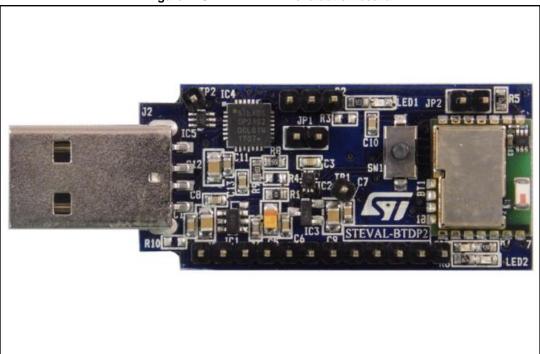


# Getting started with the STEVAL-BTDP2 USB dongle

# Introduction

The STEVAL-BTDP2 evaluation board (dongle) has an embedded Bluetooth<sup>®</sup> class SPBT3.0DP2 module and includes a USB connector. The USB connector allows PC access to the Bluetooth module and supplies power to the dongle.

The STEVAL-BTDP2 allows testing and working with the SPBT3.0DP2 module, so users can familiarize themselves with the firmware and create Bluetooth links with simple AT commands.<sup>a</sup>



## Figure 1: STEVAL-BTDP2 evaluation board

<sup>&</sup>lt;sup>a</sup> The AT command list is detailed in user manual UM2077 on www.st.com

# **Contents**

1	Overviev	w		4
2	Getting	started		5
	2.1	Installing	the drivers on host PC	5
	2.2	Two dong	gle communication	7
		2.2.1	Connection procedure	8
3	Revisio	n history		11
Ар	pendix A	USB	driver installation	12



# List of figures

Figure 1: STEVAL-BTDP2 evaluation board	.1
Figure 3: USB drive installation first and second step	
Figure 4: Wizard installation - first step	.5
Figure 5: Wizard installation - second step	.6
Figure 6: Wizard installation third step	.6
Figure 7: Wizard installation completed	.6
Figure 8: Windows device manager	
Figure 9: Two dongle communication setup	.7
Figure 10: Connection setup	.8
Figure 11: Port selection	.8
Figure 12: Port parameters	.9
Figure 13: Connection properties setup	.9
Figure 14: AT command prompt1	0
Figure 15: BDAddress dongle1, dongle21	0
Figure 16: USB driver installation launch1	
Figure 17: License agreement1	2
Figure 18: Wizard installation - 11	3
Figure 19: Wizard installation - 21	3
Figure 20: Wizard installation - 31	
Figure 21: Wizard installation terminated1	4
Figure 22: Installation completed1	4



# 1 Overview

The SPBT3.0DP2 features:

- SPBT3.0DP2 V3.0 Bluetooth class 2 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**

#### Installing the drivers on host PC 2.1

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



No drivers need to be installed on the Bluetooth SPBT3.0DP2 module or the evaluation board.

Step 1

• Plug the STEVAL-BTDP2 into any available USB port: the computer will automatically find the devices shown below.

Found New Hardwore      CP2102 USD to UART Bridge Controller      P202 3:24 DM	Found New Hardware     CP210x US0 Composite Davice
80 32HM	20 321 PK

2. LICP drive installation n fleat -. . . . 

## 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-BTDP2 USB to UART controller and virtual COM port driver



	Welcome to the Found New Hardware Wizard Windows will search for current and updated software by
	looking on your conputer, on the hardware installation CD, or on the Windows Update Web site (with your permission). <u>Read our privacy policy</u>
	Can Windows connect to Windows Update to search for software?
- 40E	()Yes, this time only Yes, now and gvery time I connect a device
	No, not this time
	Click Next to continue.



### Figure 4: Wizard installation - second step

CP2102 USB to UART Bridge Controller	This wizard helps you install software for:
or floppy disk, insert it now.      What do you want the wizard to do?      O[Initial the software automatically (Recommended]     O Initial from a list or goecilic location (Advanced)	CP2102 USB to UART Bridge Controller
Install from a list or gpecific location (Advanced)	or floppy disk, insert it now.
Click Next to continue	
	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

	Welcome to the Found New Hardware Wizard
SE	looking on your compute, on the hardware installation (D), or on the Windows Update Web site (with your permission). Read our privacy policy
	Can Windows connect to Windows Update to search for software?
	( <u>Ves</u> , this time only)     ( <u>Ves</u> , now and givery time I connect a device     ( <u>No</u> , not this time
	Click Next to continue.

#### Figure 6: Wizard installation completed

		New Hardware
Your new hardware is installed and ready to use.	vare is installed and ready to use.	dware is installed and readyto u

- Step 4:
  - Open the Windows<sup>®</sup> device manager application to verify correct installation and check which COM port is assigned to the STEVAL-BTDP2 Bluetooth serial device<sup>b</sup>. The STEVAL-BTDP2 is usually assigned the same virtual COM port each time it is inserted (unless there are other virtual COM devices altering port assignments).



<sup>&</sup>lt;sup>b</sup> If the USB driver wizard installation fails, find the alternative installation procedure in the Appendix.

- check that **two device drivers** for the STEVAL-BTDP2 Bluetooth are shown here.

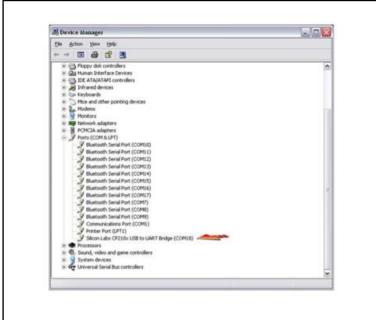


Figure 7: Windows device manager

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-BTDP2 dongles on separate PCs can be implemented for the development of applications involving cable-free communication.

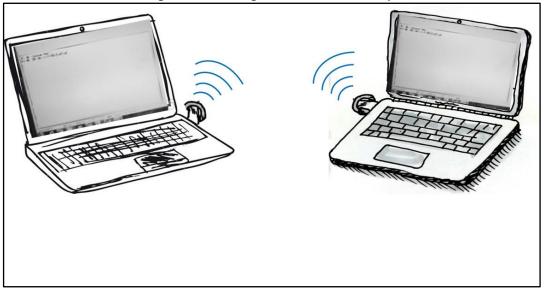


Figure 8: Two dongle communication setup



# 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		
E test - HyperTerminal File Edit View Call Transfer Help D D D D D D D D D D -	Connect To BTconnection Erster details for the phone number that you want to dail County/regon: Area code:	
	Phone number: Connect using: COMS	

# Figure 9: Connection setup

Figure 10: Port selection

■ New Connection - HyperTerminal File Edit View Call Transfer Help D 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
	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
Elow control:	None
	Restore Defaults
	K Cancel Apply

## Step 3

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

Figure 12: Connection properties setup

T Con Properties 🔹 💽 🔀	ASCII Setup
Connect To Settings Function, arrow, and ctrl keys act as Terminal keys Backspace key sends ©trl+H ©el © Ctrl+H, Space, Ctrl+H Emulation: Auto detect Terminal Setup Colors Telget terminal ID: ANSI Backscroll buffer lines: 500 Play sound when connecting or disconnecting Exit program upon disconnecting ASCII Setup OK Cancel	ASCII Sending  Send line ends with line feeds  Echo typed characters locally Line delay: Character delay:  ASCII Receiving  Append line feeds to incoming line ends Force incoming data to 7-bit ASCII  Varap lines that exceed terminal width  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		х
File Edit View Call Tran	nsfer Help _	
🗅 🗃 🍙 🔏 💷 🛅 (	a de la companya de la compa	
		_ ^
AT-AB -CommandM	La alla	
		Ξ
AT-AB BDAddress		
		•

## Figure 14: BDAddress dongle1, dongle2

mm - HyperTerminal	bb - HyperTerminal
ile Edit View Call Transfer Help _	File Edit View Call Transfer Help
) 📽 🍘 🎖 📫 🎦 📽	D 🖨 🖉 🕉 🗠 🎦 🖻
AT-AB -CommandMode- AT-AB BDAddress 0080e1ba001c	AT-AB -CommandMode- 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/USBtoUARTBridgeVCPDrivers.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

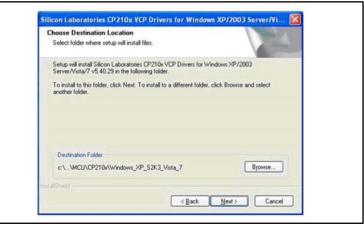
50	Welcome to the InstallShield Wizard for Silicon Laboratories CP210z VCP Drivers for Windows XP/2003 Server/Vista/7 v5.40.29
	The finitalSheld Woord will copy Silcon Laboratories CP210xVCP Drivers for Windows X9/2003 Server/Vista/7 v5.4029 onlo your computer. To continue, click Nest.
	Cancel

Figure 16: License agreement





## Figure 17: Wizard installation - 1



#### Figure 18: Wizard installation - 2

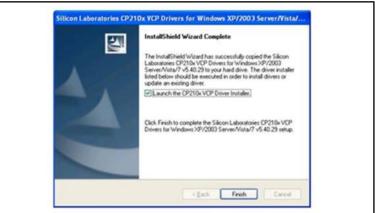
Ready to Install the Program The wizard is ready to begin installation.		
Click Install to begin the installation.		
If you want to review or change any of your insti- the wizard	ellation settings, click Back. Click Ca	ncel to exit

Figure 19: Wizard installation - 3

	x USB to UART Bridge Driver Inst		
Silicon Laboratories Silicon Laboratories CP210	USB to UADT Bridge	Success	
U G Silcon Laboracones CP210	CODE CO OMICE BRIDGE	(*)	
Installation Location:	Driver Version 5.4.	29	Installation completed successfu
C:\Program Files\Silabs\MCU\CF	210x]		
			C OK



## Figure 20: Wizard installation terminated



### Figure 21: Installation completed

×	Completing the Found New Hardware Wizard	
2	The wizard has finished installing the software for	
	Silicon Labs CP210x USB to UART Bridge	
	-	
	Click Finish to close the wizard.	
	Caref	

The USB driver installation is now complete



### UM2226

## **IMPORTANT NOTICE – PLEASE READ CAREFULLY**

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2017 STMicroelectronics - All rights reserved

