



Test & Measurement

Product Catalog



Suin Instruments Co., Ltd

★ Signal Generator

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| | |
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Selection Guide of Generators

| | TFG6800 Series | TFG2900A Series | TFG3900A Series | TFG6900A Series | TFG1900A Series | TFG1900B Series |
|----------------------|---|---|---|--|--|---|
| Max Frequency | 100MHz | 400MHz | 160MHz | 60MHz | 20MHz | 20MHz |
| Channel | 2 | 2 or 4 | 2 | 2 | 2 | 1 |
| Frequency Resolution | 1μHz | 1μHz | 1μHz | 1μHz | 1μHz | 10μHz |
| Best Accuracy | 20ppm | 1ppm | 2ppm | 50ppm | 20ppm | 50ppm |
| Sampling Rate | 250MSa/s | 1.2GSa/s | 500MSa/s | 120MSa/s | 100MSa/s | 100MSa/s |
| Vertical Resolution | 16bits | 14bits | 14 bits | 14bits | 10bits | 8bits |
| Output level | Max 20Vpp | Max 10Vpp | Max 20Vpp | Max 20Vpp | Max 20Vpp | Max 20Vpp |
| Waveform | 165 kinds including Sine, square, ramp, pulse, noise, DC, PRBS, user-defined arbitrary waveform, user-defined harmonic, etc | 165 kinds including: Sine, square, ramp, pulse, noise, DC, PRBS, built-in arbitrary waveforms, user-defined harmonic, etc | 150 kinds including: Sine, square, ramp, pulse, noise, PRBS, Exponential, Logarithm, Tangent, Gaussian, Cardiac, Quake, etc | Sine, square, ramp, pulse, noise +50 built in arbitrary waveforms + 5 user-defined waveforms | 11 built-in waveforms(sine, square, ramp, pulse, etc) + 5 user-defined arbitrary waveforms | 16 waveforms, sine, square, ramp, Exp, Log, Noise, etc. |
| DC Offset | ● | ● | ● | ● | ● | ● |
| TTL | ● | ● | ● | ● | ● | ● |
| Sweep | ● | ● | ● | ● | ● | ● |
| Modulation | FM, AM, PM, PWM, Sum, FSK, 4FSK, NFSK, PSK, 4PSK, NPSK, ASK, OSK | FM, AM, PM, PWM, Sum, FSK, 4FSK, NFSK, PSK, 4PSK, NPSK, ASK, OSK | FM, AM, PM, PWM, Sum, FSK, 4FSK, QFSK, PSK, 4PSK, QPSK, ASK, OSK | FM, AM, PM, PWM, Sum, FSK, PSK, BPSK | FM, AM, PM, PWM, FSK | FM, AM, PM, PWM, FSK |
| Burst | ● | ● | ● | ● | ● | ● |
| Frequency Counter | 0.01Hz to 350MHz DC couple 10Hz to 350MHz AC couple | ○ | 0.1Hz ~ 350MHz | 0.01Hz ~ 350MHz | 1Hz ~ 100MHz | ○ |
| Display | 7" TFT LCD touch screen | 7" TFT LCD touch screen | 4.3" TFT LCD | 4.3" TFT LCD | VFD | LCD |
| Interface | USB Host & Device and LAN | USB Host & Device, LAN, WIFI | USB Host & Device and LAN | RS-232, USB Host & Device | USB Host & Device | USB Device |
| Options | TCXO, Power Amplifier, IOT interface | Frequency Counter, OCXO | Power Amplifier | Power Amplifier, TCXO | Power Amplifier | Power Amplifier |

*Notice: ● means the indicated function is available while ○ means not available

TFG6800 Series Function/Arbitrary Waveform Generator



* without option PA

Features

- 250MSa/s sample rate, 16bit vertical resolution and 16Mpts waveform length
- Rise/fall time of Square: $\leq 4.2\text{ns}$
- Removable PA (option)
- Optional IOT interface
- High precision frequency counter
- 7" touch screen display

Standard Accessories

| | |
|---------------------|---|
| Power Cord | 1 |
| BNC cable | 1 |
| CD(software+manual) | 1 |

Specification

| | TFG6803 | TFG6806 | TFG6810 |
|---|--|---|-------------------|
| Frequency | | | |
| Sine/Square | 1 μ Hz~35MHz | 1 μ Hz~65MHz | 1 μ Hz~100MHz |
| Pulse | 1 μ Hz-25MHz | | |
| Ramp | 1 μ Hz-3MHz | | |
| PRBS | 1kbps~60Mbps | | |
| Noise (-3dB) | 100MHz bandwidth | | |
| Other | 1 μ Hz~20MHz | | |
| Resolution | 1 μ Hz or 12 digits | | |
| Accuracy | $\pm(20\text{ppm} + 14\text{pHz})$ | | |
| Waveform | | | |
| Type | 165 kinds include: Sine, Square, Ramp, Pulse, Noise, DC, PRBS, user-defined Arbitrary waveform, user-defined harmonic, etc | | |
| Sample Rate | 250MSa/s | | |
| Vertical Resolution | 16 bits | | |
| Arbitrary | Sample Rate | 1 μ Sa/s~125MSa/s | |
| | Length | 2-16Mpts | |
| | Resolution | 16 bits | |
| Square | Rise/Fall Time | $\leq 4.2\text{ns}$ | |
| | Duty Cycle | 0.0001%~99.9999% | |
| Pulse | Rise/Fall Time | $\geq 8\text{ns}$ | |
| | Width | 13ns ~ (period - 13ns) | |
| DC Offset (High-Z) | | | |
| Range | $\pm 10\text{Vpk(ac+dc)}$ | | |
| Resolution | 1mVdc | | |
| Accuracy | $\pm(\text{setting value} \times 1\% + \text{amplitude value} \times 0.5\% + 2\text{mV})$ | | |
| Sweep | | | |
| Range | 1 μ Hz ~ upper frequency limit | | |
| Type | Linear, logarithmic | | |
| Time | 1ms to 500s | | |
| Burst | | | |
| Mode | Triggered, Gated | | |
| Period | 1 μ s to 600s | | |
| Count | 1 to 100000000 cycles | | |
| Counter | | | |
| Frequency Range | 1mHz to 350MHz (DC Couple) 10Hz to 350MHz (AC Couple) | | |
| Resolution | 8 digits/s | | |
| Period and Pulse Width Measurement | 100ns to 20s | | |
| Duty Cycle Measurement | 0.1% to 99.9% | | |
| Amplitude (High-Z) | | | |
| Range | 2mVpp~20Vpp, frequency $\leq 10\text{MHz}$ 2mVpp~10Vpp, frequency $> 10\text{MHz}$ | | |
| Resolution | 1mVpp or 4digits | | |
| Accuracy | $\pm(\text{of settings value} \times 1\% + 1\text{mV})$, Sine 1kHz, $\geq 10\text{mVpp}$, offset 0V | | |
| Modulation | | | |
| FM,AM,PM, PWM,Sum | Carrier Waveform | Sine, Square, Ramp (only pulse for PWM), etc. | |
| | Modulating Waveform | Sine, Square, Ramp, etc. | |
| | Modulating Frequency | 1mHz to 100kHz | |
| FSK,4FSK,NFSK, PSK,4PSK,NPSK, ASK,OSK | Carrier Waveform | Sine, Square, Ramp, ect | |
| | Hop Frequency | 1 μ Hz -upper limits | |
| | Hop Rate | 1mHz to 1MHz | |
| General Characteristic | | | |
| Power | AC 100~240V, 50/60Hz $\pm 10\%$, AC 100~120V, 400Hz $\pm 10\%$ 226 \times 200 \times 125mm, Approx. 2.9kg | | |
| Dimension & Weight | 226 \times 200 \times 166mm, Approx. 3.3kg (if amplifier power is selected) | | |

Options

| | |
|-----------------|---|
| TCXO | $\pm 1\text{ppm}$ accuracy, $\pm 1\text{ppm/year}$ aging rate |
| Power Amplifier | 2 times power amplifier, Max output power 8W (8 Ω) |
| IOT interface | Based on LoRa |

TFG2900A Series Arbitrary Waveform Generators



Features

- 1.2GSa/s sample rate, 14 bits vertical resolution
- Maximum 4 output channels can be configured
- Generating arbitrary waveform points by points to ensure output high-quality waveform accurately
- Unique Harmonic Synthesis
- Standard Interface include: USB Host, USB Device, LAN and WIFI
- 7" touch screen display for easier operation(pixel 800*400)

Specification

| | TFG2922A | TFG2924A | TFG2932A | TFG2934A | TFG2942A | TFG2944A |
|-------------------------------|---|------------------|-------------|----------|-------------|----------|
| Output Channel | 2 | 4 | 2 | 4 | 2 | 4 |
| Frequency | | | | | | |
| Sine | 1μHz~200MHz | | 1μHz~300MHz | | 1μHz~400MHz | |
| Square | 1μHz~120MHz | | | | | |
| Pulse | 1μHz~80MHz | | | | | |
| Ramp | 1μHz~6MHz | | | | | |
| Others | 1μHz~50MHz | | | | | |
| Resolution | 1μHz | | | | | |
| Accuracy | ±1ppm | | | | | |
| Waveform | | | | | | |
| Type | 165 kinds include : Sine, Square, Ramp, Pulse, Noise, DC, PRBS, build-in arbitrary waveforms ,user-defined harmonic, etc. | | | | | |
| Smample Rate | 1.2GSa/s | | | | | |
| Vertical Resolution | 14 bits | | | | | |
| Arbitrary | Sample Rate | 1uSa/s~200MSa/s | | | | |
| | Length | 2 ~ 32M points | | | | |
| | Resolution | 14 bits | | | | |
| Square | Rise/Fall Time | ≤2.5ns | | | | |
| | Duty Cycle | 0.01%~99.99% | | | | |
| Pulse | Rise/Fall Time | 2.5ns ~1.2s | | | | |
| | Width | 4ns~(period-4ns) | | | | |
| Sine Spectral Purity | | | | | | |
| Total Distortion | ≤0.2% (20Hz~20kHz,20Vpp) | | | | | |
| Phase Noise | ≤-140dBc/Hz@10MHz (0dBm, 10kHz offset) | | | | | |
| Amplitude (into 50Ω) | | | | | | |
| ≤40MHz | 1mVpp~10Vpp | | | | | |
| ≤100MHz | 1mVpp~5Vpp | | | | | |
| ≤200MHz | 1mVpp~2Vpp | | | | | |
| ≤300MHz | 1mVpp~1.5Vpp | | | | | |
| >300MHz | 1mVpp~1Vpp | | | | | |
| Accuracy | ±(1% of setting + 1mVpp), (Sine 1kHz, 0V offset, ≥10mVpp) | | | | | |
| Offset | | | | | | |
| Range | ±5Vpk ac+dc (50Ω load) | | | | | |
| Accuracy | ±(1% of setting + 2mV + 0.5% of amplitude) (High-Z) | | | | | |
| Modulation | | | | | | |
| Type | FM, AM, PM, PWM, Sum, FSK, 4FSK, NFSK, PSK, 4PSK, NPSK, ASK, OSK | | | | | |
| Burst | | | | | | |
| Burst Count | 1 to 100 000 000 cycles | | | | | |
| General Characteristic | | | | | | |
| Power | AC 100~240V, 45~65Hz, <70VA (TFG29X2A), <80VA (TFG29X4A) | | | | | |
| Dimension & Weight | 364×155×329 mm, 7.0Kg, (TFG29X2A) | | | | | |
| | 364×155×468 mm, 10.0Kg, (TFG29X4A) | | | | | |

Standard Accessories

| | |
|----------------------------|---|
| Power Cord | 1 |
| BNC cable | 1 |
| CD(Software+ User's Guide) | 1 |
| Wifi Antenna | 1 |

Options

Frequency Counter (upper limits to 3GHz)
OCXO (accuracy:±0.01ppm±1μHz)

TFG3900A Series Function/Arbitrary Waveform Generators



Features

- Dual channel outputs with identical performance
- 500MSa/s sample rate, 14 bits vertical resolution
- 2ppm high accuracy to ensure the high quality waveform
- 150 built-in waveforms
- Full and complete modulation functions
- 7digits/s, 350MHz built-in counter
- Standard interface: USB Host & Device, LAN

Standard Accessories

| | |
|----------------------------|---|
| Power Cord | 1 |
| BNC Testing cable | 1 |
| CD(Software+ User's Guide) | 1 |

Options

Power Amplifier

Specification

| | | TFG3908A | TFG3912A | TFG3916A |
|---|---|--|------------------|---------------|
| Frequency | | | | |
| Range | Sine | 1μHz ~ 80MHz | 1μHz ~ 120MHz | 1μHz ~ 160MHz |
| | Square, Pulse | 1μHz ~ 30MHz | 1μHz ~ 40MHz | 1μHz ~ 50MHz |
| | Arbitrary | 1μHz ~ 30MHz | | |
| | Ramp | 1μHz ~ 5MHz | | |
| Resolution | | 1μHz | | |
| Accuracy | | ±(2ppm+1μHz) | | |
| Waveform | | | | |
| Type | | 150 kinds, including Sine, Square, Ramp, Pulse, Noise, PRBS, Exponential, Logarithm, Tangent, Gaussian, Cardiac, Quake, etc. | | |
| Length | | 16384 points | | |
| Sample Rate | | 500MSa/s | | |
| Vertical Resolution | | 14bits | | |
| Amplitude | | | | |
| Range | Frequency≤40MHz | 1mVpp~10Vpp (50Ω load) | | |
| | Frequency≤80MHz | 1mVpp~5Vpp (50Ω load) | | |
| | Frequency≤120MHz | 1mVpp~2.5Vpp (50Ω load) | | |
| | Frequency>120MHz | 1mVpp~2Vpp (50Ω load) | | |
| Accuracy | | ±(1% of setting + 2mVpp) | | |
| Flatness (relative to 1MHz Sine) | | ±0.2dBm, frequency<80MHz ±0.3dBm, frequency≥80MHz | | |
| Offset | | | | |
| Range | | ±10Vpk (ac+dc, open circuit) | ±5Vpk (50Ω load) | |
| Accuracy | | ±(1% of setting + 2mV + 0.5% of amplitude) | | |
| Modulation | | | | |
| FM, AM, PM, PWM, Sum Modulation | Modulating Frequency | 1mHz ~ 100kHz (FM, AM, PM,PWM) | 1mHz~1MHz(Sum) | |
| | AM Modulating Depth | 0% ~ 120% | | |
| | Phase Deviation | 0° ~ 360° | | |
| | Pulse Width Deviation | 0% ~ 99% | | |
| | Sum Amplitude | 0% ~ 100% | | |
| | Source | Internal/External | | |
| FSK,4FSK,QFSK, PSK,4PSK,QPSK, ASK,OSK | Hop Frequency | 1μHz ~ maximum frequency | | |
| | Rate | 1mHz ~ 1MHz | | |
| | Source | Internal/External | | |
| Sweep | | | | |
| Waveform | Sine, Square, Ramp, etc. | | | |
| Type | Linear, Log, List | | | |
| Sweep Time | 1ms to 500s | | | |
| Return/Hold/Interval Time | 0s to 500s | | | |
| Trigger Source | Internal, External or Manual | | | |
| Burst | | | | |
| Waveform | Sine, Square, Ramp, etc. | | | |
| Period | 1μs ~ 500s | | | |
| Burst Count | 1 ~ 10000000 | | | |
| Start/Stop Phase | 0° ~ 360° | | | |
| Trigger Source | Internal, External or Manual | | | |
| Channel Coupling | | | | |
| Frequency Coupling | Frequency Ratio, Frequency Difference | | | |
| Amplitude Offset Coupling | Amplitude Difference, Offset Difference | | | |
| Waveform Coupling | Combination Amplitude, 0% ~ 100% | | | |
| Sync Output | | | | |
| Level | TTL compatible, rise/fall time≤10ns | | | |
| Impedance | 50Ω (typical) | | | |
| Counter | | | | |
| Frequency Range | 0.01Hz ~ 350MHz | Resolution: 7 digits/s | | |
| Period and Pulse Width Measurement | 100ns ~ 20s | | | |
| Duty Cycle Measurement | 0.1% ~ 99.9% | | | |
| General Characteristics | | | | |
| Power | AC 100 ~ 240V, 45 ~ 65Hz, <30VA | | | |
| Dimension & Weight | 256×106×386mm, Approx.3.7 kg | | | |

TFG6900A Series Function/Arbitrary Waveform Generators



Features

- Dual channel outputs
- 50ppm frequency accuracy and 1 μ Hz resolution
- 5 standard waveforms, 50 built-in and 5 user-defined arbitrary waveforms
- Abundant modulation function FM, AM, PM, PWM, Sum, FSK, BPSK
- Channel coupling and combine features on CHB
- 6digits/s, 350MHz built-in frequency counter
- Standard interface: USB Host & Device, RS-232

Specification

| | | TFG6910A | TFG6920A | TFG6930A | TFG6940A | TFG6960A |
|---|--|---|--------------------|--------------------|--------------------|--------------------|
| Frequency | | | | | | |
| Range | Sine Square, Pulse others | 1 μ Hz ~ 10MHz 1 μ Hz ~ 10MHz 1 μ Hz ~ 5MHz | 1 μ Hz ~ 20MHz | 1 μ Hz ~ 30MHz | 1 μ Hz ~ 40MHz | 1 μ Hz ~ 60MHz |
| Resolution | | 1 μ Hz | | | | |
| Accuracy | | \pm (50ppm+1 μ Hz) | | | | |
| Waveform | | | | | | |
| Type | | Sine, Square, Ramp, Pulse, Noise, 50 built-in waveforms + 5 user-defined waveforms | | | | |
| Length | | 4096 points | | | | |
| Sample Rate | | 120 MSa/s | | | | |
| Vertical Resolution | | 14 bits (CHA); 10bits (CHB) | | | | |
| Amplitude Characteristics | | | | | | |
| Range | Frequency \leq 20MHz Frequency >20MHz | 0.1mVpp ~ 10Vpp(50 Ω) 0.2mVpp ~ 20Vpp (open circuit) 0.1mVpp ~ 7.5Vpp(50 Ω) 0.2mVpp ~ 15Vpp (open circuit) | | | | |
| Resolution | | 1mVpp (Amplitude \geq 1Vpp, load 50 Ω) 0.1mVpp(Amplitude<1Vpp, load 50 Ω), 2mVpp (Amplitude \geq 2Vpp, open circuit) 0.2mVpp(Amplitude<2Vpp, open circuit) | | | | |
| Accuracy | | \pm (1% of setting +1mVpp)(1kHz Sine, 0V offset, auto range) | | | | |
| Offset Characteristics | | | | | | |
| Range | | \pm 5Vdc (50 Ω), \pm 10Vdc (open circuit) | | | | |
| Accuracy | | \pm (1% of setting +1mVdc) | | | | |
| Modulation Characteristics (CHA) | | | | | | |
| FM,AM, PM,PWM, SUM | | Carrier Waveform: Sine, Square, Ramp, etc. (only Pulse for PWM) Modulating Waveform: Sine, Square, Ramp, etc. | | | | |
| FSK,BPSK | Carrier Waveform Source | Modulating Frequency : 1 μ Hz ~ 100kHz Sine, Square, Ramp, etc. Internal/External | | | | |
| Sweep Characteristics (CHA) | | | | | | |
| Carrier Waveform | | Sine, Square, Ramp and etc. | | | | |
| Type | | Linear, Log | | | | |
| Sweep Time | | 5ms to 500s | | | | |
| Hold/Return Time | | 0s to 500s | | | | |
| Trigger Source | | Internal, External or Manual | | | | |
| List Sweep | | List Length: 600 pcs | | | | |
| Burst Characteristics (CHA) | | | | | | |
| Carrier Waveform | | Sine, Square, Ramp, etc. | | | | |
| Period | | 1 μ s~500s | | | | |
| Burst Count | | 1 ~ 1000000 | | | | |
| Trigger Source | | Internal, External or Manual | | | | |
| Counter | | | | | | |
| Frequency Range | | 10MHz ~ 350MHz, resolution: 6 digits/s | | | | |
| Period, Pulse Width | | 100ns ~ 20s | | | | |
| Duty Cycle | | 1% ~ 99% | | | | |
| General Characteristics | | | | | | |
| Power | | AC 100 ~ 240V, 45 ~ 65Hz, < 30VA | | | | |
| Dimension & Weight | | 256 \times 106 \times 336 mm, Approx.3 kg | | | | |

Standard Accessories

| | |
|----------------------------|---|
| Power Cord | 1 |
| BNC cable | 1 |
| CD(Software+ User's Guide) | 1 |

Options

| | |
|-----------------|---------------------------------|
| Power Amplifier | Power: 8W (load 8 Ω) |
| TCXO | Frequency Stability: \pm 2ppm |

TFG1900A Series Function/Arbitrary Waveform Generators



Features

- Dual channel outputs
- Frequency accuracy 20ppm and 1 μ Hz resolution
- Abundant modulation function AM, FM, PM, PWM and FSK
- Provide sweep and burst
- 100MHz built-in counter
- Standard interface : USB Device & Host

Standard Accessories

| | |
|----------------------------|---|
| Power Cord | 1 |
| CD(Software+ User's Guide) | 1 |

Options

Power Amplifier: 10W, load 8 Ω

Specification

| | | TFG1905A | TFG1910A | TFG1920A |
|--|-----------------------|--|--------------------|--------------------|
| Frequency | | | | |
| Range | Sine | 1 μ Hz ~ 5MHz | 1 μ Hz ~ 10MHz | 1 μ Hz ~ 20MHz |
| | Square, Pulse | 1 μ Hz ~ 5MHz | | |
| | others | 1 μ Hz ~ 1MHz | | |
| Resolution | | 1 μ Hz, 6digits | | |
| Accuracy | | \pm 20ppm | | |
| Waveform | | | | |
| Type | | 11 build-in waveform (Sine, Square, Ramp, Pulse, etc.) + 5 user-defined arbitrary waveforms | | |
| Length | | 4096 points | | |
| Sample Rate | | 100 MSa/s | | |
| Vertical Resolution | | 10 bits | | |
| Amplitude Characteristics | | | | |
| Range | Frequency \leq 8MHz | 0 ~ 10Vpp(50 Ω), 0 ~ 20Vpp(Open circuit) | | |
| | Frequency>8MHz | 0 ~ 9Vpp (50 Ω), 0 ~ 18Vpp(Open circuit) | | |
| Resolution | | 2mVpp(Amplitude>2Vpp) 0.2mVpp(Amplitude \leq 2Vpp) | | |
| Offset Characteristics (Ampl. 0Vpp) | | | | |
| Range | | \pm 5Vdc (50 Ω), \pm 10Vdc (Open circuit) | | |
| Resolution | | 2mVdc | | |
| Modulation Characteristics (CHA) | | | | |
| FM,AM,PM, | Carrier Waveform | 16 waveforms, Sine, Square, Ramp, etc. (PWM is only for Pulse) | | |
| PWM | Modulating Waveform | 16 waveforms, Sine, Square, Ramp, etc. | | |
| | Modulating Frequency | 2mHz ~ 20kHz | | |
| FSK | Carrier Waveform | 16 waveforms, Sine, Square, Ramp, etc. | | |
| | Hop Frequency | 1 μ Hz ~ 5MHz | 1 μ Hz ~ 10MHz | 1 μ Hz ~ 20MHz |
| | Rate | 1mHz ~ 100kHz | | |
| Sweep Characteristics (CHA) | | | | |
| Carrier Waveform | | 16 waveforms, Sine, Square, Ramp, etc. | | |
| Type | | Linear or Log | | |
| Sweep Time | | 50ms ~ 500s | | |
| Burst Characteristics (CHA) | | | | |
| Carrier Waveform | | 16 waveforms, Sine, Square, Ramp, etc. | | |
| Burst Count | | 1 ~ 1000000 | | |
| Internal Period | | 1 μ s ~ 500s | | |
| Start/Stop Phase | | 0 $^\circ$ ~ 360 $^\circ$ | | |
| Sync Output | | | | |
| Waveform Characteristic | | Square, rise/fall time \leq 20ns | | |
| Output Level | | TTL compatible | | |
| Counter | | | | |
| Frequency Range | | 1Hz ~ 100MHz | | |
| Input Amplitude | | 100mVrms ~ 7Vrms | | |
| Period | | 50ms ~ 5s | | |
| General Characteristics | | | | |
| Power | | AC 100 ~ 240V, 45 ~ 65Hz, < 30VA | | |
| Display | | VFD display | | |
| Dimension & Weight | | 322 \times 256 \times 102 mm, Approx.1.5 kg | | |

TFG1900B Series Function Generators



Features

- Simple structure and highly cost-effective
- Output 16 waveforms
- FM, AM, PM, PWM and FSK modulation
- Provide frequency sweep and burst
- Standard configuration interface: USB device

Options

Power Amplifier (output power: 10W)

Specification

| | | TFG1903B | TFG1905B | TFG1910B | TFG1920B |
|--------------------------------|--|---|--------------------|---------------------|---------------------|
| Frequency | | | | | |
| Range | Sine | 10 μ Hz ~ 3MHz | 10 μ Hz ~ 5MHz | 10 μ Hz ~ 10MHz | 10 μ Hz ~ 20MHz |
| | Square | 10 μ Hz ~ 5MHz | | | |
| | others | 10 μ Hz ~ 1MHz | | | |
| Resolution | 10 μ Hz | | | | |
| Accuracy | \pm 50ppm | | | | |
| Waveform | | | | | |
| Type | 16 waveform, Sine, Square, Ramp, Exp, Log, Noise, etc. | | | | |
| Length | 1024 points | | | | |
| Sampling Rate | 100 MSa/s | | | | |
| Vertical Resolution | 8 bits | | | | |
| Sine | Harmonic Distortion | \leq -40dBc(\leq 5MHz); \leq -35dBc($>$ 5MHz) | | | |
| | Total Distortion | \leq 0.5% (20Hz ~ 20kHz, 20Vpp) | | | |
| Square | Rise/Fall Time | \leq 35ns Overshoot: \leq 10 % | | | |
| | Duty Cycle | 0.1% ~ 99.9% | | | |
| Ramp | Symmetry | 0.0% ~ 100.0% | | | |
| Amplitude | | | | | |
| Range | Frequency \leq 8MHz | 0 ~ 10Vpp(50 Ω), 0 ~ 20Vpp(Open circuit) | | | |
| | Frequency $>$ 8MHz | 0 ~ 9Vpp (50 Ω), 0 ~ 18Vpp(Open circuit) | | | |
| Resolution | 5mVpp(Amplitude $>$ 2Vpp) | | | | |
| | 0.5mVpp(Amplitude \leq 2Vpp) | | | | |
| DC Offset (Ampl. 0Vpp) | | | | | |
| Range | \pm 5Vdc (50 Ω), \pm 10Vdc (Open circuit) | | | | |
| Resolution | 5mVdc | | | | |
| Modulation | | | | | |
| FM,AM, | Carrier Waveform | 16 waveforms, Sine, Square, Ramp, etc. (only Pulse for PWM) | | | |
| PM,PWM | Modulating Waveform | 16 waveforms, Sine, Square, Ramp, etc. | | | |
| | Modulating Frequency | 40MHz ~ 20kHz | | | |
| FSK | Carrier Waveform | 16 waveforms, Sine, Square, Ramp, etc. | | | |
| | Modulating Waveform | Square | | | |
| | FSK Rate | 40MHz ~ 100kHz | | | |
| Sweep | | | | | |
| Type | Linear or Logarithmic | | | | |
| Sweep Time | 50ms ~ 500s | | | | |
| Trigger Source | Internal/External/Manual | | | | |
| Burst | | | | | |
| Waveform | 16 waveforms, Sine, Square, Ramp, etc. | | | | |
| Burst Count | 1 ~ 1000000 | | | | |
| Internal Period | 1 μ s ~ 20s | | | | |
| Start Phase | 0 $^{\circ}$ ~ 360 $^{\circ}$ | | | | |
| Trigger Source | Internal/External/Manual | | | | |
| Sync Output | | | | | |
| Electrical Level | TTL compatible | | | | |
| Waveform Characteristic | Square, edge time \leq 20ns | | | | |
| Output Level | low level $<$ 0.3V, high level $>$ 4V | | | | |
| General Characteristics | | | | | |
| Power | AC 100 ~ 240V, 45 ~ 65Hz, $<$ 20VA | | | | |
| Display | LCD display | | | | |
| Dimension & Weight | 322 \times 256 \times 102mm, Approx.1.5 kg | | | | |

TFG3681 Microwave Signal Generator



Features

- Ultra-low phase noise, excellent spurious noise suppression, ultra-wide bandwidth
- Wide application range in radar, communication, ECM, electronic reconnaissance and etc
- It can also be used as local oscillator and signal generator

Specification

| | |
|--------------------------------|---|
| Frequency | |
| Range | 2GHz-12GHz |
| Resolution | 1Hz |
| Accuracy | ±1ppm, 18°C-28°C |
| Level | |
| Setting Range | -20dBm ~ +15dBm |
| Specified Range | -10dBm ~ +13dBm |
| Resolution | 0.1dB |
| Accuracy | ±1.5 dBm of setting (output level: +13dBm ~ -10dBm) |
| Output Impedance | 50Ω |
| Spectrum Purity | |
| Harmonic | <-33dBc |
| Non-harmonic | <-40dBc |
| Phase Noise | -95dBc/Hz@100kHz, -105dBc/Hz@100kHz (Typ.) |
| Modulation | |
| Internal Pulse Width | 0.1μs~10ms |
| Internal Pulse Period | 0.5μs~10ms |
| External Pulse Modulation | Pulse Width≥1.0μs |
| External Pulse Input Level | 0V/3.3V (low/high) |
| General Characteristics | |
| Power | AC 100V-240V, 50(1±10%) Hz, 30VA |
| Dimension & Weight | 256 × 106 × 386mm, 5.5kg |

Standard Accessories

| | |
|---------------------|---|
| Power Cord | 1 |
| USB2.0 Cable | 1 |
| CD(Software+Manual) | 1 |



Power Cord



USB2.0 Cable



CD

TFG3836 RF Signal Generator



Features

- Frequency up to 3.6GHz
- 0.01Hz frequency resolution
- Level output from -110dBm to +13dBm, maximum level up to +20dBm
- Phase noise: <math>< -105\text{dBc}/\text{Hz}</math> @ 20 kHz (typ.)
- Level accuracy: ≤ 0.5 dB (typ.)
- Provides standard AM, FM, ϕ M and Pulse modulation (on/off ratio up to 70dBc)
- 7 inch TFT capacitive touch screen
- Standard interface include USB Host, USB Device and LAN

Specification

| | | |
|---|-------------------------------|--|
| Frequency | | |
| Range | | 9kHz ~ 3.6GHz |
| Resolution | | 0.01Hz |
| Spectral Purity | | |
| Harmonic (CW mod, 1MHz \leq f \leq 3.6GHz, levels+13 dBm) | | <math>< -30\text{ dBc}</math> |
| Non-harmonic (CW mod, level \geq -10 dBm, carrier offset \geq 10kHz) | 100kHz \leq f \leq 2.4GHz | <math>< -60\text{dBc}</math>, <math>< -70\text{ dBc}</math> (typ.) |
| | 2.4GHz \leq f \leq 3.6GHz | <math>< -54\text{dBc}</math>, <math>< -64\text{ dBc}</math> (typ.) |
| SSB Phase Noise (CW mod, carrier offset=20kHz, 1Hz bandwidth) | 100kHz \leq f \leq 2.4GHz | <math>< -105\text{dBc}/\text{Hz}</math>, <math>< -110\text{ dBc}/\text{Hz}</math> (typ.) |
| | 2.4GHz \leq f \leq 3GHz | <math>< -100\text{dBc}/\text{Hz}</math>, <math>< -105\text{ dBc}/\text{Hz}</math> (typ.) |
| | 3GHz \leq f \leq 3.6GHz | <math>< -100\text{dBc}/\text{Hz}</math>, <math>< -105\text{ dBc}/\text{Hz}</math> (typ.) |
| Level | | |
| Setting Range | | -110dBm to +20dBm |
| Specified Range | | -110dBm to +13dBm |
| Resolution | | 0.01dB |
| Accuracy | 100kHz \leq f \leq 3.6GHz | ≤ 1 dB, ≤ 0.5 (typ.) (output level:+13dBm ~ -10dBm) |
| | | ≤ 2 dB, ≤ 0.7 (typ.) (output level:-60dBm ~ -110dBm) |
| VSWR | 1MHz \leq f \leq 3.6GHz | <math>< 1.8</math> (typ.) |
| Internal Modulation Generator (LF) | | |
| Waveform | | Sine Square |
| Frequency Range | Sine | DC~200kHz |
| | Square | DC~20kHz |
| Resolution | | 0.01Hz |
| Voltage Range | | AC: 0 ~ 3v, DC:-3V ~ 3V |
| Sweep | | |
| Function | | Frequency Sweep, Level Sweep |
| Modulation | | |
| Type | | AM, FM, ϕ M, Pulse modulation |
| General Characteristics | | |
| Power | | AC 100~240V, 50/60Hz(1 \pm 10%), 60VA |
| Dimension & Weight | | 364 \times 154 \times 388 mm, 6kg |

Standard Accessories

- Power Cord: 1
- N-BNC Connector: 1
- CD (Software+User's Guide): 1



Power Cord



N-BNC Connector



CD

Options

- OCXO: <math>< 5 \times 10^{-7}</math>

TFG3600 Series Synthesized Signal Generators



Features

- Perfect combination of DDS and PLL techniques
- Frequency upper limits to 1.5GHz
- Higher level of frequency accuracy, up to 1ppm
- Complete AM/FM/FSK/PSK modulation function
- Standard communication interface: USB Device and RS-232

Standard Accessories

| | |
|----------------------------|---|
| Power Cord | 1 |
| BNC Testing cable | 1 |
| CD(Software+ User's Guide) | 1 |

Options

Frequency Counter
(upper limits to 2.5GHz, only for TFG3605)

GPIB

Specification

| CHA | | TFG3605 | TFG3610 | TFG3615 |
|--|----------------|---|----------------|----------------|
| Frequency | | | | |
| Range | Sine | 1μHz ~ 500MHz | 1μHz ~ 1000MHz | 1μHz ~ 1500MHz |
| | Square | 1μHz ~ 80MHz | | |
| Resolution | | 1μHz (carrier frequency≤80MHz) 1Hz (carrier frequency>80MHz) | | |
| Accuracy | | ±1ppm, Frequency≥1.0kHz, 18℃ to 28℃ ±50ppm, Frequency<1.0kHz, Min. output 1μHz | | |
| Sine Output Level | | | | |
| Range | Freq≤500MHz | -127dBm ~ +13dBm(-127dBm ~ -117dBm typ.) | | |
| | Freq≤1000MHz | -110dBm ~ +13dBm(-100dBm ~ -110dBm typ.) | | |
| | Freq≤1500MHz | -105dBm ~ +10dBm(-100dBm ~ -105dBm typ.) | | |
| Resolution | | 0.1dB | | |
| Accuracy | Freq≤300MHz | setting value ±1dBm (output level +13dBm~-100dBm) setting value±2.2dBm (output level +13dBm~-80dBm, setting value ±1.5dBm typ.) | | |
| | Freq≤1500MHz | setting value ±2.7dBm (output level -80dBm~-100dBm, setting value ±2.0dBm typ.) | | |
| Stationary Wave Ratio (SWR) | | <1.8 (output levels≤0dBm) | | |
| Spectral Purity | | | | |
| Harmonic | | < -33dBc (output levels≤4dBm, typ.) | | |
| Non-Harmonic | | < -40dBc (output levels≤4dBm, deviation CF≥5kHz) | | |
| Sub-Harmonic | | < -40dBc (output levels≤4dBm) | | |
| Residual FM | | < 100Hz (BW: 0.3 ~ 3kHz, RMS < 120MHz) | | |
| Square | | | | |
| Rise/Fall Time | | ≤15ns | | |
| Overshoot | | ≤5% | | |
| Modulation | | | | |
| Type | | AM, FM, FSK, PSK | | |
| External Modulation Input | | Voltage Range: 5V full scale, Input impedance:10kΩ, Frequency: DC to 10kHz | | |
| Frequency Sweep | | | | |
| Sweep Rate | | 1ms ~ 800s Linear (carrier ≤80MHz) 100ms ~ 800s Logrithm(carrier ≤80MHz) | | |
| Step Time | | 50ms ~ 10s Linear (carrier>80MHz) | | |
| Burst(Carrier Frequency ≤80MHz) | | | | |
| Burst Count | | 1 ~ 10000 cycles | | |
| Interval | | 0.1ms ~ 800s | | |
| CHB | | | | |
| Frequency | | | | |
| Range | | 1μHz ~ 10MHz | | |
| Resolution | | 1μHz | | |
| Accuracy | | ±1ppm, Frequency≥1.0kHz, 18℃ to 28℃ ±50ppm, Frequency<1.0kHz, Min. output 1μHz | | |
| Waveform | | | | |
| Type | | Sine, Square, Ramp, Pulse, Sinc, Exp, Noise, DC | | |
| Square | Rise/Fall Time | ≤50ns | | |
| | Duty Cycle | 0.01% ~ 99.99% | | |
| Pulse | Rise/Fall Time | ≤50ns | | |
| | Pulse Width | 20ns ~ 20s | | |
| Ramp | Symmetry | 0.0% ~ 100.0% | | |
| Output | | | | |
| Amplitude | | 1mVpp ~ 10Vpp(50Ω), 2mVpp ~ 20Vpp(High Z) | | |
| Offset | | ±5Vpk ac+dc(50Ω), ±10Vpk ac+dc(High Z) | | |
| Resolution | | 5mVpp | | |
| Accuracy | | ±(1% of setting + 10mVpp) (1kHz Sine) | | |
| Flatness | | ± 0.5dB(1MHz Sine, 1Vpp) | | |
| General Characteristics | | | | |
| Power | | AC 100V~240V, 50/60Hz, 50VA Max | | |
| Dimension & Weight | | 256×106×386 mm, Approx.4.2 kg | | |

SU5000 Series Pulse/Pattern Generators



Features

- Direct Digital Synthesis Technology
- Crystal Oscillation Reference
- High Accurate Time and Frequency
- Count burst or single burst both can be selected
- Multiple output channels and EXT
- Trigger/Frequency Standard Input channels
- Data Storage And Recall
- Optional GPIB and USB interface

Specification

| | SU5101/5102 | SU5202G | SU5302 | SU5303 |
|--------------------------------|---|---|--|---|
| Channel | 1/2 | 2 | 2 | 1 |
| Waveform | | | | |
| Pulse | Single/Dobule, Logic Positive /Negative, Positive/Negative Polary | Single/Dobule, Logic Positive /Negative | | Logic Positive /Negative |
| Edge Time | ≤ 10ns | ≤ 10ns | 8ns ~ 1ms | 5ns ~ 1ms |
| Overshoot | ≤ 10% | ≤ 10% | ≤ 10% | ≤ 10% |
| Time | | | | |
| Pulse Period | 20ns ~ 10000s (frequency range: 0.1mHz ~ 50MHz) | | | 20ns ~ 10000s |
| Time Interval | 5ns ~ 10000s | | | 8ns ~ 9999.5s |
| Resolution | 5ns (Low range), 10μs (High range) | | | 0.1ns (typical) |
| Interval Error | ±(T×5×10 ⁻⁵ + 5ns)(Low range), ±(T×5×10 ⁻⁵ + 10μs) (High range) | | | ±(T×5×10 ⁻⁵ +5ns) |
| Pattern | | | Length:4095bits Format:NRZ Rate:100mHz ~ 50MHz | Length range: 2~16383bits Format:NRZ, RZ |
| Amplitude Offset | | | | |
| Amplitude Range | 50mV ~ 10V(High Z) | 50mV ~ 5V (50Ω) | | |
| Offset Range | 50mV ~ 10V(High Z) | ±(50mV~5V) (50Ω) | | |
| Output Impedance | 50Ω | | | |
| TTL | | | | |
| TTL/COMS Level | Low Level≤ 0.3V, High Level≥3.0V (high impedance load) | | | |
| Output Impedance | 50Ω | | | |
| Burst | | | | |
| Burst Count | 2 ~ 65000 cycles | | | |
| Burst Mode | Continuous, Single | | | |
| EXT. STD Input | | | | |
| Frequency | 10M mutiple | | | |
| Amplitude | 0.5-5Vpp, AC coupling | | | |
| Trigger | | | | |
| Trigger Mode | Internal, External, Manual | | | |
| Ext. Trigger Input | Frequency: 1Hz ~ 10MHz (Square), Amplitude: 1Vp-p~20Vp-p | | | Ampl: TTL, Pulse width: >100ns, Input Impedance: ≥1kΩ |
| Input Impedance | ≥100kΩ | | | |
| General Characteristics | | | | |
| Power | AC110~240V, 50/60Hz,<80VA | | | |
| Display | VFD | 5.7' TFT LCD | 5.7' TFT LCD | 4.3' TFT LCD |
| Optional Interface | USB, GPIB | RS232(Standard),GPIB | RS-232(Standard) | RS232(Standard),GPIB |
| Dimension & Weight | 256×106×385mm, Approx.3 kg | 340×162×293mm,Approx.4.2kg | | 450×102×475mm, Approx.6.0 kg |

Standard Accessories

| | |
|-------------------|---|
| Power Cord | 1 |
| Testing cable | 1 |
| CD (User's Guide) | 1 |

Options

| |
|-----------------|
| Power Amplifier |
|-----------------|

SU432X Series Noise Generator



Features

- Gauss white noise with broadband standard could be generated
- Uniform and controlled spectral density, no DC and excess noise
- Simulate link noise in the UAV, navigation and satellite communication
- Widely application in electronic countermeasures and electromagnetic compaction, BER test and CATV test

Specification

| | SU4323 | SU4326 |
|--------------------------------|---|--|
| Output | | |
| Noise Bandwidth | 10.0MHz~3.0GHz | 10.0MHz~6.0GHz |
| Attenuation Range | 0.0~60.0dB | |
| Attenuation Step | 0.1 dB | |
| Max. Output Noise | ≥3.0dBm (10MHz~3.0GHz) | ≥3.0dBm (10MHz~6.0GHz) |
| Flatness (attenuation 0.0dB) | ±2.0dB (10MHz~50MHz) ±2.0 dB (50MHz~2.4GHz) ±2.0 dB (2.4GHz~3GHz) | ±2.0dB (10MHz~50MHz) ±2.0 dB (50MHz~2GHz) ±2.0 dB (2GHz~5.4GHz) ±2.5 dB (5.4GHz~6.0GHz) |
| Output Impedance | 50Ω | |
| General Characteristics | | |
| Interface | RS-232, USB (standard), GPIB (optional) | |
| Power | AC 100V-240V, 50Hz~60Hz (1±10%), <15VA | |
| Environment | Temperature 5℃ ~ 40℃, RH<80% | |
| Dimension | 254 × 103 × 374 mm | |
| Weight | 4.0kg | 4.2kg |

Standard Accessories

| | |
|----------------------------|---|
| Power Cord | 1 |
| CD(Software+ User's Guide) | 1 |



Power Cord



CD

SE2000 Ground Tester



Purpose

It used to test the ground resistance of various telecommunication, electric power, meteorology, computer room, oil field, electric power distribution line, tower transmission line, gas station, factory grounding network, lightning rod and so on.

Features

- Resistance range: 0-1200Ω
- Current range: 0-20A
- Display Ω and current at the same time
- 300 groups of memory

Specification

| Mode | Range | Resolution | Accuracy |
|---------------------|----------------|------------|---------------|
| Resolution Accuracy | 0.010Ω-0.099Ω | 0.001Ω | ± (1%+0.01Ω) |
| | 0.10Ω-0.99Ω | 0.01Ω | ± (1%+0.01Ω) |
| | 1.0Ω-49.9Ω | 0.1Ω | ± (1%+0.1Ω) |
| | 50.0Ω-99.5Ω | 0.5Ω | ± (1.5%+0.5Ω) |
| | 100Ω-199Ω | 1Ω | ± (2%+1Ω) |
| | 200Ω-395Ω | 5Ω | ± (5%+5Ω) |
| | 400-590Ω | 10Ω | ± (10%+10Ω) |
| | 600Ω-880Ω | 20Ω | ± (20%+20Ω) |
| Current | 900Ω-1200Ω | 30Ω | ± (25%+30Ω) |
| | 0.00mA -9.95mA | 0.01mA | ± (2.5%+1mA) |
| | 10.0mA -99.0mA | 0.1mA | ± (2.5%+5mA) |
| | 100mA -300mA | 1mA | ± (2.5%+10mA) |
| | 0.30A-2.99A | 0.01A | ± (2.5%+0.1A) |
| | 3.0A-9.9A | 0.1A | ± (2.5%+0.3A) |
| | 10.0A-20.0A | 0.1 A | ± (2.5%+0.5A) |

SA2100/SA2200 Power Quality Analyzer



Selection Guide

| Model | SA2100 | SA2200 | |
|-----------------------------------|--|---|--|
| IEC61000-4-30 standard compliance | Class S | Class A, Ed.3 | |
| Measurement Items | AC/DC | ● | ● |
| | Voltage/Current | ● | ● |
| | Frequency | ● (50Hz,60Hz,400Hz) | ● 50Hz,60Hz,400Hz |
| | Dips /swell | ● | ● |
| | Harmonics | ● 1-50th (50/60Hz) | ● 1-100th (50/60Hz) |
| | Power / Energy | ● | ● |
| | Unbalance | ● | ● |
| | Monitor | ● | ● |
| | Inrush | ● | ● |
| | Flicker | ● | ● |
| | Transients | ● 20kS/s | ● 200kS/s |
| | Logger | ● | ● |
| Input Characteristics | Mains signaling | ○ | ● |
| | Wave Recording | ○ | ● |
| | Channel (Voltage/Current) | 4/4 | |
| Storage | Voltage Range | 1-1000Vrms, 6000V transient voltage | |
| | Current Range | depends on supplied current clamp | |
| Battery | Capacity/Life | 8GB | 32GB |
| Time Synchronization | GPS/Beidou | NI-MH, 3800mAh/>7h | Lithium ion, 5200mAh/>8h |
| Communication | Interface | ○ | ● (option) |
| | Screen | USB Host, LAN | USB Host, LAN, WIFI |
| General Characteristic | Screen | 5.6" TFT LCD /320*240 | 5.6" TFT LCD /640*480 |
| | Language | 10-Chinese, English, French, German, Korean, Polish, Portuguese, Spanish, Turkish, Russian | 14-Chinese, English, French, German, Italian, Japanese, Korean, Polish, Portuguese(Brazil/Portugal), Russian, Spanish (Latin/Spain), Turkish |
| | Dimension/Weight | 262× 173×66 mm/1.6kg | 270×200×68mm/2.0kg |
| | Wire Combinations | 1Ø+NEUTRAL,1Ø SPLIT PHASE,1Ø IT NO NEUTRAL,3Ø WYE,3Ø DELTA, 3Ø IT, 3Ø HIGH LEG, 3Ø OPEN LEG, 2-ELEMENT, 2 1/2-ELEMENT | |
| Electrical Safety | IEC61010-1 ,Safety Degree: 600V CAT IV | 1000V CAT III | |



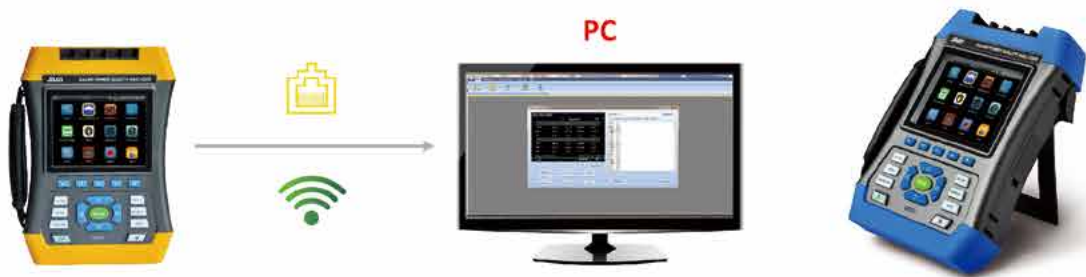
Isolated Interface to ensure safe operation



SA2100 Specification

Measurement

| | Measurement Range | Resolution | Accuracy |
|---|---|------------|--------------------------|
| Voltage/Current/Frequency | | | |
| Vrms(AC+DC) | 1 ~ 1000Vrms | 0.1Vrms | ±0.5% of nominal voltage |
| Vpk | 1 ~ 1400Vpk | 0.1Vpk | ±0.5% of nominal voltage |
| V(Crest Factor) | 1.0 ~ >2.8 | 0.01 | ±5% |
| Arms (AC) | 10mV/A | 0~100A | ±0.5%±0.2A |
| | 1mV/A | 1~1000A | ±0.5%±0.2A |
| | 50mV(65mV)/1000A | 15~5000A | ±1%±2A |
| A(Crest Factor) | 1 ~ 10 | 0.01 | ±5% |
| Frequency | 42.5~57.5(50Hz nominal) | 0.01Hz | ±0.01Hz |
| | 51~69(60Hz nominal) | 0.01Hz | ±0.01Hz |
| | 385~414(400Hz nominal) | 0.01Hz | ±0.1Hz |
| Dips & Swells | | | |
| Vrms1/2 | 0 ~ 200% of nominal voltage | 0.1Vrms | ±1% |
| Arms1/2 | 1 ~ 3000A | 1A | ±1% ±2A |
| Duration | hour-minute-second-microsecond | 0.5 cycle | 1 cycle |
| Harmonic (IEC61000-4-7) | | | |
| Harmonic Number | 1 ~ 50 | | |
| Harmonic Voltage % | 0.0 ~ 100.0% | 0.1% | ±0.1% ± nx0.1% |
| Harmonic Current % | 0.0 ~ 100.0% | 0.1% | ±0.1% ± nx0.1% |
| THD | 0.0 ~ 100.0% | 0.1% | ±2.5% |
| Phase | -360° ~ 0° | 1° | ± nx1.5° |
| Power and Energy | | | |
| Active Power/Apparent Power/Reactive Power | 1.0 ~ 20.00MW | 0.1kW | ±1.5±10 digits |
| KWh | 0.00kWh ~ 200GWh | 10Wh | ±1.5±10 digits |
| Power Factor | 0 ~ 1 | 0.01 | ±0.03 |
| Flicker (IEC61000-4-15) | | | |
| Pst(1min),Pst,Plt,PF5 | 0.00 ~ 20.00 | 0.01 | ±5% |
| Unbalance | | | |
| Voltage | 0.0 ~ 5.0% | 0.1% | ±0.5% |
| Current | 0.0 ~ 20.0% | 0.1% | ±1% |
| Voltage Phase | -360° ~ 0° | 1° | ±2 digits |
| Current Phase | -360° ~ 0° | 1° | ±5 digits |
| Voltage Transient | | | |
| Vpk | ±6000Vpk | 1V | ±15% |
| Vrms | 10 ~ 1000Vrms | 1V | ±2.5% |
| Min. Test Time | 50us | | |
| Inrush Current | | | |
| Arms | 0~3000Arms | 0.1 | ±1% ± 5 digits |
| Inrush Duration | 6s ~ 32min selectable | 10ms | ±20ms |
| Logger | | | |
| Recording | user-defined parameters for 4 phases at the same time | | |
| Memory | Data stored in Micro SD card, 8GB | | |
| Duration Time | 2 hrs to 1 year, depends on the recording items and time interval | | |
| Interval | 1s to 60 minutes | | |
| Monitor | | | |
| Support EN50160 in default or user-defined standard | | | |








SA2200 Specification






• Measurement




| | Measurement Range | Resolution | Accuracy |
|---|---|----------------------------------|---|
| Voltage/Current/Frequency | | | |
| Vrms(AC+DC) | 1 ~ 120Vrms 120Vrms~400Vrms 400~1000Vrms | 0.001Vrms 0.01Vrms 0.1Vrms | Vnom>100V: ±(Vnom×0.1%) Vnom<100V: ±0.1V |
| Vpk | 1 ~ 1400Vpk | 0.01Vpk | ±0.5% of nominal voltage |
| V(Crest Factor) | 1.0 ~ >2.8 | 0.01 | ±5% |
| Arms (AC) | 10mV/A | 0~150A | ±0.1%±0.5A |
| | 1mV/A | 1~2000A | ±0.1%±5A |
| | 65mV/1000A | 10~6000A | ±0.1%±50A |
| A(Crest Factor) | 1 ~ 10 | 0.01 | ±5% |
| Frequency | 42.5~57.5 (50Hz nominal) | 0.01Hz | ±0.01Hz |
| | 51~69 (60Hz nominal) | 0.01Hz | ±0.01Hz |
| | 320~480 (400Hz nominal) | 0.01Hz | ±0.01Hz |
| Dips & Swells | | | |
| Vrms1/2 | 0 ~ 200% of nominal voltage | 0.01Vrms | ±0.2% |
| Arms1/2 | depends on current clamps | Ref to Arms | ±1%±5counts |
| Harmonic (IEC61000-4-7) | | | |
| Harmonic Number | 1 ~ 100(50/60Hz) (IEC61000-4-7) 1~12(400Hz) | | |
| Harmonic Voltage %f | 0.0 ~ 100.0% | 0.01% | ±0.1% ± nx0.1% |
| Harmonic Current %f | 0.0 ~ 100.0% | 0.01% | ±0.1% ± nx0.1% |
| THD | 0.0 ~ 100.0% | 0.01% | ±2.5% |
| Phase | -180° ~ 180° | 0.1° | ± nx0.1° |
| Power and Energy | | | |
| P, S, Q1 | Max. 6000MW | 0.1kW | ±1%±10 digits |
| PF & cosΦ | 0 ~ 1 | 0.01 | ±0.01 |
| kWh, kVAh, kvarh | depends on nominal voltage and current clamps | | ±1%±10 digits |
| Flicker (IEC61000-4-15) | | | |
| Pst(10min)/PIt (2 hrs) | 0.00 ~ 20.00 | 0.01 | ±5% |
| Unbalance | | | |
| Voltage | 0.0 ~ 20.0% | 0.1% | ±0.1% |
| Current | 0.0 ~ 20.0% | 0.1% | ±1% |
| Voltage Phase | -360° ~ 0° | 0.1° | ±0.1° |
| Current Phase | -360° ~ 0° | 0.1° | ±0.5° |
| Voltage Transient | | | |
| Vpk | ±6000Vpk | 0.01V | ±15% |
| Vrms | 10 ~ 1000Vrms | 0.01V | ±2.5% |
| Min. Test Time | 5us | | |
| Inrush Current | | | |
| Arms | depends on current clamps | Ref to Arms | ±1%±10counts |
| Inrush Duration | 1 ~ 32min selectable | 10ms | ±20ms |
| Mains Signaling | | | |
| Signaling Frequency | 60-3000Hz | 0.1Hz | |
| Relative V% | 0%~100% | 0.10% | ±0.4% |
| Absolute V3s (3s average) | 0.0 ~ 1000V | 0.1V | ±5% of Nominal voltage |
| Logger | | | |
| Recording | user-defined parameters for 4 phases at the same time | | |
| Memory | Data stored in Micro SD card, 32GB | | |
| Duration Time | 2 hrs to 1 year, depends on the recording items and time interval | | |
| Interval | 1s to 60 minutes | | |
| Monitor | | | |
| Support EN50160 in default or user-defined standard | | | |

Accessories

| | | | | | |
|--------------------------------------|---|--------------|--------------------------------|---|-------|
| Voltage Test Leads + Alligator Clips |  | (2m) × 5 pcs | Soft Carry Bag |  | 1 pcs |
| Power Cord Power Adapter |  | 1 pcs | CD (Software, Manuals) |  | 1 pcs |
| | | | Sticker of input port (SA2200) |  | 1 pcs |

CT Clamps

| Clamp Mode | ST08 | CTC0080 | CTC0130 | CTC1535 | ETCR035AD |
|--------------------------|--|--|--|--|--|
| Appearance |  |  |  |  |  |
| Measurement Range | 0-5A | 0-50A | 1~100A | 1~1000A | 0.0-1000A (AC/DC) |
| Output Voltage Ratio | 10mV/A | 10mV/A | 1mV/A | 1mV/A | 1mV/A |
| Accuracy | 0.2% | 0.2% | 0.2% | 1% | ±3% |
| Frequency Characteristic | 45Hz~55Hz | 50Hz~400Hz | 50Hz~400Hz | 40Hz~100kHz | AC: 45Hz~400Hz |
| Clamp Radius (mm) | 8 | 8 | 13 | 52 | 30×35 |
| Dimension (mm) | 158×43×24 | 171×46×27 | 174×52×27 | 111×216×45 | 122×70×33 |
| Cable Length (cm) | 200 | 200 | 200 | 200 | 150 |
| Power | ○ | ○ | ○ | ○ | 9V Dry cell 6LR61 |

| Flexible Probes Mode | SY-1500A | PY-3000A | PY-5000A (SA2100) | SY-6000A (SA2200) |
|----------------------------|---|--|---|----------------------|
| Appearance |  |  |  | |
| Measurement Range | 1~1500A | 15~3000A | 20~5000A | 20~6000A |
| Output Voltage Ratio | 100mV/1000A @ 50Hz | 65mV/1000A @ 50Hz | 50mV/1000A @ 50Hz | 65mV/1000A @ 50Hz |
| Accuracy | ±0.5% + Position Error | ±1% + Position Error | | ±1% + Position Error |
| Maximum Allowable Input | 100KA | 100KA | | 100KA |
| Phase Error | <±1° | <±1° | | <±1° |
| Noise | <2mVrms (10Hz~10KHz) | <2mVrms (10Hz~10KHz) | | <2mVrms (10Hz~10KHz) |
| Frequency Characteristic | 10Hz~10KHz (-3dB) | 10Hz~10KHz (-3dB) | | 10Hz~10KHz (-3dB) |
| Weight | 110g | 130g | | 150g |
| Length | 200cm | 200cm | | 200cm |
| CT Perimeter | 35cm | 50cm | | 80cm |
| Measurement Position Error | ±1% | ±2% | | ±2% |

SA9100/9200 Series Spectrum Analyzers

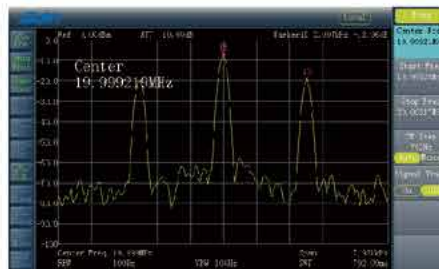


Features

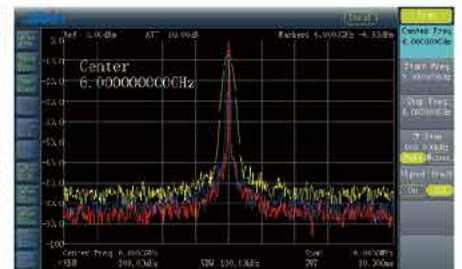
- Frequency range from 9kHz to 7.5GHz
- -160dBm Display Average Noise Level (Min.)
- < -100 dBc/Hz @10 kHz Offset Phase Noise (Typ.)
- Total Amplitude Accuracy < 0.8 dB
- Pre-amplifier and EMI filter are standardly configured



Adjacent Channel Power



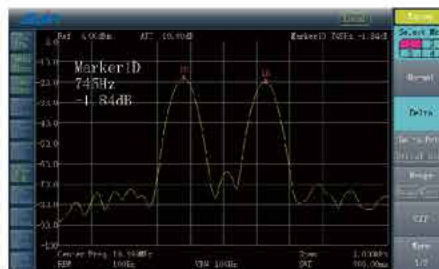
AM modulation signal



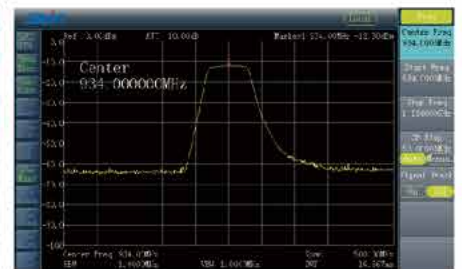
Different analysis width



Occupied bandwidth



Higher resolution



Scalar network analyzer

Specification

| | SA9115 | SA9130 | SA9232 | SA9275 |
|---|---|---------------------|--|---------------------|
| Frequency | | | | |
| Range | 9kHz ~ 1.5GHz | 9kHz ~ 3.0GHz | 9kHz ~ 3.2GHz | 9kHz ~ 7.5GHz |
| Resolution | 1Hz | | | |
| Aging Rate | <5×10 ⁻⁶ /year | | <1×10 ⁻⁶ /year | |
| Frequency Span | | | | |
| Frequency Span Range | 0Hz, 100Hz ~ 1.5GHz | 0Hz, 100Hz ~ 3.0GHz | 0Hz, 100Hz ~ 3.2GHz | 0Hz, 100Hz ~ 7.5GHz |
| Uncertainty | ±span/(sweep points-1) | | | |
| SSB Phase Noise (fc=1.0GHz) | -80dBc/Hz @10 kHz offset | | -96dBc/Hz @10 kHz offset | |
| Bandwidth | | | | |
| Resolution Bandwidth (-3dB) | 10Hz ~ 1MHz, step 1-3-10, | | | |
| RBW Uncertainty | 10%, nominal (RBW>1kHz) 20%, nominal (RBW≥10Hz, sweep time≥5s) | | | |
| Video Bandwidth (-3dB) | 1Hz to 1MHz, step 1-3-10 | | | |
| Amplitude | | | | |
| Range | DANL to +30dBm DC Voltage: 50V | | DANL to +20dBm | |
| Maximum Input Level | CW RF Power: +30dBm (1.0W) Max.Damage Level: +40dBm (10W) | | CW RF Power: +20dBm (0.1W) Max.Damage Level: +30dBm (1W) | |
| Displayed Average Noise Level (DANL) | | | | |
| DANL (Preamplifier Off) | typ. -125 dBm | | typ. -135 dBm | |
| DANL (Preamplifier On) | typ. -135 dBm | | typ. -152 dBm | |
| Reference Level Range | -100 dBm to +30 dBm, step 1 dB | | | |
| Sweep | | | | |
| Sweep Time Range | 10 ms to 3000 s (100Hz≤Span≤3GHz) 20 μs to 3000 s (Span=0 Hz) | | 1ms to 7500 s (100Hz≤Span≤7.5GHz) 20 μs to 7500 s (Span=0 Hz) | |
| Sweep Time Uncertainty | 5%, nominal (100Hz≤Span≤7.5GHz) 0.5%, nominal (Span=0 Hz) | | | |
| Sweep Mode | Continuous, Single | | | |
| Trigger | | | | |
| Trigger Source | Free, Video, External | | | |
| External Trigger Level | 5 V TTL level | | | |
| Advanced Measurement | | | | |
| Channel Power, Adjacent Channel Power, N-dB bandwidth, Occupied Bandwidth | | | | |
| EMI | 200Hz, 9kHz, 120kHz | | | |
| Input/Output | | | | |
| RF Input Impedance | 50 Ω | | | |
| Standard frequency | Frequency: 10MHz Amplitude: 0dBm~10dBm (input)-3dBm to +3dBm (output) | | | |
| Tracking Generator (-TG Model) | | | | |
| TG Frequency range | 9kHz to 1.5GHz | 9kHz to 3GHz | 100kHz to 3.2GHz | 100kHz to 7.5GHz |
| TG Output level range | -20dBm to 0dBm | | -40dBm to 0dBm | |
| TG Output level resolution | 1 dB | | | |
| Interface | | | | |
| Type | USB Host & Device, LAN, VGA, RS-232 (only SA9100 series available) | | | |
| General Characteristic | | | | |
| Power Supply | Input Voltage: AC100V to 240V Frequency: 50/60Hz (1±10%) Power Consumption: 35W | | | |
| Dimension & Weight | 364×155×328mm, Approx. 6.0kg | | 364×155×328mm, Approx. 6.5kg | |

Standard Accessories

| | | |
|----------|----------------------------|---|
| Standard | Power Cord | 1 |
| | N-BNC Adapter | 1 |
| | CD(Software+ User's Guide) | 1 |



Attenuator 1: 900MHz/1.8GHz



Attenuator 2: 2.4GHz



Near Field Probe Set SY5030

Options

Tracking Generator
N-SMA Adapter, N-SMA Cable, BNC-BNC Cable,
USB cable, RS-232 cable
Attenuator 1(900MHz/1.8GHz), Attenuator 2 (2.4GHz)
Near Field Probe Set SY5030

SS7406/7406C/7406R Universal Frequency Counter/Timer/Analyzer



Features

- Minimum measuring resolution 11 digits/s
- Time resolution 25ps (Typ.)
- 4.3' TFT-LCD display to show abundant information also trendgram and histogram of statistical calculation visually
- Firm and sophisticated standard 2U design
- Standard interface of RS-232, GPIB and LAN

Specification

| | SS7406 | SS7406C | SS7406R |
|--------------------------------|---|---|---|
| Measuring Functions | | | |
| Frequency Range | Channel 1: 1mHz ~ 200MHz Channel 2: 1mHz ~ 200MHz Channel 3: 3GHz/6.5GHz/12.4GHz/16GHz/20GHz/26.5GHz/40GHz (option) | | |
| Measurement Resolution | 11 digits/s | | |
| Period | 5ns ~ 1000s | | |
| Time Interval Range | 1ns ~ 10000s | | |
| Time Resolution | 25 ps | | |
| Pulse Width | 1ns ~ 10000s | | |
| Duty Cycle | 1% ~ 99% | | |
| Totalize | 0 ~ 1×10 ¹³ | | |
| Phase Difference | 1° ~ 359° | | |
| Input | | | |
| Dynamic Range | 50mVrms ~ 1.0Vrms (Sine), 150mVPP ~ 4.5VPP(Pulse) | | |
| Input Impedance | 1MΩ//35pF or 50Ω | | |
| Coupling Mode | AC or DC | | |
| Input Attenuation | ×1 or ×10 | | |
| Trigger Level | -5.000V ~ +5.000V, min. step 1mV or auto trigger level | | |
| Other Functions | | | |
| Frequency Ratio | ratio value range : 0.00001~999999 | | |
| Up/Low Limit | "Limit" light on shows the result out of range, off shows within range | | |
| Statistics Calculation | Multi-average, Max.,Min., PPM, SD, Allan Variance | | |
| Standard Time Base | | | |
| Daily Aging | 1×10 ⁻⁶ /day | | |
| Yearly Aging | 5×10 ⁻⁷ /year | | |
| Optional Time Base | | | |
| Daily Aging | 5×10 ⁻¹⁰ /day | | |
| Yearly Aging | 5×10 ⁻⁸ /year | | |
| Receiving System | GPS, BDS | | |
| Holdover Accuracy | ≤5×10 ⁻¹² @24 hours | | |
| GPS Discipling | | | |
| Accuracy | 1×10 ⁻⁸ | | <5×10 ⁻¹¹ |
| Daily Aging | <5×10 ⁻¹⁰ /day | | <5×10 ⁻¹² /day (after 3 days) |
| Channel Options | | | |
| | Frequency Range | Dynamic Range | |
| 3.0GHz | 100MHz ~ 3GHz | A. -27dBm~+19dBm (100MHz~2.6GHz) -15dBm~+19dBm (2.6GHz~3.0GHz) | |
| | 100MHz ~ 3GHz | B. -27dBm~+19dBm | |
| 6.5GHz | 200MHz ~ 6.5GHz | -15dBm ~ +13dBm | |
| | 12.4GHz | -15dBm ~ +10dBm | |
| 16.0GHz | 6.5GHz ~ 16GHz | -15dBm ~ +10dBm | |
| | | -10dBm ~ +10dBm (200MHz~350MHz) | |
| 20.0GHz | 200MHz~20GHz | -15dBm ~ +10dBm (350MHz~18GHz) | |
| | | -10dBm ~ +10dBm (18GHz~20GHz) | |
| 26.5GHz | 10GHz~26.5GHz | -20dBm ~ +10dBm (10GHz~20GHz) | |
| | | -15dBm ~ +10dBm (20GHz~24GHz) | |
| 40GHz | 18GHz~40GHz | -10dBm ~ +10dBm (24GHz~26.5GHz) | |
| | | -29dBm~+15dBm (18GHz~20GHz) | |
| | | -20dBm~+15dBm (20GHz~28GHz) | |
| | | -29dBm~+10dBm (28GHz~37GHz) | |
| | | -20dBm~+13dBm (37GHz~40GHz) | |
| General Characteristics | | | |
| Interface | RS-232, GPIB, LAN, USB Host | | |
| Power | Standard: AC220V (10%), 50Hz (5%), <70VA Optional: AC110V (10%), 60Hz (5%), <70VA | | |
| Dimension & Weight | 454×98×486mm, 7.3Kg | | |

Standard Accessories

| | |
|----------------------------|---|
| Power Cord | 1 |
| BNC Testing Cable | 1 |
| CD(Software+ User's Guide) | 1 |

SS7000 Series Universal Frequency Counter/Timer/Analyzer



Features

- Minimum measuring resolution 11 digits/s
- Time resolution 25ps (typical)
- Maximum frequency's measurement can reach to 40GHz (options)
- Measures Frequency, Period, Duty Cycle, Frequency Ratio, Totalize, Phase Difference, Pulse Width, Time Interval and DCV.
- Utility statistics functions of multi-average, maximum, minimum, PPM, standard deviation and Allan Variance for frequency measurement
- Stores 15 group status
- High-stability crystal oscillator is optional

Specification

| | | SS7200A | SS7300 | SS7400 | SS7402 |
|--------------------------------|------------------------|--|-------------|--------------|--------------|
| Measuring Functions | | | | | |
| Frequency Range | CH1 | 0.001Hz ~ 200MHz | | | |
| | CH2 | 0.001Hz ~ 200MHz | | | |
| | CH3 | CH 3:3GHz/6.5GHz/12.4GHz/16GHz/20GHz/26.5GHz/40GHz (option) | | | |
| Display Resolution | | 8 digits/s | 10 digits/s | 11 digits/s | 11 digits/s |
| Period | | 5ns ~ 1000s | | | |
| Time Interval Range | | 10ns ~ 10000s | | 1ns ~ 10000s | |
| Time Resolution | | 2.5ns | 500 ps | 150ps | 25ps |
| Pulse Width | | 30ns ~ 5000s | | 1ns ~ 10000s | |
| Duty Cycle | | 1% ~ 99% | | | |
| Totalize | | 0 ~ 1×10 ¹³ | | | |
| Phase Difference | | 1° ~ 359° | | | |
| Input | | | | | |
| Dynamic Range | | 50mVrms ~ 1.0Vrms (Sine), 150mVpp ~ 4.5Vpp(Pulse) | | | |
| Input Impedance | | 1MΩ//35pF or 50Ω | | | |
| Input Attenuation | | ×1 or ×10 | | | |
| Trigger Level | | -5.000V ~ +5.000V | | | |
| Other Functions | | | | | |
| Frequency Ratio | | ● | | | |
| Up/Low Limit | | "Limit" light on shows the result out of range, off shows within range | | | |
| Statistics Calculation | | Multi-average, Max., Min., PPM, SD, Allan Variance | | | |
| Standard Time Base | | | | | |
| Accuracy | | 5×10 ⁻⁸ | | | |
| Daily Aging | | 1×10 ⁻⁸ /day | | | |
| Yearly Aging | | 5×10 ⁻⁷ /year | | | |
| Optional Time Base | | | | | |
| Accuracy | | 5×10 ⁻⁸ | | | |
| Daily Aging | | 5×10 ⁻¹⁰ /day | | | |
| Yearly Aging | | 5×10 ⁻⁸ /year | | | |
| Channel Options | | | | | |
| | Frequency Range | Dynamic Range | | | |
| 3.0GHz | 100MHz ~ 3GHz | A. -27dBm~+19dBm (100MHz~2.6GHz) -15dBm~+19dBm (2.6GHz~3.0GHz) | | | |
| | 100MHz ~ 3GHz | B. -27dBm~+19dBm | | | |
| 6.5GHz | 200MHz ~ 6.5GHz | -15dBm ~ +13dBm | | | |
| | 6.5GHz ~ 12.4GHz | -15dBm ~ +10dBm | | | |
| 12.4GHz | 6.5GHz ~ 12.4GHz | -15dBm ~ +10dBm | | | |
| | 6.5GHz ~ 16GHz | -15dBm ~ +10dBm | | | |
| 16.0GHz | 6.5GHz ~ 16GHz | -15dBm ~ +10dBm | | | |
| | 200MHz~20GHz | -10dBm ~ +10dBm (200MHz~350MHz) -15dBm ~ +10dBm (350MHz~18GHz) | | | |
| | 200MHz~20GHz | -10dBm ~ +10dBm (18GHz~20GHz) -20dBm ~ +10dBm (10GHz~20GHz) | | | |
| 26.5GHz | 10GHz~26.5GHz | -15dBm ~ +10dBm (20GHz~24GHz) -10dBm ~ +10dBm (24GHz~26.5GHz) | | | |
| | 10GHz~26.5GHz | -29dBm~+15dBm (18GHz~20GHz) -20dBm~+15dBm (20GHz~28GHz) | | | |
| 40GHz | 18GHz~40GHz | -29dBm~+10dBm (28GHz~37GHz) -20dBm~+13dBm (37GHz~40GHz) | | | |
| | 18GHz~40GHz | -29dBm~+10dBm (28GHz~37GHz) -20dBm~+13dBm (37GHz~40GHz) | | | |
| | 18GHz~40GHz | -29dBm~+10dBm (28GHz~37GHz) -20dBm~+13dBm (37GHz~40GHz) | | | |
| General Characteristics | | | | | |
| Interface | Standard | USB, RS-232 | | | RS-232, GPIB |
| | Optional | GPIB | | | ○ |
| Power | | AC220V(10%) or AC110V(10%), 50Hz(5%) or 60Hz(5%) | | | |
| | | AC220V (1 ±10%), 50Hz (1 ±5%) <70VA (for SS7402) | | | |
| Dimension & Weight | | 256×106×386mm | | | |
| | | 3.7kg | 3.7kg | 4.2kg | 5.2kg |
| Standard Accessories | | | | | |
| Power Cord | | 1 | | | |
| BNC Testing Cable | | 1 | | | |
| CD(Software+ User's Guide) | | 1 | | | |

SS7301 Frequency Counter



Features

- High accuracy with minimum measuring resolution 10 digits/s
- 16-bit microcontroller is used and the speed of data processing is fast
- Maximum frequency's measurement can reach to 26.5GHz (options)
- Utility statistics functions of multi-average, maximum, minimum, PPM, standard deviation and Allan Variance for frequency measurement
- High-stability crystal oscillator is optional

Standard Accessories

| | |
|----------------------------|---|
| Power Cord | 1 |
| BNC Testing Cable | 1 |
| CD(Software+ User's Guide) | 1 |

Specification

Measuring Functions

| | | |
|--------------------|------|---|
| Frequency | CH 1 | 0.001Hz ~ 200MHz |
| | CH 2 | 3GHz/6.5GHz/12.4GHz/16GHz/20GHz/26.5GHz/40GHz (options) |
| | CH 3 | 3GHz/6.5GHz/12.4GHz/16GHz/20GHz/26.5GHz /40GHz(options) |
| Display Resolution | | 10 digits/s |
| Period | | 5ns ~ 1000s |
| Pulse Width | | 50ns ~ 1000s |
| Duty Cycle | | 5% ~ 95% |
| Totalize | | 0 ~ 1×10 ¹³ |

Input

| | |
|-------------------|---|
| Dynamic Range | 50mVrms ~ 1.0Vrms (Sine), 150mVpp ~ 4.5Vpp(Pulse) |
| Input Impedance | 1M Ω //35pF or 50 Ω |
| Coupling Mode | AC or DC |
| Trigger Mode | Rising edge or Falling edge |
| Input Attenuation | ×1 or ×10 |
| Low-pass Filter | stop frequency approx.100kHz |
| Trigger Level | -5.000V ~ +5.000V, step 5mV |

Other Functions

| | |
|------------------------|--|
| Frequency Ratio | ● |
| Frequency Self-test | ● |
| Up/Low Limit | "Limit" light on shows the result out of range, off shows within range |
| Statistics Calculation | Multi-average, Max.,Min., PPM, SD, Allan Variance |

Standard Time Base

| | |
|-------------|-------------------------|
| Accuracy | 5×10 ⁻⁸ |
| Daily Aging | 1×10 ⁻⁸ /day |

Optional Time Base

| | |
|-------------|--------------------------|
| Accuracy | 5×10 ⁻⁸ |
| Daily Aging | 5×10 ⁻¹⁰ /day |

Channel Options

| | Frequency Range | Dynamic Range |
|---------|------------------|---|
| 3.0GHz | 100MHz ~ 3GHz | A. -27dBm~+19dBm (100MHz~2.6GHz) -15dBm~+19dBm (2.6GHz~3.0GHz) |
| | 100MHz ~ 3GHz | B. -27dBm~+19dBm |
| 6.5GHz | 200MHz ~ 6.5GHz | -15dBm ~ +13dBm |
| 12.4GHz | 6.5GHz ~ 12.4GHz | -15dBm ~ +10dBm |
| 16.0GHz | 6.5GHz ~ 16.0GHz | -15dBm ~ +10dBm |
| 20.0GHz | 200MHz~20GHz | -10dBm ~ +10dBm (200MHz~350MHz) |
| | | -15dBm ~ +10dBm (350MHz~18GHz) |
| | | -10dBm ~ +10dBm (18GHz~20GHz) |
| 26.5GHz | 10GHz~26.5GHz | -20dBm ~ +10dBm (10GHz~20GHz) |
| | | -15dBm ~ +10dBm (20GHz~24GHz) |
| 40GHz | 18GHz~40GHz | -10dBm ~ +10dBm (24GHz~26.5GHz) |
| | | -29dBm~+15dBm (18GHz~20GHz) |
| | | -20dBm~+15dBm (20GHz~28GHz) |
| | | -29dBm~+10dBm (28GHz~37GHz) |
| | | -20dBm~+13dBm (37GHz~40GHz) |

General Characteristics

| | | |
|--------------------|----------|--|
| Interface | Standard | USB, RS-232 |
| | Optional | GPIB |
| Power | | AC220V(10%) or AC110V(10%), 50Hz(5%) or 60Hz(5%) |
| Dimension & Weight | | 256×106×386mm, Approx. 3.5kg |

SA1000 Series Frequency Characteristic Analyzer



Features

- Built-in detector, dispensing with detection radiometer
- Measure amplitude-frequency, phase-frequency, frequency discrimination and S parameters
- Available to set sweep mode arbitrarily, such as linear, logarithmic or single tone
- Display the frequency, gain and phase value at cursor position
- Four cursors could be displayed at same time within the sweep range
- 7" TFT color LCD with clear graph interface and convenient operation
- USB Device and RS-232 interface

Specification

| | SA1030 | SA1080 | SA1140 |
|--------------------------|---|--------------|---------------|
| Sweep Range | 20Hz ~ 30MHz | 20Hz ~ 80MHz | 20Hz ~ 140MHz |
| Function | amplitude-frequency, phase-frequency, frequency discrimination and S Parameters | | |
| Sweep Mode | Linear, Log or Tone | | |
| Output Amplitude | >0.5Vrms | | |
| Input Impedance | 50Ω/High Impedance | | |
| Output Impedance | 50Ω | | |
| Output Attenuation | 0 ~ 80dB, 1dB step | | |
| Input Gain | 10 ~ -30dB, 10dB step | | |
| Phase Range | -180° ~ +180° | | |
| Phase Resolution | 1° | | |
| Amplitude range of Input | 0.1V≤A≤10V | | |
| DC Offset | ±4V | | |

General Characteristics

| | |
|--------------------|------------------------------------|
| Display | 7" TFT LCD, 800×480 |
| Interface | RS-232, USB Device |
| Power | AC 220 (1±10%)V, 50(1±5%)Hz, <60VA |
| Dimension & Weight | 364×155×328mm, Approx. 4.8 kg |

SA1216

SA1220

| | SA1216 | SA1220 |
|------------------------------|--|---------------|
| Sweep Range | 20Hz ~ 160MHz | 20Hz ~ 200MHz |
| Measurement Function | amplitude-frequency, phase-frequency, frequency discrimination, S Parameters | |
| Sweep Mode | Linear, Log or Tone | |
| Output Level | -80dBm~10dBm | |
| Output Impedance | 50Ω/75Ω | |
| Input Level | -80dBm~20dBm | |
| Input Impedance | 50Ω/75Ω/1MΩ | |
| Level Detection Accuracy | 0.1dB | |
| Phase Detection Range | 0~360° | |
| Phase Detection Accuracy | ±0.5° | |
| Input signal amplitude range | 0.1V≤A≤10V | |
| DC Offset | ±4V | |

General Characteristics

| | |
|--------------------|------------------------|
| Display | 7" TFT LCD, 800×480 |
| Interface | RS-232, USB Device |
| Dimension & Weight | 364×155×328 mm, 5.0 kg |

Standard Accessories

| | | | | | |
|-------------------|---|---|---|---|--|
| Power Cord | 1 |  |  |  |  |
| BNC Testing Cable | 2 | | | | |
| Test clip leads | 2 | | | | |
| CD(User's Guide) | 1 | Power Cord | CD | BNC Testing Cable | Test clip leads |

Options

TCXO Stability: ±5×10⁻⁷/day

SM2100 Series Digital AC Millivolt Meter



Features

- LED Display, Dual Independent Channels
- Auto/Manual Ranging can be selected
- Multiple display result with different units
- High Frequency Range from 5Hz to 6MHz
- Standard Interface USB Device

Specification

| | SM2130 | SM2160 |
|--|---|---|
| Frequency Range | 5Hz ~ 3MHz | 5Hz ~ 6MHz |
| Measurement Range | | |
| AC Voltage | 50 μ V ~ 400V | 50 μ V ~ 300V |
| Range | 3mV, 30mV, 300mV, 3V, 30V, 300V | |
| dBV | -86dBV ~ 52dBV | -86dBV ~ 50dBV |
| dBm | -73dbm~65.05dbm (50 Ω) -84dbm~54.26dbm (600 Ω) | -73dbm~62.55dbm (50 Ω) -84dbm~51.76dbm (600 Ω) |
| Vpp | 141 μ Vpp ~ 1131Vpp | 141 μ Vpp ~ 848Vpp |
| W | 0.05nW~3200W (50 Ω) 0.00417nW~267W (600 Ω) | 0.05nW~1800W (50 Ω) 0.00417nW~150W (600 Ω) |
| Voltage Measurement Error | | |
| \geq 5Hz ~ 100Hz | \pm 2.5% reading \pm 0.8% range | |
| >100Hz ~ 500kHz | \pm 1.5% reading \pm 0.5% range | |
| >500kHz ~ 2MHz | \pm 2.0% reading \pm 1.0% range | |
| >2MHz ~ 3MHz | \pm 3.0% reading \pm 1.0% range | |
| >3MHz ~ 5MHz | \pm 4.0% reading \pm 2.0% range | |
| >5MHz ~ 6MHz | \pm 5.0% reading \pm 4.0% range | |
| Resolution | | |
| Range | 3 ¹ / ₂ digits Display | 4 ¹ / ₂ digits Display |
| 3mV | 0.001mV | 0.0001mV |
| 30mV | 0.01mV | 0.001mV |
| 300mV | 0.1mV | 0.01mV |
| 3V | 0.001V | 0.0001V |
| 30V | 0.01V | 0.001V |
| 300V | 0.1V | 0.01V |
| Maximum Undamaged Input Voltage | | |
| Range:300V | 400Vrms | 350Vrms |
| General Characteristics | | |
| Power | AC220(1 \pm 10%)V, 50 (1 \pm 5%)Hz, 15VA | |
| Interface | USB Device | |
| Display | LED display | |
| Dimension & Weight | 256 \times 106 \times 386mm , Approx.3.9 kg | |

Standard Accessories

- Power Cord 1
- Test clip leads 2
- CD(Software+ User's Guide) 1



Power Cord



CD



Test clip leads

SA5053 Digital Multimeter



USB

RS-232

LAN

GPIB

Features

- Real 5½ digits readings resolution (119999 counts)
- 1 μ V resolution
- True-RMS AC Voltage and AC Current measuring
- 4.3-inch color LCD touch screen with double display for easy viewing
- Two sets of input interfaces front and rear, which provides convenience to arrange wires
- In addition to numerical data display, it also features histograms, trend charts, bar charts, and statistics functions

Specification

| Basic Function | Range | Best Accuracy \pm (% reading + % range) |
|--------------------------------|--|--|
| DC Voltage | 100mV/1V/10V/100V/1000V | \pm (0.012 + 0.005) |
| AC Voltage | 100mV/1V/10V/100V/750V | \pm (0.2 + 0.1) |
| DC Current | 100 μ A/1mA/10mA/100mA/1A/10A | \pm (0.05+0.007) |
| AC Current | 100 μ A/1mA/10mA/100mA/1A/10A | \pm (0.5+0.1) |
| Resistance | 100 Ω /1K Ω /10K Ω /100K Ω / 1M Ω /10M Ω /100M Ω | \pm (0.03+0.005) |
| Capacitance | 1nF/ 10nF/ 100nF/1 μ F/10 μ F/100 μ F | \pm (0.2+0.5) |
| Frequency | 5Hz~1MHz | \pm 0.02 |
| Temperature | -200°C~ 800°C | \pm 0.2 °C (without accuracy of probe) |
| Features | | |
| Reading Rate | 500 reading/s | |
| Auto Range | ● | |
| Diode | ● | |
| Continuity | ● | |
| Trigger | ● | |
| Save/Read | ● | |
| Math | MAX/MIN,Rel,dB, dBm,Limit,Statistic | |
| General Characteristics | | |
| Safety | IEC61010-1: 2001, CAT I 1000V/CAT II 600V, Class of pollution: 2 | |
| Interface | USB Host, USB Device,RS-232,LAN, GBIP (optional) | |
| Power | 115V/230V, 50Hz/60Hz, 15VA | |
| Dimension & Weight | 256x106x322 mm, 3.5 kg | |

Standard Accessories

| | |
|-------------------------------|---|
| Power Cord | 1 |
| Test Lead Kit | 1 |
| Temperature Probe | 1 |
| CD (User's Guide+PC software) | 1 |



Power Cord



CD



Test Lead Kit



Temperature Probe

SK3323/3325/3503 Programmable DC Power Supply



Features

- Three outputs, the maximum power is up to 342W
- Standard Timing Output
- Comprehensive over-voltage protection
- 4 digit LED display can show voltage, current and power simultaneously

Specification

| Model | | SK3323 | SK3325 | SK3503 |
|--------------------------------------|------------------------------------|--|--------------------------------------|--------------------------------------|
| Channel | | | | |
| | CH1 | 0~32V/0~3.2A | 0~32V/0~5.1A | 0~50V/0~3.2A |
| | CH2 | 0~32V/0~3.2A | 0~32V/0~5.1A | 0~50V/0~3.2A |
| | CH3 | 1.8V/2.5V/3.3V/5.0V switchable, 3.2A (Max. output) | | |
| Line Regulation | | | | |
| Voltage | CH1, CH2 | $\leq 1 \times 10^{-4} + 2\text{mV}$ | | |
| | CH3 | $\leq 1 \times 10^{-4} + 3\text{mV}$ | | |
| Current | CH1, CH2 | $\leq 1 \times 10^{-4} + 2\text{mA}$ | | |
| Load Regulation | | | | |
| Voltage | CH1 | | $\leq 1 \times 10^{-4} + 8\text{mV}$ | $\leq 1 \times 10^{-4} + 3\text{mV}$ |
| | CH2 | $\leq 1 \times 10^{-4} + 3\text{mV}$ | | |
| | CH3 | | $\leq 1 \times 10^{-4} + 3\text{mV}$ | |
| Current | CH1, CH2 | $\leq 1 \times 10^{-4} + 2\text{mA}$ | | |
| Programming/Readback Accuracy | | | | |
| Voltage | CH1 | $\leq \pm(0.5\% + 30\text{mV})$ | | $\leq \pm(0.5\% + 60\text{mV})$ |
| | CH2 | | | |
| | CH3 (no readback) | $\leq \pm 7\%$ | | |
| Current | CH1 | $\leq \pm(0.5\% + 30\text{mA})$ | $\leq \pm(1\% + 60\text{mA})$ | $\leq \pm(0.5\% + 30\text{mA})$ |
| | CH2 | | | |
| | CH3 (no readback) | $\geq 3.2\text{A}$ | | |
| Ripple and Noise | | | | |
| Voltage | CH1, CH2 | $\leq 1\text{mVrms}$ | | $\leq 1.5\text{mVrms}$ |
| | CH3 | $\leq 1\text{mVrms}$ | | |
| Current | CH1, CH2 | $\leq 3\text{mA rms}$ | $\leq 5\text{mA rms}$ | $\leq 3\text{mA rms}$ |
| Display resolution | | | | |
| Voltage | CH1, CH2 | 10mV | | |
| Current | CH1, CH2 | 1mA | | |
| Display Digits | | | | |
| Voltage | | 4 digits | | |
| Current | | 4 digits | | |
| Other function | | | | |
| | Auto switch of serial and parallel | ● | | |
| General Characteristics | | | | |
| Rated Voltage | | AC220(1±10%)V | | |
| Rated Power | | 500W 670VA | | 600W 800VA |
| Rated Frequency | | 50/60(1±5%) Hz | | |
| USB charging Interface | | 5V 1A | | |
| Remote Interface | | USB, LAN (option) | | |
| Dimension | | 226×140×303mm | | 226×140×333mm |
| Weight | | 8KGs | | 9KGs |

Standard Accessories

| | |
|------------------|---|
| Power Cord | 1 |
| CD(User's Guide) | 1 |



Power Cord



CD

SK3323J/3325J Programmable DC Power Supply



Features

- Three outputs, the maximum power is up to 338W
- Low Ripple and Noise: $\leq 1\text{mV}/\leq 3\text{mA}$
- Standard Timing Output
- Comprehensive over-voltage and over-temperature protection
- Fully remote control interface: LAN, USB Device and RS-232
- 5 digit LED display can show voltage, current and power simultaneously

Specification

| Model | | SK3323J | SK3325J |
|--------------------------------------|---------------|--|--------------------------------------|
| Channel | | | |
| | CH1 | 0~32V/0~3A | 0~32V/0~5A |
| | CH2 | 0~32V/0~3A | 0~32V/0~5A |
| | CH3 | 0~6V/0~3A | |
| Line Regulation | | | |
| Voltage | CH1, CH2, CH3 | $\leq 1 \times 10^{-4} + 3\text{mV}$ | |
| Current | CH1, CH2, CH3 | $\leq 1 \times 10^{-4} + 500\mu\text{A}$ | |
| Load Regulation | | | |
| Voltage | CH1 | | $\leq 1 \times 10^{-4} + 5\text{mV}$ |
| | CH2 | $\leq 1 \times 10^{-4} + 3\text{mV}$ | |
| | CH3 | | $\leq 1 \times 10^{-4} + 3\text{mV}$ |
| Current | CH1, CH2, CH3 | $\leq 1 \times 10^{-4} + 500\mu\text{A}$ | |
| Programming/Readback Accuracy | | | |
| Voltage | CH1 | | |
| | CH2 | $\leq \pm(0.05\% + 20\text{mV})$ | |
| | CH3 | | |
| Current | CH1 | | $\leq \pm(0.3\% + 10\text{mA})$ |
| | CH2 | $\leq \pm(0.3\% + 5\text{mA})$ | |
| | CH3 | $\leq \pm(2\% + 20\text{mA})$ | |
| Ripple and Noise | | | |
| Voltage | | $\leq 1\text{mV}$ | |
| Current | | $\leq 3\text{mA}$ | |
| Display resolution | | | |
| Voltage | | 1mV | |
| Current | | 1mA | |
| Display Digits | | | |
| Voltage | | 5 digits | |
| Current | | 4 digits | |
| Other function | | | |
| Auto switch of serial and parallel | | ○ | |
| Timing Output | | ● | |
| OTP | | ● | |
| OVP | | ● | |
| General Characteristics | | | |
| Rated Voltage | | 220/230 (198-242)V | |
| Rated Power | | 0.5kW 0.7kVA | 0.6kW 0.8kVA |
| Rated Frequency | | 50/60(47-63) Hz | |
| USB charging Interface | | 5V 2A | |
| Remote Interface | | LAN, USB Device, RS-232 | |
| Dimension | | 254×157×442mm | |
| Weight | | 9KGs | 10KGs |

Standard Accessories

| | |
|------------------|---|
| Power Cord | 1 |
| CD(User's Guide) | 1 |

SK135XX Series Programmable DC Power Supply



Features

- All digital controlled, output 1mV/1mA step
- High stability, Low drift
- LED display the voltage/current and working status visually
- Intelligent temperature controlled fan with low noise
- Storage and recall function
- OVP (Over Voltage Protection) function
- Keypad locked function to avoid the misoperation
- Standard RS-232 interface, optional USB Device

Specification

| Model | SK13515 | SK13530 | SK13530K |
|---|---------------------------------------|-----------------------------|----------------------------------|
| Output Range | 35V/15A | | 35V/30A |
| Output Power | 500W | | 1000W |
| Resolution | 1mV/1mA | | |
| Source Effect | | | |
| CV | $\leq 1 \times 10^{-5} + 1\text{mV}$ | | |
| CC | $\leq 1 \times 10^{-5} + 3\text{mA}$ | | |
| Load Effect | | | |
| CV | $\leq 1 \times 10^{-4} + 3\text{mV}$ | | |
| CC | $\leq 1 \times 10^{-4} + 3\text{mA}$ | | |
| Period and Random Deviation (PARD) | | | |
| CV | $\leq 1\text{mV}$ | | |
| CC | $\leq 6\text{mA}$ | | $\leq 20\text{mA}$ |
| Accuracy | | | |
| Voltage | $\leq \pm (0.05\% + 10\text{mV})$ | | $\leq \pm (0.1\% + 10\text{mV})$ |
| Current | $\leq \pm (0.2\% + 50\text{mA})$ | | $\leq \pm (0.2\% + 50\text{mA})$ |
| OVP | $\leq \pm (0.5\% + 0.5\text{V})$ | | $\leq \pm (0.5\% + 0.8\text{V})$ |
| General Characteristics | | | |
| Power | AC220V(1±10%)V,50(1±5%)Hz | | AC220~230(198~242)V,50(47~63)Hz |
| Interface | RS-232 (standard) USB Device (option) | | |
| Dimension & Weight | 445×148×475 mm, Approx 25kg | 445×148×675 mm, Approx 35kg | 345×148×475 mm, Approx 13kg |

Standard Accessories

- Power Cord 1
- RS-232 cable 1
- CD(Software+User's Guide) 1



Power Cord



RS-232 cable



CD

ST2050 Series Frequency Standard Comparator



Features

- With dual-channel frequency difference measuring technique
- Measuring Channel: up to 4
- The sampling time could be set as user demand: 1s to 10⁹s
- Graphic interface, auto and real time measurement of Allan Deviation
- Measure Cesium/Hydrogen/Rubidium Atomic Clock, such as daily fluctuation, booting characteristic, aging rate, accuracy, drift, frequency deviation and difference of daily accuracy

Specification

| Main Specification | ST2051 | ST2052 | ST2053 | ST2054 |
|--------------------------------|---|--------|--------|--------|
| Measuring Channel | 1 | 2 | 3 | 4 |
| Frequency | 5MHz, 10MHz | | | |
| Input Amplitude | 3dBm ~ 13dBm, Input Impedance: 50ohm | | | |
| Max. Frequency Deviation | 1×10 ⁻⁸ | | | |
| Comparison Uncertainty | 5×10 ⁻¹³ /s | | | |
| | 5×10 ⁻¹⁴ /10s | | | |
| | 5×10 ⁻¹⁵ /100s | | | |
| | 1×10 ⁻¹⁵ /1000s | | | |
| Measuring Function | 5×10 ⁻¹⁶ /10000s | | | |
| | Allan standard deviation, Accuracy, Booting characteristic, Aging rate, Repeatability | | | |
| Built-in Frequency Counter | 13digits/s | | | |
| Port | USB: connect USB-type mouse, keyboard and USB disk LAN: remote control | | | |
| General Characteristics | | | | |
| Voltage | 220(1±10%)V | | | |
| Frequency | 50(1±5%)Hz | | | |
| Power Consumption | 65VA Max. | | | |
| Working Temperature | 10 ~ 30 °C | | | |
| Weight | 10.5kg | | | |
| Dimension | 364×155×468mm | | | |

Standard Accessories

- Power Cord 1
- CD (User's Guide) 1
- Network cable 1
- BNC testing cable 5
- Connector TNC/BNC-JK 5



Connector TNC/BNC-JK

Power Cord

CD

BNC testing cable

Network cable

SF2002 Stopwatch Calibrator



Features

- High resolution of crystal oscillator with accuracy up to 5×10^{-8}
- Quick response
- Easy operation suitable for metrological service, factory, academy and scientific research institution to calibrate all kinds of timer instruments

Specification

| Mechanical stopwatch and electronic stopwatch | |
|---|---|
| Input Range | T_0 : 1s-99999s |
| Accuracy | $< \pm (1 \times 10^{-7} \times T_0 + 3\text{ms})$ |
| Pointer electrical stopwatch | |
| Input Range | T_0 : 0.1s-99999s (Continuous, Trigger and Pause) |
| Accuracy | $< \pm (\text{Mains frequency accuracy} \times T_0 + 0.6\text{ms})$ |
| Digital electrical stopwatch | |
| Input Range | T_0 : 0.1ms-9999.9s |
| Accuracy | $< \pm (1 \times 10^{-7} \times T_0 + 3\mu\text{s})$ |
| Crystal Oscillator | |
| Nominal Frequency | 10MHz |
| Daily Aging Rate | $\leq 5 \times 10^{-9}/\text{day}$ |
| Second Stability | $\leq 5 \times 10^{-11}/\text{s}$ |
| Accuracy | $\leq 5 \times 10^{-8}$ |
| Warm Up Time | > 2 hours |
| General Characteristics | |
| Power | 220(1 \pm 10%)V, 50(1 \pm 5%)Hz, <20VA |
| Display | LCD |
| Dimension | 256 \times 106 \times 393 mm |
| Weight | 3.7kg |

Standard Accessories

- Power Cord 1
- CD (User's Guide) 1
- Dual banana plug test lead 2
- BNC-banana test lead 1



Power Cord



BNC-banana test lead



CD



Dual banana plug test lead

Options

- SF2001 stopwatch fixture
- SF2601 timer fixture
- Certificate issued by third part

SF2004 Daily Difference Calibrator



Features

- High precision OCXO are built in
- Support instantaneous measurement of daily difference, monthly difference and yearly difference
- Non-contact or contact measurement way could be selected
- Frequency and time interval measurement function are also supported
- 7" touch screen display, voice broadcast PPM measurement result

Specification

| Instantaneous Daily Difference Measurement | |
|--|--|
| Frequency | 32.768KHz, 1Hz |
| Object | Electric Stopwatch, Electric Energy Meter, Crystal, Quartz Clock, etc. |
| Method | Non-contact or contact |
| Items | PPM, s/d, s/m, s/y |
| Range | Daily difference: -10.000 ~ +10.000 (s) Monthly difference: -300.000 ~ +300.000 (s) |
| Resolution | 0.0001s |
| Allowed Error Range | Internal frequency standard: Daily difference: ±0.01s, Monthly difference: ±0.3s External frequency standard: Daily difference: ±0.001s, Monthly difference: ±0.03s |
| Time/Frequency Measurement | |
| Resolution | Frequency: 8 digits/s Time Interval: 5ns |
| Signal Level | Pulse, TTL Level |
| Time Base Input | |
| Frequency | 5MHz or 10MHz |
| Wave | Sine |
| Amplitude | ≥1.5V _{p-p} |
| Built-in OCXO | |
| Frequency | 10MHz |
| Daily Aging | ≤1×10 ⁻⁹ /day |
| Power on | ≤1×10 ⁻⁸ |
| Frequency Accuracy | ≤1×10 ⁻⁷ |
| Second Stability | ≤3×10 ⁻¹¹ /s |
| General Characteristic | |
| Power | AC220 (1±10%)V, 50(1±5%)Hz, <50VA |
| Work Environment | Temperature: 0~+40 ℃, RH:20~80% |
| Interface | USB Host, USB Device, RS-232 |
| Dimension & Weight | 364×155×328 mm, approx. 2KGs |

Standard Accessories

- | | |
|--------------------------|---|
| BNC Cable | 1 |
| Power Cord | 1 |
| CD (User's Guide) | 1 |
| Sensor + Connection wire | 1 |



Power Cord



CD



BNC cable



Sensor + Connection wire

SF2101 Photoelectric Converter



Design Reference

Verification regulation of time calibrator

Purpose

- To verify actuation time of machinery such as stroke time of stopwatch fixture, bullet flying speed, object's rotating speed, etc.
- To count by pieces in production line.

Features

- High precision photoelectric detector is introduced to ensure the accuracy and reliable.
- Easy to use, high cost performance

Application

- Metrological Service, factory, institutions, scientific research units.

Specification

| Basic information | |
|------------------------|--|
| Converting accuracy | ≤0.1ms |
| Interface | BNC |
| Detected distance | ≤1m |
| Detected object | Untransparent objects with ≥Φ2mm |
| Output | +12V Square |
| Adapter | Input AC100-220V, 50/60Hz, output DC+12V |
| Power | Total current consumption ≤50mA for transmitting and receiving terminals |
| Required Test Device | Frequency Counter or Oscilloscope |
| General Characteristic | |
| Working Environment | Temperature: 0~+40 ℃, RH:20~80% |
| Dimension & Weight | 185×120×90mm, approx. 3KGs |

Standard Accessories

- Power Cord
- THX-120200KD power adapter
- BNC Cable
- CD (User's Guide)

- 2
- 2
- 1
- 1



Power Cord



THX-120200KD power adapter



BNC cable



CD

Test Leads/Probes/Connector



01



02



03



04



05



06



07



08



09



10



11



12



13



14



15



16

Power Adapter/Data Cable



17



18



19



20

Antenna



21



22



23



24

Soft Carry Bag/Battery



25



26



27



28



* Our company reserves the right to change the specification of the catalogue without notice



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