

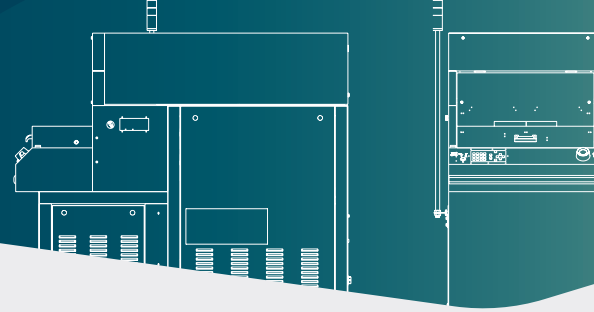
Thin Film Laser Trim System



LT2210

Circuit & Sensor Trim™

A versatile platform for trim and test of Thin Film resistors, resistor networks, hybrids, temperature sensitive devices (RTDs) and other Thin Film – small geometry applications.



Circuit & Sensor Trim™ LT2210

Specifications

Optical System

- **Beam positioner type** | High Speed closed loop galvanometer
- **Spot Size¹** | 10 µm or 15 µm
- **Field size** | 100 x 100 mm
| 50 x 50 mm (10 µm spot)
| 25 x 25 mm (10 µm optional)
- **Depth of Focus** | 150 µm
| 50 µm (10 µm spot)
- **Beam Repeatability** | ~ 1.0 µm
- **Resolution** | 1.6 µm
| 0.80 µm (10 µm spot)

¹ Minimum spot size. Maximum = 1.5X minimum.

Laser System

- **Type** | Diode pumped Q-switched YAG
- **Wavelength** | 532 nm
- **Output Power / Pulse Width** | 3W / 30 ns
| 3W / 70 ns (optional)
| 6W / 70 ns (optional)

X/Y Part Positioning

- **Dual axis servo motors**
 - X/Y Travel | 12" x 17"
 - X/Y Resolution | 1.0 µm
 - X/Y Repeatability | 3 µm

Z-Theta Stage

- **Programmable Z stage**
 - Z Travel | 20 mm
 - Z Resolution | 4 µm
 - Z Repeatability | 4 µm
 - Theta Travel | ± 5°
 - Theta Resolution | 0.003°
 - Lifting / Probe force | 25 lbs (11.3 kg)

Part Viewing

- **Dual CCD camera system for High and Low Mag viewing**
- **15 µm (nominal factory settings)**
 - High Mag Viewing Field | 1.7 x 1.2 mm
 - Low Mag Viewing Field | 11.0 x 8.0 mm
- **10 µm (nominal factory settings)**
 - High Mag Viewing Field | 1.1 x 0.83 mm
 - Low Mag Viewing Field | 6.0 x 4.5 mm
- **Vision Processing**
 - Pattern recognition and Edge Detection

Measurement System

- **Type** | High Speed, Force V, current nulling bridge
- **Range** | 0.1 Ω – 1000 MΩ
- **Resistance measurement accuracy (full Kelvin)**
 - Low Range (< 50 Ω) | ± 0.02 % ± (1.0 % / R)
 - Mid Range | ± 0.02 % of value
 - High Range (> 160 K) | ± 0.02 % ± 0.02 % per MΩ
- **Active Guard Measurement**
 - 200 mA guard driver
- **DC Voltage Measurement Accuracy**

Range	Accuracy (%FSR)
100 mV – 400 mV	± 0.10 %, ± 1 mV
1 V – 16 V	± 0.05 %, ± 1 mV
10 V – 160 V	± 0.05 %, ± 5 mV
- **Voltage Source**

Range	Resolution	Accuracy (%FSR)
± 4 V	31 µV	± 0.008 %
± 16 V	125 µV	± 0.005 %
± 32 V	250 µV	± 0.005 %

Probing Assembly

- Motorized probe card holder adjustable with three independent motor controls to adjust Z, roll and pitch (0.5" total travel range); Z resolution 1.0 µm
- Manual X and Y adjustment (0.5" total travel range)
- Operator and Program control of Up / Down positions. Position saved in job file.

Software

- **VersiTrim 2** system software includes resistor programming using spreadsheet format and laser trim language library
- **Setup tools**
- **System checkers**
- **Windows™ 10 Operating System**

Utility Requirements

- **Power** | 100 / 120 / 230 / 240 VAC ± 10 %
| 50 / 60 Hz, single phase 20 A max
- **Air** | 80 psi @ 5 SCFM (113 l/m) filtered to 5 µm and free of contaminants

Optional Equipment

- **Low-ohm option (5 mΩ – 1 Ω)**
 - Uses standard 4T probe cards
 - **Range** | **Accuracy**

0.005 Ω – 0.1 Ω	± 0.50 %
0.1 Ω – 1 Ω	± 0.25 %
- **Additional matrix cards**
- **Choice of analog cables**
- **PCI IO card**
- **GPIB interface**
- **GPIB instrumentation package**
- **Configurable Light Tower**
- **Illumination options**
- **Service tools and accessories**

Benefits

- Choice of 10 or 15 µm spot size using Green (532 nm) laser technology
- Programmable Z stage with 4 µm resolution for optimum focus control
- Patented beam calibration and vision system hardware for precise laser positioning
- Latest generation diode-pumped laser technology for minimum maintenance, long term stability and high reliability
- Measurement platform supports passive and active trim applications
 - Traceable measurement certification
 - Resistance range from 5 milli-Ohms to 1 Gig Ohm
- VersiTrim™ Software – Graphical user interface for simple job creation and operation