

Loop Control (FT8) Utility Software (LoopControl.exe)

Some known problems when using the Midi or Baby loop controller.

The FT8 software does not know, if the Loop-Antenna ATU is tuning, there is **no feedback** from the ATU at all! From the ATU manual, “**The ATU could be damaged when the Transceiver is transmitting during the tuning cycle**” (see below). Most FT8 software runs fully automatically, so it is easy to **forget** that FT8 software will start **Transmitting in the background**.

What is the Goal and how to prevent ATU controller damage.

Always prevent the **ATU to start tuning**, when the **FT8 software** is in **Transmit mode** (first stop the Transceiver TX mode). When the FT8 Software is Transmitting, then we need to Stop the transmit cycle before the **ATU starts tuning**.

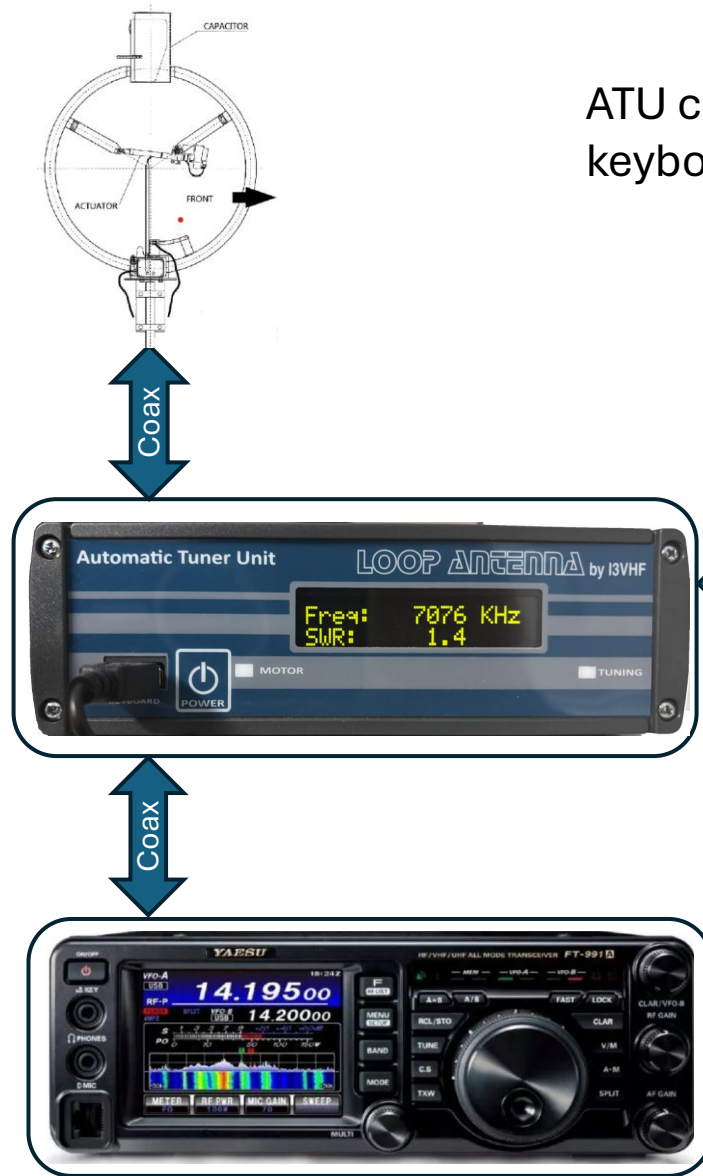
On the next pages you will find some examples on how the ATU is connected.

The software is tested on Windows 11.

**WARNING! NEVER TRANSMIT WHEN THE ATU IS TUNING (RED LED ON)!
THERE IS RISK OF BLOWING OR BURNING OUT THE ATU RF AMPLIFIER**



Example 1 : Most simple setup/layout - Transceiver + ATU

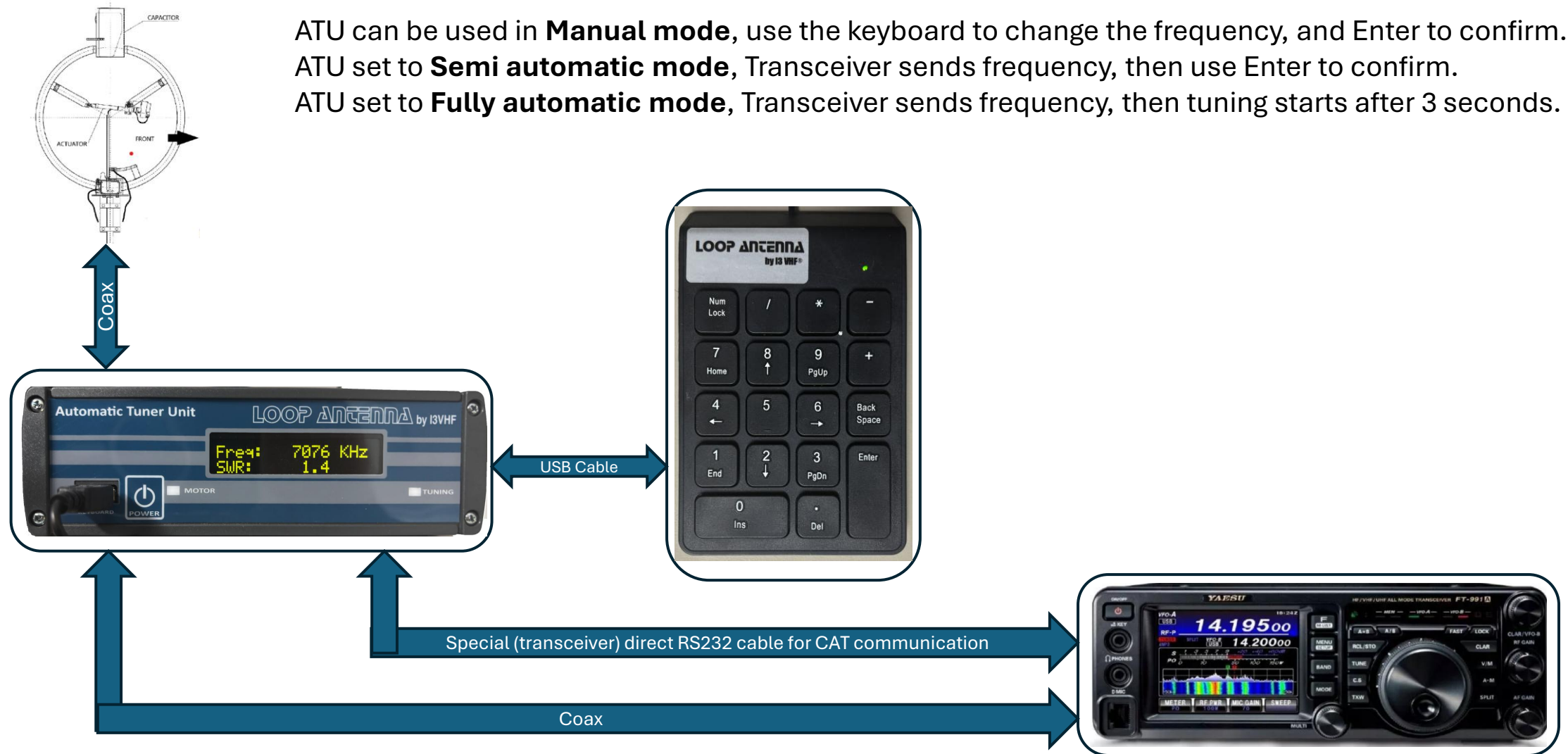


ATU can be used in **Manual mode only**, using the keyboard to change the frequency and confirm.



But you cannot run FT8, you need a PC!

Example 2 : Another simple setup/layout - Transceiver + ATU

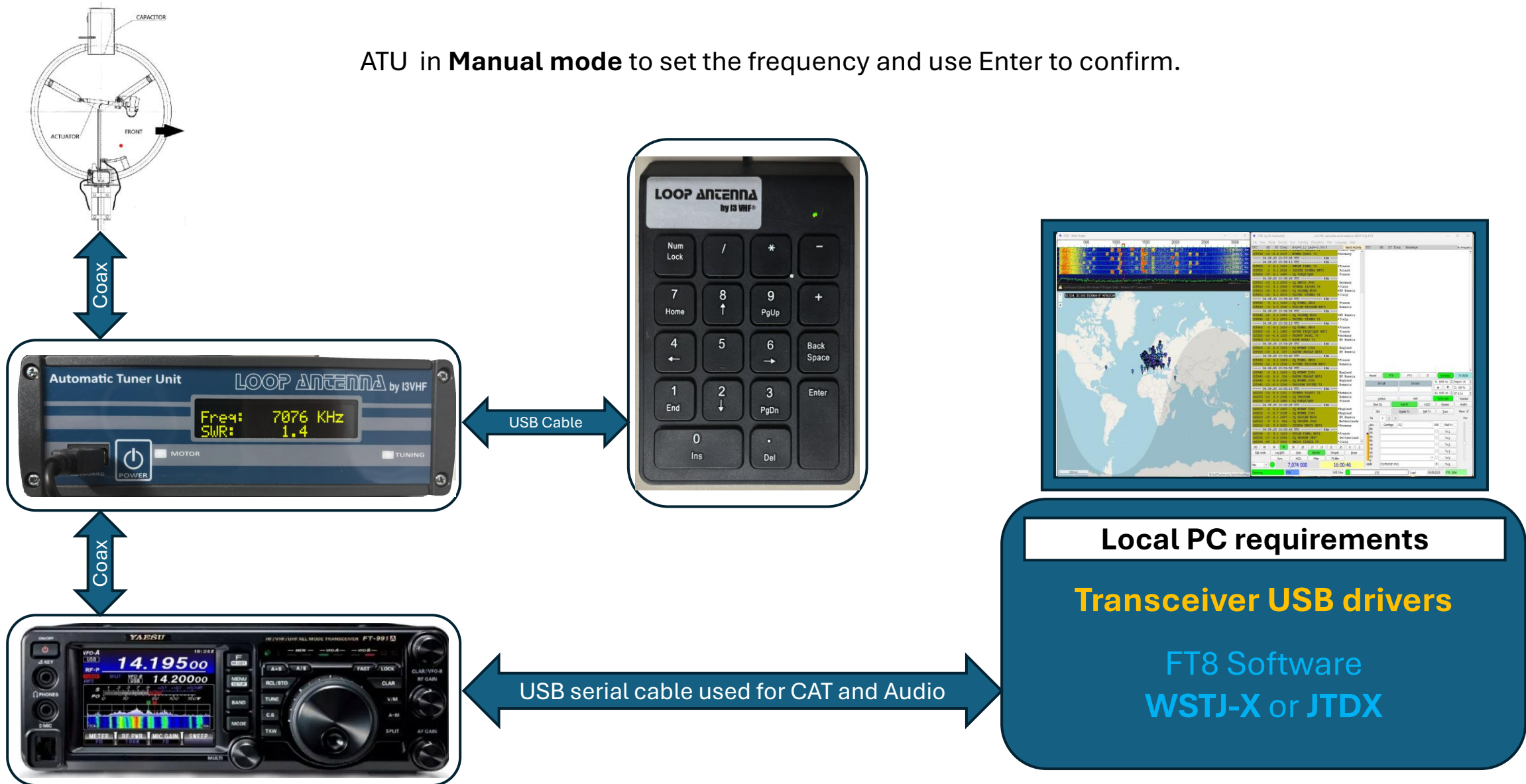


ATU can be used in **Manual mode**, use the keyboard to change the frequency, and Enter to confirm.
ATU set to **Semi automatic mode**, Transceiver sends frequency, then use Enter to confirm.
ATU set to **Fully automatic mode**, Transceiver sends frequency, then tuning starts after 3 seconds.

Also, in this setup you cannot run FT8, you still need a PC!

Example 3 : Common setup/layout - Transceiver + ATU + PC

ATU in **Manual mode** to set the frequency and use Enter to confirm.



Example 4 : Advanced setup/layout - Transceiver + ATU + PC



Software layout when using LoopControl software on the PC

FT8 Software - WSTJ-X or JTDX

IP: **224.0.0.1** and UDP Port: **2237**
Automatically starts in **Multicast** Mode
Send, but also **Receives** messages

JT-Alert

IP: **224.0.0.1** and Port: **2237**
Automatically use **Multicast** Mode
Receive and **Send** to FT8 Software

Grid-Tracker

IP: **224.0.0.1** and UDP Port: **2237**
Need to setup in **Multicast** Mode
Only **receive** from FT8 Software

LoopControl

IP: **224.0.0.1** and UDP Port: **2237**
Always used in **Multicast** Mode
Receive and **Send** to FT8 Software

Internal network - local PC

Detailed info about LoopControl, how does it work!

When all software is running, then LoopControl will listen to all messages send by WSJT-X or JTDX.

- It's **recommended** to run LoopControl in **Auto mode**, when switched off, you still could start tuning manually.
- One of the **most important** LoopControl **tasks** is to monitor, if **FT8 software transmit mode is active**.
- If you **change band** on the FT8 software, it will be **detected** and (if running) **transmit Mode** will be **stopped**.
- Only when **FT8 Transmit mode is stopped**, the new (band) frequency will be **sent** to the **ATU**, and **tuning starts**.
- If the ATU tuning session was successful, then all loopControl **Red buttons** and **Text Fields** become **Green**.
- Everything on the **Button bar**, should be **Green** before you **continue** making connections on WSJT-X or JTDX.
- If you start a new connection cycle, then the **BAND button** should change to **Orange** when FT8 transmit is active.

To summarize.

When setup correctly, you only change the band on the FT8 Software, then the Baby/Midi-Loop Antenna ATU / Tuner is automatically set to the new (Band) frequency, and tuning will start after 3 seconds.

Wait till every **Button/Field** becomes **Green** and only then continue 😊.

Have Fun and 73's

General Control setup guidelines.

- **Serialport 1** (setup) is **always** used for the Transceiver side, RS232 (USB) cable to the PC.
- **Serialport 2** (setup) is **always** used for the Midi/Baby-Loop connection, RS232 (Null modem) to the PC.
- When used in **Baby/Midi-Loop** mode, then **Always** start/connect **Serialport 1** and then **Serialport 2**.
- When used in FT8 mode then **Serialport 1** could be used to **start** or **stop** the Transceiver when the transceiver is on a remote location. After the Transceiver is started, you need to disconnect because FT8 Software needs this port.
- Also, in FT8 the **Serialport 2** (setup) is **always** used for the Midi/Baby-Loop connection, RS232 (Null) to the PC.
- When using a **Yaesu Transceiver**, the Baud Rate works best at 9600, and of course the Com port could be different.
- Setup for the **Midi/Baby-Loop tuner** will work at 9600 Baud, just a simple null modem cable, using any Com-Port.

Serialport 1 (Setup)

COM Port: COM5

Baud Rate: 9600

Data Bits: 8

Stop Bits: One

Parity Check: None

Hand Shake: Request To Send

DTR On/Off: On

Received/Transmitted data lines

Received data lines: 0

Transmitted data lines: 3

Serialport 1 (Options)

Send RX to Serialport(2) TX

Baby-loop mode.

Midi-loop mode.

Spare

Spare

EOL char()

LF/CR

LF

CR

(:)

.

Serialport 2 (Setup)

COM Port: COM3

Baud Rate: 9600

Data Bits: 8

Stop Bits: One

Parity Check: None

Hand Shake: None

DTR On/Off: Off

Received/Transmitted data lines

Received data lines: 1089

Transmitted data lines: 11

Serialport 2 (Options)

Send RX to Serialport(1) TX

Baby-loop mode.

Midi-loop mode.

Set FT8 Loop Frequency

+2 Khz offset Loop Antenne

EOL Char()

LF/CR

LF

CR

(:)

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General Control setup Info

LoopControl is a SerialPort & Baby/Midi-Loop Antenna Utility - Beta 1.20250814 - © 2025 J.Stoof (PE1FQF)

Set IP and Port Exit

Serialport 1 (Setup)

COM Port: COM5
Baud Rate: 9600
Data Bits: 8
Stop Bits: One
Parity Check: None
Hand Shake: RequestToSend
DTR On/Off: On

Received/Transmitted data lines
Recieved data lines: 0
Transmitted datalines: 3

Serialport 1 (Options)

- Send RX to Seraliport(2) TX
- Baby-loop mode.
- Midi-loop mode.
- Spare
- Spare

EOL char()
 LF/CR
 LF
 CR
 (:)
 .

Serialport 2 (Setup)

COM Port: COM3
Baud Rate: 9600
Data Bits: 8
Stop Bits: One
Parity Check: None
Hand Shake: None
DTR On/Off: Off

Received/Transmitted data lines
Recieved data lines: 1089
Transmitted data lines: 11

Serialport 2 (Options)

- Send RX to Seraliport(1) TX
- Baby-loop mode.
- Midi-loop mode.
- Set FT8 Loop Frequency
- +2 Khz offset Loop Antenne

EOL Char()
 LF/CR
 LF
 CR
 (:)
 .

Serialport 1 (RX/TX section)

Port 1 - Data to be transmitted.

Port 1 - Data received.

Set Transceiver mode:
Comport Test/mode
Baby Loop Mode
Midi Loop Mode

Serialport 2 (RX/TX section)

Port 2 - Data to be transmitted.

Port 2 - Data received.

Set ATU / Tuner mode:
Comport Test/mode
Baby Loop Mode
Midi Loop Mode
FT8 Mode

Control

Connect P1 Disconnect P1 Connect P2 Disconnect P2 Restart Exit

15-8-2025 10:45:09 Active: 0 00:08:12

General Control - Baby-Loop setup Info

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Set IP and Port Exit

Serialport 1 (Setup)

COM Port: COM5
Baud Rate: 9600
Data Bits: 8
Stop Bits: One
Parity Check: None
Hand Shake: RequestToSend
DTR On/Off: On

Received/Transmitted data lines
Recieved data lines: 173
Transmitted datalines: 173

Serialport 1 (Options)

Send RX to Serailport(2) TX
 Baby-loop mode.
 Midi-loop mode.
 Spare
 Spare

EOL Char()
 LF/CR
 LF
 CR
 (:)
 .

Serialport 2 (Setup)

COM Port: COM3
Baud Rate: 9600
Data Bits: 8
Stop Bits: One
Parity Check: None
Hand Shake: None
DTR On/Off: Off

Received/Transmitted data lines
Recieved data lines: 173
Transmitted data lines: 173

Serialport 2 (Options)

Send RX to Serailport(1) TX
 Baby-loop mode.
 Midi-loop mode.
 Set FT8 Loop Frequency
 +2 Khz offset Loop Antenne

EOL Char()
 LF/CR
 LF
 CR
 (:)
 .

Set to Baby-Loop mode

Serialport 1 (RX/TX section)

Port 1 - Data to be transmitted.
FA:

Port 1 - Data received.
FA010136000; - Valid for Baby-Loop.
FA010136000; - Valid for Baby-Loop.
FA010136000; - Valid for Baby-Loop.
FA010136000; - Valid for Baby-Loop.
FA010136000; - Valid for Baby-Loop.
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FA010136000; - Valid for Baby-Loop.
FA010136000; - Valid for Baby-Loop.
FA010136000; - Valid for Baby-Loop.

Serialport 2 (RX/TX section)

Port 2 - Data to be transmitted.
FA010136000;

Port 2 - Data received.
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;
FA;

Control

Connect P1 Disconnect P1 Connect P2 Disconnect P2 - + Restart Exit

15-8-2025 14:29:23 Active: 0 00:01:39 0 00:00:00.534 Not connected Baby-Loop mode is active!

Frequency CAT request (From ATU) sent to the Transceiver every 0.4 seconds.

Frequency returned by the Transceiver and this will be relayed / send sent to the ATU.

Frequency received from the Transceiver and sent to the ATU. Tuning starts when the frequency is stable for 3 seconds

Frequency (CAT) request received from the ATU, and relayed / sent to the Transceiver every 0.4 seconds.

General Control – FT8 Frequency Loop setup Info

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Set IP and Port | Stop all UDP connections | Send Clear message | Send Stop Transmit | Restart UDP (Multicast) | Exit

Serialport 1 (Setup)
COM Port: COM5
Baud Rate: 9600
Data Bits: 8
Stop Bits: One
Parity Check: None
Hand Shake: RequestToSend
DTR On/Off: On

Received/Transmitted data lines
Recieved data lines: 0
Transmitted datalines: 0

Serialport 1 (Options)
 Send RX to Serailport(2) TX
 Baby-loop mode.
 Midi-loop mode.
 Spare
 Spare

EOL char()
 LF/CR
 LF
 CR
 (:)
 *

Serialport 2 (Setup)
COM Port: COM3
Baud Rate: 9600
Data Bits: 8
Stop Bits: One
Parity Check: None
Hand Shake: None
DTR On/Off: Off

Received/Transmitted data lines
Recieved data lines: 3
Transmitted data lines: 3

Serialport 2 (Options)
 Send RX to Serailport(1) TX
 Baby-loop mode.
 Midi-loop mode.
 Set FT8 Loop Frequency
 +2 KHz offset Loop Antenne

EOL Char()
 LF/CR
 LF
 CR
 (:)
 *

Serialport 1 (RX/TX section)
Port 1 - Data to be transmitted.
Port 1 - Data received.

Serialport 2 (RX/TX section)
Port 2 - Data to be transmitted.
10138 - FT8 offset active
Port 2 - Data received.
FA:
FA:
FA:
FA:

Baby/Midi Loop FT8 Setup
 Auto mode - WSJT/JTDX
 Extra Button Bar activated
80m - 3573 Khz (Midi Loop)
60m - 5357 Khz (Midi Loop)
40m - 7074 Khz (Both Loops)
30m - 10136 Khz (Both Loops)
20m - 14074 Khz (Both Loops)
17m - 18100 Khz (Baby Loop)
15m - 21074 Khz (Baby Loop)
12m - 24915 Khz (Baby Loop)
10m - 28074 Khz (Baby Loop)

Control
Connect P1 | Disconnect P1 | Connect P2 | Disconnect P2 | Restart | Exit

15-8-2025 10:36:59 | Active: 0 00:00:01 | 3 | 0 00:00:00.516 | Not connected | Loop FT8 frequency mode is active! | 0/15

Set to FT8-Loop mode

Frequency received from the FT8 software and send to the ATU. Tuning starts when the frequency is stable for 3 seconds

When FT8 is used in Auto-mode then software will not send the new frequency to the ATU, until FT8 Software transmit mode is switched Off (Safety feature).

Frequency (CAT) request received from the ATU, but in this mode not send to the Transceiver...

In this mode we use these request, to see if the ATU is tuning or Not!