

· Test & Measurement Equipments

RF & Microwave Instruments & Systems

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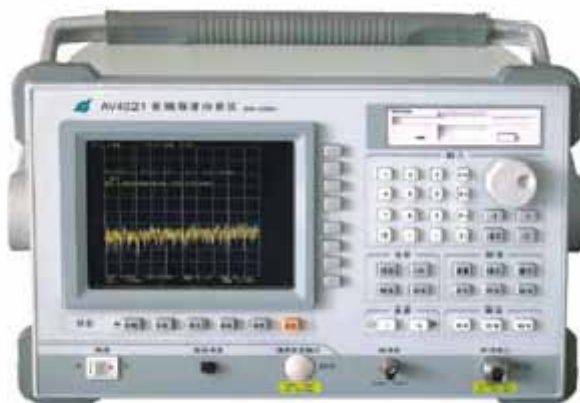
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AV4021 RF Spectrum Analyzer



The AV4021 RF Spectrum Analyzer is high performance and economic, and can measure precise signal noise ratio, distortion, spurious. Its GPIB interface can realize the construction of intellectual measure system and hard-copy the measurement results. The built-in IBASIC is able to perform a second processing and judgment of the data with zero bandwidth sweep and time-gated spectrum measurement. The analyzer is used in the design, production and maintenance of communication equipments.

Specifications

Item	Specification	
⑤ Frequency range:2Hz ~ 2GHz	Noise Side Band	
⑤ Resolution Bandwidth: 1Hz ~ 3MHz(1,3,10 sequence)	Frequency Ranges	OFF set from carrier >10kHz
⑤ Amplitude Accuracy:≤±1dB(10MHz ~ 1.8GHz)	2Hz ~ 1GHz	<-105dBc/Hz
⑤ Receiver sensitivity:-145+3f(GHz)dBm	1GHz ~ 1.8GHz	<-100dBc/Hz
⑤ Residual Response:≤-100dBm	1.8GHz ~ 2GHz	<-95dBc/Hz
Option	1. IBASIC 2. 10MHz High-stability Time-base	
Dimensions	D×W×H: 460×363×222(mm)	
Weight	18kg	

AV4033 Series

High Performance Microwave Spectrum Analyzer



The AV4033 Series High Performance Spectrum Analyzer, exploited introduced by the 41st Institute, is a new intellectualized microwave instrument with wide bandwidth, high resolution, high sensitivity, high dynamic range. It can be widely used in the fields of electron rivalry, satellite communications, navigation, digital mobile communications, spectrum detecting etc.

Main Features

- ③ TFT LCD: provides a friendly interface.
- ③ Millimeter Wave Frequency Expansion: satisfies millimeter wave frequency expansion measurement.
- ③ Delay sweep: can flexibly adjust the location of signal.
- ③ 100 dB display dynamic range: can measure the large and small signal at the same time.
- ③ Entirely Chinese operation platform: can easily master the measurement and technique of the Instrument.
- ③ Wideband tracking pre-select: avoids false spectrum appearance.
- ③ Phase-locked Frequency Synthesizer: improves the accuracy and stability of sweeping LO, decreases phase noise.
- ③ Standard parallel interface: a printer can be linked to it directly.
- ③ Real time IF calibration: ensures the accuracy and coherence of measure results when the environment is variable.
- ③ Narrow Band Digital Filter: provides 1Hz smallest RBW.
- ③ Frequency / Amplitude modulation Demodulation
- ③ Millimeter-wave Extended RF
- ③ Channel power measurement
- ③ Harmonic distortion measurement

- ③ TDMA measurement
- ③ Time filed
- ③ Delay Sweep Test
- ③ Time-gated spectrum analysis
- ③ Digital radio measurement
- ③ Phase noise Test
- ③ Signal identify function
- ③ Adjacent channel and occupied channel power

Specifications

Item		Specification
Frequency Range		AV4033: 30Hz ~ 26.5GHz; AV4033A: 30Hz ~ 18GHz; AV4033B: 30Hz ~ 13.2GHz; AV4033C: 30Hz ~ 3GHz
Frequency Readout Accuracy	Span>2MHz×N: $\pm(\text{freq. readout} \times \text{freq. ref. accuracy} + 5\% \times \text{span} + 15\% \times \text{RBW} + 10\text{Hz})$	
	Span≤2MHz×N: $\pm(\text{freq. readout} \times \text{freq. ref. accuracy} + 1\% \times \text{span} + 15\% \times \text{RBW} + 10\text{Hz})$	
Frequency Span Readout Accuracy	±5% Span>2MHz×N	
	±1% Span≤2MHz×N	
Displayed Average Noise Level	<-139dBm 10MHz ~ 2.9GHz	
	<-140dBm 2.9GHz ~ 6.46GHz	
	<-137dBm 6.46GHz ~ 13.2GHz	
	<-132dBm 13.2GHz ~ 26.5GHz	
Frequency Response	±1.8dB 9.0kHz ~ 2.90GHz	
	±2.4dB 2.9GHz ~ 6.46GHz	
	±2.9dB 6.46GHz ~ 13.2GHz	
	±4.0dB 13.2GHz ~ 26.5GHz	
RBW	Range	1Hz ~ 2MHz in 1,3,10 sequence
	3dB bandwidth accuracy	1Hz ~ 300kHz ±10%
		1MHz±25%
		2MHz +50%, -25%
Noise Sidebands	<-90dBc/Hz Offset 1KHz	<-105dBc/Hz Offset 10kHz
Dimensions	D×W×H: 480×335×165(mm)	
Net Weight	Approx.19kg	
Options	AV4033-OP1	1. Fast time field sweep.
	AV4033-OP2	2. Phase noise measurement (software).
	AV4033-OP3	3. Modulate and demodulate
	AV4033-OP4	4. Millimeter wave frequency expansion. (Put out later)

AV1271X Series Harmonic Mixer



The AV1271X series harmonic mixer is mainly designed for millimeter-wave frequency extension of the microwave spectrum analyzer. Compared with its foreign counterparts, it covers a wider local power range to ensure the accuracy of amplitude measurement. The AV1271X series harmonic mixer can be used in frequency extension for AV4032, AV4033, HP70000, HP8560, and HP8566 series microwave spectrum analyzers. Besides, it may serve as the front end of the millimeter-wave signal receiver.

Specifications

Item	Specification				
Model	AV12711A (8mm)	AV12713 (7mm)	AV12715 (6mm)	AV12717 (5mm)	AV12719 (3mm)
Frequency Range (GHz)	26.5~40	33~50	40~60	50~75	75~110
Harmonic Number	8	10	10	14	18
Alternating Frequency Loss (dB)	28	28	28	40	46
Alternating Flatness (dB)	±2.8	±2.1	±1.9	±2.1	±3.0
Noise Level (RBW=1KHz)	-108	-104	-101	-92	-85
Vibration Power Range (dBm)	12~18	12~18	12~18	12~18	12~18
Dimensions	D× W×H: 260×100×100(mm)				
Weight	2kg				

AV4061/4062 Spectrum Analyzer



AV4061/AV4062 Spectrum analyzer is a high-performance and low-cost RF signal analyzer. With all-band digital sweep PLL local oscillator, digital detector and 6.4" TFT LCD display, It provides accurate frequency and amplitude measurement, as well as multifunction expansion capability. It can be widely used in the fields of digital mobile communications, CATV test and spectrum detecting, etc.

Specifications

Item	Specification	
Model	AV4061	AV4062
Frequency range	9kHz ~ 2.2GHz	9kHz ~ 2.9GHz
Frequency Span Width	1kHz ~ 2.2GHz, 0Hz	500Hz ~ 2.9GHz, 0Hz
Span Accuracy	$\pm 0.5\%$ of the indicated Span Width	
Readout Accuracy	\pm (Frequency Standard Accuracy + Span Accuracy +50% of RBW)	
Noise Sidebands	-80dBc/Hz @10kHz offset (Carrier 1200MHz)	
Average Displayed Noise Level	$< -103\text{dBm}$ (1kHz RBW)	$\leq -116\text{dBm}$ (5MHz ~ 1.6GHz) $\leq -110\text{dBm}$ (1.6GHz ~ 2.2GHz) $\leq -104\text{dBm}$ (2.2GHz ~ 2.9GHz)
Frequency Response	$\pm 2\text{dB}$	
RF Attenuator	0 ~ 50dB, 10dB Step	
Reference Level Accuracy	$\pm 1.5\text{dB}$	
Harmonic Distortion	$\leq -60\text{dBc}$ (-40dBm input, 0dB attenuation)	
Intermodulation Distortion (3rd order)	$\leq -70\text{dBc}$ (-30dBm input, 10dB attenuation)	
Resolution Bandwidth	1kHz ~ 3MHz (1,3,10	1kHz ~ 3MHz(Standard);

	step)	10Hz ~ 1kHz(Optional)
Video Bandwidth	10Hz ~ 1MHz (1,3,10 step)	
Sweep time range	50ms ~ 3000s (Span≥1kHz); 1ms ~ 200s (Zero Span)	
Sweep time Accuracy	Frequency Standard Accuracy ±0.5% of Sweep time	
Interface	RS-232	RS-232 (Standard); GPIB (Option)
Printer Driver	PCL3	
Storage	3.5" Disk	3.5" Disk (Standard) USB(Optional)
Dimensions	D×W×H: 360×360×160mm	
Weight	11kg	
Power	AC 220V±10%, 50Hz±1	

AV4032 Series Microwave Spectrum Analyzer



The AV4032 series microwave spectrum analyzer have over 100 functions including self-test, self-diagnosis, self-adaptation, automatic search, automatic tracing, maximum uphold, digital storage/call, frequency scalar reading, AM Fourier transform, automated computation, man-machine dialogue, picture and text display, automatic print/drawing output, GPIB and etc.

It is widely used in areas like electronic confrontation, satellite communication, navigation, frequency detection, component test, digital communication, EMC and etc.

Specifications

Model	Frequency range	Resolution bandwidth	Optimized display noise level	Amplitude range	Noise side band	
						Deviation from carrier 20kHz
AV4032	9kHz ~ 26.5GHz	30Hz ~ 3MHz	-122dBm	-122 ~ +30dBm	(-100+20LgN) dBc/Hz	
AV4032A	9kHz ~ 18GHz	30Hz ~ 3MHz	-122dBm	-122 ~ +30dBm	(-100+20LgN) dBc/Hz	
AV4032B	9kHz ~ 12.4GHz	30Hz ~ 3MHz	-122dBm	-122 ~ +30dBm	(-100+20LgN) dBc/Hz	
AV4032C	9kHz ~ 2.9GHz	30Hz ~ 3MHz	-122dBm	-122 ~ +30dBm	(-100+20LgN) dBc/Hz	

AV1241X Waveguide Series

Frequency Doubling Sources Modules



The Millimeter-wave system has the virtues of small body, narrow beam, big volume, high resolution, powerful anti-disturbance performance and security. It is used in arms equipments and electronic information systems. Millimeter-wave frequency multiplier signal sources series module performs millimeter-wave frequency extension on the basis of microwave synthesized sweep frequency signal source-from 10 ~ 20GHz microwave signal to 26.5 ~ 110GHz millimeter-wave. It is applied in electronic surveillance, electronic disturbance, millimeter-wave precision navigation, millimeter-wave communication, radar test, astral satellite communication and technologies of hiding and anti-hiding.

Specifications

Item	Specification				
Model	AV12411(8mm)	AV12412(3mm)	AV12413(5mm)	AV12414(6mm)	AV12415(7mm)
Frequency range (GHz)	26.5 ~ 40	75 ~ 110	50 ~ 75	40 ~ 60	33 ~ 50
Max. Constant Amplitude Output Power(dBm)	+5	0	+2	+2	+2
Min. Constant Amplitude Output Power(dBm)	-5	-5	-3	-5	-5
Power Precision (dB)	±2	±2.5	±2	±2	±2
Power Flatness (dB)	±1.5	±1.5	±1.5	±1.5	±1.5
Output Standing Wave	<2.0	<2.0	<2.0	<2.0	<2.0
Dimensions	D×W×H: 230×100×100(mm)				
Weight	1.5Kg				

AV1485 RF Synthesized Signal Generator



The frequency range of the AV1485 RF synthesized signal generator is from 250 kHz to 4GHz, which has covered all of the common RF bands nowadays. With an extremely high frequency resolution, power accuracy and excellent spectral purity, the economic generator can be applied in areas like scientific research, production, test and etc. it boasts of abundant modulation functions including amplitude modulation, frequency modulation, phase modulation, pulse modulation and etc and is offered the option-internal modulation signal generator. Step sweep and list sweep provide flexible digital sweep functions, which can easily realize control over output frequency and power.

Main Features

- ③ Wide frequency coverage
- ③ Extremely high power accuracy
- ③ Built-in modulation signal generator
- ③ Excellent spectral purity
- ③ Sweep modes: step, list
- ③ GPIB remote control function

Specifications

Item	Specification		
Frequency range	250kHz ~ 4GHz	time-base aging rate	1×10 ⁻⁹ /Day
Frequency resolution	10mHz	output power range	+7dBm ~ -136dBm
(>-20dBm) Level accuracy	250k ~ 2GHz: ±0.5dB 2GHz ~ 4GHz: ±0.9dB		
Spectral purity	harmonics (source power output≤+4dBm): <-30dBc		
	non-harmonics (source power output≤+7dBm ,frequency deviation >3kHz): <-53dBc		
	SSB phase noise: <-116dBc/Hz(1GHz carrier, frequency deviation 20kHz ,typical)		
Frequency modulation	Max. deviation:N×400kHz	Phase modulation	Max. deviation: N×4 radian
	3dB bandwidth:DC ~ 100kHz		3dB bandwidth: DC ~ 100kHz
Amplitude modulation (carrier>500kHz)	range: 0 ~ 100%	Pulse modulation	on/off ratio: >60dB
	3dB bandwidth: DC ~ 10kHz		rise/fall time: <150ns typical
Operating temperature	0 ~ 40		
Dimensions	D×W×H: 500×440×133(mm)		
Weight	Approx. 19.5kg		
Interface GPIB	GPIB		
Options	1. mechanical stepped attenuator *internal modulation signal generator		

Main Features

- ③ Wide frequency coverage
- ③ Extremely high power accuracy
- ③ Built-in modulation signal generator
- ③ Excellent spectral purity
- ③ Sweep modes: step, list
- ③ GPIB remote control function

Specifications

Item	Specification		
Frequency range	250kHz ~ 4GHz	time-base aging rate	1×10 ⁻⁹ /Day
Frequency resolution	10mHz	output power range	+7dBm ~ -136dBm
(>-20dBm) Level accuracy	250k ~ 2GHz: ±0.5dB 2GHz ~ 4GHz: ±0.9dB		
Spectral purity	harmonics (source power output≤+4dBm): <-30dBc		
	non-harmonics (source power output≤+7dBm ,frequency deviation >3kHz): <-53dBc		
	SSB phase noise: <-116dBc/Hz(1GHz carrier, frequency deviation 20kHz ,typical)		
Frequency modulation	Max. deviation:N×400kHz	Phase modulation	Max. deviation: N×4 radian
	3dB bandwidth:DC ~ 100kHz		3dB bandwidth: DC ~ 100kHz
Amplitude modulation (carrier>500kHz)	range: 0 ~ 100%	Pulse modulation	on/off ratio: >60dB
	3dB bandwidth: DC ~ 10kHz		rise/fall time: <150ns typical
Operating temperature	0 ~ 40		
Dimensions	D×W×H: 500×440×133(mm)		
Weight	Approx. 19.5kg		
Interface GPIB	GPIB		
Options	1. mechanical stepped attenuator *internal modulation signal generator		

AV1487 Series Microwave Synthesized Signal Sweeper



AV1487 Series sweepers, which were exploited by the 41st Institute of China Electronics Technology Group Corporation based on combining and optimizing the market requirement and direction of the international same products, is a new family of microwave signal sources that provide high performances. The signal sources provided with the module designed and the series configured can meet the demands of different users. The completely new operation system with real time and multitask works very stable and credible. The signal sources display by the large screen TFT-LCD with high lightness and reality color and support the multi-language menus convenient for users operating, support GPIB communication, support the construction of automatic testing system.

In addition, AV1487 series microwave sweepers support the option mode which includes the interior modulation sources and the exterior millimeter wave modules for frequency expanding that above together with the friendly customization; intelligentized interface and the perfect ratio of price/performance become the sources into the modern intelligentized measurement instruments. So it can be broadly used in many fields such as aviation aerospace, radar and electronic counterwork.

Main Features

- ③ Output high power and pure signal
- ③ 1~10MHZ low frequency signal source option
- ③ Complex modulation simulation in pulse
- ③ Chinese/English operation interface
- ③ 110GHZ frequency expanding module
- ③ Cw, ramp, step, list, power sweep modes
- ③ Supporting AV3617, constructing scalar network system
- ③ Software upgraded automatic by USB

Specifications

Item	Specification			
Model	AV1487A	AV1487B	AV1487C	AV1487
Frequency Range	0.01GHz ~ 8GHz	0.01GHz ~ 20GHz	0.01GHz ~ 26.5GHz	0.01GHz ~ 40GHz
Time-base Aging Rate	1*10 ⁻⁹ /day	1*10 ⁻⁹ /day	1*10 ⁻⁹ /day	1*10 ⁻⁹ /day
Frequency Resolution	0.1Hz	0.1Hz	0.1Hz	0.1Hz
Ramp Sweep Mode Accuracy	<0.1‰ of span			
Harmonics	10MHz ~ 2.35GHz: <-30dBc; Big power option <-20dBc			
	2.35GHz ~ 20GHz: <-50dBc; Big power option <-20dBc			
	20GHz ~ 40GHz: <-40dBc			
Sub-harmonic	10MHz ~ 20GHz: No 20GHz ~ 40GHz: <-40dBc			
Non-harmonically Related	10MHz ~ 2.35GHz: <-50dBc			
	2.35GHz ~ 20GHz: <-60dBc			
	20GHz ~ 40GHz: <-55dBc			
Single-sideband Phase Noise	-80dBc/Hz@1kHz -95dBc/Hz@10kHz -100dBc/Hz@100kHz (Typical 10GHz)			
Power-level Range	AV1487A:+13dBm ~ 20dBm; With 001 option: +15dBm ~ 110dBm			
	AV1487B:+10dBm ~ 20dBm; With 001 option: +15dBm ~ 110dBm			
	AV1487C:+10dBm ~ 20dBm; With 001 option: +8dBm ~ 110dBm			
	AV1487:+8dBm ~ 20dBm; With 001 option: +5dBm ~ 110dBm			
Power Flatness(Typical)	10MHz ~ 2.35GHz: ±0.5dB			
	2.35GHz ~ 20GHz: ±0.6dB			
	20GHz ~ 40GHz: ±0.8dB			
Power Accuracy	10MHz ~ 2.35GHz: ±0.6dB			
	2.35GHz ~ 20GHz: ±0.7dB			
	20GHz ~ 40GHz: ±0.9dB			
Modulation	Pulse on/off ratio: >80dB Pulse rise/full times: <20ns			
	AM sensitivity: 100%/V, 10dB/V AM rate: DC ~ 100kHz			
	FM sensitivity: 1MHz/V AM rate: DC ~ 1MHz			
	PM sensitivity: 1r/V PM rate: DC ~ 1MHz			
	FM wave in pulse: sine-wave, saw-tooth-wave, triangle-wave			
	Pulse wide: 1μs ~ 10s ⁻¹ μs Pulse period: 100μs ~ 10s Pulse resolution: 1μs			
Dimensions	D×W×H: 580×440×146(mm)			
Net Weight	Approx. 22.5kg			
Work Temperature	0 ~ 40			
RF Output Por	AV1487A: N(J)			
	AV1487B/AV1487C: 3.5mm(K)			
	AV1487: 2.4mm(K)			
Options	1) 90dB step attenuator 2) Internal modulation generator 3) low frequency signal generator 4) high power option			

AV1471 Agile RF Signal Generator



AV1471 agile RF signal generator combines high performance with frequency agility for Modern military communication and Radio confront. It provides capability for both static and agile test requirements, and has several flexible modulation types. These complex RF signal can quantitatively exercise a receiver's vulnerability to a jamming transmission. It satisfies complex signal simulations in fast hop mode. These capabilities are important for performance testing of such devices as frequency agile radios, surveillance receivers and modern new system radars. It is indispensable instrument in the process of the research manufacture and measure maintenance for the radio war devices. The AV1471 agile RF signal generator offers flexible and comprehensive control of the frequency hopping output. Parameters can be entered from the front panel, through the GPIB port or using TTL inputs on the rear panel. Example, hop frequencies, amplitude, dwell times, hop rate, modulation and extensive hopped-frequency simulations. For real-time control, it can utilize the external triggering, dwell time and frequency selection. It convenient allow direct connection with the hardware under test, or make up of the measure system with the other devices.

Main Features

- ③ 15ms Frequency switching time
- ③ ± 2 ppm Frequency accuracy in Fast Hop mode
- ③ Low spurious and phase noise
- ③ Large amplitude dynamic range and Better amplitude accuracy
- ③ Internal Numeric Synthesis Modulation source
- ③ FM/AM/PM/Pulse modulation/Simultaneous modulation
- ③ Three types of frequency sweep: Digitally-stepped sweep, Fast-hop sweep, Phase-continuous sweep

Specifications

Item		Specification	
Frequency range		252kHz ~ 2060MHz	Level range +13 ~ -110dBm
Frequency resolution		0.01Hz	Hopping frequency accuracy ±2ppm
SSB phase noise		-123dBc/Hz(1GHz,20kHz Offset)	
Harmonics		<-30dBc (252kHz ~ 1030MHz,output≤+8dBm) <-25dBc (1030 ~ 2060MHz,output≤+8dBm)	
Non-harmonics		<-80dBc (252kHz ~ 1030MHz,>20kHz Offset) <-74dBc (1030 ~ 2060MHz,>20kHz Offset)	
Frequency switching time		500μs(252kHz ~ 1030MHz)	85μs (8 ~ 1030MHz)
		15μs (128 ~ 1030MHz)	20μs (1030 ~ 2060MHz)
NSM source		0.1Hz ~ 400kHz,Sine, White Gaussian noise; 0.1Hz ~ 50kHz,Square, Saw tooth, Triangle	
Modulation type	Static	Internal/External/Simultaneous modulation; Simultaneous internal/external modulation: FM and phase	
	Agile	Internal or external AM, FM, Simultaneous AM and FM	
Input port		AM, FM, PM, Pulse modulation, External 10MHz Reference, Voltage measure, HOP, SEQ Input: BNC 50O female connector	
Output port		RF Output: N 50O female connector Audio Output: BNC 50O female connector Reference Output: BNC 50O female connector	
Interface character		GP-IB Interface, Accord with IEEE-488.2 interface requirement Fast Hop bus interface: DB-25 connector accepting TTL levels	
10MHz high stability option and main performance specifications		Aging: 1×10^{-9} /day, 3×10^{-7} /year	
Power requirements		AC 220V±10%, 50Hz±5%,320W Maximum	
Maximum shape dimensions		200H × 440W × 640D mm	
Weight		35kg	

AV1486 Series Microwave Signal Generator



The AV1486 Series sweepers, a family of microwave signal sources, which were exploited by the Institute based on combining and optimizing its existing ripe technologies, can provide multi-functions with the perfect ratio of price /performance. Through option mode, these sweepers can meet the demands of different levels from simple broadband microwave oscillator intelligently driving to synthesized sweepers with excellent spectral purity, multiple modulations and frequency expanding. All of above can decrease purchasing cost as well as fully satisfy special needs of different consumers.

Main Features

- ③ Module designed, easy to upgraded
- ③ Support GPIB communication, instrument bus extending and ATE setting up
- ③ Effectively integrated functions as follows: frequency synthesizing, frequency sweep and power sweep.
- ③ Convenient operation with Chinese or English interface, menu selection in large screen
- ③ Hardware combined with software to provide perfect self testing and self adjusting functions
- ③ Option mode for different users.
- ③ Built-in user manual, intelligent help on line and error auto testing with alarm
- ③ Include superior accuracy , excellent spectral purity and high frequency resolution
- ③ Through pulse, amplitude, frequency modulation and combination modulation, provide output of internal modulation

Specifications

Item	Specification
Frequency Range	AVI486:10MHz ~ 20GHz AVI486A:2GHz ~ 20GHz
Internal Reference Oscillator	Frequency: 10MHz Aging Rate standard: $\pm 1 \times 10^{-6}$ /year Aging Rate of High Stability Option: $\pm 1 \times 10^{-9}$ /day
Frequency Resolution	1Hz
Analog Sweep Accuracy	$\leq +0.01\%$ of span (Sweeping time > 500ms)
SSB Phase Noise	-75dBc/Hz (10GHz@10kHz offset)
Harmonics	10MHz ~ 2.35GHz: < -30dBc Other: < -50dBc High power Output option: < -20dBc
Sub-harmonics	none
Non-harmonics Spurious	< -50dBc (Offset From Carrier: > 500kHz)
Output Power Range	Standard: -20dBm to +10dBm High power Output option: -15dBm to +15dBm Step attenuator option: 70dB, 90dB
Power Flatness	± 0.7 dB
Power Accuracy	± 1.0 dB
Modulation	AM FM PM
Dimensions	D×W×H : 500×440×133(mm)
Weight	Approx. 18kg
Option	1. High-Stability Time base 2. High Power Output (+15dBm) 3. Programmable Step Attenuator (70dB or 90dB) 4. Internal Modulation Sweeper

AV1483/AV1484

Broadband Microwave Frequency-swept Signal Generator



The AV1483/AV1484 series sweepers, new types of broadband coaxial synthesized sweepers, are achieved by frequency expanding based on the AV1481 series. Their upper limit of frequency respectively is from 40 GHz to 26.5 GHz. They can provide the same virtues as the AV1481 series, such as high

frequency accuracy, excellent spectral purity, superior power accuracy, wide range of output power, friendly interface, etc. In the meanwhile, they also have performances of amplitude modulation, frequency modulation and Pulse modulation. As perfect broadband microwave signal sources. They have been widely used in many fields as aviation, aerospace, radar, electronic warfare, communication, and so on.

Specifications

Item	Specification	
Models	AV1483	AV1484
Frequency Range	10MHz ~ 40GHz	10MHz ~ 26.5GHz
Time-base Aging Rate	1×10^{-9} /day	
Frequency Resolution	1Hz	
Sweep Frequency Accuracy	1‰	
Harmonics	10GHz ~ 2.35GHz: <-25dBc	10MHz ~ 2.35GHz: <-30dBc
	2.35GHz ~ 40GHz: <-40dBc	2.35GHz ~ 20GHz: <-50dBc
		20GHz ~ 26.5GHz: <-40dBc
Sub-harmonics	<-40dBc	7 ~ 20GHz: <-50dBc
		>20GHz: <-40dBc
Non-harmonics	<-50dBc	
SSB Phase Noise	<-80dBc/Hz (10GHz @10kHz Offset)	
Maximum Leveled Power	>+0dBm	>+10dBm
Power Accuracy	± 2.0 dB	± 0.9 dB
Power Flatness	± 1.5 dB	± 0.8 dB
Dimensions	D×W×H: 584×420×180mm	
Net Weight	Approx. 28.5kg	

Options	Built-in function generator Output from rear panel 90dB remote control step attenuator	Built-in function generator Output from rear panel 90dB vertebra control step attenuator
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AV1481 Series

Microwave Synthesized Frequency-swept Signal Generator



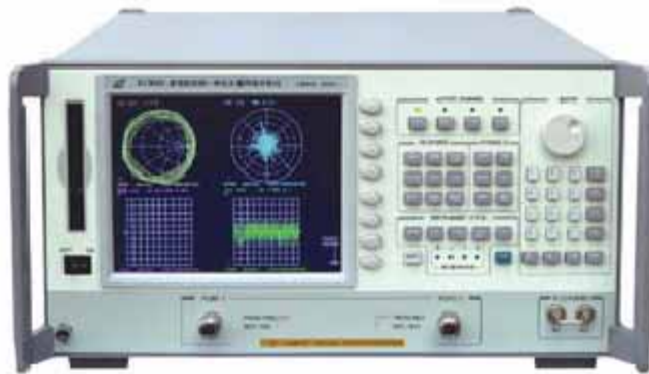
The AV1481 series provide superior accuracy and stability. They make the excellent frequency resolution and signal purity. The excellent performance combines high-output power capabilities, high measurement dynamic range. Fully-synthesized CW, stepped, and ramp sweep modes are available in operation. Excellent output-power flatness and accuracy can be translated to the input port of the device-under-test with the power flatness correction feature and remote control operation of frequency multiplier source module interface and GPIB interface. With excellent modulation specifications, the series supports pulse, linear, logarithmic and amplitude frequency modulation respectively and simultaneously. They are used in communication, radar, electronic confrontation, aviation, spaceflight, and are important microwave measurement instruments.

Specifications

Item	Specification		
Model	AV1481	AV1481B	AV1481C
Frequency range	2GHz ~ 20GHz	10MHz ~ 7GHz	10MHz ~ 20GHz
Time base Aging Rate	1×10^{-9} /day	1×10^{-9} /day	1×10^{-9} /day
Frequency Resolution	1Hz	1Hz	1Hz
Frequency Accuracy	1×10^{-8}	1×10^{-8}	1×10^{-8}
SF Accuracy	1‰	1‰	1‰
SSB Phase Noise	10MHz ~ 7GHz:-78dBc/Hz@1KHz;-86dBc/Hz@10KHz 7GHz ~ 13.5GHz:-72dBc/Hz@1KHz;-80dBc/Hz@10KHz 13.5GHz ~ 20GHz:-68dBc/Hz@1KHz;-76dBc/Hz@10KHz		
Harmonics	10MHz ~ 2.35GHz:<-30dBc; Others:<-50dBc		
Sub-harmonics	<-50dBc		

Non-harmonics	10MHz ~ 2.35GHz:<-50dBc; Others:<-60dBc
Output Power Range	+10dBm ~ -20dBm; With Option-1:+8.5dBm ~ -110dBm
Power Flatness	±0.6dB
Power Accuracy	±0.7dB
Modulation	Pulse Modulation on/off ratio: >80dB Pulse Modulation rise/fall time: <50ns Amplitude modulation sensitivity: 100%/V,10dB/V Modulation frequency: DC ~ 100kHz Frequency Modulation Sensitivity: 1MHz/V,10MHz/V Modulation Frequency: DC ~ 8MHz
Options	1: 90dB remote control step attenuator 2: Internal modulation signal generator 3: Rear panel output
Dimensions	D×W×H=584×420×180(mm)
Weight	Approx. 28.5kg

AV3620 High Performance RF Integrative Vector Network Analyzer



AV3620 high performance RF integrative vector network analyzer carries fast and accurate measurement of amplitude, phase and group delay of RF networks, as well as measurement of time domain and frequency conversion components. It has a vast application in military and civilian technology areas such as S-parameter measurement of RF passive/active networks, short wave communication, phase-control field radar, electronic interference and surveillance and precision navigation. Abiding closely with the requirements of production lines, the analyzer is one of the most used measurement instruments on the production line of elements. Its high measurement precision qualifies it as a measurement standard in the labs and on the production lines.

Main Features:

- ③ Fast measurement speed
- ③ High measurement precision
- ③ Simultaneous display of four channels (Max. 8 testing curves)
- ③ Measurement upper and lower limits configurable
- ③ Highly intellectual
- ③ Highlight LCD display

Specifications

Primary technology specifications

Chengdu SIWI Electronic Co., Ltd SIWI Electronic Building, Xiejiaji Chengdu 610091, China	www.siwi.com.cn Tel: +86-28-81705119 87360620 Fax: +86-28-81707519 Email: market@siwi.com.cn
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Frequency Range	30kHz ~ 6GHz				
Frequency Resolution	1Hz				
Frequency Accuracy	± 0.5ppm (25 ± 5)				
Output Power Range	-85dBm ~ +8dBm				
Power Sweep Range	23dB				
Test Port Output Power Accuracy	±1.0dB				
Measurement Port Characteristics	Frequency Bands	30kHz ~ 300kHz	300kHz ~ 1.3GHz	1.3GHz ~ 3GHz	3GHz ~ 6GHz
	Directivity (dB)	50	50	47	40
	Source Match (dB)	45	42	36	31
	Load Match (dB)	50	50	47	40
Frequency Bands	30kHz ~ 16MHz	16MHz ~ 3GHz		3GHz ~ 6GHz	
System Dynamic Range (dB)	90	100		95	
Display Mode	8.4 inch LCD				
Display Channel	4 channels				
Measurement Speed	77ms/201 points (30kHz ~ 6GHz Frequency Range,3kHz IF Bandwidth)				
Measurement Domains	Frequency and time domains				
Measurement Formats	Descartes coordinates: Logarithm amplitude, linear amplitude, phase, group delay, standing wave ratio, real and minus parts of complex number				
	Smith circle graph: logarithm amplitude, linear amplitude, impedance R+jX or admittance G+jB				
	Polar coordinates: logarithm amplitude, linear amplitude, phase, real and minus part				
Display Amplitude Resolution	0.001dB/div				
Display Phase Resolution	10m°/div				
Display Group Delay Resolution	0.01ps/div				
Interface Forms	Standard parallel, serial, GPIB, VGA interfaces.				

AV3618 Series

Microwave Integrative Vector Network Analyzer



AV3618 series microwave integrative vector network analyzer is a combination of synthesized swept frequency signal source, multi-channel amplitude and phase receiver and S parameter measurement device, with the compact structure, measurement frequency broadband, fast measurement speed and convenience to carry about. In one frequency sweep, you can acquire the information of amplitude, phase, and group delay of the four S parameters of the subject network simultaneously. Thus AV3618 series microwave integrative vector network analyzer is the primary equipment for the S parameter measurement of microwave components, equipment and system.

Main Features

- ③ Built-in fast sweep frequency synthesized source; support power sweep
- ③ Phase-locked vector receiver; error calibration and time domain function
- ③ Built-in electron switch, S parameter test set
- ③ Wide dynamic range
- ③ Chinese and English menu selection
- ③ Non coaxial component measurement
- ③ Direct sampling channel
- ③ Built-in 3.5-inch floppy drive
- ③ Common print interface
- ③ Large screen LCD color display

Specifications

Item		Specification			
Frequency range		AV3618: 50MHz ~ 20GHz AV3618A: 50MHz ~ 13.5GHz			
Frequency Resolution		1Hz			
Frequency accuracy		10ppm			
Output Power Range		-70dBm ~ +5dBm			
Power Accuracy of Test Port		±4.0dB			
Specification of Test Port	Frequency Range (GHz)	0.05 ~ 0.5	0.5 ~ 2	2 ~ 8	8 ~ 20
	Effective Directivity (dB)	42	42	38	36
	Effective Source Match (dB)	37	37	30	28
	Effective Load Match (dB)	42	41	36	34
Frequency Range (GHz)		0.05 ~ 0.5	0.5 ~ 2	2 ~ 8	8 ~ 20
System Dynamic Range (dB)		70	95	96	95
Measurement Format		Frequency domain, time domain			
Measure Points		1 ~ 1601			
Display Amplitude Resolution		0.001dB/div			
Display Phase Resolution		10m ° /div			
Group time-Relay Resolution		0.01 ps /div			
Average Factor		1 ~ 999			
Test port Connector Type		3.5mm (M)			
Interface		Standard parallel interface、 GPIB interface			
Test option	Calibration Parts	AV31101: N type Coaxial Calibration Kit AV31111: 7mm Coaxial Calibration Kit AV31121: 3.5mm Coaxial Calibration Kit			
	Test cable	Agilent 85131F: 3.5-3.5 mm Agilent 85132F: 3.5-7 mm			
Dimension		L × W × H: 500mm × 440mm × 300mm			
Net Weight		Approx. 35kg			
Power Supply		50Hz ± 5%, 220V ± 10% Single-phase AC Maximum of input power: 200W			

AV3627 Broadband Integrative Vector Network Analyzer



AV3627 broadband series vector network analyzer is developed by the 41st institute. It is a new type of products of the microwave integrative vector network analyzer series. Its frequency is up to 40GHz. And the whole instrument is combined with built-in sweep frequency source, multi-channel amplitude and phase receiver and S-parameter test set. It has the features such as compact structure, broad frequency band, and fast test and easy to take and so on. It can obtain simultaneously amplitude, phase and group-delay characteristics of the DUT's four forward and reverse S-parameters. It can take comprehensive and accurate measurements of microwave network parameters. And it has been used in the fields of the research, test and produce of devices, radar, spaceflight, communication and interference, electronic counter measure and other military and civil. The network analyzer is a core instrument of microwave devices, equipments and system parameters measurement.

Main Features:

- ③ Built-in high speed sweep frequency synthesized source, power sweep function
- ③ Phase-locked vector receiver, error correction and time domain function
- ③ Integrated S-parameter test system
- ③ Internal 3.5 inch floppy drive
- ③ English optional menu
- ③ 10 inch color LCD display
- ③ Universal printer interface

Specifications

Item		Specification			
Frequency Range		0.05 ~ 40GHz			
Frequency Resolution		1Hz			
Frequency Accuracy (No High Stable Time-base)		10ppm			
Specifications of Test Port	Frequency Segment	0.05 ~ 2GHz	2 ~ 8GHz	8 ~ 20GHz	20 ~ 40GHz
	Effective Directivity (dB)	≥42	≥40	≥34	≥26
	Effective Source Match (dB)	≥30	≥30	≥28	≥23
	Effective Load Match (dB)	≥42	≥40	≥34	≥26
Frequency Segment		0.5 ~ 0.84GHz	0.84 ~ 8GHz	8 ~ 20GHz	20 ~ 40GHz
System Dynamic Range (dB)		≥70	≥90	≥90	≥80
Display Mode		10-inch high brightness color LCD			
Display Channels		2 channels, every channel has 4 elementary parameters: S11,S12,S21,S22			
Measurement Domain		Frequency domain, time domain			
Measurement Format		A. Descartes coordinates: logarithm amplitude, linear amplitude, phase, group-delay, and stationary wave ratio, plural parameters' the real part and the imaginary B. Smith plot: logarithm amplitude, linear amplitude, impedance R+jX or conductance G+jB C. Pole coordinates: logarithm amplitude, linear amplitude, phase, the real part and the imaginary.			
Measurement Points		1 ~ 1601			
Display Amplitude Resolution		0.001dB/div			
Display Phase Resolution		10m °/div			
Group Time-delay Resolution		0.01ps/div			
Average Factor		1 ~ 999			
Test Port Connector Type		Coaxial 2.4mm			
Interface		Standard parallel interface, GPIB interface			
Dimensions (l× b× h)		510mm × 460mm × 285mm			
Net Weight		Approx.36kg			
Electrical Source and Power		50Hz±5%, 220V±10% Single-phase AC Maximum of input power: 200W			

AV3630 Four-channel Amplitude and Phase Receiver



With the AV3630 Four-channel Amplitude and Phase Receiver as the host, the microwave millimeter-wave vector network analyzer is new generational vector network analyzer developed after AV3615 by the 41st Institute and is an organized combination of the modern microwave millimeter-wave technology, modern circuit technology and modern computer technology. It is entitled the king of microwave and millimeter-wave measurement instrument for simultaneous acquirement of features of the microwave and millimeter-wave device under test such as amplitude, phase and group-delay. Its excellent performance and powerful measurement function are able to meet various microwave millimeter-wave measurement measurements.

Main Features:

- ③ Wide frequency measurement
- ③ Compatible with general-purpose PC, & printers
- ③ 12 items of error correction
- ③ Antenna and RCS test function
- ③ Powerful mathematical operation function
- ③ Pulse measurement function
- ③ Powerful time domain function
- ③ Powerful storage function
- ③ High fidelity LCD display
- ③ Real-time data processing
- ③ Compatible with Agilent product
- ③ Flexible operation

③ Host integration

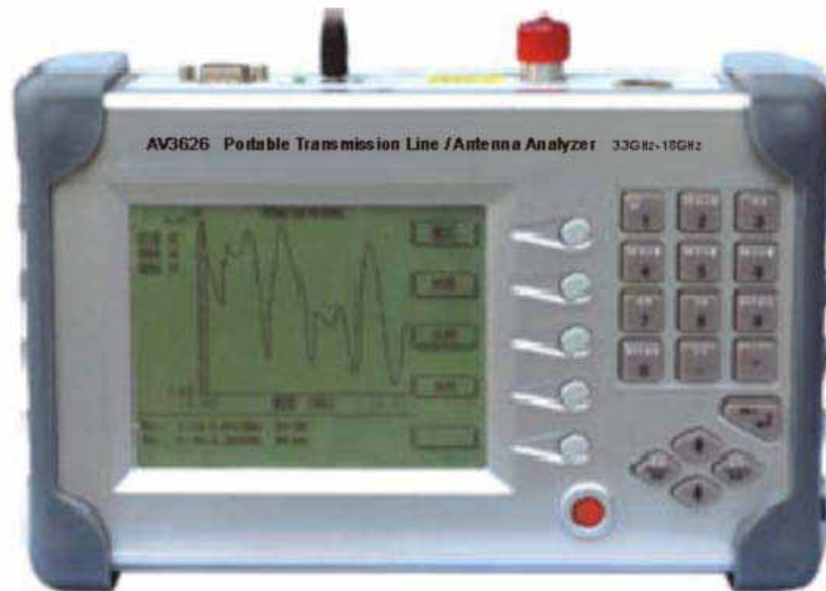
System Configuration		
Coaxial test system	Waveguide test system (AV3630 four-channel amplitude and phase receiver + AV3640 millimeter-wave controller + test modules	Flexible test cable
AV3630 four-channel amplitude and phase receiver Frequency range: 45MHz ~ 110GHz	AV3641A 8mm S-Parameter test module Frequency range:26.5GHz ~ 40GHz	Flexible test cable 3.5mm-3.5mm
AV3631 S-Parameter test set Frequency range: 45MHz ~ 26.5GHz	AV3642A 7mm S-Parameter test module Frequency range:33GHz ~ 50GHz	Flexible test cable 3.5mm-7mm
AV3632 S-Parameter test set Frequency range: 45MHz ~ 40GHz	AV3643A 6mm S-Parameter test module Frequency range:40GHz ~ 60GHz	Flexible test cable 2.4mm-2.4mm
AV3633 Frequency convert test set Frequency range: 45MHz ~ 26.5GHz	AV3644A 5mm S-Parameter test module: Frequency range:50GHz ~ 75GHz	Flexible test cable 2.4mm-3.5mm
AV3635 Antenna test set Frequency range: 100MHz ~ 20GHz	AV3645 3mm S-Parameter test module Frequency range:75GHz ~ 110GHz	Flexible test cable 2.4mm-7mm

Main Specifications						
AV3630 Four-channel amplitude and phase receiver		Specifications	AV3631 S-parameter test set	AV3632 S-parameter test set	AV3640/ AV3641A 8mm S-parameter Test set	AV3640/ AV3645 3mm S-parameter Test set
Frequency range: 45MHz ~ 110GHz		Frequency range	45MHz ~ 26.5GHz	45MHz ~ 40GHz	26.5GHz ~ 40GHz	75GHz ~ 110GHz
Resolution	Amplitude (dB): 0.001	Dynamic range	70dB ~ 93dB	70dB ~ 83dB	89dB	76dB
	Phase degree: 0.01	Effective directivity	42dB ~ 48dB	38dB ~ 42dB	50dB	46dB
	Group delay (ps): 10	Load match	42dB ~ 48dB	38dB ~ 42dB	50dB	46dB
Accuracy	Calibration by the calibration Kit with NIST standard data	Source match	31dB ~ 40dB	31dB ~ 40dB	40dB (OFFSET CAL)	36dB (OFFSET CAL)
		Reflection tracing	±0.14dB	±0.14dB	±0.05dB	±0.04dB
		Transmission tracing	±0.09dB	±0.14dB	±0.05dB	±0.07dB
Dimensions (D× W× H: mm)			508× 440× 222	508× 440× 131	508× 440× 131 295× 175× 175	508× 440× 131 295× 175× 175
Weight			26kg	19kg	12kg/12kg	12kg/12kg

Specifications (AV3XXXX series coaxial/waveguide calibration Kit)			
	Model	Frequency range	Return loss
AV31XXX series coaxial/wave guide calibration Kit	AV31101 N	45MHz ~ 18GHz	Connector SWR≤1.083
	AV31111 7mm	45MHz ~ 18GHz	Connector SWR≤1.083
	AV31121 3.5mm	45MHz ~ 26.5GHz	Connector SWR≤1.106
	AV31123 2.4mm	45MHz ~ 40GHz	
AV32XXX series coaxial/wave guide calibration Kit	AV32111	1.72GHz ~ 2.61GHz	Coaxial to wave guide adapter SWR≤1.25
	AV32112	2.6GHz ~ 3.95GHz	Coaxial to wave guide adapter SWR≤1.25
	AV32113	3.94GHz ~ 5.99GHz	Coaxial to wave guide adapter SWR≤1.25
	AV32114	4.64GHz ~ 7.05GHz	Coaxial to wave guide adapter SWR≤1.25
	AV32115	5.88GHz ~ 8.17GHz	Coaxial to wave guide adapter SWR≤1.25
	AV32116	6.57GHz ~ 10.0GHz	Coaxial to wave guide adapter SWR≤1.25
	AV32117	8GHz ~ 12.4GHz	Coaxial to wave guide adapter SWR≤1.25
	AV32118	12GHz ~ 18GHz	Coaxial to wave guide adapter SWR≤1.25
	AV32119	18GHz ~ 26.5GHz	Coaxial to wave guide adapter SWR≤1.25
	AV32101	26.5GHz ~ 40GHz	Load Return loss SWR≤-30dB
	AV32141	75GHz ~ 110GHz	Load Return loss SWR≤-30dB

AV3625/AV3626 Series

Portable Transmission Line/Antenna Analyzer



The AV3625/AV3626 series portable vector network analyzer is a high speed and accurate SWR/RL (standing wave ratio/return loss), absolute power and Distance-To-fault (DTF) measure instrument that includes a build-in precise synthesized signal source, a high sensitive receiver, a high performance CPU, a large LCD display. The AV3625/AV3626, are designed for the electric system's installation debugging, maintenance and repair outdoor, for RF & microwave components' test in laboratory. They are used in broadcast television, CATV, GPS, GSM/PCS, microwave relay, satellite communication and radar.

Main Features:

- ③ Large LCD display, Chinese display
- ③ Operation simplicity and flexibility, easy to learn and use
- ③ Two types of power supplies: direct current, internal battery
- ③ High performance and economical
- ③ Light weight, easy to carry
- ③ Used in the wider field

Specifications

Models		AV3625	AV3626	AV3626A	AV3626B
Frequency Range		25MHz ~ 3.3GHz	3.3GHz ~ 18GHz	9GHz ~ 10GHz	4.5GHz ~ 6GHz
Frequency Accuracy		75ppm	75ppm	75ppm	75ppm
Frequency Resolution		100kHz	1MHz	1MHz	1MHz
Measurement Item		Return Loss SWR DTF Cable Loss (single port) Absolute Power (option)	RL SWR DTF Cable Loss (single port) Absolute Power (option)	RL SWR Insertion Loss (double ports)	SWR Insertion Loss (double ports)
Directivity		>35dB	>32dB	>32dB	>32dB
Source Match		>20dB	>20dB	>20dB	>20dB
Power Uncertainty		±2dBm (0 ~ -40dB)	±2dBm (0 ~ -40dB)	±2dBm (0 ~ -40dB)	±2dBm (0 ~ -40dB)
Load Match		--	--	>20dB	>20dB
Dynamic Range		--	--	>80dB	>80dB
Option	OP-CC/WC	Coaxial Calibration Kit	Calibration (wave-guide or coaxial)	Calibration Kit (wave-guide or coaxial)	Calibration Kit (wave-guide or coaxial)
	OP-TC	Test Cable	Test Cable	Test Cable	Test Cable
	OP-PP	Power Probe	Power Probe	Power Probe	Power Probe
Dimensions		D×W×H: 260×180×70(mm)			
Net Weight		Approx. 2.5kg			

AV3619series RF Integrative Vector Network Analyzer



The AV3619 series RF vector network analyzers combine RF synthesized signal source, receiver, display and measurement controller. With impact structure, advanced performance, fast measurement, and high reliability, the analyzers are used in research, development, and production measurement of RF fields.

The AV3619B economic RF vector network analyzer supports narrow band measurement, but no AM delay measurement and X, Y external detection. Except for the above features, the analyzer is the same with the AV3619. With a high economic price, it is used in the assembly of production lines.

Main Features:

- ③ Measurement Methods: support broadband and narrowband measurement
- ③ Measurement Functions: support transmission, reflection, AM delay measurement (option)
- ③ Sweep Types: support frequency sweep and power sweep
- ③ Display Format: display measurement results in logarithm, Smith circle diagram, polar coordinate, etc.
- ③ Display output: provide video signal output port for external display for the convenience of remote monitoring and demonstration
- ③ Input from the keyboard. The host is compatible with DIN keyboard, you can program in IBASIC directly on the host.
- ③ Storage Carriers: store measurement information on the built-in floppy disk, nonvolatile memory, volatile memory and external disk drive
- ③ Output Ports: output measurement results by parallel port, serial port and GP-IB port
- ③ Trigger Modes: provide external trigger interface for functional extension of the equipment
- ③ IBASIC Function: built-in IBASIC functions for programming capability of USER BEGIN application software
- ③ FAIL/PASS Interface: set limits for measurement for the set-up of auto-test system in

Specifications

Model		AV3619	AV3619A	AV3619B
Signal Source	Frequency Range	300kHz ~ 3GHz	300kHz ~ 1.3GHz	300kHz ~ 3GHz
	Frequency Accuracy	±5ppm	±5ppm	±5ppm
	Power Accuracy	±2.0dB (With Remote Control Attenuator)	±2.0dB (With Remote Control Attenuator)	±2.0dB (With Remote Control Attenuator)
	Power Range	-5dBm ~ +7dBm (Standard)	-5dBm ~ +10dBm (Standard)	-5dBm ~ +7dBm (Standard)
		-60dBm ~ +7dBm (With Remote Control Attenuator)	-60dBm ~ +10dBm (With Remote Control Attenuator)	-60dBm ~ +7dBm (With Remote Control Attenuator)
	Spectral Purity	Harmonic 30dBc(≥10MHz)	Harmonic less than -30dBc(≥10MHz)	-
		Harmonic -20dBc(<10MHz)	Harmonic Less than -20dBc(<10MHz)	-
Display Features	Phase Noise	-67dBc/Hz (Offset10kHz) 100KHz ~ 1.3GHz -65dBc/Hz (Offset 10kHz) 1.3Hz ~ 3GHz	-67dBc/Hz (Offset 10kHz)	-60dBc/Hz (Offset 10kHz)
	Amplitude Resolution	0.01dB/div	0.01dB/div	0.01dB/div
	Phase Resolution	0.1°/div	0.1°/div	0.1°/div
Measurement Features	Frequency Range	1Hz	1Hz	1Hz
		300kHz ~ 3GHz Narrowband Measurement	300kHz ~ 1.3GHz Narrowband Measurement	300kHz ~ 3GHz Narrowband Measurement
	Dynamic Range	10MHz ~ 3GHz Broadband Measurement	10MHz ~ 1.3GHz	
		100dB(300KHz ~ 3GHz) Narrowband Measurement	100dB(300kHz ~ 1.3GHz) Narrowband Measurement	100dB (300kHz ~ 3GHz) Narrowband Measurement

		60dB(10MHz ~ 3GHz) Broadband Measurement	60dB(10MHz ~ 1.3GHz) Broadband Measurement	
	Maximum Input	+10dBm Narrowband Measurement	+10dBm Narrowband Measurement	+10dBm Narrowband Measurement
		+16dBm Broadband Measurement	+16dBm Broadband Measurement	
	Transmission Tracing	±0.1dB	±0.1dB	±0.1dB
	Reflection Tracing	±0.1dB	±0.1dB	±0.1dB
Port Features	Directivity	40dB	40dB	40dB
	Source Matching	20dB	20dB	20dB
	Load Matching	20dB (Freq.<1.3GHz)	20dB	20dB (Freq.<1.3GHz)
		18dB (Freq≥1.3GHz)		18dB (Frequency≥1.3GHz)
	Measurement Port	Type N	Type N	Type N
Dimensions		D × W × H=520 × 440 × 210mm		
Weight		24kg		

AV3617 Microwave/Millimeter-Wave Scalar Network Analyzer



The AV3617 is a high-performance, economical cost scalar network analyzer. It provides the accuracy and high performance of a synthesized source, and can measure insertion loss, gain, return loss, SWR quickly and accurately. With the series of high-performance detectors, directional bridges, directional coupler, and a companion source and digital plotter/printer, the AV3617 becomes the basis of a complete measure system with superb performance.

Specifications

AV3617 SCALAR NETWORK ANALYZER	
Frequency range: 10MHz ~ 110GHz (Depending on the detector)	Frequency Resolution: depending on the source Measurement Points: 101, 201, 401, 801, 1601 Perpendicular Resolution: 0.01dB
Dimensions: D×W×H: 440×440×190(mm)	
Weight: 22kg	

Specifications of the Accessories of AV3617

	AV10320 High-precision AC/DC Detector	AVI0321 AC Detector	AVI0321A AC Detector
Frequency range	10MHz ~ 18GHz	10MHz ~ 18GHz	10MHz ~ 26.5GHz (K Connector)
Frequency response	10MHz ~ 40MHz:±0.35dB 40MHz ~ 18GHz:±0.2dB	±0.6dB	10MHz ~ 18GHz:±0.6dB 18GHz ~ 26.5GHz:±1.5dB
Return loss	>20dB	10MHz ~ 40MHz:>10dB 40MHz ~ 18GHz:>15dB	10MHz ~ 40MHz:>10dB 40MHz ~ 18GHz:>15dB 18GHz ~ 26.5GHz:>10dB
Power accuracy (50MHz)	+20dBm ~ +10dBm:±0.35dB +10dBm ~ -30dBm:±0.15dB -30dBm ~ -50dBm:±0.85dB	+16dBm ~ +10dBm:±0.6dB +10dBm ~ -40dBm:±0.4dB -40dBm ~ -55dBm:±1.2dB	Same as the AVI0321

-	AVI0615C Directional Bridge	-	Internal Power Source
Degree of Coupling	-	Frequency	50MHz
Frequency Response	--	0dBm Accuracy	±0.1dB
Directivity	36dB:10MHz ~ 2GHz 34dB:2GHz ~ 12.4GHz 32dB:12.4GHz ~ 18GHz	Linearity	+20dBm ~ +10dBm:±0.12dB +10dBm ~ -30dBm:±0.08dB/10dB -30dBm ~ -55dBm:±0.12dB/10dB
Port SWR	1.2:10MHz ~ 2GHz 1.5:2GHz ~ 12.4GHz 1.8:12.4GHz ~ 18GHz		
Insertion Loss	-		
Frequency	10MHz ~ 18GHz		
Maximum Power	+27dBm		

AV3616X/XA Series

RF Microwave Scalar Network Analysis System



The AV3616X/XA series RF/microwave scalar network analysis system comprises high resolution and low harmonics sweep frequency source and accurate scalar instruments. It is matched with high sensitivity detector and high directivity SWR auto-tester. It can test translation loss, reflection loss and absolute output power of RF/microwave bands components. It is utilized in broadcast and television, CATV, microwave relay, satellite communication, radar, and especially convenient to test amplifiers, mixers, receivers and receivers.

Specifications of AV3616X

Scalar Network	Sweep Source	Accessories
<ul style="list-style-type: none"> ⑤ Channel Dynamic Range: 71dB(-55dBm~+16dBm) ⑤ Channel Accuracy: ±0.4dB(-40dBm ~ 16dBm) ±1.2dB(-55dBm ~ -40dBm) ⑤ Display Resolution: Horizontal:51,101,201and 401(dot) Vertical: 0.01dB ⑤ A, B, R Three channel input, A/R, B/R Test Auto-scale, set limits testing, save and recall etc. 	<ul style="list-style-type: none"> ⑤ Frequency range: 10MHz ~ 8.6GHz ⑤ Maximum Output Power: +10dBm(10MHz ~ 8GHz) +7dBm(8GHz ~ 8.6GHz) ⑤ Frequency resolution: 100kHz ⑤ Source SWR: <1.5 ⑤ Swept frequency accuracy: ±500 kHz (typical) ⑤ Start/stop, Center/Width, Alternating sweep functions. Provide 8 frequency scalars ⑤ Model N tie-in (negative). 	<ul style="list-style-type: none"> 1. Detector: Frequency Response: ±0.5dB Standing wave ratio: <2.0(10MHz-50MHz) <1.4(50MHz-8.6GHz) 2. SWR Test Device: Port SWR: <1.25 Directivity: >36Db Power Allowed: +27dBm 3. 70dB Remote Control Step Attenuator ±0.4dB/10dB step 4. GP-IB interface 5. Printer and cable
Dimensions: L×W×H: 480×440×180(mm)		
Weight: 18kg		

AV3983 8mm Noise Figure Test Set



One system, composed of this test set, the AV3981 or the HP8970B noise figure meter, the AV1484/AV1481C synthesized signal source, 8mm noise source such as AV16601, R347B, NC5128 and outer controlling computer, is able to test the noise figure of 8mm frequency band.

By way of sweep test, graphics display, menu operation, the system simplifies the operation of noise co-efficient. In addition, it accomplished 8mm noise configure single band test, improved the test precision and intelligence. This system is used in control and guide, radar, electronic countermeasures. It can test the noise figure of millimeter-wave elements, parts, the whole instrument systems.

Specifications

Item	Specification
Frequency range	26.5GHz ~ 40GHz
Noise Figure Measurement Range	0 ~ 30dB
Input Port Standing Wave Ratio	1.5
Gain Measurement Range	-6 ~ 30dB
Noise Figure	<14 dB
Gain	>20 dB
Noise Coefficient Measurement Uncertainty	$\pm 0.3\text{dB} \pm 0.03\text{dB/}$
Gain Measurement Uncertainty	$\pm 0.3\text{dB} \pm 0.03\text{dB/}$
Mirror Frequency Reject	>20dB
Dimensions	D×W×H =430×424×133(mm)
Net Weight	17kg
Option	AV16601 8mm noise source

AV3981/3982 Noise Figure Test Set



The AV3981 Noise Figure Meter is a tunable receiver with high sensitivity. It can automatically measure the noise figure and gain of the linear network. The Noise Figure Meter has more than two hundred functions including self-test, self-calibration, storage and recalling, data input mode, digit indication. The Noise Figure Meter can output analog data to an analog oscilloscope, the X-Y recorder, or a strip chart recorder through the X, Y, Z-axis outputs; Digital data can also be output to the AV3617 Scalar Analyzer on the System Interfaces Bus; The noise figure and gain can be printed out. Together with the AV3982 Noise Test Set and the system local oscillator, the noise figure test system can measure noise and gain in the frequency range of 10MHz to 26.5GHz. The AV3981 Noise Figure Meter is used in aviation, spaceflight, communications and electronic confrontation.

This AV3982 Noise Figure Test Set combines with AV3981 or the HP8970B Noise Figure Meter can extend the noise figure and gain test frequency range to 26.5GHz. The noise figure test system can measure the noise figure and gain of the DUT (device under test). It makes the SSB test to be true, and it improves the measurement accuracy.

Specifications

Input	Noise Figure Measurement	Gain Measurement
Input Connection Type: Type N female FREQ Range: 10MHz ~ 1.6GHz FREQ Tuning Accuracy: (1MHz+1% of frequency), ±6MHz Max. Input SWR: <2.0(50Ω) Input Power(Max): 20dBm	NF Range: 0 ~ 30FdB RESOL: 0.01dB Jitter: <0.02dB (Smooth Factor set to 64) <0.15dB (Smooth Factor set to 1) NF Accuracy: ±0.1dB	Gain Range: -20dB ~ +40dB Accuracy: ±0.15dB Resolution: 0.01dB
Dimensions:	D × W × H = 422 × 440 × 152mm	
Net Weight:	Approx. 16kg	

Item	SPECIFICATION
Frequency Range	10MHz ~ 26.5GHz
NF Measurement Range	0 ~ 30FdB
Input SWR	2.25(10MHz ~ 18GHz); 2.7(18GHz ~ 26.5GHz)
Dimensions	D × W × H = 520 × 465 × 125(mm ³)
Net Weight	Approx. 15kg

AV5261 Vector Signal Analyzer



The AV5261 Vector Signal Analyzer is a high-performance signal analyzer designed for digitally modulated RF signals measurement. The analyzer has several functions of spectrum analyzing, timing-sequence measuring and modulation accuracy measuring. With the capabilities of high sensitivity, large dynamic range and little demodulation residual error, it can meet users to measure various kinds of complicated digital signals. The analyzer offers complete measurements solutions of digital wireless communication equipment.

Main Features:

- ③ High resolution, high sensitivity, low phase-noise, broad dynamic range
- ③ Flexible digital demodulated parameters
- ③ Symbol rates demodulated up to 6.4MHz
- ③ Realize the third generation mobile communication standard signal analyzing
- ③ Display eye diagrams, polar vector, polar constellation symbol/error table
- ③ Build-in multi-digital communication standards and digital modulation parameters
- ③ 8.4"high-brightness TFT LCD, Chinese &English display and Chinese operation.

Specifications

Item	Specification			
Frequency range	100Hz ~ 3.0GHz			
Frequency Accuracy	span>2MHz×N:±(Freq ×REF deviation+5%span+15%RBW+10Hz)			
	span≤2MHz×N:±(Freq ×REF deviation+1%span+15%RBW+10Hz)			
Span Accuracy	±5%span>2MHz×N			
	±1%span≤2MHz×N			
Displayed Average Noise Level	<-138dBm nominal value:-150dBm 10MHz ~ 3.0GHz			
Freq Response Flatness	±1.5dB 1MHz ~ 3.0GHz			
Resolution Bandwidth	1Hz ~ 2MHz(1Hz ~ in 1/3/10 steps)			
Demodulated IF Bandwidth	5MHz,10MHz			
Noise Sideband(f=1GHz)	<-80dBc/Hz for carrier offset:100Hz		<-110dBc/Hz for carrier offset:10kHz	
Communication Standards	GSM, NADC, TETRA, IS-95CDMA, W-CDMA, Option:3GPP, CDMA2000, EDGE, PDC, DECT, PHS, PWT, TFTS, ERMES, MODACOM, CDPD, CT2, APCO25			
Digital Modulation Formats	BPSK, QPSK, OQPSK, DQPSK,π/4-DQPSK, 8PSK, 3π/8-8PSK D8PSK, 16QAM, MSK, GMSK, 2FSK, 4FSK			
Symbol Range Rates	320Hz ~ 6.4MHz			
GSM Demodulation Error	Error vector magnitude		≤1.5% rms nominal value: 0.7% rms	
	Magnitude error	≤1.5% rms	Phase error	≤1° rms
	Freq error	≤2Hz	I/Q offset	≤0.4%
NADC, TETRA Demodulation Error	Error vector magnitude		≤1% rms nominal value: 0.5% rms	
	Magnitude error	≤1% rms	Phase error	≤1°rms
	Freq error	≤0.3Hz	I/Q offset	≤0.4%
IS-95CDMA Demodulation Error	Error vector magnitude		≤2.8% rms nominal value: 1.0% rms	
	Magnitude error	1.2% rms	Phase error	0.6°rms

	Freq error	≤9Hz	I/Q offset	≤0.4%
W-CDMA Demodulation Error	Error vector magnitude	≤2% rms nominal value: 1.3% rms		
	Magnitude error	≤2% rms	Phase error	≤2°rms
	Freq error	≤22Hz	I/Q offset	≤0.4%
FSK Modulation error	Magnitude error	≤3% rms nominal value: 0.8% rms		
	Freq deviation	±(1%×REF deviation+ REF freq error)		
Other Options	GP-IB, parallel print interface, local oscillator output			
Dimensions Weight	Dimensions: D x W x H = 560x440x220(mm) 32kg			

AV4942 Microwave Complex Measurement Instrument



The instrument is a combination of spectrum analyzer, synthesized generator, power meter, frequency meter. Its compact structure, advanced features and high reliability eliminate the difficulties when multiple test sets are transported and maintained. The set is used in the microwave communications, radar and navigation test. And it is an essential test set in developing the scientific research, production and maintenance of military electronic components, entire sets and systems. Also it services post, communications, radio /TV.

Main Features:

- ③ Spectrum Analysis
- ③ Microwave Frequency Meter
- ③ Microwave Power Meter
- ③ Scalar Network Test
- ③ Synthesized Source (Synchronous Sweep, Pulse Modulation)
- ③ High integration, complete functions, measurement of various microwave parameters, easy to operate
- ③ High performance, economic cost
- ③ Modulation design, ease to install and maintain
- ③ Portable feature, suits for field and site operation
- ③ High-brightness TFT LCD, colored Chinese/English interface, easy to operate.

Specifications

Item	Specifications	
Spectrum Analysis	Frequency range: 9kHz ~ 18GHz	Residual Response: better than -90dBm
	Resolution Bandwidth: 1kHz ~ 3MHz (step in 1,3,10)	Optimum Display Average Noise Level: 107dBm (1kHz Resolution Bandwidth)
	Noise Side Band: < -100dBc/Hz (Frequency 1GHz, Offset 20kHz)	
Synthesized Source	Frequency range: 10MHz ~ 18GHz	Frequency Resolution: 1Hz
	Phase Noise: -75dBc/Hz (10kHz Offset, typical)	Power Accuracy: ± 1.5 dB (Without output attenuator)
	Output Power: -20 ~ +10dBm (output attenuator optional)	
Power Measurement	Frequency range: 10MHz ~ 18GHz	Frequency Range: +20dBm ~ -60dBm
	Linearity: 3%/10dB (0dBm as the standard)	Power Reference: 1.00mW $\pm 2\%$ (+10 ~ +35)
	Power Probe SWR: 1.18 (10MHz ~ 2GHz); 1.22 (2GHz ~ 12.4GHz); 1.30 (12.4GHz ~ 18GHz)	
Frequency Measurement	Frequency range: 10MHz ~ 18GHz	Sensitivity: better than -40dBm
	Frequency Measurement Accuracy: \pm (Frequency Readout \times frequency reference error + Counter Resolution + 100Hz)	
	Resolution: 5Hz, 10Hz, 100Hz, 1kHz, 10kHz	
Dimensions	D \times W \times H: 560 \times 480 \times 180(mm)	
Weight	30kg	

AV2434 Microwave Power Meter



The AV2434 microwave power meter is a high accurate measurement instrument used for measuring average power, peak power, peak-to-average ratio of broad band microwave CW signals and complex modulated signals. By using following all-brand new design methods and technic as well as data processing methods: wide dynamic range, broad band diode detective power sensor design and production technic as well as small signal processing, digital compensation and calibration, high-speed sampling and DSP processing, broad band modulated signal's average power and peak power measuring, multi-thread software designing; the measurement system is distinct in broad frequency band, wide dynamic range, high sensitivity, fast measurement speed and functions. All characteristics are similar to advanced level of systems abroad.

The AV2434 microwave power meter with AV7172XX series video bandwidths average-peak sensors, can make accurate measurement of average power, peak power, average-to-peak ratio in up to 8 predefined microwave communication signals such as GSM900, CDMAONE, CDMA2000, W-CDMA, Bluetooth.

The AV2434 microwave power meter is widely used in many fields such as microwave communication, radar, navigation, E-antagonizing, space technic, satellite ground station, signal monitoring. It's also the required instrument for those departments in developing, producing, testing, examination and measuring, microwave electro-elements or microwave electronic systems.

Specifications

Specification			
Frequency range	9kHz ~ 110GHz(Depending on the configured probe)	Power Range	-67dBm ~ +44dBm
Display Resolution	Logarithmic: 1 ~ 0.001dB, linear: 1-4	Video Bandwidth	5MHz
Instrumentation Precision	CW Average Power Mode :Absolute: $\pm 0.02\text{dB}$ Relative: $\pm 0.04\text{dB}$		
	Peak/Modulation Average Power Mode: Absolute: $\pm 0.04\text{dB}$ Relative: $\pm 0.08\text{dB}$		
50MHz Power Calibration Source	Frequency Accuracy: $\pm 1\%$ Power Accuracy(1mW): $\pm 1.2\%$ Source Standing Wave Ratio:1.06		
Dimensions& Weight	D x W x H = 340x240x100(mm) 5kg		

Specifications of the AV7171X Series Average Power Sensors

Model	Frequency range Power Range	Max. Power	Power Linearity	VSWR	Input Connector
AV71710	10MHz ~ 18GHz -67dBm ~ +20dBm	+23dBm	+10dBm ~ +20dBm: $\pm 6\%$ -67dBm ~ +10dBm: $\pm 5\%$	10MHz ~ 50MHz: 1.35 50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.27	N(m)
AV71711	50MHz ~ 26.5GHz -67dBm ~ +20dBm	+23dBm	+10dBm ~ +20dBm: $\pm 6\%$ -67dBm ~ +10dBm: $\pm 5\%$	10MHz ~ 50MHz: 1.35 50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.27 18GHz ~ 26.5GHz: 1.61	3.5mm(m)
AV71712	50MHz ~ 40GHz	+23dBm	+10dBm ~ +20dBm: $\pm 6\%$	10MHz ~ 50MHz: 1.35	2.4mm(m)

	-67dBm ~ +20dBm		-67dBm ~ +10dBm: $\pm 5\%$	50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.29 18GHz ~ 26.5GHz: 1.37 26.5GHz ~ 40GHz: 1.61	
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Specifications					
Model	Frequency range Power Range	Max. Bandwidth	Power Linearity	VSWR	Connector
AV71720	50MHz ~ 6GHz CW Average Power Range: -60dBm ~ +20dBm Modulation Average Power Range: -47dBm ~ +20dBm	300kHz	+10dBm ~ +20dBm: $\pm 6\%$ -60dBm ~ +10dBm: $\pm 5\%$	1.15	N(m)
AV71720A	50MHz ~ 6GHz CW Average Power Range: -60dBm ~ +20dBm Modulation Average Power Range: -42dBm ~ +20dBm	1.5MHz	+10dBm ~ +20dBm: $\pm 6\%$ -60dBm ~ +10dBm: $\pm 5\%$	1.15	N(m)
AV71720B	50MHz ~ 6GHz CW Average Power Range: -57dBm ~ +20dBm Modulation Average Power Range: -37dBm ~ +20dBm	5MHz	+10dBm ~ +20dBm: $\pm 6\%$ -57dBm ~ +10dBm: $\pm 5\%$	1.15	N(m)
AV71721	50MHz ~ 18GHz CW Average Power Range: -60dBm ~ +20dBm	300kHz	+10dBm ~ +20dBm: $\pm 6\%$ -60dBm ~ +10dBm: $\pm 5\%$	50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.29	N(m)

	Modulation Average Power Range: -47dBm ~ +20dBm				
AV71721A	50MHz ~ 18GHz CW Average Power Range: -60dBm ~ +20dBm Modulation Average Power Range: -42dBm ~ +20dBm	1.5MHz	+10dBm ~ +20dBm: $\pm 6\%$ -60dBm ~ +10dBm: $\pm 5\%$	50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.29	N(m)
AV71721B	50MHz ~ 18GHz CW Average Power Range: -57dBm ~ +20dBm Modulation Average Power Range: -37dBm ~ +20dBm	5MHz	+10dBm ~ +20dBm: $\pm 6\%$ -57dBm ~ +10dBm: $\pm 5\%$	50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.29	N(m)
AV71722	50MHz ~ 26.5GHz CW Average Power Range: -60dBm ~ +20dBm Modulation Average Power Range: -47dBm ~ +20dBm	300kHz	+10dBm ~ +20dBm: $\pm 6\%$ -60dBm ~ +10dBm: $\pm 5\%$	50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.29 18GHz ~ 26.5GHz: 1.37	3.5mm(m)
AV71722A	50MHz ~ 26.5GHz CW Average Power Range: -60dBm ~ +20dBm Modulation Average Power Range: -42dBm ~ +20dBm	1.5MHz	+10dBm ~ +20dBm: $\pm 6\%$ -60dBm ~ +10dBm: $\pm 5\%$	50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.29 18GHz ~ 26.5GHz: 1.37	3.5mm(m)
AV71722B	50MHz ~ 26.5GHz CW Average Power Range: -57dBm ~ +20dBm Modulation Average Power Range: -37dBm ~ +20dBm	5MHz	+10dBm ~ +20dBm: $\pm 6\%$ -57dBm ~ +10dBm: $\pm 5\%$	50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.29 18GHz ~ 26.5GHz: 1.37	3.5mm(m)

AV71723	50MHz ~ 40GHz CW Average Power Range: -60dBm ~ +20dBm Modulation Average Power Range: -47dBm ~ +20dBm	300kHz	+10dBm ~ +20dBm: $\pm 6\%$ -60dBm ~ +10dBm: $\pm 5\%$	50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.29 18GHz ~ 26.5GHz: 1.37 26.5 ~ 40GHz: 1.61	2.4mm(m)
AV71723A	50MHz ~ 40GHz CW Average Power Range: -60dBm ~ +20dBm Modulation Average Power Range: -42dBm ~ +20dBm	1.5MHz	+10dBm ~ +20dBm: $\pm 6\%$ -60dBm ~ +10dBm: $\pm 5\%$	50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.29 18GHz ~ 26.5GHz: 1.37 26.5 ~ 40GHz: 1.61	2.4mm(m)
AV71723B	50MHz ~ 40GHz CW Average Power Range: -57dBm ~ +20dBm Modulation Average Power Range: -37dBm ~ +20dBm	5MHz	+10dBm ~ +20dBm: $\pm 6\%$ -57dBm ~ +10dBm: $\pm 5\%$	50MHz ~ 2GHz: 1.12 2GHz ~ 12.4GHz: 1.20 12.4GHz ~ 18GHz: 1.29 18GHz ~ 26.5GHz: 1.37 26.5 ~ 40GHz: 1.61	2.4mm(m)

AV3941 Electromagnetic Radiation Detector



The AV3941 Electromagnetic Radiation Detector is consisted of the sensor, power density indicator, and lengthening cable. The sensor provides isotropic response with the three mutually-crossed high sensitive detectors. The innovative design and technology insures that the sensor provides almost constant effective caliber for the radiation field in a spacious frequency range, thus realizing precise measurement of the power density of near fields and far fields. The meter is widely used in the quantitative measurement of electromagnetic radiation source in areas like radar, communication, electronic war system, microwave applications (microwave oven, heater, etc.), medical apparatus, and etc, as well as the quantitative detection of radiation leakage of electronic equipment in the EMC tests.

Main Features

- ③ Wide dynamic range
- ③ Broadband isotropic response
- ③ 3-D display small, lightweight and portable

Specifications

Item		Specification
Operating Frequency range		1MHz ~ 18GHz
Power density measurement range		1mW/cm ² ~ 20mW/cm ² divided into three classes:200mW/cm ² ;2mW/cm ² ;20mW/cm ²
Frequency response		±2.5dB
Calibration precision		±1dB
Isotropic response		±1.5dB(except for the direction of the handle)
Response time		1.5s
Power density display		3.5 bit LCD digital display
Power		3*(AA 1.5V), consumed current<10mA
Dimensions	Power density indicator	D × W × H=80 × 200 × 40(mm)
	Sensor	Length:335m, Max diameter:70mm
	Cable	1m
Weight		0.67kg

AV2432/2433 Microwave Power Meter



AV2432



AV2433

The AV2432 power meter is a new generation diode detectors' universal power meter, which based on DSP technology. With built-in 50MHz power sweep calibrator, it can trace standard of power and automatically calibrate the amplitude response of a power Probe. The AV2432 universal power meter can achieve accurate measurements of average power of continuous wave and the RF power level of a pulse modulated signal. Power Probes' calibrate and power level's measurements of signal can be reached by operated the front panel manually or controlled through GPIB interface of the rear panel. Its extraordinary capability can meet the measurement requirements of RF and microwave-power in many fields, such as radar, communication, and broadcast.

The AV2433 is a dual-channel (channels: A, B) universal power meter designed specifically for Automatic Test Equipment (ATE) system. It can configure two AV23200 series power Probes, which can accurate measure the power of continuous wave or pulse modulated inputted from the two channels, and the results display on the LCD. It has A, B, A/B, B/A, A-B, B-A testing mode, and has functions of measuring the microwave elements or components' Return Loss/SWR by configured specifically Directional Bridge, and also has all functions of the AV2432 universal power meter. It is economical and high-performance.

Specifications

Specifications for AV2432 and AV2433	
Frequency range	10MHz ~ 110GHz(depend on the kind of the configured probe)
Power Range	-70dBm ~ +50dBm
Zero Configuration	±100pW
Display Resolution	Logarithm Mode: 1 ~ 0.001dB Linear Mode: 1-4 bits
Power Sweep Calibration Source	Frequency Accuracy: ±1.5% Power Accuracy: ±1.9% (when tracing back to power accuracy ±0.5% the power accuracy of standard calibration can be better than ±1.2%) Power Dynamic Range:-30dBm ~ +20dBm Source Standing Wave Ratio: 1.08
Dimensions	D×W×H: 370×220×90(mm)
Weight	5kg

AV3860/AV3861

Series Broadband Microwave/Millimeter-wave Amplifier



The AV3860/AV3861 Series Broadband Microwave/millimeter-wave Amplifier is small, portable, easy to operate, and has wide frequency band. With source module interface circuit and broadband microwave magnifier, it can be used as a separate power magnifier, and form a test system with other test equipments. Now it is used in the test system of electronic equipment in electronic disturbance, electronic confrontation, radar, microwave communication and satellite communication.

Specifications

Models	SPECIFICATIONS				
	AV3860	AV3860A	AV3860B		AV3861
Frequency Range(GHz)	2~20	0.1~4	2~20	20~26.5	26.5~ 40
Maximum Output Power (dBm)	≥17	≥17	≥17	≥15	≥15
Minimum Unleveled Output Power(dBm)	≥18	≥18	≥18	≥16	≥17
Gain(dB) (P(in)=-15dBm)	≥17	≥17	≥17	≥15	≥17
External Stabilize Amplitude Flatness	±2dB(17dBm) P(out)=17dBm	±2dB(17dBm) P(out)=17dBm	±2dB(17dBm) P(out)=17dBm	±2dB(17dBm) P(out)=15dBm	±2dB(17dBm) P(out)=15dBm
Input PSWR	≤2.8	≤2.8	≤2.8	≤3.0	≤3.0
Output PSWR	≤2.8	≤2.8	≤2.8(2~18GHz)		≤2.8
Second Harmonic wave	≤-20dBc	≤-20dBc	≤-20dBc		--
Third Harmonic Wave	≤-30dBc	≤-30dBc	≤-30dBc		--
Non-harmonic Wave	≤-50dBc	≤-50dBc	≤-40dBc		--
Noise Figure	≤10dB	≤10dB	≤12dB	≤14dB	--

AV4941 Digital Microwave Communication Complex Tester

The AV4941 Digital Microwave Communication Complex Tester combines multi-path fading simulator, link measurement personality, power meter, frequency counter, scalar network analyzer and signal source into a portable system. It is used in the measurement of multi-path fading specifications in mobile communications, including dynamic, static M-curves measurement, delay M-curves measurement, dynamic S-curves measurement, recovery time measurement and so on, as well as in the measurement of link group delay

time and amplitude flatness in mobile communication. It contains all of the measurement functions of a spectrum analyzer, power meter, frequency counter, and scalar network analyzer. It can measure over 100 parameters in digital microwave communication and radio in total. With its frequency range from 9 kHz to 26.5GHz, it can be applied in production, installation, debugging, maintenance and other processes of digital microwave communication equipment.



Main Features:

- ③ Multi-path fading simulator
- ③ Microwave power meter
- ③ Microwave sweep generator
- ③ Low frequency oscilloscope
- ③ Spectrum analyzer
- ③ Microwave frequency counter
- ③ Triple audio sources
- ③ Link measurement personality
- ③ Flatness analyzer
- ③ Event counter
- ③ Modularization design, easy to install and maintenance
- ③ Light-weight, special design for out door operation
- ③ User-friendly color Chinese interface, easy to learn and use
- ③ Combine several popular instruments into one portable system, high performance, economical.

Specifications

Item	Specification	
Spectrum Analysis	Frequency range: 9kHz ~ 26.5GHz	Frequency Response :better than $\pm 2.0\text{dB}$ ~ $\pm 5.0\text{dB}$
	Resolution Bandwidth: 1kHz ~ 3MHz(1,3,10 steps)	Display Average Noise Level: better than -110dBm ~ -85dBm
	Third-order Inter-modulation Distortion:< -70dBc(10MHz ~ 22GHz)	Reference Level Accuracy: $\pm 0.75\text{dB}$
	Resolution Bandwidth Switching Uncertainty : better than $\pm 0.4\text{dB}$	Residual Responses: better than -90dBm
	Side-band Phase Noise: < -100dBc/Hz(frequency 1GHz, offset 20kHz)	
	Frequency Readout Accuracy: $\pm(\text{Frequency Readout} \times \text{Frequency Reference Accuracy} + 1\% \text{Span} + 20\% \text{RBW} + 100\text{Hz} \times N)$ N is harmonics Number	
	Second Harmonic Distortion: < -70dBc 10MHz ~ 2.9GHz (mixer level -40dBm) < -100dBc 2.75GHz ~ 22GHz (mixer level -10dBm)	
IF Tracking Generator	Frequency range: 300kHz ~ 2.9GHz	Power Range: -66dBm ~ -1dBm
	Flatness: $\pm 2\text{dB}$	Power Accuracy: $\pm 0.7\text{dB}$
	Harmonics: < -20dBc	Non-harmonics: < -23dBc
	Frequency Accuracy: $\pm(\text{Frequency Readout} \times \text{Frequency Reference Accuracy} + \text{Span Accuracy} + 1\% \text{Span} + 20\% \text{RBW} + 2\text{kHz})$	
	Standing Wave Ratio: 2.0	
RF Source	Frequency range: 3.75GHz ~ 6.5GHz	Frequency Accuracy: $\pm(1 \times 10^{-6} \times \text{Frequency} + 1.5\% \text{Span} + 2\text{kHz})$
	Flatness: $\pm 0.5\text{dB}$	Power Accuracy: $\pm 1\text{dB}$
	Output Level: +5dBm ~ -15dBm	Standing Wave Ratio: <2.0
	Harmonics: < -30dBc	Non-harmonics: < -40dBc
Multi-path Fading Simulator	Notch Frequency: 70MHz \pm 30MHz(Standard Setting, 140MHz option)	
	Notch Frequency Resolution: 100kHz	Frequency Accuracy: $\pm 400\text{kHz}$
	Notch Depth: 0 ~ 40dB	Attenuation Range :Gain 0 ~ 12dB, Attenuation 0 ~ 50dB
	Accuracy: $\pm 1\text{dB}$ (20dB Depth ~ $\pm 3\text{dB}$ (40dB Depth)	Accuracy: $\pm 2.5\text{dB}$ (0 ~ 30dB Flat Attenuation)
Power Meter	Frequency range: 10MHz ~ 18GHz	Power Range: -60dBm ~ +20dBm
	Linearity: $\pm 3\%/10\text{dB}$ (by the standard of 0dBm)	Reference Power: 1.00mW $\pm 1.2\%$ (+10 ~ +35)

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	Power Sensor Standing Wave Ratio:1.18 (10MHz ~ 2GHz); 1.22 (2GHz ~ 12.4GHz); 1.30(12.4GHz ~ 18GHz)	
Three Tone Source	Frequency range: 67MHz,70MHz,75MHz	Maximum Output Level: < -7dBm
Event Counter & Oscillator Scope	Maximum Pulse Rate: 100kHz	Maximum Pulse Width:1us negative,5us positive
	Oscillator Bandwidth: DC ~ 100kHz	Trigger Time: 10ms ~ 163s (10ms step)
Frequency Counter	Frequency range: 10MHz ~ 22GHz	Sensitivity: < -40dBm
	Frequency Measurement Accuracy: $\pm(\text{Frequency Readout} \times \text{Frequency Reference Accuracy} + \text{Counter Resolution} + 100\text{Hz} \times N)$ N is a harmonics number	
	Resolutions: 5Hz,10Hz,100Hz,1kHz,10kHz	
Flatness Analyzer	Frequency range: 3.75GHz ~ 6.475GHz	
	Flatness: $\leq \pm 0.05\text{dB}$ (40MHz normalization)	Input Level: -30dBm ~ +20dBm
Group Time Delay(option)	Maximum Range: $\pm 200\text{ns}$ Maximum Sensitivity: 0.1ns/unit	

AV6413 High Performance Mini-OTDR



The AV6413 is a high performance mini-OTDR, which is small in size, light in weight and rugged in configuration. It has a large color LCD and a USB interface. It also features a long battery operation life. With the AV6413, you can measure unit/connection/transmission loss and locate faults or breaks on optical fibers.

It is widely applied in the manufacture, construction and maintenance of optical fibers.

Main Features:

- ③ 42/40dB high dynamic range
- ③ Rugged
- ③ 1.6m short event dead zone
- ③ High quality touch screen
- ③ 0.1m sample resolution with 16000 sampling points
- ③ Offer Chinese and English interface
- ③ Deep memory for data storage
- ③ Transmit data to PC by serial or parallel interfaces
- ③ Battery operation life over 8 hours
- ③ Intelligent battery capacity display
- ③ USB interface
- ③ Write/read file in Bell core GR196 file format

Specifications

Item	Specification				
Pulse Width	10ns to 20480ns				
Module	3542	3537	3532	5636	8332
Central Wavelength	1310/1550 ±20nm	1310/1550 ±20nm	1310/1550 ±20nm	1550/1625 ±20nm	850/1300 ±30nm
Applicable Fiber	Signal-mode	Signal-mode	Signal-mode	Signal-mode	Multi-mode
Dynamic Range (SNR=1)	42/40dB	37/35dB	32/30dB	36/36dB	24/32dB
Event Dead Zone *1	≤1.6m	≤1.6m	≤2.5m	≤1.6m	≤3m
Distance Range	1.6km to 512km				
Sampling Resolution	0.1m to 32m				
Sampling points	16000				
Distance Measurement Accuracy	±(1m+sample space/2+measurement distance×0.01%)				
Display	640×480, 7.7"color LCD (touch screen)				
Interface	USB, RS232, Printer, Keyboard				
Optical Connector	FC/UPC (universal connector, option)				
Power Supply	DC: 17 to 22V (3A), (AC adapter 100 to 240V, 50/60Hz, 1.5A) Built-in Lithium battery: 8 hours *2				
Dimensions	L×W×H: 258×198×90(mm)				
Weight	2.7kg				

*1: Pulse width: 10 ns, terminal reflection loss: 40dB, typical.

*2: At back light low brightness, measurement not executed.

AV6411E Mini-OTDR

Missing picture

AV6411E mini-OTDR is a compact and rugged mini-OTDR with high performance, lightweight, large color LCD and long battery operational life. It's easy to use.

It can measure unit loss, connection loss, transmission loss and locate faults or breaks of optical fiber. It can be used in manufacture, examination, maintenance of optical fiber.

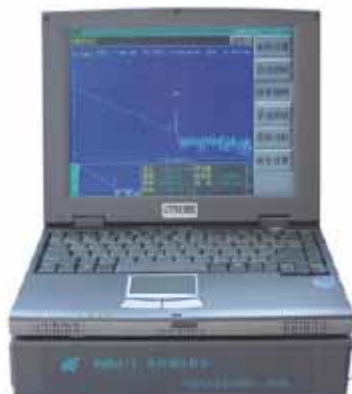
Main Features

- ③ High quality touch screen
- ③ Rugged
- ③ 640x480 color LCD
- ③ Offer emulation software for windows 9x
- ③ Offer Chinese and English interface
- ③ Offer Auto test mode and manual test mode
- ③ Offer great content for data storage inside OTDR
- ③ Transmit data to PC by serial or parallel
- ③ Battery operate over 4 hours
- ③ Intelligent battery, can show capacity of battery

Specifications

Item	Specification	
Pulse Width	10ns ~ 10000ns	
Dynamic Range(dB)(SNR=1)	module	3527
	Wavelength (nm)	1310/1550
	type	SMF
	dynamic range	27/25dB
Dead Zone	≤10m	
Loss display resolution	0.001dB	
Distance accuracy	$\pm(1\text{m} + \text{sample spacing} + \text{measured distance} \times 10^{-4})$	
Display	640*480 8color LCD(with touch screen)	
Interface	RS232, Printer, Keyboard, VGA display	
Connector	FC-PC	
Power supply	AC/DC adapter(AC:100 ~ 240V, 50/60Hz) build-in NiMH battery (≥4 hours)	
Dimensions	258*198*87mm	
Weight	3kg	

AV6411 Optical Time Domain Reflectometer



AV6411 OTDR is notebook PC-based mini-OTDR, portable, lightweight, small and easy to use. The main specifications of AV6411 OTDR are as the same as the AV3662A OTDR, but omits build-in printer and GP-IB interface. AV6411 OTDR can be regarded as high-class notebook PC to provide more extended functions.

Specifications

Item	Specification					
One-way backscatter dynamic range(SNR=1)	Module	AV6411Y1	AV6411 Y4	AV6411 Y6	AV6411 Y8	AV6411 Y0
	Central Wavelength	1300±20nm	1310±20nm	1550±20nm	1310/1550±20nm	1310/1550±20nm
	Fiber Type	MMF	SMF	SMF	SMF	SMF
	Dynamic range	25dB	32dB	30dB	32/30dB	40/38dB
Distance accuracy	±(1m + sample spacing + 3 * 10 ⁻⁴ * measured distance)(Excluding uncertainty caused by fiber IOR) , display resolution 0.0001km .					
Dead zone	<30m					
Loss measurement	Linearity: 0.06dB/dB; Display resolution: 0.001dB					
Dimensions	D * W * H = 306 * 232 * 90mm					
Weight	Approx.4.8kg					

AV6411A Optical Time Domain Reflectometer



AV6411A OTDR is a compact and rugged mini-OTDR with high performance, lightweight, large color LCD and long battery operational life. It's easy to use. It can measure unit loss, connection loss, transmission loss and locate faults or breaks of optical fiber. It can be used in manufacture, examination, maintenance of optical fiber.

Main Features:

- ③ High quality touch screen
- ③ 640 * 480 color LCD
- ③ Offer Chinese and English interface
- ③ Offer great content for data storage inside OTDR
- ③ Battery operate over 4 hours
- ③ Rugged
- ③ Offer emulation software for windows 9x
- ③ Offer Auto test mode, manual test mode
- ③ Transmit data to PC by serial or parallel
- ③ Intelligent battery, showing capacity of battery

Specifications

Item	Specification						
Pulse Width	10ns~10000ns						
Dynamic Range(dB) (SNR=1)	module	0335	0533	0633	8324	3535	3540
	Wavelength (nm)	1310±20	1550±20	1625±20	850/1300±20	1310/1550±20	1310/1550±20
	type	SMF	SMF	SMF	MMF	SMF	SMF
	dynamic range	35	33	33	18/24	35/33	40/38
Dead Zone(m)	≤10						
Loss display resolution	0.001 dB						
Distance accuracy	±(1m + sample spacing + measured distance 0.01%)						
Display	640 * 480, 7.7" color LCD						
Interface	RS232, Printer, Keyboard, VGA display						
Connector	FC-PC						
Power supply	AC/DC adapter(AC: 100 ~ 240V, 50/60Hz) , build-in NiMH battery(≥4 hours)						
Dimensions	W * H * D = 258 * 198 * 90 mm						
Weight	Approx.3kg						

AV6313A Handheld Light Source



The AV6313A handheld light source is used to test opticables in telecommunications, CATV and LAN; loss measurement of optic passive components; wavelength responsibility measurement of detectors and the environment feature-tests of optical fiber, optic cable and optical components.

Main Features

- ③ Double-wavelengths double-output port
- ③ NiMH battery of long operation time
- ③ Output continuous wave(CW) or modulation (MOD)
- ③ Built-in rechargeable manager
- ③ Choices of internal modulation: 270Hz, 1kHz
- ③ Low power indication
- ③ Optic power step attenuation

Specifications

Wavelength	1310±20nm, 1550±20nm
Spectral width	≤4nm
Output power	≥-7dBm
Short-term stability	≤±0.02/15min
Long-term stability	≤±0.15/6h
Dimensions	180mm×83mm×32mm(D×W×H)
Weight	Approx.0.4kg
Power	Two AA NiMH batteries or external 9VAC/DC adapter
Operating temperature	0 ~ 50

AV6316 ASE Light Source



The AV6316 ASE Light Source is a high stable, high output optical power broadband light source. It is used for test of the optical fiber components, such as fiber grating, DWDM, CWDM, thin-film filter and fiber coupler. Its power spectral density of the output is up to ten times greater than that of the white light source and the tunable laser source; it is also applied to the teaching and the study of the optical communication in the school and the institute.

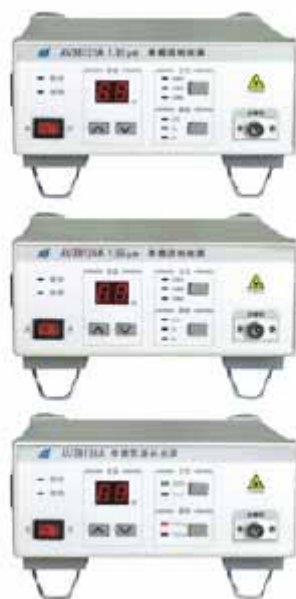
Main Features

- ③ Width RF
- ③ Excellent Reliability
- ③ Great output power
- ③ Easy Operation, perfect test precision
- ③ Low-cost
- ③ Out-Modulation(TTL electric, DC ~ 300Hz)

Specifications

Item	Specification
Wavelength Range	1525 ~ 1565nm
Fiber Type	SMF, 9/125μm
Connector Type	FC/PC
Spectral Density	> -13dBm/nm(1530nm,1550nm,1560nm)
Output Optical Power	>5.5dBm
Short-term Stability(constant temperature, CW)	±0.02dB/15min
Long-term Stability(constant temperature, CW)	±0.05dB/6h
Operating Temperature	0 ~ 40
Store Temperature	-40 ~ +60
Power Supply	AC220V±10%, 50Hz, 20W
Dimensions	D × W × H = 212 × 88 × 250(mm ³)
Net Weight	Approx.2.2kg

AV Series High-stability Laser Source



The AV series high-stability laser source is based on automatic power and temperature control technology and shows high output optical power stability. It is most useful in parameter measurement of telecommunication, CATV and LAN optical fiber cables; plug loss, isolation degree and return loss of optical passive parts; wavelength responsibility of detectors; environment features test of optical fiber, optical cable and optical parts, as well as in scientific research, education and measurement. Therefore, the laser source is a requisite for construction, maintenance and various measurement activities in optical fiber communication.

Main Features

- ③ High output light-wave power
- ③ Excellent long and short term dependability
- ③ Varieties of modulation modes
- ③ Synchronized output of electric signal
- ③ Optional output wavelength
- ③ Modulation output power
- ③ AC/DC power supply (handheld mode optional)
- ③ Optional Platform-style or handheld mode
- ③ Simultaneous 12-path output
- ③ External modulation

Specifications

Item	Specification		
Model	AV38121A	AV38124A	AV38126A
Optical Type	SMF 9/125nm		
Wavelength	1310±20nm	1550±20nm	1310/1550±20nm
Spectrum Width	≤4nm		
Output Power	≥0dBm		≥-3dBm
Short-term dependability	±0.003dB/15min		±0.003dB/15min
Long-term dependability	±0.03dB/8h		±0.03dB/8h
Internal modulation frequency	270Hz, 1kHz, 2kHz		270Hz
Connector type	FC/PC		
Optical Power adjustment	0 ~ 6.0dB, 0.1dB step		
Power supply	AC220V±10%, 50Hz±5%		
Dimensions, Weight	D * W * H = 212 * 250 * 88(mm) Weight: 4kg		
Related products	White light source, LED light source, DFB light source, E/O, O/E convertor		
Applications	spectrum loss test of optical fiber and optical passive parts; test and detection of wave forms; basic belt feature test of optical communication and optical control system; EDFA feature test		

AV2495 Intellectual Luminous Power Meter



With a wide range of measurable wavelengths, a broad dynamic range and high sensitivity, the AV2495 Power Meter can work with various intellectual light detectors. While measuring, the light wavelength is set, then you can readout the measurement results, which are stored to make recalling and comparison easy at any time. The light detector can be exchanged with the host meter with no adjustment during the process. Combined with the modulation light source and other instruments produced by our Institute, the meter makes an inexpensive and practical system for measuring the optical simulation field diameter and cut-off wavelength (for further information refer to the introduction to the diameter measurement system for optical fiber simulation field and the cut-off wavelength measurement system for optical fiber). It integrates a GP-IB interface, through which it can construct an auto-test system. The meter is used in research, measurement and applications in optical fiber communication and optical fiber cable production departments factories.

Specifications

Item	Specification		
Model	AV2495		
Detector Model	AV23122	AV23125	AV23126
Wavelength Range	0.75 ~ 1.75 μ m	0.4 ~ 1.1 μ m	0.75 ~ 1.75 μ m
Light-sensitive Element	InGaAs	Si	InGaAs
Power Measurement Range	-90 ~ 0dBm	-70 ~ +10dBm	-70 ~ +3dBm
Sensitivity	0.01pW	0.001nW	0.001nW
Uncertainty	$\pm 5\%$		
Return Loss	Range:70dB(AV23122 Detector);Uncertainty: ± 1 dB		
Display Resolution	Linear display: 0.1%; Logarithm display: 0.01dBm; Relative measurement:0.001dB.		
Data Storage	capacity: 500 measurement results		
Auto functions	Auto zero, auto-selection of measurement range, automatic wavelength response compensation, data average, data storage		
GP-IB	SH1, AH1, L4, T5, SR0, RL1, PP0, DC0, DT0, C0.		
Dimensions	D × W × H = 255 × 280 × 97(mm)		
Weight	2.8kg		

AV6331 Optical Power Meter



The AV6331 is a dual-channel meter, which can carry out real-time dual-path measurement simultaneously, and can solely measure between two paths as well as inter-channel data transmission and processing. It can realize ratio auto-control of two channel light powers in production process, with flexible control interface to manipulate external relay or produce high/low level to adapt to different kinds of fused biconical taper system. The equipment is also able to perform self-calibration to insure the consistency of channel measurement. With 3 wave calibration points (or changing to needs): 850nm, 1310nm, 1550nm, the AV6331 is used in optical fiber communication, research, education, and production, especially in the production of passive parts in optical coupler.

Main Features

- ③ Self-calibration
- ③ Real-time dual-path measurement(-70 -- +3dBm)
- ③ High resolution(0.001dB)
- ③ Ratio configurable with high resolution (0.1%)
- ③ Automatic ratio control
- ③ Weight:4kg
- ③ Dimensions: D × W × H = 240 × 28 × 80(mm)

AV6333 Optical Power Meter



AV6333 is a single-channel digital-display optical power meter. It ensures accuracy and linearity over a wide wavelength range and greatly improves measurement reliability. It also has an improved basic performance. For example, measurements can be made over wide level range from -80 to +10 dBm since internal reflection of the power sensors was suppressed. AV6333 also has many new functions that make it easier to use than other power meters. It can be used for all optical power measurements such as optical fiber loss measurement and optical device performance evaluation.

Specifications

Item	Specification
Element	InGaAs
Wavelength range	0.8 ~ 1.7 μ m
Measurement range	-80 ~ 10dBm
Measurement accuracy	\pm 5%
Resolution	W: 0.1% dBm: 0.01dB dB(REL): 0.01/0.001dB
Optical connector	FC/SC/ST/UI
Dimensions	213*88*251(mm)
Weight	\leq 3.5kg

AV2498A Optical Fiber Multimeter

The AV2498A optical multi-meter is intelligent and handheld. It composes multifunctional measure



instruments and light source and Light-wave Multi-meters, and it can measure absolute and relative power, especially light loss of optical fiber, optical cable and passive parts as an independent system. Therefore, the meter is used in construction and maintenance in optical fiber communication and cable TV system. Without light source, the AV2498A can be used as a handheld light-wave multi-meter.

Main Features

- ③ Portable, easy to use.
- ③ Build-in rechargeable battery with automatic management of charging process and low voltage alarm indication
- ③ Automatic Measurement Range Conversion or keep, auto zero.
- ③ Calibration wavelength 850,1310,1550nm
- ③ Measurement display modes include dB, dBm, mW, uW, nW
- ③ with 1300nm optional light source
- ③ Relative/absolute power measurement
- ③ Optional functions of optical output connect
- ③ Applied to SM and MM optical fiber

Specifications

Item	Specification	
Optical power	Calibration wavelength	850,1310,1550nm
	Uncertainty	5%(-10dBm, 1310nm)
	Power range	-70 ~ +3dBm
	Resolution	linear mode:0.1% logarithm mode:0.01dBm/0.001dB
Light source(optional)	Wavelength	1300±30nm(LED)≥-33dBm
	Stability	0.02dB/5min
Power	8.4V pile rechargeable battery;DCI2V	
Dimensions	D × W × H = 180 × 83 × 32(mm),	
Weight	0.3kg	
Options	1. Optical power measurement range:-40 - +20dBm 2. FC,ST,SC,UI Exchangeable connector	

AV6372 Field Optical Multimeter



The AV6372 Field Optical Multimeter is a multi-function test instrument gathers functions of optical fiber telephone, optical source and optical power meter. Working as a kind of optical fiber installation and service equipment, it is used for optical fiber line communication and test, carrying out optical fiber working mode judgment. It also has optical fiber identical function and it measures easier. The advanced built in non-easy lost memory can save up to 500 pieces of test data for convenient checking.

Because of the multiple function easy operation, small size and easy carrying, it fits for optical line installation and service companies to test optical line and keep the talking on optical line

Specifications

Item	Specification	
Power Meter	Wavelength	850nm,1310nm,1550nm
	Range	-50 ~ +3dBm
	Accuracy	±0.20dB
	Resolution	0.01dB; (0.1 ~ 1)%
Source	Wavelength	1310nm, 1550nm
	Modulate	CW, 270Hz, 1kHz, 2kHz
	Output Power	≥-10dBm
	Stability	±0.08dB/1h
Talk Set	Mode	Full duplex
	Dynamic	≥35dB
Dynamic	Power	9V
	Battery	6V, 2Ah
	Interface	RS232C
	Operating Temperature	-25 ~ 55
	Storage Temperature	-50 ~ 70
	Dimensions	226*100*57.5mm
	Net Weight	≤1.3kg

AV6362 Optical Spectrum Analyzer



The AV6362 Optical Spectrum Analyzer, a new high performance spectrum analyzer, is developed through adopting the global advanced technologies Passive Component Test Application such as double-pass grating monochromator, high resolution direct drive diffraction grating, optical cuneiform delay polarization elimination and electronic digital filter. Having reached the advanced level of its global counterpart on the whole, the analyzer is used in the test of basic components such as LED, LD, SLD, DFB-LD, EDFA, optical fiber, optical fiber grating, optical filter, optical magnifier, WDM, and related systems.

Main Features:

- ③ 70 Db Dynamic Range
- ③ -90 dBm Level measurement sensitivity
- ③ Built-in FDD (Windows)
- ③ Tracking tunable laser source
- ③ Modulated and pulsed light measurement
- ③ DWDM Measurement
- ③ PMD Measurement
- ③ NF OF EDFA Gain measurement

Specifications

Item	Specification
Wavelength range	600 ~ 1700nm
Wavelength accuracy	±0.3nm:±0.05nm(1520-1600nm)
Level range	+10 ~ -90dBm(1250 ~ 1600nm);+10 ~ 65dBm(600 ~ 1000nm) +10 ~ -75dBm(1600 ~ 1700nm);+10 ~ 85dBm(1000 ~ 1250nm)
Level linearity	±0.05dB(1550nm,-50 ~ 0dBm)
Dynamic range	≥70dB(1nm from peak wavelength)
Resolution bandwidth	0.05, 0.07, 0.1, 0.2, 0.5, 1nm
Polarization Sensitivity	±0.05dB(1550nm):±0.1dB(1310nm)
Display	colour TFT-LCD
Memory	A/B(2 curve),3.5 inch FDD
Printer	built-in heat sensitive printer
Interfaces	GP-IB,RS232,VGA output
Operating Environment	operating temperature:10 ~ 40 ;Relative humidity:≤90%RH
Dimensions ,Weight	DXWXH=350X320X177(mm);≤17kg
Power	220V±10%,50Hz

AV6318 Visual Fiber Fault Locator



The AV6318 Fiber Fiber Fault Locator injects visual light (red light) into the optical fiber with 650nm laser and observes visual light leakage in the fiber to locate the fiber fault point with convenience and accuracy. The locator is used on naked optical fibers, and jumpers as well as other optic cables that leak red light. Checking the fault points at the near end of the fiber and the high loss sections caused by inconspicuous bend can make up for the defects in the near end dead zone of OTDR. The locator is utilized in core alignment of multi-core optic cables.

Specifications

Item	Specification
Optical components	LD
Wavelength	650nm±20nm
Output power	≥0.5mw (SM optical fiber)
Output mode	1HZ/CW
Optical fiber identification distance	≥5km
Connector	FC/SC/ST
Battery	two AA batteries

AV6482 Precision Light Chopper



The AV6482 precision light chopper features a host with separating a chopping head for remote operation, which is used to transfer DC space light into modulated light. The faint optical signal could be measured for making use of correlative detection technology. Usual frequency points are selected. The products are used for Optical absorption, reflection and transmission measurements, and also for production and test of optical devices, which are fit for use with AV2495 optical power meter or lock-in amplifier.

Main Features

- ③ Quartz crystal frequency accuracy and stability
- ③ Lock indication
- ③ Synchronous output phase continuously adjustable($-\pi$ to $+\pi$)
- ③ Enclosed housings for safety
- ③ Remote chopper heads

Specifications

Item	Specification
Chopped Frequency	270Hz, 1000Hz
Display Mode	LED indication
Control Mode of Frequency	Shift by key-press
Frequency Stability	100ppm/ (10 ~ 30)
Jitter	0.4°(RMS)
Synchronous Output	TTL square wave
Setting Time	<60s
Phase-shift Range	-180° ~ +180°
Condition	Operating temperature: 0 ~ 40 Storage temperature: -10 ~ 60 ; Humidity: ≤90%RH
Dimensions	Host: D × W × H=218 × 280 × 100(mm ³) Chopper head: D × W × H=62 × 55 × 68(mm ³)
Net Weight	Host Approx. 3kg; Chopper head: 0.25kg
Power	AC220V±10%,50Hz±5%
Standard Configure	Power line

AV6491E Optical Fiber Fusion Splicer



The AV6491E Fiber Fusion Splicer is a kind of advanced fusion splicer, which has Profile Alignment System (PAS) and automatic fusion function. The main characteristic of PAS is that alignment does not depend on remote-point. Much work and time are saved. At the same time, efficiency is raised. There is no more worry about the bend fiber and no more limitation of fiber type also. The AV6491E can preset 30 different splicing modes. It allows various types of fiber to be spliced.

There are two vertical optical beams, which pass through the optical fiber and the fiber image is magnified by a microscope. Then the fiber image is detected by a CCD camera. By using high-speed digital image processing method; gap; clear; align and fusion can be done, splice loss also can be estimated. The fiber image and message are displayed on the LCD

Main Features

- ③ Lower fusion loss.
- ③ Fast fusion and automatic operation
- ③ Advanced Profile Alignment System(PAS)
- ③ High resolution LCD (5 inches)
- ③ Watch X and Y axis with one CCD camera

Specifications

Item	Specification
Fiber types	According to ITU-T G.651 ~ G.655 standard and method
Average loss	0.02dB(SM, typical), 0.01dB(MM, typical), 0.05dB(DS)
Operating mode	Automatic, Semiautomatic, Manual
Operating temperature	-10 ~ 50
Storage temperature	-20 ~ 60
Working humidity	95%RH (non-condensing)
Elevation	0 ~ 3500m
Power supply	AC: 198 ~ 242V, 50Hz, 40VA DC: 11 ~ 14.5V
Dimensions	210mm*200mm*230mm
Weight	6kg

CONFIGURES			
Number	Name	Quantity	Remark
1	AV6491E OPTICAL FIBER FUSION SPLICER	1	
2	AC/DC adapter	1	Accessory
3	AC & DC power line	1	Accessory
4	User manual	1	Accessory
5	Pump bottle & air pump	1	Accessory
6	Storage battery	1	Optional
7	AV33012 Fiber Cleaver	1	Optional
8	Tool Box	1	Optional

AV87501 Temporary Fiber Aligner



AV87501 Temporary Fiber Aligner is a precise V-slot fiber aligner. It is used to loss in OTDR testing and the temporary interface between fibers. It has a light source and power meter-based loss measurement and bare fiber reel testing for confirming transmission capability.

Main feature

- ③ Typical loss of 0.5dB
- ③ Precision V-groove for easy cleaning
- ③ Light Weight and Small Dimensions

Specifications

Item	Specification	
Fiber Types	Single Fibers: 0.25 to 0.9mm coating diameter 0.125 clad diameter	
Average Loss	SM fiber:0.5dB	
Applicable Fibers	SM, MM, DS, NZ-DS optical fibers	
Cleave Length	10mm	
Operating Environments	Temperature	0 to 40 /td>
	Humidity:	90%RH(40 , non-condensing)
	Storage:	-20 ~ 60
Dimensions	Main Body:	D × W × H=80 × 50 × 30(mm ³)
	Carrying Case:	D × W × H=210 × 140 × 60(mm ³)
Net Weight	Main Body:	Approx.0.26kg
	Carrying case:	Approx.0.38kg

AV6481 Programmable SM Optical Switch



The AV6481 Programmable SM Optical Switch is a functional set for fast switching between light paths. It is used in multi-path optical monitoring in optical fiber transmission system, protection and transfer of optical fiber network, test of multi-path/belt optical fibers and optical fiber components in optical fiber testing systems and network tests. Combined with OTDR, the switch can make an automatic monitoring system for multiple monitoring of optical fiber probes.

Main Features

- ③ Low Insertion Loss
- ③ High Repeatability
- ③ Low Crosstalk
- ③ With RS-232 and GP-IB interfaces
- ③ Fast Switching
- ③ Status Auto Storage

AV6391X Fusion Biconical Taper System



The small and economic AV6391X fusion biconical taper system comprises light source, main body, optical power probe, flux controller and the computer. You are able to manufacture passive optical fiber parts including the standard optical fiber, WDM and broadband couplers. The whole manufacturing process takes about ten minutes and is entirely under the control of microcomputers, featuring high automatization. You can set spectroratio and use single component hydrogen. By adjusting parameters such as the flame position and the stretching speed of optical fibers, you can produce various couplers easily.

Specifications

Item	Specification
Light Source Wavelength	1310nm and 1550nm
Light Source Stability	±0.05dB/15min
Detector Wavelength Range	1100 ~ 1700nm
Detector Power Range	-50 ~ 0dBm
Main Body Sweep Distant	<40mm
Main Body Sweep Speed	20 ~ 400μm/s
Fiber Location Distance	15 ~ 95mm
Fiber Fixed Means	Torch
Torch	Fixed 10mm, pure hydrogen
Torch Up-down Distant	<10mm
Torch Front-back Distant	<60mm
Gas Flux Control Resolution	1sccm
Package Set	Automatic, epoxy glue
Dimensions	450 × 320 × 190mm
Weight	18kg
Power Supply	AC220V,50Hz

Devices	Coupler	WDM
Wavelength	1310nm/n1550nm	1310/1550nm
Typical Extra Loss	<0.15dB	<0.2dB
Spectroratio	99:1 ~ 50:50	
Spectroratio Error	±1%	
Bandwidth	±20nm or ±40nm	±20nm or ±40nm
Isolation Degree	-	>18dB

AV6381/6381B Programmable Optical Attenuator



The AV6381/6381B Programmable Optical Attenuator is a continual variable programmable optical attenuator, which is developed on the neutral filter and photoelectric rotary coder control technology and delivers extremely high repeatability, stability and attenuation reliability. It can detect and adjust fast communication systems and equipments in the research, exploration and production stages (e.g. optical fiber line delivery,

error ratio measurement, system side band analysis, receiver sensitivity measurement, optical power attenuation). The attenuator calibrates the entire 60dB attenuation range at 1310nm to 1550nm. In addition, the wavelengths are solidified in an EEPROM to make auto-correction to every wavelength and attenuation. You can match the attenuator exactly to the center wavelength of the light source to ensure reliable measurement results.

Main Features

- ③ 4 Digits display
- ③ Programmable GP-IB
- ③ 0.01dB Resolution and 0.02dB repeatability
- ③ Correct attenuation between 1200nm to 1650nm
- ③ 60dB Continuous attenuation range

Specifications

Item	Specification	
	AV6381B	AV6381
Wavelength range	1200nm ~ 1650nm	
Max. Attenuation	60dB(insertion loss not included)	
Display Resolution	0.01dB	
Repeatability	0.02dB	
Insertion loss	≤3dB	
Attenuation Accuracy(Linearity)	±0.6dB(SM)	±0.4dB(SM)
Return loss	≥45dB(SM)	
Operating Environment	Temperature:0 ~ 45 Humidity:≤90%RH	
Dimensions	248 * 98 * 378(mm); 5.5kg	
Power	220V±10%,50Hz	

AV33011/AV33012 Optical Fiber Cleaver



AV33011



AV33012

The AV33011 Fiber Cleaver adopts electronic tuning ultrasonic to vibrate the blade to cut optical fiber. It composes blade carrier, fiber clamping workbench, damper, tension-meter, operating grip, tension adjusting set, blade adjusting set, electronic tuning circuit, operating indicator light and power source. It meets the need for cutting SM or MM optical fiber.

AV33012 Fiber Cleaver is a mechanical optical cleaver with a precision circle blade. It is consisted of the pedestal, the slider, the blade fixture, the optical fiber press and cutting block. With compactness, lightweight and portability, the cleaver is used in cutting of SM or MM quartz optical fiber with 1-12 cores. Both of cleavers are suitable for research and laboratory, also for outdoor construction. It can acquire smooth end-face of fiber of less than 1° angle, ensuring lowest splice loss.

Main Features

- ③ Easy to operate
- ③ High verticality, smoothness and economical price
- ③ AV33012 adopts the precision circle blade to cut optical fiber
- ③ AV33011 adopts electronic tuning ultrasonic to vibrate the blade to cut optical fiber

Specifications

Specifications		
Model	AV33011	AV33012
Optical Fiber Type	SM, MM quartz optical fiber, clad diameter 80 ~ 200um	SM, MM quartz optical fiber, clad diameter 80 ~ 125um; cores:1 ~ 12cores
End face Quality	end face angle $\leq 1^\circ$	end face angle $\leq 1^\circ$ mirror face
Life of Diamond heads	20000 times (The blade can be divided into 10 points, each of which cuts 2000 times.)	20000 times (The blade can be divided into 16 points, each of which cuts 2000 times.)
Cleave length	-	10mm
Dimensions	D x W x H = 150 x 150 x 70(mm)	D x W x H = 70 x 57 x 50(mm)
Weight	1.4kg	0.3kg
Power	high-volume 9v alkaline battery	-
Operating Environment	Operating Temperature:-5 ~ 40	Operating Temperature:0 ~ 40
	Storage & transport Temperature:-10 ~ +50	Storage & transport Temperature:-10 ~ +50
	Relative humidity: $\leq 95\%$ RH(40 non-condensing)	Relative humidity: $\leq 95\%$ RH(40 non-condensing)

AV6332 Echo Loss Measurement Instrument



The AV6332 return loss Test set measures insertion loss and return loss simultaneously. With ease-of-use and multiple applications, the instrument is suitable for measurement of insertion loss and return loss of optical fiber, cable and parts. The calibration parameters can be stored so that the user does not have to make calibration every day, which simplifies the measurement process. In addition, the set features good measurement repetition junctions are easy to clean. It is used in research, education and production of optical communication.

Specifications

Item		Specification
Operating Wavelength		1310nm,1550nm
Return loss	Range	0 ~ 70dB
	Accuracy	±1.5dB
power	Range	-70 ~ +3dBm
	Accuracy	±0.25dB(-10dBm)
Connector Type		FC,SC,ST
Operating Temperature		0 ~ +40
Power		AC220V,50Hz
Dimensions,		D ×W ×H = 280 × 280×85,
Weight		4kg

SMF Mode-Field-Diameter Test System



SMF Mode-Field-Diameter Test System is used to measure the diameter of SM optical fiber module field. The system measures different SM optical fibers such as G652, G653 and G655 using the basic standard method defined by CCITT-far-field sweep method. It can perform precise measurement over the numerical aperture of SM, MM optical fiber. The measurement system comprises measurement swivel table, LD light source, Power Meter, the digital display diagram and the computer.

Main Features

- ③ Different light sources for your choice to construct measurement system of simulation diameter or numerical aperture
- ③ All light sources and power meters are general purpose equipment made by the Institute, which are quite economical cost
- ③ High measurement precision to produce results according to the highest standard for national defense
- ③ Fast measuring speed, only 6-8 minutes per measurement.
- ③ Simple system structure to conveniently maintain, Chinese& English interface for measurement software, easy to learn and use

Technology indexes

- ③ Measurement angle range: $\pm 60^\circ$
- ③ Measurement dynamic range: 90dB
- ③ Measurement uncertainty: 0.2mm
- ③ Measurement repetition: 0.01m

AV5232C Bit Error Ratio Tester



The AV5232C Bit Error Ratio Tester is used to measure bit errors and online code errors of a digital telecommunication system at E1 level and accomplishes the error performance analysis. The measurement and analysis conform to ITU-T G.703, O.151, G.821 recommendation. It is used in the development, production, construction and maintenance of digital telecommunication and its accessories.

Main Features

- ③ With Hand-held structure, rechargeable internal batteries and external direct current power supply
- ③ Bit error and code error measurement
- ③ Error insert, beep alarm on errors, triggered print function
- ③ Print test results and test conditions
- ③ Device-monitor end measurement.
- ③ Detection of Loss of Signal (LOS), Pattern Synchronization Loss (PSL) and All 1's (AIS) alarm,
- ③ Easy to operate with keyboard lock, power protection

Specifications

The Transmission Unit	Clock	2.048Mb/s±50ppm
	Pattern	(PRBS):2 ¹⁵ -1; User-defined word: 16-bit word can be set as wish.
	Output	Impedance :75(unbalanced); Level:±2.37V±10%; The pulse waveform conforms to ITU-T Rec.G.703.
	Error Addition	10 ⁻³ ,10 ⁻⁴ ,10 ⁻⁵ ,10 ⁻⁶ ,single, 0.
The Receive Unit	The Receive Unit	The clock, pattern and line code are same as the transmission unit; equalization is automatically applied to the input data
	Error Measurement	bit error, code error.
	Error Performance:	(1)Error Count (EC) (2)Second Error Rate(SER) (3)Error Rate (ER) (4)Error Free Seconds(EFS) (5)Error Seconds (ES) (6)Severely Error Seconds(SES) (7)Defected Minutes(DM) (8)Unavailable Seconds(US) (9)ErrorSecondRate(ES%)(10)SeverelyErrorSecondRate(SES%) (11)Defected Minutes Rate(DM%)(12)Unavailable Seconds Rate(US%)
	Alarm Indication	:Loss of signal (Los), Pattern Synchronization Loss (PSL), All 1's (AIS)
	Test Period:	automatic, manual (the longest test period is 99 hours 59 minutes 59 seconds); Measurement can be made once or repeated automatically
Other	Electronic Clock	display year, month, date, hour, minute and second
	Print	Up to 11 above parameters except SER can be printed at the time preset; The moment when signal is lost or got, when synchronization is lost or got, when AIS alarm occurs or ends, when power is turned up or turned off also can be printed
	Print Period	programmable, the longest period is 99 hours 59 minutes
	Power Supply	internal rechargeable battery, the test set can work with it for 4 hours uninterruptedly; external 12V direct current power supply
	AC-DC Converter	input: single phase 220V±10%, 50Hz±5%;output: 12V±5%,1.25A±5%
	Environment	operating temperature:0 ~ 40 ;store temperature:-40 ~ 70
	Dimensions	:D × W × H=198 × 88 × 38(mm)
	Weight:	Approx.0.5kg.

AV5221 xDSL Subscriber Loop Analyzer



AV5221 xDSL Subscriber loop analyzer is a comprehensive test instrument. It can be used for test and line faults locating of all kinds of cable such as POTS, xDSL etc. It also can qualify the capability of cable to carry the xDSL technology. The test set is best choice for service opening, daily maintenance, and troubleshooting .

AV5221 measures line cable Using the single-ended test method, It can test VAC/VDC of copper twisted pair cable, and its Resistance, AC/DC Current, Capacitance, frequency response ,noise ,load coil, it also can measure the achievable maximum bit rate that a local loop can support without the need of an xDSL modem. and can locate bridge taps, short, opens, and any other impairments that may exist on the line.

Main Features

- ③ Manual or auto TDR test, graphic display for test results
- ③ Large LCD, easy to learn and easy to use
- ③ AC/DC or internal battery power supply, lightweight, easy to carry and test
- ③ DMT test, estimate the maximum bit rate for the whole cable with respective ADSL
- ③ Powerful test ability for twisted pair telecommunication cable, can measure frequency response, noise, load coil, and DMM etc.

Specifications

TDR (Time Domain Reflectometry)	
Test Type	Manual TDR, Auto TDR
Distance Range	9m ~ 5000m (range will depend on cable type and condition)
Distance Accuracy	±1% of reading ±3m
Pulse Widths	28ns ~ 10us(auto-selecting in Auto TDR test)
Test Signals	Sine, half-sine and square pulse
V.O.P	40% to 99% in increments of 1% of the speed of light

Frequency Response	
Test Type	Single End Measured
Frequency Range	4.3125kHz ~ 2MHz in increments of 4.3125kHz
Attenuation Range	0 ~ -36dB
Measured Accuracy:	±2dB
Graph display, Moveable Cursor available for detailed plot analysis	

Noise Measurements	
RMS Noise Arrange	from +24dBm to -50dBm
Accuracy:	±2dB(in -20dBm)
Power Spectral Density(PSD)	Display Range From -3.3 to -153.3dBm/Hz or +30 to -120dBm, Spectrum analyzer with a resolution bandwidth of 2.15625kHz and a range from 2.16kHz to 2MHz.

DMT Test	
Noise Margin	0 to 10.0dB in 0.1dB steps
Test Type	Single End Measured
ADSL Setups	15 bit test as per G.992.1; 8 bit test as per G.992.2(g.lite)
Test Frequency Response, PSD Noise, and Estimate the possible number of bits allocated for an individual DMT subchannel, the maximum bit rate for the whole cable with respective ADSL	

Load Coil Detection
Graph, and numerical result

DMM(Digital Multimeter)	
DC Voltage	400 VDC max, Auto-ranging Accuracy: $\pm 2\%$ Full-Scale
AC Voltage	400 VAC peak max Auto-ranging Accuracy: $\pm 2\%$ Full-Scale
DC Current	max.200mA, Accuracy: $\pm 1\%$ Full-Scale
AC Current:	max.140mA, Accuracy: $\pm 2\%$ Full-Scale
Resistance	Range: 1k Ω , 10k Ω , 100k Ω , 1M Ω , 10M Ω Auto-ranging Accuracy: $\pm 5\%$ of range
Capacitance	1nF ~ 10uF, Accuracy: $\leq 10\text{nF}$, $\pm 2\text{nF}$ $> 10\text{nF}$, $\pm 20\%$

GENERAL	
Wire Interface	3 pin Small CF, RJ-45, RJ-11
Impedance	75 Ω , 100 Ω , 120 Ω , 135 Ω , 150 Ω & Automatic
Display	LCD 640*480 pixels
Power Supply	18VDC input via external AC Mains adapter
Dimensions	260 × 190 × 70mm (L × W × H)
Weight	Approx. 1.9kg
Operation Temperature	0 ~ 40 , Up to 90% relative humidity
Storage Temperature	-20 ~ 60

AV5282 PCM Comprehensive Tester



AV5282 PCM Comprehensive Tester can be used in the test of PCM terminal, and other telecommunication system based on optical fiber, microwave or cable media. It has profuse functions and the operation of it is very easy. It is a mini-type test platform for various telecommunication systems.

Main Features

- ③ 2Mb/s framed or unframed signal error test, 64kb/s co-directional signal test
- ③ G.821, G.826 and M.2100 series analysis
- ③ Jitter test (optional)
- ③ E1 pulse mask measurement (optional)
- ③ Tone frequency test (optional)
- ③ Handhold test set, use internal battery as well as external AC power supply
- ③ Large LCD, Chinese/English display

Specifications

Item	Specification
Bit Rates	2.048Mb/s \pm 50ppm, 64kb/s \pm 50ppm, external clock
Line Code	AMI or HDB3
Test Patterns	PRBS: 2 ⁹ -1, 2 ¹¹ -1, 2 ¹⁵ -1, 2 ²⁰ -1, 2 ²³ -1, 16-bit user word, all-ones, all-zeros, 1010, 1000
Errors Added	Single, fixed rate 10 ^{-N} (N=3~7)
Signals	2Mb/s framed: PCM30, PCM31, PCM30+CRC, PCM31+CRC, 2M unframed, 64kb/s co-directional, as per ITU-T Rec G.703, G.704, G.706 and G.732
Error Test	bit, code, FAS, CRC, E-bit error count and error rate. Analysis can be performed as per G.821, G.826 or M.2100 series. Analysis display: list or histogram. Test can be made on n \times 64kb/s timeslots, or 2Mb/s unframed signal or 64kb/s co-directional signal.
Channel Test	n \times 64kb/s timeslots insert/drop
Clock Frequency Offset	\pm 100ppm, resolution:1ppm
Tone Frequency Test	300Hz~3400Hz; level: -40~+3dB, the tester can generate DTMF signal (optional)
Frequency Test	Resolution 1Hz, accuracy \pm 5ppm
Jitter test	Range 1.0UI or 10UI (no filter), (optional)
Alarms can be added and detected	LOS, AIS, LOF, TS AIS, RDI, RDI-MF
Pulse mask of E1 telecommunication signal (optional)	
Tap on the channel selected	
Hand-held Structure, large LCD, Chinese/English menu, RS232 port equipped	
Co-directional interface error test	
Power Supply	NiH battery, can last 4 hours. External 12V DC power supply
Dimensions (D \times W \times H)	275 \times 127 \times 55 (mm)
Net Weight	Approx.1kg
Option	AV5282-OP1: Pulse mask of E1 telecommunication signal AV5282-OP2: Jitter test: Range 1.6UI or 16UI AV5282-OP3: Tone frequency test: 300Hz~3400Hz; level: -40~+3dB

AV5242 Series SS7 Tester



The AV5242 Series SS7 Tester conforms to the ITU-T technological specifications and SS7 signal technological specifications of telecommunication network of China. It has the ability of validity test and compatibility test for telecommunication equipment. It is used for the development and production of remote-controlled switchboard, the debugging, performance analysis, maintenance, fault shooting and optimization of the SS7 signaling network.

Main Features

- ③ Monitor and emulator of SS7 & ISDN
- ③ GSM monitor
- ③ Line monitoring, protocol interpretation, statistics and analysis
- ③ Filter, trace and trigger functions
- ③ Five interfaces supported
- ③ 4, 8, 16 links in one chassis are optional
- ③ Emulation mode or monitoring mode is optional

Specifications

Model	Monitoring Simulation	Number of links	Protocol	Interfaces
AV5242A	Monitoring	4	SS7(all),ISDN,GSM	2Mb/s(75Ω/120Ω) V.35,RS232,ISDN BRI
AV5242B	Monitoring/ simulation	4	SS7(all),ISDN,GSM	2Mb/s(75Ω/120Ω) V.35,RS232,ISDN BRI
AV5242C	Monitoring	8	SS7(all),ISDN,GSM	2Mb/s(75Ω/120Ω) V.35,RS232,ISDN BRI
AV5242D	Monitoring/ simulation	8	SS7(all),ISDN,GSM	2Mb/s(75Ω/120Ω) V.35,RS232,ISDN BRI
AV5242E	Monitoring	16	SS7(all),ISDN,GSM	2Mb/s(75Ω/120Ω) V.35,RS232,ISDN BRI
AV5242F	Monitoring/ simulation	16	SS7(all),ISDN,GSM	2Mb/s(75Ω/120Ω) V.35,RS232,ISDN BRI

SPECIFICATIONS	
4, 8, 16 Full-Duplex links; compatible for 14/24 bits signaling point compatible	
Emulation test:	MTP, TUP, ISUP, SCCP, TCAP protocol, etc User can perform his test use the script composed by himself. Simple operations such as addition, modification, delay or deletion of a message are enough; verbose program is not necessary
Monitor function:	SS7: MTP, TUP, ISUP, SCCP, TCAP; ISDN: ITU-T Q.921, Q.931 GSM: BSSMAP, MAP, Abis protocol, etc Line monitoring, protocol interpretation, statistics analysis, trace and search, filter, trigger, re-display can be performed. User can define the code of the signaling point being tested. Time label is inserted before the message. User can define the field to be displayed of a certain message. The interpretation of the message is very clear. Record mode is various as you needed. Local operation or remote operation can be applied.
Interface:	E1 (75Ω/120Ω), V.35, RS232, ISDN BRI/PRI
Processor:	Pentium 1.4GHz (or faster); RAM :256MB; HD: 40GB (or more)
Dimensions:	D*W*H= 420*260*250mm
Net Weight:	Approx. 10kg

AV5237 Telecom/Datacom Analyzer



AV1471 agile RF signal generator combines high performance with frequency agility for Modern The AV5237 Telecom/Datacom Analyzer combines telecom analyzer and Datacom analyzer together, used in telecom and Datacom test at rates from 50b/s to 2Mb/s. It has multi-interface capability, can be configured as a DCE or a DTE and has a wide range of rates, carrying out transmission capability test, function test, electrical parameter test and CAS monitor. Measurement parameter: Error, Error Performance Analysis, slips, alarms, interval monitoring, 64kb/s Channel frequency and level, circular delay, duplication, duplication release and signal command. The AV5237 can carry out PCM transmission testing at sub-64kb/s, 64kb/s, N*64kb/s, 2.048Mb/s. It also provides Datacom testing at rates from 50b/s up to 2Mb/s. The test set is used in development and production of communication; installation, authentication, operation and maintenance of telecommunication network.

Main Features

- ③ 50b/s ~ 2.048Mb/s PCM & Data Communication Test
- ③ V.24, V.35, RS449, V.11, X.21, G.703 Interfaces
- ③ In-or off-line error and alarm measurements
- ③ Multi-parameter test: Frequency, Frequency offset, Delay time, Channel level, Code word measurements, Offset
- ③ Auto configure and Auto diagnosis
- ③ Large Chinese display, easy to operate.

Specifications

TELECOM TEST	
Data Rates	2.048Mb/s, 64kb/s. internal clock, external clock and looped timing
Frame Structure	2Mb/s unframed, PCM30, PCM30+CRC, PCM31, PCM31+CRC, X.50 framed
Interfaces	75Ω unbalanced/120Ω balanced , Conforming to ITU-T G.703 and G.823
Modes Of Operation	Transmit, Receive, Direct channel
Test Patterns	PRBS : 2^9-1 , $2^{11}-1$, $2^{15}-1$, $2^{23}-1$, Inverted Data .WORD: Fully programmable 16-bit word, all ones, 1 in 2, Fully programmable word 8 to 1024 bits in octet steps, octet aligned
Code	HDB3, AMI, NRZ, G.703 co-directional code
Error Add Rate	Can either be added singly or at preset rates of 10 N where N=-2 to -8 Frame Error: Burst, Continuous
Error Measurements	Bit errors, code errors, frame errors, CRC errors, REBEs (E bit)
Error Performance Analysis	G.821 analysis, M.2100 analysis
Alarm Detection	AIS, LOS, LOF, multi-frame loss, CRC4 multi-frame loss, Remote frame loss, Remote multi-frame loss, Pattern sync loss, Octet loss, Power loss
2M Frame Spare International(Si) Bits, Spare Application(Sa) Bits and Signaling Bits can be set and monitored	
Frequency, Slips, Round trip delay	
Sub-64kb/s testing	Testing of sub-64kb/s data signals to ITU-T X.50 and X.58;
Timeslot Access	External drop/insert of 64kb/s timeslot to VF ports or n*64kb/s(n=1 to 16) to X.21 DATACOM port: internal tone generation/measurements and talk/listen
Measurements relative frequency offset and wander	
Tone generation and measurement	Generation: Into n 64kbit/s timeslot,(n=1 ~ 31) Level: 0dBm to -55dBm in 5dB steps Frequency: 100Hz to 3.9 kHz Measurement: In selected 64kb/s timeslot Code word , Channel frequency and level

DATAKOM TEST

Interfaces	V.24, V.11/X.21-leased, V.35 (DTE or DCE)
Data Rates	50bit/s to 2Mbit/s (synchronous: built-in synthesizer), 50bit/s to 19.2kbit/s (asynchronous)
V.24 Breakout	TDR, RD, XTC, TC, RC, RTS, CTS, DTR, DSR, DCD; Patch points, monitors, voltage sources, switches; V.11/V.35 : Activity indicators on data, clock and control circuits
Error Add Rate	Errors can either be added singly or at preset rates of 10 N where N=2 to 5
Test Patterns	PRBS : $2^6 - 1$, $2^9 - 1$, $2^{11} - 1$, $2^{15} - 1$, $2^{20} - 1$; all 1s, all 0s, 1010, 3 to 16-bit user-definable word, FOX word
Measurements	Errors, BER, block-errors, clock slips
Error Performance Analysis	G.821 analysis
Alarm Measurements	Data loss, Power loss, Pattern loss, Clock slips
Frequency Measurements	0 ~ 2.048MHz (Synchronous Mode)
Control-Circuit Analysis	Transition Diagrams of RTS, CTS, DTR, DSR, DCD and MON
Control-Circuit Timing	Measures times between selectable start/stop events

COMMON CHARACTERISTICS

Remote control and Printing	
Graphic display: error, alarm and status of control circuits Results and setting storage and recall.	
Auto Configure and Self-test function	
In-out tie-in	BNC, v.24, v.11/x.21, v.35
Accessory	V.24, V.11/X.21, V.35, RS232, DATAKOM interface loop-back connector apiece 1; Power cord 1; Operate manual 1; BNC cable 2; Fuse 2
Light-Weight, field-portable	
Dimension	D × W × H=:340 × 195 × 220mm
Net Weight	Approx.5kg

AV5236 SDH/PDH Digital Transmission Analyzer



The AV5236 SDH/PDH Digital Transmission Analyzer conforms to ITU-T technology standards and the national technology system light synchronous transmission network. It can test network error code, jitter, pointer, bolt, insertion/drop, and other parameters of SDH/PDH. The test set is versatile. It can be widely used in the fields of development, production of SDH/PDH equipment and installation, authentication, operation and maintenance of telecommunication network.

Main Features

- ③ PDH transmission characteristics test (error & jitter)
- ③ STM-1/STM-4 transmission test (error & jitter)
- ③ STM-1/STM-4 optical interface(1310nm & 1550nm)
- ③ SDH/PDH alarm analysis
- ③ Pointer adjustment and analysis
- ③ SDH/PDH transmission and reception, account opening and canceling setting, analysis and other function test

AV5232C Bit Error Ratio Tester



The AV5232C Bit Error Ratio Tester is used to measure bit errors and online code errors of a digital telecommunication system at E1 level and accomplishes the error performance analysis. The measurement and analysis conform to ITU-T G.703, O.151, G.821 recommendation. It is used in the development, production, construction and maintenance of digital telecommunication and its accessories.

Main Features

- ③ With Hand-held structure, rechargeable internal batteries and external direct current power supply
- ③ Bit error and code error measurement
- ③ Error insert, beep alarm on errors, triggered print function
- ③ Print test results and test conditions
- ③ Device-monitor end measurement.
- ③ Detection of Loss of Signal (LOS), Pattern Synchronization Loss (PSL) and All 1's (AIS) alarm,
- ③ Easy to operate with keyboard lock, power protection

Specifications

The Transmission Unit	Clock	2.048Mb/s±50ppm
	Pattern	(PRBS):2 ¹⁵ -1; User-defined word: 16-bit word can be set as wish.
	Output	Impedance :75(unbalanced); Level:±2.37V±10%; The pulse waveform conforms to ITU-T Rec.G.703.
	Error Addition	10 ⁻³ ,10 ⁻⁴ ,10 ⁻⁵ ,10 ⁻⁶ ,single, 0.
The Receive Unit	The Receive Unit	The clock, pattern and line code are same as the transmission unit; equalization is automatically applied to the input data
	Error Measurement	bit error, code error.
	Error Performance:	(1>Error Count (EC) (2)Second Error Rate(SER) (3>Error Rate (ER) (4>Error Free Seconds(EFS) (5>Error Seconds (ES) (6)Severely Error Seconds(SES) (7)Defected Minutes(DM) (8)Unavailable Seconds(US) (9>ErrorSecondRate(ES%)(10)SeverelyErrorSecondRate(SES%) (11)Defected Minutes Rate(DM%)(12)Unavailable Seconds Rate(US%)
	Alarm Indication	:Loss of signal (Los), Pattern Synchronization Loss (PSL), All 1's (AIS)
	Test Period:	automatic, manual (the longest test period is 99 hours 59 minutes 59 seconds); Measurement can be made once or repeated automatically
Other	Electronic Clock	display year, month, date, hour, minute and second
	Print	Up to 11 above parameters except SER can be printed at the time preset; The moment when signal is lost or got, when synchronization is lost or got, when AIS alarm occurs or ends, when power is turned up or turned off also can be printed
	Print Period	programmable, the longest period is 99 hours 59 minutes
	Power Supply	internal rechargeable battery, the test set can work with it for 4 hours uninterruptedly; external 12V direct current power supply
	AC-DC Converter	input: single phase 220V±10%, 50Hz±5%;output: 12V±5%,1.25A±5%
	Environment	operating temperature:0 ~ 40 ;store temperature:-40 ~ 70
	Dimensions	:D × W × H=198 × 88 × 38(mm)
	Weight:	Approx.0.5kg.

The AV5232E Bit Error Ratio Tester



The AV5232E Bit Error Ratio Tester is used in the error measurement and error performance analysis for 50b/s ~ 2Mb/s data communication and 2Mb/s, 8Mb/s telecommunication systems. The measurement and analysis conforms to ITU-T G.703, O.151, G.821 recommendation. It is used in the digital/data communication networks and the development, production, construction, maintenance of the communication equipment.

Main Features

- Aptotic Frequency 2Mb/s, 8Mb/s, continuous frequency 50b/s ~ 2Mb/s
- 2Mb/s online test and 2Mb/s, 8Mb/s out-of-service error test and analysis
- Line code include AMI, HDB3, NRZ, RZ
- Large LCD Chinese display, power protection

Specifications

SPECIFICATIONS				
The Transmission Unit	Aptotic Frequency	2.048MHz 8.448MHz±20ppm	Continuous Frequency	50Hz ~ 2.048MHz in 1Hz steps
	External Frequency		1kHz ~ 8MHz, Amplitude range form 1.5V to 4.5V	
	Frequency Offset		(fixed 2Mb/s,8Mb/s): ±100ppm	
	Pattern		PRBS: 2 ⁿ -1(n=6, 9, 11, 15, 20, 23) user word: programmable 16-bit word	
	Line Code:		AMI, HDB3, NRZ, RZ; AMI/HDB3 (fixed 2Mb/s, 8Mb/s): ±2.37V NRZ/RZ (TTL, 50b/s ~ 2Mb/s): TTL	
	Error Addition:		10 ⁻ⁿ (n=3,4,5,6),single,0	
The Receive Unit	The signal rate, test pattern and line code are as same as the transmitter; equalization for input data is applied automatically; Input impedance: 75Ω(unbalanced); High impedance:≥1.5kΩ(2Mb/s frame test); The clock can be set to normal phase or inverse phase as wish			
	Error Type:	2Mb/s frame test: code error, FAS error, CRC4 error 2Mb/s, 8Mb/s unframed test: bit error, code error 50b/s ~ 2Mb/s test: bit error		
	Error P erformance: according to ITU-T Rec. G. 821	(1) Error Count (EC) (2) Second Error Rate (SER) (3) Error Rate (ER) (4) Error Free Seconds (EFS) (5) Error Seconds (ES) (6) Severelv Error Seconds (SES)		

		(12) Unavailable Seconds Rate (US%) (13) Frame Align Signal Word (FASW) (14) Frame Align Signal Word Rate(FASW%) (15) Cyclic Redundancy Check (CRC)
	Alarm Indication:	2Mb/s frame test: Loss of signal (LOS) All 1's (AIS) Loss of Frame (LOF) Loss of Multi-Frame (LOM) Remote Defect Indication (RDI) Remote Defect Indication of Multi-Frame(RDI MF) Unframed test: Loss of Signal (LOS) Pattern Synchronization Loss (PSL) All 1's (AIS)
	Print: User-timed print or error-triggered print can be performed. All results including errors and alarms, end-of-measurement time, power-on time and power-off time can be printed out. Print period is programmable; the longest period is 99 hours and 59 minutes	
	Test Mode:	single, repeat
	Electronic Clock:	display year, month, date, hour, minute and second, date and time can be modified
	Power Supply:	220V±10%,50Hz±10%,power consumption≤45W Operating temperature: 0 ~ 40 Store temperature: -40 ~ 70
	Input and Output Connector:	BNC, impedance 75Ω
	Accessories:	power cable, user manual, BNC cable (2) print paper (2), fuse (2)
	Dimensions	D × W × H = 300 × 230 × 100 mm
	Net Weight:	Approx. 3.5kg

AV5233C 2M/8M/34M Bit Error Ratio Tester



The AV5233C 2M/8M/34M Bit Error Ratio Tester can measure primary, quadratic, triple group digital communication, data communication error and error specification analysis. It conform to ITU-TG.703,O.151,G.821. It is used in the development, production, construction and maintenance of digital telecommunications and its accessories.

Main Features

- Fixed rate 2Mb/s,8Mb/s,34Mb/s
- Continuous rate 50b/s ~ 50Mb/s(option 1)
- Error measurement and analysis offline, seven alarm detecting
- Detecting code types include AMI,HDB3,NRZ,RZ
- Support measurement at end monitor (2Mb/s frame testing)
- Large LCD screen Chinese display, power protection
- Two printing methods: print during configuration and when error appears

Specifications

Sending part	Continuous rate	50b/s ~ 2Mb/s,Resolution 1Hz;Fixed rate: 2.048Mb/s, 8.448Mb/s, 34.368Mb/s±20ppm		
	External clock	1kHz ~ 50MHz,Amplitude ≥ 1.5V		
	Frequency deviation(2M Fixed rate)	±100ppm.		
	Diagram	PRBS:2 ⁿ -1(n=6,9,11,15,20,23):Artificial	code:16	Bit
		programmable.		

	Code type	AMI,HDB3,RZ,NRZ;Level: $\pm 2.37V, \pm 1V(34Mb/s)$;75 Ω (Unbalanced); Pulse waveforms comply with ITU-T Rec. G.703. At continuous rate, the code types are NRZ,RZ. Clock can be set as anti-phase or non-anti-phase for your choice
	Error insertion	$10^{-3}, 10^{-4}, 10^{-5}, 10^{-6}$,single,0.
Receiving part	Receiving Setting	The rate, diagram and code type are the same as in the sending part and the input values are the same with the output indexes in the sending part. Automatic \sqrt{f} compensation for input data. Impedance is 75 Ω (unbalanced), high impedance $\geq 1.5k\Omega$ (2Mb/s frame test). Clock can be set as normal phase or inverse phase.
	Error type	bit error, coding error, FAS error, CRC4 error
	Error and its specifications	(1)EC(2)SER(3)ER(4)EFS(5)ES (6)SES (7)DM (8)US (9)(10)SES% (11)DM% (12)US% (13)FASW(14)FASW% (15)CRC
	Alarm display	at 2Mb/s frame test, no signal, synchronization loss, AIS alarm, frame loss, multi-frame loss, remote frame alarm, remote multi-frame alarm: at 50b/s ~ 2Mb/s and 12Mb/s, 8Mb/s non-frame test, only the former-three alarms appear.
	Measurement method	single, repetitive.
Others	Print	Print at configuration and when error appears, print error, warning, measurement end time and power off/on time. Print cycle is settable, with maximum 99 hours and 59 minutes.
	Electronic watch	displays year, month, day, hour, minute, second, revisable
	Power	220V $\pm 10\%$:50Hz $\pm 10\%$:Power loss $\leq 45W$:Operating temperature:0 ~ 40
	:Storage temperature	-40 ~ 70
	Dimensions	D*W*H=300*230*100(mm)
	Weight	3.5kg
	Option1	:50b/s ~ 50Mb/s Continuous error test

AV1761 Programmable Modular Power



AV1761 Programmable Modular Power is ideal for automated testing platforms to supply power stimulus and testing. It can be applied in automated testing areas including design research and manufacture.

Main Features:

- ③ *High density Mainframe (150 W ~ 2000W)*
- ③ *8-slot modular power system; you can select (or order customer-tailored modules) from existing varieties of module types to optimize investment*
- ③ *Built-in serial link cable enables two mainframes to control up to 16 outputs with a GPIB address.*
- ③ *Advanced programmable voltage and current control*
- ③ *Sequence voltage and current setting for outputs*
- ③ *Series and parallel operation to expand the range of output voltage and current*
- ③ *Output low ripple and noise*
- ③ *High-accuracy read-back of voltage and current*
- ③ *Store multiple settings*
- ③ *Optional isolation and polarity-reversal relays*
- ③ *Specially-designed connector assembly to simplify system integration*
- ③ *Standard interface (GPIB (IEEE 488.2))*

Specifications :

		DC 176101	DC 176102	DC 176103	DC 176104
Output ratings (0 ~ 40)	Output Voltage	0 ~ 8V	0 ~ 20V	0 ~ 40V	0 ~ 50V
	Output Current	0 ~ 16A	0 ~ 7.5A	0 ~ 3.75A	0 ~ 3A
	Output Power	128W	150W	150W	150W
Programming	Voltage .035% +	4mV	10mV	22mV	51mV

accuracy (25 ±5)	Current .035% +	8mA	5mA	4mA	1.9mA
Readback accuracy (25 ±5)	Voltage0.025% +	3mV	8mV	15mV	28mV
	Current0.025% +	8mA	6mA	4mA	1.5mA
Ripple and noise (20Hz ~ 20MHz)	Constant voltage (rms)	3mV	5mV	8mV	15mV
	Peak to peak	8mV	10mV	19mV	21mV
	Constant current (rms)	12mA	6mA	3.5mA	1.5mA
Line regulation	Voltage (CV)	0.8mV	0.8mV	2.5mV	3mV
	Current (CC)	1mA	0.8mA	0.5mA	0.2mA
Load regulation	Voltage (CV)	1.5mV	1.5mV	1.5mV	3mV
	Current (CC)	0.5mA	0.35mA	0.35mA	0.2mA
Transient response time :less than 5ms for the output voltage to recover within 100mv of its previous level following any step change in load current up to 10 percent of rated current					
Drift	Constant Voltage 100ppm +	0.5mV	1mV	1.5mV	2mV
	Constant Voltage 180ppm +	0.3mA	0.25mA	0.21mA	0.18mA
		DC 176105	DC 176106	DC 176107	DC 176108
Output ratings (0 ~ 40)	Output voltage	0 ~ 120V	0 ~ 160V	0 ~ 200V	0 ~ 320V
	Output current	0 ~ 1.25A	0 ~ 1A	0 ~ 0.75A	0 ~ 0.5A
	Output power	150W	160W	150W	160W
Programming accuracy (25 ±5)	Voltage 0.035% +	71mV	72mV	100mV	144mV
	Current 0.035% +	1mA	0.8mA	0.8mA	0.5mA
Readback accuracy (25 ±5)	Voltage0.025% +	47mV	48mV	60mV	98mV
	Current0.025% +	0.5mA	0.5mA	0.4mA	0.3mA
Ripple and noise (20Hz ~ 20MHz)	Constant Voltage (rms)	19mV	19mV	40mV	40mV
	Peak to peak	38mV	39mV	80mV	80mV
	Constant Current (rms)	1.5mA	1.5mA	1.5mA	1mA
Line regulation	Voltage (CV)	4.5mV	4.5mV	8mV	8mV
	Current (CC)	0.4mA	0.4mA	0.35mA	0.2mA
Load	Voltage (CV)	6mV	9.8mV	10mV	20mV

regulation	Current (CC)	0.15mA	0.2mA	0.2mA	0.2mA
Transient response time : less than 5ms for the output voltage to recover within 100mv of its previous level following any step change in load current up to 10 percent of rated current					
Drift	Constant Voltage 100ppm +	3.5mV	4mV	4.5mV	5mV
	Constant Voltage 180ppm +	0.17mA	0.15mA	0.1mA	0.1mA

AC input of System Mainframe: **AC 220V ± 15%, 50/60Hz**

Input Power of System Mainframe :**2200W (max.)**

Net Weight: **Mainframe : 22kg; Module: 3kg**

Size: **Mainframe (handle included) 480 (W) mm×190 (H) mm×750(D)mm;**

Module: **48(W) mm×144 (H) mm×588(D) mm.**

AV6681 VXI Oscilloscope



The AV6681 digitizing oscilloscope is a C-size, 2-slot, message-based VXI module with a sampling rate of 100 MSa/s and a memory depth of 1MB. It has four channels of 500MHz bandwidth and conforms to Plug & Play definitions. It provides waveform acquisition, parameter measurement and data acquisition capability, meeting needs for broadband signals verification and real-time data acquisition. It can be widely applied in diverse VXI automated testing systems.

Main Features

- ③ Real-time data acquisition: maximum 10ns sampling resolution over a time span of 10ms
- ③ Sequential single sampling: acquire 1024 consecutive waveform records, fit for capturing continuous single events
- ③ Repetitive sampling capability: 200GSa/s equivalent sample rate, 12bit waveform effective amplitude resolution in the average mode.
- ③ Standard pulse parameters measurements
- ③ 512 shared memory, SCPI control command set, Window9x/NT/XP compatible driver and virtual pan

Specifications

specification			
Vertical system	Bandwidth(-3dB)	50Ω	DC ~ 500MHz($\geq 10\text{mV/div}$); 300MHz($< 10\text{mV/div}$)
		1MΩ	250MHz
	Input coupling		DC, AC, GND
	Input impedance		50Ω, 1MΩ/12pF
	Max. input voltage		50Ω: $\pm 5\text{V}$; 1MΩ: $\pm 250\text{V}$
	Vertical Sensitivity		2mV/div ~ 500mV/div(50Ω); 2mV/div ~ 5V/div(1MΩ)
Horizontal system	Vertical Offset		$\pm 1\text{V}(\leq 100\text{mV/div})$; $\pm 10\text{V}(\leq 1\text{V/div})$; $\pm 100\text{V}(\leq 5\text{V/div})$
	Time base range		200ps/div ~ 5s/div
	Delay		Positive delay(post-trigger): 100s; Negative delay(pre-trigger): 10div
	Resolution		5ps
Trigger system	Equivalent sampling rate		200Ga/s
	Triggering source		CH1 ~ CH4, TTL external, VXI trigger buses(ECLTRG0 ~ 1, TTLTRG0 ~ 7)
	Triggering modes		Auto, normal; single, sequential single, continuous; Edge, combination, state, glitch, width
Acquisition system	Trigger hold off range		Time hold off: 200ns ~ 10s; Event hold off: 2 ~ 8192
	Max. sample rate		100MSa/s
	A/D resolution		8bit
	Record length		1Mpts/channel
Input port	Data processing		Single-shot, recombination, averaging(2 ~ 8092), envelope
	Channel 1 ~ 4, TTL external		Standard BNC
Output port	Channel calibration, probe compensation output		Standard BNC
VXI port	P1, P2 connector		Standard 96 PIN
General features	Dimensions		D x W x H = 393 x 413 x 207 mm
	Weight		App. 2.5kg
	Typical operating current		+5V: 4.5A; -5.2V: 5.8A; -2V: 0.4A; +12V: 0.24A; -12V: 0.12A
	Max. operating current		+5V: 5.5A; -5.2V: 7A; -2V: 1A; +12V: 0.5A; -12V: 0.5A
	Operating temperature		10 ~ 40
Package	Main body		1
	Accessories	Four 250MHz oscilloscope probes	
		One calibrated cable (50Ω)	
		Operation instructions book, programming manual and CD-ROM, one for each.	

AV2782 Precision LCR Meter



The AV2782 Precision LCR Meter can measure the parameters such as L, C, R and their components. It is used to check the components in and out of factory. And it is also used to evaluate the components precisely in laboratory.

Main Features

- ③ Frequency range: 75kHz ~ 30MHz
- ③ Basic accuracy: 0.1%
- ③ Broad measurement range
- ③ GP-IB Interface
- ③ Configurable DC bias current source
- ③ Configurable Various test fixtures
- ③ Sweep measurement

Specifications

Item	Specification
Frequency range	75kHz ~ 30MHz, Frequency resolution 100Hz.
Measurement Signal Level Range	5mV ~ 2V
Basic accuracy in impedance measurement	0.1%
Effective measurement range	Impedance: 0.01 ~ 10MΩ Capacitance: 0.1pF ~ 100μF Inductance: 0.1nH ~ 100mH
Measurement Parameters	Able to display R(Resistance), C(Capacitance), L(Inductance), Z(impedance),
GPIB Interface	
The current range of the Configurable DC bias current source is 0 ~ 10A.	
Configurable various test fixtures such as slot-type, alligator-type and SMD-type	
Sweep measurement	Sweep test on 10 frequency points or levels.
Triggering modes	Internal, external and manual
Time delay measurement	Delay time 0 ~ 60S
Averaging	Average times 1 ~ 256
Automatic level control	
Dimensions	D×W×H=530×369×190(mm)
Weight	Approx. 13kg.
Power	AC220V±10%, 50Hz±10%, Max. power consumption: 90W.
Operating temperature	0 ~ 40

Specifications

Item	Specification	
Measurement Frequency	192 Points in 50Hz ~ 100kHz, there-into 15kHz ~ 30kHz step distance is on 100Hz	
Signal Amplitude	0.01 ~ 1.27V, step distance:0.01V	
Offset Voltage	0 ~ 35V, Step distance:0.5V	
External Offset Current	0 ~ 5A(option AV1791 power source)	
Measurement Range	L	4 μ H ~ 600H
	C	10p ~ 3000 μ F
	R, Z , X	0.5 Ω ~ 400k Ω
	θ	0 ~ 90°
Basic Accuracy	$\pm 0.1\%$ (1kHz)	
Minimum Accuracy	$\pm 1\%$	
Measurement Speed	slow: 0.25; normal:1; fast: 2	
Extension Measurement	support measurement beyond limit (except for Q, D, θ)	
Power	220V $\pm 10\%$, 50Hz $\pm 10\%$, ≤ 50 VA	
Dimensions	D*W* H=280*270*100mm	
Weight	2.5kg	

AV1792/AV1793 Programmable DC Power Supply



The AV1792 Programmable DC Power Supply has four independent isolated outputs, two 25Ws and two 50Ws. Each output can operate as a constant voltage (CV) or constant current (CC) source. The voltage output range is 0~50V, accuracy up to 0.016%+5mV. The current output range is 0~2A, accuracy up to 0.04%+25μA. Max series connections voltage is 200V, Max parallel connections current is 4A. Suspended, the positive and negative poles can be exchanged each other. The AV1792 has over voltage, over current protection and GP-IB interface.

The AV1793 Programmable DC Power Supply has three independent isolated outputs, one 30W and two 50Ws. The voltage range of 50W is 0~25V, accuracy 0.05%+25mV; the range of current is 0~2A, accuracy 0.2%+10mA. The voltage range of 30W is 0~6V, accuracy 0.05%+10mV; the range of current is 0~5A, accuracy 0.5%+10mA. AV1792 and AV1793 designed to meet the most exacting engineering requirements. They can be used as constant voltage or constant current source in the lab and auto-measurement system.

Specifications

Specifications							
MODELS		AV1792				AV1793	
Watts/Number of Outputs		25W/2		50W/2		50W/2	30W/1
Output	Range	Low-range	High-range	Low-range	High-range	--	--
	CV	0 ~ 7V	0 ~ 50V	0 ~ 16V	0 ~ 16V / 0(50V)	0 ~ 25V	0 ~ 6V
	CC	0 ~ 15mA	0 ~ 500mA	0 ~ 200mA	0 ~ 2A/0(1A)	0 ~ 2A	0 ~ 5A
Accuracy	CV	0.016 ~ +5mV	0.016 ~ +15mV	0.016% +5mV	0.016% +15mV	0.05% +25mV	0.05% +10mV
	CC	0.04% +25mA	0.04% +200mA	0.04% +300mA	0.04% 600mA	0.2% +10mA	0.5% +10mA
Ripple and Noise	CV P-P	5mV	5mV	5mV	5mV	20mV	20mV
	CC rms	0.2mA	0.2mA	0.2mA	0.2mA	5mA	10mA
Line, Load Regulation	CV	1mV	5mV	1mV	5mV	10mV	10mV
	CC	0.1mA	0.2mA	0.2mA	0.2mA	10mA	20mA
Transient Response Time		≤200ms				¾	
Dimensions		D × W × H=500 × 440 × 133 mm				D × W × H= 400 × 300 × 133 mm	
Net Weight		Approx. 20kg				Approx. 10kg	

AV2781A LCR Automatic Tester



The AV2781A LCR Automatic Tester are improved on the AV2781. They can measures various parameters like L, C, R, equivalent series resistance, G, Q, D, X, B, |Z|, θ etc. A measurement point is set every 100Hz in the range of 15kHz ~ 30kHz. Support software calibration. The measurement clamps are convenient and reliable. The device is suited for the production and test of components, entrance test of components, audio frequency resistance test and laboratory test. Equipped with AV1791 DC offset power, it is able to measure incremental inductance with additional error of $\pm 0.5\%$ ($f \leq 20\text{kHz}$).

Main Features

- ③ Measure parameters such as L,C,R,ESR,G,Q,D,X,B,|Z|
- ③ Measure incremental inductance (with offset power)
- ③ Basic accuracy 0.1%
- ③ 50Hz ~ 100kHz,with 192 frequency points
- ③ Large screen LCD display
- ③ Easy to operate
- ③ Small and lightweight

Specifications

Item	Specification	
Measurement Frequency	192 Points in 50Hz ~ 100kHz, there-into 15kHz ~ 30kHz step distance is on 100Hz	
Signal Amplitude	0.01 ~ 1.27V, step distance:0.01V	
Offset Voltage	0 ~ 35V, Step distance:0.5V	
External Offset Current	0 ~ 5A(option AV1791 power source)	
Measurement Range	L	4 μ H ~ 600H
	C	10p ~ 3000 μ F
	R, Z , X	0.5 Ω ~ 400k Ω
	θ	0 ~ 90°
Basic Accuracy	$\pm 0.1\%$ (1kHz)	

Minimum Accuracy	±1%
Measurement Speed	slow: 0.25; normal:1; fast: 2
Extension Measurement	support measurement beyond limit (except for Q, D, θ)
Power	220V±10%, 50Hz±10%, ≤50VA
Dimensions	D*W* H=280*270*100mm
Weight	2.5kg

AV1851 Digital Multimeter



With SCM providing control and processing functions and software calibration, the multimeter boasts of high measurement accuracy. A lithium battery is used as a spare power supply for power failure to protect calibration data from missing. Based on the multi-ramp integral principle, it has solved the conflict between speed and accuracy measurement in dual-ramp integral. With the high-performance AC/DC virtual value convertor, the multimeter is able to measure the virtual value of voltage, current of various waveforms (including noise) between 20Hz and 100 KHz frequency band. There are two ways to measure DC resistance double-wire method and four-wire method. The double-wire method is suited for measurement of middle and high resistance, while the four-wire method for low resistance. The four-wire clamp can be as convenient as in the double-wire method.

Main Features

- ③ Vac/Vdc/Aac/Adc Measurement and Ohm Measurement
- ③ Highly Accuracy VDC 0.007%
- ③ AC Frequency Range 20Hz ~ 100KHz
- ③ Electronic calibration
- ③ Easy to operate, small and lightweight

Specifications

specification		
DC Voltage	Range	300mV, 3V, 30V, 300V
	Accuracy	0.007%
DC Current	Rang	3A
	Accuracy	0.08%
AC Voltage	Frequency Range	20Hz ~ 100kHz
	Rang	300mV, 3V, 30V, 300V(rms), Expandable
	Accuracy	0.3%
AC Current	Frequency Range	20Hz ~ 20kHz
	Range	300mA, 3A(rms)
	Accuracy	1%(50Hz ~ 20kHz)
DC Resistance	Range	300Ω, 3kΩ, 30kΩ, 300kΩ, 3MΩ, 30MΩ
	Accuracy	0.01% Except rang in 30MΩ
Power	220V±10%, 50Hz±5%	
Dimensions	D × W × H=260 × 250 × 90mm	
Weight	2.2kg	
Operating Temperature	0 ~ 40	

AV4451 Digital Oscilloscope



Main Features

- ③ Auto-scale
- ③ 11 Automatic pulse parameter measurements
- ③ Dual voltage and dual time markers
- ③ GP-IB interface
- ③ 16 Standard communication pulse mask
- ③ Various trigger and hold-off modes
- ③ Direct hardcopy to print or plot
- ③ Averaging, infinite and variable persistence displays

Specifications

Item	Specification	
Vertical System	Bandwidth(-3dB)	500MHz(50W)(DC ~ 350MHz when 10mV/div and 20mV/div)300MHz(1mW)
	Bandwidth in Single Mode	8MHz(sine interpolation)
	Rise Time	$\leq 700\text{ps}(50\text{W})$ $\leq 1.0\text{ns}(10\text{mV/div, } 20\text{mV/div})$ $\leq 1.2\text{ns}(1\text{mW})$
	Overshoot	$\leq 5\%(50\text{W}) \quad \leq 10\%(1\text{mW})$

	Total Channel Number	2
	Vertical Sensitivity	10mV/div ~ 1V/div, 1, 2, 5 steps
	ΔV Accuracy	$\pm 1\% \cdot \text{full scale} \pm 2\% \Delta V (10 \sim 30)$ $\pm 1\% \cdot \text{full scale} \pm 5\% \Delta V (\text{outside } 10 \sim 30)$
	Offset Range	$\pm 1.5 \cdot \text{full scale}$
	Vertical Zoom	$\cdot 1 \sim \cdot 16$
	Over Voltage Protect	50W input: >5Vrms 1mW input: > $\pm 2V$
Horizontal System	Time-base	100ps/div ~ 1s/div, 1, 2, 5 steps
	Delay Range	Pre-trigger: -200ms or $\cdot 10 \text{div}$ Post-trigger: +1.6s or 600,000div
	Δt Accuracy	100ps ~ 500ns/div: $\pm (200\text{ps} + 0.5\% \cdot \Delta t)$ 1us ~ 1s/div: $\pm (200\text{ps} \pm 0.03\% \cdot \Delta t)$
	Time Resolution	20ps
	Position of Trigger Point	Left, Center, or Right
Trigger System	Trigger Sensitivity	1div(DC-100MHz) 2div(100MHz ~ 300MHz)
	Trigger Level Range	$\pm 2 \cdot \text{full scale}$
	Trigger Jitter	200ps(peak-peak)
	Trigger Condition	edge, pattern
	Trigger Hold-off	time: 70ns ~ 670ms, 10ns steps event: 2 ~ 67,000,000, 80MHz max
	Min Trigger Pulse Width	1.5ns
Acquisition System	Max Sample Rate	20MSa/s
	A/D Resolution	8bit
	Record Length	1k/ch
General Features	Dimension	D*W*H = 390*430*175 mm
	Net Weight	Approx. 12.5kg

AV4445 Digital Oscilloscope



The AV4445 is an easy to use, DSO digitizing oscilloscope designed for generic using. It has two channels with 100MHz bandwidth and 200MSa/sampling rate, It is suited for most electronic testing applications. It has an operating interface such as traditional analog oscilloscope. It uses a multi-CPU structure to achieve high speed display rating. The 1MB memory per channel gives it more powerful functions than normal DSO. This model is designed to replace 100MHz traditional analog oscilloscope.

Main Features

- ③ 1MB/ch Record length Keeps up max sample rate of 200 μ s/div at sweep speed down to 200 μ s/div , ensure not to miss details of the input signal.
- ③ Zoom in horizontal direction In single or stop mode, you can catch waveform for long time at high sample rate, and then zoom the waveform in horizontal to observe it detailedly . You can also observe the waveform in splitting screen: observe the waveform in up screen, and observe or measure a part of the waveform in underside screen.
- ③ Operating interface like traditional analog oscilloscope A djust vertical, Horizontal , Trigger set through corresponding RPG , easy to be used , avoid the trouble to browse menu.
- ③ With GP-IB interface card: buildup a auto test system.
- ③ With serial and parallel interface optional card: You can print waveform or parameter, or connect with a PC through serial port.
- ③ Expand storage and expand measurement two interface cards can storage 100 waveforms; expand measurement performance include: Differentiation, Integration, FFT, mask edit and mask testing (go/no go).

Specifications

Specification		
Vertical System	Bandwidth(-3dB)	DC ~ 100MHz($\geq 10\text{mV/div}$); DC ~ 60MHz($< 10\text{mV/div}$)
	Input Coupling	DC, AC, GND
	Input Impedance	1M Ω
	Input Capacitance	$\leq 13\text{pF}$
	Max. Input Voltage	250V
	Vertical Sensitivity	2mV/div ~ 5V/div, 1, 2, 5 steps & Vernier
	ΔV Accuracy	$\pm 1.5\%$ full scale $\pm 2\% \Delta V \pm 1\text{LSB}$ (10 ~ 30); at 0 ~ 9 or 30 ~ 40 , the error will increase $\pm 2\% \Delta V$
	Offset Range	$\pm 2\text{V}$ ($< 200\text{mV/div}$) $\pm 40\text{V}$ ($\geq 200\text{mV/div}$)
	Bandwidth Limit	20MHz(-3dB) at upper limit
	Probe Attenuation	1*, 10*, 20*, or 100*
Horizontal System	Main Time Base	2ns/div ~ 50s/div, 1, 2, 5 steps & Vernier
	Delayed Time Base	2ns/div ~ 1/2 Main Time Base
	Δt Accuracy	$\pm (40\text{ps} + 0.01\% \cdot \Delta t + 0.2\% \text{ screen width})$
	Delay Range	Pos(Post-trigger): 500s; Neg(Pre-trigger): screen range or 2.5ms
	Time Resolution	40ps
	Sweep Modes	Main, Delayed, Roll, XY, Single
	Position of Trigger Point	Left, Center, or Right
Trigger System	Trigger Source	CH1, CH2, External, Line
	Trigger Mode	Auto, Auto-Level, Normal
	Trigger Condition	Pos Edge, Neg Edge, Glitch, TV
	Trigger Level Range	$\pm 6\text{div}$
	Trigger Jitter	$\leq 800\text{ps}$ (Peak-Peak)
	Coupling	AC, DC, HF Reject (about 50kHz), LF Reject (about 50kHz), Noise Reject
	Hold-off Time	200ns ~ 25s
Acquisition System	Max Sample Rate	200MSa/s
	A/D Resolution	8bit
	Record Length	1Mpts per Channel
Display System	Display Mode	normal, average, smoothing, vector
	Display Resolution	512*320
	CRT Size	7inch
Auto	Voltage	Vp-p, Varg, Vrms, Vtop, Vbase, Vmax, Vmin

Measure	Time	Frequency, Period, Duty Cycle, +Width, -Width, Rise Time, Fall Time
System Functions	Auto-scale	Request: signal amplitude >100mV, frequency 50Hz-100MHz, Duty Cycle>5%
	Run/Stop	You can stop a catch, and change time-base to observe waveform detailedly
	Single	After a single catch, you can change time-base to observe signal
	Store	Keep each waveform points on screen, so as to olding the change of signal
	Erase	Erase waveform from screen.
	Save/Recall	Save/Recall ten front-panel setups in/from non-volatile memory
	Waveform Storage	Two Waveform Storage memory, each can store all waveforms displayed on the screen
Output Signal	Square Waveform Signal	Output mode: front panel signal pad Signal haracteristic: > 0 ~ 5V, 1.2kHz square waveform
	DC Calibration Signal	Output mode: back panel BNC Signal characteristic 0.000V±1mV; 5.000V±20mV(controlled by program)
General Specifications	Dimension	D*W*H=380*400*185(mm ³)(not include the handle)
	Net Weight	<9kg
	Voltage	AC: 220V±10%
	Power Consumption	<90VA
	Operating Temperature	0 ~ 40