

# レーザートリム装置 LT2200/2210

Thick Film  
Laser Trim System



LT2200/2210

# Circuit & Sensor Trim™

A platform for trim and test of Thick Film circuits, hybrids and components including PCBs and SMT.



Circuit & Sensor Trim™ LT2200

# Specifications

## Optical System

- Beam positioner type | High Speed closed loop galvanometer
- Spot Size<sup>1</sup> | 30µm  
| 20 µm (optional)
- Field size | 100 x 100 mm  
| 65 x 65 mm (20 µm spot)
- Depth of Focus | 300 µm  
| 135 µm (20 µm spot)
- Beam Repeatability | ~ 1 µm
- Resolution | 1.6 µm  
| 1.0 µm (20 µm spot)

<sup>1</sup> Minimum spot size. Maximum = 1.5X minimum.

## Laser System

- Type | Diode pumped Q-switched YAG
- Wavelength | 1064 nm
- Output Power / Pulse Width | 6W / 70 ns  
| 6W / 30 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
- Theta Travel | ±5°
- Z Step Resolution | 4.0 µm
- Theta Resolution | 0.003°
- Lifting / Probe force | 25 lbs (11.3 kg)

## Part Viewing

- Dual CCD camera system for High and Low Mag viewing
- 30 µm IR (nominal factory settings)  
High Mag Viewing Field | 1.6x1.2mm  
Low Mag Viewing Field | 11.0x8.0mm
- 20 µm IR (nominal factory settings)  
High Mag Viewing Field | 1.7x1.2mm  
Low Mag Viewing Field | 8.0x6.0mm
- Vision Processing  
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 (> 160K) | ± 0.02 % ± 0.02 % per MΩ
- Active Guard Measurement  
200 mA guard driver
- DC Voltage Measurement Accuracy  

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

Range	Resolution	Accuracy (%FSR)
± 4V	31 µV	± 0.008%
± 16V	125 µV	± 0.005%
± 32V	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 stored 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 | 100/120/230/240VAC ± 10%  
| 50 / 60 Hz, single phase 20 A max
- Air | 80psi @ 5SCFM (113l/m) filtered  
| to 5µm and free of contaminants

## Optional Equipment

- Low-ohm option (LOIC) (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
- Pattern recognition system
- PCI IO card
- GPIB interface
- GPIB instrumentation package
- Configurable Light Tower
- Service tools and accessories
- Illumination options

## 特長

- レーザー加工装置の分野で25年以上の実績 (GSI社/ESI社/EPP社/L-TRIS社)
- 最新世代のDPLレーザー技術により、最小限のメンテナンス、長期安定性、高信頼性を実現
- 特許取得のビームキャリブレーションとビジョンシステムハードウェアにより高いレーザー位置決め精度を実現
- あらゆるタイプのトリムカット形状が利用可能
- 厚膜・薄膜アプリケーションに対応した構成
- 高精度、最速スループットと歩留まり、そして24時間365日のフル生産を実現する設計
- 測定プラットフォームは、パッシブおよびアクティブトリムアプリケーションをサポート
  - トレーサブルな測定認証
  - 5ミリオームから1ギガオームまでの抵抗値範囲
  - DC電圧測定と電源供給
  - VXIおよびGPIBアーキテクチャによるサードパーティの拡張性
- 一括したハンドリングソリューション提供によるワンストップショッピング

L-TRIS GmbH  
Pionierstraße 7  
82152 Krailling, Germany

P +49 (89) 502 002-0  
www.l-tris.com  
info@l-tris.com



Market Expansion  
Services by  
www.dksh.com



DKSHマーケットエクспанションサービスジャパン株式会社  
テクノロジー事業部門 半導体・電子部品製造装置部  
〒108-8360 東京都港区三田3-4-19  
Phone : 03-5730-7600 FAX : 03-5730-7606  
tec.jp@dksh.com www.dksh.jp