

Getting started with the STEVAL-BTDP1 USB dongle

Introduction

The STEVAL-BTDP1 evaluation board (dongle) has an embedded Bluetooth[®] class SPBT3.0DP1 module and includes a USB connector. The USB connector allows PC access to the Bluetooth module and supplies power to the dongle.

The STEVAL-BTDP1 allows testing and working with the SPBT3.0DP1 module, so users can familiarize themselves with the firmware and create Bluetooth links with simple AT commands.^a



Figure 1: STEVAL-BTDP1 evaluation board

^a The AT command list is detailed in user manual UM2077 on www.st.com

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1 Overview

The STEVAL-BTDP1 features:

- SPBT3.0DP1 V3.0 Bluetooth class 1 module
 with embedded antenna
- USB interface and power supply
- Reprogramming support via USB interface
- Reset button
- RoHS compliant

The default settings are:

- UART: 115200 baud rate, no parity, 1 stop bit, 8 data bits
- Local name: "ST BTC3.0 Module"
- Profile: SPP (serial port profile)
- Deep sleep: disabled
- Page and inquiry scan: 1.28 s interval, 11 ms duration
- Security: disabled
- Bonding PIN: "1234"
- Bonding allowed: always enabled



2 Getting started

2.1 Installing the drivers on host PC

To install the drivers on your PC, follow the procedure shown below.



No drivers need to be installed on the Bluetooth SPBT3.0DP1 module or the evaluation board.

Step 1

• Plug the STEVAL-BTDP1 into any available USB port: the computer will automatically find the devices shown below.

CP2102 USD to UART Bridge Controller	CP210x US0 Composite Device

Step 2

• A Found New Hardware Wizard installation window opens:

select Yes, this time only to locate the drivers from the Microsoft[®] website
 click Next to confirm the installation of the identified STEVAL-BTDP1 USB to UART controller and virtual COM port driver



Figure 3: Wizard installation - first step



Figure 4: Wizard installation - second step

	This wizard helps you install software for:
	CP2102 USB to UART Bridge Controller
1000	If your hardware came with an installation CD or floppy disk, insert it now.
The second second	What do you want the wizard to do?
	Instal the software automatically (Recommended) Instal from a list or gpecific location (Advanced)
	Click Next to continue.

Step 3

• The Found New Hardware Wizard opens again to install the USB device driver: - select **Yes, this time only** to locate the drivers from the Microsoft website

Figure 5: Wizard installation third step

H.	Welcome to the Found New Hardware Wizard Viridows will search for current and updated software by looking on pour compute, on the hardware installation (CD, or on the Windows Update Web site (with your permission).
	Can Windows connect to Windows Update to search for software? © Yes, this time only © Yes, now and givery time I connect a device © No, not this time
	Click Next to continue.

Figure 6: Wizard installation completed

Your new hardware is installed and readyto us	use.

- Step 4:
 - Open the Windows[®] device manager application to verify correct installation and check which COM port is assigned to the STEVAL-BTDP1 Bluetooth serial device². The STEVAL-BTDP1 is usually assigned the same virtual COM port each time it is inserted (unless there are other virtual COM devices altering port assignments).

² If the USB driver wizard installation fails, find the alternative installation procedure in the Appendix.





- check that **two device drivers** for the STEVAL-BTDP1 Bluetooth are shown here.

 Bit Device Manager

 Die geton gene gebo

 Image: Stand Devices

 Image: Stand Device Devices

 Image: Device Devices

Figure 7: Windows device manager

The CP2102 chip ensures standard UART serial communication from the computer via the universal serial bus and interfaces directly with the Bluetooth module in the Bluetooth serial adapter.

2.2 Two dongle communication

Two Bluetooth STEVAL-BTDP1 dongles on separate PCs can be implemented for the development of applications involving cable-free communication.



Figure 8: Two dongle communication setup



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2.2.1 Connection procedure

The dongles used in the connection have separate BD addresses. In our example they are 0080e1f00001 (dongle2) and 0080e1f00002 (dongle2).

Two dongle connection procedure

Step 1

• Plug each dongle into a PC using the USB connector

Step 2

• Open the HyperTerminal program on both PCs and create a new connection and configure it as shown below.

test - HyperTerminal		23
I test - HyperTerminal File Edit View Call Transfer Help D I I IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Connect To	
	Connect using: COM5	

Figure 9: Connection setup

Figure 10: Port selection

New Connection - HyperTerminal File Edit View Call Transfer Help S S L D D D D D D D D D D D D D D D	
	Connection Description
Disconnected Auto detect Auto	detect SCROLL CAPS NUM Capture Print echo

Figure 1	1: Port parameters
COM5 Properties	8 ×
Port Settings	
<u>B</u> its per second:	115200 💌
<u>D</u> ata bits:	8 •
<u>P</u> arity:	None
<u>S</u> top bits:	1
Flow control:	None
	Restore Defaults
	K Cancel Apply

Step 3

• From the menu file set the AT command connection properties.

Connect To Settings	ASCII Sending
Function, arrow, and ctrl keys act as	 ✓ Send line ends with line feeds ✓ Echo typed characters locally Line delay: 1 milliseconds. Character delay: 1 milliseconds.
Emulation: Auto detect Terminal Setup Colors Telnet terminal ID: ANSI Backscroll buffer lines: 500	ASCII Receiving Append line feeds to incoming line ends Force incoming data to 7-bit ASCII Yrap lines that exceed terminal width
Play sound when connecting or disconnecting Exit program upon disconnecting <u>A</u> SCII Setup	OK Cancel
OK Cancel	

• The dongle is ready to use.



Step 4

• Press the reset switch on the dongle: on the screen, the prompt followed by the module Bluetooth address should appear:

mm - HyperTerminal	
File Edit View Call T	ransfer Help _
🏽 📽 💿 🕉 🖷 🎦	Ľ [₽]
AT-AB -Comman	dMode-
AT-AB BDAddre	ss 0080e1ba001c
AT-AB BDAddres	ss 0080e1ba001c

Figure 14: BDAddress dongle1, dongle2

ile Edit View Call Transfer Help	File Edit View Call Transfer Help	
) 📽 🔿 🖏 🕫 🖀 👘	D 📽 🐲 💲 🕫 🖀	
OT_OR_CommandModo_	OT_OR_CompandMada_	-
AT-AB BDAddress 0080e1ba001c	AT-AB BDAddress 0080e1ba00ad	5
AT-AB BDAddress 0080e1ba001c	AT-AB BDAddress 0080e1ba00ad	-

The user can now operate the dongle through the AT commands.



3 Revision history

Table 1: Document revision history

Date	Version	Changes
05-Jun-2017	1	Initial release.



Appendix A USB driver installation

If USB driver wizard installation fails, the dongle can be installed using the driver available on the silicon lab website at

https://www.silabs.com/products/mcu/Pages/USB to UARTBridge VCPD rivers.aspx

Insert the dongle into a USB port on the PC and follow the sequence shown in the images below.

Figure 15: USB driver installation launch

E.	Welcome to the InstallShield Wizard for Silicon Laboratories CP210x VCP Drivers for Windows XP/2003 Server/Vista/7 v5.40.29	
	The InstallSheld Witzed will copy Silcon Laboratories OP210x VCP Drivers for Windows XP/2003 Server.Vista/7 v5.4029 onto your computer. To continue, click Next	

Figure 16: License agreement



Figure 17: Wizard installation - 1



Figure 18: Wizard installation - 2

Ready to Install the Program The wizard is ready to begin installation.		No.
Click Install to begin the installation.		
If you want to review or change any of your inst the woard	allation settings, click Back. (Dick Cancel to exit

Figure 19: Wizard installation - 3

 Silicon Laboratories Silicon Laboratories CP210x U 	ISB to UART Bridge	Success
stallation Location:	Driver Version 5.4.29	Installation completed success
C:\Program Files\Silabs\MCU\CP21	0x1	
C:\Program Files\Silabs\MCU\CP21	0x1	СК



Г

Figure 20: Wizard installation terminated



Figure 21: Installation completed

The wizad has finished installing the software for.	
Săcon Labs CP210x USB to UART Bridg	
	*
-	
Click Finish to close the waard.	

The USB driver installation is now complete



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