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LCR Active Head and Impedance Analysis Interface

The PSM1700, PSM1735 and PSM3750 can provide LCR measurements in either 'passive mode', where an external shunt is used for current detection or with optional active impedance measurement accessories available from N4L.

Passive mode:

In this mode, an external shunt is placed in series with the component under test, then CH1 is used to measure the voltage across the component under test while CH2 is used to measure the voltage across the shunt. From these voltages and their relative phase angle, the PSM units compute impedance and all LCR functions.

LCR Active Head and Impedance Analysis Interface:

The LCR Active Head and IAI/IAI2 convert the PSM1700/1735/3750(IAI2 only) units into high performance LCR meters with true 4 wire Kelvin connections that are taken directly to the component without need for external shunts. Buffering, amplification, and selectable shunts provide LCR measurements over a wide frequency and impedance range.

LCR Active Head

PSM3750 with IAI2

		LCR Active Head	IAI & IAI2	
Frequency Range		10uHz to 5MHz	10uHz to 35MHz (IAI2 50MHz)	
Measurement Ranges:	Inductance	100nH to 10kH	10nH to 10kH	
	Capacitance	10pF to 1000uF	1pF to 1000uF	
	Resistance	10mΩ to 100MΩ	1mΩ to 500MΩ	
Basic Accuracy: PSM1700/35/3750(IAI2 only) PSM1700/3750(IAI2 only) PSM1735 PSM3750		 0.2% <1kHz 0.5% + 0.005%/kHz <1MHz 0.5% + 0.005%/kHz <5MHz -	 0.1% <1kHz 0.2% +0.002%/kHz <1MHz 0.2% +0.0005%/kHz <35MHz 0.2% +0.005%/kHz <50MHz	
Internal Shunts:				Phase° Accuracy
	Low	N/A	5Ω	0.1° + 0.01°/kHz
	Normal	100Ω	50Ω	0.05° + 0.005°/kHz
	High	10kΩ	5kΩ	0.05° + 0.005°/kHz
	Very High	1MΩ	500kΩ	0.1° + 0.05°/kHz
Power source		Auxiliary Port	90-264V rms 47-64Hz	

Standard accessories and options

LCR Active Head supplied with:	BNC to Kelvin clip lead set (Power and comms via hard wired Auxiliary lead)
Impedance Analysis Interface supplied with:	BNC to Kelvin clip lead set, 3 x BNC link cables, 1 x comms link, 1 x IEC power cable
IAI fixture option:	IAI Kelvin fixture - to simplify connection and HF accuracy with axial / radial components