

PAIRING TSL *BLUETOOTH*® READERS TO WINDOWS 7 DESKTOP

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Overview

This document describes how to pair a TSL *Bluetooth*[®] Reader to a Windows 7 desktop computer. The process is similar for other desktop computers.

History

<u>Version</u>	<u>Date</u>	Modifications
1.0	19/09/2013	Document Creation
1.1	08/12/2014	Content revised to include multiple TSL Bluetooth® readers

INTRODUCTION

Many of Technology Solutions' *Bluetooth*[®] products use the *Bluetooth*[®] virtual serial port profile. This typically means that once a connection has been configured an application running on a *Bluetooth*[®] host can communicate with the Technology Solutions *Bluetooth*[®] Device as if it were using a simple serial port.

The process of configuring the connection is split into stages

- Discovering the Bluetooth® device to connect to
- Providing a PIN to permit the devices to use secured communication (optional but usually required)
- Determining the COM port that the device has been associated with

Once the connection has been configured all that is required to connect and disconnect with the Technology Solutions *Bluetooth*[®] Device is to open and close the serial port that is associated with the connection.

When pairing a *Bluetooth*[®] virtual serial port device with a Windows desktop computer Windows typically assigns two com ports to the device an outgoing and incoming com port. The outgoing com port is a serial port that makes a *Bluetooth*[®] connection to the device when it is opened and closes the *Bluetooth*[®] connection as the port is closed. The *Bluetooth*[®] host initiates the connection. Technology Solutions *Bluetooth*[®] devices require the *Bluetooth*[®] host to initiate the connection and therefore it is the outgoing com port that should be used.

The incoming com port is a serial port that can be opened to listen for incoming *Bluetooth*[®] connections. This can be seen in some *Bluetooth*[®] ActiveSync scenarios (StoneStreetOne). An application opening this port does not initiate the connection but simply waits for a device to connect to it. This port is not used by Technology Solutions *Bluetooth*[®] devices.

CONFIGURING THE CONNECTION

BLUETOOTH® DISCOVERY

Add a Device		
Allow a Device to Connect Show Bluetooth Devices	Add a device Add a printer	irch Devices and Printers 👂
Send a File Receive a File	No items match your search.	
Join a Personal Area Network Open Settings	Paste Paste shortcut Undo Rename Ctri+Z	
Remove Icon	Add a device Add a printer	
Customize	0 items	
🖸 🚳 🏂 🖿 🐂 😡 14:3		

FIGURE 1: Initiate Discovery

The first step in configuring the connection is to discover the device to connect to. From the right click context menu of the *Bluetooth*[®] system tray icon (left) or from the right click context menu in the "Devices and Printers" dialog in control panel (right) select "Add a Device". This will show the *Bluetooth*[®] discovery dialog and start searching for *Bluetooth*[®] devices.

Select a o	levice to add to thi ill continue to look for n	s computer ew devices and display th	em here.	
Ŭ	000301-EU-1128 Bluetooth Other			
What if Win	dows doesn't find my d	evice?		

FIGURE 2: Discovered Devices

If you have not already done so, press the yellow trigger button on the Technology Solutions *Bluetooth*[®] device. This should wake the device, if not awake already. You should see a flashing blue LED to indicate the device is waiting to be connected to.

As Windows discovers devices they appear in the list. The *Bluetooth®* friendly name of the Technology Solutions *Bluetooth®* device is usually the serial number of the device. This helps to quickly identify the required device from the list available. When the required device appears in the list select it and click next (in this example 000301-EU-1128).

BLUETOOTH® PAIRING

Select the 'Enter the device's pairing code' option.



FIGURE 3: Enter PIN

Windows will then prompt for a PIN for the Technology Solutions *Bluetooth*[®] device (by default 0000). Enter the PIN and click next.



FIGURE 4: Bluetooth® Device Paired

At this connection the Technology Solutions *Bluetooth*[®] device is paired with the desktop computer. Next Windows will discover the appropriate services offered by the *Bluetooth*[®] device and install the appropriate drivers. You should see the typical installing drivers system notification which you can click to see more information.

INSTALLING DRIVERS AND DETERMINE COM PORT

Driver Software Installation		Driver Software Installation
Installing device driver softwo	are	Device driver software was not successfully installed
Bluetooth Peripheral Device OSearching Windows Update		Please consult with your device manufacturer for assistance getting this device installed.
Bluetooth Peripheral Device Bluetooth Peripheral Device	uetooth Peripheral Device Searching Windows Update uetooth Peripheral Device Searching Windows Update	Standard Serial over Bluetooth link (COM3) Standard Serial over Bluetooth link (COM4) Bluetooth Peripheral Device X No driver found
Obtaining device driver software from Windows Update might take a while. <u>Skip obtaining driver software from Windows Update</u>		What can I do if my device did not install properly?
	Close	Close

FIGURE 5: Installing Drivers

Once the *Bluetooth*[®] device is paired Windows discovers the services it offers and installs the appropriate drivers. Windows shows the standard installing drivers system notification that can be selected to show the dialogs above as the *Bluetooth*[®] virtual serial ports offered by the Technology Solutions *Bluetooth*[®] device are discovered and appropriate serial ports installed.

You may see that there was no driver found for the '*Bluetooth*® Peripheral Device' however this is a service used by iOS devices only and not used on a Windows desktop computer.

Control Panel > Hardware and Sound > Devices and Printers > Bluetooth Devices v 49 Sear	Compared Hardware Services Bluetoeth
Add a device Add a printer Troubleshoot Remove device	Image: Contract of Contrect of Contract of Contract of Contract of Cont
000301-EU-1128 Category: Other Status: Needs troubleshooting	OK Cancel Apply

FIGURE 6: Determine Com Port

Figure 5 shows Windows has installed two com ports for the device an incoming and outgoing com port (COM3 and COM4). To use a Technology Solutions *Bluetooth*[®] device the outgoing com port is used. To determine the correct port select the device in the *Bluetooth*[®] Devices and right click for properties. The hardware tab of the properties dialog shows the outgoing com port associated with the selected device (COM3).

TESTING THE CONNECTION

🕞 ASCII Protocol Explorer	ASCII Protocol Explorer		
File Reader View Help	File Reader View Help		
Peferch Davie	1		
			Messages
Port COM1 ages			messages
Connect COM3	Command		
leng Disconnect COM4	IsIndexedCommand	True	
lelibranCommand True	IsLibraryCommand	True	
MaxSunchronousWait 3	MaxSynchronousWaitTime	3	
CommandName ab	CommandName	.Vr	
LastCommandLine	LastCommandLine	.YF LCMD 000000	
	Antenna Sarial Number	1128 C1 EU 000201	
	Antenna Senai Number	20.0	
	Rostloader/Version	140	
	FirmwareVersion	310	
	Manufacturer	TSLUKItd	
	RadioBootloaderVersion	1.2.0	
	RadioFirmwareVersion	2.6.0	
	RadioSerialNumber	1116-ET-006504	
	SerialNumber	1128-EU-000301	
Perparent lines			Response Lines
Tresponse Lines			CS: .vr LCMD 000000
CommandName Identifies the command on the command line	CommandName Identifies the command on the comm	and line	MF: TSL UK Ltd. US: 1128-EU-200301 PV: 2.0.0 UF: 3.1.0 UB: 1.4.0 RF: 1116-ET-006504 RF: 2.6.0
AbortCommand -	VersionInformationCommand		 RB: 1.2.0 AS: 1128-S1-EU-000301
Build Parse Send	Build Parse	Send Synchronous Shotcut	OK:
	Connected on COM3		- L

FIGURE 7: Testing the Connection

Now that the connection is configured the connection can be opened or closed by opening or closing the appropriate com port (COM3). A Windows terminal program can be used to open the required port and a command sent to the Technology Solutions *Bluetooth*[®] device. In this example a version command `.vr' has been sent and the response received.

Before opening the com the Technology Solutions *Bluetooth*[®] device must be awake awaiting a connection. If the Technology Solutions *Bluetooth*[®] device has a static blue LED disconnect from the other *Bluetooth*[®] host or serial or USB connection to ensure the blue LED is flashing. If the blue LED is not flashing press the yellow trigger button to wake the device.

With the device waiting for a connection open the com port from the terminal application. The blue LED should change from flashing to on to show that the connection is established.

ABOUT TSL

ABOUT

TSL designs and manufactures both standard and custom embedded, snap on and standalone peripherals for handheld computer terminals. Embedded technologies include:

- RFID Low Frequency, High Frequency & UHF
- Bluetooth[®] wireless technology
- Contact Smartcard
- Fingerprint Biometrics
- 1D and 2D Barcode Scanning
- Magnetic Card Readers
- OCR-B and ePassport

Utilizing class leading Industrial design, TSL develops products from concept through to high volume manufacture for Blue Chip companies around the world. Using the above technologies TSL develops innovative products in a timely and cost effective manner for a broad range of handheld devices.

CONTACT

Address:	Technology Solutions (UK) Limited, Suite C,		
	Loughborough Technology Centre, Epinal Way,		
	Loughborough, Leicestershire, LE11 3GE.		
	United Kingdom.		
Telephone:	+44 (0)1509 238248		
Fax:	+44 (0)1509 220020		
Email:	enquiries@tsl.uk.com		
Website:	www.tsl.uk.com		



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