

Térkép Műhold

Zajtűrő digitális adásmódok a gyakorlatban

Felhasználói tapasztalatok

ha6nn@starjan.hu

Rx at Fri, 18 Nov 2016 14:55:51 GMT
From [KD6C](#) in United States
Loc CM95nh by [HA6NN](#)
Distance: 9951 km bearing 328°
Frequency: 18.103.236 MHz (17m), JT65, -23dB
Last LoTW upload: Mon, 07 Nov 2016
eQSL Authenticity Guaranteed.

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PSKREPORTER.INFO

Szoftverek digitális adásmódokhoz I.

<i>SOFTWARE</i>	<i>SIZE</i>	<i>MODES / DESCRIPTION</i>	<i>LIVE</i>	<i>PLATFORM</i>	<i>AUTHOR</i>
CMSK	257K	CMSK 8, 31, 63, 125 BAUD	TX / RX	WIN 98, XP	ZL2AFP
DIGIPAN 2.0	630K	BPSK31, QPSK31, FSK31, BPSK63, PACTOR1	TX / RX	WIN 98, XP	KH6TY
FLDIGI 4.0.12.5	8878K	FSQ, THOR, PSKR, CONTESTIA, OLIVIA, MFSK, + MORE	TX / RX	WIN XP, 7, 10	W1HKJ
FREEDV 1.2.0	11417K	DIGITAL VOICE. 700B, 700C, 800XA, 1600 [32 + 64 BIT]	TX / RX	WIN XP, 7	KD0EAG,VK5DGR
FREEDV 1.2.2	18729K	DIGITAL VOICE. 700C, 800XA, 1600 [32 + 64 BIT]	TX / RX	WIN XP, 7	KD0EAG,VK5DGR
JASON 0.95	400K	I.F.K [WITH KK7KA DECODER, NO TURBO MODE]	TX / RX	WIN 98, XP, 7	I2PHD
JASON 0.99B	627K	I.F.K [WITH TURBO MODE, NO KK7KA DECODER]	TX / RX	WIN 98, XP, 7	I2PHD
JT65 HB9HQX 4.97	5058K	JT65	TX / RX	WIN XP, 7, 10	HB9HQX
JT65HF 1.0.70	6927K	JT65	TX / RX	WIN XP, 7	W6CQZ
JT65HF 1.0.9.3	6845K	JT65	TX / RX	WIN XP, 7	W6CQZ
JT65HF COMFORT 3.9	9253K	JT65	TX / RX	WIN XP, 7	DL3VCO
JT65HF COMFORT 4.0	10021K	JT65	TX / RX	WIN XP, 7	DL4OCE
JTDX 17.9.0.53	17881K	JT65, JT9, T10, WSPR2	TX / RX	WIN XP, 7, 10	HF COMMUNITY
MAP65 2.5 R6139	14145K	JT65, B, C, JT65 B2, C2	TX / RX	WIN XP, 7	K1JT
MIXW 2.19	4063	BPSK, RTTY, AMTOR, FSK, MFSK, THROB, MT63, ETC.	TX / RX	WIN XP, 7	UT2UZ
MIXW 3.2.105	13735	BPSK, RTTY, AMTOR, FSK, MFSK, THROB, MT63, ETC.	TX / RX	WIN XP, 7, 10	UT2UZ
MMTTY 1.70K	3514K	RTTY	TX / RX	WIN XP, 7	JE3HHT

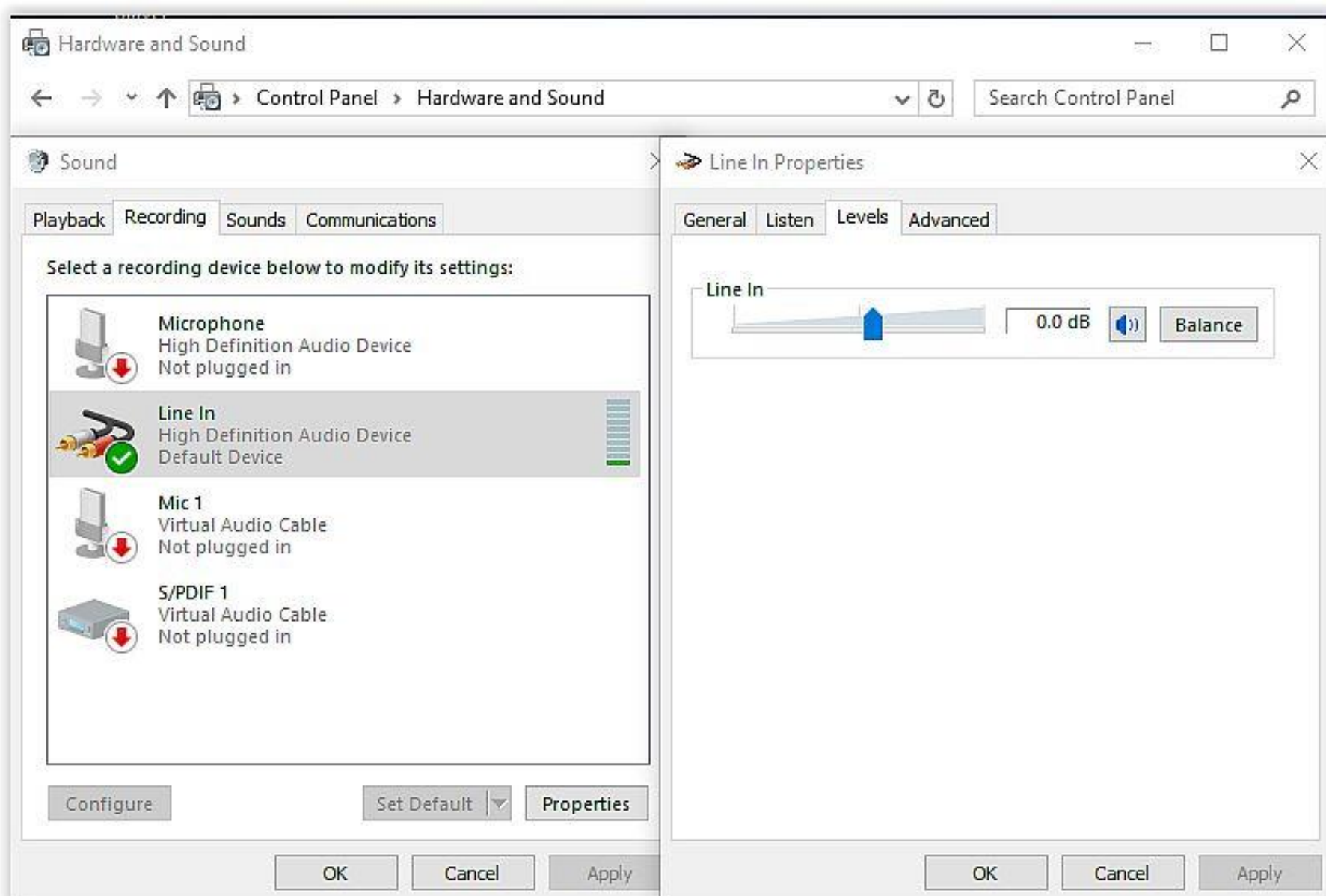
Szoftverek digitális adásmódokhoz II.

WSJT 3.81	6937K	FSK441, JT6M, JT44, CW	TX / RX	WIN 98, XP	K1JT
WSJT 4.70	7002K	FSK441A/B/C, JT6M, JT65/B/C	TX / RX	WIN 98, XP	K1JT
WSJT 7.07 R2031	9281K	FSK441, JT6M, JT64A, JT65/B/C, JT2, JT4A-G, WSPR	TX / RX	WIN 98, XP, 7	K1JT
WSJT 8 R1944	11550K	JTMS, ISCAT, JT64A, JT8	TX / RX	WIN 98, XP, 7	K1JT
WSJT 10 R6088	13362K	FSK315, ISCAT A/B, JT65A-C, JT4A-G, JT65B2/C2, JTMS	TX / RX	WIN XP, 7	K1JT
WSJT-X 0.95 R3278	8820K	JT9, JT9-2, JT9-5, JT9-10, JT9-30	TX / RX	WIN XP, 7	K1JT
WSJT-X 1.80	20695K	FT8, JT4, JT9, JT65, QRA64, ISCAT, MSK144, WSPR2	TX / RX	XP, 7, 10	K1JT
WSPR 2.0 R1714	6601K	4 TONE 1.46 BAUD FSK	TX / RX	WIN 98, XP, 7	K1JT
WSPR 4.0 R4171	16007K	4 TONE 1.46 BAUD FSK	TX / RX	WIN 98, XP, 7	K1JT
WSPR-X 08 R3058	6601K	WSPR 2, WSPR 15	TX / RX	WIN XP, 7	K1JT

Minimum jel/zaj viszony 2500 Hz sávszélességre vonatkoztatva

Adásmód	jel/zaj viszony
FSK441	-1 dB
CW	-15 dB
ISCAT	-17 dB
FT8	-20 dB
JT4	-23 dB
JT65	-25 dB
JT9	-27 db
WSPR	-28 dB

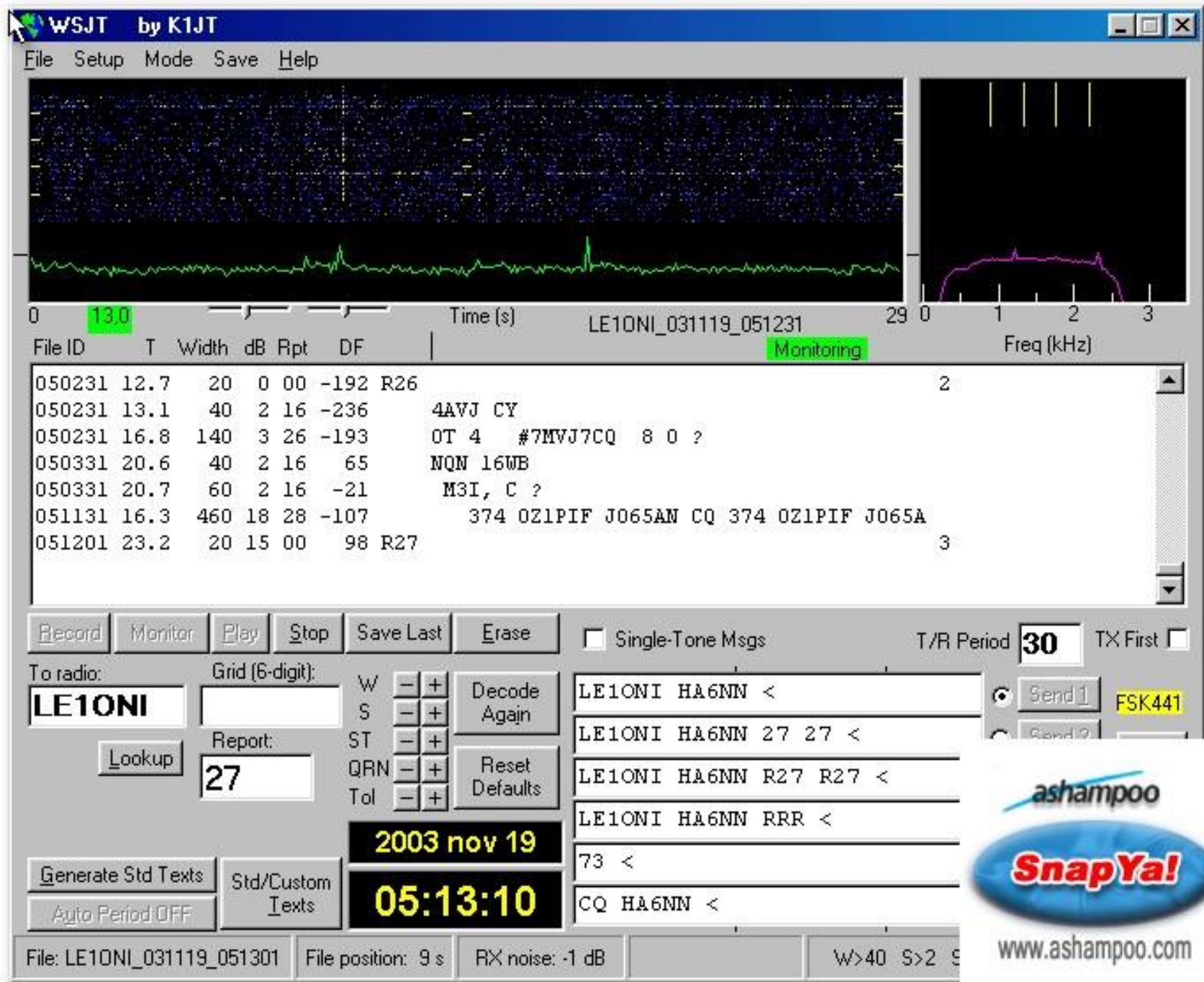
A hangfrekvenciás alapszint beállítása a PC vezérlőpulton.



WSJT 2003.

Ebben az évben
kezdődött meg
a WSJT-X
fejlesztése

K1JT 2004. január 30-án
jelentette be, hogy a WSJT-X
V1.3
letölthető Princetonból.



WSJT-X V1.4.0

WSJT-X v1.4.0 by K1JT

File View Mode Decode Save Help

Band Activity

UTC	dB	DT	Freq	Message
1714	-17	0.9	1050	# DL1JVT CT4VB R-01
1714	-9	0.4	1268	# DH6FAJ EA7DGC IM77
1714	-3	0.1	1365	# G0PHP RJ3ZL RR73
1715	-7	0.3	679	# S58X G4WEY R-01
1715	-19	-0.4	1008	# IN3NHZ UA3POG -22
1715	-1	0.7	1365	# RJ3ZL G0PHP 73
1716	-15	0.1	947	# S53PM G4RGH R-11
1716	-15	0.7	1049	# DL1JVT CT4VB RR73
1716	-11	0.3	1269	# DH6FAJ EA7DGC R-07
1716	-2	-0.1	1654	# OE4AHG RJ3ZL KO70

Rx Frequency

UTC	dB	DT	Freq	Message
1657	-7	-0.8	1712	# DL1ARJ UR5UCJ KO5
1659	-18	0.3	1707	# DL1ARJ UR6ISV RR7
1700	Tx		1712	# UR5UCJ HA6NN -07

Log QSO Stop Monitor Erase Decode Enable Tx Halt Tx Tune

40m

+2 kHz

50
40
30
20
10
30 dB

7,076 000

DX Call DX Grid

UR5UCJ KO50

Az: 68 860 km

Lookup Add

2017 nov. 09 17:17:21

Digital gain for audio input

☒ Tx even

Tx JT65 #

Tx 1712 Hz

Rx 1712 Hz

☒ Lock Tx=Rx

Report -7

Generate Std Msgs

Next Now

UR5UCJ HA6NN JN98

UR5UCJ HA6NN -07

UR5UCJ HA6NN R-07

UR5UCJ HA6NN RRR

UR5UCJ HA6NN 73

CQ HA6NN JN98

Tx 1

Tx 2

Tx 3

Tx 4

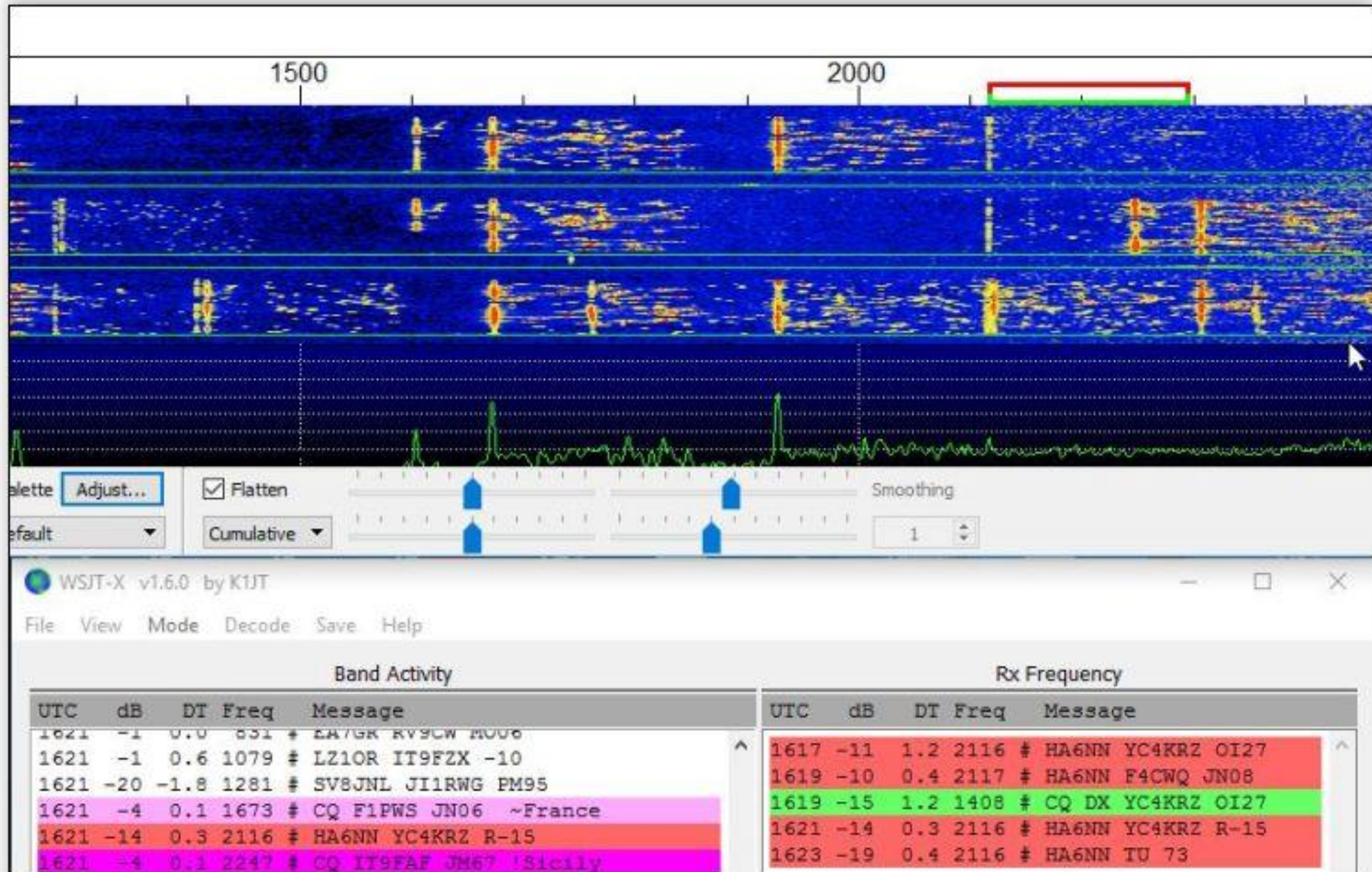
Tx 5

Tx 6

Pwr

Receiving JT65 Last Tx: UR5UCJ HA6NN -07 Tx-Enable Armed

A JT65 jel



JT65

A JT65 protokol kódját 2001-ben írta Joe Taylor K1JT

Nyílt forráskód megjelent:2005

MS és EME célra készült

65 tone FSK

Jelszéleség: 185 Hz

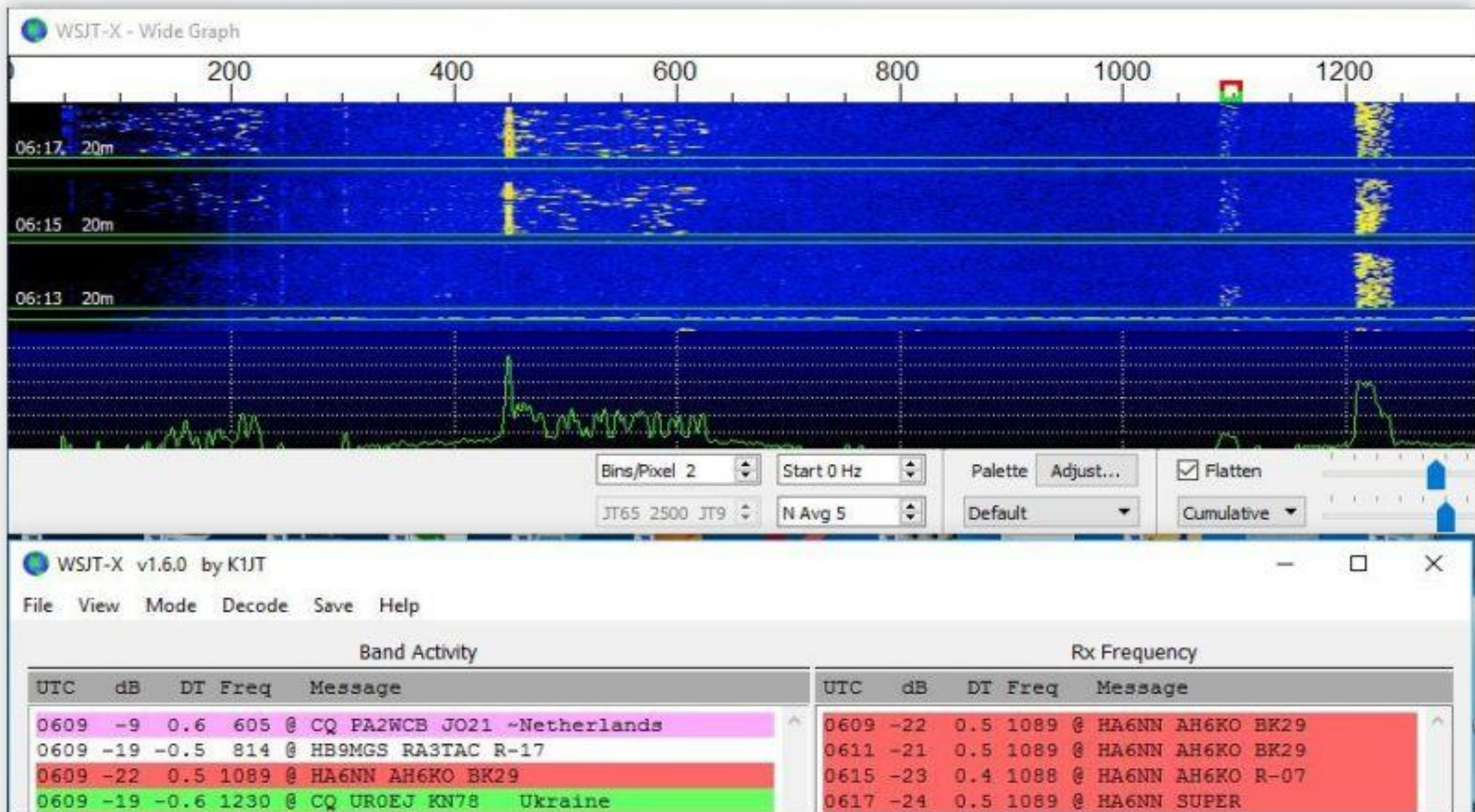
Hibamegelőzés: FEC

Hibajavítás: Reed-Solomon

10-15 dB-vel érzékenyebb mint a CW

A PC időszinkron alapvető

A legutolsó teljesen komplett verzióval a V1.7.0-val dolgoztam 2015-ben



Ez az összeköttetés az ötvenedik USA állam elérését jelentette JT9 adásmódban.

The screenshot displays the JT9 software interface. At the top, a row of buttons includes 'Log QSO', 'Stop', 'Monitor' (highlighted in green), 'Erase', 'Decode', 'Enable Tx' (highlighted in red), 'Halt Tx', and 'Tune'. Below these, a frequency display shows '14,078 000' in yellow on a black background. To the left of the frequency is a band selection dropdown set to '20m' and a green status indicator. Below the frequency, there are fields for 'DX Call' (AH6KO) and 'DX Grid' (BK29), along with 'Az: 355' and '12497 km'. A 'Lookup' button and an 'Add' button are also present. A large black box displays the date and time: '2016 ápr. 19 06:17:52'. To the right of the frequency, there are controls for 'Tx JT9 @', 'Tx even' (checked), 'Tx 1089 Hz', 'Tx<Rx', 'Rx 1089 Hz', 'Rx<Tx', 'Lock Tx=Rx' (checked), and 'Report -22'. On the far right, a 'Pwr' slider is visible. The bottom status bar shows 'Receiving' (green), 'JT9' (pink), 'Last Tx: AH6KO HA6NN RRR', 'Tx-Enable Armed', and a green progress bar at 100%.

Log QSO Stop Monitor Erase Decode Enable Tx Halt Tx Tune

20m 14,078 000

60+
50
40
30
20
10
0
31dB

DX Call DX Grid
AH6KO BK29
Az: 355 12497 km
Lookup Add

2016 ápr. 19
06:17:52

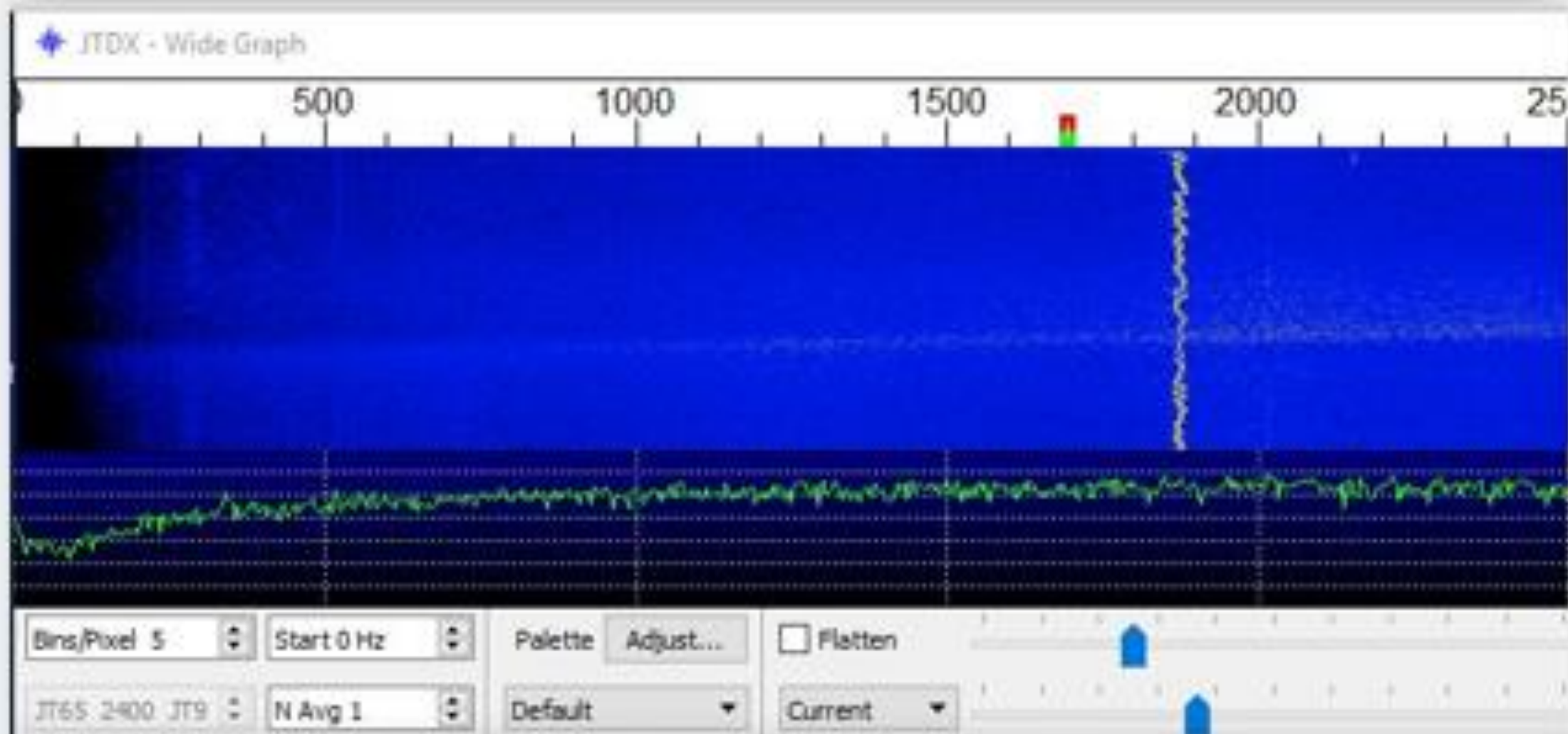
Tx JT9 @ ☒ Tx even
Tx 1089 Hz Tx<Rx
Rx 1089 Hz Rx<Tx
☒ Lock Tx=Rx Report -22

Calling CQ Answering CQ
CQ Grid
dB R+dB
RRR 73

AH6KO HA6NN RRR ☐ Gen msg
R TU LOTW 73 ☒ Free msg

Receiving JT9 Last Tx: AH6KO HA6NN RRR Tx-Enable Armed 100%

A JT9 jel



JT9

**RH, KH és HH sávartományhoz készült
FSK 9 hang 1,7 Hz közökkel (tone spacing)
Sávszélesség 15.6 Hz
Elviseli a nagy jeleket
Vételi küszöb -27 dB**

Submode	Tone duration (sek)	Signal bandwidth (Hz)	S/N threshold (dB)*	Comunication duration (minutes)
JT9-1	0,58	15	-27	6
JT9-2	1,28	7	-30	12
JT9-5	3,41	2,6	-34	30
JT9-10	6,91	1,3	-37	60
JT9-30	21,00	0,4	-42	180

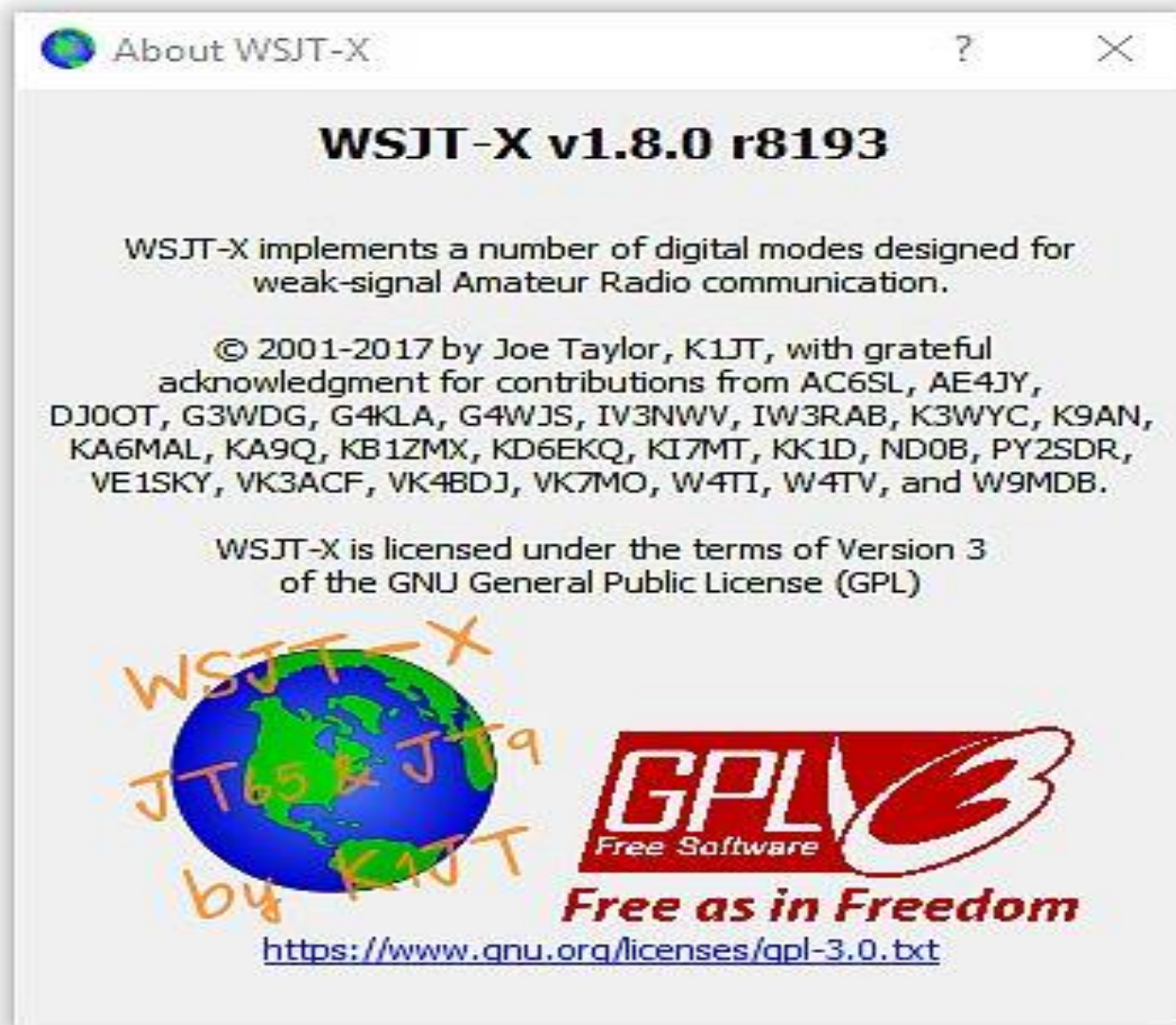
** Noise measured in 2500Hz passband*

Út a 15 másodperces vagy még rövidebb periódusok felé a JT9H protokol alkalmazásával:

The screenshot displays the JT9H software interface with the following elements:

- Top Bar:** Buttons for Log QSO, Stop, Monitor (highlighted in green), Erase, Decode, Transmit Tx (highlighted in red), Halt Tx, and Tune.
- Frequency:** A red box displays 50,290 000.
- Band:** A dropdown menu shows 6m.
- Call and Grid:** DX Call is G3XVR and DX Grid is IO91. Below them, Az: 292 and 1535 km are shown.
- Buttons:** Lookup and Add buttons are present.
- Time:** A black box displays 2017 jún. 16 19:37:55.
- Controls:** Tx even/1st (checked), Tx 700 Hz, Rx 700 Hz, F Tol 20, Report -3, T/R 15 s, Tx CQ 290, Tx ← Rx, Rx ← Tx, Lock Tx=Rx (checked), Submode H, Sync 0, Fast (checked), and Auto Seq (checked).
- Message List:** A table with columns Generate Std Msgs, Next, Now, and Pwr. The messages are:
 - G3XVR HA6NN JN98
 - G3XVR HA6NN -03
 - G3XVR HA6NN R-03
 - G3XVR HA6NN RRR
 - G3XVR HA6NN 73
 - CQ HA6NN JN98 (selected with a radio button)
- Status Bar:** Receiving (green), JT9 H (pink), Last Tx: CQ HA6NN JN98, 10/15, WD: 30m.

2017. október 27-én megjelent a WSJT-X V1.8.0 r8193



FT8

Franke-Taylor design, 8-FSK moduláció

Multi-hop Es-hez gyenge, rövid fadinges jelek vételére, megbízható és gyors riportváltáshoz, ök-hoz

Fontos jellemzők:

- T/R idő: 15 s
- Üzenet hossza: 75 bit + 12-bit CRC
- FEC
- Moduláció: 8-FSK, tone spacing = 5.86 Hz
- Jelszélesség: 47 Hz
- Periódus időtartama = 13.48 s
- Dekódolási küszöb: -20 dB
- Használhatóság az RH frekvencia-tartományban: mint a JT9 ill. JT65
- Multi dekóder: minden jelet dekódol az átvitt vételi sávban
- Auto-szekvencia manuális QSO indítás után

A WSJT-X több hívó állomást is képes egyidőben dekódolni

UTC	dB	DT	Freq	Message
175800	Tx		2042 ~	CQ HA6NN JN98
175815	-3	-1.7	2042 ~	HA6NN ISOGFT JM49
175830	Tx		2042 ~	ISOGFT HA6NN -03
175815	-21	0.1	2020 ~	HA6NN F1ONW IN94
175845	-7	-1.7	2042 ~	HA6NN ISOGFT JM49
175900	Tx		2042 ~	ISOGFT HA6NN -03

WSJT V1.8.0 adásmódok

WSJT-X v1.8.0 by K1JT

File Configurations View **Mode** Decode Save Tools Help

Mode menu:

- FT8
- JT4
- JT9
- JT9+JT65
- JT65
- QRA64
- ISCAT
- MSK144**
- WSPR
- Echo
- FreqCal

Left Panel (Tx Data):

UTC	dB	DT	Freq	Message
225000	-21	0.7		
225000	-17	-1.0		
225000	-6	0.0		
225000	-8	-0.5		
225000	-2	0.1		
225000	5	0.1		
225000	-19	0.4		
225000	-24	0.2		
225015	-18	-0.5		
225015	-17	0.9		
225015	2	0.1		
225015	-22	0.1		
225015	-6	0.1		
225015	-20	-0.0		
225015	-9	0.1		

Right Panel (Rx Frequency):

UTC	dB	DT	Freq	Message
224730	-23	0.6	1613	~ G7KFQ UA3SGV -13
224845	-9	-0.2	1219	~ CQ M1CEC IO83
224900	-18	-0.6	1221	~ SQ9OZA G4XEX IO92
224900	-17	1.8	1212	~ NA2J EA1CF RRR
224915	-6	-0.2	1219	~ CQ M1CEC IO83
224930	-13	-0.6	1220	~ SQ9OZA G4XEX R-03
224930	-13	1.8	1211	~ NA2J EA1CF 73
225000	-16	-0.6	1220	~ SQ9OZA G4XEX 73
225000	-17	1.8	1211	~ CQ EA1CF IN52

Buttons: Log QSO Stop **Monitor** Erase Decode Enable Tx Halt Tx Tune ☒ Menus

Frequency: 40m **7,074 000**

TX Settings:

- ☒ Tx even/1st
- ☒ Hold Tx Freq
- ☒ Auto Seq
- ☒ Call 1st
- ☐ NA VHF Contest

Call Sign: PE1GQE Grid: JO21 Az: 295 1125 km

Report: -15

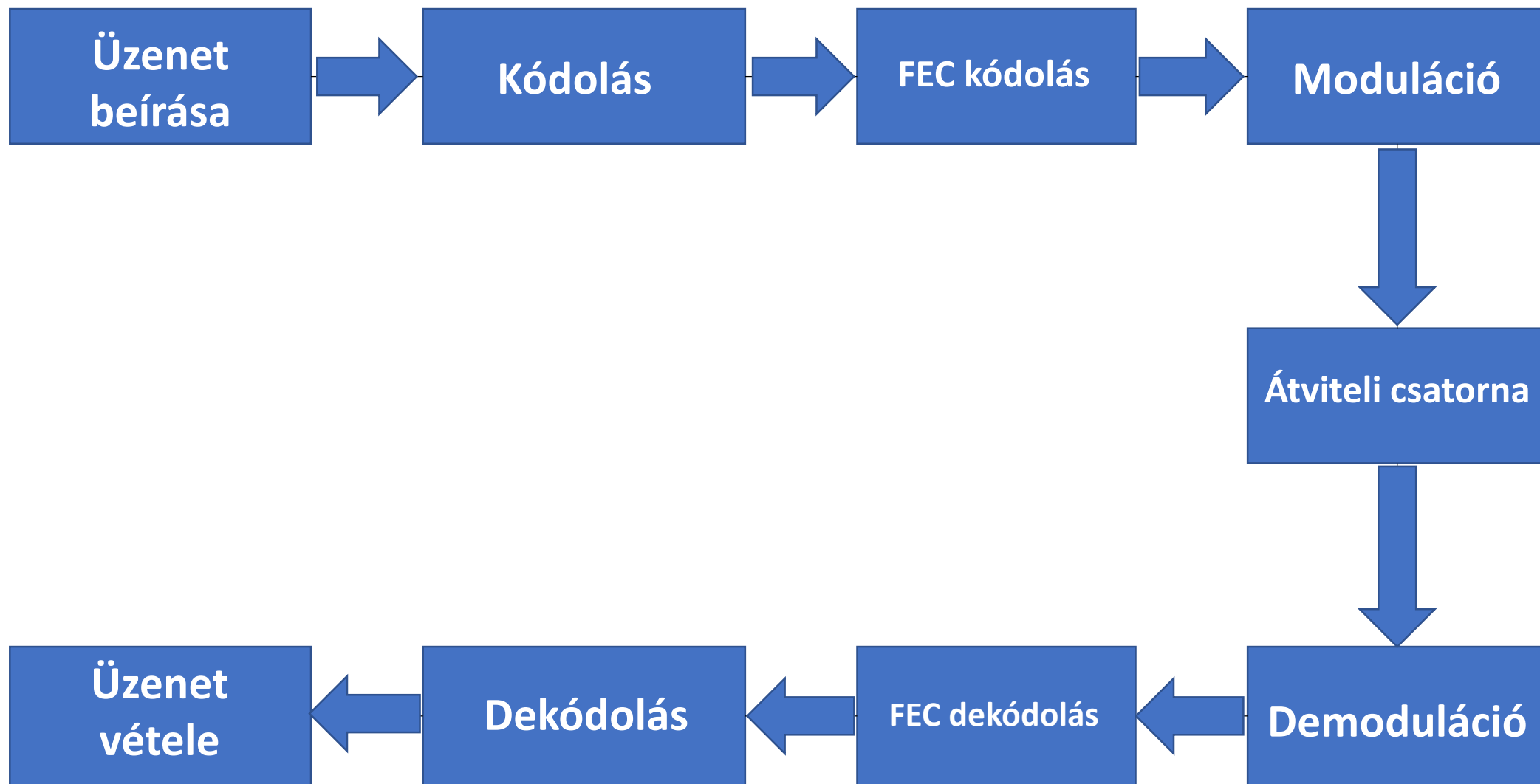
Time: **2017 nov. 01 22:50:43**

Generate Std Msgs:

Next	Now	Pwr
PE1GQE HA6NN JN98	☐	Tx 1
PE1GQE HA6NN -15	☐	Tx 2
PE1GQE HA6NN R-15	☐	Tx 3
PE1GQE HA6NN RRR	☐	Tx 4
PE1GQE HA6NN 73	☐	Tx 5
CQ HA6NN JN98	☒	Tx 6

Status: Receiving FT8 13/15 WD:30m

Az adatátvitel lépései egy tipikus digitális hírközlő csatornán



Megbízható adatátvitel megbízhatatlan hírközlő csatornán

Megoldások:

az MFSK moduláció,

**a FEC hibamegelőző eljárás, Reed - Solomon hibajavító
algoritmus,**

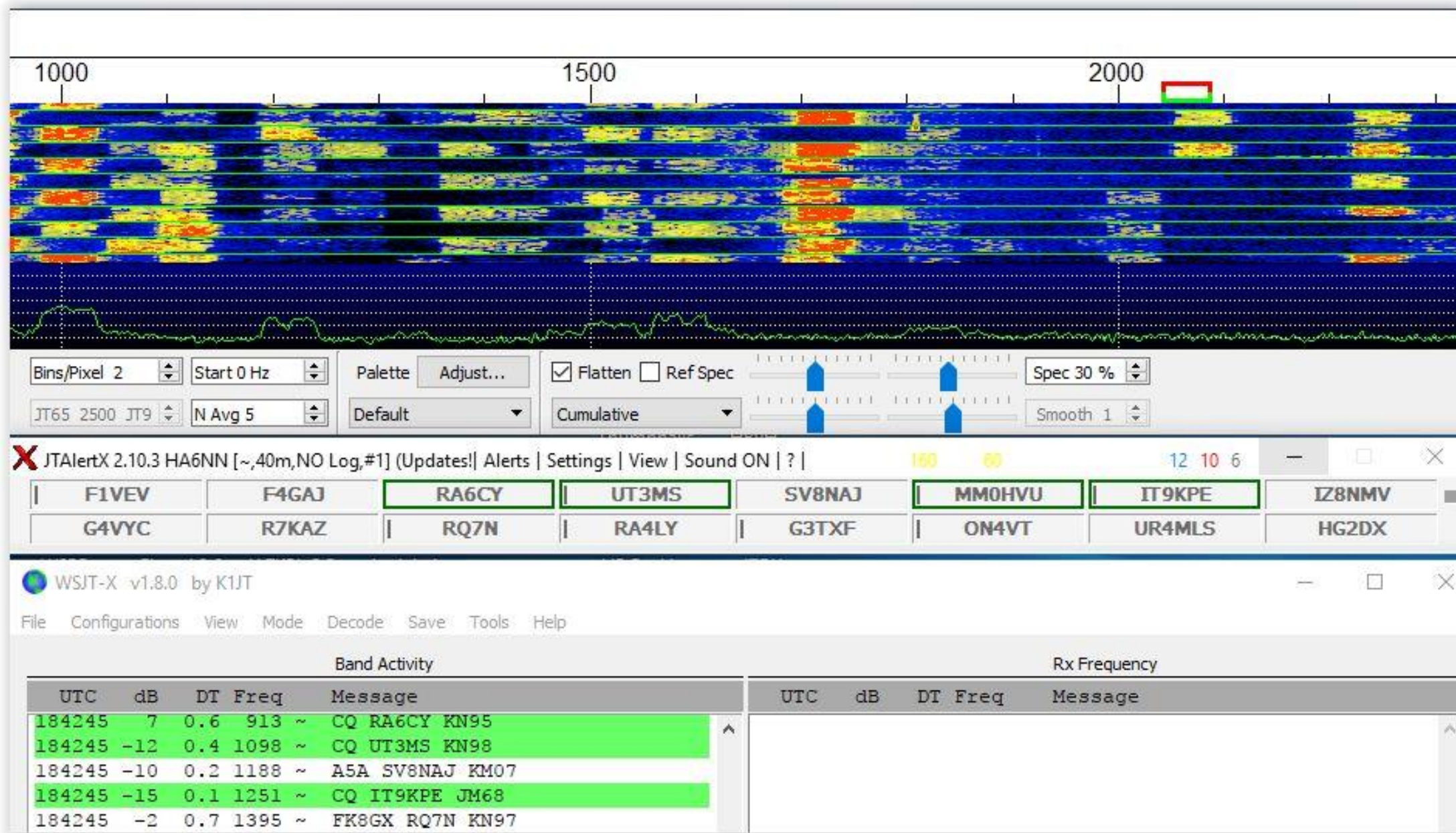
az adásmód felismerés: RSID, Reed-Solomon Identification.

**Az RSID lehetővé teszi bármely digitális adásmód felismerését ha
az tartalmaz kódazonosítót.**

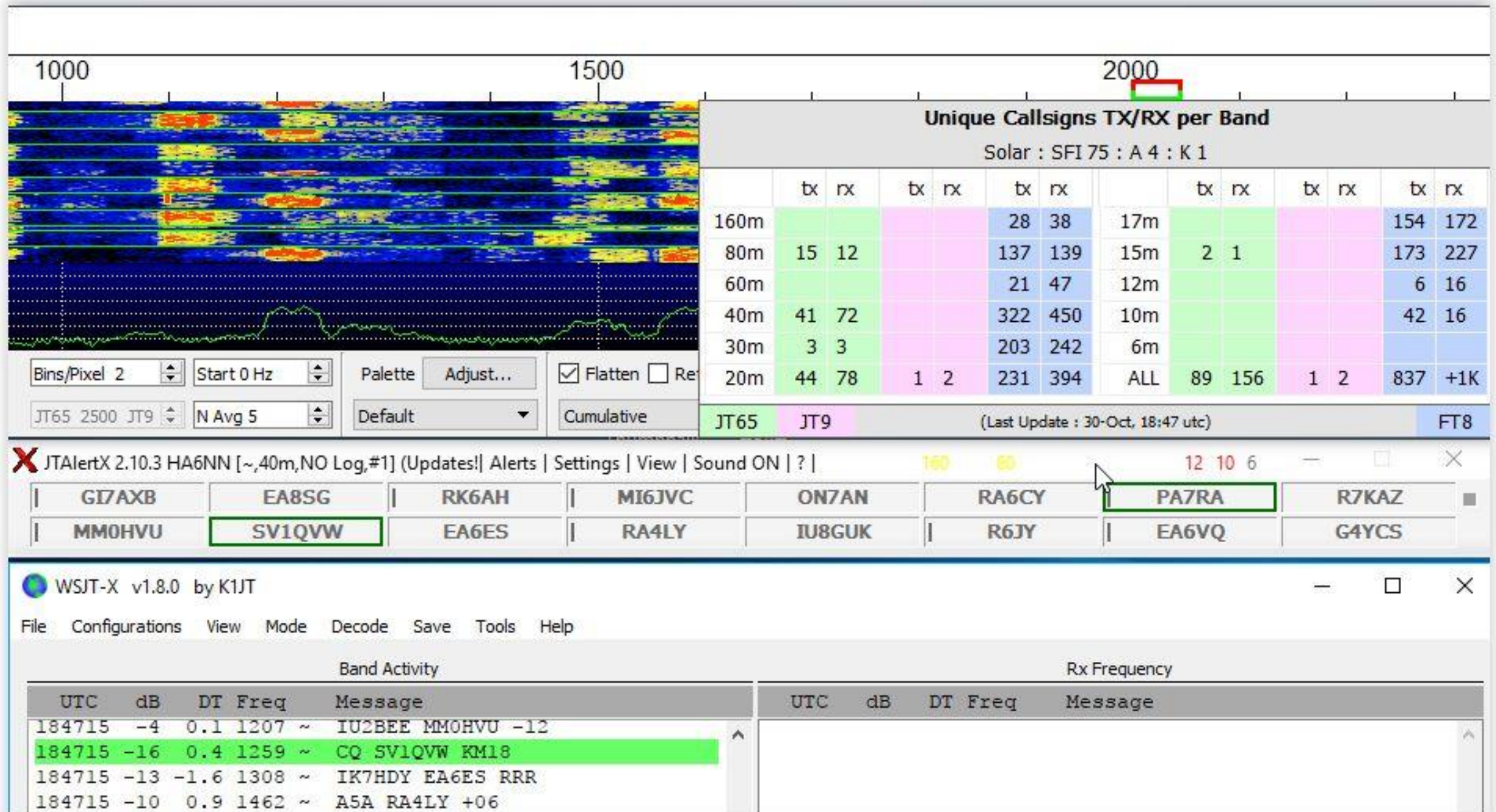
Fldigi: W1HKJ, David H. Freese Jr.

Multipsk: F6CTE, Patrick Lindecker

Működés kiegészítő szoftverrel: JTAAlertX



A JTAlertX statisztikát készít



128 karakter hosszúságú üzenetek válthatók a frekvenciát használó állomások között!

0 2000

Unique Callsigns TX/RX

Solar : SFI 75 : A 4 :

	tx	rx	tx	rx	tx	rx	
160m					40	66	17m
80m					132	167	15m
60m					19	30	12m
40m	51	89	3	17	383	482	10m
30m	6	13			194	236	6m
20m	43	90	1	8	277	356	ALL

JT65 JT9 (Last Update : 30-Oct, 20:50)

Country : Scotland
Continent : EU
CQ Zone : 14
Distance : 1,759 km
Bearing : 306

LoTW : Yes (2017)
eQSL(AG) : Yes

* Wanted Grid (IO85)
* Wanted Prefix (MM0)

Decode : CQ MM0HVU IO85

DS3CHK IK2FWY EG8VTG **MM0HVU** DG7KAQ

DD8BA **HB9FUR - B4** 9A0W **OF3NE** G3XBI

Text Message

Send a short text message.
Message is sent without confirmation of receipt. The recipient station may not be using JTAlert or may have messages turned off.

Received Messages - Last 5

Callsign

22 of 128 Characters Max

Text Message

Send a short text message.
Message is sent without confirmation of receipt. The recipient station may not be using JTAlert or may have messages turned off.

Received Messages - Last 5

MM0HVU [2017-OCT-30 21:02:12 utc]
Hi I hope things are good there have a great night

Callsign

13 of 128 Characters Max

A JTAlertX segédprogram szolgáltatásai:

logot vezet,

jelzi a megismételt összeköttetéseket,

az USA állomások hívójeléhez kiírja az állam jelét,

a beállításoknak megfelelően jelzi ami új,

statisztikát készít,

közleményváltást biztosít...

A szoftver szerzője VK3AMA Laurie Cowcher

A hamspots.net használatának előnyei: spotok kijelzése mindkét irányban, riportokkal, frekvenciákkal, ország, állam kijelzése, statisztika készítése, üzenetküldési lehetőség.

Calls You Spotted [DETAIL]					Your Call Spotted [DETAIL]				
Age	DX	Bnd	Mode	Sig	Age	Spotter	Bnd	Mode	Sig
2m	9A2TN	17	FT8	-17	1m	DF4WQ	17	FT8	-22
2m	DF7DC	17	FT8	-21	1m	DJ0QP	17	FT8	-23
2m	DL6JOS	17	FT8	-17	1m	K4JKB	17	FT8	-10
2m	ES1QV	17	FT8	-21	1m	K4KAY	17	FT8	+2
2m	F6CSR	17	FT8	-24	1m	KA4DOC	17	FT8	-13
2m	G3XBI	17	FT8	-23	1m	MM0LGS	17	FT8	+4
2m	GM0VGI	17	FT8	-08	1m	MM0XAB	17	FT8	-07
2m	GM3PIL	17	FT8	-06	1m	N8KDX	17	FT8	-03
2m	HP1XT	17	FT8	-13	1m	ON8BB	17	FT8	-24
2m	IK6BFH	17	FT8	-22	1m	W4JDE	17	FT8	-18
2m	K1HTV	17	FT8	-17	1m	W5GSF	17	FT8	-15
2m	KA2VBI	17	FT8	-10	1m	WA8CLT	17	FT8	-15

X	54s	OH3QJ	18100.82	+4	FT8		Finland	HB9DQV
X	54s	DG0AM	18101.85	-16	FT8		Germany	HB9DQV
X	54s	EU7A	18101.51	+6	FT8		Belarus	HB9DQV
X	54s	GM0VGI	18100.47	-17	FT8		Scotland	N9CIF
X	54s	OZ8QI	18101.64	-07	FT8		Denmark	N9CIF
X	54s	MI0IGL	18100.90	-13	FT8		Northern Ireland	N9CIF
X	54s	RN6AJ	18101.10	-16	FT8		EU Russia	WA8CLT
X	54s	KB0CVW	18101.14	-16	FT8	WI	United States	WA8CLT
X	54s	HA6NN	18102.01	-16	FT8		Hungary	WA8CLT
X	54s	IU7IGI	18101.66	-07	FT8		Italy	WA8CLT
X	54s	KC8YDS	18101.77	-16	FT8	OH	United States	WA8CLT
X	54s	IU8GNY	18100.70	-10	FT8		Italy	WA8CLT
X	54s	DF4WQ	18101.31	-11	FT8		Germany	WA8CLT
X	54s	UW8SM	18101.72	-08	FT8		Ukraine	WA8CLT
X	54s	F6EAZ	18100.82	-16	FT8		France	W8QXO

Fejlesztő: VK3AMA

SFI 76, A 8, K 2
Online : 00:43:05

** FT8 MODE **

590 Online
13:57:20 : UTC

SS VB VC VV

[age +4h] Oct-21 09:42utc

Query: 0.0031 sec

Calls You Spotted [DETAIL]

Age	DX	Bnd	Mode	Sig
1m	CO2ORO	17	FT8	-14
1m	EI7HDB	17	FT8	+10
1m	G1YEF	17	FT8	+11
1m	HB9CQL	17	FT8	-18
1m	K5CD	17	FT8	-10
1m	KD8CGH	17	FT8	-18
1m	M0OBL	17	FT8	-02
1m	NN2X	17	FT8	-18
1m	OZ1TMK	17	FT8	-19
1m	R2DGN	17	FT8	-02
1m	RA3TOS	17	FT8	-06
1m	W8WEJ	17	FT8	-07
1m	WB4EEN	17	FT8	-24
1m	WD8VN	17	FT8	-18
2m	AB9QZ	17	FT8	-13
2m	CO2ORO	17	FT8	-07
2m	EI7HDB	17	FT8	+13
2m	HB9CIC	17	FT8	-15
2m	K5CD	17	FT8	-09
2m	KD8CGH	17	FT8	-15
2m	M0OBL	17	FT8	-08
2m	NN2X	17	FT8	-12
2m	OZ1TMK	17	FT8	-13
2m	R2DGN	17	FT8	+5
2m	RW7M	17	FT8	-23

Query: 0.0569 sec

Your Call Spotted [DETAIL]

Age	Spotter	Bnd	Mode	Sig
54s	N9CIF	17	FT8	-12
54s	W2PKY	17	FT8	-10
54s	W8QXO	17	FT8	-12
54s	WA8CLT	17	FT8	-16
1m	DL6YDX	17	FT8	-19
1m	EI1DG	17	FT8	-11
1m	ES2HV	17	FT8	-24
1m	G0SLN	17	FT8	-18
1m	HB9HFN	17	FT8	-19
1m	IZ4REF	17	FT8	-24
1m	K1JT	17	FT8	-03
1m	K1Tzt	17	FT8	-08
1m	K4BWG	17	FT8	-14
1m	KA4RSZ	17	FT8	-10
1m	KD8CGH	17	FT8	-11
1m	KO2F	17	FT8	-01
1m	LA9LOA	17	FT8	-20
1m	M0OBL	17	FT8	-11
1m	MM0LGS	17	FT8	+5
1m	N1LID	17	FT8	-10
1m	N1MGO	17	FT8	-20
1m	N2VAN	17	FT8	-10
1m	N9CIF	17	FT8	-15
1m	NE1B	17	FT8	-09
1m	NV0Q	17	FT8	-17

Query: 0.0549 sec

X 54s	DC5ES	18100.60	-14	FT8	Germany	W2PKY
X 54s	OZ5AGJ	18100.38	-17	FT8	Denmark	W2PKY
X 54s	IW1FZR	18102.19	-13	FT8	Italy	F4GWY
X 54s	W1KOK	18102.33	-01	FT8	VT United States	W2PKY
X 54s	KB0CVW	18101.19	-23	FT8	WI United States	F4GWY
X 54s	AB9QZ	18102.01	-18	FT8	IL United States	F4GWY
X 54s	KC8YDS	18101.82	-16	FT8	OH United States	F4GWY
X 54s	UW8SM	18101.77	-07	FT8	Ukraine	F4GWY
X 54s	GM0VGI	18100.53	+3	FT8	Scotland	F4GWY
X 54s	MI0IGL	18100.97	-08	FT8	Northern Ireland	F4GWY
X 54s	RN6AJ	18101.12	+4	FT8	EU Russia	HB9DQV
X 54s	R7RAG	18102.30	-08	FT8	EU Russia	HB9DQV
X 54s	OE6MDF	18101.40	-10	FT8	Austria	N9CIF
X 54s	W1KOK	18102.36	-20	FT8	VT United States	HB9DQV
X 54s	OH3OJ	18100.82	+4	FT8	Finland	HB9DQV
X 54s	DG0AM	18101.85	-16	FT8	Germany	HB9DQV
X 54s	EU7A	18101.51	+6	FT8	Belarus	HB9DQV
X 54s	GM0VGI	18100.47	-17	FT8	Scotland	N9CIF
X 54s	OZ8QI	18101.64	-07	FT8	Denmark	N9CIF
X 54s	MI0IGL	18100.90	-13	FT8	Northern Ireland	N9CIF
X 54s	RN6AJ	18101.10	-16	FT8	EU Russia	WA8CLT
X 54s	KB0CVW	18101.14	-16	FT8	WI United States	WA8CLT
X 54s	HA6NN	18102.01	-16	FT8	Hungary	WA8CLT
X 54s	IU7IGI	18101.66	-07	FT8	Italy	WA8CLT
X 54s	KC8YDS	18101.77	-16	FT8	OH United States	WA8CLT
X 54s	IU8GNY	18100.70	-10	FT8	Italy	WA8CLT
X 54s	DF4WQ	18101.31	-11	FT8	Germany	WA8CLT
X 54s	UW8SM	18101.72	-08	FT8	Ukraine	WA8CLT
X 54s	F6EAZ	18100.82	-16	FT8	France	W8QXO
X 54s	EU7A	18101.48	-10	FT8	Belarus	W8QXO
X 54s	DJ0OP	18100.75	-12	FT8	Germany	W8QXO
X 54s	IW1FZR	18102.19	-13	FT8	Italy	W8QXO

HA6NN

Log Out

[Your Spot History](#)[Settings](#)Seen Call: Frequency: Mode: Message: Post

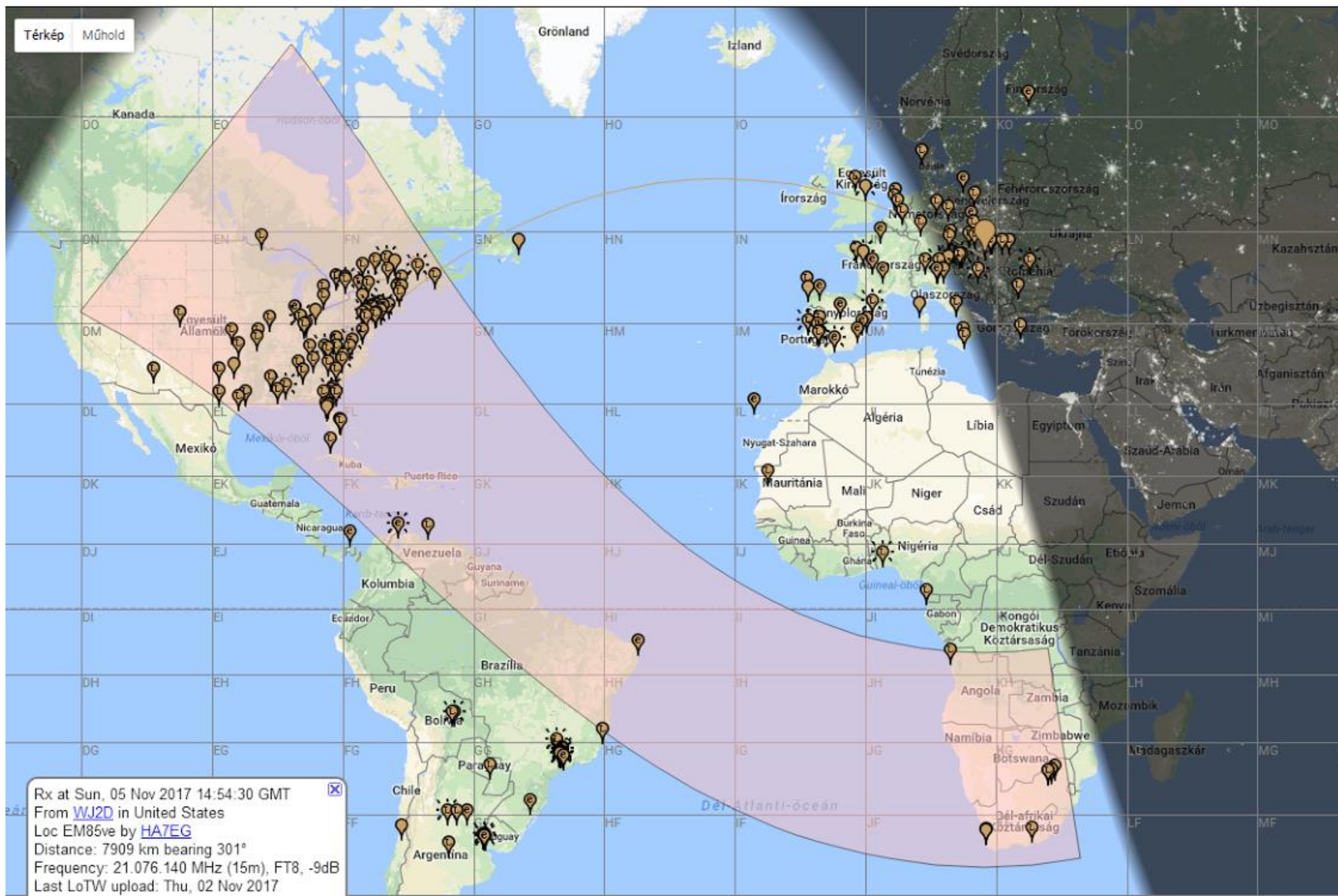
To chat, you can leave "Mode" & "Frequency" fields blank

[Activity](#) | [Spotters](#) | [Links](#)

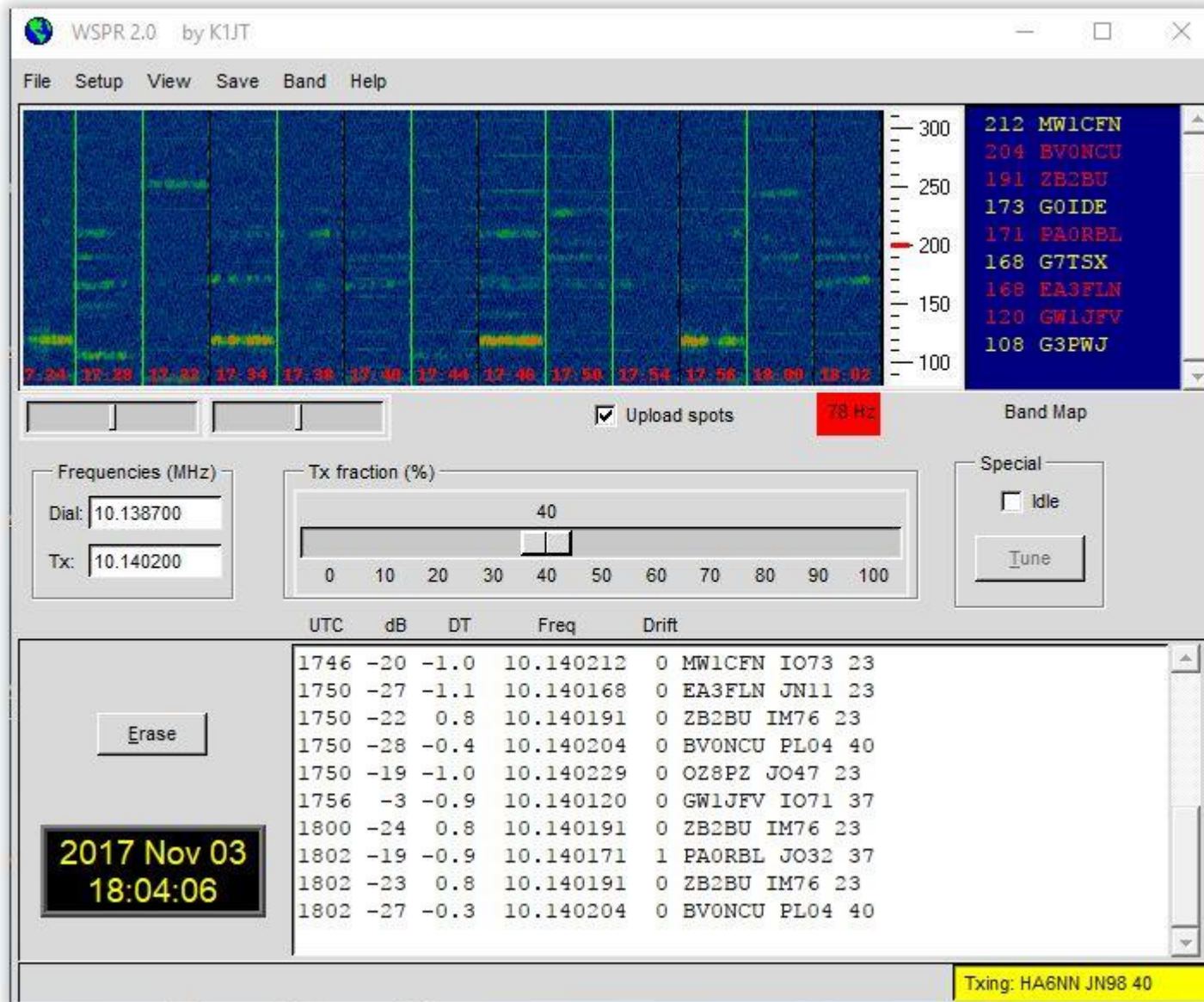
A
pskreporter
map egyik
szolgáltatása
a
besugárzott
terület
kiemelése -
10 dB fölött.

Forrás:
Erős György,
HA7EG

On show rcvd by using over the last [Display options](#) [Permalink](#)
Automatic refresh in 4 minutes. Small markers are the 179 transmitters ([show logbook](#)) heard ([distance chart](#)) at HA7EG (1124 reports, 69 countries last 24 hours; 4515 reports, [72 countries](#) last week).
There are [496 active FT8 monitors](#) on 15m. [Show all FT8 on all bands](#). [Show all on all bands](#). [Legend](#)



Weak Signal Propagation Reporter



Station parameters

Call: HA6NN

Grid: JN98VC

Audio In: 1 Line In (High Definition Audio)

Audio Out: 3 Speakers (High Definition Audio)

Power (dBm): 40

PTT method: RTS

PTT port: COM2

☒ Enable CAT

CAT port: COM1

Rig number: 101 Yaesu FT-847

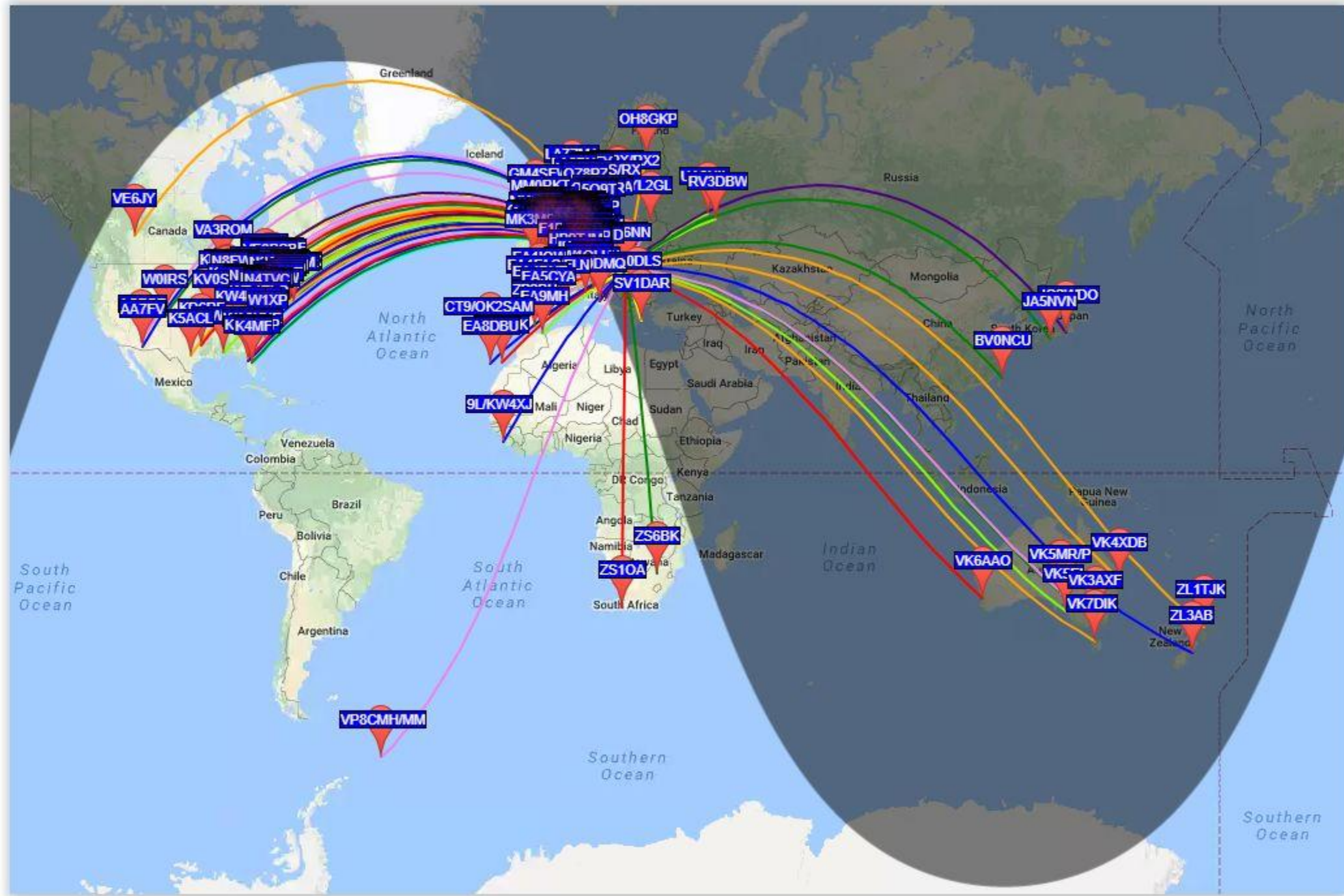
Serial rate: 9600

Data bits: 8

Stop bits: 2

Handshake: None

WSPR



WSJT-X V1.8.1 rc1

F Tolerancia
Submode A

WSJT-X v1.8.1-rc1 by K1JT

File Configurations View Mode Decode Save Tools Help

Single-Period Decodes

UTC	dB	DT	Freq	Message
0708	-27	1.2	1186	:*
0710	-28	2.6	1117	:*
0712	-27	2.3	1117	:*
0713	-27	1.5	1169	:*
0714	-23	2.8	1305	:* K0TPP NH6Y BL10
0716	-22	2.8	1302	:* K0TPP NH6Y R-22
0718	-22	3.0	1300	:* K0TPP NH6Y R-22
0720	-22	3.0	1298	:* K0TPP NH6Y R-22
0722	-23	2.8	1296	:* K0TPP NH6Y 73
0724	-26	3.3	1096	:*

Average Decodes

UTC	dB	DT	Freq	Message
0714	-23	2.8	1305	:* K0TPP NH6Y BL10
0715	Tx		1276	@ NH6Y K0TPP -23
0716	-22	2.8	1302	:* K0TPP NH6Y R-22
0717	Tx		1276	@ 1500 Hz
0718	-22	3.0	1300	:* K0TPP NH6Y R-22
0719	Tx		1276	@ 1500 Hz
0720	-22	3.0	1298	:* K0TPP NH6Y R-22
0721	Tx		1276	@ NH6Y K0TPP RRR
0722	-23	2.8	1296	:* K0TPP NH6Y 73
0723	Tx		1276	@ NH6Y K0TPP 73

Log QSO

Stop

Monitor

Erase

Decode

Enable Tx

Halt Tx

Tune

☒ Menus

2m

144.120 000

80

60

40

20

0

58 dB

DX Call

NH6Y

DX Grid

BL10

Az: 273

4076 mi

Lookup

Add

2017 Nov 03

07:25:46

☐ Tx even/1st

Tx 1276 Hz

Rx 1296 Hz

F Tol 200

Report -23

☐ Sh

☐ Tx ← Rx

☐ Rx ← Tx

☒ Hold Tx Freq

Submode A

Sync 0

☒ Auto Seq

☐ Tx6

Generate Std Msgs

	Next	Now
NH6Y K0TPP EM48	☐	☐ Tx 1
NH6Y K0TPP -23	☐	☐ Tx 2
NH6Y K0TPP R-23	☐	☐ Tx 3
NH6Y K0TPP RRR	☐	☐ Tx 4
NH6Y K0TPP 73	☒	☐ Tx 5
CQ K0TPP EM48	☐	☐ Tx 6

Receiving

QRA64 A

Last Tx: NH6Y K0TPP 73

46/60

JTDX

50,276 000

19:50:40

Tx Odd

Pwr

6m

Report -2

DX Call

IT9FNO

Az: 199

Lookup

DX Grid

JM76

1344 km

Add

Tx 692 Hz

Rx 692 Hz

beep on

Tx<=>Rx

Rx<=>Tx

☒ Lock Tx=Rx

UTC	dB	DT	Freq	Message	Rx Frequency
1940	Tx		2322	# CQ HA6NN JN98	
1941	Tx		2322	# CQ HA6NN JN98	
1942	-21	1.9	1440	# CQ SV7CUD/QRP	Greece
1943	Tx		1440	# SV7CUD HA6NN -21	
1945	Tx		1440	# SV7CUD HA6NN RR73	
1944	-4	-0.1	1219	# IV3CYT SV1QEZ R-01	Greece
1944	-2	-1.1	692	# CQ IT9FNO JM76	Sicily
1946	-13	-1.1	692	# CQ IT9FNO JM76	Sicily
1947	Tx		692	# IT9FNO HA6NN -02	
1948	-9	-1.1	701	# HA6NN IT9FNO R-01	Sicily
1949	Tx		692	# IT9FNO HA6NN RR73	

Enable Tx

Halt Tx

Log QSO

Erase

Hint

SWL mode

AGCc

Filter

Decode

Clear DX

Generate Std Msgs

Next

Skip Tx 1 ☒

IT9FNO HA6NN JN98

IT9FNO HA6NN -02

IT9FNO HA6NN R-02

IT9FNO HA6NN RR73

IT9FNO HA6NN 73

CQ HA6NN JN98

Tx 1

Tx 2

Tx 3

Tx 4

Tx 5

Tx 6

90+

80

70

60

50

40

30

20

10

0

75dB

40/50

24 maj. 2017

JT65 55

A JTDX adásmódjai:

JT9

T10

JT65

JT9+JT65

WSPR-2

The screenshot displays the JTDX software interface. At the top, the frequency is set to 7,076 000 and the time is 20:12:14. The band is 40m. The DX Call is VK7XX and the DX Grid is QE38. The Tx and Rx frequencies are both 1951 Hz. The message log shows several entries, including "2003 -6 -0.4 1951 # CQ VK7XX QE38 Australia". The "Generate Std Msgs" section lists various messages, with "VK7XX HA6NN 73" selected. The "Tx" section shows a list of messages to be transmitted, with "Tx 5" selected. The "Monitor" button is highlighted in green. The "armed" status is shown at the bottom left, and the date "16 okt. 2017" and mode "JT65 2" are at the bottom right.

UTC	dB	DT	Freq	Message	Rx Frequency
2003	-6	-0.4	1951	# CQ VK7XX QE38	Australia
2003	Tx		1951	# VK7XX HA6NN -06	
2004	-8	0.2	1951	# HA6NN VK7XX -06	Australia
2005	Tx		1951	# VK7XX HA6NN -06	
2006	-12	0.1	1951	# HA6NN VK7XX RR73	Australia

Generate Std Msgs	Next	Skip Tx 1
VK7XX HA6NN JN98	☐	Tx 1
VK7XX HA6NN -06	☐	Tx 2
VK7XX HA6NN R-06	☐	Tx 3
VK7XX HA6NN RR73	☐	Tx 4
VK7XX HA6NN 73	☒	Tx 5
CQ HA6NN JN98	☐	Tx 6

Három hívó állomás dekódolása egyidejűleg

JTDX v17.8 by HF community derivative work based on WSJT-X v1.7 by K1JT

File View Mode Decode Save Help

UTC	dB	DT	Freq	Message	Band Activity
2137	-9	0.1	1772	# HA6NN M6VCJ IO92	England
2137	-17	1.4	979	# CQ OK1VPO JO60	Czech Re
2137	-18	0.2	1057	# RA9JF PA9CC 73	Netherla
2137	-23	0.1	416	# EA2EGM SP6AB JO81	Poland
2137	-20	0.1	1300	# IU1IBN RA3GZ 73	EU Russi
2137	-26	-0.0	1355	# CQ PY4SM GH80	Brazil
2137	-23	2.0	1197	# F5SEP 9A6DJM JN65	Croatia
2137	-27	0.6	1780	# JA9AUW ZS1CM 73	S. Afric
2139	-1	0.9	763	# VK7SM I1DXD JN44	Italy
2139	-1	0.3	1196	# F5SEP M0PXS IO93	England
2139	-1	0.1	2007	# CQ MM0HVU IO85	Scotland
2139	-1	0.1	643	# DL5JJ M6RUG RR73	England
2139	-4	-0.5	716	# GW6CZE SV1RZE -17	Greece
2139	-1	-1.3	1407	# IZ8VHV UN7QAT -11	Kazakhst
2139	-17	0.2	1057	# CQ PA9CC JO32	Netherla
2139	-22	1.4	979	# CQ OK1VPO JO60	Czech Re
2139	-17	0.7	2321	# CQ DX SP5MXZ KO03	Poland
2139	-21	3.8	1639	# JA6MHA RW0LFE R-08	AS Russi
2139	-24	0.1	416	# EA2EGM SP6AB R-10	Poland
2139	-19	0.2	1300	# CQ RA3GZ KO92	EU Russi
2139	-22	-0.2	1355	# LU5IBL PY4SM -10	Brazil
2139	-23	0.2	2005	# CQ RA6PA LN23	EU Russi
2139	-23	0.2	1895	# VK4CAG SV8RMA -21	Greece

7,076 000 21:40:43 TX Even

40m

DX Call M6VCJ DX Grid IO92

Az: 296 1551 km

Lookup Add beep on Lock Tx=Rx

UTC	dB	DT	Freq	Message	Rx Frequency
2134	TX		1769	# CQ HA6NN JN98	
2135	-1	0.3	1768	# HA6NN M0PXS IO93	England
2135	-8	-0.1	1769	# HA6NN MOGZL IO81	England
2135	-17	-0.7	1768	# HA6NN GONJS IO91	England

Enable Tx Halt Tx

Log QSO Erase

Hint SWL mode

AGCc Filter

Decode Clear DX

Generate Std Msgs

Next Skip Tx 1 ☒

M6VCJ HA6NN JN98 ☐ Tx 1

M6VCJ HA6NN -09 ☒ Tx 2

M6VCJ HA6NN R-09 ☐ Tx 3

M6VCJ HA6NN RR73 ☐ Tx 4

M6VCJ HA6NN 73 ☐ Tx 5

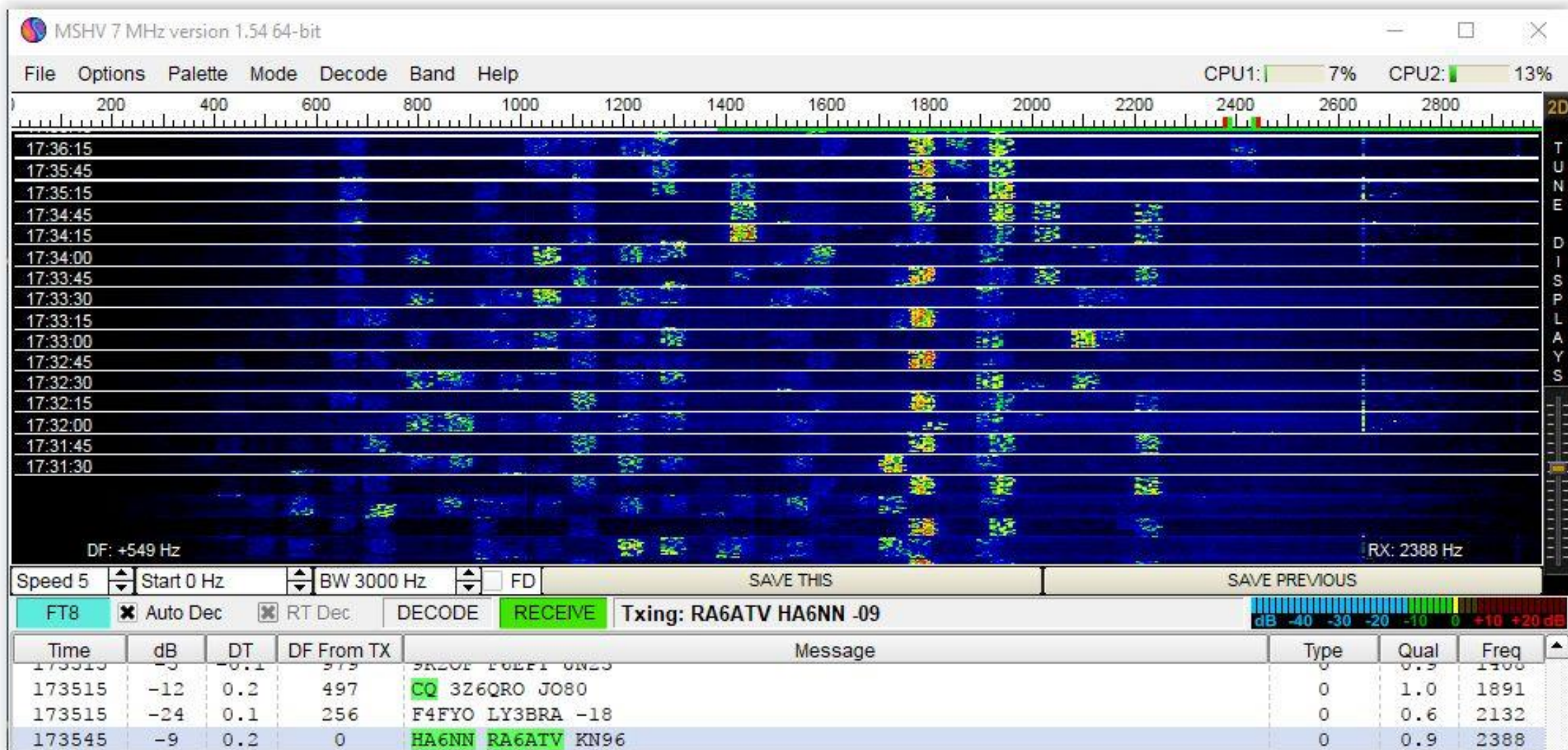
CQ HA6NN JN98 ☐ Tx 6

90 -80 -70 -60 -50 -40 -30 -20 -10 0 dB

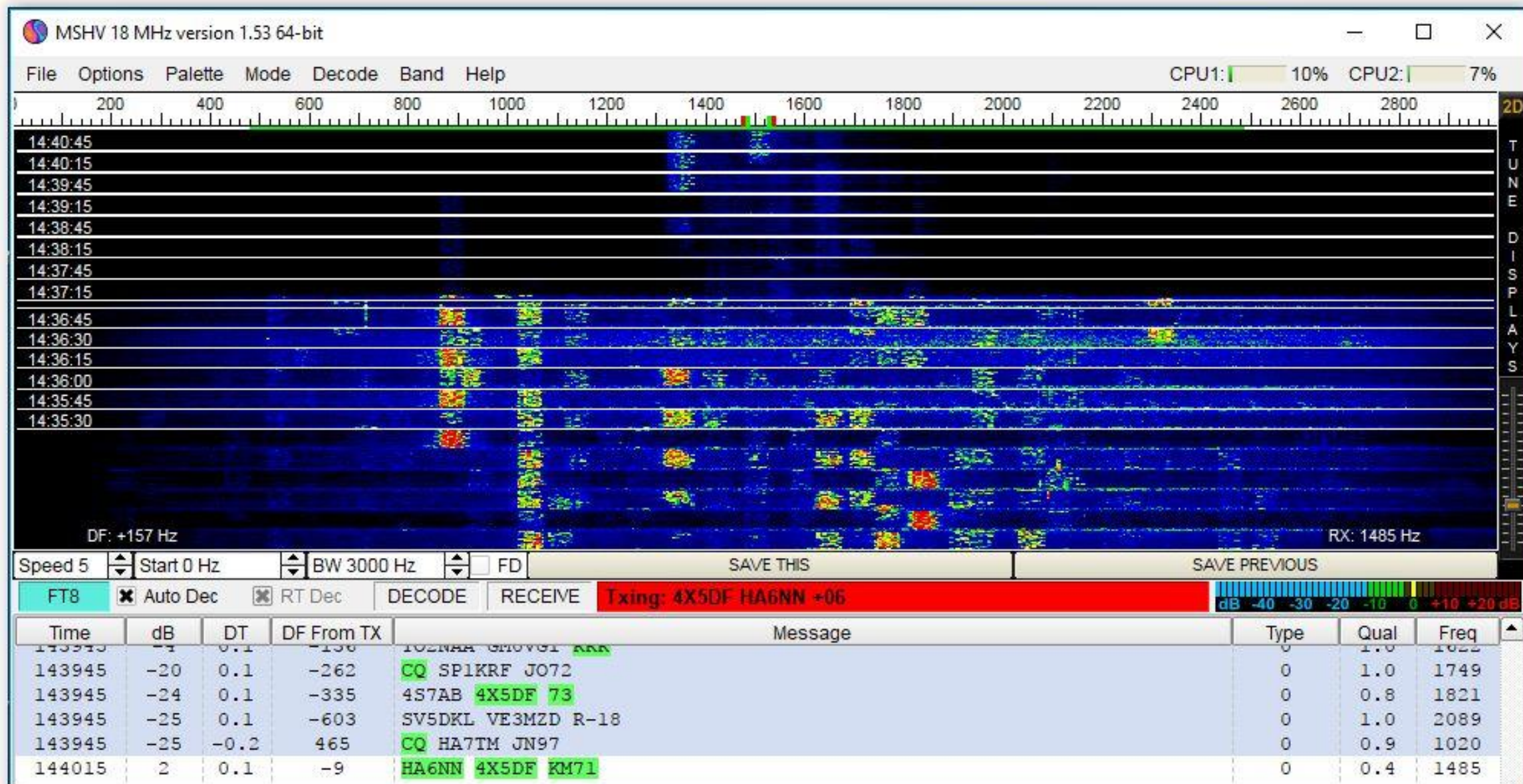
Tx: M6VCJ HA6NN -09 JT65 A LastTx: M6VCJ HA6NN -09 AutoTx Disarmed 43/60 25 apr. 2017 JT65 10

MSHV

64 bites szoftver a 64 bites Windows 10 operációs rendszer alatt



A KF átviteli sáv szűkítése DSP-val



MSHV V1.47 Interface Control

 Interface Control ✕

Port:

Baud Rate:

PTT Method:

☒ PTT Via RTS ☐ PTT Via DTR ☐ PTT Via CAT COMMAND

RIG:

☒ PTT ☐ PTT MIC ☐ PTT DATA

STOP PTT TEST

Tx Watchdog:

☐ Off ☒ In Time

☐ In Number Of TX Periods

MSHV V1.47

Authors of the protocols are: K1JT Joe Taylor, and K9AN Steven Franke - for MSK144 and FT8

- **MSK144** For meteor scatter. Message frame duration is 72 ms and with Sh option 20 ms. Character transmission rate for standard messages is as high as 250 cps.
- **JTMS** For meteor scatter. Character transmission rate 197 cps.
- **FSK441** For meteor scatter. Character transmission rate 147 cps.
- **FSK315** For meteor scatter. Character transmission rate 105 cps.
- **ISCAT** Optimized for meteor and ionospheric scatter at 6 meters. Character transmission rate 16.15 or 32.3 cps.
- **JT6M** Optimized for meteor and ionospheric scatter at 6 meters. Character transmission rate 14.4 cps.
- **FT8** Designed for fast tropospheric QSOs.
- **JT65 VHF/UHF** For EME and troposcatter.
- **PI4 PharusIgnis4** A digital modulation (MGM) for beacon purposes.

- **Developed by LZ2HV - Christo**
- **Tested by SP9HWY - Jurek and G0LFF - Dick**
- **Ideas about appearance OZ2M - Bo and ideas about performance LZ1BB - Harry**
- **Linux binaries OZ1PIF - Peter**

JT65HF

Adásmód: JT65

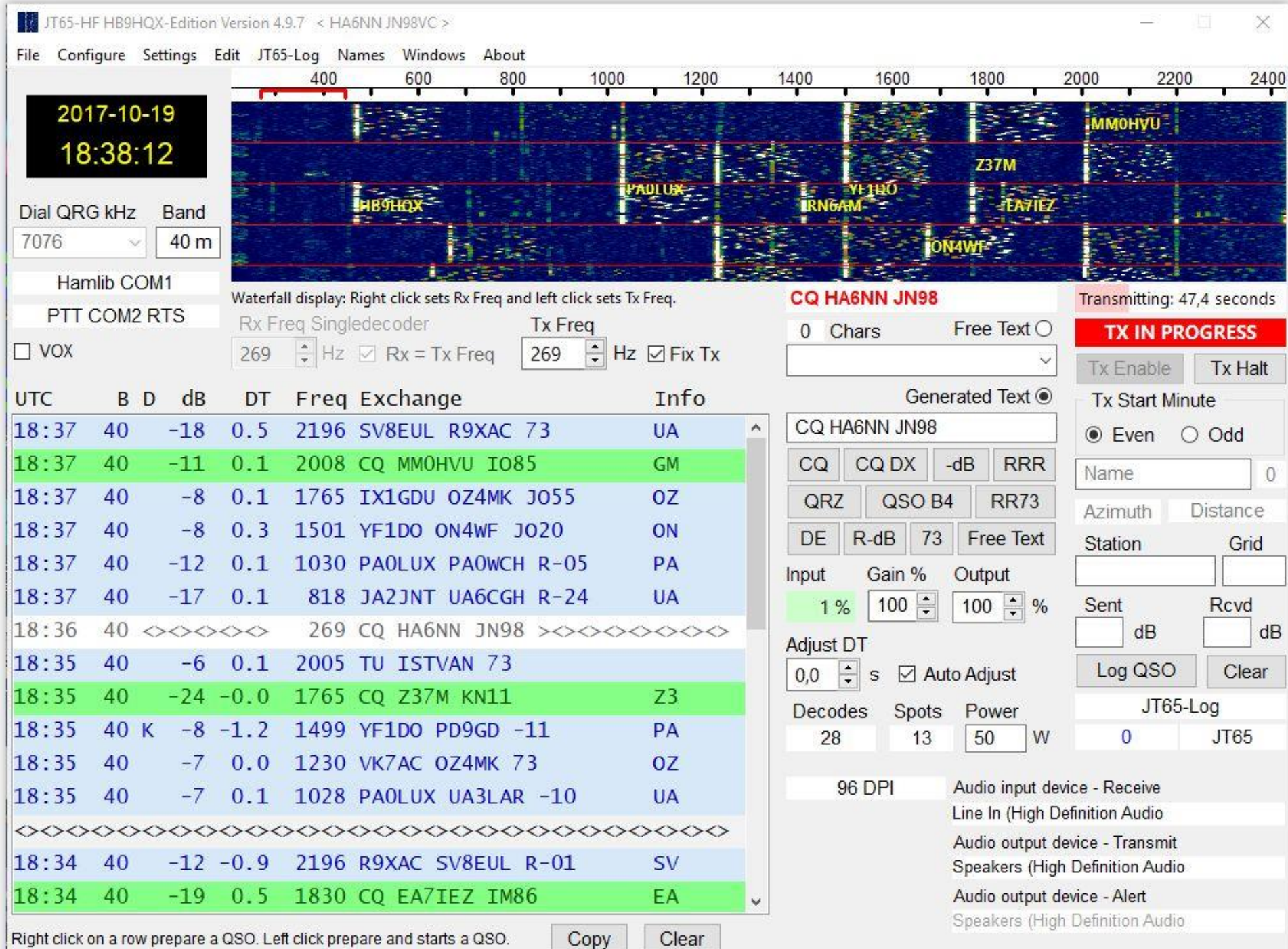
Kiírja a hívójeleket

Azonnal QSO

feltöltés az eqsl.cc-re

Eltárolja az op. nevét

Fejlesztő: HB9HQP



On 17m ▾ show signals ▾ rcvd by ▾ the callsign ▾ HA6NN using FT8 ▾ over the last 1 hour ▾ Go! [Display options](#)
Automatic refresh in 1 minute. Small markers are the 169 transmitters ([show logbook](#)) heard ([distance chart](#)) at HA6NN (1266 reports, 72 countries last 24 hours; 4958 reports, [74 countries](#) last week).
There are [197 active FT8 monitors](#) on 17m. [Show all FT8 on all bands](#). [Show all on all bands](#). [Legend](#)



Adásmódok népszerűsége 2017. VII.25 – 2017. X. 17.

Modes	25/08/17	30/10/17	Variations	Variations
	Nb reports	Nb reports	Nb reports	%
FT8	231 105	456 278	225 173	97,43%
JT65	65 359	18 087	-47 272	-72,33%
CW	2 216	2 945	729	32,90%
PSK63	1 691	2 077	386	22,83%
PSK31	2 169	1 998	-171	-7,88%
JT9	15 993	215	-15 778	-98,66%
RTTY	127	101	-26	-20,47%
ROS	89	89	0	0,00%
SIM31	134	74	-60	-44,78%
OPERA	65	71	6	9,23%
VARA	23	66	43	186,96%
QPSK31	122	43	-79	-64,75%
OLIVIA	8	12	4	50,00%
PI4	11	7	-4	-36,36%
PSK125	13	5	-8	-61,54%

Fontos helyek az Interneten

<https://physics.princeton.edu/pulsar/k1jt/wsjsx.html> K1JT, Joe Taylor
<https://physics.princeton.edu/pulsar/k1jt/refs.html> K1JT, Joe Taylor
<http://www.wsprnet.org/drupal/wsprnet/map> WSPR K1JT, Joe Taylor
<https://sourceforge.net/p/wsjsx/wsjsx/HEAD/tree/branches/wsjsx/INSTALL> Forráskód fordítása G3WJS, Bill Somerville
<http://hamapps.com> VK3AMA, Laurie Cowcher
<http://www.hamspots.net> VK3AMA, Laurie Cowcher
<https://pskreporter.info> Philip Gladstone, N1DQ
<https://hamalert.org/about> Digimode spots Manuel Kasper, HB9DQM
<http://www.qrz.it/ly3bg/JTDX/jtdx.html> UA3DJY, Igor Chernikov
<http://lz2hv.org/mshv> LZ2HV, Christo Hristov
<http://www.w1hkj.com> W1HKJ, David H. Freese, Jr. FLDIGI
<http://www.pa3fwm.nl/technotes/tn09b.html> PA3FWM, Pieter-Tjerk de Boer U.Twente websdr
<http://www.qsl.net/zl1bpu/SOFT/WSQ.htm> ZL1BPU, Murray Greenman
<http://sp9jpa.blogspot.in/p/pawe-jaocha-sp9vrc.html> Pawel Jalocho, SP9VRC
<https://sourceforge.net/projects/jt65hfhb9hqxedl/support> Beat Oehrli, HB9HGX
<http://www.oliviamode.com/index.htm>
https://wikivisually.com/wiki/Olivia_MFSK
http://hfradio.org.uk/html/digital_modes.html Sean Gilbert, G4UCJ
<https://nl9222.home.xs4all.nl/digisoft.htm>
<http://www.dxatlas.com/omnirig/> Alex Shovkoplyas, VE3NEA OmniRig
<http://www.thinkman.com/dimension4/download.htm> UTC