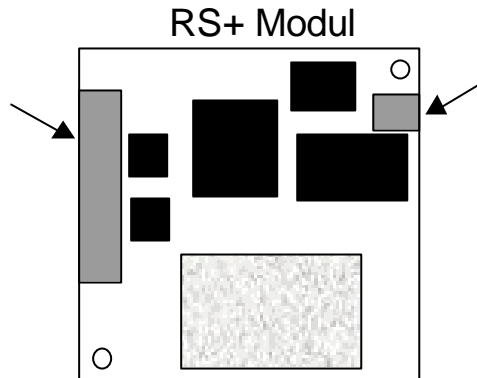


## First installation steps

When receiving the **RS+ module** you have to follow these steps to use this device in your environment:



The RS+ module supports V.24 (RS-232) signals with TTL voltage level.

When connecting this module to a serial COM port of a PC or other device you have to adapt these TTL voltage level of connector **P1** (+5V and 0V DC) to V.28 voltage level (+3 to +12V and -3V to -12V DC) of the RS-232 interface.

*Stollmann can provide you with those adapter boards.*

The pin assignment of the serial interface connector is described in the manual in chapter A4 "serial interface connector P1".

Please note: the serial pin assignment is made for a DCE interface. The status lines "TXD", "DTR", "RTS" and "GND" are input lines.

- When you power on the RS+ module (connected to a COM port of a PC with the help of a adapter board) the RS+ module will send the following message after 2 seconds:  
< +++ Press <CR>,<CR>,<ESC>,<ESC> to enter BlueRS+ configurator +++ >  
with a speed of 9600 bits per second (8 data bits, no parity, 1 stop bit).
- After this message appears you have the allowed time of 2 seconds to enter the requested sequence <cr><cr><ESC><ESC> to reach the configuration editor.
- All serial status lines will be ignored during this 'sequence wait time'.  
Any other character than <cr><cr><ESC><ESC> will conclude the direct configuration access.
- The configuration editor will response with the internal command prompt < # >.
- In this configuration editor you can change all parameter listed in the manual in chapter 4.3 "BlueRS+configurator commands".
- If you do not enter the configuration editor after powering the Blue RS+ firmware will start with its default values:  
serial speed: 115.200 bits per second  
data format: 8 data bits, no parity, 1 stop bit  
command set: AT command set (cmds =0)
- In this command set you can also configure the RS+ module with AT commands listed in the manual in chapter 3.2 "AT command set for BlueRS+" or
- leave the AT command set with sending the command "ATCONF<cr>" to reach the internal configuration editor.  
The configuration editor will response with the internal command prompt " # ".  
In this configuration editor you can change all parameter listed in the manual in chapter 4.3 "BlueRS+configurator commands".

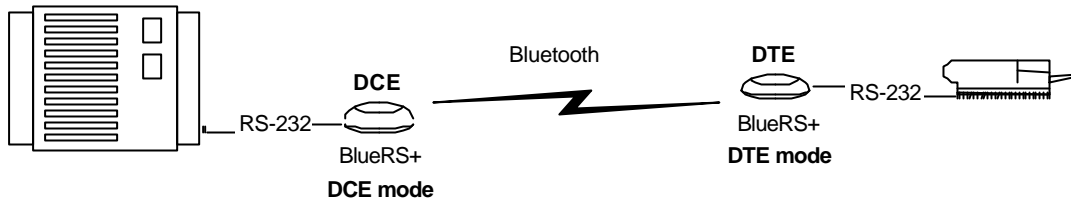
## Configuration proposal

### Serial cable replacement "Point-to-point"

To establish a cable replacement between two devices with a serial interface, BlueRS+ can at one side be realized as DCE, at the other as DTE.

**controlling device (DTE mode)**

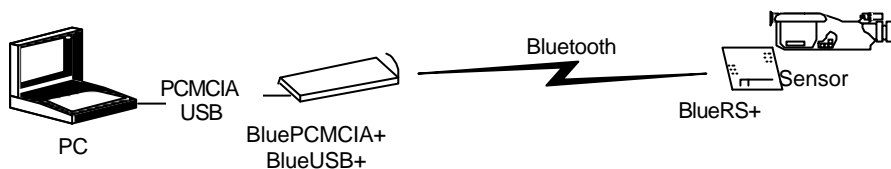
**controlled client (DCE mode)**



BlueRS+ as Bluetooth client can establish connections with other Bluetooth interfaces, e.g. in PCs.

**controlling device (DTE mode)**

**controlled client (DCE mode)**



### Physical connections between DTE device (controlling device) and DCE device (controlled client)

The serial interface (RS-232) of a **controlling device** (for example: COM port of a PC) is working in a DTE mode (status lines "TXD", "DTR", "RTS" and "GND" are output lines). To connect this controlling device with a standard serial cable (direct connected cable 1:1) the RS-232 interface of the Blue RS+ is working in a DCE mode.

In the default configuration the Blue RS+ (when used with RS-232 adapter board) is physically connected as DCE (status lines "TXD", "DTR", "RTS" and "GND" are input lines).

In most cases the serial interface of a **controlled client** is working in DCE mode (status lines "TXD", "DTR", "RTS" and "GND" are input lines). When connecting a Blue-RS+ to this controlled client you have to change the mode of the serial status lines from DCE to DTE mode to get the correct direction for each serial status line.

The easiest way to change the mode is the use of a NULL-modem. The NULL-modem will change the directory of the status lines of Blue-RS+ from input lines to output line and converse.

### Typical configuration between controlling device and controlled client

#### **BlueRS+ (DCE mode):**

**cmds:** 0 (AT command set) + "ATD< BlueTooth address of other RS+ >"  
 or 6 (auto connect with DTR) + **brad** = BlueTooth address of other RS+  
 or 8 (auto connect after power on) + **brad** = BlueTooth address of other RS+

**br:** set specific serial speed depend on the device at the end

#### **BlueRS+ (DTE mode):**

**cmds:** 12 (wait for incoming calls)

**br:** set specific serial speed depend on the device at the end

**cdtr:** set **cdtr=0** when this status line is not present

**flc:** set local flow control off (**flc=0**) when RTS line is not present