ibaPDA-Interface-Raytek
Data Interface for Raytek Temperature Scanners

Manual
Issue 1.2

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The current version is available for download on our web site www.iba-ag.com.

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# Content

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>About this manual</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.1 Target group and previous knowledge</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1.2 Notations</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1.3 Used symbols</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>System requirements</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Raytek interface</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>3.1 General information</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>3.2 System topologies</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>3.3 Configuration and engineering ibaPDA</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>3.3.1 Interface settings</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>3.3.2 Adding a module</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>3.3.3 General module settings</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>3.3.4 Connection settings</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>3.3.5 Signal configuration</td>
<td>12</td>
</tr>
<tr>
<td>4</td>
<td>Diagnostics</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>4.1 License</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>4.2 Connection diagnostics with PING</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>4.3 Connection table</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>Support and contact</td>
<td>16</td>
</tr>
</tbody>
</table>
1 About this manual

This document describes the functions of the software interface \textit{ibaPDA-Interface-Raytek} and how it is used. This documentation is a supplement to the \textit{ibaPDA} manual. Information about all the other characteristics and functions of \textit{ibaPDA} can be found in the \textit{ibaPDA} manual or in the online help.

1.1 Target group and previous knowledge

This documentation is aimed at qualified professionals, who are familiar with handling electrical and electronic modules as well as communication and measurement technology. A person is regarded as professional if he/she is capable of assessing the work assigned to him/her and recognizing possible risks on the basis of his/her specialist training, knowledge and experience and knowledge of the standard regulations.

This documentation in particular addresses persons who are concerned with the configuration, test, commissioning or maintenance of Raytek temperature linescanners. For the handling of \textit{ibaPDA-Interface-Raytek} the following basic knowledge is required and/or useful:

- Windows operating system
- Basic knowledge of \textit{ibaPDA}
- Knowledge of configuration and operation of the relevant measuring devices/measuring systems

1.2 Notations

In this manual, the following notations are used:

<table>
<thead>
<tr>
<th>Action</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu command</td>
<td>Menu Logic diagram</td>
</tr>
<tr>
<td>Calling the menu command</td>
<td>Step 1 – Step 2 – Step 3 – Step x</td>
</tr>
<tr>
<td>Example: Select the menu Logic diagram - Add - New function block.</td>
<td></td>
</tr>
<tr>
<td>Keys</td>
<td>&lt;Key name&gt;</td>
</tr>
<tr>
<td>Example: &lt;Alt&gt;; &lt;F1&gt;</td>
<td></td>
</tr>
<tr>
<td>Press the keys simultaneously</td>
<td>&lt;Key name&gt; + &lt;Key name&gt;</td>
</tr>
<tr>
<td>Example: &lt;Alt&gt; + &lt;Ctrl&gt;</td>
<td></td>
</tr>
<tr>
<td>Buttons</td>
<td>&lt;Key name&gt;</td>
</tr>
<tr>
<td>Example: &lt;OK&gt;; &lt;Cancel&gt;</td>
<td></td>
</tr>
<tr>
<td>File names, paths</td>
<td>&quot;Filename&quot;, &quot;Path&quot;</td>
</tr>
<tr>
<td>Example: &quot;Test.doc&quot;</td>
<td></td>
</tr>
</tbody>
</table>
1.3 Used symbols

If safety instructions or other notes are used in this manual, they mean:

---

**Danger!**

⚠️ The non-observance of this safety information may result in an imminent risk of death or severe injury:

- Observe the specified measures.

---

**Warning!**

⚠️ The non-observance of this safety information may result in a potential risk of death or severe injury!

- Observe the specified measures.

---

**Caution!**

⚠️ The non-observance of this safety information may result in a potential risk of injury or material damage!

- Observe the specified measures

---

**Note**

🔍 A note specifies special requirements or actions to be observed.

---

**Tip**

💡 Tip or example as a helpful note or insider tip to make the work a little bit easier.

---

**Other documentation**

📖 Reference to additional documentation or further reading.
2 System requirements

The following system requirements are necessary to use the Raytek data interface:

- **ibaPDA v6.38 or higher**

- **License for ibaPDA-Interface-Raytek**  
  (supports up to 2 devices, i.e. 2 connections)

- If you need more than 2 connections, you will require additional *one-step-up-Interface-Raytek* licenses for each additional 2 connections. You can have a total of 16 connections.

For further requirements for the computer hardware used and the supported operating systems, please refer to the *ibaPDA* documentation.

**Note**

The 2D top view is particularly suitable for displaying the measured values. This display is possible with live data but only with the trend graph and HD trend graph objects of the *ibaQPanel* software. Therefore it is recommended to purchase additional licenses for *ibaQPanel* and/or ibaHD server.

In the offline analysis with *ibaAnalyzer*, the 2D top view is included as standard.

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Product name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>31.001013</td>
<td>ibaPDA-Interface-Raytek</td>
<td>ibaPDA data interface for connecting up to 2 Raytek temperature linescanners</td>
</tr>
<tr>
<td>31.101013</td>
<td>one-step-up-Interface-Raytek</td>
<td>Extension license for 2 more Raytek connections (maximum of 7 licenses permissible)</td>
</tr>
<tr>
<td>30.670040</td>
<td>ibaQPanel-V7-Add-On</td>
<td>Additional package for an ibaPDA client to display process/quality data in an HMI image</td>
</tr>
</tbody>
</table>

Table 1: Available Raytek interface licenses
3 Raytek interface

3.1 General information

The Raytek interface is suitable for recording measurement data from Raytek MP40, MP50 and MP150 type (Fluke Process Instruments) temperature linescanners. The scanners generate 1024 measurement points per line and they can scan up to 150 lines per second. The scanners automatically send their data to ibaPDA via an Ethernet TCP/IP connection. ibaPDA does not need to request the measuring data. The scanners only support one connection per device.

3.2 System topologies

The connections to the devices can be established via the computer’s standard Ethernet interfaces.

No further software is necessary for operation.

Note

It is recommended carrying out the TCP/IP communication on a separate network segment to exclude a mutual influence by other network components.

3.3 Configuration and engineering ibaPDA

Open the I/O manager, e.g. from the toolbar.

If all system requirements are met (see above), the "Raytek" interface will be displayed in the signal tree.

Fig. 1: Raytek interface in the I/O manager
3.3.1 Interface settings

The interface itself has the following functions and configuration options:

![Raytek interface settings](image)

**Set all values to zero when the connection to a device is lost**

If this option is enabled, all measured values of a Raytek device are set to zero as soon as the connection is lost. If this option is disabled, *ibaPDA* will keep the last valid measured value at the time the connection was lost in its memory.

**Start acquisition even if a device is not accessible**

If this option is enabled, the acquisition will start even if the Raytek device is not accessible. In case of an error, a warning is indicated in the validation dialog. If the system has been started without a connection to the device, *ibaPDA* will periodically try to connect to the device.

**Connection table**

The table shows the cycle times and error counters for the individual connections during data measurement. To reset the calculated times and error counters to zero, simply click on the *Reset counters* button.

3.3.2 Adding a module

For each device you need one module. *ibaPDA* supports one module type:

**Raytek MPx linescanner**

Add a module by clicking below the interface. Select the desired module type and click *OK*.

![Adding a Raytek module](image)
### 3.3.3 General module settings

The modules have the following setting options.

**Fig. 4: General settings of a Raytek module**

#### Basic settings

**Module Type (information only)**
Indicates the type of the current module.

**Locked**
A module can be locked to avoid unintentional or unauthorized changing of the module settings.

**Enabled**
Disabled modules are excluded from signal acquisition.

**Name**
The plain text name should be entered here as the module designation.

**Module No.**
Internal reference number of the module. This number determines the order of the modules in the signal tree of ibaPDA client and ibaAnalyzer.

**Time base**
All signals of the module will be sampled on this time base.

**Use name as prefix**
Puts the module name in front of the signal names.

#### Data

**Profile name**
For each Raytek module, ibaPDA generates a vector signal with the measured line data. The vector signal can be found in the 'Groups' section of the I/O manager.

The name consists of the module name and the module number as standard.

You can determine the name of this vector signal by entering it into the Profile name field. You can use the '\\' character to put the vector signal in a subgroup.
**Note**

The vector signal can be used directly in the 2D top view (color-coded display) of the temperature profile in *ibaQPanel* and/or *ibaAnalyzer*.

---

**Example**

Entering "Test\Raytek_01_Profile" as the profile name will result in a subgroup named "Test" with a vector signal named "Raytek_01_Profile" as a group element.

---

**Profile name setting in the general module settings**

---

**Group and profile vector signal**

---

**3.3.4 Connection settings**

In the *Connection* tab, carry out the relevant setting to establish a connection:

---

Fig. 5: Raytek connection settings
**Address**
Enter the IP address of the Raytek device here.

**Port**
This is the port number that the device uses to communicate with ibaPDA. Default setting: 2727. You can change the port number as required. The port number must be the same on both sides (ibaPDA and Raytek).

**Type**
Here, you can select the scanner type. However, this is usually not necessary when you click on the <Test> button after entering the IP address. If the scanner is connected and switched on, the type is automatically detected by ibaPDA.

**Unit**
Here, you can select between the temperature units °C and °F. ibaPDA then uses the correct factors for scaling.

**<Test> button**
When you click on the <Test> button, ibaPDA attempts to establish a connection to the device and to read out various data, such as:

- Device ID
- Device version
- Current device status
- Temperature range
- Scan frequency
- Number of pixels per line

If the connection is successful, the data is displayed in the dialog window. Part of this information is used to automatically adjust the number of analog signals in the signal table.

---

**Note**
Changes to the parameters, e.g. the number of pixels per line or scan frequency, can only be made on the device using Raytek software.
3.3.5 Signal configuration

The module contains all analog and digital signals that the scanner sends. The complete set of signals of a Raytek device is automatically created for every module.

They are grouped by functionality in the signal table. There is no need to select any other signals. However, you may disable/enable the signals individually if you want.

![Raytek interface ibaPDA-Interface-Raytek](image)

Fig. 6: Raytek "Analog" signal table

![Raytek interface ibaPDA-Interface-Raytek](image)

Fig. 7: Raytek "Digital" signal table
4 Diagnostics

4.1 License

If the "Raytek" interface is not displayed in the signal tree, you can either check in ibaPDA under General - Settings - License info in the I/O manager or in the ibaPDA service status application to see whether your license "Interface Raytek" has been properly recognized. The number of licensed connections is indicated in brackets.

Fig. 8: License display in the ibaPDA I/O manager
4.2 Connection diagnostics with PING

PING is a system command with which you can check if a certain communication partner can be reached in an IP network.

Open a Windows command prompt.

Enter the command “ping” followed by the IP address of the communication partner and press <ENTER>.

With an existing connection you receive several replies.

With no existing connection you receive error messages.
4.3 Connection table

The Raytek interface shows all connections in a table. There is one row per connection to a scanner.

![Raytek connection table](image)

Fig. 11: Raytek connection table

The columns in the table and their meaning:

- **Name**: Name of the module
- **Address**: IP address of the scanner
- **Error counter**: The number of communication errors that occurred
- **Current update time, average, minimum, maximum**:
  - The update time is the time between two subsequent telegrams.

Additional information is provided by the background color of the table rows:

<table>
<thead>
<tr>
<th>Color</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>The connection is OK and the data is read.</td>
</tr>
<tr>
<td>Red</td>
<td>The connection has failed or was interrupted</td>
</tr>
<tr>
<td>Gray</td>
<td>No connection configured.</td>
</tr>
</tbody>
</table>

Table 2: Meaning of background colors of the connection table
5 Support and contact

Support
Phone: +49 911 97282-14
Fax: +49 911 97282-33
Email: support@iba-ag.com

Note
If you require support, indicate the serial number (iba-S/N) of the product or the license number.

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