto
Measurement Terminals	3-terminals, 5-terminals
Measuring Speed	4meas/sec, 1.5 meas/sec
Calibration Function	Open, short
Comparator Function	1%, 5%, 10%
Input Fuse	0.1 A / 250 V
Interface	Mini-USB (virtual serial port)
Test Signal	
Test Frequency	100 Hz, 120 Hz, 1 kHz
Test Level	0.6 Vrms
Output Resistance	100Ω
Display	
Reading	Max. primary parameter: 40,000 digits, secondary parameters D/Q minimum resolution: 0.0001
Basic Accuracy	0.25%
Measuring Range	
L	0.0 µH - 1000.0H
C	0.0 Pf – 20.000 mF
Z/R	0.0000Ω - 10.000 MΩ
ESR	0.0000Ω - 999.9Ω
D	0.0000 - 999.9
Q	0.0000 - 9999
Θ	0.00° - ±180.0°
Power Requirements	
Battery Model	IEC 6LR61, 9 V alkaline battery
AC Power Adapter	Input: 220 V/50 Hz, Output: 12 V-15 V (100Ω load)
Standby Current	Max. 2 µA
Battery Life	16 hours (typical), new alkaline battery, with backlight off
Auto Power Off	5 min, 15 min, 30 min, 60 min, OFF available; Factory default: 5 min
Low Voltage Indicator	When battery voltage drops below 6.8 V, low voltage indicator turns on.
Max .Basic Accuracy 0.25%	
Enhanced protection capability off input terminal impact	
Typical ultra-low consumption: 25 mA	
Innovatively compatible terminal configuration: 5-terminal test slot and 3- terminal banana jack	
Constant 100Ω output impedance	
Battery charge in startup & shutdown	
Test terminal protection function	
Real-time function configuration selection and working condition hold capacity	
Fast access PC communication software	
Gorgeous dual-color case shell	

Options

OHCT1001-A1	RS485 Interface
OHCT1001-A2	GPIB Interface

Resistance Tester

ORT4000 Series

- 4-terminal test, the test is not influenced by impedance of test leads.
- R, V, L, Z, Θ test.
- LCD resolution 480 x 272.
- V, I test signal level monitor function.
- Foot switch trigger function.
- 24-bit color 4.3 inch LCD display.
- RS232, USB host, USB device, GPIB (optional), for communication with PC and remote control.

Model		ORT4065	ORT4350
Display	Displayer	4.3 inch 480x272, 24 bit color TFT display	
	Displayed Digit	R: slow 5 digits, Max. displayed digit 35000; fast, Max. displayed digit 3500 V: slow 5 digits, Max. displayed digit 35000; fast, Max. displayed digit 3500	
Parameter		R, V, R-V, Z-Θ°, Z-Θr, L-Q, L-R, R-X, R-Q	
Basic Accuracy		R: 0.1%, V: 0.05%	
Test Signal Source	Frequency	1 kHz ±0. 2 Hz sine waveform	
	Constance Current	100 mA/10 mA/1 mA/100 μA/10 μA	
Display Range	R/Z/X	1 μΩ - 3.5kΩ	
	DC V	100 μV - 65 V	100 μV - 350 V
	L	0.2 nH – 1H	
	Q	0.001 – 9999.9	
	Θd (deg)	-179.99 – 179.99	
	Θd (reg)	-3.1416 – 3.1416	
Mathematic		Direct, ΔABS, Δ%	
Range	AC R	30 mΩ/300 mΩ/3Ω/30Ω/300Ω/3kΩ	
	DC V	6 V/60 V	30 V/300 V
Max. Input Voltage		65 V	350 V
Test Speed (time/s)		FAST: 50 times/s MED: 10 times/s SLOW1: 5 times/s SLOW2: 3 times/s	
Comparator		20 bits	
Range Mode		Auto, hold	
TRIGGER mode		Internal, manual, external, bus	
Operation Mode		Test leads contact inspection; DUT I/V monitor; REL; short “0”; 1-255 average Delay setting; graphic analysis and scanning; USB storage; Max. 100 groups of the file save/load; statistics of Max.30000 of date	
Interface		Handler, RS232, USB devise, GPIB (optional), USB HOST	
General specification			
Operation Environment	Temperature	0°C – 40°C	
	Humidity	≤ 90% RH	
Power Supply	Voltage	100 V – 120 V, 198 V – 242 V	
	Frequency	47 Hz – 6 3 Hz	
Power Consumption		Max. 15 AV	
Dimensions (WxHxD)		215 mm x 87 mm x 335 mm (net) 235 mm x 105 mm x 360 mm (with sheath)	
Weight		About 3.6 kg	
Contact inspection, to inspect the contact of the test leads in testing			
Deviation deduction (rel) and reference operation, eliminate the influence of base to test result			
Max. test speed 50 times/s			
1 kHz AC constant current source test			
Direct and Δ% display			
Graphic scanning and analysis			
10 bin compare, high limit, low limit, pass and alarm function			
Statistics, like CpK, Cp.etc			
Information in screen stored			
Automatic update through USB HOST			

Options

ORT4000-A1	GPIB interface

Transistor Characteristic Graphic Tester

OTT5000 Series

- Cursor readout, β or gm auto-display.
- Built-in memorizer, curve to be stored and comparable.
- Double transistor test, homo/hetero polarity transistor match.
- RS-232 interface, realize saving, printing and analyzing data stat.

Model	OTT5005	OTT5030
Collector Power Supply		
Voltage: 0 ~ 10 V	Output current: 5 A	Output current: 30 A (pulse)
Voltage: 0 ~ 30 V	Output current: 1 A	Output current: 10 A (pulse)
Voltage: 0 ~ 50 V	Output current: 1 A	
Voltage: 0 ~ 100 V	Output current: 0.5 A	
Voltage: 0 ~ 500 V	Output current: 0.1 A	
Base Drive Power Supply		
Step Current Range	(0.1μA ~ 0.5μA) /steps, 1,2,5 steps ± 7% (Only OTT5005)	
	(1μA ~ 50 mA) /steps, 1,2,5 steps ± 5%	
	(100 mA ~ 0.5 A) /steps, 1,2,5 steps ± 5% (Only OTT5030)	
Step Voltage Range	(0.05 V ~ 1 V)/steps, 1,2,5 steps ± 5%	(0.1 V ~ 1.5 V) steps, 1,2,5 steps ± 5%
Collector Voltage	Voltage Range: (0.05 V ~ 50 V)/div ±3%	
Collector Current	(10μA ~ 0.5 A)/Div ± 3%	
	1 A/ Div (Pulse) ±5% 3 A/Div (pulse) ±5% (Only OTT5030)	
Diode Measurement		
Voltage	(100 V ~ 500 V) /div ± 5%	
Revers Current range	(0.1μA ~ 0.5μA)/div (3div) ± 10%	
	1μA/div ±5%	
	(2μA ~ 5μA)/ div (2div) ±3%	
Test of High-power Diode Positive Trait (only OTT5030)		
Positive Voltage Range	0.2 V/div ± 5%: 1 V/div ±5%	
Positive Current Range	1 A /div ± 5%: 3 A /div ±5%	
Dimensions & Weight	215 mm × 360 mm × 440 mm (HxWxD); 15 kg approx.	
Big screen LCE, flexible keyboard		

Soldering Station for SMD Rework

OLSH2700

- The core of the whole machine controlled by the single and microwave chip.
- 700W hot-air and 50W soldering station.
- Clear digital display of the current working temperature and conditions.
- Temperatures of rework station and soldering station continuously adjusted by digital buttons to meet the needs in different workplaces.
- The two stations can work separately.
- Intuitive fault indication function.

Model	OLSH2700
Total power	750W (MAX)
Input voltage	220VAC ±10% 50Hz / AC110V ±10% 50Hz
Working environment	0-40° Relative humidity: <80 %
Storage temperature	-20-80°C
Weight	3 kg
Hot air operation voltage	AC220V ±10% 50Hz
Hot air output power	700W
Temperature range	100° - 500°
Temperature stability	±5°
Gas flow rate	120L/min (max)
Welding station operating voltage	AC26V 50Hz
Welding station output power	50W

Accessories

OLSH2700-A1	User's guide
OLSH2700-A2	Gun holder
OLSH2700-A3	3 type nozzles
OLSH2700-A4	Power cord
OLSH2700-A5	Iron handle set
OLSH2700-A6	Cleaning sponge
OLSH2700-A7	Iron stand

Soldering Station for SMD Rework

OLSH2550

- Dual LCD display the working and parameter temperatures.
- 550W hot-air and 50W soldering station.
- Quick-to-temp power up.
- Automatic shut-off and sleep mode for safety and energy saving.
- Buttons on the hand piece allow instant adjustment of temperature and air volume.
- Memory stores up to three air and temperature presets.
- Double-window LED screen display. Visualized operation and simple and easy to use.

Model	OLSH2550
Hot wind soldering station	
Power consumption	550W
Temperature range	150-500˚C
Air pump type	Diaphragm type air pump
Noise	<52dBA
Range of tap position of wind amount	20-100 levels
Amount of wind	23L/min (MAX)
Soldering station	
Power consumption	50W
Temperature range	200 – 480˚C
Temperature stability	±2˚C (still air and have no load)
Temperature accuracy	±10˚C
Tip to ground impedance	<2Ω
Tip to ground voltage	<2mV
Physical dimension of principal machine	246 x 187 x 170 mm (LxWxH)
Weight	4.4 kg
Two-in-One design for the welding station and hot wind desoldering station saves space.	
The intelligent cooling system and the extension of air feeding time after shutdown protects the hot wind handgrip much more efficiently.	
The diaphragm type air pump with large pressure can work with many types of spray nozzles.	

Accessories

OLSH2550-A1	User's guide
OLSH2550-A2	Gun holder
OLSH2550-A3	3 type nozzles
OLSH2550-A4	Power cord
OLSH2550-A5	Iron handle set
OLSH2550-A6	Cleaning sponge
OLSH2550-A7	Iron stand

Soldering Station

OLS1100

- Smart function detection for working or non-working modes.
- 100 watts and silver alloy heater.
- Intelligent cooling and temperature recovery.
- Automatic standby and shutdown to ensure personal and property safety (and extend product life).
- Visual overview on the heating process with status bar.
- 3 button store and retrieve prefer heating settings.
- Temperature locking, MCU controlled temperature calibration.
- Low voltage heater is completely isolated from the mains input.

Model	OLS1100
Voltage	AC (100V/110V/120V||220V/230V/240V) 50/60Hz(Optional)
Power	100W
Heater voltage	28VAC
Temperature offset range	150-480℃/302-896℉
Temperature accuracy	±50℃/±90℉
Temperature stability	±2℃(in still air, no load)
Automatic stand-by time	1-120 minutes
Standby temperature	150℃
Automatic shutdown time	1-120 minutes
Temperature adjustment	5 digits (Default)/1 digits (Fine-tuning)
Heater	Silver alloy heater
Temperature lock	Yes
touchtone	Yes
Tip-to-ground impedance	<2Ω
Tip-to-ground voltage	<2 mV
Dimensions	175(L)*115(w)*95(H)mm
Net weight	2.4KG

Accessories

OLS1100-A1	User's guide
OLS1100-A2	Cleaning Sponge
OLS1100-A3	Power cord
OLS1100-A4	Iron stand
OLS1100-A5	Hand Piece

Soldering Station

OLS1090

- 90 watts and silver alloy as conducting material, heat exchange mode, and very fast temperature recovery.
- Temperature rises to 350°C in 10 seconds after starting up.
- Immediate temperature access function and quick switch of service temperature.
- Auto sleep and password locking.
- Separate design between soldering iron and heating core, thus saving on use-cost.
- Fault display warning function.

Model	OLS1090
Power consumption	90 W
Input voltage	220 V AC ± 10% 50 Hz (110 V selectable)
Output voltage	24 V AC
Temperature Range	100~ 500˚C (212~ 932˚F)
Temperature-correcting Range	-50~ +50˚C (-58~ +122˚F)
Temperature Stability	±2˚C (Still air and no load)
Temperature Accuracy	± 10˚C
Setting Mode	Keying adjustment and immediate access
Password Scope	001~ 999
Dormant Time	1~ 99 minutes (No dormancy at the point of 0 minute)
Dormant Temperature	200˚ C (temperature at the tip of soldering iron in the dormant state)
Tip to Ground Impedance	<2Ω
Tip to Ground Voltage	<2 mV
Physical Dilation of Principal Machine	175 mm x 155 mm x 95 mm (LxWxH)
Weight	2.3 kg approx.

Accessories

OLS1090-A1	User Guide
OLS1090-A2	Cleaning Sponge
OLS1090-A3	Power Cord
OLS1090-A4	Soldering Iron
OLS1090-A5	Iron holder

Soldering Station

OLS1080

- Smart function detection for working or non-working modes.
- 80 watts with high end quad-wire heater
- Intelligent cooling and temperature recovery.
- Automatic standby and shutdown to ensure personal and property safety (and extend product life).
- Complete new design with nice LCD display and new user interface.
- Visual overview on the heating process with status bar.
- 3 button store and retrieve prefer heating settings.
- Temperature locking, MCU controlled temperature calibration.
- Low voltage heater is completely isolated from the mains input.

Model	OLS1080
Voltage	AC (100V/110V/120V||220V/230V/240V) 50/60Hz(Optional)
power	80W
Heater voltage	28VAC
Temperature range	150-480℃/302-896℉
Temperature offset range	±50℃/±90℉
Temperature accuracy	±10℃
Temperature stability	±2℃(in still air, no load)
Automatic stand-by time	1-120 minutes
Standby temperature	150℃
Automatic shutdown time	1-120 minutes
Temperature adjustment	5 digits (Default)/1 digits (Fine-tuning)
Heater	High end quad-wire heater
Temperature lock	Yes
Touchtone	Yes
Tip-to-ground impedance	<2Ω
Tip-to-ground voltage	<2 mV
Dimensions	175(L)*115(w)*95(H)mm
Net weight	2.36KG

Accessories

OLS1080-A1	User's guide
OLS1080-A2	Cleaning Sponge
OLS1080-A3	Power cord
OLS1080-A4	Iron stand
OLS1080-A5	Hand Piece

Soldering Station

OLS1060

- Smart function detection for working or non-working modes.
- 60 watts with high performance dual-wire heater.
- Intelligent cooling and temperature recovery.
- Complete new design with nice LCD display and new user interface.
- 3 button store and retrieve prefer heating settings.
- Temperature locking, MCU controlled temperature calibration.

Model	OLS1060
Voltage	AC (100V/110V/120 | | 220V/230V/240V) 50/60Hz(Optional)
Power	60W
Heater voltage	26VAC
Temperature range	150-450℃/302-842℉
Temperature offset range	±50℃/±90℉
Temperature accuracy	±15℃
Temperature stability	±2℃(in still air, no load)
Automatic stand-by time	1-120 minutes
Standby temperature	150℃
Automatic shutdown time	1-120 minutes
Temperature adjustment	5 digits (Default)/1 digit (Fine-tuning)
Heater	High performance dual-wire heater
Temperature lock	Yes
Touchtone	Yes
Tip-to-ground impedance	<2 Ω
Tip-to-ground voltage	<2 mV
Dimensions	175(L)*115(w)*95(H)mm
Net weight	1.85KG
Automatic standby and shutdown to ensure personal and property safety (and extend product life).	
isual overview on the heating process with status bar.	
Low voltage heater is completely isolated from the mains input.	

Accessories

OLS1060-A1	User's guide
OLS1060-A2	Cleaning Sponge
OLS1060-A3	Power cord
OLS1060-A4	Iron stand
OLS1060-A5	Hand Piece

Soldering Station

OLS1050

- MCU controlled temperature calibration whit PID system equipped.
- 50 watts and four core stainless steel heater with long life.
- The heater using low voltage AC source to ensure the antistatic and no leakage, no interference.
- Steady temperature setting with 200 ~ 480˚C.
- Rapid heating-up.
- Legerity handle suitable for long time operation.
- Unique temperature locks setting to avoid adjusting temperature.
- Using split design, easy to place.

Model	OLS1050
Voltage	230 VAC/50Hz - 110VAC/60Hz
Power	50W
Temperature range	200 - 480˚C
Temperature stability	±2˚C (in steel air, no load)
Heater	Four core stainless steel heater
Tip-to-ground impedance	< 2 Ω
Tip-to-ground voltage	< 2mV
Net weight	1.6 KG

Accessories

OLS1050-A1	User's guide
OLS1050-A2	Cleaning Sponge
OLS1050-A3	Power cord
OLS1050-A4	Iron stand
OLS1050-A5	Hand Piece

Soldering Station

OLS2060

- MCU controlled temperature calibration whit PID system equipped.
- 60 watts and two core stainless steel heater with long life.
- Temperature range: 150 °C - 450 °C (302 °F - 842 °F).
- Three programmable preset temperature buttons
- ESD safe & suitable for work on static-sensitive components.

Model	OLS2060
Power consumption	AC (100 V/110 V/120 V||220 V/230 V/240 V) 50/60 Hz
power	60 W
Temperature correcting Range	150˚C to 450˚ (302˚F to 842˚F)
Output voltage	26 V AC
Temperature Stability	±2˚C (static)
Display	LCD
Max. Surrounding Temperature	40˚C
Calibrating Method	Digital Calibration
Temperature Range for Calibration	50˚C to - 50˚C (90˚F to -90˚F)
Tip to Ground Impedance	<2Ω
Tip to Ground Voltage	<2 mV
Heating Element	2 Cores

Accessories

OLS2060-A1	User Guide
OLS2060-A2	Cleaning Sponge
OLS2060-A3	Power Cord
OLS2060-A4	Soldering Iron
OLS2060-A5	Iron holder

Soldering Station

OLS4080

- ESD safe digital soldering station; suitable for work on static – sensitive components.
- 80 watts and four – core ceramic heating core.
- Easy temperature read-out in ˚C or ˚F.
- Three programmable present temptation buttons.
- Temperature range: 150˚C~450˚C (320˚F – 842˚F).
- On/off switch on side of unit.
- Digital temperature correction and simple and easy to operation.
- Fast temperature rise and temperature returning.

Model	OLS4080
Power	80 W
Input Voltage	220 VAC ±10% 50 Hz (110 V optional)
Output Voltage	28 V AC
Temperature Range	150˚C to 450˚ (302˚F to 842˚F)
Temperature Stability	±2˚C (still air; no load)
Temperature Accuracy	±10˚C
Tip To Ground Impedance	<2Ω
Tip To Ground Voltage	<2 mV
Setting Mode	Key adjustment and immediate access
Temperature Correction Mode	Digital
Heating Core	80 W four – core ceramic heating core
Physical Dimension of Principal Machine	146 mm x 120 mm x 91 mm (LxWxH)
Weight	1.8 kg

Accessories

OLS4080-A1	User Guide
OLS4080-A2	Cleaning Sponge
OLS4080-A3	Power Cord
OLS4080-A4	Soldering Iron
OLS4080-A5	Iron holder

Hot Air Station

OLH1070

- Closed-loop and MCU zero crossing design for achieving fast heating-up, accurate and stable control.
- 700 W power consumption.
- LED screen used to display working temperature and working states.
- Embedded sensor inside iron hand piece for auto-sleep.
- With a series of frequently-used temperature and air flux measurements. Digital control for air flow grades.
- Can use normal temperature wind to cool the components.

Model	OLH1070
Voltage	AC (100 V/110 V/120 V||220 V/230 V/240 V) 50/60 Hz (optional)
Power Consumption	700 W
Temperature Range	100-500˚C
Display Mode	LED display
Pump	Fan type pump
Air Flow Gradation	120L/minute (max)
Noise	<52 dB (A)
Smart cooling system and deferred power-off function to extend hot air gun lifespan	
Compact unit to save workbench space	
Smart malfunction detection and indications	
3 nozzles	

Accessories

OLH1070-A1	User Guide
OLH1070-A2	Gun Holder
OLH1070-A3	3 Type Nozzles
OLH1070-A4	Power cord

Hot Air Station

OLH1055

- Closed-loop and MCU zero crossing design for fast and accurate heat-up.
- 550 W power consumption.
- Knob control and LED display.
- Intelligent cooling system and deferred power-off function to extend hand piece lifespan.

Model	OLH1055
Voltage	AC (100 V/110 V/120 V||220 V/230 V/240 V) 50/60 Hz (optional)
Power Consumption	550 W
Temperature Range	100-480°C
Display Mode	LED display
Air Flow Grades	A25~ A99 grades
Pump	Diaphragm pump
Air Flow Gradation	23L/minute (max)
Noise	<52 dB (A)
High power diaphragm pump with high pressure; suitable for various nozzles	
With 2 nozzles	

Accessories

OLH1055-A1	User Guide
OLH1055-A2	Gun Holder
OLH1055-A3	2 Type Nozzles
OLH1055-A4	Power cord

Hot Air Station

OLH2055

- Closed-loop and MCU zero crossing design for achieving a fast heat-up and an accurate and stable control.
- 550 W power consumption.
- Knob control and LED display.
- Smart cooling system and deferred power-off function to extend hand piece lifespan.

Model	OLH2055
Voltage	AC (100 V/110 V/120 V||220 V/230 V/240 V) 50/60 Hz (optional)
Power Consumption	550 W
Temperature Range	100-480˚C
Display Mode	LED display
Air Flow Grades	A25~ A99 grades
Pump	Diaphragm pump
Air Flow Gradation	23L/minute (max)
Noise	<52 dB (A)
Time Function	20 s to 600 s
High power diaphragm pump with high pressure; suitable for various nozzles	
With 4 nozzles	

Accessories

OLH2055-A1	User Guide
OLH2055-A2	Gun Holder
OLH2055-A3	4 Type Nozzles
OLH2055-A4	Power cord

Adjustable / Customizable Work Table

OWB1685

- Stationary workbench BASIC is constructed with an aluminum alloy frame and professional-grade powder coat finish, it provides the necessary strength and stability for demanding environments that is perfect to maximize work surface, the upright frame profile allows for the use of different accessories, whether your requirement is for the laboratory, production floor or other applications, the Stationary Workbench BAISC delivers strength and durability combined with sleek, good-looking style.
- Length: 160 cm, Depth: 85 cm surface.

Model	OWB1685
1	Durable melamine high pressure laminate Length: 160 cm, Depth: 85cm, Thickness: 2.5cm
2	There are two function shelves with length 161cm and depth 36cm mounted in upright frame, which are suitable for putting various kinds of instruments, such as oscilloscope, function generator, DC power supply, bench multimeter, electronic load, and others. (the size of functional shelve is available for customer requested size)
3	Apply with innovative aluminum casted mounting joint rack, it is in good strength and durability and easy disassembly.
4	Advanced optimal illumination the maximum 100 W high power embedded extra slim LED lamp, it is the tricolor with adjustable R, G and B three levels contrast range, as well as memory of light adjustments. Color/Brightness Contrast Controller.
5	The main structure frames of Stationary Workbench BASIC are assembled by aluminum alloy with oxidation powder coating; it is a rare combination of flexibility and strength in a aesthetic package.
6	Well-organized power strip and DC sockets makes work surface clean and safe, it is efficient and convenient for operations.
7	Functional shelf there are two functional shelves with length 161cm and depth 36cm mounted in upright frame, they are suitable for putting various kinds of instruments, such as oscilloscope, function generator, DC power supply, bench multimeter, electronic load, and others. (the size of functional shelve is available for customer requested size)
8	Optional accessory: The mobile-mate storage cabinet is the optional accessory of Station Workbench BASIC
	The total weight of Stationary Workbench BASIC is 105 kgs in two packages: Packing dimension: • 1710 x 900 x 150 cm • 1710 x 480 x 150 cm

Work Table for Small Production Lines & Educational Labs

OWB2005

- Worktable cabinet. Customer can decide its style and its function, also customer can decide what instruments or meter can be composed.
- We design, install and test worktable cabinet according to requests.

Model	OWB2005
Including Instruments	
Oscilloscope: 20 MHz CRT with high sensitivity Oscilloscope.	
Function Generator: 0.3 Hz ~ 3 MHz, with measure frequency and counter.	
HF Signal Generator: 100 kHz ~ 150 MHz, with FM,AM, steady amplitude output.	
DC power supply: 0 ~ 30 V, 3 A double output and 5 V fixed output.	
Table Multimeter: 3½ digit table digital Multimeter.	
Other specifications	
0-250 V/2 A AC adjustable output.	
6 V, 12 V, 20 V, AC output low voltage.	
With iron plane, solder wire plane, sponge plate etc.	
Each circuit can be controlled separately, with power voltage, current display, various power switches are controlled separately With power supply display, voltage display, current display, leakage protection.	
Metal table, fire prevention surface, fine outline.	