BARTEC

Supplementary description – Translation of the original
Addendum to user manual 11-A1S4-7D0001

BCS36x8ex Series

Type 17-A1S4-*HP*
ATEX / IECEx Zone 1/21
NEC / CEC Class I, II, III Division 1

Type B7-A2S4-*HP* and B7-A2S4-*ER*
ATEX / IECEx Zone 2/22
NEC / CEC Class I, II, III Division 2

Date: 26 March 2021 – Rev. B

Proviso: Technical changes reserved. Changes, mistakes and printing errors do not substantiate any claim to damages.

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1. General information about programming

1.1 Programming of universal supply module (USM) – corded:

The universal supply module transmits the data of the serial interface 1 to 1.

To establish a connection with a PC, the interface parameters on the hand-held scanner and the PC/host have to be identical.

The interface parameters of the hand-held scanner can be adjusted via the programmable codes in the Zebra "Product Reference Guide" or by using the Zebra 123 Scan Utility.

The interface parameters of the PC/host can be adjusted via the settings e.g. in the device manager.

Download:

- Zebra "Product Reference Guide":
  - BARTEC Support and Download Page:
    http://automation.bartec.de/scannerE.htm
    => Data Capture
    => BCS3600ex Hand-Held Scanner Series
    => Category Manuals --- Zebra Manuals
  - Zebra Support and Download Page:
    https://www.zebra.com/us/en/support-downloads.html
    => Barcode Scanners
    => Ultra Rugged Scanners ---- DS3608-HP/DS3678-HP
    => Category ---- Manuals

- Zebra "123Scan Utility":
  - Zebra Support and Download Page:
    https://www.zebra.com/us/en/support-downloads.html
    => Barcode Scanners
    => Ultra Rugged Scanners ---- DS3608-HP/DS3678-HP
    ---- DS3608-ER/DS3678-ER
    => Category ---- Utilities

1.2 Programming of the universal supply module (USM) - Bluetooth:

The Bluetooth hand-held scanner is paired or connected to the USM via Bluetooth.

Interface parameters cann't be adjusted directly on the Bluetooth hand-held scanner (e.g. by scanning programmable codes or via 123 Scan Utility).

All settings have to be made directly on the Bluetooth USM.

The manual describes:

1. The programming of the baud rate of the Bluetooth USM via a terminal program (e.g. H-Term). The Bluetooth USM has to be connected to a PC via a serial interface (RS232 or USB-SPP). A terminal program e.g. H-Term is required on the PC to transfer the settings.
2. How to read the Bluetooth address of the installed Bluetooth module.
   The address can be used/needed to create a pairing barcode using the 123 Scan Utility.

1.3 Programming of the supply module Ex i:

Important note to supply module Ex i:

The serial parameters of the supply module Ex i can't be re-programmed.

It is valid for following supply modules:

Supply module Ex i	Order number	Zone 1	Zone 2	Div 2	Available interface
For cabled scanner version BCS3608ex-IS	17-A1Z0-0025	X	-	-	• USB-SPP* • RS232
For Bluetooth scanner version BCS3678ex-IS	17-A1Z0-0028	X	-	-	

The serial parameters of the Ex i moduls set to:

RS-232 and USB-SPP Host-Parameters (Default)	
Baud Rate:	9600 Baud
Parity:	Keine/None
Stop Bits:	1 Bit
Data Bits:	8 Bit
Hardware Handshaking:	Keine/None
Software Handshaking:	Keine/None

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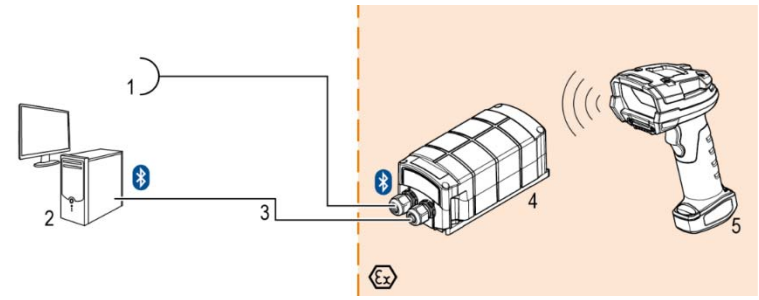
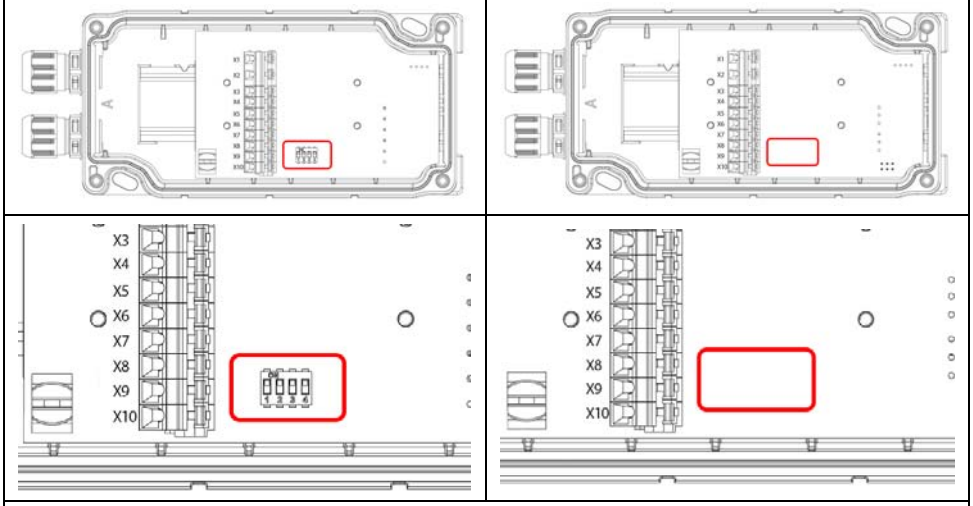
2. Default values of USM - Bluetooth

2.1 USM – Bluetooth for BCS3678ex – Bluetooth hand-held scanner

Diagram

Differentiation of USM generations
1. Generation with Dip-switch / 2. Generation without Dip-switch

Sample picture for universal supply module - Bluetooth

2.1.1 USB-HID

USB-HID is not supported.

2.1.2 USB-SPP

- USB-SPP is plugged in the USB port on PC/Host.
- USB-SPP is recognized on PC/Host as a (virtual) serial interface.

RS-232-Host-Parameters (Default)		
	USM 1. Generation with Dip-switch	UVM 2. Generation without Dip-switch
Baud Rate:	115200 Baud	9600 Baud
Parity:	Keine/None	
Stop Bits:	1 Bit	
Data Bits:	8 Bit	
Hardware Handshaking:	Keine/None	
Software Handshaking:	Keine/None	

2.1.3 RS232

- RS232 is plugged in serial port on PC/Host.
- RS232 is recognized on PC/Host as a serial interface.

RS-232-Host-Parameters (Default)		
	USM 1. Generation with Dip-switch	UVM 2. Generation without Dip-switch
Baud Rate:	115200 Baud	9600 Baud
Parity:	Keine/None	
Stop Bits:	1 Bit	
Data Bits:	8 Bit	
Hardware Handshaking:	Keine/None	
Software Handshaking:	Keine/None	

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2.1.4 RS422

- The RS422 is a standard interface.

RS-422-Host-Parameters (Default)		
	USM 1. Generation with Dip-switch	UVM 2. Generation without Dip-switch
Baud Rate:	115200 Baud	9600 Baud

2.1.5 RS485

- The RS485 is a standard interface.

RS-485-Host-Parameters (Default)		
	USM 1. Generation with Dip-switch	UVM 2. Generation without Dip-switch
Baud Rate:	115200 Baud	9600 Baud

3. Preparation of USM - Bluetooth and PC

3.1 About the Universal Supply Module (USM) - Bluetooth

The USM with Bluetooth option (1st generation) is in the default settings on 115200 baud.

The USM with Bluetooth option (2nd generation) is in the default settings on 9600 baud.

The instruction describes how to change the baud rate.

The instruction is valid for following universal supply modules.

Universal supply module (USM)	Order number	Zone 1	Zone 2	Div 2	Available interface
For cabled scanner version BCS3608ex-NI	B7-A2Z0-0042	-	X	-	• USB-SPP* • RS232 • RS422 • RS485
	B7-A2Z0-0042US	-	-	X	
For cabled scanner version BCS3608ex-IS	17-A1Z0-0018	X	-	-	
For Bluetooth scanner version BCS3678ex-NI	B7-A2Z0-0043	-	X	-	
	B7-A2Z0-0043US	-	-	X	
For Bluetooth scanner version BCS3678ex-IS	17-A1Z0-0019	X	-	-	

* USB is working only as SPP (Single Port Profile)
The scanner is connected via USB. On the PC/Host is the USB identified as a virtual serial interface.

HID is not supported by communication over USM.

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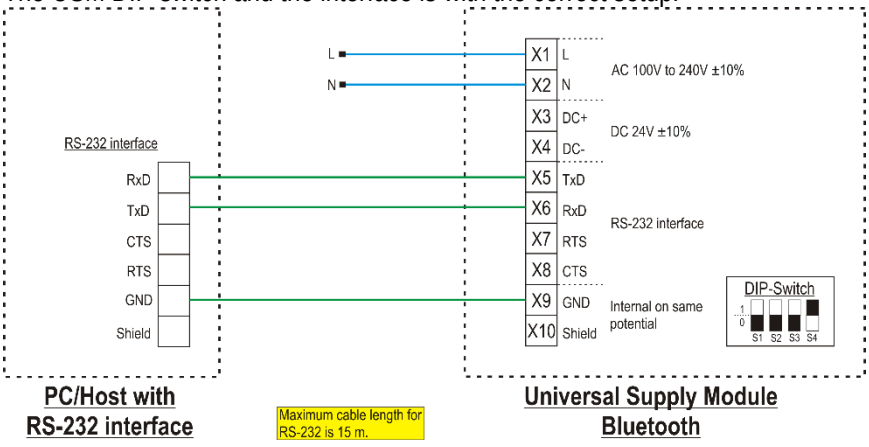
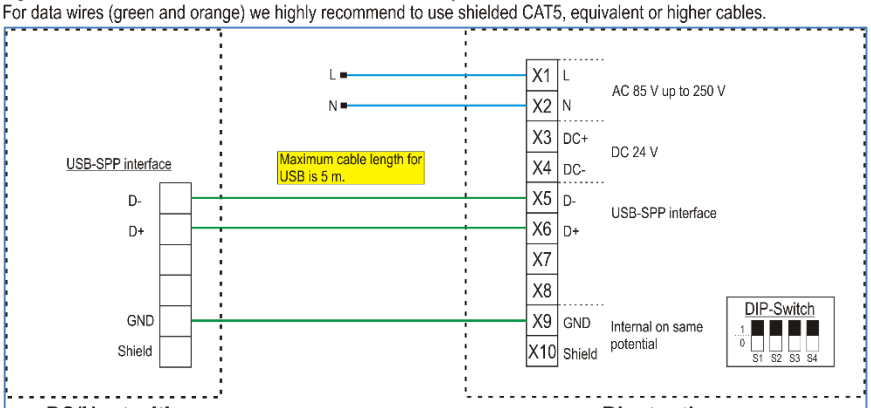
3.2 Requirements

- A terminal program for setup.
  In this description is H-term used.
- A serial connection between USM and a PC with a terminal program.
  Option 1. RS232 connection
  Option 2: USB-SPP connection (virtual COM (communication) port)
- The USM connected to power (AC 85 to 253 V or DC 24 V)
- The USM DIP-switch and the interface is with the correct setup.



Wiring:
blue wires => mandatory
green wires => mandatory
Signal RTS and CTS is internal not in use. The terminal can only be used to connect the wires.
For data wires (green and orange) we highly recommend to use shielded CAT5, equivalent or higher cables.



Wiring:
blue wires => mandatory
green wires => mandatory
For data wires we highly recommend to use shielded CAT5 or higher cables.

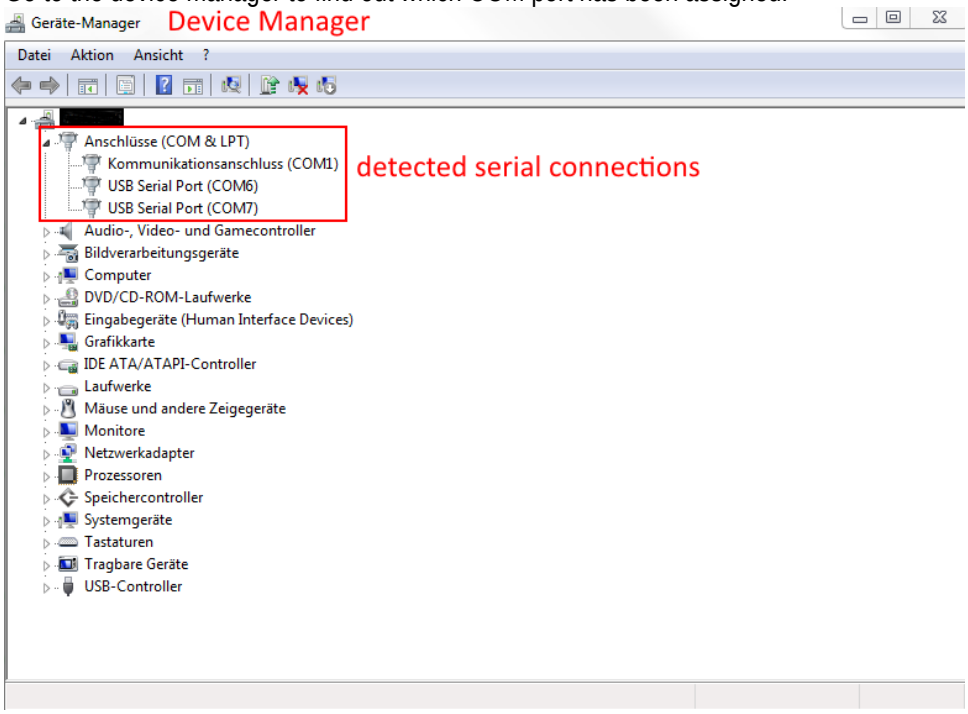
	In 1st generation of USM is the interface setup via Dip switch. In 2nd generation is the interface setup of USM via programming barcodes.

	RS232	USB-SPP

Universal supply module –FTDI-FT232-R driver	
	Driver for the universal supply module (USM). On connecting the USM to a PC, the driver is automatically detected by the Windows operating system and installed. If the automatic detection does not work, then the driver can be downloaded from the BARTEC download page or directly from the FTDI website and installed manually. The driver is compatible with: - Windows 10, 8.1, 8, 7 --- 32/64 bit BARTEC download page: http://automation.bartec.de/

3.3 COM-port selection

After connecting the USM via RS232 or USB-SPP, the operating system assigns automatically a COM port.
Go to the device manager to find out which COM port has been assigned.



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4. Programming Baud Rate of USM - Bluetooth

4.1 Programming

Programming of the USM can be started after the connection is established.

Important is to unpair the scanner from the “Universal Supply Module”.

It is not possible to change the programming or read data out of the module as long the module is paired with a scanner.

Unpair the hand-held scanner from the “Universal Supply Module”.

Scan the barcode below to disconnect all existing hand-held scanner connections to “Universal Supply Module”, base station/PC host/other Bluetooth devices.

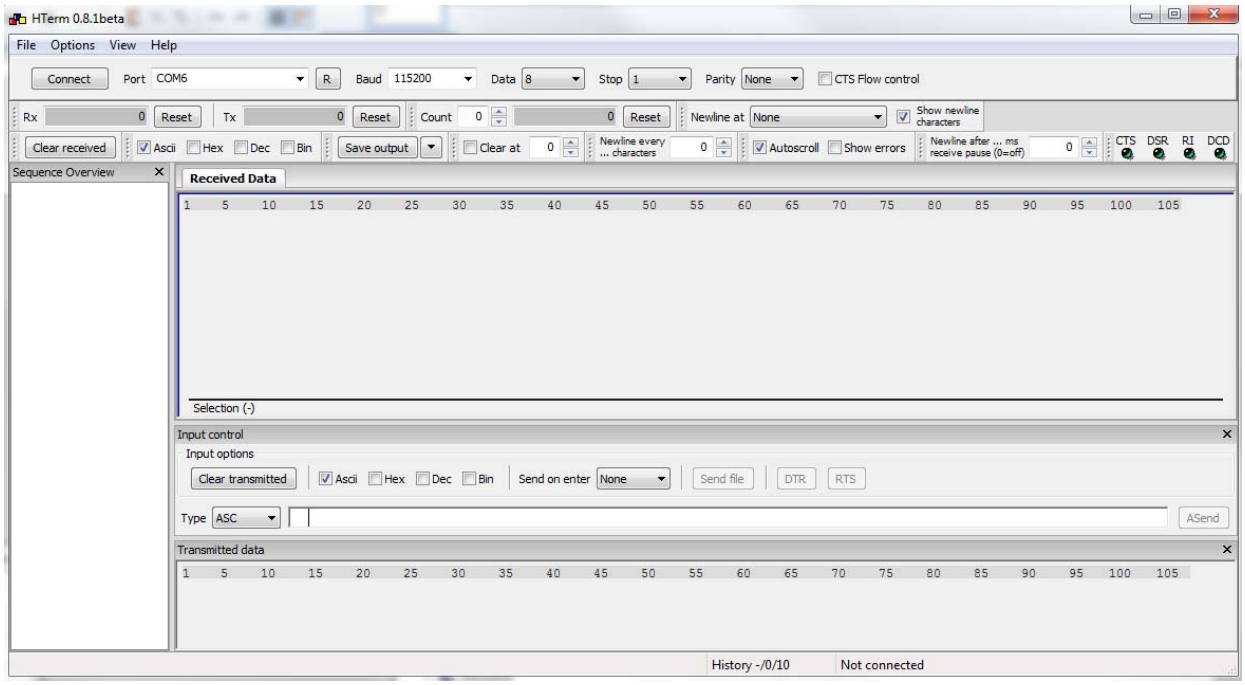
Unpairing

The following steps illustrate the programming of the USM with the terminal program H-term.
The example describes the change from 115200 baud to 9600 baud.
The table in chapter 4.2 shows all parameter for all possible baud rate.

Required command:

Command	Description
$$$	This command causes the device to enter Command mode and display a command prompt. The device passes characters as data until it sees this exact sequence. The escape character to enter Command mode can be changed with the S$ command. Example: $$$ // Enter Command mode
---	This command causes the device to exit Command mode, displaying END. Example: --- // Exit Command mode
SU,xx	Command SU sets the UART baud rate. Chapter 3.4 shows the input parameters and their corresponding baud rates. Default: 03 xx: parameter for baud rate Example: SU,07 // Set the UART baud rate to 19200

4.4.1 Open terminal application.



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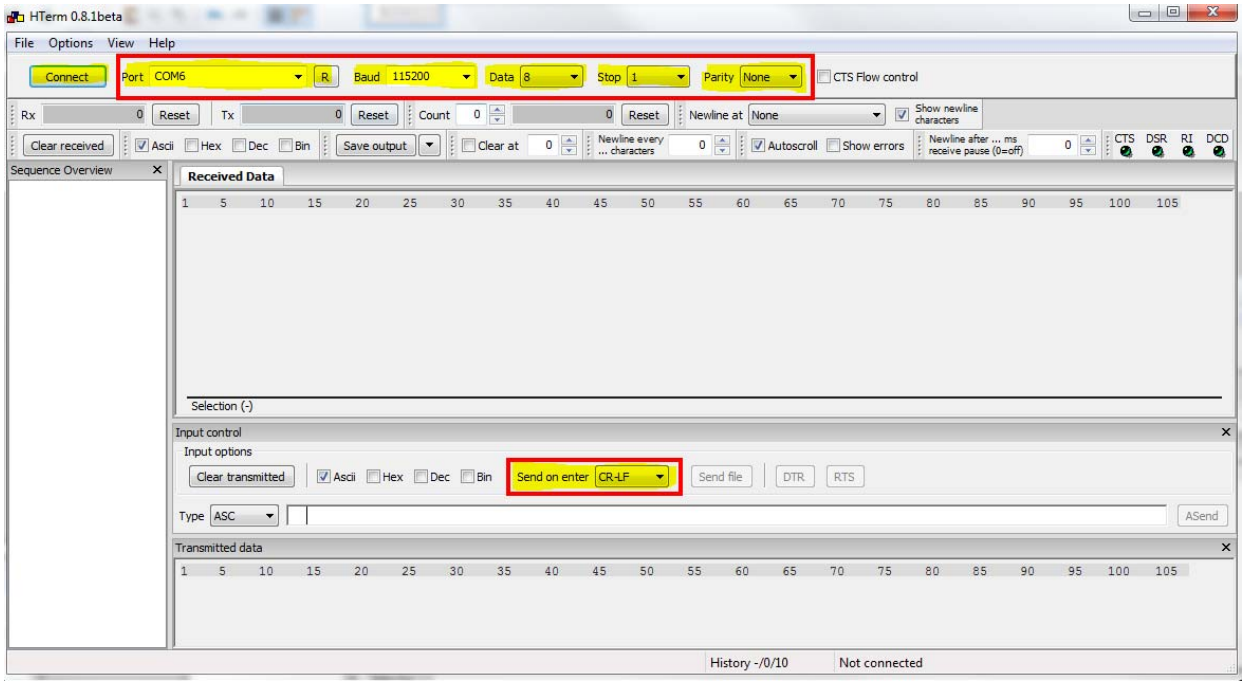
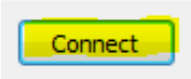
4.4.2 Make correct setup

Select correct COM port
Baud = 115200
Data = 8
Stop = 1
Parity = None
Send on enter = CR+LF (needed to transmit the parameter)



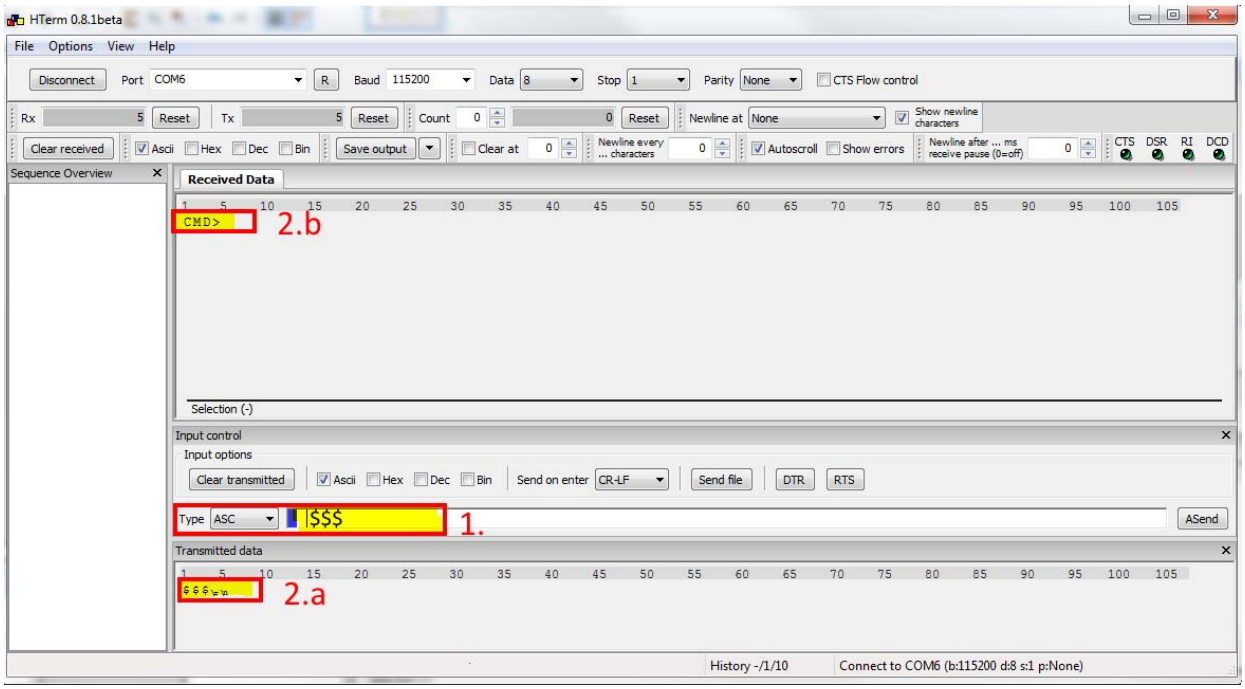
4.4.3 Connect to the COM port

Press Connect



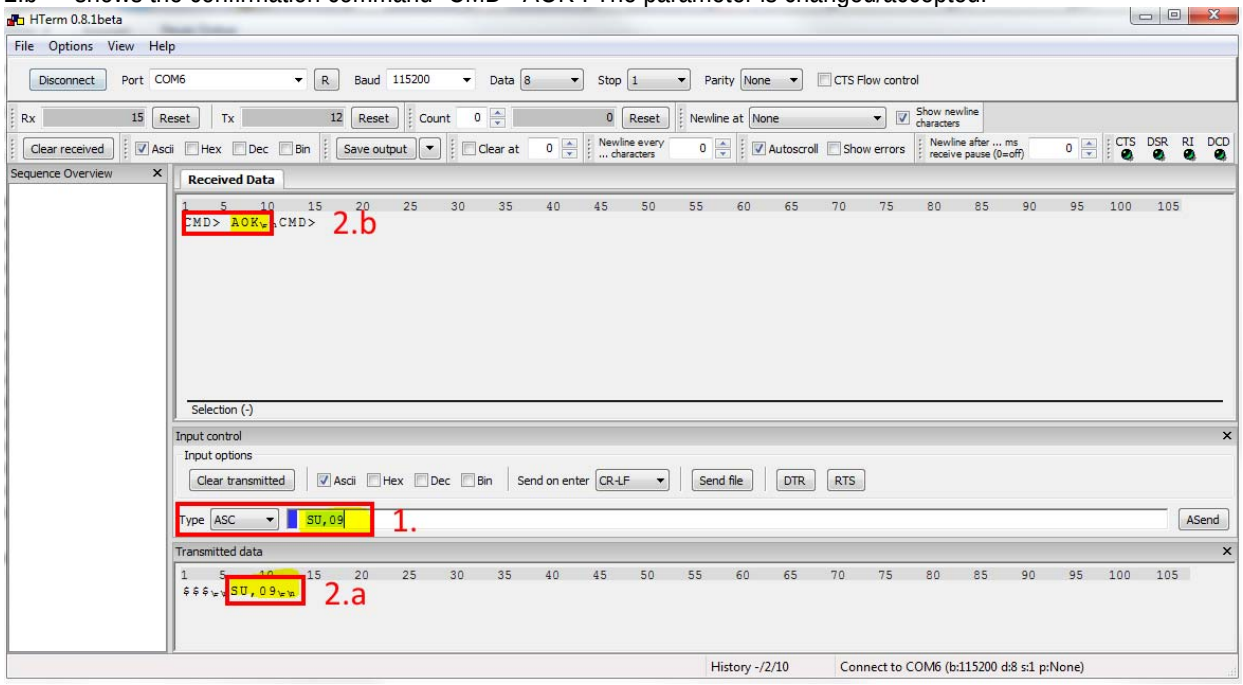
4.4.4 Activate/Enter command mode

1. type $$$ in the red marked field “1”.
2.a --- shows the send parameter “$$$”
2.b --- shows the confirmation command “CMD”. Command mode is activated.



4.4.5 Change baud rate

1. type SU,09 in the red marked field “1”. “SU,09” is the command to change the baud rate to 9600 baud.
2.a --- shows the send parameter “SU,09”
2.b --- shows the confirmation command “CMD> AOK”. The parameter is changed/accepted.



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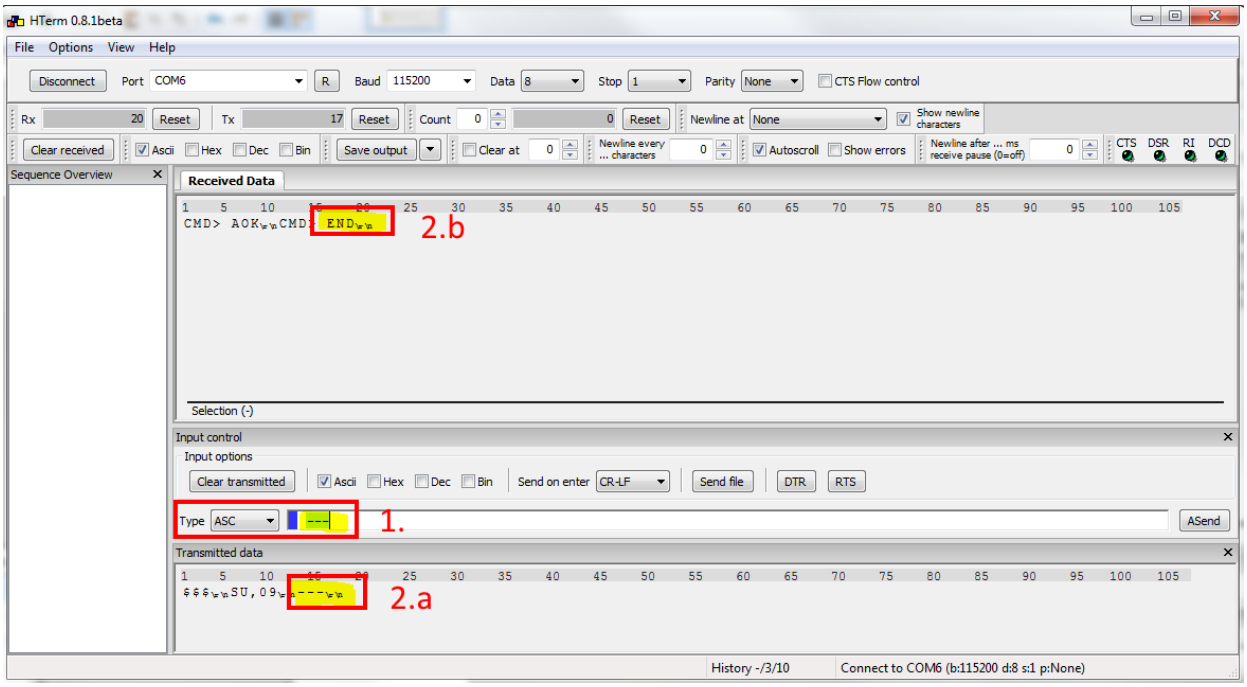
4.4.6 Exit command mode

1. type --- in the red marked field “1”. “---“ is the command to exit the command mode.
2.a --- shows the send parameter “---”
2.b --- shows the confirmation command “END”. Command mode ended.



4.4.7 Finish programming

1. Disconnect serial interface and close terminal application.
2. Restart the USM. (switch USM off and on)

After restart, the new baud rate is activated.

4.2 The parameter list for baud rate

Baud Rate Index	UART Baud Rate
00	921600
01	460800
02	230400
03	115200**
04	57600
05	38400
06	28800
07	19200
08	14400
09	9600*
0A	4800
0B	2400
0C	3000000
0D	4000000
0E	3250000
0F	1843200
10	307200
	* --- Default value of: 1st generation USM corded 2nd generation USM corded and Bluetooth ** --- Default value of: 1st generation USM Bluetooth

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5. Read out Bluetooth Address of USM - Bluetooth

5.1 Read Bluetooth address

Every USM with Bluetooth is equipped with a pairing barcode to establish a connection between Bluetooth scanner and USM.

Description	Barcode
Master Barcode: Must be scanned first that scanner switch to pairing mode.	Bluetooth Serial Port Profile (Master)
Pairing Barcode: Content of the pairing barcode is the Bluetooth address of the module inside of USM. The barcode must be scanned to establish the connection between scanner and USM.	D88039FC8E97 (Bluetooth Address of the remote device) *Example barcode*

The following steps illustrate how to read the Bluetooth address of a generation 2 USM (without Dip switch).
For this example the terminal program H-term is use. It works with every other terminal application as well.

ⓘ	The instructions for creating a pairing barcode using the 123 Scan Utility is part of the BARTEC user manual (11-A1S4-7D0001).

ⓘ Important is to unpair the scanner from the “Universal Supply Module”.

It is not possible to change the programming or read data out of the module as long the module is paired with a scanner.

Unpair the hand-held scanner from the “Universal Supply Module”.

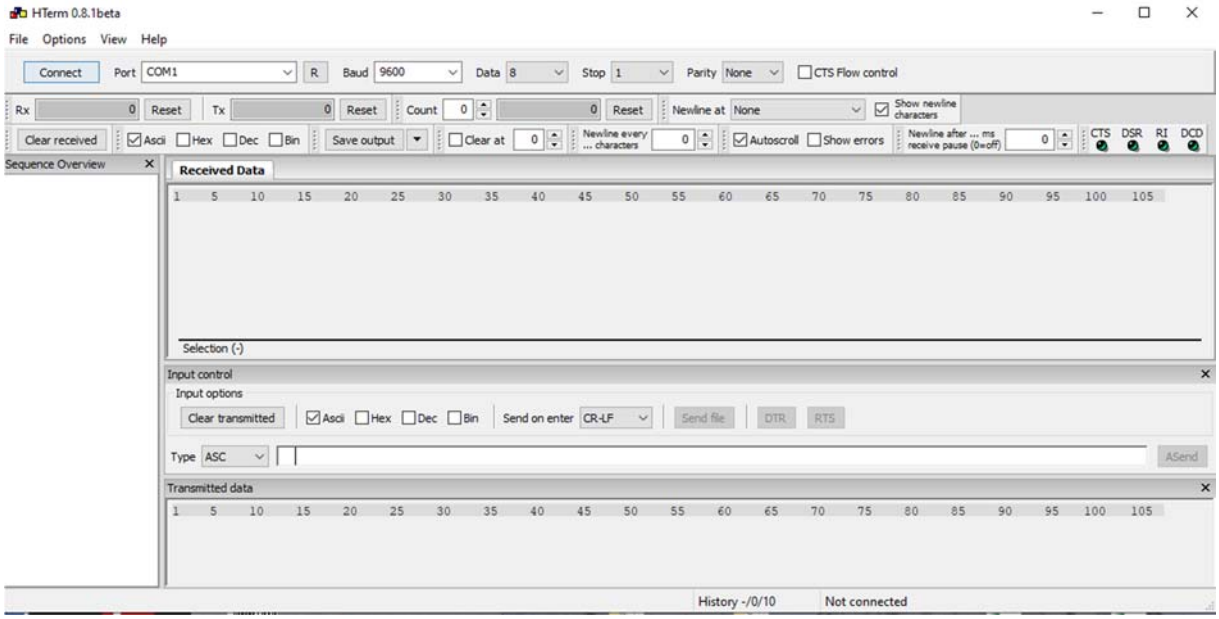
Scan the barcode below to disconnect all existing hand-held scanner connections to “Universal Supply Module”, base station/PC host/other Bluetooth devices.

Unpairing

Required command:

Command	Description
$$$	This command causes the device to enter Command mode and display a command prompt. The device passes characters as data until it sees this exact sequence. The escape character to enter Command mode can be changed with the S$ command. Example: $$$ // Enter Command mode
---	This command causes the device to exit Command mode, displaying END. Example: --- // Exit Command mode
GB	Command GB read out the Bluetooth address of the USM.

4.4.1 Open terminal application.



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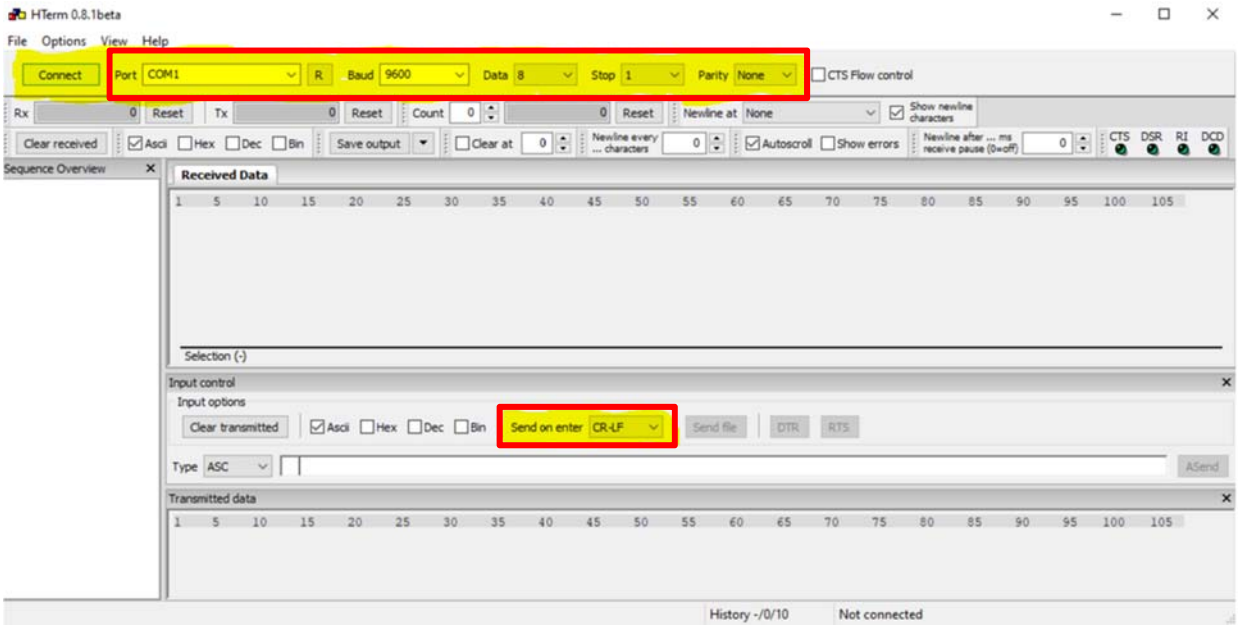
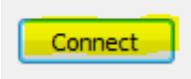
4.4.2 Make correct setup

Select correct COM port
Baud = 9600
Data = 8
Stop = 1
Parity = None
Send on enter = CR+LF (needed to transmit the parameter)



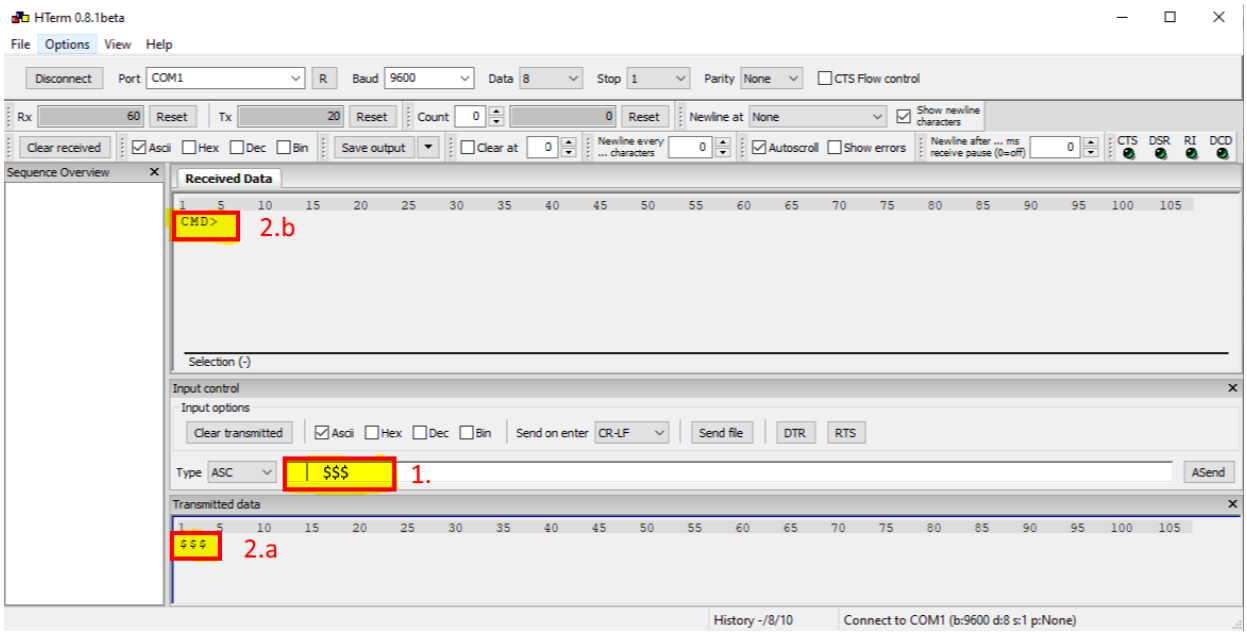
4.4.3 Connect to the COM port

Press Connect



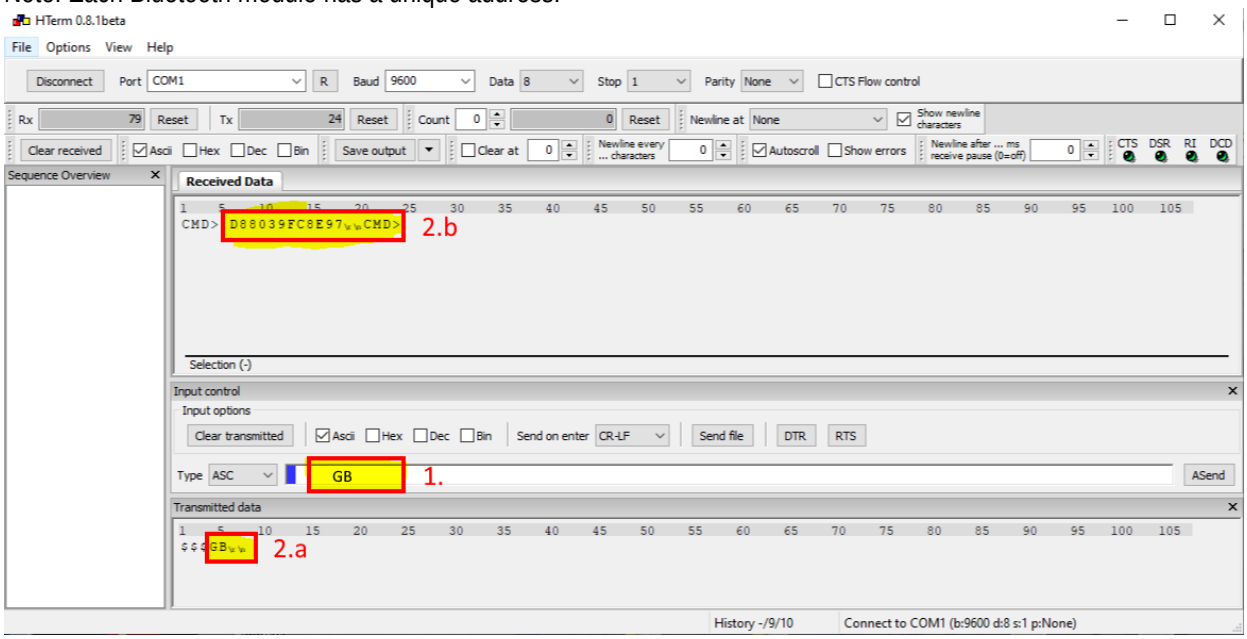
4.4.4 Activate/Enter command mode

1. type $$$ in the red marked field “1”.
2.a --- shows the send parameter “$$$”
2.b --- shows the confirmation command “CMD”. Command mode is activated.



4.4.5 Read out Bluetooth address

1. type GB in the red marked field “1”. “GB” is the command to read the Bluetooth address.
2.a --- shows the send parameter “GB”
2.b --- shows the confirmation command “CMD> AOK”. The parameter is read.
In this example is “D88039FC8E97” the Bluetooth address.
Note: Each Bluetooth module has a unique address.



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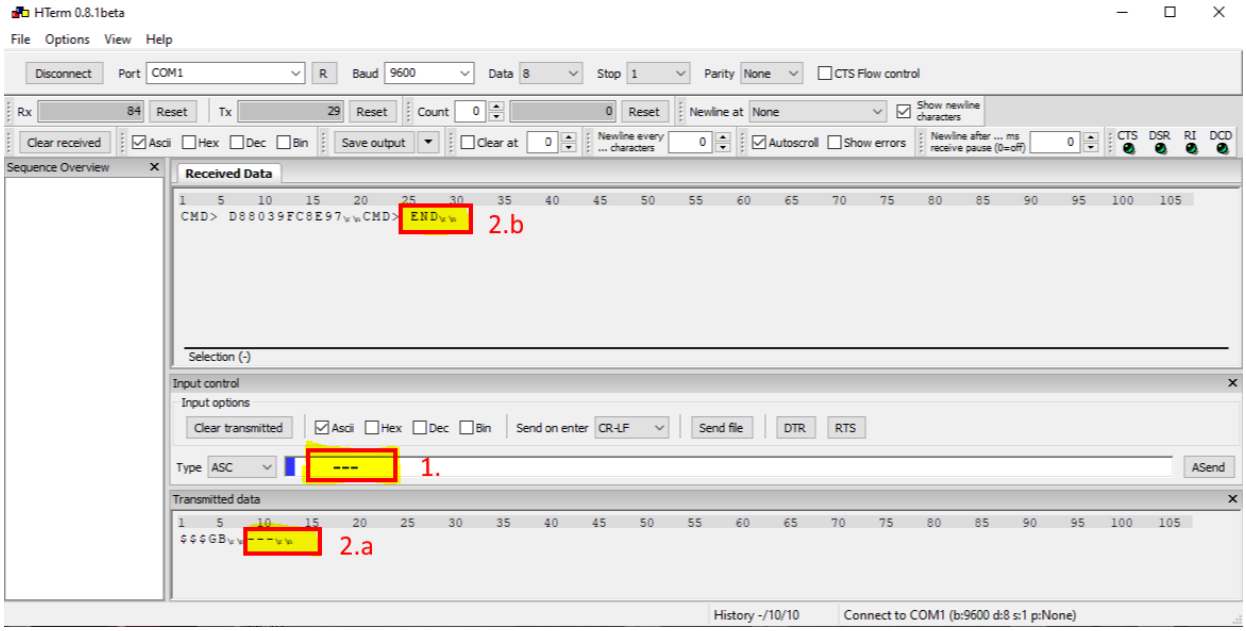
4.4.6 Exit command mode

1. type --- in the red marked field “1”. “---“ is the command to exit the command mode.
2.a --- shows the send parameter “---”
2.b --- shows the confirmation command “END”. Command mode ended.



4.4.7 Finish

1. Disconnect serial interface and close terminal application.
2. Restart of the USM is not required, because no changes on programming done.