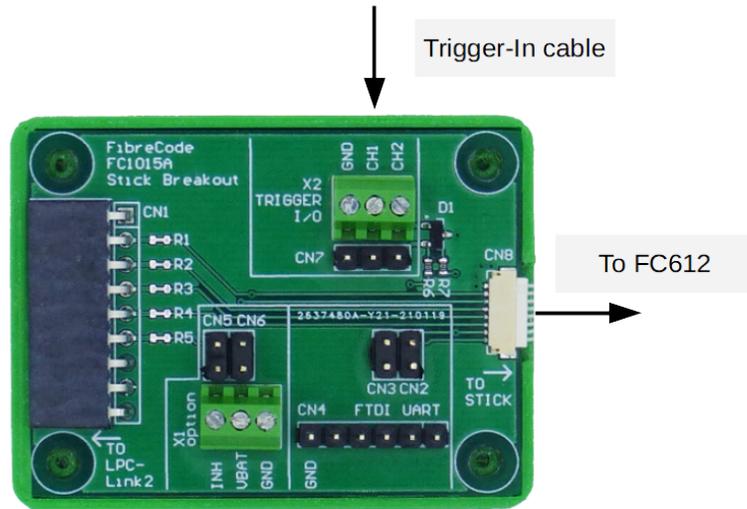


User Manual

FC900701 Trigger Extension
Version 1.0.0

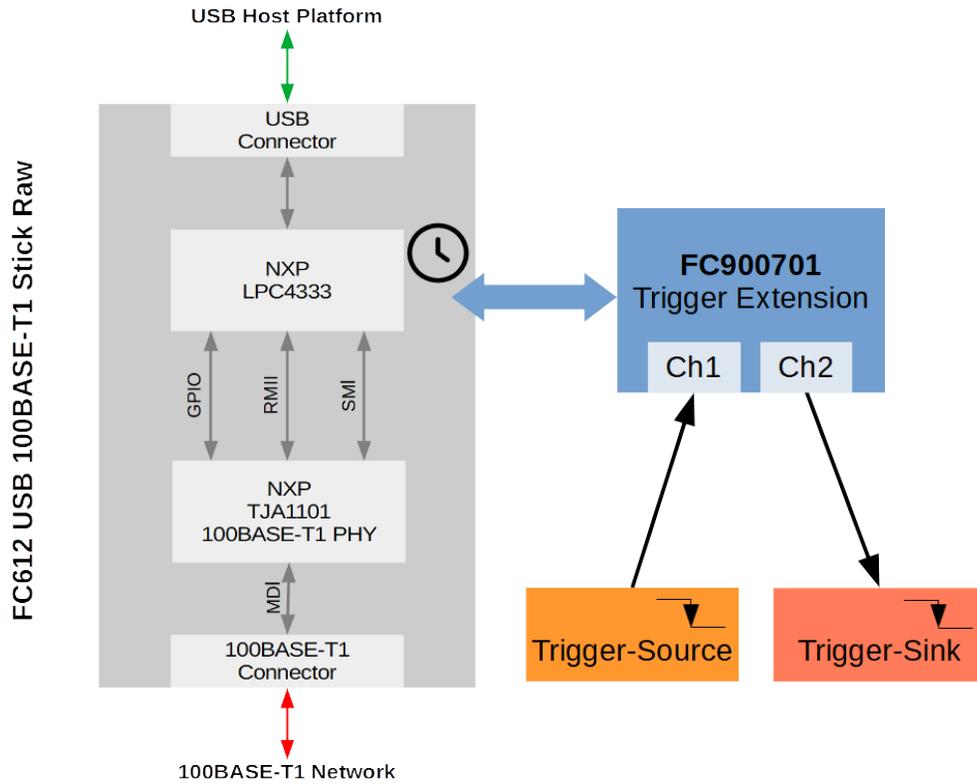
May 20, 2021
Build 1
©FibreCode GmbH

1 Usage



2 Overview

Using FibreCode USB 100BASE-T1 Raw Sticks, enables using precision timestamping of Ethernet frames sent and received via MAC-Hardware timestamping.

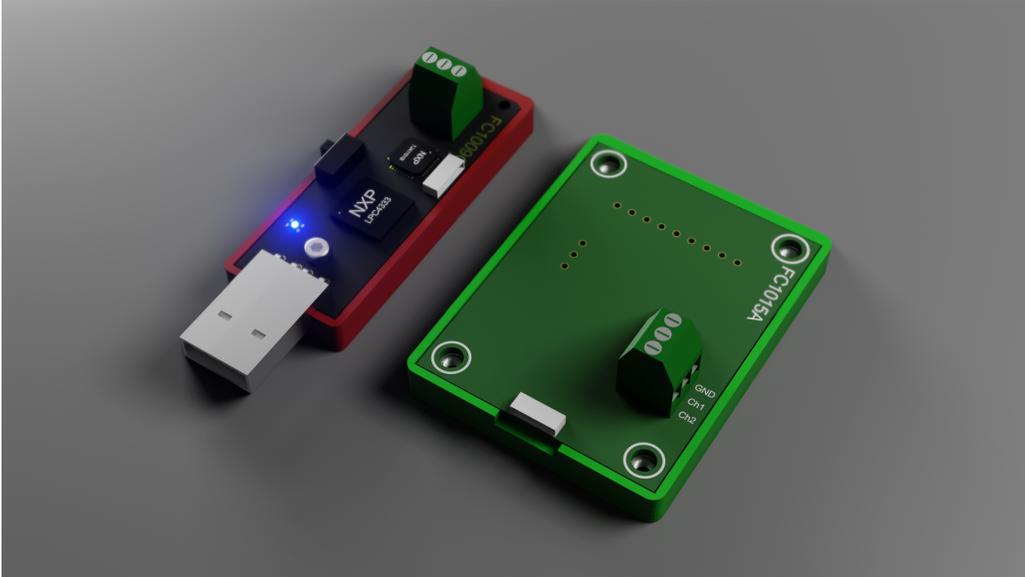


2.1 Deliverables

- FC900701 - Trigger Extension
- 8-Pin cable connector from Raw-Stick to FC900701
- Broadway2 - V2.3 already includes firmware/software and python samples

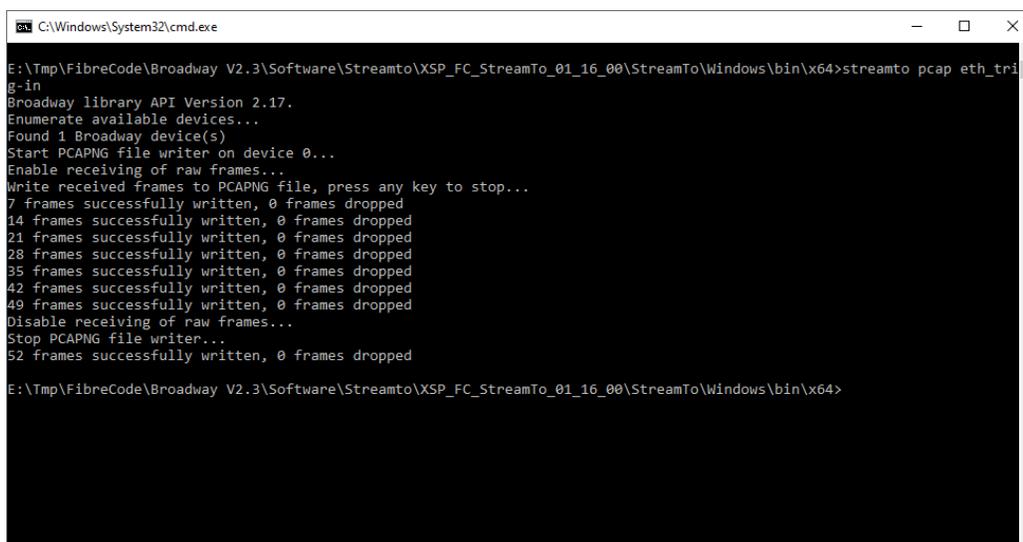
3 Software

3.1 First demos



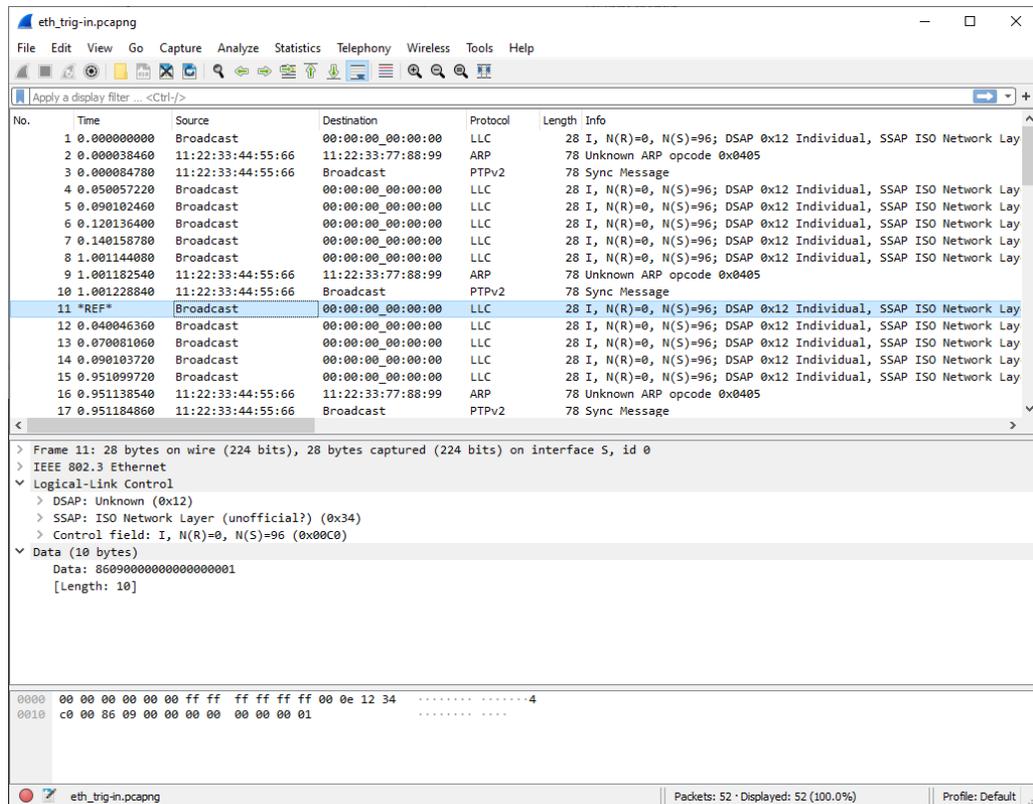
- Run `python raw_rx.py` to enable Trigger-In and verify if there are valid inputs (falling-edge to GND) on Pin Ch1.
- Now, as trigger in is activated by using `raw_rx.py`, we can stop using `<Ctrl-C>`.

To get incoming data recorded to pcapng-file, run `streamto` on this Raw-Adapter to record incoming Ethernet frames and trigger-in events marked as LLC.



```
C:\Windows\System32\cmd.exe
E:\Tmp\FibreCode\Broadway V2.3\Software\Streamto\XSP_FC_StreamTo_01_16_00\StreamTo\Windows\bin\x64>streamto pcap eth_trig-
in
Broadway library API Version 2.17.
Enumerate available devices...
Found 1 Broadway device(s)
Start PCAPNG file writer on device 0...
Enable receiving of raw frames...
Write received frames to PCAPNG file, press any key to stop...
7 frames successfully written, 0 frames dropped
14 frames successfully written, 0 frames dropped
21 frames successfully written, 0 frames dropped
28 frames successfully written, 0 frames dropped
35 frames successfully written, 0 frames dropped
42 frames successfully written, 0 frames dropped
49 frames successfully written, 0 frames dropped
Disable receiving of raw frames...
Stop PCAPNG file writer...
52 frames successfully written, 0 frames dropped
E:\Tmp\FibreCode\Broadway V2.3\Software\Streamto\XSP_FC_StreamTo_01_16_00\StreamTo\Windows\bin\x64>
```

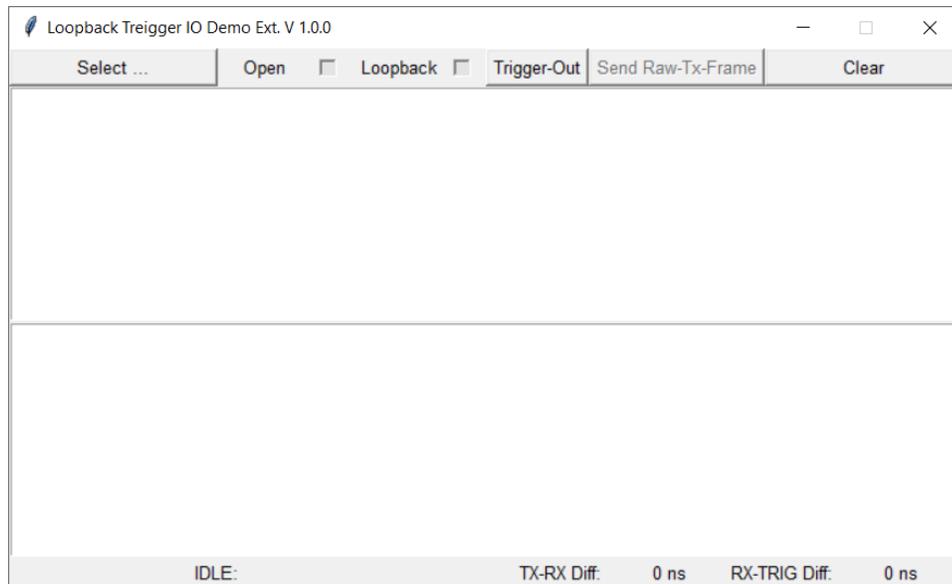
- After pressing <SPACE> to stop recording, Wireshark can be opened to analyze incoming frames and trigger-points marked as LLC frames. Each trigger-in increments counter inside LLC data block.



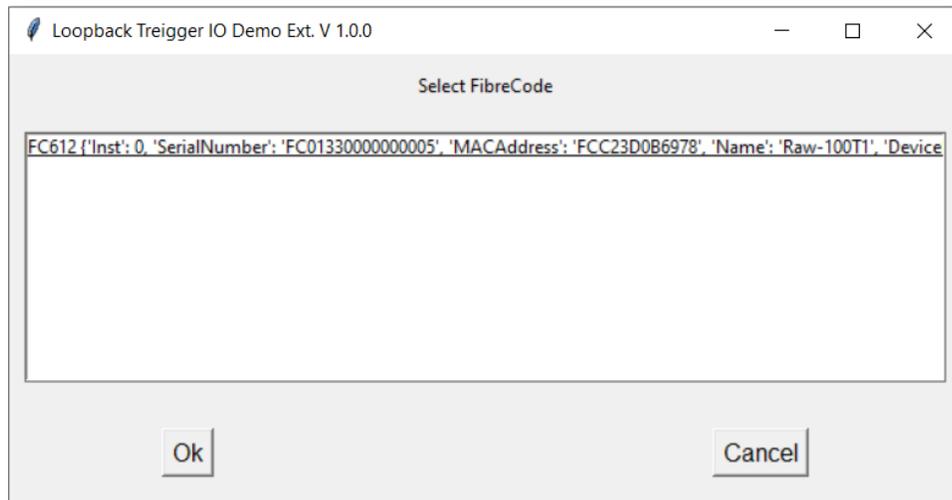
3.2 Loopback verification

- Connect FC612 + FC900701 to PC. Connect cable on FC900701 Ch1 - Ch2 to loopback trigger-output to trigger-input.
- On fibrecode github, there is a GUI-Sample project:

`loop_back_gui.py`



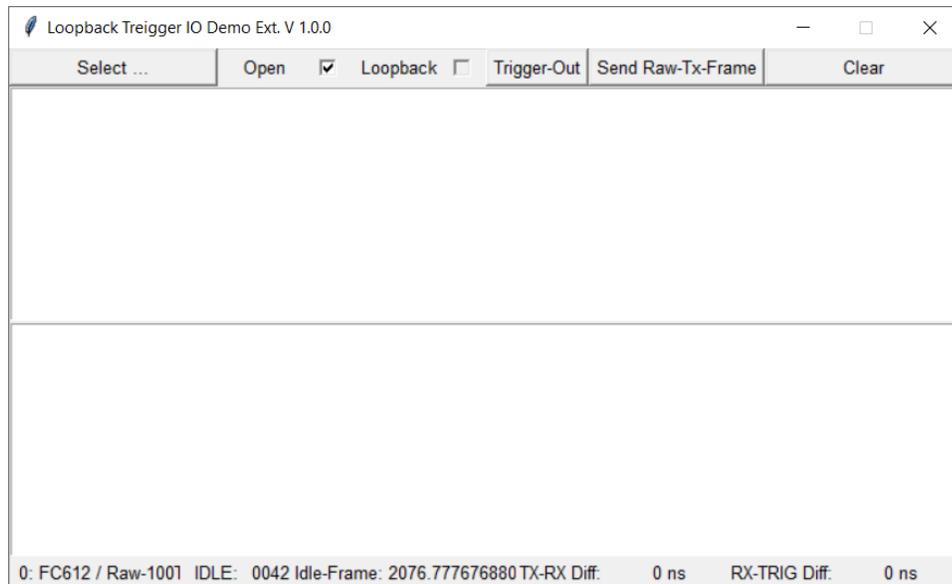
- Select your FibreCode FC612 USB 100BASE-T1 Stick Raw.



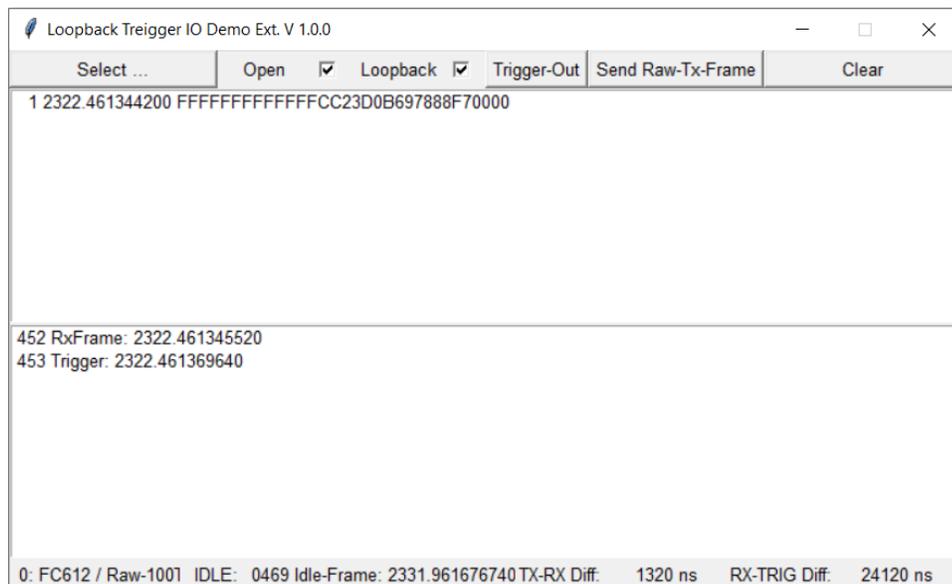
- Stick is now selected. Verify in bottom line.

0: FC612 / Raw-1001

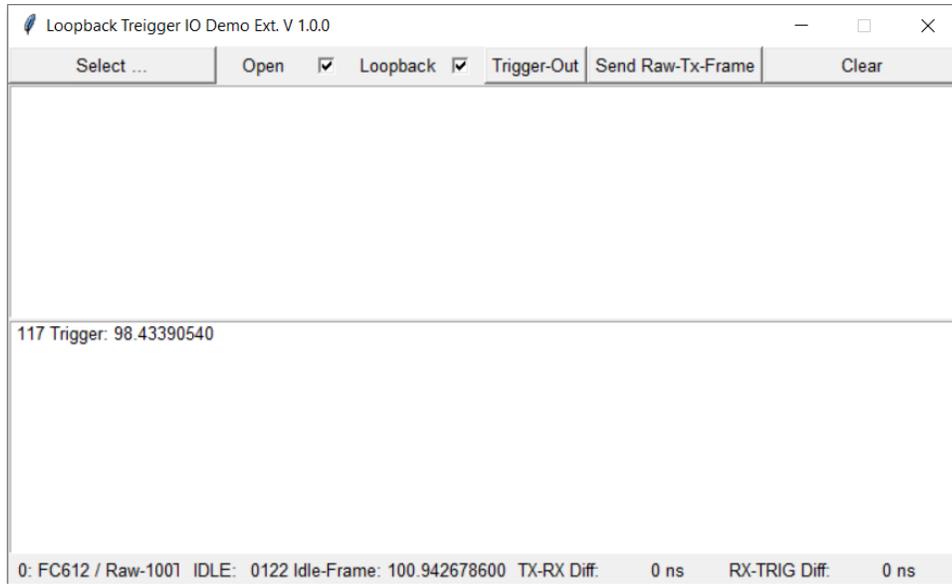
- Check "Open" to activate FC612. Idle Frames running.



- Check "Loopback" to enable loopback mode. FC612 should blink fast.
- Press "Send Raw-Tx-Frame" and verify feedback.



- This app shows incoming frames including trigger-inputs. By pressing button Trig-Out, trigger-in frame is generated because of loopback.



- Also works on Ubuntu and Raspberry Pi

