iDTRONIC GmbH

BLUEBOX
RFid System

BlueBoxShow

BlueBoxShow

BlueBoxShow, free of charge and included in the BlueBox SDK, is the graphical testing and configuration tool that with just few clicks customizes the functions of any BlueBox RFID devices.
Please note that not all the functions included in this guide will be displayed in any BlueBox. The software itself will show only the parameters that are meant to be managed. This guide refers to BlueBox CX series, but can be used with any BlueBox device.



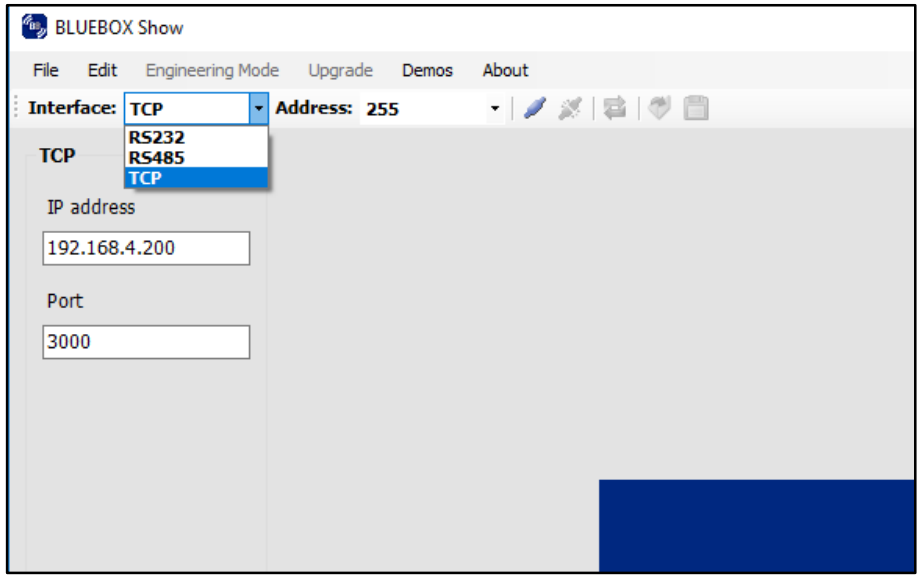
Connection

MAIN BAR MENU

File: load or save a configuration

Edit: activate/deactivate «beep» on tag event.
Open Engineering mode (only for service personnel)

Engineering Mode: reserved for manufacturer
Upgrade: safely upgrade the firmware
Demos: spontaneous mode demo
About: shows information about firmware and hardware



INTERFACE

In order to connect the device to the BlueBo xShow first of all it is necessary to choose the proper interface between Ethernet (TCP) or Serial (RS232 / RS485).
For TCP connection the default IP address is 192.168.4.200 (Port 3000). For serial the defaults are baud rate 19200 bps, 8 data bits, 1 stop bit and no parity check. Indeed the correct serial port must be selected first.

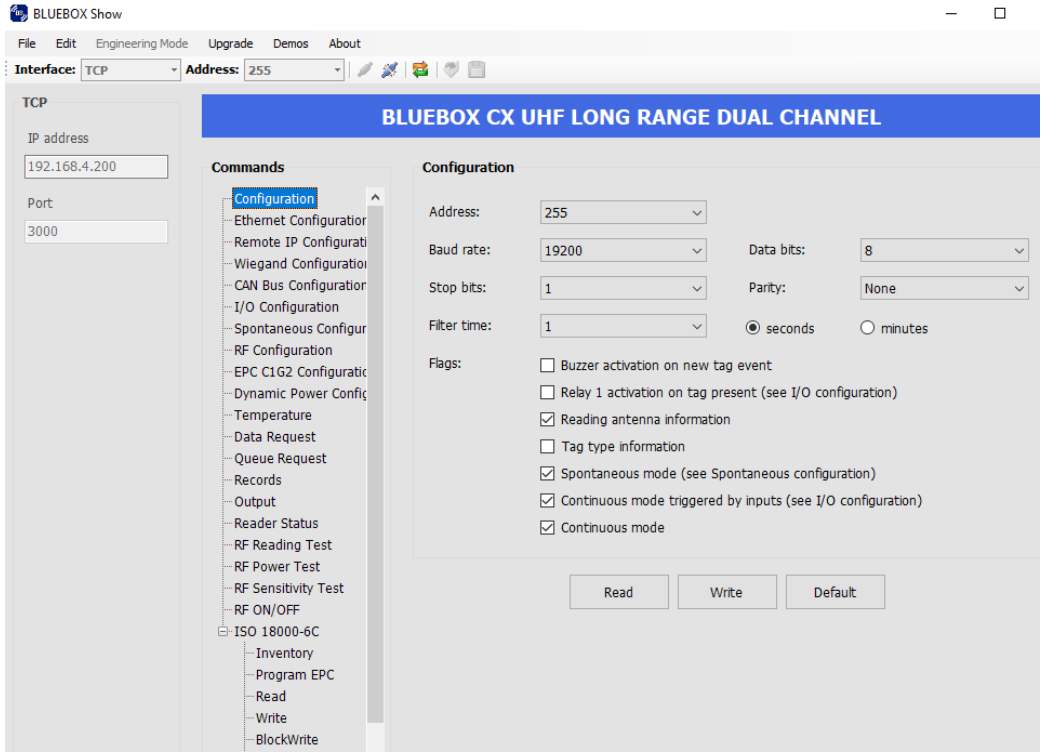
Address
Default is 255, but any number between 1-255 can be assigned to a device part of an RS485 network. Note: This device address is tested on all interfaces.

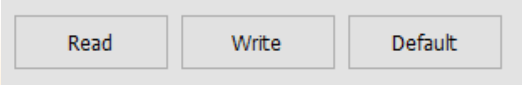
SHORTCUT ICONS

Configuration

Right after the connection the device version is shown in the highlighted blue panel (in the picture BLUEBOX CX UHF LONG RANGE DUAL CHANNEL)
The Commands colon contains all the parameters controlled by the BlueBoxShow.

Configuration:	This panel allows to set network Address node of the device, and the serial communication parameters.
Filter Time:	It is used to avoid multiple detections of the same tag. The Filter time says the device to ignore the tag after the detection for the specified time.
Buzzer activation on new tag event:	enables/disable the buzzer on tag detection
Relay 1 activation on tag present:	activate the Relay1, the behaviour is controlled in the I/O configuration section.
Reading antenna Information:	upon tag detection, enables/disables adding the antenna information together with the tag ID
Tag type information:	upon tag detection, enables/disables adding the tag information together with the tag ID
Spontaneous mode:	enables/disables the spontaneous mode
Continuos mode triggered by inputs:	by enabling this option the continuos mode is controlled in the I/O configuration panel
Continuos mode:	enables/disables the continous mode

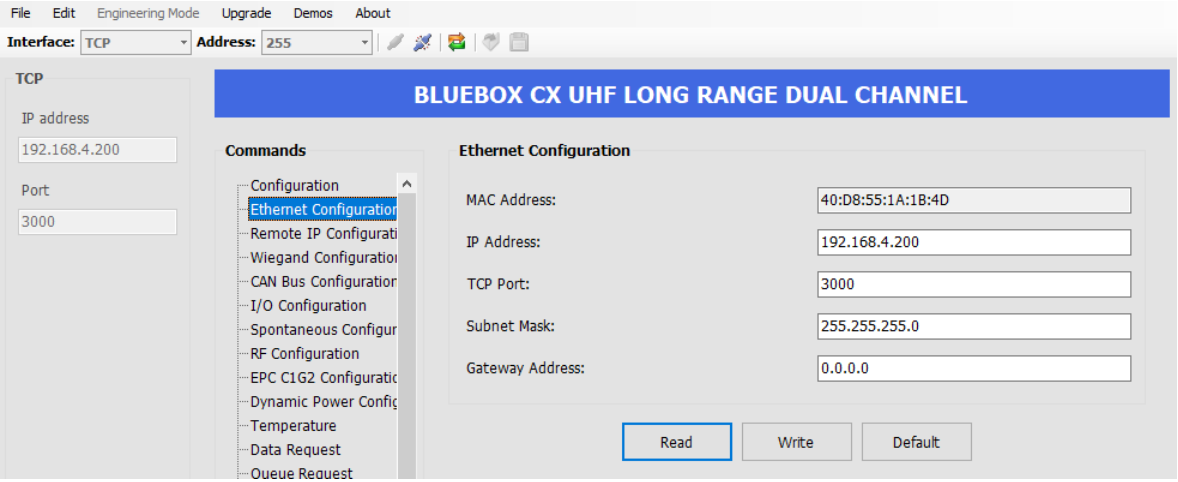




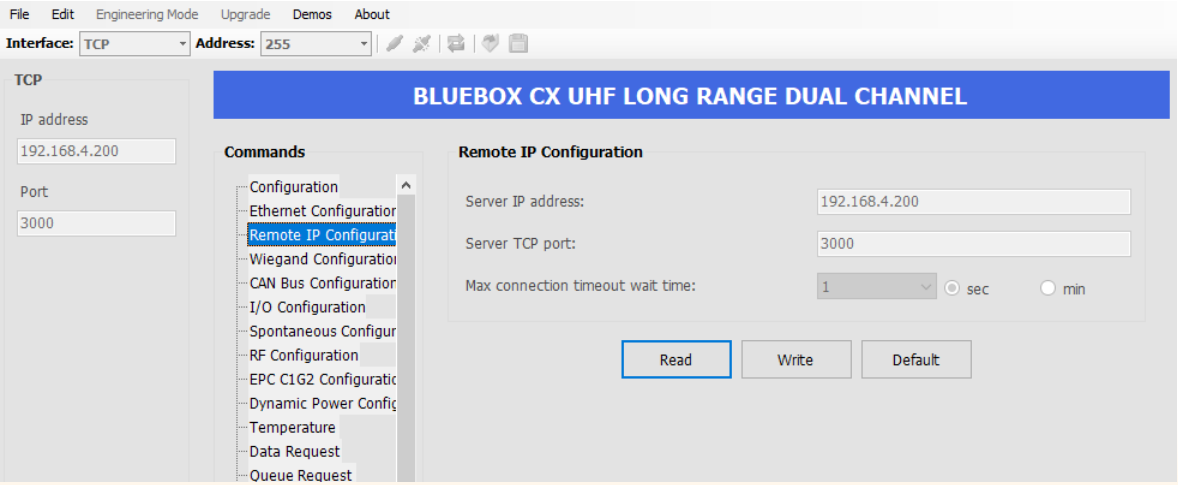
Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required)
Default: calls the factory default values

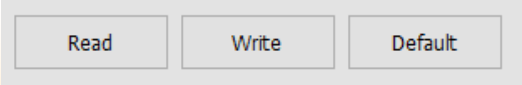
Ethernet configuration – Remote IP configuration

Ethernet Configuration: view/change the IP address, TCP Port, Subnet Mask and Gateway Address



Remote IP Configuration: it is possible to stream the readings to a remote server by specifing the IP address and the TCP listening Port





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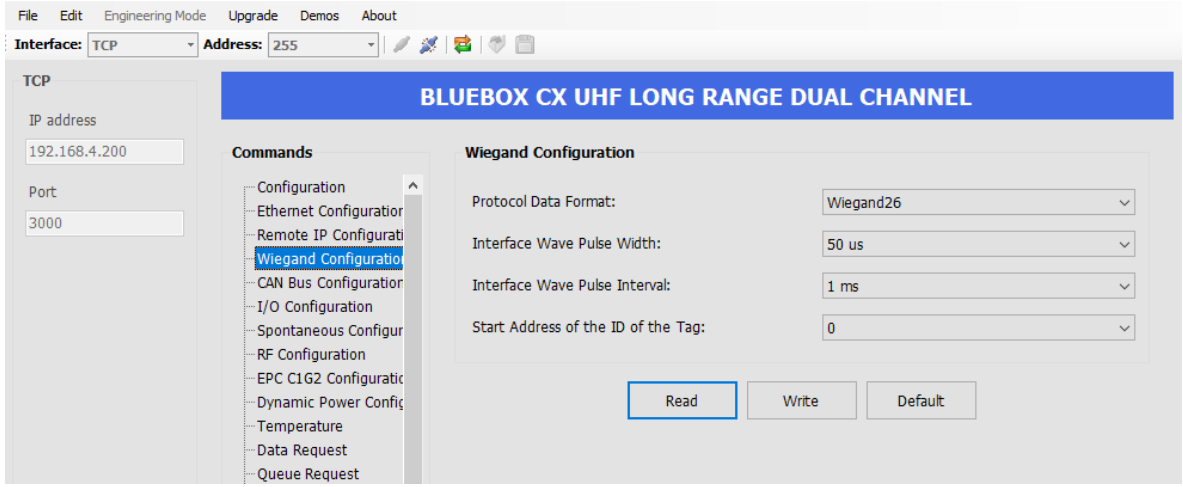
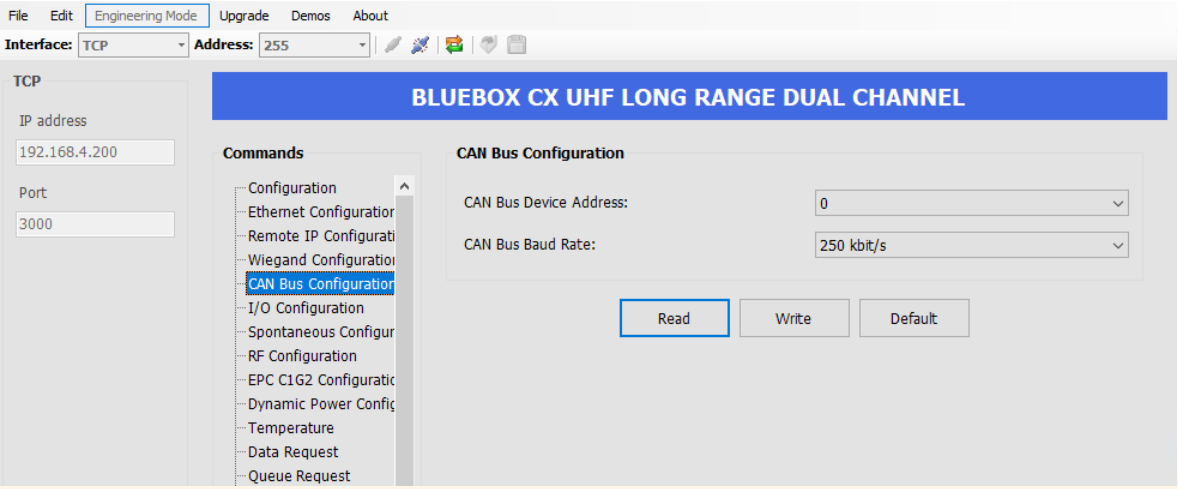
Default: calls the factory default values

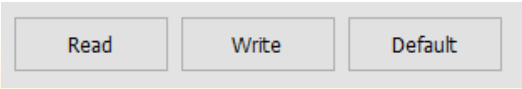
Wiegand configuration – Can Bus configuration

Wiegand Configuration: set the Wiegand parameters
(it applies only to Wiegand versions)



CAN Bus Configuration: set the CAN Bus parameters
(it applies only to CAN Bus versions)





Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required)
Default: calls the factory default values

I/O Configuration – Spontaneous Configuration

Input mode 1: sets the behaviour when Input 1 is in ON or OFF state

Input mode 2: not yet implemented in the firmware

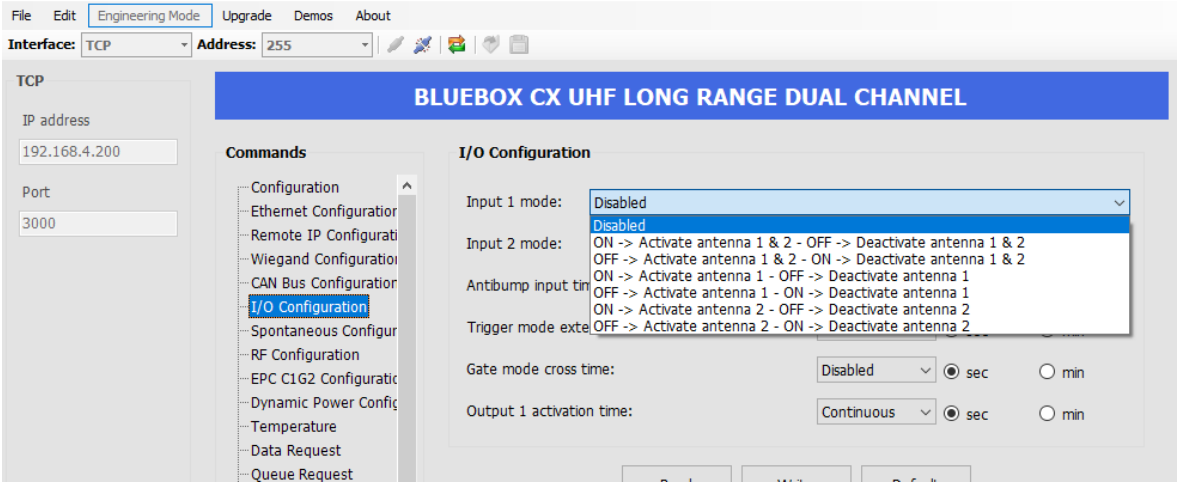
Antibump input time: sets the time to manage the antibump (default time is 50 msec)

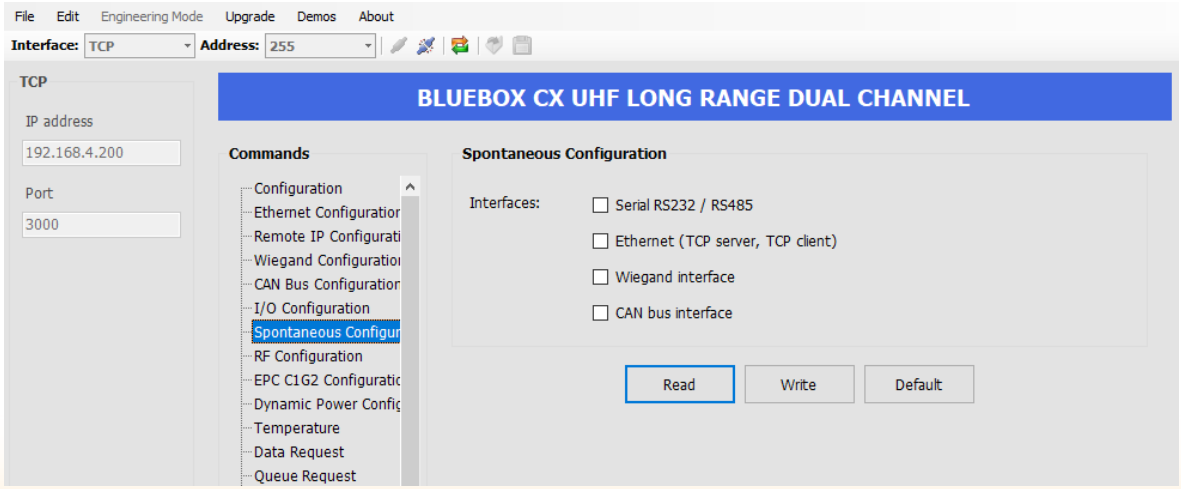
Trigger mode extend time: extends the reaction time of the input

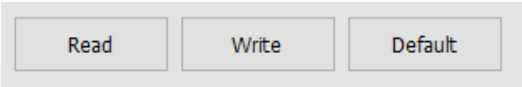
Gate mode cross time: when enabled the device, for the specified time, is set to idenfy the crossing gate direction

Output 1 activation time: sets the relay closing time

Interfaces: it is possible to choose through the checkboxes, the interfaces where to send the spontaneous messages to







Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required)
Default: calls the factory default values

RF Configuration

RF geographical region: Europe (ETSI) or North America (FCC)

RF output power: from 0dBm to the max. supported (+27 dBm = 500 mW, +30 = 1 W)

RF input sensitivity: the lower, the more tags are detected

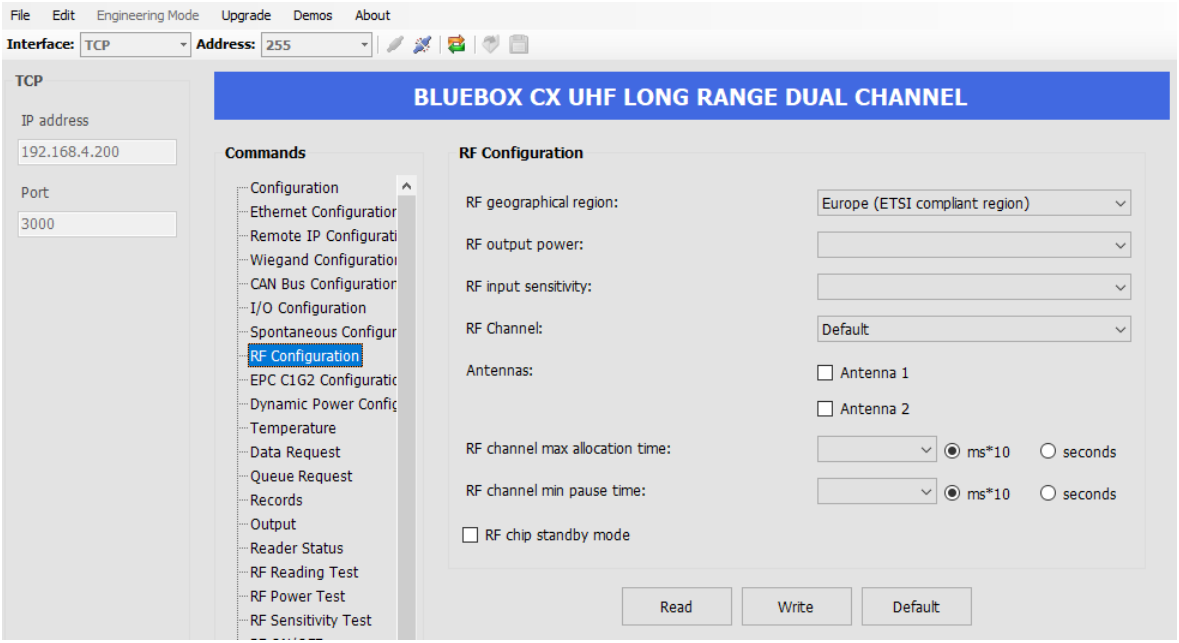
RF Channel: it is possible to choose between 10 channels for ETSI and 50 for FCC. Very useful to avoid interferences where more readers are working simultaneously

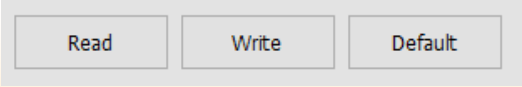
Antennas: the checkboxes control which antenna is active

RF Channel max allocation time: according to the application it is possible to specify the max allocation time of the specific channel

RF Channel min pause time: according to the application it is possible to specify the pause time of the specific channel

RF chip standby mode: puts the RF chip in standby





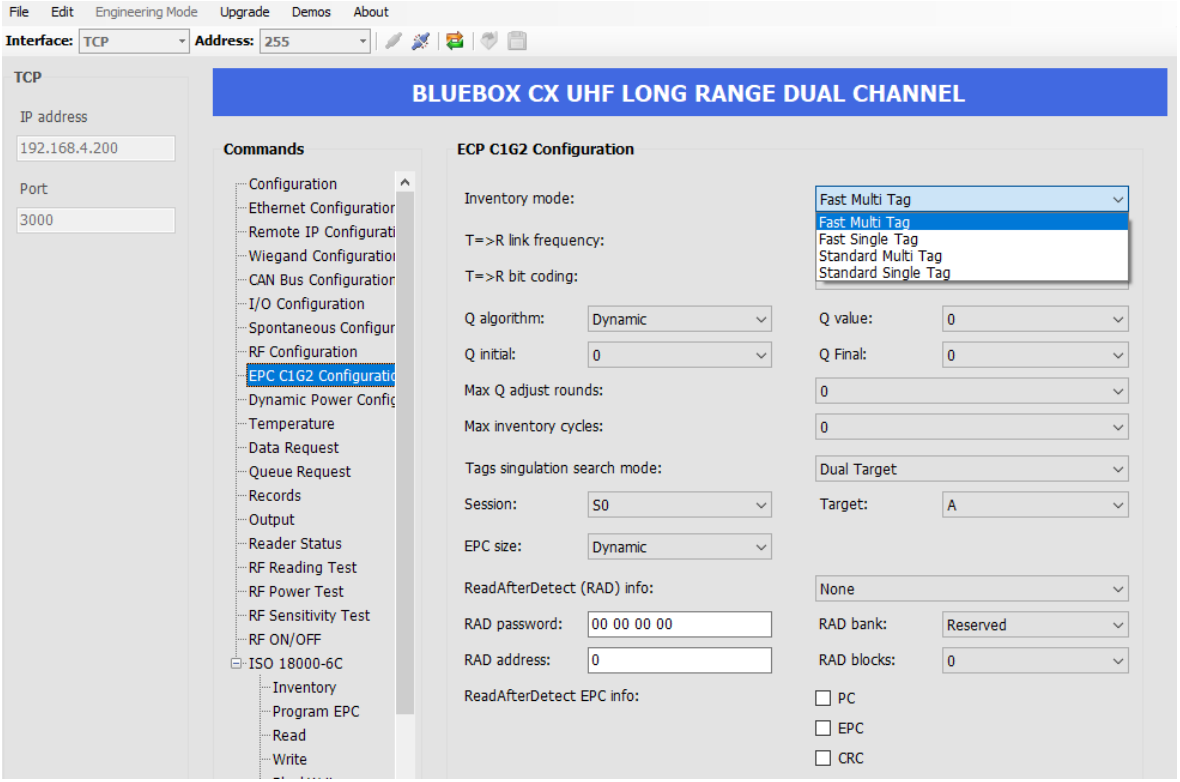
Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required)
Default: calls the factory default values

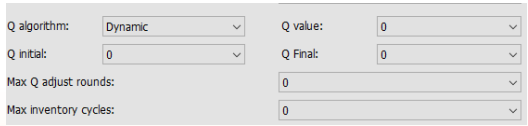
EPC C1G2 Configuration

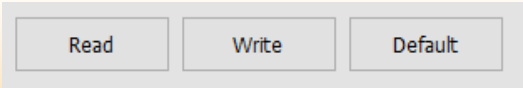
Inventory mode: Fast take the tag to the acknowleged mode, **Standard** to the Opened mode. The first is faster the second is more secure. **Multi** does anticollision procedure, **Single** no.
T=>R link frequency: defaults suggested, refer to the product manual.
T=>R bit coding: defaults suggested, refer to the product manual.

Q tuning section
Q tells the reader informations about the number of tags that could be expected in the field according with the equation $n=2^Q$ so, if the Q value is set to **0** and the Q algorithm to **fixed** the reader expects 1 tag in the field. When the Q algorithm is set to Dynamic, the reader changes automatically the values to match the actual scenario.

Tags singulation search mode: according to the EPC C1G2 specifications, an UHF tag when energized puts its state from A to B, when selected Dual Target the reader looks for tags that are in A and B state, when selected Single Target the reader looks for tags that are in the specified Target
Session: indicates which is the session managed by the reader. For further informations refers to EPC C1G2 specifications
EPC size: indicates the amount of EPC memory that will be used.
ReadAfterDetect (RAD) info: tells the reader what to read after the tag detection (TID, or custom)
RAD Bank: if Custom is selected then it is possible to specify which memory bank to read from, between EPC, TID or User
RAD blocks: when Custom is selected then it is possible to specify the number of blocks to read
ReadAfter Detect EPC info: select The EPC bank info to include in the tag's ID in ReadAfterDetect mode



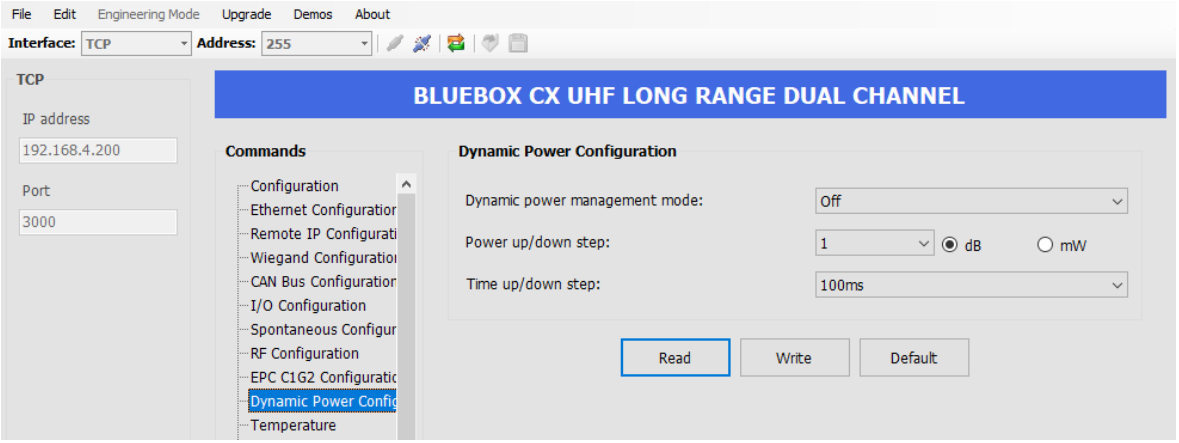




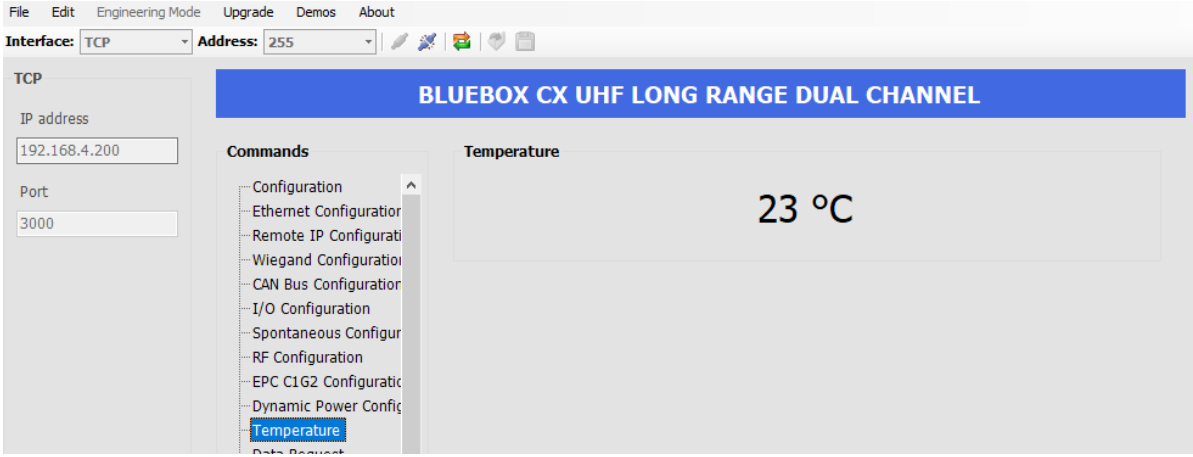
Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required)
Default: calls the factory default values

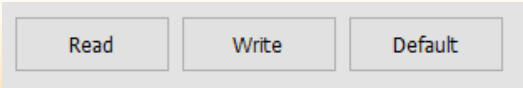
Dynamic Power Configuration - Temperature

Dynamic Power Configuration:
when set to ‘on’ the reader changes the power according to the specified parameters. While changing its power, it changes the shape of the lobe as well. This could increase the reading range of the device.



Temperature
Internal Temperature of the device is shown.

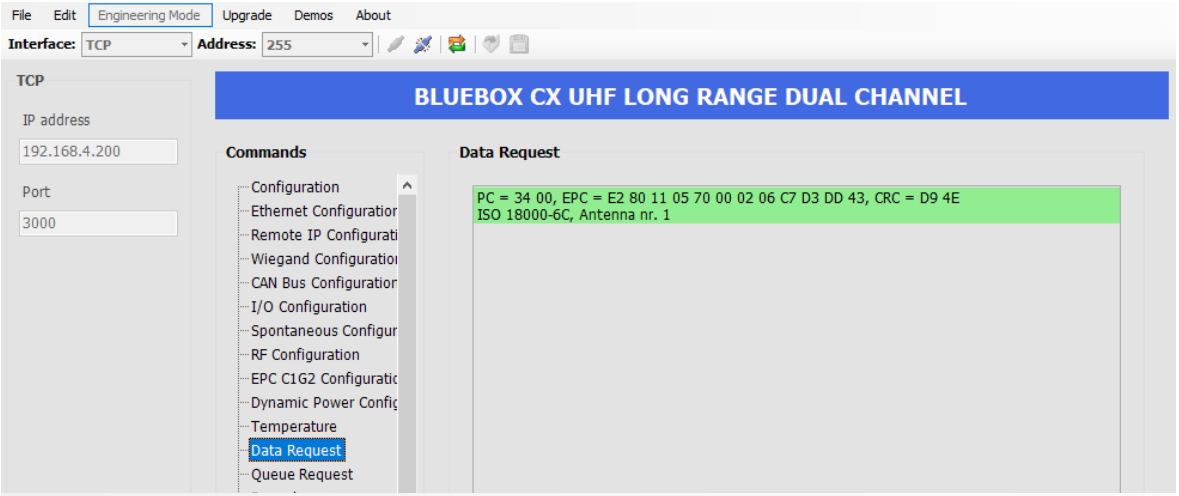




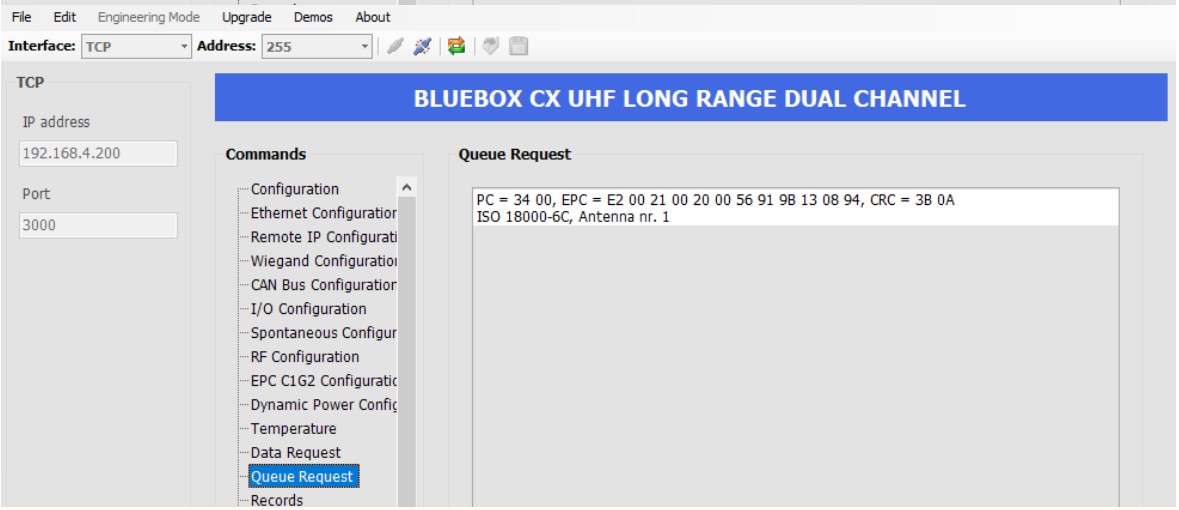
Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required)
Default: calls the factory default values

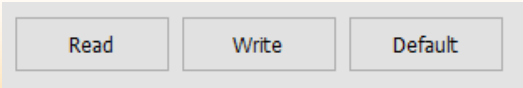
Data request – Queue request

Data Request:
when Request button is pressed the panel shows the tag in the reading range, if infinite request is flagged the reader keep searching until stopped.
Clear: clears the panel.
Export: exports in .csv file the Data Request panel content.



Queue Request:
when Request button is pressed the panel shows all the tags red by the device since the last request. Due to memory limit a total of approx 1000 readings are stored
Export: exports in .csv file the Queue Request panel content

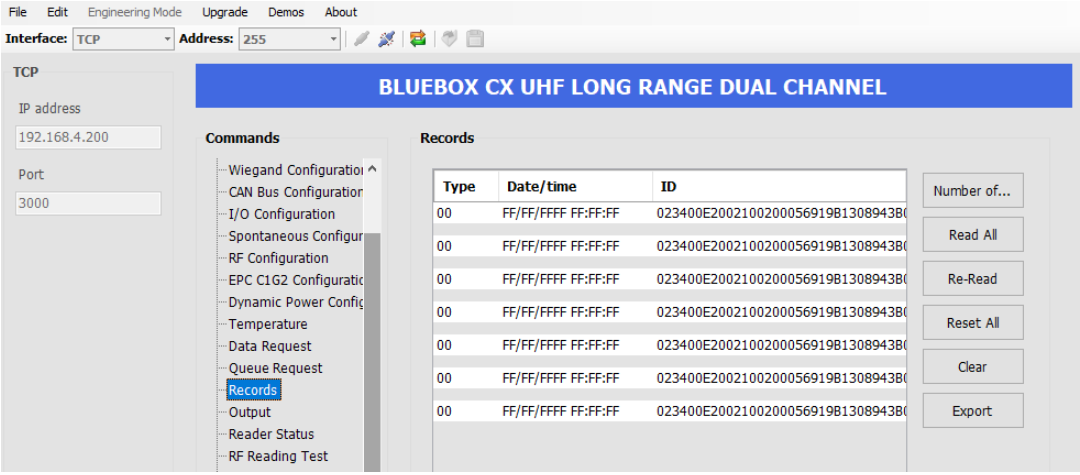




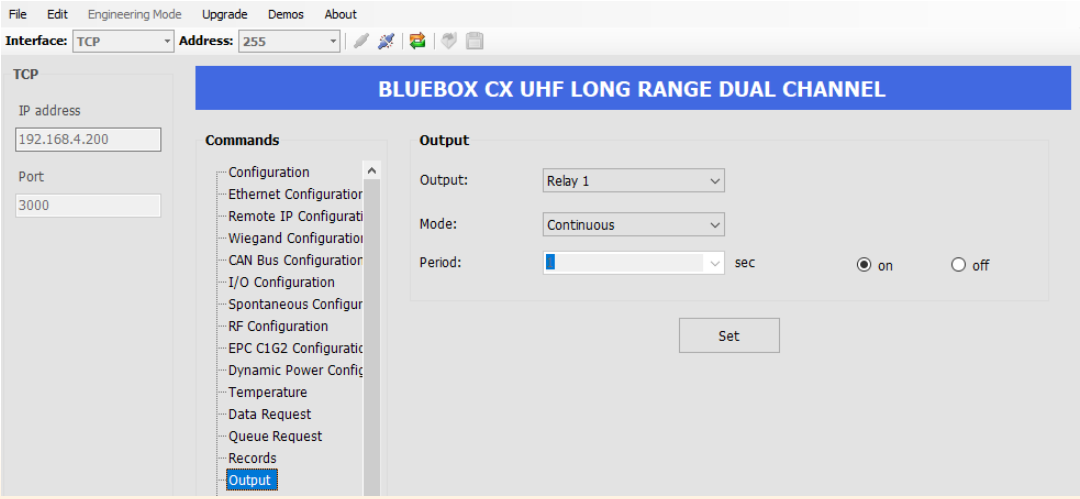
Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required)
Default: calls the factory default values

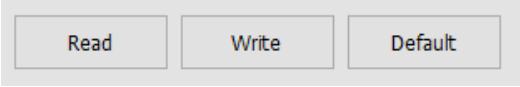
Records – Output

Records:
In this panel are shown the stored readings (for BlueBox with Real Time Clock, time stamp is added)
Number of: returns the number of readings stored in the flash memory
Read All: reads the content of the memory
Re-read: updates and reads the content of the memory
Reset All: clears the flash memory and the panel
Clear: clears the panel only
Export: saves the content as .csv file



Output:
Within this panel it is possible to test the output activating countinuosly or impulsively Relay1 and Relay2

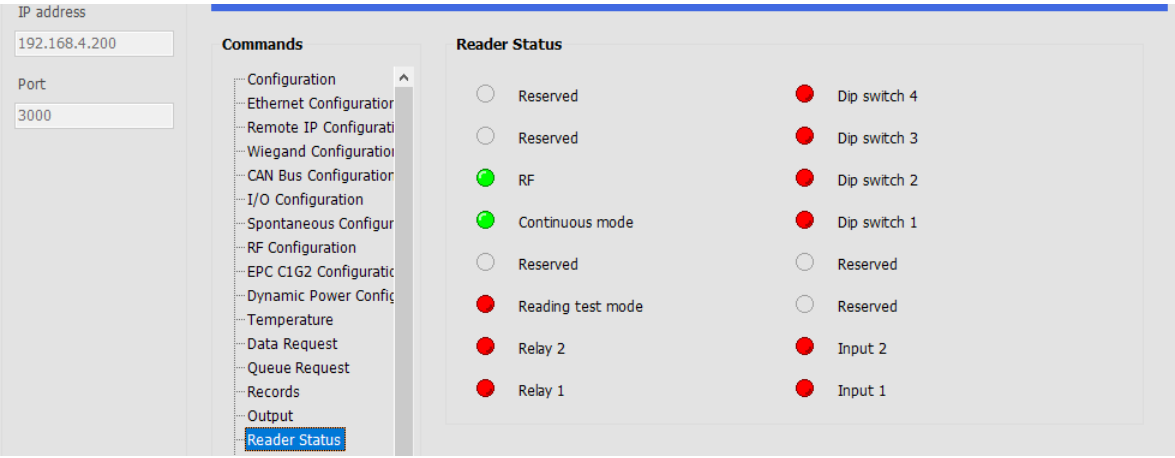




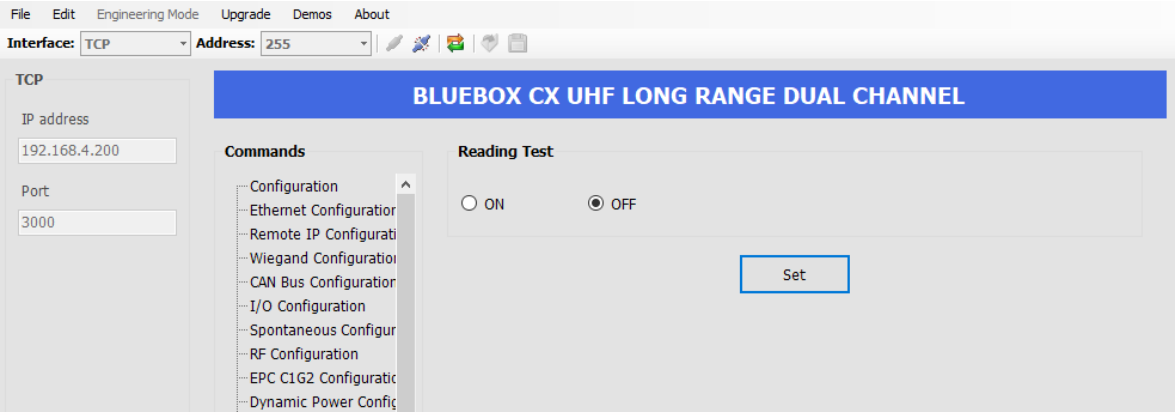
Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required) **Default:** calls the factory default values

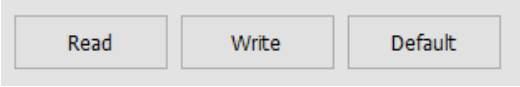
Reader Status – Reading Test

Reader Status
panel that shows what's on and what's off in the BlueBox



Reading Test:
when set to ON, the readers beeps continuosly when a tag is in the field. This functionality is useful when testing reading ranges.



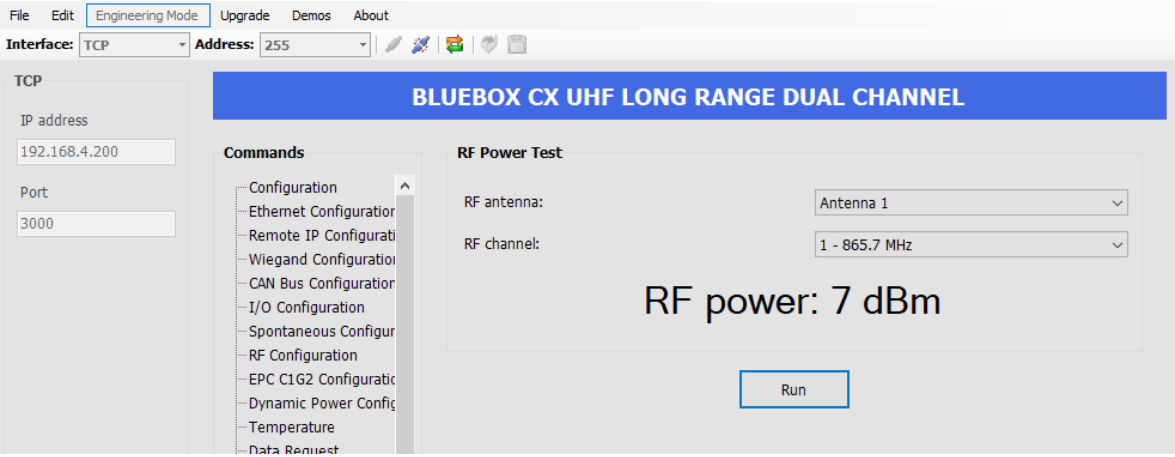


Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required) **Default:** calls the factory default values

RF Power Test – RF Sensitivity Test

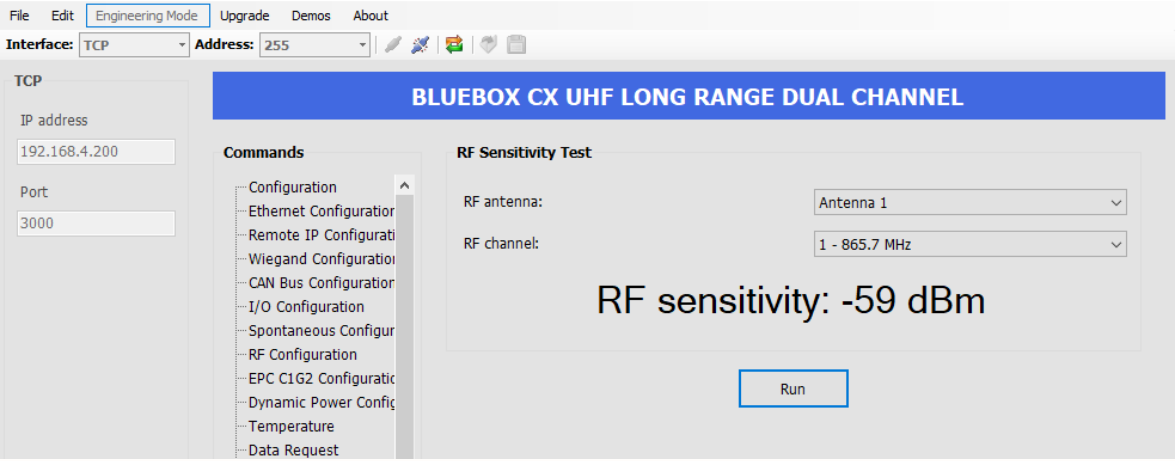
RF Power Test

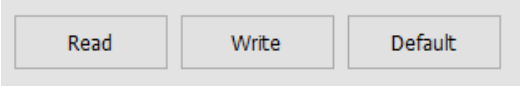
This test Panel returns the RF Power needed to detect a tag on a specific channel.



RF Sensitivity Test

This test Panel returns the RF Sensitivity needed to detect a tag on a specific channel



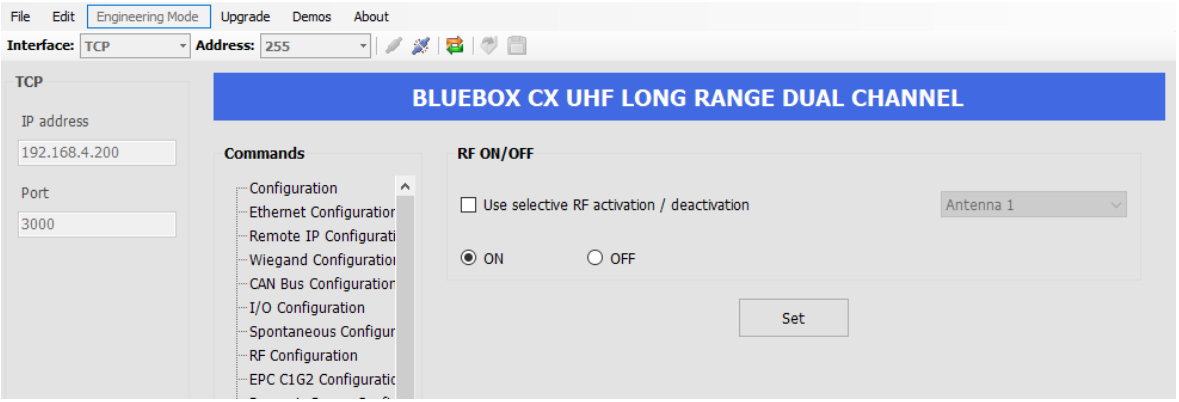


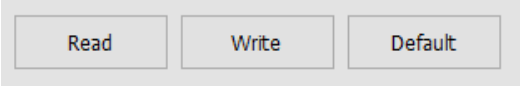
Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required) **Default:** calls the factory default values

RF ON/OFF

It switches the RF power on the selected channel.

This can be used in combination with continuous mode + spontaneous mode to stop the automatic detection of tags without having to use configuration command.



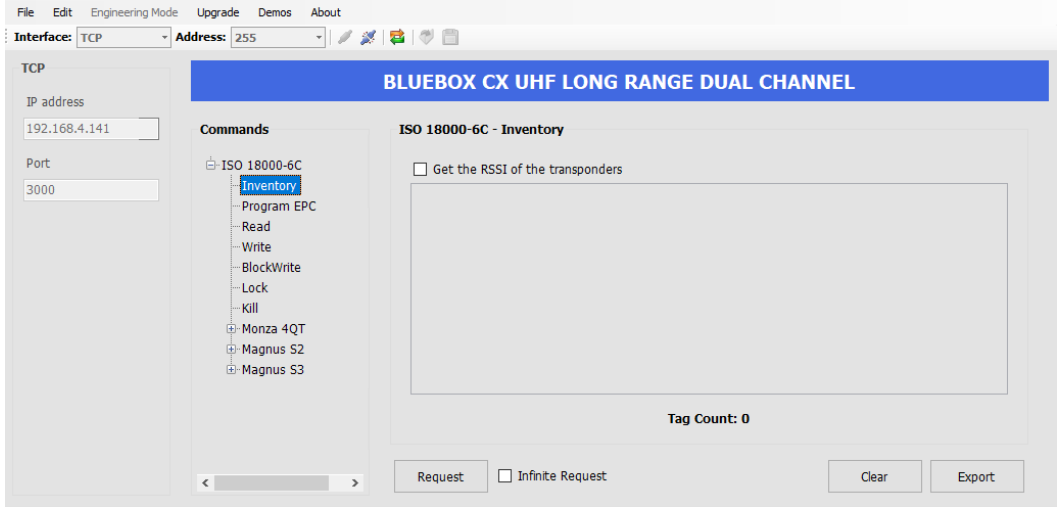


Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required) **Default:** calls the factory default values

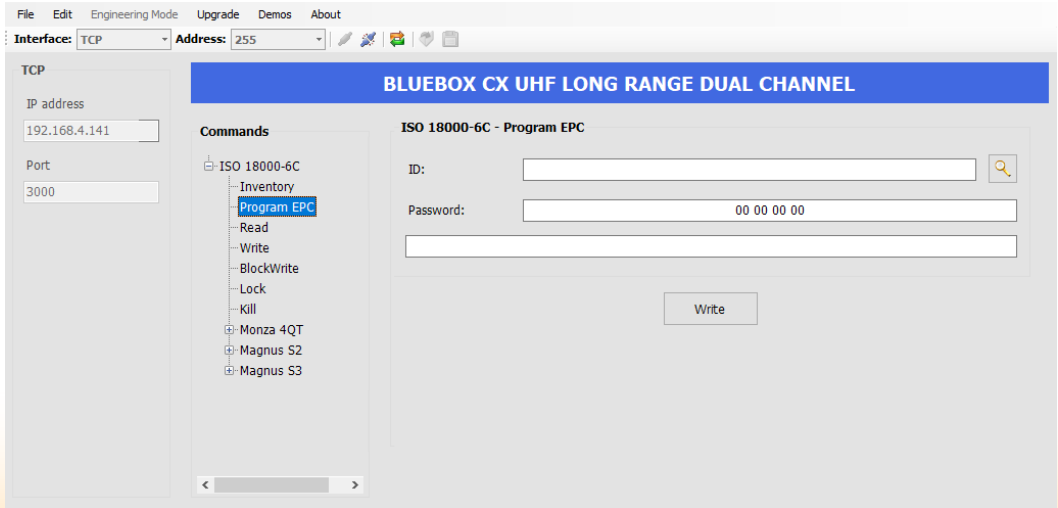
Inventory – Program EPC

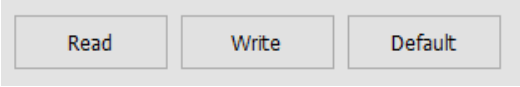
Inventory:
When **Request** is pressed, each tag in the reading range appears in the panel. Additionally by flagging the **Get the RSSI of the transponders** it is also possible to have, for each tag, the indication of the **Receive Signal Strenght Indicator** that shows the signal strenght used for the decoding of data. This is not the receiver input level, but a quality indicator.

If Infinite Request is flagged the reader keeps looking for the TAGs in the field steadily until stopped.



Program EPC
In order to write the EPC area of a tag it is necessary to select a tag by pressing the magnifier Icon. Once selected, please fill in the blanks and press write.



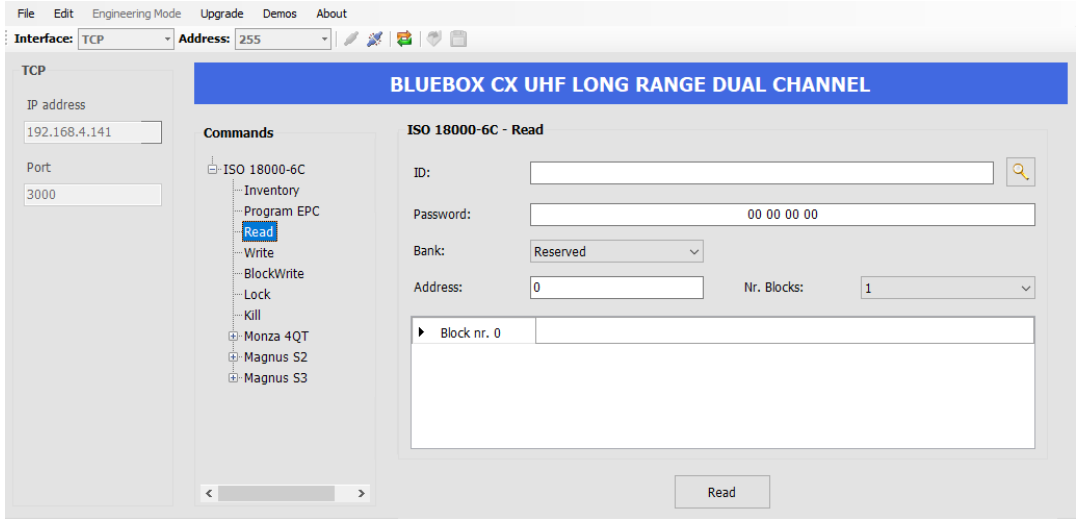


Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required) **Default:** calls the factory default values

Read – Write

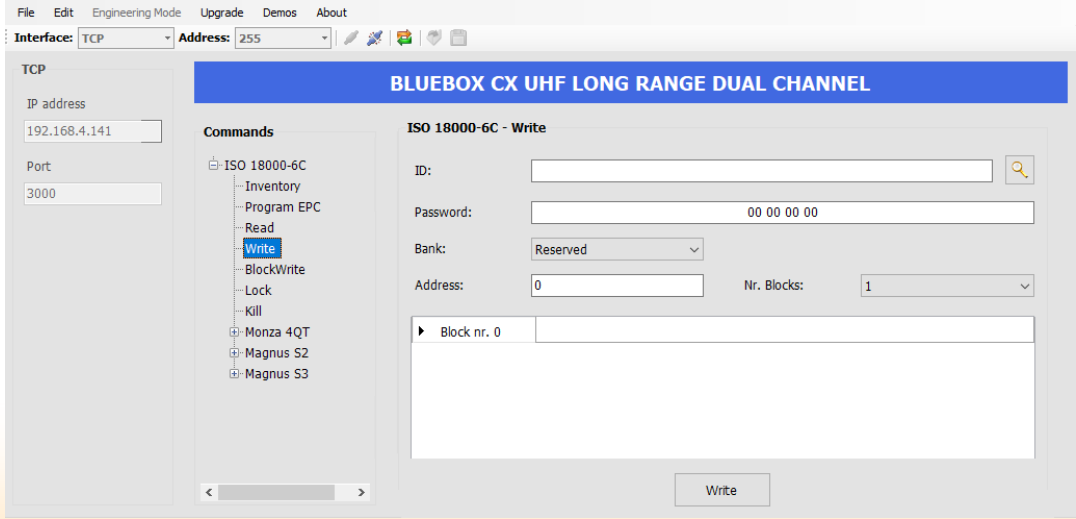
Read

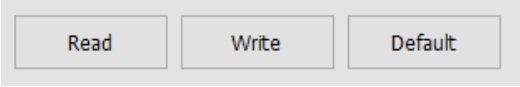
By pressing the magnifier, please choose between the tags within the reading range the one to operate with. Then from the scroll down menu select which memory bank read from, the starting address and the number of blocks. End the operation by pressing 'Read' so that the values will be displayed in the panel.



Write

By pressing the magnifier choose between the tags within the reading range the one to operate with. Then from the scroll down menu select which memory bank write to, the starting address and the number of blocks. End the operation by pressing 'write' so that the values will be stored in the tag.



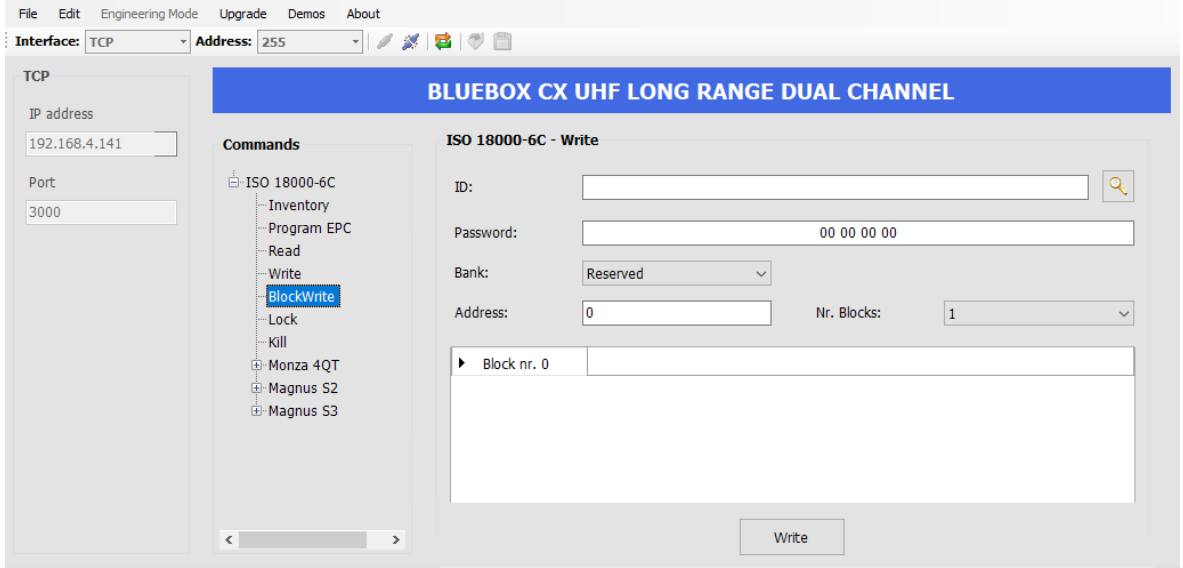


Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required) **Default:** calls the factory default values

Blockwrite – Lock

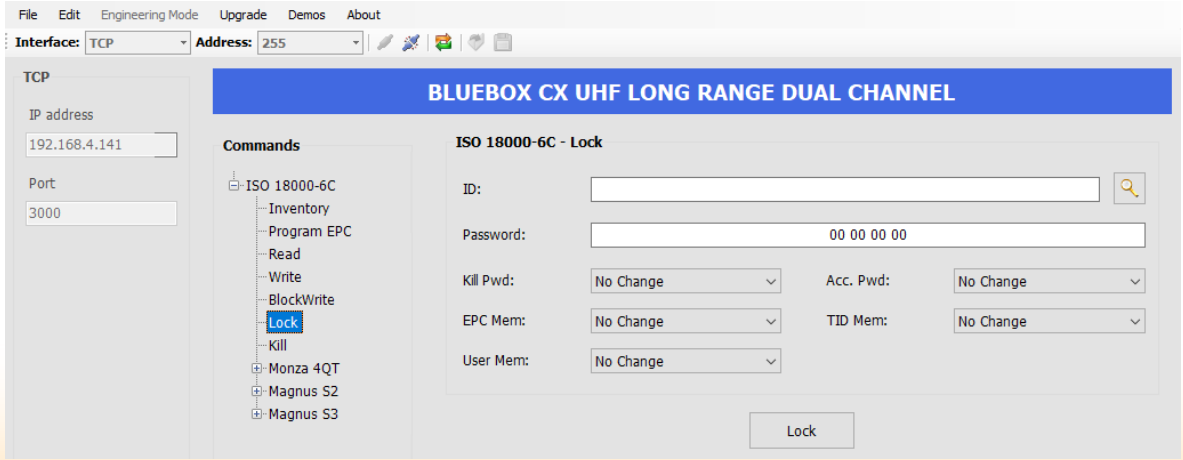
Blockwrite

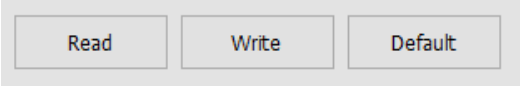
By pressing the magnifier choose between the tags within the reading range the one to operate with. Then from the scroll down menu select which memory bank write to, the starting address and the number of blocks. End the operation by pressing 'write' so that the values will be stored in the tag. While 'write' writes one block at a time, blockwrite writes all the blocks in one operation, so its faster, but it is not supported by all the tags.



Lock

By pressing the magnifier, choose between the tags within the reading range the one to operate with. Then from the scroll down menu select which memory bank to lock. End the operation by pressing 'Lock'.



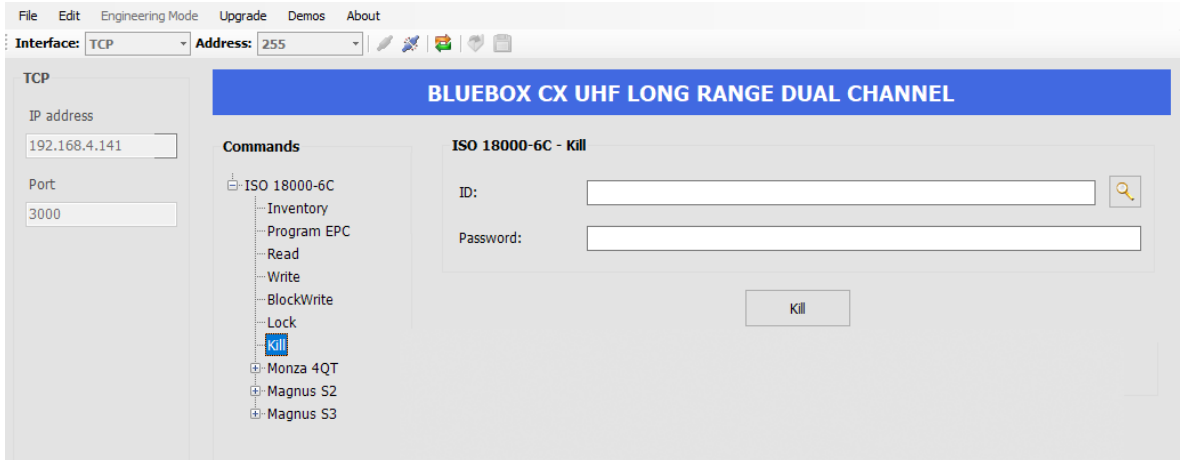


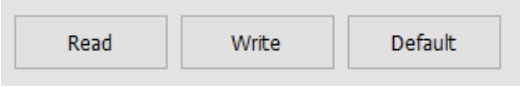
Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required) **Default:** calls the factory default values

Kill

Kill

By pressing the magnifier, choose between the tags within the reading range the one to operate with. Then input the kill Password. End the operation by pressing ‘Kill’.

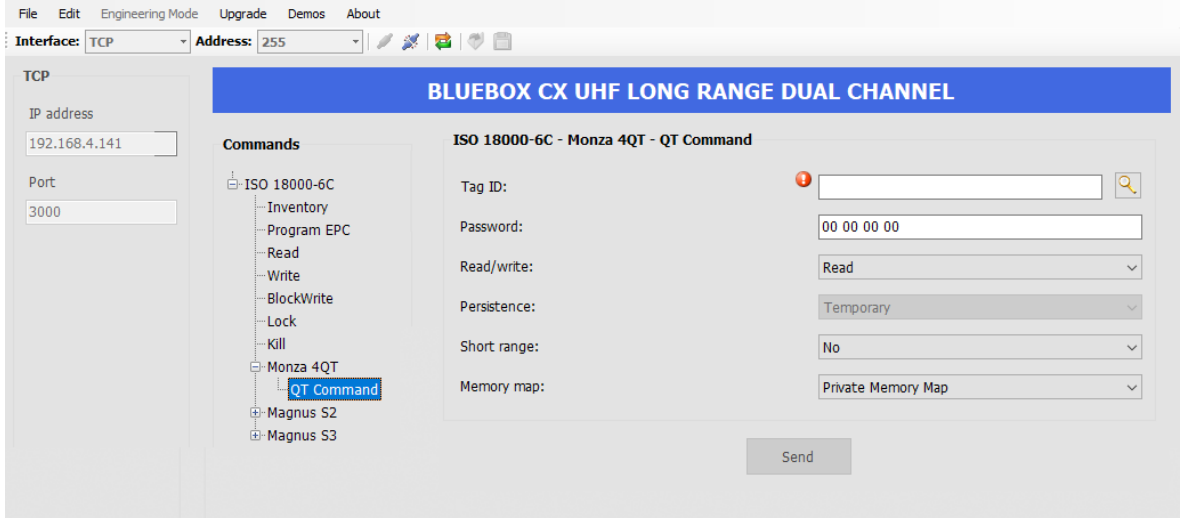


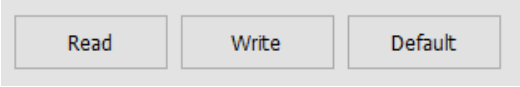


Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required) **Default:** calls the factory default values

Monza 4QT

Monza 4QT
Bluebox UHF CX series, manages the double memory profile of Impinj Monza QT chips. Please refers to the Monza 4QT manual.

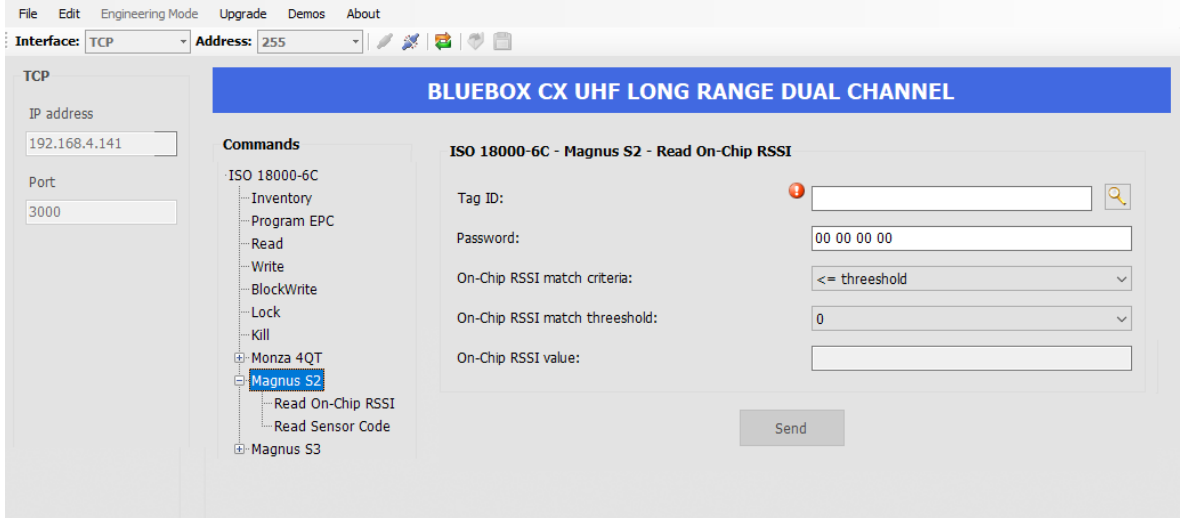


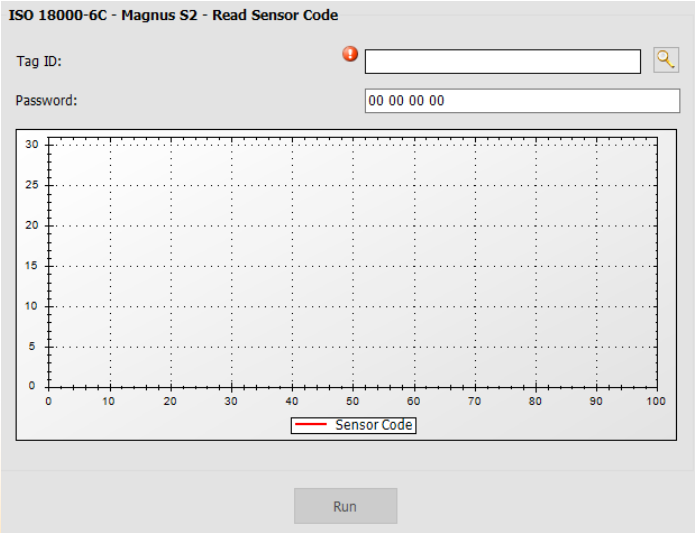


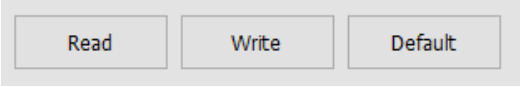
Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required) **Default:** calls the factory default values

Magnus S2

Magnus S2
Bluebox UHF CX series, manage the RFMicron Magnus Sensor Tags. For further details please refer to the RFMicron Magnus Sensor Tags manual.
Press the magnifier in order to select the tag to operate with. From the scroll down menu it is possible to set reading criteria (up or under the threesold), the threesold. After pressing the sent button, the readings are graphically shown in the 'Read Sensor Code' menu.



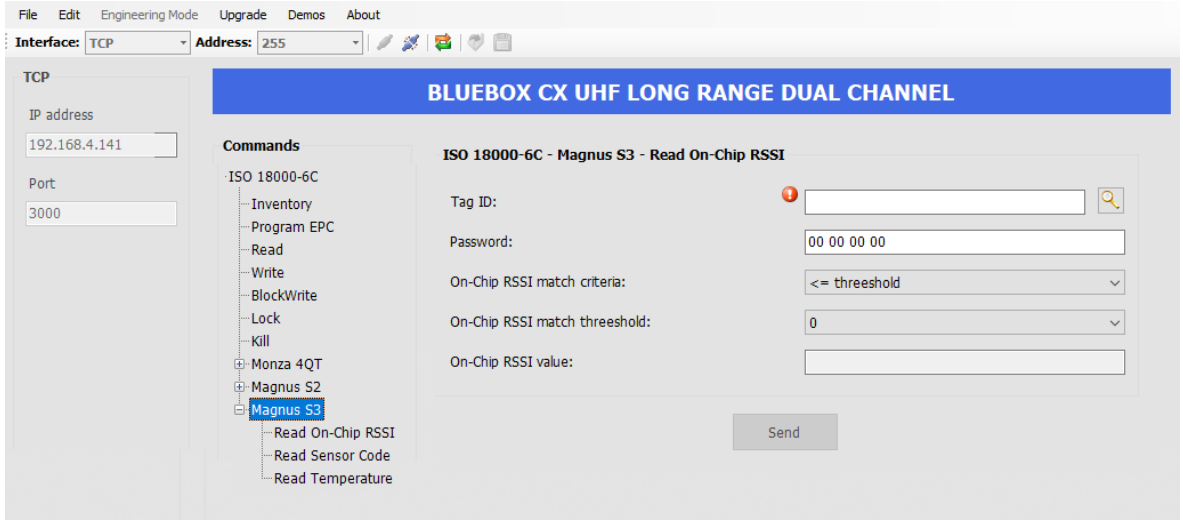


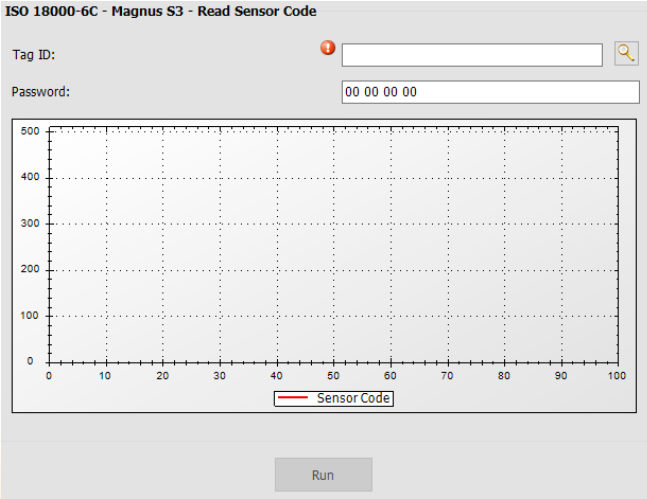


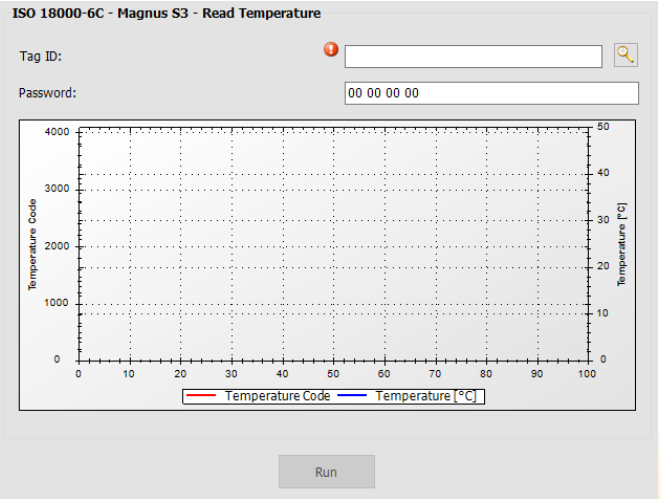
Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required) **Default:** calls the factory default values

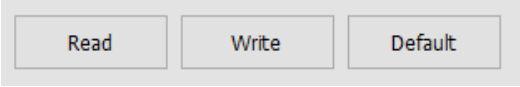
Magnus S3

Magnus S3
Bluebox UHF CX series, manage the RFMicron Magnus Sensor Tags. For further details please refer to the RFMicron Magnus Sensor Tags manual.
Press the magnifier in order to select the tag to operate with. From the scroll down menu it is possible to set reading criteria (up or under the threesold), the threesold. After pressing the sent button, the readings are graphically shown in the 'Read Sensor Code' and Read Temperature menus.









Read: reads the stored values, **Write:** saves the values in the memory (a reboot may be required) **Default:** calls the factory default values

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