



### 6622A SERIES FEATURES

- ◆ Measurement Range From 1 mΩ~134 kΩ
- ◆ Extended Measurement Range down to 0.1 μΩ With Currents to 3000A
- ◆ Rx/Rs Ratios: 0.1:1 ~ 100:1
- ◆ Best Uncertainty: ± 0.03 ppm of Reading
- ◆ Linearity: ± 0.01 ppm of Full Scale
- ◆ Resolution: ± 0.001 ppm of Full Scale
- ◆ Temperature Option Available
- ◆ Range Extender Designed to Operate Without external Power Supplies / Switches
- ◆ Fully Programmable IEEE 488
- ◆ Bridgeworks™ Data Acquisition Software
- ◆ Unique Calibration Support Strategy
- ◆ Complete Measurement Systems Available

**GUILDLINE INSTRUMENTS 6622A SERIES** direct current comparator (DCC) bridges are well suited for precision calibration in both resistance and temperature applications. Their flexible and wide measurement ranges, the upgradeable performance, the newly introduced 100:1 measurement ratio all make them very attractive to users. Due to customers' request, Guildline introduced the model 6622A-XPS, the performance enhanced version of the Guildline model 6622A-XP. The only difference between a model 6622A-XPS and a model 6622A-XP is the enhanced performance of model 6622A-XPS, the best uncertainty of the model 6622A-XPS is better than 0.03 ppm.

Specially selected hardware is used in the construction of the model 6622A-XPS. In addition, a much more stringent alignment and calibration procedure also play a important role to guarantee the performance of the model 6622A-XPS, to reach the 0.03 ppm of uncertainty at both 1:1 and 10:1 ratios.

Just like all the other 6622A, the model 6622A-XPS can be upgraded, to have a wider measurement range of up to 100MΩ or 1GΩ.

**Measurements of UUT from 1Ω ~ 10kΩ can be made using 1:1 and 10:1 ratios, at better than 0.03 ppm of uncertainty!**

The model 6622A-XPS provides very stable measurement. This bridge is perfect for applications such as Quantum Hall Measurements for the determination of the ohm, calibration of standard resistors, calibration of SPRT's and very precise temperature measurements etc.

Using proprietary technology, the Guildline 6623A series of range extenders can enable measurement of shunts at high current, such as the measurement of a 0.1uΩ shunt at a maximum current of 3000A. The range extenders carry out polarity reversal automatically, at user selected intervals. Standard models include the 6623A-150, 6623A-300, 6623A-450, 6623A-600, 6623A-1000, 6623A-2000, and 6623A-3000, each with built-in current power supplies. The Guildline 6623A series range extenders are easy to use and easy to maintain. Using this approach, a user does not need to worry about external switches, compressed air or power supply.

## 6622A Series DCC Bridges

### 6622A-XPS Measurement Specifications

R <sub>s</sub>	Rx/Rs Ratio Measurement Uncertainty, 12-Month (ppm)				24-Hour Stability (ppm)
	0.08:1~ 0.8:1	0.8:1 ~ 6.3:1	6.3:1 ~ 13.4:1	13.4:1 ~ 107.5:1	
1 Ω	0.4	0.03	0.03	0.05	< ± 0.02
10 Ω	0.4	0.03	0.03	0.05	< ± 0.02
100 Ω	0.4	0.03	0.03	0.1	< ± 0.02
1 kΩ	0.4	0.03	0.03	0.5	< ± 0.02
10 kΩ	0.4	0.03	0.15	NA	< ± 0.03

### 6623A-3000 Range Extension Option

UUT (Ω) <sup>1</sup>	10 <sup>-7</sup>	10 <sup>-6</sup>	10 <sup>-5</sup>	10 <sup>-4</sup>	10 <sup>-3</sup>	10 <sup>-2</sup>	10 <sup>-1</sup>
Uncertainties	± 4 ppm	± 0.9 ppm	± 0.9 ppm	± 0.9 ppm	± 0.15 ppm	± 0.15 ppm	± 0.15 ppm

1 – Uncertainties are based on using a R<sub>s</sub> of 1 Ω for UUT from 10<sup>-7</sup>Ω to 10<sup>-1</sup> Ω.

### General Specifications

Measurement Range, Without range extender	10 <sup>-3</sup> ~ 10 <sup>5</sup> Ω	
Resistance ratio range	0.1:1 ~ 100:1	
Linearity	± 0.01 ppm of full scale (Full scale defined as 1.34:1, 13.4:1 and 100:1)	
Display resolution (ppm)	± 0.001 ppm	
Temperature coefficient of resistance ratio measurement	0.01 ppm/°C of reading	
Automatic current reversal rate (in seconds)	4 s to 1637 s programmable, increment of 1second	
Communication	IEEE 488	
Test current	Usable range (±30V compliance)	20 μA ~ 150 mA
	Resolution	2 μA
	Accuracy [error(ppm) + offset]	±200 ppm ± 10 μA
Dimensions and weight	465(D)-440(W)-200(H) mm, 27kg	
Environmental	Operating: 18~28°C, 20%~50%RH; Storage: -20~60°C, 15%~ 80%RH	
Power Requirements	100/120V/220/240V <sub>AC</sub> ± 10% , 50/60Hz ±5%, 200VA	

### Ordering Information

Model	List One Of Following Bench Models*
<b>6622A-XPS</b>	Extended Performance, Range to 134 kΩ, including Calibration Certificate, Operator and Software manuals and one set of Solid Copper Wire (SCW) Test Leads
<b>6623A-3</b>	3A Range Extender, Required for the 6623A Series
<b>6622A-XPS/T</b>	Temperature Option – Installed Internally
/RC	Report of Calibration. Available at Nominal Charge
SM6622A	Service Manual, Extra Charge
<b>6622A SERIES OPTIONS</b>	
<b>Bridgeworks-UPG</b>	Upgrades Bridgeworks-R to Bridgeworks-C
/57XX UTL	Bridgeworks-C 57XX Resistance Calibration Utility
IEEE-USB	NI IEEE-488.2 Interface for a USB port (Win 98 and newer)
6634A	Temperature Stabilized Resistance Standard
6623A-150	External 150A Range Extender for DCC Resistance Bridge
6623A-600	External 600A Range Extender for DCC Resistance Bridge
6623A-3000	External 3000A Range Extender for DCC Resistance Bridge
6664B	16 Channel Low Thermal Scanner
6664A-11	SCW Lead pair with gold plated banana plug, 1m in length
Many other leads and accessories to include system integration and IEEE are available.	

## Guildline Instruments

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