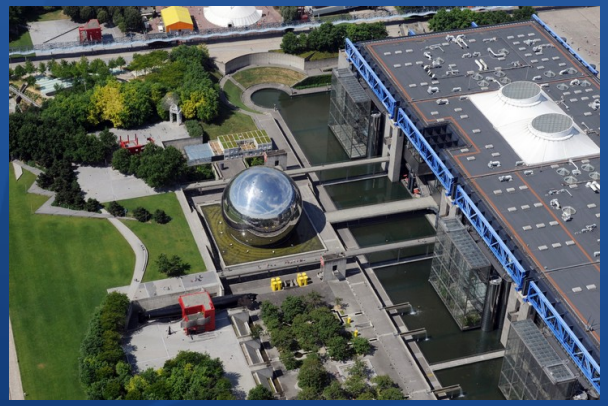


Signaux faibles niveaux en télécommunications spatiales

Bernard Pidoux, F6BVP

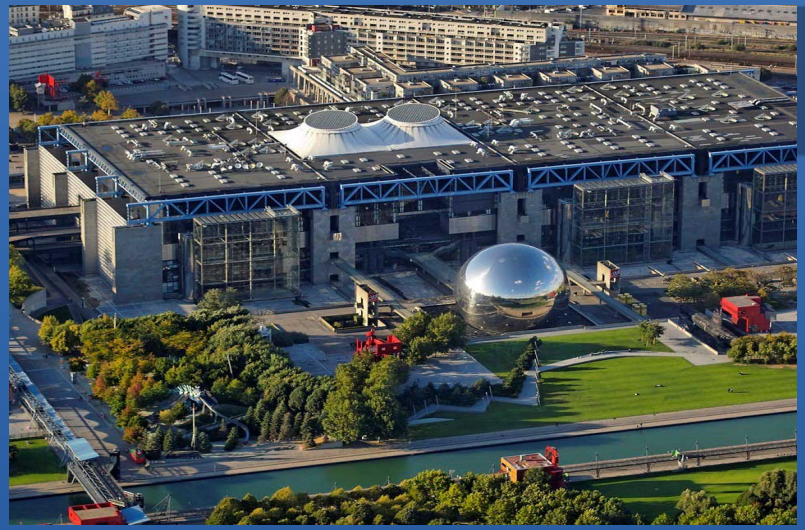
Association Dimension Parabole

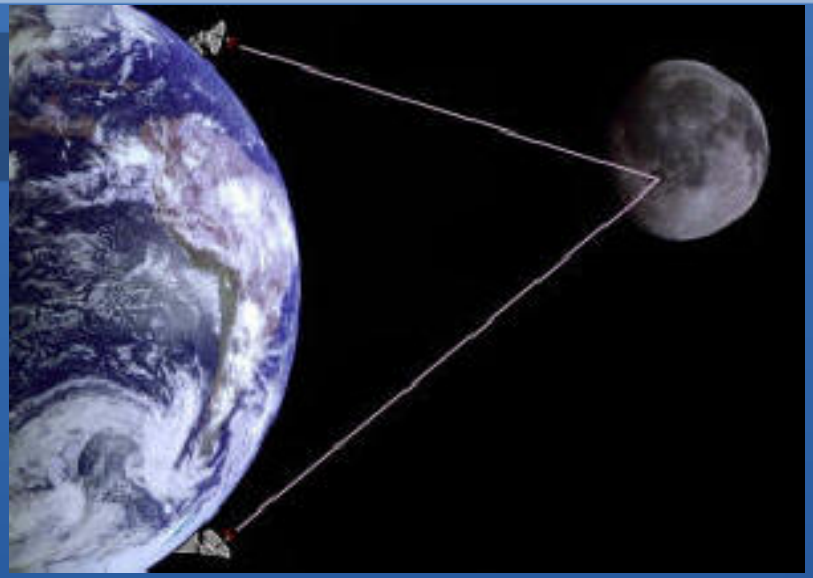
en hommage à :

Christian Paillart, secrétaire commission radioastronomie SAF

François Biraud, OBSPM-Nançay, installation du radiotélescope en 1986

Jean-Jacques Maintoux, radioastronome amateur, radioamateur F1EHN





Histoire des télécommunications (amateurs) :

- améliorer l'efficacité sans augmenter la puissance

avec nouveaux types de modulation (exemple AM→BLU)
et codages (parité, codes auto correcteurs...)

Numérisation → progrès +++

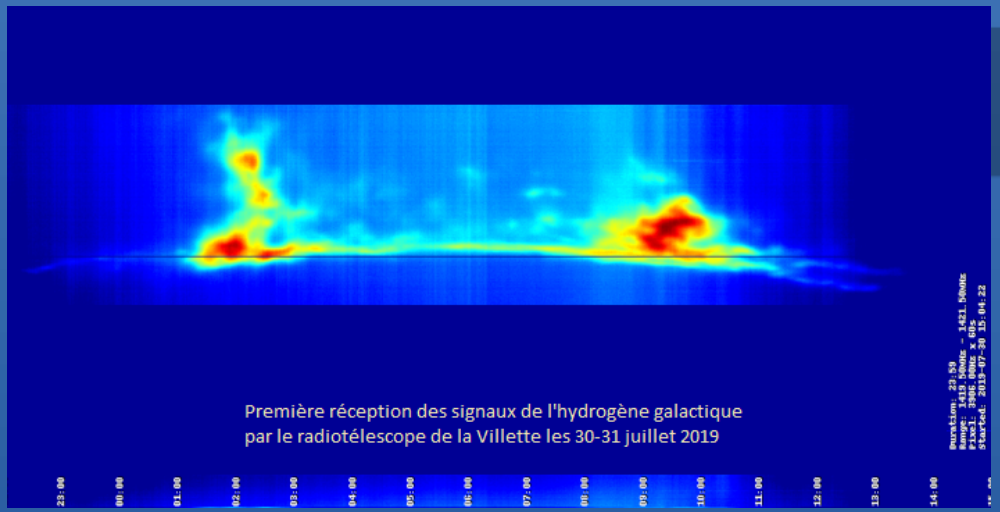
Signaux Faibles
@ F4KLO

Echos télégraphiques Morse sur la Lune (EME)

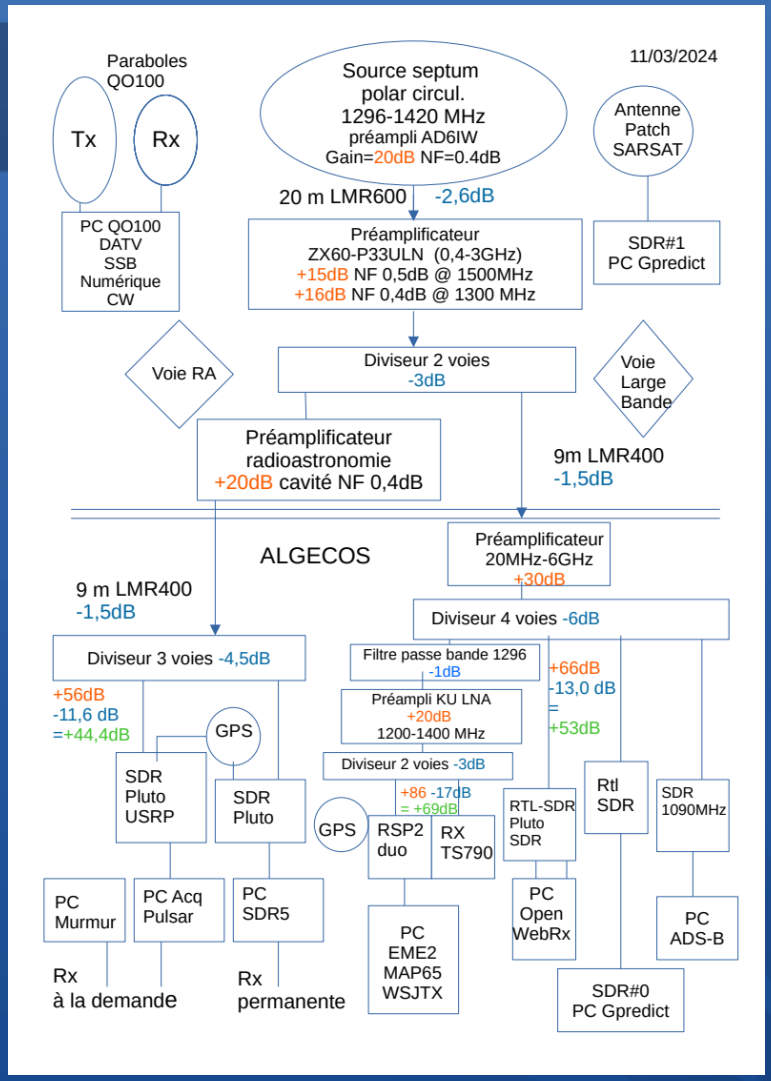
Réception & émission SSTV par réflexion sur la Lune

Q65 numérique en communications EME avec WSJTX

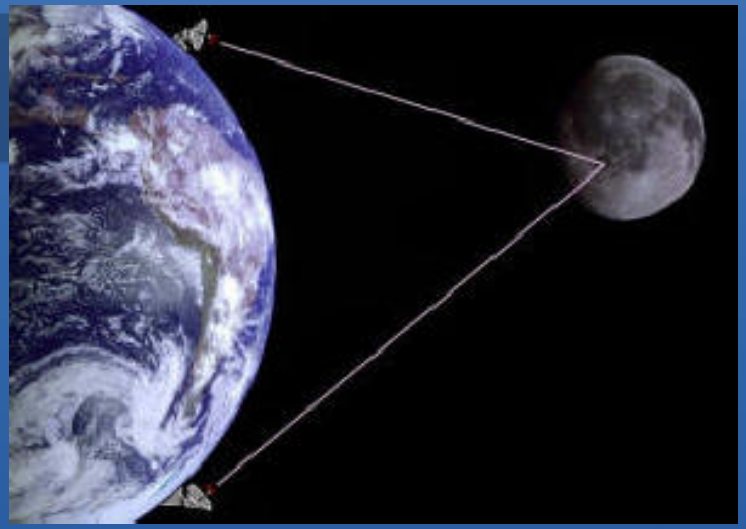
Vers la puissance minimale FT- 8 via satellite QO-100


Première réception des signaux de l'hydrogène galactique
par le radiotélescope de la Villette les 30-31 juillet 2019


F4KLO
26-03-2022 Sat 18:45:57
cameraN4


11/03/2024
Paraboles
QO100
Tx
Rx
PC QO100
DATV
SSB
Numérique
CW
Source septum
polar circul.
1296-1420 MHz
préampli AD6IW
Gain=20dB NF=0.4dB
20 m LMR600 -2,6dB
Antenne
Patch
SARSAT
SDR#1
PC Gpredict
Préamplificateur
ZX60-P33ULN (0,4-3GHz)
+15dB NF 0,5dB @ 1500MHz
+16dB NF 0,4dB @ 1300 MHz
Voie RA
Diviseur 2 voies
-3dB
Voie
Large
Bande
Préamplificateur
radioastronomie
+20dB cavité NF 0,4dB
9m LMR400
-1,5dB
ALGECOS
Préamplificateur
20MHz-6GHz
+30dB
9 m LMR400
-1,5dB
Diviseur 4 voies -6dB
Diviseur 3 voies -4,5dB
Filtre passe bande 1296
-1dB
+66dB
-13,0 dB
=
+53dB
+56dB
-11,6 dB
=+44,4dB
GPS
Préampli KU LNA
+20dB
1200-1400 MHz
Diviseur 2 voies -3dB
+86 -17dB
= +69dB
Rtl
SDR
SDR
1090MHz
SDR
Pluto
USRP
SDR
Pluto
GPS
RSP2
duo
RX
TS790
RTL-SDR
Pluto
SDR
PC
Murmur
PC Acq
Pulsar
PC
SDR5
PC
Open
WebRx
PC
ADS-B
PC
EME2
MAP65
WSJTX
Rx
à la demande
Rx
permanente
SDR#0
PC Gpredict

Signaux télégraphiques



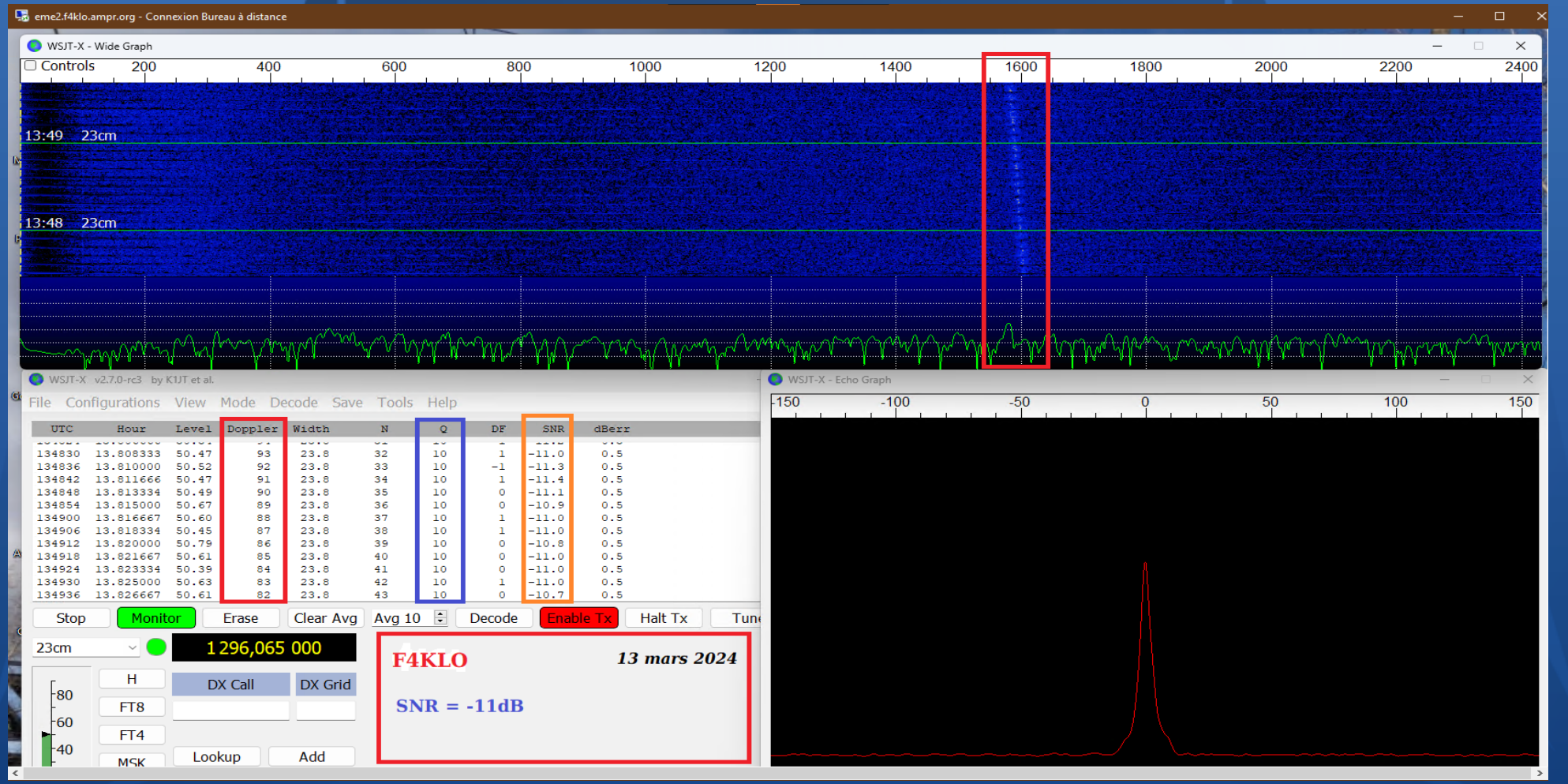
échos sur la Lune pour

connaissant la vitesse de la lumière

calculer la distance Terre-Lune

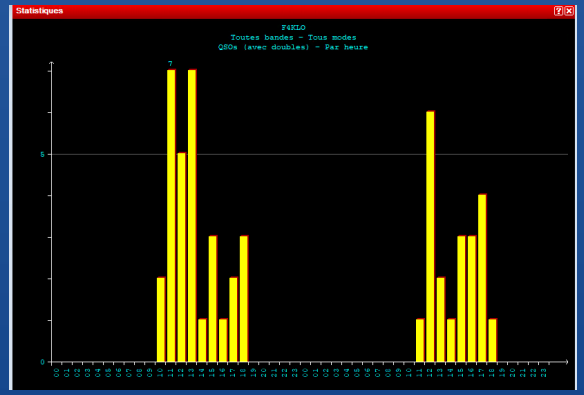
- suivre la Lune
- TS-790 - 5 W
- ampli ~ 75 W
- gain antenne ~40dB
- atténuation ~270 dB
- échos
- enregistrement

Echo sur la Lune - WSJT-X



Concours EME
Memorial VK3UM 12 mai 2024

Guy F2CT opérateur CW



1296 MHz - VK3UM Memorial Contest

Place	Call	Points	QSO	Multi	Pwr	OP
1.	OK2DL	445.300	73	61	QRO	SGL
2.	OK1DFC	414.000	69	60	QRO	SGL
3.	SP6JLW	283.200	59	48	QRO	MUL
4.	KL6M	267.900	57	47	QRO	SGL
5.	SP9VFD	237.600	54	44	QRO	SGL
6.	F4KLO	209.250	46+4	45	QRP	SGL
7.	G3LTF	209.100	51	41	QRP	SGL
8.	PA3DZL	175.500	45	39	QRO	SGL
9.	DU3T	151.200	42	36	QRO	SGL
10.	K0PRT	132.600	39	34	QRO	MUL
11.	CT1DMK	112.000	35	32	QRO	SGL

Evaluation de la distance Terre-Lune

le 29 septembre 2024 à 11h30

Vitesse de la lumière : 299 792, 458 Km/s

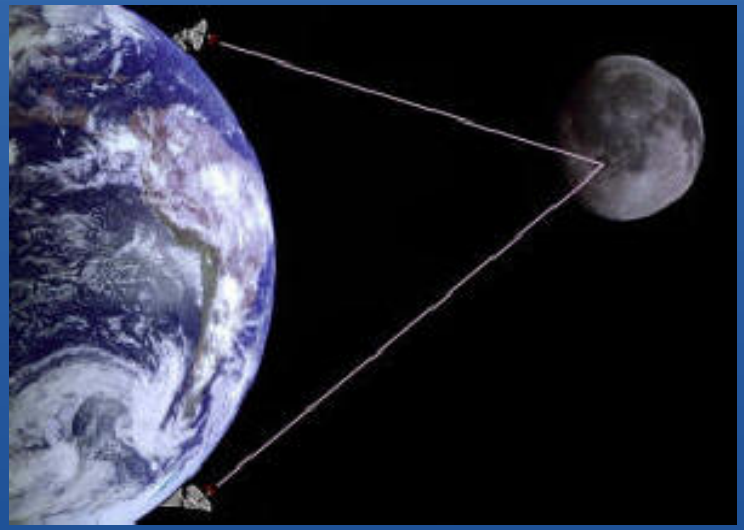
Temps aller-retour du signal télégraphique : 2650 ms

Distance calculée : 397225 Km

SkyChart : 397303 Km

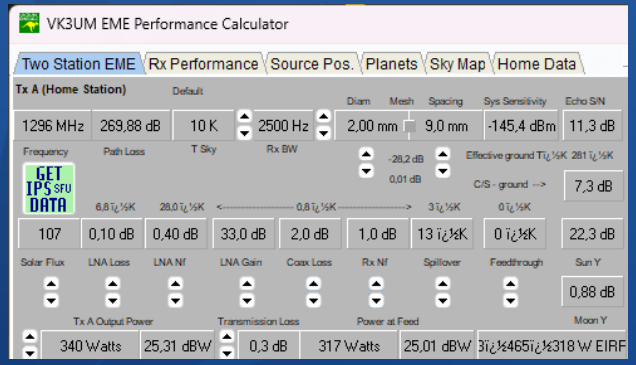
Erreur ~ 78 Km !

Réception & émission SSTV par réflexion sur la Lune (EME)



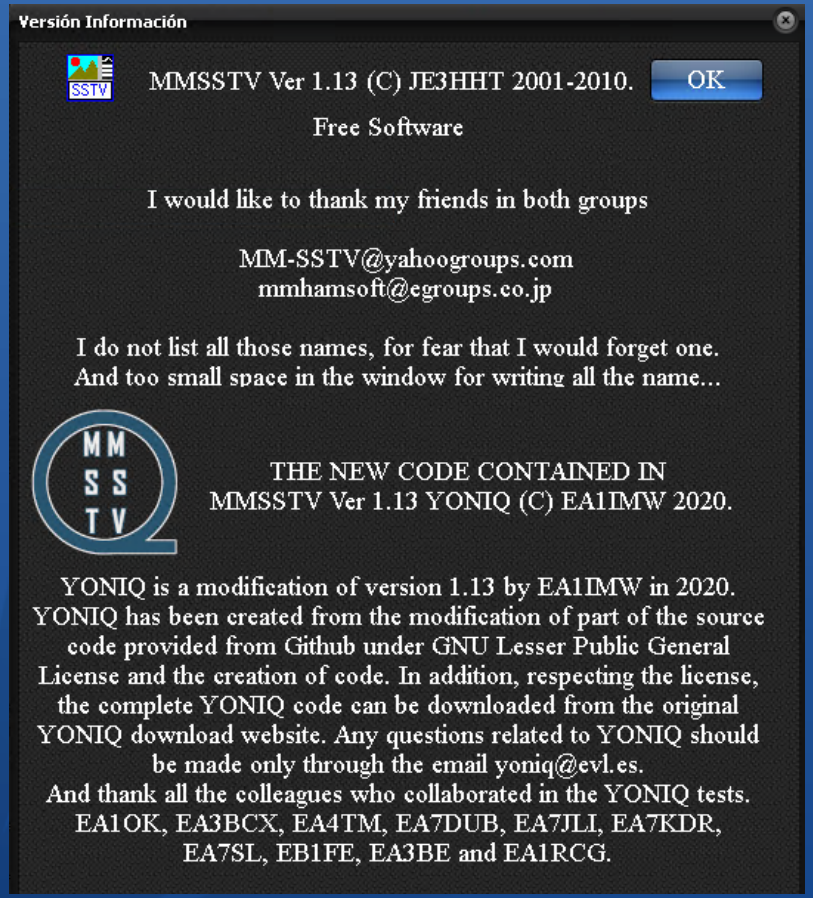
Application MMSSTV

Atténuation ~270 dB sur 1296 MHz



Réception SSTV à F4KLO
de PI9RD ex PI9CAM

Commémoration 1er alunissage Apollo 11
20 juillet 1969

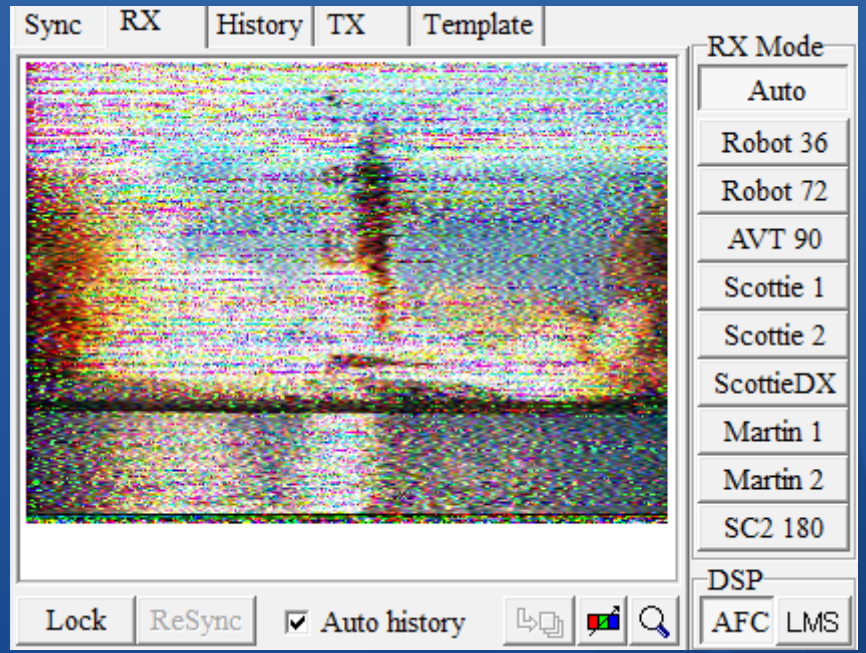


Transmission SSTV PI9RD @Dwingeloo

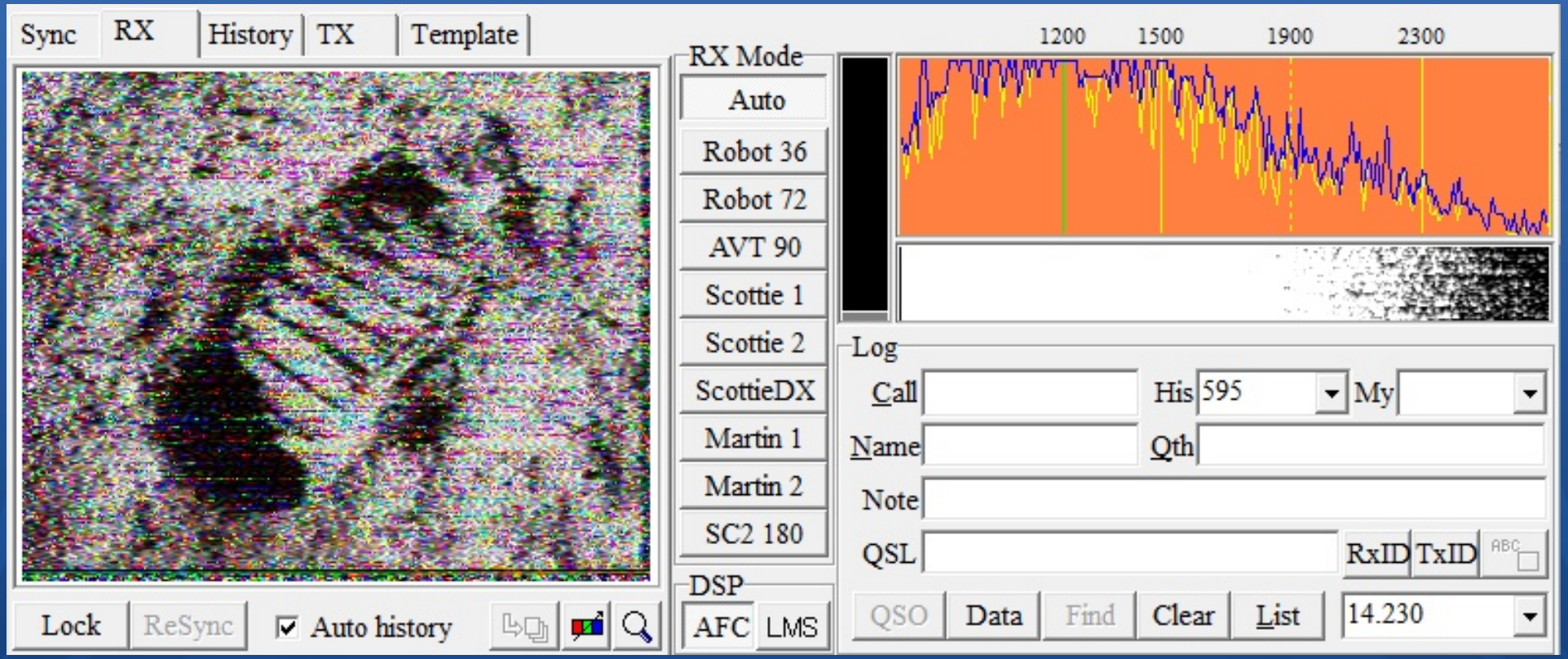
Commémoration 1er alunissage Apollo 11
20 juillet 1969

UTC | CQ | 1296.075 | 1st | 2nd | Q65-60C CFOM | search...

15:01	PI9CAM dish	@	PI9CAM	Team CAM
15:00	******* CQ 1296.080 1st q65c 60 1500Hz cfom *******	@	**DL1YMK**	**Michael**
14:58	moon now	@	PI9CAM	Team CAM
14:58	@BG0AUB: can we have a try Zhaofeng?	@	DL1YMK	Michael
14:56	@IK1FJI: Great Valter :-)	@	PI9CAM	Team CAM
14:55	starship launch now	@	PI9CAM	Team CAM
14:54	@PI9CAM: Last FB rx !	@	IK1FJI	Valter
14:53	cubesats now	@	PI9CAM	Team CAM
14:51	PI9CAM dish now	@	PI9CAM	Team CAM
14:50	Mars helicopter now	@	PI9CAM	Team CAM
14:49	******* CQ 1296.065 1st Q65-60C CFOM 1500 *******	@	**YU1SAN**	**Aleksandar**
14:49	**@F4KLO:** RRR Bernard! Happy :-)	@	PI9CAM	**Team CAM**
14:49	******* CQ 1296.085 2nd Q65-60C CFOM *******	@	**IK2DDR**	**Francesco**
14:48	@PI9CAM nice copy 579 SSTV images ! 73s de F4KLO Bernard F6BVP op	@	F4KLO	La Villette
14:48	Mars rover now	@	PI9CAM	Team CAM
14:45	Now to modern times. Artemis logo	@	PI9CAM	Team CAM
14:45	Splash down	@	PI9CAM	Team CAM
14:42	First foot step now	@	PI9CAM	Team CAM
14:41	TXing earth rise now	@	PI9CAM	Team CAM
14:40	@DL1YMK: You are a SSTV talent Michael :-)	@	PI9CAM	Team CAM
14:39	Apollo launch :-)	@	PI9CAM	Team CAM

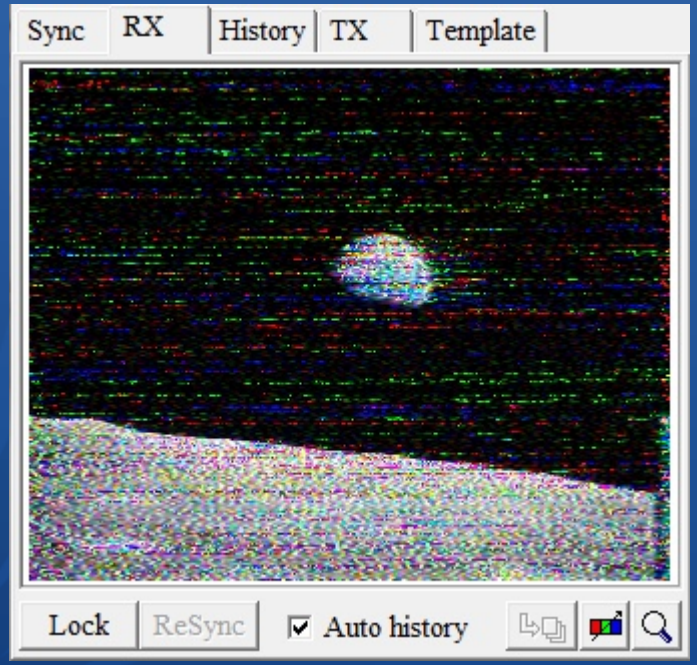


Réception SSTV EME @F4KLO

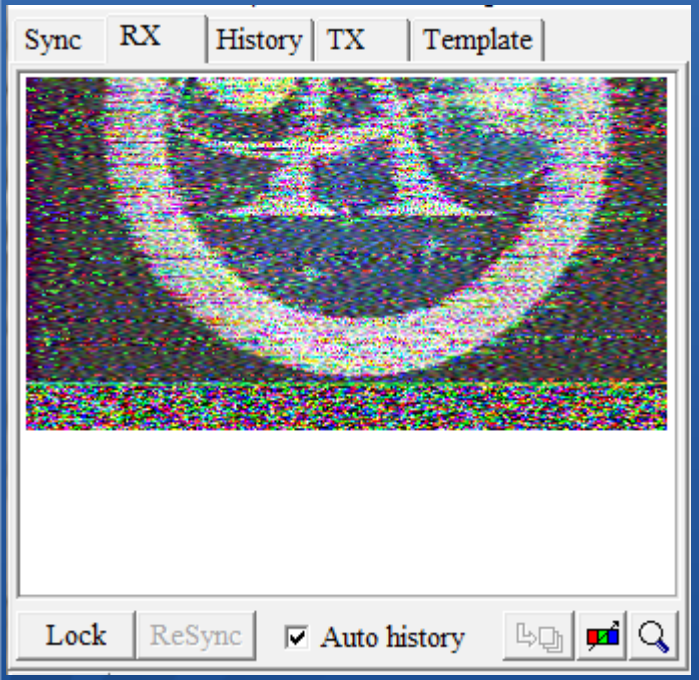


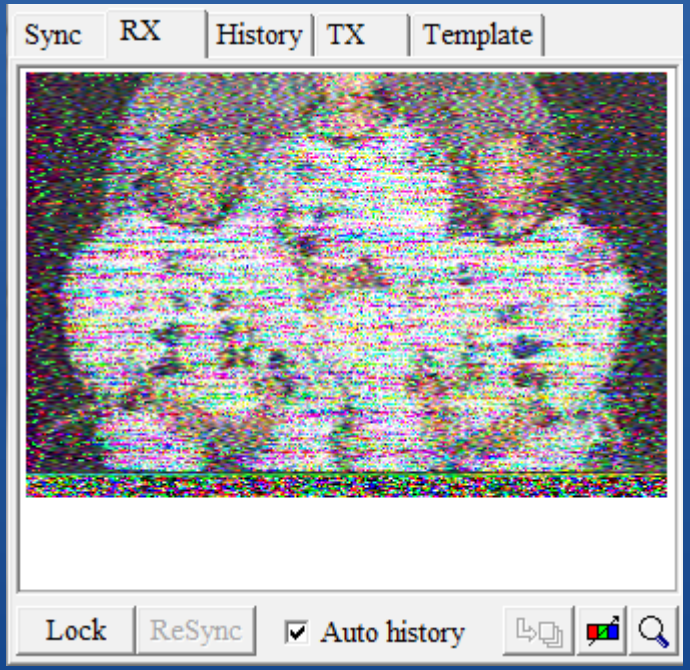
Transmission SSTV PI9RD @Dwingeloo

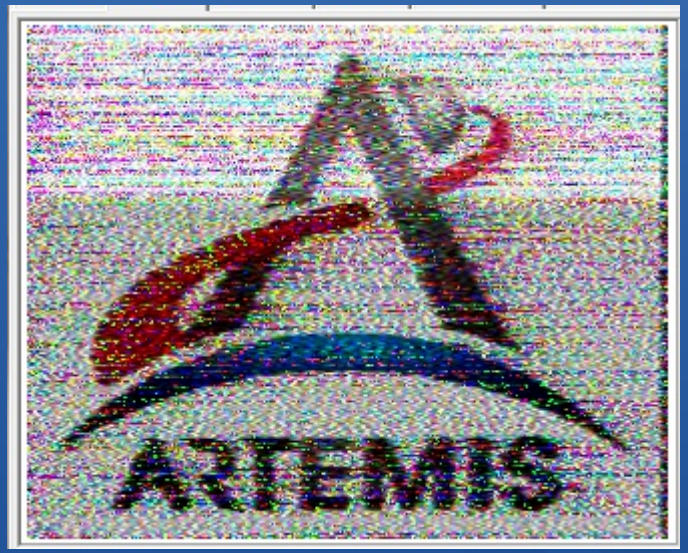
Commémoration 1er alunissage Apollo 11
20 juillet 1969



Réception SSTV EME @F4KLO

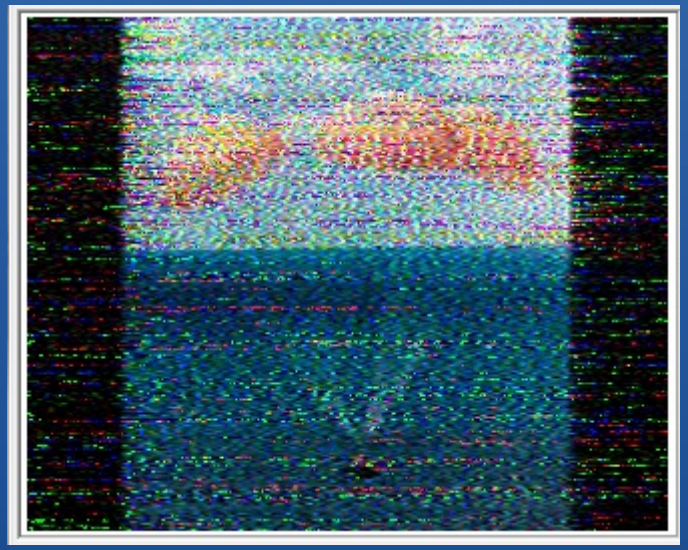


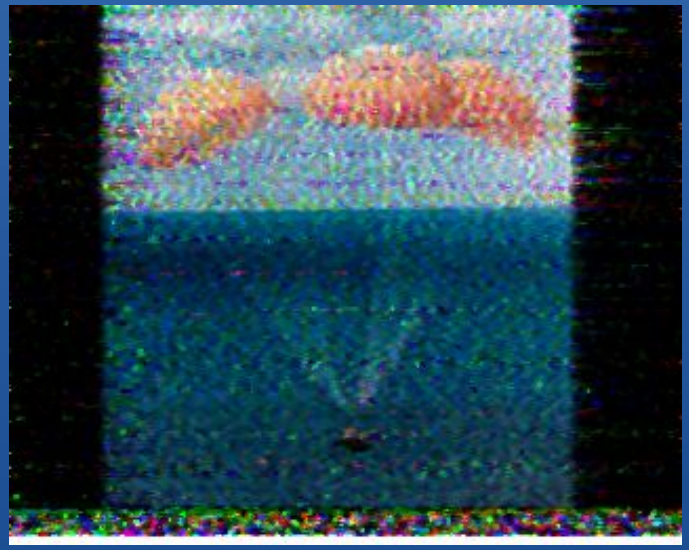




SSTV EME

Débruitage image amérissage Apollo-11





SSTV EME

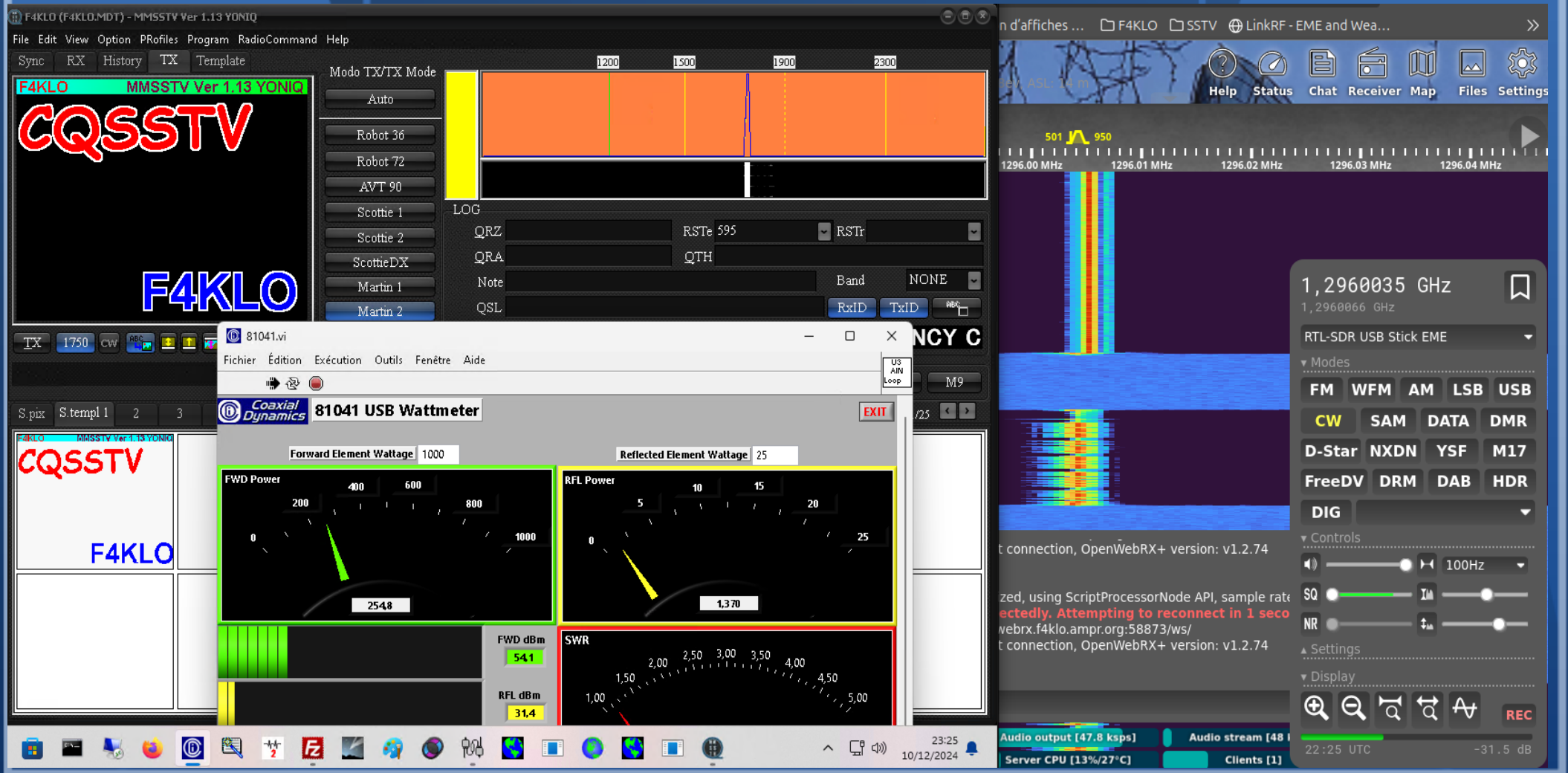

CT1FGW


RXSSTV: Martin 2 | 2024-dic-11 15:36:17

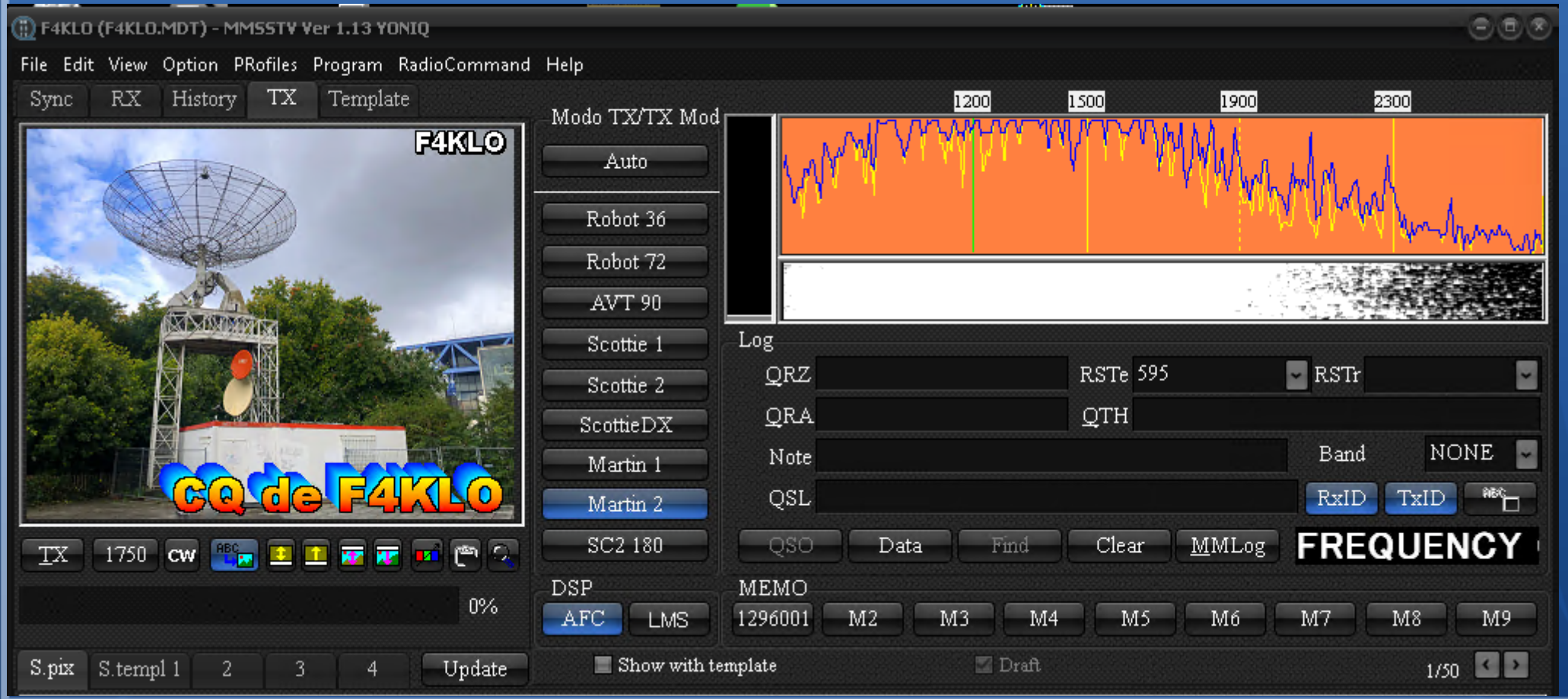

F4KLO (F4KLO.MDT) - MMSSTV Ver 1.13A
File Edit View Option PRofiles Program RadioComm
Sync RX History TX Template
2WØSKW


ommand Help
RX Mode
Auto
Robot 36
Robot 72
AVT 90
Scottie 1
Scottie 2
ScottieDX
Martin 1
Martin 2
SC2 180
DSP
AFC LMS
Lock ReSync Auto history

Emission SSTV EME 11 décembre 2024



Emission SSTV EME



SSTV EME

Emission F4KLO

Réception PI9RD

Réception SSTV EME
PI9RD

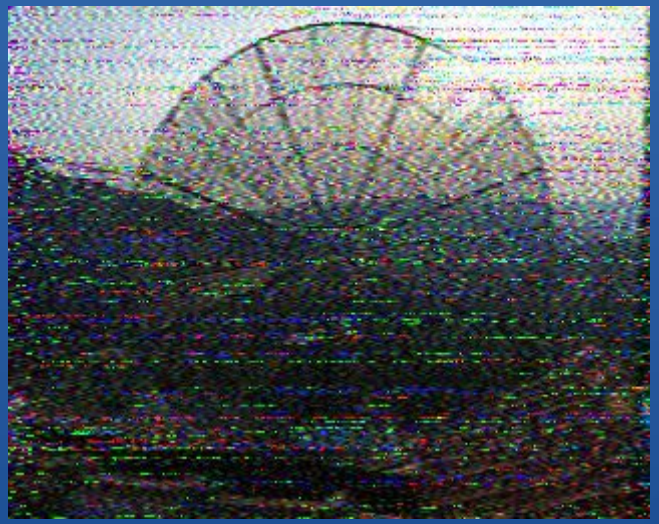
11 décembre 2024

SSTV EME
image reçues @ PI9RD

11 décembre 2024

SSTV EME
image reçues @ PI9RD

11 décembre 2024



Télécommunications numériques EME

Protocole Q65 WSJT-X 2.4.0 (*Joe Taylor K1JT* - février 2021)

conçu pour les signaux faibles

tolérance du Doppler sur plusieurs Hz

- modulation par changement de fréquence (FSK) à 65 tons
- sous modes 15, 30, 60, 120, 300 secondes avec différents espacements de tons → SNR -22,2 à -33,8 dB !
- répétition, accumulation
- un ton de synchronisation temps et fréquence
- correction d'erreur FEC (65,15) blocs 6 bits k=13 n=63 symboles
- CRC 12 bits
- 22 symboles pseudo aléatoires
- décodage a priori à partir liste …
- multi décodage dans la bande passante

…

Sous mode 60C recommandé pour EME :

espacement des tons 6,67Hz largeur bande occupée 433Hz

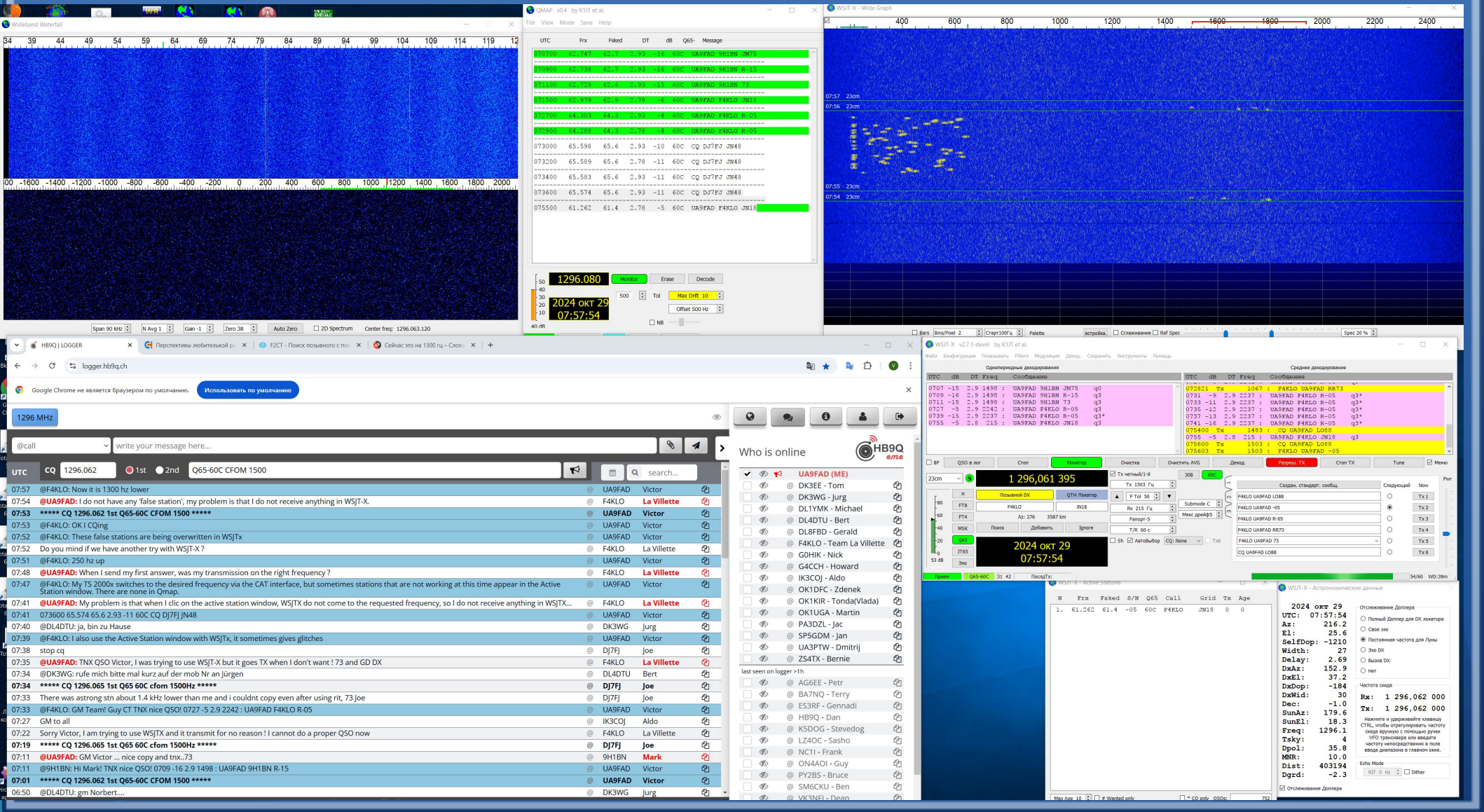
WSJT Files

Weak signal ham radio communication

Brought to you by: bsomervi, chetfenn, dg2ycb, k1jt

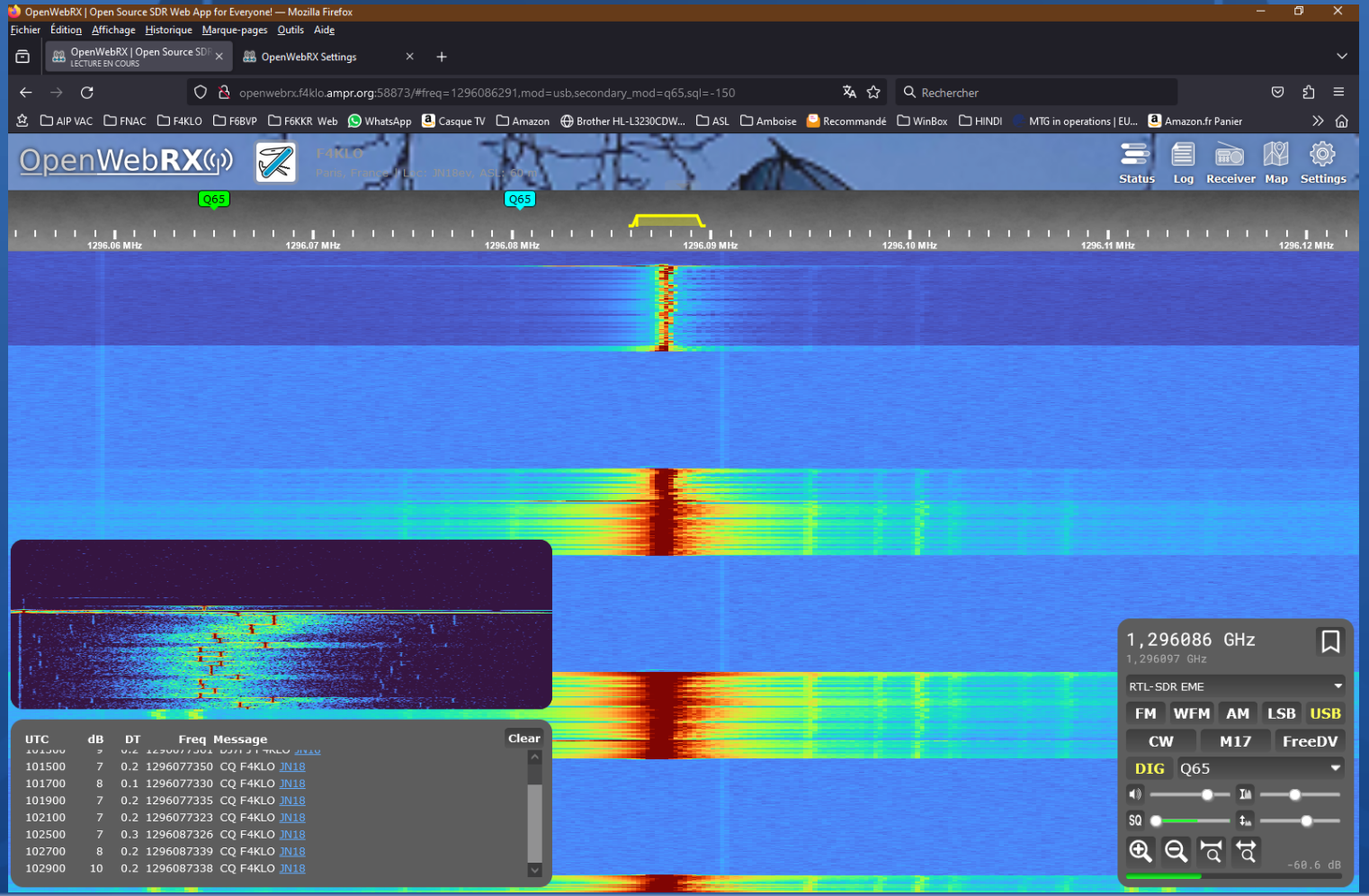
Home

Name	Modified	Size	Downloads / Week
wsjtx-2.7.0	2025-02-15		16,121
wsjtx-2.7.0-rc8	2025-01-04		373
wsjtx-2.7.0-rc7	2024-09-30		136

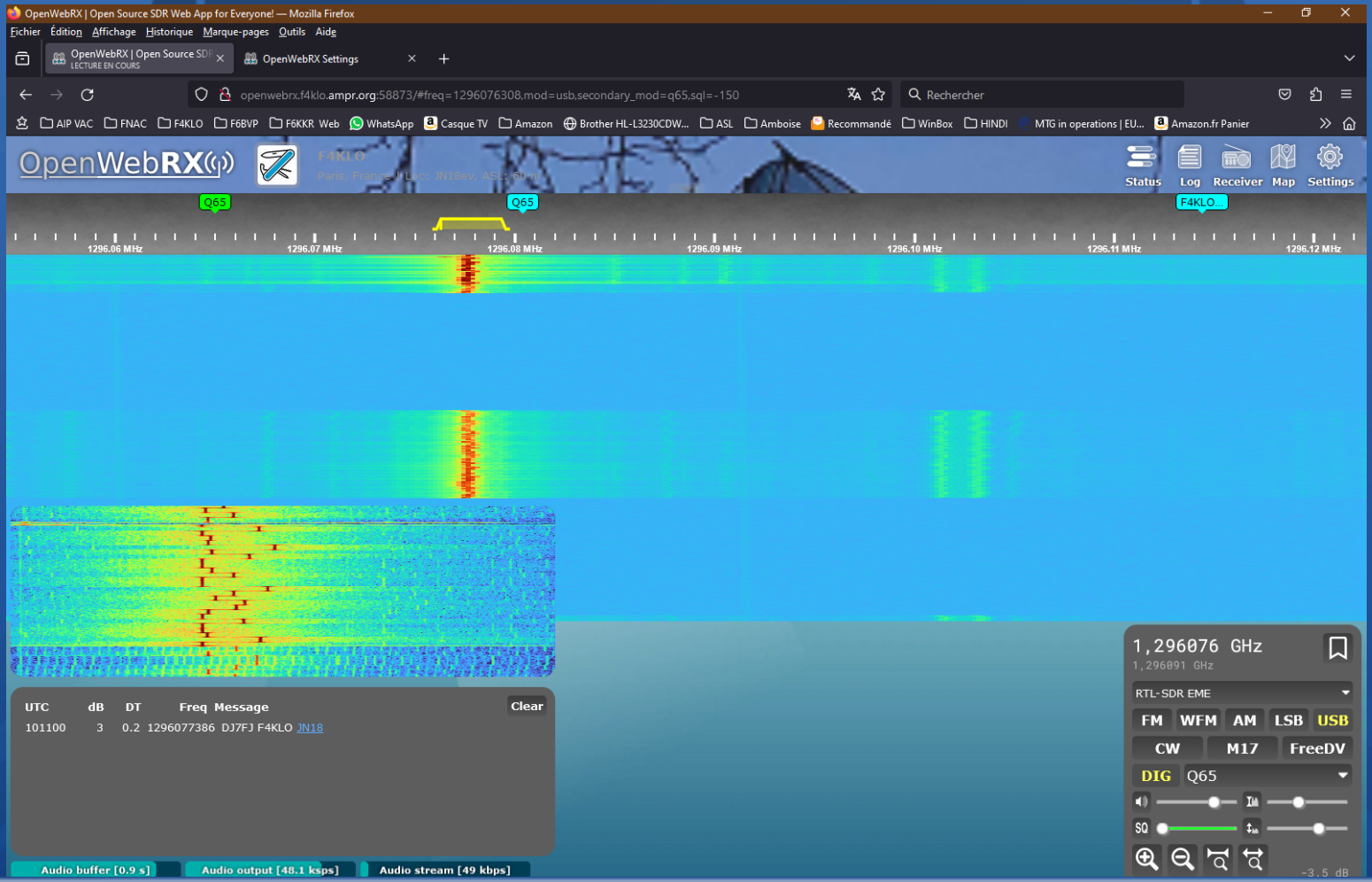


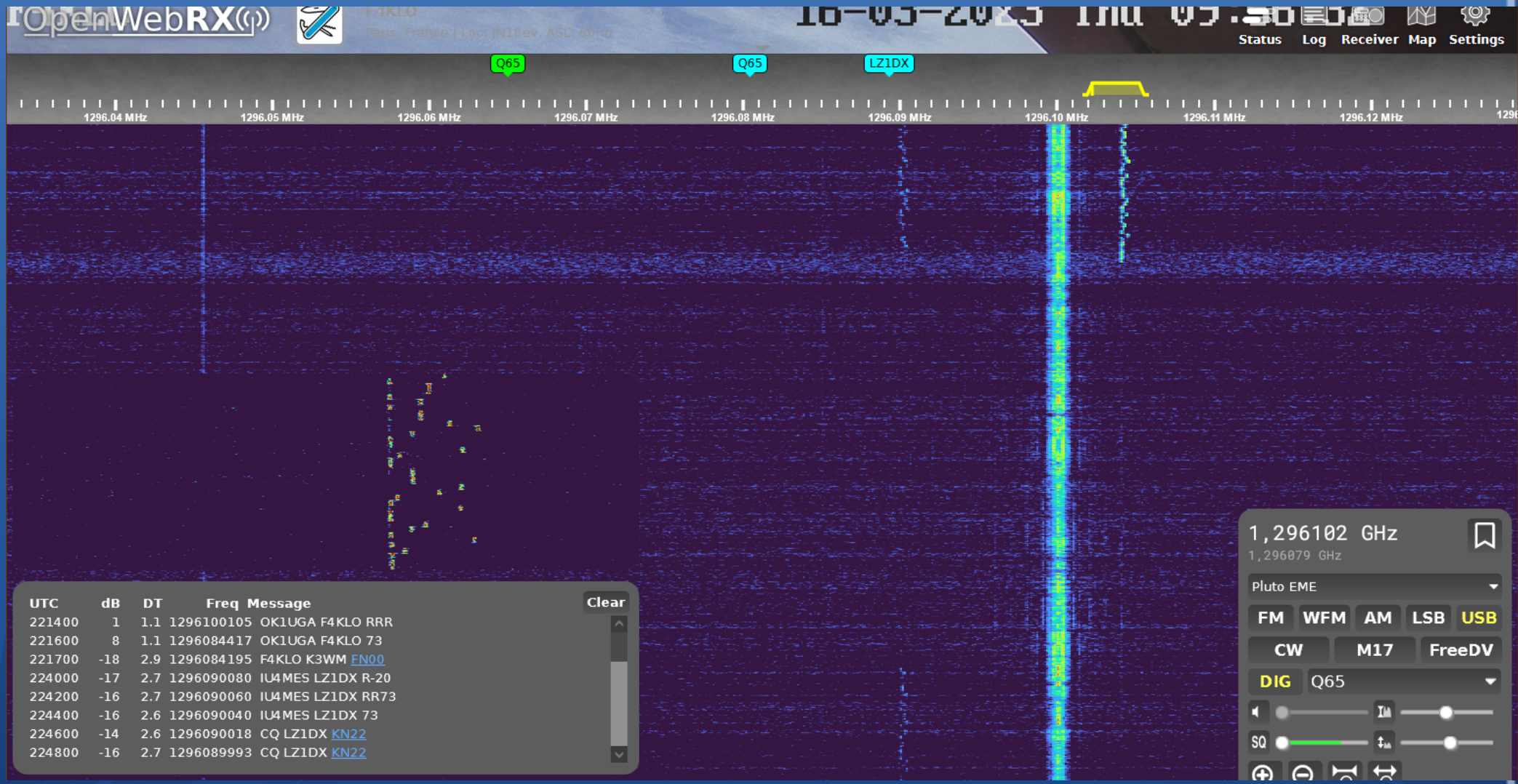
UTC	CQ	1296.062	1st	2nd	Q65-60C CFOM 1500	search...
07:57	@F4KLO: Now it is 1300 hz lower	@	UA9FAD	Victor		
07:54	**@UA9FAD:** I do not have any 'false station', my problem is that I do not receive anything in WSJT-X.	@	F4KLO	La Villette		
07:53	***** CQ 1296.062 1st Q65-60C CFOM 1500 *****	@	UA9FAD	Victor		
07:53	@F4KLO: OK I CQing	@	UA9FAD	Victor		
07:52	@F4KLO: These false stations are being overwritten in WSJTx	@	UA9FAD	Victor		
07:52	Do you mind if we have another try with WSJT-X ?	@	F4KLO	La Villette		
07:51	@F4KLO: 250 hz up	@	UA9FAD	Victor		
07:48	**@UA9FAD:** When I send my first answer, was my transmission on the right frequency ?	@	F4KLO	La Villette		
07:47	@F4KLO: My TS 2000x switches to the desired frequency via the CAT interface, but sometimes stations that are not working at this time appear in the Active Station window. There are none in Qmap.	@	UA9FAD	Victor		
07:41	**@UA9FAD:** My problem is that when I clic on the active station window, WSJTX do not come to the requested frequency, so I do not receive anything in WSJTX...	@	F4KLO	La Villette		
07:41	073600 65.574 65.6 2.93 -11 60C CQ DJ7FJ JN48	@	UA9FAD	Victor		
07:40	@DL4DTU: ja, bin zu Hause	@	DK3WG	Jurg		
07:39	@F4KLO: I also use the Active Station window with WSJTx, it sometimes gives glitches	@	UA9FAD	Victor		
07:38	stop cq	@	DJ7FJ	Joe		
07:35	**@UA9FAD:** TNX QSO Victor, I was trying to use WSJT-X but it goes TX when I don't want ! 73 and GD DX	@	F4KLO	La Villette		
07:34	@DK3WG: rufe mich bitte mal kurz auf der mob Nr an Jürgen	@	DL4DTU	Bert		
07:34	***** CQ 1296.065 1st Q65 60C cfom 1500Hz *****	@	DJ7FJ	Joe		
07:33	There was astrong stn about 1.4 kHz lower than me and i couldnt copy even after using rit, 73 Joe	@	DJ7FJ	Joe		
07:33	@F4KLO: GM Team! Guy CT TNX nice QSO! 0727 -5 2.9 2242 : UA9FAD F4KLO R-05	@	UA9FAD	Victor		
07:27	GM to all	@	IK3COJ	Aldo		
07:22	Sorry Victor, I am trying to use WSJTX and it transmit for no reason ! I cannot do a proper QSO now	@	F4KLO	La Villette		
07:19	***** CQ 1296.065 1st Q65 60C cfom 1500Hz *****	@	DJ7FJ	Joe		
07:11	**@UA9FAD:** GM Victor ... nice copy and tnx..73	@	9H1BN	Mark		
07:11	@9H1BN: Hi Mark! TNX nice QSO! 0709 -16 2.9 1498 : UA9FAD 9H1BN R-15	@	UA9FAD	Victor		
07:01	***** CQ 1296.062 1st Q65-60C CFOM 1500 *****	@	UA9FAD	Victor		
06:50	@DL4DTU: gm Norbert....	@	DK3WG	Jurg		

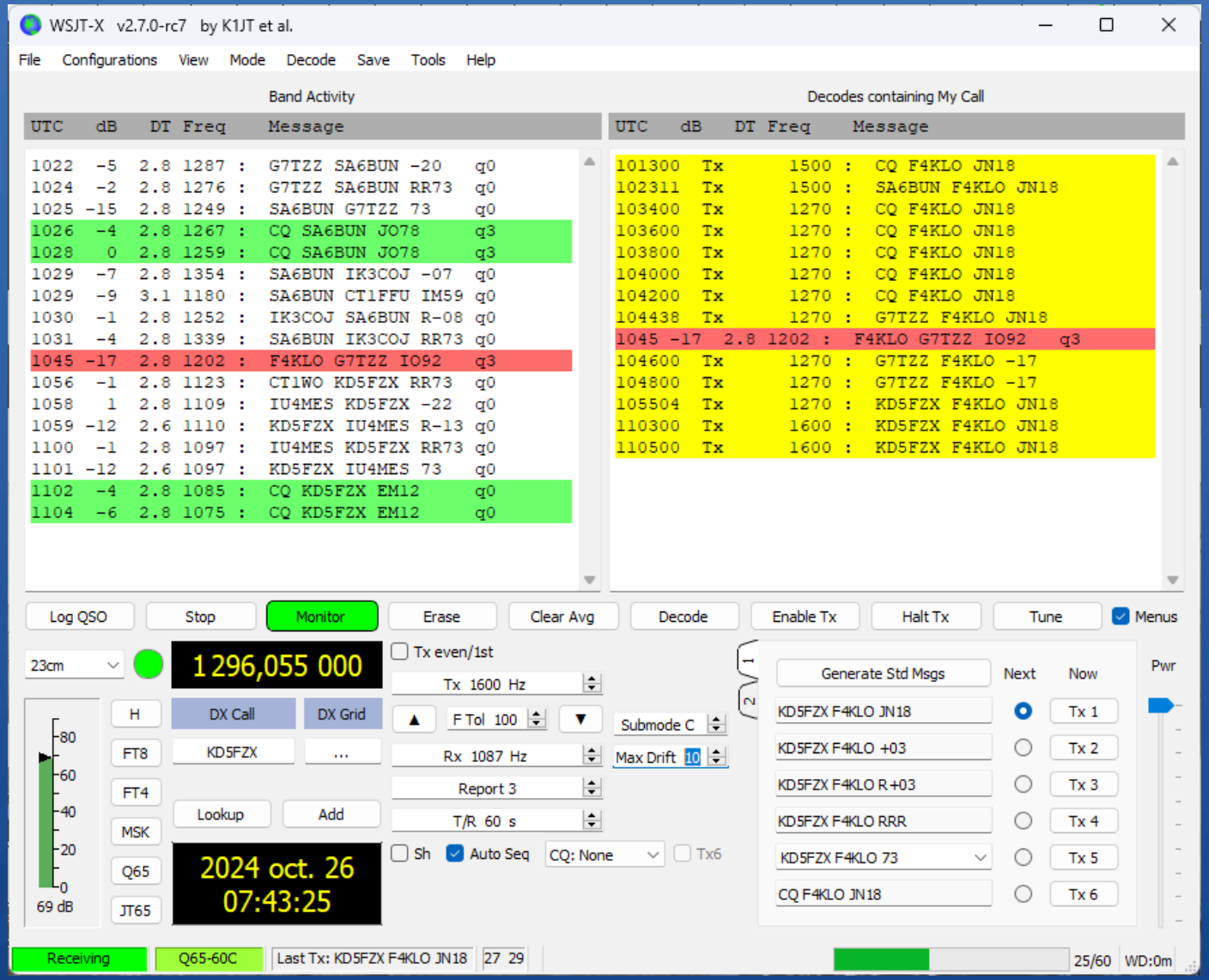
Communications EME Q65

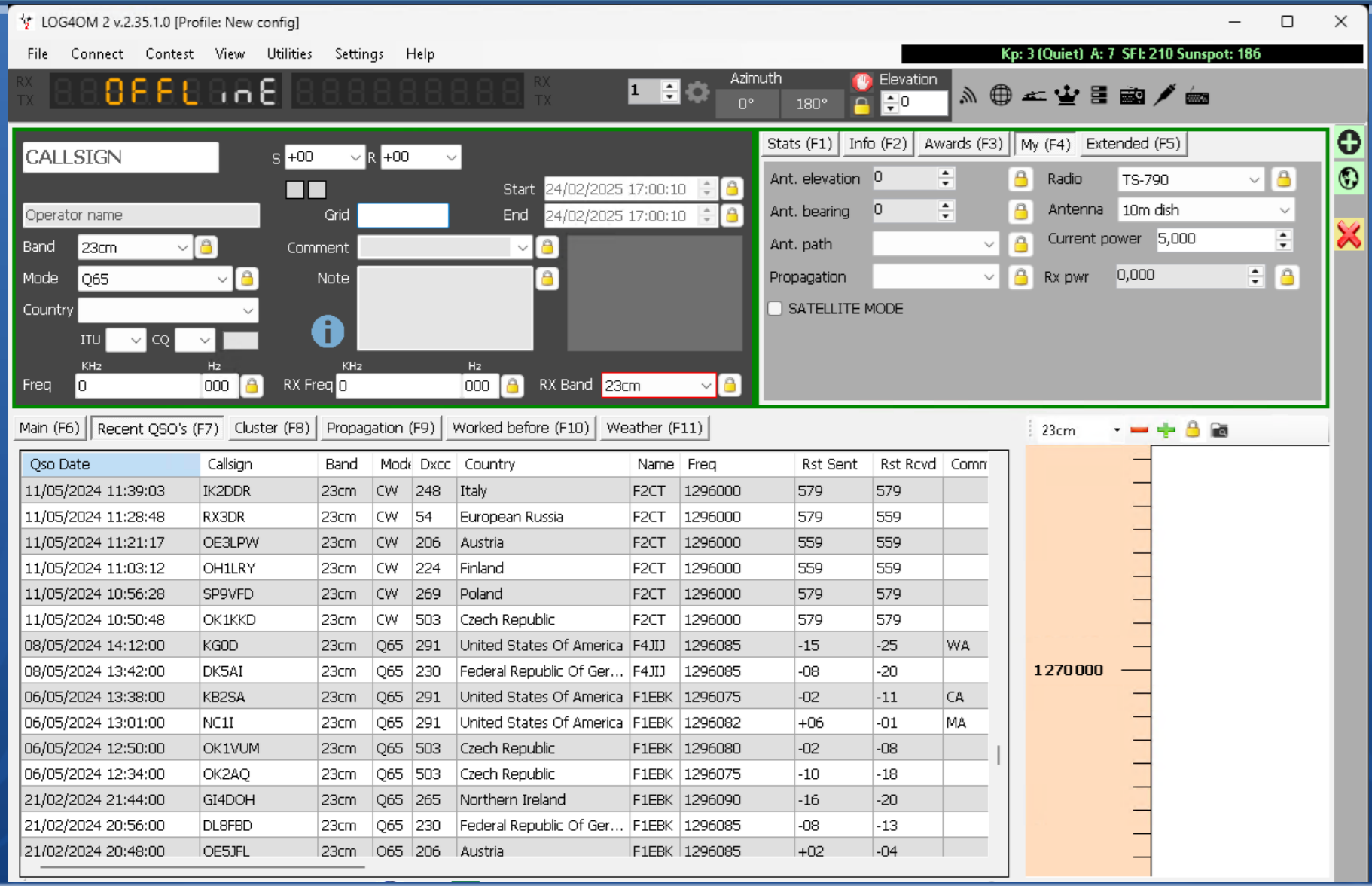


Communications EME Q65




OpenWebRX
F4KLO
Paris, France | Loc: JN18ev, ASL: 60 m
Status
Log
Receiver
Map
Settings
Q65
Q65
LZ1DX
1296.04 MHz
1296.05 MHz
1296.06 MHz
1296.07 MHz
1296.08 MHz
1296.09 MHz
1296.10 MHz
1296.11 MHz
1296.12 MHz
UTC dB DT Freq Message
221400 1 1.1 1296100105 OK1UGA F4KLO RRR
221600 8 1.1 1296084417 OK1UGA F4KLO 73
221700 -18 2.9 1296084195 F4KLO K3WM FN00
224000 -17 2.7 1296090080 IU4MES LZ1DX R-20
224200 -16 2.7 1296090060 IU4MES LZ1DX RR73
224400 -16 2.6 1296090040 IU4MES LZ1DX 73
224600 -14 2.6 1296090018 CQ LZ1DX KN22
224800 -16 2.7 1296089993 CQ LZ1DX KN22
Clear
1,296102 GHz
1,296079 GHz
Pluto EME
FM
WFM
AM
LSB
USB
CW
M17
FreeDV
DIG
Q65
SQ


WSJT-X v2.7.0-rc7 by K1JT et al.
File Configurations View Mode Decode Save Tools Help
Band Activity
UTC dB DT Freq Message
1022 -5 2.8 1287 : G7TZZ SA6BUN -20 q0
1024 -2 2.8 1276 : G7TZZ SA6BUN RR73 q0
1025 -15 2.8 1249 : SA6BUN G7TZZ 73 q0
1026 -4 2.8 1267 : CQ SA6BUN JO78 q3
1028 0 2.8 1259 : CQ SA6BUN JO78 q3
1029 -7 2.8 1354 : SA6BUN IK3COJ -07 q0
1029 -9 3.1 1180 : SA6BUN CT1FFU IM59 q0
1030 -1 2.8 1252 : IK3COJ SA6BUN R-08 q0
1031 -4 2.8 1339 : SA6BUN IK3COJ RR73 q0
1045 -17 2.8 1202 : F4KLO G7TZZ IO92 q3
1056 -1 2.8 1123 : CT1WO KD5FZX RR73 q0
1058 1 2.8 1109 : IU4MES KD5FZX -22 q0
1059 -12 2.6 1110 : KD5FZX IU4MES R-13 q0
1100 -1 2.8 1097 : IU4MES KD5FZX RR73 q0
1101 -12 2.6 1097 : KD5FZX IU4MES 73 q0
1102 -4 2.8 1085 : CQ KD5FZX EM12 q0
1104 -6 2.8 1075 : CQ KD5FZX EM12 q0
Decodes containing My Call
UTC dB DT Freq Message
101300 Tx 1500 : CQ F4KLO JN18
102311 Tx 1500 : SA6BUN F4KLO JN18
103400 Tx 1270 : CQ F4KLO JN18
103600 Tx 1270 : CQ F4KLO JN18
103800 Tx 1270 : CQ F4KLO JN18
104000 Tx 1270 : CQ F4KLO JN18
104200 Tx 1270 : CQ F4KLO JN18
104438 Tx 1270 : G7TZZ F4KLO JN18
1045 -17 2.8 1202 : F4KLO G7TZZ IO92 q3
104600 Tx 1270 : G7TZZ F4KLO -17
104800 Tx 1270 : G7TZZ F4KLO -17
105504 Tx 1270 : KD5FZX F4KLO JN18
110300 Tx 1600 : KD5FZX F4KLO JN18
110500 Tx 1600 : KD5FZX F4KLO JN18
Log QSO
Stop
Monitor
Erase
Clear Avg
Decode
Enable Tx
Halt Tx
Tune
Menus
23cm
1 296,055 000
Tx even/1st
Tx 1600 Hz
F Tol 100
Submode C
Max Drift 10
Rx 1087 Hz
Report 3
T/R 60 s
H
FT8
FT4
MSK
Q65
JT65
DX Call
DX Grid
KD5FZX
...
Lookup
Add
Sh
Auto Seq
CQ: None
Tx6
2024 oct. 26
07:43:25
69 dB
Generate Std Msgs
Next
Now
KD5FZX F4KLO JN18
KD5FZX F4KLO +03
KD5FZX F4KLO R+03
KD5FZX F4KLO RRR
KD5FZX F4KLO 73
CQ F4KLO JN18
Tx 1
Tx 2
Tx 3
Tx 4
Tx 5
Tx 6
Pwr
Receiving
Q65-60C
Last Tx: KD5FZX F4KLO JN18
27 29
25/60
WD:0m



Qso Date	Callsign	Band	Mode	Dxcc	Country	Name	Freq	Rst Sent	Rst Rcvd	Comm
11/05/2024 11:39:03	IK2DDR	23cm	CW	248	Italy	F2CT	1296000	579	579	
11/05/2024 11:28:48	RX3DR	23cm	CW	54	European Russia	F2CT	1296000	579	559	
11/05/2024 11:21:17	OE3LPW	23cm	CW	206	Austria	F2CT	1296000	559	559	
11/05/2024 11:03:12	OH1LRY	23cm	CW	224	Finland	F2CT	1296000	559	559	
11/05/2024 10:56:28	SP9VFD	23cm	CW	269	Poland	F2CT	1296000	579	579	
11/05/2024 10:50:48	OK1KKD	23cm	CW	503	Czech Republic	F2CT	1296000	579	579	
08/05/2024 14:12:00	KG0D	23cm	Q65	291	United States Of America	F4JIJ	1296085	-15	-25	WA
08/05/2024 13:42:00	DK5AI	23cm	Q65	230	Federal Republic Of Ger...	F4JIJ	1296085	-08	-20	
06/05/2024 13:38:00	KB2SA	23cm	Q65	291	United States Of America	F1EBK	1296075	-02	-11	CA
06/05/2024 13:01:00	NC1I	23cm	Q65	291	United States Of America	F1EBK	1296082	+06	-01	MA
06/05/2024 12:50:00	OK1VUM	23cm	Q65	503	Czech Republic	F1EBK	1296080	-02	-08	
06/05/2024 12:34:00	OK2AQ	23cm	Q65	503	Czech Republic	F1EBK	1296075	-10	-18	
21/02/2024 21:44:00	GI4DOH	23cm	Q65	265	Northern Ireland	F1EBK	1296090	-16	-20	
21/02/2024 20:56:00	DL8FBD	23cm	Q65	230	Federal Republic Of Ger...	F1EBK	1296085	-08	-13	
21/02/2024 20:48:00	OE5JFL	23cm	Q65	206	Austria	F1EBK	1296085	+02	-04	

Communications EME Q65

Frank Potts NC1I
21 Gableview Lane
Southwick, MA 01077
U.S.A.

NC1I

CQ 5
ITU 8
FN32ob
Hampden County

To Radio	DATE			UTC	Band	2-Way	RST
	Day	Month	Year				
F4KLO	26	11	2023	22:59	1296.070	Q65	-02

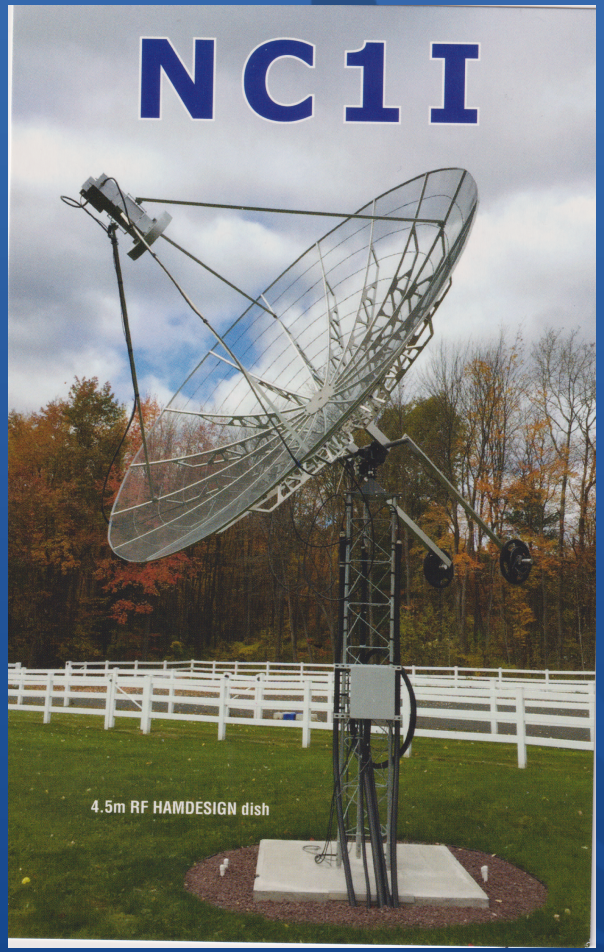
Thanks For initial on 23cm!

23 cm EME system: 6.1-meter dish
~~4.5m dish~~ with KL6M septum feed
G4DDK 0.22 dB NF preamp
Combined Kuhne SS amps at 1.5 KW

Frank

70 cm EME system:
48 x 15 element K1FO yagis
0.15 dB NF cavity preamp
1.5 KW

KB3IFH QSL Cards



Satellite géostationnaire QO-100

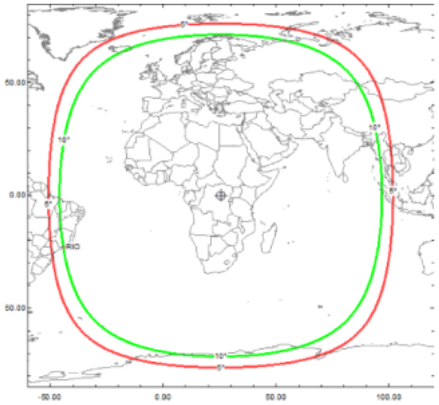
Minimum setup for **SSB** communications:

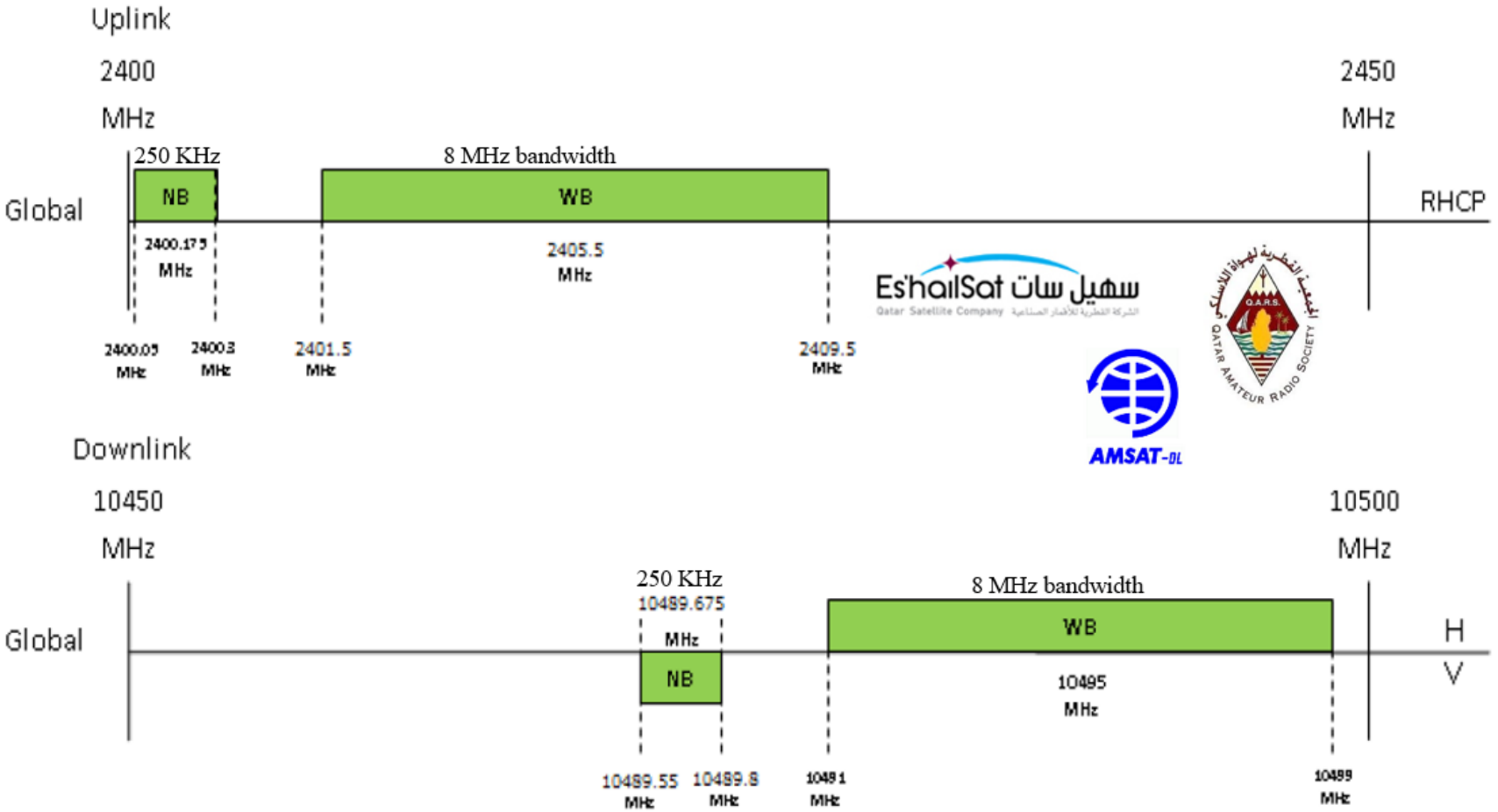
RX Antenna	60-90 cm SAT-TV dish
Receiver	LNB with power injector and DVB-T dongle + SDR software (for example SDR#) OR 3 cm LNA with downconverter to 70cm
Transmitter	10W PEP in 60-90 cm dish plus upconverter from 144 MHz

Minimum setup for **DATV** (DVB-S2) communications:

RX Antenna	60-90 cm SAT-TV dish
Receiver	modified LNB with standard satellite receiver box (DVB-S2) OR modified LNB with PCI DVB-S2 cards for PC use
Transmitter	25W PEP in 2.4m dish plus DVB-S2 modulator for a 2MSym/s videostream

Coverage from orbital position of 26 deg East





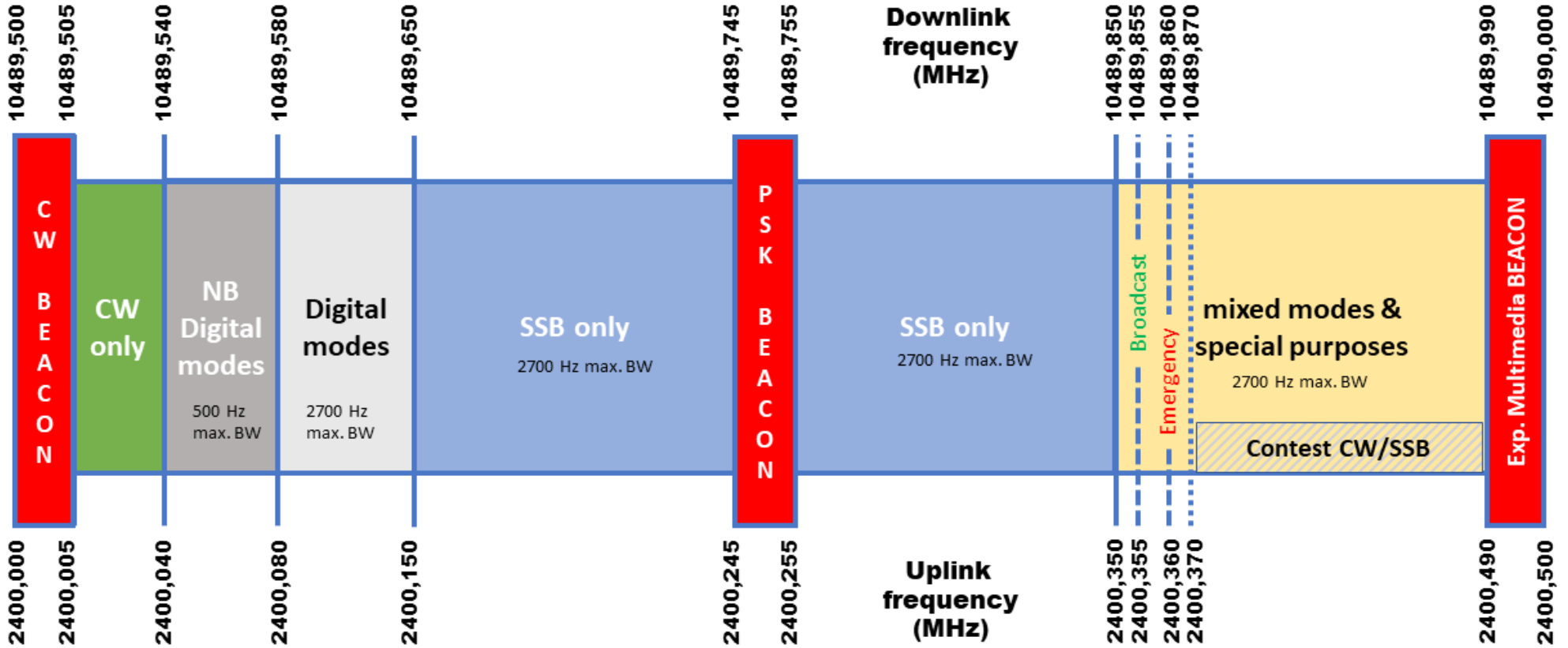
Xpdr	U/L FREQUENCY (MHz)				D/L FREQUENCY (MHz)				LO	BW
No	Pol	Begin	Center	End	Pol	Begin	Center	End	(MHz)	(MHz)
NB	RHCP	2400.05	2400.175	2400.3	V	10489.55	10489.675	10489.8	8089.5	0.25
WB	RHCP	2401.5	2405.5	2409.5	H	10491	10495	10499	8089.5	8

AMSAT QO-100 / P4A
NB Transponder Bandplan

AMSAT-DL
Satelliten für Kommunikation, Wissenschaft und Bildung
Satellites for Communication, Science and Education

Es'hailSat سهيل سات
Qatar Satellite Company الشركة القطرية للأقمار الصناعية

QATAR AMATEUR RADIO SOCIETY



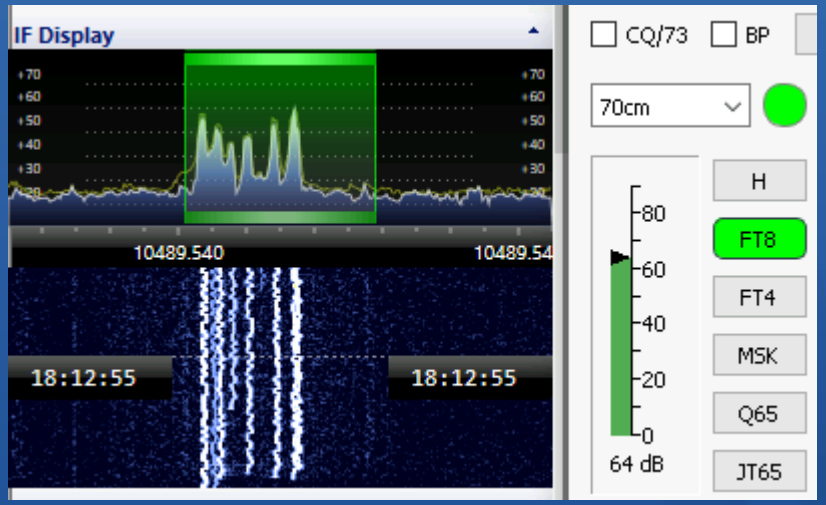
Oct 8th 2022


Scan & Tioune V0.2k for MiniTiouner/Pro ---- Scanwidth 250 kHz to 60 MHz ---- Detect SR66kS/s to SR33000kS/s
SCANNER
BandWidth
10 MHz
Freq 10495900
Offset - 09749997
ScanWidth
7,50 MHz
STOP
Scan time: 10,4 Sec
Fplug A B
A_Volt 0 V 13 V 18 V
A_22kH: OFF ON
TIOUNER
BandWidth
10 MHz
SR (kS) Freq (kHz)
00333 10497259
Offset-> - 09749997
Derot view
Presets
SR Help
DVB mode DVB-S DVB-S2 Auto
SR change
66 125 250 333 500 1000
4KLO JN18EV La villette Radio
07-10-2022 Fri 07:42:46
lescope-lavillette.fr - OBS Studio 27.1.3 virtual cam : F1E
VLC x1
Display
via UDP
232.0.0.1:9910
Station1 01014kS/s 10494723kHz
Station2 00478kS/s 10495778kHz
Station3 01041kS/s 10493189kHz
F4KLO 10497259 kHz SR333 kS/s
round SR
Detect all
>SR125
Show Next
CLEAR
Carrier Lock
SR Lock
RF Power
C/N MER
Carrier
SR
Full
RF Pw -36dBm
C/N MER 6,2dB
F4KLO
10 492 150 kHz
10 495 900 kHz
10 499 650 kHz
Scan Setup No generic QO-100
Fine
Step28,1kH
BCH errors 0
LDPC 15% 1017
FEC 3/4 QPSK_L35
C/N must be > 4,03dB
D2
TS err 0
Bytes recvd: 539 kb/s
lock 2641 ms
TS UDP
Record
Web
Quit
Images perdues (réseau) : 9246 (5.5%)
LIVE: 01:32:51
REC: 00:00:00
CPU: 8.0%, 30.00 fps
kb/s: 2665

Transmission numérique protocole FT-8

Steve Franke, K9AN - Joe Taylor K1JT

Transmission numérique protocole FT-8 (2017)
→ télécommunications à faible niveau -21dB
(meilleur que BLU ~+10dB ou CW -15dB à l'oreille)



- modulation 8-FSK (Frequency Shift Keying)
- messages blocs 77 bits en 15 secondes
- Tx 12,64 sec – Rx 2,36 sec
- débit 6,09 bits/sec
- -21dB dans 2500 Hz
- Eb/N0 = 10 log (2500/6,09) = -21+26,1 = 5,1 dB

Transmission à période fixe ± 1 sec (NTP ++) sur fréquence pilotée GPSDO ++

Réglages SDRConsole

Quelle niveau de signal CW ou SSB sur QO-100 ?
(la recommandation est de ne pas dépasser le niveau balise...)
En FT-8 ?

Transmit TX :
- drive au **minimum** du signal retour visible (en dehors fréquence FT-8 !)
- gain microphone et compression proc jouent sur la puissance de sortie
- vox

Receive Rx :
- sortie audio distant 100 % et régler audio de Windows
- mode duplex
- SSB

Un truc pour se passer du Câble Audio Virtuel si bureau à distance :
bouclage audio par micro dans écouteur du casque ...

Réglages WSJT-X

Très utile pour remplir le journal de log

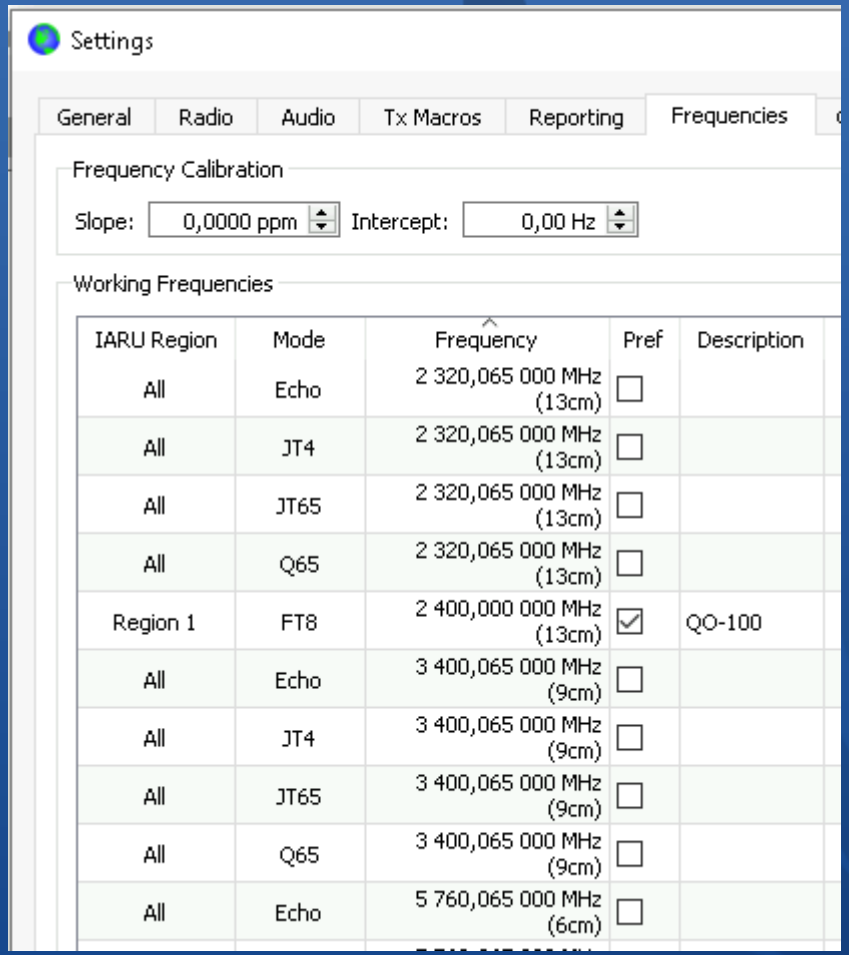
Dans Settings :

Régler audio Input, Output

Frequencies : cliquer à droite, Insert …

- IARU Region 1
- Mode FT-8
- Frequency 2400,000 000 MHz
- Cocher Pref
- Description QO-100

Logging : cocher Prompt me to log QSO
Op call : indicatif



Satellite QO-100

transpondeur bande étroite

Récepteur SDR Pluto fréquence asservie GPSDO et heure NTP +++
Applications : ConsoleRadio – WSJT-X – FT8 sur 10 489,540 MHz

https://qo100dx.club/ft8-skimmer

Cluster beta

This page is experimental.

Date/Time	DX	Freq.	Comments	Spotter	Source
2024-11-20 20:33	**4Z5PE**	.520	qo100 sat cq cw km72sx	IK2GRA	DXCluster
2024-11-20 20:33	**4Z5PE**	.519	qo100 sat cq cw km72sx	IK2GRA	DXCluster
2024-11-20 14:17	**DP0GVN**	.800	QO100 Tnx Alex IB59UI IB59	F6GLJ	DXCluster
2024-11-20 14:17	**DP0GVN**	.797	QO100 Tnx Alex IB59UI IB59	F6GLJ	DXCluster
2024-11-20 14:15	**PF16F**	.700	cq ses sat qo-100	SV2HZT	DXCluster
2024-11-20 05:15	**S9Z**	--	pseqo-100	R9HBF	DXCluster
2024-11-19 20:47	**F4KLO**	.679	cq sat qo-100	SV2HZT	DXCluster

-16 dB

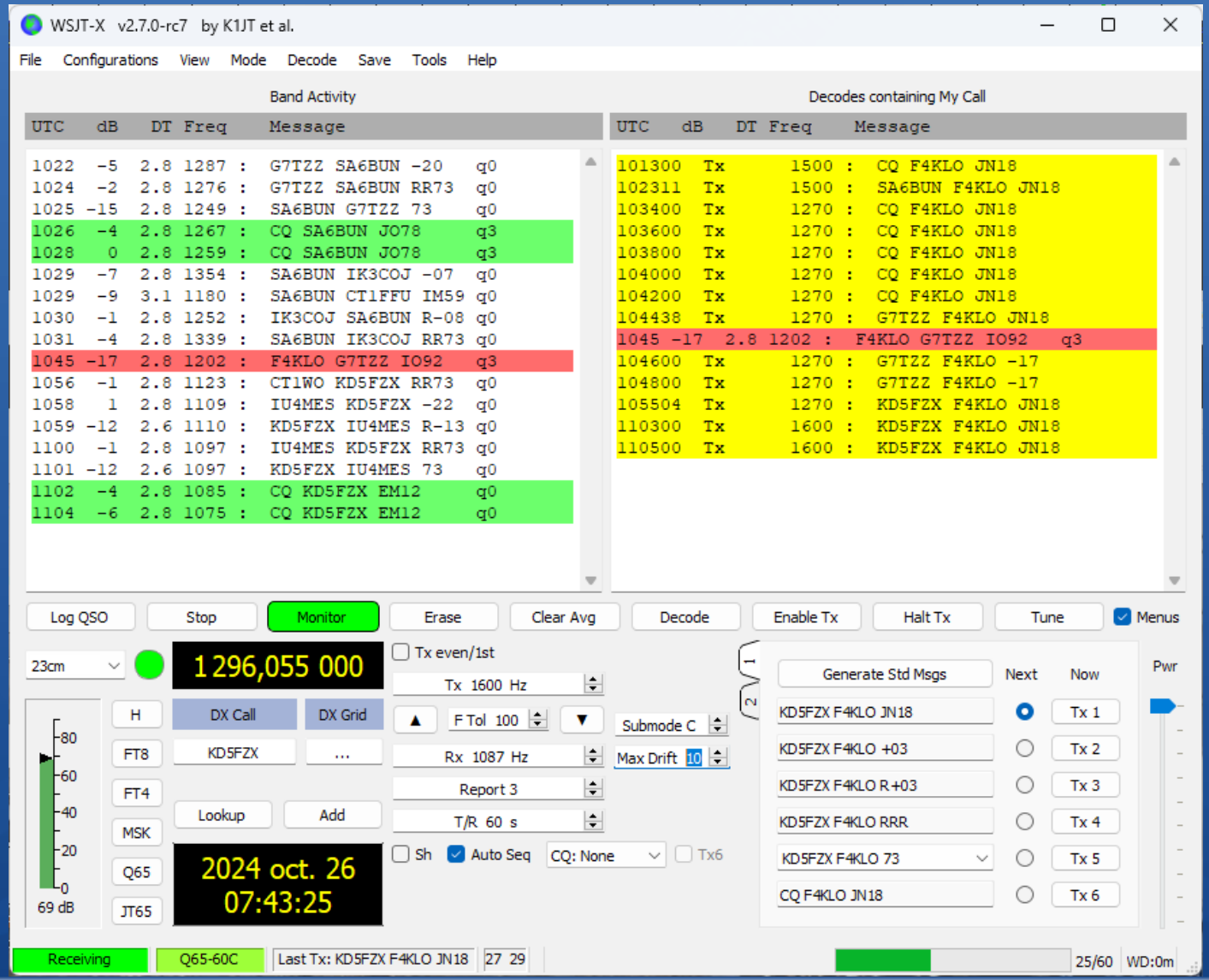
Last messages

```
10:07:45 +20 1400 EA5RM SP1MVG R+01
10:08:00 +13 0818 CQ YL2KF KO27
10:08:15 +19 1403 EA5RM SP1MVG 73
10:08:30 +14 0816 CQ YL2KF KO27
10:09:00 +14 0816 CQ YL2KF KO27
10:09:30 +14 0816 CQ YL2KF KO27
10:12:30 +14 1746 CQ F5RRS JN36
10:13:00 +14 1745 CQ F5RRS JN36
10:13:30 +14 1749 CQ F5RRS JN36
10:38:30 +13 1752 CQ F5RRS JN36
10:41:00 +17 1986 CQ PA0WCH JO21
10:41:30 +17 1986 CQ PA0WCH JO21
10:42:30 +17 1984 CQ PA0WCH JO21
10:42:30 -16 2324 CQ F4KLO JN18
10:43:00 -16 2324 CQ F4KLO JN18
10:43:30 -15 2327 CQ F4KLO JN18
10:44:00 -16 2326 CQ F4KLO JN18
10:44:30 -15 2328 CQ F4KLO JN18
10:44:30 +17 1986 CQ PA0WCH JO21
10:45:00 -17 2325 CQ F4KLO JN18
```

Top 👍

S	Station
-16	F4KLO
-14	IW5BT
-13	SV2HZT
-13	IK3ITB
-13	PE0JHM
-13	YL2KF
-12	DK1KQ
-12	HB9BIN
-12	SQ9ATC
-11	DL0OHA
-8	AO100RBCN
-6	F5OMU
-5	EA3RO

S	Station
-3	IZ8DBJ
-3	UR4URT
-3	IZ2BKC
-2	F4EJL
-1	LA7VRA


WSJT-X v2.7.0-rc7 by K1JT et al.
File Configurations View Mode Decode Save Tools Help
Band Activity
UTC dB DT Freq Message
1022 -5 2.8 1287 : G7TZZ SA6BUN -20 q0
1024 -2 2.8 1276 : G7TZZ SA6BUN RR73 q0
1025 -15 2.8 1249 : SA6BUN G7TZZ 73 q0
1026 -4 2.8 1267 : CQ SA6BUN JO78 q3
1028 0 2.8 1259 : CQ SA6BUN JO78 q3
1029 -7 2.8 1354 : SA6BUN IK3COJ -07 q0
1029 -9 3.1 1180 : SA6BUN CT1FFU IM59 q0
1030 -1 2.8 1252 : IK3COJ SA6BUN R-08 q0
1031 -4 2.8 1339 : SA6BUN IK3COJ RR73 q0
1045 -17 2.8 1202 : F4KLO G7TZZ IO92 q3
1056 -1 2.8 1123 : CT1WO KD5FZX RR73 q0
1058 1 2.8 1109 : IU4MES KD5FZX -22 q0
1059 -12 2.6 1110 : KD5FZX IU4MES R-13 q0
1100 -1 2.8 1097 : IU4MES KD5FZX RR73 q0
1101 -12 2.6 1097 : KD5FZX IU4MES 73 q0
1102 -4 2.8 1085 : CQ KD5FZX EM12 q0
1104 -6 2.8 1075 : CQ KD5FZX EM12 q0
Decodes containing My Call
UTC dB DT Freq Message
101300 Tx 1500 : CQ F4KLO JN18
102311 Tx 1500 : SA6BUN F4KLO JN18
103400 Tx 1270 : CQ F4KLO JN18
103600 Tx 1270 : CQ F4KLO JN18
103800 Tx 1270 : CQ F4KLO JN18
104000 Tx 1270 : CQ F4KLO JN18
104200 Tx 1270 : CQ F4KLO JN18
104438 Tx 1270 : G7TZZ F4KLO JN18
1045 -17 2.8 1202 : F4KLO G7TZZ IO92 q3
104600 Tx 1270 : G7TZZ F4KLO -17
104800 Tx 1270 : G7TZZ F4KLO -17
105504 Tx 1270 : KD5FZX F4KLO JN18
110300 Tx 1600 : KD5FZX F4KLO JN18
110500 Tx 1600 : KD5FZX F4KLO JN18
Log QSO
Stop
Monitor
Erase
Clear Avg
Decode
Enable Tx
Halt Tx
Tune
Menus
23cm
1 296,055 000
Tx even/1st
Tx 1600 Hz
F Tol 100
Submode C
Rx 1087 Hz
Max Drift 10
Report 3
T/R 60 s
Sh
Auto Seq
CQ: None
Tx6
80
60
40
20
0
69 dB
H
FT8
FT4
MSK
Q65
JT65
DX Call
DX Grid
KD5FZX
...
Lookup
Add
2024 oct. 26
07:43:25
1
2
Generate Std Msgs
Next
Now
KD5FZX F4KLO JN18
KD5FZX F4KLO +03
KD5FZX F4KLO R+03
KD5FZX F4KLO RRR
KD5FZX F4KLO 73
CQ F4KLO JN18
Tx 1
Tx 2
Tx 3
Tx 4
Tx 5
Tx 6
Pwr
Receiving
Q65-60C
Last Tx: KD5FZX F4KLO JN18
27 29
25/60
WD:0m

-18 dB

Last messages

```
10:08:15 +19 1403 EA5RM SP1MVG 73
10:08:30 +14 0816 CQ YL2KF KO27
10:09:00 +14 0816 CQ YL2KF KO27
10:09:30 +14 0816 CQ YL2KF KO27
10:12:30 +14 1746 CQ F5RRS JN36
10:13:00 +14 1745 CQ F5RRS JN36
10:13:30 +14 1749 CQ F5RRS JN36
10:38:30 +13 1752 CQ F5RRS JN36
10:41:00 +17 1986 CQ PA0WCH JO21
10:41:30 +17 1986 CQ PA0WCH JO21
10:42:30 +17 1984 CQ PA0WCH JO21
10:42:30 -16 2324 CQ F4KLO JN18
10:43:00 -16 2324 CQ F4KLO JN18
10:43:30 -15 2327 CQ F4KLO JN18
10:44:00 -16 2326 CQ F4KLO JN18
10:44:30 -15 2328 CQ F4KLO JN18
10:44:30 +17 1986 CQ PA0WCH JO21
10:45:00 -17 2325 CQ F4KLO JN18
10:45:30 +16 1984 CQ PA0WCH JO21
10:46:30 -18 2326 CQ F4KLO JN18
```

Top 👍

S	Station
-18	F4KLO
-14	IW5BT
-13	SV2HZT
-13	IK3ITB
-13	PE0JHM
-13	YL2KF
-12	DK1KQ
-12	HB9BIN
-12	SQ9ATC
-11	DL0OHA
-8	AO100RBCN
-6	F5OMU
-5	EA3RO

S	Station
-3	IZ8DBJ
-3	UR4URT
-3	IZ2BKC
-2	F4EJL
-1	LA7VRA

-19 dB

Last messages

```
10:56:15 +13 0876 CQ DL1RI JO40
10:56:45 +11 0883 CQ DL1RI JO40
10:57:15 +11 0885 CQ DL1RI JO40
11:05:00 +14 1748 CQ F5RRS JN36
11:05:30 +13 1748 CQ F5RRS JN36
11:20:45 -14 2325 CQ F4KLO JN18
11:21:15 -13 2323 CQ F4KLO JN18
11:21:45 -15 2326 CQ F4KLO JN18
11:22:15 -15 2322 CQ F4KLO JN18
11:22:45 -18 2321 CQ F4KLO JN18
11:23:15 -16 2320 CQ F4KLO JN18
11:24:15 -16 2321 CQ F4KLO JN18
11:24:45 -17 2322 CQ F4KLO JN18
11:25:15 -16 2320 CQ F4KLO JN18
11:26:00 +15 1292 CQ II4BTFU
11:26:30 +14 1296 CQ II4BTFU
11:27:00 +15 1296 CQ II4BTFU
11:27:15 -19 2319 CQ F4KLO JN18
11:27:45 -20 2322 CQ F4KLO JN18
11:28:15 -19 2322 CQ F4KLO JN18
```

Top 👍

S	Station
-19	F4KLO
-14	IW5BT
-13	SV2HZT
-13	IK3ITB
-13	PE0JHM
-13	YL2KF
-12	DK1KQ
-12	HB9BIN
-12	SQ9ATC
-11	DL0OHA
-8	AO100RBCN
-6	F5OMU
-5	EA3RO

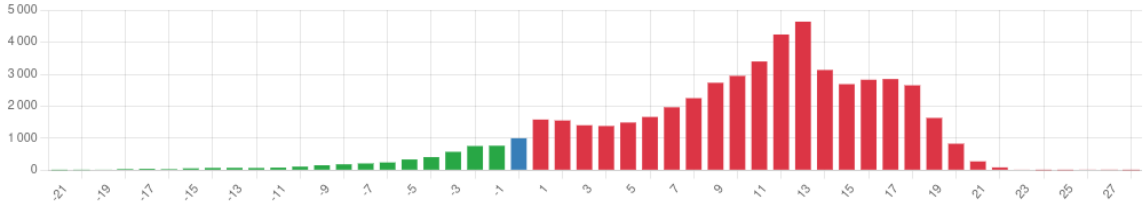
S	Station
-3	IZ8DBJ
-3	UR4URT
-3	IZ2BKC
-2	F4EJL
-1	LA7VRA

FT-8 les bons... les brutes ...

Last 24h | Last 7 days

Data from 2024-11-14 11:41:01 until 2024-11-21 11:41:01, total of decodes.

Signal Strength Histogram



Last messages

```
11:30:00 +14 2977 <HG20EU> DL4MAU +08
11:30:00 +05 2241 <HG20EU> SV8JE KM08
11:30:30 +14 2976 <HG20EU> DL4MAU +08
11:30:30 +13 1728 CQ F5RRS JN36
11:31:00 +13 1731 CQ F5RRS JN36
11:31:30 +14 1732 CQ F5RRS JN36
11:31:45 +13 1399 CQ HG20EU
11:31:45 +14 1582 SV8JE R9HBF NO26
11:32:30 +16 1869 <HG20EU> IK3GHR JN55
11:33:00 +15 1563 <HG20EU> R9HBF NO26
11:33:00 +18 1866 <HG20EU> IK3GHR R+01
11:33:15 +08 1401 <IK3GHR> HG20EU RR73
11:33:15 +09 1460 R9HBF <HG20EU> +05
11:33:30 +18 1862 HG20EU <IK3GHR> 73
11:33:30 +15 1557 <HG20EU> R9HBF R-04
11:33:45 +07 1400 <R9HBF> HG20EU RR73
11:34:00 +14 1558 HG20EU <R9HBF> 73
11:35:15 +14 1396 CQ HG20EU
11:35:45 +12 1401 CQ HG20EU
11:36:15 +14 1399 CQ HG20EU
```

Top 👍

S	Station
-21	R3LO
-21	DJ3LE
-20	DL1GNM
-20	F4KLO
-20	SP6IWQ
-20	SQ5NRY
-19	DD6ZV
-19	OH4MS
-19	DL5RMH
-19	9H1CG
-18	EA1RX
-18	SP3AU
-18	SP5OAP

S	Station
-18	EW2MS
-18	RN3ZPE
-18	UE34DX
-17	RA3DNC
-17	IK1JNS
-17	SP7TBS
-17	YL2KF
-17	DK3WN
-17	R9LR
-17	UW2N
-17	DH4DAN
-17	4Z5PE
-17	CT1FFU

Top 👎

S	Station
28	TA1SOR
26	EA2AA
24	SP5OAP
23	IK1GPG
23	YL2GC
22	F5OMU
22	DL7ACN
22	HB9BIN
22	UN7NVM
22	DL3FE
22	TA2AI
22	DJ0WJ
22	CT1ILT

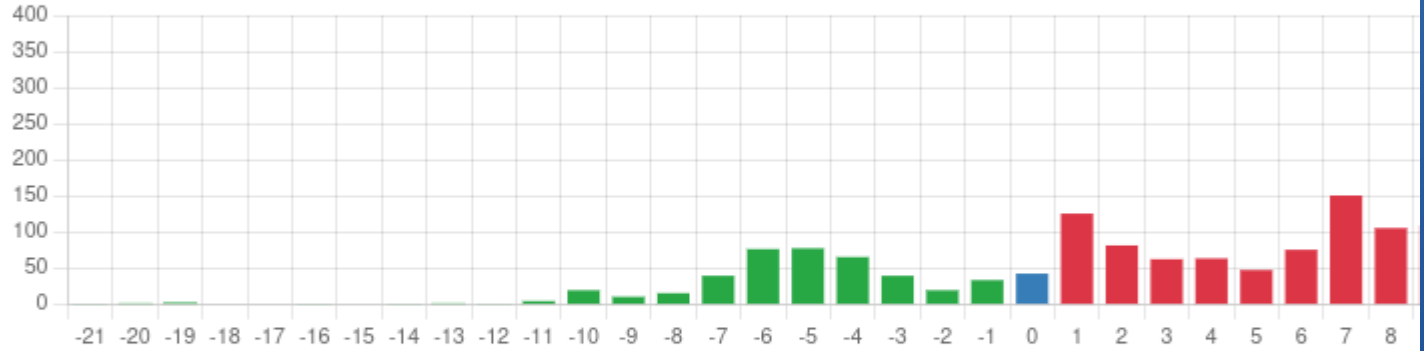
S	Station
21	IZ6ERS
21	DH3RN
21	UT4QM
21	I3BUI
21	YU0W
21	YO7CW
21	DJ3LE
21	PY2GN
21	R9LR
21	G4PPN
21	SQ5DM
21	SP1MVG
21	SQ1SDX

FT-8 -21dB le TOP !

Last 24h | Last 7 days

Data from 2024-11-21 13:22:01 until 2024-11-22 13:22:01, total of decodes.

Signal Strength Histogram



Last messages

```
13:14:00 +17 1635 YO3CBZ <AM125FCB> +05
13:14:15 +15 1500 <AM125FCB> YO3CBZ R+10
13:14:30 +17 1635 <YO3CBZ> AM125FCB RR73
13:14:45 +15 1502 AM125FCB <YO3CBZ> 73
13:15:00 +17 1633 CQ AM125FCB
```

Top 👍

S	Station
-21	F4KLO
-16	PY2KY
-14	SM0TGU

S	Station
-9	UR4QWW
-9	IK3GHR
-8	SP5CJG

QSO FT-8 F4KLO

WSJT-X v2.7.0-rc7 by K1JT et al. - Log QSO

Click OK to confirm the following QSO:

Call	Start	End
DL6SMA	19/11/2024 19:01:00	19/11/2024 19:02:07

Mode	Band	Rpt Sent	Rpt Rcvd	Grid	Name
FT8	2m	-07	-22	JN58	

Tx power — Retain

Comments — Retain

Operator

Exch sent — Rcvd

Prop Mode: Satellite — Retain

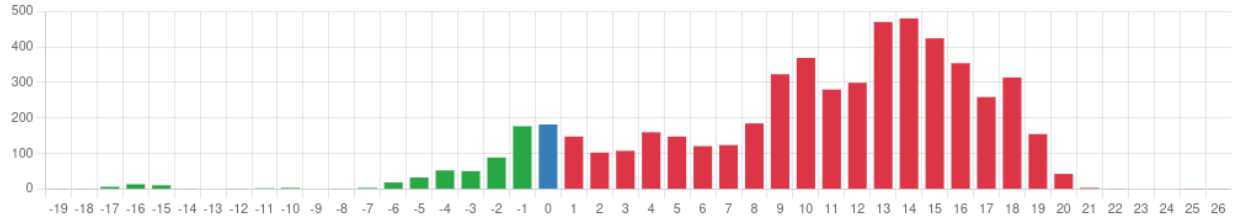
OK Cancel

```
185845  -3  1.6 1743 ~  CQ DG4DW JO31
185908  Tx       1743 ~  DG4DW F4KLO JN18
185915   0  1.6 1744 ~  CQ DG4DW JO31
185930  Tx       1743 ~  DG4DW F4KLO JN18
185945  -3  1.3 1753 ~  CQ DG4DW JO31
190000  Tx       1743 ~  DG4DW F4KLO JN18
190015  -1  1.5 1747 ~  DJ6OI DG4DW +05
190030  Tx       1743 ~  DG4DW F4KLO JN18
190045  -3  1.5 1746 ~  DJ6OI DG4DW +05
190015  -8  1.3  842 ~  CQ DL6SMA JN58
190100  Tx        842 ~  DL6SMA F4KLO JN18
190115  -7  1.4  839 ~  F4KLO DL6SMA -22
190130  Tx        842 ~  DL6SMA F4KLO R-07
190145  -5  1.4  831 ~  F4KLO DL6SMA RR73
190200  Tx        842 ~  DL6SMA F4KLO 73
```

Last 24h | Last 7 days

Data from 2024-11-26 17:48:01 until 2024-11-27 17:48:01, total of decodes.

Signal Strength Histogram



Last messages

```
17:47:15 +06 1566 UR4QWW SP7QJF KO10
17:47:15 +19 0839 F4KLO RN6MA R-19
17:47:30 -17 1743 RN6MA F4KLO RRR
```

Top 👍

S	Station
-19	F4KLO
-17	DH5YBE

S	Station
-4	DD8KO
-4	PA3AAA

Top 👎

S	Station
26	EA2AA
22	YL2GC

S	Station
19	DO1EJK
19	PA3EKG

QRZ log F4KLO QSO FT-8

	Date	Time	RX Call	TX Frequency	RX Mode	RX Grid	RX	RX Country	RX Operator Name
1	2024-11-23	23:41	UW2N	10,489.50000	FT8	KN49		Ukraine	SERGEI IVANOV
2	2024-11-23	23:40	UW2N	10,489.50000	FT8	KN49		Ukraine	SERGEI IVANOV
3	2024-11-19	19:01	DL6SMA	10,489.50000	FT8	JN58		Germany	Markus Senser
4	2024-11-19	09:30	ON5VW	10,489.50000	FT8	JO10		Belgium	MARC
5	2024-11-19	09:18	ON5VW	10,489.50000	FT8	JO10		Belgium	MARC
6	2024-11-18	19:15	ON5VW	10,489.50000	FT8	JO10		Belgium	MARC
7	2024-11-18	19:11	DJØWJ	10,489.50000	FT8	JO40		Germany	Marian Zerebecki
8	2024-11-18	19:10	SP3AU	10,489.50000	FT8	JO71		Poland	Jozef Au
9	2024-11-18	19:08	PY2GN	10,489.50000	FT8	GG56t…		Brazil	WILLIAM G. SCHAUFF
10	2024-11-18	19:04	F5OMU	10,489.50000	FT8	IN94		France	Alain SIGNAC
11	2024-11-18	18:53	UR4QWW	10,489.50000	FT8	KN77		Ukraine	Clubstation of Zaporiz…
12	2024-11-18	18:46	E77ENS	10,489.50000	FT8	JN93		Bosnia and He…	Klub Radio Amatera …
13	2024-11-18	18:41	PY4BL	10,489.50000	FT8	GH80		Brazil	ARNALDO G. SOUZA
14	2024-11-18	18:37	PAØWCH	10,489.50000	FT8	JO21		Netherlands	Dr. Will Chr. Hildering
15	2024-11-18	11:48	YL2GC	10,489.50000	FT8	KO26		Latvia	VLADIMIR KONDER…
16	2024-11-14	18:45	R3LO	10,489.50000	FT8	KO64		Russia	Vladimir Pavlenko
17	2024-11-14	18:39	F5RRS	10,489.50000	FT8	JN36e…		France	Damien FORESTIER
18	2024-11-14	18:36	F5RRS	10,489.50000	FT8	JN36e…		France	Damien FORESTIER
19	2024-11-13	19:42	PP2RON	10,489.20000	FT8	GH53		Brazil	RONNAN WERNECK
20	2024-11-13	19:31	F6HRP	10,489.50000	FT8	IN88		France	Alain PUILLANDRE
21	2024-11-13	19:18	I3BUI	10,489.50000	FT8	JN55		Italy	ROBERTO BUREI
22	2024-11-13	19:09	EW2MS	10,489.50000	FT8	KO34		Belarus	MIKHAIL SENKO
23	2024-11-13	19:01	OH4MS	10,489.50000	FT8	KP24		Finland	Tomi Tikkanen
24	2024-11-13	19:00	OH4MS	10,489.50000	FT8	KP24		Finland	Tomi Tikkanen

https://qo100dx.club/sprint-2025

Schedule

The Sprint Contest will take place on the 2nd Saturday of the month, between 15h00 and 15h59 UTC (inclusive), with the following schedule:

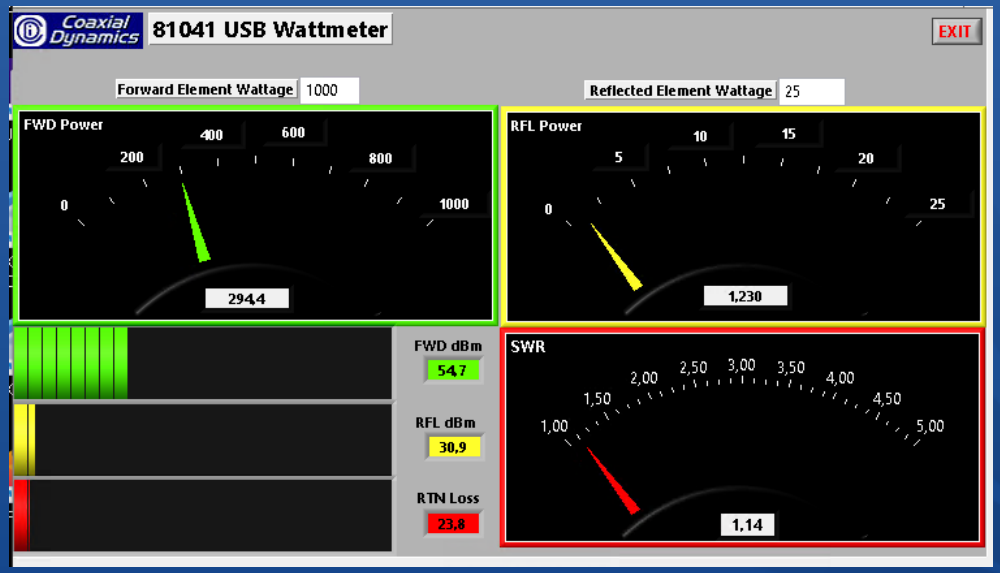
January, May, September: SSB

February, June, October: CW

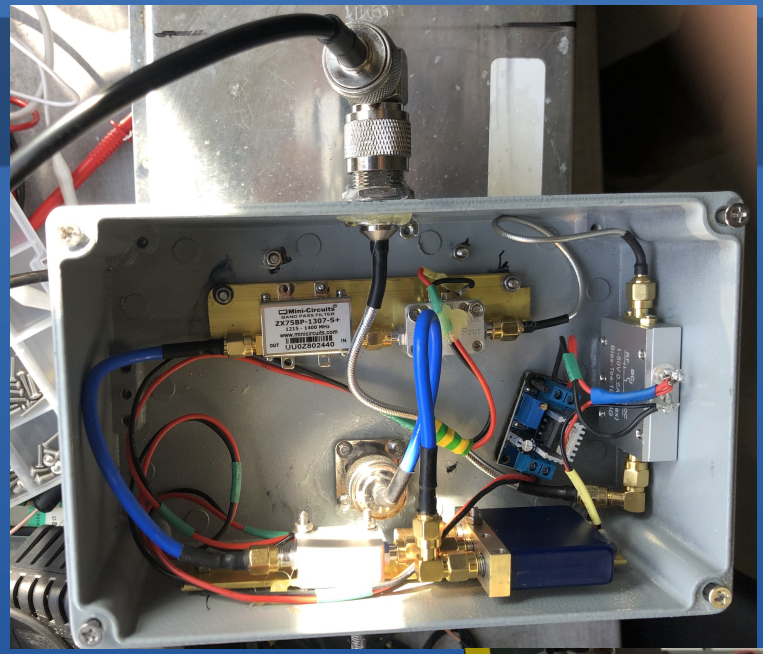
March, July, November: RTTY

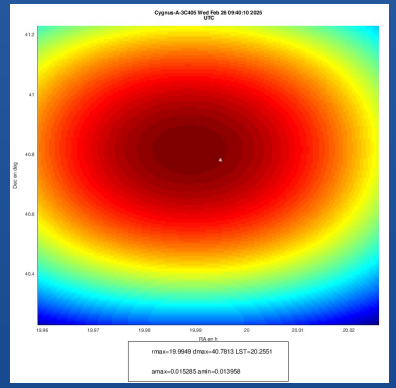
April, August, December: FT4

6 décembre 2024 – réglage TOS minimal

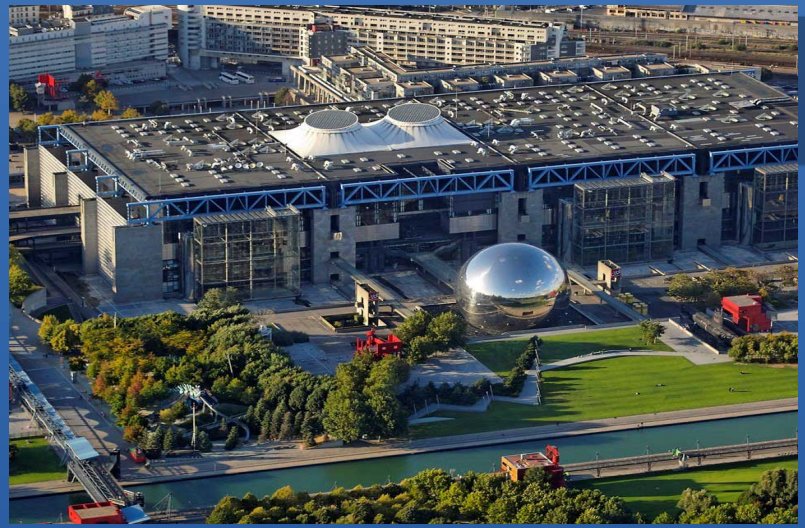


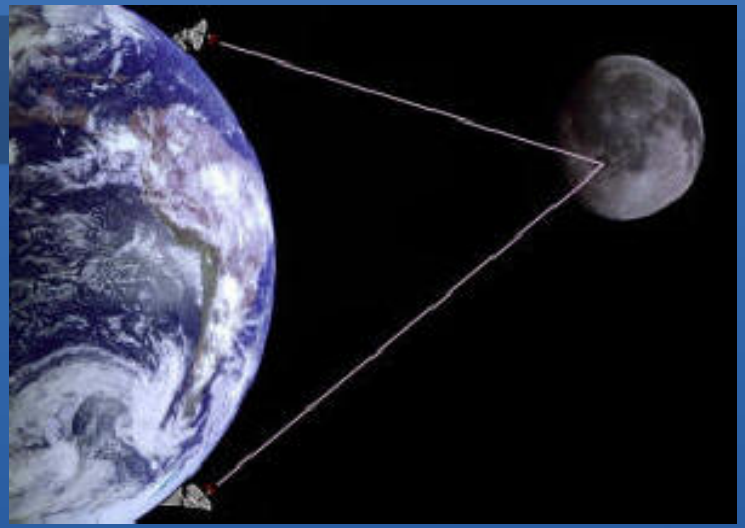
18 février 2025





Cygnus A* 750 Mal





Association Dimension Parabole

contact@radiotelescope-lavillette.fr

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Patrick F1EBK, Guy F2CT...