


IARU Monitoring System Region 1



Monthly Newsletter - January 2025

- **Video feature:** click on the “play” red icons in the text or in the images of the Newsletter to watch the videos 

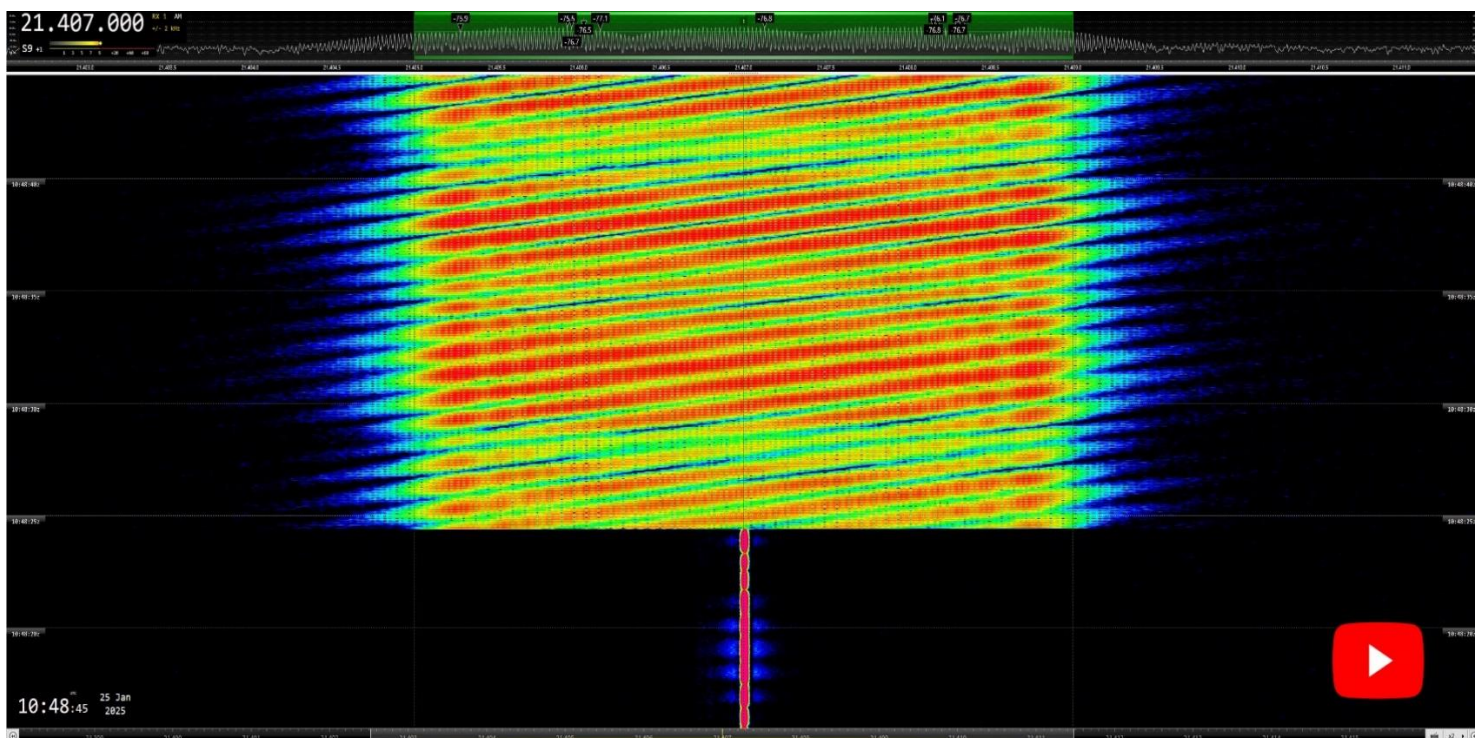
- **IARUMS Wiki:** find more information, screenshots, videos and recordings of the transmission modes most used by non-amateur stations on the amateur radio bands: <https://www.iaru-r1.org/spectrum/monitoring-system/iarums-wiki/>

News and Info

Over-the-Horizon (OTHR) radar transmissions are the most prevalent among all non-amateur transmissions received in HF amateur radio bands and have been for many years. In January 2025 alone, nearly 1,000 such transmissions were recorded within these bands. The most affected was the 15-meter band, where more than half of the transmissions were detected, though they were also present across all bands from 40 to 10 meters, inclusive.

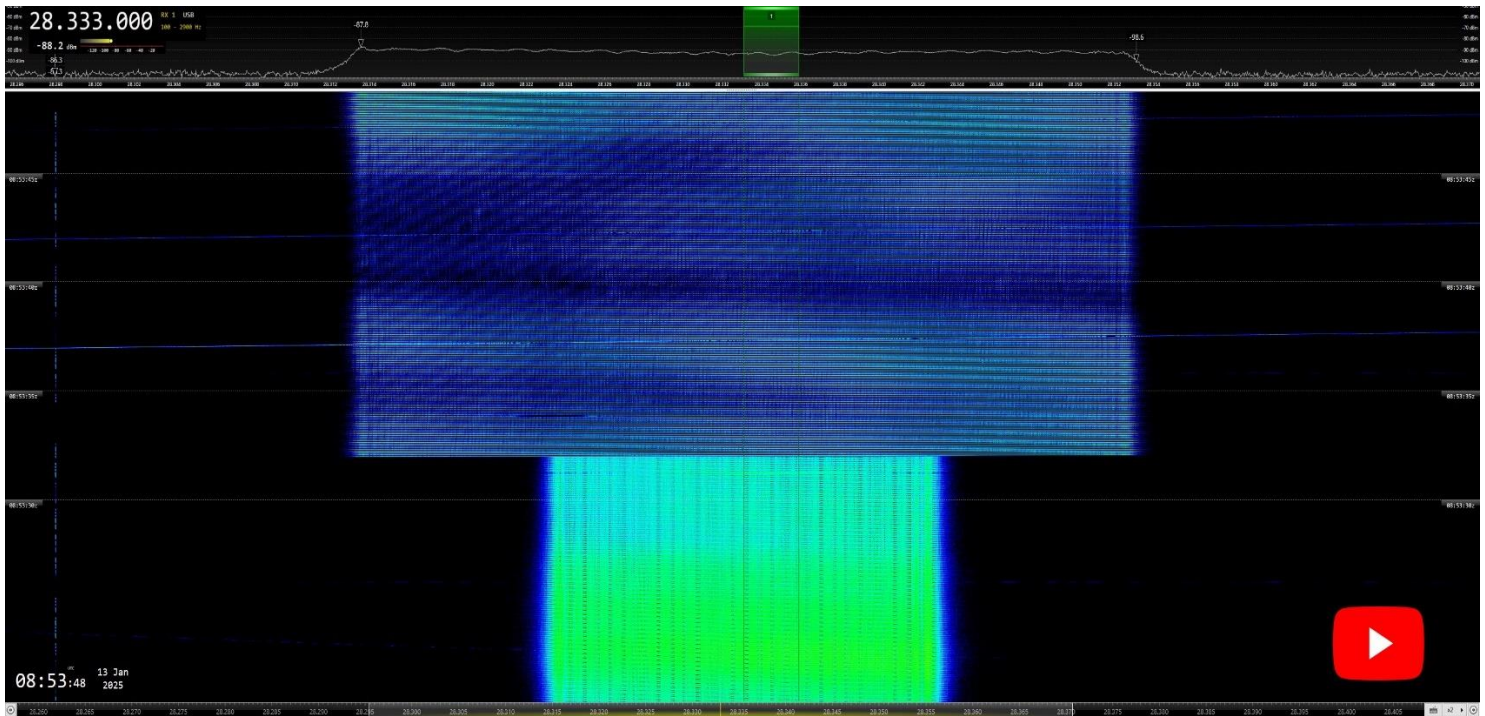
These transmissions are generally long in duration. Due to this, along with the extremely high transmission power used, the wide bandwidth occupied by each signal, and the frequent occurrence of two or more simultaneous transmissions from the same radar—along with signals from other radars within the same band—OTHR transmissions significantly degrade and reduce the usable spectrum available to amateur radio operators in the HF bands allocated to them.

This month, in addition to the usual transmissions, we observed a new type of signal from the well-known British radar located in the UK Sovereign Base Area in Cyprus. This radar was using a previously unobserved bandwidth of 4 kHz.



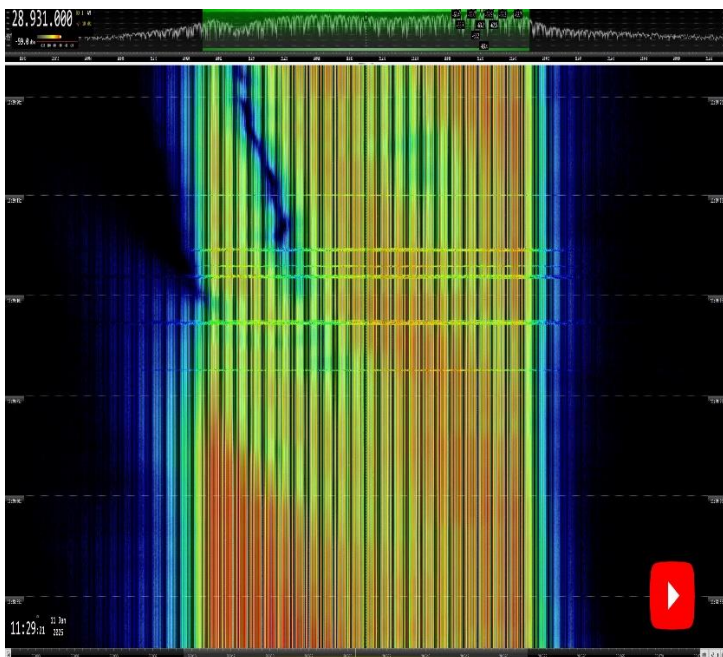
21407 kHz CF. British OTHR (UK SBA in Cyprus). BW = 4 kHz. 255 pps

Additionally, we noted that during one of its transmissions, it changed its bandwidth and pulse repetition frequency (PRF, measured in pulses per second, pps) instantaneously, without any interruption:

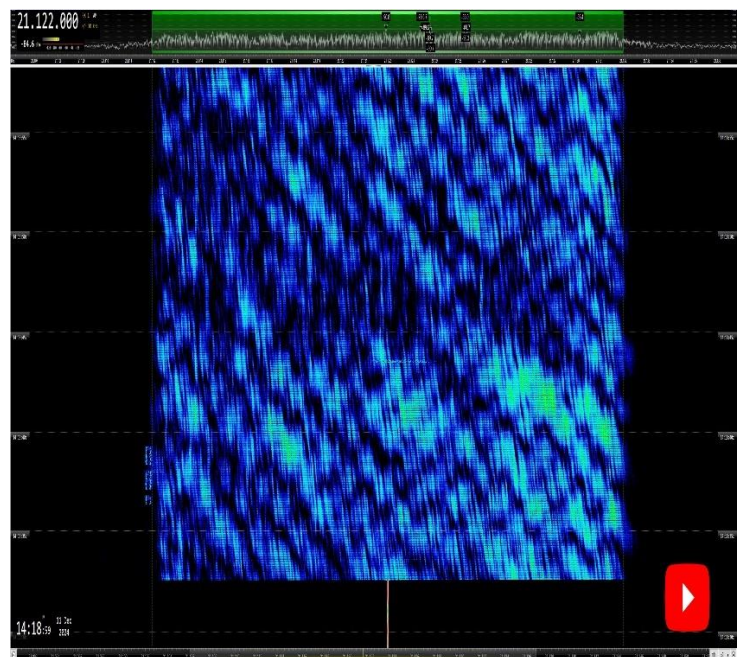


28333 kHz CF. British OTHR. ITYU = G (UK SBA, Cyprus). Changing BW and PRF from from 20 kHz and 25 pps to 40 kHz and 12.5 pps

These are the most usually transmission modes used by this radar:

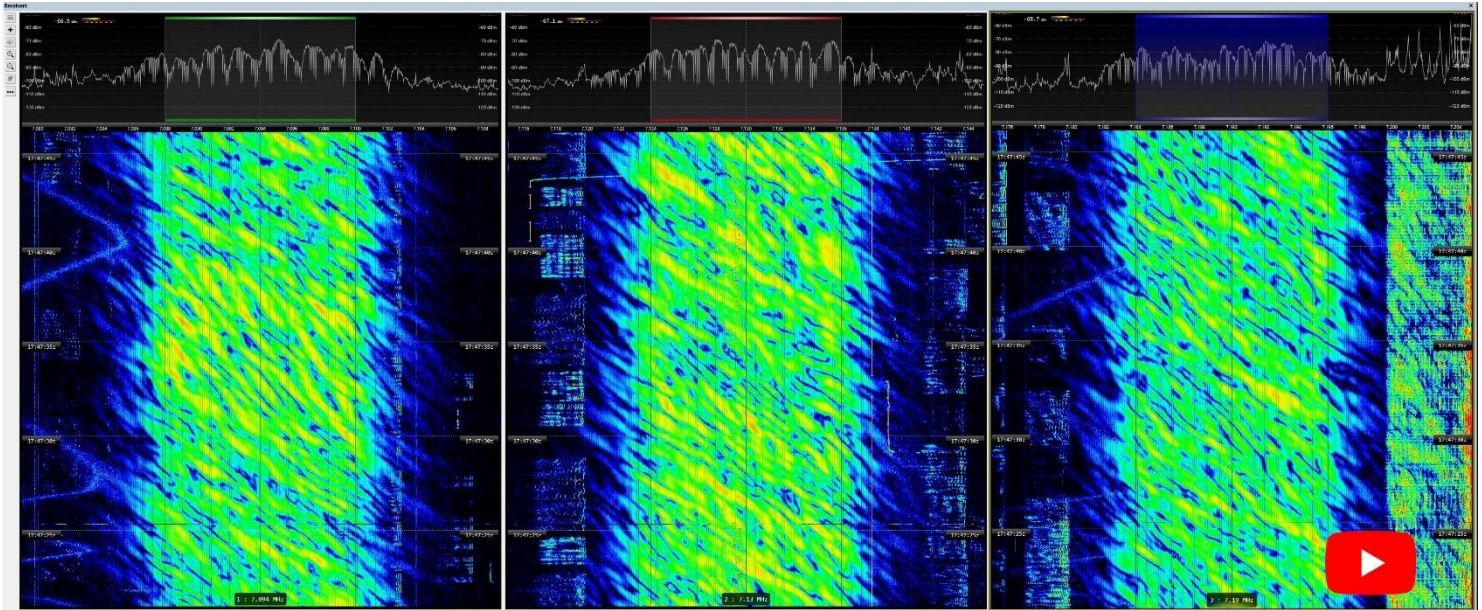


28931 kHz CF: OTHR G (UK SBA, Cyprus): BW = 20 kHz. 50 pps



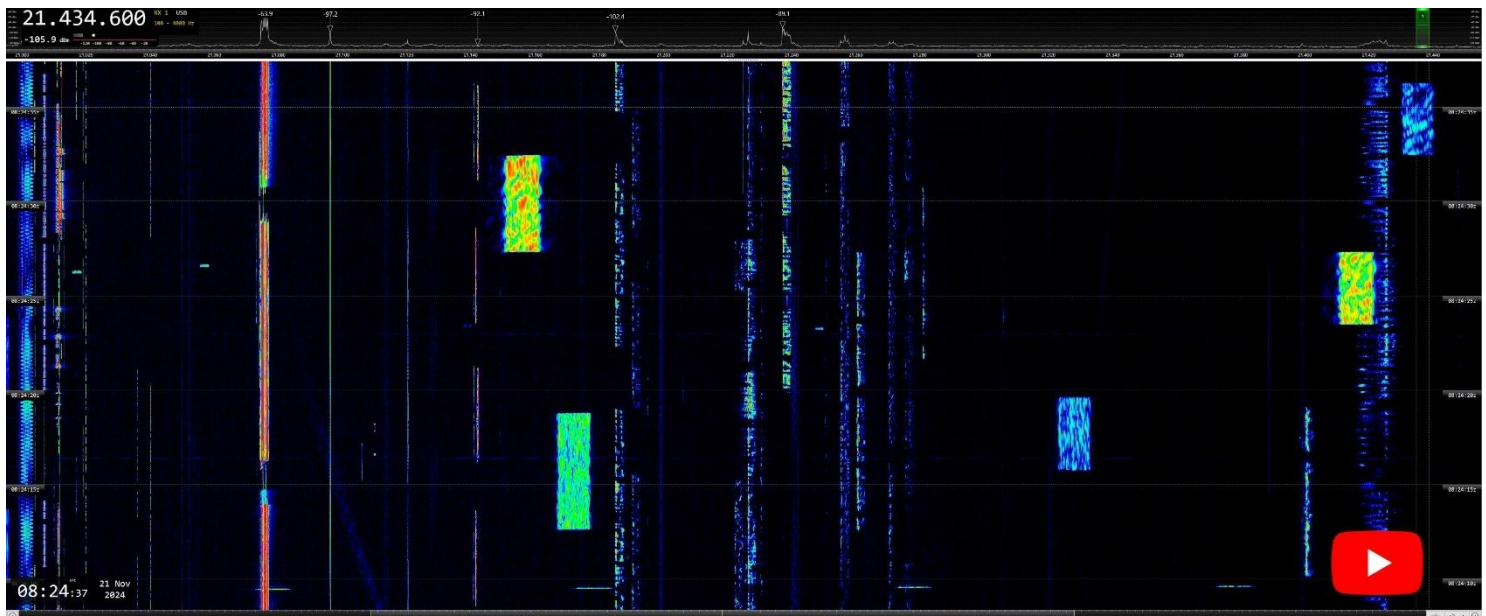
OTHR G (UK SBA, Cyprus). BW = 20 kHz. 25 pps (example video)

The Russian OTHR "Contayner" is also known for conducting multiple simultaneous transmissions within a single amateur band, which not only enhances its performance but also greatly amplifies the interference it causes. This results in two, three, or even four times more unusable spectrum for amateur radio activities. In a relatively narrow band such as 40 meters, this can lead to the loss of at least 48 kHz—potentially much more due to the splatter effect caused by the high transmission power. Three simultaneous TX of this radar can be observed in the following video, recorded on 40m:



3 X RUS OTHR Contayner on 40 meters. BW = 12 kHz. PRF = 40 pulses per second

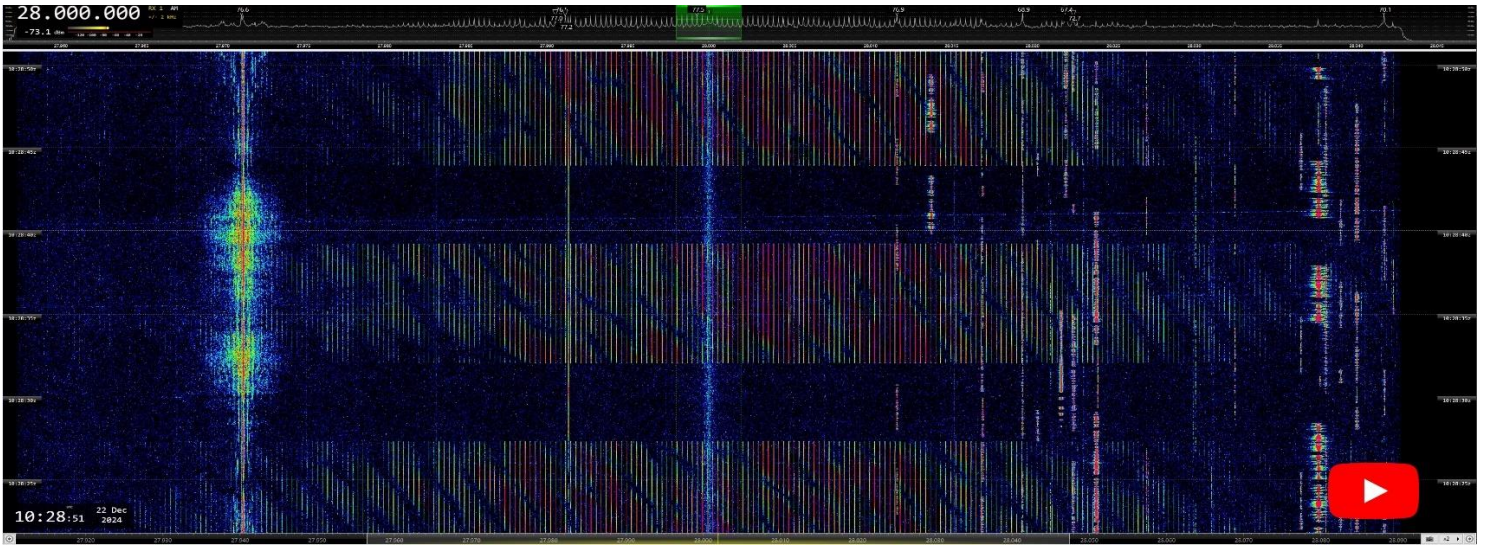
The Chinese OTHR systems, which we commonly refer to as "Foghorn" due to their distinctive sound resembling a ship's foghorn, were also detected across all bands from 40 to 12 meters. It was not uncommon to encounter up to five or six simultaneous burst transmissions within an affected band.



Chinese OTHR „Foghorn“ bursts on 15 meters (example video). BW = 10 kHz. Most usual PRF: 50 and 66.7 pps (example video)




Unfortunately, it is also not unusual to find transmissions from all three types of radars—Russian, Chinese, and British—coexisting within a single band.

As for the Iranian OTHR, which operates exclusively on the 10-meter band, last month we observed a shift in its emission pattern. Instead of alternating bursts of 150 pps and 313 pps—its usual transmission mode for many years—it transmitted exclusively using 313 pps bursts. This trend has now been confirmed, with multiple recordings throughout January at 29,465 kHz CF. Additionally, another transmission of the same radar type was frequently recorded at 28,870 kHz using the usual alternating mode, resulting in two simultaneous emissions within the 10-meter band and occupying a total bandwidth of 90 kHz.

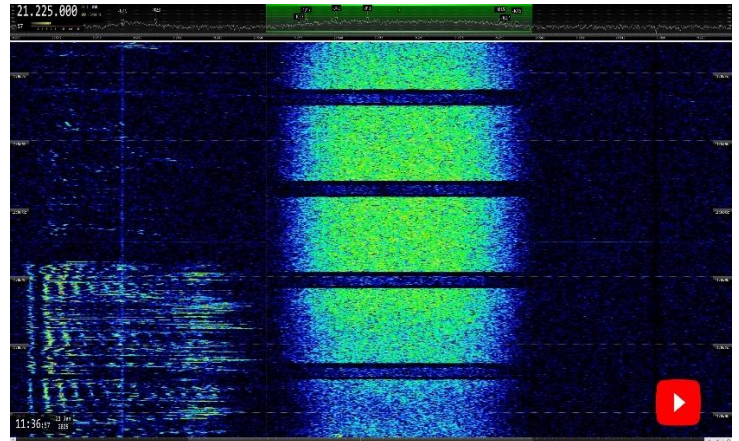
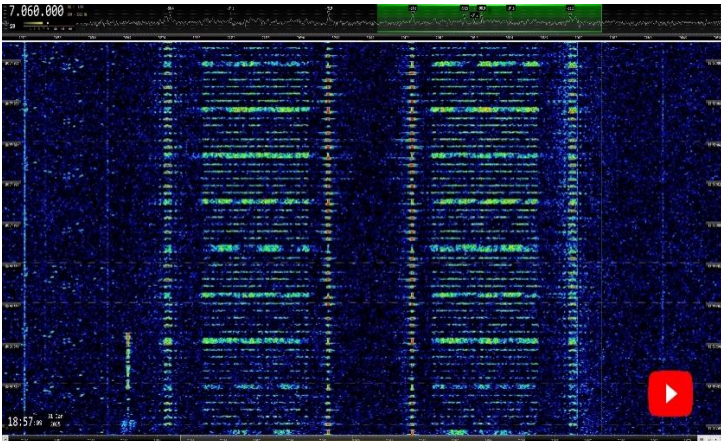


Iranian OTHR. BW ca 45 kHz. 313 pps bursts only (example video)

These are unfortunately just some of the OTH radars that we received during January 2025, and also just some of the OTHR radars that usually operate in the HF amateur bands, where others - like those quoted below - can be usually heard:

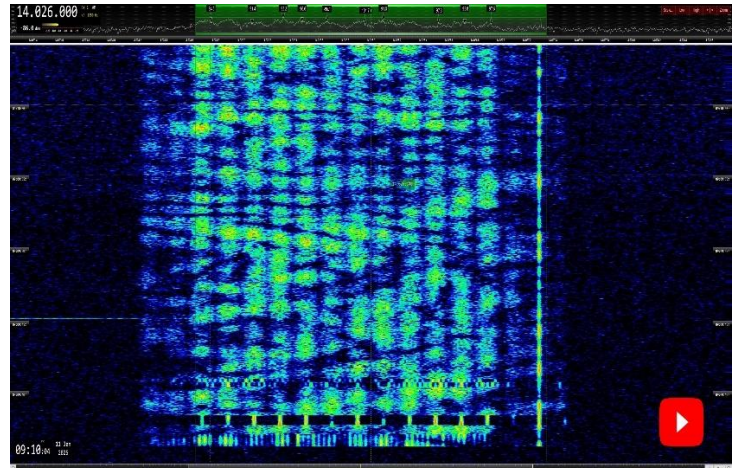
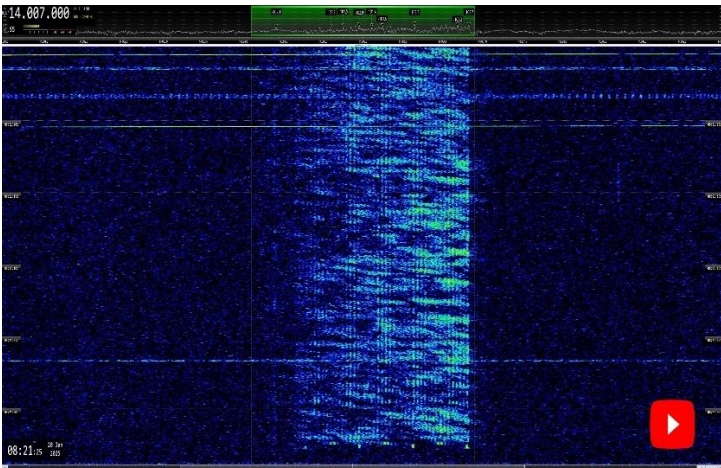
- Chinese OTHR BW = 10 kHz, 50 pps 
- Australian OTHR JORN (Jindalee Operational Radar Network). BWs = 10 or 12 kHz. PRF = 7 pps 
- Chinese wideband OTHR (BW = 160 kHz, 10 pps) 

Transmissions sent in MIL and Diplomatic modes were also regrettably received, as they are every month, during the last month. Just a few examples below:



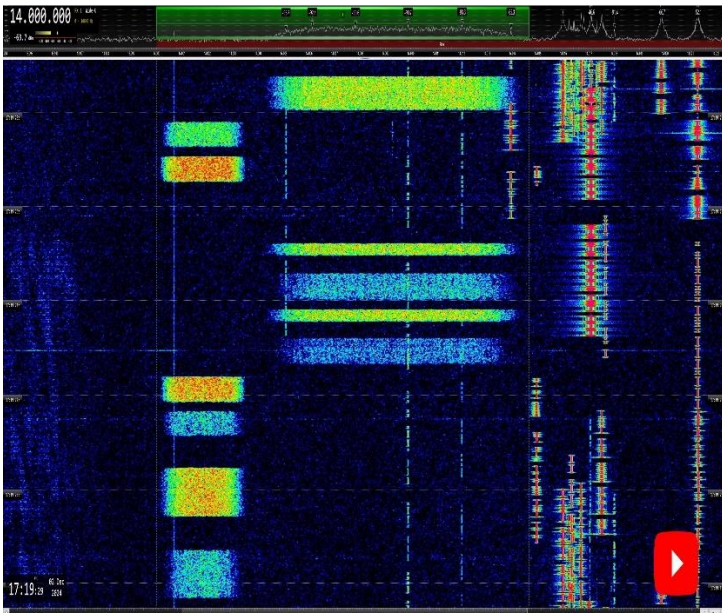
7060 kHz CF: LINK-11 CLEW DSB. B7D. BW = 6 kHz. 75 Bd

21225 kHz USB: MIL-188-141C ALE 3G. BW ca 3K0E. 2400 Bd (example)

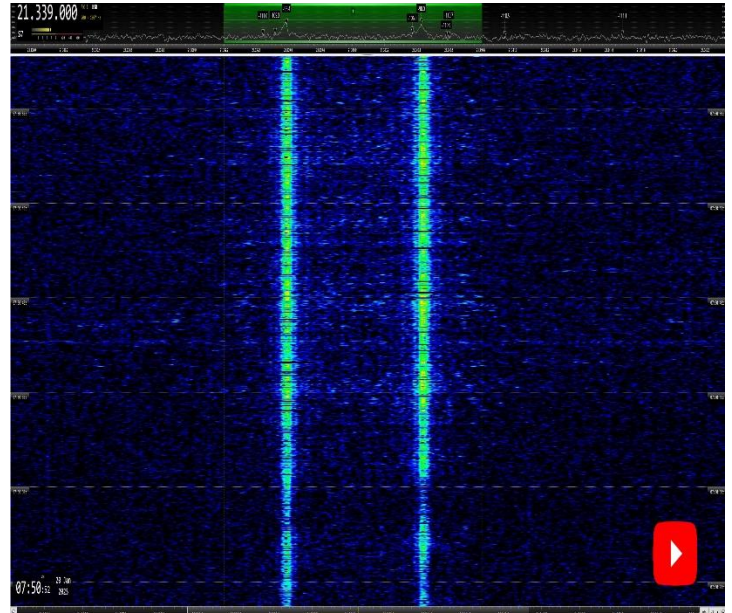


14007 kHz LSB. CHN OFDM 39. W7D. BW = 2.4 kHz. 44.44 Bd

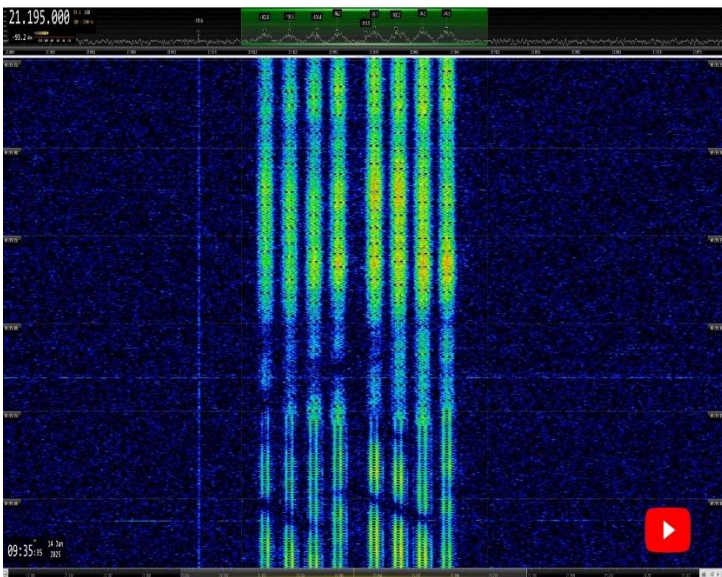
14026 kHz CF: CIS-12. J7D. BW = 2.7 kHz. 12 X 120 Bd



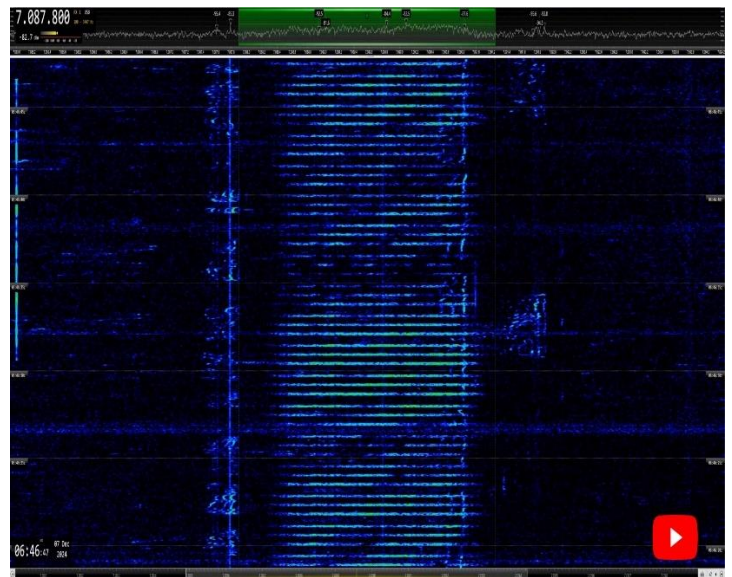
7005 kHz CF WHARQ: Several BW and modulation types (example video)



21340 kHz CF: STANAG-4481. F1B (FSK). Shift = 850 Hz. 75 Bd



21195 kHz LSB: CHN 4+4. G7D. BW = 2.4 kHz. 75 Bd



7088 kHz USB: LINK-11 SLEW. BW = 2.4 kHz. 2400 Bd (example video)

- Find other videos and screenshots about the transmissions received during January 2025 at the end of this Newsletter -

Detailed reports of national coordinators

Abbreviations used (as per IARUMS definitions)

aka = also known as | **BC** = Broadcast | **Bd** = Baud | **BD** = Burst duration) | **BRI** = Burst repetition interval.
BW = Bandwidth | **ca** = approximate | **CHN** = **PRC** = People’s Republic of China | **CF** = Center frequency
DF = Direction finding (radio location; see also TDoA) | **FMCW** = frequency modulated continuous wave
FMOP = frequency modulated on pulse | **OTHR** = over the horizon radar | **SH** = Shift (Hz) | **sps** = sweeps per second | **TDoA** = Time difference of arrival | **ui** = **unid** = unidentified.

DARC; Harald, DL9NDW and the DARC IW team									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7008.0	16:15	06	01			G1D	2400	2K40	Stanag-4285 disturbed by HAM CW activity.
7013.0	07:05	17	01			XXX		3K30E	Jammer
7015.0	17:13	13	01	CHN		RADAR	66.7	10K0E	OTHR Bursts
7020.0	16:37	15	01	CHN		RADAR	66.7	10K0E	OTHR Bursts
7034.0	06:37 vt*	04 vd*	01			XXX		3K0E	Jammer, Carrier with 100hz spaced subcarriers 3Khz USB orientation. *Daily
7042.0	17:58	15	01	CHN		RADAR	66.6	10K0E	OTHR Bursts
7052.0	17:15 vt*	09 vd*	01			J7D	125	1K75	MIL-188-141A * also on 7067, 7115 ,7123,7179 . Evening times. 10 Reports
7055.0	06:08 vt*	06 *vd	01			J3E-L		2K70E	Radiowar, Music, NON Ham Voice *Daily
7065.0	17:47	27	01	RUS		RADAR	40	12K0E	OTHR Container. 2 TX, on 7059 kHz CF and on 7067 kHz CF, overlapping
7084.0	17:59	01	01	RUS		J7D	120	2K60E	CIS-12
7085.0	21:28	02	01	RUS		RADAR	40	12K0E	OTHR Container
7091.0	19:29 vt*	09 vd*	01	CHN		RADAR	50	10K0E	OTHR Bursts, * also on 7099,7100,7095, 7102 and others , in 42,50 and 66.6 Hz modes , 43 reports. Evening times when Band opens to East. Up to 3 times at once inside Band
7100.0	16:57	12	01	RUS		RADAR	40	12K0E	OTHR Container
7128.0	16:04	12	01	G		RADAR	50	20K0E	OTHR Cyprus UK SBA
7134.0	20:30 vt*	27 vd*	01	RUS		F1B	50	200H	*daily
7205.0	13:00	24	01	CHN		A3E		9K0E	China Radio International on 7205 with splatters 7190 ? 7220 kHz , *often
10097.0	17:08	12	01	RUS		RADAR	40	12K0E	OTHR Container
10116.0	16:22	23	01	CHN		RADAR	50	10K0E	OTHR Bursts
10145.0	12:39	27	01	CHN		RADAR	48	10K0E	OTHR Bursts
13987.0	16:03	31	01	RUS		RADAR	26	20K0E	OTHR Container, splattering into 14m Band
13990.0	16:02	12	01	G		RADAR	50	20K0E	OTHR Cyprus UK SBA, splattering into 14m Band
14035.0	14:01	14	01	CHN		RADAR	42	10K0E	OTHR Bursts
14078.0	16:40	09	01	RUS		RADAR	40	12K0E	OTHR Container, covers nearly double bandwidth with splatter
14150.0	10:02	07	01	G		RADAR	50	20K0E	OTHR Cyprus UK SBA
14200.0	12:21 vt*	02 vd*	01	RUS		RADAR	40	12K0E	OTHR Container, * 6 reports
14212.0	14:16	07	01	RUS		RADAR	40	20K0E	OTHR Container. 20kHz *also 02.01 , 09:38
14215.0	13:09 vt*	05 vd*	01	CHN		RADAR	66.7	10K0E	OTHR Bursts across 14m Band, in 42,50 and 66.6 Hz modes , 10 reports.
18135.0	08:45	16	01	RUS		RADAR	40	12K0E	OTHR Container
18143.0	09:23	03	01	CHN		RADAR	50	10K0E	OTHR Bursts
18175.0	12:28	27	01	RUS		RADAR	40	12K0E	OTHR Container, splatters into 17m Band
21001.5	09:48	09	01			XXX		2K70E	Jammer, daily
21063.0	12:27	25	01	RUS		RADAR	40	12K0E	OTHR Container.
21173.0	14:34	13	01	RUS		RADAR	40	12K0E	OTHR Container 2tx, other TX: 14164 kHz CF (both overlapping)
21255.0	07:25	16	01	G		RADAR	25	20K0E	OTHR Cyprus UK SBA 25 sps !

DARC; Harald, DL9NDW and the DARC IW team

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21262.0	11:59 vt*	09 vd*	01	CHN		RADAR	66.7	10K0E	OTHR Bursts, *6 reports (21311,21339,21350) , 66.7 or 50 sps
21385.0	12:32 vt*	01 vd*	01	RUS		RADAR	40	12K0E	OTHR Container, 14 reports
24935.0	09:01	30	01	G		RADAR	50	20K0E	OTHR Cyprus UK SBA
24940.0	09:36	15	01	RUS		RADAR	40	12K0E	OTHR Container
24947.0	17:00	12	01			RADAR	2.6	134K0E	Far East Ocean surface radar
24955.0	09:45	17	01	CHN		RADAR	50	10K0E	OTHR Bursts
24968.0	09:40	28	01	CHN		RADAR	42	10K0E	OTHR Bursts
28000.0	09:31	03	01	IRN		RADAR	313	46K0E	Iranian radar - 313 sps bursts, also on 5.1
28000.0	13:37	19	01	RUS		RADAR	40	12K0E	OTHR Container
28025.0	12:49 vt*	19 vd*	01			J3E-U		2K4E	Far East Pirates, * 5 reports
28100.1	17:18 vt*	01 vt*	01			F1B	51	300	4 x Enagal GPS fishing buoy - QTE 230, *often, 6 reports
28235.0	10:50	23	01			F3E		5K0E	Far East Pirates
28360.0	09:29 vt*	03 vd*	01	G		RADAR	50	20K0E	OTHR Cyprus UK SBA * 3 reports
28400.0	13:04	09	01			RADAR	0.1	30K0E	Slow Radar, continous
28834.0	11:46	12	01	G		RADAR	50	20K0E	OTHR Cyprus UK SBA
29465.0	12:32	10	01	IRN		RADAR		46K0E	Iranian radar - 313 sps bursts.
29465.0	11:49	12	01	IRN		RADAR		46K0E	Iranian radar - 313 sps

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3610	2010	24	1	RUS/ UKR		LSB			Russian-Ukrainian radio war. Huge signals, persistent.
7000	2045	19	1	B		USB			Brazilian pirates. Male voices, very weak.
7000	2100	19	1	TJK		AM			Radio Free Asia. Harmonic. Heard also on their "real" frequencies of 9410, 9410 and 7520 kHz. Audible until after 2300z. Medium strength.
7033	1700	1	1			USB			Carrier. Heard all day long every day of the month. Very strong during all hours of darkness.
7055	1540	2	1	RUS/ UKR		LSB			Russian-Ukrainian radio war. Daily all day long, every single day of the month. Huge signal during the late afternoon and early night. Always inactive at nighttime.
7100	2050	19	1	RUS/ UKR		LSB			Russian-Ukrainian radio war. Huge and persistent signals.
7130	1720	7	1	RUS		RADAR			Radar from 7130 to 7150 kHz. Very strong signals. "Sunflower".
7135	1920	24	1			F1B			Medium signal. Still audible an hour later.
14000	2000	8	1	B		USB			Brazilian pirates. Male and female voices. Still on at 2230z. Also heard on the 22 nd as of 1315z for about 2 hours, on and off with medium signals.
14121	1445	1	1	RUS/ UKR		USB			Russian-Ukrainian radio war. Very strong signals.
14190	1400	1	1			RADAR			Radar from 14190 to 14205 kHz. Medium but persistent signals.

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14191	1350	1	1	RUS		F1B			Russian navy in Kaliningrad. Strong and persistent signals. All day long every day of the month.
14210	1410	1	1			RADAR			Radar from 14210 to 14225 kHz. Medium signals, persistent.
14297.5	1205	23	1			PSK			North Korean embassy traffic. Very strong signals, persistent.
21001.5	910	2	1						Jammer. All day long, every day of the month.
21088	1200	13	1	MRC or MM		USB			Moroccan fishermen. Medium signals.
21120	1200	23	1	UK		RADAR			Radar from 21120 to 21140 kHz. UK base in Cyprus. Very strong and persistent.
21155	1330	24	1			RADAR			Radar from 21155 to 21195 kHz. Huge and persistent signals.
21360	1045	25	1			RADAR			Radar from 21360 to 21390 kHz. Huge and persistent signals.
21365	1025	22	1			RADAR			Radar from 21365 to 21385 kHz. Strong and persistent signals.
21370	1415	1	1			RADAR			Radar from 21370 to 21395 kHz. Medium and persistent signals.
21438	1400	2	1	UKR		CW			Russian Navy Sevastopol. Medium to strong signals. Daily all day long.
24940	1235	29	1	G		RADAR			Radar from 24940 to 24960 kHz. Huge and persistent signals. UK base in Cyprus.
28330	1420	1	1			F1B			Strong and persistent signals.
28525	825	19	1	G		RADAR			Radar from 28525 to 28545 kHz. Huge and persistent signals. British base in Cyprus.
28825	1300	26	1	IRN		RADAR			Radar from 28825 to 28925 kHz. Huge and persistent.
28900	1405	21	1	G		RADAR			Radar from 28900 to 28920 kHz. Medium signal. British base in Cyprus.
28930	1150	23	1	IRN		RADAR			Radar from 28930 to 28990 kHz. Weak but persistent.
28980	1210	13	1			AM			Harmonic from a broadcasting station. Very weak.
21100	1040	2	1			FM			Carrier. Strong. Heard in the mornings and early afternoon. Daily with a medium to strong signal.
29100	1215	13	1			RADAR			Radar from 29100 to 29125 kHz. Strong and persistent.
29225	1200	23	1			FM			SE Asian fishermen. Medium signals, in and out.
29400	1140	27	1	IRN		RADAR			Radar from 29400 to 29500 kHz. Strong and persistent.

PZK; Mirek, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7034.0	1250	16	01			UI		3K0E	S6 many spectral lines
7062.0	1025	29	01	RUS		CIS-12		2K7	
7068.0	1250	16	01	RUS		CIS		2K7	S7 pilot 7069.3
7087.0	1750	28	01			RADAR		12K0E	S9 also weaker 7124.0

PZK; Mirek, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7180.0	1655	28	01			RADAR		12K0E	S9
14162.0	1348	16	01			RADAR		8K0E	5 sec. Burst
14211.0	1535	28	01			RADAR		12K0E	S9 also 14144.0
14213.0	1145	07	01			RADAR		20K0E	
14298.5	1220	07	01			UI		1K0E	short bursts like RTTY 600
14328.0	1220	07	01			RADAR		10K0E	3 sec burst foghorn and 14284.0
14346.0	1545	01	01			RADAR		12K0E	S9
18090.0	1300	11	01			RADAR		8K0E	5 sec. Burst
18161.0	0842	28	01			RADAR		8K0E	5 sec. Burst
19115.0	1148	13	01			RADAR		20K0E	S9
21001.5	1310	21	01			UI		2K5	Jammer?
21032.0	0745	28	01			RADAR		10K0E	3 sec burst foghorn
21064.0	1220	25	01			RADAR		12K0E	s9+
21104.0	1045	19	01			RADAR		12K0E	S9
21127.0	0938	30	01			RADAR		12K0E	S9+
21131.0	vt	07	01			RADAR		12K0E	S9+
21132.0	1030	28	01			RADAR		12K0E	S9
21159.0	1030	28	01			RADAR		8K0E	5 sec. Burst
21160.0	1240	11	01			RADAR		12K0E	S9+
21160.0	1300	29	01			RADAR		12K0E	S9
21162.0	1325	19	01			RADAR		12K0E	S9
21166.0	0955	15	01			RADAR		12K0E	S9
21176.0	1320	06	01			RADAR		12K0E	
21258.0	1410	11	01			RADAR		20K0E	S9
21274.0	1150	14	01			RADAR		12K0E	S9
21280.0	1317	06	01			RADAR		8K0E	5 sec. Burst also 21130.0
21300.0	0905	30	01			RADAR		10K0E	3 sec burst foghorn
21307.0	1030	13	01			RADAR		8K0E	5 sec. Burst
21314.0	0925	31	01			RADAR		10K0E	3 sec burst foghorn and 21329.0
21358.0	1235	11	01			RADAR		10K0E	3 sec burst foghorn
21376.0	1045	22	01			RADAR		12K0E	S9
21385.0	1215	22	01			RADAR		12K0E	S9
21387.0	1235	25	01			RADAR		12K0E	s9+
21396.0	1315	06	01			RADAR		10K0E	3 sec burst foghorn and 21406.0
21422.0	1045	05	01			RADAR		12K0E	S9+
21422.0	1255	29	01			RADAR		20K0E	S9+ also weaker at 21397.0
24935.0	0905	30	01			RADAR		20K0E	S9+12 looks like Cyprus
24952.0	1255	29	01			RADAR		20K0E	Like foghorn
24968.0	0835	28	01			RADAR		10K0E	3 sec burst foghorn
28000.0	1245	03	01	IRN		RADAR		45K0E	
28163.0	0955	29	01			RADAR		20K0E	
28190.5	1405	07	01			UI		2K0E	S8
28850.0	1255	03	01			RADAR		20K0E	S9+20
28870.0	1245	29	01	IRN		RADAR		45K0E	
28932.0	1215	11	01			RADAR		20K0E	S7 foghorn
28958.0	1150	07	01			RADAR		20K0E	S6 foghorn
29440.0	1255	06	01	IRN		RADAR		60K0E	

PZK; Mirek, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
29502.0	1025	13	01			RADAR		40K0E	S7 not IRN type

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7 MHz	1530-0700	*	1	RUS		RADAR	40 sps	13k0E	*) Days: 2. 5. 8. 10. 12. 17. 20. 24. 25. 27. 28. 31. (WebSDR 24d)
7000.0	1215-1930	01 - 31	1	CHN		A3A		4k0E	
7000.0	0710-1155	*	1			NON		50HE	*) Days: 7. 12. 14. 16. 17. 20. 27. 29. 50 Hz brum
7008.0	0605-1110	17 24	1	RUS		F1B		250H	
7011.5	1715	30	1			jam		5k0E	
7014.0	0600-1650	17	1	RUS		J7D	120	2k60E	
7019.0	0550-1715	*	1	RUS		F1A/B/ NON		200H	*) Days: 1. 2. 29. 31.
7030.0	0900-1500/	*	1	RUS		F1B		200/ 250H	*) Days: 6. 7. 10.
7032.0	0600-1900	01 - 20	1	RUS		J3E-u		3k60E	Non-stop Russian anthem / mx,
7032.0	0000-2400	01 - 22	1	RUS		J3E-u		3k60E	Brum when no music.
7035.1	0600-1930	01 - 31	1	RUS		J3E-l		3k60E	240 Hz ticking carriers
7060.0	0530-1700	*	1	RUS		F1B		200H	*) Days: 3. 7. 9. 11. - 17. 20. 21. 22. 26. 30.
7060.0	1555-1600	31	1			B7D		6k0E	LINK11 dsb
7062.0	0745-1430/	*	1	RUS		J7D	120	2k60E	*) Days: 4. 14. 17. 21.23. 24. 29.
7067.0	0910-1030	*	1	RUS		J7D	120	2k60E	*) Days: 7. 18. 28.
7068.0	0835-1300	16 30	1	RUS		J7D	120	2k60E	
7100.0	1400-1900	14 16	1			G7D		2k40E	LINK11 usb
7157.0	0530-1700	01 - 31	1	RUS	VB	A1A		20H	id 2 / 73 sec (2f 3578.5 kHz)
7193.0	0745-1455/	*	1	RUS	XYGA etc	F1B/A/ NON		200H	*) Days: 1. 3. 4. 6. - 11. 16. - 20.
7195.0	0715-1605/	*	1	RUS		J7D	120	2k60E	*) Days: 5. 10. 14. 17. 21. 22.
7200.0	1345-1455/	31	1			A3		4k0E	900 Hz tone with pips, fq offset -30 Hz
10 MHz			1	G		RADAR	50sps	20k0	(WebSDR 2d)
10 MHz	1530-1730	*	1	RUS		RADAR	40sps	13k0E	*) Days: 1. 10. 12. (WebSDR 4d)
10121.0	0905-1400	*	1			RADAR	43sps	50k0E	
10125A	1500-1557/	*	1	GUM	KTWR	spurious		5k0E	*) Days: 3. 7. 24. from 9900 kHz
10132A	1100-1257/	*	1	GUM	KTWR	spurious		5k0E	*) Days: 3. 5. 10. 12. 13. 15. 22. 25. - 28. from 9910 kHz

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14 MHz	0545-1700	*	1	RUS		RADAR	40sps	13k0E	*) Days: 1. - 9. 11. 14. 23.24. 26. 28. 29. (WebSDR 17d)
14 MHz	1030-1500	*	1	CHN		RADAR	50/67sps	10k0E	*) Days: 7. - 10. 13. 22. - 29. 'foghorn'
14000.0	0645-1040	29 - 31	1			RADAR		6k0E	SuperDARN, jumps +/- 25 kHz 60 sec per fq**
14116.0	0735-1030/	02	1	RUS		F1B		250H	S9 +40db
14118.0	1100-1200/	02	1	RUS		J7D	120	2k60E	
14192.0	0600-1900	01 - 31	1	RUS		F1B		200H	
14258.0	0725-0835/	22	1	RUS		F1B		500H	
18 MHz	0730-0930	24	1	G		RADAR	50/25sps	20k0	(WebSDR 2d)
18 MHz	0730-1330	*	1	RUS		RADAR	40sps	13k0E	*) Days: 5. 9. 11. 15. 19. 20. 22. 28. (WebSDR 8d)
21 MHz	0600-1500	*	1	G		RADAR	50/25sps	20k0	*) Days: 2. 4. 7. - 11. 14 16. 20. 21. 26. (WebSDR 14d)
21 MHz	0600-1645	*	1	RUS		RADAR	40sps	13k0E	*) Days: 1. 3. - 9. 11. - 20. 22. - 30. (WebSDR 31d)
21 MHz	0620-1000	05 - 08	1	CHN		RADAR	50sps	10k0E	(WebSDR 24d)
21 MHz	0600-1300	*	1	CHN		RADAR	50/67sps	10k0E	*) Days: 1. - 27. 29. - 31. 'foghorn'
21001.5	0600-1630	01 - 31	1			jam		5k0E	
21030.0	0650-0845	10 29	1			jam		18k0E	
21438.0	/0830-1430	01 - 31	1	RUS	RCV	A1A	16 - 25 wpm	40H	Navip etc.
24 MHz	0800-1100	16 30	1	G		RADAR	50sps	20k0	(WebSDR 4d)
24 MHz	0800-0900	06 08	1	RUS		RADAR	40sps	13k0E	*) Days: 3. 12. - 17. 19. 23. 24. 26. (WebSDR 8d)
25000.0	0700-1330	01	1			RADAR	2sps	200k0	Codar
28 MHz	0600-1500	*	1	G		RADAR	25/50sps	20k0	*) Days: 1. - 15. 17. 18. 19. 21. 22. 23. 26. 28. 29. 30. (WebSDR 28d)
28860A	0800-1500	*	1	IRN		RADAR	150/313	60k0E	*) Days: 2. - 5. 22. -25. 29. 30. 31. (WebSDR 20d)
29440A	0620-1500	*	1	IRN		RADAR	313	60k0E	*) Days: 6. - 12. 16. 22. -25. 27. 28. 30. 31.
28 MHz	0745-1100	*	1	RUS	Taxi disp.	F3E		3k0E	*) Days: 2. 3. 9. 10. 11. 30. 12 reports
29750.0	1025-1715	*	1	RUS	Kazan	RADAR	1592sps	60k0E	*) Days: 1. 4. 11. 13. audible to 29500 kHz

URE; Gaspar, EA6AMM. Team members: EA4021SWL, EB4APL

(Radars activity: summarized per band)

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
6994.0	18:05	27	01	RUS		RADAR	40	12K0E	OTHR Contayner. Splatter to 7004 kHz
6999.0	12:13	13	01			J7D		2K70E	CIS-12, submode idle. Partially inside the 40m band and splatter to 7003 kHz

URE; Gaspar, EA6AMM. Team members: EA4021SWL, EB4APL									
(Radars activity: summarized per band)									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7000.0*	vt**	vd**	01	RUS		RADAR	40	12K0E	<i>OTHR Contayner TX *on 40m **Very often. 36 reports 2 simultaneous TX on 40m: 4 3 simultaneous TX on 40m: 1</i>
7000.0*	vt**	vd**	01	CHN		RADAR	41.7 50 66.7	10K0E	<i>OTHR "Foghorn" bursts *on 40m: **Very often. 62 reports</i>
7005.0 USB	17:13 vt*	03 vd*	01		AOC	J7D	125	1K80E	MIL-188-141A ALE 2G
7005.0	11:02 vt*	11 vd*	01			XXX	14400	18K0E	WHARQ. Wideband HF Hybrid Automatic Repeat Request (ARQ). Burst system. Several BW, modulation types and QRG. *Often. 5 reports
7007.0	12:11	22	01			XXX	4800	6K0E	WHARQ
7009.0	12:13	22	01			J7D		2K70E	CIS-12, submode idle
7010.0	21:19	27	01			J7D	120	2K70E	CIS-12
7011.5	17:34	30	01			XXX		CA8K50E	Jammer
7017.5	12:14	22	01			J7D		2K70E	CIS-12, submode idle
7028.0	08:30 vt*	18 vd*	01			XXX	4800	6K0E	WHARQ *Also on 22/01, 0830Z
7030.0	12:27	10	01			F1B	75	250H	
7032.0 USB	20:20 vt*	01 vd*	01			XXX		3K30E	Jammer / QRG occupation (channel marker). *Almost daily
7035.8	15:24	21	01			NON			Carrier from F1B system on 7036 kHz CF (250 Hz, 50 Bd)
7036.0	15:54 vt*	10 vd*	01			F1B	50	250H	*Often. 4 reports
7050.5	12:44	10	01			J7D		2K70E	CIS-12, submode idle
7051.0	17:01 vt*	26 vd*	01			A1A	10		Looped message (beacon). MSG = 'CQ CQ CQ, RUSSIA MORDOR. PUTIN HUJLO'. Drifting up and down. Long-lasting. Daily since 26/01
7059.0	12:17	22	01			F1B	75	250H	
7062.0	11:18 vt*	21 vd*	01			J7D	120	2K70E	CIS-12 *Also on 24/01, 1339Z
7065.0	11:16	28	01			F1B	75	200H	
7065.9	14:51	16	01			NON			Carrier. Long-lasting
7067.0 USB	19:19	02	01	CHN	AB1 - CD6	J7D	125	1K80E	MIL-188-141A ALE 2G + ROBUST
7068.0	12:51	16	01			J7D		2K70E	CIS-12, submode idle
7070.0 USB	19:21 vt*	02 vd*	01	CHN	571 288 334 514	J7D	125	1K80E	MIL-188-141A ALE 2G *Also on 11/01 and on 22/01; vt
7070.0 USB	20:38	11	01			J3E-U		2K40E	Non-amateur comms. Male voices, unidentified language
7071.7	17:13	26	01			XXX		2K70E	Noise (Carriers). CIS-12 submode idle?
7088.0 USB	17:02	03	01			G1D	2400	2K40E	LINK-11 SLEW *Also on 10/01, 1719Z
7095.0 USB	20:29	09	01			J7D	125	1K80E	MIL-188-141A ALE 2G
7098.0	07:40	08	01			F1B	75	250H	
7100.0	18:19	01	01			G7D	75	2K40E	LINK-11 CLEW SSB

URE; Gaspar, EA6AMM. Team members: EA4021SWL, EB4APL (Radars activity: summarized per band)									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
USB	vt*	vd*							*ALSO ON 16/01, 1922Z
7100.0 USB	18:51 vt*	09 vd*	01			G1D	2400	CA2K80E	STANAG-4285 *Also on 26/01, 1831Z
7100.0	20:36 vt*	13 vd*	01			J3E-L		2K80E	UKR/RUS radiowar *Also on 19/01, 1937Z
7167.0 USB	10:56	16	01				2400	CA3K0E	MIL-188-141C ALE 3G
7192.9	11:04	11	01	RUS		NON			Carrier from RUS 7193 kHz CIS 36-50 (200 Hz 50 bd. ID = "RDL"). *Also on 18/01, 1336Z
7193.0	12:39 vt*	10 vd*	01	RUS	RDL	F1B F1A	50	200H	CIS 36-50. *Often. 6 reports
7195.0	12:48	10	01			J7D		2K70E	CIS-12, submode idle
13999.0 USB	09:00	01	01		114 312	J7D	121	1K80E	MIL-188-141A ALE 2G. Partially inside the 20m band
13999.0 USB	09:02	01	01			J3E-U		3K0E	Non-amateur comms start after end of ALE 2G TX. Male voices. Asian Language (sounds like CHN)
13999.0	12:46	05	01		235 585	J7D	125	1K80E	MIL-188-141A ALE 2G. Partially inside the 20m band
13999.0	08:03	09	01		878	J7D	125	1K80E	13999 kHz USB. MIL-188-141A ALE 2G. Partially inside the 20m band
13999.0	08:04	09	01			J3E-U		3K10E	13999 kHz USB: non-amateur coms. Male voice. Unid language (after ALE 2G TX)
13999.0	08:06	09	01		221 468 318	J7D	125	1K80E	13999 kHz USB. MIL-188-141A ALE 2G. Partially inside the 20m band
13999.0	07:12	10	01		235 313	J7D	125	1K80E	13999 kHz USB. MIL-188-141A ALE 2G. Long-lasting. Partially inside the 20m band
13999.0	08:19	14	01			J7D		2K70E	CIS-12, submode idle. Partially inside the 20m band and splatter to 14002 kHz
14000.0*	vt**	vd**	01	RUS		RADAR	40	12K0E	<i>OTHR Contayner TX *on 20m **Very often. 65 reports 2 simultaneous TX on 20m: 20 3 simultaneous TX on 20m: 2 4 simultaneous TX on 20m: 1</i>
14000.0*	vt**	vd**	01	CHN		RADAR	41.7 50 66.7	10K0E	<i>OTHR "Foghorn" bursts *on 20m: **Very often. 93 reports</i>
14000.0*	vt**	vd**	01			RADAR		Ca6K0E	<i>SuperDARN-like radar bursts. *Hopping between 14005, 14010, 1405 and 14020 kHz CF. **Often. 7 reports</i>
14000.0 USB	10:58	01	01				2400	CA3K0E	ALE 3G bursts *Almost daily: 23 reports
14000.0	6:18 vt*	02 vd*	01			XXX		2K0E	Jammer. 85 Hz. *Also on 02/01 and on 08/01, vt
14000.0 USB	08:36	07	01				2400	CA3K0E	ALE 3G complete link *Also on 20/01, 1357Z
14000.0	08:38	07	01			XXX	2400	CA2K40E	14000 kHz USB. Unidentified 2400Bd/1200 MSK bursts
14000.0 USB	07:30	11	01		102 103	J7D	125	1K80E	14000 kHz USB. MIL-188-141A ALE 2G
14000.0 USB	10:03	13	01		FSE JCI	J7D	125	1K80E	14000 khz USB. MIL-188-141A ALE 2G *Also on 14/01, 1105Z
14000.0	13:51	13	01		Charlie Kilo Romeo	J3E-U		3K30E	Non-amateur comms. Male voices, Italian language. *Also on 20/01, 1252Z

URE; Gaspar, EA6AMM. Team members: EA4021SWL, EB4APL									(Radars activity: summarized per band)
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14000.0	08:48	15	01			XXX	2400	3K0E	14000 kHz USB. Unidentified bursts. MSK 2400 Bd
14000.0 USB	09:00	16	01		1	J7D	125	1K80E	MIL-188-141A ALE 2G. *Also on 18/10, 1440Z
14000.0	08:04 vt*	20 vd*	01	D		A3E		CA7K0E	Non-amateur comms. Air traffic. Male voices. Language: German. *Also on 24/01, 0936Z
14000.0	08:52	21	01		7TH	J7D	125	1K80E	14000 kHz USB. MIL-188-141A ALE 2G
14000.0	10:29	21	01			J3E-U		3K30E	Non-amateur comms between ALE 2G bursts. Male voices. Unidentified language
14000.0*	18:42 vt**	11 vd**	01			RADAR		CA6K0E	SuperDARN-like radar bursts. *Hopping between 14005, 14010, 1405 and 14020 kHz CF. **Often. 7 reports
14001.4	09:14	10	01			J3E-U		2K40E	Non-amateur comms. Male voices. Unid language (seems Arabic). Long-lasting. *Also on 11/01, 0745Z (same ops)
14004.0	07:12	14	01			XXX		CA2K40E	Unidentified digital TX preceded and followed by non-amateur J3E-U TX
14004.0 USB	08:05	20	01		101 106 103	J7D	125	1K80E	MIL-188-141A ALE 2G *Also on 23/01, 0752Z
14004.0	08:06	20	01			J3E-U		2K40E	Non amateur comms after ALE 2G TX. Male voices. Asian language
14004.0	08:24	28	01			J3E-U		2K40E	Non-amateur comms. Male voices. Unidentified Asian language
14005.5	13:37 vt*	04 vd*	01			F1D	600	600H	DPRK-FSK 600 ARQ. *Often. 8 reports
14007.0 LSB	08:21	20	01			W7D	44.44	2K40E	CHN OFDM 39
14007.5	08:02 vt*	09 vd*	01			F1D	600	600H	DPRK-FSK 600 ARQ. *Often. 8 reports
14009.0 USB	08:06	20	01			XXX	2400	2K80E	Unidentified 2400Bd/1200 MSK bursts
14012.0	08:08	23	01			J3E-U		2K40E	Non-amateur comms. Male voices. Unid language
14015.0	09:51	28	01			J3E-U		2K80E	Non-amateur comms. Male voices - Arabic language
14018.0 LSB	08:32	15	01			W7D	44.44	2K40E	CHN OFDM 39
14026.0	12:14 vt*	10 vd*	01			J7D	120	2K70E	CIS-12 *Also on 11/01 and on 21/01, vt
14100.0 LSB	16:56	01	01	MOZ	AFUNGI	J7D	125	1K80E	MIL-188-141A ALE 2G. Inverted spectrum. *Almost daily. 26 reports
14100.0 USB	07:01	09	01	CHN	AB1 - CD5	J7D	125	1K80E	MIL-188-141A ALE 2G
14103.0 LSB	08:54	24	01			W7D	44.44	2K40E	CHN OFDM 39
14104.0	07:11	14	01			J3E-U		2K40E	Non-amateur comms before and after unid digital TX BW = 2K40E. Male voice, unid language.
14110.0	12:55 vt*	04 vd*	01			J3E-U		2K80E	UKR/RUS radiowar. Long-lasting *Also on 10/01, 1125Z
14111.5	10:15	04	01			J3E-U		2K80E	UKR/RUS radiowar. Long-lasting
14112.0 LSB	08:20 vt*	01 vd*	01			W7D	44.44	2K40E	CHN OFDM 39 *Also on 10/01, 0711Z

URE; Gaspar, EA6AMM. Team members: EA4021SWL, EB4APL									(Radars activity: summarized per band)
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14118.0	11:00	02	01			J7D	120	2K70E	CIS-12
14121.0	10:24	01	01			J3E-U		2K80E	UKR/RUS radiowar. Long-lasting
14124.0	11:32	07	01			J3E-U		3K05E	Slavic music. Long-lasting. QRT: 1526Z
14133.0	15:02	19	01			J3E-U		3K0E	Broadcast relaying. Male speaker. Slavic language. Religious content and music. Long-lasting. QRT: 1632Z
14138.0	13:27 vt*	14 vd*	01			J3E-U		3K0E	Broadcast relaying. Slavic music and speech. Male voice, Slavic language. Long-lasting. *Also on 18/01, 1407Z
14171.0	08:19	16	01			J7D		2K70E	CIS-12, submode idle
14192.0	08:17	01	01	RUS		F1B	50	200H	*Daily. Long-lasting
14198.5	12:48 vt*	01 vd*	01			F1D	600	600H	DPRK-FSK 600 ARQ *Almost daily. 20 reports
14206.0 LSB	07:45 vt*	09 vd*	01			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4 *Also on 14/01, 0711Z
14220.5	08:03 vt*	03 vd*	01			F1D	600	600H	DPRK-FSK 600 ARQ *Very often. 17 reports
14224.0 USB	07:15	07	01			G1D	2400	2K40E	MIL-188-110A. First and last bursts = ALE 3G
14225.0 USB	11:36	21	01				2400	CA3K0E	MIL-188-141C ALE 3G
14233.5	16:24	04	01			F1D	600	600H	DPRK-FSK 600 ARQ
14238.5	16:24	04	01			F1D	600	600H	DPRK-FSK 600 ARQ
14248.5	12:43	15	01			F1D	600	600H	DPRK-FSK 600 ARQ
14258.0	07:18	22	01			F1B	50	500H	
14270.0	17:50	13	01			RADAR	50	9K0E	Unidentified radar bursts
14292.0 LSB	07:12	22	01			W7D	44.44	2K40E	CHN OFDM 39
14297.0	13:14	04	01			J3E-U		2K80E	Music. Long-lasting
14298.5	12:37 vt*	01 vd*	01			F1D	600	600H	DPRK-FSK 600 ARQ *Almost daily. 25 reports
14308.0	09:06 vt*	24 vd*	01			F1B	75	500H	*Also on 29/01, 0716Z
14312.0	11:13	10	01			A1A			Non-amateur comms. Encrypted QTC
14345.4	08:22	11	01			XXX		CA9K70E	Unidentified bursts
18136.0	08:49	16	01	RUS		RADAR	40	12K0E	OTHR Contayner
18163.0	08:17	01	01	CHN		RADAR	66.7	10K0E	OTHR short bursts
21000.0*	vt**	vd**	01	RUS		RADAR	40	12K0E	OTHR Contayner *on 15m **Daily. 187 reports 2 simultaneous TX on 15m: 44 3 simultaneous TX on 15m: 8
21000.0	vt**	vd**	01	CHN		RADAR	41.7 50 66.7 83.3	10K0E	OTHR "Foghorn" bursts *on 15m: Daily. 251 reports
21000.0*	vt**	vd**	01	G		RADAR	25 50	20K0E	OTHR (UK SBA, Cyprus) TX *on 15m Very often: 29 reports 2 simultaneous TX on 15m: 2
21000.0*	vt**	vd**	01	CHN		RADAR	50	10K0E	OTHR (continuous) TX *on 15m **3 reports
21001.5	08:38	02	01			XXX		2K50E 5K0E	Jammer. 85 Hz *Almost daily. 28 reports

URE; Gaspar, EA6AMM. Team members: EA4021SWL, EB4APL									
(Radars activity: summarized per band)									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21010.0	08:34	05	01			XXX		3K40E	Jammer 85 Hz bursts. Bandwidth changing from 3K40E to 6K30E
21020.0	08:34	05	01			XXX		6K30E	Jammer 85 Hz. Bursts
21047.0	07:13	22	01			F1B	75	850H	STANAG-4481
21115.0 LSB	08:30	04	01			G7D	75	2K40E	CHN 4+4 a.k.a PRC 4+4
21145.0 USB	08:25	01	01	MRC	E7 A1 MIRADOR2 VX34 VX200 EA51 E52 ...	J7D	125	1K80E	MIL-188-141A ALE 2G *Almost daily. 26 reports
21170.0	08:43 vt*	07 vt*	01			XXX	15.6	3K0E	21170 kHz USB. Unidentified chirps. *Also on 09/01, 1022Z
21171.5	15:22	03	01			XXX	15.6	2K40E	Unidentified bursts: chirps, 15.6 pps
21195.0 LSB	09:33	14	01			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4
21215.0 USB	08:55	02	01	CHN	AB1 - CD5	J7D	125	1K80E	MIL-188-141 ALE 2G + ROBUST
21225.0 USB	07:58	07	01			G1D	24002		MIL-188-110A
21225.0 USB	10:06 vt*	13 vd*	01				2400	CA3K0E	MIL-188-141C ALE 3G *Often. 5 reports
21225.0 USB	15:33	16	01				2400	CA3K0E	ALE 3G bursts
21233.0	15:54	10	01			W7D		2K40E	21233 kHz USB. Unidentified OFDM bursts. Possible CIS-48 variant? *Also on 30/01, 1119Z
21315.0 LSB	11:12	08	01			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4
21340.0	07:48	20	01			F1B	75	850H	STANAG-4481
21345.0 USB	08:49	08	01			G1D	2400	2K40E	MIL-188-110A
21350.0 LSB	12:03	20	01			G7D	75	2K40E	CHN 4+4 a.k.a PRC 4+4
21407.0	10:47	25	01	G		RADAR	25	4K0E	<i>OTHR G, Cyprus, with new BW</i>
21418.5	14:17	18	01			F1D	600	600H	DPRK-FSK 600 ARQ
21438.0	11:25 vt*	02 vd*	01	RUS	RCV	A1A			RUS navy QTC *Almost daily. 21 reports
24903.0	09:10	11	01	RUS		RADAR	40	12K0E	<i>OTHR Contayner</i>
24961.0	09:11	11	01	CHN		RADAR	66.7	10K0E	<i>OTHR short bursts</i>
24968.0	10:43	28	01	CHN		RADAR	40	10K0E	<i>OTHR short bursts</i>
28000.0*	Vt**	Vd**	01	G		RADAR	25 50	20K0E	<i>OTHR (UK SBA, Cyprus) TX *on 10m **Very often. 81 reports 2 simultaneous TX on 10m: 12</i>
28000.0*	Vt**	Vd**	01	IRN		RADAR	150 313	Ca45K0E	<i>OTHR TX *on 10m - Alternating 150 and 313 pps bursts **Often. 8 reports - 313 pps bursts only **Very often. 26 reports - Hopping after every burst **1 report 2 simultaneous TX on 10m: 6</i>

URE; Gaspar, EA6AMM. Team members: EA4021SWL, EB4APL (Radars activity: summarized per band)

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
29502.0	11:01	13	01	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus. Changed from BW = 20K0E 12.5 pps to BW = 40K0E, 25 pps
29750.0*	09:42 vt**	04 vd**	01	RUS		RADAR	1592	CA60K0E	29750 kHz CF: Kazan Federal University Meteor Radar. RUS. Lower side lobe to 29550 kHz **Often. 5 reports

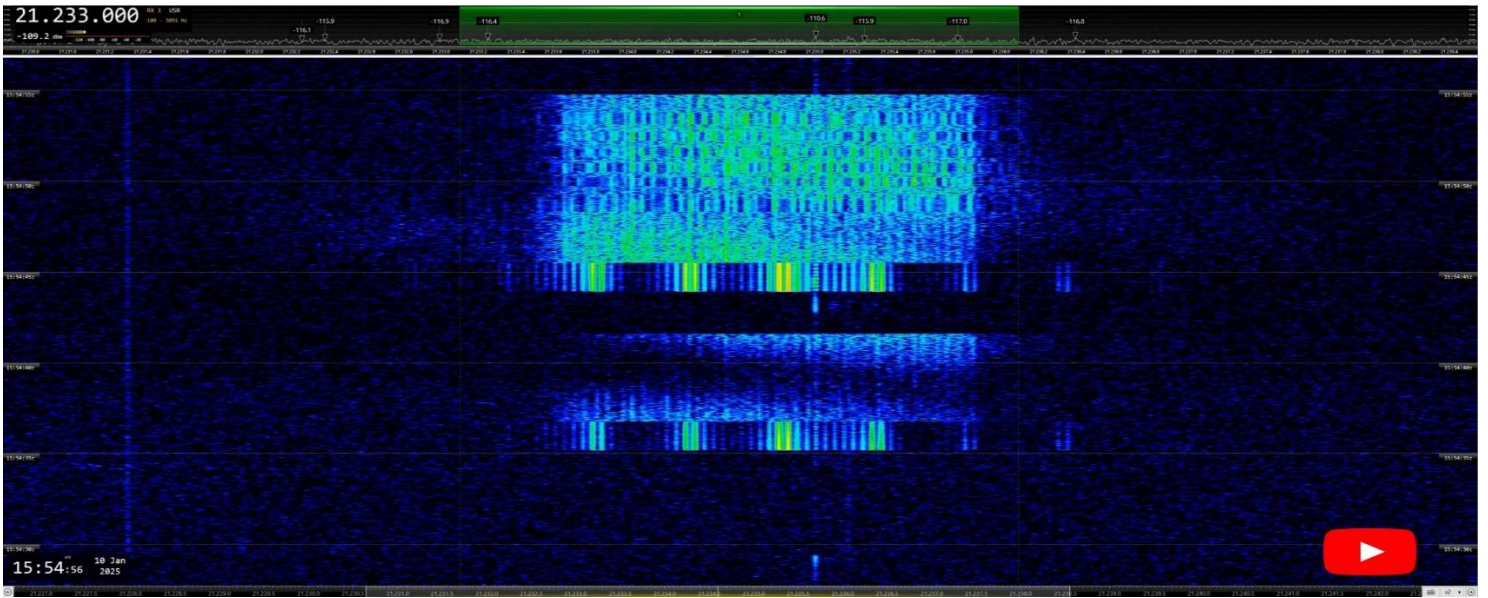
VERON: Ruud PG1R. Credits to observers Dick PA0GRU, Rene PA3EQO

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7032.0	1821	06	01	RUS		J3E-U		3K0E	Kaliningrad; Russian songs; S7
7032.0	xxxx	xx	01	RUS		J3E-U	100	3K2E	100Hz hum; S9; loc Kaliningrad; daily; seems to be gone at the end of January
7050.0	1536	18	01	UKR /RU S		J3E-L		2K7E	UKR-RUS radiowar; discussions & slogans in loop; 2TX same freq; S8
7055.0	xxxx	xx	01	UKR /RU S		J3E-L		2K8E	UKR-RUS radiowar; war rhetoric slogans in loop; S9; daily
7120.0	1813	06	01	CHN		RADAR	Ca 50	10K0E	OTHR; short bursts; rather weak with QSB
7138.0	1818	09	01	RUS		RADAR	40	12K0E	OTHR Contayner; S7-8
14000.0	1538	12	01	RUS		RADAR	40	12K0E	CF; OTHR Contayner
14100.0	1542	14	01	UKR /RU S		J3E-U		3K0E	Russian/Ukrain war rhetoric & music; also on several other days
14192.0	1520	12	01	RUS		F1B		200H	Ptr; S8
14192.0	1020	30	01	RUS		F1B		200H	UiPtr
21000.0	xxxx	xx	01						Humming noise; daily
21064.0	1210	25	01	RUS		RADAR	40	12K0E	CF; OTHR Contayner
21165.0	1207	25	01	RUS		RADAR	40	12K0E	CF; OTHR Contayner
21184.0	1000	31	01			RADAR			
21445.0	1511	12	01	CHN		RADAR	50	10K0E	CF; OTHR
21450.0	1027	30	01			RADAR			

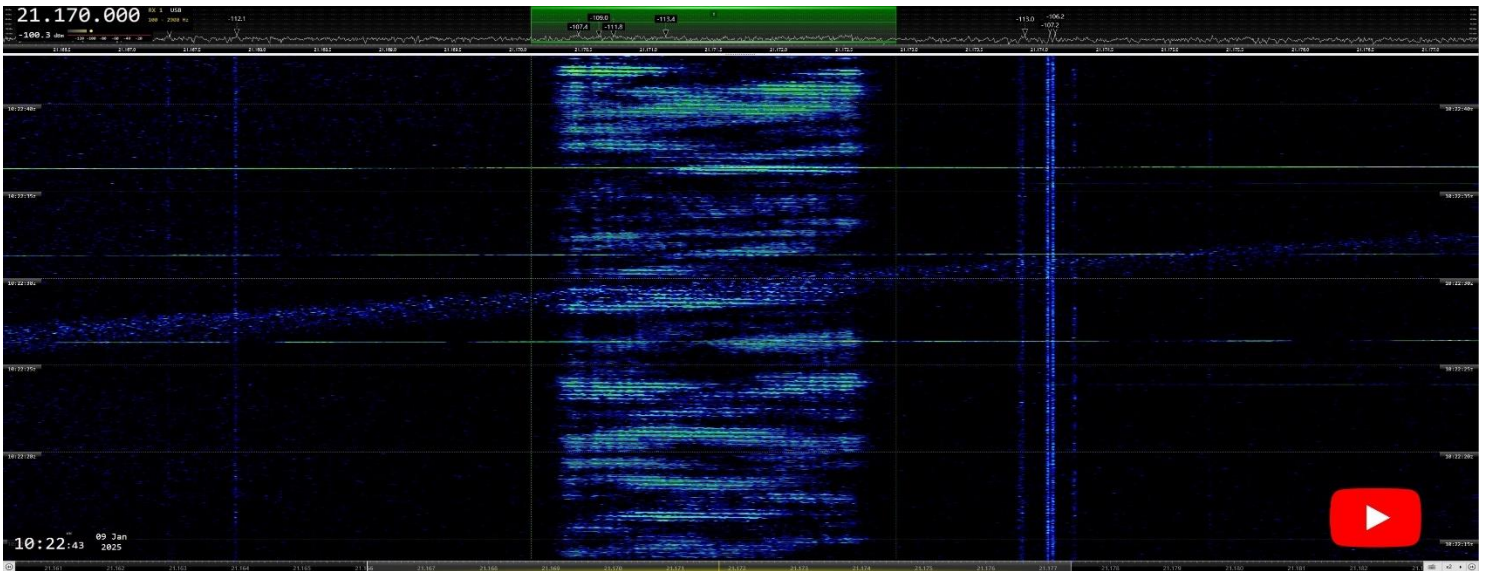
Contact: Gaspar, EA6AMM. IARUMS Region 1 coordinator: iarums@iaru-r1.org

IARUMS R1 Coordinators: <https://www.iaru-r1.org/spectrum/monitoring-system/iarums-region-1-coordinators/>

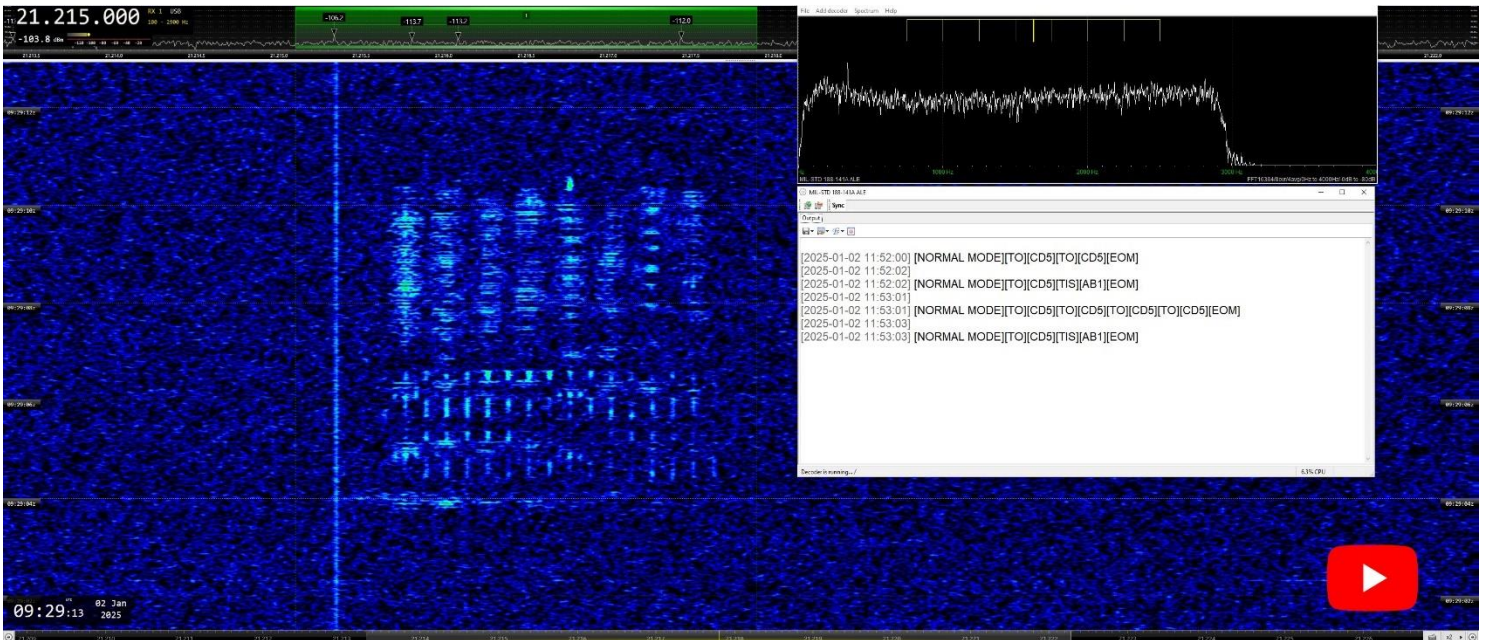
Visit our website: <https://www.iaru-r1.org/about-us/committees-and-working-groups/iarums/>



21233 kHz USB. Unidentified OFDM. BW = 2.4 kHz. Possibly, a CIS-48 variant?



21170 kHz USB: XXX. Unidentified chirps. BW ca 2.5 kHz. 16 pps



21215 kHz USB. MIL-188-141A ALE 2G. CHN. ROBUST. BW = 1.8 kHz. 125 Bd (example video)