

301. Time/frequency

Measured Quantity Instrument or Gauge	Field Code	Range	BMC(±) (The confidence Level is about 95 %)	Comments
Frequency meters/counters	30104			
Timebase Output Frequency		10 Mhz	1.5×10^{-12}	Primary Frequency Standards /Comparison Measurement Primary Frequency Standards /Direct Measurement
Timebase Input Frequency	10 Mhz	1.2×10^{-11}		

401. DC voltage & current

Power Suppliers, DC	40110			
DC Voltage		0 V ~ 10 V	0.58 mV	DMM/DC Votage Measurement
		10 V ~ 100 V	5.8 mV	
	100 V ~ 1 000 V	58 mV		
DC Current		0 A ~ 15 A	0.63 mA	DMM/DC Current Measurement
		15 A ~ 100 A	12 mA	

404. Other DC & LF Measurements

Frequency analyzers	40412			
Output Frequency		20 Hz ~ 200 Hz	58 mHz	Frequency Counter/ Frequency Measurement
	2 kHz ~ 100 kHz	0.58 Hz		
Input Frequency		20 Hz	5.8 mHz	Multi Function Generator/ Frequency Measurement
	99.9 kHz	0.82 Hz		
	150 kHz	1.0 Hz		
Input Level				Calibrator/ Voltage Measurement
50 Hz ~ 1 kHz	300 V	0.12 V		
20 Hz ~ 100 kHz	150 V	84 mV		
	100 V	84 mV		
	70 V	84 mV		
	45 V	84 mV		
	30 V	84 mV		
	15 V	3.9 mV		
	10 V	3.9 mV		
	7 V	3.9 mV		
	4.5 V	3.9 mV		
	3 V	3.9 mV		
	1.5 V	0.44 mV		
	1 V	0.44 mV		
	700 mV	0.44 mV		
	450 mV	0.44 mV		
	300 mV	0.44 mV		
	150 mV	0.14 mV		
100 mV	0.14 mV			
70 mV	0.14 mV			
7 mV	0.14 mV			
Output Level				Multi Function Generator/ Frequency Measurement
20 Hz ~ 100 kHz	6 V	3.9 mV		
	0.7 V	0.44 mV		
	70 mV	0.14 mV		
	7 mV	20 μV		
	0.7 mV	20 μV		
DC Input Level				Calibrator/DC Voltage Measurement
	300 V	14 mV		
	30 V	1.2 mV		
	3 V	0.10 mV		

Measured Quantity Instrument or Gauge	Field Code	Range	BMC(±) (The confidence Level is about 95 %)	Comments
Frequency analyzers	40412	0.6 V 0.06 V	60 μ V 60 μ V	
Distortion		25 Hz , 100 Hz, -10 dB 2 kHz , 4.02 kHz, -10 dB 2 kHz , 4.02 kHz, -20 dB 2 kHz , 4.02 kHz, -30 dB 2 kHz , 4.02 kHz, -40 dB 2 kHz , 4.02 kHz, -50 dB 2 kHz , 4.02 kHz, -60 dB 2 kHz , 6.03 kHz, -10 dB 2 kHz , 8.04 kHz, -10 dB 2 kHz , 10.05 kHz, -10 dB 20 kHz , 40.2 kHz, -10 dB 100 kHz , 201 kHz, -10 dB 100 kHz , 201 kHz, -60 dB 100 kHz , 301.5 kHz, -10 dB 100 kHz , 301.5 kHz, -10 dB	0.08 dB 0.08 dB 0.08 dB 0.08 dB 0.08 dB 0.08 dB 0.16 dB 0.08 dB 0.08 dB 0.08 dB 0.08 dB 0.16 dB 0.16 dB 0.16 dB	Calibrator, Function Generator/ Distortion Rate
SINAD		25 Hz , 100 Hz, -10 dB 2 kHz , 40.2 kHz, -10 dB 100 kHz , 201 kHz, -60 dB 100 kHz , 201 kHz, -10 dB 100 kHz , 301.5 kHz, -10 dB 100 kHz , 301.5 kHz, -60 dB	0.08 dB 0.08 dB 0.16 dB 0.08 dB 0.08 dB 0.16 dB	Calibrator, Multi Function Generator / Noise Measurement
S/N		50 Hz , 100 Hz, -10 dB 20 kHz , 40.2 kHz, -10 dB	0.08 dB 0.08 dB	Calibrator, Multi Function Generator / Noise Measurement
Function Generators	40414			
Frequency		1 μ Hz ~ 1 kHz 1 kHz ~ 60 MHz	0.58 mHz 46 mHz	Frequency Counter/ Frequency Measurement
Sine Amplitude 100 Hz ~ 100 kHz		0 V ~ 1.9 V 1.9 V ~ 19 V 19 V ~ 50 V	0.13 mV 1.2 mV 25 mV	DMM/Voltage Measurement
100 kHz ~ 60 MHz		0 V ~ 7 V 7 V ~ 14 V 14 V ~ 50 V	28 mV 55 mV 0.19 V	
Square Amplitude 100 Hz ~ 100 kHz		0 V ~ 1.9 V 1.9 V ~ 19 V 19 V ~ 50 V	0.59 mV 1.3 mV 26 mV	DMM/Voltage Measurement
100 kHz ~ 60 MHz		0 V ~ 1 V 1 V ~ 10 V 10 V ~ 50 V	23 mV 55 mV 0.19 V	
Triangle Amplitude 100 Hz ~ 100 kHz		0 V ~ 1.9 V 1.9 V ~ 19 V 19 V ~ 50 V	0.59 mV 1.3 mV 26 mV	DMM/Voltage Measurement
100 kHz ~ 60 MHz		0 V ~ 1 V 1 V ~ 10 V 10 V ~ 50 V	23 mV 55 mV 0.19 V	

Measured Quantity Instrument or Gauge	Field Code	Range	BMC(±) (The confidence Level is about 95 %)	Comments
Function Generators	40414			
Ramp Amplitude 100 Hz ~ 100 kHz		0 V ~ 1.9 V 1.9 V ~ 19 V 19 V ~ 50 V	0.59 mV 1.3 mV 26 mV	DMM/Voltage Measurement
100 kHz ~ 60 MHz		0 V ~ 1 V 1 V ~ 10 V 10 V ~ 50 V	23 mV 55 mV 0.19 V	
Flatness(Sine Wave)		1 kHz ~ 20 MHz 20 MHz ~ 50 MHz	5.5 mV 30 mV	DMM, TVC/Voltage Measurement
DC Offset		0 V ~ 5 V 5 V ~ 20 V	48 μV 0.52 mV	DMM/Voltage Measurement
LCR meters	40418			
Capacitance (1 kHz)		1 pF	0.30 fF	Standard Capacitance/ Capacitance Measurement
(1 kHz ~ 1 MHz)		1 pF	0.40 fF	
(1 MHz ~ 13 MHz)		1 pF	3.6 fF	
(1 kHz)		10 pF	30 fF	
(1 kHz ~ 1 MHz)		10 pF	30 fF	
(1 MHz ~ 13 MHz)		10 pF	40 fF	
(1 kHz)		100 pF	30 fF	
(1 kHz ~ 1 MHz)		100 pF	30 fF	
(1 MHz ~ 13 MHz)		100 pF	60 fF	
(1 kHz)		1 000 pF	0.35 pF	
(1 kHz ~ 1 MHz)		1 000 pF	0.35 pF	
(1 MHz ~ 13 MHz)		1 000 pF	3.0 pF	
(1 kHz)		0.01 μF	0.70 pF	
(1 kHz)		0.1 μF	7.0 pF	
(1 kHz)		1 μF	70 pF	
Resistance				Standard Resistance/ Resistance Measurement
(100 kHz)		1 Ω	1.7 mΩ	
(1 MHz)		1 Ω	2.4 mΩ	
(100 kHz)		10 Ω	14 mΩ	
(1 MHz)		10 Ω	14 mΩ	
(13 MHz)		10 Ω	0.22 Ω	
(1 kHz)		100 Ω	0.16 Ω	
(100 kHz)		100 Ω	0.14 Ω	
(1 MHz)		100 Ω	0.14 Ω	
(13 MHz)		100 Ω	0.41 Ω	
(1 kHz)		1 kΩ	2.4 Ω	
(100 kHz)		1 kΩ	2.1 Ω	
(1 MHz)		1 kΩ	2.1 Ω	
(13 MHz)		1 kΩ	3.4 Ω	
(100 kHz)		10 kΩ	21 Ω	
(1 MHz)		10 kΩ	21 Ω	
(100 kHz)		100 kΩ	3.3 kΩ	

Measured Quantity Instrument or Gauge	Field Code	Range	BMC(±) (The confidence Level is about 95 %)	Comments
Multimeters, digital	40424			
DC Voltage		100 mV	2.0 μV	Calibrator /Voltage Measurement
		1 V	11 μV	
		10 V	98 μV	
		100 V	1.2 mV	
		1 000 V	14 mV	
AC Voltage				Calibrator/ Voltage Measurement
40 Hz		100 mV	26 μV	
1 kHz		100 mV	26 μV	
20 kHz		100 mV	26 μV	
100 kHz		100 mV	0.14 mV	
40 Hz		1 V	0.11 mV	
1 kHz		1 V	0.11 mV	
20 kHz		1 V	0.11 mV	
100 kHz		1 V	0.44 mV	
40 Hz		10 V	1.1 mV	
1 kHz		10 V	1.1 mV	
20 kHz		10 V	1.1 mV	
100 kHz		10 V	3.9 mV	
40 Hz		100 V	12 mV	
1 kHz		100 V	12 mV	
20 kHz		100 V	12 mV	
100 kHz		100 V	84 mV	
50 Hz		1 000 V	0.12 V	
1 kHz		1 000 V	0.12 V	
DC Current				
		100 μA	18 nA	
		1 mA	81 nA	
		10 mA	0.81 μA	
		100 mA	8.1 μA	
		1 A	0.11 μA	
		10 A	4.2 mA	
AC Current				Calibrator, Amplifier /Current measurement
40 Hz		10 mA	2.6 μA	
1 kHz		10 mA	2.6 μA	
40 Hz		100 mA	24 μA	
1 kHz		100 mA	24 μA	
40 Hz		1 A	0.93 mA	
1 kHz		1 A	0.93 mA	
40 Hz		10 A	5.7 mA	
1 kHz		10 A	5.7 mA	
Resistance				
		1 Ω	0.13 m Ω	
		10 Ω	0.38 m Ω	
		100 Ω	2.3 m Ω	
		1 k Ω	17 m Ω	
		10 k Ω	0.16 Ω	
		100 k Ω	1.9 Ω	
		1 M Ω	27 Ω	
		10 M Ω	0.54 k Ω	
		100 M Ω	16 k Ω	

Measured Quantity Instrument or Gauge	Field Code	Range	BMC(±) (The confidence Level is about 95 %)	Comments	
Oscilloscopes	40426	Vertical Accuracy	1 mV/Div	58 μV	Oscilloscope Calibrator/ Voltage Measurement
			2 mV/Div	58 μV	
			5 mV/Div	58 μV	
			10 mV/Div	58 μV	
			20 mV/Div	58 μV	
			50 mV/Div	58 μV	
			100 mV/Div	58 μV	
			200 mV/Div	58 μV	
			500 mV/Div	82 μV	
			1 V/Div	82 μV	
			2 V/Div	84 μV	
			5 V/Div	0.70 mV	
			10 V/Div	0.91 mV	
			20 V/Div	6.2 mV	
			Time	2 ns	
		5 ns		5.8 ps	
		10 ns		5.9 ps	
		20 ns		6.5 ps	
		50 ns		9.4 ps	
		100 ns		16 ps	
		200 ns		30 ps	
		500 ns		80 ps	
		1 μs		0.16 ns	
		2 μs		0.31 ns	
		5 μs		0.75 ns	
		10 μs		1.5 ns	
		20 μs		3.0 ns	
		50 μs		7.5 ns	
		100 μs		15 ns	
		200 μs		30 ns	
		500 μs		80 ns	
		1 ms		5.8 μs	
		2 ms	5.8 μs		
5 ms	5.8 μs				
10 ms	6.1 μs				
20 ms	7.0 μs				
50 ms	12 μs				
100 ms	16 μs				
200 ms	50 μs				
500 ms	0.20 ms				
1 s	58 ms				
2 s	58 ms				
5 s	60 ms				
Band Width	50 kHz ~ 1.1 GHz	0.62 dB	Oscilloscope Calibrator/ Time Measurement		
CAL Output Voltage	0 V	58 μV	DMM/DC Voltage Measurement		
	5 V	63 μV			

406. RF Measurements

Attenuators, coaxial Fixed Attenuation (30 MHz ~ 1 GHz)	40608	0 dB ~ 10 dB	0.14 dB	Measuring Receiver/Direct Measurement
		10 dB ~ 20 dB	0.14 dB	
		20 dB ~ 30 dB	0.14 dB	
		1 GHz ~ 18 GHz		
Attenuators, coaxial	40608			

Measured Quantity Instrument or Gauge	Field Code	Range	BMC(±) (The confidence Level is about 95 %)	Comments
100 mV _{rms}		50 Hz ~ 40 kHz	1.4 mV	
Power Reference		1 mW	4 μW	Thermistor Mount/Direct Measurement
Power Meter Zero Carryover		10 μW 100 μW 1 mW 10 mW 100 mW	29 nW 0.3 μW 2.9 μW 29 μW 0.3 mW	RF Power Meter Calibrator/Direct Measurement
Power Meter Accuracy		10 μW 100 μW 1 mW 10 mW 100 mW	29 nW 0.3 μW 2.9 μW 29 μW 0.3 mW	RF Power Meter Calibrator/Direct Measurement
Tuned RF Level (Freq:30 MHz)		0 dB 10 dB 20 dB 30 dB 40 dB 50 dB 60 dB	0.02 dB 0.02 dB 0.02 dB 0.02 dB 0.02 dB 0.03 dB 0.03 dB	Standard Attenuator/Comparison Measurement
Network analyzers	40631			
Source Output Frequency Accuracy		30 kHz ~ 1 MHz 1 MHz ~ 10 MHz 10 MHz ~ 6 GHz 6 GHz ~ 18 GHz 18 GHz ~ 26.5 GHz	1.9×10^{-7} 6.0×10^{-8} 6.0×10^{-8} 6.0×10^{-8} 6.0×10^{-8}	Frequency Counter /Frequency Measurement
Source Output Power Level Accuracy (20 dBm ~ -20 dBm)		100 kHz ~ 300 kHz 300 kHz ~ 1 MHz 1 MHz ~ 2 GHz 2 GHz ~ 3 GHz 3 GHz ~ 6 GHz 6 GHz ~ 18 GHz 18 GHz ~ 20 GHz 20 GHz ~ 26.5 GHz	0.36 dB 0.16 dB 0.10 dB 0.22 dB 0.15 dB 0.17 dB 0.20 dB 0.28 dB	Power Sensor/Power Direct Measurement
Source Output Power Range & Linearity (20 dBm ~ -20 dBm)		100 kHz ~ 26.5 GHz	0.03 dB	Power Sensor/Power Direct Measurement
Magnitude Dynamic Accuracy (Freq:30 MHz)		0 dB ~ 10 dB 10 dB ~ 20 dB 20 dB ~ 30 dB 30 dB ~ 40 dB 40 dB ~ 50 dB 50 dB ~ 60 dB 60 dB ~ 70 dB 70 dB ~ 80 dB 80 dB ~ 90 dB 90 dB ~ 100 dB	0.38 dB 0.40 dB 0.48 dB 0.55 dB 0.65 dB 0.72 dB 0.84 dB 0.91 dB 0.98 dB 1.0 dB	Measuring Receiver, Step Attenuator /Comparison Measurement
Power meters, RF	40643			
Power Reference		1 mW	4 μW	Thermistor Mount/ Direct Measurement
Power Meter Accuracy		300 μW 1 mW 3 mW 10 mW	0.43 μW 1.5 μW 4.3 μW 14 μW	RF Power Meter Calibrator/ Direct Measurement
Power meters, RF	40643	30 mW	43 μW	

Measured Quantity Instrument or Gauge	Field Code	Range	BMC(±) (The confidence Level is about 95 %)	Comments
		100 mW	0.15 mW	
Power sensor, thermocouple Calibration Factor	40645	10 MHz ~ 1 GHz 1 GHz ~ 10 GHz 10 GHz ~ 18 GHz	1.4×10^{-2} 1.5×10^{-2} 1.7×10^{-2}	Thermistor Mount/ Comparison Measurement
Signal generators, RF Reference Frequency	40648	10 MHz	2.2×10^{-8}	Frequency Counter /Frequency Measurement
FM Accuracy (100 kHz ~ 1.3 GHz)		DC ~ 40 kHz 40 kHz ~ 400 kHz	0.95 kHz 4.6 kHz	Modulation Meter/ FM Measurement
AM Accuracy (100 kHz ~ 1.3 GHz)		10 % 90 %	0.1 % 1.0 %	Modulation Meter/ AM Measurement
Harmonics		30 Hz ~ 6.5 GHz 6.5 GHz ~ 18 GHz	1.9 dB 2.9 dB	Spectrum Analyzer/ Harmonics Measurement
RF Low Output Level Accuracy (10 MHz ~ 1.3 GHz)		0 dBm ~ -10 dBm -10 dBm ~ -20 dBm -20 dBm ~ -30 dBm -30 dBm ~ -40 dBm -40 dBm ~ -50 dBm -50 dBm ~ -60 dBm -60 dBm ~ -70 dBm -70 dBm ~ -80 dBm -80 dBm ~ -90 dBm -90 dBm ~ -100 dBm -100 dBm ~ -110 dBm -110 dBm ~ -120 dBm	0.38 dB 0.40 dB 0.48 dB 0.55 dB 0.65 dB 0.72 dB 0.84 dB 0.91 dB 0.98 dB 1.0 dB 1.2 dB 1.2 dB	8902S System/Direct Measurement
RF High Output Level Accuracy (10 MHz ~ 1 GHz)		10 dBm ~ -20 dBm	0.30 dB	Power Sensor/Power Direct Measurement
(1 GHz ~ 10 GHz)		10 dBm ~ -20 dBm	0.30 dB	
(10 GHz ~ 18 GHz)		10 dBm ~ -20 dBm	0.41 dB	
(18 GHz ~ 26.5 GHz)		10 dBm ~ -20 dBm	0.39 dB	
Spectrum analyzers, RF Reference Frequency	40649	10 MHz	2.2×10^{-8}	Frequency Counter /Frequency Measurement
Calibrator Output Level		0 dBm ~ -20 dBm	0.11 dB	Power Meter Sensor/Direct Measurement
Resolution Bandwidth		300 Hz 1 kHz 3 kHz 10 kHz 30 kHz 100 kHz 300 kHz 1 MHz 2 MHz	0.93 Hz 3.1 Hz 9.3 Hz 31 Hz 93 Hz 0.31 kHz 0.93 kHz 3.1 kHz 6.2 kHz	Signal Generator/ Bandwidth Measurement
Frequency Readout (10 Hz ~ 18 GHz)		≤ 1 MHz Span 1 MHz ~ 10 MHz Span 10 MHz ~ 20 MHz Span 20 MHz ~ 50 MHz Span	1 kHz 10 kHz 20 kHz 50 kHz	Signal Generator/ Frequency Measurement

Measured Quantity Instrument or Gauge	Field Code	Range	BMC(±) (The confidence Level is about 95 %)	Comments		
Spectrum analyzers, RF	40649	50 MHz ~ 100 MHz Span	0.1 MHz			
		100 MHz ~ 1 GHz Span	1 MHz			
		Marker Frequency Count	10 MHz ~ 18 GHz		0.58 Hz	Signal Generator/ Frequency Measurement
		Scale Fidelity (10 MHz ~ 80 MHz)	0 dB ~ 30 dB		0.10 dB	Signal Generator/ Amplitude Measurement
			30 dB ~ 60 dB		0.10 dB	
			60 dB ~ 100 dB		0.13 dB	
		Frequency Span	≤ 2 kHz		3 Hz	Signal Generator/ Frequency Span
			2 kHz ~ 10 kHz		15 Hz	
			10 kHz ~ 50 kHz		71 Hz	
			50 kHz ~ 200 kHz		0.3 kHz	
			200 kHz ~ 1 MHz		1.5 kHz	
			1 MHz ~ 5 MHz		7.1 kHz	
			5 MHz ~ 20 MHz		30 kHz	
			20 MHz ~ 100 MHz		0.15 MHz	
		Frequency Response (-20 dBm ~ 20 dBm)	10 MHz ~ 2.9 GHz		0.24 dB	Signal Generator, Power Sensor /Power Comparison Measurement
2.75 GHz ~ 6.46 GHz	0.39 dB					
5.86 GHz ~ 13.2 GHz	0.40 dB					
12.4 GHz ~ 26.5 GHz	0.41 dB					

* Some values without unit indicate relative uncertainty values.

* "100 mV" means 100 mV range.