AT A GLANCE
Plug and play PIC characterization setup with Ethernet controlled multisource board and temperature controlled PIC assembly

Features
- 8 current sources, voltage read out enabled
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- 4 laser drivers for setting constant laser output power (MLD203P1)
- 1 temperature controller (MTD415T)
- complete PIC Assembly
- GUI and API available

Applications
- controlling PICs for LiDAR, artificial neural networks, signal processing and more
- enabling fast prototype development
- replacing expensive lab equipment
- overcoming manual electrical probing
- standardizing measurements

Technical Background
Fraunhofer HHI has developed a new PIC measurement setup (PIConnect) with integrated laser drivers, current and voltage sources. The system enables parallel operation of the building blocks and thus convenient evaluation of PICs. Communication to a PC is enabled via Ethernet. For embedding PIConnect into an existing measurement setup, pre-defined python written functions can be used. This API allows setting and getting the measurement parameters.
### Specifications and pinout of the PIConnect Mainboard

<table>
<thead>
<tr>
<th>Controller/Source</th>
<th>Amount</th>
<th>Pin</th>
<th>Specifications</th>
<th>Resolution</th>
<th>Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEC controller</td>
<td>1</td>
<td>extra</td>
<td>5-45°C, ±1.5 A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NTC thermistor</td>
<td>1-2</td>
<td></td>
<td>10 kΩ thermistor supported</td>
<td>0.01 K</td>
<td>Temperature</td>
</tr>
<tr>
<td>Current source</td>
<td>8</td>
<td>3-18</td>
<td>Max. 200 mA @ max. 5 V</td>
<td>50 µA, 1.2 mV</td>
<td>Voltage</td>
</tr>
<tr>
<td>Voltage source</td>
<td>8</td>
<td>19-34</td>
<td>-10…+10 V @ max. ±20 mA</td>
<td>5 mV, 10 µA</td>
<td>Current</td>
</tr>
<tr>
<td>Laser controller</td>
<td>4</td>
<td>35-50</td>
<td>Controllable optical power @ max. 200 mA &amp; max. 3 V</td>
<td>50 µA</td>
<td>Laser current</td>
</tr>
</tbody>
</table>

**PIConnect comprising of Mainboard and PIC Assembly for plug and play PIC characterization.**

**Photograph of the temperature controlled PIC Assembly carrying the wire-bonded PIC.**