UHF Transceiver Type II

Firmware Update Instructions

UHF TRANSCEIVER TYPE II FIRMWARE UPDATE INSTRUCTIONS

These instructions describe the full procedure for a firmware upgrade of EnduroSat's UHF Transceiver Type II module.

Please read these instructions carefully before starting the firmware upgrade.

Figure 1: UHF Transceiver Type II Module

1 CHANGE LOG

Date	Version	Note
30/04/2019	Rev 1.0	Initial

2 ACRONYMS LIST

COM	Communication Port
EPS	Electrical Power System
GUI	Graphic User Interface
OBC	On-Board Computer
UART	Universal asynchronous receiver/transmitter
UHF	Ultra-High Frequency
USB	Universal Serial Bus
VCP	Virtual COM Port
RF	Radio Frequency

3 FIRMWARE UPGRADE INSTRUCTIONS

To begin the process, you will need to first install EnduroSat's “xHF and OBC Configurator (EnduroSat - xhfobc”.exe) file. This is a Windows based Graphical User Interface (GUI) for configuration and updating the firmware on EnduroSat's modules. For the latest and greatest version of this configurator software and firmware please use the contact form on the EnduroSat Web Site:

https://www.endurosat.com/contact/

The upgraded device can be powered through its USB Mini B connector – see Figure 2.

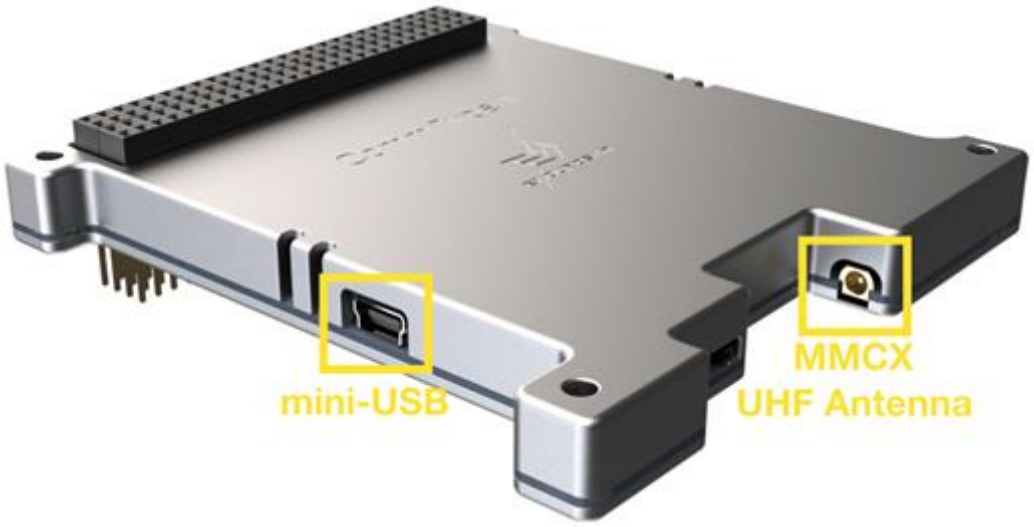

Figure 2: Upgraded UHF Transceiver Type II Module

Caution

Unless requested to do so during the firmware upgrade, then switching off the power to the module or removing the USB cable during the upgrade procedure is likely to corrupt the device. This will require the module to be returned to the factory for repair.

3.1 Upgrading the Firmware on a Local Device

Step 1:

Connect the USB Cable to the mini-USB port shown in figure 2. No additional power supply is required.

Step 2:

The mini-USB port of the device works as a Virtual Com Port. For this reason, it is necessary to check the exact COM Port number in the Windows Device Manager.

If a USB Driver is needed, then it can be downloaded from:

https://www.ftdichip.com/Drivers/VCP.htm

Step 3:

Run EnduroSat's GUI "xHF and OBC Configurator" and select from the toolbar *Module* → *New connection* or directly press the shortcut button. 

Step 4:

The connection type used for upgrading the local device is “xHF”. Use the COM port shown by the Windows Device Manager (see step 2). In the example shown in figure 3, the Serial port is COM36. The default speed for the UART parameter is “115200” and for the device Address is “0x22”.

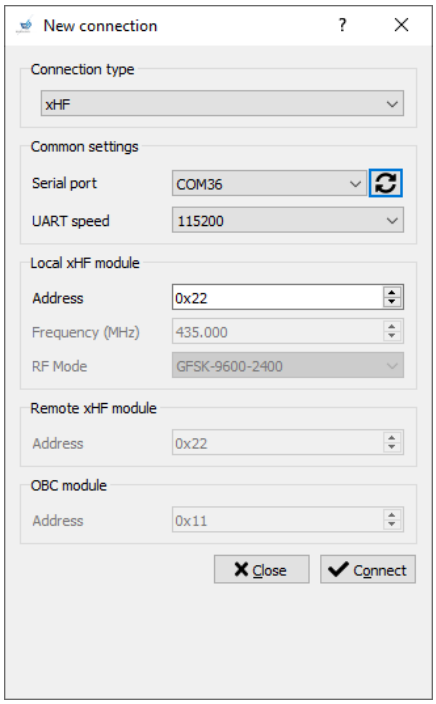

Figure 3: UHF/OBC Configurator

Step 5:

Press the "Read" button, see figure 4. The current firmware version is indicated in the “Status" window.

The firmware version can be changed by pressing the “Flash” button and selecting the wanted “.SCRM” file. The firmware is successfully changed when the line “INFO end of FLASH operation” appears in the command log.

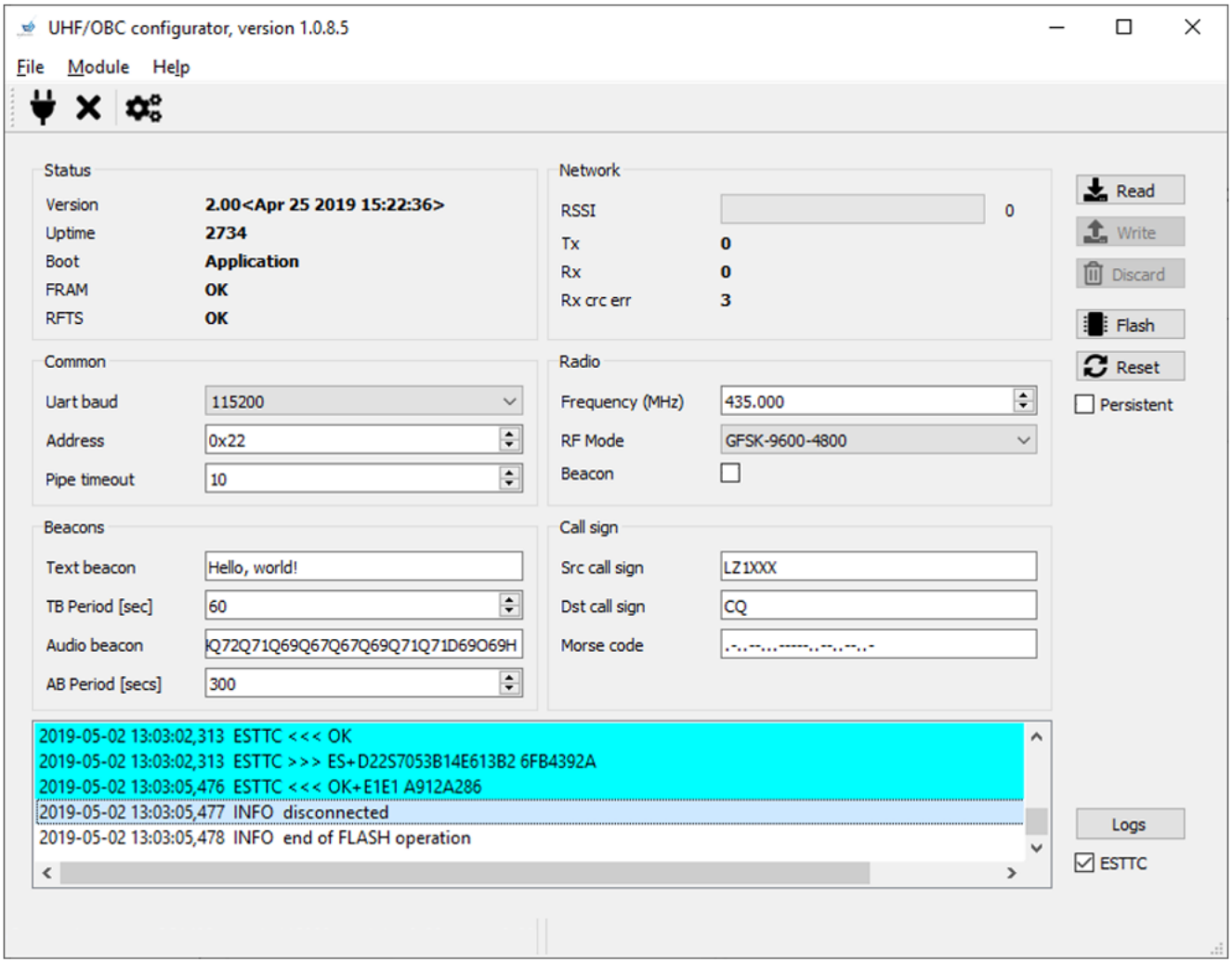

Figure 4: UHF/OBC Configurator

3.2 Upgrading the Firmware on a Remote Device

You can update the firmware of a remote UHF module using another (local) UHF module connected via USB. The local UHF module will transfer the firmware update to the remote UHF module using the Radio frequency (RF) communication channel.

Step 1:

The local and the remote UHF transceiver must both be powered simultaneously.

On the local device, connect the USB Cable to the mini-USB port. The USB port is shown in Figure 2.

On the remote device, the UHF transceiver module is integrated inside the satellite and is powered by an Electrical Power System (EPS) via the PC-104 connector. In the laboratory, the module can be powered via the mini-USB port for testing.

Step 2:

The USB port of the device works as a Virtual Com Port (VCP). For this reason, it is necessary to check the exact COM Port number in the Windows Device Manager.

If USB Driver is needed, such can be downloaded from:

https://www.ftdichip.com/Drivers/VCP.htm

Step 3:

Run the EnduroSat GUI "xHF and OBC Configurator" and select from the toolbar *Module* → *New connection* or directly press the shortcut button  .

Step 4:

The connection type used for upgrading the remote device is “xHF -> xHF”. Use the COM port shown by the Windows Device Manager (see step 2). In the example shown in figure 5, the Serial port is COM32. The default speed for the UART parameter is “115200” and for the local and remote device Address is “0x22”. Both devices must be configured with the same working frequency.

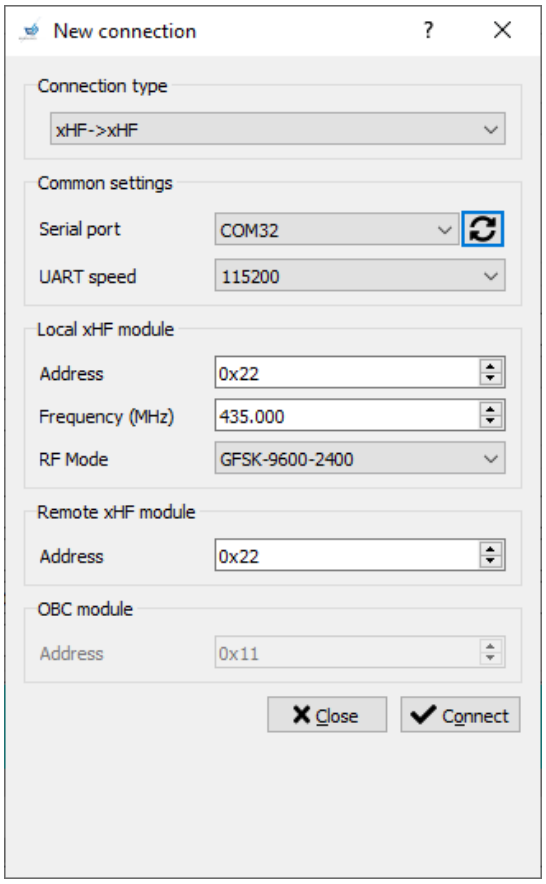

Figure 5: UHF/OBC Configurator

Step 5:

Press the "Read" button, see figure 6. The current firmware version is indicated in the “Status" window. The firmware version can be changed by pressing the “Flash” button and selecting the wanted “.SCRM” file. The firmware is successfully changed when the line “INFO end of FLASH operation” appears in the command log.

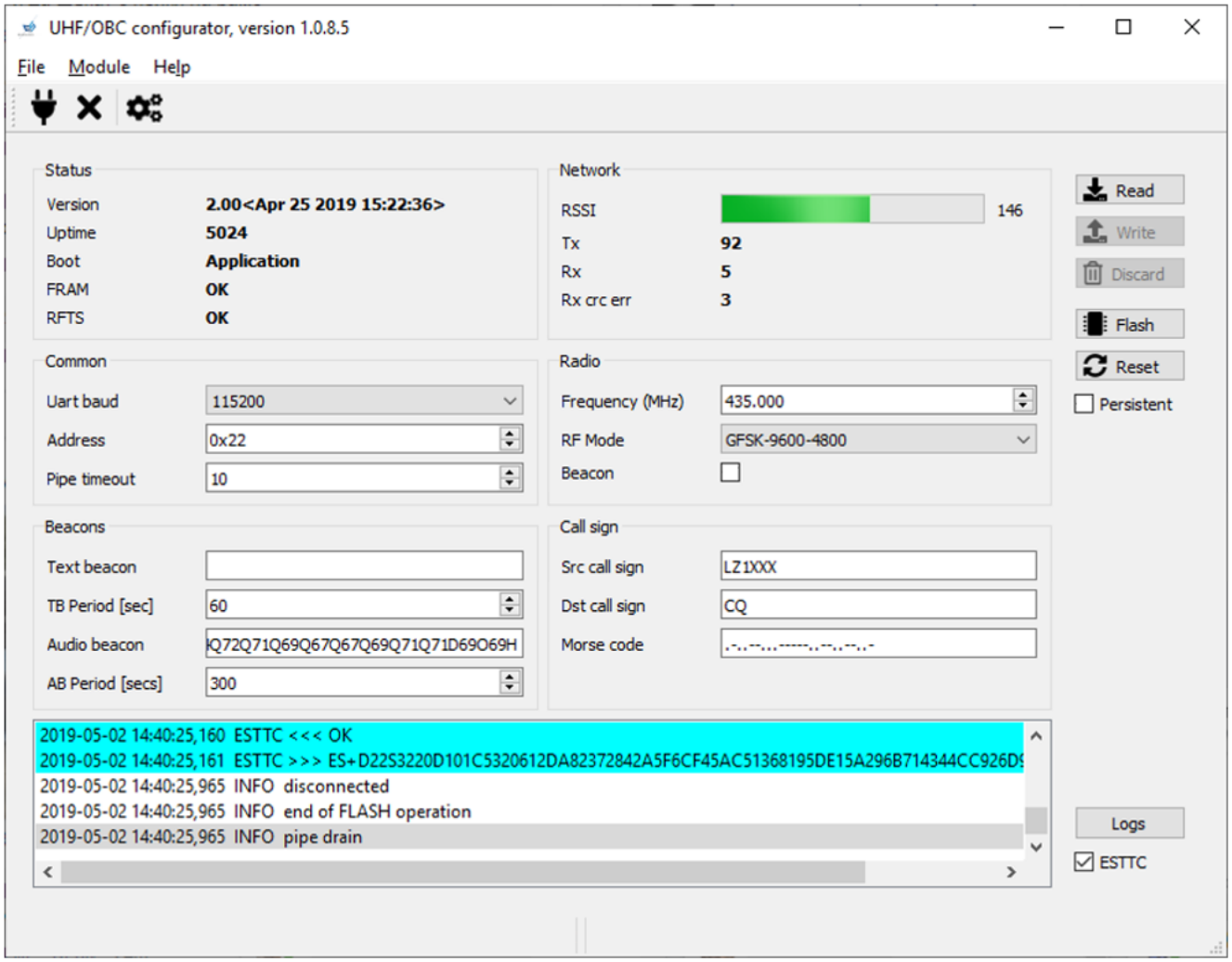

Figure 6: UHF/OBC Configurator