

# MedTEST

A Complete Electrical Safety Testing System that Satisfies the Most Demanding Medical Compliance Requirements



Our MedTEST system can be designed to provide a complete test solution for medical device manufacturers in need of conforming to IEC 60601-1 3rd Edition Standard. Customize your MedTEST system to satisfy your individual testing requirements including Hipot, Ground Bond, Insulation Resistance, Functional Run and leakage current testing for all B, BF and CF type applied parts including Mains on Applied Parts (MOAP) tests. Up to 40 A of continuous DUT current combined with our Active Link® technology reduces overall test time and integration with our SC6540 modular multiplexer allows for multi-point sequential testing without the need to change test leads. Get the most from your test system by utilizing our WithStand® software for maximum productivity-enhancing benefits.



## AVAILABLE INTERFACES



## SAFETY & PRODUCTIVITY FEATURES

- SmartGFI®**  
Automatic operator shock protection
- Remote Safety Interlock**  
Easily disable HV output
- Prompt & Hold**  
Provides alerts & instructions between tests
- Multiple Languages**  
Multi-Language user interface
- Active Link®**  
Continuous power during test steps
- My Menu**  
Customize your own shortcut menu
- DualCHEK®**  
Simultaneous Hipot and Ground Bond
- Internal Multiplexer**  
Available with optional HV multiplexer
- Modular Multiplexer**  
Compatible with SC6540 multiplexers
- FailCHEK™**  
Confirms failure detection
- Cal-Alert®**  
Tracks and alerts for calibration
- Ramp-Hi®**  
Reduce ramp time during DC Hipot
- Charge-LO®**  
Confirms proper DUT connection
- Accredited Cal**  
Accredited calibration options available
- WithStand®**  
Automation Software

- AC Hipot
- DC Hipot
- Ground Bond
- Ground Continuity
- Insulation Resistance
- Leakage Current
- Functional Run
- Power Source Recommended

# POPULAR MEDTEST CONFIGURATIONS



## OMNIA® II 8207 AND SC6540

- All-in-one testing system (Hipot, Ground Bond, Insulation Resistance, and Leakage Current)
- Built in 500 VA AC power source
- Efficient use of rack space
- SC6540 provides automated multi-point testing  
Most common applications incorporate 8 or 16 port multiplexers



## OMNIA® II 8206, SC6540 AND POWERED BY AN AC POWER SOURCE

- All-in-one testing system (Hipot, Ground Bond, Insulation Resistance, and Leakage Current)
  - Compatible EEC power source provides power to DUT\*
  - SC6540 provides automated multi-point testing.  
Most common applications incorporate 8 or 16 port multiplexers
- \*Choose from EEC 8500 Series.



## OMNIA® II 8204, 620L, SC6540 AND POWERED BY AN AC POWER SOURCE

- All-in-one testing system (Hipot, Ground Bond, Insulation Resistance, and Leakage Current)
  - Compatible EEC power source provides power to DUT\*
  - SC6540 provides automated multi-point testing  
Most common applications incorporate 8 or 16 port multiplexers
  - Up to 40 A continuous current capability for applications that draw greater than 16 A of current
- \*Choose from EEC 8500 Series.

LINE CONDITIONS	
Reverse Power Switch	Switch for power polarity reversal
Neutral Switch	Neutral switch on/off selection for single fault
Ground Switch	Ground switch on/off selection for class I single fault
PROBE SETTINGS	
Surface to Surface	(PH – PL)
Surface to Line	(PH – L)
Ground to Line	(G – L)
LEAKAGE LIMIT SETTINGS	
Touch Current High/Low Limit (rms)	Range: 0.0 $\mu$ A – 999.9 $\mu$ A / 1,000 $\mu$ A – 9,999 $\mu$ A / 10.00 mA – 20.00 mA Resolution: 0.1 $\mu$ A / 1 $\mu$ A / 0.01 mA
Touch Current High/Low Limit (Peak)	Range: 0.0 $\mu$ A – 999.9 $\mu$ A / 1,000 $\mu$ A – 9,999 $\mu$ A / 10.00 mA – 30.00 mA Resolution: 0.1 $\mu$ A / 1 $\mu$ A / 0.01 mA
MEASURING DEVICE MODULE	
MD1	UL544NP, UL484 , UL923, UL471, UL867, UL697
MD2	UL544P
MD3	IEC 60601-1
MD4	UL1563
MD5	IEC60990 Fig4 U2, IEC62368, IEC60335-1, IEC60598-1, IEC60065, IEC61010
MD6	IEC60990 Fig5 U3, IEC60598-1
MD7	IEC62368, IEC61010-1 FigA.2 (2 kohm) for Run function
External MD	Basic measuring element 1 kohm
MD Voltage Limit	70 VDC
DUT POWER	
AC Voltage	0.0 – 277.0 V
AC Current	40 A max continuous
AC Voltage High/Low Limit	Range: 0.0 – 277.0 V Resolution: 0.1 V/step
AC Voltage Display	Range: 0.0 – 277.0 V Resolution: 0.1 V/step Accuracy: $\pm$ (1.5% of reading + 2 counts), 30.0 – 277.0 V
Delay Time Setting	Range: 0.5 – 999.9 sec Resolution: 0.1 sec
Dwell Time Setting	Range: 0, 0.5 – 999.9 sec (0=Continuous) Resolution: 0.1 sec Accuracy: $\pm$ (0.1% of reading + 0.05 seconds)
Failure Protection	On Start-Up – Neutral Voltage Check (Neutral – V) Over current and ground current check (Line – OC)

DIELECTRIC WITHSTAND TEST MODE			
Output Rating*	5 kV @ 50 mAAC 6 kV @ 20 mADC		
Voltage Setting	Range: 0 – 5,000 VAC, 0 – 6,000 VDC Resolution: 1 V Accuracy: $\pm$ (2% of setting + 5 V)		
HI and LO-Limit	AC Total	Range:	0.000-9.999 mA
		Resolution:	0.001 mA
	Accuracy:	$\pm$ (2% of setting + 2 counts)	
	AC Real	Range:	10.00 – 50.00 mA
		Resolution:	0.01 mA
	Accuracy:	$\pm$ (2% of Setting + 2 counts)	
DC	Range:	0.00 – 999.9 $\mu$ A	
	Resolution:	0.1 $\mu$ A	
Accuracy:	$\pm$ (2% of setting + 2 counts)		
Ramp HI	Range: 1,000 – 20,000 $\mu$ A Resolution: 1 $\mu$ A Accuracy: $\pm$ (2% of setting + 2 counts)		
Charge LO	Range: 0.000 – 350.0 $\mu$ A or Auto Set		
DC Output Ripple	$\leq$ 4% Ripple rms at 5 kVDC @ 20 mA, Resistive Load		
Discharge Timer	< 50 msec for no load, < 100 msec for capacitor load (All capacitance values in MAX load spec below)		
Maximum Capacitive Load	1 $\mu$ F < 1 kV	0.08 $\mu$ F < 4 kV	
	0.75 $\mu$ F < 2 kV	0.04 $\mu$ F < 6 kV	
	0.50 $\mu$ F < 3 kV		
Output Frequency	50/60 Hz $\pm$ 0.1% , User Selection, 400/800 Hz Option		
AC Output Waveform	Sine Wave, Crest Factor = 1.3 – 1.5		
Output Regulation	$\pm$ (1% of output + 5 V) from no load to full load and over input voltage range		
Dwell Timer	AC 0, 0.4 – 999.9 sec (0=Continuous) DC 0, 0.3 – 999.9 sec (0=Continuous)		
Ramp Timer	Ramp-Up AC: 0.1 – 999.9 Ramp-Down AC: 0.0-999.9 Ramp-Up DC: 0.4 – 999.9 Ramp-Down DC: 0.0, 1.0-999.9		
Ground Continuity	Current: DC 0.1 A $\pm$ 0.01 A, fixed Max. Ground Resistance: 1 $\Omega$ $\pm$ 0.1 $\Omega$ , fixed		
Ground Fault Interrupt	GFI Trip Current: 5.0 mA max HV Shut Down Speed: < 1 ms		

\*Output voltage limited to 3.5 kV with 620L option 03

CONTINUITY TEST MODE	
Output Current	DC 0.1 A ± 0.00001 A
Resistance Display	Range: 0.00 – 10,000.00 Ω
HI and LO-Limit	0.00 – 10,000 Ω
Dwell Timer	Range: 0.0, 0.3 – 999.9 sec (0=Continuous)
Milliohm Offset	Range: 0.00 – 10.00 Ω
GROUND BOND TEST MODE	
Output Voltage	Range: 3.00 – 8.00 VAC
Output Frequency	50/60 Hz ± 0.1%, User Selection
Output Current	Range: 1.00 – 40.00 A Resolution: 0.01 A Accuracy: ± (2 % of setting + 2 counts)
Output Regulation	± (1% of output + 0.02 A) Within maximum load limits, and over input voltage range
Maximum Loading	1.00 – 10.00 A, 0 – 600 mΩ 10.01 – 30.00 A, 0 – 200 mΩ 30.01 – 40.00 A, 0 – 150 mΩ
HI and LO-Limit	Range: 0 – 150 for 30.01 – 40.00 A
	Range: 0 – 200 for 10.01 – 30.00 A
	Range: 0 – 600 for 6.00 – 10.00 A
	Range: 0 – 600 for 5.99 – 1.00 A
	Resolution: 1 mΩ
	Accuracy: 6.00 – 40.00 A, ± (2% of setting + 2 Counts) 1.00 – 5.99 A, ± (3% of setting + 3 Counts)
Milliohm Offset	Range: 0 – 200 mΩ
INSULATION RESISTANCE TEST MODE	
Output Voltage	Range: 30 – 1,000 VDC
Charging Current	Maximum > 20 mA peak
HI and LO-Limit	Range: 0.05-99.99 MΩ Resolution: 0.01 MΩ
	Range: 100.0 – 999.9 MΩ Resolution: 0.1 MΩ
	Range: 1000 – 50,000 MΩ Resolution: 1 MΩ
Charge-LO	0.000 – 3.500 μA or Auto Set
Ramp Timer	Ramp Up: 0.1 – 999.9 secs
	Ramp Down: 0.0, 1.0 – 999.9 secs
Dwell Timer	0, 0.5 – 999.9 (0=Continuous)
Delay Timer	0.5 – 999.9 secs
Ground Fault Interrupt	GFI Trip Current: 5.0 mA max HV Shut down Speed: < 1 ms

GENERAL SPECIFICATIONS	
Interface	Standard: USB, RS-232 Optional: Ethernet, GPIB
Safety	Built-in SmartGFI® circuit
Memory	620L: 50 memories, 30 steps per memory OMNIA® II: 10,000 steps
AC POWER SOURCE	
AC Power Source	Up-to 4 kVA compatible power sources available
Configuration	AC Power Source configuration depends on application.
	MedTEST hardware is configured for testing products with one side of the supply mains at earth potential (Fig 10 UL60601-1).
	MedTEST hardware is configured for unbalanced 0-277 V DUT input power.
	Custom Configurations available. Contact us for details.

**Why We Use Counts**

Associated Research publishes some specifications using "counts" which allows us to provide a better indication of the instrument's capabilities across measurement ranges. A count refers to the lowest resolution of the display for a given measurement range. For example, if the resolution for voltage is 1V then 2 counts = 2 V.

**Specifications subject to change without notice.**