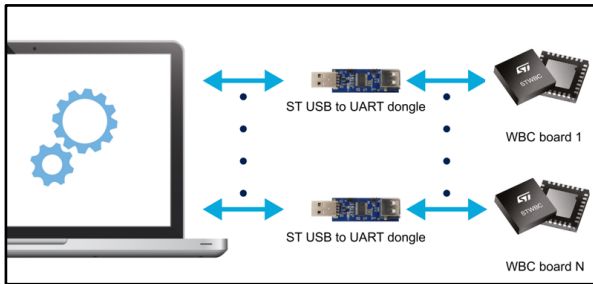


STWBC firmware downloader tool

Data brief



Features

- STWBC firmware downloading to any WBC device embedding the STWBC chip
- 1 to 8 possible simultaneous downloads
- Ability to download binary files and binary package files
- Half-bridge topology
- Free, user-friendly license terms

Description

The STSW-STWBCFWDT firmware downloader tool allows downloading firmware to the STWBC digital controller for wireless charger transmitters by ST.

The DOS loader application runs on a PC and the ST USB-to-UART dongle, that comes with the STWBC boards, provides the physical communication interface.

You can simultaneously update up to eight boards at once using a separate dongle for each board.

1 Procedural overview

The downloader tool can be used to flash a blank STWBC chip or to overwrite firmware already loaded on a chip.

The Multiloader tool package contains:

- **Multiloader.exe**: the main DOS application that handles multiple UART firmware downloads
- **stwbc_Loader.exe**: a DOS application that handles single UART firmware downloads
- **multiloader_not_empty.bat**: the command script to set up the UART com port, enable the board UART boot mode and run the loader
- **enable_boot.bin**: the binary file including the data to be sent to the board to enable the UART boot mode

The Multiloader tool runs using one of the following command lines:

1. `Multiloader.exe <mode> <com port 1> <com port x> <cab file>`: to use the firmware file cabinet container (.cab file);
2. `Multiloader.exe <mode> <com port 1> <com port x> <program file> <parameters file> <options file>`: to use the individual bin files.

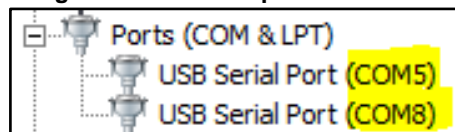
The parameters for both command line options are:

- **Mode**:
 - 0, the Multiloader programs a "naked" STWBC digital controller (never been programmed)
 - 1, the Multiloader overwrites the existing STWBC firmware
- **Com port**: UART com port list (up to 8 ports supported)
- **Program file**: the STWBC firmware binary file (**program.bin**)
- **Parameters file**: the parameter value binary (**parameters.bin**)
- **Options file**: the STWBC option byte binary (**options.bin**)

1.1 Download procedure

- 1 Plug the dongles to the PC.
- 2 Check the different port com numbers.

Figure 1: USB COM port allocations



- 3 Plug each USB cable to the board UART connector (micro USB connected has to be next to the SWIM connector).
- 4 Copy the four downloader files (multiloader.exe, stwbc_loader.exe, stwbc_loader_not_empty.bat, enable_boot.bin) in a local directory (e.g., C:\multiloader).

- 5 Copy the firmware cabinet file (or the 3 bin files contained in the cabinet file) into the same directory as in step 3.

Figure 2: Downloader files and cab package

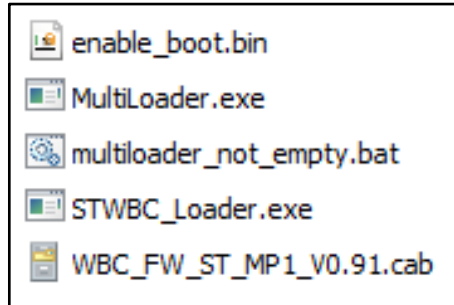
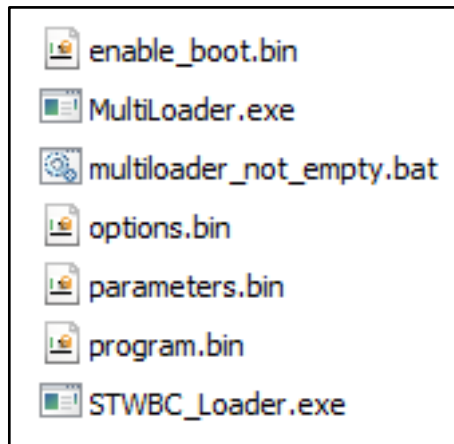


Figure 3: Downloader files and individual binaries



- 6 Open a DOS terminal.
- 7 Go to the file directory.
- 8 Turn the boards on.
- 9 Run the loader script using one of the command lines described in [Section 1: "Procedural overview"](#). For each COM port, a DOS terminal appears.

Figure 4: Windows terminal

```

Administrator: C:\Windows\system32\cmd.exe
C:\multiloader>Multiloader.exe 1 COM8 COM5 WBC_FW_ST_MP1_U0.92.cab

Start BATCH loader on COM8
Start BATCH loader on COM5

Fail on COM5
Success on COM8

ERROR

C:\multiloader>

```

Once the download has been completed, one of the following status messages is returned:

- **SUCCESS**, if all the COM ports have been downloaded successfully;
- **ERROR**, if at least one COM port failed to download the firmware. The Multiloader returns “Fail on COMx” for each port with unsuccessful download.

2 Revision history

Table 1: Document revision history

Date	Version	Changes
09-Oct-2017	1	Initial release.

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