



Scopes of Calibration and Accreditation

Field of Calibration	Properties of Measured / Equipment Under Calibration	Capability Range	Calibration Methods	ISO/IEC 17025 Accredited by ONSC-TISI (Thailand)		ISO/IEC 17025 Accredited by ANAB (USA)	
				LAB	ON-SITE	LAB	ON-SITE
Electrical DC/Low Frequency	Voltage / Current / Resistance Meters						
	DC Volt Meters / Panel Meters (Digital & Analog)	DCV: Up to 1,100 V	Multi-Product Calibrators	Yes	Yes	Yes	Yes
	AC Volt Meters / Panel Meters (Digital & Analog)	DCA: Up to 500 A	Multi-Function Calibrators	Yes	Yes	Yes	Yes
	DC Current Meters / Panel Meters (Digital & Analog)	ACV: Up to 1,100V (10Hz-1MHz)	DC/AC V/A Calibrator	Yes	Yes	Yes	Yes
	AC Current Meters / Panel Meters (Digital & Analog)	ACA: Up to 500 A (10Hz-50kHz)	Standard Resistor Sets	Yes	Yes	Yes	Yes
	DC Volt / Current Meters (Digital & Analog)	DCR: Up to 10 TΩ	Standard Capacitor Sets	Yes	Yes	Yes	Yes
	AC Volt / Current Meters (Digital & Analog)	Frequency: 0.1 Hz to 10 MHz	Standard Inductor Sets	Yes	Yes	Yes	Yes
	Analog Circuit Testers / Analog Multi Testers	Capacitance: Up to 100 mF	Decade Resistors	Yes	Yes	Yes	Yes
	Leakage Current Testers	Inductance: 100 μH to 10 H	Decade Inductors	Yes	Yes	Yes	Yes
	AC/DC Current Cut-Off Meters		Decade Capacitors	Yes	Yes	Yes	Yes
	Multi-Function Meters			Yes	Yes	Yes	Yes
	Electrometers / Pico Ammeters			Yes	Yes	Yes	Yes
	Digital Multimeters (Up to 7.5 digits)			Yes	Yes	Yes	Yes
	Voltage / Current / Power Sources						
	Single Output DC Power Supply	DCV: Up to 1,000 V	Digital Multimeters	Yes	Yes	Yes	Yes
	Multi Output DC Power Supply	DCA: Up to 500 A	AC/DC Current Shunts	Yes	Yes	Yes	Yes
	Single Output AC Power Supply	ACV: Up to 1,000 V (10Hz-100kHz)	Electronic Load	Yes	Yes	Yes	Yes
	Multi Output AC Power Supply	ACA: Up to 500 A (10Hz-1kHz)	Ripple Meters	Yes	Yes	Yes	Yes
	Electronic Load		Audio Analyzers	Yes	Yes	Yes	Yes
	Power & Energy Meters						
	Portable AC/DC Watt Meters (Analog Type)	DCW: Up to 36 kW	Multi-Product Calibrators	Yes	-	Yes	Yes
	Single-Phase Watt Meters (Analog / Digital)	(DCV: 0-1000V, DCA: 0-36 A)	Multi-Function Calibrators	Yes	-	Yes	Yes
	Three-Phase Watt Meters (Analog / Digital)	ACW: Up to 50 kW	DC/AC V/A Calibrator	Yes	-	Yes	Yes
	Power Quality Analyzers	(ACV: Up-1000V, ACA: Up-50A, 40Hz-1kHz, PF 0.3-1.0)		Yes	-	Yes	Yes
	Clamp-On Power Meters			Yes	-	Yes	Yes
	Power Quality Logger			Yes	-	Yes	Yes
	Watt-Hour Meters	Up to 20.9 kW-H	Multi-Product Calibrators	-	-	Yes	Yes
	Watt-Hour Meters		Digital Stopwatches				
	Coulomb Meters	Up to 20 μC	Coulomb Calibrator	-	-	Yes	Yes
	Coulomb Meters						
	AC/DC Clamp Meters						
	AC/DC Current Clamp Probe	DCA: Up to 1000 A	Multi-Product Calibrators	-	-	Yes	Yes
	AC Clamp Meters	ACA: Up to 1000 A (10Hz-1kHz)	Multi-Function Calibrators	Yes	-	Yes	Yes
	DC Clamp Meters		Current Coils	Yes	-	Yes	Yes
	AC/DC Clamp Meters			Yes	-	Yes	Yes
	AC/DC High Voltage						
	Digital High Volt Meters	DCV: Up to 30 kV	Multi-Product Calibrators	Yes	-	Yes	Yes
	Analog High Volt Meters	ACV: Up to 30 kV (40Hz-60Hz)	Multi-Function Calibrators	Yes	-	Yes	Yes
	High Voltage Probe with Indicator		Voltage Amplifiers	Yes	-	Yes	Yes
	High Voltage Dividers		Ref. High Volt Meters	Yes	-	Yes	Yes
	High Voltage Probe		High Volt Sources	Yes	-	Yes	Yes
	High Voltage Differential Probe			Yes	-	Yes	Yes
	Electrostatic Meters						
	Electrostatic Field Meters	DCV: Up to ±30 kV	Multi-Product Calibrators	-	-	Yes	Yes
	Electrostatic Volt Meters		Multi-Function Calibrators	-	-	Yes	Yes
	Charged Plate Monitors		Voltage Amplifiers	-	-	Yes	Yes
	Charge Analyzer		Ref. High Volt Meters	-	-	Yes	Yes
	Static Sensors		High Volt Sources	-	-	Yes	Yes
	Electrostatic Locators		Static Field Flat Plate	-	-	Yes	Yes
	Electrostatic Discharge Simulators			-	-	Yes	Yes
	Ion Monitors			-	-	Yes	Yes
	Electrical Safety Testers Instruments						
	Withstanding Voltage Testers	DCV: Up to 30 kV	High Volt Sources	Yes	-	Yes	Yes
	Hi-Pot Testers	ACV: Up to 30 kV (40Hz-60Hz)	High Volt Meters	Yes	-	Yes	Yes
	Flash Testers	DCA: Up to 500 A	AC/DC Current Shunts	Yes	-	Yes	Yes
	Puncture Tester	ACA: Up to 500 A (40Hz-60Hz)	Digital Multimeters	Yes	-	Yes	Yes
	Battery Testers	DCR: Up to 10 TΩ	High Voltage Resistors	Yes	-	Yes	Yes
	Battery Simulators	ACR: Up to 10 GΩ	High Current Resistors	Yes	-	Yes	Yes
	Capacity Battery Testers		Resistor Sets	Yes	-	Yes	Yes
	Insulation Testers		Low Ohm Resistor Sets	Yes	-	Yes	Yes
	Earth Testers		High Ohm Resistor Sets	Yes	-	Yes	Yes
	Insulation and Continuity Testers			Yes	-	Yes	Yes
	Withstanding Voltage / Insulation Tester			Yes	-	Yes	Yes
	High Voltage Insulation Testers			Yes	-	Yes	Yes
	High Voltage Power Supply			Yes	-	Yes	Yes
	Dielectric Analyzers			Yes	-	Yes	Yes
	Electrical Safety Compliance Analyzers			Yes	-	Yes	Yes
	Appliance Multitesters			Yes	-	Yes	Yes
	Puncture / Insulation Testers			Yes	-	Yes	Yes
	Ground Resistance Testers			Yes	-	Yes	Yes
	Ground Bond Testers			Yes	-	Yes	Yes
	Low Resistance Ohmmeters			Yes	-	Yes	Yes
	AC Milliohm Meters			Yes	-	Yes	Yes
	AC Low Ohm Testers			Yes	-	Yes	Yes
	AC Grounding Testers			Yes	-	Yes	Yes
	Electrical Safety Testers Instruments (Cont.)						
	High Resistance Meters	DCV: Up to 30 kV	High Volt Sources	Yes	Yes	Yes	Yes
	Megohmmeters	ACV: Up to 30 kV (40Hz-60Hz)	High Volt Meters	Yes	Yes	Yes	Yes
	Super Megohmmeters	DCA: Up to 500 A	AC/DC Current Shunts	Yes	Yes	Yes	Yes
	Ultra High Resistance Meters	ACA: Up to 500 A (40Hz-60Hz)	Digital Multimeters	Yes	Yes	Yes	Yes
	Impulse Winding Testers	DCR: Up to 10 TΩ	Electrometers	-	-	Yes	Yes
	Winding Testers	ACR: Up to 10 GΩ	High Voltage Resistors	-	-	Yes	Yes
	Surge Testers		High Current Resistors	-	-	Yes	Yes
	Spark Testers		Resistor Sets	-	-	Yes	Yes
	Shoes and Flooring Testers		Low Ohm Resistor Sets	Yes	-	Yes	Yes
	Wrist Strap and Footwear Testers		High Ohm Resistor Sets	Yes	-	Yes	Yes
	Wrist Strap Testers		Decade Resistor Sets	Yes	-	Yes	Yes
	Wrist Strap & Dual Heel Testers			Yes	-	Yes	Yes
	System Testers			Yes	-	Yes	Yes
	ESD Shoe/ Wrist Strap Testers			Yes	-	Yes	Yes
	Flooring Testers			Yes	-	Yes	Yes
	Resistivity Meters			Yes	-	Yes	Yes
	Environment & Megohmmeters			Yes	-	Yes	Yes
	Surface Resistivity Checkers			Yes	-	Yes	Yes
	Worksurface Testers			Yes	-	Yes	Yes
	Megohmmeter Test Kit			Yes	-	Yes	Yes

Yes

= Accredited ISO/IEC 17025

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= Not accredited scopes of ISO/IEC 17025



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				LAB	ON-SITE	LAB	ON-SITE	
Electrical DC/Low Frequency	Resistance / Capacitance / Inductance Instruments							
	Decade Resistance Boxes	DCR: Up to 10 TΩ ACR: 1 mΩ to 1 MΩ (DC to 13 MHz) Cap: 1 pF to 100 mF (20Hz-13MHz) Ind: 100 μH to 10 H (100Hz-10kHz) DCR for Insulation Tester: 10 kΩ to 10 TΩ (Up to 10 kV)	High Volt Sources	Yes	-	Yes	Yes	
	Resistance Boxes for Insulation Tester		High Volt Meters	Yes	-	Yes	Yes	
	Low Accuracy Resistors		AC/DC Current Shunts	Yes	-	Yes	Yes	
	Low Accuracy Standard Resistors		Digital Multimeters	Yes	-	Yes	Yes	
	High Accuracy Standard Resistors		Digital Electrometers	Yes	-	Yes	Yes	
	DC Current Shunts		Digital LCR Meters	Yes	-	Yes	Yes	
	DC/AC Current Shunts		Impedance Analyzers	Yes	-	Yes	Yes	
	Decade Capacitance Boxes		High Voltage Resistors	Yes	-	Yes	Yes	
	Low Accuracy Capacitors		High Current Resistors	Yes	-	Yes	Yes	
	High Accuracy Capacitors		Resistor Sets	Yes	-	Yes	Yes	
	4-T Standard Air Capacitors Set		Low Ohm Resistor Sets	Yes	-	Yes	Yes	
	4-T Standard Air Capacitors Set		High Ohm Resistor Sets	Yes	-	Yes	Yes	
	Calibration L-R Standard		Decade Resistor Sets	Yes	-	Yes	Yes	
	4-T Pair Standard Resistors Set		Standard Capacitor Sets	Yes	-	Yes	Yes	
	Decade Inductance Boxes		Standard Inductor Sets	Yes	-	Yes	Yes	
	Low Accuracy Inductors		Standard AC Resistor Sets	Yes	-	Yes	Yes	
	High Accuracy Inductors			Yes	-	Yes	Yes	
	L Meters			Yes	-	Yes	Yes	
	Inductance Meters			Yes	-	Yes	Yes	
	C Meters			Yes	-	Yes	Yes	
	Capacitance Meters			Yes	-	Yes	Yes	
	Crystal Impedance Meters			Yes	-	Yes	Yes	
	LCR Meters			Yes	-	Yes	Yes	
	LCZ Meters			Yes	-	Yes	Yes	
	Transformer Impedance Analyzers			Yes	-	Yes	Yes	
	Impedance Analyzers			Yes	-	Yes	Yes	
	Impedance Gain / Phase Analyzers			Yes	-	Yes	Yes	
	Automatic Component Analyzers			Yes	-	Yes	Yes	
	Impedance Deviation Meters / Comparators			Yes	-	Yes	Yes	
	LCR Meter & Bias Current Sources			Yes	-	Yes	Yes	
	Semiconductor Parameter Analyzers			Yes	-	Yes	Yes	
	Transistor / Relay / Diode / Transformer / Ratio / Cable / Breaker / Semi-conductor Tester Instruments							
	Diode Curve Tracers		DCV: Up to 30 kV DCA: Up to 500 A DCR: Up to 10 TΩ	High Volt Sources	Yes	Yes	Yes	Yes
	Transistor Curve Tracers			High Volt Meters	Yes	Yes	Yes	Yes
High Power Curve Tracers	AC/DC Current Shunts			Yes	Yes	Yes	Yes	
Transformer Testers	Digital Multimeters	Yes		Yes	Yes	Yes		
Current Transformers	Digital Electrometers	Yes		Yes	Yes	Yes		
Variable Autotransformers	Digital LCR Meters	Yes		Yes	Yes	Yes		
Voltage Transformers	Impedance Analyzers	Yes		Yes	Yes	Yes		
Transformer Ratiometers	High Voltage Resistors	Yes		Yes	Yes	Yes		
Ratio Formers / Ratio Testers	High Current Resistors	Yes		Yes	Yes	Yes		
Universal Cable / Harness Testers	Resistor Sets	Yes		Yes	Yes	Yes		
Cable Multi Tester	Low Ohm Resistor Sets	Yes		Yes	Yes	Yes		
Relay Checkers	High Ohm Resistor Sets	Yes		Yes	Yes	Yes		
Relay Test Sets	Decade Resistor Sets	Yes		Yes	Yes	Yes		
Automatic Three-Phase Relay Test Set	Standard Capacitor Sets	Yes		Yes	Yes	Yes		
Advanced Protection Relay Test Set	Standard Inductor Sets	Yes		Yes	Yes	Yes		
Secondary Injection Relay Test Set	Standard AC Resistor Sets	Yes		Yes	Yes	Yes		
Substation Test Set		Yes		Yes	Yes	Yes		
Breaker Analyzers		Yes		Yes	Yes	Yes		
Semiconductor Testers		Yes		Yes	Yes	Yes		
Fo & Ze Meters		Yes		Yes	Yes	Yes		
Calibration Standard Instruments (Low to Medium Accuracy)								
DC Voltage Current Source/Monitor	DCV: Up to 1100 V DCA: Up to 500 A ACV: Up to 1100 V (10Hz-1MHz) ACA: Up to 500 A (10Hz-30kHz) DCR: Up to 10 TΩ Frequency: 1 Hz to 10 MHz Capacitance: Up to 100 mF	High Volt Sources		Yes	Yes	Yes	Yes	
Programmable DC Voltage/Current Generator		High Volt Meters		Yes	Yes	Yes	Yes	
DC Voltage Current Source/Monitor		AC/DC Current Shunts		Yes	Yes	Yes	Yes	
Bias Current Sorce		Digital Multimeters		Yes	Yes	Yes	Yes	
Portable Calibrator		Digital Electrometers	Yes	Yes	Yes	Yes		
Process Loop Caibrator / Multimeter		Digital LCR Meters	Yes	Yes	Yes	Yes		
AC Current & Voltage Source		Impedance Analyzers	Yes	Yes	Yes	Yes		
Current/Voltage Calibrator/Meter		High Voltage Resistors	Yes	Yes	Yes	Yes		
Calibrator / Source		High Current Resistors	Yes	Yes	Yes	Yes		
Picoammeter / Voltage Source		Resistor Sets	Yes	Yes	Yes	Yes		
Source Meter		Low Ohm Resistor Sets	Yes	Yes	Yes	Yes		
V-I Loop Calibrator		High Ohm Resistor Sets	Yes	Yes	Yes	Yes		
Programmable DC Source		Decade Resistor Sets	Yes	Yes	Yes	Yes		
Handy Calibrator		Standard Capacitor Sets	Yes	Yes	Yes	Yes		
AC Voltage / Current Standard		Standard Inductor Sets	Yes	Yes	Yes	Yes		
DC Voltage / Current Calibration Set		Standard AC Resistor Sets	Yes	Yes	Yes	Yes		
Process Calibrator / Multifunction Process Calibrator			Yes	Yes	Yes	Yes		
DC Calibration Set			Yes	Yes	Yes	Yes		
Programable DC Standard			Yes	Yes	Yes	Yes		
Calibration Standard Instruments (High Accuracy)								
Multi-Product Calibrators / Multi-Function Calibrators,		DCV: Up to 1100 V DCA: Up to 100 A ACV: Up-3 V (10Hz-30MHz) >3-220 V (10Hz-1MHz) >220-1100V (10Hz-100kHz) ACA: Up to 50 A (10Hz-30kHz) DCR: Up to 10 GΩ Capacitance: 1 pF-100 mF (20Hz-13MHz) TC/RTD : All types Phase: 0-90 Deg. Freq: 1 Hz - 26.5 GHz Impedance: 50Ω, 75Ω, 600Ω, 1MΩ	AC/DC Transfer Standard					
AC Measurement Standard, Oscilloscope Calibrators			DC Standard Cells					
- Fluke 55XXA Series			High Precision Meters					
- Fluke 55XXA-SC300/600/1.1G			AC Measurement Std.	-	-	Yes	Yes	
- Fluke 58XXA/5CH Series			AC/DC Current Shunts	-	-	Yes	Yes	
- Fluke 5790A / 5790B, WB	Reference Dividers		-	-	Yes	Yes		
- Fluke 57XXA, 572XA Series	Low Thermal Scanner		-	-	Yes	Yes		
- Fluke 57XXA-WB, 572XA-WB	Nano Volt Meters		-	-	Yes	Yes		
- Fluke 5080A	Standard Resistor Sets		-	-	Yes	Yes		
- Fluke 8508A, 8588A Referance Multimeters	Precision LCR Meters		-	-	Yes	Yes		
- Fluke 732 Series	Precision Phase Meters		-	-	Yes	Yes		
- HP, Agilent, Keysight 3458A Multimeter (8.5 Digit)	Universal Counters		-	-	Yes	Yes		
- Wavetek 9100	Rubidium Frequency Std.		-	-	Yes	Yes		
- Wavetek 9500B OSC Calibrator	RF Power Sensors		-	-	Yes	Yes		
- Wavetek 4800A	RF Power Meters		-	-	Yes	Yes		
- Transmille 1000A / 1000B			-	-	Yes	Yes		
- Transmille 3010A / 3041A / 3050A / 3310A			-	-	Yes	Yes		
- Transmille 3341A / 3350A			-	-	Yes	Yes		
- Transmille 4010 / 4015 / 4610M			-	-	Yes	Yes		
- Transmille 9041A / 9050A			-	-	Yes	Yes		
- Other models and manufacturers			-	-	Yes	Yes		

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				LAB	ON-SITE	LAB	ON-SITE
Electrical Time/ Frequency/ RF/Microwave	Time / Frequency Instruments						
	Clock Timer	Freq: 0.1 Hz - 40 GHz Notes: 1] Quartz ocillator class TCXO, MCXO and OCXO use aging time at least 1 day before calibration 2] Class > 5E-9 uses aging time and calibration cycle at least 4 days	GPS Time Receiver	-	-	Yes	Yes
	Digital Stopwatch		Rubidium Freq. Standard	-	-	Yes	Yes
	Analog Stopwatch		Universal Counter	-	-	Yes	Yes
	Timer		Microwave Counter	-	-	Yes	Yes
	Primary Frequency Standard (Class > 5E-9) ^{NOTE 2]}		Signal Generator	-	-	Yes	Yes
	Rubidium Frequency Standard (Class > 5E-9) ^{NOTE 1]}		Function Generator	-	-	Yes	Yes
	Quartz Oscillator (Class TCXO > 5E-7) ^{NOTE 1]}		-	-	Yes	Yes	
	Quartz Oscillator (Class MCXO > 5E-8) ^{NOTE 1]}		-	-	Yes	Yes	
	Quartz Oscillator (Class OCXO > 5E-9) ^{NOTE 1]}		-	-	Yes	Yes	
	Frequency Counter		-	-	Yes	Yes	
	Microwave Counter		-	-	Yes	Yes	
	Universal Counter		-	-	Yes	Yes	
	RF Frequency Counter		-	-	Yes	Yes	
	Time Interval Counter		-	-	Yes	Yes	
	Digital Counter		-	-	Yes	Yes	
	DTS Time Measurement Instrument	-	-	Yes	Yes		
	Stroboscope / RPM / Surface Speed Measurement						
	Stroboscope	RPM: Up to 100,000 rpm Surface Speed: All Units	Function Generator	-	-	Yes	Yes
	Photo Type Tachometer		Universal Counter	-	-	Yes	Yes
	Contact Type Tachometer		-	-	Yes	Yes	
	RPM Meter		-	-	Yes	Yes	
	Surface Speed Tachometer		-	-	Yes	Yes	
	Surface Speed Measurement / Conveyer		-	-	Yes	Yes	
	Waveform Analyzer Instruments						
	Analog Oscilloscope	DCV: Up to 10 kV	Oscilloscope Calibrators	-	-	Yes	Yes
	Digital Storage Oscilloscope	ACV: Up-3 V (10Hz-40GHz)	Signal Generators	-	-	Yes	Yes
Real Time Oscilloscope	> 3-220V (10Hz-1MHz)	Function Generators	-	-	Yes	Yes	
Digitizing Oscilloscope	> 220-1100V (10Hz-100kHz)	Pulse Generators	-	-	Yes	Yes	
Sampling Oscilloscope	> 1kV - 7kV (50Hz-60Hz)	Universal Counter	-	-	Yes	Yes	
Scope Meters	RF Power: +20dBm to -100dBm (10Hz - 40GHz)	Microwave Counter	-	-	Yes	Yes	
Oscilloscope Differential Probe	Bandwidth: Up - 40GHz	Digital Communication Analyzer	-	-	Yes	Yes	
Oscilloscope High Frequency Probe	Impedance: 50Ω, 75Ω, 600Ω, 1MΩ	Digital Oscilloscope	-	-	Yes	Yes	
Oscilloscopes Current Probe	Time Mark: 2ns - 5s	RF Power Meters	-	-	Yes	Yes	
High Voltage Differential Probe	Wave Form Period, Pulse Width, Rise/Fall Time, Duty Cycle, Phase	RF Power Sensors	-	-	Yes	Yes	
Passive Probe	ΔT, Time Interval, Jitter	Power Splitters	-	-	Yes	Yes	
Low Capacitance Probe		RF Amplifiers	-	-	Yes	Yes	
Active Probe		Spectrum Analyzers	-	-	Yes	Yes	
Logic Probe			-	-	Yes	Yes	
Memory Hi-Corders			-	-	Yes	Yes	
Signal / Level Analyzer Instruments							
Spectrum Analyzer	DCV: 0 - 1kV	Direct measurement and in-direct measurement with Frequency Standard RF Power Standard and other equipment	-	-	Yes	Yes	
RF Field Analyzer	ACV: Up-3V (10Hz-40GHz)		-	-	Yes	Yes	
Dynamic Signal Analyzer	> 3-220V (10Hz-1MHz)		-	-	Yes	Yes	
Cable TV Analyzer	> 220-1100V (10Hz-100kHz)		-	-	Yes	Yes	
Vector Signal Analyzer	> 1kV - 7kV (50Hz-60Hz)		-	-	Yes	Yes	
CXA Signal Analyzer	RF Power: +20dBm to -100dBm (10Hz - 40GHz)		-	-	Yes	Yes	
EXA Signal Analyzer	Bandwidth: Up - 40GHz		-	-	Yes	Yes	
MXA Signal Analyzer	Impedance: 50Ω, 75Ω, 600Ω, 1MΩ		-	-	Yes	Yes	
PXA Signal Analyzer	Time Mark: 2ns - 5s		-	-	Yes	Yes	
FFT Spectrum Analyzer			-	-	Yes	Yes	
Audio Analyzer			-	-	Yes	Yes	
Signal / Level Analyzer Instruments (Cont.)							
Audio Performance Tester	DCV: 0 - 1kV	Direct measurement and in-direct measurement with Frequency Standard RF Power Standard and other equipment	-	-	Yes	Yes	
Audio Measuring System	ACV: Up-3V (10Hz-40GHz)		-	-	Yes	Yes	
Audio & Radio Tester	> 3-220V (10Hz-1MHz)		-	-	Yes	Yes	
Selective Level Meter	> 220-1100V (10Hz-100kHz)		-	-	Yes	Yes	
Signal Level Meter	> 1kV - 7kV (50Hz-60Hz)		-	-	Yes	Yes	
2 CH. AC Millivoltmeter	RF Power: +20dBm to -100dBm (10Hz - 40GHz)		-	-	Yes	Yes	
AC Millivoltmeter	Bandwidth: Up - 40GHz		-	-	Yes	Yes	
AC Voltmeter	Impedance: 50Ω, 75Ω, 600Ω, 1MΩ		-	-	Yes	Yes	
RMS Voltmeter	Time Mark: 2ns - 5s		-	-	Yes	Yes	
Logic Analyzer			-	-	Yes	Yes	
Modulation Analyzer			-	-	Yes	Yes	
Amplitude Modulation Meter			-	-	Yes	Yes	
Frequency Modulation Meter			-	-	Yes	Yes	
Stereo Signal Demodulator			-	-	Yes	Yes	
Stereo Mudulator			-	-	Yes	Yes	
Noise Figure Analyzer			-	-	Yes	Yes	
Noise Figure Meter			-	-	Yes	Yes	
Noise Meter			-	-	Yes	Yes	
Automatic Distortion Meter			-	-	Yes	Yes	
Distortion Meter			-	-	Yes	Yes	
PHS Handy Analyzer			-	-	Yes	Yes	
Distortion Analyzer			-	-	Yes	Yes	
RF Power Meter			-	-	Yes	Yes	
RF Voltmeter			-	-	Yes	Yes	
RF Power Sensor			-	-	Yes	Yes	
RF Watt Meter and Power Element			-	-	Yes	Yes	
Signal Source / Oscillator Instruments							
Signal Generator	ACV: Up-10V (1Hz-10MHz)	Direct measurement and in-direct measurement with Frequency Standard RF Power Standard Reflection/Transmission and other equipment	-	-	Yes	Yes	
FM/AM Signal Generator	RF Power: +20dBm to -100dBm		-	-	Yes	Yes	
Microwave Signal Generator	Freq: 1Hz - 40GHz		-	-	Yes	Yes	
Digital & Vector Signal Generator	RF Att.: Up-100dB (DC-40GHz)		-	-	Yes	Yes	
Digital RF Signal Generator	RF Imp.: 50Ω, 75Ω, 600Ω (DC - 40GHz)		-	-	Yes	Yes	
Synthesized Sweeper			-	-	Yes	Yes	
Synthesized Sweeper/CW Generator			-	-	Yes	Yes	
Synthesized Signal Generator			-	-	Yes	Yes	
ESG/PSG Signal Generator			-	-	Yes	Yes	
MXG Signal Generator			-	-	Yes	Yes	
Digital Modulation Signal Generator			-	-	Yes	Yes	
Vector Signal Generator			-	-	Yes	Yes	
Stereo FM/AM Signal Generator			-	-	Yes	Yes	
Mono FM/AM Signal Generator			-	-	Yes	Yes	
DAB Signal Generator			-	-	Yes	Yes	

Yes

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Electrical Time/ Frequency/ RF/Microwave	Signal Source / Oscillator Instruments						
	Digital Modulation Signal Generator	DCV: Up - 1000V ACV: Up - 10V (1Hz-10MHz) RF Power: +20dBm to -100dBm Freq: 1Hz - 40GHz RF Att.: Up-100dB (DC-40GHz) RF Imp.: 50Ω, 75Ω, 600Ω (DC - 40GHz)	Direct measurement and in-direct measurement with Frequency Standard RF Power Standard Reflection/Transmission and other equipment	-	-	Yes	Yes
	Vector Signal Generator			-	-	Yes	Yes
	Stereo FM/AM Signal Generator			-	-	Yes	Yes
	Mono FM/AM Signal Generator			-	-	Yes	Yes
	DAB Signal Generator			-	-	Yes	Yes
	Noise Simulation System			-	-	Yes	Yes
	Noise Source (Max. 3GHz)			-	-	Yes	Yes
	Noise Generator			-	-	Yes	Yes
	Impulse Noise Simulator			-	-	Yes	Yes
	Noise Oscillator			-	-	Yes	Yes
	Pink Noise Generator			-	-	Yes	Yes
	Tracking Generator			-	-	Yes	Yes
	RF Power Supply			-	-	Yes	Yes
	Leveled Sine Wave Generator			-	-	Yes	Yes
	Mobile Service Tester			-	-	Yes	Yes
	Function Generator			-	-	Yes	Yes
	Function / Arbitrary Waveform Generator			-	-	Yes	Yes
	Arbitrary Waveform Generator			-	-	Yes	Yes
	Synthesized Function Generator			-	-	Yes	Yes
	Synthesizer/Level Generator			-	-	Yes	Yes
	DDS Function Generator			-	-	Yes	Yes
	Sweep/Function Generator			-	-	Yes	Yes
	Pulse Generator			-	-	Yes	Yes
	Pulse Function Generator			-	-	Yes	Yes
	Pulse Pattern Generator			-	-	Yes	Yes
	Universal Waveform Generator			-	-	Yes	Yes
	Multifunction Synthesizer			-	-	Yes	Yes
	Clock Synthesizer			-	-	Yes	Yes
	Oscillator			-	-	Yes	Yes
	Anderon Oscillator			-	-	Yes	Yes
	Audio Generator			-	-	Yes	Yes
	Frequency Synthesizer			-	-	Yes	Yes
	Laser Diode Driver			-	-	Yes	Yes
	Low Distortion Oscillator			-	-	Yes	Yes
	RC Oscillator			-	-	Yes	Yes
	Speaker Test Oscillator			-	-	Yes	Yes
	Standard Level Calibration Set			-	-	Yes	Yes
	Sweep Audio Oscillator / Sweep Oscillator			-	-	Yes	Yes
	Range Calibrator			-	-	Yes	Yes
	Dial / Level Tester			-	-	Yes	Yes
	Mobile Service Tester			-	-	Yes	Yes
	TFT Tester			-	-	Yes	Yes
	Distortion Meter Calibrator			-	-	Yes	Yes
	Network / Communication Instruments						
	Network Analyzer	DCV: Up - 1000V ACV: Up - 10V (1Hz-10MHz) RF Power: +20dBm to -100dBm Freq: 1Hz - 40GHz RF Att.: Up-100dB (DC-40GHz) RF Imp.: 50Ω, 75Ω, 600Ω (DC - 40GHz)	Direct measurement and in-direct measurement with Frequency Standard RF Power Standard Reflection/Transmission and other equipment	-	-	Yes	Yes
	Network / Spectrum / Impedance Analyzer			-	-	Yes	Yes
S-Parameter Test Set	-			-	Yes	Yes	
S-Parameter Network Analyzer	-			-	Yes	Yes	
Scalar Network Analyzer	-			-	Yes	Yes	
Transmission/Reflection Network Analyzer	-			-	Yes	Yes	
Vector Network Analyzer	-			-	Yes	Yes	
Bluetooth Audio Test Set	-			-	Yes	Yes	
Communications Perfomance Analyzer	-			-	Yes	Yes	
Communications Test Set	-			-	Yes	Yes	
Digital Communication Analyzer	-			-	Yes	Yes	
Digital Mobile Radio Transmitter Tester	-			-	Yes	Yes	
Digital Transmission Analyzer	-			-	Yes	Yes	
GSM Mobile Station Test Set	-			-	Yes	Yes	
GSM/GPRS Digital Radio Test Set	-			-	Yes	Yes	
Radio Communication Analyzer	-			-	Yes	Yes	
Site Master / Site Analyzer	-			-	Yes	Yes	
RF Attenuation / RF Termination / Component Instruments							
Fixed Attenuator	DCV: Up - 1000V ACV: Up - 10V (1Hz-10MHz) RF Power: +20dBm to -100dBm Freq: 1Hz - 40GHz RF Att.: Up-100dB (DC-40GHz) RF Imp.: 50Ω, 75Ω, 600Ω (DC - 40GHz)	Direct measurement and in-direct measurement with Frequency Standard RF Power Standard Reflection/Transmission and other equipment	-	-	Yes	Yes	
Decade Attenuator			-	-	Yes	Yes	
Programmable Attenuator			-	-	Yes	Yes	
Termination			-	-	Yes	Yes	
Calibration Kit			-	-	Yes	Yes	
Power Splitter			-	-	Yes	Yes	
Power Dividers			-	-	Yes	Yes	
Minimum Loss Pad			-	-	Yes	Yes	
Impedance Adapters			-	-	Yes	Yes	
Directional Bridge			-	-	Yes	Yes	
Reflection Bridge			-	-	Yes	Yes	
VSWR Bridge			-	-	Yes	Yes	
Transmission / Reflection Test Sets			-	-	Yes	Yes	
SWR Meters			-	-	Yes	Yes	
Directional Couplers			-	-	Yes	Yes	
CD / DVD / TV / VDO / Telephone Signal Analyzer and Source Instruments							
Analog Video Generator	DCV: Up - 1000V ACV: Up - 10V (1Hz-10MHz) RF Power: +20dBm to -100dBm Freq: 1Hz - 40GHz RF Att.: Up-100dB (DC-40GHz) RF Imp.: 50Ω, 75Ω, 600Ω (DC - 40GHz)	Direct measurement and in-direct measurement	-	-	Yes	Yes	
Bell Ringer Generator			-	-	Yes	Yes	
Broadcasting Network Checker			-	-	Yes	Yes	
Digital TV Signal Generator			-	-	Yes	Yes	
Digital Video Generator			-	-	Yes	Yes	
HDTV Digital Video Generator			-	-	Yes	Yes	
HDTV Standard Converter			-	-	Yes	Yes	
HDTV Up/Down Standard Converter			-	-	Yes	Yes	
NTSC Color Pattern Generator			-	-	Yes	Yes	
NTSC TV Generator			-	-	Yes	Yes	
NTSC Vector Scope			-	-	Yes	Yes	
NTSC/PAL Video Signal Analyzer			-	-	Yes	Yes	
PAL Color Pattern Generator			-	-	Yes	Yes	
PAL TV Generator			-	-	Yes	Yes	
PAL Vector Scope			-	-	Yes	Yes	
PAL/SECAM Pattern Generator			-	-	Yes	Yes	
SECAM Encoder			-	-	Yes	Yes	
Telephone Analyzer / Dial Tester			-	-	Yes	Yes	
Telephone Unit Tester			-	-	Yes	Yes	

Yes

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Scopes of Calibration and Accreditation

Field of Calibration	Properties of Measured / Equipment Under Calibration	Capability Range	Calibration Methods	ISO/IEC 17025 Accredited by ONSC-TISI (Thailand)		ISO/IEC 17025 Accredited by ANAB (USA)	
				LAB	ON-SITE	LAB	ON-SITE
Electrical Time/ Frequency/ RF/Microwave	CD / DVD / TV / VDO / Telephone Signal Analyzer and Source Instruments (Cont.)						
	TV & FM Level Meter	DCV: Up - 1000V ACV: Up - 10V (1Hz-10MHz) RF Power: +20dBm to -100dBm Freq: 1Hz - 40GHz RF Att.: Up-100dB (DC-40GHz) RF Imp.: 50Ω, 75Ω, 600Ω (DC - 40GHz)	Direct measurement and in-direct measurement	-	-	Yes	Yes
	TV / SAT Signal Level Meter			-	-	Yes	Yes
	TV Signal Generator			-	-	Yes	Yes
	TV Signal Level Meter			-	-	Yes	Yes
	Video Distributer			-	-	Yes	Yes
	Video Generator			-	-	Yes	Yes
	Video Measurement Set			-	-	Yes	Yes
	Video Noise Meter			-	-	Yes	Yes
	Video Noise Meter			-	-	Yes	Yes
	Video Pattern Generator			-	-	Yes	Yes
	Video Signal Analyzer			-	-	Yes	Yes
	Wideband Video Gennerator			-	-	Yes	Yes
	ATIP/ADIP Jitter Meter			-	-	Yes	Yes
	CD Jitter Calibrator			-	-	Yes	Yes
	CD Jitter Meter			-	-	Yes	Yes
	CD/MD Jitter Checker			-	-	Yes	Yes
	Digital Process Jitter Meter			-	-	Yes	Yes
	DVD Jitter Meter			-	-	Yes	Yes
	DVD/CD Jitter Meter			-	-	Yes	Yes
	MD/CD Jitter Meter			-	-	Yes	Yes
	VTR Jitter Analyzer			-	-	Yes	Yes
	Wow Flutter / Jitter Calibrator			-	-	Yes	Yes
Wow Flutter Calibrator	-			-	Yes	Yes	
Wow/Flutter Meter	-	-	Yes	Yes			
Optical & Fiber Optic	Optical Power Meters / Sensors						
	Optical Head	Optical Wavelength: (450 to 1700) nm Optical Power: (0 to -100) dBm	Direct measurement and in-direct measurement	-	-	Yes	Yes
	Fiber Optic Power Meter			-	-	Yes	Yes
	Optical Head Interface			-	-	Yes	Yes
	Optical Multimeter			-	-	Yes	Yes
	Optical Power Meter			-	-	Yes	Yes
	Optical Power Sensor			-	-	Yes	Yes
	Optical Sampling Module			-	-	Yes	Yes
	Optical Test Meter			-	-	Yes	Yes
	Optical Power Return Loss Meter			-	-	Yes	Yes
	Sensor Module			-	-	Yes	Yes
	Smart Optic Level Meter			-	-	Yes	Yes
	Optical Laser Sources						
	Fiber Optic Light Source	Optical Wavelength: (450 to 1700) nm Optical Power: (0 to -100) dBm	Direct measurement and in-direct measurement	-	-	Yes	Yes
	Laser Source Module			-	-	Yes	Yes
	Optical Laser Source			-	-	Yes	Yes
	Optical Light Source			-	-	Yes	Yes
	Stabilized Laser Source			-	-	Yes	Yes
	Stabilized Light Source			-	-	Yes	Yes
	Tunable Laser Source	-	-	Yes	Yes		
	Optical Wavelength / Lightwave Meters						
	Lightwave Measurement System	Optical Wavelength: (450 to 1700) nm Optical Power: (0 to -100) dBm	Direct measurement and in-direct measurement	-	-	Yes	Yes
	Lightwave Multimeter			-	-	Yes	Yes
	Lightwave Receiver			-	-	Yes	Yes
	Multi-Wavelength Meter			-	-	Yes	Yes
	Optical Wavelength Meter			-	-	Yes	Yes
	Optical Attenuators						
	ATTN Module	Optical Wavelength: (450 to 1700) nm Optical Power: (0 to -100) dBm	Direct measurement and in-direct measurement	-	-	Yes	Yes
	Automated Optical Attenuator			-	-	Yes	Yes
	Optical Attenuator			-	-	Yes	Yes
	Precision Optical Variable Attenuator			-	-	Yes	Yes
	Programmable Optical Attenuator			-	-	Yes	Yes
	Variable Optical Attenuator			-	-	Yes	Yes
	Variable Optical Attenuator Module			-	-	Yes	Yes
	Optical Communication and Testing Instruments						
	2.4 Gb/s SDH/SONET Test Set	Optical Wavelength: (450 to 1700) nm Optical Power: (0 to -100) dBm	Direct measurement and in-direct measurement	-	-	Yes	Yes
	Bit Error Rate Tester			-	-	Yes	Yes
	Communication Signal Analyzer			-	-	Yes	Yes
	Communications Media Analyzer			-	-	Yes	Yes
	Error Performance Analyzer			-	-	Yes	Yes
	Fiber Optic OTDR			-	-	Yes	Yes
	Fiber Optic Test System			-	-	Yes	Yes
	Mini-OTDR			-	-	Yes	Yes
	NetTek Analyzer			-	-	Yes	Yes
	NETTEST SDH Analyzer			-	-	Yes	Yes
	Omni Ber			-	-	Yes	Yes
	Omni BER OTN			-	-	Yes	Yes
	Omni BER XM			-	-	Yes	Yes
	Optical Component Analyzer			-	-	Yes	Yes
	Optical Loss Test Set			-	-	Yes	Yes
	Optical Polarization Controller			-	-	Yes	Yes
	Optical Spectrum Analyzer			-	-	Yes	Yes
	Optical Test Meter			-	-	Yes	Yes
	OTDR			-	-	Yes	Yes
	Polarization Controller			-	-	Yes	Yes
	SONET/SDH/PDH/ATM Analyzer			-	-	Yes	Yes
	SONET/SDH/PDH/DSn Analyzer			-	-	Yes	Yes
	SpectralBER DWDM Controllor Module			-	-	Yes	Yes
	SpectralBER DWDM Receiver Module			-	-	Yes	Yes
	SpectralBER DWDM Transmitter Module			-	-	Yes	Yes
	SunLite E1			-	-	Yes	Yes
	SunSet E1			-	-	Yes	Yes
	SunSet E10			-	-	Yes	Yes
	SunSet E20c			-	-	Yes	Yes
	SunSet MTT			-	-	Yes	Yes
	SunSet xDSL			-	-	Yes	Yes
Laser Power Meters & Sources							
	Laser Power Meters	Wavelength: 488 nm and 633 nm Laser Power: Up to 100 mW	Direct measurement and in-direct measurement	-	-	Yes	Yes
	Laser Power Source			-	-	Yes	Yes
				-	-		

Yes = Accredited ISO/IEC 17025
- = Not accredited scopes of ISO/IEC 17025