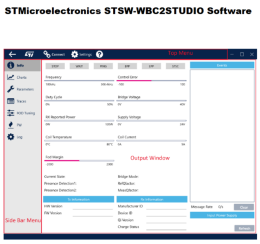
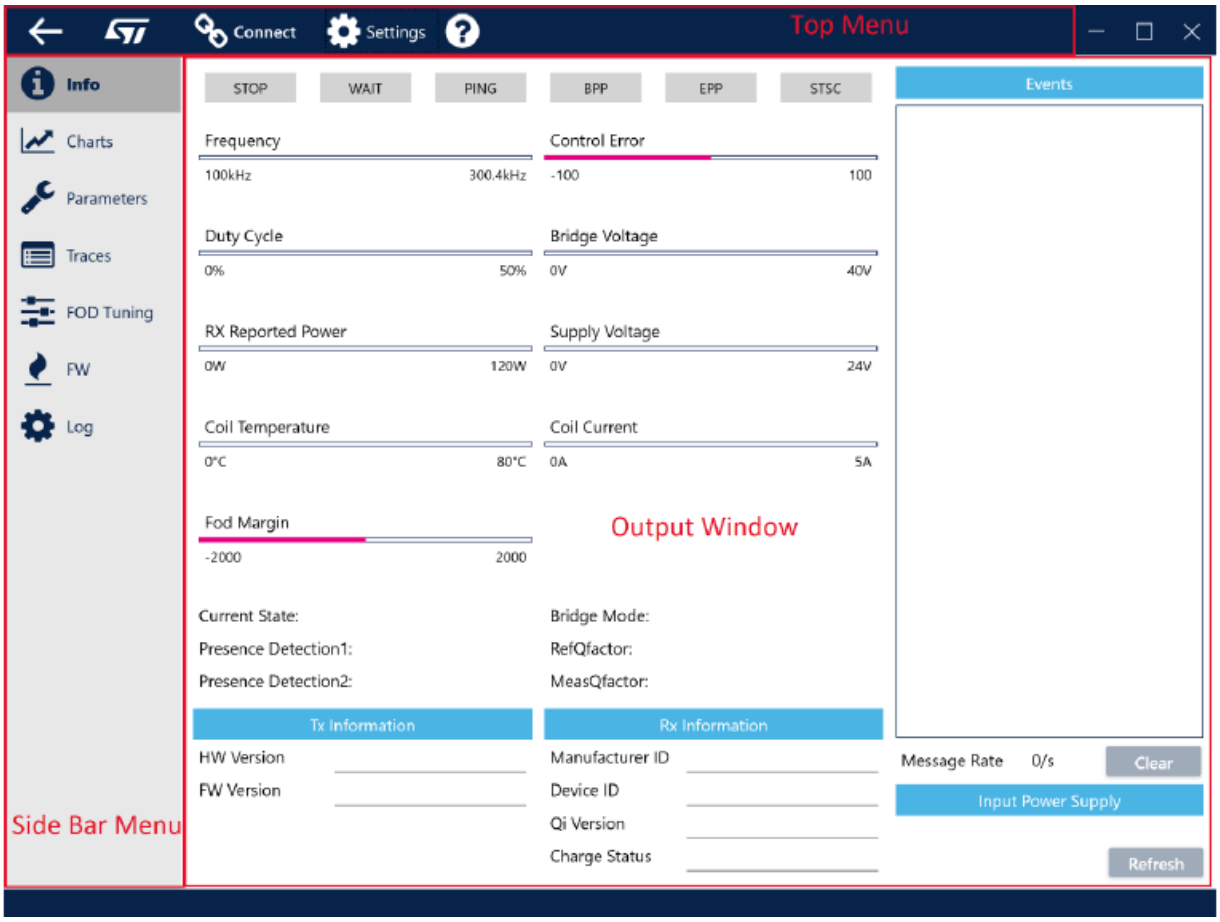


STMicroelectronics STSW-WBC2STUDIO Software User Guide

Contents

STMicroelectronics STSW-WBC2STUDIO Software



Introduction

- The purpose of this document is to provide a comprehensive user guide for the STSW-WBC2STUDIO software. It aims to provide clear instructions on how to install, execute, and use the features provided by the software.
- This document is intended for end-users of the STSW-WBC2STUDIO software, who have all the required hardware settings. The scope of this document is limited to the STSW-WBC2STUDIO software.

Abbreviations, acronyms, and definitions

Abbreviations, and acronyms

Table 1. List of abbreviations

Abbreviation	Description
UART	Universal Asynchronous Receiver-Transmitter
HW	Hardware
NVM	Non-Volatile Memory
PRx	Power Receiver
PTx	Power Transmitter
Rx	Receiver/Receive. Unless explicitly mentioned, this is used interchangeably with PRx
Tx	Transmitter/Transmit. Unless explicitly mentioned, this is used interchangeably with PTx
UI	User Interface

Definitions

Table 2. List of definition

Name	Description
application processor	A microcontroller or microprocessor that controls the device of interest. Typically, an application processor is the main processor of the system or subsystem in which the device is connected to
customer	The person, or persons, who pay for the product and usually (but not necessarily) decide the requirements. In the context of this recommended practice, the customer and the supplier may be members of the same organization
host	A master system that controls the device of interest. In the case that the host is a microcontroller or microprocessor, it is referred to as an application processor
user	The person, or persons, who operate or interact directly with the product

System requirements

Table 3. List of system requirements

Description	Minimum requirement
Operating system	Microsoft® Windows® 10
Processor	1 Ghz processor
RAM	4 GBytes or higher (Minimum 8 GB preferred for better performance, 16 GB recommended in debug mode)
Hard disk space	15 Mbytes or more

Software installation

STSW-WBC2STUDIO software does not require specific installation steps. To execute the software:

1. Extract the contents of STSW-WBC2STUDIO Vx.x.x.zip into C driver
2. Double-click on STSW-WBC2STUDIO.exe to launch the software In case of using ST-LINK as a USB-UART bridge, install USB driver.

Hardware connection

Before starting the software, ensure the target evaluation kit is connected to the PC via a USB-UART bridge and powered up. The Table 4. The list of supported USB-UART bridges shows a list of ST-LINK bridges supported by the STSW-WBC2STUDIO software.
The STSW-WBC2STUDIO can connect one USB-UART bridge at a time for UART serial communication.
The Table 5. List of supported WLC evaluation kit lists the WBC2 evaluation kit supported by the STSW-WBC2STUDIO software.
Figure 1. STSW-WBC2STUDIO HW connection

Figure 1. STSW-WBC2STUDIO HW connection

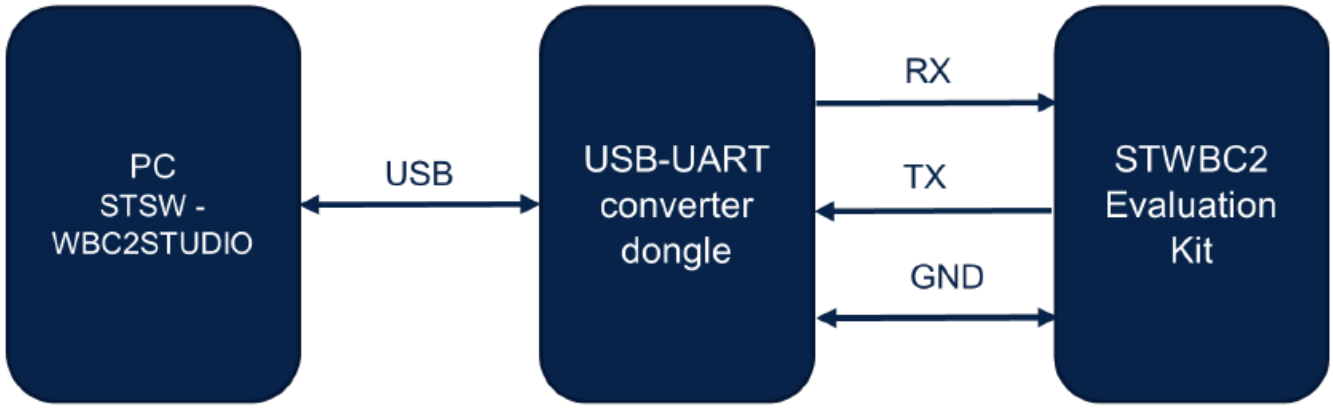


Table 4. List of supported USB-UART bridge

Part number	Description
STLINK-V3SET	USB-UART bridge
STLINK-V3MINI	USB-UART bridge
STLINK-V3MINIE	USB-UART bridge
USB-UART bridge	Generic USB-UART bridge

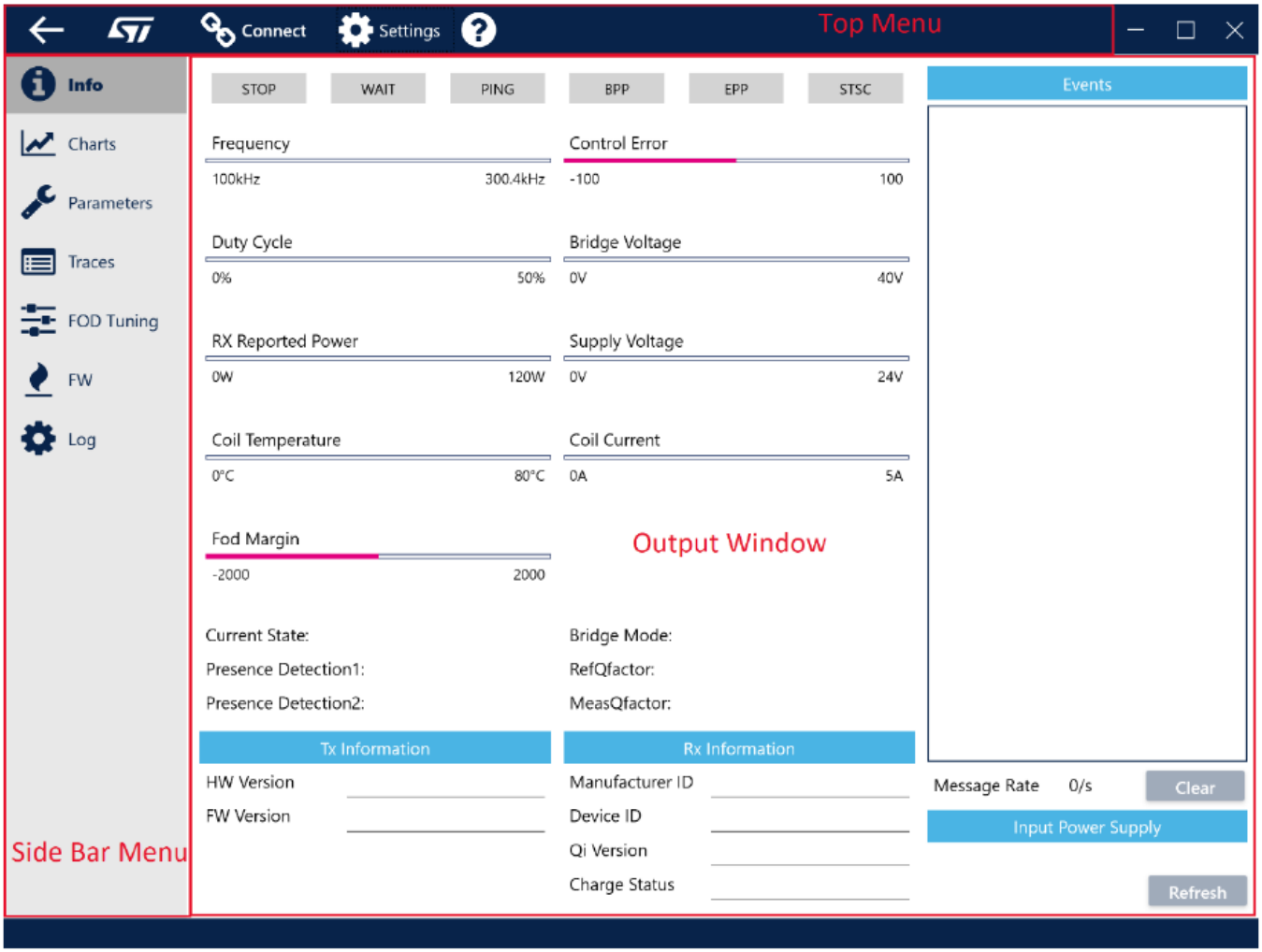
Table 5. List of supported WLC evaluation kit

Part number	PTx	Description
STEVAL-WBC2TX70	PTx	General application PTx up to 70 W
STEVAL-WBC2TX50	PTx	General application PTx up to 50 W

Interface Description

The STSW-WBC2STUDIO main interface consists of three main sections: The top menu, the Side Menu Bar, and the Output Window.
The Side Menu Bar selects the output in the Output Window, details can be found in Section 5.2: Output Window.
For details about the Top menu refer to Section 5.1: Top menu section.

Figure 2. STSW-WBC2STUDIO main interface



Top menu section

The Top Menu Section hosts the interface to access the software's setup, settings, and information about the software.

Figure 3. Top Menu Section

Table 6. Top menu UI element(s) description

UI element(s)	Description
Expander	Allows users to expand and collapse the Side Menu bar. This feature allows the user to have a bigger view of the Output Window when needed
Connect	The toggle button allows you to connect or disconnect the WBC2 device
Settings	The Settings button opens the Settings window, for details refer to Section 5.1.1: Set tings window
About	Opens the About window, for details refer to Section 5.1.2: About Window

Settings window

Figure 4. Settings window

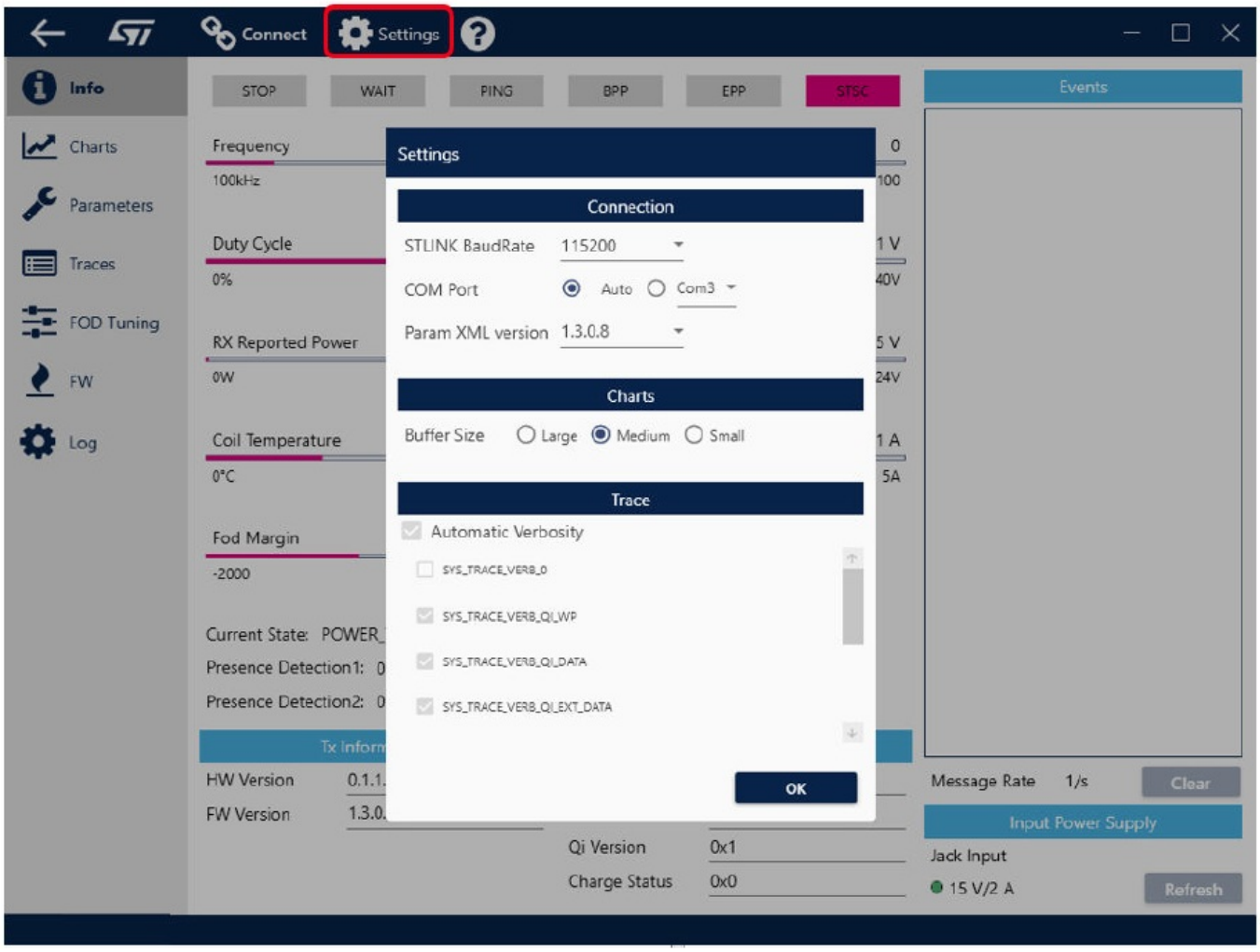


Table 7. Settings Window UI element(s) Description

UI Element(s)	Description
Tx/Rx Settings	Option to manually choose or auto-select com port for WBC2 UART Option to choose WBC2 Param XML version
Charts Settings	Configures chart plotting features Buffer size [large: 100, medium: 50, small: 10] plot entries Older data in plots are cleared to add new data when the plot entries exceed the configured size
Verbosity Settings	Enable traces based on category

About Window

Figure 5. **About Window**

Table 8. About Window UI element(s) Description

UI Element(s)	Description
Product Version	Software version number

Output Window

Info

Info Window displays the main metrics of running the STWBC2 device.

Figure 6. **Info Window**

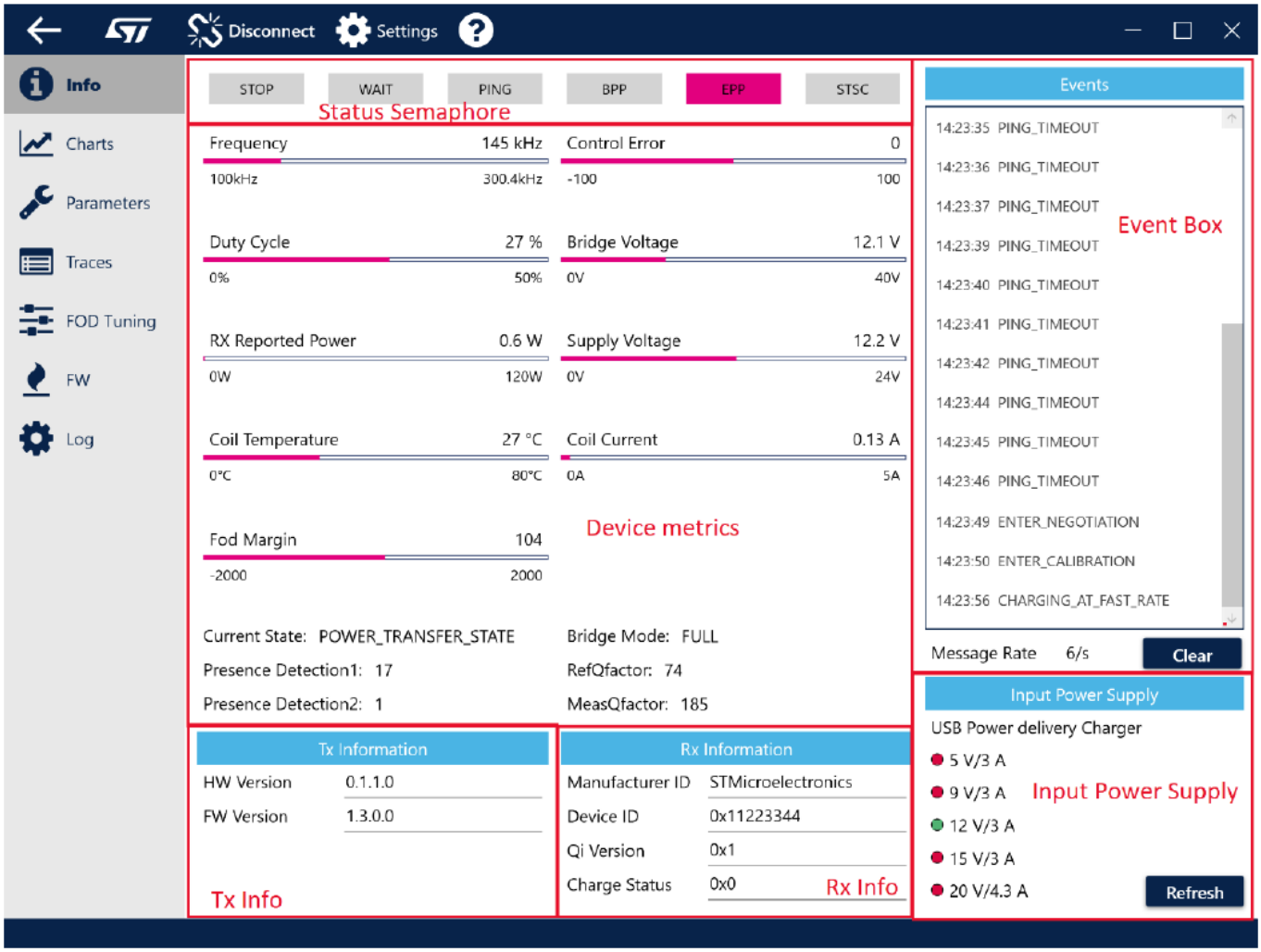


Table 9. Info Window UI element(s) Description

UI Element(s)	Description
Status Semaphore	Provides current status of Tx device
Event box	Display device status events. The clear button allows to clear events
Device Metrics	Device metrics indicate the current status of the device
Tx Info	Hardware and Firmware details of the Tx device
Rx Info	The last identified power receiver information
Input Power Supply	Current input power supply of Tx device

Charts

Charts allow users to monitor key operational parameters in real-time. Chart settings are configurable in the Settings Window.

The maximum buffer size (period) available is 50 seconds. The data is plotted once every 500 ms and up to 4 different charts can be displayed at a time. The check box select option in Legend allows the user to choose charts for display. We recommend clearing the previously captured charts, using the Clear button, before starting a new capture.

Figure 7. **Charts Window**

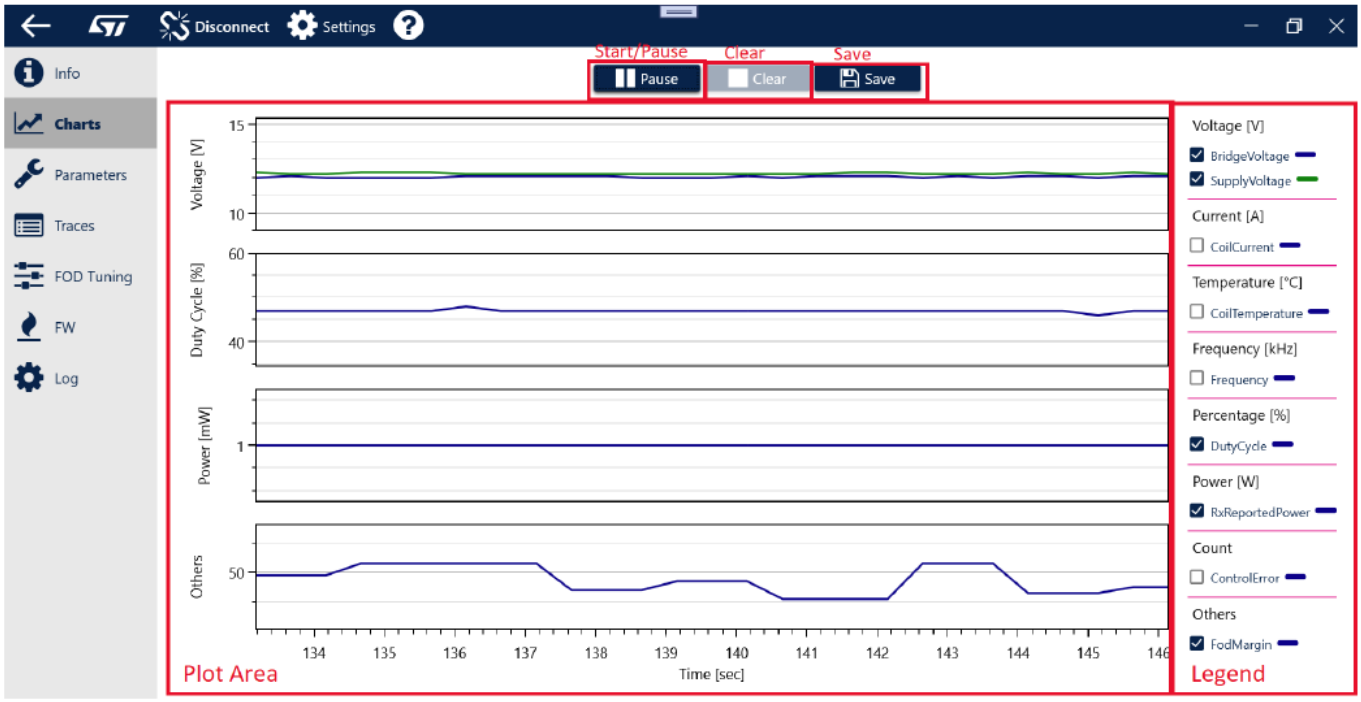


Table 10. Charts Window UI element(s) Description

UI Element(s)	Description
Start/Pause	The toggle button allows the user to start or pause sampling and plotting
Clear	Clear existing plot(s)
Save	Save the current plot into a .csv file
Plot Area	Shows one or multiple plots
Legend	Legend for plot area. Click on the check box to enable/disable plotting

Table 11. Charts controller description

Action	Gesture
Pan	Right mouse button
Zoom	Mouse wheel
Zoom by rectangle	Ctrl+Right mouse button, Middle mouse button
Reset	Ctrl+Right mouse button double-click, Middle mouse button double-click
Show 'tracker'	Left mouse button
Reset axes	'A' , Home

Parameters

The parameters page allows the user to configure the device and to save and load the prepared configuration.

Figure 8. **Parameters Window**

Table 12. Parameters Window UI element(s) Description

UI Element(s)	Description
Read	Read from the device RAM and display in GUI
Write	Write parameters configured in GUI to device RAM
Write NVM	Write parameters configured in GUI to device RAM and NVM
Save	Save Parameters to the configuration file
Load	Load parameter configuration file to GUI
Parameters Display	Display box for parameters in GUI

Traces

Traces are used to monitor key operating parameters of the device and to keep track of ongoing firmware tasks.

Figure 9. **Traces Window**

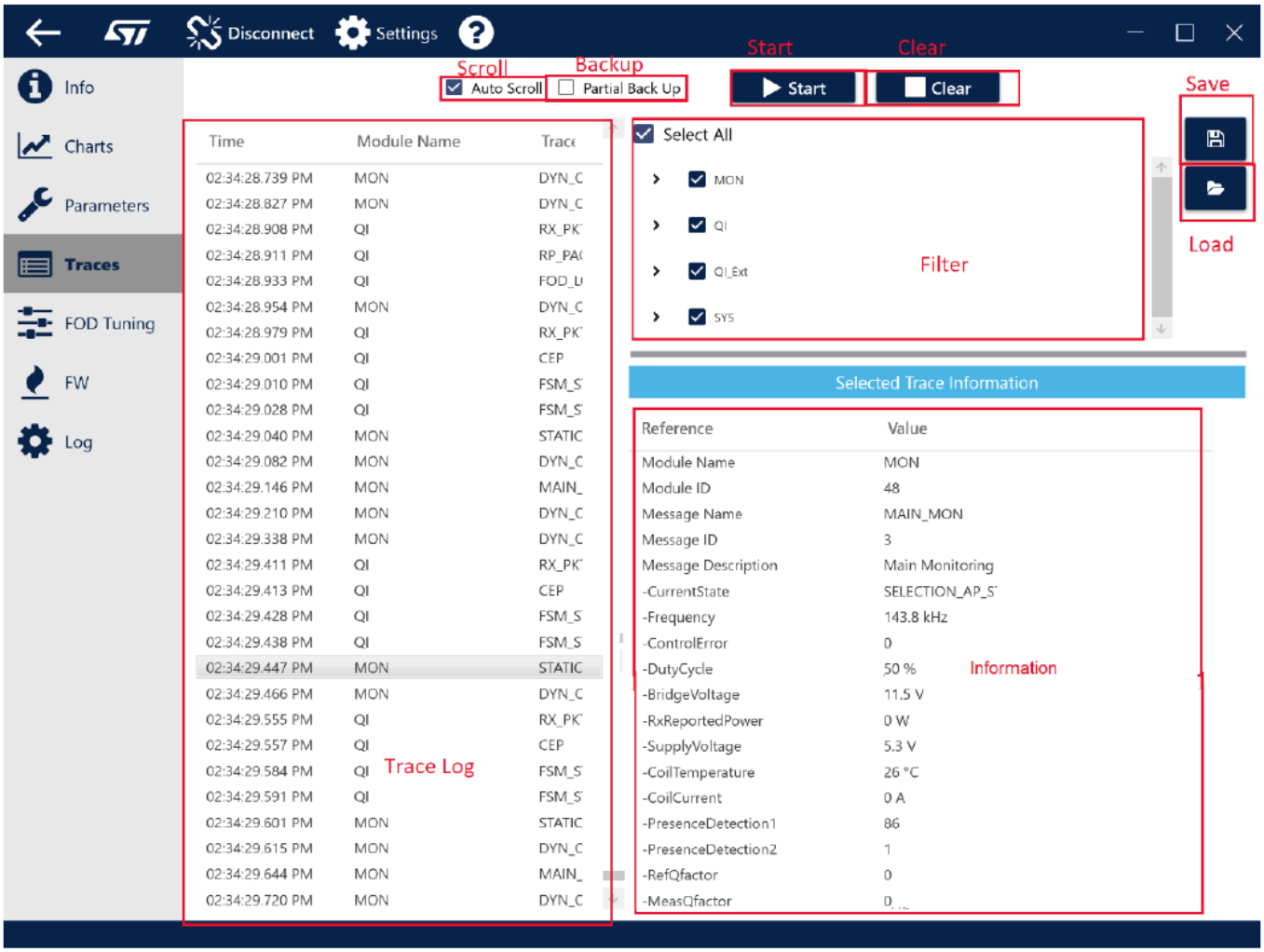


Table 13. Traces Window UI element(s) description

UI Element(s)	Description
Scroll	Enables auto-scrolling to the latest Trace log
Backup	Enables partial backup. When the trace buffer is full(2000 recordings), the traces are s tored to the file and the Trace log is cleared
Start	The toggle button allows to Enable/disable trace logs to display. By default, traces shal l be enabled
Clear	Clears Trace logs from the display
Save	Opens a dialog to save Trace logs to file, refer to Section 5.2.4.1: Traces save
Load	Loads of previously saved traces
Filter	Enables trace filter based on user selection
Information	Allows the user to click on individual traces for more details
Trace Log	Display box for traces

Traces save

Figure 10. Traces save window

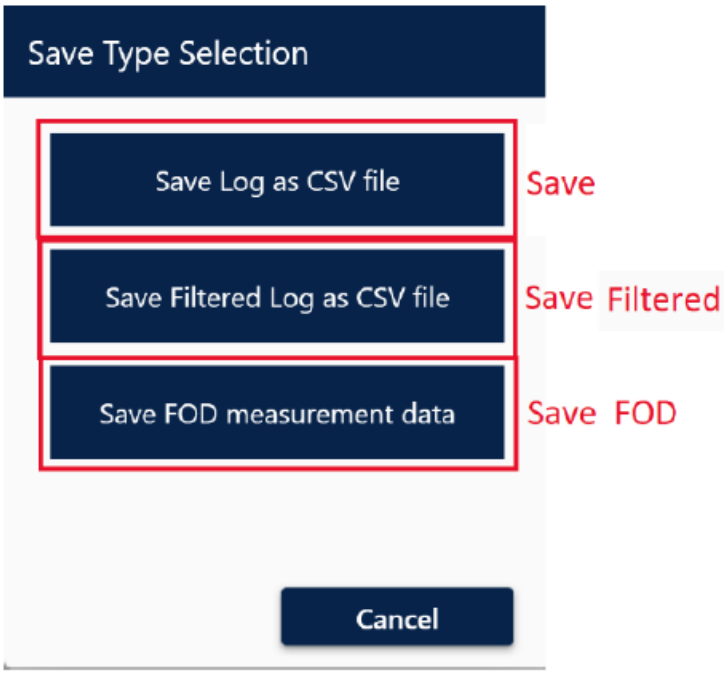


Table 14. Traces save window UI element(s) Description

UI Element(s)	Description
Save	Save Trace logs to CSV file
Save Filtered	Save only filtered trace logs to the CSV file
Save FOD	Save traces to be used for FOD tuning

FOD tuning
Details about FOD tuning are separately available in the respective application notes.

FW
FW Window enables the user to load and change the firmware of the device. This Window allows *.hex format firmware file.

Figure 11. **Programming Window**

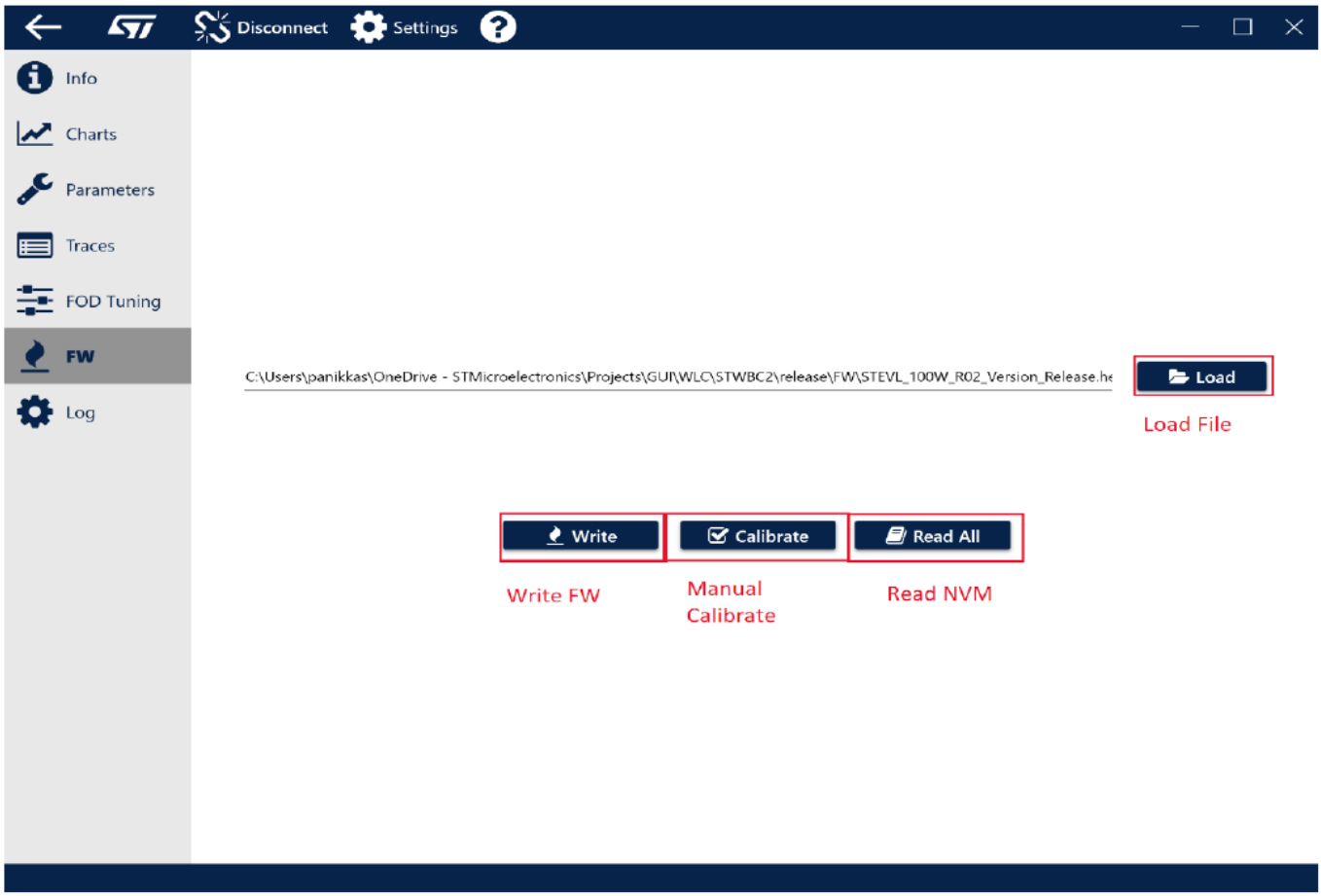


Table 15. Programming Window UI element(s) Description

UI Element(s)	Description
Load	Select the firmware source file *.hex
Write	Start programming firmware into the device NVM
Calibrate	To execute calibration manually. It is recommended to perform calibration after each fir mware update
Read All	Allows users to read and save contents of the NVM (both firmware and Parameters) in to a *.hex file. The generated file can also be used later in mass production

Log

The Log Window displays logs of all the UART transactions performed during any session. These logs may be saved into a file.

Figure 12. **Logger Window**

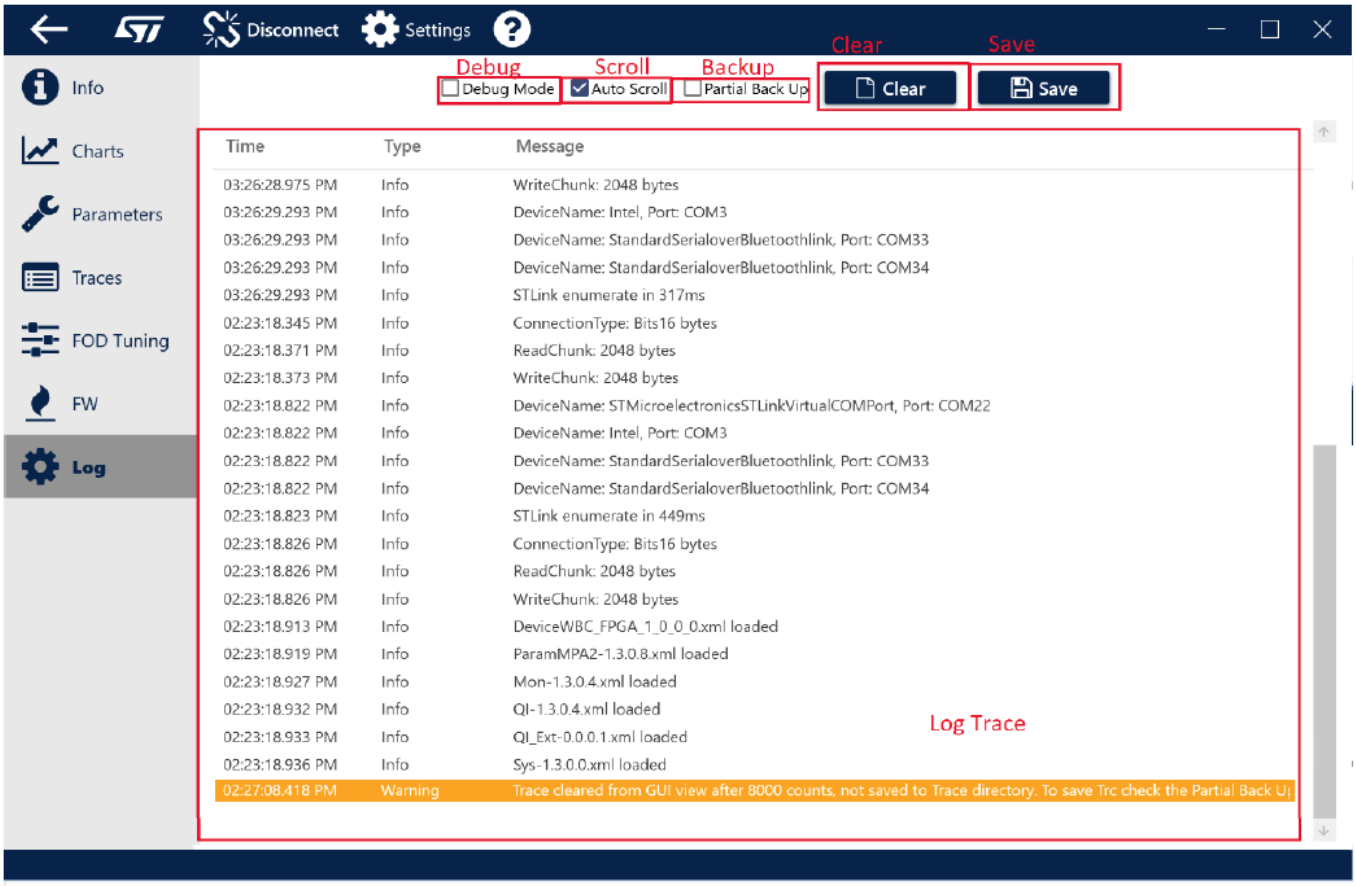


Table 16. Log Window UI element(s) description

UI Element(s)	Description
Debug	Enables log level up to debug
Clear	Clears the debug trace log
Save	Saves current trace log into a .txt file
Scroll	Enables auto-scrolling to the latest log
Backup	Enables partial backup when the log buffer is full
Log Trace	Display box for traces

Revision history

Table 17. Document revision history

Date	Revision	Changes
09-Feb-2024	1	Initial release.

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Documents / Resources

	**STMicroelectronics STSW-WBC2STUDIO Software** [pdf] User Guide UM3287, STSW-WBC2STUDIO Software, STSW-WBC2STUDIO, Software

References

- **User Manual**