

## TIRIS Bluetooth PUK – Getting Started



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## History

Version	Date	Modifications
1.0	16/06/04	Document Creation
1.1	15/8/2004	Minor corrections
1.2	22/10/04	Added configuration and power save commands, added description of power save features

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## 1 Overview

Thank you for purchasing this TIRIS Bluetooth PUK Development Kit. This reader has been developed to provide a cost effective and simple, easy to use method of creating RFID solutions linked to a host over Bluetooth.

Communication between the TIRIS Bluetooth PUK and the host computer uses Bluetooth. The PUK presents a comm. port as a Bluetooth service. This runs at 57600 baud with 8 data bits, no parity and 1 stop bit.

## 2 Contents

In this kit, you will find the following components.



- A – TIRIS Bluetooth PUK
  - B – Battery charger power supply
  - C – Selection of Low Frequency Transponders.
- (All Data sheets can be found on the CD)
- D - Software Development CD.

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### 3 Installing the demonstration software

To install the reader demonstration software launch the "TSL Reader Demo.msi" file in the "Installs" folder of the CDROM. Follow the on screen instructions to complete the installation.

A shortcut to the application is created in the Programs section of the Start menu. Launch the application by Selecting TSL Reader Demo

You can subsequently uninstall the demo application using Add or Remove Programs in the Control Panel

The demonstration software uses the Bluetooth comm. port provided by the Bluetooth driver software supplied with your Bluetooth device. Consult your device documentation to find out more about enabling this functionality.

### 4 Switching the PUK on

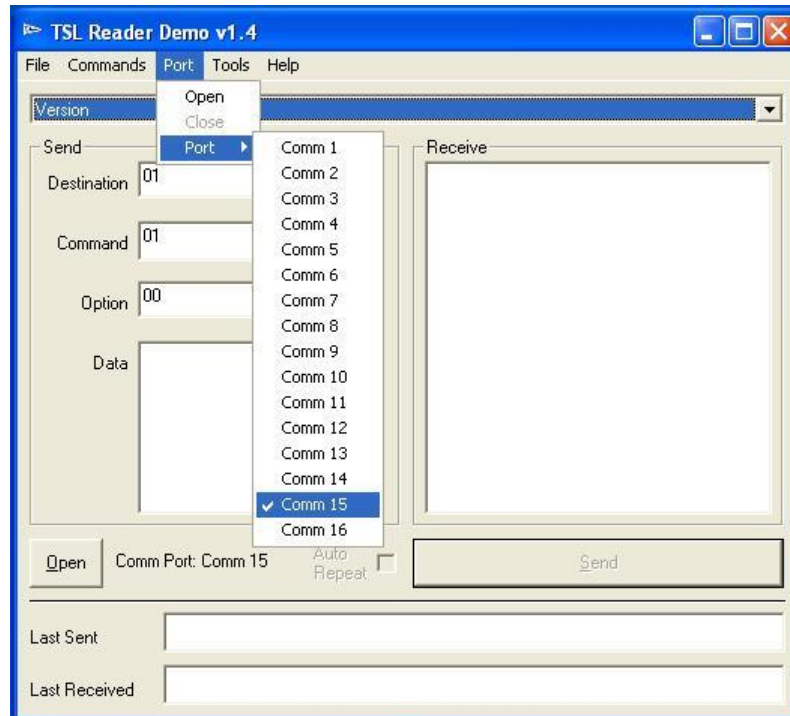
Remove the transport cap from the battery pack. When inserted this isolates the battery from the RFID reader section to minimise battery drain. Press the button briefly, the PUK will power up and the Bluetooth section will become Discoverable. In this state the blue LED flashes slowly. If a Bluetooth link is not established within a minute the PUK returns to low power sleep mode and must be reactivated by a button press.

### 5 Connecting to the PUK

Using the Bluetooth driver software installed on the host, search for Bluetooth Devices. The PUK will appear as an unknown device (standard Bluetooth logo displayed) with name "RFID". The single service offered will be a serial port replacement. Start the serial port replacement service. When prompted for a PIN enter "2004". The PUK will then be connected to whichever virtual comm. port the driver software uses and the blue status LED will be lit continuously. Usually the Bluetooth device driver displays a message telling you which comm. port is being used.

## 6 Demonstration Application

1. From the Start menu open the Technology Solutions program group and launch the TSL Reader Demo.
2. Select the comm port which the PUK is connected to using the “Port” menu. This is the port that the Bluetooth Device Driver software should have indicated that it was using when the PUK was connected to.

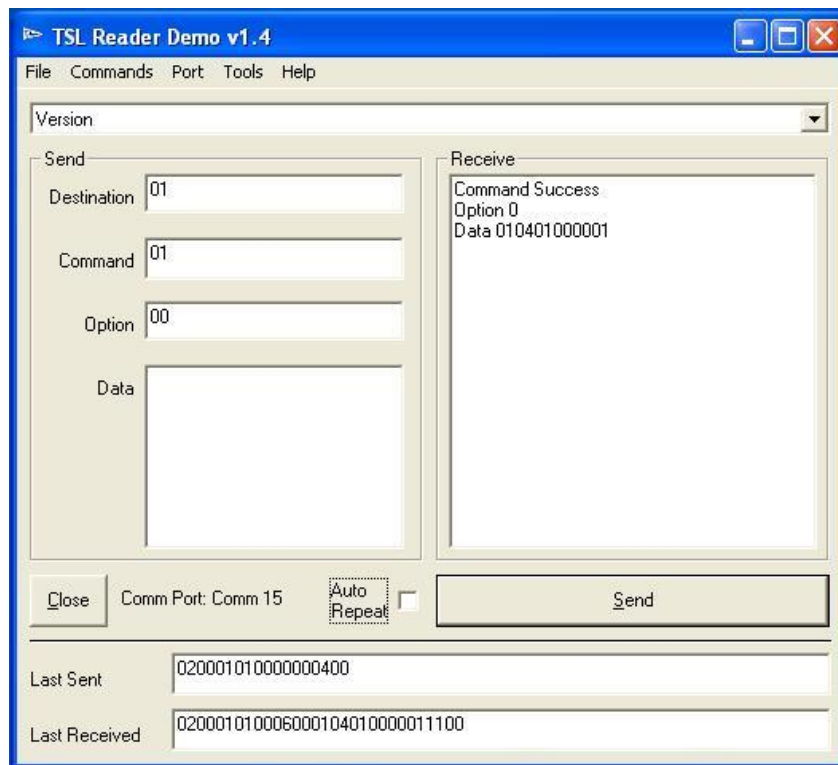


3. Click “Open” on the “Port” menu to open the comm port to allow communications with the reader. “Close” on the “Port” menu will close the port and terminate communications, depending on the Bluetooth driver it may also close the link to the PUK.

4. Select a command from the drop down box or the “Commands” menu. Selecting a command fills the packet parameters (Destination, Command, Option, Data) with predefined values for the named command. If you examine the packet parameters you will see they correspond with those given in the reader command set documentation in the “Documents” folder on the CD (TIRIS Bluetooth PUK Programming Guide.pdf). Note that not all of these commands are supported by the PUK.

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5. Click the “Send” button to send the command to the PUK. The receive text box will show the received packet. The Reader Version command that reads the firmware version of the unit is shown below.



6. The “History” option on the “Tools” menu opens another window that displays the command history. Each packet is added sequentially to the text area as they are sent or received.

## 7 Changing hosts with the PUK

As soon as the serial port to the PUK is closed the PUK becomes discoverable again. The Bluetooth address and link key from the previous pairing is stored in non-volatile memory so that the PUK can immediately reconnect to the same host. If the pairing is deleted on the host, or if a new host connects to the PUK the PIN is requested and a new link key / Bluetooth address pair replaces the previous ones.

## 8 Powering down the PUK

If the Bluetooth link is left inactive (disconnected) for a minute the PUK automatically powers down. Alternatively the PUK may be forced to power down even if a link is still open by pressing and holding the button for three seconds. If the PUK is not to be used for an extended period of time the transit plug should be inserted. This prevents the reader from drawing any current from the battery. The remaining discharge of the battery is governed by the self discharge of the battery itself and leakage back into the charge control circuit.

## 9 Charging the PUK

A 6V ( $\pm 10\%$ ) dc supply capable of supplying 400mA is required, the jack connector is a standard 1.3mm diameter inner pin with centre positive. A suitable power supply has been supplied with the evaluation unit.

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Inserting the charger automatically disconnects the battery from the RFID reader section. The red LED on the battery section will illuminate during the charging cycle, this changes to green when the battery is fully charged. If the ambient temperature is outside the safe charging range for the battery then the LED lights amber until the temperature returns to safe limits.

If a battery has been allowed to discharge fully, for example by being left connected to a reader for several weeks the overdischarge protection in the battery pack will be activated. This is automatically reset when the battery is charged, but the charge time will be extended by several hours because the circuit only allows deeply discharged batteries to be charged at very low currents initially.

#### Support

For initial support please contact Technology Solutions Ltd on:

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**+ About TSL**

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

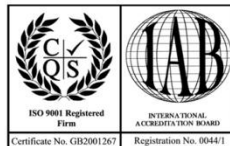
- GPS
- RFID – Low Frequency, High Frequency and UHF
- GPRS/GSM
- IrDA
- Contact Smartcard
- Fingerprint Biometrics
- 1D and 2D Barcode Scanning
- Bluetooth
- 802.11 WiFi
- Magnetic Card Readers
- OCR – B and ePassport

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.

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