User Guide

Tensor STB

Wireless tool for the Power Focus tightening controller

Atlas Copco Industrial Technique AB

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Contents

1   Introduction

This manual describes the Atlas Copco Tensor STB nutrunner.

For complete technical data, see Product Instructions for each tool.

For software and hardware compatibility between tool and controller, see Tensor STB release notes.

For an updated list of functionality, see Tensor STB release notes.

See also the Power Focus User guide, 9836 3123 01.

1.1   Radio Frequency Exposure

The Serial Port Adapter (or the IRC Focus front panel) and the Tensor STB contain a small radio transmitter and receiver. During communication all IRC products receive and transmit radio frequency (RF) electromagnetic fields (microwaves) in the frequency range for the ISM band (2.4GHz and 5.0 GHz).

2 System overview

Tensor STB is battery powered and communicates with the Power Focus tightening controller system through wireless digital communication built on Industrial Radio Communication (IRC) technology.

Figure 1 System overview

A Tensor STB system includes the following parts.

Tool	
Tensor STB tool	
Tool battery	
Battery charger	
Docking station with power supply and USB cable, for configuration of IRC-W.	
Controller options	
IRC Focus for IRC-B	Power Focus 4000 or 3100
	Serial Port Adapter for IRC-B or IRC-W
	Serial cable for Power Focus
	Power cable for Serial Port Adapter
RBU (Bronze, Silver or Gold)	
Software	
Tensor STB software	
Power Focus software (W7.5 up to W10.9)	
ToolsTalk Service, for configuration of IRC-W infrastructure mode	

For compatibility between software versions, see Tensor STB release notes.

2.1 Functionality

2.1.1 System functionality

The Power Focus sends the Parameter set (Pset) and the batch size to the tool where it is stored and executed, and the tightening result is sent back to the Power Focus. See schematic figure below.

The STB tool family has the same basic functionality as other ST tools, but due to the nature of the wireless communication where the tightening data is stored in the tool, all features in the Power Focus SW may not be available in STB. For a complete list, see Tensor STB release notes.

ⓘ **Remote start is not available, for safety reasons.**

Pset

Result
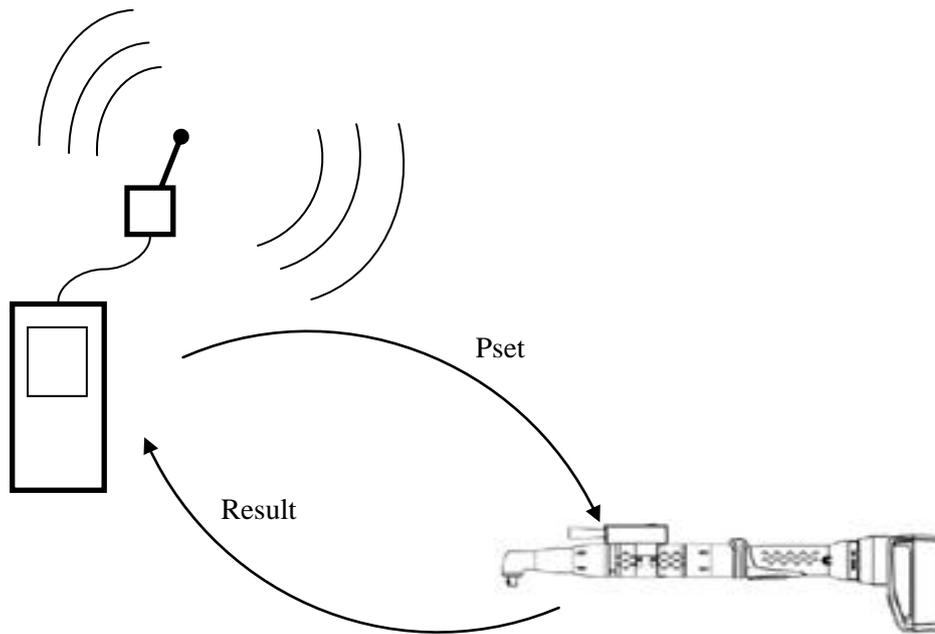
Figure 2 System functionality

2.1.2 Tool functionality

1	Optional ST Scanner, ST selector or GPIO on bus connector
2	Buzzer
3	LEDs
4	Function button
5	Battery
6	Direction ring
7	Tool trigger

Figure 3 STB tool

The Tensor **STB tool** is equipped with a buzzer and blue LEDs that can be configured as outputs to indicate a series of events, similar to the relays on Power Focus. In addition, STB has the following LEDs.

- Connection, blue LED: Indicates connection to Power Focus

- Batch, green LED: Indicates Batch done

- Battery, yellow LED: Indicates battery status (flashing light for low, and fixed light for empty battery)

- Alarm, red LED: A tool event is detected, for example Tool overheated

The function button, situated on the direction ring, can be configured as an input similar to the inputs on Power Focus. It can generate different inputs depending on the position of the direction ring, clockwise (CW) or counter clockwise (CCW).

External accessories can be mounted directly on the tool. Connected to the bus connector, the accessories communicate with the Power Focus using the same data link as the tool. The tool accessory bus is configurable to work in different modes depending on the connected device.

2.2 Technical data

For complete technical data, see Product Instructions for each tool.

2.2.1 Memory capacity

The results for up to 25 tightenings including traces can be stored together with 8 Jobs (Psets) in the STB.

2.2.2 Battery

Tensor STB is equipped with a Lithium-Ion battery.
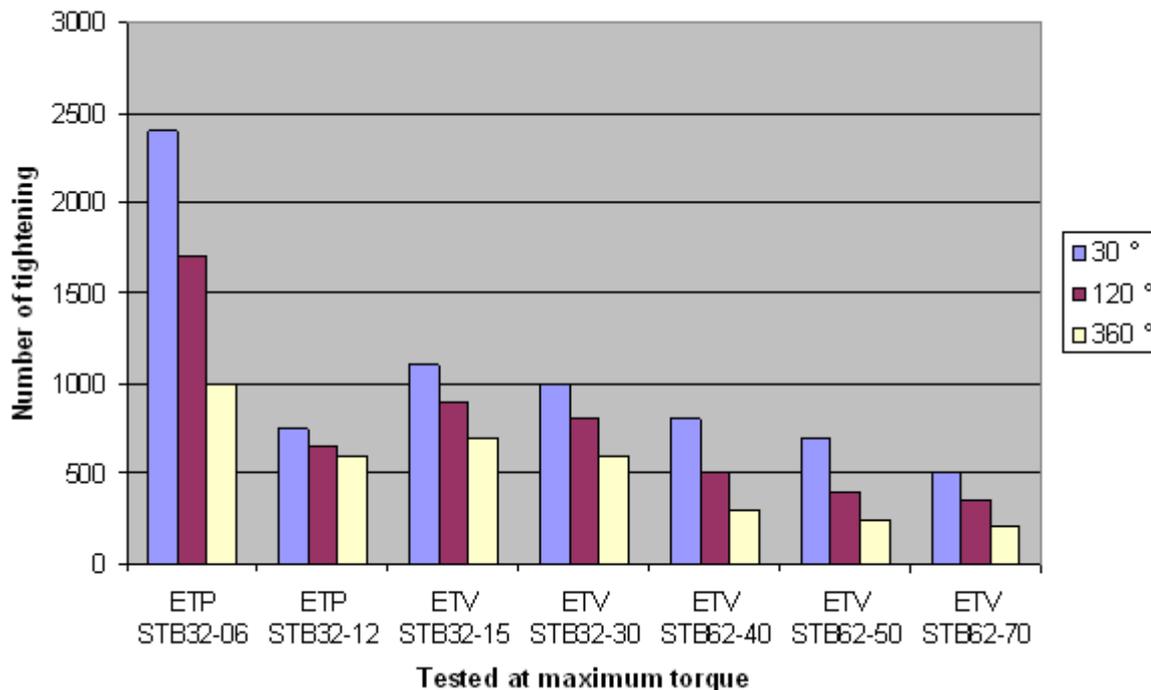
Figure 4 Number of tightening

The capacity is dependent on the battery type and joint, softer joints gives less tightenings. See Figure 4 Number of tightening illustrates the number of tightening between re-charge for different tools and different types of joints (rundown angle in degrees) at the maximum torque for the tool. The same values apply to the STB33 and STB63 tool models.

2.2.3   IRC

The Industrial Radio Communication (IRC) technology operates on the free 2.4 GHz ISM band and also the 5.0GHz band (Uniband I and II).

The Tensor STB tool is available in two different versions for the different IRC standards:

- IRC-B
- IRC-W

The table below gives an overview of the different standards.

Technique	Latency Immunity	Multipath Immunity	Interference Immunity	Power Consumption
IRC-B	High	High	High	Low
IRC-W	Moderate	Moderate	Moderate	High

The performance of IRC-W is highly dependent on the infrastructure at the site.

Latency defines the delay times of the communication link i.e. when transferring tightening results. The multipath immunity indicates how well the reflections in the environment are handled, for example against walls or equipment. The interference immunity indicates how well other radio sources are avoided.

IRC-B

- 79 (1 MHz) channels.
- IRC-B features dynamic Adaptive Frequency Hopping (AFH).
- No frequency planning needed.
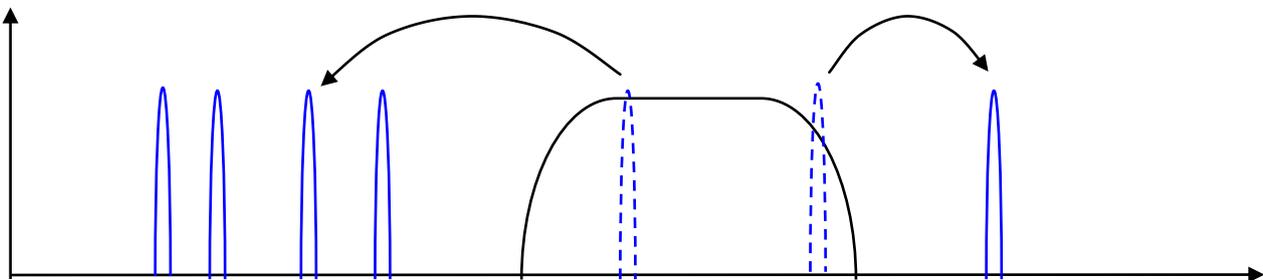
Figure 5 IRC-B with AFH avoids collisions on the 2.4 GHz ISM band, for example Wi-Fi

More information at: www.bluetooth.com.

IRC-W (dualband)

- 14 (22 MHz) channels in the 2.4 GHz band.
- 16 infrastructure channels in the 5.0 GHz band (Unii-band 1, Unii-band II and Uniband-IIe)
- 4 ad-hoc channels in the 5.0 GHz band (Unii-band 1)
- 1 fixed channel used for communication.
- Frequency planning needed.
- Installation support from IT department needed.
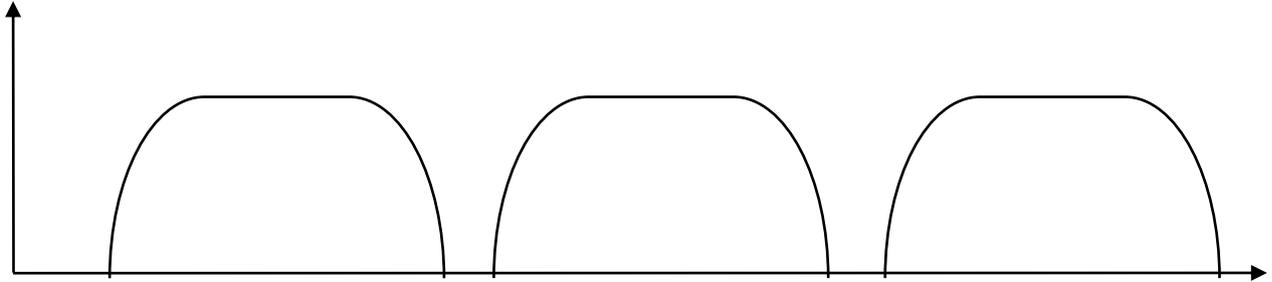
Figure 6: IRC-W, three channels occupying the 2.4GHz ISM band with a channel bandwidth of 22 MHz.

Channel No.	Band (GHz)	Description
0	Automatic	2.4 GHz or 5.0 GHz band, where channel is chosen automatically to optimize performance.
1-14	2.4	Channel distribution: North America or FCC domain (1-11) Europe or ETSI domain (1-13) Japan (1-14)
36	5.15-5.25 GHz	Unii-band 1
40		
44		
48		
52	5.25-5.35 GHz	Unii-band II (restrictions for ad-hoc usage – please contact Atlas Copco representative)
56		
60		
64		
100	5.5 GHz	Uniband IIe (restrictions for ad-hoc usage – please contact Atlas Copco representative)
104		
108		
112		
116		
132	5.6-5.7 GHz	
136		
140		

More information at www.wi-fi.org.

3 System setup

This section describes how to connect the Power Focus and STB.

> ℹ️ **The STB tool is compatible with standard Power Focus 4000 and 3100 as well as the IRC Focus for both Graph and Compact controllers and all available RBU-types (except for DS).**

3.1 Hardware setup

Setup the Power Focus system according to the local network recommendation.

If using a Serial Port Adapter, the connection with ToolsTalk Power Focus must go through Ethernet as the serial port 2 is required for the adapter. In case there is no network available, the connection between Power Focus and the PC running ToolsTalk Power Focus is made with a cross-over Ethernet cable according to the instructions in section 6.2 *ToolsTalk Service with Serial port adapter*.

In case an IRC Focus is used, it is possible to connect to the Power Focus with a serial connection.

In both cases, it is also possible to access the Power Focus 4000 with a USB connection.

3.2 IRC hardware setup

Tools using IRC-B or IRC-W with Serial Port Adapter proceed to section 3.2.1 *Serial Port Adapter*. Tools using IRC-B or IRC-W with an IRC Focus proceed directly to section 3.2.2 *Antenna placement*.

3.2.1 Serial Port Adapter

When using a Serial Port Adapter, connect it according to the following instructions.

1. Turn off the Power Focus.
2. Connect an Atlas Copco crossover cable between the Serial Port Adapter and the Power Focus serial port 2, called RS232 (2).
3. Connect a green power cable between the Serial Port Adapter and the Power Focus.
4. Turn on the Power Focus.

Figure 7 Serial Port Adapter connection

Figure 8 Serial Port connection

3.2.2 Antenna placement

The antenna must be located with free line of sight to the tool, for example above pallets and other equipment.

The antenna on the serial port adapter can be adjusted to optimize performance.

In IRC Focus, the antenna is built-in behind the front panel.

Since the IRC Focus has a smaller antenna, it is especially important to ensure proximity and obstruction-free placement.
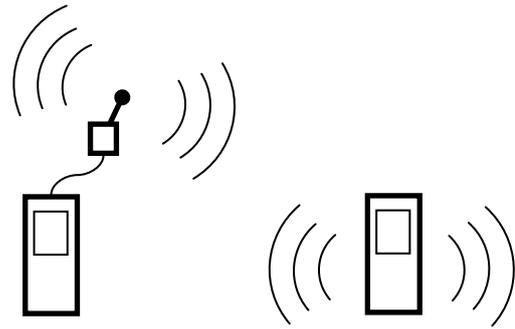
Place the controller in free line of sight to the tool.

Figure 9 Antenna placement

3.3 Tool preparation

The battery must be charged before proceeding.

3.4 Setting up the Power Focus software

The Power Focus can be programmed from ToolsTalk Power Focus or directly on Power Focus Graph.

ToolsTalk Power Focus:
1. Establish a connection with program control from ToolsTalk.
2. Open **Power Focus Map > Tool > Configuration > Connection** to access the radio and connection parameters.
3. Proceed to section *3.5 Setting up tool communication* and select connection type.

Power Focus Graph:
1. Press **PROG > Tool > Configuration > Connection** to access the radio and connection parameters.
2. Proceed to section *3.5 Setting up tool communication* and select connection type.

3.5 Setting up tool communication

You need to set up how to communicate with the tool, i.e., type of connection.
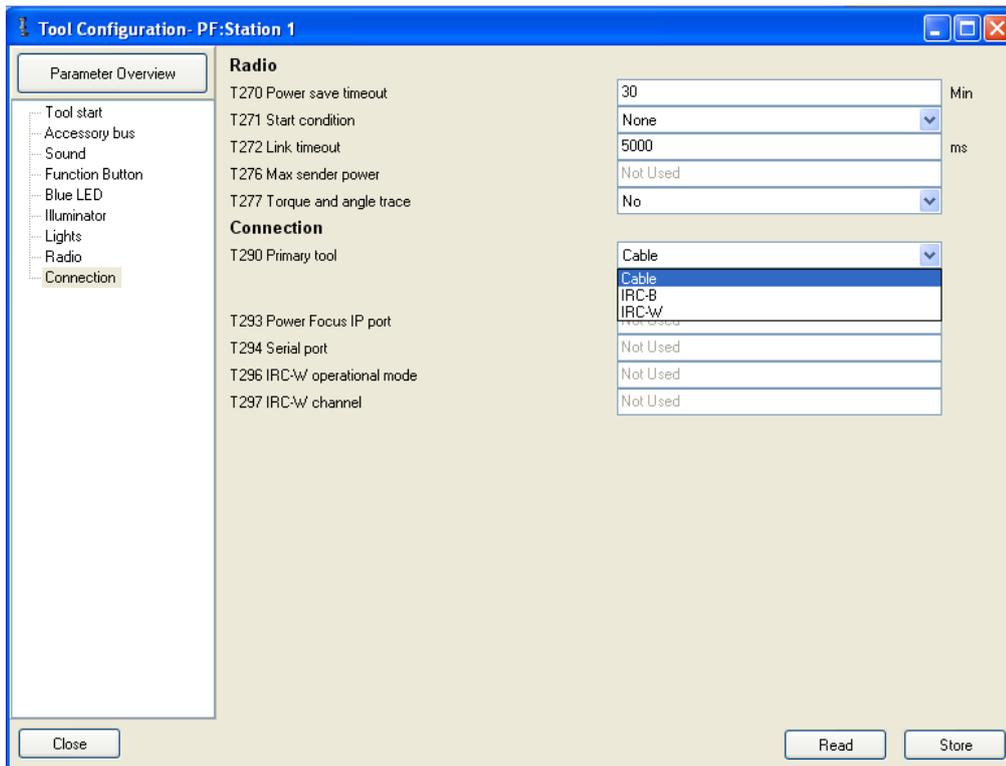
Figure 10 Tool configuration

3.5.1 Getting started with IRC-B

In ToolsTalk Power Focus do the following settings:

1. Set parameter *T290 Primary tool* to **IRC-B**.

2. Set *T294 Serial port* to **Serial 2** if a Serial Port Adapter is used or **Internal** for IRC Focus.

3. Reboot the Power Focus.

4. Continue to section *3.6 Connecting tool with Power Focus (Pairing)*.

3.5.2 Getting started with IRC-W – Infrastructure

IRC-W connection requires the following settings.

▪ Network settings: The network administrator must open the network for UDP traffic for the MAC address of the STB tool, and submit data to enter in ToolsTalk Service.

▪ Supports IEEE 802.11 a/b/g/n

▪ Thorough frequency planning is needed for the premises

▪ Encryption and authentication standards supported:

   ▪ WEP: 64 (Open or shared)
   ▪ WEP 128 (Open or shared)
   ▪ WPA-PSK, TKIP
   ▪ WPA2-PSK, AES/CCMP
   ▪ LEAP,WEP128
   ▪ LEAP, TKIP
   ▪ LEAP, AES/CCMP
   ▪ PEAP, TKIP
   ▪ PEAP, AES/CCMP
   ▪ EAP/TLS, WEP128
   ▪ EAP/TLS, TKIP
   ▪ EAP/TLS, AES/CCMP

▪ To setup the controller use ToolsTalk Power Focus or Graph interface and do the following settings:

1. Set parameter *T290 Primary tool* to **IRC-W**.

2. Set parameter *T296 IRC-W operational mode* to **Infrastructure**.

3. *T293 Power Focus IP port* is default **6677**, and must be the same as in the tool.

- Reboot Power Focus.

3.5.3 Getting started with IRC-W – Ad hoc

The Ad hoc mode makes it possible to set up on which channel to communicate.

In ToolsTalk Power Focus do the following settings:

1. Set parameter *T290 Primary tool* to **IRC-W**.

2. Set parameter *T296 IRC-W operational mode* to **Ad-Hoc**.

3. Set *T294 Serial port* to **Serial 2** if a Serial Port Adapter is used or **Internal** for IRC Focus.

4. Set parameter *T297 IRC-W channel* to the correct channel number. If Auto is selected the PF and the tool will select the best available channel.

5. Reboot Power Focus.

6. Continue to section *3.6 Connecting tool with Power Focus (Pairing)*.

3.6   Connecting tool with Power Focus (Pairing)

The Power Focus and the tool need to be paired together in order to establish the IRC-B or IRC-W ad hoc connection. This is not needed when running in infrastructure mode. Before connecting tool in infrastructure mode proceed to section *3.8 Connecting tool with ToolsTalk Service (Docking)*.

1. Disconnect the (charged) battery from the tool.
2. Press the tool trigger while reattaching the battery.
3. When the tool LEDs are off, release the tool trigger.
4. When the tool LEDs are on again, press the tool trigger.
5. When the tool LEDs are off again, release the tool trigger. Both LEDs start to flash (after approximately 10 seconds).

Figure 11 LED on

(i) **Do not start the Power Focus procedure before both LEDs on tool are flashing. Initiate pairing within 30s or the tool might time out.**

Power Focus Compact or IRC Compact:

1. Press the F-button 10 times (**F10**).
2. Press the return-key to confirm the selection.

Power Focus Graph or IRC Graph:

1. Press **PROG > Tool > Configuration > Connection > IRC Pairing > right arrow**
2. Press the soft key marked **Start** to confirm the selection.
3. Press **OK** to exit setup.

ToolsTalk Power Focus:

- Select **Power Focus Map > Tool > Configuration > Radio > IRC pairing**

Wait a few seconds until the blue connection LEDs on the tool and the Serial Port Adapter (if used) are on.

(i) **The pairing is consistent until the tool or the Serial Port Adapter is replaced.**

Figure 12 Connection LED on tool

Figure 13 Connection LED on, Serial Port Adapter

Event E559 indicates a successful pairing completed and event E550 indicates connection with the tool. The connection to Power Focus is established within one minute.

3.7 Setting up standalone

This can be done after setting up the tool communication according to section 3.5 *Setting up tool communication* and performing a pairing. Standalone mode can be configured preferably when working with IRC-B or IRC-W ad-hoc mode.

3.7.1 Setting ST-selector in stand-alone mode

If and ST selector is used, the ST selector must be pre-programmed to work in stand-alone mode. This is done by following this procedure:

1. When powering up the STB tool, keep the left button on the selector is pressed in, and the selector will enter the configuration mode. (Requirement : The Accessory Bus parameter T210 Mode must be configured to ST Bus).
2. By pressing the right button it is then possible to toggle between the different available modes. Ensure that mode 1 is chosen and stored by pressing the left button again.
3. If full functionality mode(Mode 2) is chosen the selector is now ready to be used, but if stand alone mode (Mode 1) is chosen the operator must enter number of Psets that should be used. This is done by pressing the right button again until the right number is shown on the display. Mode 3 works exactly the same way as Mode 1.
4. When the right number is displayed, it is stored by pressing the left button again. The selector is now ready to be used.

The mode will be stored in the selectors memory even after power off.

3.7.2 Getting started with Standalone

The STB power tool can be used in standalone mode, i.e., without being connected to the controller.

To setup the tool in standalone mode follow this instruction:

1. Start by pairing the tool and controller.
2. In the PF Map Tool branch, double-click on **Maintenance** and then click **Standalone** to view the Standalone settings.
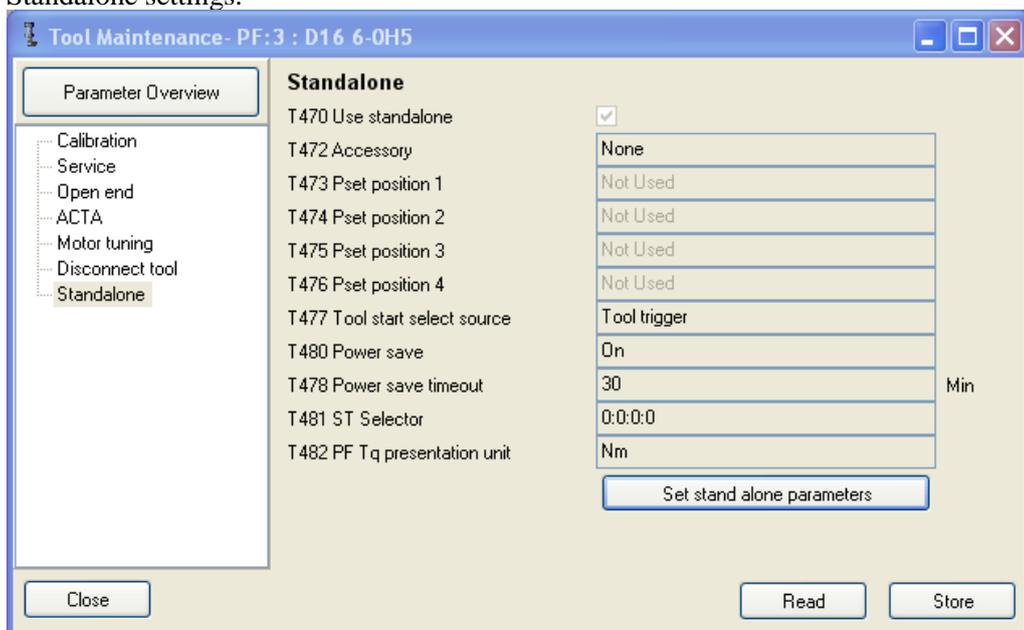
Figure 14 Standalone parameter settings

3. To edit the standalone parameters click **Set stand alone parameters**.

4. In the **Set Stand Alone Parameters** dialog box select the **Use standalone** check box, and then select type of accessory.

- *None:* Only one Pset can be used.
- *ST Selector:* Up to four Psets are available. The ST Selector must be set to mode 1. To set up the ST Selector, please refer to section 3.7.1 Setting ST-selector in stand-alone mode.
- *GPIO:* Up to four Psets are available.

5. Select a Pset for each position.

6. Click **OK** when finished to store the standalone configuration to tool.
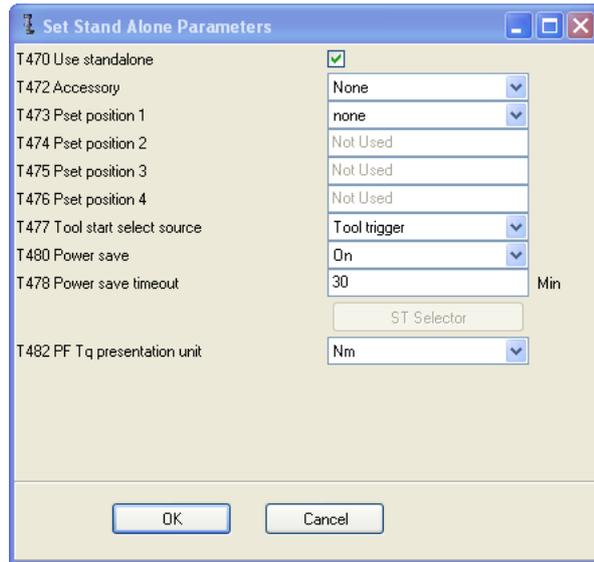
Figure 15 Standalone parameter settings

The ST selector functions can be programmed in ToolsTalk by selecting the item "ST selector" in T472 Accessory.
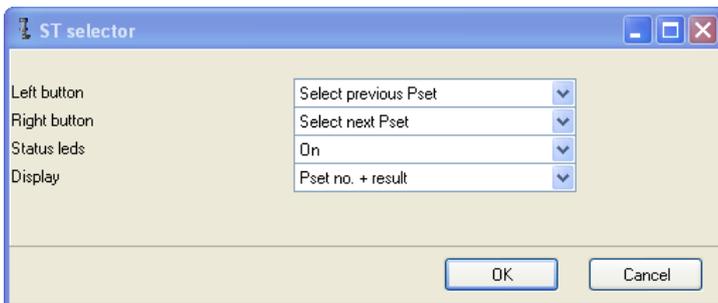
Figure 16 ST selector programming

ⓘ **Standalone mode is indicated by the flashing blue Connection LED on the tool. It will take some time (up to 15 seconds) for this to occur.**

7. To the left in the **Tool Maintenance** dialog box, click **Disconnect tool**.
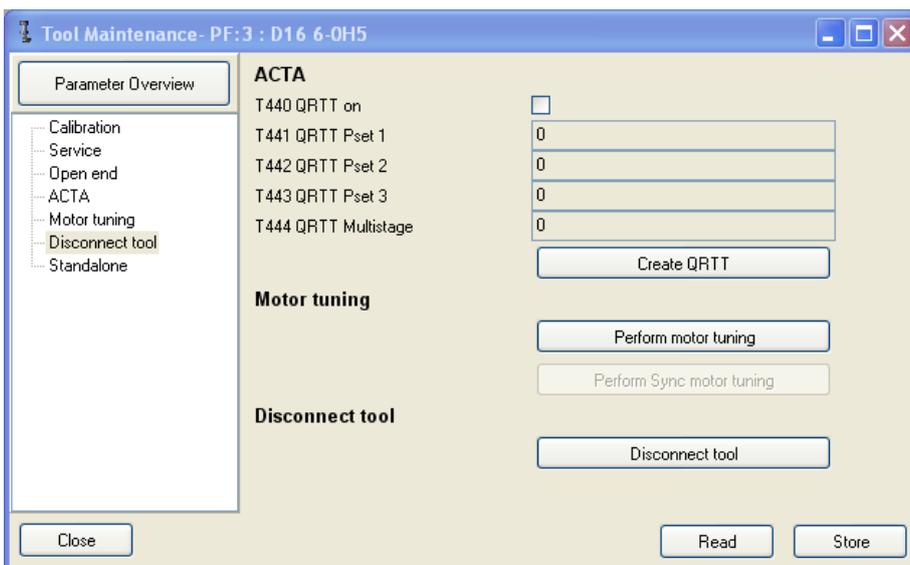
Figure 17 Disconnect tool

8. To disconnect the tool, click **Disconnect tool**, and then click **OK** in the **Disconnect tool** dialog box.

Pair the tool to upload results and/or change standalone configuration.

3.8   Connecting tool with ToolsTalk Service (Docking)

The docking station is useful when configuring the tool to operate in an infrastructure W-LAN environment. It is also useful for service operation on the tool software or tool parameters.

1. Connect the tool to the docking station. For instructions on how to connect the tool, see section *6.1 Docking station setup*.

2. In ToolsTalk Service, open **Options > Settings**.

3. Select **Port** and **USB** device.

4. Click **OK**.
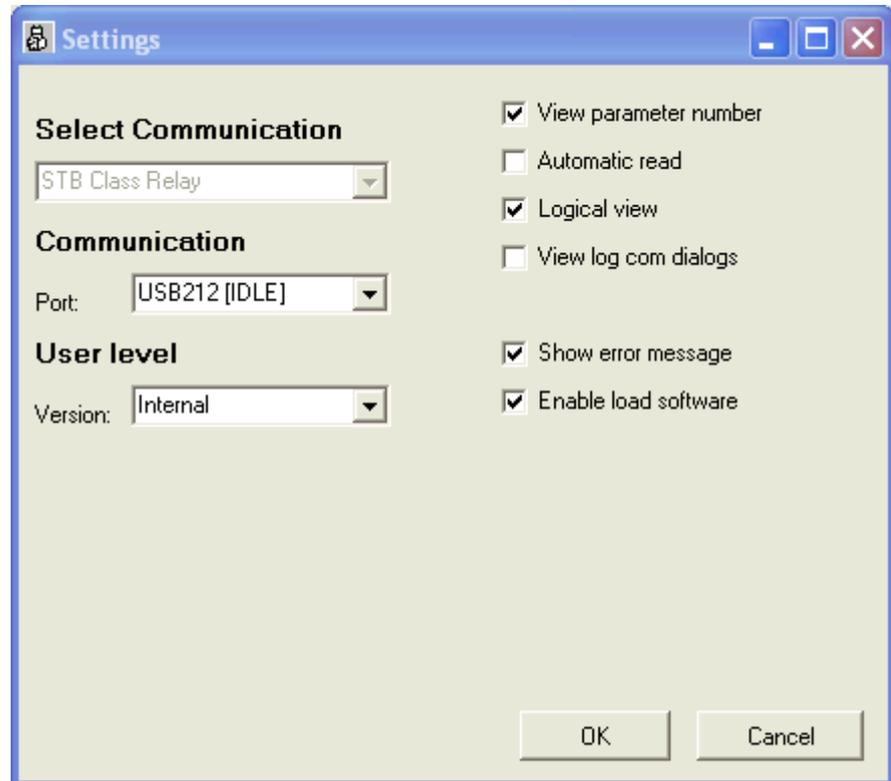
Figure 18 TTS settings

5. Click the **Connect** icon when the tool is connected to the Tensor STB docking station.

The tool stays connected during the session with ToolsTalk Service.

Figure 19 Connect icon

6. Open **Configuration > IRC-W**. Set parameters *106402 Remote IP Address* to the IP address of the Power Focus, and *106403 Remote Port* to the port number same as the controller parameter *T293 Power Focus IP port*, default **6677**.

7. Enter the settings for **IRC Hardware** parameters.
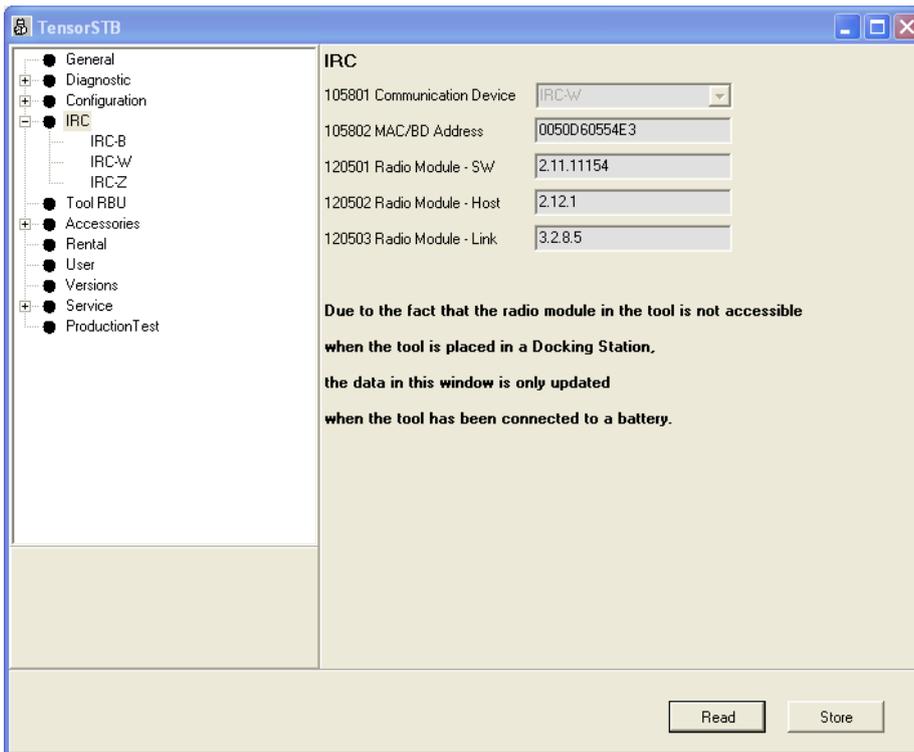
Figure 20 IRC Hardware settings

8. Enter the settings for the **IRC-W** parameters. The data for Authentication/Encryption type and key is submitted by the network administrator.
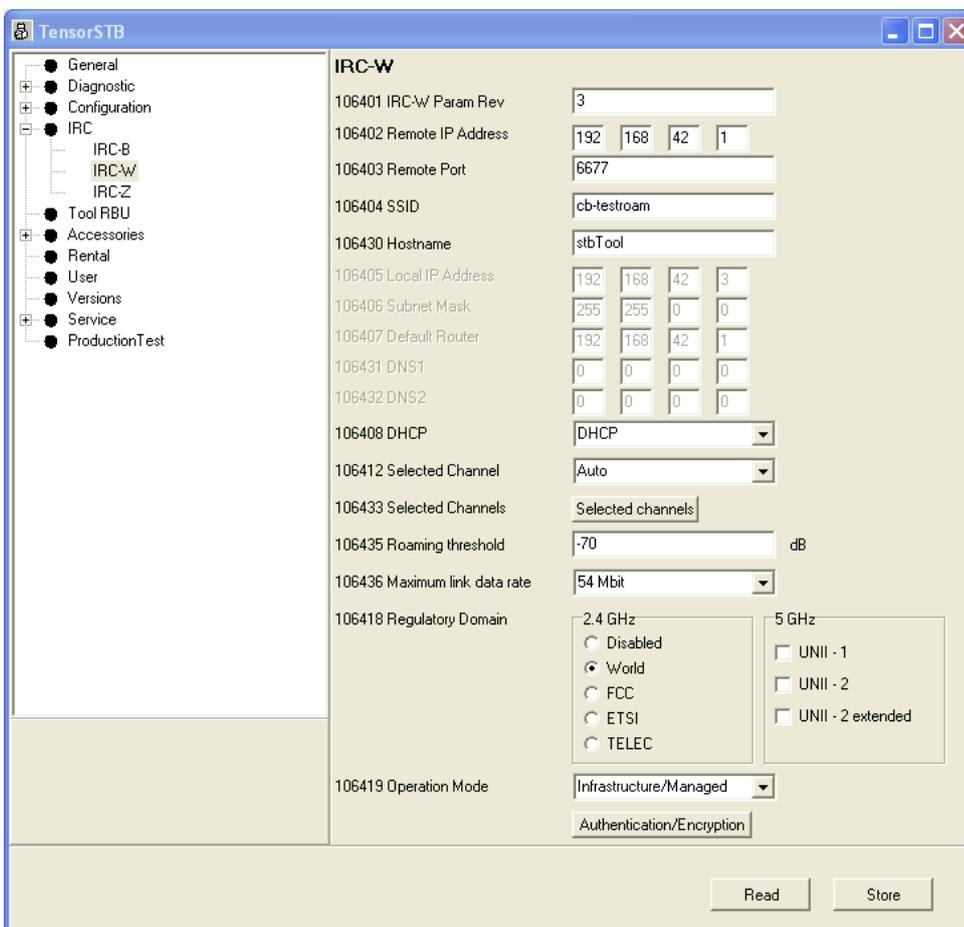
Figure 21 IRC-W settings
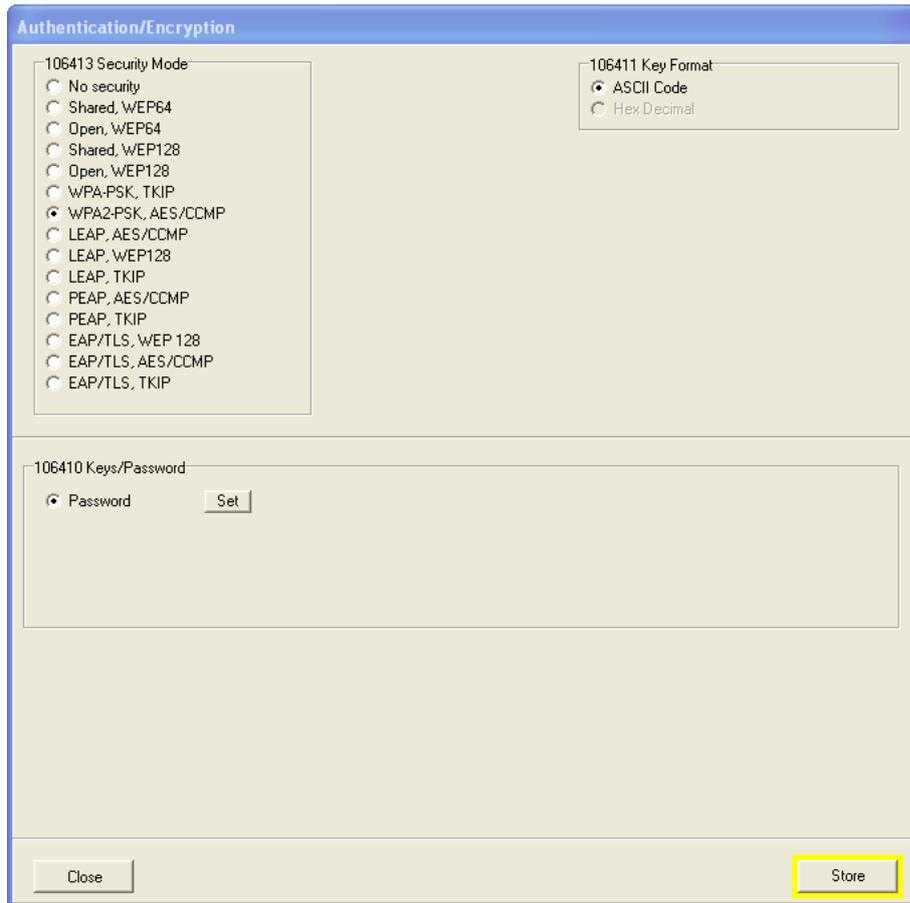
Figure 22 Encryption Key dialog

9. Save the settings and click the **Disconnect** icon.

Remove the tool from the docking station and attach the battery. The tool is automatically connected to Power Focus.

3.9 Other settings

Open **Power Focus Map > Tool > Configuration > Radio**

The following settings are available.

Radio		
T270 Power save timeout	30	Min
T271 Start condition	None	
T272 Link timeout	5000	ms
T276 Max sender power	Full	
T277 Torque and angle trace	No	

Figure 23 Radio settings

T270 Power save timeout: Tool turns off after this time, if inactive. To restart, press trigger once. Connection takes approximately 10 seconds.

T271 Start condition: The start condition if using IRC connection for tool.

- None: Up to 25 tightenings can be performed if IRC connection is lost (Blue LED off).
- Connected: IRC connection must be established (Blue LED on) to run tool.
- Start request: IRC connection must be acknowledged before start of each tightening.

T272 Link timeout: If the tool looses IRC connection it is considered offline and the connection LED (blue) on the tool turns off after the link timeout time.

T276 Max sender power. See Parameter list.

T277 Torque and angle trace: This function is not supported by STB. Traces are always on. (Up to 10 traces can be stored in the tool if connection is lost.)

4 Parameters, relays and events

4.1 Parameter list

ⓘ **The following parameters are relevant for Tensor STB tools. See the Power Focus user manual for a description of all parameters in Power Focus.**

Parameter number	Parameter name	Description	Default setup
T270	Power save timeout	Tool will turn off automatically if inactive for this period of time. Unit: Minutes. Min value: 1. Max value: 120.	30
T271	Start condition	Tool radio start condition Alternatives: Off, Connected, Start request	Off
T272	Link timeout	After this timeout the tool is considered offline. Unit: Milliseconds. Min value: 5000. Max value: 60000.	5000
T276	Max sender power	Max sender power on the IRC module. Only IRC-B.	Full
T277	Torque and angle trace	Selects if torque or angle traces shall be created. Up to 10 torque and angle can be stored in the STB tool. Alternatives: No and Yes.	No
T278	Power save	Flag that specifies whether T270 is active or not.	On
T290	Primary tool	Expected primary tool connection. Cable or IRC.	Cable
T292	IRC pairing	When selected, IRC pairing starts if tool is in pairing mode and tool connection is IRC-B.	
T293	Power Focus IP port	Port number for IRC-W tool connection.	6677
T294	Serial port	Serial port where IRC-B device is connected. Serial 2 or internal.	Serial 2
T296	IRC-W operational mode	Operational mode when IRC-W is used. Ad-hoc or Infrastructure	Ad hoc
T297	IRC-W channel	Radio channel when IRC-W is used. Valid channels: 0,1-14, 36, 40, 44, 48, 52, 56, 60 and 64.	0 (Auto)
T470	Use standalone	Defines if the tool is used as standalone.	
T472	Accessory	Specifies the attached tool accessory. None, ST selector, GPIO	None
T473	Pset position 1	Only available Pset if no accessory is selected, or used when accessory is in position 1.	
T474	Pset position 2	Selected when accessory is in position 2.	
T475	Pset position 3	Selected when accessory is in position 3.	
T476	Pset position 4	Selected when accessory is in position 4.	
T477	Start select source	Same function as T200, and overrides it when in standalone mode.	Tool trigger
T478	Power save timeout	Same function as T270, and overrides it when in standalone mode.	30 min
T480	Power save	Flag that specifies whether T478 is active or not	On
T481	ST selector	Settings for the ST selector functions.	Off
T482	Torque unit	When T472 is ST selector this setting will set the torque unit in which the tightening result and Pset target will be displayed	Nm

4.2 Digital outputs (relays)

ℹ **The following outputs are relevant for Tensor STB tools. See the Power Focus user manual for a description of all available inputs/outputs and how to set up.**

Name	Description	String length	Value	Set signal / Reset signal	Time	To next tightening	Tracking	Blue LED	Sound (time duration for all)
Battery empty	Indicates tool battery empty	1 bit	0=not used 1=battery empty	Tool battery empty / no signal			X	X	X
Battery low	Indicates tool battery low	1 bit	0=not used 1=battery low	Tool battery low / no signal			X	X	X
Tool connected	Indicates connection established between tool and controller	1 bit	0=not used 1=tool connected	Tool is connected / no signal			X	X	X
No tool connected	Indicates controller has no connection with tool	1 bit	0=not used 1=tool not connected	Controller has no connection with tool / no signal			X		

4.3 Event codes

The following Power Focus event codes are associated with STB.

Event code	Event name	Description	Procedure	Acknowledge	PF ready	Tool not ready
E550	Radio contact with tool established, tool accessible	Radio contact with tool established, tool accessible.	For information only.			
E551	Radio contact with tool lost, tool inaccessible	Radio contact with tool lost, tool inaccessible.	Re-establish connection.			
E552	Communication error with tool	An intermittent communication disturbance between tool and controller.	For information only. If occurring frequently, then replace the Serial Port Adapter. If problem persists, contact your Atlas Copco representative.			
E553	Pairing attempt with wireless tool failed	An attempt to pair the Power Focus with a wireless tool failed.	Set the tool in pairing mode according to the pairing procedure and perform another pairing attempt. If reoccurring, replace the tool.			
E554	Command not performed, wireless tool inaccessible	A command (batch increment, reset batch etc.) could not be performed and was discarded because the tool was currently inaccessible.	Re-establish connection. Perform the action causing the event again.			

Event code	Event name	Description	Procedure	Acknowledge	PF ready	Tool not ready
E555	Condition change not reflected in tool, wireless tool inaccessible	A condition change in the controller (Pset selection, Job selection, Job aborted etc.) could not be reflected in the tool. The tool was currently inaccessible.	Re-establish connection. The condition change is now automatically transferred to the tool.			
E556	Tool battery low	Tool battery voltage is low.	Complete work and replace battery.			
E557	Tool battery empty	Tool battery voltage is empty. Tool locked	Replace the battery. The tool is unlocked automatically.			
E558	Tool software version mismatch	The implemented protocol version in Power Focus for connected tool differs from the protocol version in tool. Additional parameter information: First parameter is Power Focus protocol version second parameter is Tool protocol version.	Upgrade the software in tool or Power Focus.			
E559	IRC pairing completed	An IRC paring sequence has been successfully completed.	For information only.			
E561	Tool locked, do Store standalone	Tool locked since no Pset has been actively stored in the tool.	Do Store Standalone or deselect Standalone, parameter *T470 Use Standalone*.			
E562	Condition change not reflected in tool, wireless tool standalone	A condition change in the controller (Pset selection, Job selection, Job aborted …) could not be reflected in the tool. The tool was currently standalone	Make changes in the standalone interface instead if the change is meant to apply.			
E563	IRC configuration mismatch	Not possible to establish radio connection with wireless tool.	Check if tool is in correct operation mode (Ad-hoc and not Infrastructure mode) and the PF IRC settings.	x		
E564	Reboot of wireless tool needed for changes to take effect	Reboot of wireless tool needed for changes to take effect.	Acknowledge the event on the PF and power cycle the wireless tool	x		
E565	Locked while updating Pset/Job in tool	The controller has locked the tool while updating the Pset/Job in the tool.	For information only. The tool trigger was pressed before the tightening programme was fully read by the tool.			x
E601	System voltage low	DC voltage too low. Tool locked.	Acknowledge the event. Check the battery. If occurring frequently, check Pset settings. Lastly, service tool.	x	x	x
E602	Dcbus HI during rundown	DC voltage too high		x	x	x
E620	Tool stall	Tool motor stall.	Check that the tool cable and connectors are undamaged and correctly connected. If possible use a shorter tool cable. For STB, see *E601 System voltage low*.			
E621	Current measurement error	Current cannot be measured correctly.	Contact the Atlas Copco service representative if it occurs frequently.	x		

Event code	Event name	Description	Procedure	Acknowledge	PF ready	Tool not ready
E623	Safety current monitoring error	The torque measured by the torque transducer is inconsistent with the torque estimated from the measured current.	Try to modify the Pset settings regarding speed and first target settings. If problem persists, please contact the Atlas Copco service representative.	x		
E624	Battery failure	DC voltage too high or too low: battery failure. May also occur sporadically when battery is approaching low level. May occasionally be due to internal electronics in the tool misjudging battery alarm level.	Replace the battery. Contact the Atlas Copco service representative and send back battery to Atlas Copco (do not reuse it if faulty!). If battery is OK tool electronics must be analyzed.	x	x	x
E721	Tool internal error - Service tool	Diode (LED) board in ST tool disconnected. Various internal errors for STB. Tool service needed.	Acknowledge the event. Service the tool.	x	x	x
E808	Error condition detected by software	An unexpected error condition was detected in software. Power Focus: The probable cause is that an external application has started too many subscriptions. STB: Software error. May or may not be auto repairable.	Power Focus: Close external programs connected to Power Focus. STB: If the problem occurs frequently, please contact Market Support.			
E841	SW function not available for this tool type	This SW function is not available for this tool type	Change to the correct tool type.			

5 FAQ

Question	Answer
I have problems connecting the tool with the Power Focus or IRC Focus (E558)?	Please make sure you have compatible software for Power Focus /IRC Focus and tool. You can find the latest software in the Marketing & Support Data base
How many tightenings can I do with a fully charged battery?	It depends on the joint, applied torque and what kind of tool you are using. Please see graph in section 2.2.2 *Battery*.
What is the maximum torque range?	ETP 2-12 Nm ETV 4-100 Nm
How long is the battery life time?	After around 500 charging cycles the battery capacity is reduced to roughly 75 %.
How long is the charging time for the batteries?	18 V (2,6 Ah) = 60 minutes 30 V (2,6 Ah) = 90 minutes
What is the range of the IRC-B communication?	Up to 100 meters in open field with free line of sight,.Reducing sender power will reduce the range. Obstacles on the way of line of sight can affect the range. The IRC Focus has roughly half the range of the IRC-B com kit.
What is the range of IRC-W communication?	The IRC-W 5.0 GHz has a shorter range than IRC-W 2.4 GHz, which is roughly the same as for IRC-B.
What happens if the tool looses the Power Focus connection (Blue led off) in the default configuration?	The operator can do 25 tightenings, after that the tool is locked. When the tool is back in range and the operator pushes the trigger, connection is re-established. When connection has been re-established the tightening results are automatically uploaded to the Power Focus. This function can be configured differently. See chapter 3.9 Other settings.
Can I run the Tensor STB on Power Focus 3100?	Yes, if you install WR7.5 or a later release.
What are the advantages with IRC-B compared to other communication alternatives?	• Requires no support from IT department • Easy to set up • Stable communication • Low interference with other radio technologies due to Adaptive Frequency Hopping (AFH).
Can I limit the operating range to the cover only the work station?	No, but you can choose between low, medium, high and full sending power of the system. By doing so you limit the operating range but it gives no guarantee that the tool is not being used outside of the work station.
When do I need to do a pairing?	You only need to pair the tool and Power Focus when you set up the system with IRC-B or IRC-W ad hoc. When changing battery, pairing is not necessary. If you replace tool or controller, then a paring is needed.
Will the battery discharge if I leave the tool on for a long time?	No, the tool features a power save timeout. You can set the timeout between 1-120 minutes (T270, Power save timeout). To re-start the tool, push the tool trigger. It will take around 10 seconds for the radio communication to be established before the tool can start. It is possible to set T278 Power save to off.
The tool is beeping. What does that mean?	Probable cause is a faulty card in the tool. Signal: • Long-Short – No connection to the LED card. • Long-Short-Short – No connection to the IRC module.
What is worth thinking about regarding frequency and/or channel planning in Wi-fi?	If there are many communication devices in a small area it is a good measure to avoid overlap of the channels. If this is not possible, it is better to let devices close to each other use the same channel rather than using adjacent channels in an interference point of view.
Can I upgrade the Power Focus software with a serial connection if a Serial port adapter is used?	This is possible if the Serial port adapter is disconnected from the Power Focus and the setting T294 Serial port is set to "Internal".
What are the advantages of IRC-W Ad-hoc and Infrastructure, respectively.	Ad-hoc: simplicity of connection and safety with separate network. Infrastructure: Security mode and traffic control through access points

6 Appendix

6.1 Docking station setup

Tensor STB docking station only works with Tensor STB33 tools and later.

The following equipment is needed.

- PC with at least Windows 2000.
- Tensor STB docking station with accessories.
- ToolsTalk Service software stored locally on your PC.

6.1.1 Connecting to PC

Hardware setup

1. Connect the power supply to the Tensor STB docking station.

2. Connect the Tensor STB docking station to the PC using the USB cable.

The **Found New Hardware Wizard** is displayed.

This may look different depending on the version of Windows being used.

Figure 24 Found New Hardware Wizard, first screen

3. Select **No, not this time**, and click **Next**.

Figure 25 Found New Hardware Wizard, second screen

4. Select **Install from a list or specific location**, and click **Next**.
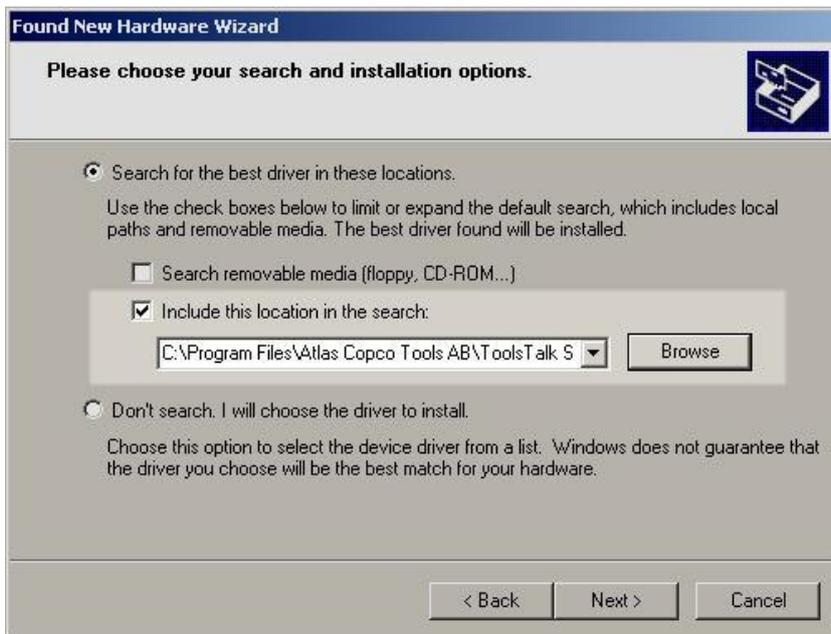
Figure 26 Found New Hardware Wizard, thrid screen

5. Select **Include this location in the search** and click **Browse** to locate the ToolsTalk Software.
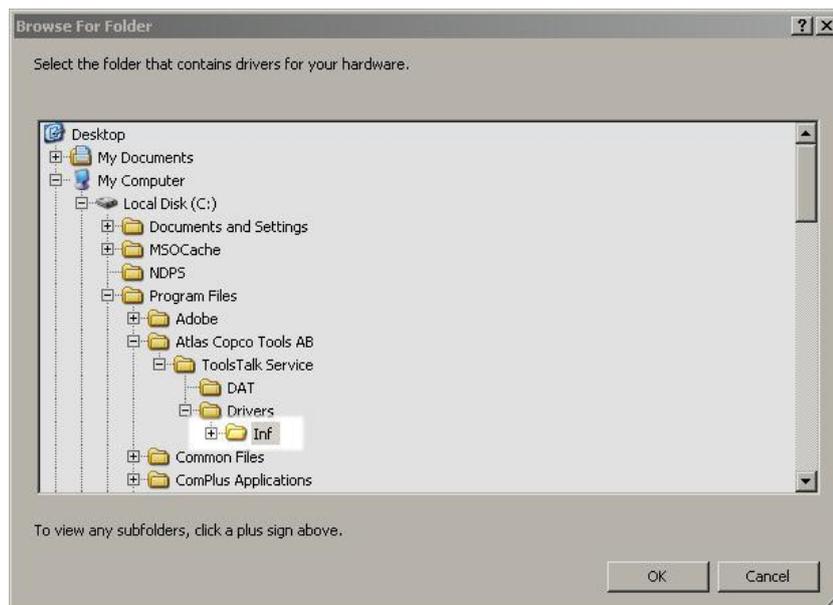
Figure 27 Found New Hardware Wizard, browse for TTS

6. Select the ToolsTalk Service **Inf** directory, and then click **OK**.

Figure 28 Found New Hardware Wizard, fourth screen

7. Click **Continue Anyway**.

Figure 29 Found New Hardware Wizard, fifth screen

8. Click **Finish** to exit the **Found new Hardware Wizard**.

Software setup

1. Install the ToolsTalk Service software on the PC by executing the ToolsTalk Service_a_b_c_d.exe file, where a, b, c and d is the release number.

2. Start the ToolsTalk Service software.

3. In the **Select tool** window, select **Tensor STB** for angle tool or **Tensor STB ETP** for pistol tool. NOTE: ToolsTalk Service must be restarted and this procedure must be repeated if changing between angle and pistol tools and vice versa.

4. In the main window, select **Options > Settings**.

5. In the **Select communication** window, select **Tensor STB Docking Station** from the drop-down list.

6. In the **Communication** field set **Port** to the USB device that matches the Tensor STB docking station.

7. Click **OK**.

The docking station is now ready to use.
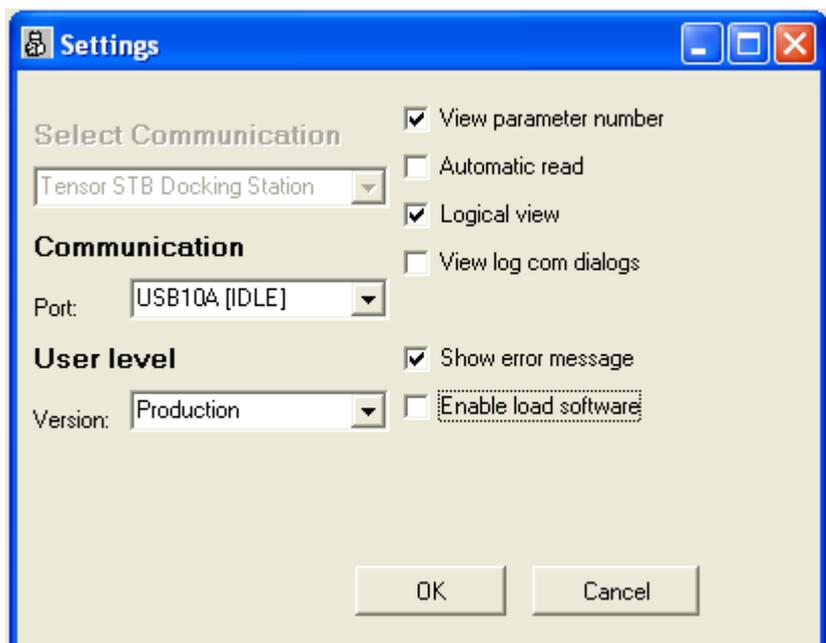
Figure 30 Communication settings in TTS

Connecting STB tool to ToolsTalk Service

1. Place the Tensor STB tool in the Tensor STB docking station.
2. Select **Connection > Connect** or click the Connection button on the toolbar.

The indicator on the docking station marked **Pwr** is lit and ToolsTalk Service opens the main window.

See User guide for ToolsTalk Service to perform the tool programming.

Disconnecting

To finish and disconnect, follow the sequence below.

- Select **Connection > Disconnect** or click the Connection button on the toolbar.

The indicator on the docking station marked **Pwr** is off.

- Disconnect the tool from the docking station.

6.2   ToolsTalk Service with Serial port adapter

For Tensor STB32 tools which are adapted to blue tooth communication it is possible to connect to ToolsTalk Service with the help of an IRC-B module connected to the PC with a regular RS232 serial cable. In Options->Settings specify an appropriate port for the communication.
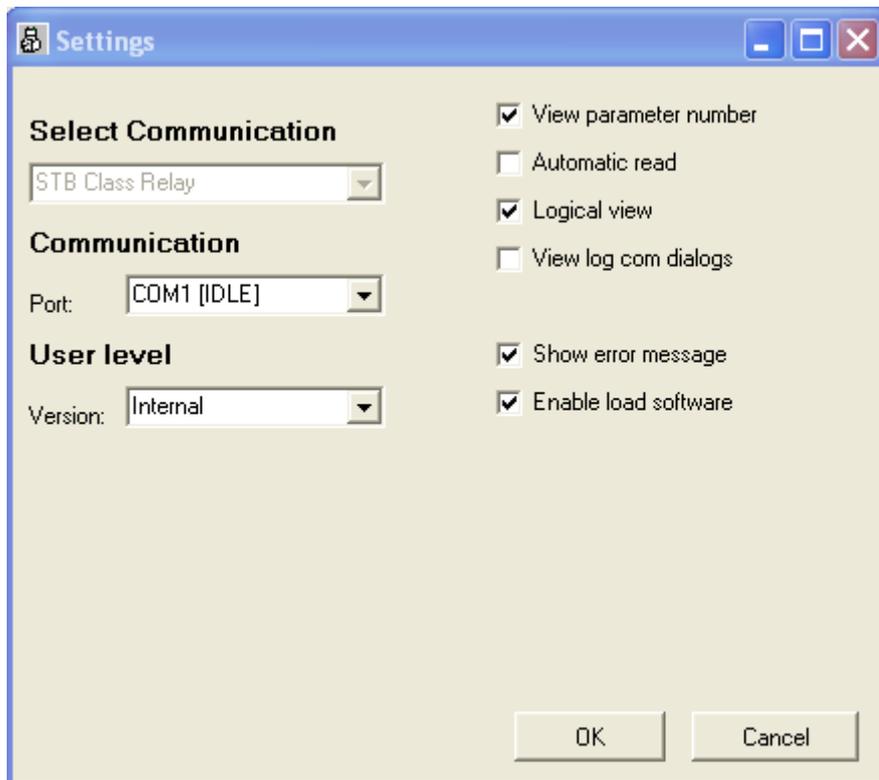
Figure 31 Connecting to Toolstalk Service with an IRC-B module

Perform a pairing with the same method as described in Section 3.6 Connecting tool with Power Focus (Pairing).

6.3 Cross-over Ethernet connection

ⓘ **The instructions in this section are only applicable if it is not possible to connect to the PF via the network or via USB connection and when the serial connection is used by the Serial port adapter.**

Network configuration in Power Focus

Configure network settings (IP-address and Subnet mask) directly on the Power Focus.

On Power Focus compact, use F8, on Power Focus Graph, set parameters C300 IP address and C301 Subnet mask. Default router is not required for this connection.

Setting up PC network configuration

The PC must be configured for fixed IP address. The following instructions show an example from Microsoft Windows XP.

1. Open the start menu and click **Settings > Network Connections**.
2. Right-click on the **Local Area Connection** and select **Properties** (Figure 32).
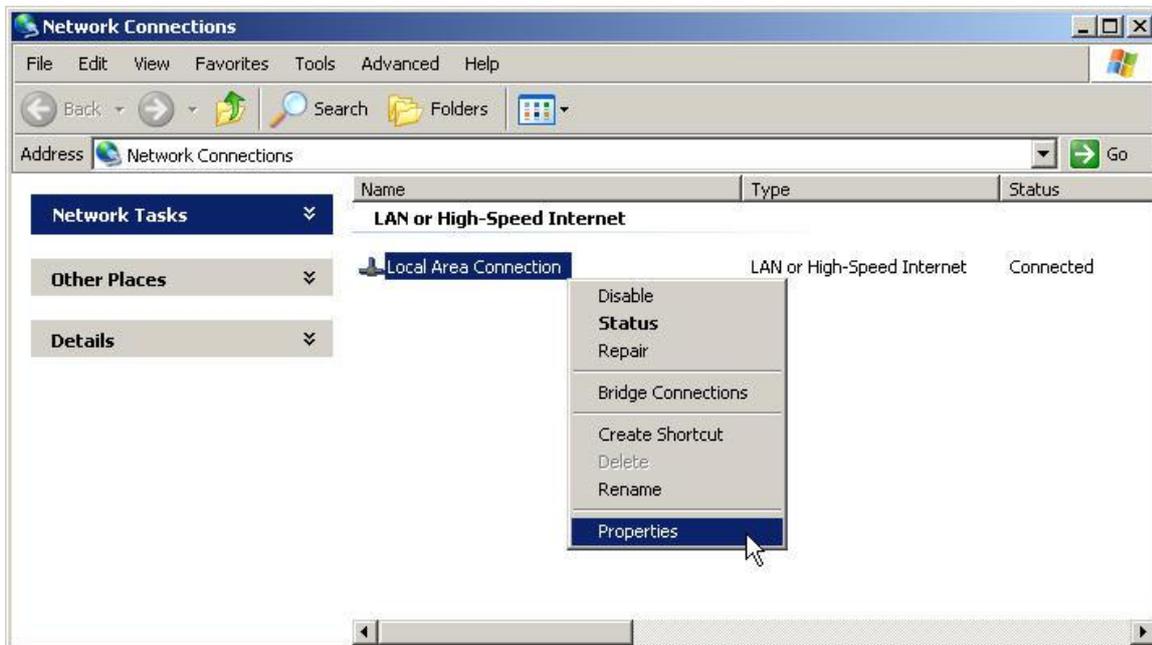
Figure 32 Network Connections

3. Under the **General** tab, select **Internet Protocol (TCP/IP)** and click **Properties**.
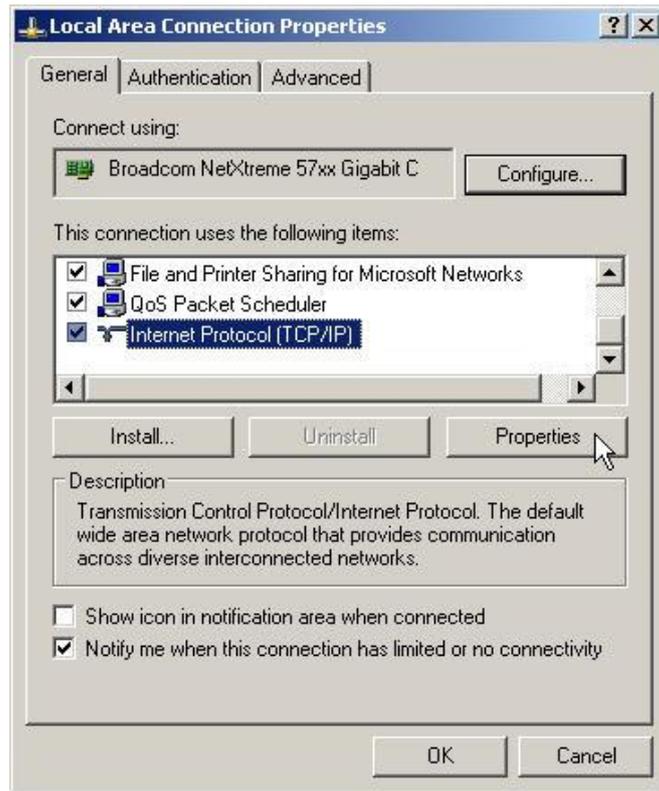
Figure 33 LAN properties

4. Click **Use the following IP Address** and enter **IP address** and **Subnet mask** to use for this PC, according to the example. **Default gateway** is not needed for crossover cable connections.
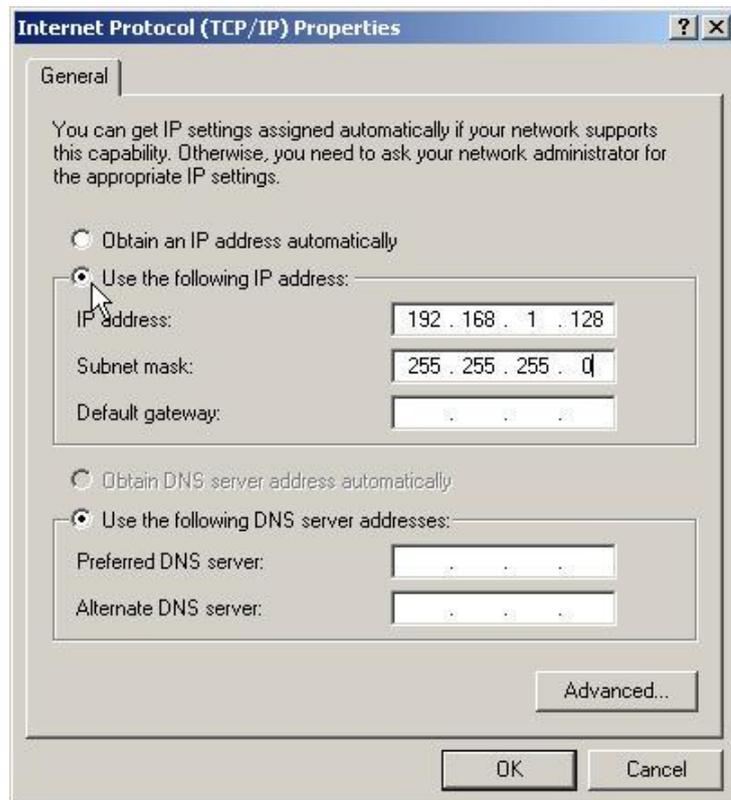
Figure 34 TCP/IP properties

Connecting through cross-over Ethernet cable

1. Connect the cross-over Ethernet cable between the PC and the Power Focus.

2. In ToolsTalk, open **Option > Settings > Power Focus List** and check that the Power Focus is present in the Power Focus list.

3. Connect the Power Focus.

Troubleshooting the connection

If no connection is established, do the following to check that the network configuration is correct.

1. In the PC, open up the start menu, and click **Run**.

2. Type **cmd** and then click **OK**. The command prompt window opens.

3. Type **ipconfig** in that window, and then press the enter key. The IP configuration of this PC is displayed. Verify that it matches the settings of the Power Focus, except for the last digit group of the IP address that must be different. In this example it is 1 for the controller and 128 for the PC.

4. Type **ping** followed by the IP address of the Power Focus. In the example, type **ping 192.168.1.1.**

5. Press the Enter key. A reply message from the Power Focus should now be displayed.