February 2024

SAT-EME Groundstation for 2m and 70cm

Antennas from Antenna Amplifiers (70cm) and Anjo (2m)

2m
YA014408 8-Element Anjo YAGI (144-146 MHz, G=12.4dBi) 3.13m, 8 Elements, 2 kW PEP

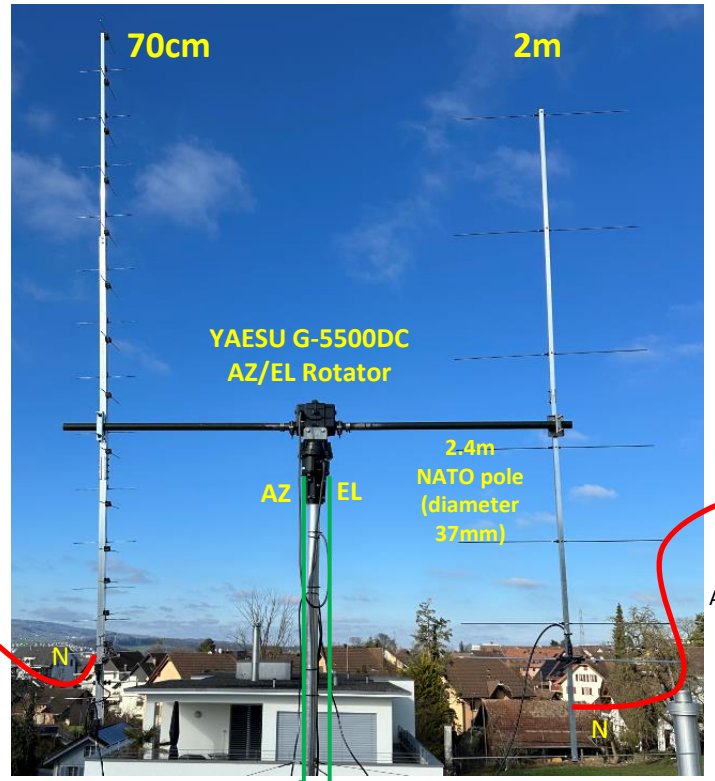
70cm
PA432-CROSS-30-3.5AP (432-440 MHz, G=16.7 dBi) 3.5m, 2 x 15 elements, 850 Watt PEP

- Right Circular (RHCP) for 70cm YAGI (SAT)
- horizontal for 2m YAGI (EME)
- ICOM IC-9700 with 100W
- SSB Electronic Preamp
- Low Noise Band Pass Filter for 2m and 70cm
- YAESU G-5500 AZ/EL Rotor
- ARS-USB Box from EA4TX
- EA4TX Raspberry Pi Server for Web-GUI
- SAT32PC SAT-Tracking Software
- RemoteRotator Web-GUI on Raspberry Pi

SAT & EME Groundstation

3.5m
2x15 (30) Element
16.7 dBi Gain
Right Circular (RHCP) Polarization

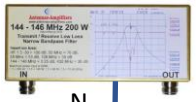
PA432-CROSS-30-3.5AP
BIG-LEO KIT



3.13 m
8 Element
12.4dBi Gain
Horizontal Polarization

YA014408 8-Element
Anjo YAGI

2m Low Loss Band Pass Filter (200W)



N
N

4m
Aircell 7

N

1m
LMR/CFD300

N

SSB Pre-Amp 2m

N

15m
Ecoflex 10+

N

DG-503 70cm

N

1m H-155

70cm
(N)

IC-9700

1m H-155

2m
(PL)

N

DG-503 2m

N

5.12m
Aircell 7

N

N

70cm Low Loss Band Pass Filter (200W)

N

1m
LMR/CFD300

N

SSB Pre-Amp 70cm

N

15m
Ecoflex 10+

N

6-pol

6-pol

2x 6-pol
Wire (15m)

IC-9700, G-5500, LBV-Tracker, ARS-USB EA4TX

Satellite Tracking App or SATPC32

virtual Serial Port

EA4TX Raspberry Pi with remoteRotator

TCP-Port 6001

ARSVCOM

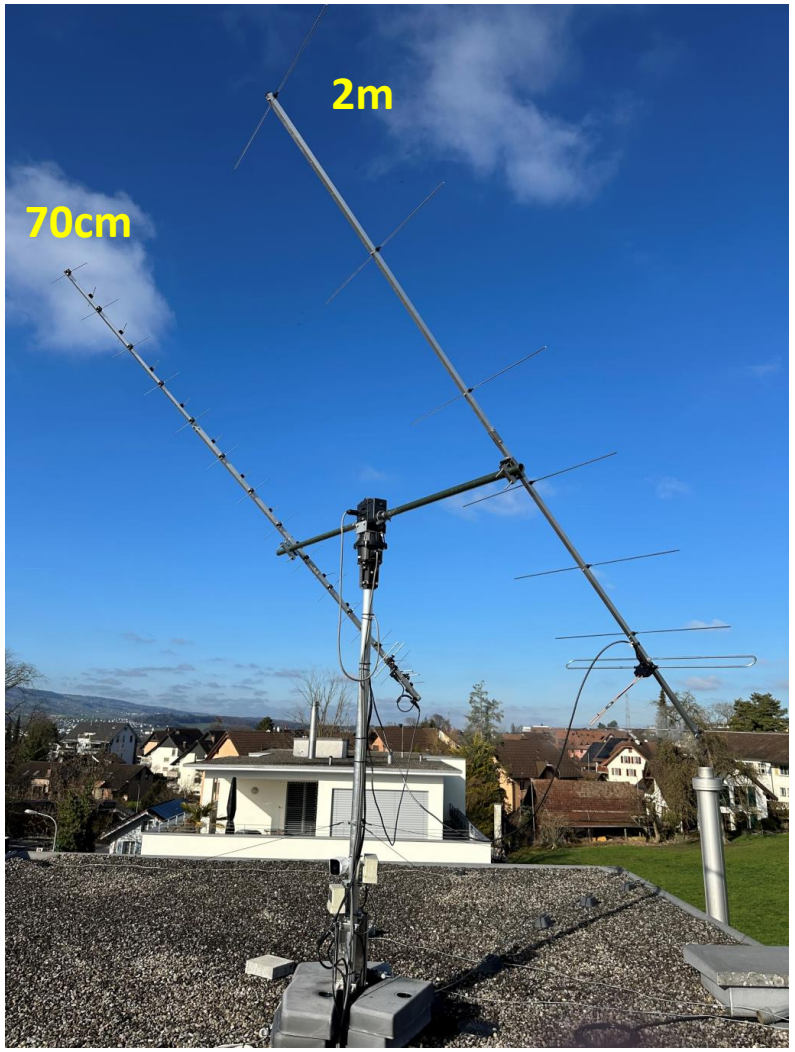
LAN

USB

EA4TX ARS-USB BOX

8-pol

SAT & EME Groundstation



2m = 8 element, 3.13 Boom, Gain = 12.4dBi, horizontal
70cm = 2 x 15 element, 3.5m Boom, Gain = 16.7 dBi, Right Circular (RHCP) Polarization
SSB Electronic Preamps, Low Loss Narrow Bandpass Filter

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SAT & EME Groundstation

- **2m = 8 element, 3.13m Boom, Gain = 12.4dBi, horizontal**
- **70cm = 2 x 15 element, 3.5m Boom, Gain = 16.7 dBi, (RHCP)**
- **SSB Electronic Preamps**
- **Low Loss Narrow Bandpass Filter for 2m and 70cm**

SAT Ground-Station for 2m and 70cm

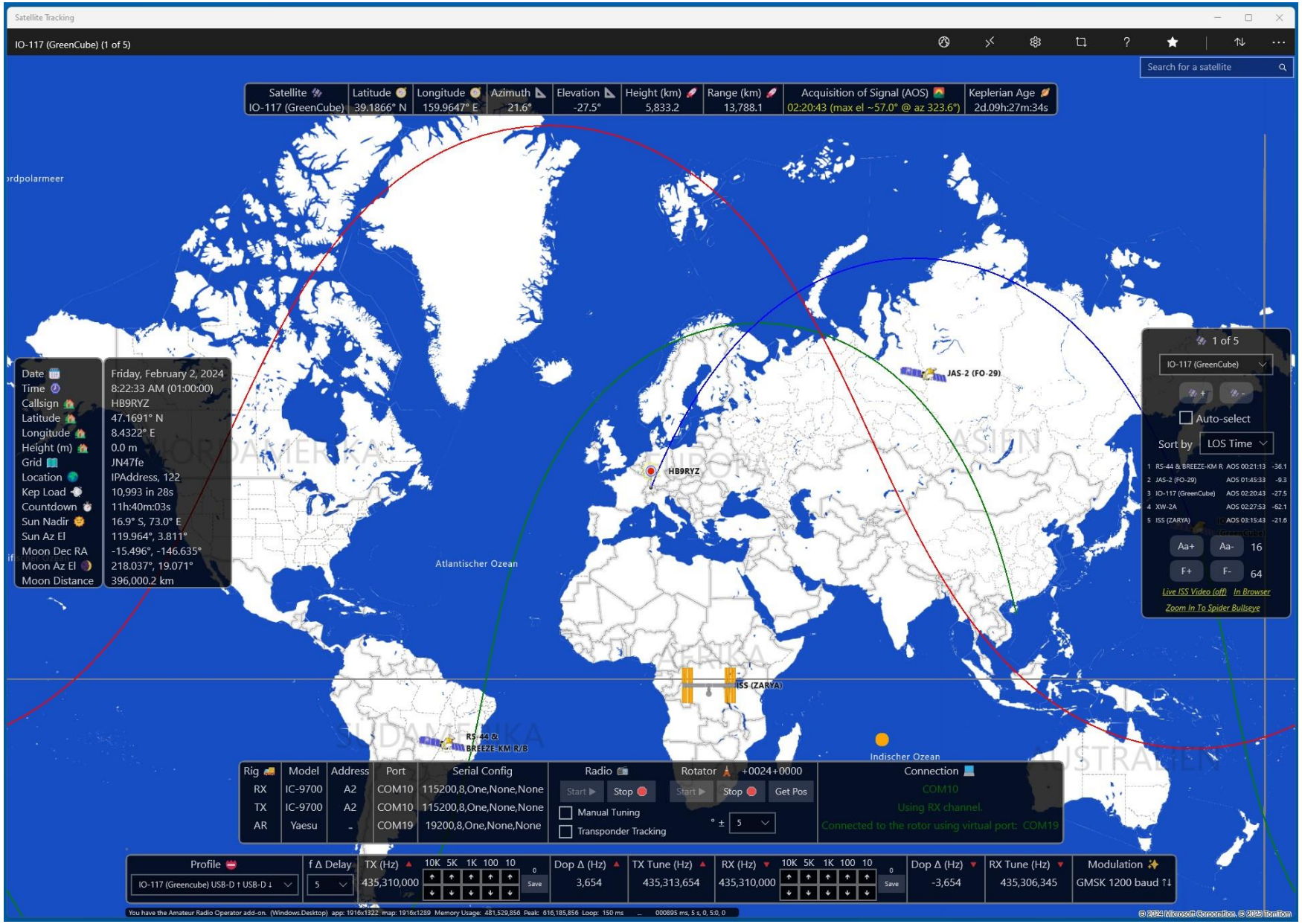
YAESU G-5500 AZ/EL Rotor, ICOM IC-9700 (100W), ARS-USB Box from EA4TX with Raspberry Pi Server for Web-GUI

Windows

Satellite Tracking App from KarhuKoti

https://apps.microsoft.com/detail/9WZDNCRDNDF7?hl=en-us&gl=US

Microsoft Windows Satellite Tracking App



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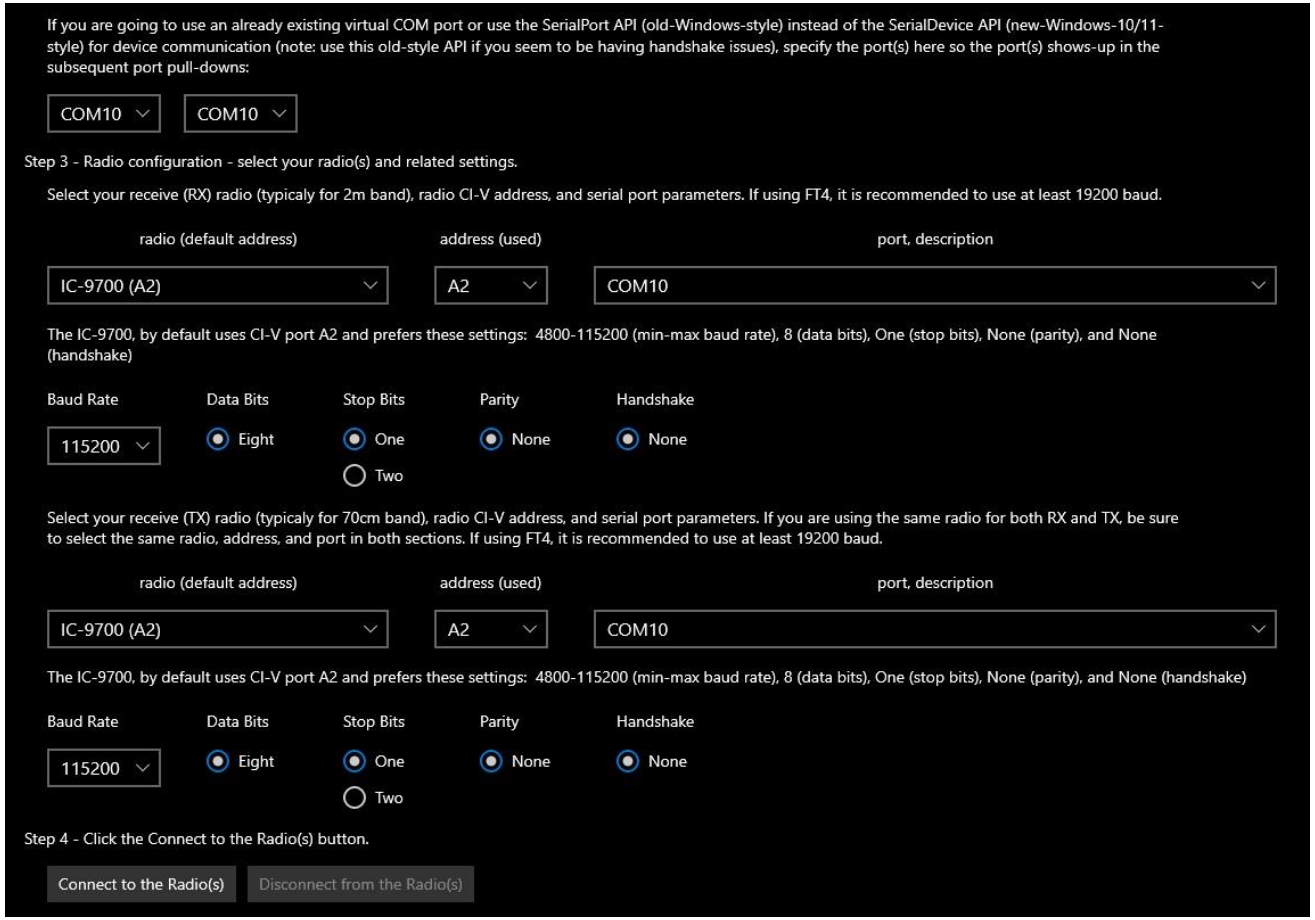
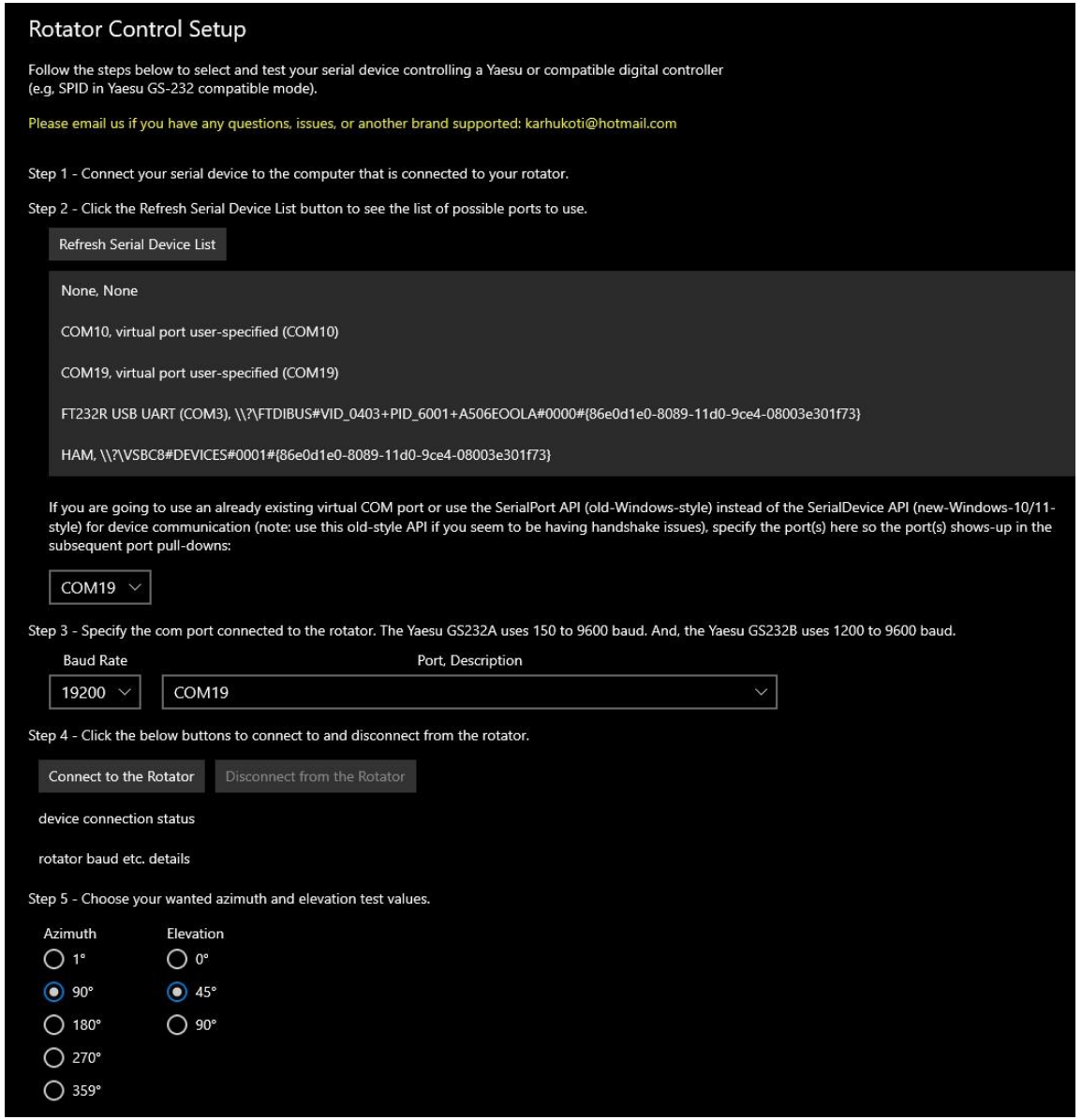
Microsoft Windows Satellite Tracking App

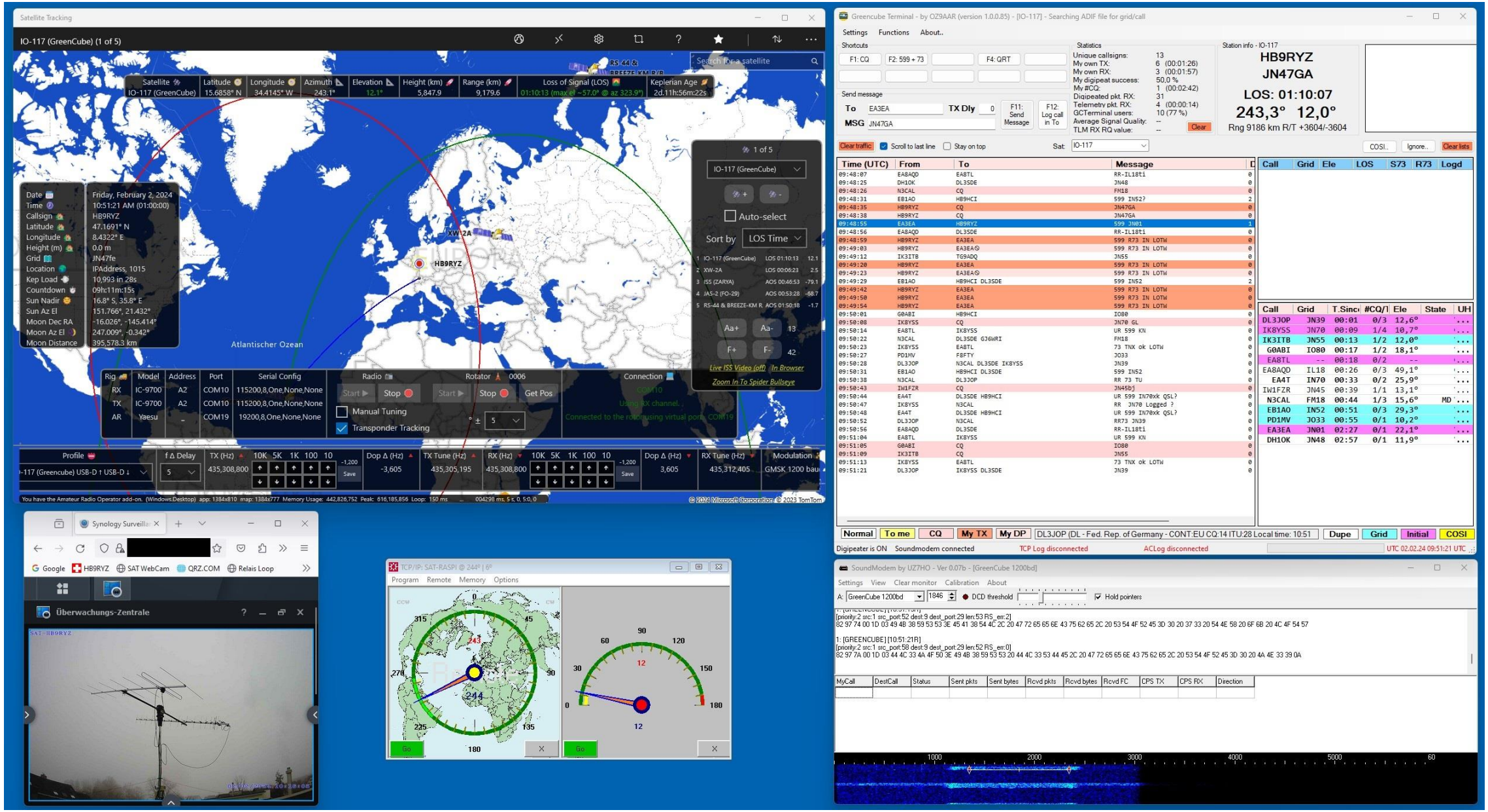
IC-9700 Configuration via VSPE and Omnirig



Rotator EA4TX Configuration via ARSVCOM Virtual COM-Port



Microsoft Windows Satellite Tracking App – Tracking Greencube (IO-117) Digi-SAT

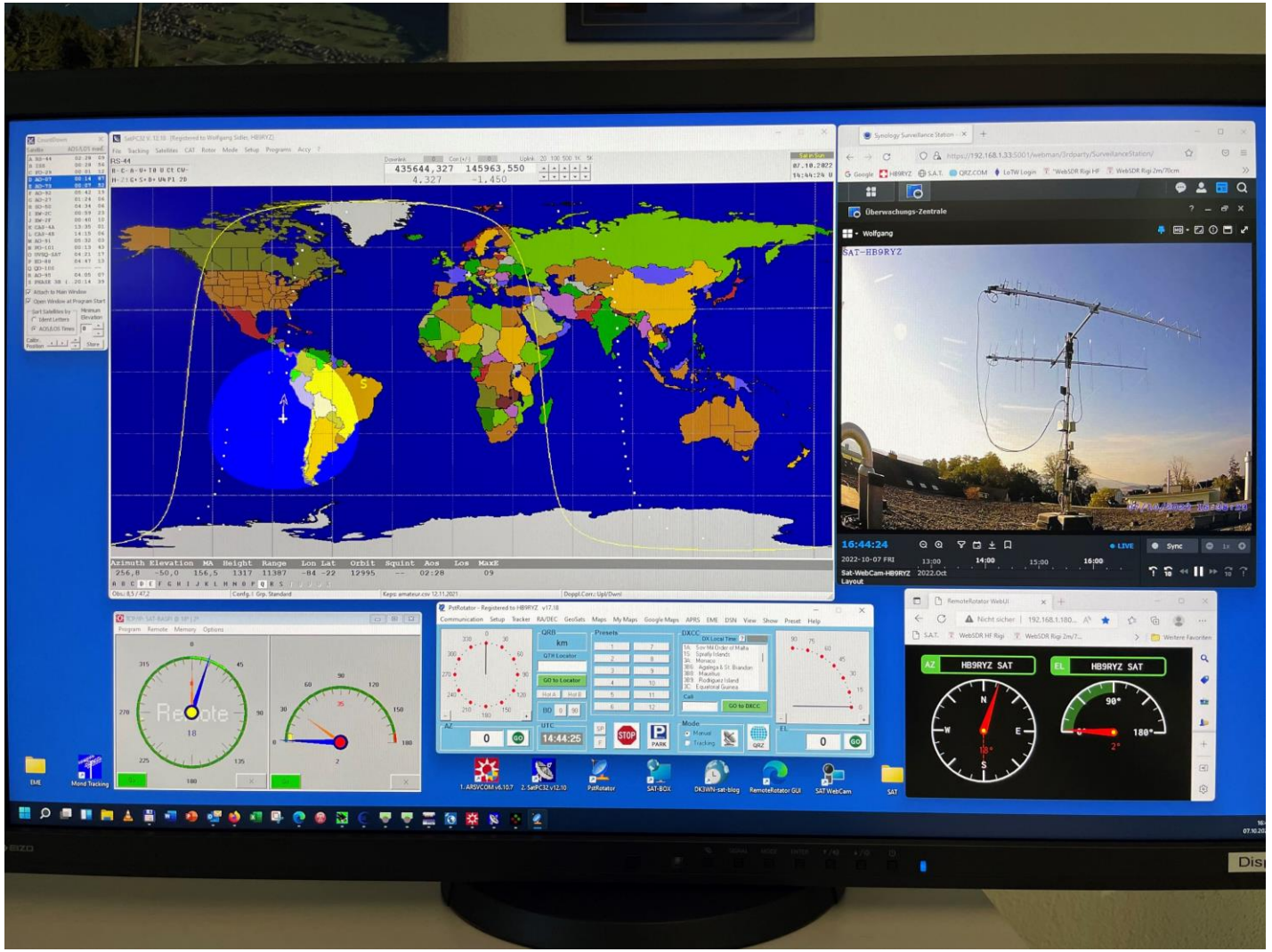


SATPC32 v12.10

with ARS-USB Box EA4TX and Raspberry Pi3 with remoteRotator from DH1TW

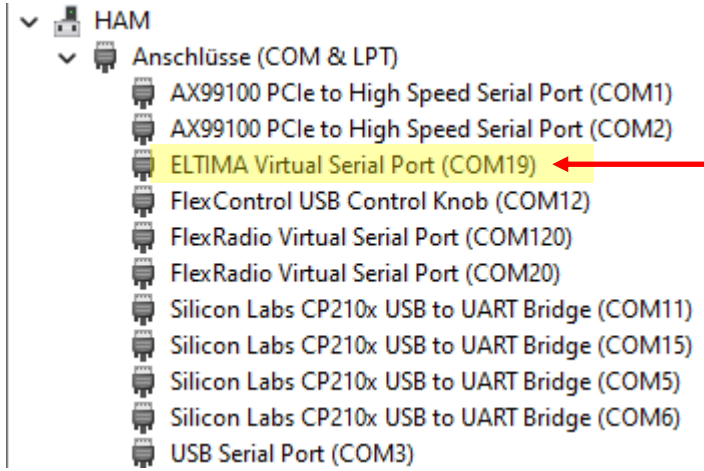
EA4TX ARS-USB Box: https://ea4tx.com/en/tienda/antenna-rotator-system/ars-usb-ae/
SATPC32 Software: https://www.dk1tb.de/indexeng.htm

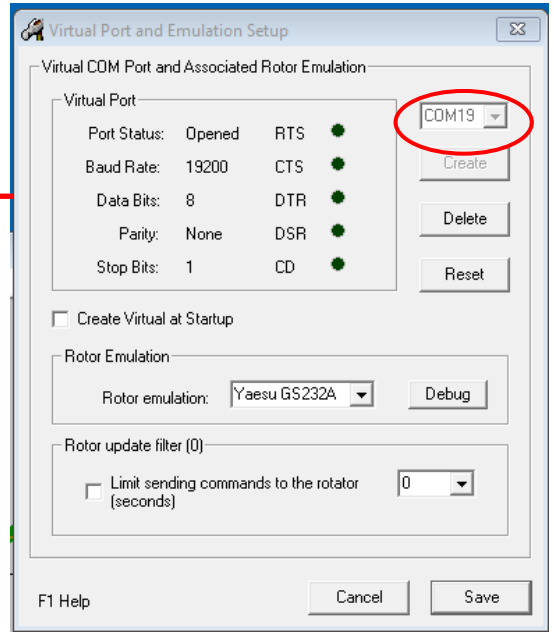
SATPC32 Satellite Tracking Software from Erich DK1TB



SATPC32 SAT-Tracking Software, SAT WebCam, RemoteRotator Web-GUI, PSTRotator

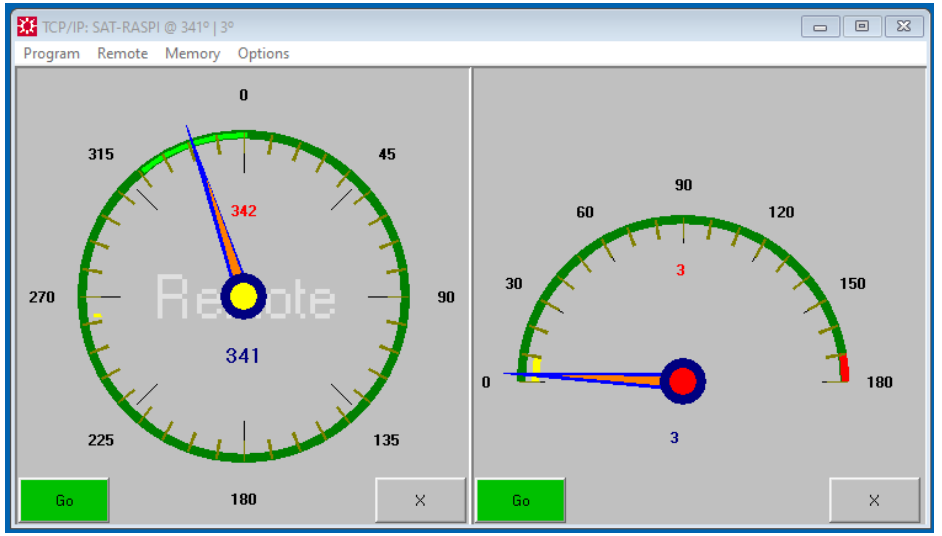
EA4TX ARS-USB Box (Virtual Serial Port) and SATPC32 Setup



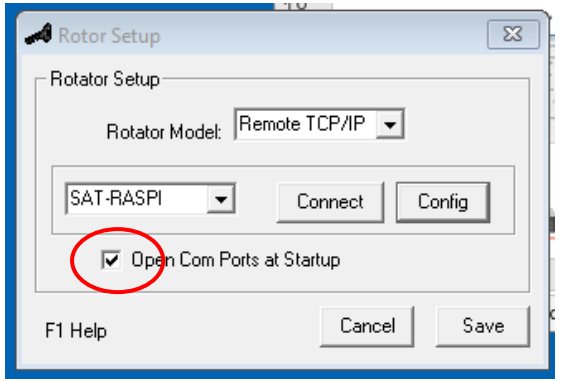


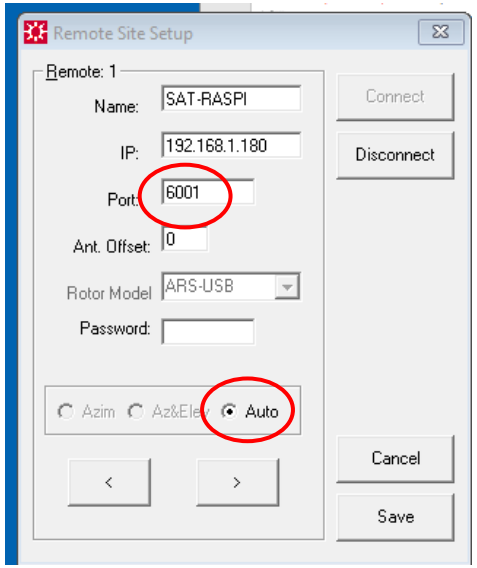
The Rotators are controllled via the Virtual Serial Port COM 19 (ARSVCOM).

v6.10.7



Thats for the Raspberry Pi IP-Connection





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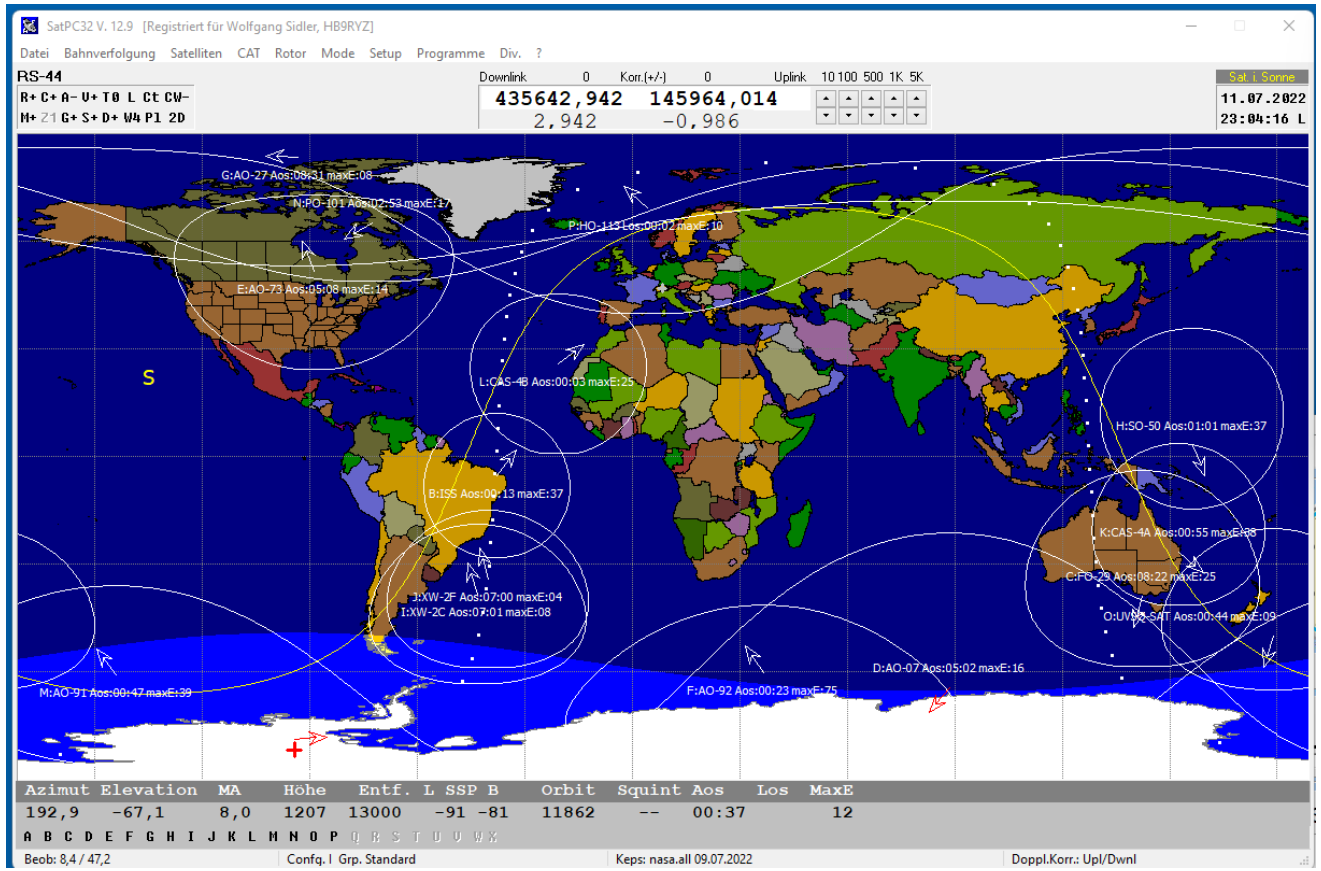
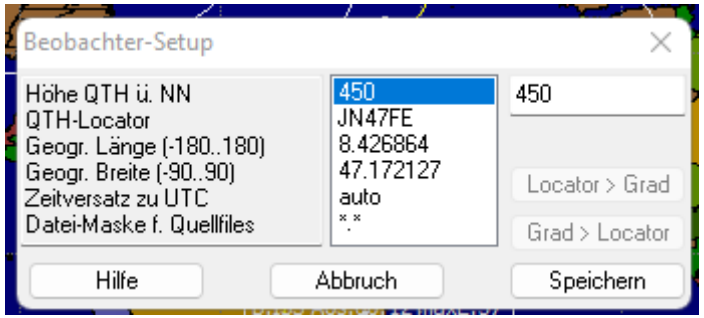
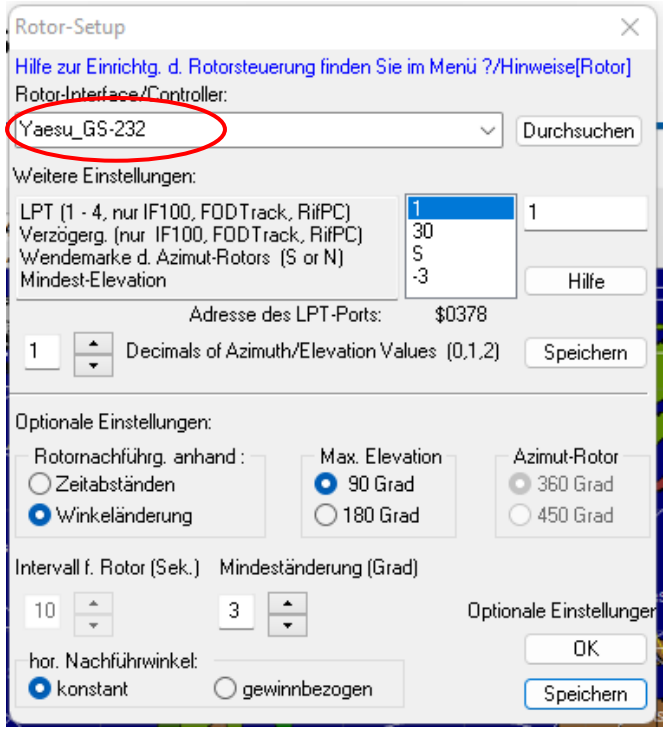
EA4TX ARS-USB Box (Virtual Serial Port) and SATPC32 Setup

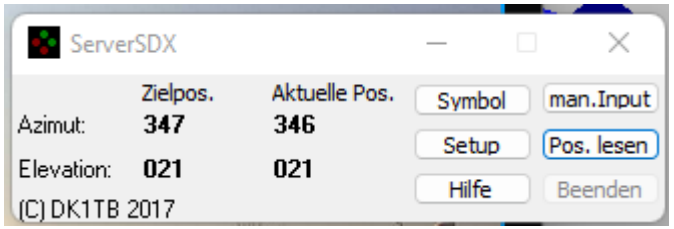
SATPC32 v12.10

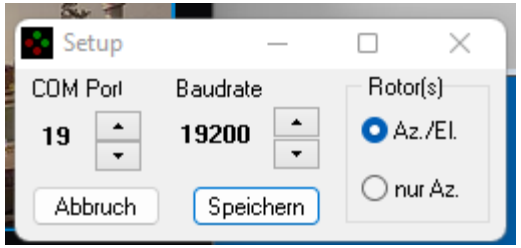






The Rotators are controllled via the Virtual Serial Port COM 19 (ARSVCOM).





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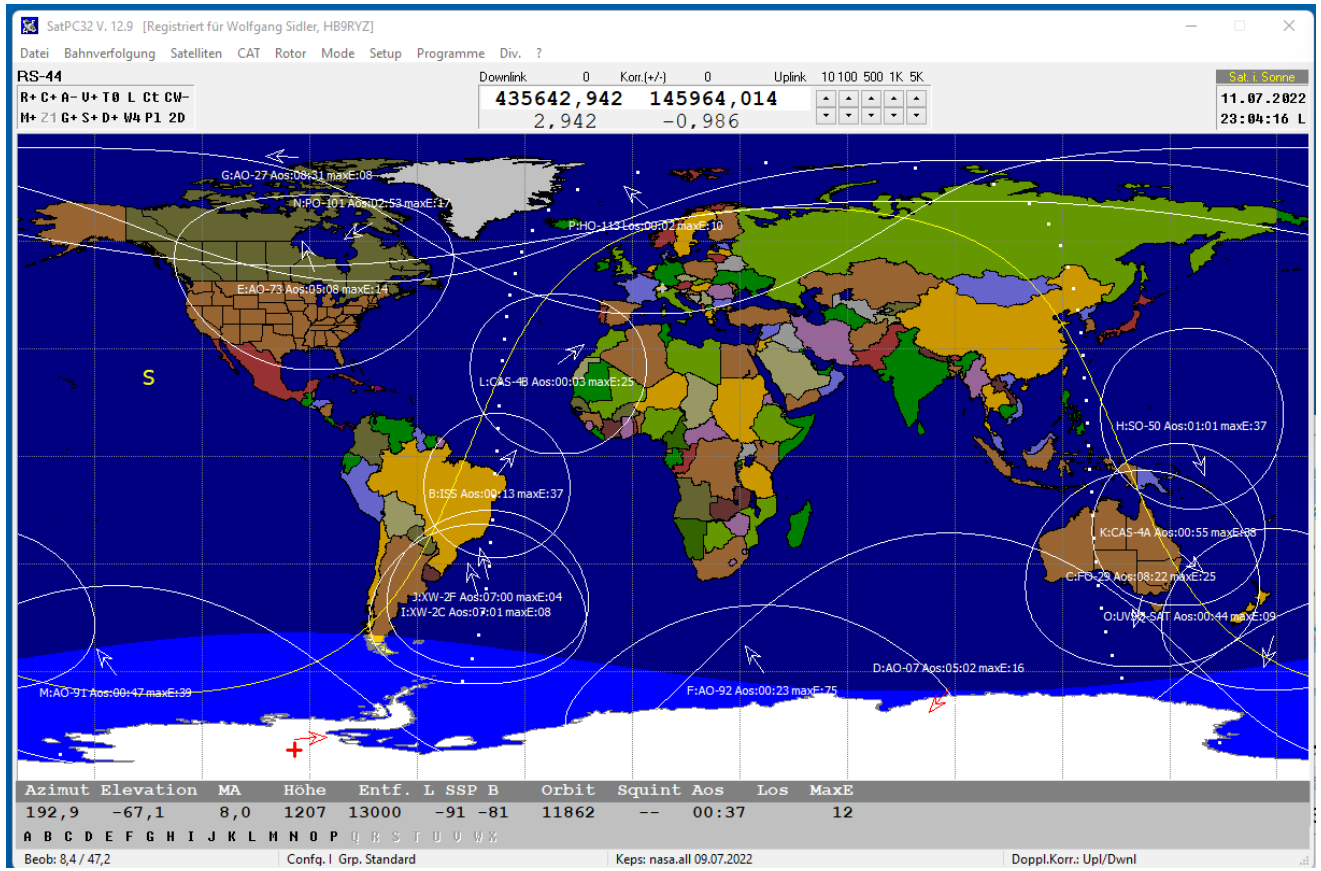
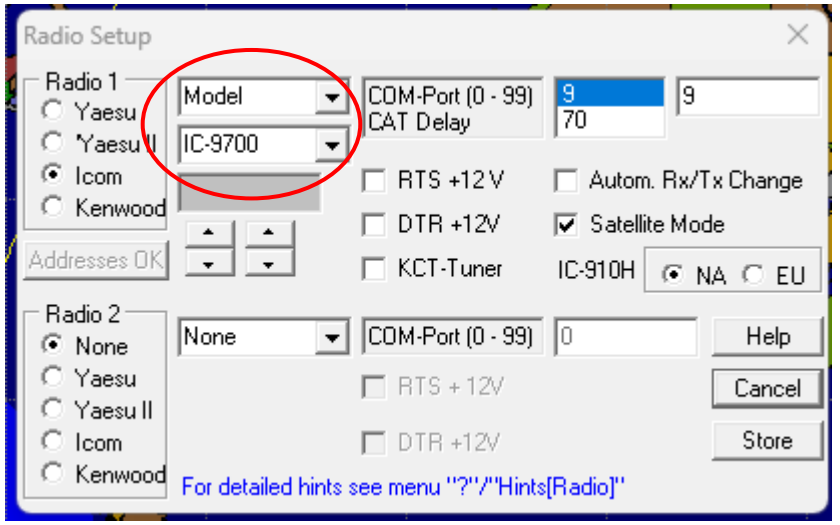
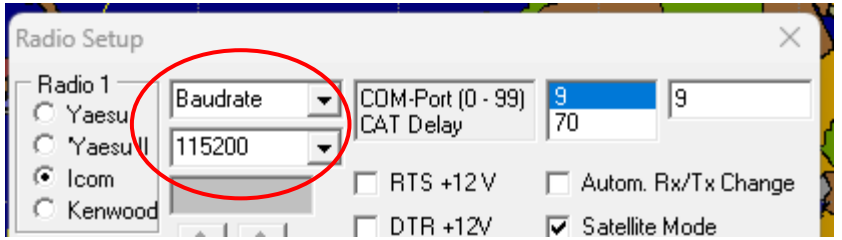
SATPC32 Setup with ICOM IC-9700

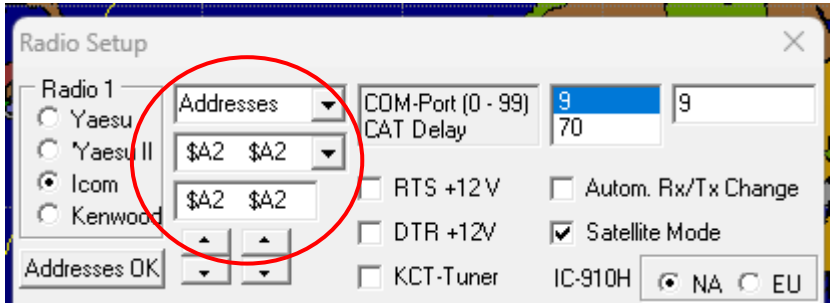
SATPC32 v12.10



Setup – Radio Setup

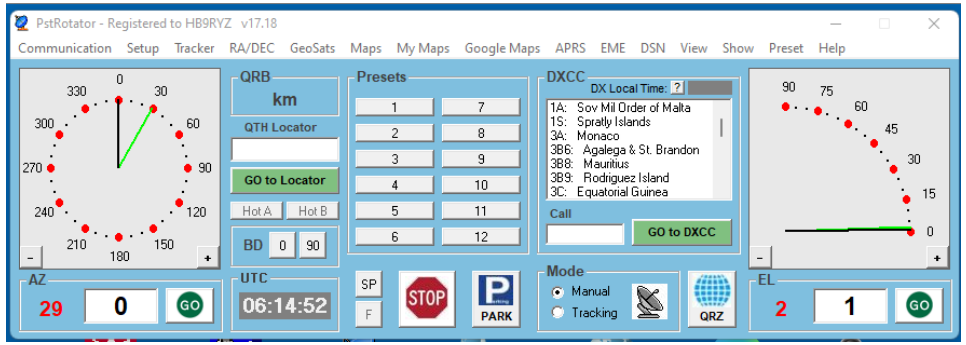




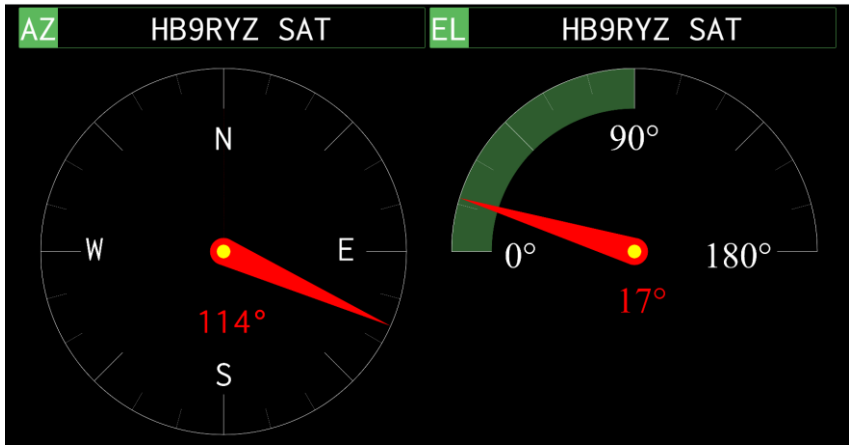


PSTRotator Setup

PSTRotator



RemoteRotator Web-GUI from DH1TW running on a Raspberry Pi

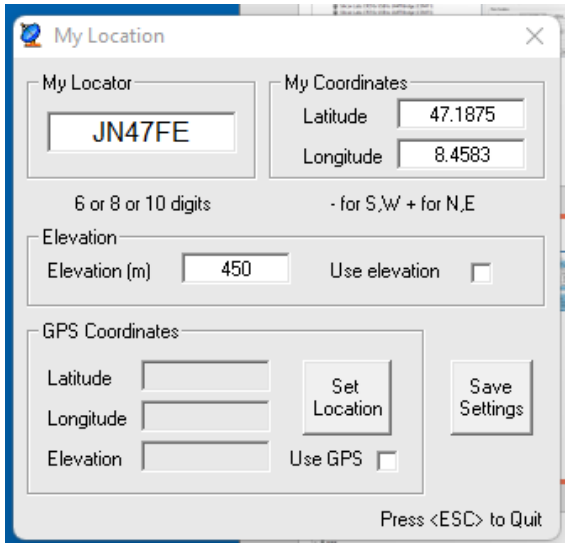


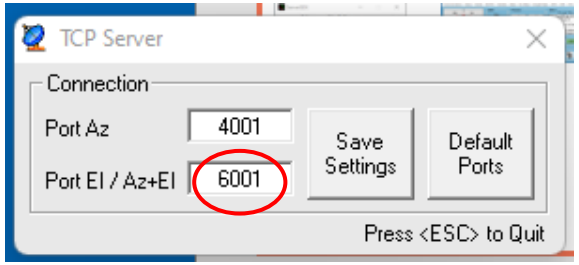
Communications
TCP Client = ON
EL / AZ+EL COM Port = NONE

Setup
Start as TCP Client

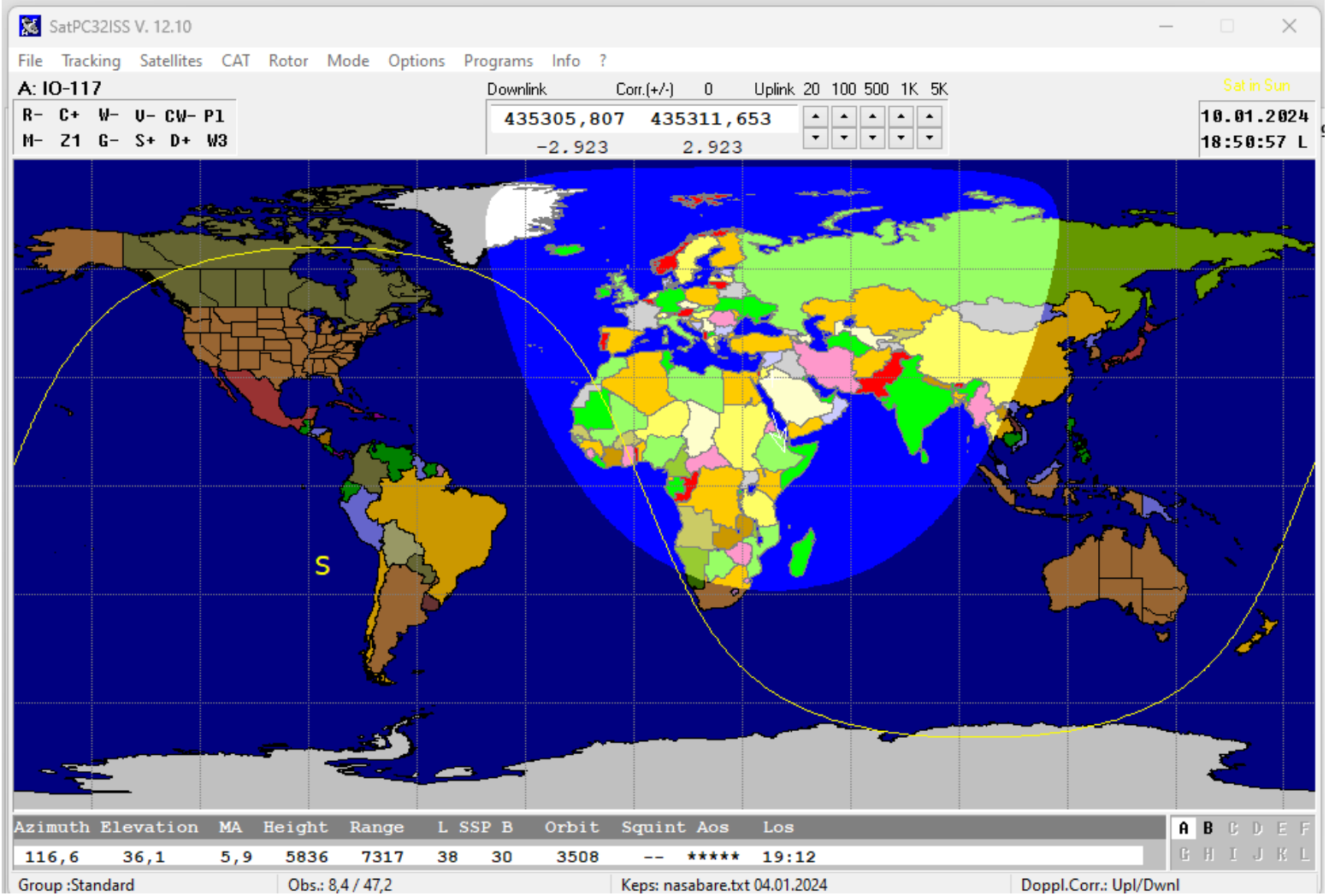
Tracker
SAT = SatPC32 / SatPC32ISS

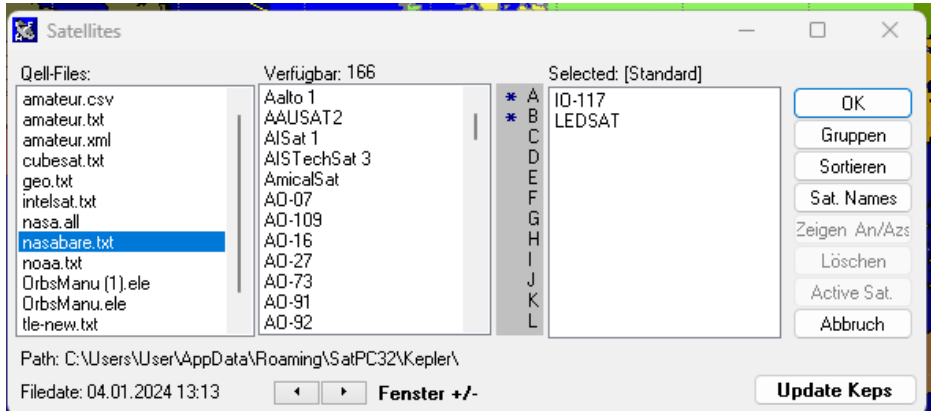
My Location

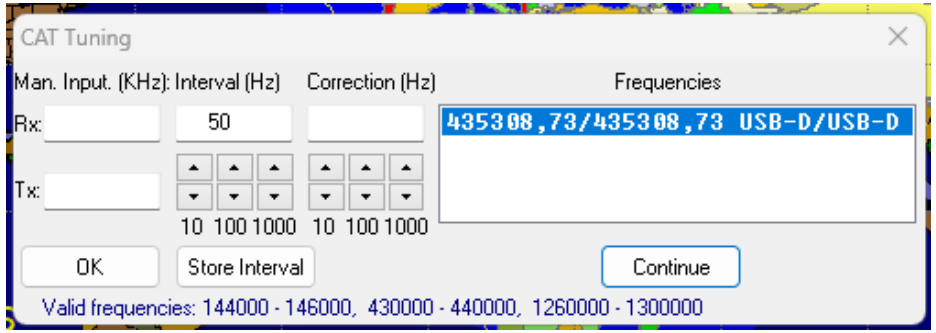




GreenCube (IO-117) MEO Satellite Setup mit SatPC32ISS

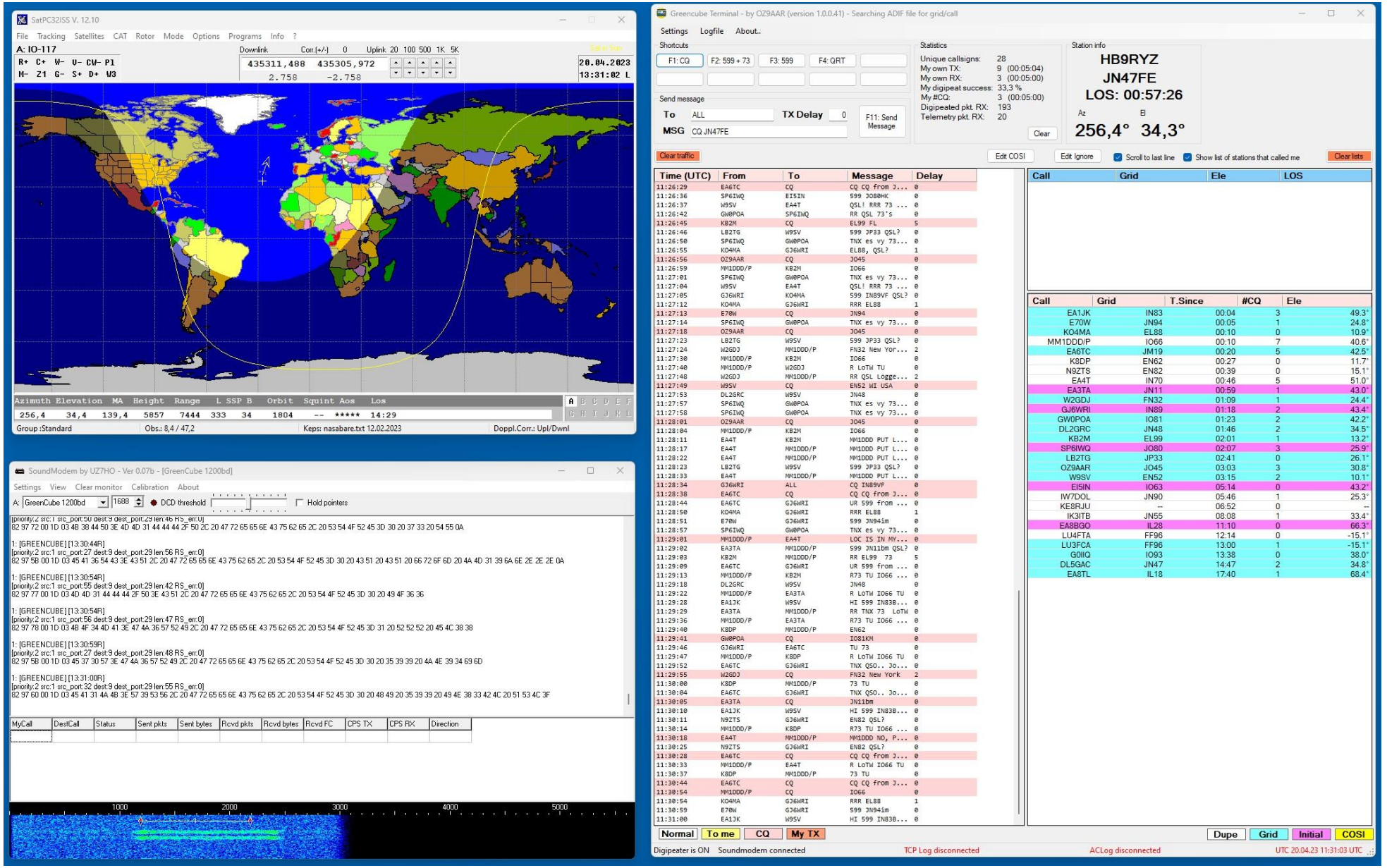






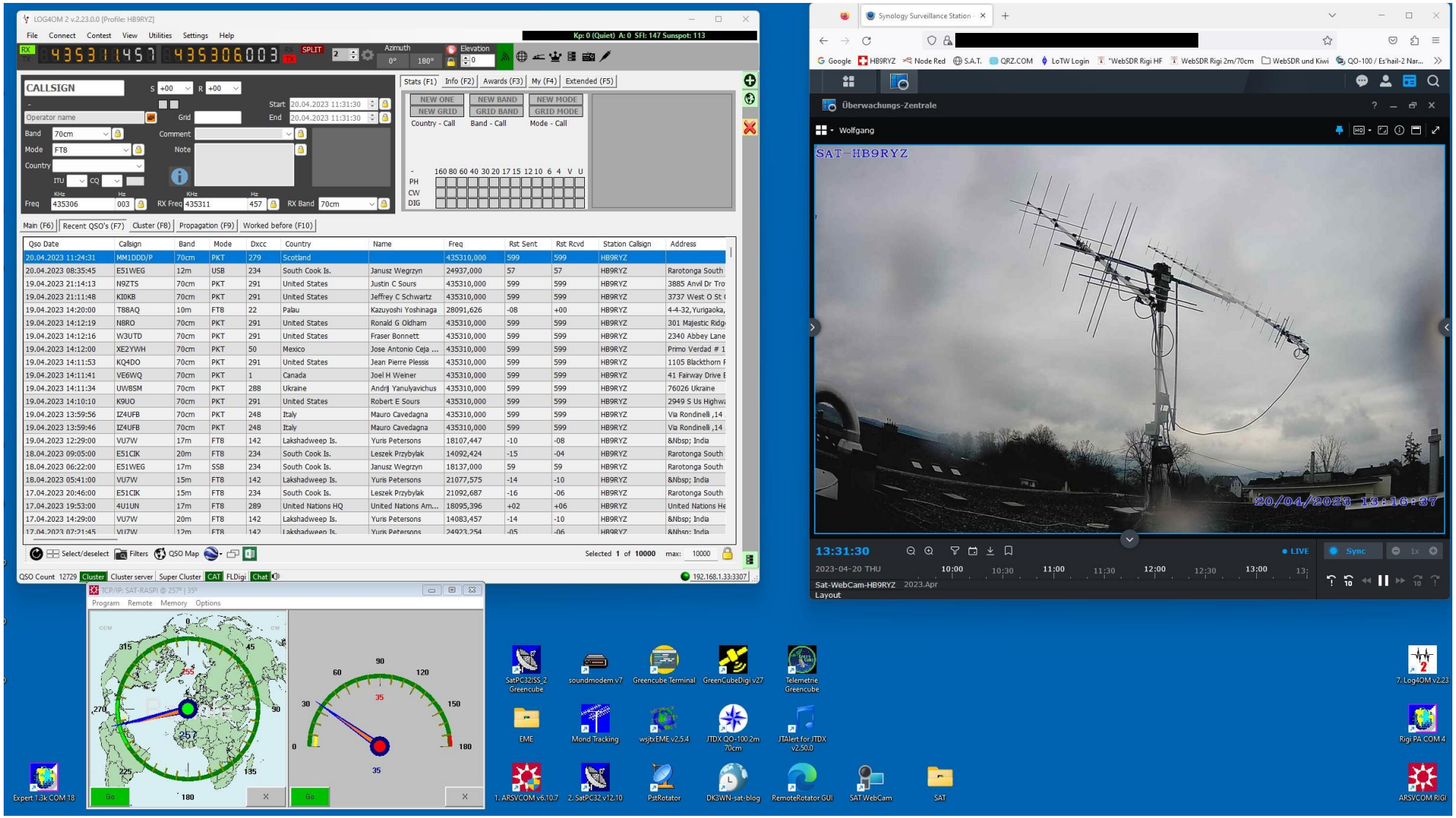
GreenCube (IO-117) MEO Satellite Setup mit SatPC32ISS

GreenCube Application from OZ9AAK: https://moonbounce.dk/hamradio/greencube-terminal-program.html

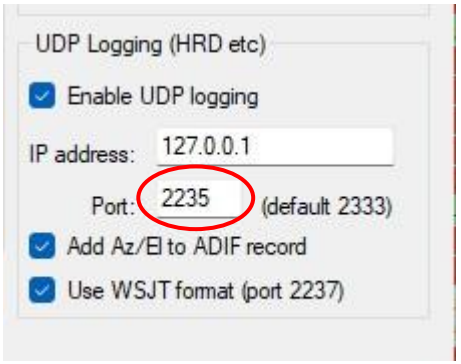


GreenCube (IO-117) MEO Satellite Setup mit Log4OM

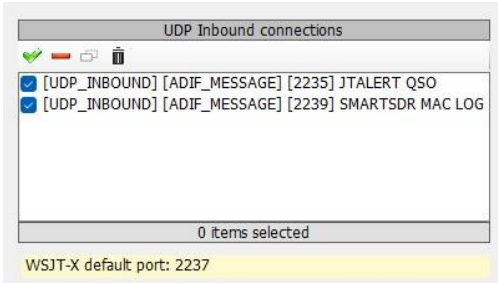
GreenCube Application from OZ9AAK sends the LOG direct to my Log4OM Log-Program



Settings in GreenCube Application from OZ9AAK

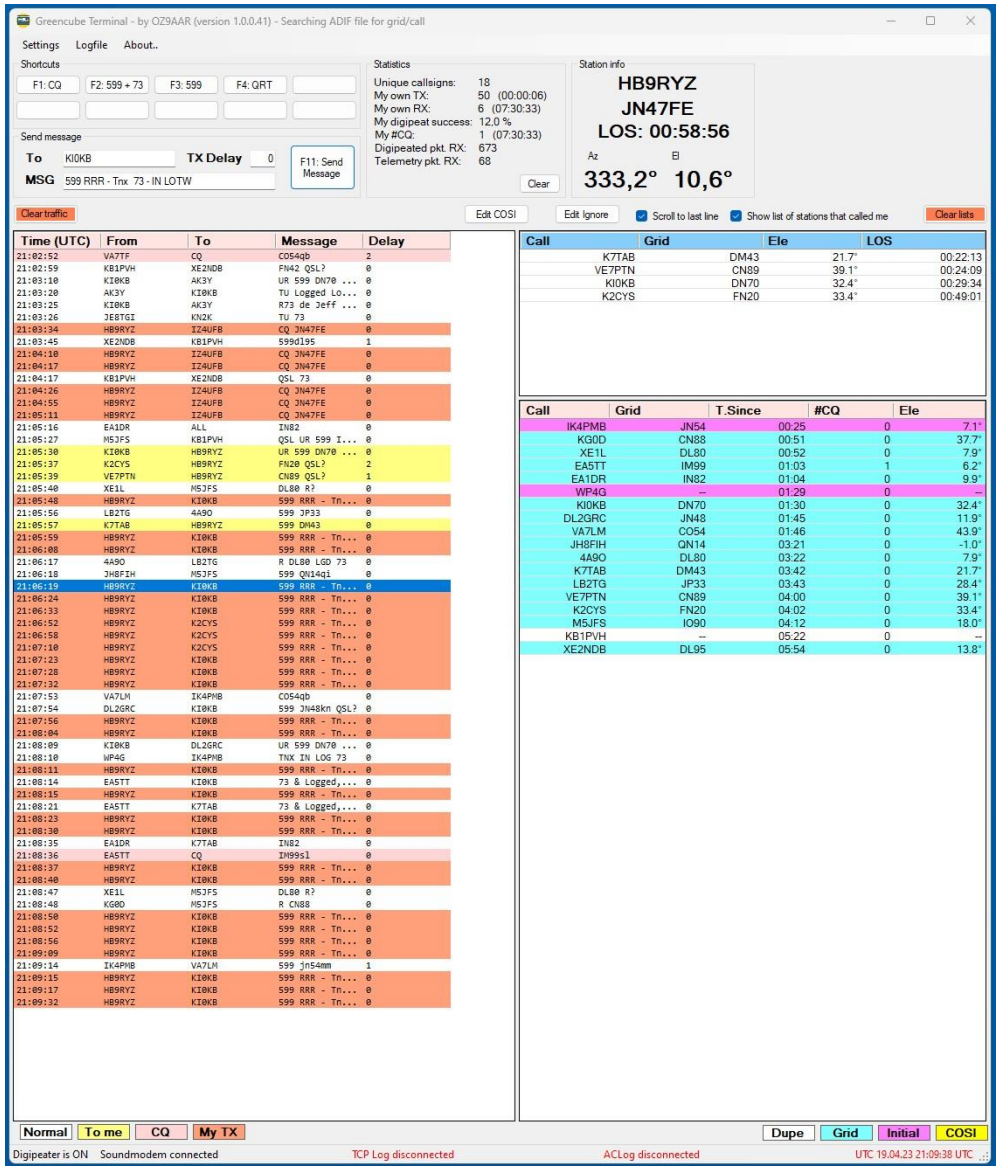


Settings in Log4OM

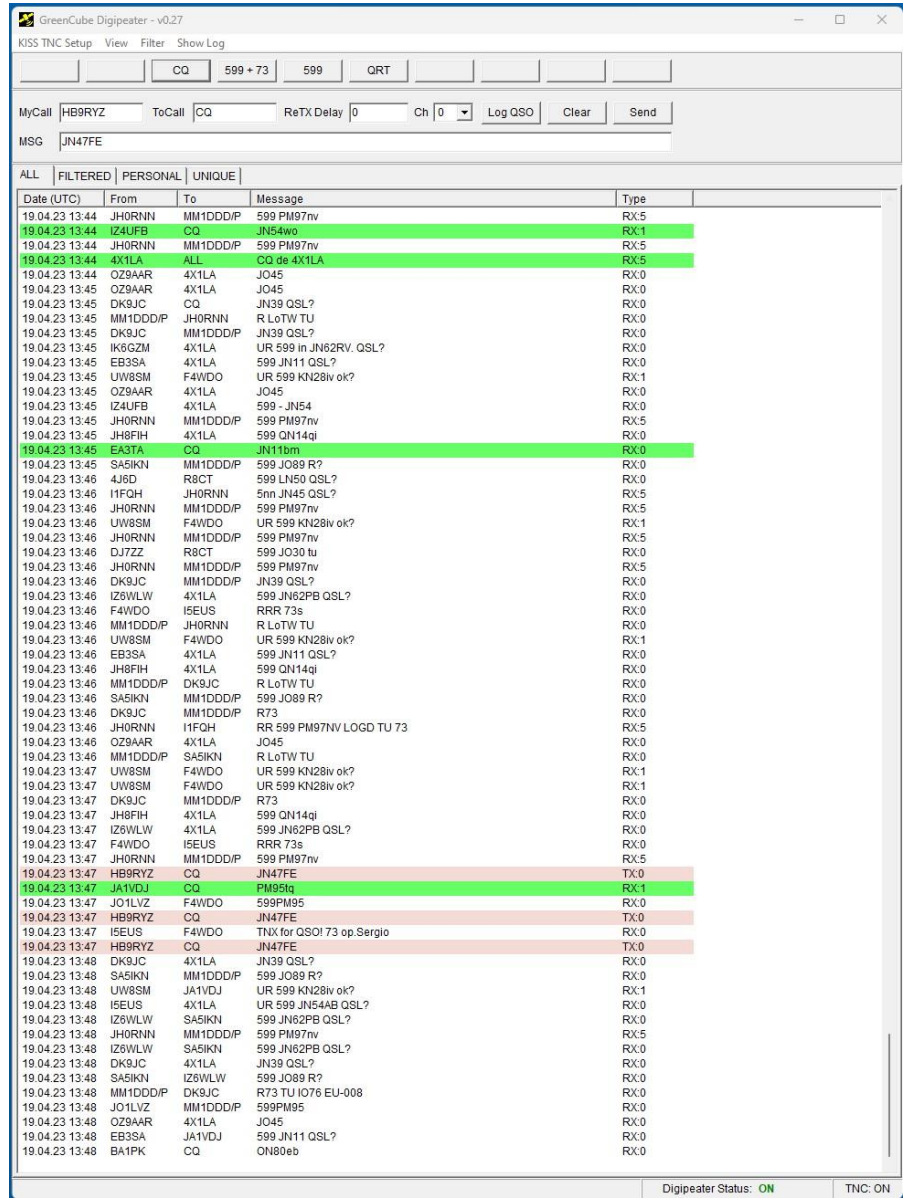


GreenCube (IO-117) MEO Satellite Setup

GreenCube Application from OZ9AAK:
https://moonbounce.dk/hamradio/greencube-terminal-program.html



GreenCube Digipeater v0.27 (the original Software)
https://www.s5lab.space/index.php/digipeater



ICOM IC-9700 Settings for Satellite Communication incl. GreenCube (IO-117) Digipeater

The following **IC-9700** settings are very important:
AGC = OFF
Mode = USB-D

Connectors > External Speaker Separate **"Mix"**
Connectors > ACC AF/IF Output > AF/SQL Output Select **"MAIN"**
Connectors > ACC AF/IF Output > Output Select **"AF"**
Connectors > ACC AF/IF Output > AF Output Level **"50%"**
Connectors > ACC AF/IF Output > AF SQL **"OFF (Open)"**
Connectors > ACC AF/IF Output > IF Output Level **"50%"**

Connectors > USB AF/IF Output > Output Select **"AF"**
Connectors > USB AF/IF Output > AF Output Level **"50%"**
Connectors > USB AF/IF Output > AF Output Level **"50%"**
Connectors > USB AF/IF Output > AF SQL **"OFF (Open)"**
Connectors > USB AF/IF Output > IF Output Level **"50%"**

Connectors > USB SEND/Keying > USB SEND: **"USB (B) DTR"**

Connectors > CI-V > CI-V Baud Rate **"19200"**
Connectors > CI-V > CI-V Transceiver **"OFF"**
Connectors > CI-V > CI-V USB Port **"Link to [REMOTE]"**
Connectors > CI-V > CI-V DATA Baud Rate **"19200"**
Connectors > CI-V > CI-V DATA Echo Back **"on"**

PTT Port Function **"PTT Input + SEND Output"**

Switch AGC to OFF
To switch it off, hold down the AGC button in the Function menu.

Then select on of your AGC options and with the tuning wheel you can now turn it down until it shows OFF.