

Marking

PCB Marking

PCB's (Printed Circuit Boards) are used everywhere in electronic technology. Their convenient size, light weight and good strength properties allow for more compact circuits to be constructed. Moreover, modern multi-layer boards offer the opportunity to connect very small elements and create a lot of complicated connections between them. In such a large market, marking PCB's has become very important for identifying specific products and elements. Mainly, there is a need to store alpha numeric information, however bar codes and ID matrix marks are now being used to store much more data.

Laser marking of PCB's is an efficient, reliable process which doesn't involve chemicals or any consumable materials and is a totally contactless process. This makes the method highly cost-effective and attractive for industrial manufacturing solutions. The process relies on changing the surface properties of PCB material under laser radiation and is not only very quick compared to alternative methods but is also easily repeatable regardless of data volume.

Using our redENERGY G4 20W EP-Z fiber laser it is possible to achieve high quality marking without damage to the PCB substrate. By using high speed galvo scanners and electronic control of a temporal pulse shape it is possible to achieve cost effective, high quality results on a wide range of PCB materials. The marked 'SPI Lasers' text (2 mm high) presented in the photo opposite takes approximately 0.5s to produce and a QR code can be produced within ~ 3.5s. This process time can be reduced by using a higher power laser.

Application Parameters

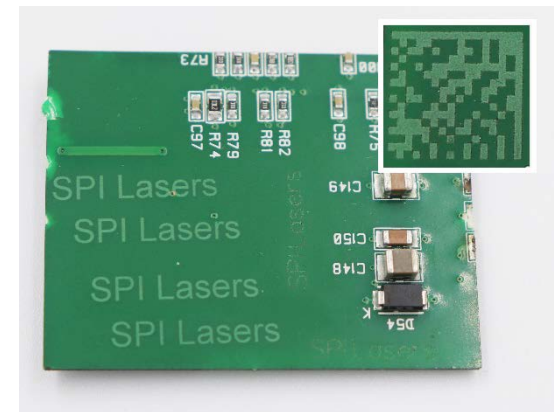
| Type | redENERGY G4 20W EP-Z |
|----------------|---------------------------------|
| Power | 20W |
| M ² | 1.3 |
| Beam Ø | 7.5mm |
| Scanner/Lens | 10mm aperture / 163mm F – theta |
| Energy | W39 1mJ @ 20kHz |

Related Product



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redENERGY®



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