

SAT-Groundstation for 2m and 70cm – HB9RYZ

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, E-Sporadic, Tropo)
- **Horizontal** for **2m** YAGI (SAT, E-Sporadic, Tropo)
- ICOM IC-9700 with 100W
- Contest2-144 144-148 MHz Super Loss Input Bandpass Filter with LNA (300W) incl. Bias-Tee for IC-9700 (**+24.9 dB**) – Antenna Amplifiers
- Contest2-432 430-450 MHz Super Loss Input Bandpass Filter with LNA (150W) incl. Bias-Tee for IC-9700 (**+ 20.5 dB**) – Antenna Amplifiers
- YAESU G-5500 AZ/EL Rotator
- ARS-USB Box from EA4TX to control the YAESU AZ/EL-Rotator
- EA4TX Raspberry Pi Server for Web-GUI to control the YAESU AZ/EL-Rotator via Web-Browser with the Remote Rotator Web-GUI on Raspberry Pi
- SatTrack from OZ9AAR and SAT32PC SAT-Tracking Software



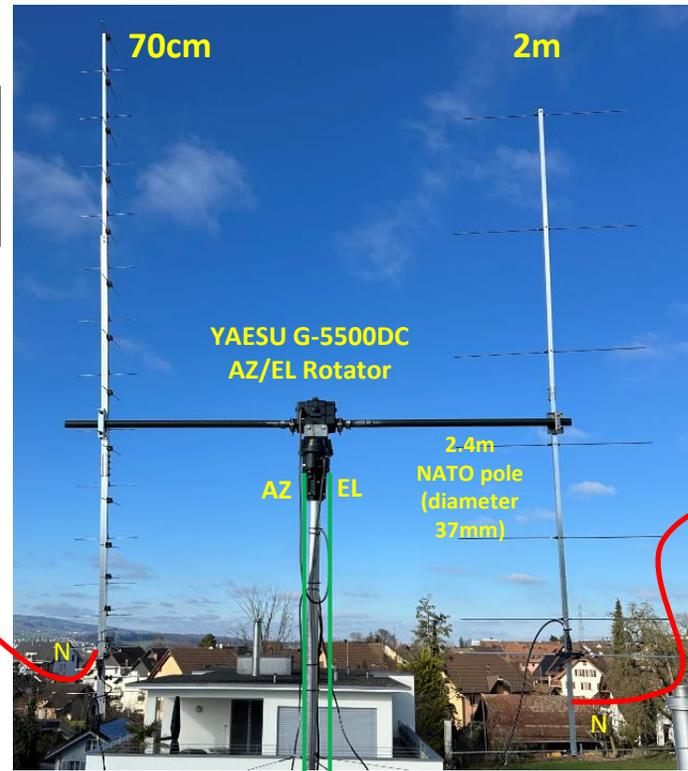
SAT-Groundstation JN47FE

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

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



Contest2-144 144-148
MHz Super Loss Input
Bandpass Filter with LNA
(300W) incl. Bias-Tee for
IC-9700 (+24.9 dB) –
Antenna Amplifiers



3.13 m
8 Element
12.4dBi Gain
Horizontal Polarization

YA014408 8-Element
Anjo YAGI



5.12m
Aircell 7

Contest2-432 430-450
MHz Super Loss Input
Bandpass Filter with LNA
(150W) incl. Bias-Tee for
IC-9700 (+ 20.5 dB) –
Antenna Amplifiers

4m
Aircell 7

15m
Ecoflex 10+

15m
Ecoflex 10+

2x 6-pol
Wire (15m)



EA4TX
ARS-USB BOX

EA4TX
Raspberry Pi
with
remoteRotor



TCP-Port
6001

ARSVCOM



Satellite
Tracking App
SatTrack and
SATPC32

virtual
Serial
Port

SAT-Groundstation JN47FE



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
Antenna Amplifiers Preamps with low loss Bandpass Filter and Bias-T

SAT-Groundstation JN47FE



New since 5. July 2025

Due to crosstalk on the RS-44 satellite (UP 145 MHz, Down 435 MHz), I have installed a bandpass filter incl. preamplifier and DC-Bias-T on both 2m and 70cm.

2m

Contest2-144 144-148 MHz
Super Loss Input Bandpass Filter with LNA (300W) incl.
Bias-Tee for IC-9700 (+24.9 dB)
from Antenna Amplifiers

70cm

Contest2-432 430-450 MHz
Super Loss Input Bandpass Filter with LNA (150W) incl.
Bias-Tee for IC-9700 (+ 20.5 dB)
from Antenna Amplifiers

SAT-Groundstation JN47FE



- **2m = 8 element, 3.13m Boom, Gain = 12.4dBi, horizontal**
- **70cm = 2 x 15 element, 3.5m Boom, Gain = 16.7 dBi, (RHCP)**
- **Antenna Amplifiers Preamps with low loss Bandpass Filter and Bias-T**



SAT-Groundstation 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 «SatTrack» from Carsten
OZ9AAR

<https://www.moonbounce.dk/hamradio/sattrack.html>

Windows SatTrak from OZ9AAR

SatTrak will do the following:

1. Track a satellite in realtime and show calculated values for it
2. Track the moon and the sun
3. Show a list of selected satellites, ordered so that the ones rising first will be at the top of the list
4. Control your ICOM IC-9700 (and a few other ICOM radios like IC-910 and IC-706, you test it yourself) radio according to the defined transponder(s) for the satellite being tracked
5. Control your Yaesu GS-232B, PstRotator or URC rotorcontroller so you antennas will follow the tracked sat
6. Show the footprint of the currently selected satellite on a map
7. Fetch updated TLE elements from the internet at defined intervals (or use a local file)
8. Inject data (name, frequency etc) for the currently tracked satellite into log program ALog
9. Make it easy for you to make small adjustment to the uplink frequency to put you "on the spot"
10. Allow you to set alarms (voice messages) for upcoming passes of specific satellites and specific passes
11. Give voice announcements whenever a satellite is about to rise
12. Fetch current status from AMSAT satellite status page for a selected satellite and present this in a readable way
13. Help you plan satellites and passes and alarms for these in the "Future passes" planner
14. Import/export transponder definitions, can also import SQF file from SatPC32 and use that

The screenshot displays the SatTrak software interface. At the top, it shows the title bar and menu options: File, Rotor, Planning, Settings, Transponder, Help. The main window features a 3D world map with a satellite footprint for FO-29. A data box for FO-29 shows: LOS 00:03:01, AZ 332,61°, EL 12,99°, Alt: 988 Km, Rng: 2521 Km, Foot: 6666 Km. To the right, there are three circular antenna control panels for FO-29, each showing AZ 332,6° and EL 13,0°. Below the map, the 'Commanded position' is AZ=331,2 El=14,6 and the 'Current position' is AZ=0,0 El=0,0. The time is UTC 11:29:26. At the bottom, there is a table of satellites and a control panel for the selected satellite FO-29.

Satellite	Next event	Azimuth	Elevation	Altitude	Range	Active transponder
QO-100	GeoSync	160,7°	24,8°	35776,9	39070,6	Voice S/X
FO-29	LOS in 00:03:01 (Max el 45,6°)	332,6°	13,0°	987,8	2521,2	435.850/145.950 - U
SO-50	LOS in 00:03:44 (Max el 88,1°)	133,8°	20,2°	635,8	1453,1	436.795/145.850 - F
Moon	LOS in 00:14:32 (Max el 61,9°)	320,1°	1,2°	378845,1	385043,7	(No definitions)
IO-117	LOS in 01:08:14 (Max el 64,3°)	296,5°	15,5°	5840,9	8857,9	UHF Digipeater
AO-07	AOS in 00:49:13 (Length 18:39/Max el 21,7°)	219,3°	-76,6°	1477,4	13883,0	Mode B - SSB
SONATE-2	AOS in 01:10:22 (Length 10:02/Max el 16,7°)	156,3°	-35,3°	495,7	8156,3	1200 baud digipeate

Control panel for FO-29:

Transponder data for FO-29: Send updates to ALog, Send updates to radio

Downlink USB: SAT: 435.850.450 Hz, Doppler: - 8.174 Hz, VFO: 435.842.292 Hz

Uplink LSB: 145.951.650 Hz, + 2.737 Hz, 145.954.387 Hz

Buttons: Voice 1, Voice 2, Voice 3, Stop voice

UTC: 19-11-24 11:29:26 UTC

Windows

Satellite Tracking App from KarhuKoti

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

Microsoft Windows Satellite Tracking App

Satellite Tracking

IO-117 (GreenCube) (1 of 5)

Search for a satellite

Satellite	Latitude	Longitude	Azimuth	Elevation	Height (km)	Range (km)	Acquisition of Signal (AOS)	Keplerian Age
IO-117 (GreenCube)	39.1866° N	159.9647° E	-21.6°	-27.5°	5,833.2	13,788.1	02:20:43 (max el ~57.0° @ az 323.6°)	2d.09h:27m:34s

1 of 5

IO-117 (GreenCube)

Auto-select

Sort by LOS Time

- RS-44 & BREEZE-KM R AOS 00:21:13 -36.1
- JAS-2 (FO-29) AOS 01:45:33 -9.3
- IO-117 (GreenCube) AOS 02:20:43 -27.5
- XW-2A AOS 02:27:53 -62.1
- ISS (ZARYA) AOS 03:15:43 -21.6

Aa+ Aa- 16

F+ F- 64

Live ISS Video (off) In Browser

Zoom In To Spider Bullseye

Date: Friday, February 2, 2024
 Time: 8:22:33 AM (01:00:00)
 Callsign: HB9RYZ
 Latitude: 47.1691° N
 Longitude: 8.4322° E
 Height (m): 0.0 m
 Grid: JN47fe
 Location: IPAddress, 122
 Kep Load: 10,993 in 28s
 Countdown: 11h:40m:03s
 Sun Nadir: 16.9° S, 73.0° E
 Sun Az El: 119.964°, 3.811°
 Moon Dec RA: -15.496°, -146.635°
 Moon Az El: 218.037°, 19.071°
 Moon Distance: 396,000.2 km

Rig	Model	Address	Port	Serial Config	Radio	Rotator	Connection
RX	IC-9700	A2	COM10	115200,8,One,None,None	Start Stop	Start Stop Get Pos	COM10
TX	IC-9700	A2	COM10	115200,8,One,None,None	Manual Tuning		Using RX channel.
AR	Yaesu	-	COM19	19200,8,One,None,None	Transponder Tracking	± 5	Connected to the rotor using virtual port: COM19

Profile: IO-117 (Greencube) USB-D + USB-D 1

f Δ Delay: 5

TX (Hz): 435,310,000

Dop Δ (Hz): 3,654

TX Tune (Hz): 435,313,654

RX (Hz): 435,310,000

Dop Δ (Hz): -3,654

RX Tune (Hz): 435,306,345

Modulation: GMSK 1200 baud 14

You have the Amateur Radio Operator add-on. (Windows.Desktop) app: 1916x1322 map: 1916x1289 Memory Usage: 481.529.856 Peak: 616.185.856 Loop: 150 ms 000895 ms 5 s 0.0.0

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Microsoft Windows Satellite Tracking App

IC-9700 Configuration via VSPE and Omnirig

If you are going to use an already existing virtual COM port or use the SerialPort API (old-Windows-style) instead of the SerialDevice API (new-Windows-10/11-style) for device communication (note: use this old-style API if you seem to be having handshake issues), specify the port(s) here so the port(s) shows-up in the subsequent port pull-downs:

COM10 COM10

Step 3 - Radio configuration - select your radio(s) and related settings.

Select your receive (RX) radio (typically for 2m band), radio CI-V address, and serial port parameters. If using FT4, it is recommended to use at least 19200 baud.

radio (default address)	address (used)	port, description
IC-9700 (A2)	A2	COM10

The IC-9700, by default uses CI-V port A2 and prefers these settings: 4800-115200 (min-max baud rate), 8 (data bits), One (stop bits), None (parity), and None (handshake)

Baud Rate	Data Bits	Stop Bits	Parity	Handshake
115200	<input checked="" type="radio"/> Eight	<input checked="" type="radio"/> One <input type="radio"/> Two	<input checked="" type="radio"/> None	<input checked="" type="radio"/> None

Select your receive (TX) radio (typically for 70cm band), radio CI-V address, and serial port parameters. If you are using the same radio for both RX and TX, be sure to select the same radio, address, and port in both sections. If using FT4, it is recommended to use at least 19200 baud.

radio (default address)	address (used)	port, description
IC-9700 (A2)	A2	COM10

The IC-9700, by default uses CI-V port A2 and prefers these settings: 4800-115200 (min-max baud rate), 8 (data bits), One (stop bits), None (parity), and None (handshake)

Baud Rate	Data Bits	Stop Bits	Parity	Handshake
115200	<input checked="" type="radio"/> Eight	<input checked="" type="radio"/> One <input type="radio"/> Two	<input checked="" type="radio"/> None	<input checked="" type="radio"/> None

Step 4 - Click the Connect to the Radio(s) button.

Connect to the Radio(s) Disconnect from the Radio(s)

Rotator EA4TX Configuration via ARSVCOM Virtual COM-Port

Rotator Control Setup

Follow the steps below to select and test your serial device controlling a Yaesu or compatible digital controller (e.g. SPID in Yaesu GS-232 compatible mode).

Please email us if you have any questions, issues, or another brand supported: karhukoti@hotmail.com

Step 1 - Connect your serial device to the computer that is connected to your rotator.

Step 2 - Click the Refresh Serial Device List button to see the list of possible ports to use.

Refresh Serial Device List

None, None

COM10, virtual port user-specified (COM10)

COM19, virtual port user-specified (COM19)

FT232R USB UART (COM3), \\?\FTDIBUS#VID_0403+PID_6001+A506EOLA#0000#{86e0d1e0-8089-11d0-9ce4-08003e301f73}

HAM, \\?\VSBCE#DEVICES#0001#{86e0d1e0-8089-11d0-9ce4-08003e301f73}

If you are going to use an already existing virtual COM port or use the SerialPort API (old-Windows-style) instead of the SerialDevice API (new-Windows-10/11-style) for device communication (note: use this old-style API if you seem to be having handshake issues), specify the port(s) here so the port(s) shows-up in the subsequent port pull-downs:

COM19

Step 3 - Specify the com port connected to the rotator. The Yaesu GS232A uses 150 to 9600 baud. And, the Yaesu GS232B uses 1200 to 9600 baud.

Baud Rate	Port, Description
19200	COM19

Step 4 - Click the below buttons to connect to and disconnect from the rotator.

Connect to the Rotator Disconnect from the Rotator

device connection status

rotator baud etc. details

Step 5 - Choose your wanted azimuth and elevation test values.

Azimuth	Elevation
<input type="radio"/> 1°	<input type="radio"/> 0°
<input checked="" type="radio"/> 90°	<input checked="" type="radio"/> 45°
<input type="radio"/> 180°	<input type="radio"/> 90°
<input type="radio"/> 270°	
<input type="radio"/> 359°	

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

Satellite Tracking - IO-117 (GreenCube) (1 of 5)

Satellite	Latitude	Longitude	Azimuth	Elevation	Height (km)	Range (km)	Loss of Signal (LOS)	Keplerian Age
IO-117 (GreenCube)	15.6858° N	34.4145° W	243.1°	12.1°	5,847.9	9,179.6	01:10:13 (max el -57.0° @ az 323.9°)	2d,11h:56m:22s

IO-117 (GreenCube) Data:

ID	Call	Grid	Ele	LOS	S73	R73	Logd
1	IO-117 (GreenCube)			LOS 01:10:13	12.1		
2	XW-2A			LOS 00:06:23	2.5		
3	ISS (ZARYA)			AOS 00:46:53	-79.1		
4	JAS-2 (FO-29)			AOS 00:53:28	-68.7		
5	RS-44 & BREEZE-KM R			AOS 01:50:18	-1.7		

Greencube Terminal - by OZ9AAR (version 1.0.0.85) - [IO-117] - Searching ADIF file for grid/call

Time (UTC)	From	To	Message
09:48:07	E8AQD	E8BTL	RR-IL18T1
09:48:125	DH3OK	DL3SDE	JN48
09:48:126	N3CAL	CQ	FM18
09:48:31	EB1AO	HB9HCI	599 IN52
09:48:35	HB9RYZ	CQ	JN47GA
09:48:38	HB9RYZ	CQ	JN47GA
09:48:55	E83EA	HB9RYZ	599 JN01
09:48:56	E8AQD	DL3SDE	RR-IL18T1
09:48:59	HB9RYZ	E83EA	599 R73 IN LOTM
09:49:03	HB9RYZ	E83EA	599 R73 IN LOTM
09:49:113	IK3ITB	YQ9AQ	JN55
09:49:20	HB9RYZ	E83EA	599 R73 IN LOTM
09:49:23	HB9RYZ	E83EA	599 R73 IN LOTM
09:49:29	EB1AO	HB9HCI DL3SDE	599 IN52
09:49:42	HB9RYZ	E83EA	599 R73 IN LOTM
09:49:50	HB9RYZ	E83EA	599 R73 IN LOTM
09:49:54	HB9RYZ	E83EA	599 R73 IN LOTM
09:50:01	G8AB1	HB9HCI	J080
09:50:08	IK8YSS	CQ	JN76 GL
09:50:14	E8BTL	IK8YSS	UR 599 KN
09:50:22	N3CAL	DL3SDE G36WR1	FM18
09:50:23	IK8YSS	E8BTL	73 TNX ok LOTM
09:50:27	PD1MV	F8TY	J033
09:50:28	DL3JOP	N3CAL DL3SDE IK8YSS	J039
09:50:31	EB1AO	HB9HCI DL3SDE	599 IN52
09:50:38	N3CAL	DL3JOP	RR 73 TU
09:50:43	IW1FZR	CQ	JN45B3
09:50:44	E8AT	DL3SDE HB9HCI	UR 599 IN78X QSL?
09:50:47	IK8YSS	N3CAL	RR JN78 Logged?
09:50:48	E8AT	DL3SDE HB9HCI	UR 599 IN78X QSL?
09:50:52	DL3JOP	N3CAL	RR73 JN39
09:50:56	E8AQD	DL3SDE	RR-IL18T1
09:51:04	E8BTL	IK8YSS	UR 599 KN
09:51:05	G8AB1	CQ	J206
09:51:09	IK3ITB	CQ	JN55
09:51:13	IK8YSS	E8BTL	73 TNX ok LOTM
09:51:21	DL3JOP	IK8YSS DL3SDE	JN39

Station info - IO-117

**HB9RYZ
JN47GA**

**LOS: 01:10:07
243,3° 12,0°
Rng 9186 km R/T +3604/-3604**

Statistics

Unique callsigns:	13
My own TX:	6 (00:01:26)
My own RX:	3 (00:01:57)
My digipeat success:	50,0 %
My IC2:	1 (00:02:42)
Disapeated pkt. RX:	31
Telemetry pkt. RX:	4 (00:00:14)
GCTerminal users:	10 (77 %)
Average Signal Quality:	--
TLM RX RQ value:	--

Profile

f Δ Delay	TX (Hz)	10K	5K	1K	100	10	Dop Δ (Hz)	TX Tune (Hz)	RX (Hz)	10K	5K	1K	100	10	Dop Δ (Hz)	RX Tune (Hz)	Modulation
5	435,308,800						-3,605	435,305,195	435,308,800						3,605	435,312,405	GMSK 1200 baud

Überwachungs-Zentrale

TCP/IP: SAT-RASPI @ 244°

Program Remote Memory Options

315 45 90 120 150 180 210 225 270 315

243 244

180 90 60 30 0 30 60 90 120 150 180

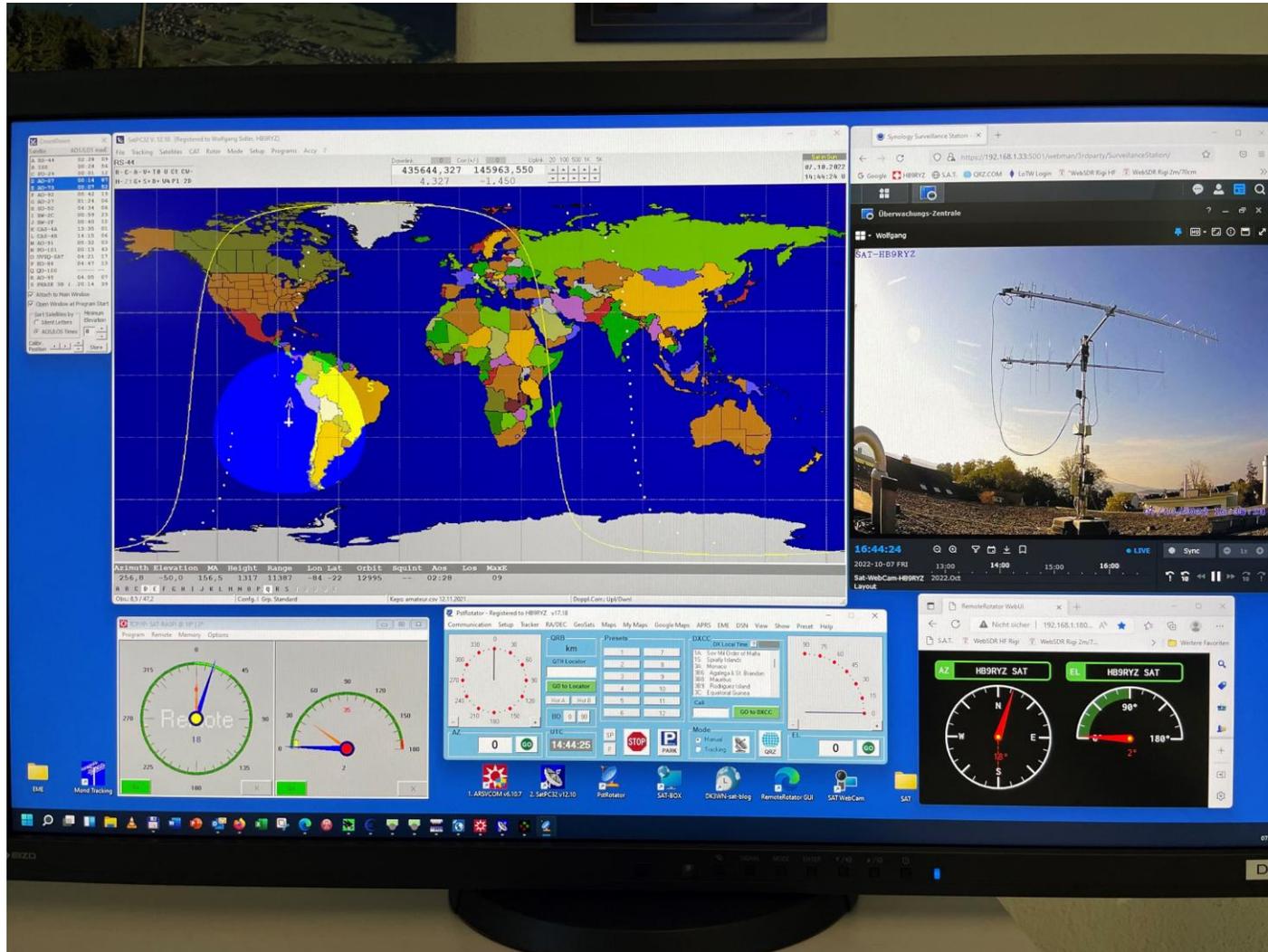
12 12

SATPC32 v12.10

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

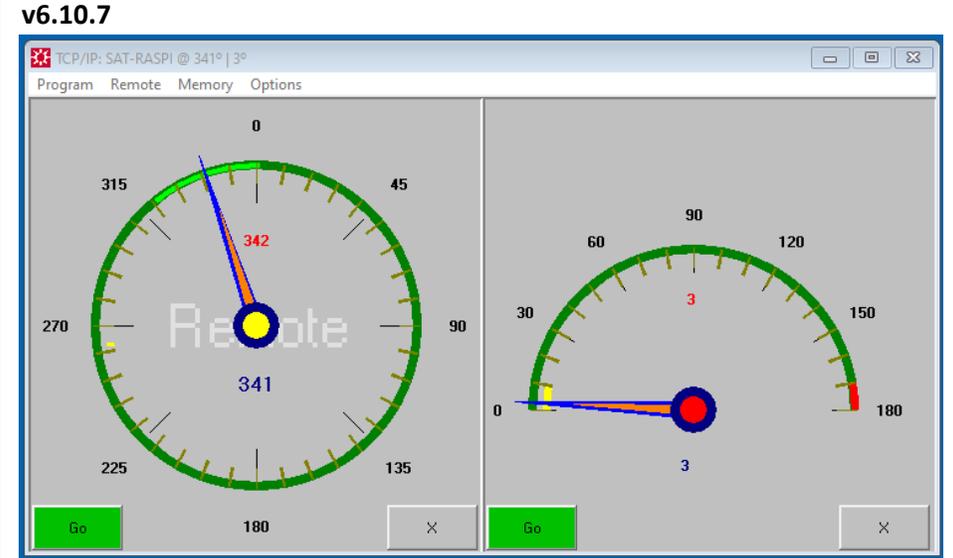
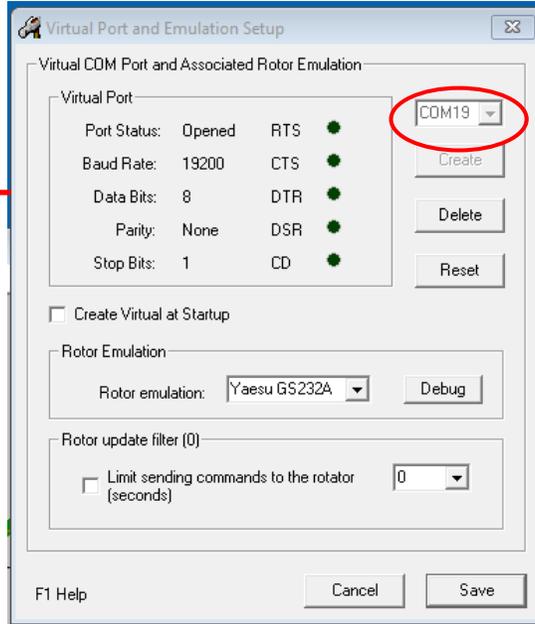
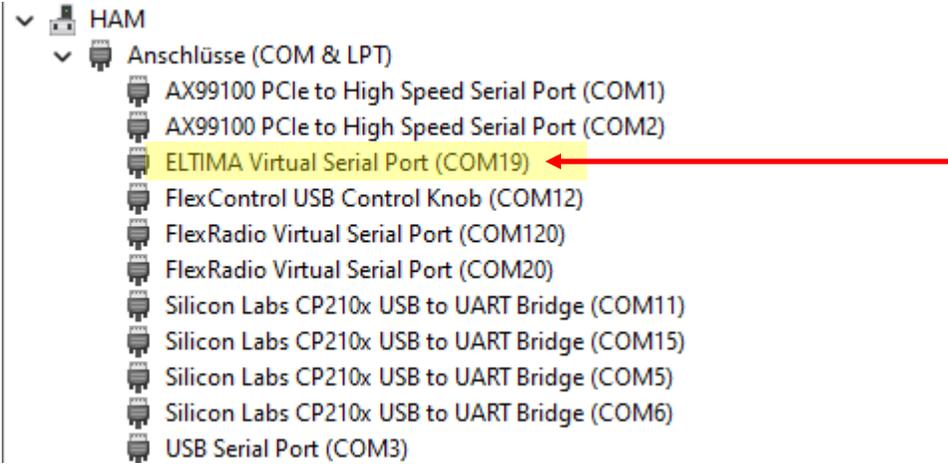
EA4TX ARS-USB Box: <https://ea4tx.com/en/tienda/antenna-rotator-system/ars-usb-ae/>
SATPC32 Software: <https://www.dk1tb.de/indexeng.htm>

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 controlled via the Virtual Serial Port COM 19 (ARSVCOM).



YAESU Controller

8-Pin DIN Cable



EA4TX ARS-USB BOX

USB

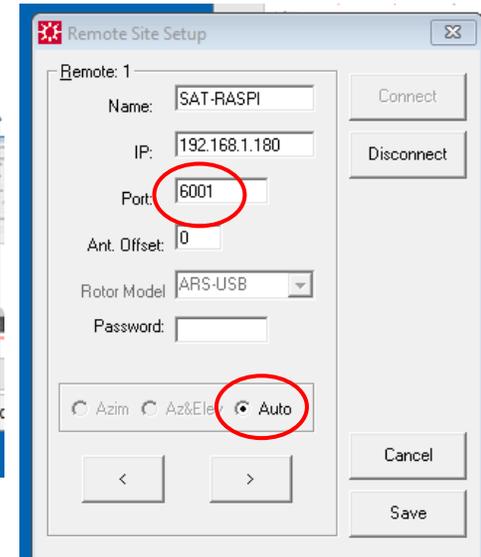
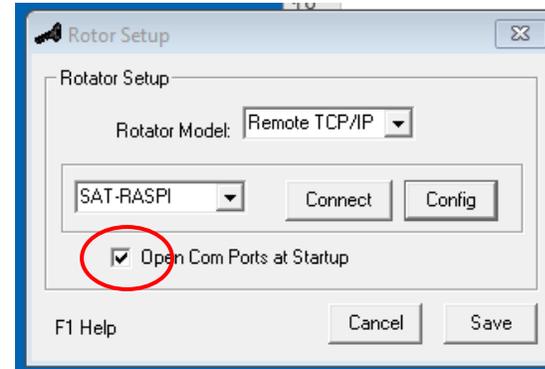


Raspberry Pi 3 with
EA4TX Software

192.168.1.180
Port: 6001

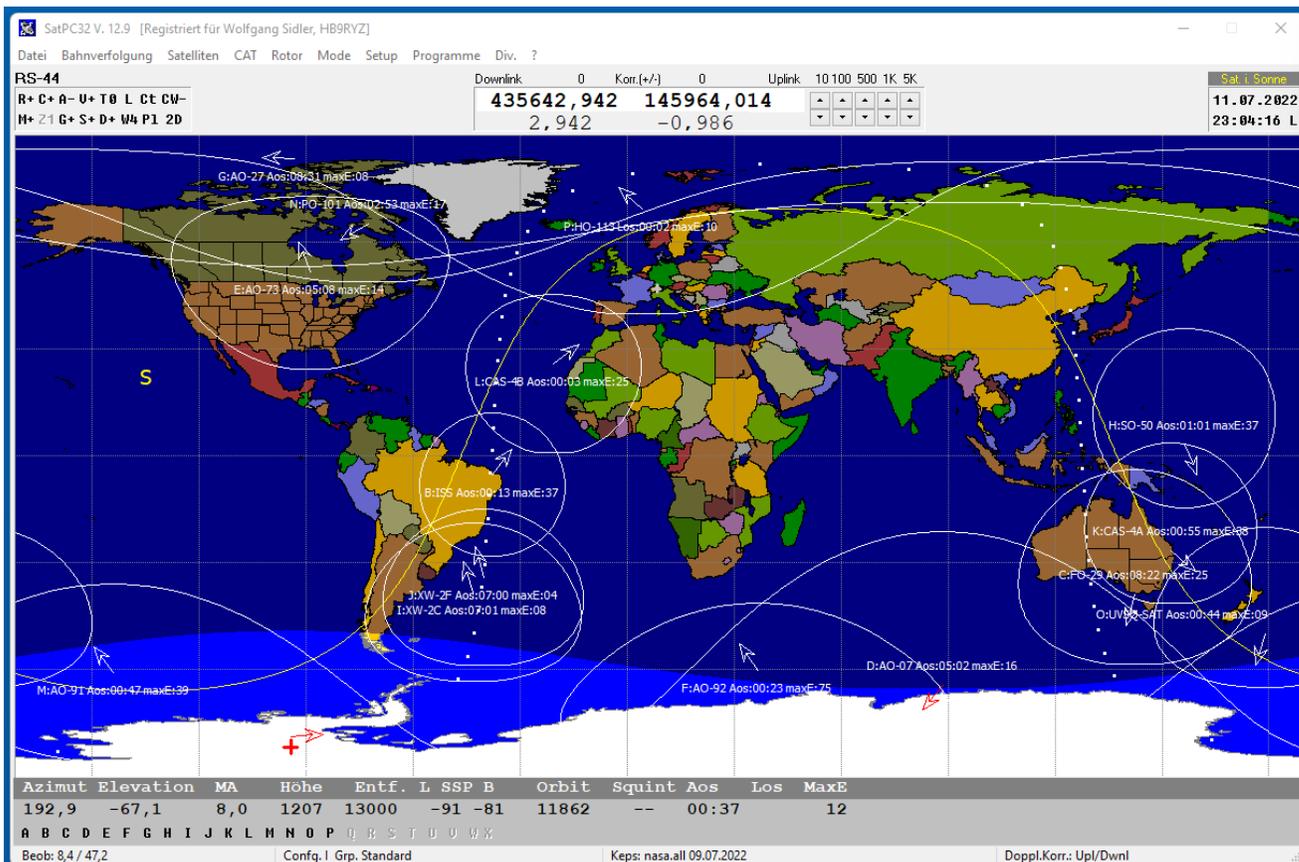
LAN

That's for the Raspberry Pi IP-Connection



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

SATPC32 v12.10



Beobachter-Setup

Höhe QTH ü. NN: 450

QTH-Locator: JN47FE

Geogr. Länge (-180..180): 8.426864

Geogr. Breite (-90..90): 47.172127

Zeitversatz zu UTC: auto

Datei-Maske f. Quellfiles: **

Hilfe Abbruch Speichern

Rotor-Setup

Hilfe zur Einrichtg. d. Rotorsteuerung finden Sie im Menü ?/Hinweise[Rotor]

Rotor-Interface/Controller: **Yaesu_GS-232** Durchsuchen

Weitere Einstellungen:

LPT (1 - 4, nur IF100, FODTrack, RifPC): 1

Verzögerg. (nur IF100, FODTrack, RifPC): 30

Wendemarke d. Azimut-Rotors (S or N): S

Mindest-Elevation: -3

Adresse des LPT-Ports: \$0378

Decimals of Azimuth/Elevation Values (0,1,2): 1 Speichern

Optionale Einstellungen:

Rotornachführg. anhand:

- Zeitabständen
- Winkeländerung

Max. Elevation:

- 90 Grad
- 180 Grad

Azimut-Rotor:

- 360 Grad
- 450 Grad

Intervall f. Rotor (Sek.): 10 Mindeständerung (Grad): 3 Optionale Einstellungen

hor. Nachführwinkel:

- konstant
- gewinnbezogen

OK Speichern

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

ServerSDX

Zielpos. Aktuelle Pos.

Azimuth: 347 346

Elevation: 021 021

(C) DK1TB 2017

Buttons: Symbol, man.Input, Setup, Pos. lesen, Hilfe, Beenden

Setup

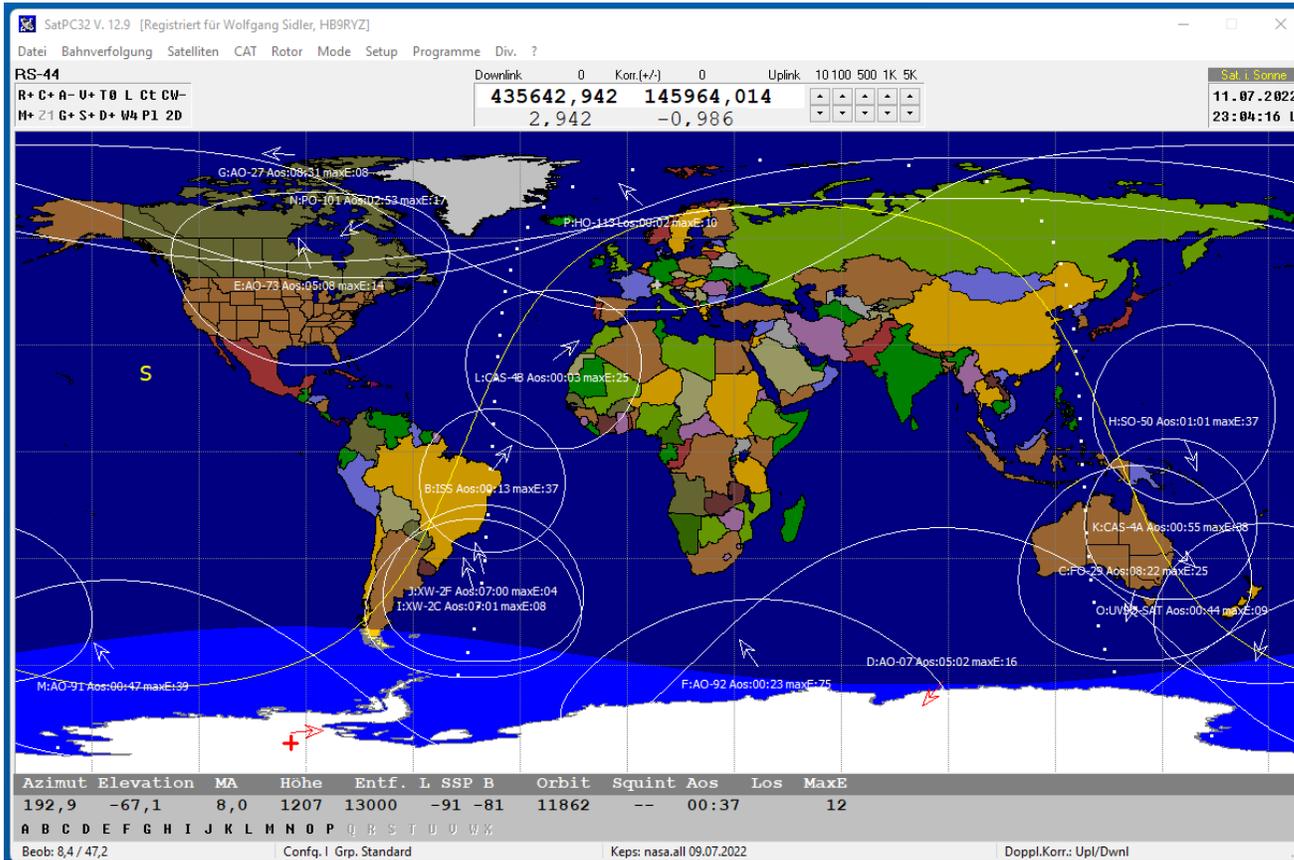
COM Port: 19 Baudrate: 19200

Rotor(s): Az./El. nur Az.

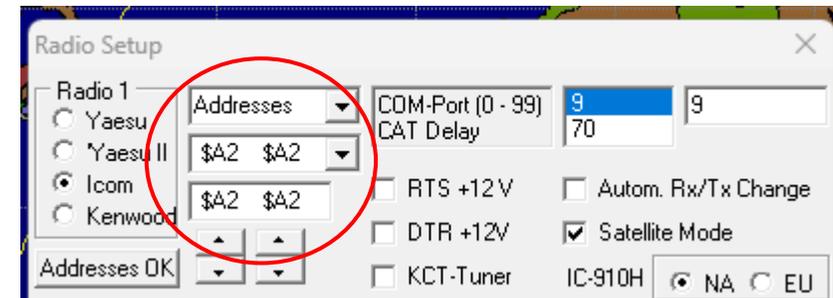
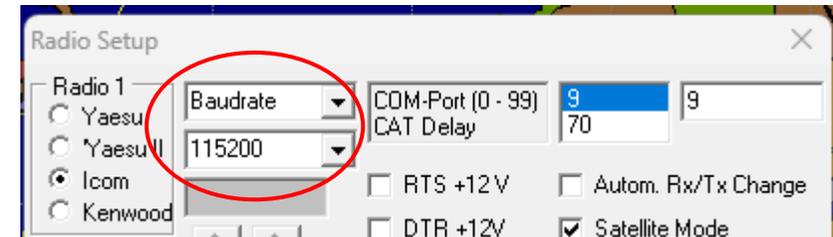
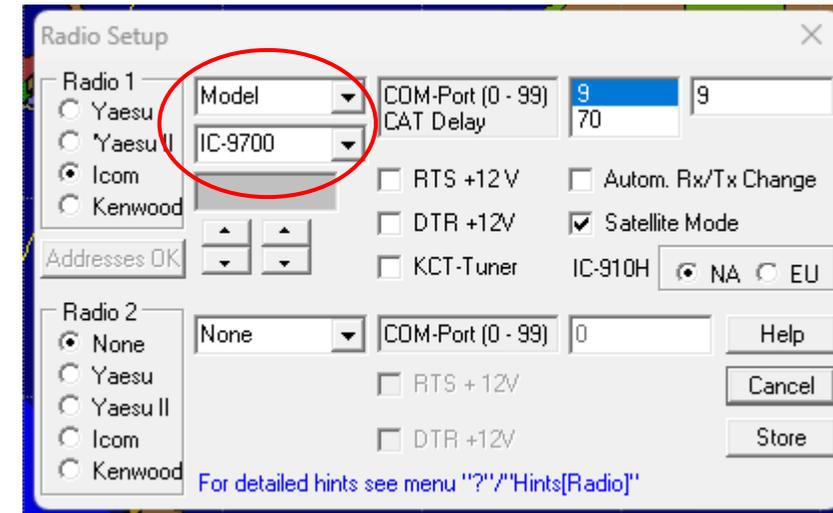
Buttons: Abbruch, Speichern

SATPC32 Setup with ICOM IC-9700

SATPC32 v12.10

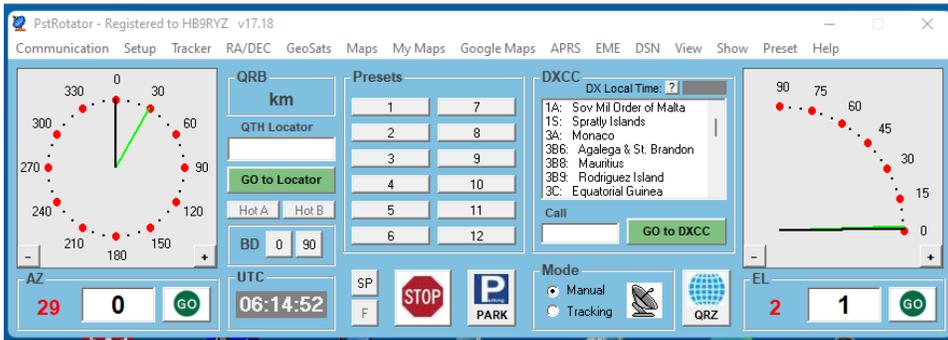


Setup – Radio Setup



PSTRotator Setup

PSTRotator



Communications

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

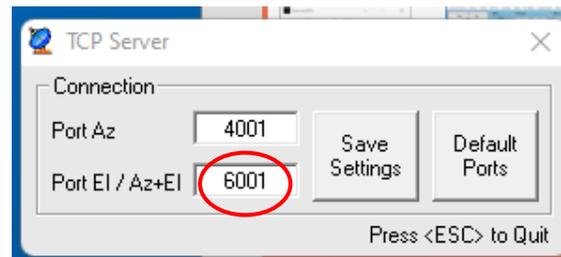
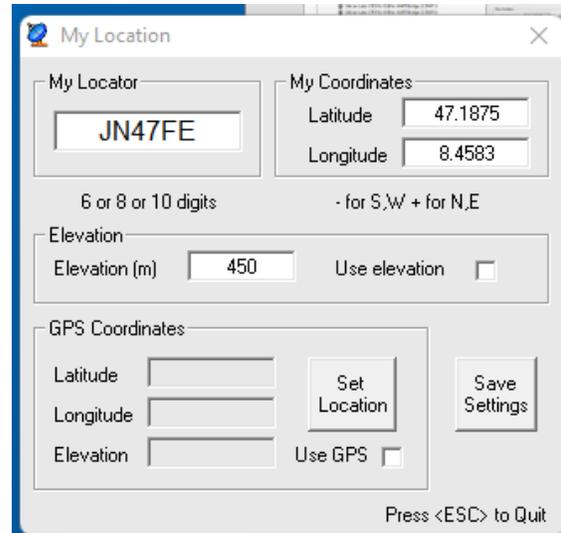
Setup

Start as TCP Client

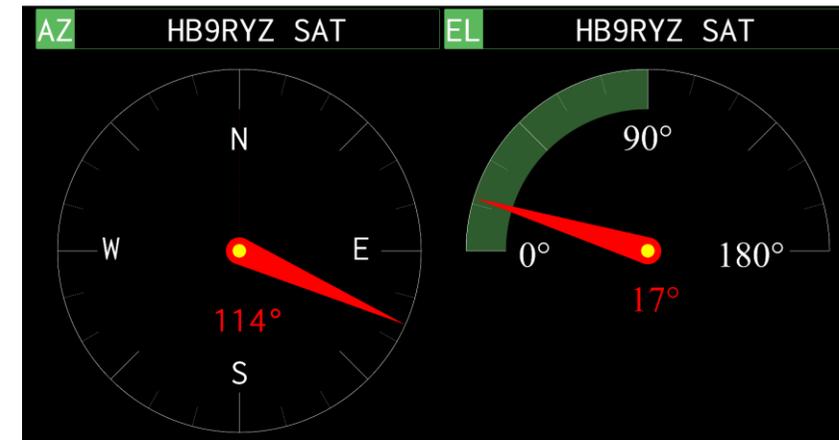
Tracker

SAT = SatPC32 / SatPC32ISS

My Location



RemoteRotator Web-GUI from DH1TW running on a Raspberry Pi



<http://192.168.1.180:7071/>

GreenCube (IO-117) MEO Satellite Setup mit SatPC32ISS

SatPC32ISS V. 12.10

File Tracking Satellites CAT Rotor Mode Options Programs Info ?

A: IO-117

Downlink Corr.(+/-) 0 Uplink 20 100 500 1K 5K **Sat in Sun**

435305,807 435311,653 **10.01.2024**

-2.923 2.923 **18:50:57 L**

Azimuth	Elevation	MA	Height	Range	L	SSP	B	Orbit	Squint	Aos	Los
116,6	36,1	5,9	5836	7317	38	30	3508	--	*****	19:12	

Group :Standard Obs.: 8,4 / 47,2 Keps: nasabare.txt 04.01.2024 Doppl.Corr.: Upl/Dwnl

Satellites

Qell-Files: Verfügbar: 166 Selected: [Standard]

amateur.csv Aalto 1 * A IO-117

amateur.txt AAUSAT2 * B LEDSAT

amateur.xml AISat 1

cubesat.txt AISatTechSat 3

geo.txt AmicalSat

intelsat.txt AO-07

nasa.all AO-109

nasabare.txt AO-16

noaa.txt AO-27

OrbsManu (1).ele AO-73

OrbsManu.ele AO-91

tle-new.txt AO-92

Path: C:\Users\User\AppData\Roaming\SatPC32\Kepler\

Filedate: 04.01.2024 13:13 Fenster +/- **Update Keps**

CAT Tuning

Man. Input. (KHz): Interval (Hz) Correction (Hz) Frequencies

Rx: 50 **435308,73/435308,73 USB-D/USB-D**

Tx: 10 100 1000 10 100 1000

OK Store Interval Continue

Valid frequencies: 144000 - 146000, 430000 - 440000, 1260000 - 1300000

GreenCube (IO-117) MEO Satellite Setup mit SatPC32ISS

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

SatPC32ISS V. 12.10

File Tracking Satellites CAT Rotor Mode Options Programs Info ?

A: IO-117

Downlink: 435311,488 435305,972 Uplink: 20 100 500 1K 5K

Corr(+/-): 0 20.04.2023 13:31:02 L

2.758 -2.758

256,4 34,4 139,4 5857 7444 333 34 1804 -- ***** 14:29

Group: Standard Obs: 8,4 / 47,2 Keps: nasabere.txt 12.02.2023 Doppl.Corr: Upl/Dwnl

SoundModem by UZTHO - Ver 0.07b - [GreenCube 1200bd]

Settings View Clear monitor Calibration About

A: [GreenCube 1200bd] [1688] DCD threshold Hold pointers

[priority:2 src:1 src_port:50 dest:9 dest_port:29 len:46 RS_err:0]
62 97 72 00 1D 03 48 39 44 50 3E 4D 40 31 44 44 44 2F 50 2C 20 47 72 65 65 6E 43 75 62 65 2C 20 53 54 4F 52 45 3D 30 20 37 33 20 54 55 0A

1: [GREENCUBE] [13:30:44R]
[priority:2 src:1 src_port:27 dest:9 dest_port:29 len:56 RS_err:0]
62 97 58 00 1D 03 45 41 36 54 43 3E 43 51 2C 20 47 72 65 65 6E 43 75 62 65 2C 20 53 54 4F 52 45 3D 30 20 43 51 20 43 51 20 66 72 6F 6D 20 4A 4D 31 39 6A 6E 2E 2E 2E 0A

1: [GREENCUBE] [13:30:54R]
[priority:2 src:1 src_port:55 dest:9 dest_port:29 len:42 RS_err:0]
62 97 77 00 1D 03 40 4D 31 44 44 44 2F 50 3E 43 51 2C 20 47 72 65 65 6E 43 75 62 65 2C 20 53 54 4F 52 45 3D 30 20 49 4F 36 36

1: [GREENCUBE] [13:30:54R]
[priority:2 src:1 src_port:56 dest:9 dest_port:29 len:47 RS_err:0]
62 97 78 00 1D 03 48 4F 34 4D 41 3E 47 4A 36 57 52 45 2C 20 47 72 65 65 6E 43 75 62 65 2C 20 53 54 4F 52 45 3D 31 20 52 52 52 20 45 4C 38 38

1: [GREENCUBE] [13:30:59R]
[priority:2 src:1 src_port:57 dest:9 dest_port:29 len:48 RS_err:0]
62 97 58 00 1D 03 45 37 30 57 3E 47 4A 36 57 52 45 2C 20 47 72 65 65 6E 43 75 62 65 2C 20 53 54 4F 52 45 3D 30 20 35 39 39 20 4A 4E 39 34 69 6D

1: [GREENCUBE] [13:31:00R]
[priority:2 src:1 src_port:32 dest:9 dest_port:29 len:55 RS_err:0]
62 97 60 00 1D 03 45 41 31 44 48 3E 57 39 53 56 2C 20 47 72 65 65 6E 43 75 62 65 2C 20 53 54 4F 52 45 3D 30 20 48 49 20 35 39 39 20 49 4E 38 33 42 4C 20 51 53 4C 3F

MyCall	DestCall	Status	Sent pkts	Sent bytes	Rcvd pkts	Rcvd bytes	Rcvd FC	CPS TX	CPS RX	Direction

Greencube Terminal - by OZ9AAK (version 1.0.0.41) - Searching ADIF file for grid/call

Settings Logfile About..

Shortcuts: F1: CQ F2: 599 +73 F3: 599 F4: QRT

Statistics: Unique callsigns: 28 My own TX: 9 (00:05:04) My own RX: 3 (00:05:00) My digipeat success: 33.3% My digipeat: 3 (00:05:00) Digipeated pkt RX: 193 Telemetry pkt RX: 20

Station info: **HB9RYZ** **JN47FE** **LN: 00:57:26** Az: 256,4° El: 34,3°

Send message: To ALL TX Delay 0 F11: Send Message

MSG: CQ JN47FE

Clear traffic Edit COSI Edit Ignore Scroll to last line Show list of stations that called me Clear lists

Time (UTC)	From	To	Message	Delay
11:26:29	EAGTC	CQ	CQ CQ from J...	0
11:26:36	SP6IQW	EI5IN	599 308BHK	0
11:26:37	W9SV	EA4T	QSL! RRR 73 ...	0
11:26:42	GW8POA	SP6IQW	RR QSL 73'S	0
11:26:45	KB2M	CQ	EL99 73	5
11:26:46	LB2TG	W9SV	599 3P33 QSL?	0
11:26:50	SP6IQW	GW8POA	TNX es vy 73...	0
11:26:55	K04NA	G36WRI	EL88, QSL?	1
11:26:56	OZ9AAR	CQ	3045	0
11:26:59	MW1DDO/P	KB2M	IO66	0
11:27:01	SP6IQW	GW8POA	TNX es vy 73...	0
11:27:04	W9SV	EA4T	QSL! RRR 73 ...	0
11:27:05	G36WRI	K04NA	599 IN83VF QSL?	0
11:27:12	K04NA	G36WRI	RRR EL88	1
11:27:13	E76W	CQ	JN94	0
11:27:14	SP6IQW	GW8POA	TNX es vy 73...	0
11:27:18	OZ9AAR	CQ	3045	0
11:27:23	LB2TG	W9SV	599 3P33 QSL?	0
11:27:24	W2G0J	MW1DDO/P	FN32 New Yor...	2
11:27:30	MW1DDO/P	KB2M	IO66	0
11:27:40	MW1DDO/P	W2G0J	R LotM TU	0
11:27:48	W2G0J	MW1DDO/P	RR QSL Logge...	2
11:27:49	W9SV	CQ	EN52 HI USA	0
11:27:53	DL2GRC	W9SV	JN48	0
11:27:57	SP6IQW	GW8POA	TNX es vy 73...	0
11:27:58	SP6IQW	GW8POA	TNX es vy 73...	0
11:28:01	OZ9AAR	CQ	3045	0
11:28:04	MW1DDO/P	KB2M	IO66	0
11:28:11	EA4T	KB2M	MW1DDO PUT L...	0
11:28:17	EA4T	MW1DDO/P	MW1DDO PUT L...	0
11:28:22	EA4T	MW1DDO/P	MW1DDO PUT L...	0
11:28:23	LB2TG	W9SV	599 3P33 QSL?	0
11:28:33	EA4T	MW1DDO/P	MW1DDO PUT L...	0
11:28:34	G36WRI	ALL	CQ IN83VF	0
11:28:38	EAGTC	CQ	CQ CQ from J...	0
11:28:44	EAGTC	G36WRI	UR 599 from ...	0
11:28:50	K04NA	G36WRI	RRR EL88	1
11:28:51	E76W	G36WRI	599 JN94in	0
11:28:57	SP6IQW	GW8POA	TNX es vy 73...	0
11:29:01	MW1DDO/P	EA4T	LOC ES SW W...	0
11:29:02	EA3TA	MW1DDO/P	599 JN11bm QSL?	0
11:29:03	KB2M	MW1DDO/P	RR EL99 73	5
11:29:09	EAGTC	G36WRI	UR 599 from ...	0
11:29:13	MW1DDO/P	KB2M	R73 TU IO66 ...	0
11:29:18	DL2GRC	W9SV	JN48	0
11:29:22	MW1DDO/P	EA3TA	R LotM IO66 TU	0
11:29:28	EA13K	W9SV	HI 599 IN83B...	0
11:29:29	EA3TA	MW1DDO/P	RR TNX 73 LotW	0
11:29:36	MW1DDO/P	EA3TA	R73 TU IO66 ...	0
11:29:40	MW1DDO/P	EN62	EN62	0
11:29:41	GW8POA	CQ	IO810H	0
11:29:46	G36WRI	EAGTC	TU 73	0
11:29:47	MW1DDO/P	KB2M	R LotM IO66 TU	0
11:29:52	EAGTC	G36WRI	TNX QSO... 30...	0
11:29:55	W2G0J	CQ	FN32 New York	2
11:30:00	K8DP	MW1DDO/P	73 TU	0
11:30:04	EAGTC	G36WRI	TNX QSO... 30...	0
11:30:05	EA3TA	CQ	JN11bm	0
11:30:10	EA13K	W9SV	HI 599 IN83B...	0
11:30:11	N9ZTS	G36WRI	EN62 QSL?	0
11:30:14	MW1DDO/P	KB2M	R73 TU IO66 ...	0
11:30:18	EA4T	MW1DDO/P	MW1DDO NO, P...	0
11:30:25	N9ZTS	G36WRI	EN62 QSL?	0
11:30:28	EAGTC	CQ	CQ CQ from J...	0
11:30:33	MW1DDO/P	EA4T	R LotM IO66 TU	0
11:30:37	K8DP	MW1DDO/P	73 TU	0
11:30:44	EAGTC	CQ	CQ CQ from J...	0
11:30:54	MW1DDO/P	CQ	IO66	0
11:30:54	K04NA	G36WRI	RRR EL88	1
11:30:59	E76W	G36WRI	599 JN94in	0
11:31:00	EA13K	W9SV	HI 599 IN83B...	0

Call	Grid	Ele	LOS
EA13K	IN83	00:04	3
E70W	JN94	00:05	1
K04NA	EL88	00:10	0
MM1DDO/P	IO66	00:10	7
EAGTC	JM19	00:20	5
K8DP	EN62	00:27	0
N9ZTS	EN62	00:39	0
EA4T	IN70	00:46	5
EA3TA	JN11	00:59	1
W2G0J	FN32	01:09	1
G36WRI	IN89	01:18	2
GW8POA	IO81	01:23	2
DL2GRC	JN48	01:46	2
KB2M	EL99	02:01	1
SP6IQW	JQ80	02:07	3
LB2TG	JP33	02:41	0
OZ9AAR	JO45	03:03	3
W9SV	EN52	03:15	2
EI5IN	IO63	05:14	0
IW7DOL	JN90	05:46	1
KE8RJU	-	06:52	0
IK3ITB	JN55	08:08	1
EA8BGO	IL28	11:10	0
LU4FTA	FF96	12:14	0
LU3FCA	FF96	13:00	1
GDIQJ	IO93	13:38	0
DL5GAC	JN47	14:47	2
EA8TL	IL18	17:40	1

Call Grid T.Since #CQ Ele

Normal To me CQ My TX Dupe Grid Initial COSI

Digipeater is ON Soundmodem connected TCP Log disconnected ALog disconnected UTC 20.04.23 11:31:03 UTC

GreenCube (IO-117) MEO Satellite Setup mit Log4OM

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

Qso Date	Callign	Band	Mode	Dxcc	Country	Name	Freq	Rst Sent	Rst Rcvd	Station Callign	Address
20.04.2023 11:24:31	MM1DDD/P	70cm	PKT	279	Scotland	Janusz Wegrzyn	435310,000	599	599	HB9RYZ	Rarotonga South
20.04.2023 08:35:45	ES1WEG	12m	USB	234	South Cook Is.	Janusz Wegrzyn	24937,000	57	57	HB9RYZ	Rarotonga South
19.04.2023 21:14:13	N9ZTS	70cm	PKT	291	United States	Justin C Sours	435310,000	599	599	HB9RYZ	3885 Anvil Dr Tro
19.04.2023 21:11:48	K1DKB	70cm	PKT	291	United States	Jeffrey C Schwartz	435310,000	599	599	HB9RYZ	3737 West O St I
19.04.2023 14:20:00	T88AQ	10m	FT8	22	Palau	Kazuyoshi Yoshinaga	28091,626	-08	+00	HB9RYZ	4-4-32, Yurigaoka,
19.04.2023 14:12:19	N8RO	70cm	PKT	291	United States	Ronald G Oldham	435310,000	599	599	HB9RYZ	301 Majestic Rdg
19.04.2023 14:12:16	W3UTD	70cm	PKT	291	United States	Fraser Bonnett	435310,000	599	599	HB9RYZ	2340 Abbey Lane
19.04.2023 14:12:00	XE2YWH	70cm	PKT	50	Mexico	Jose Antonio Ceja ...	435310,000	599	599	HB9RYZ	Primo Verdad # 1
19.04.2023 14:11:53	KQ4DO	70cm	PKT	291	United States	Jean Pierre Plessis	435310,000	599	599	HB9RYZ	1105 Blackthorn F
19.04.2023 14:11:41	VE6WQ	70cm	PKT	1	Canada	Joel H Weiner	435310,000	599	599	HB9RYZ	41 Fairway Drive E
19.04.2023 14:11:34	UVVSM	70cm	PKT	288	Ukraine	Andri Yanulyavichus	435310,000	599	599	HB9RYZ	76026 Ukraine
19.04.2023 14:10:10	K9UD	70cm	PKT	291	United States	Robert E Sours	435310,000	599	599	HB9RYZ	2949 S Us Highw
19.04.2023 13:59:56	IZ4UFB	70cm	PKT	248	Italy	Mauro Cavedagna	435310,000	599	599	HB9RYZ	Via Rondinell, 14
19.04.2023 13:59:46	IZ4UFB	70cm	PKT	248	Italy	Mauro Cavedagna	435310,000	599	599	HB9RYZ	Via Rondinell, 14
19.04.2023 12:29:00	VU7W	17m	FT8	142	Lakshadweep Is.	Yuris Petersons	18107,447	-10	-08	HB9RYZ	&Nbsp; India
18.04.2023 09:05:00	ES1CIK	20m	FT8	234	South Cook Is.	Leszek Przybylak	14092,424	-15	-04	HB9RYZ	Rarotonga South
18.04.2023 06:22:00	ES1WEG	17m	SSB	234	South Cook Is.	Janusz Wegrzyn	18137,000	59	59	HB9RYZ	Rarotonga South
18.04.2023 05:41:00	VU7W	15m	FT8	142	Lakshadweep Is.	Yuris Petersons	21077,575	-14	-10	HB9RYZ	&Nbsp; India
17.04.2023 20:46:00	ES1CIK	15m	FT8	234	South Cook Is.	Leszek Przybylak	21092,687	-16	-06	HB9RYZ	Rarotonga South
17.04.2023 19:53:00	4U1UN	17m	FT8	289	United Nations HQ	United Nations Am...	18095,396	+02	+06	HB9RYZ	United Nations He
17.04.2023 14:29:00	VU7W	20m	FT8	142	Lakshadweep Is.	Yuris Petersons	14083,457	-14	-10	HB9RYZ	&Nbsp; India
17.04.2023 07:21:45	VU7W	17m	FT8	147	Lakshadweep Is.	Yuris Petersons	74973,754	-05	-06	HB9RYZ	&Nbsp; India

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



IO-117 Settings

Greencube MEO Satellite

Soundmodem: <https://uz7.ho.ua/packetradio.htm>

Terminal OZ9AAR: <https://moonbounce.dk/hamradio/greencube-terminal-program.html>

GreenCube (IO-117) MEO Satellite Setup

SatPC32ISS V. 12.10

File Tracking Satellites CAT Rotor Mode Options Programs Info ?

A: IO-117

R+ C+ W- U- CW- P1

H- Z1 G- S+ D+ W3

Downlink: 435307,910 435309,550

Cor.(+/-) 0

Uplink: 20 100 500 1K 5K

12.05.2024 12:53:18 L

Group: Standard

Obs.: 84 / 472

Kepts: nasa.all 09.05.2024

Doppl.Corr.: Upl/Dwnl

GreenCube Terminal - by OZ9AAR (version 1.0.0.90) - [IO-117] - Searching ADIF file for grid/call

Settings Functions About...

Shortcuts: F1: CQ F2: 73 F4: QRT

Statistics: Unique callsigns: 0, My own TX: 0, My own RX: 0, My digipeat success: 0, My #CQ: 0, Digipeated pkt. RX: 0, Telemetry pkt. RX: 0, GCTerminal users: 0, Average Signal Quality: TLM RX RQ value: --

Station info - IO-117

HB9RYZ
JN47GA

AOS: 01:35:25
129,5° -68,0°
Rng 17901 km R/T -826/+826

Time (UTC)	From	To	Message	Delay

Call	Grid	Ele	LOS	S73	R73	Logd

Call	Grid	T.Since	#CQ/TX	Ele	State	UHM/LoTW

Normal To me CQ My TX My DDP EA1KE (EA - Spain - CONT-EU CQ:14 ITU:37 Local time: 10:44 +/- DST) Dupe Grid Initial COSI

Digipeater is ON Soundmodem con. TCP Log disc. ALog dis. New Version Available (.90) Download Today! UTC 12.05.24 10:53:18 UTC

Synology Surveillance Station

https://192.168.1.33:5001/web

Überwachungs-Zentrale

SAT HB9RYZ

TCP/IP: SAT-RASPI @ 175° | 3°

Program Remote Memory Options

Map showing satellite path over Europe.

Gauge showing a value of 3.

SoundModem by UZ7HO - Ver 0.10b - [GreenCube 1200bd]

Settings View Clear monitor Calibration About

A: GreenCube 1200bd | 1887 | DCD threshold

[priority:2 src:1 src_port:51 dest:9 dest_port:29 len:56 RS_err:9] 82 97 73 00 1D 03 45 41 31 48 45 3E 49 43 38 54 45 4D 2C 20 47 72 65 65 6E 43 75 62 65 2C 20 53 54 4F 52 45 30 30 20 35 39 39 20 49 4E 36 33 58 4E 20 20 51 53 4C 3F 3F

1: [GREENCUBE] [11:42:30R]
[priority:2 src:1 src_port:53 dest:9 dest_port:29 len:54 RS_err:11] 82 97 75 00 1D 03 44 4A 38 4D 53 3E 44 48 38 59 53 20 49 43 38 54 45 4D 2C 20 47 72 65 65 6E 43 75 62 65 2C 20 53 54 4F 52 45 30 30 20 35 39 39 20 4A 4F 35 34 0A

1: [GREENCUBE] [11:43:33R]
[priority:2 src:1 src_port:44 dest:9 dest_port:29 len:56 RS_err:14] 82 97 6C 00 1D 03 45 41 31 48 45 3E 49 45 34 55 46 42 2C 20 47 72 65 65 6E 43 75 62 65 2C 20 53 54 4F 52 45 30 30 20 35 39 39 20 49 4E 36 33 58 4E 20 20 51 53 4C 3F 3F

1: [GREENCUBE] [11:43:50R]
[priority:2 src:1 src_port:52 dest:9 dest_port:29 len:41 RS_err:13] 82 97 74 00 1D 03 49 5A 36 4A 50 48 3E 43 51 2C 20 47 72 65 65 6E 43 75 62 65 2C 20 53 54 4F 52 45 30 30 20 4A 4E 36 33 0A

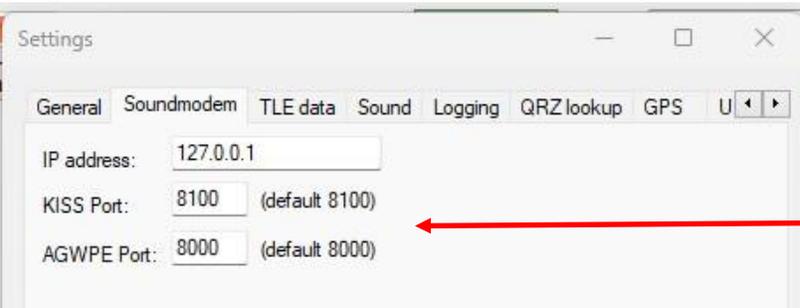
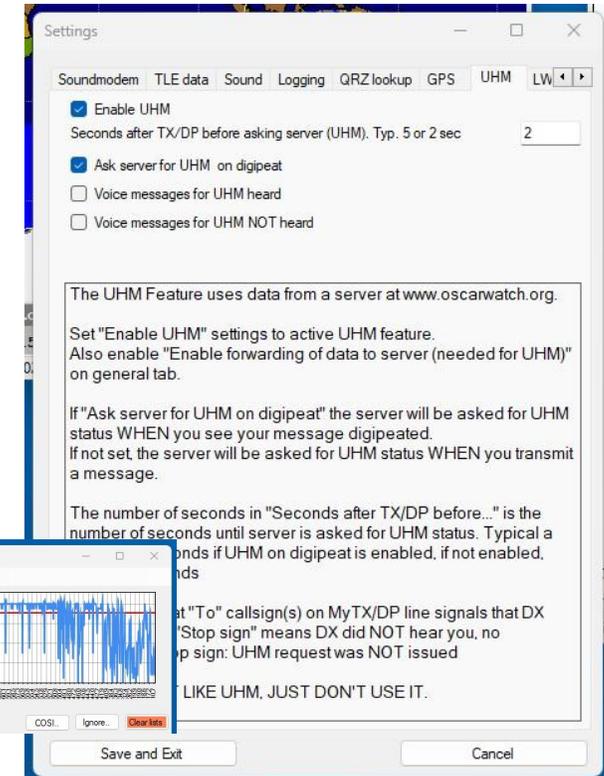
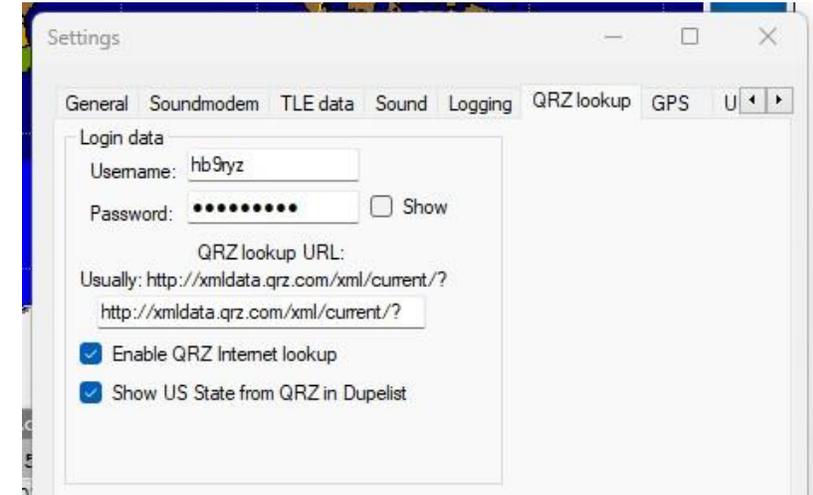
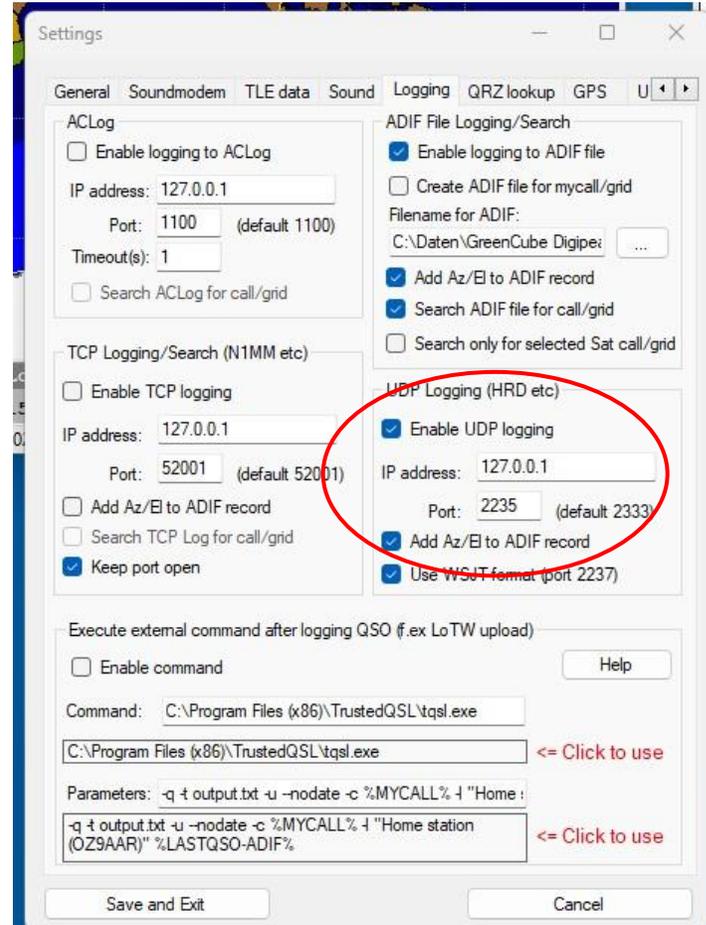
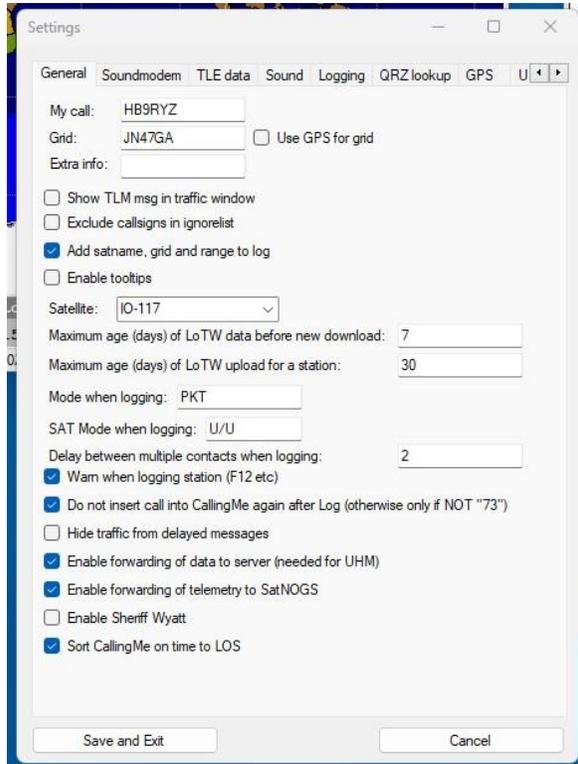
1: [GREENCUBE] [11:44:10R]
[priority:2 src:1 src_port:58 dest:9 dest_port:29 len:50 RS_err:13] 82 97 7A 00 1D 03 45 41 31 48 45 3E 49 43 38 54 45 4D 2C 20 47 72 65 65 6E 43 75 62 65 2C 20 53 54 4F 52 45 30 30 20 52 37 33 20 54 55 20 4C 4F 54 57

Waterfall plot showing signal activity over time.

GreenCube (IO-117) MEO Satellite Setup

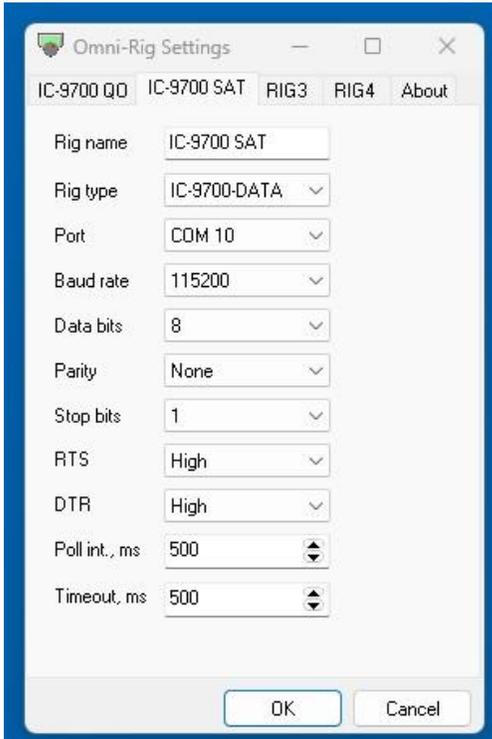
GreenCube Application from OZ9AAK:

<https://moonbounce.dk/hamradio/greencube-terminal-program.html>

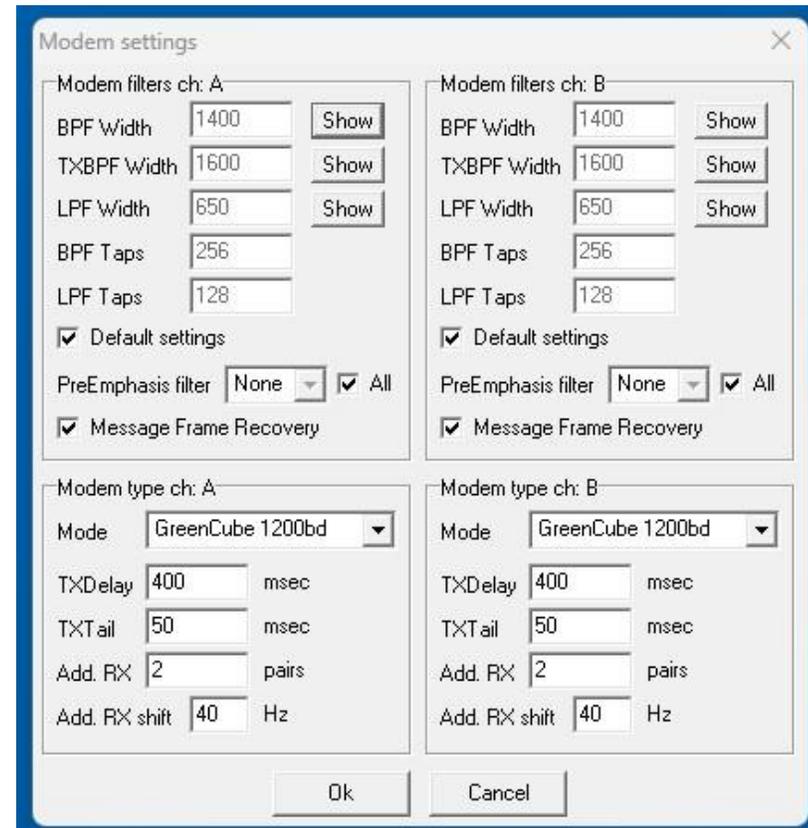
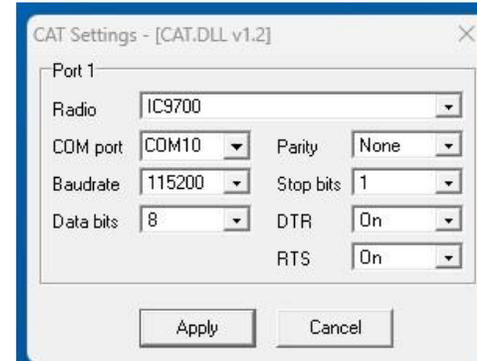
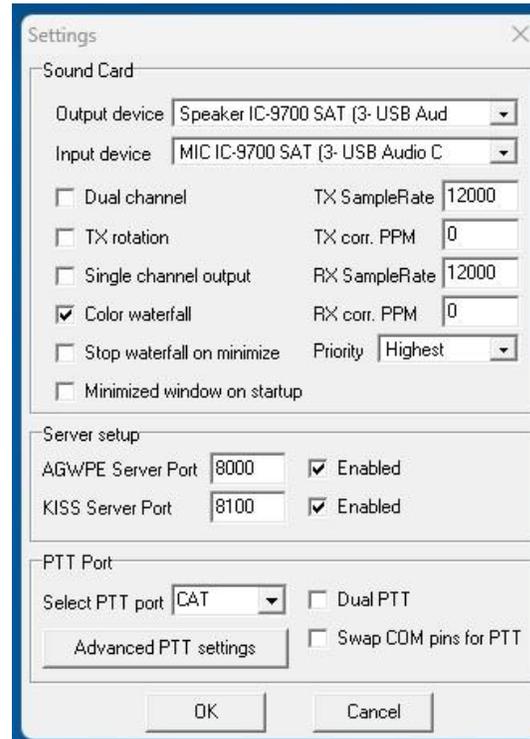


GreenCube (IO-117) MEO Satellite Setup

Omnirig



Soundmodem



Log4OM

