

# LinTronic

## BeoRemote One BlueTooth receiver BT-RS232



Our Bluetooth receiver BTRS232 reads signals from a Bang&Olufsen BeoRemote One Bluetooth remote control.

The receiver pairs with the BeoRemote One and sends out the detected Bluetooth signal as an RS232 command.

The BTRS232 will work with the TT455-RT-238 HW6.x and any computer, controller or homeautomation system capable of communicating RS232C:  
19200 bps, no parity, 8 databits, 1 stopbit

This allows our TT455-RT-238 to be triggered by bluetooth in order to control IR products, relays, tv-stands, etc. but it also allows home-automation installers to use BT-RS232 to receive Beoremove One Bluetooth commands, for their optional use, even without having a TT455-RT-238.

LinTronic's OPEN SOURCE protocol:  
<http://lintronic.dk/LinTronicProtocol.zip>

Simply explained "get started guide" on RS232:  
<http://lintronic.dk/rs232.pdf>

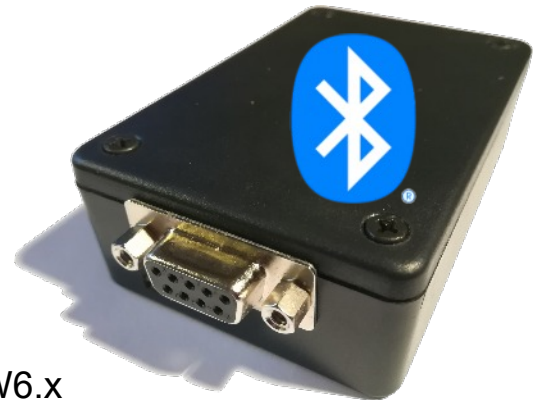
**NOTE:**

The BT-RS232 works out of the box, no configuration is needed.

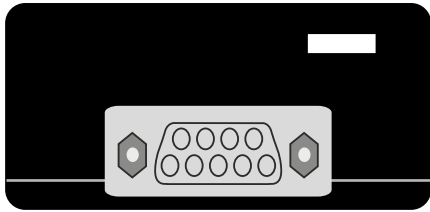
Default pairing name is "LINTRONIC BT-RS232". If you buy more than one BT-RS232, then you can individually rename the BT-RS232 modules, making it easy to swap between them. If you want to change the pairing name, the BT-RS232 must be connected to a computer with a terminal program capable of sending a renaming command on a comport. The LinTronic Configurator is recommended.

The renaming command is ofcourse public. Contact us if you need it or need help.

For firmware updates of the BT-RS232, the LinTronic Configurator is required.

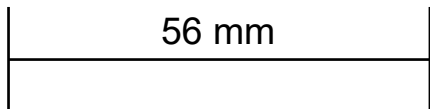


# BT-RS232



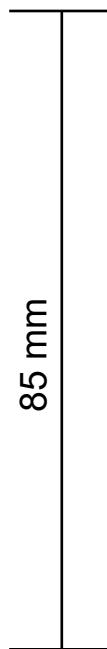
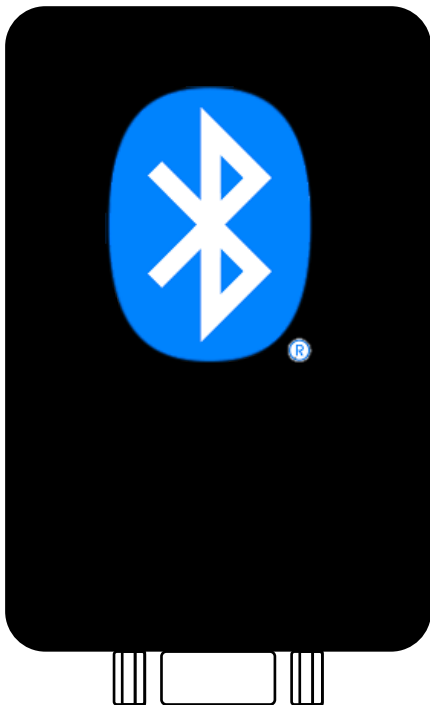
USB micro - 5 volt power supply and cable not included

RS232 - standard SUBD9 female



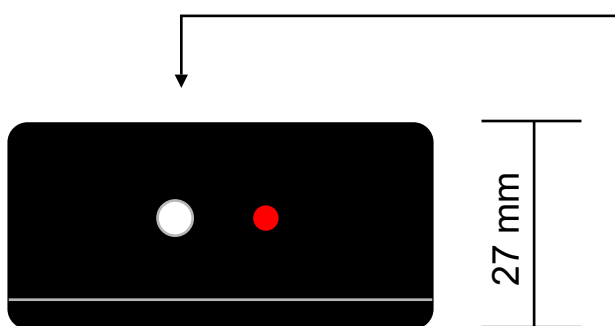
56 mm

- Pin 2 → Tx data
- Pin 3 ← RX data
- Pin 5 ↔ Ground



85 mm

Dimensions 1:1  
Bluetooth logo is not printed on cabinet.



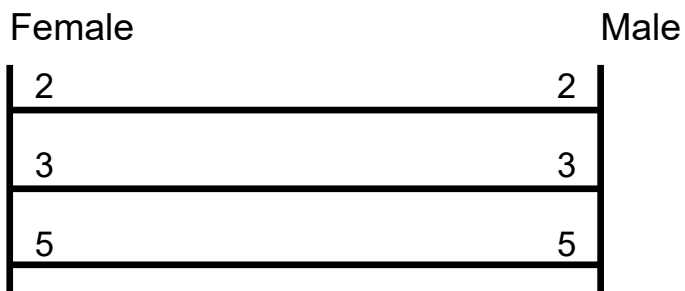
27 mm

Pairing button (activate for 1 second)  
Follow the pairing products procedure.  
See B&O manual how to pair your B&O remote.

- |     |               |                         |
|-----|---------------|-------------------------|
| LED | Fast blinking | - Pairing               |
|     | Slow blinking | - Paired, no connection |
|     | Constant On   | - Paired, connection    |



The BT-RS232 can be connected directly to a USB port on a computer or a controller like AMX, Crestron, etc. using either a USB-RS232 converter (ComCab-003) or a 9-pin male-female straight-through cable (ComCab-001) depending on the computer/system.

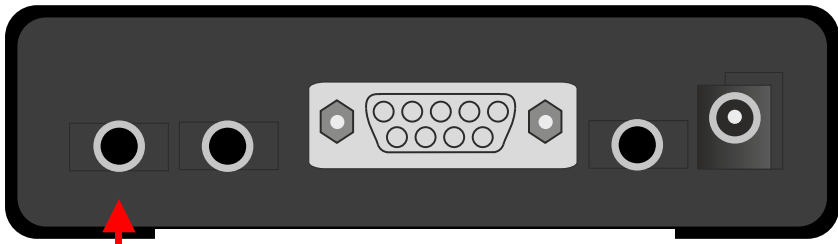


ComCab-001



**NOTE:**

If you want to connect the BT-RS232 to a computer, in order to firmware update it with our LinTronic Configuration program, or if you want to rename the BT-RS232, default pairing name, you will need a ComCab-003 (USB to RS232 converter).



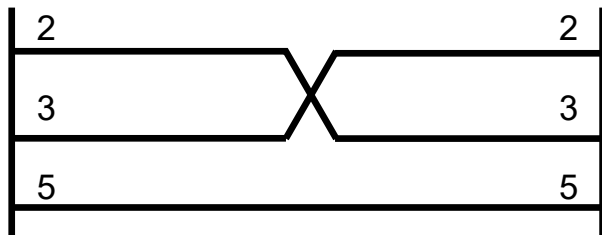
IR RECEIVER



The BT-RS232 can be connected directly to the TT455-RT-238 RS232 port, using a 9-pin crossed male-male cable.

Male

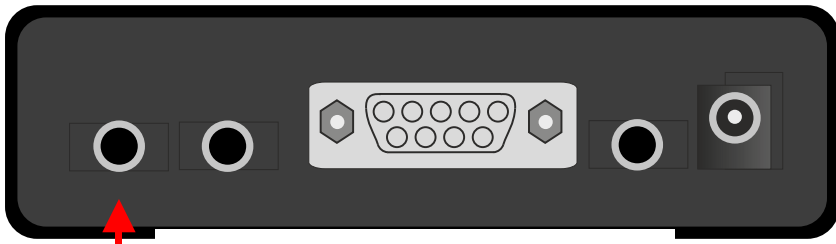
Male



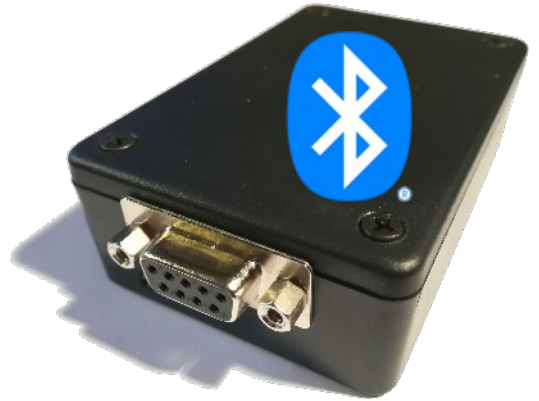
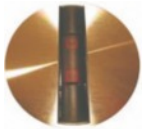
Or you can use a ComCab-001 and a gender-changer on either the TT455-RT-238 or the BT-RS232.

Or you can use break-out interfaces. See next page.





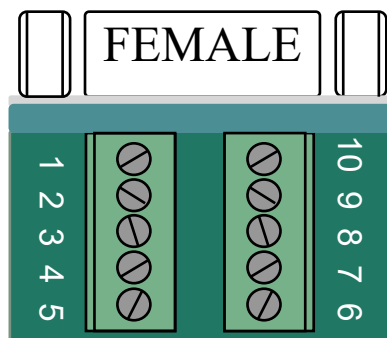
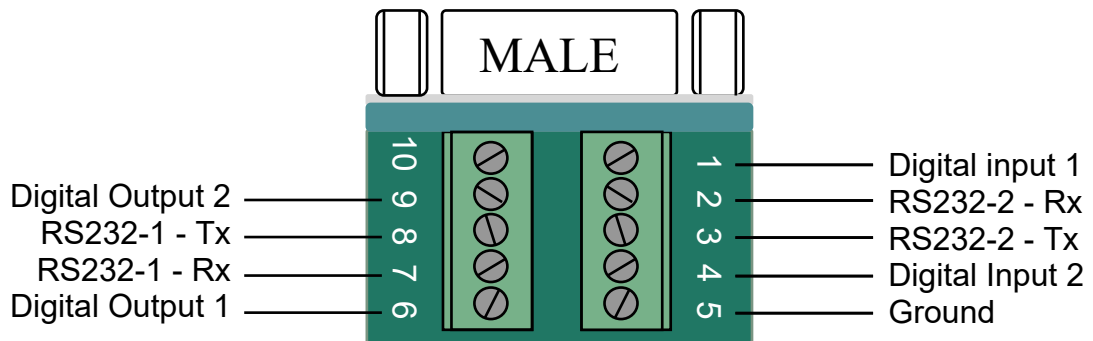
IR RECEIVER



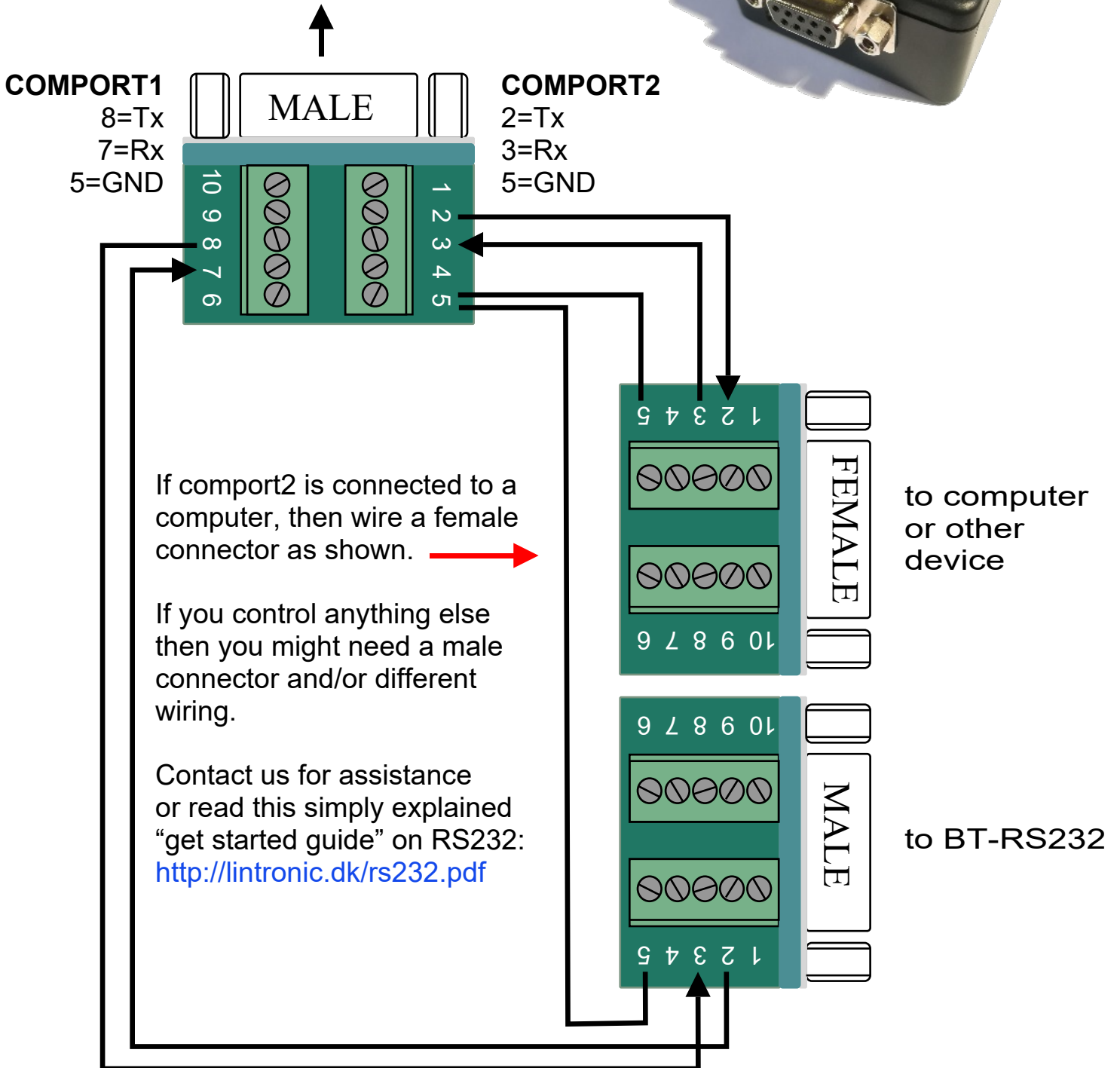
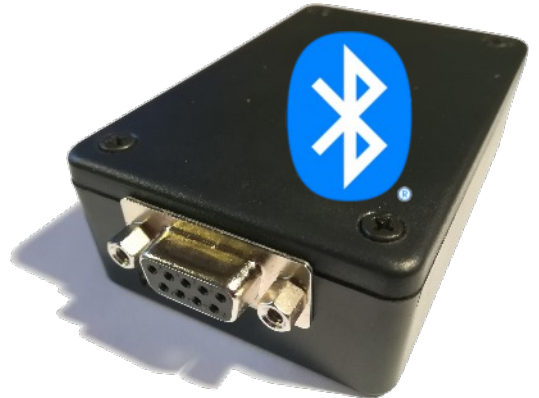
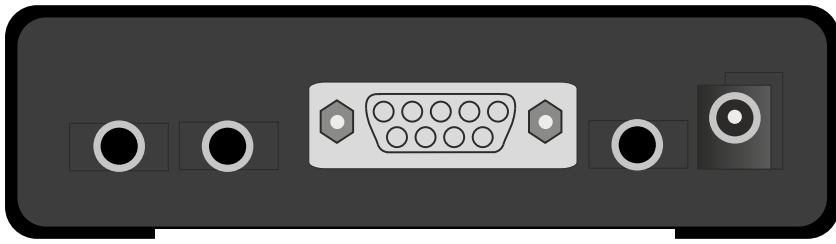
The TT455-RT-238 holds 2 comports. You can receive the bluetooth signals on both comports. For example you can trigger the TT455-RT-238 by bluetooth signals on comport1 (pin 7 and 8) and let the TT455-RT-238 communicate with or control another product on comport 2 (pin 2 and 3).

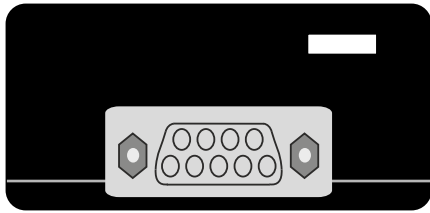
With RS232 breakout interfaces like the shown below, you can easily connect 3 products by a few wires and a screwdriver. See example on next page.

Also see the manual for TT455-RT-238 HW6.1:  
<http://lintronic.dk/hw6.pdf>



# Connecting TT455-RT-238 and BT-RS232 using two comports



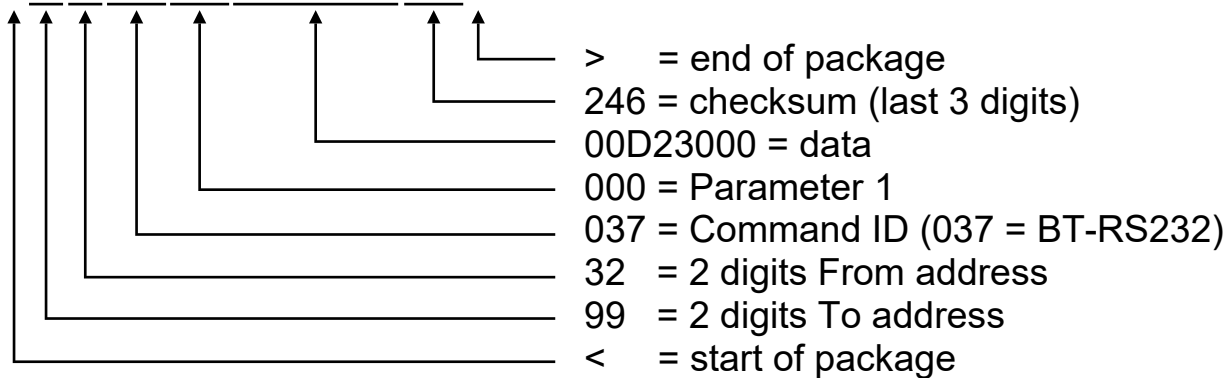


# BT-RS232

## Dimensions 1:1

LinTronic's OPEN SOURCE protocol: <http://lintronic.dk/LinTronicProtocol.zip>

<993203700000D23000246>



Addresses        00 = computer, 32 = BT-RS232, 99 = broadcast

Parameter 1 (when package is send **from** BT-RS232 **to** other device)  
000 = Bluetooth data received from a BeoRemote One  
001 = Product info (firmware, hardware, serial number information)  
002 = Product info (pairing name of BT-RS232)

Example: Broadcast info package send **from** BT-RS232 when powered up:  
<9932037001FFFHHSSSSSSCCC>

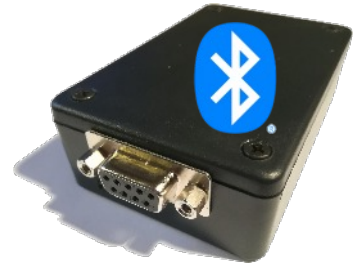
FFF        Firmware information  
HHH        Hardware information  
SSSSSS    Serial Number  
CCC        Checksum

Parameter 1 (when package is send **from** other device **to** BT-RS232)  
001 = Request for product info (example below)  
002 = Set pairing name of BT-RS232 (name is a maximum of 16 characters)  
255 = Reset BT-RS232 (in order to initiate firmware update)

Request for product info:  
<3200037001CCC>    (CCC = Checksum, not calculated/shown here)

Reset BTRS232:  
<3200037255CCC>    (CCC = Checksum, not calculated/shown here)





Screen dump showing our Bluetooth logging tool used to read signals from the BeoRemote One during the development phase.

BeoRemoteOne - Bluetooth

Time: 13:15:22.1651471

Received: <0001037002D0000241>

Bluetooth code: 00.2D.00.00      Count: 234

Mode/Selector: ALL      Button/Mode: BRBT

GET ALL COMMANDS      SAVE ALL COMMANDS

Commands

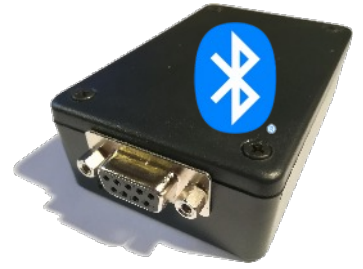
	id	received	mode	mode_text	mode_number	trigger_text	trigger_number
▶	132	<000103700310500228>	BRBT	BRBT	49	0	5
	131	<000103700310600229>	BRBT	BRBT	49	1	6
	125	<000103700310700230>	BRBT	BRBT	49	2	7
	124	<000103700310800231>	BRBT	BRBT	49	3	8
	123	<000103700310900232>	BRBT	BRBT	49	4	9
	140	<000103700310A00240>	BRBT	BRBT	49	5	10
	139	<000103700310B00241>	BRBT	BRBT	49	6	11
	138	<000103700310C00242>	BRBT	BRBT	49	7	12
	137	<000103700310D00243>	BRBT	BRBT	49	8	13
	136	<000103700310E00244>	BRBT	BRBT	49	9	14
	145	<0001037002D2402249>	BRBT	BRBT	45	ARROW	36
	133	<000103700310400227>	BRBT	BRBT	49	BLUE	4
	128	<0001037002D4300248>	BRBT	BRBT	45	DOWN	67
	135	<000103700310200225>	BRBT	BRBT	49	GREEN	2
	144	<0001037002D2302248>	BRBT	BRBT	45	HOME	35
	146	<0001037002D6000247>	BRBT	BRBT	45	INFO	96
	127	<0001037002D4400249>	BRBT	BRBT	45	LEFT	68

Delete selected row from database based on ID      Save selected command to database      CLEAR

## ORDERING

Please order the BTRS232 on our online orderingsystem

<http://lintronic.dk/ordering.aspx>



## COMCAB-003

Please observe that a ComCab-001 cable, a ComCab-003 cable and a License will automatically be added to the order. The License is free of charge when bundled with a BT-RS232. You will get a licens even if you already have one.

The ComCab-003 (USB-RS232) is used to connect the BT-RS232 to a system like AMX, Crestron or any other kind of USB computer.

Our Configurator software will support firmware update, configuration, test and verification of functionality. If you already have a USB-RS232 cable, you can delete it from the order.

## COMCAB-001

If you want to control a LinTronic TT455-RT-238 from the BT-RS232, then you will need a 9-pin crossed male-male cable (as both devices are considered DTE (data terminal equipment - according to the RS232 standard).

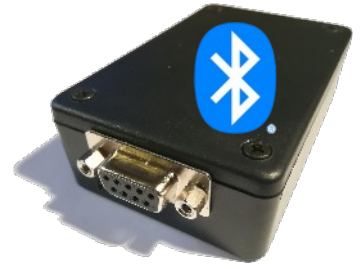
The ComCab-001 added to the order is not the right cable for this purpose. We are currently getting the right cable on stock. Alternatively you can use the ComCab-001 and a gender-changer.

If you leave the ComCab-1 on the order, then we will communicate with you, in order to learn if you actually want this cable or whether you will need a crossed version or a gender-changer.

If you want to get a crossed male-male cable or a gender-changer in a local shop, then you can remove the ComCab-001 from the order.

## QUESTIONS

Here is some of the most asked questions:



Which TT455-RT-238 hardware will support the BT-RS232 ?

The BT-RS232 will be supported by HW6.0 and HW6.1.

The HW5.x was obsoleted a very long ago due to lack of flash memory.

The firmware of HW5.x is no longer added new features.

If you own a hardware 5.x and wish to upgrade to HW6.1, then please contact us for an upgrade offer.

Will the BT-RS232 work directly with for example AMX or Crestron ?

Yes, any USB/RS232 or RS232 supported computer or system can be used.

Is it possible to convert IR signals from a B&O IR remote, into a Bluetooth signal and control other bluetooth products ?

Yes, BUT .... currently we only RECEIVE bluetooth signals from a Beoremove One. We do not yet transmit Bluetooth signals.

Also, you would need a TT455-RT-238 to receive the IR signals, and the TT455-RT-238 (or a computer) to send a command to the BT-RS232 to control the wanted product. In order to transmit bluetooth signals, we must know which protocol/commands to use. A Bluetooth command (like an IR signal or an RS232 command) holds a certain pattern of numbers and characters that must arrive in the correct format, timing and order.

It is not possible to simply "send a bluetooth signal" and then the receiving product accept it.

We are willing to work with you to achieve what you want, but this requires a close cooperation and most likely payment of development cost, for example depending on solution being public or for you only.

"What is the delay when pressing the beo button and the response from the TT ?"

If you use an infrared B&O remote today, you already know that the delay is not noticeable in any way (a few milliseconds).

The delay in detecting the Beoremove One BT is the same - nothing.