KERN

KERN & Sohn GmbH

Installation manual
RS-232 Bluetooth adapter

KERN YKI-02

Version 1.1
01/2016
GB

YKI-02-BA-e-1611

GB

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Version 1.1 - 01/2016
Operating instructions
RS-232 Bluetooth adapter

Contents

1 Scope of delivery

Delivery includes:

1. RS-232 Bluetooth adapter
2. Mains adapter (EU/UK/US)
3. USB cable (USB A to USB Mini-B, ~0.5m)
4. DE-9 adapter male-male (gender changer)
5. KERN installation instructions (German/English) in paper format (this document)

If one the articles listed above is missing please contact your supplier immediately.

2 Requirements

For the configuration of the adapter a computer with the following hardware and software is required:

- built-in or external RS-232 interface
  (e.g. USB-RS232 adapter like *KERN AFH 12)*

- Microsoft Windows operating system (Windows XP or higher)

3 Use

The RS232-Bluetooth adapter enables a device with a regular RS-232 interface to wirelessly communicate with modern laptop, tablet, smartphone, printer or any other device with a Bluetooth interface. Possible uses for this interconnectivity are:

- Wireless read-out or control of typical measurement devices with an RS-232 interface like balances from a Bluetooth-enabled device (provided that suitable software for the application is available).

- Wireless connection of a typical measurement device with an RS-232 to a Bluetooth printer.

- Cable replacement: Wireless transmission of serial data between two RS-232 interfaces using two paired RS-232 Bluetooth adapters.

In this installation manual, the configuration of the adapter for the first two applications is described in detail in the following chapters.

English

4 Connecting the adapter

4.1 Connection to the RS-232 device

For most target devices, the Bluetooth adapter can directly plugged into the corresponding D-sub connector of the device. When the target device has a female DE-9 connection, the yellow „gender changer" adapter (included in the delivery) has to be used.

If the target device has a standard pin-out, the „DCE-DTE" switch can be used to switch the adapter between emulating a DTE (data terminal equipement, e.g. a computer) or a DCE (data communication equipment, e.g. a modem). In particular, this swaps the send (TxD) and receive (RxD) lines of the adapter.

If the target device has an unconventional pin-out, the proper interface cable has to be used to connect the device to the adapter.

> **i** When connecting the adapter to a regular computer, the adapter can be plugged in directly and the DCE-DTE switch has to be set to DCE.

4.2 Powering the adapter

The Bluetooth adapter can be powered using one of the following methods:

a) **Using the included plug-in power supply:**

Install the proper country-specific plug into the power supply. Connect the cable with the USB Mini-B connector of the adapter. Then plug the power supply into the mains.

b) **Using an USB connection:**

You can power the adapter from regular USB port by using a USB A to Mini-B cable (included).

c) **Using the RS-232 port's Pin 9:**

The adapter can be powered directly over the RS-232 interface. This requires that the target device provides a voltage in the range of 4V – 13V (max. 90mA) on pin 9 of the RS-232 port.
For the configuration of the adapter, the adapter still can be powered over the USB port.

5   Configuration

If you have ordered this Bluetooth adapter together with a KERN balance, the adapter will be preconfigured for the balance and should be discoverable by your Bluetooth device.

To configure the adapter for your special use case, you need a computer with Microsoft Windows operating system and an RS-232 interface. Additionally, a configuration software available online has to be downloaded and installed.

5.1   Software installation

Before using the configuration software, it has to be downloaded and installed on the computer:

⇒   Visit the download area of the KERN webshop in your browser:
    http://www.kern-sohn.com/manuals

⇒   Enter the article number "YKI-02" into the search box, as shown in the following screenshot:
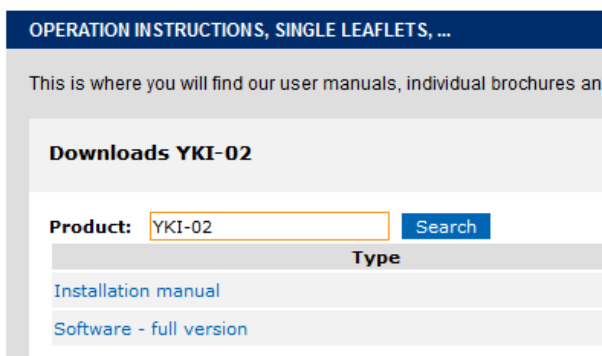
⇒ Download the configuration software onto your computer.

⇒ Start the executable setup file (exe) contained in the ZIP-compressed archive file by double-clicking it. The installation requires administrator rights.

⇒ Confirm the dialogs of the setup with „Next".

⇒ Complete the installation.

After installation, you can start the software via the Windows start menu:
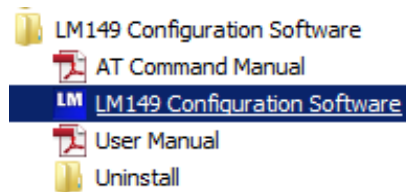
5.2 Basic configuration of the adapter

Regardless of the individual application, the RS-232 communication parameters of the adapter and the target device always have to match.

The **factory settings** of the adapter are:

- Baud Rate: 19200 Bd
- Parity: none
- Flow control: disabled
- Stop Bits: one

Reset to factory defaults:

If you have problems connecting to or configuring the adapter, please try to reset the adapter to the factory defaults using the following steps:

1) Power the adapter using one of the previously described methods
2) Use a pointed object to press the reset button for 3 seconds until all 3 LEDs flash 3 times.

## 5.2.1   Connecting and reading the device settings

At start of the configuration software, the main settings dialog appears:
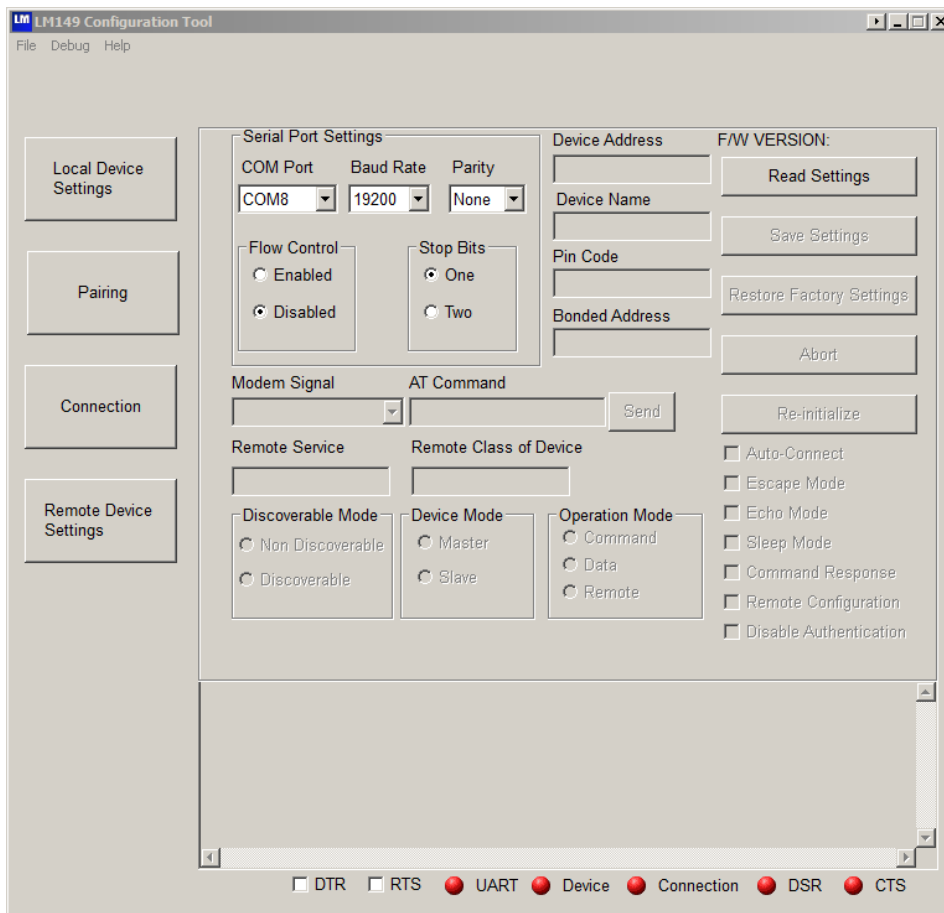
Before any setting can be changed, the current settings have to be read from the adapter using the following steps:

⇒   Connect the adapter to the RS-232 port of your computer.

⇒   Set the DCE-DTE switch to „DCE".

⇒   Start the configuration software.

$\Rightarrow$ Make sure that the input fields „COM Port", „Baudrate", „Parity", „Flow Control" and „Stop Bits" correlate with the actual settings of the adapter. The software starts with the factory settings. Therefore, the settings usually don't have to be changed when setting the adapter up for the first time.

$\Rightarrow$ Push the button „Read Settings":
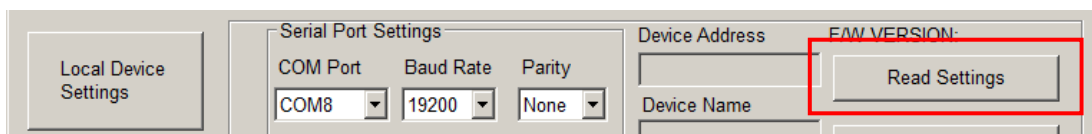
$\Rightarrow$ When successful, the output console shows the following messages:
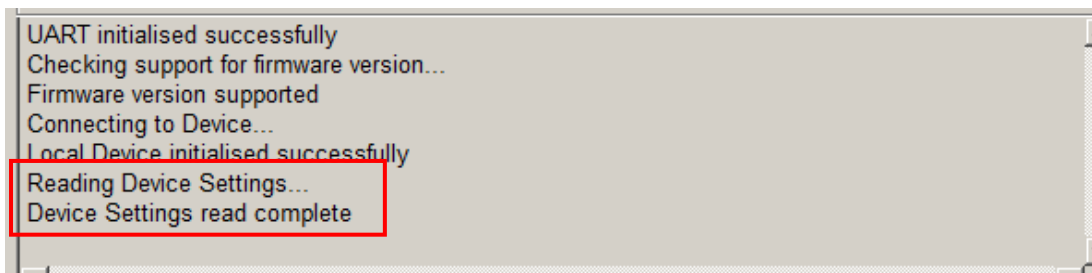
In case of errors, make sure that the DCE-DTE switch is set to DCE and the communication parameters match with the actual adapter settings. If no connection can be established, please reset the adapter to the factory settings (see above).

5.2.2 Changing the RS-232 communication parameters

The RS-232 communication parameters of the adapter have to match the ones of the target device. The following steps explain how the parameters of the adapter can be changed accordingly:

|	
i	The default communication parameters of KERN balances differ from the factory presets of the Bluetooth adapter. The default settings for most KERN balances are: 9600 Bd, 8 data bits, no parity, 1 stop bit Please consider the balance usage manual for the actual factory settings.

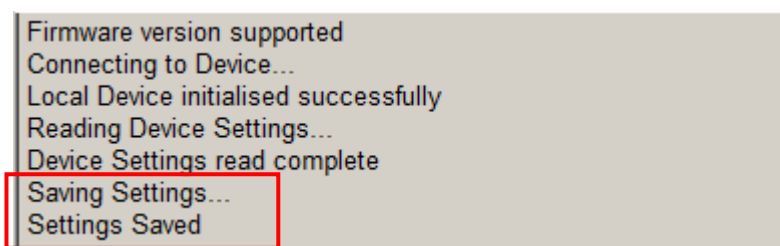⇒ Read the current settings of the adapter (see above).

⇒ Change the communication parameters to match the ones of the target device:
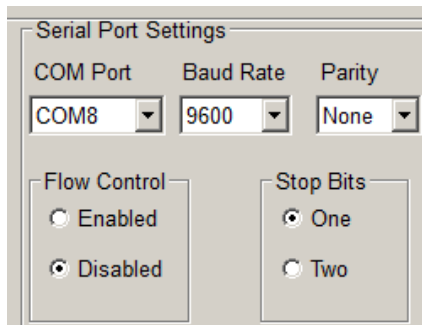
⇒ Push the button „Save Settings" to apply the new settings.
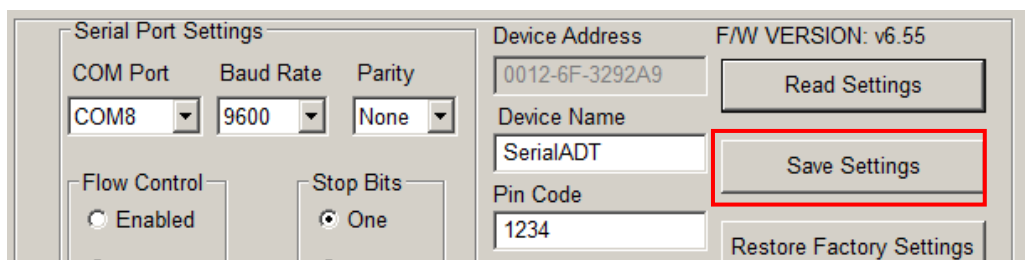
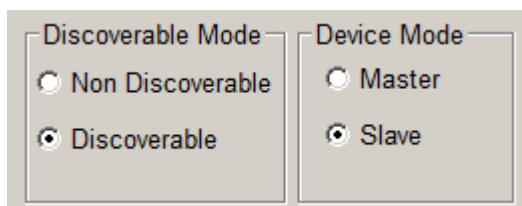⇒ Check the output console of the configuration software:

5.3 Using the adapter with laptops/tablets/smartphones

To use the adapter to access the target device from other Bluetooth-enabled devices (for exmaple, accessing a balance from a tablet), the adapter has to be configured as „slave". This is the factory preset (with the device name "SerialADT" and pin code "1234".
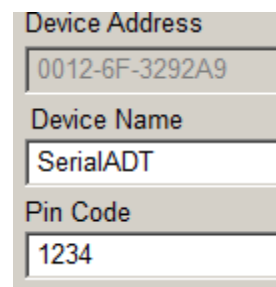
To change the device mode, name and pin code, proceed with the following steps:

⇒ Read the current settings of the adapter (see above).

⇒ Make sure the adapter's communication parameters match the ones of the target device (see above)

⇒ Make sure the „Device Mode" is set to „Slave" and the „Discoverable Mode" is set to „Discoverable":

⇒ Enter the desired device name and pin code. Bluetooth service discoveries will list the adapter by this name. To pair the host device with the Bluetooth adapter, the pin code has to be known and entered correctly.

⇒ The changes will be applied by pressing „Save Settings":
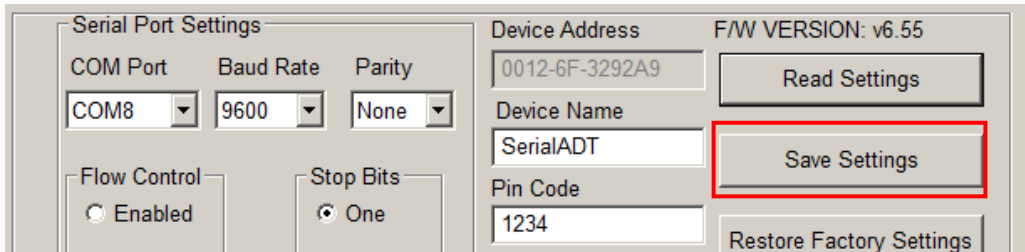
⇒ Connect the adapter with the target device as described above

⇒ You now can pair the target device with your laptop/tablet/smartphone (using the Bluetooth service discovery).
Use a software supporting the Bluetooth serial port profile (SPP) to read-out and control the target device wirelessly.
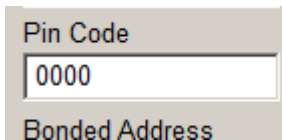
5.4 Using the adapter with printers or other passive devices

The master mode allows to use the adapter with a passive Bluetooth device like printers. In this case, the connection has to be initiated ("pairing") by the adapter, using the device name and pin code of the target device / printer. The following explain how to set up a connection between a scale and a Bluetooth printer KERN YKC-01:

⇒ Read the current settings of the adapter (see above).

⇒ Make sure the adapter's communication parameters match the ones of the target device (see above)
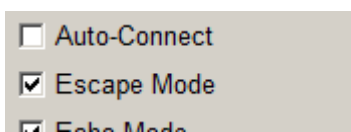
⇒ Make sure the „Device Mode" is set to „Master":
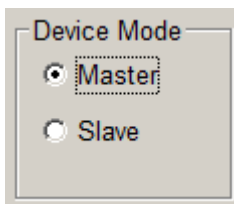
⇒ Enter the pin code of the target device
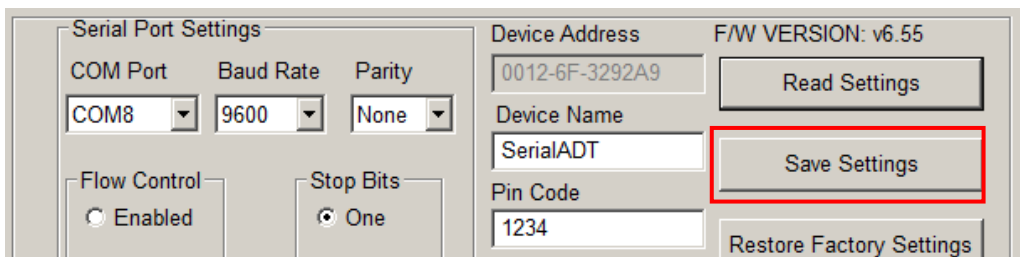(for the printer example it has to be set to „0000"):

⇒ Uncheck the checkbox „Auto-Connect":

⇒ The changes will be applied by pressing „Save Settings":

⇒ Switch to the dialog „Connection":

⇒ Push the button „Inquire Devices" to start searching for Bluetooth devices:

| Inquire Devices | Cancel Inquiry |
| Connect | Disconnect |

Select/Selected Device
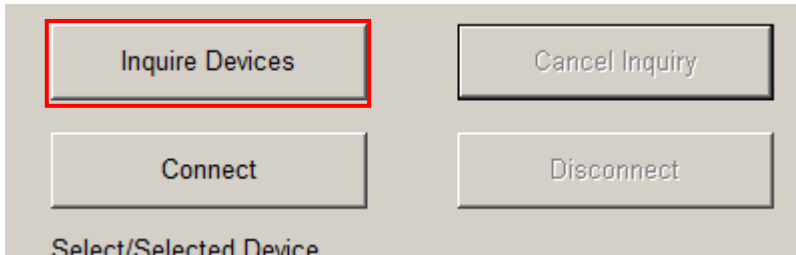
Bluetooth devices in the vicinity will be listed in the results list:

Inquiry Results

Inquiry Results:
1 DPP-250   0001-90-DCE3D7
2 Emporia F210D   8429-14-106359
Inquiry End. 2 Device(s) Found
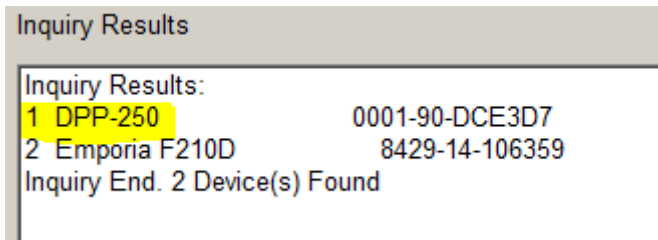
You may cancel the inquiry as soon as the desired target device (in this case the DPP-250) appears in the results list.

⇒ Select the target device in the list and press the button "Connect":

| Inquire Devices | Cancel Inquiry |
| Connect | Disconnect |

Select/Selected Device
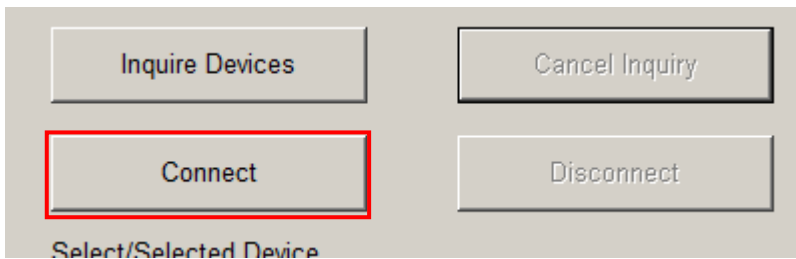
⇒ As soon as the connection is established, the following message shows. **The blue status LED on the adapter has to light continuously.**
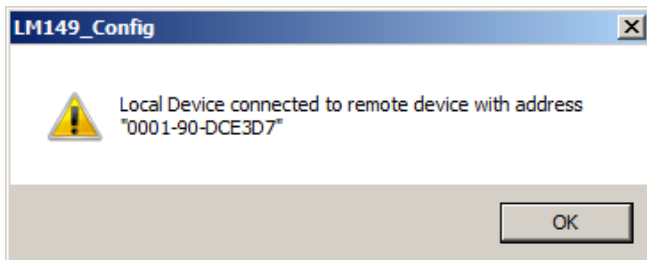

⇒ Disconnect the adapter from the computer and connect it to the target device (e.g. a balance). Remember to adjust the setting of the DCE-DTE switch as needed.

The measurement device is now wirelessly connected to the printer.
When the devices become disconnected again (for example, due to power loss), the connection has to be established again.
The adapter can also be set-up to automatically connect to the printer again. Follow the next steps (while the adapter is connected to the computer) to set-up the automatic connection:

⇒ After inquiry, the adapter's Bluetooth address is displayed in the result list of the "Connection" dialog.
Copy the Bluetooth adress from this field to the field "Bonded Address" on the dialog "Local Device Settings":
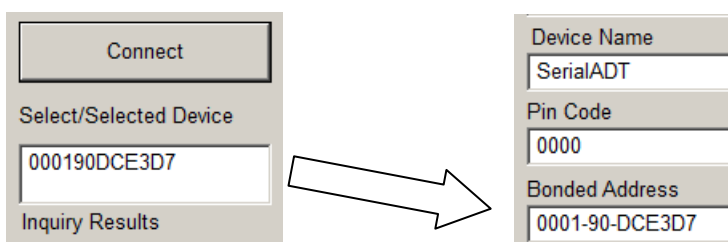
⇒ Enable the checkbox „Auto-Connect" (see above).

⇒ The changes will be applied by pressing „Save Settings":

With these settings, the adapter will regularly try to reestablish the connection to the device according to the "Bonded Address".

6 Instant help

Symptom	Remedy
The "Power" LED fails to illuminate.	Check whether the adapter is connected to the power supply and to the mains correctly.
A fault occurs during configuration.	Try to reset the adapter to the factory defaults and reconfigure the adapter.
Incorrect characters are produced. The measuring device does not respond to commands.	Check to see if the previous points apply and whether the RS-232 settings of the adapter match the settings of the measurement device.

If you are unable to remedy the error, please contact your supplier.

English