


IARU Monitoring System Region 1



Monthly Newsletter - February 2025

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

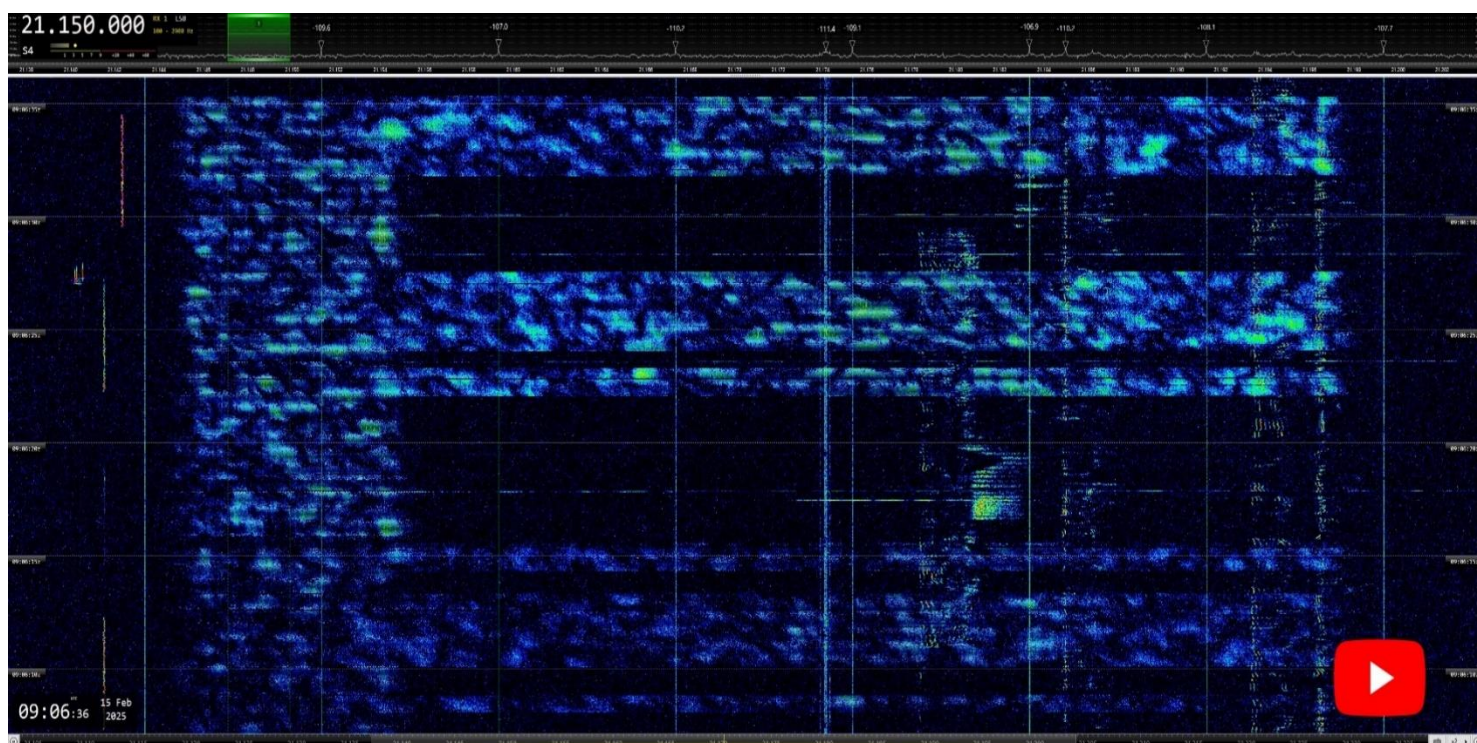
- **IARUMS Wiki:** find more information, screenshots, videos and recordings of the transmission modes most used by non-amateur stations on the amateur radio bands: <https://www.iaru-r1.org/spectrum/monitoring-system/iarums-wiki/>

News and Info

We begin this edition of the IARU Monitoring System Region 1 monthly newsletter by first addressing the new signals detected in our amateur radio HF bands during February 2025.

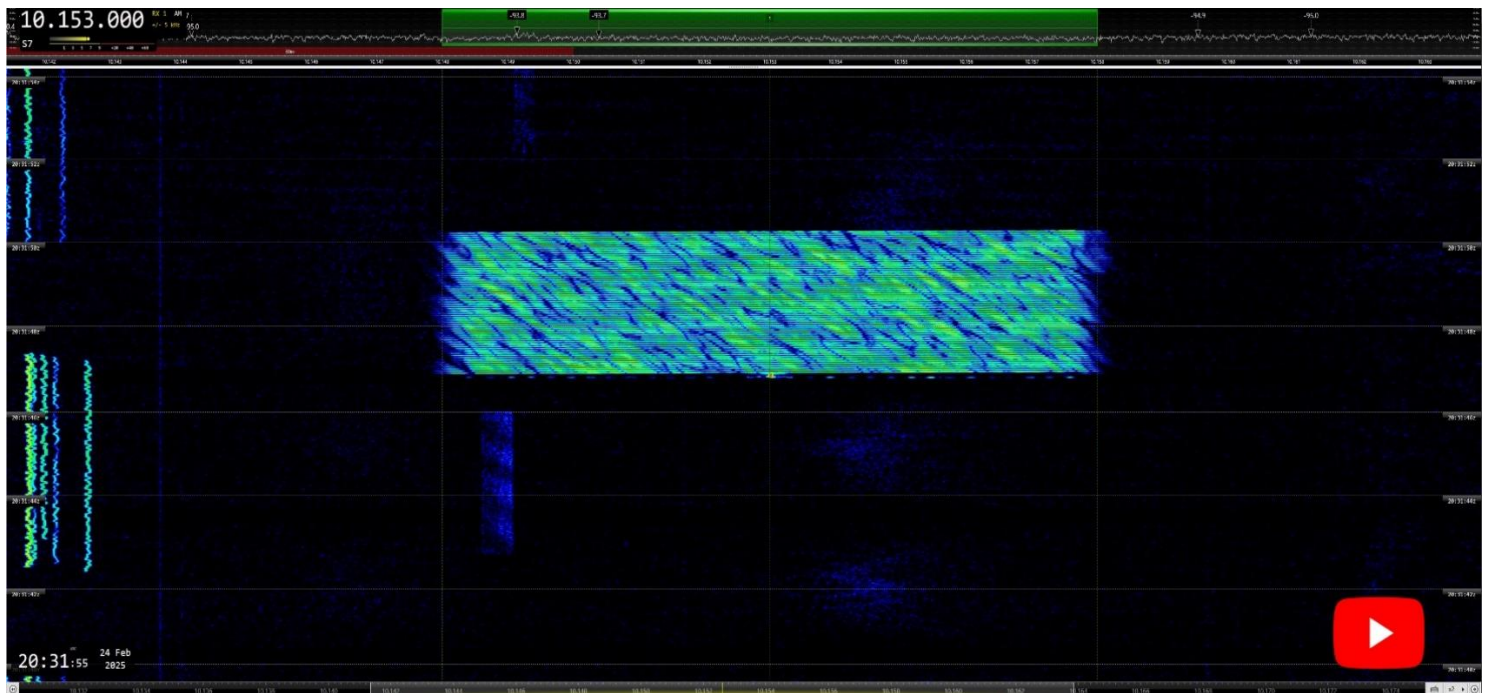
All of these signals are related to Over The Horizon (OTHR) radars. As a reminder, this type of transmission has been the most frequently received interference in our bands for many years. Due to their high occurrence, large bandwidths, high transmission power, and typically long-lasting nature, as well as the fact that multiple simultaneous transmissions of one or more of them can occur within the same band, they currently represent the greatest threat to our allocated spectrum.

Among this month’s most notable signals, we identified the transmission of a radar previously unreported in our bands. This radar transmitted bursts using two different bandwidths (10 kHz and 52 kHz) and employed a Pulse Repetition Frequency (PRF) of 20 pps (pulses per second). Micro-interruptions were observed during the transmissions, which were observed on February the 15th and the 16th in the 15-meter band for short periods. Their origin remains unknown.



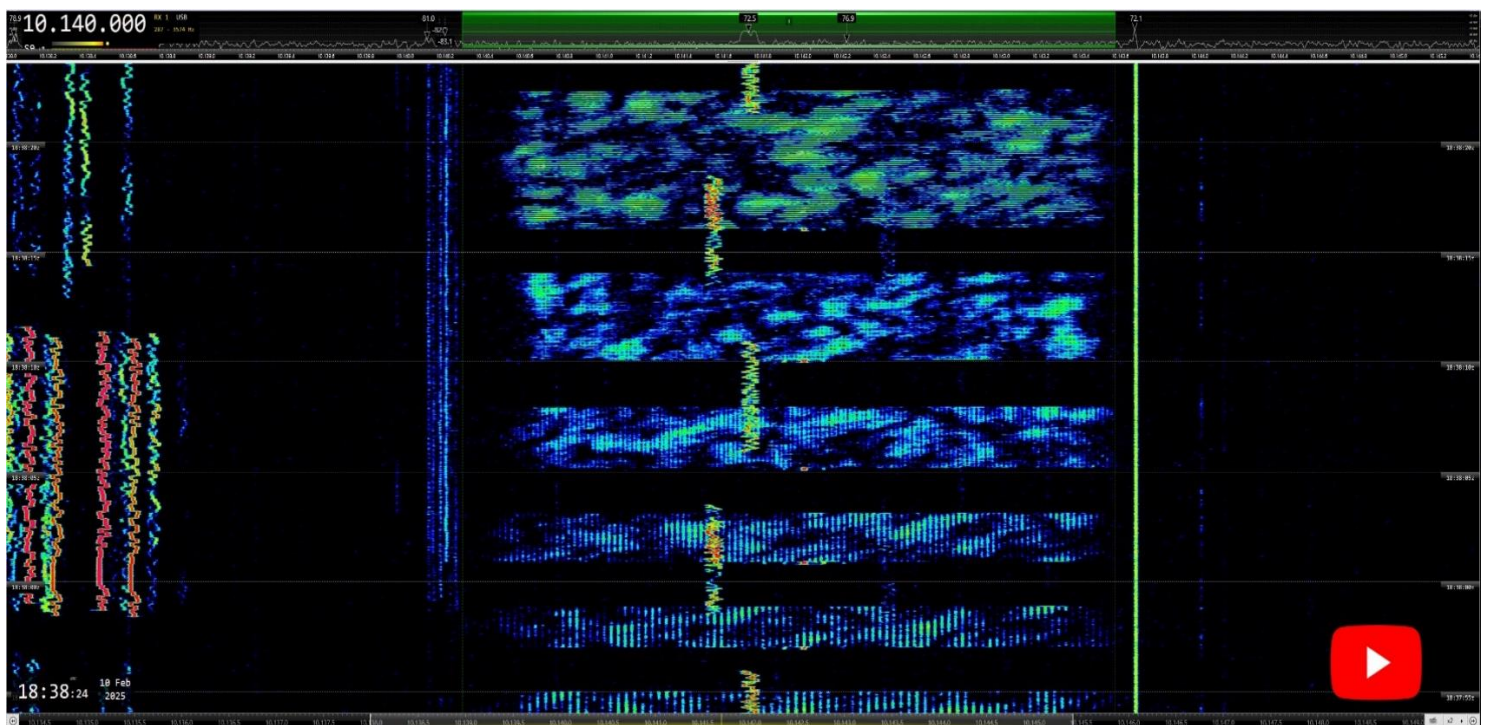
21171 kHz CF: unidentified radar bursts. BW 10 kHz and 52 kHz. 20 pps

Additionally, we recorded activity from the well-known Australian OTHR radar JORN (Jindalee Operational Radar network), which was detected transmitting bursts with a PRF of 20 pps—an unprecedented characteristic in our bands. The bandwidth used in these transmissions, which were received on the 30-meter band, was 10 kHz



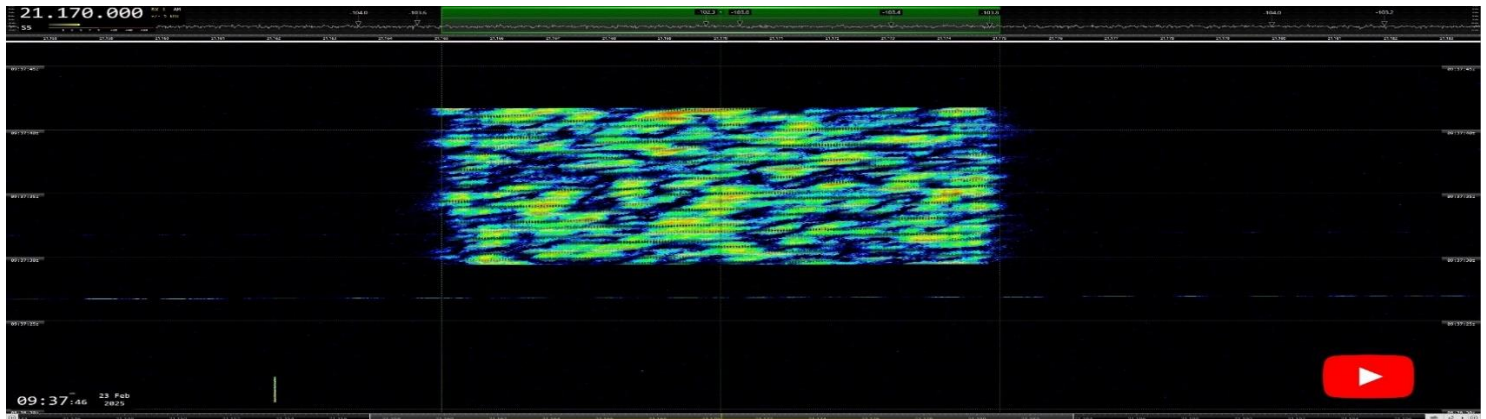
10153 kHz CF: OTHR JORN bursts. ITU = (AUS) BW = 10 kHz. 20 pps. Partially inside the 30m band (example video from March 2025)

Furthermore, the JORN OTHR was also observed transmitting in this band with sequences of 14 bursts, each featuring a decreasing PRF, ranging from 96 pps to 10 pps, and a bandwidth of 3 kHz.



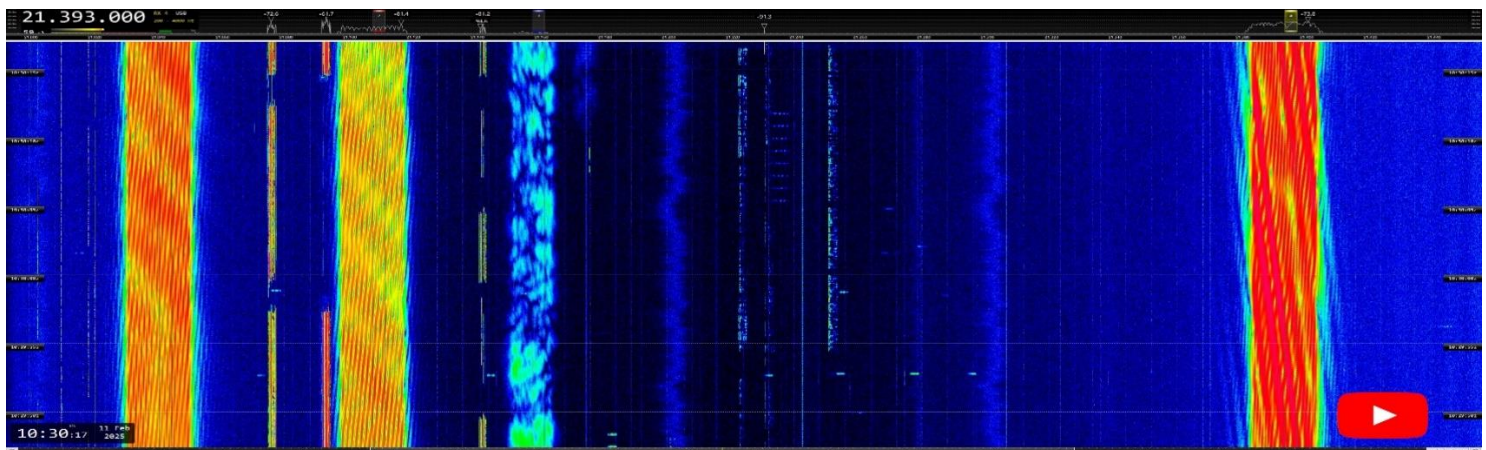
10142 kHz CF: OTHR JORN bursts; with short intro tone at the CF. ITU = (AUS). 14 bursts sequence. BW = 3 kHz. Decreasing PRF from 986 to 10 pps

Finally, we detected a new PRF used by Chinese OTH radars, commonly referred to as “Foghorn” due to the distinctive sound of their bursts. This time, bursts at 21 pps were observed interspersed within a transmission that otherwise used a more typical PRF for these radars (41.8 pps).



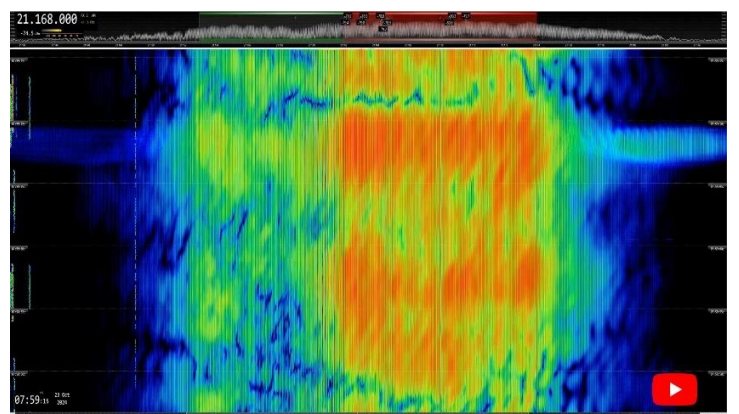
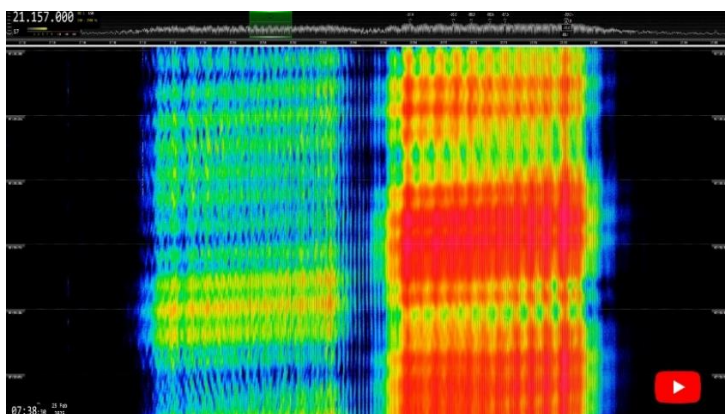
21170 kHz CF: CHN OTHR „Foghorn“ bursts. Second and third bursts: new PRF used = 21 pps. BW = 10 kHz

Regarding the OTHR radars transmissions typically received in our HF bands from, there were, unfortunately, no significant variations compared to previous months. Over 1,000 transmissions were observed, and once again, the 15-meter band was the most affected by their detrimental effects, with several simultaneous transmissions from different radars occurring in this band, as well as in other bands (mostly on 10m and on 40 m).



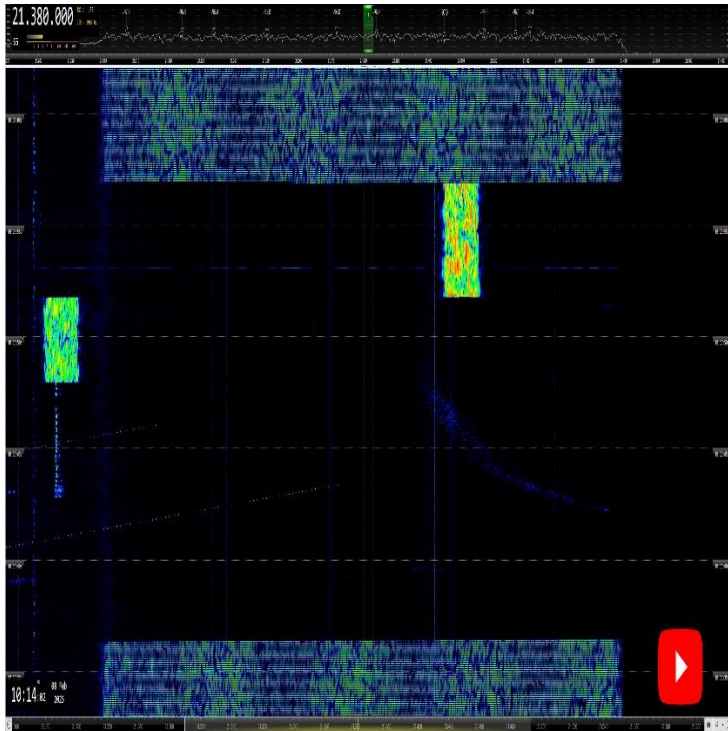
15 meters band:radars. 3 X British OTHR (located at the UK SBA in Cyprus) TX. BW = 20 kHz. 50 pps + RUS OTHR Contayner. BW = 12 kHz. 40 pps

One of the radars that frequently transmits multiple simultaneous signals in the same band is the Russian OTHR Contayner. On some occasions, two transmissions from this radar can be observed juxtaposed or overlapping. It is possible that this operational configuration is similar to what can be observed in other radars that, on VHF, use the Twin Radars technique.

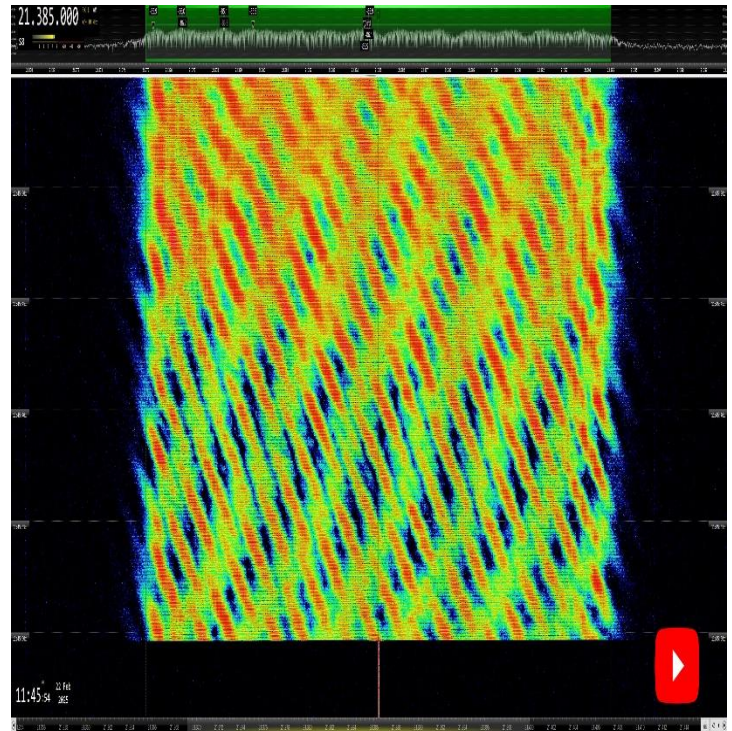


Russian OTHR Contayner performing simultaneous side by side (left) and overlapped (right) transmissions on the same band (15 meters)

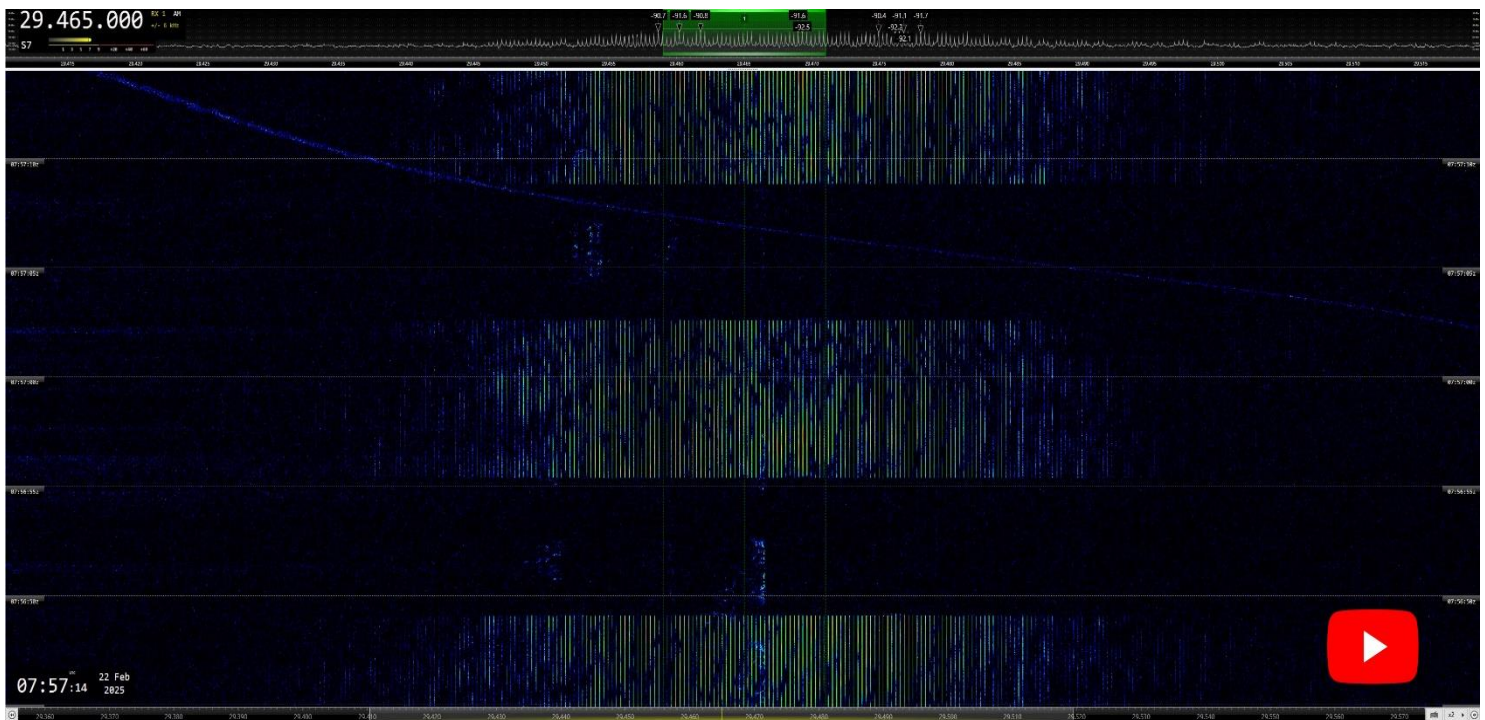
These are some examples of the OTHR transmissions received during February 2025 :



21380 kHz CF: CHN Wideband OTHR. BW = 160 kHz. 10 pps



21385 kHz CF: British OTHR (UK SBA, Cyprus). BW = 20 kHz. 25 pps

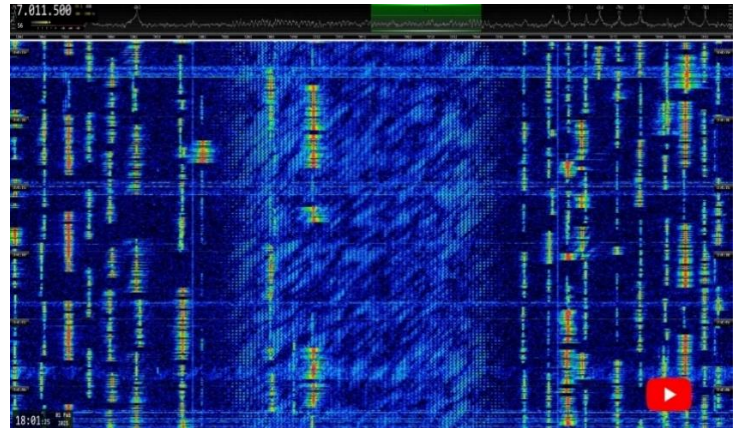
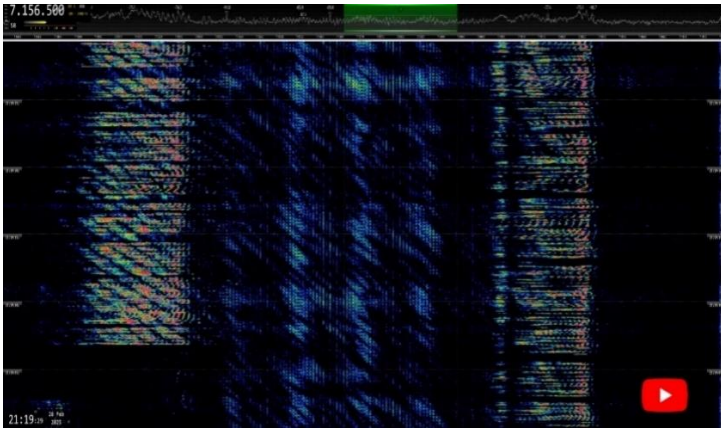


29465 kHz CF: Iranian OTHR bursts. BW ca 45 kHz. 313 pps

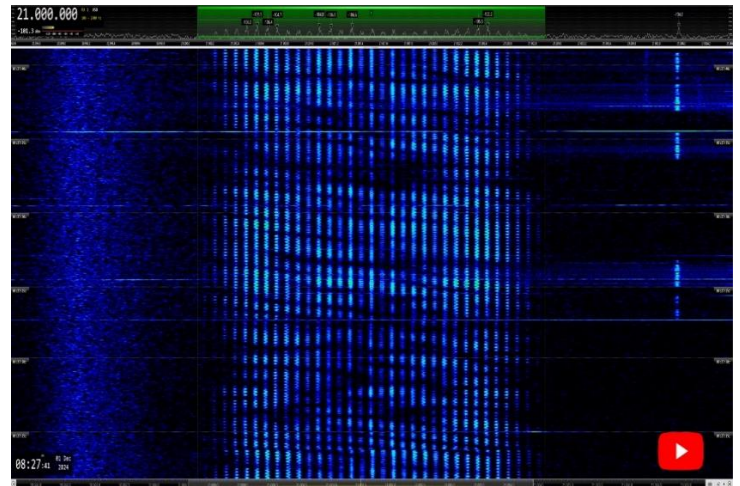
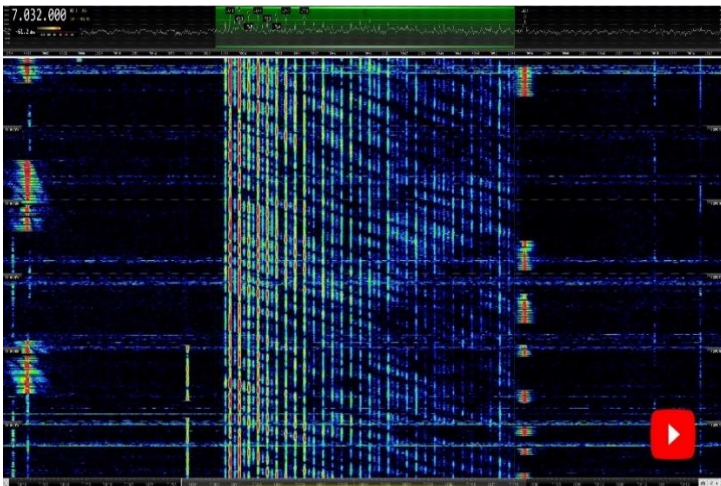
For many years now, jammers have also been part of the non-amateur transmissions frequently received in our amateur radio HF bands. A jammer is an intentional transmission of a signal aimed at disrupting or preventing the proper reception of another transmission. Although they have other applications, they are primarily used within the framework of electronic warfare (EW) in military conflicts.

During the month of February, they were active on several frequencies in the 40-meter band and on the 15-meter band.

However, the Russian jammer that we have been experiencing daily for months on 7032 kHz CF, either serving this function or acting as a frequency occupancy signal or channel marker—consisting of the transmission of noise, which was sometimes replaced by Russian military music or the Russian national anthem, looped—was observed less frequently during this month.



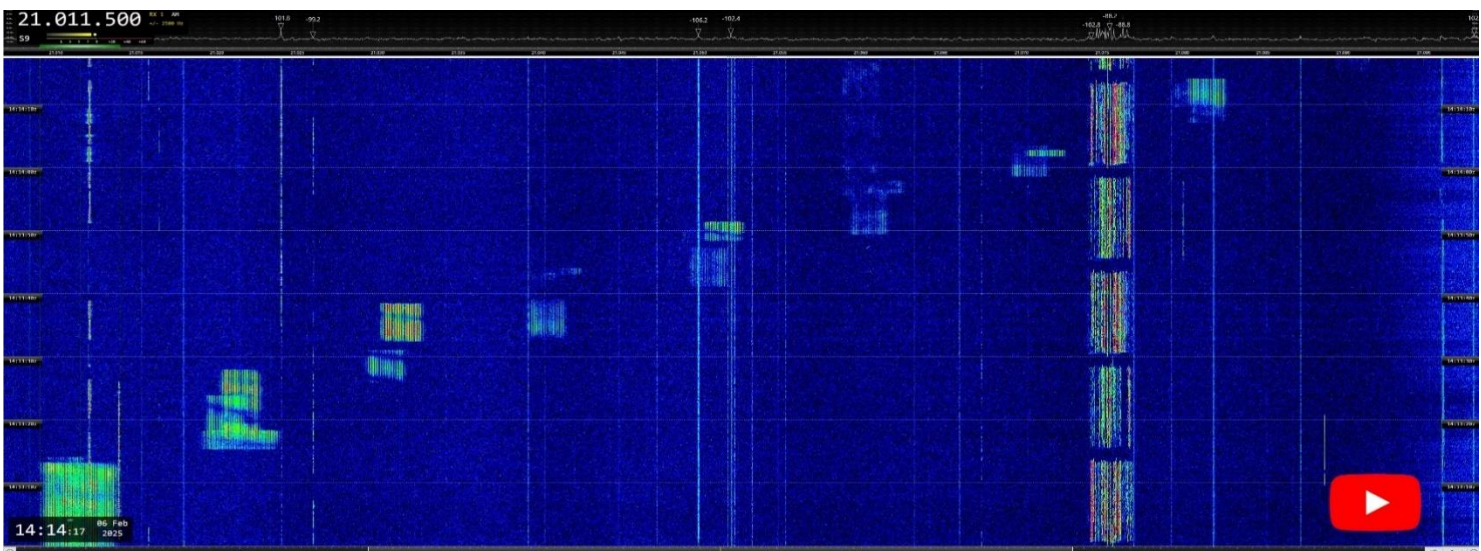
Jammers on 40 meters. Different BW (ca 4 kHz and ca 6 kHz). 85 Hz



7032 kHz USB. Jammer / frequency occupation. BW = 3.3 kHz (example)

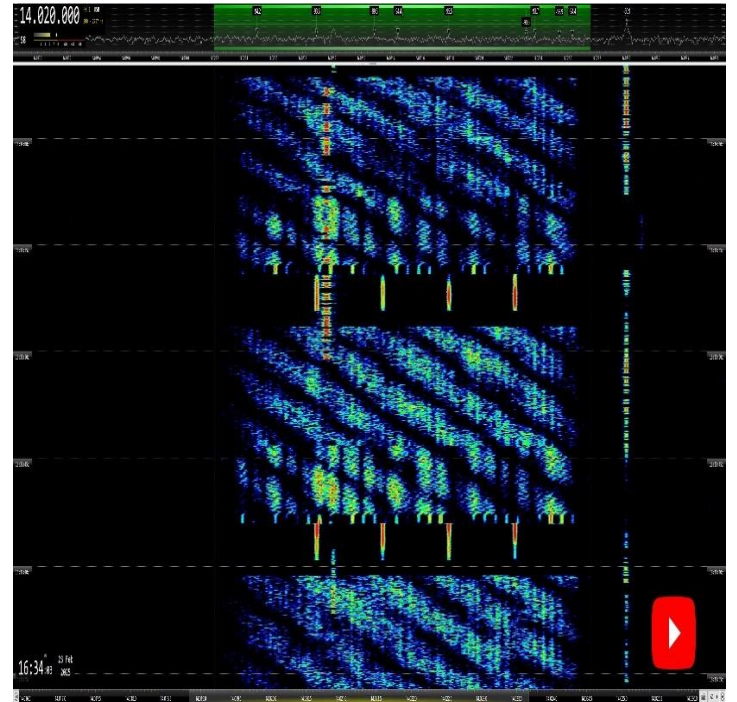
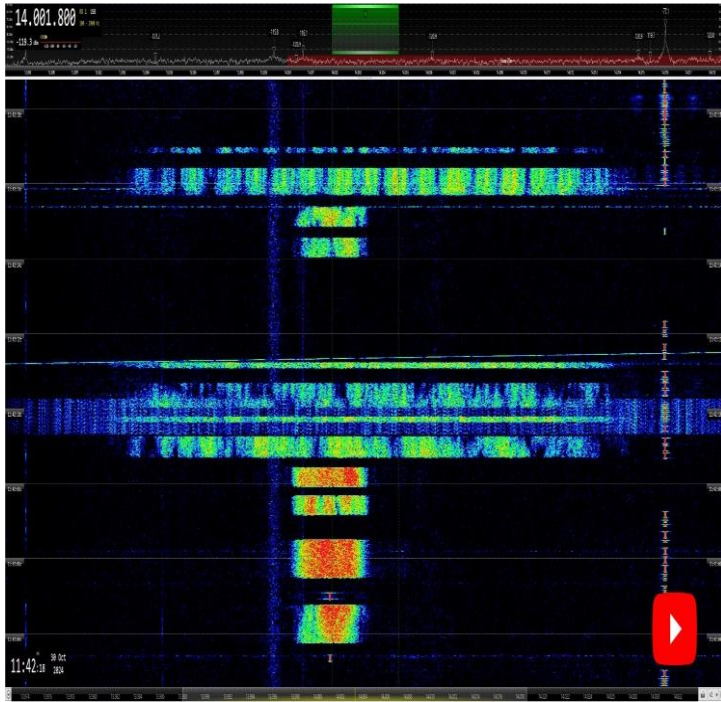
21001.5 kHz CF. Jammer. BW = 2.5 or 5 kHz. 85 Hz (example video)

We observed several times the jammer usually received on 21001.5 kHz (BW = 2.5 kHz or 5 kHz. 84 or 85 Hz) – also, less frequently received during February – performing frequency hopping and bandwidth changes, maybe in order to change its transmission frequency or following its target transmission:



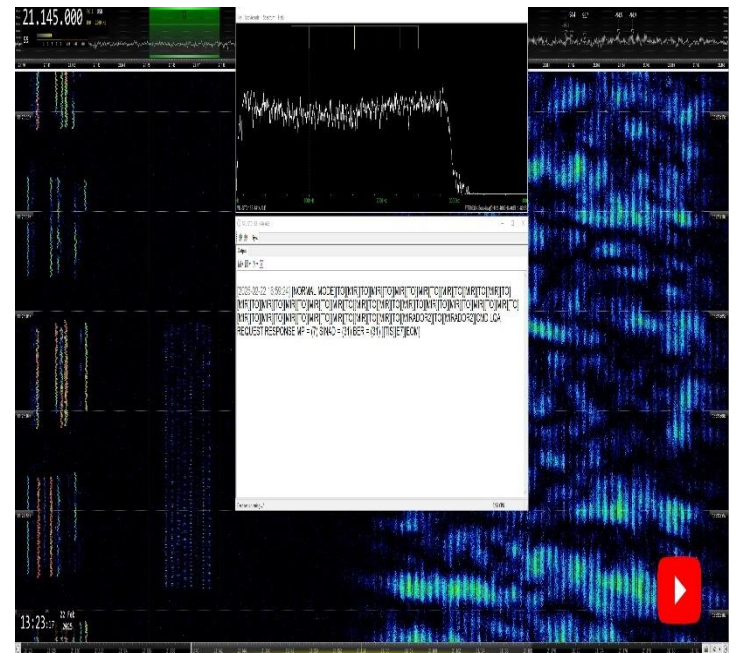
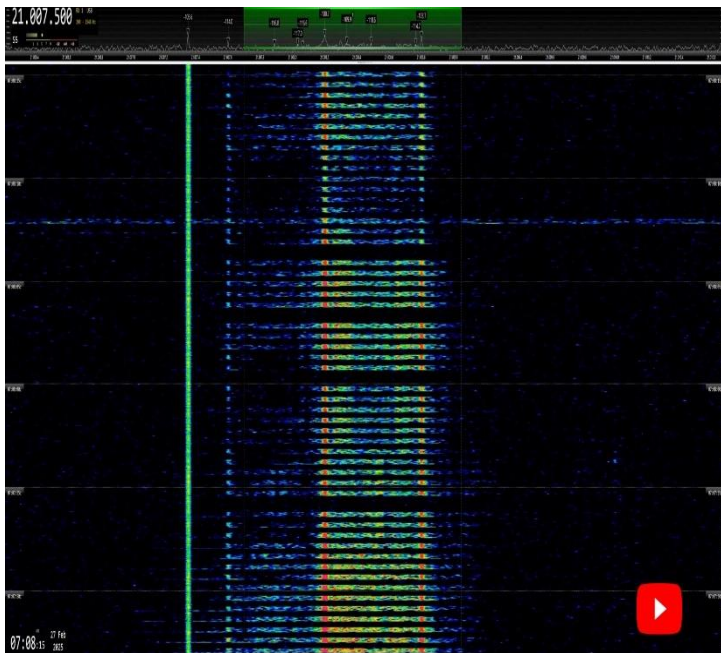
15 meters band: Jammer hopping and changing bandwidth. BW, 2.5 and 5 kHz. 85 Hz

With respect to transmissions using military or diplomatic modes—which, after OTHR radar transmissions, are the most frequently observed type of non-amateur transmissions in our amateur radio HF bands—we mainly received the following modes: DPRK 600 (North Korean diplomatic mode. FSK. F1D. Shift = 600 Hz. 600 Bd). MIL-188-141A ALE 2G (MFSK8. J7D. BW = 1.8 kHz. 125 Bd) and LINK-11 SLEW (on 7088 kHz USB. G1D. BW = 2.4 kHz. 2400 B, and various types of CIS FSK transmissions, but other MIL modes like the Israeli Navy hybrid modem or WHARQ (Wideband HF Hybrid Automatic Repeat Request (ARQ). Burst system; L3Harris proprietary mode capable of using different bandwidths (up to 24 kHz) and waveforms, and also using intelligent frequency hopping) were also received on February:



WHARQ (example video). Often RX on 40m during February 2025

14020 kHz USB: Israeli Nay hybrid modem. BW = 2.4 kHz. 2400 Bd



21008.5 kHz CF: DPRK FSK 600. F1D. SH = 600Hz. 600 Bd

21145 kHz USB: MIL-188-141A ALE 2G. J7D. BW = 1.8 kHz 125 Bd

Last but not least, other transmissions sent on SSB (J3E), CW (A1A) and FM (F3E) were received on the amateur bands, sent by pirates, Cbers, taxi dispatch stations, fishers, fishing bouys, etc.

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 | **PRF** = Pulse Repetition Frequency | **pps** = pulses per second (same as “sps”) | **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
7000.0	21:40	13	02			A3E		9K0E	Radio, with asian language music and voice. S1 to S7 , qsb
7012.0	18:12	03	02	RUS		F1B	75	250H	F1B
7014.0	21:49 VT*	11 VD*	02	RUS		RADAR	40	12K0E	OTHR Container also on 7184, *Often, 10 reports
7026.0	17:51 VT*	05 VD*	02	CHN		RADAR	66.7	10K0E	OTHR Bursts, * also on 7043,7055,7110, 7105 and others , in 42,50 and 66.6 Hz modes , 15 reports.
7042.0	17:58	08	02			J7D	125	1K75	MIL-188-141A
7063.0	19:21	03	02	RUS		F1B	75	250H	Murmansk
7078.0	21:58	04	02	RUS		J7D	120	2K60E	CIS-12 (underlying Music , probably jammer attempt)
7088.0	20:10	09	02	MKD		G1D	2400	2K40E	PSK8A , 7089.8 CF , LINK11-SLEW - North Macedonia,
7108.0	19:21	06	02	CHN		RADAR	10	160K0E	CHN wideband OTHR 7028 to 7188 kHz
7119.0	18:40	10	02	RUS		J7D	120	2K60E	CIS-12, submode idle
7130.0	17:54	05	02			J7D	125	1K75	MIL-188-141A,
7134.0	17:18	11	02	RUS		F1B	50	200H	F1B
7162.0	15:33	04	02	RUS		F1B	100	500H	Vladiwostok
7164.0	18:05	07	02			J7D	125	1K75	MIL-188-141A
7205.0	12:59	06	02	CHN		A3E		30K0E	China Radio International on 7205 with splatters 7190 - 7220 kHz, report by DARC IW
10122.0	11:42	15	02	CHN		RADAR	86	60K0E	CHN - OTHR - Shantou - 10092 - 10152 kHz - west of TWN - shared band
10122.0	18:13 VT*	08 VD*	02	CHN		RADAR	86	60K0E	CHN - RADAR - 10092 - 10152 kHz - west of TWN , *also on 15.02
10128.0	16:56	26	02	CHN		RADAR	66.7	10K0E	OTHR Bursts
10130.0	20:14	27	02	CHN		RADAR	50	10K0E	OTHR Bursts
14000.0	12:15 VT*	25 VD*	02	INS		RADAR	2	80K0E	ocean surface radar 14000 14080 kHz , *daily
14047.0	12:12 VT*	14 VD*	02	CHN		RADAR	66.7	10K0E	OTHR Bursts, *also on 14090,14100, 14177, in 42,50 and 66.6 Hz modes , 17 reports.
14123.0	12:03	21	02	CHN		W7D	44.44	2K40	OFDM 39
14181.0	15:10	10	02	RUS		RADAR	40	12K0E	OTHR Container
14188.0	06:02	25	02	G		RADAR	50	20K0E	OTHR Cyprus UK SBA
14216.0	11:46	15	02	CHN		W7D	60	2K35E	CHN 30 modem - LSB mode
21000.0	16:17	03	02	E		J3E-U		2K40E	Spanish (Galician) language Fishermen, Bay

DARC; Harald, DL9NDW and the DARC IW team

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
									of Biscay
21000.0	15:39 VT*	27 VT*	02	CHN		RADAR	48	10K0E	OTHR Bursts, * also on 21225,21249, 21345,21360, 21392,21433 in 42,50 and 66.6 Hz modes , 15 reports.
21061.0	12:25 VD*	21 VT*	02	RUS		RADAR	40	12K0E	OTHR Container. * also on 21201,21273, 16 reports
21224.0	10:53 VD*	05 VT*	02	G		RADAR	50	20K0E	OTHR Cyprus UK SBA. * Also on 21313 (20.2 1551) 2 Reports
21396.0	14:35	09	02	G		RADAR	25	20K0E	OTHR Cyprus UK SBA , 25hz but looks like Pluto, not like Container
28100.1	16:18 VT*	01 VD*	02			F1B	51	300	4 x Enagal GPS fishing buoy - QTE 230, *often ,14 reports
28195.0	10:02	15	02			A3E		5K0E	Pirates, AM Voice, no callsigns, in Digimode Area
28500.0	13:21 VT*	14 VT*	02			XXX			Several different slow moving carriers across 10m Band. *Allways when band open to Far East
28568.0	12:04 VT*	07 VD*	02	G		RADAR	50	20K0E	OTHR Cyprus UK SBA, *3 Report also on 28545, 3 reports
28870.0	08:24 VT*	10 VD*	02	IRN		RADAR		46K0E	Iranian radar - 150 sps and 313 sps alternating , *5 Reports, also on 28960 at 15 Feb 0953
28870.0	12:05	07	02	IRN		RADAR		46K0E	Iranian radar - Alternating 333 and 695 pps bursts. Changing Frequency
28980.3	11:59	17	02			A3E		9K	unid BC - carrier 28980.309 kHz - unid language - QTE 60 - daily

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3620	1800	16	2	RUS-UKR		LSB			Russian-Ukrainian radio war. Strong and persistent.
3762	1815	16	2	F		LSB			Shouting of profanities in French.Music is being played.
7000	1950	14	2	F		USB			Voice with French accent "14th division calling". Loud pop music.
7000	2105	14	2	CHN		AM			Harmonic of CNR 1 on 7230 kHz. Weak to medium signal.
7002	1930	12	2			RADAR			Radar from 7002 to 7014kHz. Huge and persistent.
7032	1515	28	2			USB			Jammer. Loud and persistent.Heard on many days of the month.
7050	1745	5	2	RUS-UKR		LSB			Russian-Ukrainian radio war. Very strong and persistent signals.
7055	1900	7	2	RUS-UKR		LSB			Russian-Ukrainian radio war. Loud and persistent.
7060	1535	11	2	RUS-UKR		LSB			Russian-Ukrainian radio war. Very strong and persistent.
7090.5	2215	25	2			PSK			Link-11 clew. Strong signal.
7112	1800	16	2			RADAR			Radar from 7112 to 7132 kHz. Strong and persistent.
7135	2200	25	2			RADAR			Radar from 7135 to 7160 kHz. Huge and persistent.

IRTS; Michael, EI3GYB									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14000	1930	1	2	B		USB			Brazilian pirates. Male and female voices. Heard often during the month with medium signals.
14080	1150	12	2			RADAR			Radar from 14080 to 14100 kHz. Medium and persistent signals.
14124	1445	24	2	RUS-UKR		USB			Russian-Ukrainian radio war. Very strong signals.
14168	900	20	2			PSK			Strong and persistent signal.
14191	1345	1	2	RUS		F1B			Russian navy in Kaliningrad. Daily all day long with a strong signal.
14195	855	20	2			RADAR			Radar from 14195 to 14210 kHz. Medium but persistent signal.
14307	1530	28	2			F1B			Strong and persistent signals.
21001.5	1330	8	2			USB			Jammer- almost daily with a weak to medium signal.
21040	1240	9	2	UK		RADAR			Radar from 21040 to 21070 kHz. Huge and persistent. British base in Cyprus.
21045	905	23	2			RADAR			Radar from 21045 to 21070 kHz. Huge and persistent.
21080	910	23	2			RADAR			Radar from 21080 to 21105 kHz. Huge and persistent.
21095	1020	23	2			RADAR			Radar from 21095 to 21115 kHz. Medium signal, persistent. Also on the 23rd at 1345z.
21145	1525	28	2			RADAR			Radar from 21145 to 21165 kHz. Medium signal, persistent.
21148	1245	9	2			RADAR			Radar from 21145 to 21160 kHz. Medium and persistent.
21150	1205	11	2			RADAR			Radar from 21150 to 21160 kHz. Medium and persistent signal.
21165	1200	10	2			RADAR			Radar from 21165 to 212185 kHz. Also on the 20th at 0850z. Medium but persistent.
21180	1000	7	2			RADAR			Radar from 21180 to 21190 kHz. Very strong. Chinese Foghorn.
21190	1005	7	2			RADAR			Radar from 21190 to 21340 kHz. Medium and persistent signal. Covers a huge part of the band.
21215	1110	5	2			RADAR			Radar from 21215 to 21235 kHz. Huge and persistent.
21260	1505	24	2			RADAR			Radar from 21260 to 21285 kHz. Very strong and persistent.
21345	845	20	2			RADAR			Radar from 21345 to 21355 kHz. Medium and persistent signal. Chinese Foghorn.
21365	1520	28	2			RADAR			Radar from 21365 to 21385 kHz. Weak signal.
21370	840	20	2			RADAR			Radar from 21370 to 21395 kHz. Huge and persistent.
21420	1250	9	2			RADAR			Radar from 21420 to 21432 kHz. Huge and persistent.
21430	1330	4	2			RADAR			Radar from 21430 to 21460 kHz. Huge and persistent.
21438	900	1	2	UKR		CW			Russian navy in Sevastopol. Every day all day long with a medium to strong signal.
21445	850	18	2			RADAR			Radar from 21445 to 21460 kHz. Huge and persistent.
28380	1300	27	2	IRN		RADAR			Radar from 28380 to 28400 kHz.

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
28555	1420	7	2			RADAR			28555 to 28575 kHz. Medium and persistent signal.
28820	1440	2	2	IRN		RADAR			Radar from 28820 to 28920 kHz. Strong and persistent. Also heard on the 21st at 1410 kHz.
28900	1120	12	2			RADAR			Radar from 28900 to 28924 kHz. Huge and persistent.
29100	1430	1	2			FM			Carrier. Heard several times during the month with big signal.
29430	1335	1	2			RADAR			Radar from 29430 to 29490 kHz. Strong and persistent.
29445	1450	4	1	IRN		RADAR			Radar from 29445 to 29485 kHz. Medium but persistent signal.

PZK; Mirek, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14180.0	1635	28	02			RADAR		14K0E	S9
14250.0	1550	25	02			RADAR		10K0E	3 sec burst foghorn
14268.0	1310	28	02			RADAR		10K0E	3 sec bursts
14288.0	1310	28	02			RADAR		8K0E	5 sec. Burst
21104.0	vt	vd	02			RADAR		12K0E	S9+
21105.0	1040	22	02			RADAR		12K0E	Extremally strong! S9+40dB
21119.0	1200	16	02			RADAR		12K0E	S9
21128.0	1205	04	02			RADAR		12K0E	S9+
21130.0	0955	07	02			RADAR		12K0E	S9+
21132.0	1350	27	02			RADAR		12K0E	S9+
21157.0	1320	28	02			RADAR		12K0E	Very strong! S9+20dB
21160.0	1330	22	02			RADAR		12K0E	Very strong! S9+20dB
21170.0	0840	21	02			RADAR		12K0E	S9+
21171.0	0910	25	02			RADAR		14K0E	S6
21175.0	0925	16	02			RADAR		12K0E	S9+ also 21366.0
21273.0	1440	05	02			RADAR		12K0E	S7
21280.0	0730	18	02			RADAR		12K0E	S9+
21297.0	1030	08	02			RADAR		10K0E	3 sec burst foghorn
21309.0	0840	21	02			RADAR		10K0E	3 sec burst foghorn AND 21376.0
21315.0	1105	26	02			RADAR		12K0E	S9+
21334.0	0913	25	02			RADAR		10K0E	3 sec burst foghorn
21358.0	1450	27	02			RADAR		14K0E	S9
21385.0	0935	27	02			RADAR		12K0E	S9+
21418.0	1330	22	02			RADAR		8K0E	5 sec. Burst
21422.0	1040	22	02			RADAR		12K0E	Very strong! S9+20dB
24898.0	0910	18	02			RADAR		10K0E	3 sec bursts
24944.0	0935	27	02			RADAR		20K0E	S9+20dB
28335.0	1335	22	02			RADAR		20K0E	S9+ looks like Cyprus
28421.0	1010	06	02			RADAR		20K0E	
28870.0	vt	vd	02	IRN		RADAR		60K0E	
29650.0	0830	07	02			RADAR		20K0E	S9+12 looks like Cyprus

SRAL; Pekka, OH2BLU									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7 MHz	1700-0615	*	2	RUS		RADAR	40 sps	13k0E	*) Days: 1. 6. 7. 11. 12. 14. 15. 16. 18. 22. 28. (WebSDR 27d)
7000.0	1230-1900	01 - 28	2	CHN		A3A		4k0E	
7008.0	1210-1350	*	2	RUS		F1B		250H	*) Days: 9. 25.
7008.0	1210-1350	06	2	RUS		J7D	120	2k60E	
7012.0	1150-1855	*	2	RUS		F1B/ NON		250H	*) Days: 3. 11. 12.
7019.0	0830-1900	*	2	RUS		F1B/ NON		200H	*) Days: 6. 17. 22.
7032.0	0600-1500	28	2	RUS		J3E-u		3k30E	Non-stop Russian anthem / mx,
7032.0	0000-2400	*	2	RUS		J3E-u		3k30E	*) Days: 13. 20. 27. 28. Brum when no music.
7035.1	0530-1900	01 - 28	2	RUS		J3E-l		3k60E	ticking carriers 240 Hz apart
7051.0	1855	27	2			jam		7k50E	
7062.0	0730-1030	*	2	RUS		J7D	120	2k60E	*) Days: 3. 7. 13.
7066.0	0545-1815	*	2	RUS		F1B/ NON		200H	*) Days: 4. 11. 20. 25. 26. 27.
7101.5	0545-1445	*	2			xxx		3k0E	*) Days: 3. 4. 6. 7. 10. - 15. 17. - 20. 24. - 27. (weekdays only?)
7157.0	0530-1530	01 - 28	2	RUS	VB	A1A		20H	id 2 / 73 sec (2f 3578.5 kHz)
7160.0	0655-0735	18 19	2	RUS	RBL88	A1A		40H	5F
7193.0	0745-1530	*	2	RUS		F1B/ NON		200H	*) Days: 1. 4. 5. 6. 10. 11. 14. 15. 16. 19. 20.
7200.0	1230-1605/	10 11	2	TWN	National unity r.	A3E		9k0	Korean px
10 MHz	1750-1830	27	2	G		RADAR	25/50sp s	20k0	(WebSDR 5d)
10 MHz			2	RUS		RADAR	40sps	13k0E	(WebSDR 9d)
10121.0	0905-1400	*	2			RADAR	43sps	50k0E	
10125A	1500-1557/	*	2	GUM	KTWR	spurious		5k0E	*) Days: 2. 6. 9. from 9900 kHz
10132A	1100-1257/	*	2	GUM	KTWR	spurious		5k0E	*) Days: 2. 4. 5. 6. 9. 10. 14. 16. 25. 26. from 9910 kHz
14 MHz	0600-1800	*	2	RUS		RADAR	40sps	13k0E	*) Days: 3. 6. 10. - 13. 15. - 18. 25. 27. 28. (WebSDR 27d)
14 MHz	1130-1800	*	2	CHN		RADAR	50/67sp s	10k0E	*) Days: 3. 7. 12. 15. 16. 19. 22. 23. 24. 26. 'foghorn'
14000.0	0630-1700	*	2			RADAR		6k0E	*) Days: 6. 8. 11. 17. -22. 24. SuperDARN, jumps +/- 25 kHz 60 sec per fq
14002.0	1010-1125	04	2	RUS		F1B		250H	
14192.0	0545-1900	01 - 28	2	RUS		F1B		200H	
14292.0	0545-1100	18 19	2	RUS	A2CA	A1A		40H	

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
18 MHz	0700-1600	15 22	2	G		RADAR	50/25 sps	20k0	(WebSDR 3d)
18 MHz	0730-1400	06 25	2	RUS		RADAR	40 sps	13k0E	(WebSDR 6d)
21 MHz	0630-1645	*	2	G		RADAR	50/25 sps	20k0	*) Days: 1. 5. 6. 9. 11. 13. 14. 16. 20. (WebSDR 14d)
21 MHz	0600-1645	01 - 28	2	RUS		RADAR	40 sps	13k0E	(WebSDR 28d)
21 MHz			2	CHN		RADAR	50 sps	10k0E	(WebSDR 24d)
21 MHz	0600-1630	01 - 27	2	CHN		RADAR	50/67sp s	10k0E	'foghorn'
21 MHz	1805-1845	04 09	2	CHN		DRM		9k0E	4 to 5 txs same time
21001.5	0630-1600	01 - 14	2			jam		5k0E	
21438.0	/0830-1500	01 - 28	2	RUS	RCV	A1A	16 - 25 wpm	40H	Navip etc.
24 MHz	0700-0745/	14	2	G		RADAR	50sps	20k0	(WebSDR 3d)
24 MHz	1100-1600	08 17	2	RUS		RADAR	40sps	13k0E	(WebSDR 6d)
28 MHz	0545-1600	*	2	G		RADAR	12.5/25/50sp s	20k0	*) Days: 1. 6. 7. 11. 12. 14. 15. 16. 18. 22. 28. (WebSDR 20d)
28 MHz	0600-1600	01 - 27	2	IRN		RADAR	150/313	60k0E	(WebSDR 25d)
29460A	0600-1600	*	2	IRN		RADAR	313	60k0E	*) Days: 1. - 7. 17. 18. 21. 22. 23. 26. 28.
28 MHz	0700-1200	*	2	RUS	Taxi disp.	F3E		3k0E	*) Days: 4. 17. 21. 6 reports

URE; Gaspar, EA6AMM. Team members: EA4021SWL

(Radars activity: summarized per band)

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
6994.0	21:42	18	02	RUS		RADAR	40	12K0E	OTHR Contayner. Splatter to 7003 kHz
7000.0*	vt**	vd**	02	RUS		RADAR	40	12K0E	OTHR Contayner TX *on 40m **Very often. 88 reports 2 simultaneous TX on 40m: 23
7000.0*	vt**	vd**	02	CHN	RADAR	RADAR	41.7 50 66.7	50	OTHR "Foghorn" bursts *on 40m **Very often. 40 reports
7000.0	21:24	03	02			G1D	2400	2K40E	7000 kHz USB. ISR navy hybrid modem
7000.0	19:28	23	02			J3E-U		2K80E	Unid sts talking. Male voices, unid language
7002.0	19:33	03	02			J3E-U		3K30E	Non-amateur comms after CHN OFDM 39 TX on 7005 kHz LSB. Male voices. Asian language
7005.0	19:27	03	02			W7D	44.44	2K40E	CHN OFDM 39
7005.0	11:46	01	02			XXX	12000	15K0E	WHARQ: Wideband HF Hybrid Automatic Repeat Request (ARQ). Burst system. Several BW and modulation types and QRG.
7005.0	12:40	02	02			XXX	14400	18K0E	WHARQ
7005.0	19:31	03	02			W7D	44.44	2K40E	7005 kHz LSB. CHN OFDM 39
7005.0	16:21	10	02			XXX	7200	9K0E	WHARQ

URE; Gaspar, EA6AMM. Team members: EA4021SWL									
(Radars activity: summarized per band)									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7005.0	17:19	18	02		AOC - BLD	J7D	125	1K80E	7005 kHz USB. MIL-188-141A ALE 2G
7005.0	16:10 vt*	19 vd*	02			XXX	9600	12K0E	WHARQ *Also on 25/02, 1632Z
7007.0	17:20 vt*	21 vd*	02			XXX	12000	15K0E	WHARQ *Also on 25/02, 1715Z
7008.0	12:13	06	02			J7D	120	2K70	CIS-12
7008.0	13:35	09	02			F1B	50	250H	*Also on 25/02, 1220Z
7009.0 USB	13:03	10	02				2400	CA3K0E	ALE 3G bursts
7011.0 USB	12:14	06	02				2400	CA3K0E	MIL-188-141C ALE 3G
7011.5	17:59	01	02			XXX		4K0E	Jammer. 85 Hz
7012.0	18:33 vt*	03 vd*	02			F1B	75	250H	*Also on 11/02 1206Z
7014.0	12:15	06	02			J7D	120	2K70E	CIS-12
7018.9	12:47	06	02			NON			Carrier. Long-lasting
7025.0	14:09	09	02			J3E-L		2K80E	Audio loops, propaganda, UKR/RUS radiowar
7028.0	12:13 vt*	06 vd*	02			XXX	14400	18K0E	WHARQ *Often. 5 reports
7032.0	16:30 vt*	27 vd*	02		RUS	XXX		3K30E	7032 kHz USB. Jammer, QRG occupation. *Also on 28/02, 1654Z
7036.0	19:38	03	02			F1B	50	250H	*Also on 26/02, 1917Z
7050.0	15:00	05	02			J3E-L		2K80E	Music (same music on 7050, 7055 and 7060 kHz)
7051.0	10:18 vt*	02 vd*	02			A1A			Looped CW message (beacon). MSG = 'CQ CQ CQ, RUSSIA MORDOR. PUTIN HUUJLO'. Drifting up and down. Long-lasting. *Daily
7052.0	19:05	27	02			XXX		CA6K0E	Jammer. 85 Hz
7055.0 LSB	15:01	05	02			J3E-L		2K80E	Music (same music transmitted simultaneously on 7050 and 7060 kHz)
7060.0	12:54	10	02			F1B	75	200H	
7062.0	12:21	25	02			J7D	120	2K70E	CIS-12
7063.0	18:36	03	02			F1B	75	250H	
7065.0	13:02	11	02			J3E-L		2K80E	UKR/RUS radiowar
7070.0 USB	21:44	03	02			J7D	125	1K80E	MIL-188-141A ALE 2G
7078.0	21:27	04	02			J7D	120	2K70E	CIS-12. Traffic and submode idle
7088.0 USB	19:36 vt*	08 vd*	02			G1D	2400	2400	LINK-11 SLEW. *Very often. 14 reports
7089.0	12:09	11	02			J7D	120	2K70E	CIS-12
7095.0 USB	20:53	14	02			J7D	125	1K80E	MIL-188-141A ALE 2G
7100.0 USB	17:51	06	02			G1D	2400	2K80E	STANAG-4285
7101.0	14:21	02	02			XXX			Intermittent unknown signal (broken system). Long-lasting
7102.0	12:30	01	02			F1B	75	200H	
7110.0 USB	20:44	14	02			J7D	125	1K80E	MIL-188-141A ALE 2G
7134.0	21:00 vt*	03 vd*	02	RUS	RDL	F1B F1A	50	200H	CIS 36-50 *Often. 5 reports
7140.0	13:39	09	02			RADAR	2	CA80K0E	CODAR

URE; Gaspar, EA6AMM. Team members: EA4021SWL									(Radars activity: summarized per band)
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7147.0	12:58	10	02			J7D		2K70E	CIS-12, submode idle
7156.0	18:48	27	02			XXX		CA8K0E	Jammer. 85 Hz
7156.3	21:17	26	02			XXX		CA8K0E	Jammer. 85 Hz
7159.0 USB	14:49	06	02			MIL-188-141CALE3 G	2400	CA3K0E	MIL-188-141C ALE 3G
7193.0	11:45 vt*	06 vd*	02	RUS	RDL	F1B F1A	50	200H	CIS 36-50 *Often. 5 reports
7195.0	14:58	05	02			J7D	120	2K70E	CIS-12
7195.0	09:19	26	02			J7D	120	2K70E	CIS-12
10102.0	20:01	23	02	RUS		RADAR	40	12K0E	OTHR Contayner
10100.0*	16:02 vt**	22 vd**	02	AUS		RADAR	96 to 10 7.2 20	3K0E 12K0E 10K0E	OTHR JORN bursts TX *on 30m (With short intro tone at the CF.) - 14 bursts sequence. PRF decreasing by the burst from 96 pps to 10 pps. ** Very often: 25 reports - **Very often. 22 reports - **1 report
10100.0*	vt**	vd**	02	CHN		RADAR	50	10K0E	OTHR "Foghorn" bursts *on 30m **3 reports
10118.0	18:00	27	02	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus
10130.0	21:47	27	02			J3E-U		2K40E	Unid sts talking. Male voices, Arabic language
10157.0	18:20	17	02	RUS		RADAR	40	12K0E	OTHR Contayner. Splatter to 10148 kHz
13998.5	15:00	16	02			J7D	125	1K80E	13998.5 kHz USB. MIL-188-141A ALE 2G
13999.0 USB	08:44	06	02			OTHER	2000	CA2K80E	THALES Selcall. MSK 2000 Bd and short MFSK-8 125 Bd non-standard MIL-188- 141A ALE. Partially inside the 20m band
13999.0	08:16	27	02			J7D		2K70E	CIS-12, submode idle. Partially inside the 20m band
14000.0*	vt**	vd**	02	RUS		RADAR	40	12K0E	OTHR Contayner TX *on 20m **Often. 36 reports 2 simultaneous tx on 20m: 3
14000.0	vt**	vd**	02	CHN		RADAR	41.7 50 66.7	10K0E	OTHR "Foghorn" bursts on 20m **Often. 30 reports
14000.0*	vt**	vd**	02			RADAR		Ca6K0	SuperDARN-like radar bursts *on 20m. ** 2 reports
14000.0 USB	11:02 vt*	02 vd*	02				2400	CA3K0E	ALE 3G bursts *Very often. 20 reports
14000.0 USB	14:12 vt*	03 vd*	02				2400	CA3K0E	ALE 3G complete link *Often. 6 reports
14000.0	07:20	05	02			J3E-U		2K80E	Non-amateur comms. Male voices. Arabic language. Long-lasting
14000.0	08:10	12	02			XXX	19200	24K0E	WHARQ. Wideband HF Hybrid Automatic Repeat Request (ARQ). Burst system. Several BW, modulation types and QRG.
14008.0	11:52	26	02	RUS		F1B	75	250H	
14011.0	10:57	08	02			J3E-U		2K80E	Non-amateur comms. Male voices. Arabic language. Long-lasting
14020.0 USB	16:32	23	02					CA2K60E	ISR navy hybrid modem. *Also on 24/02, 0639Z

URE; Gaspar, EA6AMM. Team members: EA4021SWL (Radars activity: summarized per band)									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14040.0	10:06	05	02			OTHER	2000	CA2K80E	14040 kHz USB. THALES Selcall. MSK 2000 Bd and short MFSK-8 125 Bd non-standard MIL-188-141A ALE
14110.0	10:37	02	02			J3E-U		2K80E	Broadcast relaying. Male speaker. Slavic language. Music and speech. Long-lasting
14110.0	10:04	24	02			J3E-U		2K80E	UKR/RUS radiowar. Long-lasting
14125.0	15:03	13	02			J3E-U		2K80E	UKR/RUS radiowar. Long-lasting *Often. 4 reports
14127.0	14:06	12	02			J3E-U		3K0E	Broadcast relaying. Male speakers. Slavic language. Long-lasting
14138.0	10:02	10	02			XXX		CA3K0E	14138 kHz USB. Unidentified signal
14148.5	07:12	22	02			F1D	600	600H	DPRK-FSK 600 ARQ
14160.0	07:33	12	02			F1B	50	250H	
14169.0	07:03	12	02			F1B	50	200H	
14192.0	06:33 vt*	01 vd*	02	RUS		F1B	50	200H	*Daily
14198.5	07:35 vt*	01 vd*	02			F1D	600	600H	DPRK-FSK 600 ARQ *Almost daily. 22 reports
14220.5	08:02 vt*	01 vd*	02			F1D	600	600H	DPRK-FSK 600 ARQ *Very often. 19 reports
14258.0	07:56 vt*	03 vd*	02			F1B	50	500H	*Also on 05/02 0828Z and on 17/02, 0751Z
14292.0	07:41 vt*	18 vd*	02			A1A N1N	19		Encrypted QTC. Letters & numbers. Every MSG repeated twice. - Frequency occupation (carrier, AM modulated, 50 Hz, BW = 500 Hz) continuously between CW QTC. Non-stop until *19/02, 0732Z
14298.5	07:09 vt*	01 vd*	02			F1D	600	600H	DPRK-FSK 600 ARQ *Almost daily. 23 reports
14308.0	08:20	05	02	RUS		F1B	75	500H	*Also on 25/02, 1212Z and on 26/02, 1152Z
14348.5	07:12	22	02			F1D	600	600H	DPRK-FSK 600 ARQ
14357.0	13:16	12	02	RUS		RADAR	40	12K0E	OTHR Contayner. Splatter to 14347 kHz
18136.0	08:19	21	02	CHN		RADAR	66.7	10K0E	OTHR short bursts
18142.0	08:58	02	02	CHN		RADAR	41.8	10K0E	OTHR short bursts
20994.0	13:57	13	02	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
21000.0*	vt**	vd**	02	RUS		RADAR	40	12K0E	OTHR Contayner TX *on 15m: **Daily. 231 reports 2 simultaneous TX on 15m: 66 3 simultaneous TX on 15m: 14
21000.0*	vt**	vd**	02	CHN		RADAR	41.7	10K0E	OTHR "Foghorn" bursts *on 15m Daily. 290 reports
21000.0*	vt*	vd*	02	G		RADAR	25 50	20K0E	OTHR (UK SBA, Cyprus) TX *on 15m **Very often. 41 reports 2 simultaneous TX on 15m: 7 3 simultaneous TX on 15m: 1
21001.5	06:35 vt*	01 vd*	02			XXX		2K50E	Jammer. 85 Hz *Very often. 11 reports
21008.5	07:47 vt*	03 vd*	02			F1D	600	600H	DPRK-FSK 600 ARQ *Very often. 16 reports
21011.5	14:12	06	02			XXX		5K0E	Jammer 84 Hz Hopping (Hop = 10 kHz) to 21092.5 kHz CF. Changing BW from 5 kHz to 2.5 kHz

URE; Gaspar, EA6AMM. Team members: EA4021SWL									
(Radars activity: summarized per band)									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21050.0	09:35	16	02			RADAR	20	50K0E	Unidentified radar bursts. Burst start with BW = 10 kHz and change to BW = 50 kHz. 20 sps. Micro interruptions during the TX. Same as on 15 JAN 2025, 21150 kHz CF
21143.5	07:08 vt*	04 vd*	02			F1D	600	600H	DPRK-FSK 600 ARQ *Often. 8 reports
21145.0 USB	11:09 vt*	01 vd*	02	MRC		J7D	125	1K80E	MIL-188-141A ALE 2G *Almost daily. 23 reports
21150.0	09:03	15	02			RADAR	20	50K0E	Unidentified radar bursts. Burst start with BW = 10 kHz and change to BW = 50 kHz. 20 sps. Micro interruptions during the TX
21166.0	14:25	01	02	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
21168.5	14:20	19	02			F1D	600	600H	DPRK-FSK 600 ARQ
21170.0 USB	10:22 vt*	06 vd*	02			XXX	15.9	2K50E	XXX. Unidentified chirps *Also on 13/02 1432Z and on 14/02 0722Z
21189.5	07:47	18	02			F1B	75	850H	
21225.0	12:18 vt*	02 vd*	02				2400	CA3K0E	ALE 3G bursts *Often. 5 reports
21225.0	08:01	11	02			G1D	2400	2K40E	21225 kHz USB. MIL-188-110 ##
21268.5	14:14 Vt*	02 vd*	02			F1D	600	600H	DPRK-FSK 600 ARQ *Often. 5 reports
21278.5	14:39	13	02			F1D	600	600H	DPRK-FSK 600 ARQ
21300.0 USB	07:22	14	02		155 - 110	J7D	125	1K80E	MIL-188-141A ALE 2G
21345.0 USB	14:16	17	02			G1D	2400	CA2K80E	MIL-188-110
21368.5	14:21	19	02			F1D	600	600H	DPRK-FSK 600 ARQ
21380.0	10:05	08	02	CHN		RADAR	10	160K0E	Wideband OTHR bursts
21396.0	14:01	09	02	G		RADAR	25	20K0E	OTHR. UKL SBA, Cyprus
21431.5	08:32	10	02			F1D	600	600H	DPRK-FSK 600 ARQ
21437.0	10:47	10	02	CHN		RADAR	62.7	10K0E	OTHR short bursts
21438.0	08:30 vt*	01 vd*	02	RUS	RCV	A1A			RUS navy QTC *Almost daily. 21 reports
21440.0	08:18	01	02	CHN		RADAR	47.7	10K0E	OTHR short bursts
28000.0*	vt**	vd**	02	IRN		RADAR	150/ 313 313	Ca45K0E	OTHR TX *on 10m: - Alternating 150 and 313 pps bursts. **Very often. 33 reports - 313 pps bursts only: **Very often. 17 reports 2 simultaneous TX on 10m: 7
28000.0*	vt**	vd**	02	G		RADAR	50 25 12.5	20K0E 40K0E	OTHR. UK SBA, Cyprus TX *on 10m **Very often. 46 reports 2 simultaneous TX on 10m: 1 1 report

VERON; Ruud, PG1R. Credits to observers: Dick PA0GRU and Rene PA3EQO									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7032.0	xxxx	xx	02	RUS		J3E-U		3K20E	Unfortunately back again: daily jammer with annoying hum; most likely area Kaliningrad.
7050.0	1459	16	02	UKR/ RUS		J3E-L		2K70E	UKR-RUS Radiowar; 2 TX same freq.

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7055.0	xxxx	xx	02	UKR/ RUS		J3E-L			Russian/Ukrain war rhetoric; almost daily
7055.0	1824	16	02	UKR/ RUS		J3E-L		3K0E	UKR-RUS radiowar; political comments; s9+; clear signal
7121.0	1818	16	02	RUS		RADAR	40	12K0E	CF; OTHR Contayner
7175.5	1321	16	02			XXX		1K20E	CF; Bursts ; ?? STANAG-4529 PSK-8 G1D ??
7198.0	1820	16	02	RUS		RADAR	40	12K0E	CF; OTHR Contayner
7200.0	1423	08	02			G1D		2K80E	CF; STANAG-4285 PSK-8; S7 strong QSB
14100.0	1542	07	02	UKR/ RUS		J3E-U			Russian/Ukrain war rhetoric
14192.0	1251	08	02	RUS		F1B		200H	UiPtr
14192.0	1116	22	02	RUS		F1B		200H	PtR; idle
14200.0	1020	13	02	G		RADAR		20K0E	OTHR Cyprus
14257.0	0832	17	02			F1B		200H	UiPtr
14291.0	1030	18	02			RADAR			
14291.0	1030	18	02		A2C	A1A			CW message underneath the radar signal; A2C 33440 supina etc, etc.
21112.0	1310	16	02	RUS		RADAR	40	12K0E	CF; OTHR Contayner
21118.0	1300	16	02	RUS		RADAR	40	12K0E	CF; OTHR Contayner
21130.0	1455	01	02	G		RADAR		20K0E	OTHR Cyprus
21161.0	1341	22	02	RUS		RADAR	40	12K0E	CF; OTHR Contayner
21183.0	1343	22	02	RUS		RADAR	40	12K0E	CF; OTHR Contayner
21200.0	1358	19	02	RUS		RADAR	40	12K0E	CF; OTHR Contayner
21420.0	1518	09	02	RUS		RADAR	40	12K0E	CF; OTHR Contayner
28500.0	1029	22	02	E		J3E-U			Spanish language; child yelling & singing
28860.0	1252	16	02	IRN		RADAR	150/315	50K0E	CF; OTHR bursts

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

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