Tele-Infiniti (T9595) User's Guide

© Thought Technology Ltd.
2180 Belgrave Ave. • Montreal, Que. Canada H4A 2L8
Phone 514.489.8251 • Fax 514.489.8255

Caution

Electromagnetic - Emissions

The Tele-Infiniti System has not been evaluated for electromagnetic compatibility in a medical context, and is sold as non-medical equipment. It may be used with Thought Technology Pro/FlexComp Infiniti, ProComp 2 and MyoTrac 3 equipment as per IEC 60601-1-2 (2nd ed.) section 3.201.4. The Bluetooth module included in the Tele-Infiniti System uses RF energy in the 2.4GHz ISM band, and should not be used where it might interfere with critical systems. Use of this equipment in close range with other RF communication equipment or sensitive electronic measuring devices may cause other devices to malfunction. Be sure to check for any policies prohibiting or restricting the use of Bluetooth, ISM or RF devices, in institutional environments such as hospitals.

Electromagnetic - Susceptibility

The Tele-Infiniti System communicates using radio signals in the unlicensed 2.4 GHz ISM band, and is thus subject to interference from other equipment such as cordless phones, wireless networks and microwave ovens. Interference from other equipment, or a weak signal resulting from operation near the limit of its range, may result in increased transmission delay or loss of data, which could affect efficacy of biofeedback treatment, or utility and accuracy in other applications.

When setting up and using the Tele-Infiniti System in a new environment, pay close attention to signs of interference, such as erratic signal updates, data loss markers, or increased signal latency (delay from the physiological event to the appearance on the screen). Where necessary, take measures to reduce the effects of interference, such as turning off interfering equipment, or moving the Tele-Infiniti closer to the data receiver.

Manual # SA9596 Rev. 2

Table Of Contents

CAUTION 3

ABOUT THE TELE-INFINITI 5

SETTING THE ENCODER TO THE CORRECT PROTOCOL 7

ATTACHING THE BLUETOOTH SERIAL MODULE TO THE ENCODER 8

ENABLING BLUETOOTH ON YOUR PC WITH WINDOWS XP SP2 11

REASSIGNING VIRTUAL COM PORTS 19

LED STATUS INDICATORS AND BATTERY CHARGING 20

DEVICE SPECIFICATIONS 21

PRODUCT NUMBERS 22

PLACING ORDERS 23

WARRANTY 24

REPAIR RETURN FORM 25

RETURNING EQUIPMENT AND TECHNICAL SUPPORT 26

About the Tele-Infiniti

Tele-Infiniti is a telemetry option for Thought Technology encoders that use the BioGraph legacy mode protocol (19.2 Kbps) or the MyoTrac 3 mode protocol (9.6 Kbps). The use of Tele-Infiniti will eliminate the fiber optic cable between the computer and client. Use Tele-Infiniti MI1060BG for the BioGraph legacy mode protocol. Use Tele-Infiniti MI1060MT for MyoTrac 3 mode protocol. This manual only covers the setup on a PC running Windows XP SP2; however it may be possible to use Tele-Infiniti with older versions of Windows, by installing the Bluetooth program that comes on the OEM CD of the Bluetooth USB Adaptor. Tele-Infiniti consists of three main components: a Bluetooth USB Adaptor, a custom programmed Bluetooth Serial Module, and a Thought Technology Fiber Optic to Serial Interface Adaptor.

1. Bluetooth USB Adaptor

The Bluetooth USB Adaptor supplied with Tele-Infiniti is a generic adaptor that is a Class 1 Bluetooth device. When used in conjunction with the Bluetooth serial module, it gives a wireless range of up to 30 meters (90 ft). A Bluetooth Class 2 USB adaptor may also be used, but with reduced range. However the adaptor should be recognized by Windows XP SP2 native support. The Bluetooth USB Adaptor connects to any available USB port and creates a Bluetooth Virtual Serial Port which then can be used by the BioGraph program to receive the data from the encoder.

2. Bluetooth Serial Module & Power Adaptor

The Bluetooth Serial Module is manufactured by Initium Co. The model number is Promi-SD101. The Bluetooth Serial Module is self-powered by an internal rechargeable battery, and is recharged by its 5V wall adaptor. The Bluetooth Serial Module is also a Class 2 Bluetooth device with a wireless range of up to 10 meters (33 feet). The Bluetooth Serial Module receives serial data on its DB-9 connector and then transmits via Bluetooth serial protocol to a Bluetooth-enabled PC. The Bluetooth Serial Module is pre-programmed with a unique passkey or pin code that must be entered on the PC in order to establish the Bluetooth connection.

3. Fiber Optic to Serial Interface Adaptor

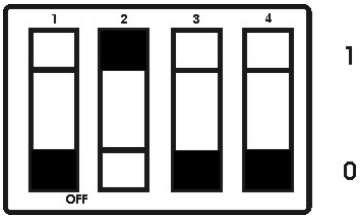
The Fiber Optic to Serial Interface Adaptor plugs into the DB-9 connector of the Bluetooth Serial Module. It receives the optical data from the encoder via the standard plastic fiber optic cable and converts it into serial data for the Bluetooth Serial Module to transmit to the PC over the Bluetooth radio link.

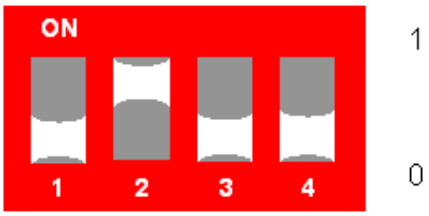
.

Setting the Encoder to the correct Protocol

Tele-Infiniti MI1060BG supports the BioGraph mode protocol (19.2 Kbps) of the following Thought Technology encoders: Procomp2, ProComp+, ProComp Infiniti, and FlexComp Infiniti. Tele-Infiniti MI1060MT supports MyoTrac 3 mode protocol (9.6 Kbps) of the MyoTrac 3 encoder. Select the appropriate Dip Switch setting for your encoder from the table below:

Encoder	Protocol	DIP Switch Setting
ProComp2	BioGraph	1 OFF, 2 ON
ProComp+	BioGraph	1 OFF, 2 ON
ProComp Infiniti	BioGraph Legacy	1 OFF, 2 ON, 3 OFF, 4 OFF
FlexComp Infiniti	BioGraph Legacy	1 OFF, 2 ON, 3 OFF, 4 OFF
MyoTrac 3	MyoTrac 3	N/A





Attaching the Bluetooth Serial Module to the Encoder

The Bluetooth Serial Module may be secured to the Pro/FlexComp Infiniti, ProComp2 and/or MyoTrac 3 encoder using the supplied pair of Velcro tapes as shown below:

Note: The wall power adapter is connected only when charging the internal battery in the Bluetooth Serial Module.

Placement 1

Placement 1

Placement 2

Placement 2

Placement 3

Placement 4

Enabling Bluetooth on your PC with Windows XP SP2

Important Notice:

Windows XP Service Pack 2 includes Microsoft's support for Bluetooth devices. This means that you no longer need to run an additional program on your PC to support the USB Bluetooth Module, as was the case with earlier versions of Windows.

It is highly recommended to upgrade your PC to Windows XP SP2 or newer as this will simplify the Bluetooth setup and operation.

To check which version of XP you are currently using, go to Control Panel, which is found on the Start Menu, and select the System Icon. The System Properties screen opens, showing your version of XP.

If you choose not to upgrade to Windows XP SP2 and want to still use Tele-Infiniti you will have to install the Bluetooth Program from the OEM CD that came with the USB Bluetooth module.

Turn on your PC and insert the USB Bluetooth Module into a free USB port.

Note:

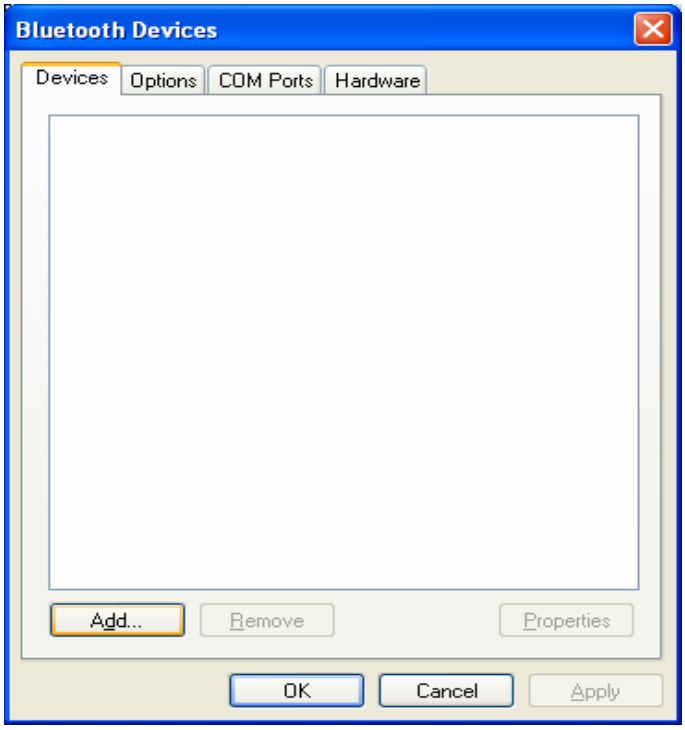
From now on always use the same physical USB Port on your PC for the USB Bluetooth adapter. Plugging into a different USB Port will cause Windows to re-enumerate the USB Bluetooth adapter and generate new virtual COM ports.

When Windows sees your USB Bluetooth Module a **"Found New Hardware"** box will appear at the bottom right of your monitor.

Windows XP SP2 will automatically recognize the Tele-Infiniti USB Bluetooth Module and install all the necessary drivers to make it work properly.

When Windows is finished the **"Found New Hardware"** box will display the message **"Your new hardware is installed and ready to use."** You can click on the **"X"** in the top right of the box to close it.

You will now see a new Bluetooth Icon in the System Tray on the bottom right of your monitor. Click on it with your mouse and from the pop-up menu select **"Show Bluetooth devices"**. This will open a **"Bluetooth Devices"** window from which you will be able to manage all the Bluetooth devices within range of your PC.

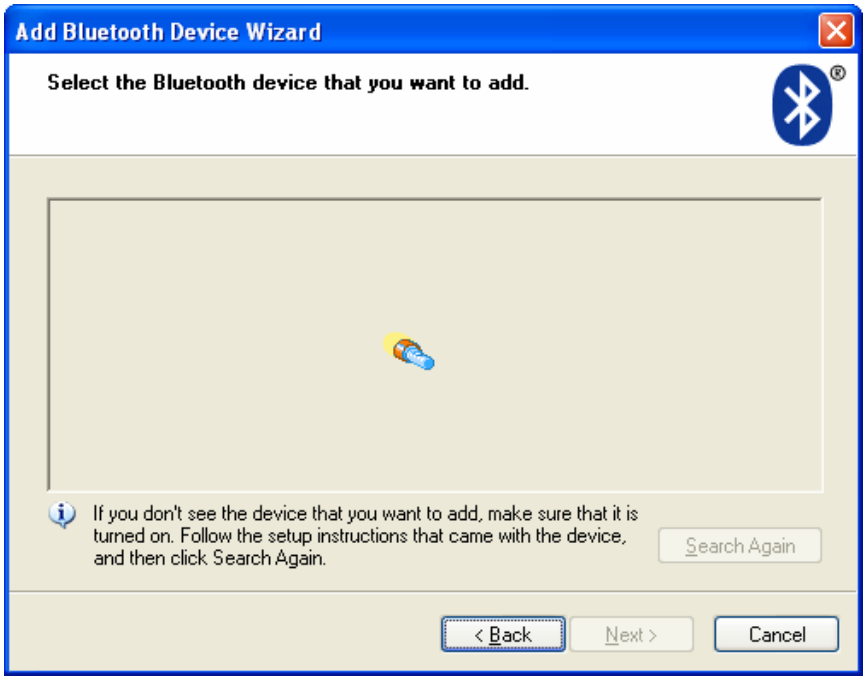


From the **“Bluetooth Devices”** window under the **“Device”** tab select **“Add…”**.

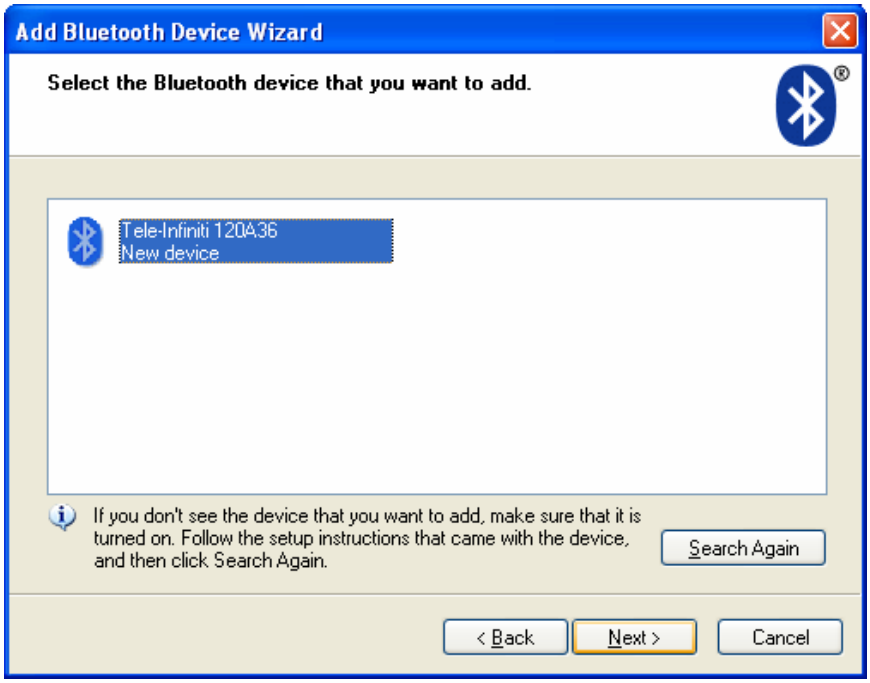
This opens the **“Add Bluetooth Device Wizard”** which will scan for any discoverable Bluetooth devices within range of the PC.

Ensure the Bluetooth Serial Module is adequately charged or connected to its power adapter. Switch the Bluetooth Serial Module power switch to the ON position. If it has been on for some time simply cycle it OFF and ON again.

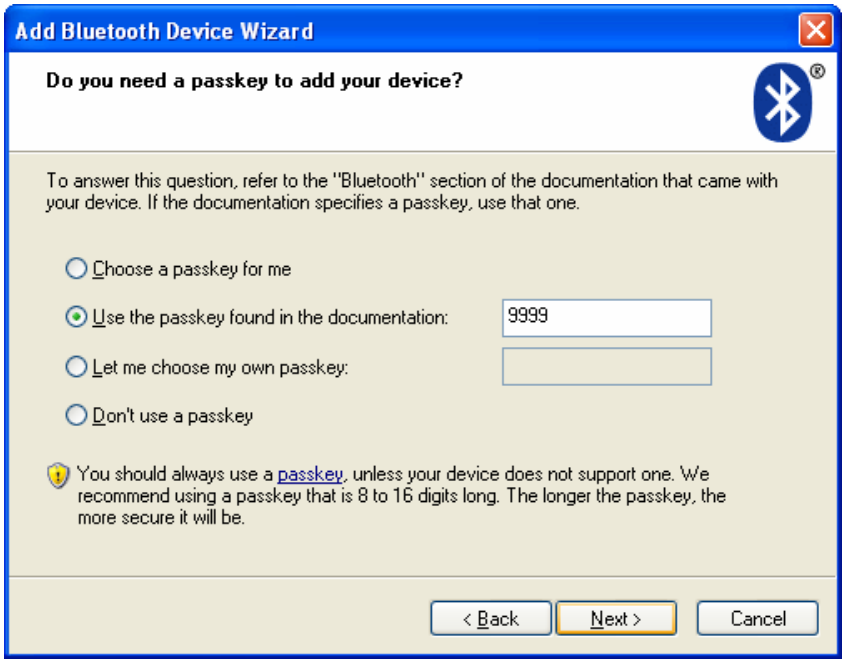
Start the “Add Bluetooth Device Wizard” by selecting the check box **“My device is set up and ready to be found.”** and then selecting **“Next”**.



The wizard will search for the Bluetooth Serial Module and should find it as a **“Tele-Infiniti xxxxxx”** where **x** is the BD_ADDR found on the label of the module.



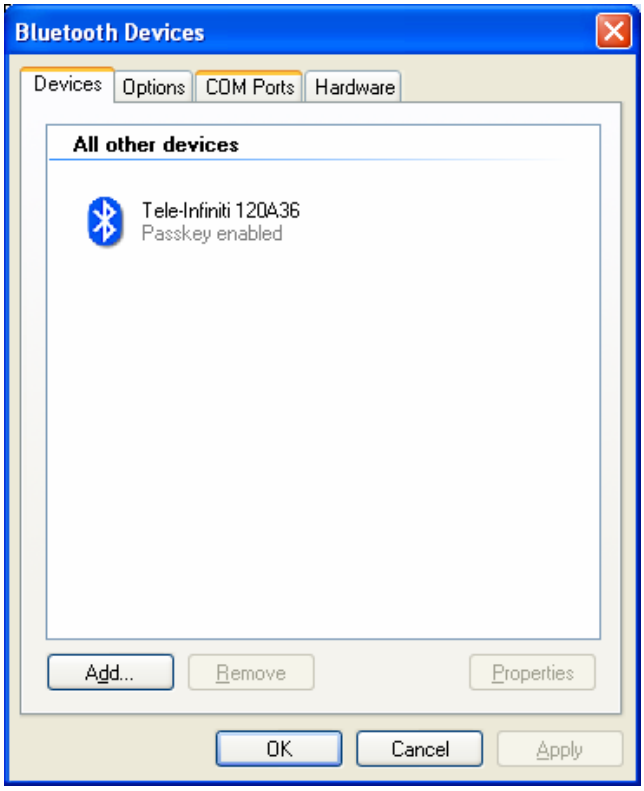
Select the **"Tele-Infiniti xxxxxx"** device and select **"Next >"**.



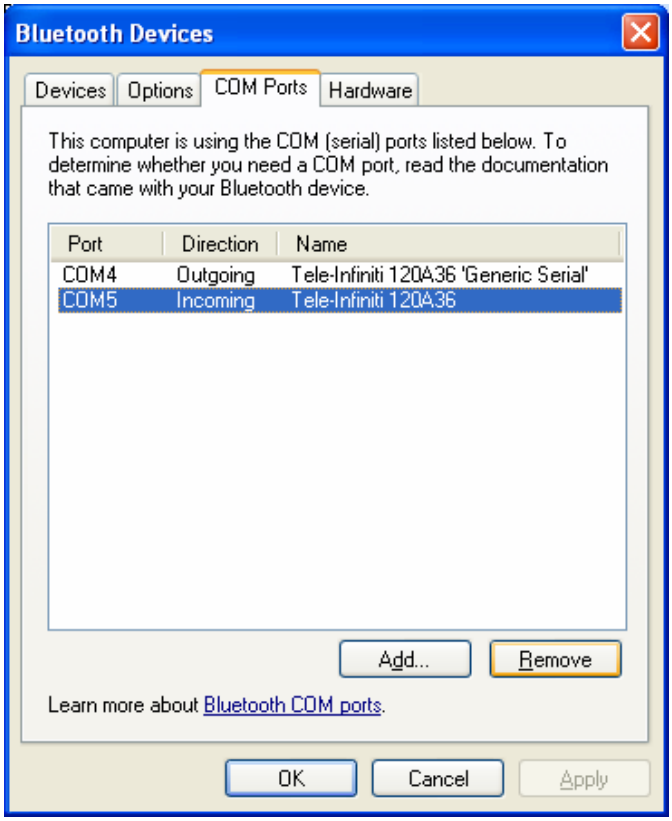
Next you will be asked for a passkey. Select the option **"Use the passkey found in the documentation"** and enter the Tele-Infiniti Passkey value **"9999"**.

If the wizard successfully added the Bluetooth Serial Module, the above window displays, showing the virtual COM ports assigned to the module. Select **"Finish".**

Tele-Infiniti will use only the Outgoing COM port and it must be assigned to COM8 or lower for Tele-Infiniti to work with the BioGraph Software. If the Outgoing COM port is higher than COM8 then see the section in this manual titled: **"Re-Assigning Virtual COM ports"**.



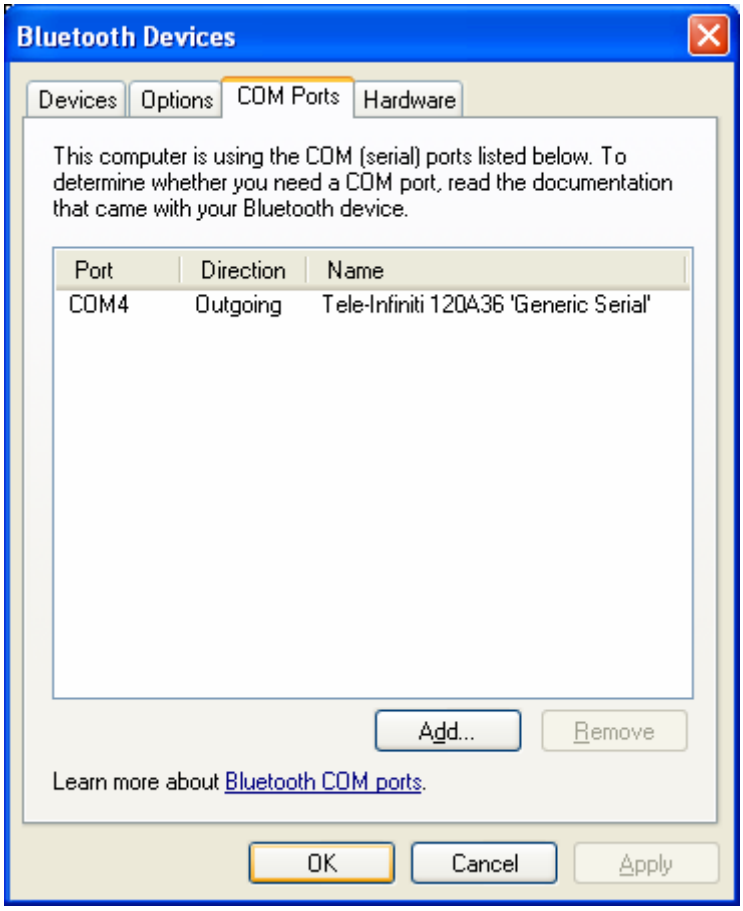
You will now see the **“Bluetooth Devices”** window with the **“Tele-Infiniti xxxxxx”** displayed. Select the **“COM Ports”** tab.



You will see the newly created COM Ports, one an Outgoing and one an Incoming port. Tele-Infiniti uses only the Outgoing port.

We suggest you delete the Incoming port from your system as this will free up a virtual COM port for use by other applications including a second Tele-Infiniti Bluetooth Serial module.

Simply select the Incoming port and select **“Remove”**.



Click **"OK"** to close the window.

Tele-Infiniti is now fully functional with your PC.

Ensure the Fiber Optic cable is connected between the Encoder and the Fiber Optic to Serial Interface Adaptor. Plug the Fiber Optic to Serial Interface Adaptor into the Bluetooth Serial module and switch its Power ON. Ensure that it is adequately charged or that it is powered from its wall adapter.

Start the BioGraph software, open a new session, and verify that live data is being displayed.

Congratulations! You Are Now Wireless.

Reassigning Virtual COM Ports

The BioGraph Infiniti Release 2.5 scans only COM1 through COM8 searching for valid data from a Thought Technology Encoder. If your PC assigned Tele-Infiniti an outgoing COM port above COM8, BioGraph won't be able to detect your encoder.

The Add New Bluetooth Device Wizard assigns the outgoing COM port to the next unassigned COM port number. If it finds COM7 as the last assigned port, it would then assign COM8 to the outgoing port and COM9 to the incoming port.

COM ports can be automatically assigned to different USB serial devices as they are connected to your PC. Windows will assign a COM port to a particular device on a particular USB port. When the device is removed from the USB port the PC will reserve that assigned COM number for if and when that particular device returns to the same USB port. Windows keeps track of these removed devices which are known as Nonpresent Devices. By default these devices are not displayed in Windows Device Manager and thus are usually very difficult to remove from your system.

To see nonpresent devices in Device Manager, open a command prompt, type "set DEVMGR_SHOW_NONPRESENT_DEVICES=1" and press Enter.

Do **one** of the following:

- Open Device Manager from Control Panel and select System, then Hardware, and then Device Manager, or
- From the command prompt type "devmgmt.msc" and press Enter.

Ensure that you remove the Bluetooth USB Adapter from your USB port.

Then in Device Manager enable "Show hidden devices" from the View menu. All your nonpresent devices will appear.

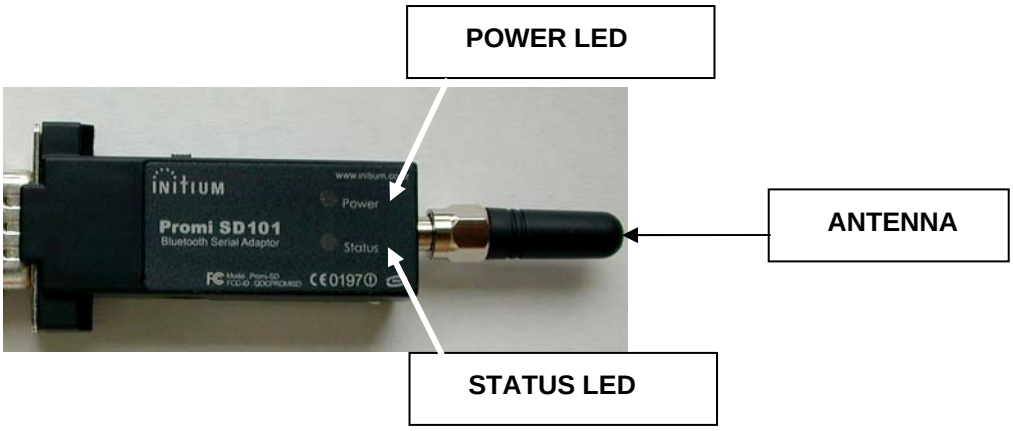
Select "Ports (COM & LPT)" All COM ports holding nonpresent devices will appear.

Uninstall all of the nonpresent ones including the 2 just installed by Tele-Infiniti that were too high. To do this, right click on one at a time and select Uninstall from the pop-up menu.

Reconnect the Bluetooth USB Adapter to the USB port and Windows will assign new COM port numbers starting with the next available number.

To put this environment variable permanently into XP, open System Control Panel, Advanced tab, Environment Variables button, System Variables, Add new, and then enter "DEVMGR_SHOW_NONPRESENT_DEVICES" as the Variable Name and "1" as the Value.

LED Status Indicators and Battery Charging



LED Indicator

The Bluetooth Serial Module STATUS LED indicates the following:

If STATUS LED is	It indicates that
Amber	the module is powered-up but not yet connected to the PC
Green	the module is connected to another Bluetooth device

The Bluetooth Serial Module POWER LED indicates the following:

If POWER LED is	It indicates that
Amber	the battery is being charged
Green	the battery is fully charged

Battery Charging & Battery Life

Connect the supplied wall power adaptor to the power jack on the side of the Bluetooth Serial Module. As long as the power LED remains AMBER this indicates that the module is charging. Full charge is indicated by the power LED turning GREEN.

On a full charge the internal battery should provide 4-5hrs of continuous operation.

Device Specifications

i) Tele-Infiniti Fiber Optic Adaptor

Housing:
4cm X 2cm X 1.5cm plastic DB-9 Housing

Input/Output Connectors:
Input – Fiber optic cable receptacle
Output – DB-9 connector (male)

ii) Bluetooth Serial Module

1. Manufacturer – Initium
2. Model – Promi SD101
3. Power – Internally rechargeable battery through 5V power adaptor
4. Software configuration – Device has been configured to connect only to the Bluetooth USB Adaptor that it is shipped with.

iii) Bluetooth USB Adaptor

1. Manufacturer – Generic
2. Model – Class 1 adaptor

iv) Functional Specifications

1. Wireless Range: up to 30 meters (90 feet)
2. Typical Battery life (per charge): 4 – 5 hrs.
3. Wireless Protocol: Bluetooth Serial Port
4. a) Data Throughput for BioGraph Protocol: 19.2 Kbps
   b) Data Throughput for MyoTrac 3 Protocol: 9.6 Kbps
5. Operating systems: Windows XP SP2

Product Numbers

T9595 – Tele-Infiniti System, which includes the following items:

MI1060BG – Bluetooth Serial Module with antenna & power adaptor for BioGraph legacy protocol

MI1060MT -- Bluetooth Serial Module with antenna & power adaptor for MyoTrac 3 protocol

MI1061 – Bluetooth USB Adaptor

SA9598 – Tele-Infiniti Fiber Optic Adaptor

SA9450 – Fiber Optic Cable (1FT)

Placing Orders

Outside USA
Tel: 1-514-489-8251
Fax: 1-514-489-8255

In USA Toll-Free
Tel:1-800-361-3651
E-Mail: mail@thoughttechnology.com

Or contact your local authorized distributor.

Warranty

The Tele-Infiniti system is guaranteed to be free from defects in material and workmanship for 1 year from the date of purchase.

In the unlikely event that repair is necessary, call Thought Technology Ltd. to receive a Return Authorization number. Then send the unit back by a traceable method. Thought Technology will not be responsible for items not received. We will repair or replace your unit(s) free of charge.

This warranty does not apply to damage incurred through accident, alteration, or abuse.

Repair Return Form

Be sure to call for authorization before returning any equipment!

Remove this sheet and include with returned unit(s).

Include copy of original invoice and return to the address in the Returning Equipment section.

Name _____

Company _____

Address _____

_____

_____

Phone No. _____

Fax No. _____

Date Purchased _____

From Whom _____

Model Name _____

Serial Number _____

_____

_____

Problem _____

_____

_____

_____

Returning Equipment and Technical Support

Returning Equipment

Be sure to call for a return authorization number (RA) before returning any equipment!

1. Send the unit(s) **postage prepaid** and **insured**, with proof of purchase to one of the addresses below.

2. If you are shipping from outside Canada and the USA to Canada, mark the package **'Goods to be repaired - Made in Canada'** to avoid unnecessary customs charges.

3. All customs and duties charges will be billed to you if incurred by sending the unit to the **wrong** address.

4. Provide a **detailed** description of the problem you are experiencing and your telephone/fax number (see form on the last page of this manual.

In the USA, ship insured to:

Thought Technology Ltd.
Cimetra LLC
20 Gateway Drive
Plattsburgh, New York
12901, USA

In Canada and all other countries, contact your dealer or ship insured to:

Thought Technology Ltd.
2180 Belgrave Avenue
Montreal, Quebec
Canada H4A 2L8

Technical Support Line

Canada 1-514 489-8251

techsupport@thoughttechnology.com