SCOPE OF ACCREDITATION TO ISO/IEC 17025-2017 & KS Q ISO/IEC 17025-2017

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CALIBRATION

Valid To : Jan. 07, 2022. Accreditation No. : KC00-011(1/127)

In recognition of the successful completion of the KOLAS evaluation process,
accreditation is granted to this laboratory to perform the following calibrations

Field Code	Item of Calibration	on-site
102. Linear dimension		
10201	Balls	N
10206	Dial/cylinder gauge testers	N
10209	End bars	N
10210	Extensometers, linear displacement transducers	Y
10211	Filler gauges	Y
10213	Gap gauges	N
10214	Gauge blocks, by comparison	N
10216	Height gauges/measuring machines	Y
10220	Standard measuring machines	Y
10223	Electronic Micrometers	N
10224	Height Micrometers, Riser blocks	N
10225	Laser scan micrometers	Y
10227	Standard tape rules, peripheral gauges	N
10228	Cylindrical plug/pin gauges, Thread measuring wire gauges	Y
10229	Radius gauges	N
10230	Cylindrical ring gauges	N
10232	Step gauges	N
10233	Taper thickness gauges	N
10234	Ultrasonic thickness gauges	Y
10235	Ultrasonic/coating thickness specimens	N
10236	Coating thickness testers	Y
10237	Torque arms	N
103. Angle		
10304	Bevel protractors	N
10311	Plate/square/electric levels	N
10320	Precision squares	N
104. Form		
10401	Form testers	Y
10404	Optical flats	N
10405	Optical parallels	N
10406	Parallel blocks	Y
10407	Precision surface plates	Y
10409	Roundness measurement instruments	Y
10413	Straight rules	N
105. Complex geometry		
10503	Contact coordinate measuring machines	Y
10504	Non-contact coordinate measuring machines	Y
10511	Measuring microscopes, Profile projectors	Y
10512	Micro measuring microscopes	Y
10525	Thread plug gauges	N
10529	V-blocks, box blocks	N
106. Various dimensional		
10601	Inside/Outside/Gear tooth calipers, Caliper gauges	Y
10603	Cylinder/Bore gauges	Y
10604	Depth gauges, Depth micrometers	Y
10605	Dial/Digital gauges	Y
10609	Micro indicators, Test indicators	Y
10610	Micrometer heads	N
10611	3-point micrometers	Y
10612	Inside micrometers	Y
10613	Outside micrometers	Y
10615	Particle counters	Y
10617	Standard sieves	N
10620	Welding gauges	N
10622	Particle dilution Systems	Y
201. Mass		
20105	Counter beam balances	Y
20108	Direct reading balances	Y
20109	Electric balances	Y
20112	Platform scale balances	Y
20113	Spring scale balances	Y
20116	Weights	N
202. Force		
20202	Force measuring devices	N
20203	Tension/compression testing machines	Y
20204	Push-pull gauges	N
203. Torque		
20302	Torque measuring devices	N
20303	Torque wrenches/drivers	Y
204. Pressure		
20406	Absolute pressure gauges	N
20408	Compound pressure gauges	Y
20409	Differential pressure gauges	Y
20411	Gauge pressure gauges	Y
20412	Pressure transducers/ transmitters	Y
20413	Dial type vacuum gauges	Y
20414	Water Depth meters	Y
208. Viscosity		
20802	Dynamic viscometers	N
209. Fluid flow		
20901	Anemometers; hot-wire	N
20902	Anemometers; pitot tube, etc.	N
20925	Anemometers; vane, etc.	N
301. Time/frequency		
30102	Frequency standards	N
30103	General frequency sources	Y
30104	Frequency meters/counters	Y
30105	Time interval sources	Y
30106	Time interval meters/ Stop watches/Timers	Y
302. Velocity & revolution		
30201	Standard RPM generators	Y
30202	Contact type tachometers	Y
30203	Photo tachometers/ stroboscopes	Y
30205	Wow-flutter generators	Y
30206	Wow-flutter meters	Y
401. DC volatage & current		
40101	DC ammeters	Y
40102	Transconductance amplifiers	Y
40103	DC voltage/current calibrators	Y
40104	Electrical temperature calibrators	Y
40105	DC current shunts	Y
40106	Galvanometers/null detectors	Y
40108	DC power supplies	Y
40111	DC voltage standards	Y
40112	DC voltmeters	Y
40113	Static/Ionic voltmeters	Y
402. Resistance, Capacitance and Inductance		
40201	Capacitance bridges /indicators	Y
40202	Decade capacitors	Y
40204	Standard capacitors	Y
40205	Earth testers	Y
40208	Inductors	Y
40210	Insulation testers	Y

Field Code	Item of Calibration	on-site
40211	Q-meters	Y
40213	Resistance bridges & Similar instruments	Y
40214	Resistance meters	Y
40215	Resistors	Y
40216	Electrical conductivity meters	Y
40217	Impedance bridges/LCR meters	Y
403. AC voltage, current & power		
40301	AC ammeters	Y
40302	Clamp ammeters/voltmeters	Y
40303	AC voltage/current calibrators	Y
40304	Wattmeter calibrators	Y
40305	AC current shunts	Y
40310	Power factor meters	Y
40311	AC power meters	Y
40312	AC power supplies	Y
40313	Puncture/safety testers	Y
40314	Power recorders	Y
40318	AC voltmeters	Y
404. Other DC & LF Measurements		
40401	LF amplifiers	Y
40402	DC/LF attenuators	Y
40403	Multimeter calibrators	Y
40404	Oscilloscope calibrators	Y
40406	Video signal generators	Y
40407	Audio distortion analyzers/ meters	Y
40408	LF filters	Y
40409	LF/Audio signal analyzers	Y
40410	Line Frequency meters	Y
40411	Function generators	Y
40412	Genescopes	Y
40413	AC/DC high voltages volt meters	Y
40416	Leakage current testers	Y
40417	Electronic AC/DC loads	Y
40419	Analogue/Digital multimeters	Y
40420	Noise meters	Y
40421	Oscilloscopes	Y
40422	LF phase meters	Y
40423	Random wave generators	Y
40424	Volt/Current recorders	Y
40425	Relay test sets	Y
40426	LF signal generators	Y
40427	LF spectrum analyzers	Y
40429	Sweep generators	Y
40432	Transistor curve tracers	Y
40433	Waveform analyzers	Y
40434	AC/DC high voltage genarators	Y
40435	AC/DC high voltage probes	Y
40436	Logic analyzers	Y
40437	Telephone testers	Y
40438	Video signal analyzers	Y
405. Low frequency electric & magnetic field		
40503	Flux meters	N
40504	Flux sources	N
40508	Magnetometers	N
40510	Reference/standard magnets	N
406. Radio frequency measurements		
40601	RF amplifiers	Y
40602	Coaxial attenuators	Y
40605	Burst pulse generators	Y
40606	Attenuator calibrators	Y
40607	RF power meter calibrators	Y
40608	EMC transducers ; current probes, absorbing clamps,etc.	Y
40610	Coaxial directional couplers/splitters	Y
40613	Electrostatic Discharge Generators	Y
40614	EMC receivers	Y
40615	RF filters	Y
40616	RF impedance meters	Y
40617	RF impulse generators	Y
40618	Line impedance stabilization networks; LISN, CDN, ISN,etc.	Y
40619	Coaxial standard mismatches	Y
40621	Mobile communication test sets	Y
40622	Modulation meters	Y
40623	Network analyzers	Y
40624	Noise figure meters	Y
40625	Noise generators	Y
40626	Noise impulse simulators	Y
40635	RF power meters	Y
40636	Diode power sensors	Y
40637	Thermocouple Power sensors	Y
40638	Pulse generators	Y
40639	Radar test sets	Y
40640	RF signal generators	Y
40641	RF spectrum analyzers	Y
40642	RF speed guns	Y
40643	Surge generators	Y
40645	RF terminations	Y
40646	Coaxial thermistor mounts	Y
40648	Transmission trouble testers	Y
40650	RF voltmeters	Y
40651	Vector voltmeters	Y
40652	Field strength meters	Y
40653	AM/FM test sources	Y
40654	Dip simulators	Y
407. Field strength & antennas		
40702	Probes	N
40703	Dipole antennas	N
40704	Loop antennas	N
40705	Monopole antennas	N
40707	Horn antennas	N
501. Contact thermometry		
50101	Temperature generators: ovens, furnaces, isothermal liquid baths, ice-point baths, dry-block calibrators	Y
50102	Temperature indicators/ recorders/controllers, temperature calibrators	Y
50103	Glass thermometers; liquid-in-glass, Beckmann	N
50104	Resistance thermometers; SPRT, IPRT, thermistors,etc.	Y
50105	Thermal expansion thermometers ; bimetal, gas or liquid type	Y
50106	Thermomecoules: noble metal, base metal, pure metal, special type, etc.	Y
50107	Temperature transducers	Y
502. Non contact thermometry		
50204	Standard radiation thermometers	N
50205	Thermal image apparatus	N
503. Humidity		
50301	Dew-point hygrometers; chilled mirror, alumina thinfilm, etc.	N
50302	Relative humidity hygrometers; polimer thinfilm, hair, etc.	Y
50304	Temperature humidity recorders ; Hygrothermograph, etc.	N
50305	Transducers; dew-point/ relative humidity	Y
50306	Humidity generators; two-pressure,two-temperature, flow mixing humidity gererator, constant temperature and humidity chamber, etc.	Y
601. Sound in air		
60102	Sound Calibrators	Y
60104	Microphones	Y
60106	Sound level meters	Y
603. Sound in air		
60301	Vibration calibrators	Y
60302	Vibration transducers	Y
60303	Vibration measuring instruments	Y
701. Photometry		
70101	Iluminance meters	Y
702. Property of detectors & sources		
70219	UV irradiance meters	N
704. Fiber optics		
70402	Broadband light sources	N
70410	Optical attenuators	N
70413	Optical loss testers	N
70415	Optical multimeters	N
70417	Optical spectrum analyzers	N
70418	Optical time domain reflectometers; OTDR	N
70430	ASE light sources	N
70433	Optical power stabilized laser and LDs	N
901. Chemical analysis		
90103	Gas analyzers	Y

Note

1. This laboratory provides calibration services in permanent standard laboratory and at on-site.

2. Laboratory conducts on-site calibration should meet requirements of KOLAS-SR-008.

3. On-site calibration is allowed to items with marking 'Y', not allowed to items with marking 'N'.

4. Calibration and Measurement Capability (CMC) means capabilities provided by accredited calibration laboratories. It expresses the lowest uncertainty of measurement that can be achieved during a calibration. CMC normally is quoted as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of k=2.

5.Due to the calibration environment such as reference standards or customers' facilities, it is note that uncertainty of measurement on a calibration certificate may be expressed larger than CMC on scope of accreditation in general.

102. Linear dimension

Measured Quantity Instrument or Gauge	Field Code	Range	CMC (The Confidence Level is about 95 %)	Comments
Balls	10201	(0 ~ 100) mm	$\sqrt{0.27^2+(0.015\times l_0)^2}$ µm (unit of l_0 : mm)	Gauge blocks, Standard measuring machines /HCT-CS-223-10201
Dial/cylinder gauge testers	10206	(0 ~ 25) mm (25 ~ 100) mm	0.21 µm 0.25 µm	Gauge blocks, Electronic micrometers /HCT-CS-001-10206
End bars	10209	(0 ~ 500) mm (500 ~ 1 000) mm	$\sqrt{0.13^2+(0.003\times l_0)^2}$ µm $\sqrt{0.16^2+(0.003\times l_0)^2}$ µm (unit of l_0 : mm)	Gauge blocks, Electronic micrometers /HCT-CS-183-10209
Extensometers, linear displacement transducers	10210	 (0 ~ 50) mm (50 ~ 100) mm (100 ~ 1 000) mm	 $\sqrt{0.21^2+(0.002\times l_0)^2}$ µm $\sqrt{0.78^2+(0.002\times l_0)^2}$ µm $\sqrt{7.8^2+(0.002\times l_0)^2}$ µm (unit of l_0 : mm)	Gauge blocks /HCT-CS-184-10210
Filler gauges	10211	(0.01 ~ 5) mm	0.33 µm	Standard measuring machines /HCT-CS-002-10211
Gap gauges	10213	(1 ~ 300) mm	$\sqrt{2.2^2+(0.005\times l_0)^2}$ µm (unit of l_0 : mm)	Gauge blocks /HCT-CS-003-10213
Gauge blocks, by comparison	10214	(0.5 ~ 100) mm	$\sqrt{71^2+(1.3\times l_0)^2}$ nm (unit of l_0 : mm)	Gauge block comparators, Gauge blocks /HCT-CS-254-10214
Height gauges/measuring machines	10216	(0 ~ 1 000) mm	$\sqrt{1.2^2+(0.003\times l_0)^2}$ µm (unit of l_0 : mm)	Gauge blocks /HCT-CS-005-10216
Standard measuring machines	10220	(0 ~ 500) mm	$\sqrt{0.25^2+(0.002\ 1\times l_0)^2}$ µm (unit of l_0 : mm)	Gauge blocks, Long gauge blocks /HCT-CS-224-10220
Electronic micrometer	10223	(0 ~ 0.02) mm (0.02 ~ 0.2) mm (0.2 ~ 2) mm	0.08 µm 0.16 µm 0.76 µm	Gauge blocks /HCT-CS-006-10223
Height micrometers, Riser blocks Height micrometers Blocks Head Riser blocks	10224	 (0 ~ 610) mm (0 ~ 30) mm (0 ~ 600) mm	 $\sqrt{1.2^2+(0.003\times l_0)^2}$ µm (unit of l_0 : mm) $\sqrt{1.3^2+(0.003\times l_0)^2}$ µm (unit of l_0 : mm) $\sqrt{1.2^2+(0.003\times l_0)^2}$ µm (unit of l_0 : mm)	Gauge blocks, Electronic micrometers /HCT-CS-007-10224
Laser scan micrometers	10225	(1 ~ 55) mm	0.56 µm	Pin Gauge /HCT-CS-282-10225
Standard tape rules, peripheral gauges	10227	(0 ~ 13) m (13 ~ 26) m (26 ~ 39) m (39 ~ 50) m	$\sqrt{0.15^2+(0.009\times l_0)^2}$ mm $\sqrt{0.17^2+(0.011\times l_0)^2}$ mm $\sqrt{0.28^2+(0.011\times l_0)^2}$ mm $\sqrt{0.48^2+(0.011\times l_0)^2}$ mm (unit of l_0 : m)	Laser interferometers, Tape measure calibration system /HCT-CS-241-10227
Cylindrical plug/pin gauges, thread measuring wire gauges Cylindrical plug/pin gauges	10228	 (0.1 ~ 100) mm	 $\sqrt{0.29^2+(0.003\times l_0)^2}$ µm (unit of l_0 : mm)	Standard measuring machines /HCT-CS-008-10228

102. Linear dimension

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Radius gauges	10229	(0 ~ 50) mm	3.0 μm	Profile projectors /HCT-CS-225-10229
Cylindrical ring gauges	10230	(1 ~ 100) mm	$\sqrt{0.59^2+(0.003\times l_0)^2}$ μm (unit of l_0 : mm)	Standard measuring machines Standard ring gauge /HCT-CS-226-10230
Step gauges	10232	(0 ~ 1 000) mm	$\sqrt{1.2^2+(0.002\times l_0)^2}$ μm (unit of l_0 : mm)	Gauge blocks, Electronic micrometers /HCT-CS-009-10232
Taper thickness gauges	10233	(0.1 ~ 60) mm	0.03 mm	Profile projectors /HCT-CS-242-10233
Ultrasonic thickness gauges	10234	(0 ~ 100) mm	3.6 μm	Ultrasonic thickness specimens /HCT-CS-243-10234
Ultrasonic/coating thickness specimens	10235			Gauge blocks, Standard measuring machines Electronic micrometers /HCT-CS-227-10235
Coating		(0 ~ 8) mm	1.4 μm	
Ultrasonic		(0 ~ 100) mm	$\sqrt{1.4^2+(0.002\times l_0)^2}$ μm (unit of l_0 : mm)	
Coating thickness testers	10236	(0 ~ 0.25) mm (0.25 ~ 1.05) mm (1.05 ~ 3.7) mm (3.7 ~ 7.9) mm	1.5 μm 2.0 μm 6.9 μm 6.9 μm	Coating thickness specimens /HCT-CS-228-10236
Torque arms	10237			Contact coordinate measuring machine, Standard measuring machine, /HCT-CS-287-10237
Torque Arm		(0 ~ 500) mm	$\sqrt{4.1^2+(0.010\times l_0)^2}$ μm (unit of l_0 : mm)	
Wire		(0 ~ 5) mm	0.7 μm	

103. Angle

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Bevel protractors	10304			Angle Gauge blocks, Precision surface plates, Profile projectors /HCT-CS-251-10304
Angle accuracy		0° ~ 90° 90° ~ 360°	1.3′ 2.0′	
Angle of accessories		0° ~ 360°	2.3′	
Plate/square/electric levels	10311			Fine angle generators, Electronic micrometers Squareness testers, Precision surface plates /HCT-CS-252-10311
Angle		±200″ ±1 000″ ±2 000″	0.3″ 0.5″ 0.9″	
Squareness		(0 ~ 300) mm	2.2 μm	
Flatness		300 mm × 60 mm	0.9 μm	
Precisionsquares	10320			Cylinderical Square, Squareness testers, Precision squares, /HCT-CS-278-10320
Squareness		(0 ~ 450) mm	$\sqrt{2.0^2+0.003^2\times l_0^2}$ μm (l_0 :height, unit: mm)	
Parallelism		(0 ~ 450) mm	1.2 μm	
Straightness		(0 ~ 450) mm	2.9 μm	

104. Form

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Form testers	10401			Form standard specimens, standard scales, Gauge blocks
Z-axis		(0 ~ 60) mm	0.16 μm	
X-axis		(0 ~ 200) mm	$\sqrt{0.57^2+(0.002\times l_0)^2}$ μm	Angle gauge blocks
Angle		(0 ~ 180) °	1.3 ´	/HCT-CS-284-10401

104. Form

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Optical flats	10404	Ø (10 ~ 130) mm	0.06 μm	Optical Flat, Monochromatic Light Sources /HCT-CS-229-10404
Optical parallels	10405			Optical flats, Gauge block comparators /HCT-CS-230-10405
Flatness		Ø (10 ~ 30) mm	0.066 μm	
Parallelism		Ø (10 ~ 30) mm	0.080 μm	
Parallel blocks	10406			Electronic Micrometer, Precision surface plates, Test bars /HCT-CS-285-10406
Parallelism		(0 ~ 1 000) mm	1.2 μm	
Flatness		(0 ~ 1 000) mm	1.2 μm	
Difference of both blocks		(0 ~ 1 000) mm	1.8 μm	
Accreditation No. : KC00-011(3/132)				
Precision surface plates	10407			Elecric levels /HCT-CS-010-10407
Area		(0 ~ 2 500) ㎠	1.5 μm	
		(2 500 ~ 5 000) ㎠	1.9 μm	
		(5 000 ~ 10 000) ㎠	2.3 μm	
		(10 000 ~ 15 000) ㎠	2.5 μm	
		(15 000 ~ 30 000) ㎠	3.4 μm	
		(30 000 ~ 60 000) ㎠	4.2 μm	
Roundness measurement instruments	10409			Roundness standard specimens, Cylindrical squares, Optical flats /HCT-CS-279-10409
Accuracy of detector		(0 ~ 1 000) μm	0.50 μm	
Rotation accuracy of circumference direction		(0 ~ 360) °	16 nm	
Rotation accuracy of shaft direction		(0 ~ 360) °	16 nm	
Straightness		(0 ~ 300) mm	1.1 μm	
Straight rules	10413	(0 ~ 3 000) mm	$\sqrt{0.29^2+(0.009\times l_0)^2}$ mm (unit of l_0 : m)	Laser interfarometer, Tape measure calibration system /HCT-CS-244-10413

105. Complex geometry

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Contact coordinate measuring machines	10503			Step gauges, Precision Square, Straight edges /HCT-CS-011-10503
Accuracy		(0 ~ 600) mm	$\sqrt{0.53^2+(0.003\times l_0)^2}$ μm (unit of l_0 : mm)	
straightness		(0 ~ 600) mm	2.1 μm	
squareness		(0 ~ 600) mm	3.1 ″	

105. Complex geometry

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Non-contact coordinate measuring machines Accuracy	10504	(0 ~ 1 000) mm	$\sqrt{0.43^2+(0.003\times l_0)^2}$ μm (unit of l_0 : mm)	Standard scale / HCT-CS-012-10504
Measuring microscopes, profile projectors Length accuracy Right angle accuracy magnification accuracy Squareness accuracy	10511	(0 ~ 300) mm (0 ~ 360)° ×2 ~ ×100 (0 ~ 300) mm	$\sqrt{0.45^2+(0.003\times l_0)^2}$ μm (unit of l_0 : mm) 1.7′ 3.2×10^{-4} 3.6 μm	Standard scale, Precision Square, /HCT-CS-013-10511
Micro measuring microscopes	10512	(0 ~ 50) mm	2.7 μm	Standard scale /HCT-CS-014-10512
Thread plug gauges External diameter Effective diameter Pitch Half angle	10525	(1 ~ 100) mm (1 ~ 100) mm (0.2 ~ 6) mm (0 ~ 45)°	0.48 μm 1.6 μm 1.2 μm 1.8′	Standard measuring machines Thread Measuring Wires Projectors /HCT-CS-016-10525
V-blocks, box blocks Flatness Parallelism Gradient Difference of both part Squareness	10529	(0 ~ 150) mm (0 ~ 150) mm (0 ~ 150) mm (0 ~ 150) mm (0 ~ 150) mm	0.80 μm 0.95 μm 0.56 μm 1.1 μm $\sqrt{2.0^2+0.003^2\times l_0^2}$ μm (l_0 :height, unit: mm)	pin gauges, Test bars, Precision surface plates, Electronic micrometers /HCT-CS-283-10529

106. Various dimensional

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Inside/outside/gear tooth calipers, caliper gauges	10601	(0 ~ 150) mm (150 ~ 1 500) mm	$\sqrt{3.8^2+(0.007\times l_0)^2}$ μm $\sqrt{7.6^2+(0.007\times l_0)^2}$ μm (unit of l_0 : mm)	Gauge blocks /HCT-CS-017-10601
Cylinder/bore gauges Cylinder gauges Bore gauges	10603	(0 ~ 800) mm (0.5 ~ 18.5) mm	0.96 μm 0.76 μm	Dial gauge testers, Gauge blocks /HCT-CS-019-10603
Depth gauges, depth micrometers	10604	(0 ~ 300) mm (300 ~ 1 000) mm	$\sqrt{0.9^2+(0.005\times l_0)^2}$ μm $\sqrt{7.2^2+(0.004\times l_0)^2}$ μm (unit of l_0 : mm)	Gauge blocks /HCT-CS-020-10604
Dial/digital gauges	10605	(0 ~ 50) mm (50 ~ 150) mm	$\sqrt{0.15+(0.002\times l_0)^2}$ μm $\sqrt{0.79+(0.002\times l_0)^2}$ μm (unit of l_0 : mm)	Gauge blocks /HCT-CS-021-10605

106. Various dimensional

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Micro indicators, Test indicators	10609	(0 ~ 2) mm	0.63 μm	Dial gauge testers / HCT-CS-022-10609
Micrometer heads	10610	(0 ~ 50) mm	0.61 μm	Gauge blocks, Electronic micrometers / HCT-CS-023-10610
3-point micrometers	10611	(1 ~ 200) mm	3.4 μm	Standard ring gauge Precision surface plates /HCT-CS-231-10611
Inside micrometers	10612	(5 ~ 300) mm (300 ~ 1 500) mm	$\sqrt{1.6^2+(0.005\times l_0)^2}$ μm $\sqrt{2.3^2+(0.005\times l_0)^2}$ μm (unit of l_0 : mm)	Gauge blocks / HCT-CS-026-10612
Outside micrometers	10613	(0 ~ 25) mm (25 ~ 100) mm (100 ~ 1 500) mm	$\sqrt{0.36^2+(0.004\times l_0)^2}$ μm $\sqrt{0.79^2+(0.004\times l_0)^2}$ μm $\sqrt{2.5^2+(0.004\times l_0)^2}$ μm (unit of l_0 : mm)	Gauge blocks / HCT-CS-027-10613
Particle Counters Airbone particle counter Laser reference voltage Flow rate Threshold voltage Counting efficiency CPC OPC Liquid particle counter Laser reference voltage Flow rate Threshold voltage	10615	 (0 ~ 10) V (0 ~ 100) L/min (0 ~ 6) V (6 ~ 10) V (0 ~ 1.0) μm (0.1 ~ 1.0) μm (0 ~ 10) V (0 ~ 300) mL/min (0 ~ 6) V (6 ~ 10) V	 4.2×10^{-3} 2.3×10^{-2} 2.1×10^{-3} 4.2×10^{-3} 3.0 % 4.7 % 4.2×10^{-3} 2.8×10^{-2} 2.1×10^{-3} 4.2×10^{-3}	CRM Standard, Flowmeter, CPC, OPC / HCT-CS-028-10615 / HCT-CS-029-10615
Standard sieves Sieve opening Wire rod diameter	10617	 (0.01 ~ 8) mm (0.01 ~ 125) mm	 1.6 μm 2.6 μm	Profile projectors /HCT-CS-232-10617
Welding gauges Height/depth measuring scale Thick measuring scale Rule measuring scale Angle measuring scale Taper measuring scale	10620	 (0 ~ 100) mm (0 ~ 16) mm (0 ~ 50) mm (0 ~ 90) ° (0 ~ 7) mm	 0.009 mm 0.009 mm 0.096 mm 0.13 ° 0.096 mm	Profile projectors /HCT-CS-246-10620
Particle dilution Systems PCRF	10622	 (30 ~ 100) nm	 8.2×10^{-2}	ELECTRICAL PARTICLE SIZER, CPC/HCT-CS-256-10622

201. Mass and related quantities

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Counter beam balances	20105	(0 ~ 311) g (311 ~ 2 610) g (2.61 ~ 20) kg	9.6 mg 82 mg 0.82 g	Standard weights /HCT-CS-233-20105
Direct reading balances	20108	(0 ~ 160) g	0.19 mg	Weights/HCT-CS-031-20108
Electric balances	20109	(0 ~ 20) g (20 ~ 200) g (200 ~ 2000) g (2 ~ 26) kg (26 ~ 60) kg (60 ~ 100) kg (100 ~ 150) kg (150 ~ 200) kg (200 ~ 300) kg (300 ~ 600) kg	0.062 mg 0.19 mg 1.8 mg 21 mg 0.72 g 1.7 g 6.2 g 12 g 58 g 0.12 kg	Standard weights /HCT-CS-032-20109
Platform scale balances	20112	(0 ~ 20) kg (20 ~ 200) kg	1.2 g 0.058 kg	Standard weights /HCT-CS-234-20112
Spring scale balances	20113	(0 ~ 1) kg (1 ~ 2) kg (2 ~ 5) kg (5 ~ 10) kg (10 ~ 30) kg (30 ~ 50) kg	2.9 g 5.8 g 12 g 29 g 58 g 0.12 kg	Standard weights /HCT-CS-235-20113
Weights F1 class	20116	 1 mg 2 mg 5 mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg	 4.6 µg 4.6 µg 4.6 µg 5.1 µg 5.1 µg 5.8 µg 6.6 µg 7.4 µg 9.1 µg 11 µg 14 µg 17 µg 21 µg 27 µg 36 µg 55 µg 0.11 mg 0.29 mg 0.55 mg 1.1 mg 2.9 mg 5.5 mg 11 mg	Standard weights, Mass comparators /HCT-CS-033-20116

202. Force

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Force measuring devices	20202			hydraulic force standards,
Force		(0.5 ~ 5) kN	4.1×10^{-5}	Deadweight force standards
		(5 ~ 10) kN	3.1×10^{-4}	/ HCT-CS-253-20202
		(10 ~ 20) kN	3.0×10^{-4}	
		(20 ~ 50) kN	3.6×10^{-4}	
		(50 ~ 100) kN	4.0×10^{-4}	
Tension/compression testing machines	20203			Electric force measuring devices
Compression		(0 ~ 10) N	1.5×10^{-3}	/HCT-CS-236-20203
		(10 ~ 20) N	1.4×10^{-3}	
		(20 ~ 50) N	1.3×10^{-3}	
		(50 ~ 100) N	1.3×10^{-3}	
		(100 ~ 200) N	1.4×10^{-3}	
		(200 ~ 500) N	1.4×10^{-3}	
		(500 ~ 1 000) N	1.5×10^{-3}	
		(1 ~ 2) kN	1.7×10^{-3}	
		(2 ~ 5) kN	1.4×10^{-3}	
		(5 ~ 10) kN	1.6×10^{-3}	
		(10 ~ 20) kN	1.8×10^{-3}	
		(20 ~ 50) kN	1.4×10^{-3}	
		(50 ~ 100) kN	1.4×10^{-3}	
		(100 ~ 200) kN	1.5×10^{-3}	
		(200 ~ 500) kN	1.5×10^{-3}	
		(500 ~ 1 000) kN	1.7×10^{-3}	
Tension		(0 ~ 50) N	1.4×10^{-3}	
		(50 ~ 100) N	1.4×10^{-3}	
		(100 ~ 200) N	1.3×10^{-3}	
		(200 ~ 500) N	1.3×10^{-3}	
		(500 ~ 1 000) N	1.4×10^{-3}	
		(1 ~ 2) kN	1.6×10^{-3}	
		(2 ~ 5) kN	1.3×10^{-3}	
		(5 ~ 10) kN	1.5×10^{-3}	
		(10 ~ 20) kN	1.7×10^{-3}	
		(20 ~ 50) kN	1.4×10^{-3}	
		(50 ~ 100) kN	1.6×10^{-3}	
		(100 ~ 200) kN	1.6×10^{-3}	
Push-pull gauges	20204	(0.2 ~ 50) N	1.5×10^{-3}	Deadweight force standards,
		(50 ~ 1 000) N	1.3×10^{-3}	Weights
		(1 000 ~ 2 000) N	1.6×10^{-3}	/HCT-CS-034-20204
		(2 000 ~ 5 000) N	1.5×10^{-3}	

203. Torque

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Torque measuring devices	20302	(0.05 ~ 100) N·m	7.1×10^{-3}	Weights, Torque arm /HCT-CS-036-20302
Torque wrenches/drivers	20303			Torque testers
clockwise		(0.1 ~ 1) N·m	1.2×10^{-2}	/HCT-CS-037-20303
		(1 ~ 2.5) N·m	9.6×10^{-3}	
		(2.5 ~ 5) N·m	7.0×10^{-3}	
		(5 ~ 10) N·m	5.2×10^{-3}	
		(10 ~ 25) N·m	3.8×10^{-3}	
		(25 ~ 50) N·m	4.0×10^{-3}	
		(50 ~ 100) N·m	6.9×10^{-3}	
		(100 ~ 250) N·m	3.6×10^{-3}	
		(250 ~ 500) N·m	3.2×10^{-3}	
		(500 ~ 1 000) N·m	5.1×10^{-3}	
		(1 000 ~ 2 000) N·m	9.4×10^{-3}	
counterclockwise		(0.1 ~ 1) N·m	1.1×10^{-2}	
		(1 ~ 2.5) N·m	1.0×10^{-2}	
		(2.5 ~ 5) N·m	7.4×10^{-3}	
		(5 ~ 10) N·m	5.0×10^{-3}	
		(10 ~ 25) N·m	4.8×10^{-3}	
		(25 ~ 50) N·m	4.0×10^{-3}	
		(50 ~ 100) N·m	1.0×10^{-2}	
		(100 ~ 250) N·m	2.9×10^{-3}	
		(250 ~ 500) N·m	2.9×10^{-3}	
		(500 ~ 1 000) N·m	5.0×10^{-3}	
		(1 000 ~ 2 000) N·m	9.8×10^{-3}	

204. Pressure

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Absolute pressure gauges	20406	60 kPa abs. ~ 7 MPa abs.	1.5×10^{-4}	Pressure calibrators / HCT-CS-255-20406
Compound pressure gauges	20408	-95 kPa ~ 7 MPa	2.4×10^{-3}	Pressure calibrators Dead weight tester / HCT-CS-215-20408
Differential pressure gauges	20409			Pressure calibrators
Pneumatic		(0 ~ 7) MPa	1.6×10^{-4}	Dead weight tester / HCT-CS-188-20409
Gauge pressure gauges	20411			Pressure calibrators
Gauge pressure gauges, Pressure generators/controllers				Pneumatic Pressure balance, Hydraulic Pressure balance
Pneumatic		(0 ~ 350) kPa	3.2×10^{-4}	/ HCT-CS-039-20411
		(0.35 ~ 5) MPa	1.3×10^{-4}	
		(5 ~ 10) MPa	2.0×10^{-4}	
Hydraulic		(0.5 ~ 200) MPa	1.3×10^{-4}	
Pressure recorders				
Pneumatic		(0 ~ 350) kPa	9.2×10^{-4}	
		(0.35 ~ 5) MPa	1.5×10^{-3}	
		(5 ~ 10) MPa	2.9×10^{-3}	
Hydraulic		(0.5 ~ 200) MPa	1.6×10^{-3}	

204. Pressure

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Pressure transducers/transmitters	20412			Pressure calibrators
Pneumatic		(0 ~ 350) kPa	4.1×10^{-4}	Dead weight tester
		(0.35 ~ 5) MPa	3.6×10^{-4}	/ HCT-CS-169-20412
		(5 ~ 10) MPa	3.7×10^{-4}	
		60 kPa abs. ~ 7 MPa abs.	3.7×10^{-4}	
Hydraulic		(0.5 ~ 200) MPa	3.3×10^{-4}	
Dial type vacuum gauges	20413	(-95 ~ 0) kPa	6.9×10^{-4}	Pressure calibrators /HCT-CS-245-20414
Water Depth meters	20414	(0 ~ 2) MPa	1.5×10^{-4}	Pressure calibrators /HCT-CS-245-20414

208. Viscosity

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Dynamic viscometers	20802			Viscosity stnadard
Rotational Viscometers		(2.5 ~ 200 000) mPa · s	1.7×10^{-2}	/HCT-CS-288-20802

209. Fluid flow

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Anemometers; hot-wire	20901	(0.1 ~ 2) m/s	5.8×10^{-2}	Laser Doppler
		(2 ~ 55) m/s	4.4×10^{-3}	/ HCT-CS-272-20901
Anemometers; pitot tube, etc.	20902	(0.1 ~ 2) m/s	5.8×10^{-2}	Laser Doppler
		(2 ~ 55) m/s	4.4×10^{-3}	/ HCT-CS-273-20902
Anemometers; vane, etc.	20925	(0.1 ~ 2) m/s	5.8×10^{-2}	Laser Doppler
		(2 ~ 55) m/s	4.4×10^{-3}	/ HCT-CS-274-20925

301. Time/frequency

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Frequency standards	30102			Atomic clock
Timebase Frequency		100 kHz ~ 10 MHz	4.5×10^{-13}	/HCT-CS-040-30102
General frequency sources	30103			Atomic clock
Timebase Frequency		100 kHz ~ 100 MHz	2.6×10^{-12}	/HCT-CS-041-30103
Frequency meters/counters	30104			standard frequency,
Input Frequency		DC ~ 3 GHz	6.1×10^{-12}	General frequency sources
		3 GHz ~ 40 GHz	0.58 Hz	/HCT-CS-042-30104
Timebase Frequency		100 kHz ~ 10 MHz	2.6×10^{-12}	

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301. Time/frequency

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Time interval sources	30105			Frequency Counterss
Time interval		0.1 ns ~ 1 ns	5.8×10^{-7}	/HCT-CS-043-30105
		1 ns ~ 10 ns	5.8×10^{-7}	
		10 ns ~ 100 ns	5.8×10^{-7}	
		100 ns ~ 1 µs	5.8×10^{-7}	
		1 µs ~ 10 µs	5.8×10^{-7}	
		10 µs ~ 100 µs	5.8×10^{-7}	
		100 µs ~ 1 ms	5.8×10^{-7}	
		1 ms ~ 10 ms	5.8×10^{-7}	
		10 ms ~ 100 ms	5.8×10^{-7}	
		100 ms ~ 5 s	5.8×10^{-7}	
Frequency		0.1 Hz ~ 1 Hz	5.8×10^{-7}	
		1 Hz ~ 10 Hz	5.8×10^{-7}	
		10 Hz ~ 100 Hz	5.8×10^{-7}	
		100 Hz ~ 1 kHz	5.8×10^{-7}	
		1 kHz ~ 10 kHz	5.8×10^{-7}	
		10 kHz ~ 100 kHz	5.8×10^{-7}	
		100 kHz ~ 1 MHz	5.8×10^{-7}	
		1 MHz ~ 10 MHz	5.8×10^{-7}	
		10 MHz ~ 100 MHz	5.8×10^{-7}	
		100 MHz ~ 1 GHz	5.8×10^{-7}	
Time interval meters/Stop watches /Timers	30106			Atomic clock /HCT-CS-044-30106
Time		1 ms ~ 86 400 s	7.2×10^{-8}	
Period		(1 ~ 10 000) s	5.8×10^{-6}	

302. Velocity & revolution

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Standard RPM generators	30201	(1 ~ 1 000) min^{-1}	6.2×10^{-2} min^{-1}	Atomic clock
		(1 000 ~ 100 000) min^{-1}	6.2×10^{-1} min^{-1}	/HCT-CS-045-30201
Contact type tachometers	30202	(1 ~ 4 000) min^{-1}	6.1×10^{-2} min^{-1}	Atomic clock /HCT-CS-046-30202
Photo tachometers/stroboscopes	30203	(1 ~ 300) min^{-1}	6.2×10^{-3} min^{-1}	Atomic clock
		(300 ~ 6 000) min^{-1}	6.2×10^{-2} min^{-1}	/HCT-CS-047-30203
		(6 000 ~ 100 000) min^{-1}	6.2×10^{-1} min^{-1}	
Wow-flutter generators	30205			Atomic clock
Wow-flutter Deflection		0.01 % ~ 3 %	1.9×10^{-5}	/HCT-CS-049-30205
Frequency		0.1 Hz ~ 99.99 kHz	5.8×10^{-4}	
Level		100 mV ~ 10 V	8.0×10^{-3}	

302. Velocity & revolution

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Wow-flutter meters	30206			Wow-flutter measure
Wow-flutter Deflection		0.01 %	2.4×10^{-4}	/HCT-CS-050-30206
		0.03 %	4.6×10^{-4}	
		0.1 %	1.6×10^{-3}	
		0.3 %	4.6×10^{-3}	
		1 %	1.5×10^{-2}	
		3 %	4.5×10^{-2}	
Input frequency		10 Hz	0.58 Hz	
		99.99 kHz	5.8 Hz	
Output frequency		3.00 kHz	0.58 Hz	
		3.15 kHz	0.58 Hz	
CCIR PULSE		10 ms ~ 100 ms	1.5×10^{-2}	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC ammeters	40101			Current Calibrators,
DC Current		Positive		Multimeter calibrators
		10 pA	7.1 fA	/ HCT-CS-051-40101
		(10 ~ 40) pA	16 fA	
		(40 ~ 80) pA	29 fA	
		(80 ~ 100) pA	36 fA	
		(100 ~ 400) pA	48 fA	
		(400 ~ 800) pA	95 fA	
		(0.8 ~ 4) nA	0.12 pA	
		(4 ~ 8) nA	0.21 pA	
		(8 ~ 10) nA	0.27 pA	
		(10 ~ 40) nA	1.3 pA	
		(40 ~ 80) nA	2.2 pA	
		(80 ~ 100) nA	2.7 pA	
		(100 ~ 400) nA	12 pA	
		(400 ~ 800) nA	24 pA	
		(0.8 ~ 1) μA	7.0 nA	
		(1 ~ 4) μA	7.2 nA	
		(4 ~ 10) μA	7.4 nA	
		(10 ~ 40) μA	9.1 nA	
		(40 ~ 80) μA	11 nA	
		(80 ~ 100) μA	12 nA	
		(100 ~ 400) μA	29 nA	
		(400 ~ 800) μA	44 nA	
		(0.8 ~ 1) mA	51 nA	
		(1 ~ 4) mA	0.26 μA	
		(4 ~ 8) mA	0.40 μA	
		(8 ~ 10) mA	0.48 μA	
		(10 ~ 40) mA	3.1 μA	
		(40 ~ 80) mA	5.1 μA	
		(80 ~ 100) mA	8.6 μA	
		(100 ~ 800) mA	15 μA	
		(0.8 ~ 1) A	0.13 mA	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Current	40101	(1 ~ 4) A	0.83 mA	
		(4 ~ 8) A	1.1 mA	
		(8 ~ 10) A	1.2 mA	
		(10 ~ 80) A	36 mA	
		(80 ~ 100) A	37 mA	
		Negative		
		-10 pA	7.1 fA	
		(-10 ~ -40) pA	16 fA	
		(-40 ~ -80) pA	29 fA	
		(-80 ~ -100) pA	36 fA	
		(-100 ~ -400) pA	48 fA	
		(-400 ~ -800) pA	95 fA	
		(-0.8 ~ -4) nA	0.12 pA	
		(-4 ~ -8) nA	0.21 pA	
		(-8 ~ -10) nA	0.27 pA	
		(-10 ~ -40) nA	1.3 pA	
		(-40 ~ -80) nA	2.2 pA	
		(-80 ~ -100) nA	2.7 pA	
		(-100 ~ -400) nA	12 pA	
		(-400 ~ -800) nA	24 pA	
		(-0.8 ~ -1) μA	7.0 nA	
		(-1 ~ -4) μA	7.2 nA	
		(-4 ~ -10) μA	7.4 nA	
		(-10 ~ -40) μA	9.1 nA	
		(-40 ~ -80) μA	11 nA	
		(-80 ~ -100) μA	12 nA	
		(-100 ~ -400) μA	29 nA	
		(-400 ~ -800) μA	44 nA	
		(-0.8 ~ -1) mA	51 nA	
		(-1 ~ -4) mA	0.26 μA	
		(-4 ~ -8) mA	0.40 μA	
		(-8 ~ -10) mA	0.48 μA	
		(-10 ~ -40) mA	3.1 μA	
		(-40 ~ -80) mA	5.1 μA	
		(-80 ~ -100) mA	8.6 μA	
		(-100 ~ -800) mA	15 μA	
		(-0.8 ~ -1) A	0.13 mA	
		(-1 ~ -4) A	0.83 mA	
		(-4 ~ -8) A	1.1 mA	
		(-8 ~ -10) A	1.2 mA	
		(-10 ~- 80) A	36 mA	
		(-80 ~ -100) A	37 mA	
Transconductance amplifiers	40102			Current shunts,
DC Current		0 μA	1.2 nA	Multimeter calibrators
		Positive		/ HCT-CS-052-40102
		(0 ~ 40) μA	1.5 nA	
		(40 ~ 80) μA	2.3 nA	
		(80 ~ 100) μA	2.8 nA	
		(100 ~ 400) μA	13 nA	
		(400 ~ 800) μA	22 nA	
		(0.8 ~ 1) mA	26 nA	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Current	40102	(1 ~ 4) mA	0.12 μA	
		(4 ~ 8) mA	0.21 μA	
		(8 ~ 10) mA	0.25 μA	
		(10 ~ 40) mA	1.3 μA	
		(40 ~ 80) mA	2.2 μA	
		(80 ~ 100) mA	2.6 μA	
		(100 ~ 400) mA	14 μA	
		(400 ~ 800) mA	23 μA	
		(0.8 ~ 1) A	28 μA	
		(1 ~ 4) A	0.16 mA	
		(4 ~ 8) A	0.28 mA	
		(8 ~ 10) A	0.34 mA	
		(10 ~ 40) A	2.0 mA	
		(40 ~ 80) A	3.7 mA	
		(80 ~ 100) A	4.5 mA	
		Negetive		
		(0 ~ -40) μA	1.5 nA	
		(-40 ~ -80) μA	2.3 nA	
		(-80 ~ -100) μA	2.8 nA	
		(-100 ~ -400) μA	13 nA	
		(-400 ~ -800) μA	22 nA	
		(-0.8 ~ -1) mA	26 nA	
		(-1 ~ -4) mA	0.12 μA	
		(-4 ~ -8) mA	0.21 μA	
		(-8 ~ -10) mA	0.25 μA	
		(-10 ~ -40) mA	1.3 μA	
		(-40 ~ -80) mA	2.2 μA	
		(-80 ~ -100) mA	2.6 μA	
		(-100 ~ -400) mA	14 μA	
		(-400 ~ -800) mA	23 μA	
		(-0.8 ~ -1) A	28 μA	
		(-1 ~ -4) A	0.16 mA	
		(-4 ~ -8) A	0.28 mA	
		(-8 ~ -10) A	0.34 mA	
		(-10 ~ -40) A	2.0 mA	
		(-40 ~ -80) A	3.7 mA	
		(-80 ~ -100) A	4.5 mA	
AC Current		50 Hz		
		100 μA	21 nA	
		(100 ~ 400) μA	93 nA	
		(400 ~ 800) μA	0.13 μA	
		(0.8 ~ 1) mA	0.15 μA	
		(1 ~ 4) mA	0.89 μA	
		(4 ~ 8) mA	1.3 μA	
		(8 ~ 10) mA	1.4 μA	
		(10 ~ 40) mA	9.0 μA	
		(40 ~ 80) mA	13 μA	
		(80 ~ 100) mA	14 μA	
		(100 ~ 400) mA	90 μA	
		(400 ~ 800) mA	0.12 mA	
		(0.8 ~ 1) A	0.14 mA	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40102	(1 ~ 4) A	0.91 mA	
		(4 ~ 8) A	1.3 mA	
		(8 ~ 10) A	1.5 mA	
		(10 ~ 40) A	9.6 mA	
		(40 ~ 80) A	14 mA	
		(80 ~ 100) A	17 mA	
		(50 Hz ~ 100 Hz)		
		100 μA	21 nA	
		(100 ~ 400) μA	93 nA	
		(400 ~ 800) μA	0.13 μA	
		(0.8 ~ 1) mA	0.15 μA	
		(1 ~ 4) mA	0.89 μA	
		(4 ~ 8) mA	1.3 μA	
		(8 ~ 10) mA	1.4 μA	
		(10 ~ 40) mA	9.0 μA	
		(40 ~ 80) mA	13 μA	
		(80 ~ 100) mA	14 μA	
		(100 ~ 400) mA	90 μA	
		(400 ~ 800) mA	0.12 mA	
		(0.8 ~ 1) A	0.14 mA	
		(1 ~ 4) A	0.91 mA	
		(4 ~ 8) A	1.3 mA	
		(8 ~ 10) A	1.5 mA	
		(10 ~ 40) A	9.6 mA	
		(40 ~ 80) A	14 mA	
		(80 ~ 100) A	17 mA	
		(100 Hz ~ 1 kHz)		
		100 μA	21 nA	
		(100 ~ 400) μA	86 nA	
		(0.4 ~ 1) mA	0.12 μA	
		(1 ~ 4) mA	0.83 μA	
		(4 ~ 8) mA	1.1 μA	
		(8 ~ 10) mA	1.2 μA	
		(10 ~ 40) mA	8.3 μA	
		(40 ~ 80) mA	11 μA	
		(80 ~ 100) mA	12 μA	
		(100 ~ 400) mA	83 μA	
		(400 ~ 800) mA	0.11 mA	
		(0.8 ~ 1) A	0.12 mA	
		(1 ~ 4) A	0.84 mA	
		(4 ~ 8) A	1.1 mA	
		(8 ~ 10) A	1.3 mA	
		(10 ~ 40) A	9.0 mA	
		(40 ~ 80) A	13 mA	
		(80 ~ 100) A	15 mA	
		(1 kHz ~ 10 kHz)		
		100 μA	21 nA	
		(100 ~ 400) μA	96 nA	
		(400 ~ 800) μA	0.14 μA	
		(0.8 ~ 1) mA	0.16 μA	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40102	(1 ~ 4) mA	0.89 μA	
		(4 ~ 8) mA	1.3 μA	
		(8 ~ 10) mA	1.4 μA	
		(10 ~ 40) mA	9.0 μA	
		(40 ~ 80) mA	13 μA	
		(80 ~ 100) mA	14 μA	
		(100 ~ 400) mA	90 μA	
		(400 ~ 800) mA	0.12 mA	
		(0.8 ~ 1) A	0.14 mA	
		(1 ~ 4) A	0.99 mA	
		(4 ~ 8) A	1.5 mA	
		(8 ~ 10) A	1.8 mA	
		(10 ~ 40) A	13 mA	
		(40 ~ 80) A	21 mA	
		(80 ~ 100) A	26 mA	
		(10 kHz ~ 100 kHz)		
		100 μA	0.11 μA	
		(100 ~ 400) μA	0.53 μA	
		(400 ~ 800) μA	0.77 μA	
		(0.8 ~ 1) mA	0.89 μA	
		(1 ~ 4) mA	5.3 μA	
		(4 ~ 8) mA	7.6 μA	
		(8 ~ 10) mA	8.8 μA	
		(10 ~ 40) mA	53 μA	
		(40 ~ 80) mA	76 μA	
		(80 ~ 100) mA	88 μA	
		(100 ~ 400) mA	0.53 mA	
		(400 ~ 800) mA	0.76 mA	
		(0.8 ~ 1) A	0.87 mA	
		(1 ~ 4) A	5.4 mA	
		(4 ~ 8) A	7.7 mA	
		(8 ~ 10) A	8.9 mA	
		(10 ~ 40) A	54 mA	
		(40 ~ 80) A	79 mA	
		(80 ~ 100) A	91 mA	
DC voltage/current calibrators	40103			Digital Multimeter,
DC Current Source		0.1 mA	2.0 nA	Current shunts
		(0.1 ~ 1) mA	2.0×10^{-5}	/HCT-CS-053-40103
		(1 ~ 10) mA	1.3×10^{-5}	
		(10 ~ 100) mA	1.5×10^{-5}	
		(0.1 ~ 1) A	1.3×10^{-5}	
		(1 ~ 10) A	1.2×10^{-4}	
		(10 ~ 100) A	6.3×10^{-4}	
		-0.1 mA	2.0 nA	
		(-0.1 ~ -1) mA	2.0×10^{-5}	
		(-1 ~ -10) mA	1.3×10^{-5}	
		(-10 ~ -100) mA	1.5×10^{-5}	
		(-0.1 ~ -1) A	1.3×10^{-5}	
		(-1 ~ -10) A	1.2×10^{-4}	
		(-10 ~ -100) A	6.3×10^{-4}	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Voltage Source	40103	100 mV	1.2 nV	
		(0.1 ~ -1) V	1.2×10^{-5}	
		(1 ~ 10) V	9.2×10^{-6}	
		(10 ~ 100) V	1.0×10^{-5}	
		(100 ~ 1 000) V	1.2×10^{-5}	
		-100 mV	1.2 nV	
		(-0.1 ~ -1) V	1.2×10^{-5}	
		(-1 V ~ -10) V	9.2×10^{-6}	
		(-10 ~ -100) V	1.0×10^{-5}	
		(-100 ~ -1 000) V	1.2×10^{-5}	
Electrical temperature calibrators	40104			Digital Multimeter /HCT-CS-205-40104
DC Current		1 mA	78 nA	
		(1 ~10) mA	1.6×10^{-5}	
		(10 ~ 30) mA	9.3×10^{-5}	
DC Voltage		(-10 ~ 0) mV	8.4×10^{-4}	
		0 mV	0.52 μV	
		(0 ~ 10) mV	8.4×10^{-4}	
		(10 ~ 100) mV	8.5×10^{-5}	
		(0.1 ~ 30) V	6.2×10^{-5}	
Resistance		10 Ω	0.13 mΩ	
		(10 ~ 100) Ω	1.3×10^{-5}	
		(0.1 ~ 10) kΩ	1.2×10^{-5}	
		(10 ~ 100) kΩ	1.3×10^{-5}	
DC Current (Meter)		1 mA	98 nA	
		(1 ~ 10) mA	9.8×10^{-5}	
		(10 ~ 20) mA	7.5×10^{-5}	
		(20 ~ 30) mA	1.0×10^{-4}	
DC Voltage (Meter)		(-10 ~ 0) mV	1.2×10^{-3}	
		0 mV	0.71 μV	
		(0 ~ 10) mV	1.2×10^{-3}	
		(10 ~ 100) mV	1.2×10^{-4}	
		(0.1 ~ 10) V	6.2×10^{-5}	
		(10 ~ 100) V	1.4×10^{-5}	
Resistance (Meter)		10 Ω	0.72 mΩ	
		(10 ~ 100) Ω	7.2×10^{-5}	
		(0.1 ~ 1) kΩ	2.2×10^{-5}	
		(1 ~ 10) kΩ	1.8×10^{-5}	
		(10 ~ 100) kΩ	1.9×10^{-5}	
DC current shunts	40105			Digital Multimeter, Multimeter calibrators, Current Calibrators/ HCT-CS-054-40105
		0.1 mΩ	1.6×10^{-4}	
		(0.2 ~ 0.333) mΩ	1.5×10^{-4}	
		(0.333 ~ 0.5) mΩ	1.6×10^{-4}	
		(0.5 ~ 8) mΩ	1.5×10^{-4}	
		(8 ~ 10) mΩ	4.0×10^{-4}	
		(10 ~ 16) mΩ	1.4×10^{-5}	
		(16 ~ 80) mΩ	1.6×10^{-4}	
		(0.08 ~ 0.1) Ω	1.1×10^{-4}	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC current shunts	40105	(0.1 ~ 0.16) Ω	2.1×10^{-4}	
		(0.16 ~ 0.4) Ω	1.0×10^{-4}	
		(0.4 ~ 0.8) Ω	1.1×10^{-4}	
		(0.8 ~ 1) Ω	7.0×10^{-5}	
		(1 ~ 1.6) Ω	2.2×10^{-4}	
		(1.6 ~ 4) Ω	5.5×10^{-4}	
		(4 ~ 8) Ω	6.3×10^{-5}	
		(8 ~ 10) Ω	5.0×10^{-5}	
		(10 ~ 16) Ω	1.3×10^{-4}	
		(16 ~ 40) Ω	3.3×10^{-4}	
		(40 ~ 80) Ω	1.3×10^{-4}	
		(80 ~ 100) Ω	1.0×10^{-4}	
		(100 ~ 800) Ω	6.3×10^{-5}	
		(800 ~ 1 000) Ω	6.0×10^{-5}	
Galvanometers/null detectors DC Voltage	40106	(3 ~ 10) μV	5.8×10^{-3}	Multimeter calibrators, Current shunts /HCT-CS-247-40106
		(10 ~ 30) μV	9.6×10^{-3}	
		(30 ~ 100) μV	5.8×10^{-3}	
		(100 ~ 300) μV	9.6×10^{-3}	
		(0.1 ~ 1) mV	5.8×10^{-3}	
		(1 ~ 3) mV	9.6×10^{-3}	
		(3 ~ 10) mV	5.8×10^{-3}	
		(10 ~ 30) mV	9.6×10^{-3}	
		(30 ~ 100) mV	5.8×10^{-3}	
		(100 ~ 300) mV	9.6×10^{-3}	
		(0.3 ~ 1) V	5.8×10^{-3}	
		(1 ~ 3) V	9.6×10^{-3}	
		(3 ~ 10) V	5.8×10^{-3}	
		(10 ~ 30) V	9.6×10^{-3}	
		(30 ~ 100) V	5.8×10^{-3}	
		(100 ~ 300) V	9.6×10^{-3}	
		(300 ~ 1 000) V	5.8×10^{-3}	
DC power supplies DC Voltage	40108	0 V	0.79 μV	Digital Multimeter, Current shunts HCT-CS-057-40108
		Positive		
		(0 ~ 80) mV	1.1 μV	
		(80 ~ 100) mV	1.2 μV	
		(100 ~ 400) mV	8.6 μV	
		(400 ~ 800) mV	8.9 μV	
		(0.8 ~ 1) V	9.3 μV	
		(1 ~ 4) V	66 μV	
		(4 ~ 8) V	76 μV	
		(8 ~ 10) V	80 μV	
		(10 ~ 40) V	0.89 mV	
		(40 ~ 80) V	0.94 mV	
		(80 ~ 100) V	1.0 mV	
		(100 ~ 800) V	11 mV	
		(800 ~ 1 000) V	12 mV	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Voltage	40108	Negetive		
		(0 ~ -40) mV	1.1 μV	
		(-80 ~ -100) mV	1.2 μV	
		(-100 ~ -400) mV	8.6 μV	
		(-400 ~ -800) mV	8.9 μV	
		(-0.8 ~ -1) V	9.3 μV	
		(-1 ~ -4) V	66 μV	
		(-4 ~ -8) V	76 μV	
		(-8 ~ -10) V	80 μV	
		(-10 ~ -40) V	0.89 mV	
		(-40 ~ -80) V	0.94 mV	
		(-80 ~ -100) V	1.0 mV	
		(-100 ~ -400) V	11 mV	
		(-800 ~ -1 000) V	12 mV	
DC Current		0 A	0.88 nA	
		Positive		
		(0 ~ 40) μA	1.6 nA	
		(40 ~ 80) μA	2.3 nA	
		(80 ~ 100) μA	2.7 nA	
		(100 ~ 400) μA	14 nA	
		(400 ~ 800) μA	22 nA	
		(0.8 ~ 1) mA	26 nA	
		(1 ~ 4) mA	0.14 μA	
		(4 ~ 8) mA	0.22 μA	
		(8 ~ 10) mA	0.26 μA	
		(10 ~ 40) mA	1.4 μA	
		(40 ~ 80) mA	2.2 μA	
		(80 ~ 100) mA	2.7 μA	
		(100 ~ 400) mA	15 μA	
		(400 ~ 800) mA	23 μA	
		(0.8 ~ 1) A	28 μA	
		(1 ~ 4) A	0.16 mA	
		(4 ~ 8) A	0.27 mA	
		(8 ~ 10) A	0.34 mA	
		(10 ~ 40) A	2.1 mA	
		(40 ~ 80) A	3.7 mA	
		(80 ~ 100) A	4.5 mA	
		(100 ~ 200) A	41 mA	
		(200 ~ 300) A	61 mA	
		(300 ~ 500) A	0.11 A	
		(500 ~ 1 000) A	0.22 A	
		Negetive		
		(0 ~ -40) μA	1.6 nA	
		(-40 ~ -80) μA	2.3 nA	
		(-80 ~ -100) μA	2.7 nA	
		(-100 ~ -400) μA	14 nA	
		(-400 ~ -800) μA	22 nA	
		(-0.8 ~ -1) mA	26 nA	
		(-1 ~ -4) mA	0.14 μA	
		(-4 ~ -8) mA	0.22 μA	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Current	40108	(-8 ~ -10) mA	0.26 μA	
		(-10 ~ -40) mA	1.4 μA	
		(-40 ~ -80) mA	2.2 μA	
		(-80 ~ -100) mA	2.7 μA	
		(-100 ~ -400) mA	15 μA	
		(-400 ~ -800) mA	23 μA	
		(-0.8 ~ -1) A	28 μA	
		(-1 ~ -4) A	0.16 mA	
		(-4 ~ -8) A	0.27 mA	
		(-8 ~ -10) A	0.34 mA	
		(-10 ~ -40) A	2.1 mA	
		(-40 ~ -80) A	3.7 mA	
		(-80 ~ -100) A	4.5 mA	
		(-100 ~ -200) A	41 mA	
		(-200 ~ -300) A	61 mA	
		(-300 ~ -500) A	0.11 A	
		(-500 ~ -1 000) A	0.22 A	
Ripple		1 mV	88 μV	
		(1 ~ 5) mV	0.10 mV	
		(5 ~ 10) mV	0.19 mV	
		(10 ~ 20) mV	0.96 mV	
Load regulation		(1 ~ 5) mV	1.1 μV	
		(5 ~ 50) mV	5.8 μV	
		(50 ~ 500) mV	58 μV	
DC voltage standards	40111			Standard cells,
DC Voltage		1.018 V	4.8×10^{-7}	Digital Multimeter
		10 V	2.4×10^{-6}	/HCT-CS-275-40111
DC voltmeters	40112			Current Calibrators,
DC Voltage		0 V	0.78 μV	Multimeter calibrators
		Positive		/HCT-CS-197-40112
		(0 ~ 4) mV	0.81 μV	
		(4 ~ 8) mV	0.84 μV	
		(8 ~ 10) mV	0.85 μV	
		(10 ~ 40) mV	1.0 μV	
		(40 ~ 80) mV	1.3 μV	
		(80 ~ 100) mV	1.5 μV	
		(100 ~ 400) mV	6.9 μV	
		(400 ~ 800) mV	8.2 μV	
		(0.8 ~ 1) V	9.0 μV	
		(1 ~ 4) V	64 μV	
		(4 ~ 8) V	71 μV	
		(8 ~ 10) V	75 μV	
		(10 ~ 40) V	0.67 mV	
		(40 ~ 80) V	0.80 mV	
		(80 ~ 100) V	0.88 mV	
		(100 ~ 400) V	8.0 mV	
		(400 ~ 800) V	9.0 mV	
		(400 ~ 1 000) V	11 mV	

401. DC volatage & current

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Voltage	40112	Negetive		
		(0 ~ -4) mV	0.81 μV	
		(-4 ~ -8) mV	0.84 μV	
		(-8 ~ -10) mV	0.85 μV	
		(-10 ~ -40) mV	1.0 μV	
		(-40 ~ -80) mV	1.3 μV	
		(-80 ~ -100) mV	1.5 μV	
		(-100 ~ -400) mV	6.9 μV	
		(-400 ~ -800) mV	8.2 μV	
		(-0.8 ~ -1) V	9.0 μV	
		(-1 ~ -4) V	64 μV	
		(-4 ~ -8) V	71 μV	
		(-8 ~ -10) V	75 μV	
		(-10 ~ -40) V	0.67 mV	
		(-40 ~ -80) V	0.80 mV	
		(-80 ~ -100) V	0.88 mV	
		(-100 ~ -400) V	8.0 mV	
		(-400 ~ -800) V	9.0 mV	
		(-800 ~ -1 000) V	11 mV	
Static/Ionic voltmeters	40113			Multimeter calibrators,
Static Voltage (Positive)		(0 ~ 100) V	6.2×10^{-4}	High voltage generators
		(100 ~ 500) V	1.2×10^{-4}	/ HCT-CS-058-40113
		(0.5 ~ 1) kV	6.2×10^{-4}	
		(1 ~ 10) kV	6.1×10^{-3}	
		(10 ~ 15) kV	4.7×10^{-3}	
		(15 ~ 20) kV	3.6×10^{-3}	
		(20 ~ 25) kV	2.8×10^{-3}	
		(25 ~ 30) kV	2.4×10^{-3}	
		(30 ~ 35) kV	2.0×10^{-3}	
		(35 ~ 40) kV	1.8×10^{-3}	
		(40 ~ 45) kV	1.6×10^{-3}	
		(45 ~ 48) kV	1.5×10^{-3}	
Static Voltage (Negative)		(0 ~ -100) V	6.2×10^{-4}	
		(-100 ~ -500) V	1.2×10^{-4}	
		(-0.5 ~ -1) kV	6.2×10^{-4}	
		(-1 ~ -10) kV	6.1×10^{-3}	
		(-10 ~ -15) kV	4.1×10^{-3}	
		(-15 ~ -20) kV	3.1×10^{-3}	
		(-20 ~ -25) kV	2.8×10^{-3}	
		(-25 ~ -30) kV	2.4×10^{-3}	
		(-30 ~ -35) kV	2.0×10^{-3}	
		(-35 ~ -40) kV	1.8×10^{-3}	
		(-40 ~ -45) kV	1.6×10^{-3}	
		(-45 ~ -48) kV	1.5×10^{-3}	

402. Resistance, capacitance and inductance

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Capacitance bridges/indicators	40201			Standard capacitors
Frequency		10 Hz ~ 1 kHz	5.8×10^{-6}	Counter,Digital Multimeter
		(1 ~ 10) kHz	5.8×10^{-7}	/ HCT-CS-059-40201
		(10 ~ 100) kHz	5.9×10^{-8}	
		(0.1 ~ 1) MHz	8.2×10^{-9}	
		(1 ~ 10) MHz	5.9×10^{-8}	
		(10 ~ 30) MHz	2.0×10^{-8}	
AC Voltage		(1 ~ 100) mV		
		20 Hz	2.0×10^{-4}	
		(0.02 ~ 1) kHz	1.8×10^{-4}	
		(1 ~ 10) kHz	2.2×10^{-4}	
		(10 ~ 100) kHz	1.1×10^{-3}	
		100 kHz ~ 1 MHz	2.5×10^{-1}	
		(0.1 ~ 1) V		
		20 Hz	6.4×10^{-4}	
		(0.02 ~ 10) kHz	5.9×10^{-4}	
		(10 ~ 100) kHz	1.0×10^{-3}	
		(0.1 ~ 1) MHz	3.5×10^{-2}	
		(1 ~ 10) V		
		20 Hz	6.4×10^{-4}	
		(0.02 ~ 10) kHz	5.9×10^{-4}	
		(10 ~ 100) kHz	1.0×10^{-3}	
		(0.1 ~ 1) MHz	3.5×10^{-2}	
		(10 ~ 20) V		
		20 Hz	8.8×10^{-4}	
		(0.02 ~ 1) kHz	3.4×10^{-4}	
		(1 ~ 10) kHz	3.8×10^{-4}	
		(10 ~ 100) kHz	1.8×10^{-3}	
Capacitance		1 pF		
		1 kHz ~ 1 MHz	0.76 fF	
		(1 ~ 2) MHz	0.78 fF	
		(2 ~ 3) MHz	0.86 fF	
		(3 ~ 4) MHz	0.98 fF	
		(4 ~ 5) MHz	1.2 fF	
		(5 ~ 10) MHz	2.6 fF	
		(10 ~ 13) MHz	3.8 fF	
		(1 ~ 10) pF		
		1 KHz ~ 5 MHz	3.6 fF	
		(5 ~ 10) MHz	3.8 fF	
		(10 ~ 13) MHz	3.9 fF	
		(10 ~ 100) pF		
		1 KHz ~ 4 MHz	36 fF	
		(4 ~ 5) MHz	38 fF	
		(5 ~ 10) MHz	49 fF	
		(10 ~ 13) MHz	61 fF	

402. Resistance, capacitance and inductance

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Capacitance	40201	(100 ~ 1 000) pF		
		1 KHz ~ 1 MHz	0.36 pF	
		(1 ~ 2) MHz	0.38 pF	
		(2 ~ 3) MHz	0.45 pF	
		(3 ~ 4) MHz	0.57 pF	
		(4 ~ 5) MHz	0.72 pF	
		(5 ~ 10) MHz	2.0 pF	
		(10 ~ 13) MHz	3.0 pF	
		(1 ~ 10) nF		
		120 Hz ~ 100 kHz	0.82 pF	
		(10~ 100) nF		
		120 Hz ~ 100 kHz	8.2 pF	
		(0.1 ~ 1) μF		
		120 Hz ~ 10 kHz	0.11 nF	
		10 kHz ~ 100 kHz	0.13 nF	
		(1 ~ 10)μF		
		100 Hz ~ 1 kHz	3.2 nF	
		(10 ~ 100)μF		
		100 Hz	71 nF	
		(0.1 ~ 1) kHz	77 nF	
		(0.1 ~ 1) mF		
		100 Hz	1.5 μF	
		(0.1 ~ 1) kHz	4.2 μF	
Decade capacitors	40202	1 kHz		Capacitance bridges LCR Meter / HCT-CS-060-40202
		(1 ~ 10) pF	9.4×10^{-6}	
		10 pF ~ 1 nF	6.2×10^{-6}	
		(1 ~ 100)nF	5.1×10^{-5}	
		(0.1 ~ 1)μF	9.1×10^{-5}	
		(1 ~ 10)μF	1.2×10^{-3}	
		120 Hz		
		(10 ~ 100)μF	1.2×10^{-3}	
		(0.1 ~ 1)mF	1.3×10^{-3}	
Standard capacitors	40204	1 kHz		Capacitance bridges LCR Meter / HCT-CS-061-40204
		1 pF	7.3 aF	
		10 pF	72 aF	
		100 pF	0.63 fF	
		1 nF	6.2 fF	
		10 nF	0.51 pF	
		100 nF	5.1 pF	
		1 μF	91 pF	
		10 μF	12 nF	
		120 Hz		
		100 μF	0.12 μF	
		1 mF	1.3 μF	

402. Resistance, capacitance and inductance

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Earth testers	40205			Decade resistor,
Earth Tester		100 mΩ	5.8×10^{-3}	Standard resistance
		100 mΩ ~ 1 Ω	6.2×10^{-4}	/HCT-CS-062-40205
		1 Ω ~ 10 Ω	1.2×10^{-4}	
		10 Ω ~ 100 Ω	6.6×10^{-5}	
		100 Ω ~ 1 kΩ	6.4×10^{-5}	
		1 kΩ ~ 2 kΩ	3.0×10^{-4}	
voltage		(DC ~ 1 kHz)		
		1 V ~ 100 V	5.9×10^{-4}	
		100 V ~ 600 V	1.4×10^{-4}	
current		(DC ~ 1 kHz)		
		1 A	1.4×10^{-3}	
		(1 ~ 10) A	1.3×10^{-3}	
		(10 ~ 60) A	1.3×10^{-3}	
Inductors	40208	(1 kHz)		LCR Meter
		0.1 mH ~ 1 mH	1.2×10^{-3}	/ HCT-CS-063-40208
		1 mH ~ 1 H	6.3×10^{-4}	
Insulation testers	40210			High resistance meters,
Resistance		1 kΩ	6.2×10^{-4}	Multimeter calibrators
		1 kΩ ~ 1 MΩ	6.7×10^{-5}	/HCT-CS-064-40210
		1 MΩ ~ 10 MΩ	9.0×10^{-5}	
		10 MΩ ~ 100 MΩ	1.7×10^{-4}	
		100 MΩ ~ 1 GΩ	5.4×10^{-4}	
		1 GΩ ~ 10 GΩ	8.5×10^{-4}	
		10 GΩ ~ 100 GΩ	2.7×10^{-3}	
		100 GΩ ~ 1 TΩ	7.0×10^{-3}	
Insulation voltage		25 V	2.3×10^{-4}	
		25 V ~ 800 V	7.3×10^{-5}	
		800 V ~ 9 kV	6.2×10^{-3}	
voltage		(DC ~ 1 kHz)		
		10 V	5.9×10^{-4}	
		10 V ~ 600 V	1.3×10^{-4}	
Resistance		10 Ω	5.9×10^{-4}	
		10 Ω ~ 100 Ω	6.6×10^{-5}	
		100 Ω ~ 100 kΩ	6.4×10^{-5}	
Q-미터	40211			Frequency Counters,
AC Voltage		DC ~ 1 kHz		Digital Multimeters
		10 mV	58 μV	/HCT-CS-065-40211
		100 mV	0.58 mV	
		1 V	0.59 mV	
		10 V	5.9 mV	
Frequevcy		DC ~ 1 kHz	5.8×10^{-6}	
		1 kHz ~ 10 kHz	5.8×10^{-7}	
		10 kHz ~ 100 kHz	5.9×10^{-8}	
		100 kHz ~ 1 MHz	9.0×10^{-9}	
		1 MHz ~ 10 MHz	5.9×10^{-8}	
		10 MHz ~ 100 MHz	8.2×10^{-8}	

402. Resistance, capacitance and inductance

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Resistance bridges & Similar instruments	40213			Standard resistance, Digital Multimeter
MEASURING ARM		0.01 Ω	7.5 μΩ	/HCT-CS-066-40213
		0.01 ~ 0.1Ω	8.5 μΩ	
		0.1 Ω ~ 1 Ω	18 μΩ	
		1 Ω ~ 10 Ω	0.11 mΩ	
		10 Ω ~ 100 Ω	0.90 mΩ	
		100 Ω ~ 1 kΩ	9.0 mΩ	
		1 kΩ ~ 10 kΩ	90 mΩ	
		10 kΩ ~ 100 kΩ	0.92 Ω	
		100 kΩ ~ 1 MΩ	11 Ω	
		1 MΩ ~ 10 MΩ	0.26 kΩ	
		10 MΩ ~ 100 MΩ	16 kΩ	
RATIO ARM		× 0.001	5.8×10^{-8}	
		× 0.01	5.8×10^{-7}	
		× 0.1	5.8×10^{-6}	
		× 1	5.8×10^{-5}	
		× 10	5.9×10^{-4}	
		× 100	5.9×10^{-3}	
		× 1 000	6.0×10^{-2}	
Resistance meters	40214			Standard resistance,
DC Resistance		1 mΩ	0.25 μΩ	Counter, Digital multimeter
		10 mΩ	1.2 μΩ	HCT-CS-067-40214
		100 mΩ	0.69 μΩ	
		1 Ω	3.3 μΩ	
		(1 ~ 10) Ω	2.2×10^{-4}	
		(10 ~ 100) Ω	9.6×10^{-5}	
		(0.1 ~ 100) kΩ	3.9×10^{-5}	
		100 kΩ ~ 1 MΩ	3.7×10^{-5}	
		(1 ~ 10) MΩ	8.7×10^{-5}	
		(10 ~ 100) MΩ	2.2×10^{-4}	
		(0.1 ~ 1) GΩ	1.4×10^{-3}	
		(1 ~ 10) GΩ	4.1×10^{-3}	
		(10 ~ 100) GΩ	6.5×10^{-3}	
		(0.1 ~ 1) TΩ	2.2×10^{-2}	
		(1 ~ 10) TΩ	6.6×10^{-2}	
Frequency		10 Hz	5.8 mHz	
		10 Hz ~100 Hz	5.8×10^{-5}	
		100 Hz ~ 1 kHz	5.8×10^{-6}	
		1 kHz ~ 10 kHz	5.8×10^{-7}	
		10 kHz ~ 100 kHz	5.9×10^{-8}	
		100 kHz ~ 1 MHz	8.2×10^{-9}	
AC Voltage		1 kHz		
		10 mV	6.8 uV	
		10 mV ~ 100 mV	1.9×10^{-4}	
		100 mV ~ 1 V	1.1×10^{-4}	
		1 V ~ 10 V	1.3×10^{-4}	
		10 V ~ 100 V	1.3×10^{-4}	
		100 V ~ 1 000 V	1.5×10^{-4}	

402. Resistance, capacitance and inductance

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Resistance	40214	1 kHz		
		1 Ω	1.2 mΩ	
		10 Ω	3.7 mΩ	
		100 Ω	36 mΩ	
		1 kΩ	0.36 Ω	
		10 kΩ	3.6 Ω	
		100 kΩ	36 Ω	
DC Voltage		100 mV	0.75 μV	
		(0.1 ~ 1) V	7.1×10^{-6}	
		(1 ~ 10) V	7.1×10^{-6}	
		(10 ~ 100) V	7.9×10^{-6}	
		(100 ~ 1 000) V	8.1×10^{-6}	
Resistors	40215			Digital Multimeter,
Standard Resistance(DC)		1 Ω	4.9 uΩ	LCR meter
		10 Ω	0.18 mΩ	/ HCT-CS-068-40215
		25 Ω	0.13 mΩ	
		100 Ω	0.59 mΩ	
		1 kΩ	5.3 mΩ	
		10 kΩ	27 mΩ	
		100 kΩ	0.80 Ω	
		1 MΩ	12 Ω	
		10 MΩ	0.22 kΩ	
			3.1 kΩ	
		1 GΩ	49 kΩ	
		10 GΩ	3.5 MΩ	
Standard Resistance(AC)		1 kHz		
		1 Ω	1.2 mΩ	
		10 Ω	3.8 mΩ	
		100 Ω	36 mΩ	
		1 kΩ	0.36 Ω	
		10 kΩ	3.6 Ω	
		100 kΩ	36 Ω	
		(1 ~ 100) kHz		
		1 kΩ	12 Ω	
		10 kΩ	0.12 kΩ	
		100 kΩ	1.2 kΩ	
		(0.1 ~ 1) MHz		
		10 Ω	0.12 Ω	
		100 Ω	1.2 Ω	
		1 kΩ	12 Ω	
		10 kΩ	0.12 kΩ	
		100 kΩ	1.2 kΩ	
Decade Resistance(DC)		1 mΩ ~ 10 mΩ	7.3×10^{-4}	
		10 mΩ ~ 100 mΩ	9.5×10^{-5}	
		100 mΩ ~ 1 Ω	8.7×10^{-5}	
		1 Ω ~ 10 Ω	4.9×10^{-5}	
		10 Ω ~ 100 Ω	9.1×10^{-6}	
		100 Ω ~ 1 kΩ	9.6×10^{-6}	
		1 kΩ ~ 10 kΩ	9.1×10^{-6}	

402. Resistance, capacitance and inductance

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Decade Resistance(DC)	40215	10 kΩ ~ 100 kΩ	9.2×10^{-6}	
		100 kΩ ~ 1 MΩ	1.1×10^{-5}	
		1 MΩ ~ 10 MΩ	1.7×10^{-5}	
		10 MΩ ~100 MΩ	4.9×10^{-5}	
		100 MΩ ~ 1 GΩ	2.0×10^{-4}	
		1 GΩ ~ 10 GΩ	7.1×10^{-4}	
		10 GΩ ~ 100 GΩ	3.1×10^{-3}	
		100 GΩ ~ 1 TΩ	4.4×10^{-3}	
Decade Resistance(AC)		1 kHz		
		100 mΩ ~ 10 Ω	1.2×10^{-3}	
		10 Ω ~ 100 kΩ	6.5×10^{-4}	
Electrical conductivity meters	40216	14.36 MS/m	0.076 MS/m	Conductivity STD /HCT-CS-227-40216
		22.90 MS/m	0.16 MS/m	
		34.28 MS/m	0.20 MS/m	
		58.38 MS/m	0.33 Ms/m	
Impedance bridges/LCR meters	40217			Counters,Standard Resistance,Capacitance, Digital Multimeters Inductance/HCT-CS-093-40217
Frequency		10 Hz	5.8 mHz	
		10 Hz~ 100 Hz	5.8×10^{-5}	
		100 Hz~ 1 kHz	5.8×10^{-6}	
		(1 ~ 10) kHz	5.8×10^{-7}	
		(10 ~ 100)kHz	5.9×10^{-8}	
		(0.1 ~ 1) MHz	8.2×10^{-9}	
		(1 ~ 10) MHz	5.9×10^{-8}	
		(10 ~ 30) MHz	2.0×10^{-8}	
AC Voltage		100 mV		
		20 Hz	21 μV	
		20 Hz ~ 1 kHz	1.9×10^{-4}	
		(1 ~ 10) kHz	2.3×10^{-4}	
		(10 ~ 100) kHz	1.1×10^{-3}	
		(0.1 ~ 1) MHz	2.5×10^{-1}	
		(0.1 ~ 1) V		
		20 Hz	6.4×10^{-4}	
		20 Hz ~ 10 kHz	5.9×10^{-4}	
		(10 ~ 100) kHz	1.0×10^{-3}	
		(0.1 ~ 1) MHz	3.5×10^{-2}	
		(1 ~ 10) V		
		20 Hz	6.4×10^{-4}	
		20 Hz ~ 10 kHz	6.0×10^{-4}	
		(10 ~ 100) kHz	1.0×10^{-3}	
		(0.1 ~ 1) MHz	3.5×10^{-2}	
		(10 ~ 20) V		
		20 Hz	9.9×10^{-4}	
		20 Hz ~ 1 kHz	3.4×10^{-4}	
		(1 ~ 10) kHz	4.4×10^{-4}	
		(10 ~ 100) kHz	1.8×10^{-3}	

402. Resistance, capacitance and inductance

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Voltage	40217	100 mV	1.1 uV	
		(0.1 ~ 10) V	5.9×10^{-3}	
		(10 ~ 40) V	2.2×10^{-5}	
DC Current		1 A	0.62 mA	
		(1 ~ 10) A	4.7×10^{-4}	
		(10 ~ 20) A	8.5×10^{-4}	
		(20 ~ 40) A	8.5×10^{-4}	
Resistance		1 Ω		
		1 kHz	1.2 mΩ	
		(1 ~ 10) Ω		
		1 kHz	3.6 mΩ	
		1 kHz ~ 5 MHz	0.12 Ω	
		(5 ~ 10) MHz	0.13 Ω	
		(10 ~ 13) MHz	0.14 Ω	
		(10 ~ 100) Ω		
		1 kHz	36 mΩ	
		1 kHz ~ 13 MHz	1.2 Ω	
		100 Ω~ 1 kΩ		
		1 kHz	0.36 Ω	
		1 kHz ~ 13 MHz	12 Ω	
		1 kΩ ~ 10 kΩ		
		1 kHz	3.6 Ω	
		1 kHz ~ 1 MHz	0.12 kΩ	
		(10 ~ 100) kΩ		
		1 kHz	36 Ω	
		1 kHz ~ 1 MHz	1.2 kΩ	
Capacitance		1 pF		
		1 kHz ~ 1 MHz	0.76 fF	
		(1 ~ 2) MHz	0.78 fF	
		(2 ~ 3) MHz	0.86 fF	
		(3 ~ 4) MHz	0.98 fF	
		(4 ~ 5) MHz	1.2 fF	
		(5 ~ 10) MHz	2.6 fF	
		(10 ~ 13) MHz	3.8 fF	
		(1 ~ 10) pF		
		1 kHz ~ 5 MHz	3.6 fF	
		(5 ~ 10) MHz	3.8 fF	
		(10 ~ 13) MHz	3.9 fF	
		(10 ~ 100) pF		
		1 kHz ~ 4 MHz	36 fF	
		(4 ~ 5) MHz	38 fF	
		(5 ~ 10) MHz	49 fF	
		(10 ~ 13) MHz	61 fF	

402. Resistance, capacitance and inductance

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Capacitance	40217	(100 ~ 1 000) pF		
		1 kHz ~ 1 MHz	0.36 pF	
		(1 ~ 2) MHz	0.38 pF	
		(2 ~ 3) MHz	0.45 pF	
		(3 ~ 4) MHz	0.57 pF	
		(4 ~ 5) MHz	0.72 pF	
		(5 ~ 10) MHz	2.0 pF	
		(10 ~ 13) MHz	3.0 pF	
		(1 ~ 10) nF		
		120 Hz ~ 100 kHz	0.82 pF	
		(10~ 100) nF		
		120 Hz ~ 100 kHz	8.2 pF	
		(0.1 ~ 1) μF		
		120 Hz ~ 10 kHz	0.11 nF	
		10 kHz ~ 100 kHz	0.13 nF	
		(1 ~ 10) μF		
		100 Hz ~ 1 kHz	3.2 nF	
		(10 ~ 100) μF		
		100 Hz	71 nF	
		100 Hz ~ 1 kHz	77 nF	
		(0.1 ~ 1) mF		
		100 Hz	1.5 μF	
		100 Hz ~ 1 kHz	4.2 μF	
Inductance		1 kHz		
		100 μH	21 nH	
		(0.1 ~ 1) mH	0.15 μH	
		(1 ~ 10) mH	1.4 μH	
		(10 ~ 100) mH	15 μH	
		(0.1 ~ 1) H	0.15 mH	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC ammeters	40301			Multimeter calibrators
AC Current		10 μA		/ HCT-CS-070-40301
		50 Hz ~ 60 Hz	2.0×10^{-3}	
		60 Hz ~ 1 kHz	9.0×10^{-3}	
		(10 μA ~ 10 mA)		
		40 Hz	3.0×10^{-4}	
		40 Hz ~ 1 kHz	2.0×10^{-4}	
		1 kHz ~ 10 kHz	2.1×10^{-3}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40301	(10 mA ~ 100 mA)		
		40 Hz	3.0×10^{-4}	
		40 Hz ~ 1 kHz	2.0×10^{-4}	
		1 kHz ~ 10 kHz	2.0×10^{-3}	
		(100 mA ~ 1 A)		
		40 Hz ~ 1 kHz	4.0×10^{-4}	
		1 kHz ~ 10 kHz	8.4×10^{-3}	
		(1 A ~ 10 A)		
		50 Hz ~ 60 Hz	1.3×10^{-3}	
		60 Hz ~ 1 kHz	2.0×10^{-3}	
		(10 A ~ 20 A)		
		50 Hz ~ 60 Hz	7.0×10^{-4}	
		60 Hz ~ 1 kHz	1.5×10^{-3}	
		(20 A ~ 50 A)		
		50 Hz ~ 60 Hz	6.0×10^{-4}	
		(50 A ~ 100 A)		
		50 Hz ~ 60 Hz	4.0×10^{-4}	
AC Voltage		(0 V ~ 10 V)		
		40 Hz	1.8×10^{-2}	
		40 Hz ~ 10 kHz	1.0×10^{-2}	
		(1 V ~ 10 V)		
		40 Hz	2.0×10^{-4}	
		40 Hz ~ 10 kHz	1.0×10^{-4}	
		(10 V ~ 75 V)		
		40 Hz	2.7×10^{-4}	
		40 Hz ~ 10 kHz	1.3×10^{-4}	
		(75 V ~ 150 V)		
		40 Hz ~ 1 kHz	1.3×10^{-4}	
		(150 V ~ 300 V)		
		50 Hz	6.7×10^{-4}	
		50 Hz ~ 1 kHz	3.3×10^{-4}	
		(300 V ~ 750 V)		
		50 Hz	4.0×10^{-4}	
		50 Hz ~ 1 kHz	1.3×10^{-4}	
Clamp ammeters/voltmeters	40302			Multimeter calibrators,
DC Voltage		0 mV ~ 100 mV	6.3×10^{-5}	Coil
		100 mV ~ 100 V	6.1×10^{-5}	/ HCT-CS-071-40302
		100 V ~ 1 000 V	6.2×10^{-5}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40302	(0 mV ~ 100 mV)		
		40 Hz	1.3×10^{-4}	
		40 Hz ~ 20 kHz	9.8×10^{-5}	
		20 kHz ~ 50 kHz	1.6×10^{-4}	
		50 kHz ~ 100 kHz	3.8×10^{-4}	
		(100 mV ~ 1 V)		
		40 Hz	1.4×10^{-4}	
		40 Hz ~ 20 kHz	8.5×10^{-5}	
		20 kHz ~ 100 kHz	1.5×10^{-4}	
		(1 V ~ 10 V)		
		40 Hz ~ 10 kHz	1.4×10^{-4}	
		10 kHz ~ 20 kHz	8.4×10^{-5}	
		20 kHz ~ 50 kHz	1.1×10^{-4}	
		50 kHz ~ 100 kHz	1.4×10^{-4}	
		(10 V ~ 100 V)		
		40 Hz ~ 10 kHz	1.4×10^{-4}	
		10 kHz ~ 20 kHz	9.4×10^{-5}	
		20 kHz ~ 50 kHz	1.2×10^{-4}	
		50 kHz ~ 100 kHz	2.2×10^{-4}	
		(100 V ~ 1 000 V)		
		50 Hz	3.7×10^{-4}	
		50 Hz ~ 1 kHz	1.1×10^{-4}	
DC Current		0 mA ~ 1 A	6.1×10^{-4}	
		1 A ~ 10 A	6.5×10^{-4}	
		10 A ~ 50 A	1.2×10^{-3}	
		50 A ~ 100 A	6.3×10^{-4}	
		100 A ~ 200 A	1.2×10^{-3}	
		200 A ~ 300 A	8.9×10^{-4}	
		300 A ~ 400 A	7.5×10^{-4}	
		400 A ~ 500 A	6.6×10^{-4}	
		500 A ~ 750 A	1.6×10^{-3}	
		750 A ~ 1 000 A	1.3×10^{-3}	
		1 000 A ~ 1 500 A	9.5×10^{-4}	
		1 500 A ~ 2 000 A	7.9×10^{-4}	
		2 000 A ~ 2 500 A	6.9×10^{-4}	
AC Current		(0 mA ~ 10 mA)		
		40 Hz ~ 1 kHz	6.2×10^{-4}	
		1 kHz ~ 10 kHz	1.0×10^{-3}	
		(10 mA ~ 100 mA)		
		40 Hz ~ 1 kHz	6.5×10^{-4}	
		1 kHz ~ 10 kHz	2.6×10^{-3}	
		(100 mA ~ 1 A)		
		40 Hz ~ 1 kHz	6.2×10^{-4}	
		1 kHz ~ 10 kHz	1.2×10^{-3}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40302	(1 A ~ 10 A)		
		40 Hz ~ 60 Hz	1.4×10^{-3}	
		60 Hz ~ 1 kHz	2.1×10^{-3}	
		(10 A ~ 100 A)		
		60 Hz	7.1×10^{-4}	
		(100 A ~ 200 A)		
		60 Hz	1.2×10^{-3}	
		(200 A ~ 300 A)		
		60 Hz	8.9×10^{-4}	
		(300 A ~ 500 A)		
		60 Hz	6.6×10^{-4}	
		(500 A ~ 900 A)		
		60 Hz	1.6×10^{-3}	
		(900 A ~ 1 000 A)		
		60 Hz	1.4×10^{-3}	
		(1 000 A ~ 1 500 A)		
		60 Hz	1.2×10^{-3}	
		(1 500 A ~ 2 000 A)		
		60 Hz	1.0×10^{-3}	
		(2 000 A ~ 2 500 A)		
		60 Hz	8.5×10^{-4}	
		(2 500 A ~ 3 000 A)		
		60 Hz	7.6×10^{-4}	
Resistance		0 Ω ~ 1 Ω	8.6×10^{-4}	
		1 Ω ~ 10 Ω	1.1×10^{-4}	
		10 Ω ~ 100 Ω	6.3×10^{-5}	
		100 Ω ~ 1 kΩ	6.8×10^{-5}	
		1 kΩ ~ 100 kΩ	6.6×10^{-5}	
		100 kΩ ~ 1 MΩ	6.2×10^{-5}	
		1 MΩ ~ 10 MΩ	1.3×10^{-4}	
		10 MΩ~ 100 MΩ	1.4×10^{-4}	
Current Coil (AC Ratio)		2	0.15 %	
		10	0.13 %	
		25	0.17 %	
		50	0.14 %	
Current Coil (DC Ratio)		2	0.14 %	
		10	0.07 %	
		25	0.13 %	
		50	0.08 %	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC voltage/current calibrators	40303			Multimeters
AC Voltage		0.1 V		/ HCT-CS-072-40303
		50 Hz	18 μV	
		50 Hz ~ 1 kHz	1.6×10^{-4}	
		1 kHz ~ 10 kHz	1.8×10^{-4}	
		10 kHz ~ 30 kHz	4.6×10^{-4}	
		30 kHz ~ 100 kHz	1.1×10^{-3}	
		(0.1 V ~ 0.4 V)		
		50 Hz	0.08 mV	
		50 Hz ~ 1 kHz	1.8×10^{-4}	
		1 kHz ~ 10 kHz	2.0×10^{-4}	
		10 kHz ~ 30 kHz	4.0×10^{-4}	
		30 kHz ~ 100 kHz	1.2×10^{-3}	
		(0.4 V ~ 0.8 V)		
		50 Hz	0.11 mV	
		50 Hz ~ 1 kHz	1.3×10^{-4}	
		1 kHz ~ 10 kHz	1.4×10^{-4}	
		10 kHz ~ 30 kHz	3.1×10^{-4}	
		30 kHz ~ 100 kHz	8.8×10^{-4}	
		(0.8 V ~ 1 V)		
		50 Hz	0.13 mV	
		50 Hz ~ 1 kHz	1.1×10^{-4}	
		1 kHz ~ 10 kHz	1.3×10^{-4}	
		10 kHz ~ 30 kHz	2.9×10^{-4}	
		30 kHz ~ 100 kHz	8.2×10^{-4}	
		(1 V ~ 4 V)		
		50 Hz	0.8 mV	
		50 Hz ~ 300 Hz	1.8×10^{-4}	
		300 Hz ~ 10 kHz	2.0×10^{-4}	
		10 kHz ~ 30 kHz	4.0×10^{-4}	
		30 kHz ~ 100 kHz	1.2×10^{-3}	
		(4 V ~ 8 V)		
		50 Hz	1.1 mV	
		50 Hz ~ 1 kHz	1.3×10^{-4}	
		1 kHz ~ 10 kHz	1.4×10^{-4}	
		10 kHz ~ 30 kHz	3.1×10^{-4}	
		30 kHz ~ 100 kHz	8.8×10^{-4}	
		(8 V ~ 10 V)		
		50 Hz	1.3 mV	
		50 Hz ~ 1 kHz	1.1×10^{-4}	
		1 kHz ~ 10 kHz	1.3×10^{-4}	
		10 kHz ~ 30 kHz	2.9×10^{-4}	
		30 kHz ~ 100 kHz	8.2×10^{-4}	
		(10 V ~ 40 V)		
		50 Hz	8.1 mV	
		50 Hz ~ 1 kHz	1.9×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40303	1 kHz ~ 10 kHz	2.0×10^{-4}	
		10 kHz ~ 30 kHz	4.3×10^{-4}	
		30 kHz ~ 100 kHz	1.2×10^{-3}	
		(40 V ~ 80 V)		
		50 Hz	12 mV	
		50 Hz ~ 1 kHz	1.3×10^{-4}	
		1 kHz ~ 10 kHz	1.5×10^{-4}	
		10 kHz ~ 30 kHz	3.1×10^{-4}	
		30 kHz ~ 100 kHz	8.8×10^{-4}	
		(80 V ~ 100 V)		
		50 Hz	13 mV	
		50 Hz ~ 1 kHz	1.1×10^{-4}	
		1 kHz ~ 10 kHz	1.3×10^{-4}	
		10 kHz ~ 30 kHz	3.0×10^{-4}	
		30 kHz ~ 100 kHz	8.2×10^{-4}	
		(100 V ~ 400 V)		
		50 Hz	0.13 V	
		50 Hz ~ 300 Hz	3.3×10^{-4}	
		300 Hz ~ 1 kHz	2.3×10^{-4}	
		1 kHz ~ 10 kHz	3.3×10^{-4}	
		(400 V ~ 800 V)		
		50 Hz	0.15 V	
		50 Hz ~ 300 Hz	1.9×10^{-4}	
		300 Hz ~ 1 kHz	1.5×10^{-4}	
		1 kHz ~ 10 kHz	1.9×10^{-4}	
		(800 V ~ 1 000 V)		
		50 Hz	0.16 V	
		50 Hz ~ 300 Hz	1.6×10^{-4}	
		300 Hz ~ 1 kHz	1.4×10^{-4}	
		1 kHz ~ 10 kHz	1.6×10^{-4}	
AC Current		100 μA		
		50 Hz	71 nA	
		50 Hz ~ 1 kHz	7.0×10^{-4}	
		1 kHz ~ 10 kHz	7.1×10^{-4}	
		(0.1 mA ~ 0.4 mA)		
		50 Hz	0.01 μA	
		50 Hz ~ 1 kHz	2.3×10^{-4}	
		1 kHz ~ 10 kHz	2.5×10^{-4}	
		(0.4 mA ~ 0.8 mA)		
		50 Hz	0.14 μA	
		50 Hz ~ 1 kHz	1.5×10^{-4}	
		1 kHz ~ 10 kHz	1.8×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40303	(0.8 mA ~ 1 mA)		
		50 Hz	0.16 μA	
		50 Hz ~ 1 kHz	1.4×10^{-4}	
		1 kHz ~ 10 kHz	1.7×10^{-4}	
		(1 mA ~ 4 mA)		
		50 Hz	0.90 μA	
		50 Hz ~ 1 kHz	2.1×10^{-4}	
		1 kHz ~ 10 kHz	2.3×10^{-4}	
		(4 mA ~ 8 mA)		
		50 Hz	1.3 μA	
		50 Hz ~ 1 kHz	1.4×10^{-4}	
		1 kHz ~ 10 kHz	1.6×10^{-4}	
		(8 mA ~ 10 mA)		
		50 Hz	1.4 μA	
		50 Hz ~ 1 kHz	1.2×10^{-4}	
		1 kHz ~ 10 kHz	1.4×10^{-4}	
		(10 mA ~ 40 mA)		
		50 Hz	8.9 μA	
		50 Hz ~ 1 kHz	2.1×10^{-4}	
		1 kHz ~ 10 kHz	2.2×10^{-4}	
		(40 mA ~ 80 mA)		
		50 Hz	12 μA	
		50 Hz ~ 1 kHz	1.3×10^{-4}	
		1 kHz ~ 10 kHz	1.5×10^{-4}	
		(80 mA ~ 100 mA)		
		50 Hz	14 μA	
		50 Hz ~ 1 kHz	1.2×10^{-4}	
		1 kHz ~ 10 kHz	1.4×10^{-4}	
		(0.1 A ~ 0.4 A)		
		50 Hz	90 μA	
		50 Hz ~ 1 kHz	2.1×10^{-4}	
		1 kHz ~ 10 kHz	2.3×10^{-4}	
		(0.4 A ~ 0.8 A)		
		50 Hz	0.12 mA	
		50 Hz ~ 1 kHz	1.4×10^{-4}	
		1 kHz ~ 10 kHz	1.5×10^{-4}	
		(0.8 A ~ 1 A)		
		50 Hz	0.14 mA	
		50 Hz ~ 1 kHz	1.2×10^{-4}	
		1 kHz ~ 10 kHz	1.4×10^{-4}	
		(1 A ~ 4 A)		
		50 Hz	0.91 mA	
		50 Hz ~ 1 kHz	2.1×10^{-4}	
		1 kHz ~ 10 kHz	2.3×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40303	(4 A ~ 8 A)		
		50 Hz	1.3 mA	
		50 Hz ~ 1 kHz	1.4×10^{-4}	
		1 kHz ~ 10 kHz	1.8×10^{-4}	
		(8 A ~ 10 A)		
		50 Hz	1.5 mA	
		50 Hz ~ 1 kHz	1.3×10^{-4}	
		1 kHz ~ 10 kHz	1.6×10^{-4}	
		(10 A ~ 30 A)		
		50 Hz	5.7 mA	
		50 Hz ~ 1 kHz	1.7×10^{-4}	
		(30 A ~ 50 A)		
		50 Hz	7.8 mA	
		50 Hz ~ 1 kHz	1.4×10^{-4}	
		(50 A ~ 80 A)		
		50 Hz	14 mA	
		50 Hz ~ 1 kHz	1.6×10^{-4}	
		(80 A ~ 100 A)		
		50 Hz	16 mA	
		50 Hz ~ 1 kHz	1.5×10^{-4}	
Clamp Meter		(60 Hz)		
		1 A	0.20 A	
		1 A ~ 3 A	0.23 A	
		3 A ~ 8 A	0.32 A	
		8 A ~ 10 A	0.35 A	
		10 A ~ 20 A	0.53 A	
		20 A ~ 30 A	0.71 A	
		30 A ~ 50 A	1.5 A	
		50 A ~ 80 A	2.0 A	
		80 A ~ 100 A	2.4 A	
		100 A ~ 200 A	4.2 A	
		200 A ~ 300 A	11 A	
		300 A ~ 500 A	15 A	
		500 A ~ 800 A	20 A	
		800 A ~ 1 000 A	24 A	
Wattmeter calibrators	40304			Power analyzer
AC cutrren		(50 ~ 60) Hz		/ HCT-CS-275-40304
		0.12 W	0.09 mW	
		0.12 W ~ 0.24 W	4.6×10^{-4}	
		0.24 W ~ 0.6 W	3.7×10^{-4}	
		0.6 W ~ 1.2 W	3.1×10^{-4}	
		1.2 W ~ 6 W	3.2×10^{-4}	
		6 W ~ 12 W	3.1×10^{-4}	
		12 W ~ 600 W	3.2×10^{-4}	
		600 W ~ 4.8 kW	3.1×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Power Factor	40304	(50 ~ 60) Hz -1 ~ 1	 3.2×10^{-4}	
Harmonic (THD-V or THD-I)		(50 ~ 60) Hz 0.5% (0.5 ~ 1) % (1 ~ 3) % (3 ~ 5) % (5 ~ 10) % (10 ~ 20) %	 1.2×10^{-1} 6.1×10^{-2} 2.0×10^{-2} 1.2×10^{-2} 6.1×10^{-3} 3.1×10^{-3}	
Frequency		20 Hz (20 ~ 60) Hz (60 ~ 100) Hz (100 ~ 400) Hz (0.4 ~ 1) kHz	3.5×10^{-4} 1.2×10^{-4} 1.4×10^{-4} 1.2×10^{-4} 6.5×10^{-2}	
AC current shunts AC Resistance	40305	 (40 Hz ~ 60 Hz) 0.001 Ω (0.001 ~ 0.01 Ω) (0.01 ~ 0.1 Ω) (0.1 ~ 1 Ω) (1 ~ 10 Ω) (10 ~ 100 Ω) (100 ~ 1 000 Ω) (60 Hz ~ 100 Hz) 0.001 Ω (0.001 ~ 0.01 Ω) (0.01 ~ 0.1 Ω) (0.1 ~ 1 Ω) (1 ~ 10 Ω) (10 ~ 100 Ω) (100 ~ 1 000 Ω) (100 Hz ~ 1 kHz) 0.001 Ω (0.001 ~ 0.01 Ω) (0.01 ~ 0.1 Ω) (0.1 ~ 1 Ω) (1 ~ 10 Ω) (10 ~ 100 Ω) (100 ~ 1 000 Ω)	 0.61 μΩ 20 μΩ 38 μΩ 0.25 mΩ 2.9 mΩ 29 mΩ 0.35 Ω 0.61 μΩ 20 μΩ 37 μΩ 0.19 mΩ 2.2 mΩ 22 mΩ 0.26 Ω 2.0 μΩ 20 μΩ 37 μΩ 0.19 mΩ 2.2 mΩ 22 mΩ 0.26 Ω	Current Source / HCT-CS-073-40305
Power factor meters	40310	(50 ~ 60 Hz) -1 ~ 1	 0.001 5	Power Calibrators / HCT-CS-074-40310

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403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC power meters	40311			Power Calibrators,
AC Power		50 Hz		Multimeter calibrators
		0.12 W	0.13 mW	/ HCT-CS-075-40311
		(0.12 W ~ 0.24 W)	0.14 mW	
		(0.24 W ~ 0.6 W)	0.28 mW	
		(0.6 W ~ 1.2 W)	0.43 mW	
		(1.2 W ~ 2.4 W)	0.76 mW	
		(2.4 W ~ 6 W)	3.2×10^{-4}	
		(6 W ~ 600 W)	3.1×10^{-4}	
		(600 W ~ 1.2 kW)	3.3×10^{-4}	
		(1.2 kW ~ 2.4 kW)	3.7×10^{-4}	
		(2.4 kW ~ 12 kW)	5.2×10^{-4}	
		(12 kW ~ 50 kW)	6.0×10^{-4}	
		60 Hz		
		0.12 W	0.18 mW	
		(0.12 W ~ 0.24 W)	0.19 mW	
		(0.24 W ~ 0.6 W)	0.41 mW	
		(0.6 W ~ 1.2 W)	0.51 mW	
		(1.2 W ~ 2.4 W)	0.87 mW	
		(2.4 W ~ 6 W)	1.9 mW	
		(6 W ~ 600 W)	3.1×10^{-4}	
		(600 W ~ 1.2 kW)	3.3×10^{-4}	
		(1.2 kW ~ 2.4 kW)	3.7×10^{-4}	
		(2.4 kW ~ 12 kW)	5.2×10^{-4}	
		(12 kW ~ 50 kW)	6.0×10^{-4}	
DC Power	40311	0.12 W	23 μW	
		(0.12 W ~ 0.24 W)	43 μW	
		(0.24 W ~ 0.6 W)	0.11 mW	
		(0.6 W ~ 1.2 W)	0.22 mW	
		(1.2 W ~ 2.4 W)	0.36 mW	
		(2.4 W ~ 4.8 W)	0.81 mW	
		(4.8 W ~ 6 W)	1.1 mW	
		(6 W ~ 12 W)	1.9 mW	
		(12 W ~ 24 W)	3.6 mW	
		(24 W ~ 60 W)	20 mW	
		(60 W ~ 120 W)	33 mW	
		(120 W ~ 240 W)	0.12 W	
		(240 W ~ 480 W)	0.23 W	
		(480 W ~ 600 W)	0.42 W	
		(0.6 kW ~ 1.2 kW)	0.77 W	
		(1.2 kW ~ 2.4 kW)	2.9 W	
		(2.4 kW ~ 4.8 kW)	5.8 W	
		(4.8 kW ~ 20 kW)	63 W	
Power Factor		(50 Hz ~ 60 Hz)		
		-1 ~ 1	1.3×10^{-4}	
AC Voltage		(50 Hz ~ 60 Hz)		
		1 V	85 μV	
		(1 V ~ 2 V)	0.13 mV	
		(2 V ~ 5 V)	0.37 mV	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40311	(5 V ~ 10 V)	0.85 mV	
		(10 V ~ 20 V)	1.3 mV	
		(20 V ~ 50 V)	4.5 mV	
		(50 V ~ 60 V)	5.0 mV	
		(60 V ~ 100 V)	9.4 mV	
		(100 V ~ 150 V)	12 mV	
		(150 V ~ 200 V)	15 mV	
		(200 V ~ 300 V)	32 mV	
		(300 V ~ 500 V)	47 mV	
		(500 V ~ 600 V)	59 mV	
		(600 V ~ 750 V)	70 mV	
		(750 V ~ 1 000 V)	0.11 V	
AC Current		(50Hz ~ 60 Hz)		
		1 mA	0.18 μA	
		(1 mA ~ 10 mA)	1.8 μA	
		(10 mA ~ 20 mA)	2.9 μA	
		(20 mA ~ 50 mA)	8.5 μA	
		(50 mA ~ 100 mA)	17 μA	
DC Voltage		(100 mA ~ 200 mA)	28 μA	
		(200 mA ~ 500 mA)	0.21 mA	
		(0.5 A ~ 1 A)	0.34 mA	
		(1 A ~ 2 A)	0.62 mA	
		(2 A ~ 5 A)	3.0 mA	
		(5 A ~ 10 A)	5.6 mA	
		(10 A ~ 20 A)	14 mA	
		(20 A ~ 30 A)	27 mA	
		(30 A ~ 50 A)	30 mA	
		1 V	61 μV	
		(1 V ~ 2 V)	62 μV	
		(2 V ~ 5 V)	66 μV	
		(5 V ~ 20 V)	0.62 mV	
		(20 V ~ 50 V)	0.70 mV	
		(50 V ~ 60 V)	0.73 mV	
		(60 V ~ 200 V)	6.2 mV	
		(200 V ~ 300 V)	6.8 mV	
		(300 V ~ 500 V)	7.5 mV	
		(500 V ~ 600 V)	7.9 mV	
		(600 V ~ 750 V)	8.7 mV	
		(750 V ~ 1 000 V)	62 mV	
DC Current		1 mA	80 nA	
		(1 mA ~ 10 mA)	1.1 μA	
		(10 mA ~ 20 mA)	1.7 μA	
		(20 mA ~ 50 mA)	5.3 μA	
		(50 mA ~ 100 mA)	11 μA	
		(100 mA ~ 200 mA)	19 μA	
		(200 mA ~ 500 mA)	91 μA	
		(500 mA ~ 1 A)	0.16 mA	
		(1 A ~ 2 A)	0.26 mA	
		(2 A ~ 5 A)	1.6 mA	
		(5 A ~ 10 A)	2.1 mA	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Current	40311	(10 A ~ 20 A)	3.2 mA	
		(20 A ~ 30 A)	8.6 mA	
		(30 A ~ 50 A)	10 mA	
Harmonic Voltage		50 Hz ~ 60 Hz		
		(0.5 % ~ 20 %)	0.053 %	
Harmonic Current		50 Hz ~ 60 Hz		
		(0.5 % ~ 20 %)	0.053 %	
Frequency		20 Hz	0.59 mHz	
		(20 Hz ~ 50 Hz)	1.2×10^{-5}	
		(50 Hz ~ 60 Hz)	1.0×10^{-5}	
		(60 Hz ~ 200 Hz)	5.8×10^{-5}	
		(200 Hz ~ 400 Hz)	2.9×10^{-5}	
		(400 Hz ~ 600 Hz)	1.9×10^{-5}	
		(600 Hz ~ 800 Hz)	1.5×10^{-5}	
		(800 Hz ~ 1 kHz)	5.9×10^{-5}	
Flicker P_{st}				
1 ~ 4000 cpm		1	0.39 %	
$P_{inst.max}$				
0.5 ~ 8.8 Hz(Sinusoidal)		1	0.38 %	
8.8 ~ 20 Hz(Sinusoidal)		1	0.40 %	
20 ~ 25 Hz(Sinusoidal)		1	0.41 %	
25 ~ 33.333 Hz(Sinusoidal)		1	0.43 %	
0 ~ 28 Hz(Square)		1	0.40 %	
28 ~ 30.5 Hz(Square)		1	1.05 %	
30.5 ~ 33.333 Hz(Square)		1	0.40 %	
P_{st} Range		0.25	0.39 %	
		0.25 ~ 5	0.42 %	
AC power supplies	40312			Multimeters
AC Voltage		100 mV		/ HCT-CS-076-40312
		20 Hz	21 μV	
		20 Hz ~ 50 Hz	1.9×10^{-4}	
		50 Hz ~ 1 kHz	1.7×10^{-4}	
		1 kHz ~ 10 kHz	1.9×10^{-4}	
		10 kHz ~ 100 kHz	1.1×10^{-3}	
		(0.1 V ~ 0.4 V)		
		20 Hz	0.11 mV	
		20 Hz ~ 50 Hz	2.8×10^{-4}	
		50 Hz ~ 1 kHz	2.5×10^{-4}	
		1 kHz ~ 10 kHz	2.8×10^{-4}	
		10 kHz ~ 100 kHz	1.2×10^{-3}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40312	(0.4 V ~ 0.8 V)		
		20 Hz	0.15 mV	
		20 Hz ~ 50 Hz	1.6×10^{-4}	
		50 Hz ~ 1 kHz	1.5×10^{-4}	
		1 kHz ~ 10 kHz	1.6×10^{-4}	
		10 kHz ~ 100 kHz	8.9×10^{-4}	
		(0.8 V ~ 1 V)		
		20 Hz	0.17 mV	
		20 Hz ~ 50 Hz	1.5×10^{-4}	
		50 Hz ~ 1 kHz	1.3×10^{-4}	
		1 kHz ~ 10 kHz	1.5×10^{-4}	
		10 kHz ~ 100 kHz	8.2×10^{-4}	
		(1 V ~ 4 V)		
		20 Hz	1.2 mV	
		20 Hz ~ 50 Hz	2.8×10^{-4}	
		50 Hz ~ 1 kHz	2.6×10^{-4}	
		1 kHz ~ 10 kHz	2.8×10^{-4}	
		10 kHz ~ 100 kHz	1.2×10^{-3}	
		(4 V ~ 8 V)		
		20 Hz	1.5 mV	
		20 Hz ~ 50 Hz	1.6×10^{-4}	
		50 Hz ~ 1 kHz	1.5×10^{-4}	
		1 kHz ~ 10 kHz	1.6×10^{-4}	
		10 kHz ~ 100 kHz	8.9×10^{-4}	
		(8 V ~ 10 V)		
		20 Hz	1.7 mV	
		20 Hz ~ 50 Hz	1.5×10^{-4}	
		50 Hz ~ 1 kHz	1.3×10^{-4}	
		1 kHz ~ 10 kHz	1.5×10^{-4}	
		10 kHz ~ 100 kHz	8.2×10^{-4}	
		(10 V ~ 50 V)		
		20 Hz	15 mV	
		20 Hz ~ 50 Hz	2.4×10^{-4}	
		50 Hz ~ 1 kHz	2.2×10^{-4}	
		1 kHz ~ 10 kHz	2.4×10^{-4}	
		10 kHz ~ 100 kHz	1.1×10^{-3}	
		(50 V ~ 80 V)		
		20 Hz	17 mV	
		20 Hz ~ 50 Hz	1.6×10^{-4}	
		50 Hz ~ 1 kHz	1.5×10^{-4}	
		1 kHz ~ 10 kHz	1.6×10^{-4}	
		10 kHz ~ 100 kHz	8.9×10^{-4}	
		(80 V ~ 100 V)		
		20 Hz	19 mV	
		20 Hz ~ 50 Hz	1.5×10^{-4}	
		50 Hz ~ 1 kHz	1.3×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40312	1 kHz ~ 10 kHz	1.5×10^{-4}	
		10 kHz ~ 100 kHz	8.2×10^{-4}	
		(100 V ~ 150 V)		
		50 Hz	0.12 V	
		50 Hz ~ 100 Hz	8.0×10^{-4}	
		100 Hz ~ 1 kHz	5.3×10^{-4}	
		1 kHz ~ 10 kHz	8.0×10^{-4}	
		(150 V ~ 200 V)		
		50 Hz	0.14 V	
		50 Hz ~ 100 Hz	7.0×10^{-4}	
		100 Hz ~ 1 kHz	5.5×10^{-4}	
		1 kHz ~ 10 kHz	7.0×10^{-4}	
		(200 V ~ 300 V)		
		50 Hz	0.14 V	
		50 Hz ~ 100 Hz	4.7×10^{-4}	
		100 Hz ~ 1 kHz	3.7×10^{-4}	
		1 kHz ~ 10 kHz	4.7×10^{-4}	
		(300 V ~ 500 V)		
		50 Hz	0.70 V	
		50 Hz ~ 10 kHz	1.4×10^{-3}	
		(500 V ~ 800 V)		
		50 Hz	0.70 V	
		50 Hz ~ 10 kHz	8.8×10^{-4}	
		(800 V ~ 1 000 V)		
		50 Hz	0.70 V	
		50 Hz ~ 10 kHz	7.0×10^{-4}	
		(1 kV ~ 1.5 kV)		
		60 Hz	0.031 kV	
DC Voltage		100 mV	6.9 μV	
		(0.1 V ~ 1 V)	69 μV	
		(1 V ~ 10 V)	0.69 mV	
		(10 V ~ 100 V)	3.8 mV	
		(100 V ~ 400 V)	0.069 V	
		(400 V ~ 1 000 V)	0.69 V	
AC Current		100 μA		
		50 Hz ~ 10 kHz	71 nA	
		(0.1 mA ~ 0.4 mA)		
		50 Hz ~ 10 kHz	0.12 μA	
		(0.4 mA ~ 0.8 mA)		
		50 Hz ~ 10 kHz	0.15 μA	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40312	(0.8 mA ~ 1 mA) 50 Hz ~ 10 kHz	0.18 μA	
		(1 mA ~ 4 mA) 50 Hz ~ 10 kHz	1.1 μA	
		(4 mA ~ 8 mA) 50 Hz ~ 10 kHz	1.4 μA	
		(8 mA ~ 10 mA) 50 Hz ~ 10 kHz	1.6 μA	
		(10 mA ~ 40 mA) 50 Hz ~ 10 kHz	11 μA	
		(40 mA ~ 80 mA) 50 Hz ~ 10 kHz	14 μA	
		(80 mA ~ 100 mA) 50 Hz ~ 10 kHz	15 μA	
		(0.1 A ~ 0.4 A) 50 Hz ~ 10 kHz	0.11 mA	
		(0.4 A ~ 0.8 A) 50 Hz ~ 10 kHz	0.14 mA	
		(0.8 A ~ 1 A) 50 Hz ~ 10 kHz	0.16 mA	
		(1 A ~ 4 A) 50 Hz ~ 10 kHz	1.1 mA	
		(4 A ~ 8 A) 50 Hz ~ 10 kHz	1.5 mA	
		(8 A ~ 10 A) 50 Hz ~ 10 kHz	1.7 mA	
		(10 A ~ 20 A) 50 Hz ~ 10 kHz	7.5 mA	
		(20 A ~ 30 A) 50 Hz ~ 10 kHz	8.1 mA	
		(30 A ~ 45 A) 50 Hz ~ 10 kHz	9.3 mA	
DC Current		100 μA (0.1 mA ~ 1 mA) (1 mA ~ 10 mA) (10 mA ~ 100 mA) (0.1 A ~ 1 A)	10 nA 64 nA 0.64 μA 6.4 μA 64 μA	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Current	40312	(1 A ~ 10 A)	0.68 mA	
		(10 A ~ 40 A)	25 mA	
		(40 A ~ 80 A)	48 mA	
		(80 A ~ 100 A)	53 mA	
Frequency		20 Hz	9 μHz	
		(20 Hz ~ 100 Hz)	7.8×10^{-7}	
		(100 Hz ~ 1 kHz)	8.4×10^{-7}	
		(1 kHz ~ 10 kHz)	9.8×10^{-7}	
		(10 kHz ~ 100 kHz)	7.5×10^{-7}	
Puncture/safety testers	40313			High voltage voltmeters,
AC Voltage		50 Hz		Digital Multimeter
		0.1 kV	0.021 kV	/ HCT-CS-077-40313
		(0.1 ~ 2) kV	2.1×10^{-2}	
		(2 ~ 10) kV	1.7×10^{-2}	
		(10 ~ 20) kV	5.5×10^{-3}	
		(20 ~ 30) kV	7.0×10^{-3}	
		(30 ~ 40) kV	7.8×10^{-3}	
		(40 ~ 50) kV	8.2×10^{-3}	
		(50 ~ 60) kV	8.5×10^{-3}	
		(60 ~ 70) kV	8.7×10^{-3}	
		60 Hz		
		0.1 kV	0.022 kV	
		(0.1 ~ 1) kV	2.2×10^{-2}	
		(1 ~ 8) kV	1.0×10^{-2}	
		(8 ~ 10) kV	1.2×10^{-2}	
		(10 ~ 75) kV	1.0×10^{-2}	
DC Voltage		0.1 kV	1.3 V	
		(0.1 ~ 1) kV	1.3×10^{-3}	
		(1 ~ 6) kV	6.5×10^{-4}	
		(6 ~ 8) kV	5.3×10^{-4}	
		(8 ~ 30) kV	8.5×10^{-4}	
		(30 ~ 100) kV	7.7×10^{-4}	
AC Cutoff Current		(50 ~ 60) Hz		
		(0.5 ~ 10) mA	1.4×10^{-2}	
		(10 ~ 20) mA	3.1×10^{-3}	
		(20 ~ 50) mA	1.3×10^{-3}	
		(50 ~ 100) mA	5.8×10^{-3}	
DC Cutoff Current		(0.5 ~ 10) mA	1.4×10^{-2}	
		(10 ~ 20) mA	2.9×10^{-3}	
		(20 ~ 50) mA	1.2×10^{-3}	
		(50 ~ 100) mA	5.8×10^{-3}	
Insulation Voltage		50 V	1.1 mV	
		(50 ~ 300) V	3.1×10^{-5}	
		(300 ~ 500) V	2.2×10^{-5}	
		(500 ~ 800) V	1.6×10^{-5}	
		(0.8 ~ 1) kV	1.3×10^{-3}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Insulation Voltage	40313	(1 ~ 2) kV	7.0×10^{-4}	
		(2 ~ 6) kV	6.5×10^{-4}	
		(6 ~ 8) kV	5.3×10^{-4}	
		(8 ~ 10) kV	8.3×10^{-4}	
Insulation Resistance		1 kΩ	0.58 Ω	
		(1 ~ 10) kΩ	7.0×10^{-5}	
		(10 ~ 100) kΩ	6.3×10^{-5}	
		(0.1 ~ 1) MΩ	3.5×10^{-4}	
		(1 ~ 10) MΩ	1.2×10^{-3}	
		(10 ~ 100) MΩ	1.2×10^{-3}	
		(0.1 ~ 1) GΩ	2.7×10^{-3}	
		(1 ~ 10) GΩ	6.6×10^{-3}	
		(10 ~ 100) GΩ	1.2×10^{-2}	
Ground Bond AC Current		(50 ~ 60) Hz		
		2 A	7.7 mA	
		(2 ~ 4) A	3.0×10^{-3}	
		(4 ~ 10) A	2.7×10^{-3}	
		(10 ~ 20) A	1.7×10^{-3}	
		(20 ~ 60) A	1.4×10^{-3}	
Ground Bond Resistance		(50 ~ 60) Hz		
		100 mΩ	1.4 mΩ	
		(100 ~ 500) mΩ	1.3×10^{-2}	
Operating Time		1 s	1.0×10^{-2}	
		(1 ~ 30) s	2.3×10^{-3}	
		(30 ~ 60) s	1.2×10^{-3}	
Power recorders	40314			Power Calibrators,
Power				Multimeter calibrators
		(50 Hz ~ 60 Hz)		/ HCT-CS-078-40314
		1 W ~ 10 W	6.6×10^{-4}	
		10 W ~ 24 W	4.0×10^{-4}	
		24 W ~ 48 W	3.4×10^{-4}	
		48 W ~ 60 W	3.3×10^{-4}	
		60 W ~ 120 W	5.8×10^{-4}	
		120 W ~ 240 W	4.0×10^{-4}	
		240 W ~ 600 W	3.4×10^{-4}	
		600 W ~ 1.2 kW	5.9×10^{-4}	
		1.2 kW ~ 2.4 kW	4.1×10^{-4}	
		2.4 kW ~ 4.8 kW	4.0×10^{-4}	
		4.8 kW ~ 6 kW	3.5×10^{-4}	
		6 kW ~ 12 kW	6.1×10^{-4}	
		12 kW ~ 24 kW	6.0×10^{-4}	
		24 kW ~ 50 kW	5.7×10^{-4}	
AC Voltage		(50 Hz ~ 60 Hz)		
		1 V ~ 50 V	1.5×10^{-4}	
		50 V ~ 100 V	5.8×10^{-4}	
		100 V ~ 200 V	3.0×10^{-4}	
		200 V ~ 300 V	2.0×10^{-4}	
		300 V ~ 400 V	1.6×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40314	(50 Hz ~ 60 Hz)		
		0.1 A ~ 1 A	6.7×10^{-4}	
		1 A ~ 2 A	4.2×10^{-4}	
		2 A ~ 5 A	3.1×10^{-3}	
		5 A ~ 10 A	2.1×10^{-3}	
		10 A ~ 20 A	6.4×10^{-4}	
		20 A ~ 50 A	2.0×10^{-4}	
		50 A ~ 100 A	6.0×10^{-4}	
		100 A ~ 200 A	1.8×10^{-3}	
AC voltmeters	40318			Multimeter calibrators,
DC voltage		(1 ~ 2) mV	9.3×10^{-6}	Digital Multimeter
		(-1 ~ -2) mV	9.2×10^{-6}	/ HCTD-CS-079-40318
		(2 ~ 10) mV	8.4×10^{-6}	
		(-2 ~ -10) mV	8.4×10^{-6}	
		(10 ~ 100) mV	8.3×10^{-6}	
		(-10 ~ -100) mV	8.3×10^{-6}	
		(0.1 ~ 1) V	5.9×10^{-6}	
		(-0.1 ~ -1) V	5.9×10^{-6}	
		(1 ~ 10) V	3.6×10^{-6}	
		(-1 ~ -10) V	3.6×10^{-6}	
		(10 ~ 100) V	6.1×10^{-6}	
		(-10 ~ -100) V	6.1×10^{-6}	
		(100 ~ 1 000) V	8.3×10^{-6}	
		(-100 ~ -1 000) V	8.3×10^{-6}	
AC Voltage		(1 mV ~ 2 mV)		
		40 Hz	1.9×10^{-3}	
		100 Hz	1.9×10^{-3}	
		1 kHz	2.2×10^{-3}	
		10 kHz	5.2×10^{-3}	
		20 kHz	5.8×10^{-3}	
		50 kHz	1.9×10^{-3}	
		100 kHz	1.7×10^{-3}	
		500 kHz	1.7×10^{-3}	
		1 MHz	1.7×10^{-3}	
		(2 mV ~ 10 mV)		
		40 Hz	3.3×10^{-4}	
		100 Hz	3.3×10^{-4}	
		1 kHz	3.3×10^{-4}	
		10 kHz	3.6×10^{-4}	
		20 kHz	6.0×10^{-4}	
		50 kHz	1.4×10^{-3}	
		100 kHz	1.8×10^{-3}	
		500 kHz	2.5×10^{-3}	
		1 MHz	1.1×10^{-3}	
		(10 mV ~ 100 mV)		
		40 Hz	5.9×10^{-5}	
		100 Hz	5.9×10^{-5}	
		1 kHz	5.9×10^{-5}	
		10 kHz	5.9×10^{-5}	
		20 kHz	5.9×10^{-5}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40318	50 kHz	1.2×10^{-4}	
		100 kHz	1.8×10^{-4}	
		500 kHz	7.0×10^{-4}	
		1 MHz	7.2×10^{-4}	
		(100 mV ~ 1 V)		
		10 Hz	2.2×10^{-4}	
		20 Hz	7.1×10^{-5}	
		40 Hz	3.7×10^{-5}	
		100 Hz	1.9×10^{-5}	
		1 kHz	1.8×10^{-5}	
		10 kHz	2.5×10^{-5}	
		20 kHz	1.8×10^{-5}	
		50 kHz	4.7×10^{-5}	
		100 kHz	5.9×10^{-5}	
		500 kHz	5.0×10^{-4}	
		1 MHz	5.2×10^{-4}	
		(1 V ~ 10 V)		
		10 Hz	2.2×10^{-4}	
		20 Hz	7.1×10^{-5}	
		40 Hz	3.6×10^{-5}	
		100 Hz	2.4×10^{-5}	
		1 kHz	2.4×10^{-5}	
		10 kHz	2.4×10^{-5}	
		20 kHz	2.4×10^{-5}	
		50 kHz	4.7×10^{-5}	
		100 kHz	5.8×10^{-5}	
		500 kHz	5.0×10^{-4}	
		1 MHz	5.6×10^{-4}	
		(10 V ~ 100 V)		
		10 Hz ~ 40 Hz	3.5×10^{-5}	
		40 Hz ~ 100 Hz	3.5×10^{-5}	
		100 Hz ~ 1 kHz	3.5×10^{-5}	
		1 kHz ~ 10 kHz	3.5×10^{-5}	
		10 kHz ~ 20 kHz	3.5×10^{-5}	
		20 kHz ~ 50 kHz	7.6×10^{-5}	
		50 kHz ~ 100 kHz	8.2×10^{-5}	
		(100 V ~ 1 000 V)		
		40 Hz	3.3×10^{-5}	
		100 Hz	3.3×10^{-5}	
		1 kHz	3.3×10^{-5}	
		10 kHz	3.3×10^{-5}	
		20 kHz	3.3×10^{-5}	
Frequency		1 Hz ~ 10 Hz	5.8×10^{-4}	
		10 Hz ~ 1 KHz	5.8×10^{-5}	
		1 KHz ~ 1 MHz	5.8×10^{-5}	
		1 MHz ~ 10 MHz	5.8×10^{-5}	
		10 MHz ~ 50 MHz	1.2×10^{-4}	

403. AC voltage, current & power

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Frequency response	40318	0 dB (0.774 6 V)		
		20 Hz ~ 100 kHz	0.002 dB	
		100 kHz ~ 200 kHz	0.005 dB	
Output voltage		(0 V ~ 1 V)		
		100 Hz ~ 20 kHz	1.0×10^{-3}	
		20 kHZ ~ 50 kHz	2.0×10^{-3}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
LF amplifiers	40401			Multimeter calibrators,
Gain		(DC ~ 1 kHz)		Digital Multimeter
		0 V ~ 1 V	2.3×10^{-4}	
		1 V ~ 10 V	3.7×10^{-4}	
		10 V ~ 100 V	1.6×10^{-4}	
		(1 kHz ~ 10 kHz)		
		0 V ~ 1 V	2.2×10^{-4}	
		1 V ~ 10 V	3.7×10^{-4}	
		10 V ~ 100 V	1.4×10^{-4}	
		(10 kHz ~ 100 kHz)		
		0 V ~ 1 V	7.1×10^{-4}	
		1 V ~ 10 V	9.5×10^{-4}	
		10 V ~ 100 V	7.2×10^{-4}	
		(DC ~ 1 kHz)		
		0 ~ 60 dB	0.006 dB	
		(1 kHz ~ 20 kHz)		
		0 ~ 60 dB	0.007 dB	
		(20 kHz ~ 100 kHz)		
		0 ~ 40 dB	0.010 dB	
DC/LF attenuators	40402			Function Generator,
Attenuator		(20 Hz ~ 10 kHz)		Digital Multimeters
		0 dB ~ 60 dB	0.006 dB	/HCT-CS-081-40402
		(10 ~ 20) kHz		
		0 dB ~ 60 dB	0.007 dB	
		(20 ~ 50) kHz		
		0 dB ~ 60 dB	0.011 dB	
		(50 ~ 100) kHz		
		0 dB ~ 60 dB	0.011 dB	
Multimeter calibrators	40403			Standard cell,Standard resistance,
DC Voltage		0 mV	0.13 μV	Standard Divider,AC Calibrator
		(0 ~ 100) mV	7.6×10^{-6}	Digital Multimeter
		(-0 ~ -100) mV	7.6×10^{-6}	/HCT-CS-082-40403
		(0.1 ~ 1) V	4.0×10^{-6}	
		(-0.1 ~ -1) V	4.0×10^{-6}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Voltage	40403	(1 ~ 10) V	4.0×10^{-6}	
		(-1 ~ -10) V	4.0×10^{-6}	
		(10 ~ 100) V	5.7×10^{-6}	
		(-10 ~ -100) V	5.7×10^{-6}	
		(100 ~ 1 000) V	5.9×10^{-6}	
		(-100 ~ -1 000) V	5.9×10^{-6}	
AC Voltage		(10 Hz)		
		0.1 mV ~ 100 mV	2.5×10^{-4}	
		0.1 V ~ 1 V	2.3×10^{-4}	
		1 V ~ 10 V	2.3×10^{-4}	
		10 V ~ 100 V	2.3×10^{-4}	
		(10 Hz ~ 40 Hz)		
		0.1 mV ~ 100 mV	5.3×10^{-5}	
		0.1 V ~ 1 V	2.8×10^{-5}	
		1 V ~ 10 V	3.2×10^{-5}	
		10 V ~ 100 V	3.7×10^{-5}	
		100 V ~ 1 000 V	4.6×10^{-5}	
		(40 Hz ~ 100 Hz)		
		0.1 mV ~ 100 mV	5.3×10^{-5}	
		0.1 V ~ 1 V	2.9×10^{-5}	
		1 V ~ 10 V	3.2×10^{-5}	
		10 V ~ 100 V	3.7×10^{-5}	
		100 V ~ 1 000 V	4.6×10^{-5}	
		(100 Hz ~ 500 Hz)		
		0.1 mV ~ 100 mV	5.3×10^{-5}	
		0.1 V ~ 1 V	2.9×10^{-5}	
		1 V ~ 10 V	3.2×10^{-5}	
		10 V ~ 100 V	3.7×10^{-5}	
		100 V ~ 1 000 V	4.6×10^{-5}	
		(500 Hz ~ 1 kHz)		
		0.1 mV ~ 100 mV	5.3×10^{-5}	
		0.1 V ~ 1 V	2.9×10^{-5}	
		1 V ~ 10 V	3.2×10^{-5}	
		10 V ~ 100 V	3.7×10^{-5}	
		100 V ~ 1 000 V	4.6×10^{-5}	
		(1 kHz ~ 10 kHz)		
		0.1 mV ~ 100 mV	5.4×10^{-5}	
		0.1 V ~ 1 V	2.8×10^{-5}	
		1 V ~ 10 V	3.2×10^{-5}	
		10 V ~ 100 V	3.7×10^{-5}	
		100 V ~ 1 000 V	4.7×10^{-5}	
		(10 kHz ~ 20 kHz)		
		0.1 mV ~ 100 mV	5.4×10^{-5}	
		0.1 V ~ 1 V	2.8×10^{-5}	
		1 V ~ 10 V	3.2×10^{-5}	
		10 V ~ 100 V	3.7×10^{-5}	
		100 V ~ 1 000 V	4.7×10^{-5}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40403	(20 kHz ~ 30 kHz)		
		0.1 mV ~ 100 mV	9.4×10^{-5}	
		0.1 V ~ 1 V	5.4×10^{-5}	
		1 V ~ 10 V	5.6×10^{-5}	
		10 V ~ 100 V	8.1×10^{-5}	
		100 V ~ 1 000 V	1.5×10^{-4}	
		(30 kHz ~ 50 kHz)		
		0.1 mV ~ 100 mV	9.4×10^{-5}	
		0.1 V ~ 1 V	5.4×10^{-5}	
		1 V ~ 10 V	5.6×10^{-5}	
		10 V ~ 100 V	8.1×10^{-5}	
		100 V ~ 600 V	1.5×10^{-4}	
		(50 kHz ~ 100 kHz)		
		0.1 mV ~ 100 mV	2.0×10^{-4}	
		0.1 V ~ 1 V	8.3×10^{-5}	
		1 V ~ 10 V	9.4×10^{-5}	
		10 V ~ 100 V	1.1×10^{-4}	
		100 V ~ 600 V	5.8×10^{-4}	
		(100 kHz ~ 200 kHz)		
		0.1 mV ~ 100 mV	3.1×10^{-4}	
		0.1 V ~ 1 V	1.9×10^{-4}	
		1 V ~ 10 V	2.2×10^{-4}	
		10 V ~ 60 V	2.3×10^{-4}	
		(200 kHz ~ 300 kHz)		
		0.1 mV ~ 100 mV	3.1×10^{-4}	
		0.1 V ~ 1 V	1.9×10^{-4}	
		1 V ~ 10 V	2.2×10^{-4}	
		10 V ~ 60 V	2.3×10^{-4}	
		(300 kHz ~ 500 kHz)		
		0.1 mV ~ 100 mV	4.7×10^{-4}	
		0.1 V ~ 1 V	3.0×10^{-4}	
		1 V ~ 20 V	4.6×10^{-4}	
		(500 kHz ~ 1 MHz)		
		0.1 mV ~ 100 mV	1.1×10^{-3}	
		0.1 V ~ 1 V	1.1×10^{-3}	
		1 V ~ 20 V	1.4×10^{-3}	
		(1 MHz ~ 2 MHz)		
		0.1 mV ~ 100 mV	6.2×10^{-4}	
		0.1 V ~ 1 V	5.9×10^{-4}	
		1 V ~ 3 V	5.9×10^{-4}	
		(2 MHz ~ 5 MHz)		
		0.1 mV ~ 100 mV	1.2×10^{-3}	
		0.1 V ~ 1 V	1.2×10^{-3}	
		1 V ~ 3 V	5.9×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40403	(5 MHz ~ 10 MHz)		
		0.1 mV ~ 100 mV	1.2×10^{-3}	
		0.1 V ~ 1 V	1.2×10^{-3}	
		1 V ~ 3 V	1.2×10^{-3}	
		(10 MHz ~ 20 MHz)		
		0.1 mV ~ 100 mV	1.8×10^{-3}	
		0.1 V ~ 1 V	1.8×10^{-3}	
		1 V ~ 3 V	1.2×10^{-3}	
		(20 MHz ~ 30 MHz)		
		0.1 mV ~ 100 mV	6.9×10^{-3}	
		0.1 V ~ 1 V	6.9×10^{-3}	
		1 V ~ 3 V	1.8×10^{-3}	
DC Current		0 μA	0.81 nA	
		(0 ~ 100) μA	8.7×10^{-6}	
		(-0 ~ -100) μA	8.7×10^{-6}	
		(0.1 ~ 1) mA	9.9×10^{-6}	
		(-0.1 ~ -1) mA	9.9×10^{-6}	
		(1 ~ 10) mA	1.0×10^{-5}	
		(-1 ~ -10) mA	1.0×10^{-5}	
		(10 ~ 100) mA	6.5×10^{-6}	
		(-10 ~ -100) mA	6.5×10^{-6}	
		(0.1 ~ 1) A	6.6×10^{-6}	
		(-0.1 ~ -1) A	6.6×10^{-6}	
		(1 ~ 10) A	1.5×10^{-5}	
		(-1 ~ -10) A	1.5×10^{-5}	
		(10 ~ 20) A	4.0×10^{-5}	
		(-10 ~ -20) A	4.0×10^{-5}	
AC Current		(10 Hz)		
		1 μA ~ 100 μA	3.2×10^{-4}	
		0.1 mA ~ 1 mA	2.9×10^{-4}	
		1 mA ~ 10 mA	2.9×10^{-4}	
		10 mA ~ 100 mA	2.9×10^{-4}	
		100 mA ~ 1 A	2.9×10^{-4}	
		1 A ~ 3 A	9.9×10^{-4}	
		(10 Hz ~ 40 Hz)		
		1 μA ~ 100 μA	7.1×10^{-5}	
		0.1 mA ~ 1 mA	3.6×10^{-5}	
		1 mA ~ 10 mA	4.5×10^{-5}	
		10 mA ~ 100 mA	4.4×10^{-5}	
		100 mA ~ 1 A	4.5×10^{-5}	
		1 A ~ 3 A	2.5×10^{-4}	
		(40 Hz ~ 45 Hz)		
		1 μA ~ 100 μA	7.3×10^{-5}	
		0.1 mA ~ 1 mA	3.7×10^{-5}	
		1 mA ~ 10 mA	4.3×10^{-5}	
		10 mA ~ 100 mA	4.4×10^{-5}	
		100 mA ~ 1 A	4.5×10^{-5}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40403	1 A ~ 10 A	2.9×10^{-4}	
		10 A ~ 20 A	2.9×10^{-4}	
		(45 Hz ~ 100 Hz)		
		1 μA ~ 100 μA	7.3×10^{-5}	
		0.1 mA ~ 1 mA	3.7×10^{-5}	
		1 mA ~ 10 mA	4.3×10^{-5}	
		10 mA ~ 100 mA	4.4×10^{-5}	
		100 mA ~ 1 A	4.7×10^{-5}	
		1 A ~ 10 A	4.9×10^{-5}	
		10 A ~ 20 A	4.7×10^{-5}	
		(100 Hz ~ 200 Hz)		
		1 μA ~ 100 μA	7.2×10^{-5}	
		0.1 mA ~ 1 mA	3.8×10^{-5}	
		1 mA ~ 10 mA	4.3×10^{-5}	
		10 mA ~ 100 mA	4.5×10^{-5}	
		100 mA ~ 1 A	4.7×10^{-5}	
		1 A ~ 10 A	4.9×10^{-5}	
		10 A ~ 20 A	4.7×10^{-5}	
		(200 Hz ~ 500 Hz)		
		1 μA ~ 100 μA	7.2×10^{-5}	
		0.1 mA ~ 1 mA	3.7×10^{-5}	
		1 mA ~ 10 mA	4.3×10^{-5}	
		10 mA ~ 100 mA	4.4×10^{-5}	
		100 mA ~ 1 A	4.5×10^{-5}	
		1 A ~ 10 A	6.3×10^{-5}	
		10 A ~ 20 A	4.8×10^{-5}	
		(500 Hz ~ 1 kHz)		
		1 μA ~ 100 μA	7.2×10^{-5}	
		0.1 mA ~ 1 mA	3.7×10^{-5}	
		1 mA ~ 10 mA	4.3×10^{-5}	
		10 mA ~ 100 mA	4.5×10^{-5}	
		100 mA ~ 1 A	4.3×10^{-5}	
		1 A ~ 10 A	4.9×10^{-5}	
		10 A ~ 20 A	4.8×10^{-5}	
		(1 kHz ~ 2 kHz)		
		1 μA ~ 100 μA	7.3×10^{-5}	
		0.1 mA ~ 1 mA	3.7×10^{-5}	
		1 mA ~ 10 mA	4.3×10^{-5}	
		10 mA ~ 100 mA	4.3×10^{-5}	
		100 mA ~ 1 A	4.4×10^{-5}	
		1 A ~ 10 A	4.9×10^{-5}	
		10 A ~ 20 A	4.8×10^{-5}	
		(2 kHz ~ 5 kHz)		
		1 μA ~ 100 μA	7.3×10^{-5}	
		0.1 mA ~ 1 mA	3.6×10^{-5}	
		1 mA ~ 10 mA	4.2×10^{-5}	
		10 mA ~ 100 mA	4.6×10^{-5}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40403	100 mA ~ 1 A	4.5×10^{-5}	
		1 A ~ 10 A	4.9×10^{-5}	
		10 A ~ 20 A	4.9×10^{-5}	
		(5 kHz ~ 10 kHz)		
		1 μA ~ 100 μA	7.3×10^{-5}	
		0.1 mA ~ 1 mA	3.7×10^{-5}	
		1 mA ~ 10 mA	4.3×10^{-5}	
		10 mA ~ 100 mA	4.5×10^{-5}	
		100 mA ~ 1 A	5.0×10^{-5}	
		1 A ~ 3 A	2.6×10^{-4}	
		(10 kHz ~ 30 kHz)		
		1 μA ~ 100 μA	1.2×10^{-4}	
		0.1 mA ~ 1 mA	6.8×10^{-5}	
		1 mA ~ 10 mA	7.2×10^{-5}	
		10 mA ~ 100 mA	7.2×10^{-5}	
		0.1 A ~ 0.33 A	2.1×10^{-4}	
Resistance		0 Ω	4.6 μΩ	
		0.1 Ω ~ 1 Ω	9.9×10^{-6}	
		1 Ω ~ 10 Ω	2.5×10^{-5}	
		10 Ω ~ 100 Ω	7.8×10^{-6}	
		100 Ω ~ 1 kΩ	7.4×10^{-6}	
		1 kΩ ~ 10 kΩ	5.0×10^{-6}	
		10 kΩ ~ 100 kΩ	7.5×10^{-6}	
		100 kΩ ~ 1 MΩ	1.0×10^{-5}	
		1 MΩ ~ 10 MΩ	1.2×10^{-5}	
		10 MΩ ~ 100 MΩ	2.5×10^{-5}	
		100 MΩ ~ 1 000 MΩ	4.2×10^{-4}	
		1 GΩ ~ 10 GΩ	5.8×10^{-4}	
		10 GΩ ~ 100 GΩ	5.8×10^{-4}	
Frequency		(0.1 ~ 1) Hz	5.8×10^{-7}	
		(1 ~ 10) Hz	5.8×10^{-7}	
		(10 ~ 100) Hz	5.8×10^{-7}	
		(0.1 ~ 1) kHz	5.8×10^{-7}	
		(1 ~ 10) kHz	5.8×10^{-7}	
		(10 ~ 100) kHz	5.8×10^{-7}	
		(0.1 ~ 1) MHz	5.8×10^{-7}	
		(1~ 10) MHz	5.8×10^{-7}	
		(10 ~ 30) MHz	1.9×10^{-7}	
Multi Function Calibrator DC Voltage (Meter)		(0.1 ~ 100) mV	1.4×10^{-5}	Meter Calibrator,LCR Meter Frequency Counter, Digital Multimeter /HCT-CS-276-40403
		(-0.1 ~ -100) mV	1.4×10^{-5}	
		(0.1 ~ 1) V	7.0×10^{-6}	
		(-0.1 ~ -1) V	7.0×10^{-6}	
		(1 ~ 10) V	3.9×10^{-6}	
		(-1 ~ -10) V	3.9×10^{-6}	
		(10 ~ 100) V	6.7×10^{-6}	
		(-10 ~ -100) V	6.7×10^{-6}	
		(100 ~ 1 000) V	8.9×10^{-6}	
		(-100 ~ -1 000) V	8.9×10^{-6}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Current (Meter)	40403	(1 ~ 100) μA	1.4×10^{-4}	
		(-1 ~ -100) μA	1.4×10^{-4}	
		(0.1 ~ 1) mA	5.6×10^{-5}	
		(-0.1 ~ -1) mA	5.6×10^{-5}	
		(1 ~ 10) mA	5.2×10^{-5}	
		(-1 ~ -10) mA	5.2×10^{-5}	
		(10 ~ 100) mA	4.7×10^{-5}	
		(-10 ~ -100) mA	4.7×10^{-5}	
		(0.1 ~ 1) A	1.2×10^{-4}	
		(-0.1 ~ -1) A	1.2×10^{-4}	
		(1 ~ 10) A	1.0×10^{-4}	
		(-1 ~ -10) A	9.9×10^{-5}	
		(10 ~ 20) A	1.0×10^{-4}	
		(-10 ~ -20) A	9.9×10^{-5}	
Resistance (Meter)		(0.1 ~ 100) Ω	7.0×10^{-6}	
		(0.1 ~ 1) kΩ	7.0×10^{-6}	
		(1 ~ 10) kΩ	4.7×10^{-6}	
		(10 ~ 100) kΩ	7.2×10^{-6}	
		(0.1 ~ 1) MΩ	1.0×10^{-5}	
		(1 ~ 10) MΩ	1.2×10^{-5}	
		(10 ~ 100) MΩ	2.5×10^{-5}	
		(0.1 ~ 1) GΩ	6.2×10^{-4}	
AC Voltage (Meter)		(10 Hz ~ 40 Hz)		
		(1 ~ 100) mV	1.2×10^{-4}	
		(0.1 ~ 1) V	5.3×10^{-5}	
		(1 ~ 10) V	5.3×10^{-5}	
		(10 ~ 100) V	5.3×10^{-5}	
		(100 ~ 1 000) V	1.6×10^{-4}	
		(40 Hz ~ 500 Hz)		
		(1 ~ 100) mV	1.1×10^{-4}	
		(0.1 ~ 1) V	4.7×10^{-5}	
		(1 ~ 10) V	4.7×10^{-5}	
		(10 ~ 100) V	5.3×10^{-5}	
		(100 ~ 1 000) V	1.1×10^{-4}	
		(500 Hz ~ 1 kHz)		
		(1 ~ 100) mV	1.1×10^{-4}	
		(0.1 ~ 1) V	4.7×10^{-5}	
		(1 ~ 10) V	4.7×10^{-5}	
		(10 ~ 100) V	5.3×10^{-5}	
		(100 ~ 1 000) V	1.1×10^{-4}	
		(1 kHz ~ 10 kHz)		
		(1 ~ 100) mV	1.1×10^{-4}	
		(0.1 ~ 1) V	4.7×10^{-5}	
		(1 ~ 10) V	4.7×10^{-5}	
		(10 ~ 100) V	5.3×10^{-5}	
		(100 ~ 1 000) V	1.1×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage (Meter)	40403	(10 kHz ~ 20 kHz)		
		(1 ~ 100) mV	1.2×10^{-4}	
		(0.1 ~ 1) V	4.7×10^{-5}	
		(1 ~ 10) V	4.7×10^{-5}	
		(10 ~ 100) V	6.1×10^{-5}	
		(100 ~ 1 000) V	1.6×10^{-4}	
		(20 kHz ~ 50 kHz)		
		(1 ~ 100) mV	1.7×10^{-4}	
		(0.1 ~ 1) V	7.0×10^{-5}	
		(1 ~ 10) V	7.0×10^{-5}	
		(10 ~ 100) V	8.6×10^{-5}	
		(50 kHz ~ 100 kHz)		
		(0 ~ 100) mV	1.7×10^{-4}	
		(0.1 ~ 1) V	7.7×10^{-5}	
		(1 ~ 10) V	7.7×10^{-5}	
		(10 ~ 100) V	9.9×10^{-5}	
AC Current (Meter)		(10 ~ 40)Hz		
		(1 ~ 100) μA	1.4×10^{-4}	
		(0.1 ~ 1) mA	9.9×10^{-5}	
		(1 ~ 10) mA	9.9×10^{-5}	
		(10 ~ 100) mA	1.1×10^{-4}	
		(0.1 ~ 1) A	2.4×10^{-4}	
		(1 ~ 10) A	1.5×10^{-4}	
		(10 ~ 20) A	1.5×10^{-4}	
		(40 Hz ~ 500 Hz)		
		(1 ~ 100) μA	1.4×10^{-4}	
		(0.1 ~ 1) mA	9.9×10^{-5}	
		(1 ~ 10) mA	9.9×10^{-5}	
		(10 ~ 100) mA	1.1×10^{-4}	
		(0.1 ~ 1) A	2.4×10^{-4}	
		(1 ~ 10) A	5.9×10^{-4}	
		(10 ~ 20) A	4.9×10^{-4}	
		(500 Hz ~ 1 kHz)		
		(1 ~ 100) μA	1.4×10^{-4}	
		(0.1 ~ 1) mA	9.9×10^{-5}	
		(1 ~ 10) mA	9.9×10^{-5}	
		(10 ~ 100) mA	1.1×10^{-4}	
		(0.1 ~ 1) A	2.4×10^{-4}	
		(1 ~ 10) A	5.9×10^{-4}	
		(10 ~ 20) A	4.9×10^{-4}	
		(1 kHz ~ 5 kHz)		
		(1 ~ 100) μA	2.2×10^{-4}	
		(0.1 ~ 1) mA	1.4×10^{-4}	
		(1 ~ 10) mA	1.4×10^{-4}	
		(10 ~ 100) mA	1.5×10^{-4}	
		(0.1 ~ 1) A	3.4×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current (Meter)	40403	(5 kHz ~ 10 kHz)		
		(1 ~ 100) μA	2.2×10^{-4}	
		(0.1 ~ 1) mA	1.4×10^{-4}	
		(1 ~ 10) mA	1.4×10^{-4}	
		(10 ~ 100) mA	1.5×10^{-4}	
		(0.1 ~ 1) A	3.4×10^{-4}	
DC Voltage (Source)		(0.1 ~ 100) mV	5.9×10^{-6}	
		(-0.1 ~ -100) mV	5.9×10^{-6}	
		(0.1 ~ 1) V	3.7×10^{-6}	
		(-0.1 ~ -1) V	3.7×10^{-6}	
		(1 ~ 10) V	3.6×10^{-6}	
		(-1 ~ -10) V	3.6×10^{-6}	
		(10 ~ 100) V	5.1×10^{-6}	
		(-10 ~ -100) V	5.1×10^{-6}	
		(100 ~ 1 000) V	5.4×10^{-6}	
		(-100 ~ -1 000) V	5.4×10^{-6}	
DC Current (Source)		(1 ~ 100) μA	1.2×10^{-5}	
		(-1 ~ -100) μA	1.2×10^{-5}	
		(0.1 ~ 1) mA	1.2×10^{-5}	
		(-0.1 ~ -1) mA	1.2×10^{-5}	
		(1 ~ 10) mA	1.0×10^{-5}	
		(-1 ~ -10) mA	1.0×10^{-5}	
		(10 ~ 100) mA	2.3×10^{-5}	
		(-10 ~ -100) mA	2.3×10^{-5}	
		(0.1 ~ 1) A	3.7×10^{-5}	
		(-0.1 ~ -1) A	3.7×10^{-5}	
		(1 ~ 10) A	1.7×10^{-4}	
		(-1 ~ -10) A	1.7×10^{-4}	
저항 (Source)		(0.1 ~ 100) Ω	9.0×10^{-6}	
		(0.1 ~ 1) kΩ	8.9×10^{-6}	
		(1 ~ 10) kΩ	8.9×10^{-6}	
		(10 ~ 100) kΩ	9.1×10^{-6}	
		(0.1 ~ 1) MΩ	1.1×10^{-5}	
		(1 ~ 10) MΩ	1.5×10^{-5}	
		(10 ~ 100) MΩ	5.0×10^{-5}	
AC Current (Source)		(10 ~ 40)Hz		
		(1 ~ 100) μA	4.1×10^{-4}	
		(0.1 ~ 1) mA	4.1×10^{-4}	
		(1 ~ 10) mA	4.1×10^{-4}	
		(10 ~ 100) mA	4.0×10^{-4}	
		(0.1 ~ 1) A	8.1×10^{-4}	
		(1 ~ 10) A	1.0×10^{-3}	
		(40 Hz ~ 500 Hz)		
		(1 ~ 100) μA	4.1×10^{-4}	
		(0.1 ~ 1) mA	4.1×10^{-4}	
		(1 ~ 10) mA	4.1×10^{-4}	
		(10 ~ 100) mA	4.1×10^{-4}	
		(0.1 ~ 1) A	8.1×10^{-4}	
		(1 ~ 10) A	1.0×10^{-3}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current (Source)	40403	(500 Hz ~ 1 kHz)		
		(1 ~ 100) μA	4.1×10^{-4}	
		(0.1 ~ 1) mA	4.1×10^{-4}	
		(1 ~ 10) mA	4.1×10^{-4}	
		(10 ~ 100) mA	4.1×10^{-4}	
		(0.1 ~ 1) A	8.1×10^{-4}	
		(1 ~ 10) A	1.0×10^{-3}	
		(1 kHz ~ 5 kHz)		
		(1 ~ 100) μA	4.3×10^{-4}	
		(0.1 ~ 1) mA	4.1×10^{-4}	
		(1 ~ 10) mA	4.1×10^{-4}	
		(10 ~ 100) mA	4.1×10^{-4}	
		(0.1 ~ 1) A	9.3×10^{-4}	
		(1 ~ 10) A	3.0×10^{-3}	
		(5 kHz ~ 10 kHz)		
		(1 ~ 100) μA	5.7×10^{-4}	
		(0.1 ~ 1) mA	4.2×10^{-4}	
		(1 ~ 10) mA	4.1×10^{-4}	
		(10 ~ 100) mA	4.1×10^{-4}	
		(0.1 ~ 1) A	3.4×10^{-4}	
		(1 ~ 10) A	3.0×10^{-3}	
DC Voltage (Electrical temperature)		(-10 ~ 0) mV	5.9×10^{-5}	
		(0 ~ 1) mV	5.9×10^{-5}	
		(1 ~ 10) mV	5.9×10^{-5}	
		(10 ~ 100) mV	5.9×10^{-5}	
		(0.1 ~ 1) V	5.8×10^{-5}	
Time Mark		(0.1 ~ 1) ns	2.7×10^{-3}	
		(1~ 10) ns	2.7×10^{-4}	
		(10 ~ 100) ns	2.7×10^{-5}	
		(0.1 ~ 1) μs	2.8×10^{-6}	
		(1 ~ 10) μs	6.4×10^{-7}	
		(10 ~ 100) μs	5.8×10^{-7}	
		(0.1 ~ 1) ms	5.8×10^{-7}	
		(1 ~ 10) ms	5.8×10^{-7}	
		(10 ~ 100) ms	5.8×10^{-7}	
		(0.1 ~ 1) s	5.8×10^{-7}	
Frequency		(0.1 ~ 1) Hz	5.8×10^{-7}	
		(1 ~ 10) Hz	5.8×10^{-7}	
		(10 ~ 100) Hz	5.8×10^{-7}	
		(0.1 ~ 1) kHz	5.8×10^{-7}	
		(1 ~ 10) kHz	5.8×10^{-7}	
		(10 ~ 100) kHz	5.8×10^{-7}	
		(0.1 ~ 1) MHz	5.8×10^{-7}	
		(1~ 10) MHz	5.8×10^{-7}	
		(10 ~ 100) MHz	5.8×10^{-7}	
		(0.1 ~ 1) GHz	5.8×10^{-7}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Capacitance	40403	(DC)		
		(0.1 ~ 1) mF	6.0×10^{-4}	
		(1 ~ 10) mF	1.1×10^{-4}	
		(10 ~ 110) mF	4.8×10^{-4}	
		(DC ~ 50 Hz)		
		(10 ~ 100) μF	6.5×10^{-4}	
		(50 Hz ~ 100 Hz)		
		(0.1 ~ 1) μF	6.2×10^{-4}	
		(1 ~ 10) μF	6.2×10^{-4}	
		(10 ~ 100) μF	6.5×10^{-4}	
		(DC ~ 1 kHz)		
		(0.1 ~ 1) pF	6.9×10^{-4}	
		(1~ 10) pF	6.8×10^{-4}	
		(10 ~ 100) pF	6.2×10^{-4}	
		(0.1 ~ 1) nF	6.2×10^{-4}	
		(1 ~ 10) nF	6.2×10^{-4}	
		(10 ~ 100) nF	6.2×10^{-4}	
		(0.1 ~ 1) μF	6.2×10^{-4}	
		(1 ~ 10) μF	6.2×10^{-4}	
		(1 kHz ~ 10 kHz)		
		(0.1 ~ 1) pF	6.9×10^{-4}	
		(1~ 10) pF	6.8×10^{-4}	
		(10 ~ 100) pF	6.8×10^{-4}	
		(0.1 ~ 1) nF	6.8×10^{-4}	
		(1 ~ 10) nF	6.8×10^{-4}	
		(10 ~ 100) nF	6.8×10^{-4}	
Oscilloscope calibrators	40404			Digital Multimeters,Counters owermeters, Oscilloscope, Spectrun Analyzer, AC Calibratior / HCT-CS-083-40404
DC Voltage		-2.5 ~ 0 mV	6.0×10^{-5}	
		-(2.5 ~ 5) mV	3.1×10^{-5}	
		-(5 ~ 10) mV	6.0×10^{-5}	
		-(10 ~ 25) mV	2.5×10^{-5}	
		-(25 ~ 50) mV	1.3×10^{-5}	
		-(50 ~ 100) mV	5.8×10^{-5}	
		-(100 ~ 250) mV	2.4×10^{-5}	
		-(250 ~ 500) mV	1.2×10^{-5}	
		-(0.5 ~ 1) V	5.8×10^{-5}	
		-(1 ~ 2.5) V	2.4×10^{-5}	
		-(2.5 ~ 5) V	1.2×10^{-5}	
		-(5 ~ 10) V	5.8×10^{-5}	
		-(10 ~ 25) V	2.4×10^{-5}	
		-(25 ~ 50) V	1.3×10^{-5}	
		-(50 ~ 100) V	5.8×10^{-5}	
		-(100 ~ 150) V	3.9×10^{-5}	
		-(150 ~ 200) V	3.0×10^{-5}	
		(0 ~ 2.5) mV	5.8×10^{-5}	
		(2.5 ~ 5) mV	3.0×10^{-5}	
		(5 ~ 10) mV	6.0×10^{-5}	
		(10 ~ 25) mV	2.5×10^{-5}	
		(25 ~ 50) mV	1.3×10^{-5}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Voltage	40404	(50 ~ 100) mV	5.8×10^{-5}	
		(100 ~ 250) mV	2.4×10^{-5}	
		(250 ~ 500) mV	1.2×10^{-5}	
		(0.5 ~ 1) V	5.8×10^{-5}	
		(1 ~ 2.5) V	2.4×10^{-5}	
		(2.5 ~ 5) V	1.2×10^{-5}	
		(5 ~ 10) V	5.8×10^{-5}	
		(10 ~ 25) V	1.2×10^{-5}	
		(25 ~ 50) V	1.3×10^{-5}	
		(50 ~ 100) V	5.8×10^{-5}	
		(100 ~ 150) V	3.9×10^{-5}	
		(150 ~ 200) V	3.0×10^{-5}	
Square/Edge Wave Voltage		(1 kHz)		
		5 mV ~ 10 mV	7.4×10^{-4}	
		10 mV ~ 25 mV	4.2×10^{-4}	
		25 mV ~ 50 mV	3.3×10^{-4}	
		50 mV ~ 100 mV	2.8×10^{-4}	
		100 mV ~ 250 mV	2.5×10^{-4}	
		250 mV ~ 500 mV	1.5×10^{-4}	
		500 mV ~ 1 V	2.0×10^{-4}	
		1 V ~ 2.5 V	1.6×10^{-4}	
		2.5 V ~ 5 V	2.3×10^{-4}	
		5 V ~ 10 V	2.0×10^{-4}	
		10 V ~ 25 V	1.6×10^{-4}	
		25 V ~ 50 V	2.3×10^{-4}	
		50 V ~ 100 V	2.0×10^{-4}	
		100 V ~ 130 V	1.8×10^{-4}	
		130 V ~ 200 V	1.7×10^{-4}	
		(100 kHz)		
		10 mV ~ 25 mV	1.2×10^{-4}	
		25 mV ~ 50 mV	1.2×10^{-4}	
		50 mV ~ 100 mV	1.2×10^{-4}	
		100 mV ~ 250 mV	3.9×10^{-5}	
		250 mV ~ 500 mV	3.9×10^{-5}	
		500 mV ~ 1 V	7.0×10^{-5}	
		1 V ~ 2.5 V	5.0×10^{-5}	
Square/Edge Wave Frequency		(0.01 ~ 10) MHz	5.8×10^{-8}	
Edge TD Pulse Drive		(10 ~ 100) Hz		
		(11 ~ 100) V	2.8×10^{-5}	
		(0.1 ~ 1) kHz		
		(11 ~ 100) V	2.8×10^{-5}	
Edge Duty Cycle		(10 ~ 50) %	1.2×10^{-3}	
Edge Rise Time		(300 ~ 500) ps	1.0×10^{-2}	
Leveled Sine Wave (Harmonic)		(50 kHz ~ 6 GHz)		
		(-10 ~ -80) dBc	0.76 dB	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
RF output levels (V : pp)	40404	50 kHz ~ 600 MHz 50 mVp-p ~ 5.5 Vp-p	1.4×10^{-2}	
		600 MHz ~ 1.1 GHz 50 mVp-p ~ 3.5 Vp-p	1.4×10^{-2}	
		1.1 GHz ~ 6 GHz 50 mVp-p ~ 1.2 Vp-p	1.4×10^{-2}	
Leveled Sine Wave (Frequency)		(0.5 ~ 6) GHz	3.1×10^{-9}	
Leveled Sine Wave (Amplitude)		(0.01 ~ 50) kHz		
		(5 ~ 100) mV	1.0×10^{-4}	
		(0.1 ~ 1) V	5.9×10^{-4}	
		(1 ~ 5.5) V	1.1×10^{-4}	
Wave Generator (Square)		(0.01 ~ 1) kHz (0.01 ~ 3.75) V	1.9×10^{-4}	
		(0.01 ~ 10) kHz (2.5 ~ 55) V	8.6×10^{-5}	
Wave Generator (Sine)		(0.01 ~ 1) kHz (0.01 ~ 55) V	1.2×10^{-4}	
Wave Generator (Triangle)		(0.01 ~ 1) kHz (0.01 ~ 55) V	1.4×10^{-4}	
Pulse Generator (Priod)		(0.01 ~ 20) μs	2.9×10^{-8}	
Pulse Generator (Width)		(4 ~ 100) ns	1.0×10^{-2}	
Time Mark		1 ns ~ 5 ns	5.4×10^{-4}	
		5 ns ~ 50 ns	5.4×10^{-5}	
		50 ns ~ 500 ns	5.4×10^{-6}	
		500 ns ~ 5 μs	5.5×10^{-7}	
		5 μs ~ 50 μs	1.3×10^{-7}	
		50 μs ~ 500 μs	1.2×10^{-7}	
		500 μs ~ 5 ms	1.2×10^{-7}	
		5 ms ~ 50 ms	1.2×10^{-7}	
		50 ms ~ 500 ms	1.2×10^{-7}	
		500 ms ~ 5 s	1.2×10^{-7}	
		5 s ~ 20 s	2.9×10^{-7}	
Frequency		50 mHz ~ 500 mHz	1.2×10^{-7}	
		500 mHz ~ 5 Hz	1.2×10^{-7}	
		5 Hz ~ 50 Hz	1.2×10^{-7}	
		50 Hz ~ 500 Hz	1.2×10^{-7}	
		500 Hz ~ 5 kHz	1.2×10^{-7}	
		5 kHz ~ 50 kHz	1.2×10^{-7}	
		50 kHz ~ 500 kHz	1.2×10^{-7}	
		500 kHz ~ 5 MHz	1.2×10^{-7}	
		5 MHz ~ 50 MHz	1.2×10^{-7}	
		50 MHz ~ 500 MHz	1.2×10^{-7}	
		500 MHz ~ 1.1 GHz	5.2×10^{-7}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
MeasZ (Resistance)	40404	40 Ω ~ 1.5 MΩ	2.7×10^{-4}	
MeasZ (Capacitance)		(5 ~ 100) pF	3.0×10^{-3}	
Video signal generators	40406			Counters,Digital Multimeter, Oscilloscope /HCT-CS-084-40406
DOT Frequency		10 kHz ~ 1 000 MHz	5.8×10^{-7}	
SYNC Frequency		50 Hz ~ 1 MHz	5.8×10^{-7}	
SYNC WIDTH(Time)		1 μs ~ 100 μs	1.2×10^{-3}	
Analog Video Level		(100 ~ 1 000) mV	1.3×10^{-2}	
Analog Sync Level		1 V ~ 5 V	1.3×10^{-2}	
Audio Level		(100 ~ 1 000) mV	1.3×10^{-2}	
S-Video Level		(100 ~ 1 000) mV	1.3×10^{-2}	
Component Level		(100 ~ 1 000) mV	1.3×10^{-2}	
Scart Video Level		(100 ~ 1 000) mV	1.3×10^{-2}	
Scart Audio Level		(100 ~ 1 000) mV	1.3×10^{-2}	
NTSC,PAL,SECAM H-Timing Test		0 ns ~ 300 ns	3.9×10^{-2}	
(Time)		300 ns ~ 9 μs	1.4×10^{-3}	
(Level)		(50 ~ 1 000) mV	6.7×10^{-3}	
NTSC,PAL,SECAM COLOR BAR (LUMINANCE Level)		(50 ~ 1 000) mV	4.1×10^{-3}	
NTSC,PAL,SECAM COLOR BAR (CHROMINANCE Level)		(50 ~ 1 000) mV	4.1×10^{-3}	
NTSC,PAL,SECAM COLOR BAR (CHROMINACE Phase)		0 ° ~ 360 °	0.55 °	
RF Frequency		10 kHz ~ 1 000 MHz	5.8×10^{-7}	
Sound Frequency		10 Hz ~ 1 MHz	5.8×10^{-7}	
SUB CARRIER Frequency				
NTSC		3.579 545 MHz	0.58 Hz	
PAL		4.433 619 MHz	0.58 Hz	
Audio distortion analyzers/meters	40407			Multimeter calibrators, Distortion Meter calibrators /HCT-CS-085-40407
Audio distortion analyzers				
Input frequency		1 Hz ~ 1 MHz	5.8×10^{-5}	
AC input levels		1 mV		
		10 Hz	7.3 μV	
		10 Hz ~ 20 kHz	5.4×10^{-3}	
		(20 ~ 50) kHz	6.4×10^{-3}	
		(50 ~ 100) kHz	8.6×10^{-3}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC input levels	40407	(1 ~ 10) mV		
		10 Hz	4.2×10^{-3}	
		10 Hz ~ 20 kHz	3.3×10^{-3}	
		(20 ~ 50) kHz	3.8×10^{-3}	
		(50 ~ 100) kHz	5.0×10^{-3}	
		(10 ~ 100) mV		
		10 Hz	1.2×10^{-3}	
		10 Hz ~ 20 kHz	4.8×10^{-4}	
		(20 ~ 50) kHz	6.5×10^{-4}	
		(50 ~ 100) kHz	1.1×10^{-3}	
		100 mV ~ 1 V		
		10 Hz	6.7×10^{-4}	
		10 Hz ~ 20 kHz	5.8×10^{-4}	
		(20 ~ 50) kHz	5.9×10^{-4}	
		(50 ~ 100) kHz	6.0×10^{-4}	
		(1 ~ 10) V		
		10 Hz	8.1×10^{-4}	
		10 Hz ~ 20 kHz	5.8×10^{-4}	
		(20 ~ 50) kHz	6.1×10^{-4}	
		(50 ~ 100) kHz	6.3×10^{-4}	
		(10 ~ 100) V		
		10 Hz	6.8×10^{-4}	
		10 Hz ~ 20 kHz	5.9×10^{-4}	
		(20 ~ 50) kHz	6.6×10^{-4}	
		(50 ~ 100) kHz	1.3×10^{-3}	
		(100 ~ 300) V		
		50 Hz	4.6×10^{-4}	
		50 Hz ~ 1 kHz	2.3×10^{-4}	
DC input levels		1 mV ~ 300 V	5.8×10^{-4}	
Input distortion		(20 Hz ~ 20 kHz)		
		-10 ~ -60 dB	0.40 dB	
		-60 ~ -70 dB	0.46 dB	
		-70 ~ -80 dB	0.61 dB	
		(20 Hz ~ 20 kHz)		
		(0.01 ~ 30) %	3.1×10^{-2}	
Distortion meter calibrators				
Output Level		100 mV		
		20 Hz	62 μV	
		20 Hz ~ 1 kHz	6.0×10^{-4}	
		(1 ~ 20) kHz	7.1×10^{-4}	
		(20 ~ 100) kHz	7.1×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output Level	40407	100 mV ~ 1 V		
		20 Hz	5.9×10^{-4}	
		20 Hz ~ 1 kHz	5.9×10^{-4}	
		(1 ~ 20) kHz	6.3×10^{-4}	
		(20 ~ 100) kHz	9.1×10^{-4}	
		(1 ~ 10) V		
		20 Hz	5.9×10^{-4}	
		20 Hz ~ 1 kHz	5.9×10^{-4}	
		(1 ~ 20) kHz	6.3×10^{-4}	
		(20 ~ 100) kHz	9.1×10^{-4}	
Output distortion		20 Hz ~ 100 kHz		
		(-10 ~ -20) dB	0.88 dB	
		20 Hz ~ 100 kHz		
		(-20 ~ -50) dB	1.1 dB	
		20 Hz ~ 100 kHz		
		(-50 ~ -80) dB	1.4 dB	
LF filters	40408			Audio Analyzer
Frequency		30 Hz ~ 30 MHz	5.8×10^{-4}	/HCT-CS-087-40408
Level		20 Hz ~ 100 kHz	0.009 dB	
LF/Audio signal analyzers	40409			Multimeter calibrators, Digital Multimeter/
Output Frequency		1 Hz ~1 MHz	5.8×10^{-6}	HCT-CS-088-40409
Output level		(1 mV ~ 100 mV)		
		10 Hz ~ 1 kHz	1.9×10^{-4}	
		1 kHz ~ 20 kHz	4.0×10^{-4}	
		20 kHz ~ 100 kHz	9.3×10^{-4}	
		(100 mV ~ 1 V)		
		10 Hz ~ 1 kHz	1.5×10^{-4}	
		1 kHz ~ 20 kHz	2.7×10^{-4}	
		20 kHz ~ 100 kHz	7.1×10^{-4}	
		(1 V ~ 10 V)		
		10 Hz ~ 1 kHz	1.5×10^{-4}	
		1 kHz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 100 kHz	7.0×10^{-4}	
		(10 V ~ 100 V)		
		10 Hz ~ 1 kHz	1.5×10^{-4}	
		1 kHz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 100 kHz	7.1×10^{-4}	
		(10 ~ -10) dBm		
		10 Hz ~ 20 kHz	0.006 2 dB	
		20 kHz ~ 50 kHz	0.008 4 dB	
		50 kHz ~ 100 kHz	0.008 4 dB	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output level	40409	(-10 ~ -30) dBm		
		10 Hz ~ 20 kHz	0.006 7 dB	
		20 kHz ~ 50 kHz	0.009 9 dB	
		50 kHz ~ 100 kHz	0.009 9 dB	
		(-30 ~ -40) dBm		
		10 Hz ~ 20 kHz	0.006 7 dB	
		20 kHz ~ 50 kHz	0.009 9 dB	
		50 kHz ~ 100 kHz	0.009 9 dB	
Output DC Offset		- 20 V ~ 20 V	5.8×10^{-5}	
Output flatness		20 Hz ~ 20 kHz	0.006 2 dB	
		20 kHz ~ 100 kHz	0.008 4 dB	
Output amplitude		20 Hz ~ 1 kHz		
		(-10 ~ -60) dB	0.006 0 dB	
		1 kHz ~ 20 kHz		
		(-10 ~ -60) dB	0.006 7 dB	
		20 kHz ~ 50 kHz		
		(-10 ~ -60) dB	0.009 9 dB	
		50 kHz ~ 100 kHz		
		(-10 ~ -60) dB	0.009 9 dB	
Output impedace		(50 ~ 600) Ω	1.2×10^{-4}	
Input Frequency		1 Hz ~ 1 MHz	5.8×10^{-5}	
AC input levels		(1 mV ~ 100 mV)		
		10 Hz ~ 20 kHz	2.5×10^{-4}	
		20 kHz ~ 100 kHz	4.6×10^{-4}	
		100 mV ~ 1 V		
		10 Hz ~ 20 kHz	1.6×10^{-4}	
		20 kHz ~ 100 kHz	1.5×10^{-4}	
		(1 V ~ 10 V)		
		10 Hz ~ 20 kHz	1.6×10^{-4}	
		20 kHz ~ 100 kHz	1.4×10^{-4}	
		(10 V ~ 100 V)		
		10 Hz ~ 20 kHz	1.2×10^{-4}	
		20 kHz ~ 100 kHz	2.0×10^{-4}	
		(100 V ~ 300 V)		
		10 Hz ~ 1 kHz	2.3×10^{-4}	
		1 kHz ~ 10 kHz	2.7×10^{-4}	
DC input levels		1 mV ~ 300 V	5.9×10^{-5}	
Filter(weight,low,high pass etc.)		400 Hz ~ 80 kHz	1.9×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Distortion factor	40409	20 Hz ~ 20 kHz		
		(-10 ~ -60) dB	0.31 dB	
		(-60 ~ -70) dB	0.38 dB	
		(-70 ~ -80) dB	0.55 dB	
		20 Hz ~ 20 kHz		
		(0.001 ~ 0.01) %	5.5×10^{-2}	
		(0.01 ~ 30) %	3.1×10^{-2}	
Line Frequency meters	40410			Multimeter calibrators
Frequency		40 Hz ~ 1 kHz	5.8×10^{-4}	/HCT-CS-179-40410
Function generators	40411			Counters,Digital Multimeter,
Frequency		1 mHz ~ 3 GHz	5.8×10^{-9}	Measuring Receiver
				Oscilloscope
Output level		(1 mV ~ 100 mV)		/HCT-CS-089-40411
		10 Hz ~ 20 kHz	4.0×10^{-4}	
		20 kHz ~ 50 kHz	9.3×10^{-4}	
		50 kHz ~ 100 kHz	9.3×10^{-4}	
		100 kHz ~ 100 MHz	3.1×10^{-2}	
		(100 mV ~ 1 V)		
		10 Hz ~ 20 kHz	2.7×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 100 kHz	7.1×10^{-4}	
		100 kHz ~ 100 MHz	3.1×10^{-2}	
		(1 V ~ 10 V)		
		10 Hz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 100 kHz	7.0×10^{-4}	
		100 kHz ~ 100 MHz	3.1×10^{-2}	
		(10 V ~ 100 V)		
		10 Hz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 100 kHz	7.1×10^{-4}	
		-60 dBm ~ 20 dBm		
		10 Hz ~ 20 kHz	0.006 0 dB	
		20 kHz ~ 50 kHz	0.006 7 dB	
		50 kHz ~ 100 kHz	0.009 9 dB	
		100 kHz ~ 100 MHz	0.16 dB	
DC Offset		-20 V ~ 20 V	5.8×10^{-4}	
Output flatness		10 Hz ~ 100 kHz	0.011 dB	
		100 kHz ~ 1 GHz	0.017 dB	
Distortion factor		20 Hz ~ 100 MHz	1.4 dB	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output amplitude	40411	10 Hz ~ 1 kHz (0 ~ -60) dB 20 kHz ~ 50 kHz (0 ~ -60) dB 50 kHz ~ 100 kHz (0 ~ -60) dB	 0.006 0 dB 0.006 7 dB 0.009 9 dB	
Rise/Fall Time		1 s ~ 100 ns 100 ns ~ 10 ns 10 ns ~ 1 ns	1.2×10^{-3} 1.3×10^{-3} 5.9×10^{-3}	
AM Modulation		5 % ~ 99 %	1.2×10^{-2}	
FM Modulation		9 kHz ~ 400 kHz	1.2×10^{-2}	
Duty Cycle		1 % ~ 99 %	5.8×10^{-3} %	
Genescopes	40412			Oscilloscope calibrators
Vertical Gain		100 mV ~ 10 V 10 V ~ 100 V	1.2×10^{-2} 1.2×10^{-2}	/ HCT-CS-110-40412
AC/DC high voltages volt meters	40413			High voltage generators
DC Voltage		(Positive) 1 V ~ 1 kV 1 kV ~ 5 kV 5 kV ~ 10 kV 10 kV ~ 20 kV 20 kV ~ 30 kV 30 kV ~ 40 kV 40 kV ~ 48 kV (Negative) -1 V ~ -1 kV -1 kV ~ -5 kV -5 kV ~ -10 kV -10 kV ~ -20 kV -20 kV ~ -30 kV -30 kV ~ -40 kV -40 kV ~ -48 kV	 5.8×10^{-3} 1.2×10^{-2} 6.7×10^{-3} 3.7×10^{-3} 4.2×10^{-3} 3.9×10^{-3} 3.8×10^{-3} 5.8×10^{-3} 1.2×10^{-2} 6.7×10^{-3} 4.2×10^{-3} 1.9×10^{-2} 1.5×10^{-2} 1.2×10^{-2}	/ HCT-CS-092-40413
AC Voltage		50 ~ 60 Hz 0 kV ~ 1 kV 1 kV ~ 10 kV 10 kV ~ 20 kV 20 kV ~ 60 kV 60 kV ~ 70 kV	 2.0×10^{-4} 1.9×10^{-2} 2.0×10^{-2} 1.9×10^{-2} 2.0×10^{-2}	
Leakage current testers	40416			Meter Calibrator
AC Current		(10 Hz) 100 μA (100 ~ 200) μA (200 ~ 500) μA (0.5 ~ 1) mA	 78 nA 5.0×10^{-4} 4.6×10^{-4} 7.1×10^{-4}	/HCT-CS-208-40416

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40416	(1 ~ 2) mA	4.4×10^{-4}	
		(2 ~ 5) mA	4.6×10^{-4}	
		(5 ~ 10) mA	7.1×10^{-4}	
		(10 ~ 20) mA	4.4×10^{-4}	
		(20 ~ 50) mA	4.8×10^{-4}	
		(50 ~ 100) mA	3.7×10^{-4}	
		(10 ~ 40) Hz		
		100 μA	69 nA	
		(100 ~ 200) μA	4.0×10^{-4}	
		(200 ~ 500) μA	3.2×10^{-4}	
		(0.5 ~ 1) mA	6.6×10^{-4}	
		(1 ~ 2) mA	3.7×10^{-4}	
		(2 ~ 5) mA	3.2×10^{-4}	
		(5 ~ 10) mA	6.6×10^{-4}	
		(10 ~ 20) mA	3.7×10^{-4}	
		(20 ~ 50) mA	3.2×10^{-4}	
		(50 ~ 100) mA	2.5×10^{-4}	
		(0.04 ~ 1) kHz		
		20 μA	14 nA	
		(20 ~ 50) μA	3.6×10^{-4}	
		(50 ~ 100) μA	6.6×10^{-4}	
		(100 ~ 200) μA	3.5×10^{-4}	
		(200 ~ 500) μA	2.8×10^{-4}	
		(0.5 ~ 1) mA	6.4×10^{-4}	
		(1 ~ 2) mA	3.4×10^{-4}	
		(2 ~ 5) mA	2.8×10^{-4}	
		(5 ~ 10) mA	6.4×10^{-4}	
		(10 ~ 20) mA	3.4×10^{-4}	
		(20 ~ 50) mA	2.6×10^{-4}	
		(50 ~ 100) mA	1.8×10^{-4}	
		(1 ~ 10) kHz		
		20 μA	0.11 μA	
		(20 ~ 50) μA	3.0×10^{-3}	
		(50 ~ 100) μA	2.2×10^{-3}	
		(100 ~ 200) μA	1.7×10^{-3}	
		(200 ~ 500) μA	3.0×10^{-3}	
		(0.5 ~ 1) mA	2.2×10^{-3}	
		(1 ~ 2) mA	1.7×10^{-3}	
		(2 ~ 5) mA	2.8×10^{-3}	
		(5 ~ 10) mA	2.1×10^{-3}	
		(10 ~ 20) mA	1.7×10^{-3}	
		(20 ~ 50) mA	1.9×10^{-3}	
		(50 ~ 100) mA	1.6×10^{-3}	
DC Current		1 μA	7.1 nA	
		(1 ~ 2) μA	3.6×10^{-3}	
		(2 ~ 5) μA	1.4×10^{-3}	
		(5 ~ 10) μA	1.0×10^{-3}	
		(10 ~ 20) μA	5.5×10^{-4}	
		(20 ~ 50) μA	2.4×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Current	40416	(50 ~ 100) μA	6.3×10^{-4}	
		(100 ~ 200) μA	3.2×10^{-4}	
		(200 ~ 500) μA	1.4×10^{-4}	
		(0.5 ~ 1) mA	6.2×10^{-4}	
		(1 ~ 2) mA	3.1×10^{-4}	
		(2 ~ 5) mA	1.4×10^{-4}	
		(5 ~ 10) mA	6.2×10^{-4}	
		(10 ~ 20) mA	3.1×10^{-4}	
		(20 ~ 50) mA	1.4×10^{-4}	
		(50 ~ 100) mA	8.6×10^{-5}	
AC Voltage		(40 Hz)		
		1 mV	4.8 μV	
		(1 ~ 2) mV	2.5×10^{-3}	
		(2 ~ 5) mV	1.1×10^{-3}	
		(5 ~ 10) mV	5.9×10^{-4}	
		(10 ~ 20) mV	4.6×10^{-4}	
		(20 ~ 50) mV	3.2×10^{-4}	
		(50 ~ 100) mV	2.0×10^{-4}	
		(100 ~ 200) mV	3.4×10^{-4}	
		(200 ~ 500) mV	1.9×10^{-4}	
		(0.5 ~ 1) V	6.3×10^{-4}	
		(1 ~ 2) V	3.3×10^{-4}	
		(2 ~ 5) V	2.0×10^{-4}	
		(5 ~ 10) V	1.4×10^{-4}	
		(10 ~ 20) V	3.3×10^{-4}	
		(20 ~ 50) V	2.2×10^{-4}	
		(50 ~ 100) V	1.5×10^{-4}	
		(0.04 ~ 1) kHz		
		1 mV	4.8 μV	
		(1 ~ 2) mV	2.5×10^{-3}	
		(2 ~ 5) mV	1.1×10^{-3}	
		(5 ~ 10) mV	5.8×10^{-4}	
		(10 ~ 20) mV	4.5×10^{-4}	
		(20 ~ 50) mV	2.8×10^{-4}	
		(50 ~ 100) mV	1.7×10^{-4}	
		(100 ~ 200) mV	3.3×10^{-4}	
		(200 ~ 500) mV	1.4×10^{-4}	
		(0.5 ~ 1) V	6.2×10^{-4}	
		(1 ~ 2) V	3.2×10^{-4}	
		(2 ~ 5) V	1.4×10^{-4}	
		(5 ~ 10) V	8.5×10^{-5}	
		(10 ~ 20) V	3.1×10^{-4}	
		(20 ~ 50) V	1.5×10^{-4}	
		(50 ~ 100) V	9.4×10^{-5}	
		(100 ~ 200) V	7.5×10^{-5}	
		(200 ~ 500) V	9.2×10^{-5}	
		(500 ~ 1 000) V	8.7×10^{-5}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40416	(1 ~ 10) kHz		
		1 mV	4.8 μV	
		(1 ~ 2) mV	2.5×10^{-3}	
		(2 ~ 5) mV	1.1×10^{-3}	
		(5 ~ 10) mV	5.8×10^{-4}	
		(10 ~ 20) mV	4.5×10^{-4}	
		(20 ~ 50) mV	2.8×10^{-4}	
		(50 ~ 100) mV	1.7×10^{-4}	
		(100 ~ 200) mV	3.3×10^{-4}	
		(200 ~ 500) mV	1.4×10^{-4}	
		(0.5 ~ 1) V	6.2×10^{-4}	
		(1 ~ 2) V	3.2×10^{-4}	
		(2 ~ 5) V	1.4×10^{-4}	
		(5 ~ 10) V	8.5×10^{-5}	
		(10 ~ 20) V	3.1×10^{-4}	
		(20 ~ 50) V	1.5×10^{-4}	
		(50 ~ 100) V	9.4×10^{-5}	
DC Voltage		1 mV	0.80 μV	
		(1 ~ 2) mV	4.1×10^{-4}	
		(2 ~ 5) mV	1.7×10^{-4}	
		(5 ~ 10) mV	8.5×10^{-5}	
		(10 ~ 20) mV	3.1×10^{-4}	
		(20 ~ 50) mV	1.2×10^{-4}	
		(50 ~ 100) mV	6.3×10^{-5}	
		(100 ~ 200) mV	3.1×10^{-4}	
		(200 ~ 500) mV	1.2×10^{-4}	
		(0.5 ~ 1) V	6.2×10^{-4}	
		(1 ~ 2) V	3.1×10^{-4}	
		(2 ~ 5) V	1.2×10^{-4}	
		(5 ~ 10) V	6.2×10^{-5}	
		(10 ~ 20) V	3.1×10^{-4}	
		(20 ~ 50) V	1.2×10^{-4}	
		(50 ~ 100) V	6.2×10^{-5}	
		(100 ~ 200) V	3.2×10^{-5}	
		(200 ~ 500) V	1.5×10^{-5}	
		(500 ~ 1 000) V	1.1×10^{-5}	
Input voltage to output current ratio		(20 Hz)		
		5.00 mA	6.2 μA	
		(20 ~ 50) Hz		
		(5 ~ 5.03) mA	6.2 μA	
		(50 ~ 60) Hz		
		5.03 mA	6.2 μA	
		(60 ~ 100) Hz		
		(5.05 ~ 5.1) mA	6.2 μA	
		(100 ~ 200) Hz		
		(5.18 ~ 5.38) mA	6.2 μA	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Input voltage to output current ratio	40416	(200 ~ 500) Hz		
		(5.65 ~ 6.99) mA	6.2 μA	
		(0.5 ~ 1) kHz		
		(5.85 ~ 10.21) mA	6.2 μA	
		(1 ~ 2) kHz		
		(4.93 ~ 14.81) mA	6.2 μA	
		(2 ~ 5) kHz		
		2.667 mA	0.64 μA	
		(2.667 ~ 5.59) mA	6.2 μA	
		(5.59 ~ 18.76) mA	6.3 μA	
		(5 ~ 10) kHz		
		1.416 mA	0.62 μA	
		(1.416 ~ 3.289) mA	0.64 μA	
		(3.289 ~ 19.65) mA	6.3 μA	
		(10 ~ 20) kHz		
		(0.719 ~ 1.721) mA	0.62 μA	
		(1.721 ~ 19.92) mA	6.3 μA	
		(20 ~ 50) kHz		
		(0.289 ~ 0.699) mA	0.62 μA	
		(0.699 ~ 20) mA	6.4 μA	
		(50 ~ 100) kHz		
		(0.145 ~ 0.35) mA	0.62 μA	
		(0.35 ~ 20) mA	6.7 μA	
		(100 ~ 200) kHz		
		(0.072 ~ 0.175) mA	0.62 μA	
		(0.175 ~ 20) mA	9.8 μA	
		(200 ~ 500) kHz		
		(0.029 ~ 0.07) mA	0.62 μA	
		(0.07 ~ 20) mA	29 μA	
		(0.5 ~ 1) MHz		
		(0.014 ~ 0.035) mA	0.62 μA	
		(0.035 ~ 20) mA	45 μA	
Input voltage to output voltage ratio		(20 Hz)		
		2.5 V	1.1 mV	
		(2.5 ~ 9.998) V	2.1 mV	
		(20 ~ 50) Hz		
		(2.506 ~ 2.513) V	0.92 mV	
		(2.513 ~ 9.989) V	1.6 mV	
		(50 ~ 60) Hz		
		(2.506 ~ 2.519) V	0.92 mV	
		(2.519 ~ 9.984) V	1.6 mV	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Input voltage to output voltage ratio	40416	(60 ~ 100) Hz		
		(2.525 ~ 2.551) V	0.92 mV	
		(2.551 ~ 9.956) V	1.5 mV	
		(100 ~ 200) Hz		
		(2.584 ~ 2.611) V	0.89 mV	
		(2.611 ~ 2.688) V	0.90 mV	
		(2.688 ~ 9.827) V	1.4 mV	
		(200 ~ 500) Hz		
		2.825 V	0.98 mV	
		(2.825 ~ 2.976) V	0.99 mV	
		(2.976 ~ 3.484) V	1.1 mV	
		(3.484 ~ 9.047) V	1.4 mV	
		(0.5 ~ 1) kHz		
		2.915 V	0.99 mV	
		(2.915 ~ 5.102) V	1.1 mV	
		(5.102 ~ 7.279) V	1.3 mV	
		(1 ~ 2) kHz		
		2.463 V	0.89 mV	
		(2.463 ~ 3.774) V	0.95 mV	
		(3.774 ~ 4.688) V	0.99 mV	
		(4.688 ~ 7.407) V	1.2 mV	
		(2 ~ 5) kHz		
		1.333 V	0.64 mV	
		(1.333 ~ 2.077) V	0.89 mV	
		(2.077 ~ 2.801) V	0.93 mV	
		(2.801 ~ 9.346) V	1.5 mV	
		(5 ~ 10) kHz		
		0.709 V	0.63 mV	
		(0.709 ~ 1.056) V	0.79 mV	
		(1.056 ~ 1.642) V	0.65 mV	
		(1.642 ~ 9.804) V	1.5 mV	
		(10 ~ 20) kHz		
		0.36 V	0.63 mV	
		(0.36 ~ 0.53) V	0.64 mV	
		(0.53 ~ 0.862) V	0.67 mV	
		(0.862 ~ 10) V	3.0 mV	
		(20 ~ 50) kHz		
		0.145 V	0.64 mV	
		(0.145 ~ 0.212) V	0.72 mV	
		(0.212 ~ 0.348) V	0.76 mV	
		(0.348 ~ 10) V	8.2 mV	
		(50 ~ 100) kHz		
		0.072 5 V	65 μV	
		(0.072 5 ~ 0.106 2) V	73 μV	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Input voltage to output voltage ratio	40416	(0.106 2 ~ 0.174 8) V	76 μV	
		(0.174 8 ~ 10) V	1.7 mV	
		(100 ~ 200) kHz		
		0.036 1 V	77 μV	
		(0.036 1 ~ 0.053 1) V	78 μV	
		(0.053 1 ~ 0.087 7) V	0.11 mV	
		(0.087 7 ~ 10) V	6.6 mV	
		(200 ~ 500) kHz		
		0.014 5 V	72 μV	
		(0.014 5 ~ 0.021 2) V	82 μV	
		(0.021 2 ~ 0.035) V	92 μV	
		(0.035 ~ 10) V	16 mV	
		(0.5 ~ 1) MHz		
		0.007 2 V	70 μV	
		(0.007 2 ~ 0.010 6) V	78 μV	
		(0.010 6 ~ 0.017 5) V	88 μV	
		(0.017 5 ~ 10) V	27 mV	
Resistance		10 Ω	0.13 mΩ	
		(10 ~ 20) Ω	4.0×10^{-5}	
		(20 ~ 50) Ω	1.7×10^{-5}	
		(50 ~ 100) Ω	1.2×10^{-5}	
		(100 ~ 200) Ω	3.8×10^{-5}	
		(200 ~ 500) Ω	1.7×10^{-5}	
		(0.5 ~ 1) kΩ	1.2×10^{-5}	
		(1 ~ 2) kΩ	4.0×10^{-5}	
		(2 ~ 5) kΩ	1.8×10^{-5}	
		(5 ~ 10) kΩ	1.2×10^{-5}	
		(10 ~ 20) kΩ	4.9×10^{-5}	
		(20 ~ 50) kΩ	2.2×10^{-5}	
		(50 ~ 100) kΩ	1.3×10^{-5}	
		(100 ~ 200) kΩ	6.0×10^{-5}	
		(200 ~ 500) kΩ	2.6×10^{-5}	
		(0.5 ~ 1) MΩ	1.6×10^{-5}	
Capacitance		(1 kHz)		
		100 pF	0.87 fF	
		(100 ~ 200) pF	3.1×10^{-5}	
		(200 ~ 500) pF	1.2×10^{-5}	
		(0.5 ~ 1) nF	8.7×10^{-6}	
		(1 ~ 2) nF	2.6×10^{-4}	
		(2 ~ 5) nF	1.0×10^{-4}	
		(5 ~ 10) nF	5.1×10^{-5}	
		(10 ~ 20) nF	2.6×10^{-4}	
		(20 ~ 50) nF	1.0×10^{-4}	
		(50 ~ 100) nF	5.1×10^{-5}	
		(100 ~ 200) nF	4.6×10^{-4}	
		(200 ~ 500) nF	1.8×10^{-4}	
		(0.5 ~ 1) μF	9.1×10^{-5}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Electronic AC/DC loads	40417			DC power supply,
DC loads				Current shunts,
CV Mode		100 mV	6.4 μV	Digital Multimeter
		100 mV ~ 1 000 V	1.2×10^{-4}	/HCT-CS-094-40417
CC Mode		100 mA	6.4 μA	
		100 mA ~ 1 A	6.4×10^{-5}	
		1 A ~ 10 A	1.2×10^{-4}	
		10 A ~ 100 A	1.2×10^{-4}	
		100 A ~ 300 A	2.3×10^{-4}	
		300 A ~ 400 A	2.1×10^{-4}	
CR Mode		0.1 Ω		
		100 A	7.3 mA	
		0.1 Ω ~ 1 Ω		
		100 A ~ 10 A	6.8×10^{-5}	
		1 Ω ~ 100 Ω		
		10 A ~ 0.1 A	6.4×10^{-5}	
AC Loads				
CV Mode		(40 ~ 60 Hz)		
		100 mV	16 μV	
		100 mV ~ 10 V	1.5×10^{-5}	
		10 V ~ 100 V	1.5×10^{-5}	
		100 V ~ 1 000 V	1.5×10^{-5}	
CC Mode		(40 ~ 60 Hz)		
		100 mA	92 μA	
		0.1 A ~ 1 A	1.2×10^{-3}	
		1 A ~ 10 A	2.3×10^{-3}	
Charging/Discharge Tester		100 μA	6.4 nA	
Charging current		0.000 1 A ~ 10 A	1.2×10^{-4}	
		10 A ~ 100 A	1.3×10^{-4}	
		100 A ~ 300 A	2.3×10^{-4}	
		300 A ~ 500 A	2.1×10^{-4}	
		500 A ~ 1 000 A	3.1×10^{-4}	
Discharge current		-100 μA	6.4 nA	
		-0.000 1 A ~ -10 A	1.2×10^{-4}	
		-10 A ~ -100 A	1.3×10^{-4}	
		-100 A ~ -300 A	2.3×10^{-4}	
		-300 A ~ -500 A	2.1×10^{-4}	
		-500 A ~ -1 000 A	3.1×10^{-4}	
Charging voltage		100 mV	6.2 μV	
		0.1 V ~ 10 V	1.2×10^{-4}	
		10 V ~ 100 V	1.2×10^{-7}	
		100 V ~ 1 000 V	1.2×10^{-4}	
		1 000 V ~ 1 500 V	1.1×10^{-3}	
Sense Voltage(Meter)		100 mV	6.4 μV	
		100 mV ~ 1 000 V	1.2×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Analogue/Digital multimeters	40419			Standard resistance,
DC Voltage		0 mV	0.49 μV	Current amplifiers,
		-1 000 V ~ -100 V	8.3×10^{-6}	Meter Calibrator
		-100 V ~ -10 V	6.1×10^{-6}	/HCT-CS-095-40419
		-10 V ~ -1 V	3.6×10^{-6}	
		-1 V ~ -100 mV	5.9×10^{-6}	
		-100 mV ~ 0.1 mV	8.3×10^{-6}	
		0.1 mV ~ 100 mV	8.3×10^{-6}	
		100 mV ~ 1 V	5.9×10^{-6}	
		1 V ~ 10 V	3.6×10^{-6}	
		10 V ~ 100 V	6.1×10^{-6}	
		100 V ~ 1 000 V	8.3×10^{-6}	
DC Current		-20 A ~ -10 A	9.9×10^{-5}	
		-10 A ~ -1 A	9.9×10^{-5}	
		-1 A ~ -100 mA	9.3×10^{-5}	
		-100 mA ~ -10 mA	4.7×10^{-5}	
		-10 mA~ -1 mA	4.7×10^{-5}	
		-1 mA ~ -100 μA	4.7×10^{-5}	
		-100 μA ~ -1 μA	1.2×10^{-4}	
		0 μA	8.1 nA	
		1 μA ~ 100 μA	1.2×10^{-4}	
		100 μA ~ 1 mA	4.7×10^{-5}	
		1 mA ~ 10 mA	4.7×10^{-5}	
		10 mA ~ 100 mA	4.7×10^{-5}	
		100 mA ~ 1 A	9.3×10^{-5}	
		1 A ~ 10 A	1.0×10^{-4}	
		10 A ~ 20 A	1.0×10^{-4}	
Resistance		0 Ω	2.1 μΩ	
		0.1 Ω ~ 100 Ω	4.0×10^{-6}	
		100 Ω ~ 1 kΩ	4.0×10^{-6}	
		1 kΩ ~ 10 kΩ	4.6×10^{-6}	
		10 kΩ ~ 100 kΩ	7.2×10^{-6}	
		100 kΩ ~ 1 MΩ	1.0×10^{-5}	
		1 MΩ ~ 10 MΩ	1.2×10^{-5}	
		10 MΩ ~ 100 MΩ	2.5×10^{-5}	
		100 MΩ ~ 1 GΩ	4.2×10^{-5}	
		1 GΩ ~ 10 GΩ	5.8×10^{-4}	
AC Voltage		(1 mV ~ 100 mV)		
		10 Hz ~ 40 Hz	7.0×10^{-5}	
		40 Hz ~ 500 Hz	6.1×10^{-5}	
		500 Hz ~ 1 kHz	6.1×10^{-5}	
		1 kHz ~ 10 kHz	6.1×10^{-5}	
		10 kHz ~ 20 kHz	7.0×10^{-5}	
		20 kHz ~ 50 kHz	1.2×10^{-4}	
		50 kHz ~ 100 kHz	1.2×10^{-4}	
		100 kHz ~ 200 kHz	1.2×10^{-3}	
		200 kHz ~ 500 kHz	2.3×10^{-3}	
		500 kHz ~ 1 MHz	2.3×10^{-3}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40419	(100 mV ~ 1 V)		
		10 Hz ~ 40 Hz	5.3×10^{-5}	
		40 Hz ~ 500 Hz	4.7×10^{-5}	
		500 Hz ~ 1 kHz	4.7×10^{-5}	
		1 kHz ~ 10 kHz	4.7×10^{-5}	
		10 kHz ~ 20 kHz	4.7×10^{-5}	
		20 kHz ~ 50 kHz	7.0×10^{-5}	
		50 kHz ~ 100 kHz	7.7×10^{-5}	
		100 kHz ~ 200 kHz	2.0×10^{-4}	
		200 kHz ~ 500 kHz	1.2×10^{-3}	
		500 kHz ~ 1 MHz	1.2×10^{-3}	
		(1 V ~ 10 V)		
		10 Hz ~ 40 Hz	5.3×10^{-5}	
		40 Hz ~ 500 Hz	4.7×10^{-5}	
		500 Hz ~ 1 kHz	4.7×10^{-5}	
		1 kHz ~ 10 kHz	4.7×10^{-5}	
		10 kHz ~ 20 kHz	4.7×10^{-5}	
		20 kHz ~ 50 kHz	7.0×10^{-5}	
		50 kHz ~ 100 kHz	7.7×10^{-5}	
		100 kHz ~ 200 kHz	2.0×10^{-4}	
		200 kHz ~ 500 kHz	1.2×10^{-3}	
		500 kHz ~ 1 MHz	1.2×10^{-3}	
		(10 V ~ 100 V)		
		10 Hz ~ 40 Hz	1.0×10^{-4}	
		40 Hz ~ 500 Hz	5.3×10^{-5}	
		500 Hz ~ 1 kHz	5.3×10^{-5}	
		1 kHz ~ 10 kHz	5.3×10^{-5}	
		10 kHz ~ 20 kHz	6.1×10^{-5}	
		20 kHz ~ 50 kHz	8.6×10^{-5}	
		50 kHz ~ 100 kHz	9.9×10^{-5}	
		(100 V ~ 1 000 V)		
		40 Hz ~ 500 Hz	1.1×10^{-4}	
		500 Hz ~ 1 kHz	1.1×10^{-4}	
		1 kHz ~ 10 kHz	1.1×10^{-4}	
		10 kHz ~ 20 kHz	1.6×10^{-4}	
		20 kHz ~ 30 kHz	1.5×10^{-4}	
AC Current		(10 μA~ 100 μA)		
		10 Hz ~ 40 Hz	1.4×10^{-4}	
		40 Hz ~ 500 Hz	1.4×10^{-4}	
		500 Hz ~ 1 kHz	1.4×10^{-4}	
		1 kHz ~ 5 kHz	2.2×10^{-4}	
		5 kHz ~ 10 kHz	2.2×10^{-4}	
		(100 μA~ 1 mA)		
		10 Hz ~ 40 Hz	9.9×10^{-5}	
		40 Hz ~ 500 Hz	9.9×10^{-5}	
		500 Hz ~ 1 kHz	9.9×10^{-5}	
		1 kHz ~ 5 kHz	1.4×10^{-4}	
		5 kHz ~ 10 kHz	1.4×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Current	40419	(1 mA ~ 10 mA)		
		10 Hz ~ 40 Hz	9.9×10^{-5}	
		40 Hz ~ 500 Hz	9.9×10^{-5}	
		500 Hz ~ 1 kHz	9.9×10^{-5}	
		1 kHz ~ 5 kHz	1.4×10^{-4}	
		5 kHz ~ 10 kHz	1.4×10^{-4}	
		(10 mA ~ 100 mA)		
		10 Hz ~ 40 Hz	1.1×10^{-4}	
		40 Hz ~ 500 Hz	1.1×10^{-4}	
		500 Hz ~ 1 kHz	1.1×10^{-4}	
		1 kHz ~ 5 kHz	1.5×10^{-4}	
		5 kHz ~ 10 kHz	1.5×10^{-4}	
		(100 mA ~ 1 A)		
		10 Hz ~ 40 Hz	2.4×10^{-4}	
		40 Hz ~ 500 Hz	2.4×10^{-4}	
		500 Hz ~ 1 kHz	2.4×10^{-4}	
		1 kHz ~ 5 kHz	3.4×10^{-4}	
		5 kHz ~ 10 kHz	3.4×10^{-4}	
		(1 A ~ 10 A)		
		40 Hz ~ 500 Hz	5.7×10^{-4}	
		500 Hz ~ 1 kHz	5.7×10^{-4}	
		1 kHz ~ 5 kHz	5.8×10^{-4}	
		5 kHz ~ 10 kHz	5.8×10^{-4}	
		(10 A ~ 20 A)		
		40 Hz ~ 500 Hz	5.5×10^{-4}	
		500 Hz ~ 1 kHz	5.5×10^{-4}	
		1 kHz ~ 5 kHz	4.7×10^{-4}	
		5 kHz ~ 10 kHz	4.8×10^{-4}	
Frequency		10 Hz ~ 10 MHz	5.9×10^{-6}	
Noise meters	40420			Multimeter calibrators
AC level(rms & Q-peak)		(DC ~ 100 kHz)		/HCT-CS-097-40420
		1 mV ~ 100 mV	1.5×10^{-3}	
		100 mV ~ 300 mV	1.9×10^{-3}	
		300 mV ~ 1 V	1.4×10^{-3}	
		1 V ~ 3 V	1.9×10^{-3}	
		3 V ~ 10 V	1.4×10^{-3}	
		10 V ~ 30 V	2.0×10^{-3}	
		30 V ~ 100 V	1.5×10^{-3}	
		100 V ~ 300 V	1.9×10^{-3}	
Weighting Filter		Filter(DIN/AUDIO, JIS A CCIR, CCIR/ARM)	1.4×10^{-3}	
Frequency Response		(10 Hz ~ 100 kHz)	0.015 dB	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Oscilloscopes	40421			Oscilloscope calibrators,
DC Voltage		0 mV	0.76 μV	Multimeter calibrators
		0 mV ~ 5 mV	7.4×10^{-4}	RF signal genertators,
		5 mV ~ 10 mV	1.5×10^{-4}	Powermeters
		10 mV ~ 25 mV	8.0×10^{-5}	/HCT-CS-080-40421
		25 mV ~ 50 mV	3.6×10^{-5}	
		50 mV ~ 100 mV	2.1×10^{-5}	
		100 mV ~ 250 mV	4.0×10^{-5}	
		250 mV ~ 500 mV	2.5×10^{-5}	
		500 mV ~ 1 V	1.4×10^{-5}	
		1 V ~ 25 V	2.4×10^{-5}	
		25 V ~ 50 V	2.4×10^{-5}	
		50 V ~ 100 V	1.3×10^{-5}	
		100 V ~ 200 V	1.1×10^{-5}	
		0 mV	0.76 μV	
		(0 ~ -5) mV	7.5×10^{-4}	
		(-5 ~ -10) mV	1.5×10^{-4}	
		(-10 ~ -25) mV	8.0×10^{-5}	
		(-25 ~ -50) mV	3.6×10^{-5}	
		(-50 ~ -100) mV	2.1×10^{-5}	
		(-100 ~ -250) mV	4.0×10^{-5}	
		(-250 ~ -500) mV	2.5×10^{-5}	
		(-0.5 ~ -1) V	1.4×10^{-5}	
		(-1 ~ -25) V	2.4×10^{-5}	
		(-25 ~ -50) V	2.4×10^{-5}	
		(-50 ~ -100) V	1.3×10^{-5}	
		(-100 ~ -200) V	1.1×10^{-5}	
Square wave voltage		(1 kHz)		
		40 μV	60 nV	
		40 μV ~ 5 mV	7.0×10^{-3}	
		5 mV ~ 10 mV	3.5×10^{-3}	
		10 mV ~ 25 mV	2.3×10^{-3}	
		25 mV ~ 50 mV	1.6×10^{-3}	
		50 mV ~ 250 mV	1.4×10^{-3}	
		250 mV ~ 50 V	1.2×10^{-3}	
		50 V ~ 100 V	1.2×10^{-3}	
		100 V ~ 200 V	1.2×10^{-3}	
Bandwidth Level				
		(50 kHz ~ 100 MHz)		
		60 mV	1.2 mV	
		0.06 V ~ 3 V	2.6×10^{-2}	
		(100 MHz ~ 550 MHz)		
		60 mV	2.2 mV	
		0.06 V ~ 3 V	3.9×10^{-2}	
		(550 MHz ~ 1.1 GHz)		
		60 mV	2.8 mV	
		0.06 V ~ 3 V	5.5×10^{-2}	
		(1.1 GHz ~ 4 GHz)		
		60 mV	1.4 mV	
		0.06 V ~ 3 V	2.3×10^{-2}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Bandwidth Level	40421	(4 GHz ~ 5 GHz)		
		60 mV	1.4 mV	
		0.06 V ~ 3 V	2.3×10^{-2}	
		(5 GHz ~ 6 GHz)		
		60 mV	1.4 mV	
		0.06 V ~ 3 V	2.3×10^{-2}	
		(6 GHz ~ 10 GHz)		
		60 mV	1.4 mV	
		0.06 V ~ 3 V	2.3×10^{-2}	
		(10 GHz ~ 15 GHz)		
		60 mV	1.6 mV	
		0.06 V ~ 3 V	2.8×10^{-2}	
		(15 GHz ~ 20 GHz)		
		60 mV	2.2 mV	
		0.06 V ~ 3 V	3.7×10^{-2}	
		20 GHz ~ 25 GHz		
		60 mV	2.2 mV	
		0.06 V ~ 3 V	3.7×10^{-2}	
		26 GHz ~ 30 GHz		
		60 mV	2.2 mV	
		0.06 V ~ 3 V	3.7×10^{-2}	
		30 GHz ~ 35 GHz		
		60 mV	2.2 mV	
		0.06 V ~ 3 V	3.7×10^{-2}	
		35 GHz ~ 40 GHz		
		60 mV	2.2 mV	
		0.06 V ~ 3 V	3.7×10^{-2}	
Time Mark		1 ns	5.8 fs	
		1 ns ~ 5 ns	5.8×10^{-6}	
		5 ns ~ 50 ns	5.8×10^{-6}	
		50 ns ~ 500 ns	5.8×10^{-6}	
		500 ns ~ 5 μs	5.8×10^{-6}	
		5 μs ~ 50 μs	5.8×10^{-6}	
		50 μs ~ 500 μs	5.8×10^{-6}	
		500 μs ~ 5 ms	5.8×10^{-6}	
		5 ms ~ 50 ms	5.8×10^{-6}	
		50 ms ~ 500 ms	5.8×10^{-6}	
		500 ms ~ 5 s	5.8×10^{-6}	
		5 s ~ 20 s	5.8×10^{-6}	
Frequency		100 mHz	0.82 μHz	
		100 mHz ~ 500 mHz	8.2×10^{-6}	
		500 mHz ~ 5 Hz	5.8×10^{-6}	
		5 Hz ~ 50 Hz	5.8×10^{-6}	
		50 Hz ~ 500 Hz	5.8×10^{-6}	
		500 Hz ~ 5 kHz	5.8×10^{-6}	
		5 kHz ~ 50 kHz	5.8×10^{-6}	
		50 kHz ~ 500 kHz	5.8×10^{-6}	
		500 kHz ~ 5 MHz	5.8×10^{-6}	
		5 MHz ~ 50 MHz	5.8×10^{-6}	
		50 MHz ~ 500 MHz	5.8×10^{-6}	
		500 MHz ~ 1.0 GHz	5.8×10^{-6}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40421	(50 Hz ~ 10 kHz)		
		10 mV	7.0 μV	
		10 mV ~ 25 mV	7.0×10^{-4}	
		25 mV ~ 50 mV	4.6×10^{-4}	
		50 mV ~ 100 mV	3.0×10^{-4}	
		100 mV ~ 250 mV	2.3×10^{-4}	
		250 mV ~ 500 mV	1.1×10^{-4}	
		0.5 V ~ 1 V	1.3×10^{-4}	
		1 V ~ 2.5 V	1.6×10^{-4}	
		2.5 V ~ 5 V	1.3×10^{-4}	
		5 V ~ 10 V	1.0×10^{-4}	
		10 V ~ 25 V	1.8×10^{-4}	
		25 V ~ 50 V	1.4×10^{-4}	
		50 V ~ 100 V	1.5×10^{-4}	
LF phase meters	40422	45 ~ 60 Hz		Calibrator
		(0 - 360) °	0.013 °	/ HCT-CS-217-40422
Random wave generators	40423			Digital Multimeter,
Frequency		100 mHz ~ 350 MHz	5.8×10^{-9}	Measuring Receiver,
				Oscilloscope, Counters
Output level		(1 mV ~ 100 mV)		/HCT-CS-098-40423
		DC ~ 20 kHz	4.0×10^{-4}	
		20 kHz ~ 50 kHz	9.3×10^{-4}	
		50 kHz ~ 100 kHz	9.3×10^{-4}	
		100 kHz ~ 100 MHz	3.1×10^{-2}	
		(100 mV ~ 1 V)		
		20 Hz ~ 20 kHz	2.7×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 100 kHz	7.1×10^{-4}	
		100 kHz ~ 100 MHz	3.1×10^{-2}	
		(1 V ~ 10 V)		
		20 Hz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 100 kHz	7.0×10^{-4}	
		100 kHz ~ 100 MHz	3.1×10^{-2}	
		(10 V ~ 100 V)		
		20 Hz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 100 kHz	7.1×10^{-4}	
		(100 kHz ~ 100 MHz)		
		-60 dBm ~ 20 dBm	0.16 dB	
DC Offset		-20 V ~ 20 V	5.8×10^{-4}	
Output flatness		(10 Hz ~ 100 kHz)	0.011 dB	
		(100 kHz ~ 350 MHz)	0.017 dB	
Distortion factor		(20 Hz ~ 80 MHz)	1.4 dB	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output amplitude	40423	10 Hz ~ 1 kHz (0 ~ -60) dB	0.006 0 dB	
		20 kHz ~ 50 kHz (0 ~ -60) dB	0.006 7 dB	
		50 kHz ~ 100 kHz (0 ~ -60) dB	0.009 9 dB	
Rise/Fall Time		1 s ~ 100 ns	1.2×10^{-3}	
		100 ns ~ 10 ns	1.3×10^{-3}	
		10 ns ~ 1 ns	5.9×10^{-3}	
AM modulatoin		5 % ~ 99 %	1.2×10^{-2}	
FM modulatoin		9 kHz ~ 400 kHz	1.2×10^{-2}	
Duty Cycle		1 % ~ 99 %	5.8×10^{-3} %	
Volt/Current recorders	40424			Multimeter calibrators
DC Voltage		0.1 mV ~ 1 mV	6.2×10^{-4}	/HCT-CS-100-40424
		1 mV ~ 2 mV	3.1×10^{-4}	
		2 mV ~ 5 mV	1.7×10^{-4}	
		5 mV ~ 10 mV	9.0×10^{-5}	
		10 mV ~ 20 mV	4.8×10^{-5}	
		20 mV ~ 50 mV	1.2×10^{-4}	
		50 mV ~ 100 mV	5.9×10^{-5}	
		100 mV ~ 200 mV	3.1×10^{-5}	
		200 mV ~ 500 mV	1.2×10^{-4}	
		500 mV ~ 1 V	5.8×10^{-5}	
		1 V ~ 2 V	2.9×10^{-5}	
		2 V ~ 5 V	1.2×10^{-4}	
		5 V ~ 10 V	5.8×10^{-5}	
		10 V ~ 20 V	3.2×10^{-5}	
		20 V ~ 50 V	1.2×10^{-4}	
		50 V ~ 100 V	5.8×10^{-5}	
		100 V ~ 200 V	3.2×10^{-5}	
		200 V ~ 500 V	1.2×10^{-4}	
		500 V ~ 1 000 V	5.8×10^{-5}	
		-0.1 mV ~ -1 mV	6.2×10^{-4}	
		-1 mV ~ -2 mV	3.1×10^{-4}	
		-2 mV ~ -5 mV	1.7×10^{-4}	
		-5 mV ~ -10 mV	9.0×10^{-5}	
		-10 mV ~ -20 mV	4.8×10^{-5}	
		-20 mV ~ -50 mV	1.2×10^{-4}	
		-50 mV ~ -100 mV	5.9×10^{-5}	
		-100 mV ~ -200 mV	3.1×10^{-5}	
		-200 mV ~ -500 mV	1.2×10^{-4}	
		-500 mV ~ -1 V	5.8×10^{-5}	
		-1 V ~ -2 V	2.9×10^{-5}	
		-2 V ~ -5 V	1.2×10^{-4}	
		-5 V ~ -10 V	5.8×10^{-5}	
		-10 V ~ -20 V	3.2×10^{-5}	
		-20 V ~ -50 V	1.2×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Voltage	40424	-50 V ~ -100 V	5.8×10^{-5}	
		-100 V ~ -200 V	3.2×10^{-5}	
		-200 V ~ -500 V	1.2×10^{-4}	
		-500 V ~ -1 000 V	5.8×10^{-5}	
DC Current		0.1 mA ~ 100 mA	8.2×10^{-5}	
		100 mA ~ 1 A	1.5×10^{-4}	
		-0.1 mA ~ -100 mA	8.2×10^{-5}	
		-100 mA ~ -1 A	1.5×10^{-4}	
Relay test sets	40425			Multimeter, Current shunts /HCT-CS-218-40425
AC Voltage		(20 ~ 55 Hz)		
		0.1 mV ~ 100 mV	2.4×10^{-4}	
		100 mV ~ 1 V	1.5×10^{-4}	
		1 V ~ 10 V	1.5×10^{-4}	
		10 V ~ 100 V	1.5×10^{-4}	
		100 V ~ 1 000 V	1.4×10^{-4}	
		(55 Hz ~ 300 Hz)		
		0.1 mV ~ 100 mV	1.6×10^{-4}	
		100 mV ~ 1 V	1.1×10^{-4}	
		1 V ~ 10 V	1.1×10^{-4}	
		10 V ~ 100 V	1.1×10^{-4}	
		100 V ~ 1 000 V	1.4×10^{-4}	
		(300 Hz ~ 1 kHz)		
		0.1 mV ~ 100 mV	1.5×10^{-4}	
		100 mV ~ 1 V	1.1×10^{-4}	
		1 V ~ 10 V	1.1×10^{-4}	
		10 V ~ 100 V	1.1×10^{-4}	
		100 V ~ 1 000 V	1.4×10^{-4}	
AC Current		(20 ~ 55 Hz)		
		0.1 mA ~ 100 mA	7.0×10^{-5}	
		100 mA ~ 10 A	8.0×10^{-5}	
		(55 Hz ~ 300 Hz)		
		0.1 mA ~ 10 mA	6.7×10^{-5}	
		10 mA ~ 100 mA	6.4×10^{-5}	
		100 mA ~ 1 A	7.2×10^{-5}	
		1 A ~ 10 A	8.0×10^{-5}	
		(300 Hz ~ 1 kHz)		
		0.1 mA ~ 10 mA	6.7×10^{-5}	
		10 mA ~ 100 mA	7.0×10^{-5}	
		100 mA ~ 1 A	7.2×10^{-5}	
		1 A ~ 10 A	1.1×10^{-4}	
		(20 Hz ~ 1 kHz)		
		10 A ~ 20 A	1.3×10^{-3}	
		20 A ~ 50 A	1.2×10^{-3}	
		50 A ~ 100 A	1.3×10^{-3}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Voltage	40425	0 mV ~ 1 V	5.8×10^{-5}	
		1 V ~ 5 V	1.2×10^{-4}	
		5 V ~ 1 000 V	5.8×10^{-5}	
DC Current		0 mA ~ 10 mA	6.0×10^{-5}	
		10 mA ~ 100 mA	7.3×10^{-5}	
		100 mA ~ 1 A	2.2×10^{-4}	
		1 A ~ 10 A	4.7×10^{-4}	
		10 A ~ 20 A	7.0×10^{-4}	
		20 A ~ 50 A	6.0×10^{-4}	
		50 A ~ 100 A	5.9×10^{-4}	
Frequency		40 Hz ~ 60 Hz	1.2×10^{-4}	
		60 Hz ~ 100 Hz	1.3×10^{-4}	
		100 Hz ~ 400 Hz	1.2×10^{-4}	
		400 Hz ~ 1 kHz	1.3×10^{-4}	
LF signal generators	40426			Digital Multimeter,
Frequency		100 mHz ~ 2 MHz	5.8×10^{-9}	Measuring Receiver, Counters,Oscilloscope
Output level		(1 mV ~ 100 mV)		/HCT-CS-101-40426
		DC ~ 20 kHz	4.0×10^{-4}	
		20 kHz ~ 50 kHz	9.3×10^{-4}	
		50 kHz ~ 100 kHz	9.3×10^{-4}	
		100 kHz ~ 1 MHz	3.1×10^{-2}	
		(100 mV ~ 1 V)		
		20 Hz ~ 20 kHz	2.7×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 100 kHz	7.1×10^{-4}	
		100 kHz ~ 1 MHz	3.1×10^{-2}	
		(1 V ~ 10 V)		
		20 Hz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 100 kHz	7.0×10^{-4}	
		100 kHz ~ 1 MHz	3.1×10^{-2}	
		(10 V ~ 100 V)		
		20 Hz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 1 kHz	7.1×10^{-4}	
		-60 dBm ~ 20 dBm		
		10 Hz ~ 20 kHz	0.006 0 dB	
		20 kHz ~ 50 kHz	0.006 7 dB	
		50 kHz ~ 100 kHz	0.009 9 dB	
		100 kHz ~ 1 MHz	0.16 dB	
DC Offset		-20 V ~ 20 V	5.8×10^{-4}	
Output flatness		(10 Hz ~ 100 kHz)	0.011 dB	
		(100 kHz ~ 1 MHz)	0.017 dB	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Distortion factor	40426	(20 Hz ~ 1 MHz)	1.4 dB	
Output amplitude		10 Hz ~ 1 kHz		
		(0 ~ -60) dB	0.006 0 dB	
		20 kHz ~ 50 kHz		
		(0 ~ -60) dB	0.006 7 dB	
		50 kHz ~ 100 kHz		
		(0 ~ -60) dB	0.009 9 dB	
Rise/Fall Time		1 s ~ 100 ns	1.2×10^{-3}	
		100 ns ~ 10 ns	1.3×10^{-3}	
		10 ns ~ 1 ns	5.9×10^{-3}	
AM modulatoin		5 % ~ 99 %	1.2×10^{-2}	
FM modulatoin		9 kHz ~ 400 kHz	1.2×10^{-2}	
Duty Cycle		1 % ~ 99 %	5.8×10^{-3} %	
LF spectrum analyzers	40427			Signal Generators /HCT-CS-180-40427
Output frequency		27 dBm		
		10 Hz ~ 20 kHz	0.022 dB	
		20 kHz ~ 100 kHz	0.032 dB	
		(27 ~ 10) dBm		
		10 Hz ~ 20 kHz	0.007 dB	
		20 kHz ~ 100 kHz	0.007 dB	
		100 kHz ~ 200 kHz	0.014 dB	
		(10 ~ -10) dBm		
		10 Hz ~ 20 kHz	0.006 dB	
		20 kHz ~ 100 kHz	0.006 dB	
		100 kHz ~ 200 kHz	0.008 dB	
		(-10 ~ -40) dBm		
		10 Hz ~ 20 kHz	0.007 dB	
		20 kHz ~ 100 kHz	0.008 dB	
		100 kHz ~ 200 kHz	0.024 dB	
		(-40 ~ -50) dBm		
		10 Hz ~ 20 kHz	0.015 dB	
		20 kHz ~ 100 kHz	0.020 dB	
		100 kHz ~ 200 kHz	0.067 dB	
		(10 ~ 100) mV		
		10 Hz ~ 10 kHz	6.3×10^{-3}	
		10 kHz ~ 100 kHz	7.4×10^{-3}	
		100 kHz ~ 200 kHz	7.4×10^{-3}	
		100 mV ~ 1 V		
		10 Hz ~ 10 kHz	6.0×10^{-3}	
		10 kHz ~ 100 kHz	5.9×10^{-3}	
		100 kHz ~ 200 kHz	8.3×10^{-3}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output frequency	40427	(1 ~ 10) V		
		10 Hz ~ 10 kHz	6.0×10^{-3}	
		10 kHz ~ 100 kHz	5.9×10^{-3}	
		100 kHz ~ 200 kHz	7.1×10^{-3}	
		(10 ~ 30) V		
		10 Hz ~ 10 kHz	3.3×10^{-3}	
		10 kHz ~ 100 kHz	3.5×10^{-3}	
Input Frequency		10 Hz ~ 200 kHz	5.8×10^{-5}	
Input Impedance		1 MΩ	5.8×10^{-4}	
Output level(AC)		(10 ~ 100) mV		
		10 Hz ~ 1 kHz	6.0×10^{-4}	
		1 kHz ~ 10 kHz	7.0×10^{-4}	
		10 kHz ~ 100 kHz	1.1×10^{-3}	
		100 mV ~ 1 V		
		10 Hz ~ 1 kHz	5.9×10^{-4}	
		1 kHz ~ 10 kHz	6.3×10^{-4}	
		10 kHz ~ 100 kHz	9.1×10^{-4}	
		(1 ~ 10) V		
		10 Hz ~ 1 kHz	5.8×10^{-4}	
		1 kHz ~ 10 kHz	5.9×10^{-4}	
		10 kHz ~ 100 kHz	6.7×10^{-4}	
Output level(DC)		10 mV ~ 10 V	5.8×10^{-5}	
Sweep generators	40429			Digital Multimeter, Counters, Oscilloscope, Measuring Receiver /HCT-CS-102-40429
Frequency		100 mHz ~ 21 MHz	5.8×10^{-9}	
Output level		(1 mV ~ 100 mV)		
		DC ~ 20 kHz	4.0×10^{-4}	
		20 kHz ~ 50 kHz	9.3×10^{-4}	
		50 kHz ~ 100 kHz	9.3×10^{-4}	
		100 kHz ~ 21 MHz	3.1×10^{-2}	
		(100 mV ~ 1 V)		
		20 Hz ~ 20 kHz	2.7×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 100 kHz	7.1×10^{-4}	
		100 kHz ~ 21 MHz	3.1×10^{-2}	
		(1 V ~ 10 V)		
		20 Hz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 100 kHz	7.0×10^{-4}	
		100 kHz ~ 21 MHz	3.1×10^{-2}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output level	40429	(10 V ~ 100 V)		
		20 Hz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 50 kHz	7.0×10^{-4}	
		50 kHz ~ 100 kHz	7.1×10^{-4}	
		(100 kHz ~ 21 MHz)		
		-60 dBm ~ 20 dBm	0.16 dB	
DC Offset		-20 V ~ 20 V	5.8×10^{-4}	
Output flatness		(10 Hz ~ 100 kHz)	0.011 dB	
		(100 kHz ~ 21 MHz)	0.017 dB	
Distortion factor		(20 Hz ~ 21 MHz)	1.4 dB	
Output amplitude		10 Hz ~ 1 kHz		
		(0 ~ -60) dB	0.006 0 dB	
		20 kHz ~ 50 kHz		
		(0 ~ -60) dB	0.006 7 dB	
		50 kHz ~ 100 kHz		
		(0 ~ -60) dB	0.009 9 dB	
Rise/Fall Time		1 s ~ 100 ns	1.2×10^{-3}	
		100 ns ~ 10 ns	1.3×10^{-3}	
		10 ns ~ 1 ns	5.9×10^{-3}	
AM Modulation		5 % ~ 99 %	1.2×10^{-2}	
FM Modulation		9 kHz ~ 400 kHz	1.2×10^{-2}	
Duty Cycle		1 % ~ 99 %	5.8×10^{-3}	
Transistor curve tracers	40432			Multimeter calibrators,
DC Voltage		-1 000 V ~ -200 V	4.8×10^{-6}	Digital Multimeter
(SMU, Base/Emitter/Collector)		-200 V ~ -100 V	4.7×10^{-6}	/HCT-CS-103-40432
		-100 V ~ -10 V	5.1×10^{-6}	
		-10 V ~ -1 V	3.7×10^{-6}	
		-1 V ~ -0.1 V	6.9×10^{-6}	
		-0.1 V ~ 0 V	5.9×10^{-6}	
		0 V ~ 0.1 V	5.9×10^{-6}	
		0.1 V ~ 1 V	6.9×10^{-6}	
		1 V ~ 10 V	3.7×10^{-6}	
		10 V ~ 100 V	5.1×10^{-6}	
		100 V ~ 200 V	4.7×10^{-6}	
		200 V ~ 1 000 V	4.8×10^{-6}	
DC Voltage		-1 000 V ~ -200 V	4.8×10^{-6}	
(VSU, Base/Emitter/Collector)		-200 V ~ -100 V	4.7×10^{-6}	
		-100 V ~ -10 V	5.1×10^{-6}	
		-10 V ~ -1 V	3.7×10^{-6}	
		-1 V ~ -0.1 V	6.9×10^{-6}	
		-0.1 V ~ 0 V	5.9×10^{-6}	
		0 V ~ 0.1 V	5.9×10^{-6}	
		0.1 V ~ 1 V	6.9×10^{-6}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Voltage	40432	1 V ~ 10 V	3.7×10^{-6}	
(VSU, Base/Emitter/Collector)		10 V ~ 100 V	5.1×10^{-6}	
		100 V ~ 200 V	4.7×10^{-6}	
		200 V ~ 1 000 V	4.8×10^{-6}	
VMU (Base/Emitter/Collector)		-1 000 V ~ -200 V	4.8×10^{-6}	
		-200 V ~ -100 V	4.7×10^{-6}	
		-100 V ~ -10 V	5.1×10^{-6}	
		-10 V ~ -1 V	3.7×10^{-6}	
		-1 V ~ -0.1 V	6.9×10^{-6}	
		-0.1 V ~ 0 V	5.9×10^{-6}	
		0 V ~ 0.1 V	5.9×10^{-6}	
		0.1 V ~ 1 V	6.9×10^{-6}	
		1 V ~ 10 V	3.7×10^{-6}	
		10 V ~ 100 V	5.1×10^{-6}	
		100 V ~ 200 V	4.7×10^{-6}	
		200 V ~ 1 000 V	4.8×10^{-6}	
DC Current		-2 A ~ -1 A	6.7×10^{-4}	
(SMU, Base/Emitter/Collector)		-1 A ~ -100 mA	3.8×10^{-4}	
		-100 mA ~ -10 mA	4.8×10^{-5}	
		-10 mA ~ -1 mA	1.5×10^{-5}	
		-1 mA ~ -100 uA	1.4×10^{-5}	
		-100 uA ~ -10 uA	1.4×10^{-5}	
		-10 uA ~ -1 uA	5.4×10^{-5}	
		-1 uA ~ -100 nA	4.7×10^{-4}	
		-100 nA ~ -10 nA	2.4×10^{-3}	
		-10 nA ~ -1 nA	2.4×10^{-3}	
		-1 nA ~ -100 pA	5.8×10^{-3}	
		-100 pA~ -10 pA	1.2×10^{-2}	
		-10 pA ~ -1 pA	1.2×10^{-2}	
		-1 pA ~ 0 pA	1.5×10^{-2}	
		0 pA ~ 1 pA	1.5×10^{-2}	
		1 pA ~ 10 pA	1.2×10^{-2}	
		10 pA ~ 100 pA	1.2×10^{-2}	
		100 pA ~ 1 nA	5.8×10^{-3}	
		1 nA ~ 10 nA	2.4×10^{-3}	
		10 nA ~ 100 nA	2.4×10^{-3}	
		100 nA ~ 1 uA	4.7×10^{-4}	
		1 uA ~ 10 uA	5.4×10^{-5}	
		10 uA ~ 100 uA	1.4×10^{-5}	
		100 uA ~ 1 mA	1.4×10^{-5}	
		1 mA ~ 10 mA	1.5×10^{-5}	
		10 mA ~ 100 mA	4.8×10^{-5}	
		100 mA ~ 1 A	3.8×10^{-4}	
		1 A ~ 2 A	6.7×10^{-4}	
Waveform analyzers	40433			Multimeter calibrators,
Output Frequency		1 Hz ~1 MHz	5.8×10^{-6}	Voltage calibrators
				Counters/HCT-CS-104-40433
Output level		(1 mV ~ 100 mV)		
		10 Hz ~ 1 kHz	1.9×10^{-4}	
		1 kHz ~ 20 kHz	4.0×10^{-4}	
		20 kHz ~ 100 kHz	9.3×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output level	40433	(100 mV ~ 1 V)		
		10 Hz ~ 1 kHz	1.5×10^{-4}	
		1 kHz ~ 20 kHz	2.7×10^{-4}	
		20 kHz ~ 100 kHz	7.1×10^{-4}	
		(1 V ~ 10 V)		
		10 Hz ~ 1 kHz	1.5×10^{-4}	
		1 kHz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 100 kHz	7.0×10^{-4}	
		(10 V ~ 100 V)		
		10 Hz ~ 1 kHz	1.5×10^{-4}	
		1 kHz ~ 20 kHz	2.6×10^{-4}	
		20 kHz ~ 100 kHz	7.1×10^{-4}	
Output DC Offset		- 20 V ~ 20 V	5.8×10^{-5}	
Output Flatness		20 Hz ~ 20 kHz	0.006 2 dB	
		20 kHz ~ 100 kHz	0.008 4 dB	
Output amplitude		20 Hz ~ 1 kHz		
		(-10 ~ -60) dB	0.006 0 dB	
		1 kHz ~ 20 kHz		
		(-10 ~ -60) dB	0.006 7 dB	
		20 kHz ~ 50 kHz		
		(-10 ~ -60) dB	0.009 9 dB	
		50 kHz ~ 100 kHz		
		(-10 ~ -60) dB	0.009 9 dB	
Output Impedance		(50 ~ 600) Ω	1.2×10^{-4}	
Input Frequency		1 Hz ~ 1 MHz	5.8×10^{-5}	
AC Input Level		(1 mV ~ 100 mV)		
		10 Hz ~ 20 kHz	2.5×10^{-4}	
		20 kHz ~ 100 kHz	4.6×10^{-4}	
		100 mV ~ 1 V		
		10 Hz ~ 20 kHz	1.6×10^{-4}	
		20 kHz ~ 100 kHz	1.5×10^{-4}	
		(1 V ~ 10 V)		
		10 Hz ~ 20 kHz	1.6×10^{-4}	
		20 kHz ~ 100 kHz	1.4×10^{-4}	
		(10 V ~ 100 V)		
		10 Hz ~ 20 kHz	1.2×10^{-4}	
		20 kHz ~ 100 kHz	2.0×10^{-4}	

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404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Input Level	40433	(100 V ~ 300 V)		
		10 Hz ~ 1 kHz	2.3×10^{-4}	
		1 kHz ~ 10 kHz	2.7×10^{-4}	
DC Input Level		1 mV ~ 300 V	5.9×10^{-5}	
Filter(weight,low,high pass etc.)		400 Hz ~ 80 kHz	1.9×10^{-4}	
Distortion factor		20 Hz ~ 20 kHz		
		(-10 ~ -60) dB	0.31 dB	
		(-60 ~ -70) dB	0.38 dB	
		(-70 ~ -80) dB	0.55 dB	
		20 Hz ~ 20 kHz		
		(0.001 ~ 0.01) %	5.5×10^{-2}	
		(0.01 ~ 30) %	3.1×10^{-2}	
AC/DC high voltage genarators	40434			High voltage voltmeters
DC Voltage		(Positive)		/HCT-CS-055-40434
		0 kV ~ 1 kV	5.4×10^{-6}	
		1 kV ~ 10 kV	7.3×10^{-4}	
		10 kV ~ 20 kV	7.2×10^{-4}	
		20 kV ~ 30 kV	7.3×10^{-4}	
		30 kV ~ 50 kV	7.2×10^{-4}	
		50 kV ~ 80 kV	7.1×10^{-4}	
		80 kV ~ 90 kV	7.2×10^{-4}	
		90 kV ~ 95 kV	7.8×10^{-4}	
		(Negative)		
		-0 kV ~ -1 kV	5.4×10^{-6}	
		-1 kV ~ -10 kV	7.3×10^{-4}	
		-10 kV ~ -20 kV	7.2×10^{-4}	
		-20 kV ~ -30 kV	7.3×10^{-4}	
		-30 kV ~ -50 kV	7.2×10^{-4}	
		-50 kV ~ -80 kV	7.1×10^{-4}	
		-80 kV ~ -90 kV	7.2×10^{-4}	
		-90 kV ~ -95 kV	7.8×10^{-4}	
AC Voltage		50 ~ 60 Hz		
		0.1 kV ~ 1 kV	1.3×10^{-4}	
		1 kV ~ 10 kV	1.5×10^{-2}	
		10 kV ~ 20 kV	1.6×10^{-2}	
		20 kV ~ 60 kV	1.5×10^{-2}	
		60 kV ~ 70 kV	1.4×10^{-2}	
AC/DC high voltage probes	40435			High voltage source
DC Voltage		(Positive)		/HCT-CS-056-40435
		1 V ~ 100 V	5.8×10^{-5}	
		100 V ~ 1 kV	5.8×10^{-4}	
		1 kV ~ 10 kV	7.0×10^{-3}	
		10 kV ~ 20 kV	4.9×10^{-3}	
		20 kV ~ 30 kV	4.2×10^{-3}	
		30 kV ~ 40 kV	3.9×10^{-3}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
DC Voltage	40435	(Negative)		
		-1 V ~ -100 V	5.8×10^{-5}	
		-100 V ~ -1 kV	5.8×10^{-4}	
		-1 kV ~ -10 kV	7.0×10^{-3}	
		-10 kV ~ -20 kV	4.9×10^{-3}	
		-20 kV ~ -30 kV	4.2×10^{-3}	
		-30 kV ~ -40 kV	3.9×10^{-3}	
AC Voltage		10 Hz ~ 50 Hz		
		(1 V ~ 100 V)	1.2×10^{-4}	
		(100 V ~ 1 kV)	6.1×10^{-4}	
		50 Hz ~ 60 Hz		
		(1 V ~ 100 V)	1.2×10^{-4}	
		(100 V ~ 1 kV)	6.1×10^{-4}	
		(1 kV ~ 10 kV)	1.9×10^{-2}	
		(10 kV ~ 20 kV)	2.0×10^{-2}	
		(20 kV ~ 60 kV)	1.9×10^{-2}	
		(60 kV ~ 70 kV)	2.0×10^{-2}	
		60 Hz ~ 1 kHz		
		(1 V ~ 100 V)	1.2×10^{-4}	
		(100 V ~ 1 kV)	6.1×10^{-4}	
Resistance		1 Ω ~ 10 Ω	5.8×10^{-4}	
		10 Ω ~ 100 Ω	5.8×10^{-5}	
		100 Ω ~ 10 kΩ	5.8×10^{-4}	
		10 kΩ ~ 100 kΩ	5.8×10^{-5}	
		100 kΩ ~ 10 MΩ	5.8×10^{-4}	
		10 MΩ ~ 100 MΩ	1.8×10^{-4}	
		100 MΩ ~ 1 GΩ	1.5×10^{-3}	
Capacitance		(1 kHz)		
		0.1 ~ 1 pF	5.8×10^{-3}	
		1 pF ~ 10 pF	9.1×10^{-4}	
		10 pF ~ 100 pF	6.1×10^{-4}	
		100 pF ~ 1 nF	5.8×10^{-3}	
		1 nF ~ 10 nF	8.7×10^{-4}	
Logic analyzers	40436			Multimeter calibrators
Input voltage		-10 V ~ 10 V	5.8×10^{-5}	/HCT-CS-201-40436
Telephone testers	40437			Counters,Digital Multimeter
Frequency		1 Hz ~1 MHz	5.8×10^{-7}	/HCT-CS-127-40437
AC Amplitude		(1 mV ~ 100 mV)		
		20 Hz ~ 20 kHz	1.9×10^{-4}	
		20 kHz ~ 50 kHz	4.0×10^{-4}	
		50 kHz ~ 100 kHz	9.3×10^{-4}	
		(100 mV ~ 1 V)		
		20 Hz ~ 20 kHz	1.2×10^{-4}	
		20 kHz ~ 50 kHz	2.7×10^{-4}	
		50 kHz ~ 100 kHz	7.1×10^{-4}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Amplitude	40437	(1 V ~ 10 V)		
		20 Hz ~ 20 kHz	1.5×10^{-4}	
		20 kHz ~ 50 kHz	2.6×10^{-4}	
		50 kHz ~ 100 kHz	7.0×10^{-4}	
		(10 V ~ 100 V)		
		20 Hz ~ 20 kHz	1.5×10^{-4}	
		20 kHz ~ 50 kHz	2.6×10^{-4}	
		50 kHz ~ 100 kHz	7.1×10^{-4}	
		(100 V ~ 500 V)		
		100 Hz ~ 1 kHz	1.2×10^{-4}	
		(20 dBm ~ -10 dBm)		
		DC ~ 20 kHz	0.006 2 dB	
		20 kHz ~ 100 kHz	0.008 4 dB	
		(-10 ~ -40) dBm		
		DC ~ 20 kHz	0.006 7 dB	
		20 kHz ~ 100 kHz	0.009 9 dB	
Loop Current		1 mA ~ 100 mA	5.8×10^{-4}	
		100 mA ~ 1 A	6.1×10^{-4}	
DC Voltage		10 mV ~ 100 V	5.8×10^{-4}	
		100 V ~ 500 V	1.2×10^{-4}	
Dial Level		-39 dBm ~ 10 dBm	0.58 dB	
Resistance		50 Ω ~ 1 000 Ω	5.8×10^{-4}	
Video signal analyzers	40438			Video signal generators / HCT-CS-130-40438
SQUARE WAVE level		(0 ~ 100) mV	1.5×10^{-3}	
		(100 ~ 200) mV	1.3×10^{-3}	
		(200 ~ 300) mV	1.2×10^{-3}	
		(300 ~ 400) mV	1.9×10^{-3}	
		(400 ~ 500) mV	1.6×10^{-3}	
		(500 ~ 600) mV	1.5×10^{-3}	
		(600 ~ 1 000) mV	9.8×10^{-4}	
SINE WAVE level		(0 ~ 100) mV	6.2×10^{-2}	
		(100 ~ 200) mV	4.4×10^{-2}	
		(200 ~ 300) mV	3.0×10^{-2}	
		(300 ~ 400) mV	2.4×10^{-2}	
		(400 ~ 500) mV	2.2×10^{-2}	
		(500 ~ 600) mV	2.0×10^{-2}	
		(600 ~ 700) mV	3.4×10^{-2}	
		(700 ~ 1 000) mV	3.1×10^{-2}	
BURST Frequency		(3 ~ 5) MHz	5.8×10^{-7}	

404. Other DC & LF measurements

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Vector scopes,Video signal monitors	40438			
Color Bar Level(chrominance)		(0 ~ 100) mV	3.1×10^{-2}	
		(100 ~ 200) mV	2.2×10^{-2}	
		(200 ~ 300) mV	1.5×10^{-2}	
		(300 ~ 400) mV	1.2×10^{-2}	
		(400 ~ 800) mV	1.1×10^{-2}	
		(800 ~ 1 000) mV	9.6×10^{-3}	
Color Bar phase		0 ° ~ 360 °	0.7 °	
Frequency		50 Hz ~ 10 MHz	5.8×10^{-5}	
Vertical Level		(0 ~ 100) mV	2.1×10^{-2}	
		(100 ~ 200) mV	1.4×10^{-2}	
		(200 ~ 300) mV	8.3×10^{-3}	
		(300 ~ 400) mV	6.2×10^{-3}	
		(400 ~ 500) mV	4.9×10^{-3}	
		(500 ~ 600) mV	4.0×10^{-3}	
		(600 ~ 700) mV	3.3×10^{-3}	
		(700 ~ 800) mV	2.9×10^{-3}	
		(800 ~ 900) mV	2.6×10^{-3}	
		(900 ~ 1 000) mV	2.3×10^{-3}	
Vertical Level(Response)		(50 kHz ~ 10 MHz)		
		(0 ~ 100) mV	6.6×10^{-2}	
		(100 ~ 200) mV	4.6×10^{-2}	
		(200 ~ 300) mV	3.1×10^{-2}	
		(300 ~ 400) mV	2.5×10^{-2}	
		(400 ~ 500) mV	2.2×10^{-2}	
		(500 ~ 600) mV	2.1×10^{-2}	
		(600 ~ 700) mV	3.4×10^{-2}	
		(700 ~ 800) mV	3.1×10^{-2}	
		(800 ~ 900) mV	2.8×10^{-2}	
		(900 ~ 1 000) mV	2.7×10^{-2}	

405. Low frequency electric & magnetic field

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Flux meters	40503	0.1 mWb	6.0×10^{-3}	Volt-second generator / HCT-CS-257-40503
		(0.1 ~ 1) mWb	1.7×10^{-3}	
		1 mWb ~ 1 Wb	8.2×10^{-4}	
		(1 ~ 10) Wb	8.6×10^{-4}	
Flux sources	40504	(0.1 ~ 1) mWb	1.3×10^{-4}	DMM, Counter, Scope / HCT-CD-258-40504
		(1 ~ 10) mWb	1.2×10^{-5}	
		(10 ~ 100) mWb	3.3×10^{-6}	
		(0.1 ~ 1) Wb	1.1×10^{-5}	
		(1 ~ 10) Wb	2.1×10^{-5}	

405. Low frequency electric & magnetic field

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Magnetometers	40508			Helmholtz coil, Electro magnet
		0 mT	2.2 μT	
		(0 ~ 1) mT	6.5×10^{-3}	NMR teslameter
		(1 ~ 25) mT	3.2×10^{-3}	/ HCT-CD-258-40504
		(25 ~ 50) mT	3.8×10^{-3}	
		(50 ~ 150) mT	2.3×10^{-3}	
		(150 ~ 500) mT	7.2×10^{-4}	
		(500 ~ 1 000) mT	7.0×10^{-4}	
		(1 ~ 1.9) T	5.5×10^{-4}	
Reference/standard magnets	40510	(5 ~ 10) mT	2.2×10^{-3}	Helmholtz coil, Electro magnet
		(10 ~ 100) mT	8.3×10^{-4}	Gauss meter
		(0.1 ~ 1) T	1.1×10^{-3}	/ HCT-CD-258-40504
		(1 ~ 2) T	9.0×10^{-4}	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
RF amplifiers	40601			RF spectrum analyzer,
Gain		(5 Hz ~ 1 GHz)		Network analyzer
		0 dB ~ 30 dB	0.08 dB	/ HCT-CS-105-40601
		30 dB ~ 60 dB	0.11 dB	
		60 dB ~ 90 dB	0.24 dB	
		(1 GHz ~ 10 GHz)		
		0 dB ~ 30 dB	0.08 dB	
		30 dB ~ 60 dB	0.11 dB	
		60 dB ~ 90 dB	0.24 dB	
		(10 GHz ~ 18 GHz)		
		0 dB ~ 30 dB	0.15 dB	
		30 dB ~ 60 dB	0.23 dB	
		60 dB ~ 90 dB	0.60 dB	
		(18 GHz ~ 40 GHz)		
		0 dB ~ 30 dB	0.15 dB	
		30 dB ~ 60 dB	0.23 dB	
Harmonics		(9 kHz ~ 18 GHz)		
		-100 dBc ~ 0 dBc	1.5 dB	
Coaxial attenuators	40602			Attenuator calibrator,
Attenuation		(5 Hz ~ 9 kHz)		Network analyzer,
		0 dB ~ 10 dB	0.11 dB	Calibration kit
		10 dB ~ 20 dB	0.13 dB	/ HCT-CS-108-40602
		20 dB ~ 30 dB	0.15 dB	
		30 dB ~ 40 dB	0.17 dB	
		40 dB ~ 50 dB	0.21 dB	
		50 dB ~ 60 dB	0.30 dB	
		(9 kHz ~ 26.5 GHz)		
		0 dB ~ 10 dB	0.04 dB	
		10 dB ~ 20 dB	0.04 dB	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Attenuation	40602	20 dB ~ 30 dB	0.05 dB	
		30 dB ~ 40 dB	0.05 dB	
		40 dB ~ 50 dB	0.06 dB	
		50 dB ~ 60 dB	0.06 dB	
		60 dB ~ 70 dB	0.07 dB	
		70 dB ~ 80 dB	0.08 dB	
		80 dB ~ 90 dB	0.08 dB	
		90 dB ~ 100 dB	0.09 dB	
		100 dB ~ 110 dB	0.09 dB	
		110 dB ~ 120 dB	0.10 dB	
		(26.5 GHz ~ 40 GHz)		
		0 dB ~ 10 dB	0.21 dB	
		10 dB ~ 20 dB	0.23 dB	
		20 dB ~ 30 dB	0.29 dB	
		30 dB ~ 40 dB	0.30 dB	
		40 dB ~ 50 dB	0.47 dB	
		50 dB ~ 60 dB	1.2 dB	
Burst pulse generators	40605			Attenuator, Oscilloscope
Output Voltage		50 Ω		/ HCT-CS-109-40605
		10 V	0.32 V	
		10 V ~ 20 V	3.2×10^{-2}	
		20 V ~ 50 V	2.6×10^{-2}	
		50 V ~ 200 V	3.2×10^{-2}	
		200 V ~ 500 V	2.6×10^{-2}	
		0.5 kV ~ 1 kV	3.2×10^{-2}	
		1 kV ~ 2 kV	2.3×10^{-2}	
		2 kV ~ 2.5 kV	1.9×10^{-2}	
		2.5 kV ~ 3 kV	1.6×10^{-2}	
		3 kV ~ 4 kV	3.2×10^{-2}	
		-10 V	0.32 V	
		-10 V ~ -20 V	3.2×10^{-2}	
		-20 V ~ -50 V	2.6×10^{-2}	
		-50 V ~ -200 V	3.2×10^{-2}	
		-200 V ~ -500 V	2.6×10^{-2}	
		-0.5 kV ~ -1 kV	3.2×10^{-2}	
		-1 kV ~ -2 kV	2.3×10^{-2}	
		-2 kV ~ -2.5 kV	1.9×10^{-2}	
		-2.5 kV ~ -3 kV	1.6×10^{-2}	
		-3 kV ~ -4 kV	3.2×10^{-2}	
		1 kΩ		
		10 V	0.24 V	
		10 V ~ 40 V	3.1×10^{-2}	
		40 V ~ 100 V	2.5×10^{-2}	
		100 V ~ 400 V	3.1×10^{-2}	
		0.2 kV ~ 1 kV	2.5×10^{-2}	
		1 kV ~ 2 kV	3.1×10^{-2}	
		2 kV ~ 4 kV	2.2×10^{-2}	
		4 kV ~ 5 kV	1.8×10^{-2}	
		5 kV ~ 6 kV	1.5×10^{-2}	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output Voltage	40605	6 kV ~ 8 kV	1.1×10^{-2}	
		-10 V	0.24 V	
		-10 V ~ -40 V	3.1×10^{-2}	
		-40 V ~ -100 V	2.5×10^{-2}	
		-100 V ~ -400 V	3.1×10^{-2}	
		-0.4 kV ~ -1 kV	2.5×10^{-2}	
		-1 kV ~ -2 kV	3.1×10^{-2}	
		-2 kV ~ -4 kV	2.2×10^{-2}	
		-4 kV ~ -5 kV	1.8×10^{-2}	
		-5 kV ~ -6 kV	1.5×10^{-2}	
		-6 kV ~ -8 kV	1.1×10^{-2}	
Delta time measurement		1.0 ns	0.02 ns	
(rise/fall/duration/period/		(1.0 to 2.0) ns	7.5×10^{-3}	
repetition rate/burst duration)		(2.0 to 5.0) ns	3.6×10^{-3}	
		(5.0 to 10.0) ns	2.7×10^{-3}	
		(10 to 20) ns	3.0×10^{-3}	
		(20 to 100) ns	2.3×10^{-3}	
		(100 to 200) ns	2.9×10^{-3}	
		(200 to 500) ns	2.3×10^{-3}	
		(0.5 to 1.0) μs	2.5×10^{-3}	
		(1.0 to 2.0) μs	2.9×10^{-4}	
		(2.0 to 10) μs	2.3×10^{-4}	
		(10 to 20) μs	2.9×10^{-3}	
		(20 to 50) μs	2.3×10^{-3}	
		(50 to 100) μs	2.4×10^{-3}	
		(100 to 200) μs	2.9×10^{-3}	
		(200 to 500) μs	2.4×10^{-3}	
		(0.5 to 1.0) ms	2.8×10^{-2}	
		(1.0 to 2.0) ms	3.5×10^{-2}	
		(2.0 to 10) ms	2.3×10^{-3}	
		(10 to 20) ms	2.9×10^{-3}	
		(20 to 100) ms	2.3×10^{-3}	
		(100 to 200) ms	2.9×10^{-3}	
		(200 to 500) ms	2.3×10^{-3}	
		(0.5 to 2) s	3.1×10^{-3}	
		(2.0 to 5.0) s	2.3×10^{-3}	
Frequency measurement		2.5 kHz	1.6 Hz	
		2.5 kHz ~ 5 kHz	3.2×10^{-4}	
		5 kHz ~ 10 kHz	8.3×10^{-4}	
		10 kHz ~ 100 kHz	5.9×10^{-4}	
		0.1 MHz ~ 1 MHz	1.2×10^{-3}	
		1 MHz ~ 3 MHz	3.1×10^{-4}	
		3 MHz ~ 10 MHz	6.0×10^{-4}	
		10 MHz ~ 30 MHz	3.5×10^{-4}	
		30 MHz ~ 100 MHz	1.5×10^{-3}	
Attenuator calibrators	40606			Standard attenuator
Attenuation measurement accuracy		0 dB ~ 10 dB	0.027 dB	/ HCT-CS-175-40606
		10 dB ~ 20 dB	0.029 dB	
		20 dB ~ 30 dB	0.031 dB	
		30 dB ~ 40 dB	0.038 dB	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Attenuation measurement accuracy	40606	40 dB ~ 50 dB	0.042 dB	
		50 dB ~ 60 dB	0.043 dB	
		60 dB ~ 70 dB	0.048 dB	
		70 dB ~ 80 dB	0.053 dB	
		80 dB ~ 90 dB	0.060 dB	
		90 dB ~ 100 dB	0.065 dB	
		100 dB ~ 110 dB	0.069 dB	
		110 dB ~ 120 dB	0.074 dB	
RF power meter calibrators	40607			Digital multimeter
Power range		3 μW	0.27 nW	/ HCT-CS-166-40607
		10 μW	0.44 nW	
		30 μW	1.8 nW	
		100 μW	2.9 nW	
		300 μW	15 nW	
		1 mW	0.02 μW	
		3 mW	0.10 μW	
		10 mW	0.18 μW	
		30 mW	0.45 μW	
		100 mW	2.5 μW	
EMC용 변환기	40608			Network analyzer,
EMC trandusers				Calibration kit
Transfer impedance		5 Hz ~ 400 MHz	0.54 dB	/ HCT-CS-167-40608
		400 MHz ~ 3 GHz	1.1 dB	/ HCT-CS-198-40608
Reflection coefficient		5 Hz ~ 3 GHz	5.9×10^{-3}	
Absorbing clamps				
Insertion loss		30 MHz ~ 1 GHz	1.8 dB	
Coaxial directional couplers /splitters	40610			Network analyzer, Calibration kit
Coupling Factor		(5 Hz ~ 9 kHz)		/ HCT-CS-110-40610
		0 dB ~ 10 dB	0.11 dB	
		10 dB ~ 20 dB	0.13 dB	
		20 dB ~ 30 dB	0.15 dB	
		30 dB ~ 40 dB	0.17 dB	
		40 dB ~ 50 dB	0.21 dB	
		50 dB ~ 60 dB	0.30 dB	
		(9 kHz ~ 26.5 GHz)		
		0 dB ~ 10 dB	0.04 dB	
		10 dB ~ 20 dB	0.04 dB	
		20 dB ~ 30 dB	0.05 dB	
		30 dB ~ 40 dB	0.05 dB	
		40 dB ~ 50 dB	0.06 dB	
		50 dB ~ 60 dB	0.06 dB	
		60 dB ~ 70 dB	0.07 dB	
		70 dB ~ 80 dB	0.08 dB	
		80 dB ~ 90 dB	0.08 dB	
		90 dB ~ 100 dB	0.09 dB	
		100 dB ~ 110 dB	0.09 dB	
		110 dB ~ 120 dB	0.10 dB	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Coupling Factor	40610	(26.5 GHz ~ 40 GHz)		
		0 dB ~ 10 dB	0.21 dB	
		10 dB ~ 20 dB	0.23 dB	
		20 dB ~ 30 dB	0.29 dB	
		30 dB ~ 40 dB	0.30 dB	
		40 dB ~ 50 dB	0.47 dB	
		50 dB ~ 60 dB	1.2 dB	
Electrostatic Discharge Generators	40613			Electrostatic Discharge Measurement System, Oscilloscope Calibrator / HCT-CS-111-40613
Current(Ip)		(6.7 ~7.5) A	0.24 A	
		(7.5 ~ 15) A	0.33 A	
		(15 ~ 22.5) A	0.63 A	
		(22.5 ~ 30) A	0.73 A	
		(30 ~ 45.0) A	1.3 A	
		(45.0 ~ 56.3) A	1.6 A	
		(56.3 ~ 75) A	1.9 A	
		(75 ~ 93.8) A	2.2 A	
		(93.8 ~ 150) A	3.1 A	
		-(6.7 ~ 7.5) A	0.24 A	
		-(7.5 ~ 15) A	0.33 A	
		-(15 ~ 22.5) A	0.63 A	
		-(22.5 ~ 30) A	0.73 A	
		-(30 ~ 45.0) A	1.3 A	
		-(45.0 ~ 56.3) A	1.6 A	
		-(56.3 ~ 75) A	1.9 A	
		-(75 ~ 93.8) A	2.2 A	
		-(93.8 ~ 150) A	3.1 A	
T1				
30 ns, 65 ns		(2 ~ 4) A	0.21 A	
		(4 ~ 8) A	0.24 A	
		(8 ~ 12) A	0.53 A	
		(12 ~ 16) A	0.56 A	
		(16 ~ 24) A	1.1 A	
		(24 ~ 30) A	1.2 A	
		(30 ~ 40) A	1.3 A	
		(40 ~ 50) A	1.5 A	
		(50 ~ 80) A	2.3 A	
		-(2 ~ 4) A	0.21 A	
		-(4 ~ 8) A	0.24 A	
		-(8 ~ 12) A	0.53 A	
		-(12 ~ 16) A	0.56 A	
		-(16 ~ 24) A	1.1 A	
		-(24 ~ 30) A	1.2 A	
		-(30 ~ 40) A	1.3 A	
		-(40 ~ 50) A	1.5 A	
		-(50 ~ 80) A	2.3 A	
T2				
60 ns, 130 ns		(1 ~ 2) A	0.20 A	
		(2 ~ 4) A	0.21 A	
		(4 ~ 6) A	0.50 A	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
T2	40613	(6 ~ 8) A	0.50 A	
60 ns, 130 ns		(8 ~ 12) A	1.0 A	
		(12 ~ 15) A	1.0 A	
		(15 ~ 20) A	1.1 A	
		(20 ~ 25) A	1.1 A	
		(25 ~ 40) A	2.0 A	
		-(1 ~ 2) A	0.20 A	
		-(2 ~ 4) A	0.21 A	
		-(4 ~ 6) A	0.50 A	
		-(6 ~ 8) A	0.50 A	
		-(8 ~ 12) A	1.0 A	
		-(12 ~ 15) A	1.0 A	
		-(15 ~ 20) A	1.1 A	
		-(20 ~ 25) A	1.1 A	
		-(25 ~ 40) A	2.0 A	
T3				
180 ns, 400 ns		(0.30 ~ 0.55) A	35 mA	
		(0.55 ~ 1.10) A	39 mA	
		(1.10 ~ 1.65) A	93 mA	
		(1.65 ~ 2.20) A	0.10 A	
		(2.20 ~ 3.30) A	0.30 A	
		(3.30 ~ 4.13) A	0.29 A	
		(4.13 ~ 5.50) A	0.30 A	
		(5.50 ~ 6.88) A	0.31 A	
		(6.88 ~ 10.6) A	0.39 A	
		-(0.30 ~ 0.55) A	35 mA	
		-(0.55 ~ 1.10) A	39 mA	
		-(1.10 ~ 1.65) A	93 mA	
		-(1.65 ~ 2.20) A	0.10 A	
		-(2.20 ~ 3.30) A	0.30 A	
		-(3.30 ~ 4.13) A	0.29 A	
		-(4.13 ~ 5.50) A	0.30 A	
		-(5.50 ~ 6.88) A	0.31 A	
		-(6.88 ~ 10.6) A	0.39 A	
T4				
360 ns, 800 ns		(0.10 ~ 0.30) A	34 mA	
		(0.30 ~ 0.60) A	35 mA	
		(0.60 ~ 0.90) A	90 mA	
		(0.90 ~ 1.20) A	91 mA	
		(1.20 ~ 1.80) A	0.29 A	
		(1.80 ~ 2.25) A	0.28 A	
		(2.25 ~ 3.00) A	0.28 A	
		(3.00 ~ 3.75) A	0.29 A	
		(3.75 ~ 5.90) A	0.36 A	
		-(0.10 ~ 0.30) A	34 mA	
		-(0.30 ~ 0.60) A	35 mA	
		-(0.60 ~ 0.90) A	90 mA	
		-(0.90 ~ 1.20) A	91 mA	
		-(1.20 ~ 1.80) A	0.29 A	
		-(1.80 ~ 2.25) A	0.28 A	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
T4	40613	-(2.25 ~ 3.00) A	0.28 A	
360 ns, 800 ns		-(3.00 ~ 3.75) A	0.29 A	
		-(3.75 ~ 5.90) A	0.36 A	
Rise/Fall Time		(0.5 ~ 1) ns	37 ps	
Voltage		(0.1 ~ 0.5) kV	7.6 V	
		(0.5 ~ 1) kV	9.0 V	
		(1 ~ 2) kV	48 V	
		(2 ~ 4) kV	49 V	
		(4 ~ 6) kV	67 V	
		(6 ~ 8) kV	68 V	
		(8 ~ 10) kV	78 V	
		(10 ~ 12) kV	97 V	
		(12 ~ 14) kV	0.12 V	
		(14 ~ 16) kV	0.12 V	
		(16 ~ 18) kV	0.13 V	
		(18 ~ 20) kV	0.14 V	
		(20 ~ 25) kV	0.20 V	
		(25 ~ 30) kV	0.20 V	
		-(0.1 ~ 0.5) kV	7.6 V	
		-(0.5 ~ 1) kV	9.0 V	
		-(1 ~ 2) kV	48 V	
		-(2 ~ 4) kV	49 V	
		-(4 ~ 6) kV	67 V	
		-(6 ~ 8) kV	68 V	
		-(8 ~ 10) kV	78 V	
		-(10 ~ 12) kV	97 V	
		-(12 ~ 14) kV	0.12 V	
		-(14 ~ 16) kV	0.12 V	
		-(16 ~ 18) kV	0.13 V	
		-(18 ~ 20) kV	0.14 V	
		-(20 ~ 25) kV	0.20 V	
		-(25 ~ 30) kV	0.20 V	
Semiconductor ESD Peak Current		(0.15 ~ 0.17) A	11 mA	
(MM or HBM)		(0.17 ~ 0.33) A	18 mA	
		(0.33 ~ 0.67) A	36 mA	
		(0.67 ~ 1.33) A	71 mA	
		(1.33 ~ 2.67) A	0.14 A	
		(2.67 ~ 5.33) A	0.28 A	
		(5.33 ~ 14) A	0.49 A	
		-(0.15 ~ 0.17) A	11 mA	
		-(0.17 ~ 0.33) A	18 mA	
		-(0.33 ~ 0.67) A	36 mA	
		-(0.67 ~ 1.33) A	71 mA	
		-(1.33 ~ 2.67) A	0.14 A	
		-(2.67 ~ 5.33) A	0.28 A	
		-(5.33 ~ 14) A	0.49 A	
ESD Rise/Fall Time of Semiconductor		(1 ~ 11) ns	12 ps	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
ESD Decay Time of Semiconductor	40613	(100 ~ 200) ns	0.58 ns	
ESD Peak Voltage of Semiconductor		(0.01 ~ 0.1) kV	3.7 V	
		(0.1 ~ 0.2) kV	9.1 V	
		(0.2 ~ 0.25) kV	10 V	
		(0.25 ~ 0.4) kV	15 V	
		(0.4 ~ 0.5) kV	18 V	
		(0.5 ~ 0.8) kV	67 V	
		(0.8 ~ 1) kV	70 V	
		(1 ~ 2) kV	92 V	
		(2 ~ 4) kV	0.16 kV	
		(4 ~ 8) kV	0.31 kV	
		-(0.01 ~ 0.1) kV	3.7 V	
		-(0.1 ~ 0.2) kV	9.1 V	
		-(0.2 ~ 0.25) kV	10 V	
		-(0.25 ~ 0.4) kV	15 V	
		-(0.4 ~ 0.5) kV	18 V	
		-(0.5 ~ 0.8) kV	67 V	
		-(0.8 ~ 1) kV	70 V	
		-(1 ~ 2) kV	92 V	
		-(2 ~ 4) kV	0.16 kV	
		-(4 ~ 8) kV	0.31 kV	
EMC receivers	40614			Calibration pulsegenerator,
Reference frequency		80 kHz ~ 100 MHz	5.8×10^{-11}	Frequency standard,
				Power sensor,
Input impedance		9 kHz ~ 1 GHz	3.8×10^{-3}	standard attenuator,
(Reflection coefficient)		1 GHz ~ 3 GHz	5.3×10^{-3}	Network analyzer,
		3 GHz ~ 20 GHz	9.3×10^{-3}	RF signal generator
		20 GHz ~ 40 GHz	1.2×10^{-2}	/ HCT-CS-112-40614
		40 GHz ~ 50 GHz	5.9×10^{-2}	
sinwave volatage accuracy		10 Hz ~ 2 GHz	0.04 dB	
		2 GHz ~ 12 GHz	0.06 dB	
		12 GHz ~ 40 GHz	0.08 dB	
		40 GHz ~ 50 GHz	0.25 dB	
Pulse response		9 kHz ~ 40 GHz	0.25 dB	
Repetition frequency response		9 kHz ~ 1 GHz	0.10 dB	
Overall slectivity		9 kHz ~ 40 GHz	0.08 dB	
IF rejection ratio		9 kHz ~ 40 GHz	0.31 dB	
Image frequency rejection ratio		9 kHz ~ 40 GHz	0.31 dB	
Other spurious response		9 kHz ~ 40 GHz	0.31 dB	
Random noise		9 kHz ~ 40 GHz	0.07 dB	
Resolution bandwidth		10 Hz ~ 20 MHz	7.4×10^{-4}	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
RF filters	40615			Network analyzer,
Cutoff frequency		9 kHz ~ 26.5 GHz	6.4×10^{-7}	Calibration kit / HCT-CS-113-40615
Insertion loss		(9 kHz ~ 1 GHz)		
		0 dB ~ 10 dB	0.11 dB	
		10 dB ~ 20 dB	0.12 dB	
		20 dB ~ 30 dB	0.14 dB	
		30 dB ~ 40 dB	0.17 dB	
		40 dB ~ 50 dB	0.21 dB	
		50 dB ~ 60 dB	0.30 dB	
		60 dB ~ 70 dB	0.54 dB	
		70 dB ~ 80 dB	1.27 dB	
		80 dB ~ 100 dB	3.23 dB	
		(1 GHz ~ 18 GHz)		
		0 dB ~ 10 dB	0.11 dB	
		10 dB ~ 20 dB	0.12 dB	
		20 dB ~ 30 dB	0.13 dB	
		30 dB ~ 40 dB	0.15 dB	
		40 dB ~ 50 dB	0.20 dB	
		50 dB ~ 60 dB	0.34 dB	
		60 dB ~ 70 dB	0.72 dB	
		70 dB ~ 80 dB	1.82 dB	
		80 dB ~ 100 dB	4.65 dB	
		(18 GHz ~ 26.5 GHz)		
		0 dB ~ 10 dB	0.21 dB	
		10 dB ~ 20 dB	0.23 dB	
		20 dB ~ 30 dB	0.24 dB	
		30 dB ~ 40 dB	0.27 dB	
		40 dB ~ 50 dB	0.35 dB	
		50 dB ~ 60 dB	0.59 dB	
		60 dB ~ 70 dB	1.28 dB	
		70 dB ~ 80 dB	3.19 dB	
		80 dB ~ 100 dB	7.56 dB	
		(26.5 GHz ~ 40 GHz)		
		0 dB ~ 10 dB	0.21 dB	
		10 dB ~ 20 dB	0.23 dB	
		20 dB ~ 30 dB	0.24 dB	
		30 dB ~ 40 dB	0.29 dB	
		40 dB ~ 50 dB	0.47 dB	
		50 dB ~ 60 dB	1.13 dB	
		60 dB ~ 70 dB	3.02 dB	
RF impedance meters	40616			Frequency standard,
Output frequency		1 mHz ~ 18 GHz	5.8×10^{-11}	Measuring receiver / HCT-CS-176-40616
Output level		(9 kHz ~ 18 GHz)		
		0 dBm ~ 20 dBm	0.19 dB	
		-10 dBm ~ 0 dBm	0.18 dB	
		-30 dBm ~ -10 dBm	0.19 dB	
		-50 dBm ~ -30 dBm	0.20 dB	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output level	40616	-50 dBm ~ -70 dBm -90 dBm ~ -100 dBm -110 dBm ~ -90 dBm -120 dBm ~ -110 dBm	0.21 dB 0.22 dB 0.23 dB 0.24 dB	
RF impulse generators Impulse Level	40617	 9 kHz ~ 1 GHz	 0.28 dB	RF spectrum analyzer / HCT-CS-248-40617
Line impedance stabilization networs	40618			Network analyzer, Calibration kit
LISN				
Impedance		5 Hz ~ 1 GHz	2.0×10^{-2}	/ HCT-CS-114-40618
Phase angle		5 Hz ~ 1 GHz	0.02 °	
Voltage division factor		5 Hz ~ 1 GHz	0.12 dB	
Isolation		(9 kHz ~ 200 MHz)		
		(0 ~ 50) dB	0.2 dB	
		(50 ~ 60) dB	0.3 dB	
		(60 ~ 70) dB	0.5 dB	
		(70 ~ 80) dB	1.2 dB	
		(80 ~ 90) dB	3.1 dB	
CDN				
Impedance		5 Hz ~ 1 GHz	2.0×10^{-2}	/ HCT-CS-163-40618
Phase angle		5 Hz ~ 1 GHz	0.02 °	
Voltage division factor		5 Hz ~ 1 GHz	0.12 dB	
ISN				
Impedance		9 kHz ~ 1 GHz	2.0×10^{-2}	/ HCT-CS-199-40618
Phase angle		9 kHz ~ 1 GHz	0.02 °	
Voltage division factor		9 kHz ~ 1 GHz	0.12 dB	
longitudinal Conversion Loss		9 kHz ~ 1 GHz	0.27 dB	
EM clamp				
Coupling Factor		9 kHz ~ 1 GHz	0.30 dB	/ HCT-CS-206-40618
Decoupling Factor		9 kHz ~ 1 GHz	0.30 dB	
Impedance		9 kHz ~ 1 GHz	1.8×10^{-2}	
Impedance converters				
Impedance		5 Hz ~ 3 GHz	6.0×10^{-3}	/ HCT-CS-249-40618
Phase angle		5 Hz ~ 3 GHz	0.011 °	
Attenuator		5 Hz ~ 3 GHz	0.13 dB	
Coaxial standard mismatches Reflection coefficients	40619	 (0 ~ 1) 9 kHz ~ 1 GHz 1 GHz ~ 18 GHz	 4.8×10^{-3} 1.0×10^{-2}	Network analyzer, Calibration kit / HCT-CS-174-40619
Mobile communication test sets Output frequency	40621	 1 mHz ~ 46 GHz	 5.8×10^{-11}	Frequency stanard, Power sensor, Measuring receiver
Output level		(-30 dBm ~ 20 dBm) 9 kHz ~ 100 MHz 100 MHz ~ 1 GHz	 0.05 dB 0.07 dB	RF spectrum analyzer / HCT-CS-115-40621

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output level	40621	1 GHz ~ 8 GHz	0.08 dB	
		8 GHz ~ 12 GHz	0.09 dB	
		12 GHz ~ 26 GHz	0.12 dB	
		26 GHz ~ 40 GHz	0.15 dB	
		40 GHz ~ 50 GHz	0.21 dB	
Absolute TRFL accuracy		(9 kHz ~ 8 GHz)		
		0 dBm ~ 30 dBm	0.15 dB	
		-40 dBm ~ 0 dBm	0.16 dB	
		-80 dBm ~ -40 dBm	0.18 dB	
		-120 dBm ~ -80 dBm	0.20 dB	
		-140 dBm ~ -120 dBm	0.21 dB	
		(8 GHz ~ 18 GHz)		
		0 dBm ~ 30 dBm	0.20 dB	
		-40 dBm ~ 0 dBm	0.20 dB	
		-80 dBm ~ -40 dBm	0.22 dB	
		-120 dBm ~ -80 dBm	0.24 dB	
		-140 dBm ~ -120 dBm	0.25 dB	
		(18 GHz ~ 26.5 GHz)		
		0 dBm ~ 30 dBm	0.27 dB	
		-40 dBm ~ 0 dBm	0.27 dB	
		-80 dBm ~ -40 dBm	0.29 dB	
		-120 dBm ~ -80 dBm	0.31 dB	
		-140 dBm ~ -120 dBm	0.32 dB	
Relative TRFL accuracy		(9 kHz ~ 18 GHz)		
		0 dBm ~ 30 dBm	0.05 dB	
		-40 dBm ~ 0 dBm	0.05 dB	
		-80 dBm ~ -40 dBm	0.08 dB	
		-120 dBm ~ -80 dBm	0.09 dB	
		-140 dBm ~ -120 dBm	0.10 dB	
		(18 GHz ~ 26.5 GHz)		
		0 dBm ~ 30 dBm	0.05 dB	
		-40 dBm ~ 0 dBm	0.05 dB	
		-80 dBm ~ -40 dBm	0.08 dB	
		-120 dBm ~ -80 dBm	0.09 dB	
		-140 dBm ~ -120 dBm	0.11 dB	
Output amplitude modulation		100 kHz ~ 26.5 GHz	1.2×10^{-2}	
Output frequency modulation		100 kHz ~ 26.5 GHz	1.2×10^{-2}	
Output phase modulation		100 kHz ~ 26.5 GHz	1.2×10^{-2}	
Output modulation distortion		100 kHz ~ 26.5 GHz	3.0×10^{-2}	
Output Harmonics		9 kHz ~ 10 GHz	1.4 dB	
		10 GHz ~ 26.5 GHz	1.7 dB	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output AC voltage	40621	(10 Hz ~ 25 kHz) 100 mV ~ 100 V	 4.0×10^{-4}	
Output DC voltage		100 mV ~ 100 V	5.9×10^{-5}	
Input frequency		1 mHz ~ 18 GHz	5.8×10^{-11}	
Input level		(-120 dBm ~ 20 dBm) 9 kHz ~ 100 MHz 100 MHz ~ 1 GHz 1 GHz ~ 8 GHz 8 GHz ~ 12 GHz 12 GHz ~ 18 GHz 18 GHz ~ 50 GHz	 0.05 dB 0.07 dB 0.08 dB 0.09 dB 0.12 dB 0.12 dB	
Output level linearity		(9 kHz ~ 26.5 GHz) -10 dBm ~ 30 dBm -20 dBm ~ -10 dBm -30 dBm ~ -20 dBm -40 dBm ~ -30 dBm -50 dBm ~ -40 dBm -60 dBm ~ -50 dBm -70 dBm ~ -60 dBm -80 dBm ~ -70 dBm -90 dBm ~ -80 dBm -100 dBm ~ -90 dBm -110 dBm ~ -100 dBm -140 dBm ~ -110 dBm	 0.034 dB 0.040 dB 0.046 dB 0.052 dB 0.058 dB 0.064 dB 0.070 dB 0.076 dB 0.080 dB 0.086 dB 0.092 dB 0.098 dB	
Input amplitide modulation		100 kHz ~ 26.5 GHz	1.2×10^{-2}	
Input frequency modulation		100 kHz ~ 26.5 GHz	1.2×10^{-2}	
Input phase modulation		100 kHz ~ 26.5 GHz	1.2×10^{-2}	
Input modulation distortion		100 kHz ~ 26.5 GHz	3.0×10^{-2}	
Input Harmonics		9 kHz ~ 10 GHz 10 GHz ~ 18 GHz	1.4 dB 1.7 dB	
Input AC voltage		(10 Hz ~ 25 kHz) 100 mV ~ 100 V	 4.0×10^{-4}	
Input DC Voltage		100 mV ~ 100 V	5.9×10^{-5}	
Modulation meters Frequency	40622	 1 mHz ~ 26.5 GHz	 5.8×10^{-11}	Measuring receiver, AM/FM test source / HCT-CS-116-40622
Amplitude Modulation		100 kHz ~ 26.5 GHz	1.2×10^{-2}	
Frequency Modulation		100 kHz ~ 26.5 GHz	1.2×10^{-2}	
Phase Modulation		100 kHz ~ 26.5 GHz	1.2×10^{-2}	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Audio RMS Accuracy	40622	(20 Hz ~ 50 kHz) 100 mW ~ 5 V	 7.0×10^{-4}	
Reference Power		(50 MHz) 1 mW	 3.0×10^{-3}	
Zero Set		0.000 μW 0.00 μW 0.0 μW 0.000 mW 0.00 mW	0.001 μW 0.01 μW 0.1 μW 0.001 mW 0.01 mW	
Range-to-Range Error		10 μW ~ 100 mW	1.3×10^{-3}	
Tuned RF Level		(0 ~ 10) dB (10 ~ 20) dB (20 ~ 30) dB (30 ~ 40) dB (40 ~ 50) dB (50 ~ 60) dB (60 ~ 70) dB (70 ~ 80) dB (80 ~ 90) dB (90 ~ 100) dB (100 ~ 110) dB (110 ~ 120) dB	0.027 dB 0.029 dB 0.032 dB 0.038 dB 0.043 dB 0.043 dB 0.048 dB 0.054 dB 0.060 dB 0.066 dB 0.069 dB 0.074 dB	
Network analyzers	40623			Calibration kit, Power sensor Frequency standrad, Standard attenuator, Mismatch / HCT-CS-117-40623
Output frequency		1 mHz ~ 46 GHz	5.8×10^{-11}	
Output level accuracy		(-30 dBm ~ 20 dBm) 5 Hz ~ 100 MHz 100 MHz ~ 1 GHz 1 GHz ~ 8 GHz 8 GHz ~ 12 GHz 12 GHz ~ 18 GHz 18 GHz ~ 26 GHz 26 GHz ~ 33 GHz 33 GHz ~ 40 GHz 40 GHz ~ 50 GHz 50 GHz ~ 75 GHz 75 GHz ~ 110 GHz	 0.05 dB 0.07 dB 0.08 dB 0.09 dB 0.12 dB 0.11 dB 0.13 dB 0.14 dB 0.16 dB 0.21 dB 0.28 dB	
Absolute TRFL accuracy		(9 kHz ~ 8 GHz) 0 dBm ~ 30 dBm -40 dBm ~ 0 dBm -80 dBm ~ -40 dBm -120 dBm ~ -80 dBm -140 dBm ~ -120 dBm (8 GHz ~ 18 GHz) 0 dBm ~ 30 dBm -40 dBm ~ 0 dBm	 0.15 dB 0.16 dB 0.18 dB 0.20 dB 0.21 dB 0.20 dB 0.20 dB	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Absolute TRFL accuracy	40623	-80 dBm ~ -40 dBm	0.22 dB	
		-120 dBm ~ -80 dBm	0.24 dB	
		-140 dBm ~ -120 dBm	0.25 dB	
		(18 GHz ~ 26.5 GHz)		
		0 dBm ~ 30 dBm	0.27 dB	
		-40 dBm ~ 0 dBm	0.27 dB	
		-80 dBm ~ -40 dBm	0.29 dB	
		-120 dBm ~ -80 dBm	0.31 dB	
		-140 dBm ~ -120 dBm	0.32 dB	
		(26.5 GHz ~ 40 GHz)		
		-30 dBm ~ 20 dBm	0.14 dB	
		(40 GHz ~ 50 GHz)		
		-30 dBm ~ 20 dBm	0.21 dB	
Output level linearity		(9 kHz ~ 26.5 GHz)		
		0 dBm ~ 10 dBm	0.034 dB	
		-10 dBm ~ 0 dBm	0.034 dB	
		-20 dBm ~ -10 dBm	0.040 dB	
		-30 dBm ~ -20 dBm	0.046 dB	
		-40 dBm ~ -30 dBm	0.052 dB	
		-50 dBm ~ -40 dBm	0.058 dB	
		-60 dBm ~ -50 dBm	0.064 dB	
		-70 dBm ~ -60 dBm	0.070 dB	
		-80 dBm ~ -70 dBm	0.076 dB	
		-90 dBm ~ -80 dBm	0.080 dB	
		-100 dBm ~ -90 dBm	0.086 dB	
		-110 dBm ~ -100 dBm	0.092 dB	
		-120 dBm ~ -110 dBm	0.098 dB	
		(26.5 GHz ~ 40 GHz)		
		-30 dBm ~ 20 dBm	0.024 dB	
		(40 GHz ~ 50 GHz)		
		-30 dBm ~ 20 dBm	0.050 dB	
Harmonics		20 Hz ~ 20 GHz	1.4 dB	
		20 GHz ~ 40 GHz	1.7 dB	
Magnitude dynamic accuracy		0 dB ~ 120 dB	0.028 dB	
Mismatch measurement accuracy		9 kHz ~ 1 GHz	4.8×10^{-3}	
		1 GHz ~ 18 GHz	1.0×10^{-2}	
Input impedance		9 kHz ~ 1 GHz	4.8×10^{-3}	
		1 GHz ~ 18 GHz	1.0×10^{-2}	
Noise figure meters Output frequency	40624	1 mHz ~ 18 GHz	5.8×10^{-11}	Frequency standard, RF signal generator, Noise source

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Input impedance	40624	9 kHz ~ 1 GHz	0.9×10^{-2}	/ HCT-CS-118-40624
		1 GHz ~ 3 GHz	1.2×10^{-2}	
		3 GHz ~ 18 GHz	1.9×10^{-2}	
Output DC voltage		0 V	10 µV	
		0.1 V ~ 30 V	1.1×10^{-6}	
Noise figure		10 MHz ~ 18 GHz	0.35 dB	
Noise generators	40625			RF spectrum generator
Output frequency		1 mHz ~ 18 GHz	5.8×10^{-11}	/ HCT-CS-177-40625
Output level		(-120 dBm ~ 30 dBm)		
		9 kHz ~ 3 GHz	0.51 dB	
		3 GHz ~ 6.6 GHz	1.8 dB	
		6.6 GHz ~ 18 GHz	2.4 dB	
Noise impulse simulators	40626			High Voltage Probe,
Output Voltage		10 V	0.32 V	Oscilloscope,
		10 V ~ 20 V	3.2×10^{-2}	/HCT-CS-119-40626
		20 V ~ 50 V	2.6×10^{-2}	
		50 V ~ 200 V	3.2×10^{-2}	
		200 V ~ 500 V	2.6×10^{-2}	
		500 V ~ 1 000 V	3.2×10^{-2}	
		1 kV ~ 2 kV	2.3×10^{-2}	
		2 kV ~ 4 kV	1.2×10^{-2}	
		-10 V	0.32 V	
		-10 V ~ -20 V	3.2×10^{-2}	
		-20 V ~ -50 V	2.6×10^{-2}	
		-50 V ~ -200 V	3.2×10^{-2}	
		-200 V ~ -500 V	2.6×10^{-2}	
		-500 V ~ -1 000 V	3.2×10^{-2}	
		-1 kV ~ -2 kV	2.3×10^{-2}	
		-2 kV ~ -4 kV	1.2×10^{-2}	
Delta time measurement		0.1 ns	0.015 ns	
(rise/fall/duration/period/		0.1 ns ~ 1 ns	1.5×10^{-2}	
repetition rate/burst duration)		1 ns ~ 2 ns	7.5×10^{-3}	
		2 ns ~ 5 ns	3.6×10^{-3}	
		5 ns ~ 10 ns	2.7×10^{-3}	
		10 ns ~ 20 ns	3.0×10^{-3}	
		20 ns ~ 100 ns	2.3×10^{-3}	
		100 ns ~ 200 ns	2.9×10^{-3}	
		200 ns ~ 500 ns	2.3×10^{-3}	
		0.5 µs ~ 1 µs	2.5×10^{-3}	
		1 µs ~ 2 µs	2.9×10^{-3}	
		2 µs ~ 10 µs	2.3×10^{-3}	
		10 µs ~ 20 µs	2.9×10^{-3}	
		20 µs ~ 50 µs	2.3×10^{-3}	
		50 µs ~ 100 µs	2.4×10^{-3}	
		100 µs ~ 200 µs	2.9×10^{-3}	
		200 µs ~ 500 µs	2.4×10^{-3}	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Delta time measurement (rise/fall/duration/period/ repetition rate/burst duration)	40626	0.5 ms ~ 1 ms 1 ms ~ 2 ms 2 ms ~ 10 ms 10 ms ~ 20 ms 20 ms ~ 100 ms 100 ms ~ 200 ms 200 ms ~ 500 ms 0.5 s ~ 2 s 2 s ~ 5 s	2.8×10^{-2} 3.5×10^{-2} 2.3×10^{-3} 2.9×10^{-3} 2.3×10^{-3} 2.9×10^{-3} 2.3×10^{-3} 3.1×10^{-3} 2.3×10^{-3}	
RF power meters RF power meters Output frequency Output leve Instrument accuracy Input level accuracy Input voltage RF high power meters Calibration factor	40635	 1 mHz ~ 18 GHz (10 MHz ~ 300 MHz) 1 μW ~ 100 mW 3 μW ~ 100 mW (9 kHz ~ 18 GHz) -80 dBm ~ 20 dBm (DC) 0 V ~ 400 V (10 kHz ~ 220 MHz) 0.01 W ~ 2.5 kW (200 MHz ~ 1 GHz) 0.01 W ~ 100 W (1 GHz ~ 4.2 GHz) 0.01 W ~ 10 W	 5.8×10^{-11} 5.6×10^{-3} 1.3×10^{-3} 0.15 dB 5.8×10^{-5} 1.9×10^{-2} 3.1×10^{-2} 3.4×10^{-2}	Range calibrator, Power sensor/ HCT-CS-120-40635 RF calorimeter / HCT-CS-162-40635
Diode power sensors Calibration factor Reflection coefficient	40636	 (1 μW ~ 100 mW) 9 kHz ~ 1 GHz 1 GHz ~ 10 GHz 10 GHz ~ 18 GHz 18 GHz ~ 26 GHz 26 GHz ~ 34 GHz 34 GHz ~ 38 GHz 38 GHz ~ 43 GHz 43 GHz ~ 50 GHz (0 ~ 1) 9 kHz ~ 1 GHz 1 GHz ~ 3 GHz 3 GHz ~ 20 GHz 20 GHz ~ 40 GHz 40 GHz ~ 50 GHz	 1.4×10^{-2} 1.6×10^{-2} 2.1×10^{-2} 2.4×10^{-2} 2.8×10^{-2} 3.1×10^{-2} 3.6×10^{-2} 5.1×10^{-2} 3.8×10^{-3} 5.3×10^{-3} 9.3×10^{-3} 1.2×10^{-2} 5.9×10^{-2}	Coaxial thermistor mount, Power sensor / HCT-CS-121-40636

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Thermocouple power sensors	40637			Coaxial thermistor mount,
Calibration factor		(1 μW ~ 100 mW)		Power sensor
		9 kHz ~ 1 GHz	1.4×10^{-2}	/ HCT-CS-122-40637
		1 GHz ~ 10 GHz	1.6×10^{-2}	
		10 GHz ~ 18 GHz	2.1×10^{-2}	
		18 GHz ~ 26 GHz	2.4×10^{-2}	
		26 GHz ~ 34 GHz	2.8×10^{-2}	
		34 GHz ~ 38 GHz	3.1×10^{-2}	
		38 GHz ~ 43 GHz	3.6×10^{-2}	
		43 GHz ~ 50 GHz	5.1×10^{-2}	
Reflection coefficient		(0 ~ 1)		
		9 kHz ~ 1 GHz	3.8×10^{-3}	
		1 GHz ~ 3 GHz	5.3×10^{-3}	
		3 GHz ~ 20 GHz	9.3×10^{-3}	
		20 GHz ~ 40 GHz	1.2×10^{-2}	
		40 GHz ~ 50 GHz	5.9×10^{-2}	
Pulse generators	40638			Frequency counters
Frequency		1 Hz ~ 10 GHz	6.1×10^{-9}	/HCT-CS-123-40646
Period		300 ps ~ 1 s	6.1×10^{-9}	
Delay		1 s ~ 100 ns	1.2×10^{-3}	
		100 ns ~ 10 ns	1.3×10^{-3}	
		10 ns ~ 1 ns	5.9×10^{-3}	
Double Pulse		1 s ~ 100 ns	1.2×10^{-3}	
		100 ns ~ 10 ns	1.3×10^{-3}	
		10 ns ~ 1 ns	5.9×10^{-3}	
Width		1 s ~ 100 ns	1.2×10^{-3}	
		100 ns ~ 10 ns	1.3×10^{-3}	
		10 ns ~ 1 ns	5.9×10^{-3}	
Transition Time		1 s ~ 100 ns	1.2×10^{-3}	
		100 ns ~ 10 ns	1.3×10^{-3}	
		10 ns ~ 1 ns	5.9×10^{-3}	
DC Level		10 mV ~ 100 V	6.1×10^{-4}	
Output Level		(10 mV)		
		20 Hz ~ 1 kHz	9.4 μV	
		1 kHz ~ 20 kHz	14 μV	
		20 kHz ~ 100 kHz	16 μV	
		(10 mV ~ 100 mV)		
		20 Hz ~ 1 kHz	6.4×10^{-4}	
		1 kHz ~ 20 kHz	7.6×10^{-4}	
		20 kHz ~ 100 kHz	1.1×10^{-3}	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output Level	40638	(100 mV ~ 1 V)		
		20 Hz ~ 1 kHz	6.3×10^{-4}	
		1 kHz ~ 20 kHz	6.7×10^{-4}	
		20 kHz ~ 100 kHz	6.7×10^{-4}	
		(1 ~ 10) V		
		20 Hz ~ 1 kHz	6.3×10^{-4}	
		1 kHz ~ 20 kHz	6.7×10^{-4}	
		20 kHz ~ 100 kHz	6.7×10^{-4}	
		(10 ~ 100) V		
		20 Hz ~ 1 kHz	6.3×10^{-4}	
		1 kHz ~ 20 kHz	6.7×10^{-4}	
		20 kHz ~ 100 kHz	6.7×10^{-4}	
		(100 ~ 300) V		
		20 Hz ~ 1 kHz	3.1×10^{-4}	
Radar test sets	40639			VOR/ILS signal calibrator,
Output frequency		1 mHz ~ 18 GHz	5.8×10^{-11}	Frequency standard,
				Power sensor
Output level		(9 kHz ~ 18 GHz)		/ HCT-CS-168-40639(RADAR)
		10 dBm ~ 30 dBm	0.12 dB	/ HCT-CS-204-40639(SART)
		-30 dBm ~ 10 dBm	0.12 dB	/ HCT-CS-207-40639(AIS)
		-60 dBm ~ -30 dBm	0.13 dB	/ HCT-CS-209-40639(GMDSS)
		-100 dBm ~ -60 dBm	0.15 dB	/ HCT-CS-214-40639(EPIRB)
		-120 dBm ~ -100 dBm	0.30 dB	
Harmonics		(9 kHz ~ 5 GHz)		
		-100 dBc ~ 0 dBc	1.2 dB	
		(5 GHz ~ 18 GHz)		
		0 dBc ~ -100 dBc	1.5 dB	
Output modulation signal level		(9 kHz ~ 18 GHz)		
		0 dBc ~ -100 dBc	1.3 dB	
Output amplitude modulation		(9 kHz ~ 18 GHz)		
		0 % ~ 100 %	1.7×10^{-2}	
Output frequency modulation		(9 kHz ~ 18 GHz)		
		0 kHz ~ 800 kHz	1.2×10^{-2}	
Output modulation distortion		(9 kHz ~ 18 GHz)		
		0 % ~ 100 %	1.2×10^{-2}	
Phase		(9 kHz ~ 18 GHz)		
		0 ° ~ 360 °	1.2×10^{-2}	
DDM		100 kHz ~ 1.36 GHz	3.0×10^{-2}	
SDM		100 kHz ~ 1.36 GHz	3.0×10^{-2}	
VOR		100 kHz ~ 1.36 GHz	3.0×10^{-2}	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Pulse width	40639	1 ns ~ 10 ms	2.3×10^{-2}	
Input frequency		9 kHz ~ 18 GHz	5.8×10^{-10}	
Input level		(100 kHz ~ 1.36 GHz) 1 mW ~ 100 W	1.9×10^{-2}	
RF signal generators	40640			Measuring receiver, Power sensor, Frequency standard, RF spectrum analyzer, / HCT-CS-124-40640
Output frequency		1 mHz ~ 46 GHz	5.8×10^{-11}	
Absolute output level		(-30 dBm ~ 20 dBm)		
		5 Hz ~ 100 MHz	0.05 dB	
		100 MHz ~ 1 GHz	0.07 dB	
		1 GHz ~ 8 GHz	0.08 dB	
		8 GHz ~ 12 GHz	0.09 dB	
		12 GHz ~ 18 GHz	0.12 dB	
		18 GHz ~ 26 GHz	0.11 dB	
		26 GHz ~ 33 GHz	0.13 dB	
		33 GHz ~ 40 GHz	0.14 dB	
		40 GHz ~ 50 GHz	0.16 dB	
		50 GHz ~ 75 GHz	0.21 dB	
		75 GHz ~ 110 GHz	0.28 dB	
Absolute TRFL accuracy		(9 kHz ~ 8 GHz)		
		0 dBm ~ 30 dBm	0.15 dB	
		-40 dBm ~ 0 dBm	0.16 dB	
		-80 dBm ~ -40 dBm	0.18 dB	
		-120 dBm ~ -80 dBm	0.20 dB	
		-140 dBm ~ -120 dBm	0.21 dB	
		(8 GHz ~ 18 GHz)		
		0 dBm ~ 30 dBm	0.20 dB	
		-40 dBm ~ 0 dBm	0.20 dB	
		-80 dBm ~ -40 dBm	0.22 dB	
		-120 dBm ~ -80 dBm	0.24 dB	
		-140 dBm ~ -120 dBm	0.25 dB	
Absolute TRFL accuracy		(18 GHz ~ 26.5 GHz)		
		0 dBm ~ 30 dBm	0.27 dB	
		-40 dBm ~ 0 dBm	0.27 dB	
		-80 dBm ~ -40 dBm	0.29 dB	
		-120 dBm ~ -80 dBm	0.31 dB	
		-140 dBm ~ -120 dBm	0.32 dB	
Relative TRFL accuracy		(9 kHz ~ 26.5 GHz)		
		0 dBm ~ 30 dBm	0.05 dB	
		-40 dBm ~ 0 dBm	0.05 dB	
		-80 dBm ~ -40 dBm	0.08 dB	
		-120 dBm ~ -80 dBm	0.09 dB	
		-140 dBm ~ -120 dBm	0.11 dB	
Output amplitude modulation		100 kHz ~ 26.5 GHz	1.2×10^{-2}	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Output frequency modulation	40640	100 kHz ~ 26.5 GHz	1.2×10^{-2}	
Output Phase modulation		100 kHz ~ 26.5 GHz	1.2×10^{-2}	
Output modulation distortion		100 kHz ~ 26.5 GHz	3.0×10^{-2}	
Harmonics		20 Hz ~ 20 GHz 20 GHz ~ 40 GHz	1.4 dB 1.7 dB	
Pulse modulation		1 μs ~ 1 s	1.2×10^{-3}	
RF spectrum analyzers	40641			Power sensor,
Reference frequency		10 MHz ~ 1 GHz	5.8×10^{-11}	Frequency standard, Standard attenuator
Reference level		(10 MHz ~ 1 GHz) -30 dBm ~ 10 dBm	 0.07 dB	RF signal generator / HCT-CS-125-40641
Frequency readout		5 Hz ~ 110 GHz	9.6×10^{-4} · SPAN	
Marker frequency counter		5 Hz ~ 110 GHz	0.1 Hz	
Frequency span		5 Hz ~ 110 GHz	1.4×10^{-3} · SPAN	
Resolution bandwidth		1 Hz ~ 100 MHz	2.2×10^{-3} · RBW	
Resolution bandwidth selectivity		1 Hz ~ 100 MHz	4.0×10^{-3} · RBW	
Resolution bandwidth switching error		1 Hz ~ 100 MHz	0.004 dB	
Input attenuator accuracy		0 dB ~ 100 dB	0.08 dB	
Scale fidelity		0 dB ~ 100 dB	0.08 dB	
Reference level accuracy		0 dB ~ 100 dB	0.06 dB	
Frequency response		5 Hz ~ 4 GHz 4 GHz ~ 18 GHz 18 GHz ~ 26.5 GHz 26.5 GHz ~ 40 GHz 40 GHz ~ 110 GHz	0.09 dB 0.15 dB 0.19 dB 0.21 dB 0.35 dB	
Average noise level		5 Hz ~ 3 GHz 3 GHz ~ 12 GHz 12 GHz ~ 18 GHz 18 GHz ~ 40 GHz 40 GHz ~ 50 GHz	0.58 dB 1.0 dB 1.4 dB 1.7 dB 2.0 dB	
Average noise level		-30 kHz ~ 30 kHz	1.7 dB	
Input level		(1 kHz ~ 100 kHz) -60 dBV ~ 30 dBV	 0.18 dB	
Conversion factor		18 GHz ~ 110 GHz	0.82 dB	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
RF speed guns	40642			Frequency standards
Speed		(5 ~ 2 000) m/s	0.03 m/s	/ HCT-CS-278-40642
Surge generators	40643			Oscilloscope, Current Probe,
Voltage output		0 V	0.20 V	High Voltage Probe
		0 V ~ 10 V	3.6×10^{-2}	/HCT-CS-126-40643
		10 V ~ 20 V	5.0×10^{-2}	
		20 V ~ 50 V	3.9×10^{-2}	
		50 V ~ 100 V	4.0×10^{-2}	
		100 V ~ 200 V	5.0×10^{-2}	
		200 V ~ 500 V	4.1×10^{-2}	
		500 V ~ 1 000 V	4.0×10^{-2}	
		1 kV ~ 2 kV	5.0×10^{-2}	
		2 kV ~ 4 kV	2.5×10^{-2}	
		4 kV ~ 6 kV	2.0×10^{-2}	
		6 kV ~ 8 kV	1.6×10^{-2}	
		8 kV ~ 10 kV	1.4×10^{-2}	
		10 kV ~ 15 kV	1.1×10^{-2}	
		15 kV ~ 18 kV	9.6×10^{-3}	
		18 kV ~ 20 kV	8.6×10^{-3}	
		0 V	0.20 V	
		-0 V ~ -10 V	3.6×10^{-2}	
		-10 V ~ -20 V	5.0×10^{-2}	
		-20 V ~ -50 V	3.9×10^{-2}	
		-50 V ~ -100 V	4.0×10^{-2}	
		-100 V ~ -200 V	5.0×10^{-2}	
		-200 V ~ -500 V	4.1×10^{-2}	
		-500 V ~ -1 000 V	4.0×10^{-2}	
		-1 kV ~ -2 kV	5.0×10^{-2}	
		-2 kV ~ -4 kV	2.5×10^{-2}	
		-4 kV ~ -6 kV	2.0×10^{-2}	
		-6 kV ~ -8 kV	1.6×10^{-2}	
		-8 kV ~ -10 kV	1.4×10^{-2}	
		-10 kV ~ -15 kV	1.1×10^{-2}	
		-15 kV ~ -18 kV	9.6×10^{-3}	
		-18 kV ~ -20 kV	8.6×10^{-3}	
Current output		0 A	38 mA	
		0 A ~ 1 A	3.8×10^{-2}	
		1 A ~ 2 A	4.0×10^{-2}	
		2 A ~ 5 A	5.7×10^{-3}	
		5 A ~ 10 A	5.1×10^{-3}	
		10 A ~ 20 A	5.3×10^{-3}	
		20 A ~ 50 A	5.2×10^{-3}	
		50 A ~ 100 A	4.9×10^{-3}	
		100 A ~ 500 A	5.2×10^{-3}	
		500 A ~ 1 000 A	5.1×10^{-3}	
		1 000 A ~ 2 000 A	5.4×10^{-3}	
		2 000 A ~ 3 000 A	9.0×10^{-3}	
		-0 A	38 mA	
		-0 A ~ -1 A	3.8×10^{-2}	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Current output	40643	-1 A ~ -2 A	4.0×10^{-2}	
		-2 A ~ -5 A	5.7×10^{-3}	
		-5 A ~ -10 A	5.1×10^{-3}	
		-10 A ~ -20 A	5.3×10^{-3}	
		-20 A ~ -50 A	5.2×10^{-3}	
		-50 A ~ -100 A	4.9×10^{-3}	
		-100 A ~ -500 A	5.2×10^{-3}	
		-500 A ~ -1 000 A	5.1×10^{-3}	
		-1 000 A ~ -2 000 A	5.4×10^{-3}	
		-2 000 A ~ -3 000 A	9.0×10^{-3}	
Delta time measurement				
(rise/fall/duration/period/		0.2 ns	0.015 ns	
repetition rate/burst duration)		0.2 ns ~ 1 ns	1.5×10^{-2}	
		1 ns ~ 2 ns	7.5×10^{-3}	
		2 ns ~ 5 ns	3.6×10^{-3}	
		5 ns ~ 10 ns	2.7×10^{-3}	
		10 ns ~ 20 ns	3.0×10^{-3}	
		20 ns ~ 100 ns	2.3×10^{-3}	
		100 ns ~ 200 ns	2.9×10^{-3}	
		200 ns ~ 500 ns	2.3×10^{-3}	
		0.5 µs ~ 1 µs	2.5×10^{-3}	
		1 µs ~ 2 µs	2.9×10^{-3}	
		2 µs ~ 10 µs	2.3×10^{-3}	
		10 µs ~ 20 µs	2.9×10^{-3}	
		20 µs ~ 50 µs	2.3×10^{-3}	
		50 µs ~ 100 µs	2.4×10^{-3}	
		100 µs ~ 200 µs	2.9×10^{-3}	
		200 µs ~ 500 µs	2.4×10^{-3}	
		0.5 ms ~ 1 ms	2.8×10^{-2}	
		1 ms ~ 2 ms	3.5×10^{-2}	
		2 ms ~ 10 ms	2.3×10^{-3}	
		10 ms ~ 20 ms	2.9×10^{-3}	
		20 ms ~ 100 ms	2.3×10^{-3}	
		100 ms ~ 200 ms	2.9×10^{-3}	
		200 ms ~ 500 ms	2.3×10^{-3}	
		0.5 s ~ 2 s	3.1×10^{-3}	
		2 s ~ 5 s	2.3×10^{-3}	
Frequency		1 Hz	6.1 mHz	
		1 Hz ~ 10 Hz	1.1×10^{-6}	
		10 Hz ~ 100 Hz	5.9×10^{-7}	
		0.1 kHz ~ 1 kHz	1.6×10^{-5}	
		1 kHz ~ 10 kHz	8.3×10^{-7}	
		10 kHz ~ 100 kHz	5.9×10^{-7}	
		0.1 MHz ~ 1 MHz	1.2×10^{-6}	
		1 MHz ~ 10 MHz	5.8×10^{-7}	
RF terminations	40645			Network analyzer,
Reflection coefficients		(0 ~ 1)		Calibration kit
		5 Hz ~ 9 kHz	4.4×10^{-3}	/ HCT-CS-128-40645
		9 kHz ~ 1 GHz	4.8×10^{-3}	
		1 GHz ~ 18 GHz	1.0×10^{-2}	
		18 GHz ~ 40 GHz	1.3×10^{-2}	
		40 GHz ~ 50 GHz	1.4×10^{-2}	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Coaxial thermistor mounts	40646			Coaxial thermistor mount / HCT-CS-129-40646
Calibration factor		(1 μW ~ 100 mW)		
		10 MHz ~ 1 GHz	1.4×10^{-2}	
		1 GHz ~ 10 GHz	1.6×10^{-2}	
		10 GHz ~ 18 GHz	2.1×10^{-2}	
Reflection coefficient		(0 ~ 1)		
		10 MHz ~ 1 GHz	3.8×10^{-3}	
		1 GHz ~ 3 GHz	5.3×10^{-3}	
		3 GHz ~ 18 GHz	9.3×10^{-3}	
Transmission trouble testers	40648			Frequency Counter, Oscilloscope, Artifacts / HCT-CS-261-40648
Pulse width		1 ns ~ 100 μs	1.4×10^{-2}	
Pulse amplitude		1 mV ~ 20 V	6.3×10^{-2}	
Pulse rate		1 ns ~ 100 μs	5.8×10^{-11}	
Pulse reflection delay Time		1 ns ~ 200 μs	1.5×10^{-2}	
Impedance		0 Ω	1.2 mΩ	
		0.1 Ω ~ 500 Ω	1.0×10^{-4}	
Insertion loss		1 MHz ~ 2.5 GHz	0.32 dB	
Return loss		1 MHz ~ 2.5 GHz	0.51 dB	
RF voltmeters	40650			Meter calibrator, Power sensor / HCT-CS-133-40650
Voltage		(DC)		
		0 V ~ 400 V	5.8×10^{-5}	
		(DC ~ 100 kHz)		
		0.1 mV ~ 10 V	1.6×10^{-4}	
		(100 kHz ~ 1 GHz)		
		-120 dBm ~ 20 dBm	0.15 dB	
Vector voltmeters	40651			Meter calibrator, Power sensor / HCT-CS-173-40651
Voltage		(DC)		
		0 V ~ 400 V	5.8×10^{-5}	
		(DC ~ 100 kHz)		
		0.1 mV ~ 10 V	1.6×10^{-4}	
		(100 kHz ~ 1 GHz)		
		-120 dBm ~ 20 dBm	0.15 dB	
Field strengh meters	40652			Power sensor, Frequency standards / HCT-CS-200-40652
Frequency		9 kHz ~ 18 GHz	5.8×10^{-11}	
Frequency response		9 kHz ~ 4 GHz	0.09 dB	
		4 GHz ~ 18 GHz	0.15 dB	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Amplitude modulation	40625	100 kHz ~ 18 GHz	1.2×10^{-2}	
Frequency modulation		100 kHz ~ 18 GHz	1.2×10^{-2}	
AM/FM test sources	40653			Measuring Reciver
Output Frequency		1 MHz ~ 1 GHz	6.4×10^{-11}	/ HCT-CS-250-40653
Vestigial FM		50 Hz ~ 3 kHz	2.0×10^{-2}	
Vestigial AM		50 Hz ~ 3 kHz	2.0×10^{-2}	
Distortion factor		12.5 kHz ~ 400 kHz	4.0×10^{-4}	
Dip Simulators	40654			디지털멀티미터,파형측정기,
Output voltage				고전압프로브
DC Output voltage				/HCT-CS-202-40654
		50 V	7.9 mV	
		50 V ~ 100 V	8.8×10^{-5}	
		100 V ~ 150 V	1.4×10^{-2}	
		150 V ~ 200 V	1.1×10^{-2}	
		200 V ~ 250 V	1.0×10^{-2}	
		250 V ~ 300 V	9.3×10^{-3}	
		300 V ~ 400 V	8.2×10^{-3}	
AC Output voltage		AC(50 Hz ~ 60 Hz)		
		50 V	0.3 V	
		50 V ~ 100 V	3.3×10^{-3}	
		100 V ~ 150 V	3.0×10^{-3}	
		150 V ~ 200 V	2.4×10^{-3}	
		200 V ~ 250 V	2.0×10^{-3}	
		250 V ~ 300 V	1.8×10^{-3}	
		300 V ~ 400 V	1.5×10^{-3}	
Line Frequency		50 Hz ~ 60 Hz	3.5×10^{-4}	
Dip & up Voltage				
DC Voltage		0 V ~ 50 V		
		0 %		
		0 V	0.35 V	
		0 % ~ 40 %		
		0 V ~ 20 V	2.9×10^{-2}	
		40 % ~ 70 %		
		20 V ~ 35 V	2.5×10^{-2}	
		70 % ~ 80 %		
		35 V ~ 40 V	2.5×10^{-2}	
		80 % ~ 120 %		
		40 V ~ 60 V	2.4×10^{-2}	
		50 V ~ 100 V		
		0 %		
		0 V	0.37 V	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Dip & up Voltage	40654	0 % ~ 40 %		
DC Voltage		0 V ~ 40 V	2.6×10^{-2}	
		40 % ~ 70 %		
		40 V ~ 70 V	2.4×10^{-2}	
		70 % ~ 80 %		
		70 V ~ 80 V	2.4×10^{-2}	
		80 % ~ 120 %		
		80 V ~ 120 V	2.3×10^{-2}	
		100 V ~ 200 V		
		0 %		
		0 V	0.37 V	
		0 % ~ 40 %		
		0 V ~ 80 V	2.7×10^{-2}	
		40 % ~ 70 %		
		80 V ~ 140 V	2.4×10^{-2}	
		70 % ~ 80 %		
		140 V ~ 160 V	2.4×10^{-2}	
		80 % ~ 120 %		
		160 V ~ 240 V	2.4×10^{-2}	
		200 V ~ 300 V		
		0 %		
		0 V	0.35 V	
		0 % ~ 40 %		
		0 V ~ 120 V	2.8×10^{-2}	
		40 % ~ 70 %		
		120 V ~ 210 V	2.5×10^{-2}	
		70 % ~ 80 %		
		210 V ~ 240 V	2.5×10^{-2}	
		80 % ~ 120 %		
		240 V ~ 360 V	2.4×10^{-2}	
		300 V ~ 400 V		
		0 %		
		0 V	0.37 V	
		0 % ~ 40 %		
		0 V ~ 160 V	2.6×10^{-2}	
		40 % ~ 70 %		
		160 V ~ 280 V	2.4×10^{-2}	
		70 % ~ 80 %		
		280 V ~ 320 V	2.4×10^{-2}	
		80 % ~ 120 %		
		320 V ~ 480 V	2.3×10^{-2}	
AC Voltage		50 Hz ~ 60 Hz, 100 V ~ 110 V		
		0 %		
		0 V	0.37 V	
		0 % ~ 40 %		
		0 V ~ 44 V	3.3×10^{-2}	
		40 % ~ 70 %		
		44 V ~ 77 V	2.7×10^{-2}	
		70 % ~ 80 %		

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40654	77 V ~ 88 V	2.6×10^{-2}	
		80 % ~ 120 %		
		88 V ~ 132 V	2.4×10^{-2}	
		50 Hz ~ 60 Hz, 110 V ~ 120 V		
		0 %		
		0 V	0.37 V	
		0 % ~ 40 %		
		0 V ~ 48 V	3.2×10^{-2}	
		40 % ~ 70 %		
		48 V ~ 84 V	2.6×10^{-2}	
		70 % ~ 80 %		
		84 V ~ 96 V	2.6×10^{-2}	
		80 % ~ 120 %		
		96 V ~ 144 V	2.4×10^{-2}	
		50 Hz ~ 60 Hz, 120 V ~ 220 V		
		0 %		
		0 V	0.37 V	
		0 % ~ 40 %		
		0 V ~ 88 V	3.2×10^{-2}	
		40 % ~ 70 %		
		88 V ~ 154 V	2.6×10^{-2}	
		70 % ~ 80 %		
		154 V ~ 176 V	2.6×10^{-2}	
		80 % ~ 120 %		
		176 V ~ 264 V	2.4×10^{-2}	
		50 Hz ~ 60 Hz, 220 V ~ 230 V		
		0 %		
		0 V	0.37 V	
		0 % ~ 40 %		
		0 V ~ 92 V	3.2×10^{-2}	
		40 % ~ 70 %		
		92 V ~ 161 V	2.6×10^{-2}	
		70 % ~ 80 %		
		161 V ~ 184 V	2.5×10^{-2}	
		80 % ~ 120 %		
		184 V ~ 276 V	2.4×10^{-2}	
		50 Hz ~ 60 Hz, 230 V ~ 380 V		
		0 %		
		0 V	0.39 V	
		0 % ~ 40 %		
		0 V ~ 152 V	3.2×10^{-2}	
		40 % ~ 70 %		
		152 V ~ 266 V	2.7×10^{-2}	
		70 % ~ 80 %		
		266 V ~ 304 V	2.6×10^{-2}	
		80 % ~ 120 %		
		304 V ~ 456 V	2.4×10^{-2}	

406. Radio frequency measurement

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
AC Voltage	40654	50 Hz ~ 60 Hz, 380 V ~ 400 V 0 % 0 V 0 % ~ 40 % 0 V ~ 160 V 40 % ~ 70 % 160 V ~ 280 V 70 % ~ 80 % 280 V ~ 320 V 80 % ~ 120 % 320 V ~ 480 V	 0.39 V 3.2×10^{-2} 2.6×10^{-2} 2.6×10^{-2} 2.4×10^{-2}	
Dip & Up Period		1 ms (1 ~ 10) ms (10 ~ 20) ms (20 ~ 100) ms (100 ~ 200) ms (200 ~ 500) ms (0.5 ~ 2) s (2 ~ 5) s (5 ~ 10) s	0.028 µs 2.3×10^{-3} 2.9×10^{-3} 2.3×10^{-3} 2.9×10^{-3} 2.3×10^{-3} 3.1×10^{-3} 2.4×10^{-3} 1.2×10^{-3}	
Phase shifiting time		1 ms (1 ~ 10) ms (10 ~ 20) ms	0.028 µs 2.3×10^{-3} 2.9×10^{-3}	
Rise & Fall time		1 µs 1 µs ~ 10 µs 10 µs ~ 50 µs	0.02 µs 4.0×10^{-3} 4.8×10^{-3}	
Inrush current		50 A 50 A ~ 100 A 100 A ~ 500 A	0.24 A 4.2×10^{-3} 4.7×10^{-3}	

407. Field strength & antenna

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Probes	40702			
E-field probe		5 kHz ~ 200 MHz (1 ~ 800) V/m 200 MHz ~ 1 GHz (1 ~ 300) V/m (1 ~ 18) GHz (1 ~ 200) V/m (18 ~ 40) GHz (1 ~ 200) V/m	 0.13 0.13 0.13 0.14	Transfer probe / HCT-CS-262-40702

407. Field strength & antenna

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Dipole antennas	40703			
SAR E-field probe				SAR calibration system
Conversion factor		800 MHz ~ 6 GHz	1.3×10^{-1}	/ HCT-CS-106-40703
Diple antenna				Network analyzer
Antenna factor		20 MHz ~ 18 GHz	1.1 dB	/ HCT-CS-263-40703
VSWR		20 MHz ~ 18 GHz	0.02	
Radiation pattern		700 MHz ~ 18 GHz	1.4 dB	
Biconical antenna				Network analyzer
Antenna factor		20 MHz ~ 18 GHz	1.2 dB	/ HCT-CS-272-40703
VSWR		20 MHz ~ 18 GHz	0.02	
Log periodic antenna				Network analyzer
Antenna factor		20 MHz ~ 6 GHz	1.2 dB	/ HCT-CS-273-40703
VSWR		20 MHz ~ 6 GHz	0.02	
Loop antennas	40704			Standard loop antenna
Antenna factor		10 Hz ~ 30 MHz	1.3 dB	/ HCT-CS-237-40704
Monopole antennas	40705			Network analyzer
Antenna factor		1 kHz ~ 30 MHz	1.4 dB	/ HCT-CS-238-40705
Horn antennas	40707			Network analyzer
Antenna factor		200 MHz ~ 18 GHz	0.9 dB	/ HCT-CS-264-40707
		(18 ~ 40) GHz	1.4 dB	
VSWR		200 MHz ~ 40 GHz	0.02	
Radiation pattern		700 MHz ~ 18 GHz	1.4 dB	

501. Contact thermometry

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Temperature generators: ovens, furnaces, isothermal liquid baths, ice-point baths, dry-block calibrators	50101			Standard Thermometers
Dry-block calibrators		(-80 ~ 420) ℃	0.05 ℃	/HCT-CS-203-50101
Ice-point baths		0 ℃	0.02 ℃	/HCT-CS-210-50101
Isothermal liquid baths		(-80 ~ 420) ℃	0.03 ℃	/HCT-CS-211-50101
Furnaces		(250 ~ 1 100) ℃	1.0 ℃	/HCT-CS-212-50101
Temperature controlled		(-80 ~ 200) ℃	0.7 ℃	/HCT-CS-134-50101
chambers/ovens		(200 ~ 400) ℃	1.0 ℃	

501. Contact thermometry

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Temperature indicators/recorders/ controllers,temperature calibrators	50102			Standard Thermometers
Temperature indicators/recorders /controllers				
With Sensor				/HCT-CS-135-50102
Thermoelectric Type		(-80 ~ 250) ℃	0.2 ℃	/HCT-CS-135-50102
		(250 ~ 500) ℃	0.8 ℃	
		(500 ~ 1 100) ℃	1.8 ℃	
Resistance Type		(-80 ~ 250) ℃	0.04 ℃	/HCT-CS-274-50102
		(250 ~ 500) ℃	0.06 ℃	
Without Sensor				
Thermoelectric Type		(-80 ~ 1 100) ℃	0.22 ℃	/HCT-CS-137-50102
Resistance Type		(-80 ~ 500) ℃	0.13 ℃	/HCT-CS-139-50102
Glass thermometers; liquid-in-glass, Beckmann	50103			Standard Thermometers / HCT-CS-147-50103
liquid-in-glass		(-80 ~ 250) ℃	0.05 ℃	
Resistance thermometers; SPRT, IPRT, thermistors, etc.	50104			Standard Thermometers / HCT-CS-148-50104
IPRT		(-80 ~ 250) ℃	0.05 ℃	
		(250 ~ 500) ℃	0.08 ℃	
Thermal expansion thermometers ; bimetal, gas or liquid type	50105			Standard Thermometers / HCT-CS-149-50105
Bimetal		(-80 ~ 250) ℃	0.3 ℃	
Thermomecoules: noble metal,base metal,pure metal,special type,etc.	50106			Standard Thermometers, Standard Thermocouples
Jewelry Thermocouple		(0 ~ 500) ℃	0.5 ℃	/HCT-CS-152-50106
		(0 ~ 1 100) ℃	1.6 ℃	
Nonmetal Thermocouple		(-80 ~ 250) ℃	0.6 ℃	
		(250 ~ 500) ℃	0.8 ℃	
		(500 ~ 1 100) ℃	1.9 ℃	
Temperature transducers	50107	(-80 ~ 250) ℃	0.18 ℃	Standard Thermometers / HCT-CS-170-50107

502. Non contact thermometry

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Standard radiation thermometers	50204			Standard infrared thermometer,
Temperature		(-18 ~ 200) ℃	1.2 ℃	Black body source
		(200 ~ 500) ℃	2.2 ℃	HCT-CS-222-50204
		(500 ~ 800) ℃	3.7 ℃	
		(800 ~ 1 000) ℃	5.3 ℃	
Thermal image apparatus	50205			Standard infrared thermometer,
Temperature		(-18 ~ 200) ℃	1.2 ℃	HCT-CS-286-50205
		(200 ~ 500) ℃	2.2 ℃	
		(500 ~ 800) ℃	3.7 ℃	
		(800 ~ 1 000) ℃	5.3 ℃	

503. Humidity

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Dew-point hygrometers; mirror, alumina thinfilm, etc. Alumina thinfilm	50301	(-20 ~ 47) ℃DP	0.7 ℃DP	Automatic Dewpoint Hygrometers /HCT-CS-154-50301
Relative humidity hygrometers; polimer thinfilm, , etc. Hair Humidity thermometry Polimer thinfilm Humidity thermometry	50302	 (30.0 ~ 90.0) % R.H. (-20 ~ 50) ℃ (5 ~ 95) % R.H. (-20 ~ 50) ℃	 2.9 % R.H. 0.60 ℃ 2.1 % R.H. 0.60 ℃	Automatic Dewpoint Hygrometers, Standard Thermometers / HCT-CS-153-50302 / HCT-CS-156-50302
Temperature humidity recorders ; Hygrothermograph , etc. Humidity thermometry	50304	 (30.0 ~ 90.0) % R.H. (-20 ~ 50) ℃	 2.8 % R.H. 0.83 ℃	Automatic Dewpoint Hygrometers /HCT-CS-171-50305
Transducers; dew-point/ relative humidity Relative humidity	50305	 (9 ~ 95) % R.H.	 2.6 % R.H.	Automatic Dewpoint Hygrometers /HCT-CS-171-50305
Humidity generators;two-pressure, two-temperature, flow mixing humidity gererator, constant temperature and humidity chamber, etc. Flow mixing humidity gererator Constant temperature and humidity chamber Humidity thermometry	50306	 (5 ~ 95) % R.H. (10 ~ 98) % R.H. (-80 ~ 250) ℃	 1.5 % R.H 3.2 % R.H. 0.7 ℃	 Automatic Dewpoint Hygrometers /HCT-CS-213-50306 Thinfilm hygrometers /HCT-CS-182-50306 Temperature indicators /HCT-CS-182-50306

601. Sound in air

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Sound Calibrator Multifunction calibrator	60102	 (94.0 ~ 114.0) dB 31.5 Hz (31.5 ~ 63) Hz (63 ~ 8 000) Hz (8 000 ~ 12 500) Hz	 0.14 dB 0.12 dB 0.11 dB 0.13 dB	Acoustic calibrators /HCT-CS-195-60102
Pistonphone, Sound calibrator		(114.0 ~ 134.0) dB 250 Hz (94.0 ~ 134.0) dB 1 000 Hz	 0.11 dB 0.11 dB	/HCT-CS-196-60102

Accreditation No. : KC00-011(124/127)

601. Sound in air

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Microphones	60104			
Pistonphone		(-50.00 dB ~ -20.00) dB		Pistonphone
		250 Hz	0.14 dB	/ HCT-CS-194-60104
3-port coupler		(-50.00 ~ -20.00) dB		3-port Coupler, Microphone
		31.5 Hz	0.13 dB	/ HCT-CS-293-60104
		(31.5 ~ 40) Hz	0.12 dB	
		(40 ~ 50) Hz	0.11 dB	
		(50 ~ 6 300) Hz	0.10 dB	
		(6 300 ~ 8 000) Hz	0.27 dB	
		(8 000 ~ 10 000) Hz	0.32 dB	
		(10 000 ~ 12 500) Hz	0.39 dB	
		(12 500 ~ 16 000) Hz	0.57 dB	
Sound level meters	60106			
Multifunction calibrator		(94.0 ~ 114.0) dB		ACOUSTIC CALIBRATOR
		(63 ~ 4 000) Hz	0.3 dB	/ HCT-CS-158-60107
		(4 000 ~ 8 000) Hz	0.4 dB	
3-port coupler		(84.0 ~ 114.0) dB		3-port Coupler
		125 Hz	0.4 dB	/ HCT-CS-172-60107
		(125 ~ 2 500) Hz	0.2 dB	
		(2 500 ~ 8 000) Hz	0.3 dB	

603. Vibration

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Vibration calibrators	60301			
Vibration calibrator		(20 ~ 630) Hz	1.8×10^{-2}	Standard accelerometer /
		(630 ~ 1 250) Hz	1.9×10^{-2}	HCT-CS-219-60301
Vibration transducers	60302			
Vibration transducer		1 Hz	2.4×10^{-2}	Standard accelerometer /
		(1 ~ 8) Hz	2.1×10^{-2}	HCT-CS-220-60302
		(8 ~ 10) Hz	2.0×10^{-2}	
		(10 ~ 20) Hz	1.3×10^{-2}	
		(20 ~ 630) Hz	1.1×10^{-2}	
		(630 ~ 1 250) Hz	1.2×10^{-2}	
		(1 250 ~ 2 500) Hz	1.7×10^{-2}	
		(2 500 ~ 5 000) Hz	2.1×10^{-2}	
		(5 000 ~ 10 000) Hz	2.9×10^{-2}	
		(10 000 ~ 15 000) Hz	4.1×10^{-2}	
		(15 000 ~ 20 000) Hz	5.2×10^{-2}	
Vibration transducer(Shock)		200 m/s^2	3.6×10^{-2}	Standard accelerometer /
		(200 ~ 500) m/s^2	3.2×10^{-2}	/ HCT-CS-291-60302
		(500 ~ 2 000) m/s^2	3.1×10^{-2}	

603. Vibration

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Vibration measuring instruments	60303			
Acceleration		10 Hz	1.7×10^{-2}	Standard accelerometer /
		(10 ~ 40) Hz	1.8×10^{-2}	HCT-CS-221-60303
		(40 ~ 100) Hz	1.7×10^{-2}	
		(100 ~ 630) Hz	1.8×10^{-2}	
		(630 ~ 1 250) Hz	1.9×10^{-2}	
		(1 250 ~ 2 500) Hz	2.1×10^{-2}	
Velocity		10 Hz	1.9×10^{-2}	
		(10 ~ 40) Hz	1.8×10^{-2}	
		(40 ~ 100) Hz	1.7×10^{-2}	
		(100 ~ 630) Hz	1.8×10^{-2}	
		(630 ~ 1 250) Hz	2.1×10^{-2}	
		(1 250 ~ 2 500) Hz	2.7×10^{-2}	
Displacement		10 Hz	1.7×10^{-2}	
		(10 ~ 160) Hz	1.6×10^{-2}	
		(160 ~ 315) Hz	2.2×10^{-2}	
bration mesauring instrument(Shock)		200 m/s^2	4.9×10^{-2}	Standard accelerometer /
		(200 ~ 500) m/s^2	3.5×10^{-2}	/ HCT-CS-292-60303
		(500 ~ 1 000) m/s^2	3.3×10^{-2}	
		(1 000 ~ 2 000) m/s^2	3.2×10^{-2}	

701. Photometry

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Iluminance meters	70101	1 lx	3.0×10^{-2}	Reference Iluminance meters
		(1 ~ 2 000) lx	2.8×10^{-2}	/HCT-CS-159-70101

702. Property of detectors & sources

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
UV irradiance meters	70219	254 nm		UV Sensor
		50 μW/cm^2 ~ 1 mW/cm^2	4.8×10^{-2}	/HCT-CS-159-70101
		365 nm		
		60 μW/cm^2 ~ 200 mW/cm^2	4.8×10^{-2}	
		405 nm		
		60 μW/cm^2 ~ 70 mW/cm^2	4.8×10^{-2}	

704. Fiber optics

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Broadband light sources	70402			Wavelength meter,
Wavelength output		1 310 nm, 1 550 nm	5.5×10^{-7}	Optical powermeter
				/ HCT-CS-266-70402
Optical power output		1 310 nm		
		(-50 ~ 0) dBm	0.08 dB	
		(-60 ~ -50) dBm	0.09 dB	
		1 550 nm		
		(-60 ~ 0) dBm	0.08 dB	
Optical attenuators	70410			Optical powermeter
Optical Attenuation		1 310 nm, 1 550 nm		/ HCT-CS-267-70410
		(-60 ~ 0) dB	0.04 dB	
Optical loss tester	70413			Wavelength meter,
Wavelength output		1 310 nm, 1 550 nm	5.5×10^{-7}	Optical powermeter
				/ HCT-CS-280-70413
Optical power Input		1 310 nm		
		(-50 ~ 0) dBm	0.08 dB	
		(-60 ~ -50) dBm	0.09 dB	
		1 550 nm		
		(-60 ~ 0) dBm	0.08 dB	
Linearity measure		1 310 nm, 1 550 nm		
		(-60 ~ 0) dB	0.04 dB	
Optical multimeters	70415			Optical powermeter
Optical power Input		1 310 nm		/ HCT-CS-268-70415
		(-50 ~ 0) dBm	0.08 dB	
		(-60 ~ -50) dBm	0.09 dB	
		1 550 nm		
		(-60 ~ 0) dBm	0.08 dB	
Linearity measure		1 310 nm, 1 550 nm		
		(-60 ~ 0) dB	0.04 dB	
Optical spectrum analyzers	70417			Wavelength meter,
Wavelength output		1 310 nm, 1 550 nm	0.084 nm	Optical powermeter
				/ HCT-CS-269-70417
Resolution measure		1 310 nm, 1 550 nm	0.084 nm	
		RBW (0.1 ~ 1) nm		
Optical power output		1 310 nm		
		(-50 ~ 0) dBm	0.08 dB	
		(-60 ~ -50) dBm	0.09 dB	
		1 550 nm		
		(-60 ~ 0) dBm	0.08 dB	
Linearity measure		1 310 nm, 1 550 nm		
		(-60 ~ 0) dB	0.04 dB	

704. Fiber optics

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Optical time domain reflectometers ; OTDR	70418			Standard CRM / HCT-CS-270-70418
Wavelength		1 310 nm	0.35 nm	
		1 550 nm	0.35 nm	
Length		(1 310 nm)		
		3 km	0.1 m	
		13 km	0.34 m	
		(1 550 nm)		
		3 km	0.1 m	
		13 km	0.34 m	
Return loss		(1 310 nm)		
		3 km	0.06 dB	
		13 km	0.06 dB	
		(1 550 nm)		
		3 km	0.06 dB	
		13 km	0.06 dB	
ASE light sources	70430			Wavelength meter, Optical powermeter / HCT-CS-281-70430
Wavelength output		1 310 nm, 1 550 nm	5.5×10^{-7}	
Optical power output		1 310 nm		
		(-50 ~ 0) dBm	0.08 dB	
		(-60 ~ -50) dBm	0.09 dB	
		1 550 nm		
		(-60 ~ 0) dBm	0.08 dB	
Optical power stabilized lasers and LDs	70433			Wavelength meter, Optical powermeter / HCT-CS-271-70433
Wavelength output		1 310 nm, 1 550 nm	5.5×10^{-7}	
Optical power output		1 310 nm		
		(-50 ~ 0) dBm	0.08 dB	
		(-60 ~ -50) dBm	0.09 dB	
		1 550 nm		
		(-60 ~ 0) dBm	0.08 dB	

901. Chemical analysis

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Gas analyzers	90103			CRM / HCT-CS-164-90106
Oxygen(O_2)		0 cmol/mol ~ 10.5 cmol/mol	4.0×10^{-2}	
Carbon monoxide(CO)		0 μmol/mol ~ 105 μmol/mol	2.4×10^{-2}	
Methane(CH_4)		0 cmol/mol ~ 2.2 cmol/mol	1.7×10^{-2}	
Carbon Dioxide(CO_2)		0 cmol/mol ~ 2.2 cmol/mol	2.1×10^{-2}	
hydrogen sulfide(H_2S)		0 μmol/mol ~ 53 μmol/mol	4.5×10^{-2}	

SCOPE OF ACCREDITATION TO ISO/IEC 17025-2017 & KS Q ISO/IEC 17025-2017

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CALIBRATION

Valid To : Jan. 07, 2022.

Accreditation No. : KC00-011(1/2)

In recognition of the successful completion of the KOLAS evaluation process,
accreditation is granted to this laboratory to perform the following calibrations

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site
501. Temperature								
50101	Temperature generators: isothermal liquid baths, dry-block calibrators	Y						
50102	Temperature temperature calibrators	Y						
50104	Resistance thermometers; thermistors, etc.	Y						
50107	Temperature transducers	Y						

Note

1. This laboratory provides calibration services in permanent standard laboratory and at on-site.

2. Laboratory conducts on-site calibration should meet requirements of KOLAS-SR-008.

3. On-site calibration is allowed to items with marking 'Y', not allowed to items with marking 'N'.

4. Calibration and Measurement Capability (CMC) means capabilities provided by accredited calibration laboratories. It expresses the lowest uncertainty of measurement that can be achieved during a calibration. CMC normally is quoted as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of k=2.

5.Due to the calibration environment such as reference standards or customers' facilities, it is note that uncertainty of measurement on a calibration certificate may be expressed larger than CMC on scope of accreditation in general.

501. Contact thermometry

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Temperature generators: ovens, furnaces, isothermAl liquid baths, ice-point baths, dry-block calibrators	50101			Standard Thermometers /HCT-CS-134-50101
Temperature controlled chambers/ovens		(-40 ~ 250) ℃	0.9 ℃	
Temperature indicators/recorders/ controllers, temperature calibrators	50102			Standard Thermometers
Temperature indicators/recorders/ controllers				
With Sensor				
Thermoelectric Type		(-40 ~ 250) ℃	0.44 ℃	/HCT-CS-135-50102
Resistance Type		(-40 ~ 250) ℃	0.08 ℃	/HCT-CS-274-50102
Without Sensor				
Thermoelectric Type		(-40 ~ 250) ℃	0.22 ℃	/HCT-CS-137-50102
Resistance Type		(-40 ~ 250) ℃	0.20 ℃	/HCT-CS-139-50102
Resistance thermometers; SPRT, IPRT, thermistors, etc	50104			Standard Thermometers / HCT-CS-148-50104
Thermometers, resistance		(-40 ~ 250) ℃	0.09 ℃	
Temperature transducers	50107	(-40 ~ 250) ℃	0.17 ℃	Standard Thermometers / HCT-CS-170-50107

SCOPE OF ACCREDITATION TO ISO/IEC 17025-2017 & KS Q ISO/IEC 17025-2017

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CALIBRATION

Valid To : Jan. 07, 2022.

Accreditation No. : KC00-011(1/2)

In recognition of the successful completion of the KOLAS evaluation process,
accreditation is granted to this laboratory to perform the following calibrations

Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site	Field Code	Item of Calibration	on-site
106. Various dimensional								
10615	Particle counters	Y						

Note

1. This laboratory provides calibration services in permanent standard laboratory and at on-site.

2. Laboratory conducts on-site calibration should meet requirements of KOLAS-SR-008.

3. On-site calibration is allowed to items with marking 'Y', not allowed to items with marking 'N'.

4. Calibration and Measurement Capability (CMC) means capabilities provided by accredited calibration laboratories. It expresses the lowest uncertainty of measurement that can be achieved during a calibration. CMC normally is quoted as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of k=2.

5.Due to the calibration environment such as reference standards or customers' facilities, it is note that uncertainty of measurement on a calibration certificate may be expressed larger than CMC on scope of accreditation in general.

106. Various dimensional

Measured Quantity Instrument or Gauge	Field code	Range	CMC (The Confidence Level is about 95 %)	Comments
Particle Counters	10615			Standard Particle(CRM)
Airbone particle counter				/ HCT-CS-028-10615
Laser reference voltage		(0 ~ 10) V	4.2×10^{-3}	
Flow rate		(0 ~ 100) L/min	2.3×10^{-2}	
Threshold voltage		(0 ~ 6) V	2.1×10^{-3}	
		(6 ~ 10) V	4.2×10^{-3}	
Counting efficiency				
CPC		(0 ~ 1.0) μm	3.0 %	
OPC		(0.1 ~ 1.0) μm	4.7 %	