

# BlueEva+P25/G2/IEEE

## Evaluation Kit User Guide

Release r03

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## 1 Introduction

This documentation describes the usage of the Stollmann Bluetooth evaluation board BlueEva+P25/G2/IEEE V04. This document is valid for the following products:

- BlueMod+P25/G2/IEEE/404
- BlueMod+P25/G2/IEEE/407
- BlueMod+P25/G2/IEEE/415
- BlueMod+P25/G2/IEEE/417

## 2 Package Contents

The BlueEva+P25/G2/IEEE package contains the following components:

- 1 BlueEva+P25/G2/IEEE board (populated with a BlueMod+P25/G2 Bluetooth module with IEEE agent specific firmware)
- 1 BlueHDP+USB dongle (populated with a BlueMod+P25/G2 Bluetooth module with HDP firmware)
- 1 power supply, 5 VDC
- 1 USB cable
- 5 additional jumpers
- BlueEva+P25/G2/IEEE CD-ROM

### 3 BlueEva+P25/G2/IEEE CD-ROM Contents

The BlueEva+P25/G2/IEEE CD-ROM contains all necessary software and documentation to test and understand the Stollmann E+V GmbH IEEE 11073 agents modules.

#### 3.1 The folder “Documentation”

The folder contains the necessary documentation for the hardware and software.

\\Documentation\\BlueEva+P25\_G2\_IEEE\_User\_Guide\_rxx.pdf – You are reading this file.

\\Documentation\\BlueMod+P2x\_G2\_HW\_reference\_rxx.pdf – Hardware reference guide for the BlueMod+P2x\_G2 module family.

\\Documentation\\BlueMod+P2x\_G2\_IEEE\_Command\_Reference\_rxx.pdf – Command reference for the BlueMod+P2x\_G2 based IEEE modules.

\\Documentation\\BlueHDP-USB\_User\_Guide\_rxx.pdf – User guide for the BlueHDP+USB device.

#### 3.2 The folder “Firmware”

Dependent on the type of EvaKit this folder contains the installable firmware for backup purpose.

\\Firmware\\10404\\P2xG2\_IEEE\_404\_x\_xxx\_Setup.exe – Pulse oximeter firmware updater for the BlueMod+P2x\_G2 module.

\\Firmware\\10407\\P2xG2\_IEEE\_407\_x\_xxx\_Setup.exe – Blood pressure monitor firmware updater for the BlueMod+P2x\_G2 module.

\\Firmware\\10415\\P2xG2\_IEEE\_415\_x\_xxx\_Setup.exe – Weighing scale firmware updater for the BlueMod+P2x\_G2 module.

\\Firmware\\10417\\P2xG2\_IEEE\_417\_x\_xxx\_Setup.exe – Glucose meter firmware updater for the BlueMod+P2x\_G2 module.

\\Firmware\\P25G2\_HDP\\ P25G2\_HDP\_x\_xxx\_Setup.exe – HDP firmware updater for the BlueMod+P2x\_G2 module to use with the HealthLink manager.

#### 3.3 The folder “IEEE\_Agent“

The folder contains the Stollmann IEEE Agent test application.

\\IEEE\_Agent\\IEEEAPP.exe – IEEE 11073 Agent test application.

\\IEEE\_Agent\\rs232api.dll – IEEE 11073 Agent test application utility dll.

### 3.4 The folder “Third\_Party\_Tools”

The folder contains third party software for use with the Evaluation kit.

\Third\_Party\_Tools\HealthLink\ - contains the HealthLink IEEE manager from LNI.

\Third\_Party\_Tools\USB\_Driver\ - contains the serial USB drivers:

- FTDI (for the BlueEva+P25/G2/IEEE board).
- CP210x / SLabs (for the BlueHDP+USB dongle)

## 4 Getting started

### 4.1 Hardware configuration

To take the BlueEva+P25/G2/IEEE into operation, connect them as follows.



BlueEva+P25/G2/IEEE with components and accessories as delivered

The USB connection is used for UART communication to a PC over a virtual comport. This lets you use the IEEE 11073 Test Application to evaluate the BlueMod+P2x/G2/IEEE module.

As an alternative to the USB power supply interface, the 5 VDC main adapter can be used for power supply (set jumper J4 to PWR).

### 4.2 Hardware installation

Please note that the HDP/IEEE firmware does not support any Serial Port Profile specific AT commands. Please use the IEEE 11073 Agent Test Application to check the correct installation.

#### 4.2.1 Connecting the USB cable

Connect the BlueEva+P25/G2/IEEE to a free PC USB port. If your operation system doesn't have a driver installed you will be asked for a driver. You can use the driver from the CD (\Third\_Party\_Tools\USB\_Driver\)) or download a driver at <http://www.ftdichip.com/Drivers/VCP.htm>.

#### 4.2.2 Check functionality of BlueEva+P25/G2/IEEE

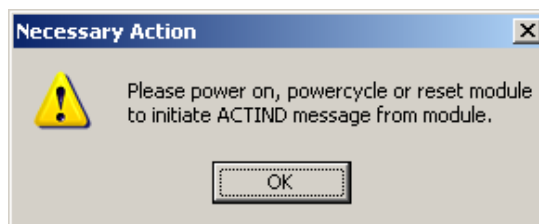
If the BlueEva+P25/G2/IEEE is correctly connected to the PC, start the IEEE Agent Test Application.

##### 4.2.2.1 Installation IEEE Agent Test Application

The IEEE Agent Test Application (included on the BlueEva+P25/G2/IEEE CD in the folder "IEEE\_Agent") includes two files "IEEEAPP.exe" and "rs232api.dll" which can be copied to a user defined directory onto the local hard disk or started from the CD.

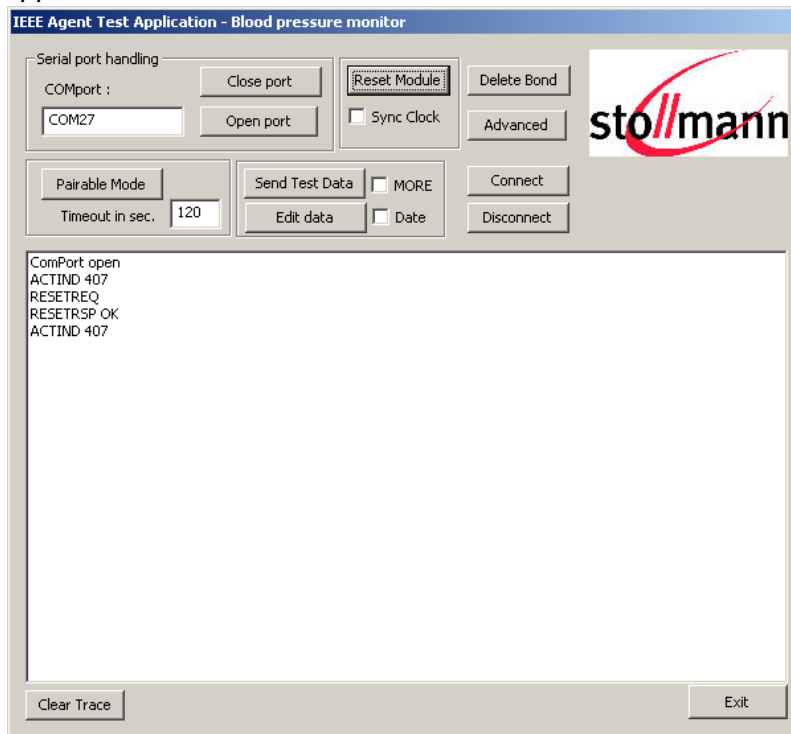
##### 4.2.2.2 Starting IEEE Agent Test Application

Start "IEEEAPP.exe" and enter the serial COM port, where the BlueEva+P25/G2/IEEE, is connected to into the "COMport" edit box and click on "Open Port" Button. The List box below the buttons will show status messages and the serial communication. The application will ask you to reset the device.



Information message from the IEEE Agent Test Application

After the manual reset of the BlueEva+P25/G2/IEEE module, power cycle or using the button “**Reset Module**” in the application, the IEEE Agent Test Application will detect the used IEEE 11073 specialization in “ACTIND” message and inform the user in the application header line.



Main window of the IEEE Agent Test Application

Now module and application are ready for evaluation

For a more detailed description of these commands used for this purpose, please consult our *BT\_IEEE\_Modul\_Command\_Reference.pdf*.

## 5 Using IEEE Agent Test Application

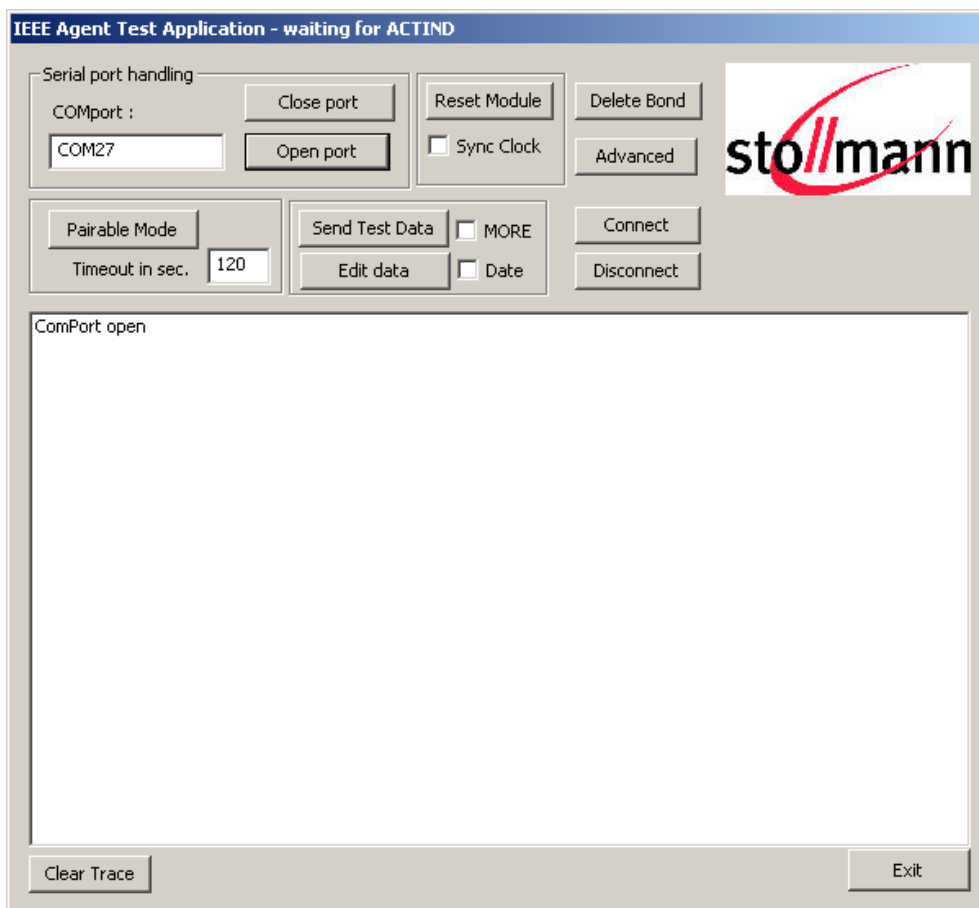
### 5.1 Installation IEEE Agent Test Application

The IEEE Agent Test Application (included on the BlueEva+P25/G2/IEEE CD in the folder “IEEE\_Agent”) includes two files “IEEEAPP.exe” and “rs232api.dll” which can be copied to a user defined directory onto the local hard disk or started from the CD.

### 5.2 Starting IEEE Agent Test Application

Start IEEE Agent Test Application and enter the serial COM port which is connected to the BlueEva+P25/G2/IEEE.

As shipped by the factory, the BlueEva+P25/G2/IEEE works with a 3-wire interface (RX/TX/GND) at 2400 bps, using the 8N1 data format (8 data bits, no parity, 1 stop bit). The IEEE Agent Test Application is set fixed to this required baud rate.



IEEE Agent Test Application

### 5.2.1 IEEE Agent Test Application IEEE data structure

The IEEE Agent Test Application supports different IEEE 11073 specialization data:

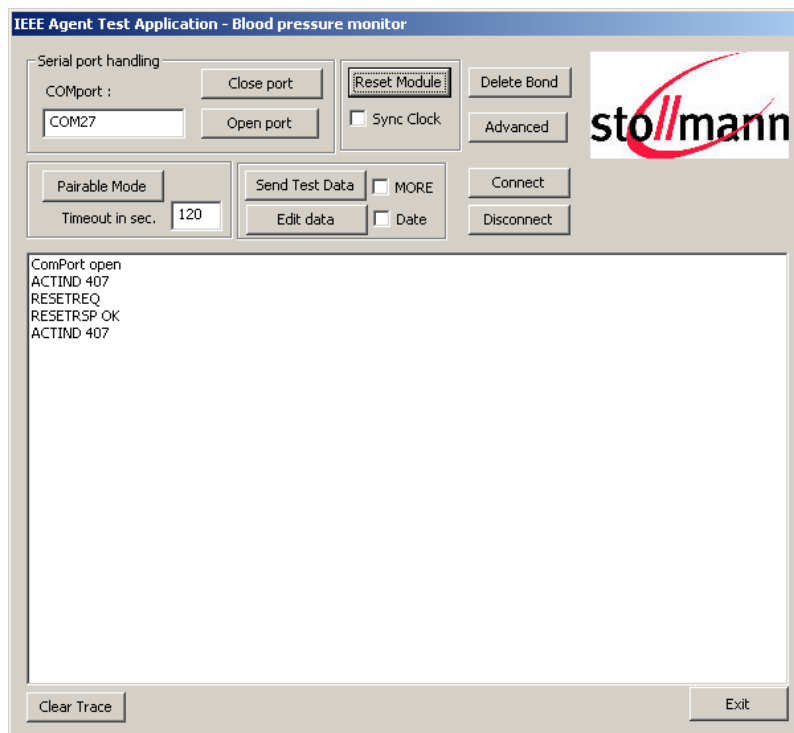
- IEEE 11073-10404 (Pulse Oximeter)
- IEEE 11073-10407 (Blood Pressure)
- IEEE 11073-10415 (Weighing Scale)
- IEEE 11073-10417 (Glucose Meter)

To automatically detect the needed IEEE 11073 specialization the user needs to reset the module after opening the COM port **“Open Port”**. The IEEE Agent Test Application will read the **“ACTIND”** message include the specialization.



Information message from the IEEE Agent Test Application

After the manual reset of the BlueEva+P25/G2/IEEE module, power cycle or using the reset button **“Reset Module”** in the application the IEEE Agent Test Application will inform the used IEEE 11073 specialization in the application header line.



Main window of the IEEE Agent Test Application

### 5.2.2 Visibility of the BlueMod+P25/G2/IEEE module in the IEEE Agent Test Application

The IEEE specific firmware of the BlueMod+P25/G2/IEEE module is configured to no Bluetooth visibility as default. The ability to accept connections and its reaction to paging and/or inquiry requests is also disabled.

To enable the Bluetooth visibility and its ability to accept connections and its reaction to paging and/or inquiry requests, the IEEE Agent Test Application needs to press the button "**Pairable Mode**" include a timeout to enable the visibility for the defined time according the value "**timeout in sec.**". Within this time the BlueMod+P25/G2/IEEE module is visible and reports the followed described device name and service name according the IEEE 11073 specialization.

The default firmware specific configuration parameters are:

- IEEE 11073-10404 (Pulse Oximeter)  
Bluetooth device name: "BlueMod+IEEE/404"  
Bluetooth service name: "Pulse Oximeter"
- IEEE 11073-10407 (Blood Pressure)  
Bluetooth device name: "BlueMod+IEEE/407"  
Bluetooth service name: "Blood Pressure"
- IEEE 11073-10415 (Weighing Scale)  
Bluetooth device name: "BlueMod+IEEE/415"  
Bluetooth service name: "Weighing Scale"
- IEEE 11073-10417 (Glucose Meter)  
Bluetooth device name: "BlueMod+IEEE/417"  
Bluetooth service name: "Glucose Meter"

### 5.2.3 Bonding procedure from the BlueMod+P25/G2/IEEE module in the IEEE Agent Test Application

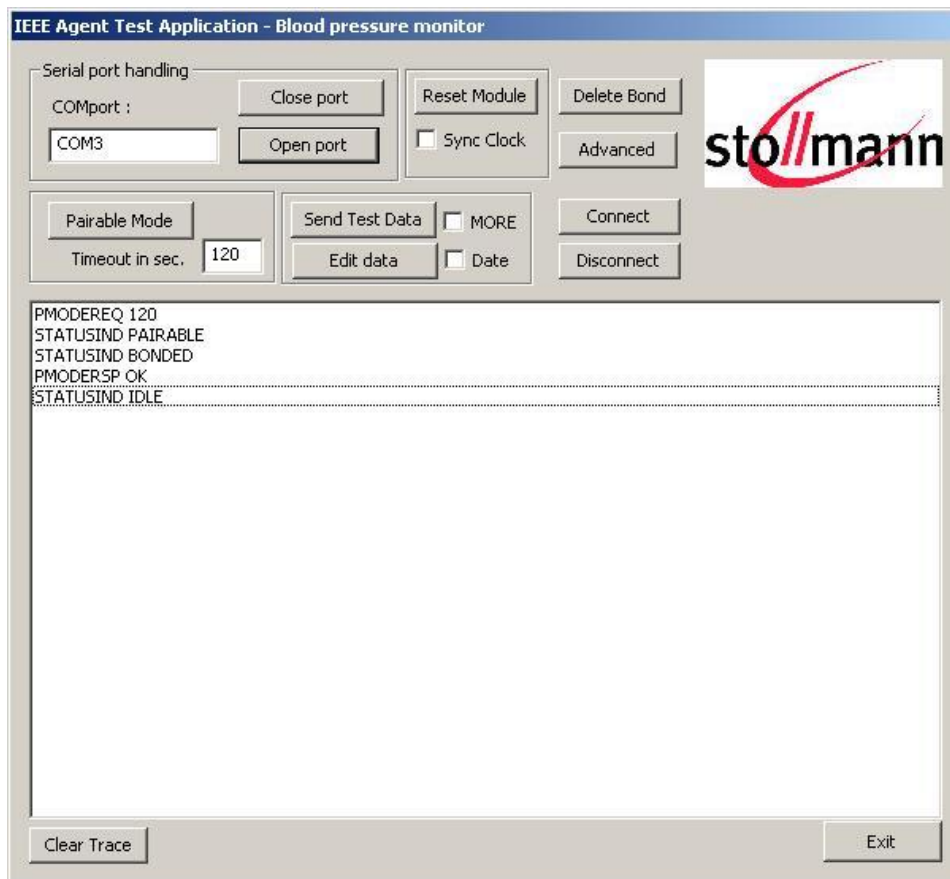
The BlueMod+P25/G2/IEEE module is able to establish a Bluetooth connection only to a bonded Bluetooth device which must be initiated from the destination side.

After the successful bonding the BlueMod+P25/G2/IEEE module will save the bonding information (Bluetooth address, Link key) in the local data base.

To initiate the bonding procedure the BlueMod+P25/G2/IEEE module must be visible ("PMODEREQ <timeout>") for other devices. See also:

[Visibility of the BlueMod+P25/G2/IEEE module in the IEEE Agent Test Application](#)

During the visibility of the BlueMod+P25/G2/IEEE module the destination needs to start the Bluetooth discovery to look for the IEEE module. Finally the destination needs to connect to initiate the bonding procedure.



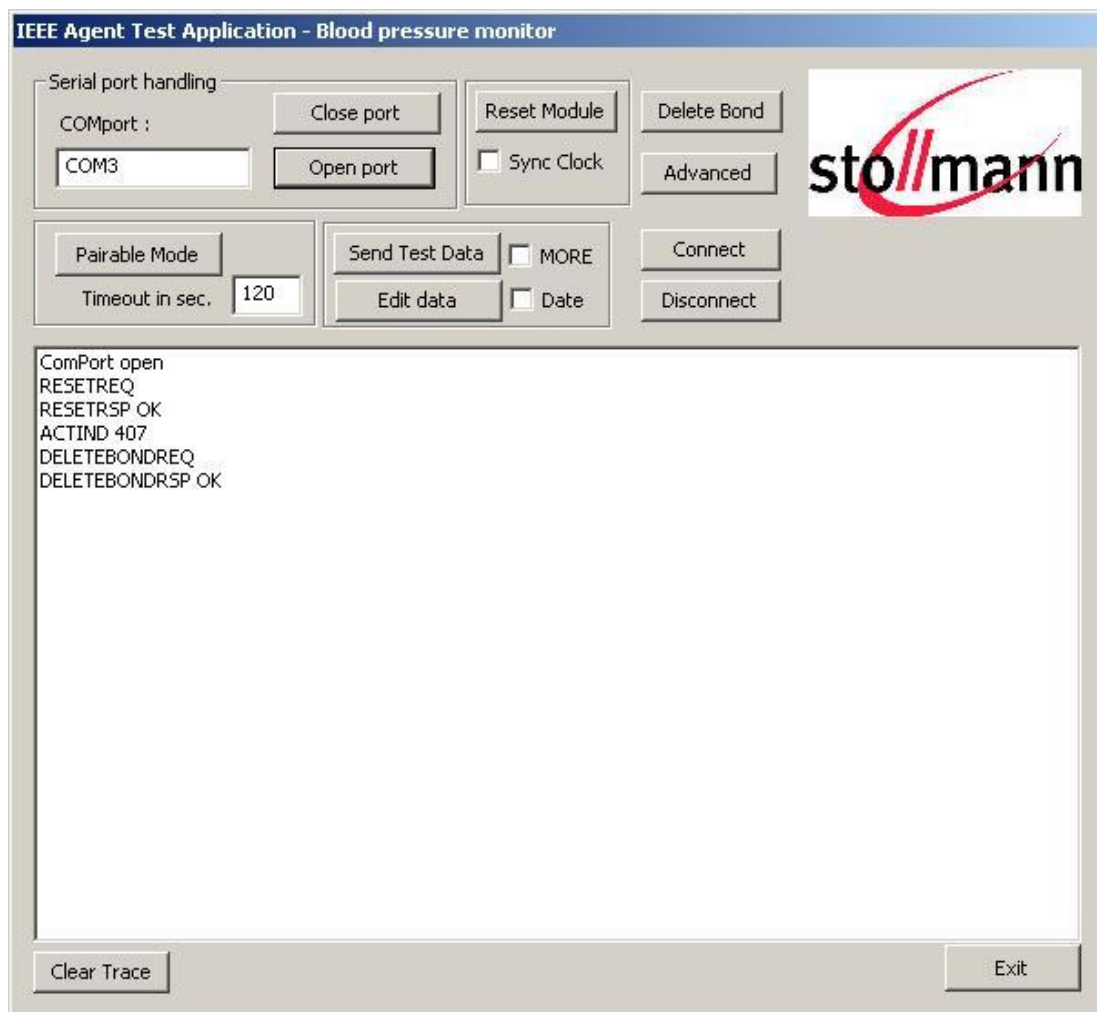
Successful bonding procedure in the IEEE Agent Test Application

#### 5.2.4 Delete Bonding procedure in the BlueMod+P25/G2/IEEE module

The IEEE Agent Test Application includes a button to delete the stored bonding entry in the BlueMod+P25/G2/IEEE module.

This button is labeled “**Delete Bond**” and will send a configuration command to remove the local stored bonding entry in the BlueMod+P25/G2/IEEE module.

When no bonding entry is stored in the local NV RAM the outgoing call will fail.

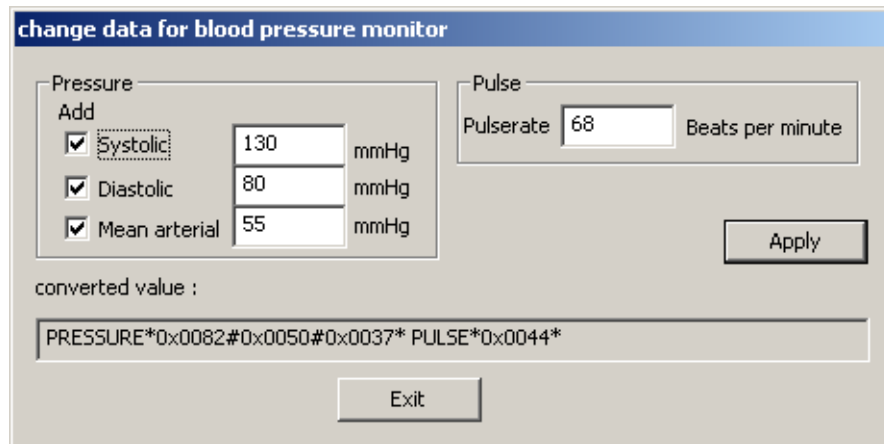


Delete Bonding procedure in the IEEE Agent Test Application

### 5.2.5 IEEE 11073 data filed in the IEEE Agent Test Application

The IEEE Agent Test Application includes a separate window called “Edit data” to modify the IEEE 11073 specific data. These data will be send out when the “Send Test Data” button is pressed.

- IEEE 11073-10407 (Blood Pressure)



change data for blood pressure monitor

Pressure

Add

Systolic 130 mmHg

Diastolic 80 mmHg

Mean arterial 55 mmHg

Pulse

Pulserate 68 Beats per minute

Apply

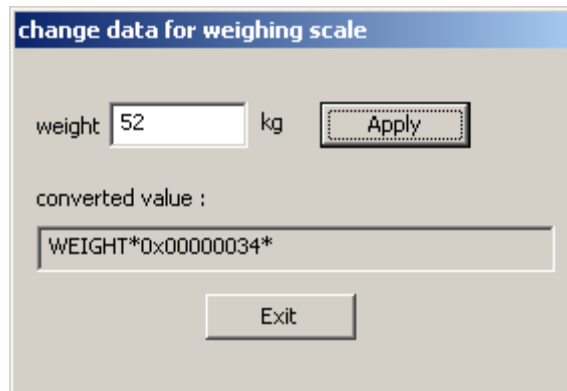
converted value :

PRESSURE\*0x0082#0x0050#0x0037\* PULSE\*0x0044\*

Exit

IEEE 11073-10407 data in the IEEE Agent Test Application

- IEEE 11073-10415 (Weighing Scale)



change data for weighing scale

weight 52 kg Apply

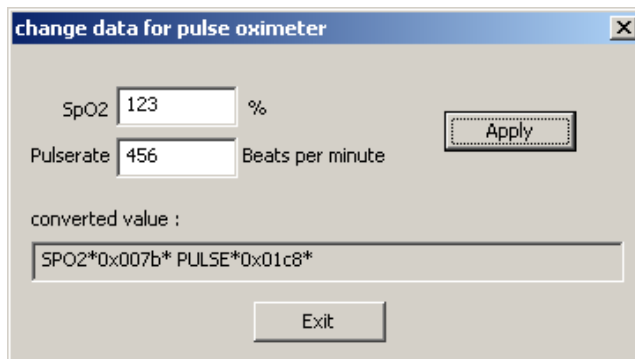
converted value :

WEIGHT\*0x00000034\*

Exit

IEEE 11073-10415 data in the IEEE Agent Test Application

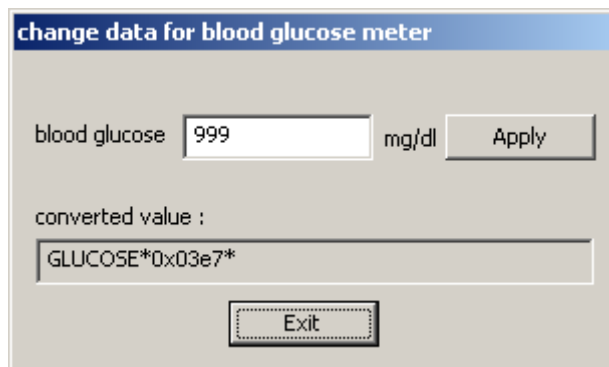
- IEEE 11073-10404 (Pulse Oximeter)



The screenshot shows a dialog box titled "change data for pulse oximeter". It contains two input fields: "SpO2" with the value "123" and a "%" unit, and "Pulserate" with the value "456" and "Beats per minute" unit. There is an "Apply" button to the right of the input fields. Below the input fields, it says "converted value :" followed by a text box containing the hexadecimal string "SPO2\*0x007b\* PULSE\*0x01c8\*". At the bottom, there is an "Exit" button.

IEEE 11073-10404 data in the IEEE Agent Test Application

- IEEE 11073-10417 (Glucose Meter)

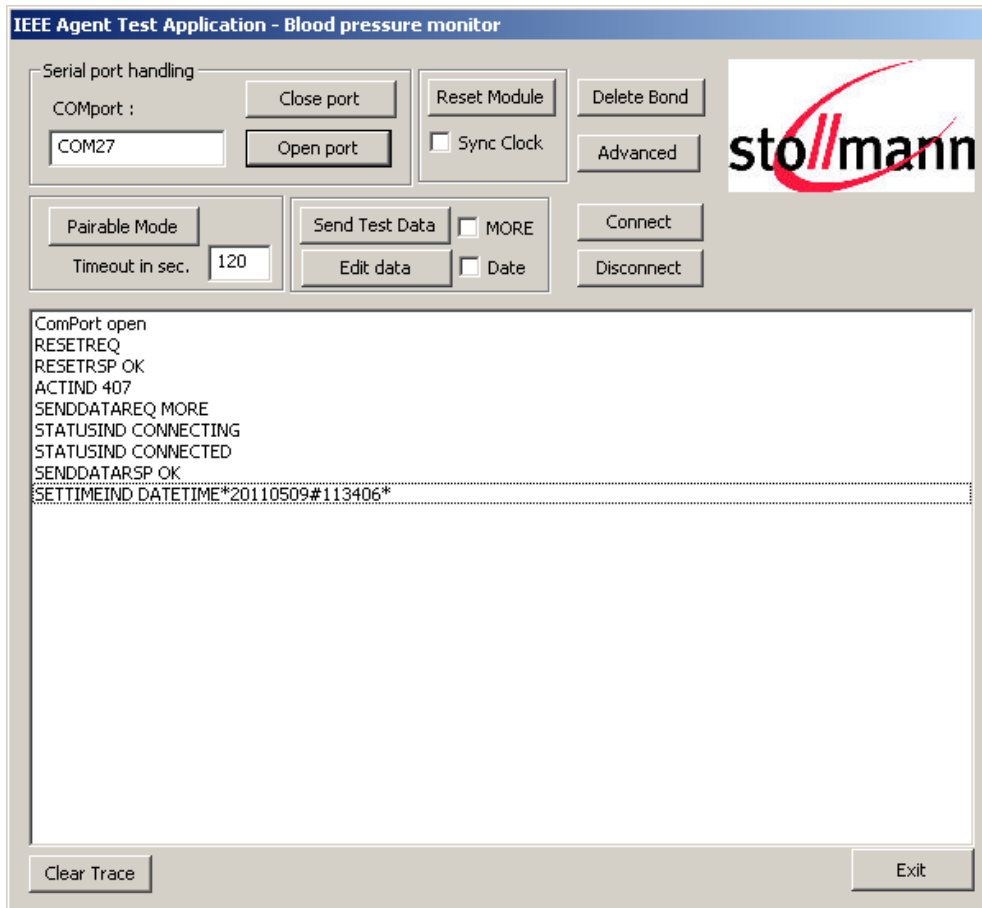


The screenshot shows a dialog box titled "change data for blood glucose meter". It contains one input field: "blood glucose" with the value "999" and "mg/dl" unit. There is an "Apply" button to the right of the input field. Below the input field, it says "converted value :" followed by a text box containing the hexadecimal string "GLUCOSE\*0x03e7\*". At the bottom, there is an "Exit" button.

IEEE 11073-10417 data in the IEEE Agent Test Application

### 5.2.6 Establish connection from the IEEE Agent Test Application to an IEEE Manager Application and disconnect

The IEEE Agent Test Application includes a button called “**Connect**” to automatically establish a connection to the local stored bonded device without sending IEEE data.



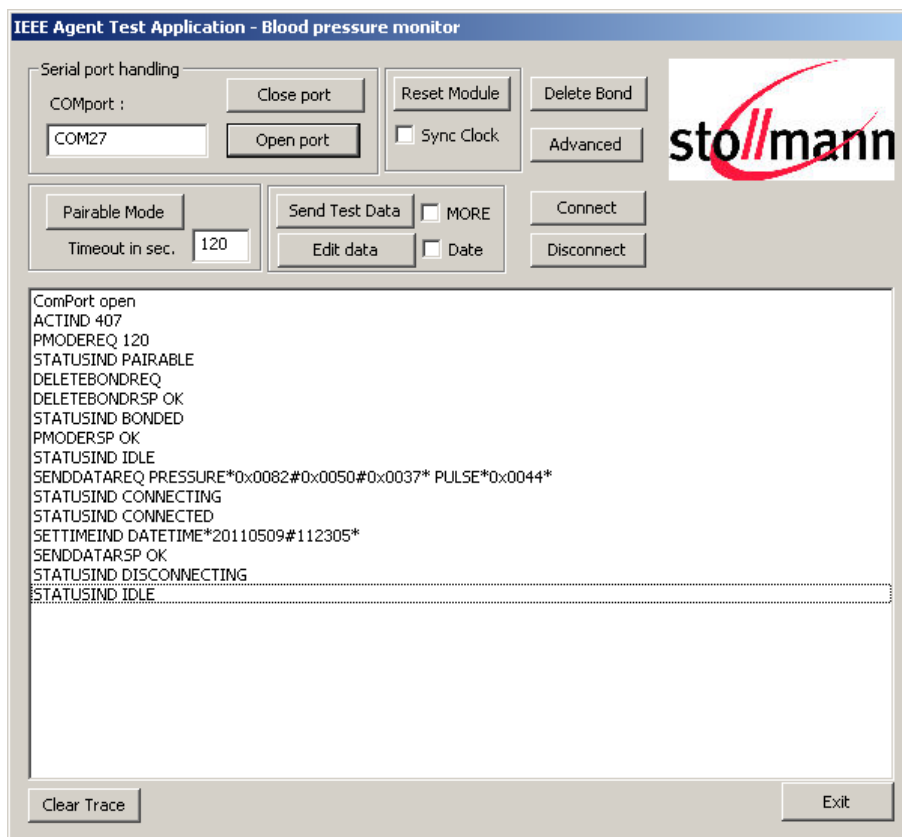
Connect to bonded device in the IEEE Agent Test Application

When activating the “**MORE**” icon in the data field area the connection will stay active after sending IEEE 11073 test data.

To disconnect directly after data transmission the “**MORE**” icon needs to be disabled. To disconnect an established connection press the “**Disconnect**” button or send data without the “**MORE**” icon enabled.

### 5.2.7 Transfer IEEE 11073 data from the IEEE Agent Test Application to an IEEE Manager Application

The IEEE Agent Test Application includes a button called “**Send Test Data**” to send out the configured or predefined IEEE 11073 test data to the connected IEEE Manager application. The field of the IEEE 11073 data is described in: [IEEE 11073 data filed in the IEEE Agent Test Application](#)



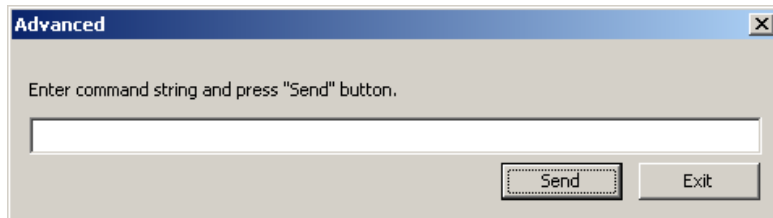
#### IEEE data transmission in the IEEE Agent Test Application

When the button “**Send Test Data**” is pressed the IEEE Agent Test Application will establish the data connection to the bonded device, send out the configured data and automatically disconnect.

When activating the “**Date**” icon in the data field area data filed includes the current date in addition to the sending IEEE 11073 test data .

### 5.2.8 Additional Information about the IEEE Agent Test Application

- The “**Advanced**” button allows to enter any configuration command which will be send to the serial interface of the BlueEva+P25/G2/IEEE module.



IEEE data transmission in the IEEE Agent Test Application

- The “**Sync Clock**” icon in the “Reset Module” area will automatically set the local system time
- To close the serial port of the connected BlueEva+P25/G2/IEEE module the user can use the button “**Close Port**”.
- To close the IEEE Agent Test Application the user has to press the “**Exit**” button.

## 6 Using IEEE Manager Application “HealthLink Manager”

### 6.1 Hardware installation

Please connect the BlueHDP+USB to the required PC where the IEEE Manager Application “HealthLink Manager” will be installed.

Install the BlueHDP+USB serial driver (CP210x / SLabs).

Please also refer the BlueHDP-USB\_User\_Guide\_rxx.pdf onto the CD in the folder “Documentation”.

### 6.2 Install IEEE Manager Application “HealthLink Manager”

To install the IEEE Manager Application “HealthLink” as destination for the IEEE Agent you have to start the installer:

- *HealthLink-1.00.11052501-windows-installer.exe*

and follow the instructions during the installation procedure.

### 6.3 Activate IEEE Manager Application “HealthLink Manager”

To use the IEEE Manager Application “HealthLink” you have to enter the required activation key which is included in the file on to CD:

\\Third\_Party\_Tools\HealthLink\“STOLLMANN\_ActivationKey.txt”



After using the right activation key the HealthLink Application has been activated with a demo license. HealthLink will expire in 180 days. HealthLink will no longer work after this expiration.

## 6.4 Configure IEEE Manager Application “HealthLink Manager”

### 6.4.1 Create user account to allocate receiving IEEE data

When stating the “HealthLink” Manager Application the first time it is required to create a new user account.

1. Enter the fields **First Name**, **Last Name**, **Date of birth** to create a user account and press “Next” to continue this process.

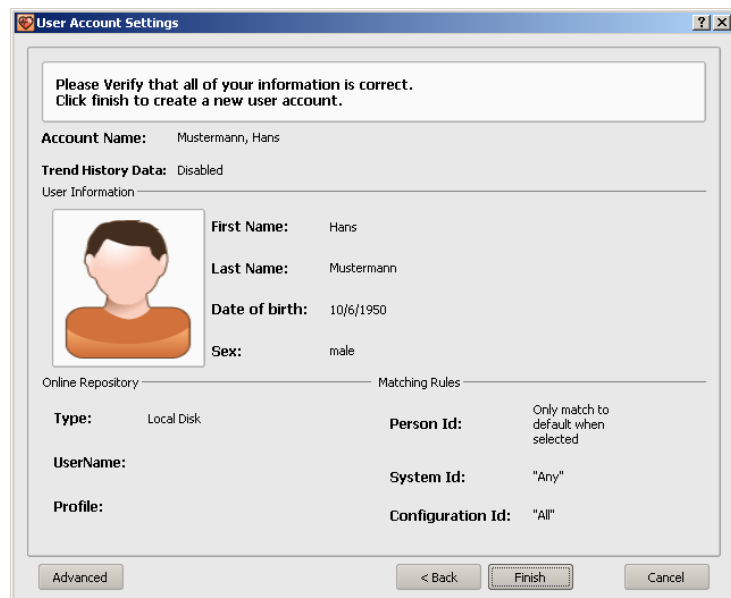


The dialog box titled "User Account Settings" contains the following fields and options:

- Account Name: Mustermann, Hans (with a checkbox for "Use combination of First and Last name")
- First Name: Hans
- Last Name: Mustermann
- Date of birth: 10/6/1950 (with an example: 12/25/1980)
- Sex:  Male,  Female,  I'd rather not say
- Would you like to collect History Trend Data?  Yes,  No

Buttons at the bottom: Advanced, < Back, Next >, Cancel.

2. Select “Save to disk” and then press “Next” to continue the process.



The dialog box titled "User Account Settings" shows the verification screen with the following information:

- Account Name: Mustermann, Hans
- Trend History Data: Disabled
- User Information:
  - First Name: Hans
  - Last Name: Mustermann
  - Date of birth: 10/6/1950
  - Sex: male
- Online Repository: Local Disk
- Matching Rules:
  - Person Id: Only match to default when selected
  - System Id: "Any"
  - Configuration Id: "All"

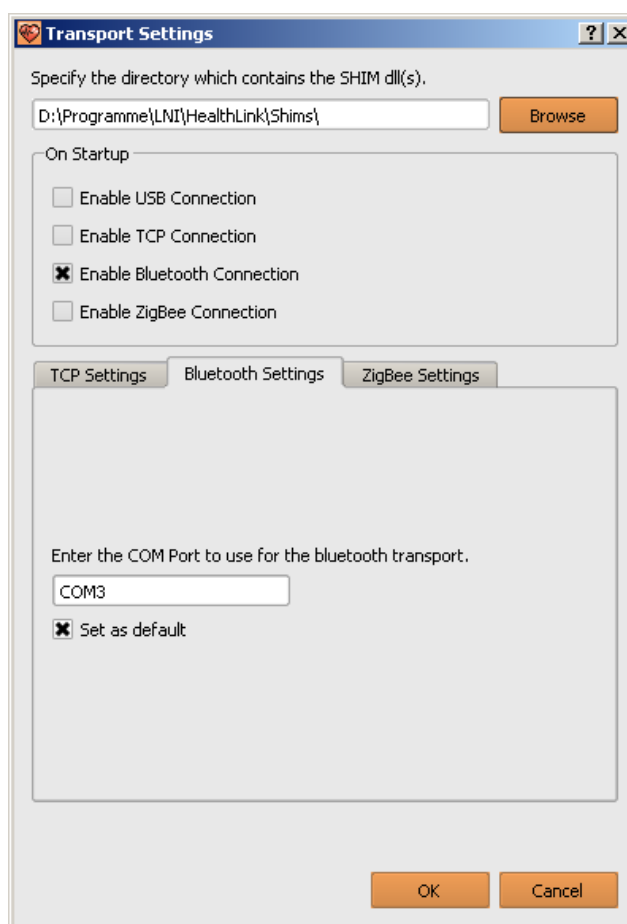
Buttons at the bottom: Advanced, < Back, Finish, Cancel.

3. Press “Finish” to finish creating a new user account.
4. Set the created user as default user profile.

#### 6.4.2 Set transport settings to Stollmann Bluetooth connectivity

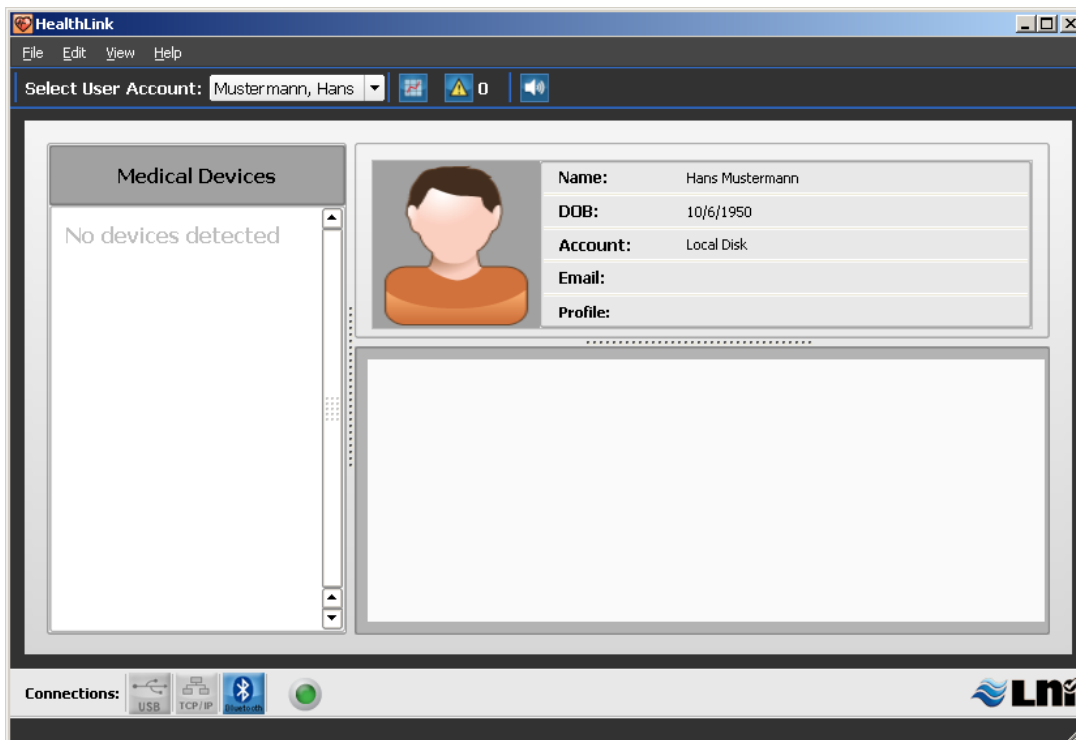
To enable Bluetooth connection as default transport settings please follow the instructions below:

1. Connect the BlueHDP+USB and install the BlueHDP+USB serial driver (CP210x / SLabs).
2. Select **“Edit”** in the header line
3. Select **“Advanced”** and then **“Transport Settings”**  
(the following **Transport Settings window** appears)



4. **On Startup** area select only **“Enable Bluetooth Conenction”**
5. Select tab **“Bluetooth settings”**
6. Enter the serial port number **“COMx”** of the BlueHDP+USB module
7. Select **“set as default”** buttton
8. Press **“OK”** to close the changed configuration.
9. Restart HealthLink Application

After the application restart the HealthLink Manager waits for incoming connections.



- The blue coloured Bluetooth icon is active.
- The signal is coloured “green”

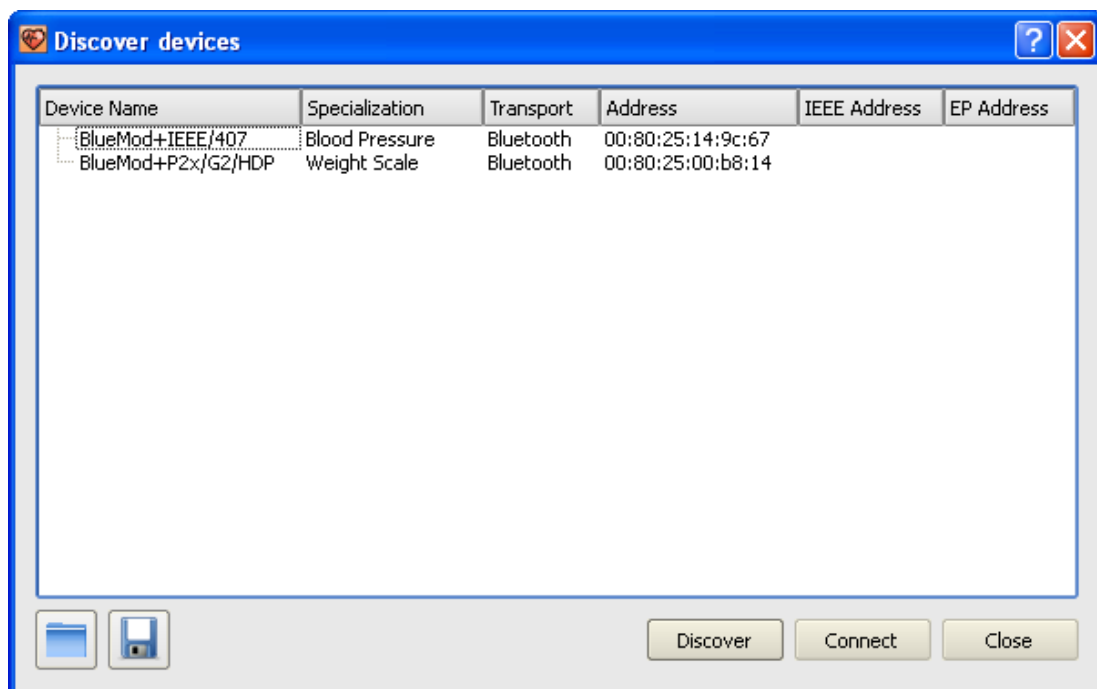
To initiate outgoing calls from the HealthLink Manager Application please read

- [Looking for Bluetooth devices from the IEEE Manager Application “HealthLink Manager”](#)
- [Connect to other Bluetooth devices from the IEEE Manager Application “HealthLink Manager”](#)

## 6.5 Looking for Bluetooth devices from the IEEE Manager Application “HealthLink Manager”

To start searching for other Bluetooth devices start the following steps:

1. Select “**Edit**” in the header line
2. Select “**Select for Devices**”  
A separate window opened which allows to start a Bluetooth discovery
3. Press “Discover” to look for Bluetooth HDP devices
4. Detected HDP Bluetooth modules are listed in the window.



## 6.6 Connect to other Bluetooth devices from the IEEE Manager Application “HealthLink Manager”

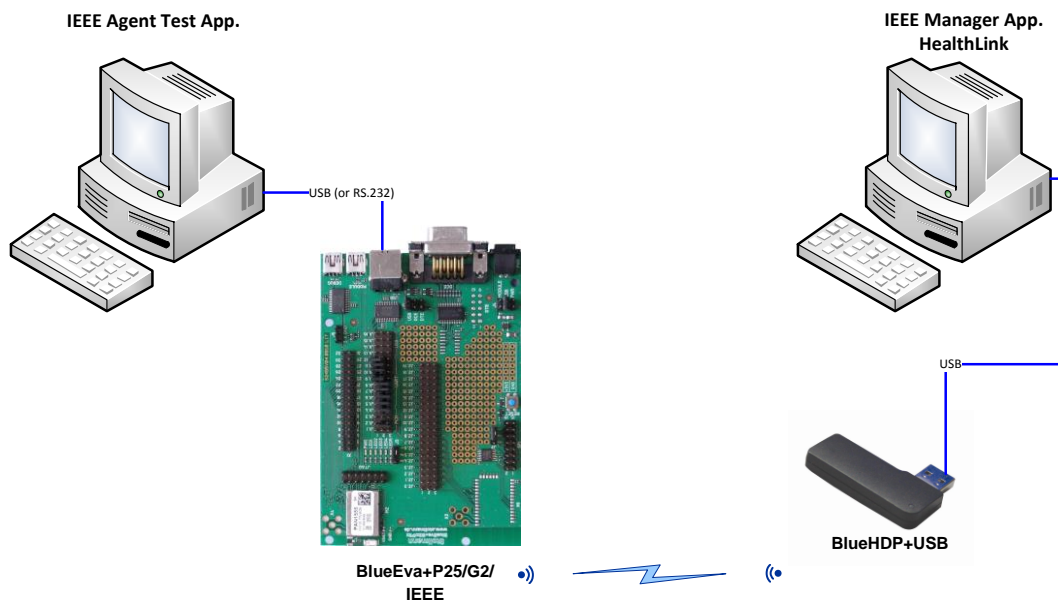
To connect to a specific HDP Bluetooth device select the required device in the Bluetooth device list and press the “**Connect**” button. See also:

[Looking for Bluetooth devices from the IEEE Manager Application “HealthLink Manager”](#)

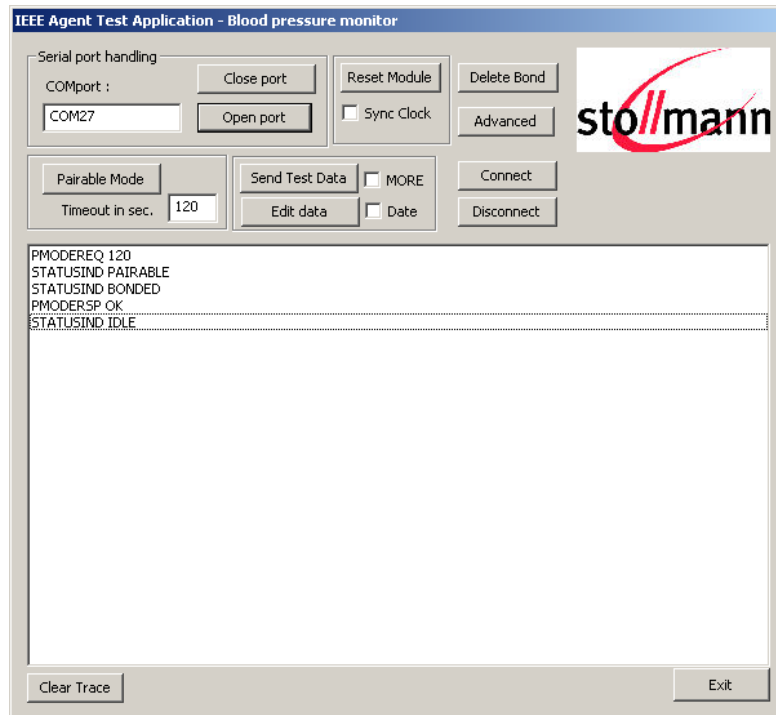
This connection procedure is also required to create the bonding procedure to the BlueMod+P25/G2/IEEE module.

## 7 Connection overview between IEEE Agent Test Application and IEEE Manager Application

The following procedure describes the steps to send IEEE data from the IEEE Agent Test Application to the IEEE Manager Application called “HealthLink Manager”



1. Connect the BlueEva+P25/G2/IEEE module to the IEEE Agent Test Application and configure the module as described in [Using IEEE Agent Test Application](#)
2. Connect the BlueHDP+USB module to the IEEE Manager Application and configure the module as described in [Using IEEE Manager Application “HealthLink Manager”](#)
3. Enable the “Pairable Mode” in the IEEE Agent Test Application
4. Start the Bluetooth Discovery in the IEEE Manager Application
5. Select the BlueMod+P25/G2/IEEE module and connect to this device
6. The incoming call on the IEEE Agent Test Application needs to report the required bonding procedure “STATUSIND BONDED” in the LOG window.



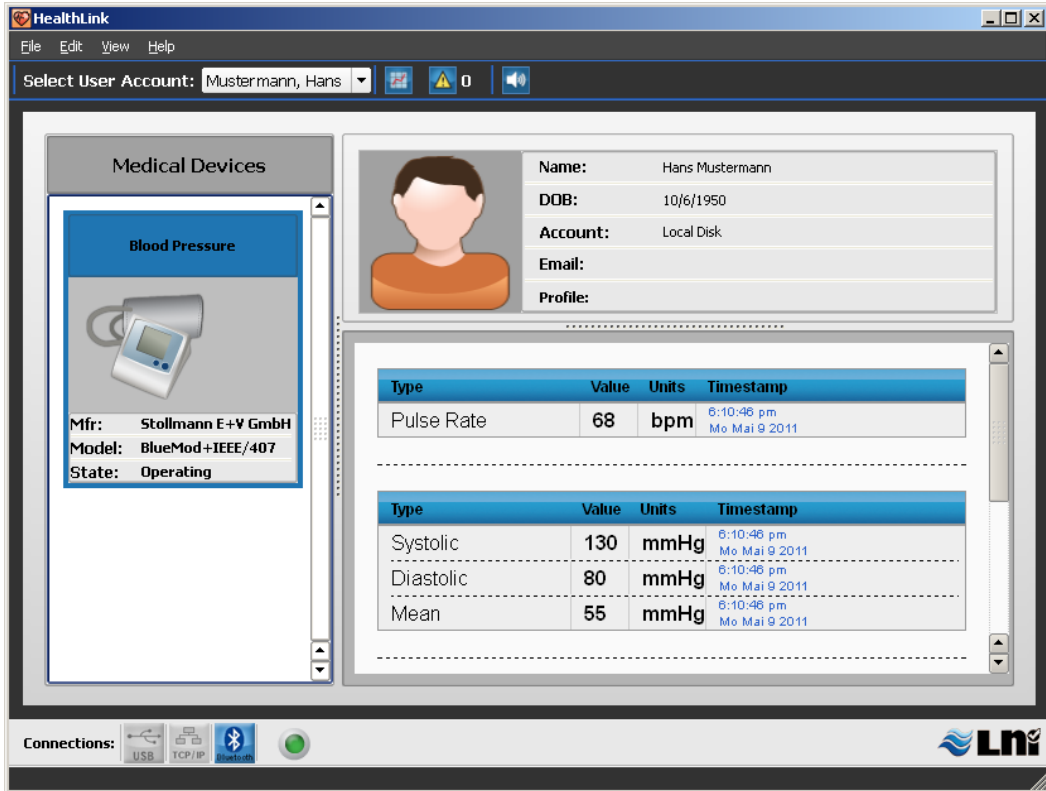
7. The Bluetooth connection will automatically closed in the IEEE Manager Application.

**Note:** *If the bonded device is removed (pressing “Delete Bond” button) the IEEE Manager Application needs two connect attempts to create a new bonding procedure. The IEEE Agent Test Application is now able to communicate to the bonded device at the IEEE Manager Application side.*

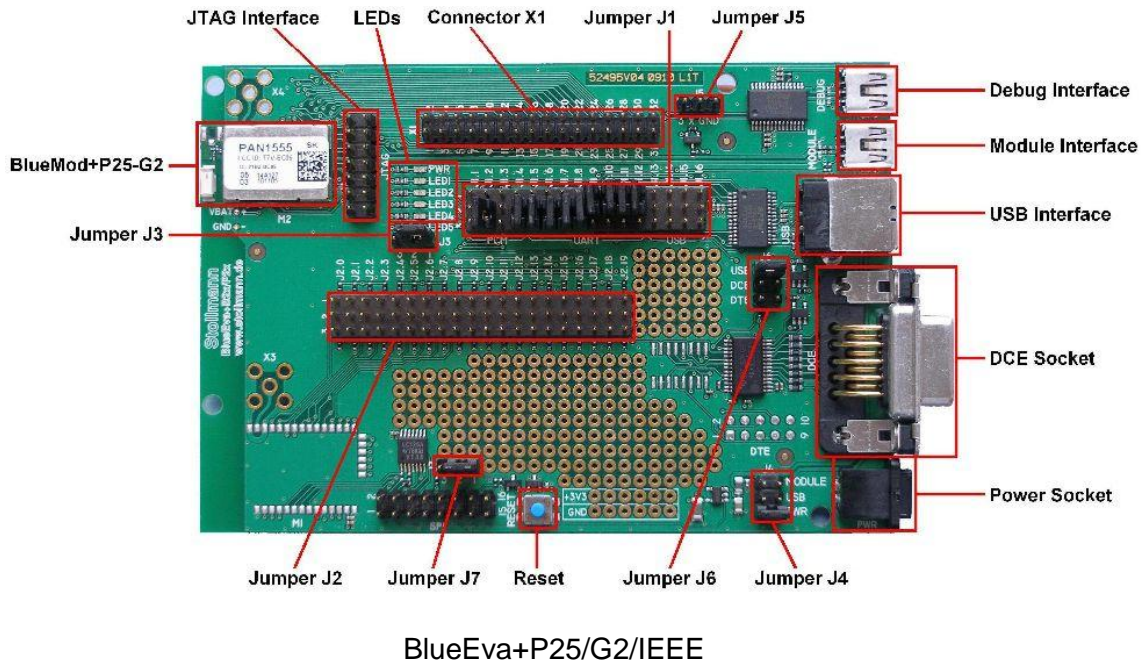
8. The IEEE Agent Test Application can send out IEEE 11073 compliant test data to the IEEE Manager Application.

Example. **PRESSURE\*0x0082#0x0050#0x0037\* PULSE\*0x0044\***

9. These data will be listed in the default user account.



## 8 Hardware details



### 8.1 BlueMod+P25/G2/IEEE

The BlueEva+P25/G2/IEEE is populated with a BlueMod+P25/G2 Bluetooth module.

### 8.2 Power Supply

There are two variants of supplying power to BlueEva+P25/G2/IEEE:

- +5VDC  $\pm 10\%$  via the USB interface connector (default).
- +5VDC  $\pm 10\%$  via the external power supply connector.

### 8.3 Reset

The BlueEva+P25/G2 is equipped with a reset button. Pressing the reset button will trigger the BlueMod+P25/G2/IEEE module to perform a reset. The USB port is not influenced from the reset.

## 8.4 USB Interface

The BlueEva+P25/G2/IEEE provides a USB interface which is used to connect the evaluation board to the host. The USB interface is equipped with a FTDI USB to serial bridge interfacing the serial port of the BlueMod+P25/G2.

## 8.5 Serial Interface (DCE Socket)

The BlueEva+P25/G2/IEEE provides a serial interface which is used to connect a communication device for transmitting data or a PC for controlling the BlueEva+P25/G2/IEEE. The serial interface corresponds to the V.24 / RS-232 standard and supports the following features:

- Transmission speed: 1,200 – 230,400 bps (asynchronous)
- Character representation: 8 bit, even/odd/no parity, 1 or 2 stop bits
- Hardware flow-control with RTS/CTS

The BlueEva+P25/G2/IEEE is used in DCE mode and can be attached to a PC. As shipped by the factory, the BlueMod+P25/G2/IEEE firmware works at 2400 bps, using the 8N1 data format (8 data bits, no parity, 1 stop bit). Please configure your terminal emulation program accordingly.

## 8.6 LEDs

The BlueEva+P25/G2/IEEE provides several LEDs for functional indication or to use for free disposal.

Interface	Position	Function
LEDs	PWR	Indicates the presence of power supply voltage
	LED1	Attached to PIO2 via J1.16/2-3
	LED2	Attached to PIO7 via J1.4/2-3
	LED3	Attached to PIO8 via J1.3/2-3
	LED4	Attached to PIO9 via J1.2/2-3
	LED5	Attached to PIO10 via J1.1/2-3

## 8.7 Connectors / Jumpers

### 8.7.1 Jumper J1 – Signal Routing

Jumper J1 is used for signal routing.

Jumper Number	Function	
	Position 1-2	Position 2-3
J1.1	GPIO10 – PCM_OUT	GPIO10 – LED5
J1.2	GPIO9 – PCM_CLK	GPIO9 – LED4 – startup of firmware
J1.3	GPIO8 – PCM_IN	GPIO8 – LED3
J1.4	GPIO7 – PCM_SYNC	GPIO7 – LED2 – device ready
J1.5	GPIO6 – RI	GPIO6 – RI
J1.6	GPIO5 – DSR output	GPIO14 – DSR output
J1.7	GPIO4 – DTR input	GPIO13 – DTR input
J1.8	GPIO3 – DCD	GPIO15 – DCD
J1.9	Module RTS to V.28 level shifter	-
J1.10	Module TXD to V.28 level shifter	-
J1.11	Module RXD to V.28 level shifter	-
J1.12	Module CTS to V.28 level shifter	-
J1.13	GPIO4 – DEBUG TX	-
J1.14	GPIO5 – DEBUG RX	-
J1.15	USB_ON – GPIO3 (BlueMod+P25/G2)	USB_ON – GPIO4 (BlueMod+B20)
J1.16	GPIO2 – USB Pull-up	GPIO – LED1

### 8.7.2 Jumper J2 – GPIO Input

All pins 1 of jumper J2 are connected to +3V3 supply voltage with a resistor of 330Ω and all pins 3 of jumper J2 are connected to GND with a resistor of 330Ω. When using the GPIOs or AIOs as inputs, this arrangement allows to place jumpers in position 1-2 to generate a HIGH and to place jumpers in position 2-3 to generate a LOW input. When using the GPIOs or AIOs as outputs, pin 2 will be used to access the signal.

Jumper Number	Description
J2.0	GPIO0
J2.1	GPIO1
J2.2	GPIO2
J2.3	GPIO3
J2.4	GPIO4
J2.5	GPIO5
J2.6	GPIO6
J2.7	GPIO7
J2.8	GPIO8
J2.9	GPIO9
J2.10	GPIO10
J2.11	GPIO11
J2.12	GPIO12
J2.13	GPIO13
J2.14	GPIO14
J2.15	GPIO15
J2.16	GPIO16
J2.17	GPIO17
J2.18	AIO0
J2.19	AIO1

### 8.7.3 Jumper J3 – Power Consumption

Jumper J3 is reserved for module power consumption measurement to use for BlueMod+P25/G2. Remove jumper from position 1-2 to take measurements.

#### 8.7.4 Jumper J4 – Power Source

The power source can be selected by jumper J4.

Jumper	Position	Function
J4	Module	Reserved
	USB	The module is powered via the USB interface
	PWR	Power from power socket

The presence of the power supply voltage is indicated by the PWR LED.

#### 8.7.5 Jumper J5 – Ground Connection

This jumper provides 3 pins with ground connection (0V) for measuring.

#### 8.7.6 Jumper J6 – Module Serial Interface Activation

Jumper J6 is used to activate the different serial interfaces.

Jumper	Position	Function
J6	USB	Activates the USB to serial bridge connected to USB
	DCE	The V.28 level shifter and the interface on the DCE socket is activated.
	DTE	Reserved

#### 8.7.7 Jumper J7 – Reset Button

Jumper J7 is used for module reset button. Remove jumper from position 1-2 to ignore reset button.

### 8.7.8 Connector X1 – Extension Header

Connector X1 is an extension header; all module signals are accessible on this header.

Pin Number	Signal	Dir.	Description
1	+3V3	O	Supply Voltage Output
2	GND	-	Ground
3	GPIO16	I/O	Digital Input/Output
4	AIO1	I/O	Analogue Input/Output
5	AIO0	I/O	Analogue Input/Output
6	RESET#	I/O	Reset Input/Output (active LOW)
7	PCM_OUT	O	PCM Data Output
8	PCM_CLK	I/O	PCM Clock (Slave = I, Master = O)
9	PCM_IN	I	PCM Data Input
10	PCM_SYNC	I/O	PCM Frame Sync (Slave = I, Master = O)
11	GPIO15	I/O	Digital Input/Output
12	GPIO14	I/O	Digital Input/Output
13	GPIO13	I/O	Digital Input/Output
14	GPIO12	I/O	Digital Input/Output
15	GPIO11	I/O	Digital Input/Output
16	GPIO10	I/O	Digital Input/Output
17	GPIO9	I/O	Digital Input/Output
18	GPIO8	I/O	Digital Input/Output
19	GPIO7	I/O	Digital Input/Output
20	GPIO6	I/O	Digital Input/Output
21	GPIO5	I/O	Digital Input/Output
22	GPIO4	I/O	Digital Input/Output
23	GPIO3	I/O	Digital Input/Output
24	GPIO2	I/O	Digital Input/Output
25	GPIO1	I/O	Digital Input/Output
26	GPIO0	I/O	Digital Input/Output
27	UART_RTS	O	Request To Send
28	UART_TX	O	UART Transmit Data
29	UART_RX	I	UART Receive Data
30	UART_CTS	I	UART Clear To Send
31	+3V3	O	Supply Voltage Output
32	GND	-	Ground

### 8.7.9 JTAG Interface

The JTAG1 interface is used for manufacturing and development purpose.

Interface	Position	Function
JTAG1	1	+3V3
	2	GND
	3	TRST
	4	GND
	5	TDI
	6	GND
	7	TMS
	8	GND
	9	TCK
	10	GND
	11	TDO
	12	Open
	13	+3V3
	14	GND

### 8.7.10 Debug Interface

This interface is reserved for later usage.

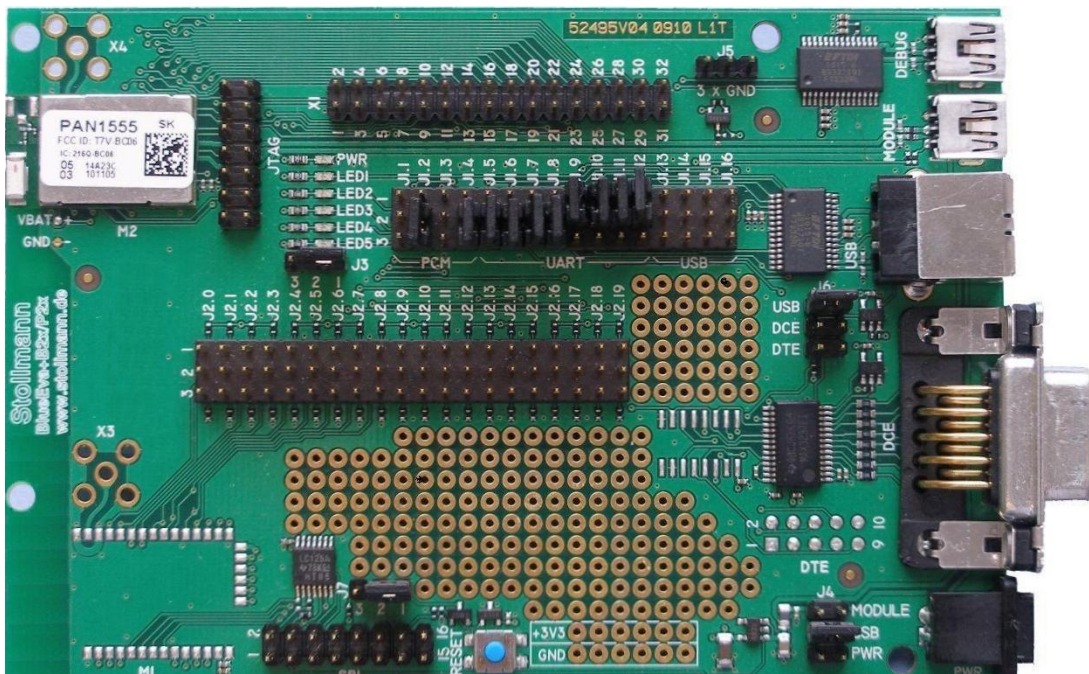
### 8.7.11 Module Interface

This interface is reserved for later usage.

## 8.8 Default Configuration

The BlueEva+P25/G2 is preconfigured to USB mode, using no serial control lines and USB power. The jumpers are configured as described below:

Jumper Number	Position	Function
J1.2	2-3	LED4 – Startup of Firmware
J1.4	2-3	LED2 – Device Ready
J1.5	2-3	Module RI
J1.6	2-3	Module DSR
J1.7	2-3	Module DTR
J1.8	2-3	Module DCD
J1.9	1-2	Module RTS
J1.10	1-2	Module TXD
J1.11	1-2	Module RXD
J1.12	1-2	Module CTS
J3	1-2	Module power consumption
J4	USB	Power from USB interface
J6	USB	UART interface from USB
J7	1-2	Reset button



BlueEva+P25/G2 default configuration

## 9 Firmware Update with “Stollmann Serial Module Updater”

Stollmann Serial Module Updater serves as a tool for uploading a firmware file into a BlueEva+P25/G2/IEEE module.

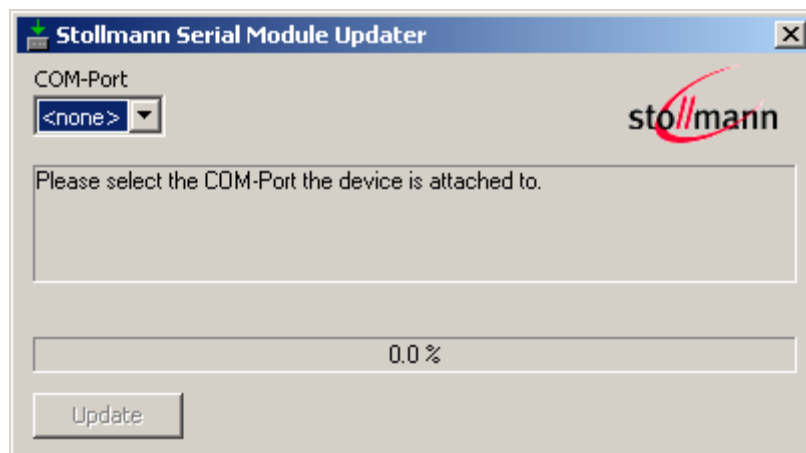
SETUP.EXE file specification:

P2Xg2\_IEEE\_<specialization ID>\_<FW-Version>\_Setup.exe

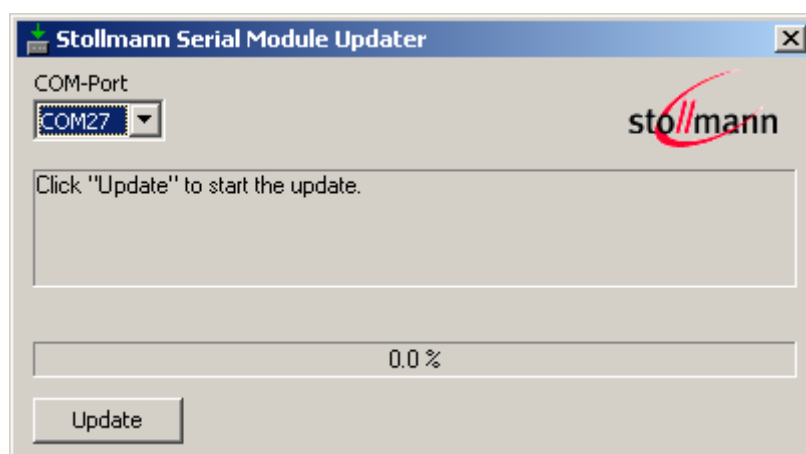
Example: P2Xg2\_IEEE\_407\_1\_004\_Setup.exe

The program requires a PC with at least one free COM-Port and Windows XP/Windows Vista or WINDOWS 7 as operating system.

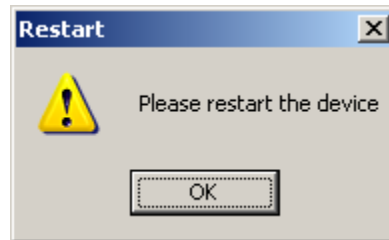
The upload is processed via the serial port the device is attached to.



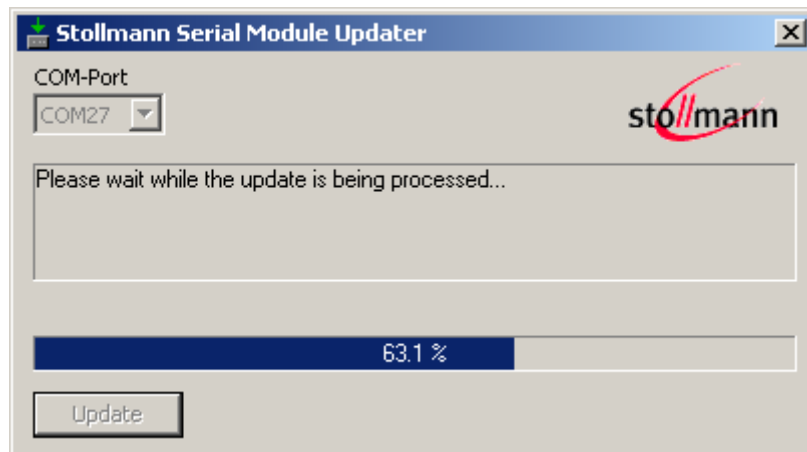
Enter the serial port value the BlueEva+P25/G2/IEEE module is connected to and press the “**Update**” button to start the process.



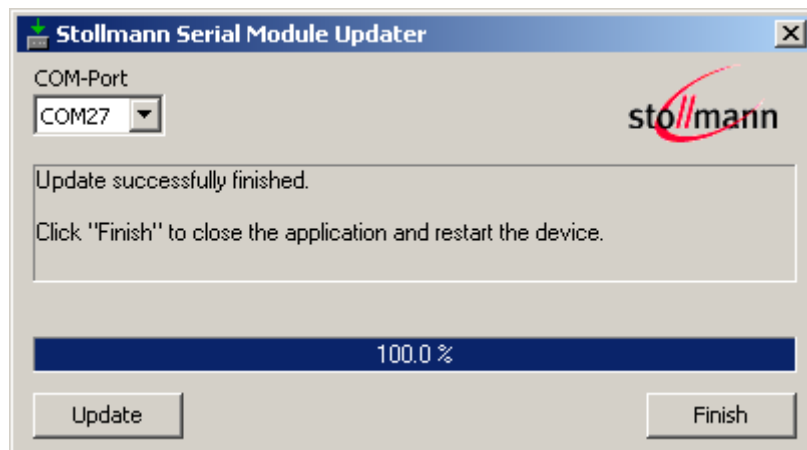
To get a defined state of the BlueEva+P25/G2/IEEE module the Stollmann Serial Module Updater requests the user to restart the module.



Please do not switch off the module during the update process.  
In case of a problem during the firmware update procedure please switch off the BlueEva+P25/G2/IEEE module and restart the update process.



After the firmware update ended successfully the Stollmann Serial Module Updater can be closed by pressing the "Finish" button.



Several instances of Stollmann Serial Module Updater may be started concurrently on one PC in order to update several modules in parallel.

After the successful update close the software and reset the module.

*Note:*

*All stored settings will be lost and set to default values after the firmware update. In case it is not possible to update the module please contact the support.*

## 10 History

Version	Release Date	By	Change description
r01d01	09.05.2011	BS	First draft
r01d02	11.05.2011	OR	Added CD contents and changed some information
r01d03	12.05.2011	OR	Worked in all comments and corrections from BS and FH
r01d04	12.05.2011	BS	Comment "figure <number>" removed from figures.
R01d05	27.05.2011	BS	Change installation procedure for HealthLink App.
R01	27.05.2011	OR	Final changes and first release
r02d01	20.06.2011	BS	Add specialization ID 404 (Pulse Oximeter)
r02	05.07.2011	BS	Second released version
r03d01	31.08.2011	BS	Change HDP Manager device from "BlueEva+P25/HDP" to „BlueHDP+USB“ Change picture in the connection overview to BlueHDP+USB Add specialization ID 417 (blood glucose meter)
r03d02	07.09.2011	BS	Add the reference to "BlueHDP-USB_User_Guide_r01.pdf" in chapter 6.1 Set "Delete Bonding procedure in the BlueMod+P25 /G2/IEEE module" in a separate chapter (chapter 5.2.4)
r03d03	12.09.2011	BS	Add screen shots of the IEEE Agent Test application for "delete bonding" and "successful bonding procedure"
r03	15.09.2011	OR	Third released version



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