IARU Monitoring System Region 1

Monthly Newsletter - October 2024

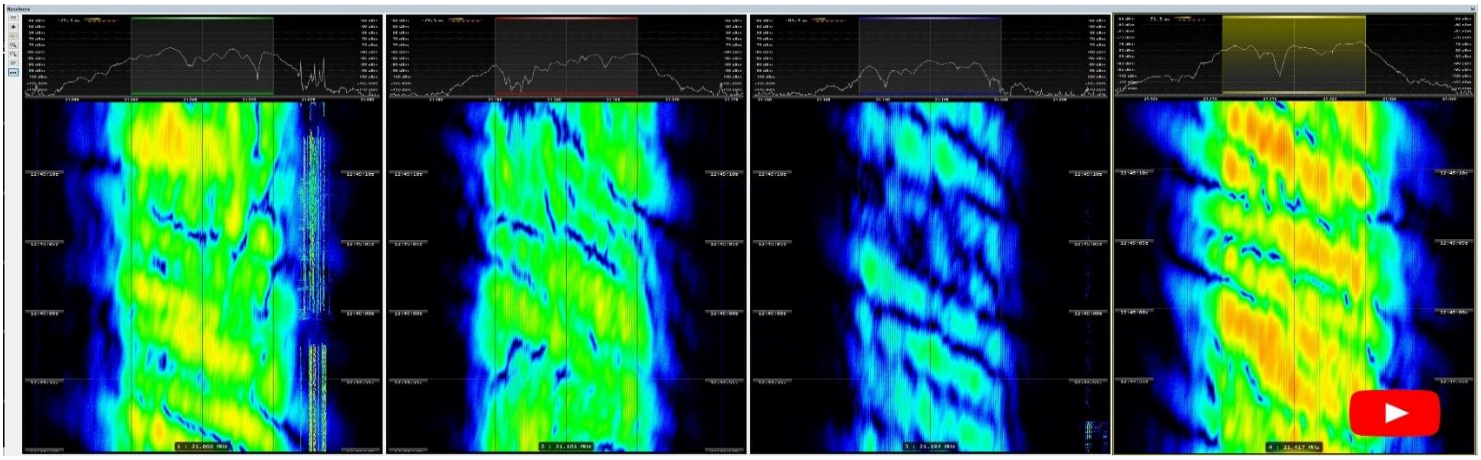
- Video feature: *click on the "play" red icons in the text or in the images of the Newsletter to watch the videos*

- 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

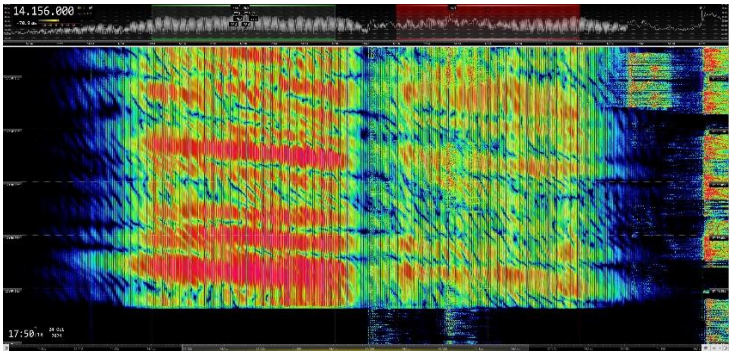
Over-The-Horizon (OTH) radars, whose signals represent more than 50% of non-amateur transmissions received monthly on amateur radio bands in HF, showed increased activity throughout October.

Of particular note was the high activity from the Russian Contayner OTH radar (necessary bandwidth = 12 kHz. 40 pulses per second. Its spectral occupation can sometimes reach 20 kHz or more). This radar was received many times in the 40, 20, 17, 15, and 12-meter bands, and it often performed multiple simultaneous transmissions within the same band. We observed up to 4 concurrent transmissions in the 20 and 15-meter bands, with more than 200 transmissions from this radar in October, many of which were long-lasting.

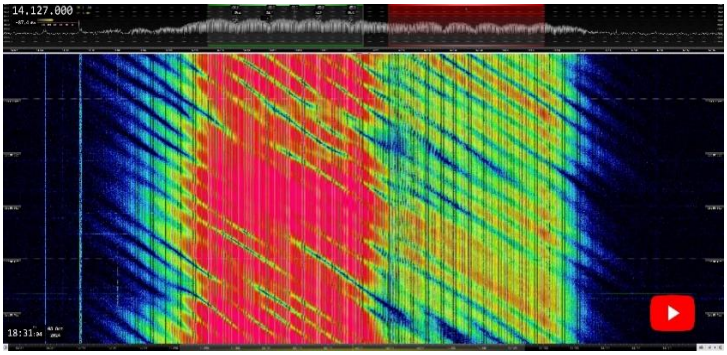


15 meters band: 4 X OTHR Contayner (RUS) simultaneous transmissions. BW = 12 kHz. 40 pps

When sending simultaneous transmissions in the same band, it was also observed transmitting one signal side by side to another, or sometimes one sending one transmission that overlapped the other, like in the video below

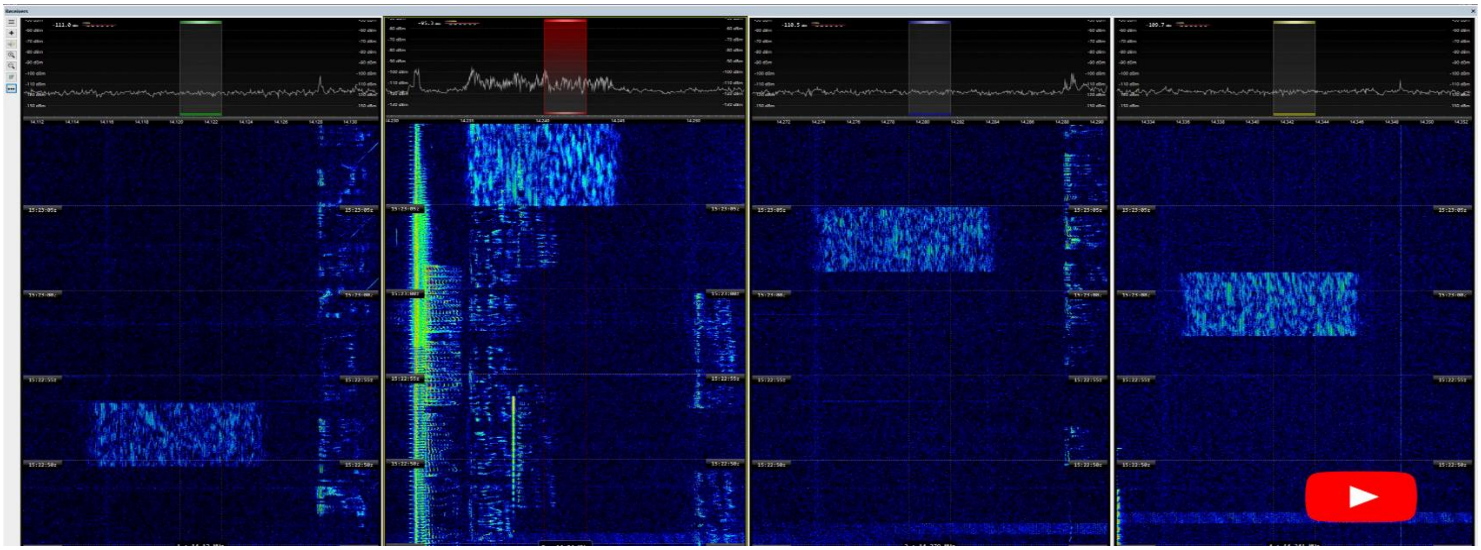


20 meters: 2X OTHR Contayner (RUS. BW = 12 kHz. 40 pps)) side by side



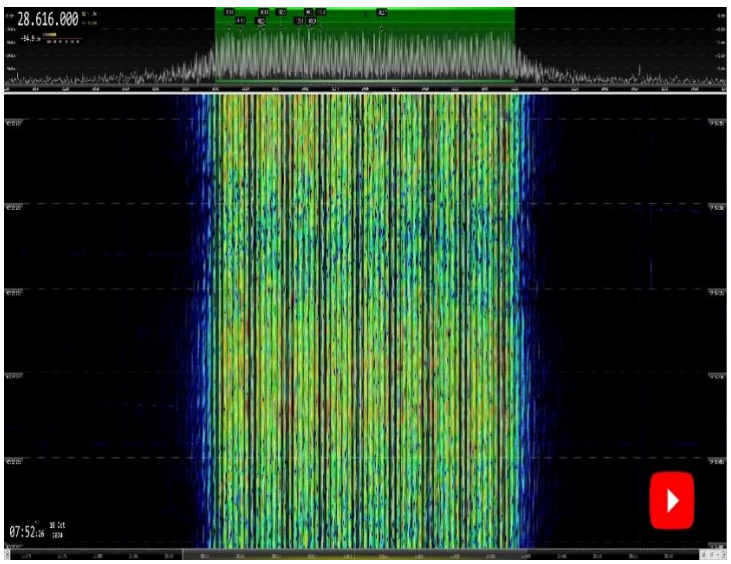
20 meters: 2 X OTHR Contayner (RUS. BW 12 kHz. 40 pps) overlapped

The Chinese OTHR "Foghorn" radars, using a bandwidth of 10 kHz and using different PRF like 41.7, 50, 66.7 and 83.6 pps, sending a few seconds long bursts, were also recurring and intrusive, as they sometimes transmitted continuously for long hours on the same frequency, and as several transmissions can be received on a same band. So nicknamed for the distinctive sound of their transmissions reminiscent of a ship's horn, they were received over 230 times across the 40, 30, 20, 17, 15, and 12-meter bands on October.

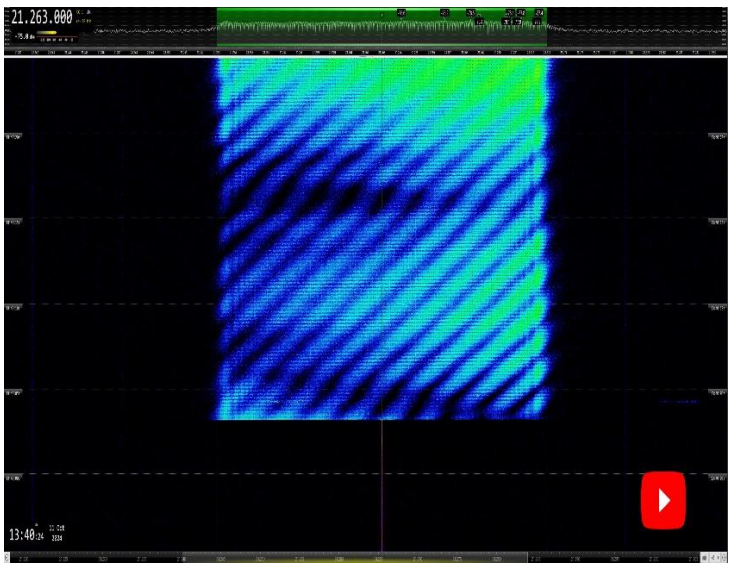


15 meters: 4 X CHN OTHR „Foghorn" bursts on different frequencies. BW = 10 kHz. Most usual PRF: 41.7, 50, 66.7 or 83.3 pps

The British radar based in the UK Sovereign Base Area in Cyprus (Bandwidth: 20 kHz. 50 or 25 pps) also displayed high activity, particularly in the 15 and 10-meter bands, where over 40 transmissions were registered, most of them also long-lasting. A peculiarity in this radar, which uses to transmit in center frequencies (CF) ending in 0 or 5 (e.g., 24925 kHz CF, or 18160 kHz CF), was observed only rarely in the past, but very often during October: it used center frequencies ending in any digit (e.g., 21342 kHz CF) most of the times.

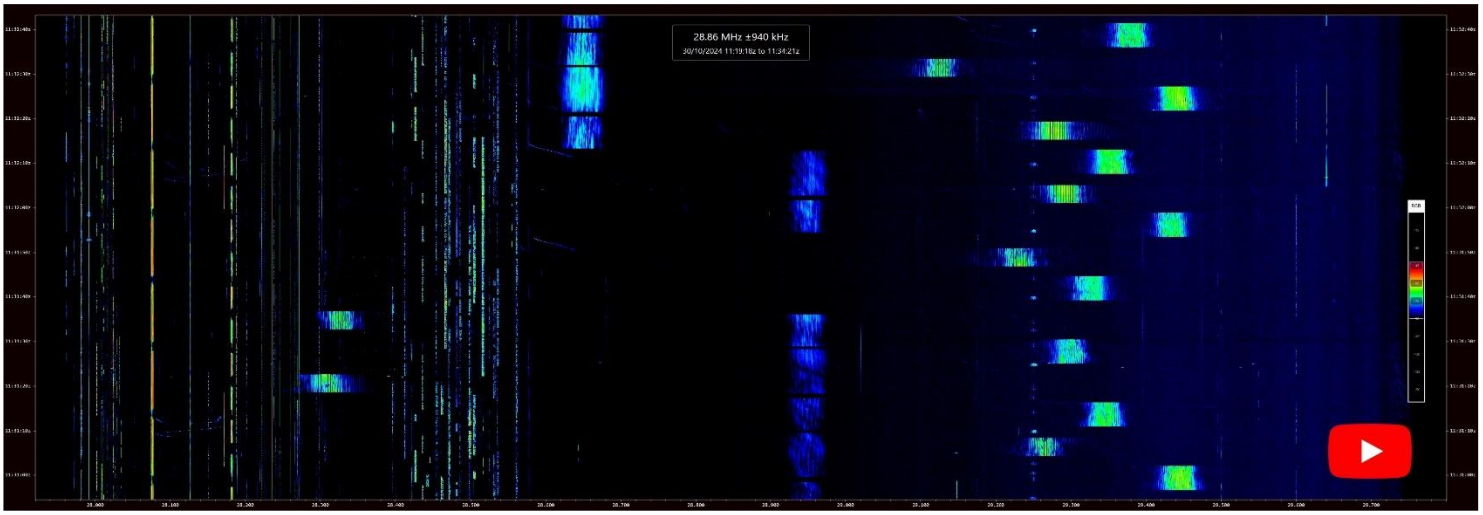


28616 kHz CF: British OTHR (UK SBA, Cyprus) BW = 20 kHz. 50 ps



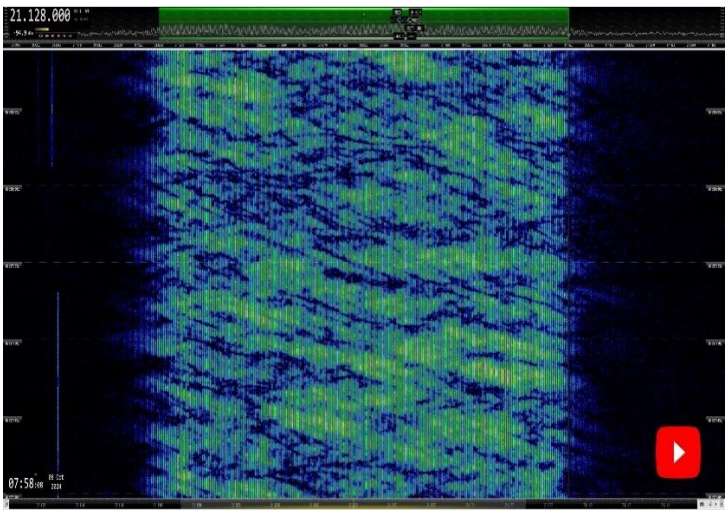
21263 kHz CF. British OTHR (UK SBA, Cyprus). BW = 20 kHz. 25 pps

The Iranian OTHR transmitting in the 10-meter band was also observed frequently employing frequency hopping across the band. It was also seen hopping after each burst, using the recently detected pulse repetition frequencies (PRF) of 333 and 695 pulses per second. Additionally, this radar was received transmitting bursts over long hours on a single frequency in this band. Detected almost daily in October, it performed over 20 transmissions using its various modes (transmitting on lots of different frequencies of the band when using frequency hopping), many of which were of extended duration.

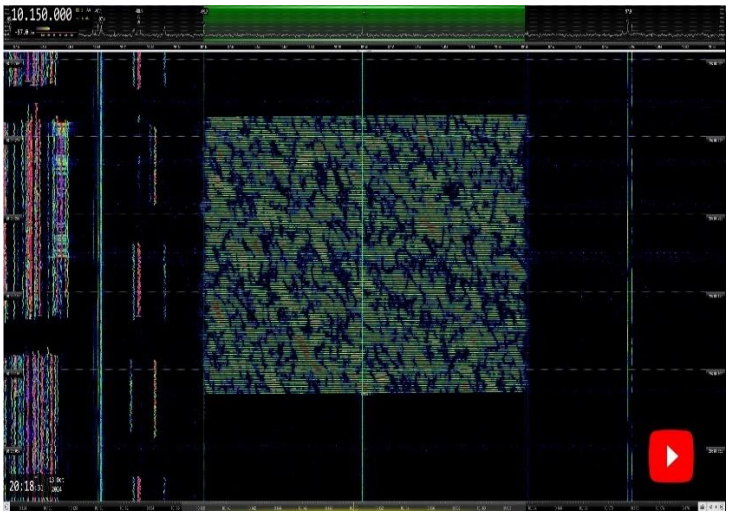


10 meters: OTHR IRN. BW ca 45 kHz. Part 1: alternating 333 and 695 pps, hopping after every burst / Part 2: alternating 150 and 313 pps bursts. Hopping

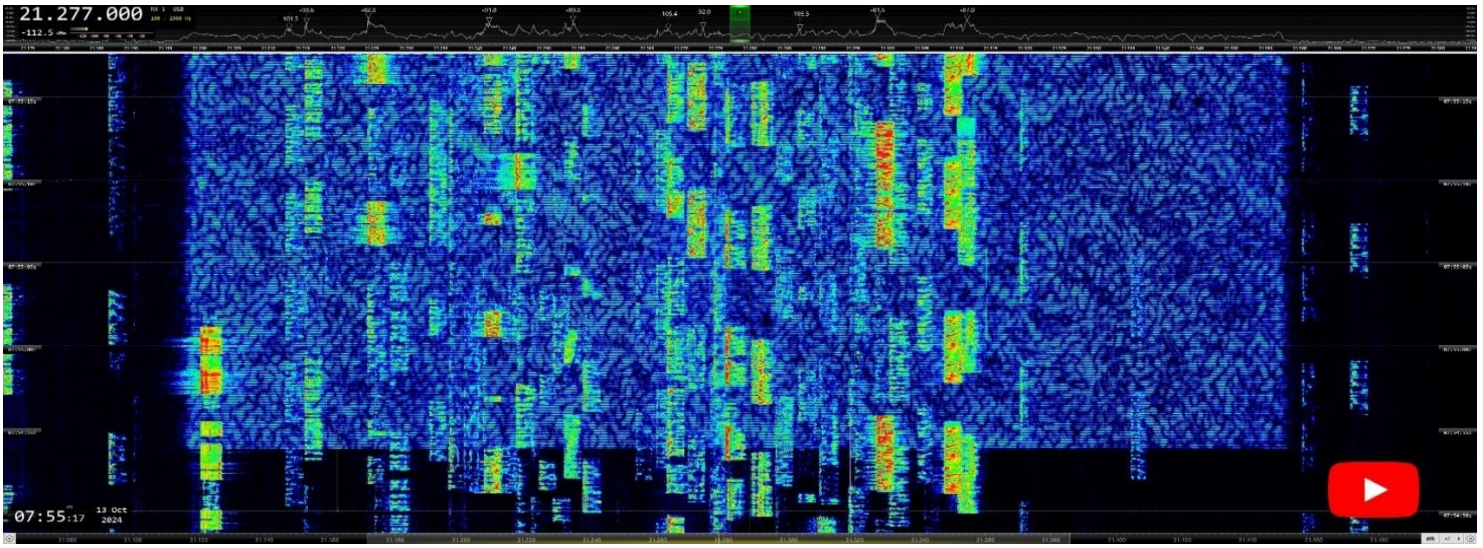
On the 15-meter band we observed several transmissions from a Chinese OTH radar that transmitted continuously for hours, using a bandwidth of 10 kHz and a PRF of 50 pps. We also received several times the wideband Chinese OTHR (BW = 160 kHz. 10 pps) transmitting bursts of nearly one minute duration every two minutes (approximately) on the 20 and 15-meter bands. The Australian JORN (Jindalee Operational Radar Network) was also sometimes received, transmitting bursts with a short intro tone in the 30-meter band.



21128 kHz CF: CHN OTHR. BW = 10 kHz. 50 pps

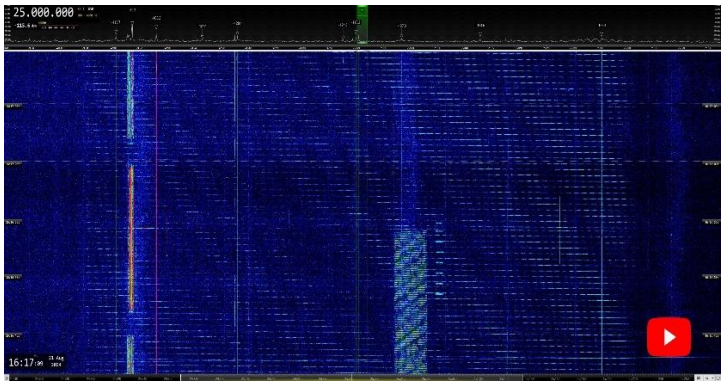


10150 kHz CF: OTHR JORN. BW = 10 or 12 kHz. 7 pps

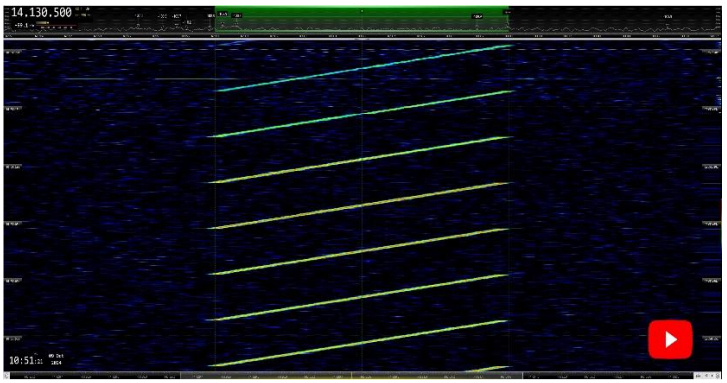


15m: CHN wideband OTHR bursts. BW = 160 kHz. 10 pps. BD ca 1 min. BRI ca 2 min

Adding to these military radars were others used for scientific research, such as, for instance, CODAR (Coastal Ocean Dynamics Applications Radar) systems. These usually perform long-lasting transmissions using different bandwidths and generally low pulse repetition frequencies. We received two of them in the 20 m band during October. One on 14040 kHz Cf (BW = 80 kHz. 2 pps)., and another on 1400 kHz CF (BW = 75 kHz. 2 pps). An example of this type of radar on the video below, on the left.



25000 kHz CF: CODAR radar. BW = 200 kHz. 2 pps. No RX on October



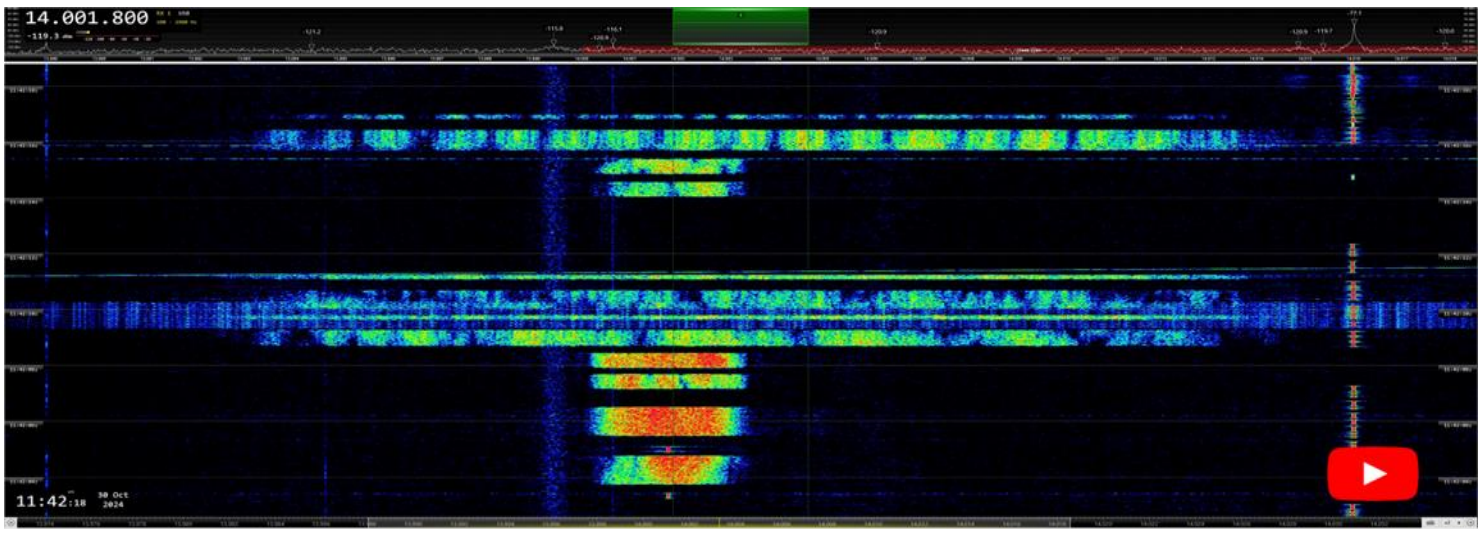
14130.5 kHz CF: XXX. Radar? BW = 1 kHz or 4 kHz. 2 pps.

Though their origin and purpose still remain unclear, we also include in the radar group some transmissions, likely radar-related, that began appearing on the 20-meter band in recent months (received daily then). These signals, with bandwidths of 1 kHz or 4 kHz, transmit bursts lasting 120 seconds every 4 minutes, using a very low PRF of 0.25 pps, and often last for long hours. On October they were often received (video above right).

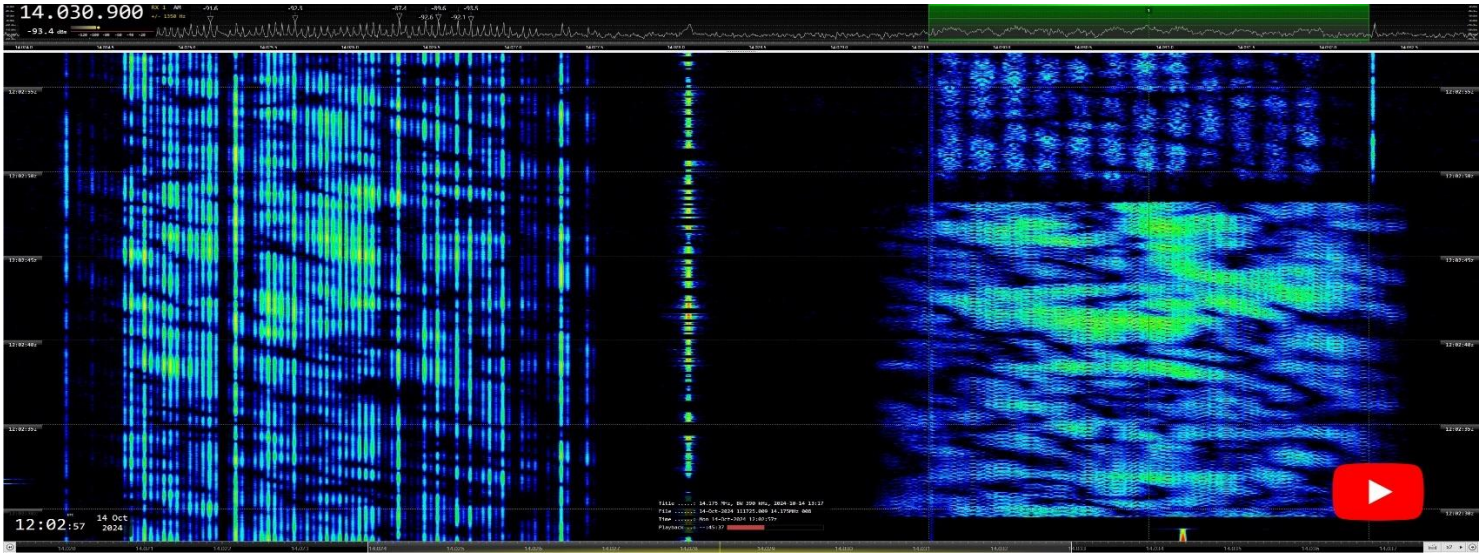
In summary, *over 650 radar transmissions were received on amateur HF radio bands in October*, most of them long-lasting, causing significant interference and reducing operational capacity for amateur users on their assigned frequencies.

In addition to this substantial number of non-amateur transmissions on HF amateur bands, we must also consider transmissions in military and diplomatic modes. In October 2024, we frequently received transmissions in the following modes:

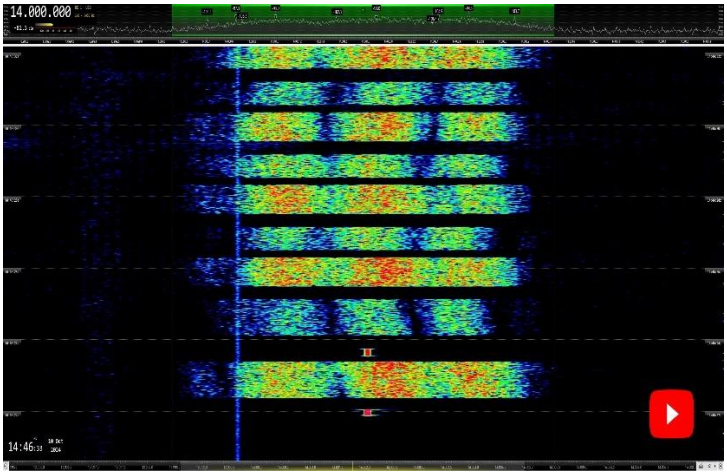
- CHN 4+4
- CHN-16
- CIS-12
- CIS-112
- CIS - ## FSK (various types)
- DPRK FSK 600
- DPRK PSK 1200
- CIS-60
- MIL-188-110#
- MIL-188-141A ALE 2G
- MIL-188-141C ALE 3G
- WHARQ
- LINK-11 CLEW (SSB and DSB)



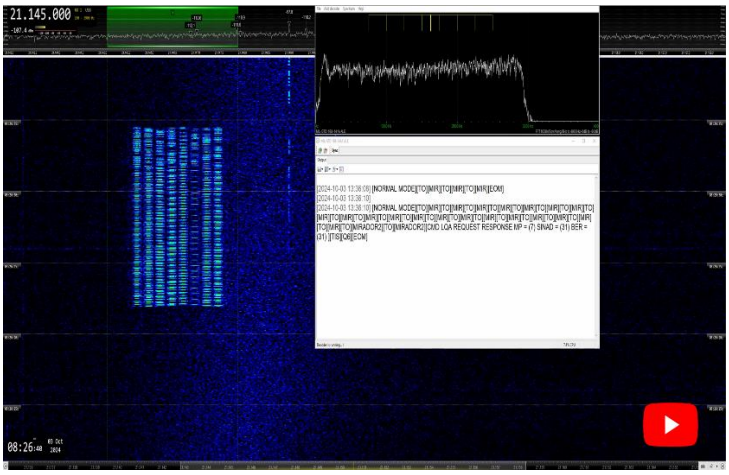
14000 kHz CF: WHARQ. HF Hybrid Automatic RepeatRequest (ARQ). Burst system. Several BW and modulation types. Intelligent frequency hopping



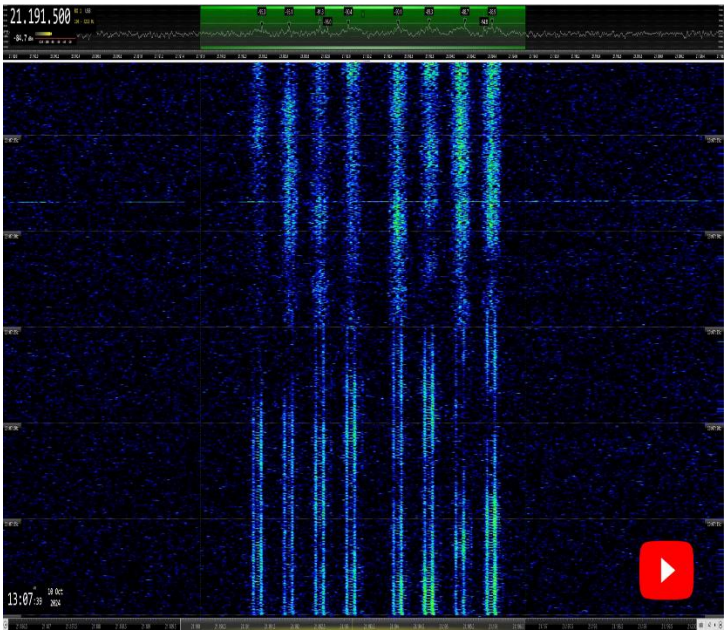
20m. Left, CIS-12, submode idle. Right, cis-12 (J7D. BW = 12 kHz. 12 X 120Bd) with QPSK 2400 Bd preamble



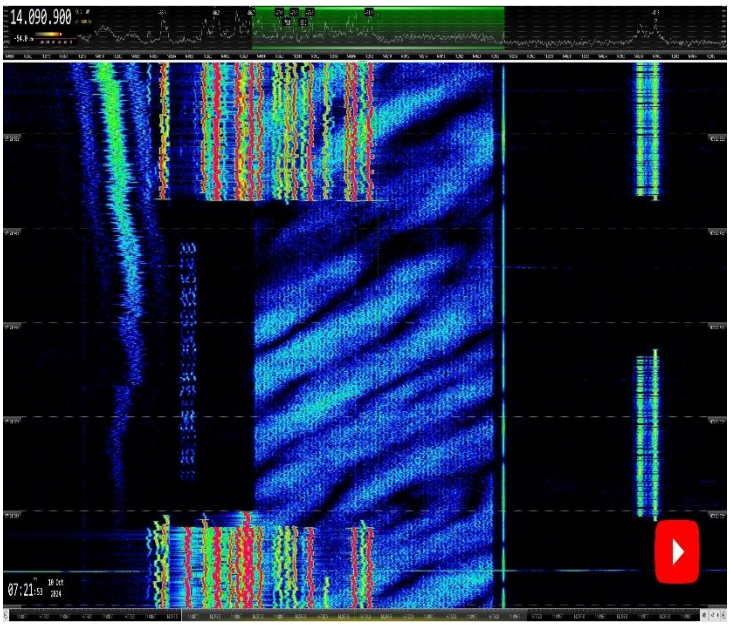
14000 kHz CF: ALE 3G bursts. BW ca 3K0E. 2400 Bd



21145 kHz CF: MIL-188-141A ALE 2G. MFSK-8. BW = 1.8 kHz. 125 Bd. MRC



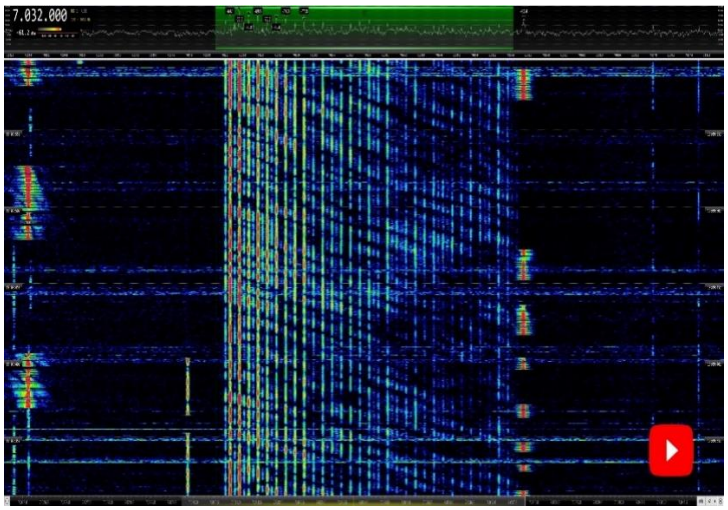
21191.5 kHz USB: CHN 4+4, a.k.a. PRC 4+4. BW = 2.4 kHz. 75 Bd



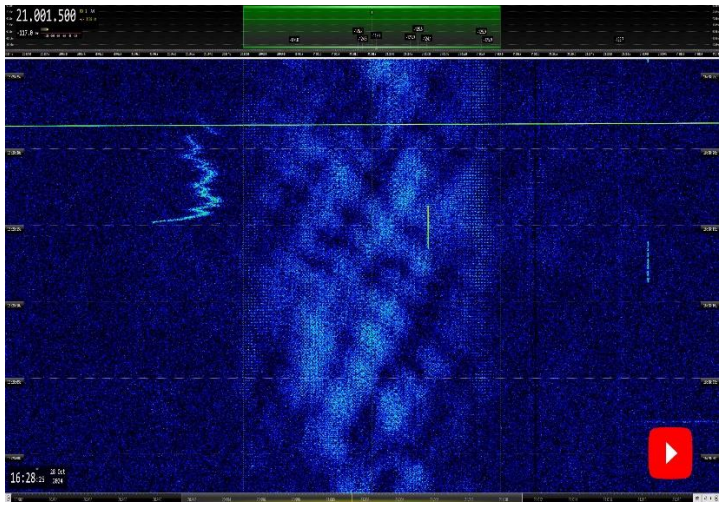
14091 kHz CF: CIS-60, OFDM. BW = 2.8 kHz. 60 X 30 Bd

All these non-amateur transmissions on HF amateur bands were further accompanied by jammers. A jammer is an intentionally transmitted signal aimed at disrupting another radio signal, preventing its interpretation by the receiver through interference or outright blocking. Jamming can take various forms, utilizing different modes, simple audio signals,

or even music. Jammers vary in bandwidth, depending on the target signal or the radio spectrum portion intended for disruption. They are commonly employed in military settings and for political purposes to disrupt broadcasting stations.



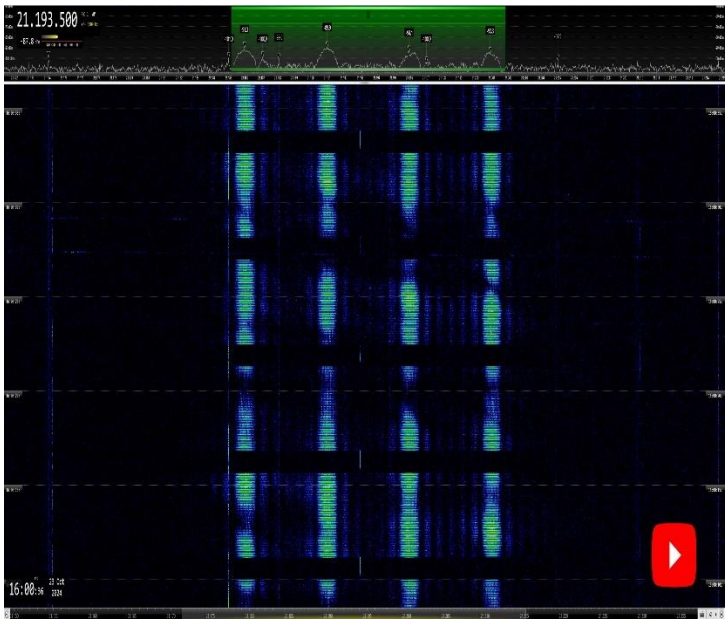
7032 kHz USB: Jammer. BW = 3.3 kHz



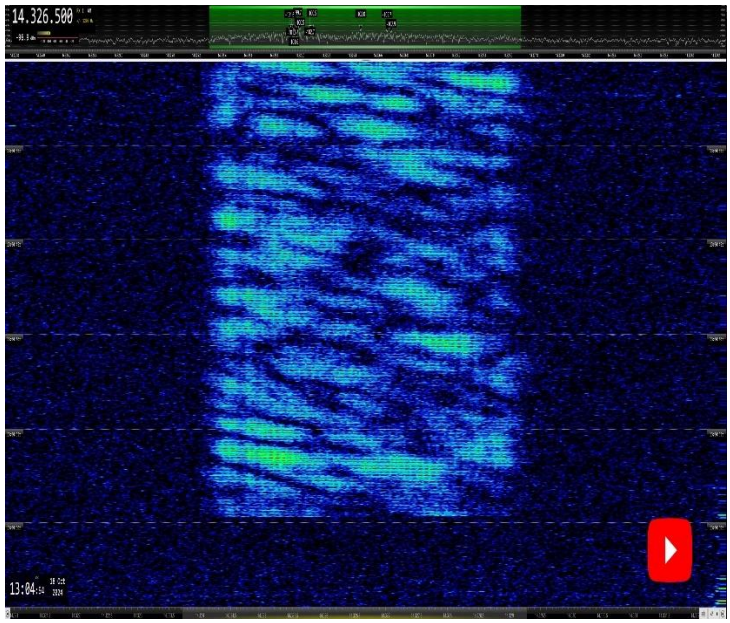
21001.5 kHz CF: Jammer. 85 Hz. BW 4 or 7 kHz

In October, we observed daily jamming transmissions on 7032 kHz USB, with a continuous signal of 3.3 kHz bandwidth (on some occasions, this signal was replaced with a pop version of the Russian national anthem or a Russian military song, looped for hours). Jamming was also detected almost daily in the 15-meter band at 21001.5 kHz CF (with two different bandwidths, 4 kHz and 7 kHz), generated by an 85 Hz tone. Occasionally, jamming was also observed at 21151.5 kHz CF and briefly on other frequencies within the amateur HF bands. Above this paragraph, two videos of these jammers.

This month also featured non-amateur transmissions using unknown modes, with a few examples detailed here for reference.



21193.5 kHz: XXX. Unidentified bursts. BW = 16 kHz. Ca 14 pps



14326.5 kHz CF: XXX. Unidentified bursts. 16 pps chirps

When adding to all the above non amateur transmission described above the various SSB, AM, or FM transmissions from pirates, fishing vessels, CBers, "village radio," taxis, fishing buoys with transmitters for radiolocation, etc., commonly received over the years on specific frequencies within our bands, we find that in October, a very large amount of non-amateur transmissions were received on HF amateur bands; most of them, long-lasting.

- Find other videos and screenshots about the transmissions received during October 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
6998.0	21:29	25	10	RUS		RADAR	40	12K0E	OTHR Container
7000.0	18:13	07	10	RUS		J7D	120	2K60E	CIS-12
7032.0	21:32 VT*	29 VD*	10			N0N		3K0E	Jammer, Carrier with 100hz spaced subcarriers 3Khz USB orientation, * Daily , sometimes Russian Hymn in POP Version, sometimes Digital transmission.
7037.0	19:44 VT*	22 VD*	10	RUS		J7D	120	2K60E	CIS-12, also 10:13, 23.10
7049.0	16:42 VT*	14 VD*	10			A3E		12K0E	Radiowar, Music, NON Ham Voice : UKR vs RUS * Daily also on 7055 , 7065 , 7094
7054.0	18:53	11	10	RUS		F1B	50	200H	F1B
7055.0	20:31	13	10	RUS		RADAR	40	12K0E	OTHR Container
7064.0	00:11	11	10	RUS		J7D	120	2K60E	CIS-12
7090.0	19:58	28	10	RUS		RADAR	40	12K0E	OTHR Container. Report by dl7pu
7119.0	10:04	01	10	RUS		J7D	120	2K60E	CIS-12
7130.0	18:31	10	10	CHN		RADAR	66.7	10K0E	OTHR Bursts
7134.0	17:41	06	10	RUS		F1B	50	200H	F1B
7168.0	20:54	06	10	RUS		RADAR	40	12K0E	OTHR Container
14008.0	12:00	23	10	RUS		F1B	50	500H	F1B
14008.0	00:13	26	10	RUS		F1B	50	500H	F1B
14026.0	18:48	03	10	RUS		J7D	120	2K60E	CIS-12
14096.0	12:47	06	10			A3E			Totally overmodulated and distorted Transmission, sounds best in AM wide mode, continous talking . Seemingly Jammer
14110.0	14:45	31	10			J3E-U		2K70E	Radiowar, Music, NON Ham Voice : UKR vs RUS
14120.0	15:35	18	10	UKR		J3E-U		2K7E	non ham transmission of fone. Short sentences ..(incl. Russisches Schwein ..)
14123.0	11:08	21	10	CHN		W7D	44.44	2K40	OFDM 39
14126.0	00:18 VT	05 VD	10	RUS		RADAR	40	12K0E	OTHR Container , 10 Reports also on 14137
14140.0	20:13	02	10	CHN		RADAR	50	10K0E	OTHR Bursts, 14 Reports , also in other SPS and other QRG in 14m Band
14220.0	10:55	19	10	RUS		J7D	120	2K60E	CIS-12
18107.0	09:40	02	10	RUS		F1B	50	200H	Ident RDL ,
21000.0	19:04 VD*	06 VT*	10			XXX		2K70E	Jammer, * nearly daily , when Band open to east
21100.0	16:31	04	10	G		RADAR	50	20K0E	OTHR Cyprus UK SBA
21101.0	11:02 VT*	21 VD*	10	CHN		RADAR	42	10K0E	China OTHR Bursts with 42,50 or 66.7 Hz Sweep, all 10K0E wide. Nearly daily, *31

DARC; Harald, DL9NDW and the DARC IW team

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
									Reports in 15M Band. Often 2 or 3 occurencies with time delay
21132.0	08:49	03	10	RUS		RADAR	40	12K0E	OTHR Container
21151.0	15:53	28	10			XXX		2K70E	Jammer
21412.0	12:13	22	10	G		RADAR	50	20K0E	OTHR Cyprus UK SBA
28030.1	15:30 VT*	01 VD*	10			F1B	51	300	Enagal GPS fishing buoy , often, also on 28100
28050.0	14:18	21	10	G		RADAR	50	20K0E	OTHR Cyprus UK SBA, strong takes CW away completely.. very bad
28100.0	17:30	03	10	B		J3E-U		3K0E	Brazilian Pirates
28135.0	10:23 VT	04 VD	10	RUS		F3E		6K0E	Russian language Taxi Traffic, often when Band open to RUS, also on 28175,28238,
28160.0	10:16	04	10			RADAR	1	45K0E	Slow Radar , seems Ocean Wave Radar from East . Several other similar Traces visible across 10m
28200.0	14:23	21	10			RADAR	0.5	CA40K0E	Slow radar Traces
28210.0	13:05	13	10			RADAR	1	CA20K0E	Sweeps, similar to ocean wave radar
28390.0	08:57	06	10			RADAR	.6	50K0E	1.5 Sec sweeping, downward, humming carrier,
28400.0	08:45	04	10	IRN		RADAR		45K0E	Iran Radar, alternating 150/313 sps
28400.0	10:21	03	10	IRN		RADAR		46K0E	Iranian radar - 150 sps and 313 sps alternating , often also on 29200, 29440, 29500. Sometimes hopping , 6 reports
28650.0	10:30	03	10			RADAR	1	60K0E	Slow radar traces sweeping in about 1 Seconds over 60Khz
28666.0	07:25	10	10	G		RADAR	50	20K0E	OTHR Cyprus UK SBA
28733.0	14:41	02	10	RUS		F1B	50	500H	RUS navy , not stable transmission, on/off several times
28800.0	09:30	31	10			XXX			Many Downbursts over the whole Band

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3613	1715	27	10	RUS-UKR		LSB			Russian-Ukrainian radio war. Patriotic music.Big signals, persistent.
3625	2205	11	10	RUS-UKR		LSB			Russian-Ukrainian radio war. Patriotic music. Strong, persistent.
3717	725	17	10	MM		USB			Male voices in Japanese. Plenty of “dodo”. At least three ships are involved in this chat which lasts for about an hour. Very strong signals all the way through.Ends 0820z.
7000	1725	11	10			RADAR			Radar from 7000 to 7020 kHz. Medium signal, persistent.
7001	2020	1	10			PSK			Huge and persistent signal. Heard every evening until the 9th.
7032	430	5	10			USB			Carrier. Heard daily all day long. Weak during the day, very strong in all hours of darkness.
7055	1715	13	10	RUS-UKR		LSB			Russian-Ukrainian radio war.Strong and persistent. Heard often during the month.

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7056	2100	2	10	UKR-RUS		LSB			Russian-Ukrainian radio war. Huge and persistent signals.
7060	2050	28	10	UKR-RUS		LSB			Russian-Ukrainian radio war.Rebroadcasting of a radio programme in Russian.
7078	2055	28	10			RADAR			Radar from 7078 to 7098 kHz. Huge and persistent.
7089.5	1720	13	10			F1B			Strong and persistent signal.Also heard on the 17th at 0815z.
7090	1930	31	10	UKR-RUS		LSB			Russian-Ukrainian radio war.Huge and persistent signals.
7094	1720	11	10	UKR-RUS		LSB			Russian-Ukrainian radio war. Loud and persistent.
7096	1905	11	10	UKR-RUS		LSB			Russian-Ukrainian radio war. Loud, persistent. “Russki pederatski”. “Russki petersilia”
7107	2225	7	10	UKR-RUS		LSB			Russian-Ukrainian radio war. Huge and persistent signals.
7136.5	440	5	10			F1B			Strong and persistent signals.
7138.5	2215	11	10			F1B			Medium signals, persistent.
7158.5	1515	18	10			PSK			Link-11 Clew. Strong and persistent.
7162.5	1120	11	10			PSK			Link-11 Clew. Strong and persistent.
14000	1305	1	10	E or MM		USB			Spanish fishermen. Heard daily with good signals.
14119	1205	23	10	RUS		FSK			Medium signals.
14175	1035	11	10			RADAR			Radar from 14175 to 14190 kHz.Weak but persistent signals.
14191	810	1	10	RUS		F1B			Strong and persistent signals all day long every day of the month. Russian navy, Kaliningrad.
14310	930	2	10			RADAR			Radar from 14310 to 14325 kHz. Medium but persistent signals.
14347.5	1235	31	10			FSK			North Korean embassy traffic. Huge and persistent signals.
18160	1325	19	10			RADAR			Radar from 18160 to 18175 kHz.Strong- but on and off.
21000	2045	31	10	E or MM		USB			Spanish fishermen. Medium signals.
21001.5	1452	7	10						Jammer. Huge and persistent. Heard many days of the month.
21020	935	31	10			RADAR			Radar from 21020 to 21040 kHz. Huge and persistent.
21115	1055	3	10			RADAR			Radar from 21115 to 21140 kHz. Huge and persistent.
21145	1420	7	10			RADAR			Radar from 21145 to 21160 kHz. Strong- but on and off.
21151	1025	28	10						Jammer. Medium signal- but persistent.
21215	950	22	10	CHN		RADAR			Radar from 21215 to 21225 kHz. Foghorn. Strong signals.
21296	1005	30	10	G		RADAR			Radar from 21296 to 21326 kHz. Huge and persistent. British base in Cyprus.
21400	1100	3	10			RADAR			Radar frpm 21400 to 21425 kHz. Strong. Fading in and out. Persistent.
21420	945	22	10			RADAR			Radar from 21420 to 21432 kHz.Huge and persistent.

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21420	1015	30	10	CHN		RADAR			Radar from 21420 to 21430 kHz. Foghorn.
21430	1410	8	10	G		RADAR			Radar from 21430 to 21460 kHz. Huge and persistent signals. UK base in Cyprus.
21438	1040	1	10	UKR		CW			Russian navy Sevastopol. Medium signal. Daily all day long.
24890	900	2	10			RADAR			Radar from 24890 to 24990 kHz. Weakish- in and out.Heard on several days during the month.
24940	1145	10	10	G		RADAR			Radar from 24940 to 24970 kHz.Huge and persistent. UK base in Cyprus.
28100	1510	9	10	IRN		RADAR			Radar from 28100 to 28500 kHz. Huge and persistent. Moving around on the band making a Dxers life miserable.
28140	955	22	10	RUS		FM			Taxi service. Female voice. “Olga”. Strong.
28300	1330	19	10	IRN		RADAR			Radar from 28300 to 28800 kHz. All over the place. Strong and persistent. Absolute pest.
28330	1510	1	10	IRN		RADAR			Radar from 28330 to 28430 kHz. Strong and persistent.
28385	940	9	10	G		RADAR			Radar from 28385 to 28405 kHz. Huge and persistent. British base in Cyprus.
28500	1410	7	10	IRN		RADAR			Radar from 28500 to 28600. Huge and persistent.
28710	1205	10	10			FM			SE Asian fishermen.Weak- in and out.
28715	1250	19	10	RUS		FM			Russian taxi service. Strong.
28800	1410	7	10	IRN		RADAR			Radar from 28800 to 28900 kHz. Huge and persistent.
28885	1015	22	10			AM			SE Asian fishermen. Weak signals.
28925	1115	15	10			FM			SE Asian fishermen. Strong signals. In and out.
28970	800	4	10			FM			SE Asian fishermen. Weak signals.
28975	1030	28	10			FM			SE Asian fishermen. Medium signals.Also heard on the 31st at 1205z,in and out with weak signals.
28980	1105	21	10			FM			Carrier. Medium signal.
28980	1040	28	10	IND		AM			Harmonic of All India Radio Chinese Service on 15400 kHz.
29000	1120	3	10			FM			Carrier. Strong and persistent.
29000	1300	17	10	B		AM			Brazilian Cbers with Rogers beeps. Medium signals.
29000	1055	23	10			FM			SE Asian fishermen. Weak signals.
29040	1040	15	10	G		RADAR			Radar from 29040 to 29065 kHz. Huge and persistent. UK base in Cyprus.
29050	1540	5	10	IRN		RADAR			Radar from 29050 to 29150 kHz. Huge and persistent.
29100	1515	1	10			FM			Carrier. Strong and persistent. Heard every single day.
29225	1220	31	10			FM			SE Asian fishermen. Strong signals.
29425	1225	31	10			FM			SE Asian fishermen. Medium signals.
29497.5	1035	31	10						Strong digital signal. UNID.
29624.5	1500	6	10			F1B			Medium signal. Also heard on the 10th at 1205z.
29649.5	1207	10	10			F1B			Medium signal. Persistent.

PZK; Mirek, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14008.0	vt	vd	10			F1B		500	S9+
14159.0	1130	2	10			USB		2K7	Propaganda in Russian
14173.0	1130	2	10			RADAR		10K0E	5 sec burst
14184.0	1020	11	10			RADAR		12K0E	S7
14189.0	1130	30	10			RADAR		12K0E	S9+20
14199.0	1120	8	10			RADAR		12K0E	S9
14201.0	1255	30	10			RADAR		14K0E	S9
14202.0	0810	9	10			RADAR		12K0E	S9
14244.0	1140	29	10			RADAR		10K0E	5 sec burst
14260.0	1120	1	10			RADAR		10K0E	5 sec burst
14268.0	0800	4	10	RUS		CIS-12		2K7	S9+
18107.0	vt	22	09			F1B		200	S9+
21001.3	0805	2	10			UI		4K0	S7
21065.0	1250	30	10			RADAR		12K0E	S9+10
21100.0	0940	5	10			RADAR		20K0E	S9
21129.0	0825	30	10			RADAR		12K0E	S9+
21151.5	vt	29	10			UI		4K0E	S7 also seen at 21001.5
21161.0	1430	6	10			RADAR		20K0E	S9+ looks like Cyprus
21161.0	vt	vd	10			RADAR		12K0E	S8-S9
21174.0	0945	31	10			RADAR		12K0E	skip to 21194.0 then 21284.0
21202.0	1030	17	10			RADAR		10K0E	3 sec burst foghorn
21208.0	0745	25	10			RADAR		10K0E	S8
21230.0	0943	31	10			RADAR		270K0E	S5
21307.0	1205	4	10			RADAR		12K0E	10 sec strong burst
21311.0	1345	4	10			RADAR		20K0E	S9+ also 21410.0
21315.0	1040	30	10			RADAR		12K0E	S9+20 looks like Cyprus
21320.0	0920	9	10			RADAR		10K0E	3 sec burst foghorn
21340.0	0930	4	10			RADAR		20K0E	S9+ looks like Cyprus
21345.0	1125	2	10			RADAR		10K0E	3 sec burst foghorn
21363.0	0949	31	10			RADAR		10K0E	3 sec burst foghorn
21374.0	1350	4	10			RADAR		10K0E	3 sec burst foghorn
21408.0	1125	2	10			RADAR		20K0E	S9+ looks like Cyprus also 21205.0
21415.0	1200	4	10			RADAR		20K0E	S9+ looks like Cyprus
21425.0	0930	4	10			RADAR		20K0E	S9+
21428.0	0918	22	10			RADAR		10K0E	S9
24890.0	1145	23	10			RADAR		10K0E	S6
24906.0	1138	30	10			RADAR		10K0E	12 sec. burst strong
28148.0	1055	25	10			RADAR		20K0E	S9+20 looks like Cyprus
28155.0	0735	7	10			A3E		6K9E	In Spanish
28258.0	0815	26	10			RADAR		20K0E	S9
28328.0	0910	31	10			RADAR		20K0E	S9+20
28329.0	vt	29	10			F1B		600	S9
28365.0	0850	17	10			RADAR		20K0E	S9+ looks like Cyprus
28400.0	vt	vd	10	IRN		RADAR		60K0E	
28400.0	0915	9	10			RADAR		20K0E	S9+
28415.0	1055	25	09			F3E		6K0	In Russian (radio taxi)

PZK; Mirek, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
28700.0	1200	16	10	IRN		RADAR		60K0E	S7 also 29400.0
28853.0	0830	30	10			RADAR		20K0E	S9+12dB

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7 MHz	1510-0600	*	10	RUS		RADAR	40 sps	13k0E	*) Days: 11. 19. 27. 29. (WebSDR 31d)
7000.0	0500-1830	01 - 21	10	RUS		J7D	120	2k60E	Maybe 0000 - 2400
7008.5	0740-1235	*	10	RUS		J7D	120	2k60E	*) Days: 16. 17. 23. 31.
7019.0	0800-1800	*	10	RUS		F1B/A N0N		200H	*) Days: 1. 2. 15. 5BL
7020.0	0600-0730	08 24	10	RUS		F1B		250H	
7030.0	0645-1115	*	10	RUS		F1B		200H	*) Days: 12. 15. 31.
7032.0	0600-1830	01 - 31	10	RUS		J3E-u		3k60E	Non-stop Russian anthem / mx,
7032.0	0000-2400	01 - 31	10	RUS		J3E-u		3k60E	Brum when no music.
7035.1	0510-1900	*	10	RUS		J3E-l		3k60E	*) Days: 14. 16. - 23. 28. - 31. 240 Hz ticking carriers
7044.0	1145-1410/	*	10	RUS		F1B/ N0N		250H	*) Days: 3. 11. 23. 27. 28. 29.
7060.0	0510-0720	10 11	10	RUS		F1B/ N0N		200H	
7062.0	0650-0917/	28	10	RUS		J7D	120	2k60E	
7067.0	0700-1430	*	10	RUS		J7D	120	2k60E	*) Days: 5. 9. 27.
7076.0	1345-1745/	03	10	RUS		J7D	120	2k60E	
7088.0	0515-1800	23 - 28	10	RUS		F1B		250H	
7100.0	1340-1900	*	10			G7D		2k40E	*) Days: 1. 6. 7. 8. 17. - 22. 29. 31. LINK11 usb
7104.0	0715	03	10	RUS		F1B		500H	
7111.0	0615-0930	*	10	RUS		F1B		250H	*) Days: 3. 7. 8.
7114.0	0500-1830	*	10	RUS	RDL	F1B/A N0N		200H	*) Days: 1. 2. 3. 5. 10. 12. 5F
7114.0	0500-1800	02 - 04	10	RUS		J7D	120	2k60E	
7121.0	0500-1515	*	10	RUS	RAL2 etc	A1A	14wpm	40H	*) Days: 2. 6. 12. 15. 16. 21. 23. 31. QSA procedures
7122.0	0520-1430	09 10	10	RUS		F1B/ N0N		200H	
7131.0	0650	28	10	RUS		A1A	16wpm	40H	5BL
7135.0	1700-1830	*	10	RUS	RDL	F1B/A	16wpm	200H	*) Days: 2. -8. 12. 14.
7137.0	1540-1830	*	10	RUS	RDL	F1B/A	16wpm	200H	*) Days: 2. 3. 6. 7. 8. 14.

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7140.0	1000-1100	07 09	10	RUS		J7D	120	2k60E	
7141.5	0740	29	10	RUS		A1A	15wpm	40H	5BL
7159.0	0600-1300	*	10	IW		G7D		2k40E	*) Days: 3. 7. 14. 15. 18. LINK11 usb
7159.0	0600-1300	*	10	IW		B7D		6k0E	*) Days: 5. 6. 12. 19. LINK11 dsb
7160.0	0650-0710	03 15	10	RUS	RBL88	A1A		40H	5BL
7176.0	0515-1330	07 - 09	10	RUS		F1B		250H	
7176.5	0930-1030	16	10	RUS		F1B		200H	
7186.0	0500-0530	07	10	RUS		J7D	120	2k60E	Carrier on 7184 kHz
7196.0	0600-1330	*	10	RUS	CBZ6 etc	A1A	17wpm	40H	*) Days: 3. 17. 19. 22. 28. 29. 5BL
7200.0	1050-1300/	27 - 30	10	TWN	N unity r	A3E		9k0	Korean px
7200.0	1400-1430	29	10	TWN	N unity r	A3E		9k0	Korean px
10 MHz			10	G		RADAR	50sps	20k0	(WebSDR 2d)
10 MHz	0930-1200	11 23	10	RUS		RADAR	40sps	13k0E	(WebSDR 22d)
14 MHz	0500-1830	*	10	RUS		RADAR	40sps	13k0E	*) Days: 1. - 7. 9. - 12. 20. - 23. 27. - 31. (WebSDR 22d)
14 MHz	1045-1800	*	10	CHN		RADAR	50/67sps	10k0E	*) Days: 6. 8. 12. 13. 14. 16. 18. 20. - 23. 29. 'foghorn'
14008.0	0500-1200	01 - 31	10	RUS		F1B		500H	
14026.0	1110-1430	03 14	10	RUS		J7D	120	2k60E	
14119.0	0530-1700	01 - 15	10	RUS	RDL	F1B/A		200H	5F
14162.0	1020-1022/	15	10	RUS		J7D	120	2k60E	
14169.0	0815-0900	17 31	10	RUS		F1B		200H	
14192.0	0500-1830	01 - 31	10	RUS		F1B		200H	
14220.0	1150	28	10	RUS		J7D	120	2k60E	
14268.0	0835-0900/	04	10	RUS		J7D	120	2k60E	
14342.0	0630	07	10	RUS		F1B		250H	
18 MHz	1045	31	10	G		RADAR	50 sps	20k0	(WebSDR 2d)
18 MHz	0700-1600	*	10	RUS		RADAR	40 sps	13k0E	*) Days: 1. 9. - 12. 20. 23. (WebSDR 7d)
18107.0	0740-1345	*	10	RUS		F1B/A		200H	*) Days: 4. 22. 23. 29. 31. 5F
18150.0	0845-1035	03 22	10	CHN		RADAR	50 sps	40kE	
21 MHz	0425-1830	*	10	G		RADAR	50/25 sps	20k0	*) Days: 4. 5. 8. 11. 19. 22. 23. 30. 31. (WebSDR 13d)
21 MHz	0500-1730	*	10	RUS		RADAR	40 sps	13k0E	*) Days: 1. - 7. 9. - 12. 20. - 23. 27. - 31. (WebSDR 23d)

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21 MHz	0700-1000	*	10	CHN		RADAR	50 sps	10k0E	*) Days: 3. 6. 14. 16. 22. 23. (WebSDR 15d)
21 MHz	0500-1600	*	10	CHN		RADAR	50/67sps	10k0E	*) Days: 1. 3. - 7. 12. - 16. 19. 21. 22. 27. 29. 30. 'foghorn'
21001.5	0500-1800	*	10			XXX/ jam		5k0E	*) Days: 1. -20. 28. - 31.
21151.5	0735-1630	28 29	10			XXX/ jam		3k0E	
21438.0	/0830-1600	01 - 31	10	RUS	RCV	A1A	16 - 22 wpm	40H	Navip etc.
24 MHz	0800-1155	10 15	10	G		RADAR	50sps	20k0	(WebSDR 2d)
24 MHz	0545-1400	*	10	RUS		RADAR	40sps	13k0E	*) Days: 1. 2. 3. 6. 15. 22. 27. 28. 31. (WebSDR 17d)
28 MHz	0500-1630	*	10	G		RADAR	25/50sps	20k0	*) Days: 1. - 4. 6. 7. 9. 10. 13. 15. 17. 18. 21. 23. 24. 27. - 31. (WebSDR 21d)
28 MHz	0315-1800	*	10	IRN		RADAR	150/313	60k0E	*) Days: 1. - 9. 12. - 18. 21. 22. 23. 28. - 31. (WebSDR 21d)
28 MHz	1000-1100	23 30	10	IRN		RADAR	333/695	60k0E	(WebSDR 9d)
28 MHz			10	RUS	Taxi disp.	F3E		3k0E	no 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
6999.8	19:03	03	10			XXX		CA4K0E	Unidentified continuous signal. Over the 7000 kHz CF CIS-12 TX. Jammer?
6999.8	18:57	04	10			XXX		CA4K0E	Jammer
*7000.0**	*vt***	*vd***	*10*	*RUS*		*RADAR*	*40*	*12K0E*	*OTHR Contayner TX *on 40m **Often. 12 reports 2 simultaneous TX: 1 report*
*7000.0**	*vt***	*vd***	*10*	*CHN*		*RADAR*		*10K0E*	*OTHR "Foghorn" bursts *on 40m ** 3 reports*
7000.0	17:26 vt*	01 vd*	10			J7D	120	2K70E	CIS-12. Long-lasting *Daily until 21-10
7005.0	16:10 vt*	03 vd*	10			XXX			WHARQ. HF Hybrid Automatic Repeat Request (ARQ). Burst system. Several BW, and modulation types. *Often. 5 reports
7007.0	16:13 vt*	28 vd*	10			XXX			WHARQ *Also on 29/10, 1810Z
7008.0	16:05	11	10	RUS		RADAR	40	12K0E	OTHR Contayner. *Also on 7065 kHz CF. 2 simultaneous TX on 40m
7009.0	19:37	15	10	CHN		RADAR	66.7	10K0E	OTHR short bursts
7010.0	18:55	02	10			XXX		5K0E	Jammer. 85 Hz
7015.0	17:49	24	10			XXX	19200	24K0E	WHARQ
7016.0	17:45 vt*	08 vd*	10	RUS		F1B	50	250H	*Also on 25/10, 1745Z
7028.0	17:06	03	10			XXX	12000	15K0E	WHARQ *Also on 30/10, 1706Z
7032.0	17:27 vt*	01 vd*	10			XXX		3K30E	Noise. Jammer / QRG occupation *Daily
7032.0	18:00	07	10			J3E-U		3K40E	Russian anthem, pop version; looped. Short pause after the end of the music
7035.1	17:00	17	10			XXX		500H	3 Carriers. Spacing: 250 Hz. With pulses.

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
	vt*	vd*							*Also on 19 and 20-10, vt
7044.0	13:51 vt*	23 vd*	10	RUS		F1B	50	250H	*Also on 28/10, 1222Z
7047.0	16:15	28	10			XXX		2K0E	Images on waterfall. No callsign
7052.0	18:45 vt*	02 vd*	10			F1B	50	250H	*Often. 7 reports
7061.0	07:17	14	10			N0N	120	2K70E	CIS-12
7062.0	21:28	06	10	RUS		RADAR	40	12K0E	OTHR Contayner
7065.9	17:13	10	10			N0N			Carrier. Long-lasting
7067.0	07:11	05	10			J7D	120	2K70E	CIS-12
7080.0	18:11 vt*	29 vd*	10	RUS	RDL	F1B	50	200	F1B and F1A *Also on 30/10, 1940Z
7088.0	17:05 vt*	13 vd*	10	RUS		F1B	75	250H	*Often. 5 reports
7088.0 USB	05:33 vt*	25 vd*	10			XXX		CA3K80E	Unidentified digital signal, with carrier at 7088.5 kHz. *Also on 26/10, 0631Z
7095.0	17:39	14	10			J3E-L		2K80E	Voice loops, UKR/RUS radiowar
7100.0	18:48 vt*	02 vd*	10			G7D	45.45	2K40E	7100 kHz USB. LINK-11 CLEW SSB *Very often. 11 reports
7109.0	18:41	14	10			J3E-L		2K80E	Voice loops, UKR/RUS radiowar
7111.0	06:43 vt*	03 vd*	10			F1B	75	250H	*Often. 4 reports
7113.8	19:24	03	10			XXX		3K30E	Unidentified continuous signal (over RUS F1B RDL on 7114 kHz CF). Jammer?
7114.0	17:28 vt*	01 vd*	10	RUS	RDL	F1B F1A	50	200H	CIS 36-50. *Also on 03/10, 1752Z and on 12/10, 1624Z
7114.0	17:39	02	10			J7D	120	2K70E	CIS-12
7119.0	19:18	03	10			J7D	120	2K70E	CIS-12
7135.0	17:29 vt*	01 vd*	10	RUS	RDL	F1B F1A	50	200H	CIS 36-50 *Very often 14 reports
7137.0	17:39 vt*	02 vd*	10	RUS	RDL	F1B F1A	50	200H	CIS 36-50 *Often. 5 reports
7156.0	16:19	15	10			OTHER	2400	CA3K0E	7156 kHz USB. ALE 3G bursts
7159.0 USB	07:29 vt*	07 vd*	10			G7D	75	2K40E	LINK-11 CLEW SSB *Also on 14/10, 1610Z
10124.0	*20:46*	*22*	*10*	*CHN*		*RADAR*	*66.7*	*10K0E*	*OTHR short bursts*
10126.0	*19:54*	*13*	*10*	*AUS*		*RADAR*	*7.2*	*12K0E*	*OTHR JORN bursts*
10160.0	*18:44*	*07*	*10*	*G*		*RADAR*	*50*	*20K0E*	*OTHR. UK SBA, Cyprus. Splatter down to 10143 kHz. *Also on 28/10, 1905Z*
13982.0	*21:25*	*10*	*10*	*G*		*RADAR*	*25*	*20K0E*	*OTHR. UK SBA, Cyprus. Splatter to 14010 kHz*
*14000.0**	*vt***	*vd***	*10*	*RUS*		*RADAR*	*40*	*12K0E*	*OTHR Contayner TX *on 20m **Almost daily. 73 reports 2 simultaneous TX: 10 reports 3 simultaneous TX: 2 reports 4 simultaneous TX: 1 reports*
*14000.0**	*vt***	*vd***	*10*	*CHN*		*RADAR*	*10*	*160K0E*	*Wideband OTHR bursts *on 14m 2 reports*
*14000.0**	*vt***	*vd***	*10*	*CHN*		*RADAR*	*41.7 50 66.7*	*10K0E*	*OTHR "Foghorn" bursts *on 20m ** Daily. 108 reports*
14000.0 USB	08:53 vt*	01 vd*	10				2400	CA3K0E	ALE 3G bursts *Very often. 18 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
14000.0 USB	08:25 vt*	02 vd*	10				2400	CA3K0E	ALE 3G. Complete link *Often. 4 reports
14000.0	14:25	04	10			J3E-U		3K30E	Non-amateur comms. Unid sts. Male voices. Unid lang
14000.0 USB	13:23	18	10			J7D	125	1K80E	MIL-188-141A ALE 2G
14000.0	13:35	18	10			J3E-U		2K40E	Unid sts talking. Male voice, unid lang.
14001.8	14:38 vt*	29 vd*	10			XXX	7200	CA9K0E	WHARQ. HF Hybrid Automatic Repeat Request (ARQ). Burst system. Several BW, and modulation types *Also on 30/10, 1142Z
14008.0	07:14 vt*	01 vd*	10	RUS		F1B	50	500H	*Very often. 12 reports
14008.5	07:04	25	10			F1D	600	600H	DPRK-FSK 600 ARQ
14015.5 USB	17:20	29	10			W7D		3K0E	CIS-112. Preamble: 8 tones + OFDM 56 tones + 112 tone (data TX). Channel spacing = 25.6 Hz. Pilot tone at 3300 Hz
14020.0 USB	16:15	01	10		182 933	J7D	125	1K80E	MIL-188-141A ALE 2G
14025.0 USB	14:05	23	10			XXX		CA3K0E	XXX. Unidentified digital TX
14026.0	13:07 vt*	03 vd*	10	RUS		J7D	120	2K70E	CIS-12 *Also on 14/10, 1055Z
14026.0 USB	13:57	23	10			XXX		CA3K0E	XXX. Unidentified digital TX
14030.5	08:46	08	10			XXX		1K0E	Slow sweeps
14031.0	12:02	14	10			J7D	120	2K70E	CIS-12; with QPSK 2400 Bd preamble
14040.0	20:5 vt*	09 vd*	10			RADAR	2	80K0E	CODAR-like radar. *Also on 14/10, 1923Z
14055.0 USB	16:35	18	10	CHN	BC5 DB5	J7D	125	1K80E	MIL-188-141A ALE 2G
14059.5 USB	16:36	24	10			G7D	75	2K40E	CHN 4+4 a.k.a PRC 4+4
14091.0	07:18 vt*	10 vd*	10			W7D	30	2K80E	CIS-60 *Also on 29/10, 0727Z
14095.0	12:06	06	10			A3E			BC A3E interference. Unid st. Unid original QRG. BW ca 12K0E. QRT: 1300Z after time signal TX
14098.5	13:20	25	10			F1D	600	600H	DPRK-FSK 600 ARQ
14100.0	19:44	28	10			RADAR	2	75K0E	CODAR radar
14109.0	08:03	05	10			F1B	600	600H	DPRK-FSK 600 ARQ
14109.5	08:19	01	10			OTHER	1200	1K20E	DPRK-PSK 1200 ARQ
14109.5	12:10 vt*	07 vd*	10			F1B	600	600H	DPRK-FSK 600 ARQ *Often. 4 reports
14110.0	12:47	03	10			J3E-U		2K80E	Loops, propaganda, music, insults; UKR/RUS radiowar. Long-lasting
14118.5	12:18	11	10			F1B	600	600H	DPRK-FSK 600 ARQ
14119.0	06:55	01	10	RUS	RDL	F1B F1A	50	200H	CIS 36-50. *Daily until 18/10
14120.0	07:53 vt*	12 vd*	10			J3E-U		2K80E	UKR/RUS radiowar. Long-lasting. *Also on 13/10 and on 18/10; vt
14122.0 USB	12:14	11	10			J7D	125	1K80E	MIL-188-141A ALE 2G

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14123.3	08:27	24	10			XXX		CA600H	Unidentified signal. Same as on 14196.6 kHz CF. Both readable on several EU KiwiSDRs. QRT: 0918Z
14126.0	18:13	02	10			J3E-U		2K80E	UKR/ RUS radiowar
14127.0	15:58	11	10			J3E-U		2K80E	Loops, propaganda, insults, UKR/ RUS radiowar. Long-lasting
14128.0	07:38	03	10			W7D	30	2K80E	CIS-60 a.k.a RUS High Data Rate modem
14128.0	16:14	19	10			J3E-U		3K0E	Broadcast relaying. Music and speech. Male voice, Slavic language
14129.5	08:13	22	10			F1D	600	600H	DPRK-FSK 600 ARQ
14130.5	18:25 vt*	07 vd*	10			XXX		1K0E	Slow sweeps. BD = 120 sec. BRI = 240 sec. Long-lasting. *Also on 09/10, 0858Z
14131.5	07:05	10	10			F1B	600	600H	DPRK-FSK 600 ARQ
14132.0	07:38 vt*	05 vd*	10			XXX	0.25	4K0E	Slow sweeps. Long-lasting. BD = 120 sec. BRI = 240 sec. *Also on 06 and on 07/10
14135.0	10:55	22	10			J7D	120	2K70E	CIS-12
14138.0	15:08	15	10			J3E-U		3K0E	Broadcasting relaying. Speech. Religious content and music. Male speaker. Slavic language. Same broadcast transmitted at 1218Z on 14140 kHz USB
14138.0	15:07	18	10			F1D	600	600H	DPRK-FSK 600 ARQ
14140.0	11:18	15	10			J3E-U		3K0E	Broadcasting relaying. Speech. Religious content and music. Male speaker. Slavic language. QRT: 1256Z
14141.0	07:59 vt*	01 vd*	10			F1B	75	500H	*Also on 30/10, 0749Z
14144.0	15:45	10	10			J3E-U		3K0E	Broadcast relaying. Speech, male voice. Slavic language. Religious content ("Apostle Paul"), music. Long-lasting (QRT: 1641Z)
14144.0	12:43	14	10			J7D		2K70E	CIS-12, submode idle
14148.5	06:54	01	10			OTHER	1200	1K20E	DPRK-PSK 1200 ARQ
14159.5 USB	17:06	01	10			G7D	75	2K40E	CHN 4+4 a.k.a PRC 4+4
14159.9	08:27	24	10			XXX		CA600H	Unidentified signal / carriers. Same as on 14196.6 kHz CF and on 14123.3. The 3 signals are readable on several EU KiwiSDRs. QRT: 0918Z
14160.0	12:10 vt*	15 vd*	10			F1B	50	250H	*Also on 29/10, 1002Z
14169.0	07:55	10	10			F1B	50	200H	
14171.0	08:20 vt*	14 vd*	10			J7D	120	2K70E	CIS-12. *Also on 16 and on 23/10; vt
14192.0	06:56	01	10	RUS		F1B	50	200H	*Daily
14196.6	08:27	24	10			XXX		CA600H	XXX: Unidentified signal. Slightly drifting. QRT: 0908Z
14197.0	10:08	29	10			F1B	50	250H	Sligthly drifting
14198.5	07:12 vt*	01 vd*	10			F1B	600	600H	DPRK-FSK 600 ARQ *Often. 9 reports
14198.5	07:13	07	10			G1D	1200	1K20E	DPRK-PSK 1200 ARQ
14220.0	11:09 vt*	12 vd*	10			J7D	120	2K70E	CIS-12 *Often. 4 reports
14220.5	08:11 Vt*	23 vd*	10			F1D	600	600H	DPRK-FSK 600 ARQ *Often. 6 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
14233.0 USB	21:33	06	10			G7D	75	2K40E	CHN 4+4 a.k.a PRC 4+4
14235.0 USB	17:47	17	10	CHN	BC5 DB5	J7D	125	1K80E	MIL-188-141A ALE 2G
14239.5 USB	11:07	12	10			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4
14242.0	09:54	15	10			J7D	120	2K70E	CIS-12, submode idle
14250.0 USB	09:42	15	10			OTHER	2400	3K0E	ALE 3G bursts
14255.0	16:12	06	10			J7D		2K70E	CIS-12 (submode idle)
14268.0	08:30	04	10			J7D	120	2K70E	CIS-12
14298.5	12:03 vt*	02 vd*	10			F1B	600	600H	DPRK-FSK 600 ARQ Almost daily. 21 reports
14318.5	07:13	07	10			F1B	600	600H	DPRK-FSK 600 ARQ
14325.0 USB	13:04	18	10			XXX	16	2K40E	Unidentified chirps. 16 pps
14325.0	07:44	22	10			XXX		CAK50E	Unidentified digital bursts
14331.5	07:10 vt*	03 vd*	10			F1B	600	600H	DPRK-FSK 600 ARQ *Often. 7 reports
14331.5	07:11	18	10			G1D	1200	1K20E	DPRK-PSK 1200 ARQ
14341.0	07:00	07	10			F1B	75	250H	
14341.5 USB	14:10	20	10			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4
14344.0 USB	15:01	13	10			G1D	2400	2K40E	MIL-188-110A. First burst = ALE 3G, Burst Waveform 5 (BW 5). QRT: 1511Z
14348.5	17:29	11	10			F1B	600	600H	DPRK-FSK 600 ARQ
*18068.0**	*vt***	*vd***	*10*	*RUS*		*RADAR*	*40*	*12K0E*	*OTHR Contayner *on 17m* ***Often. 4 reports*
18107.0	06:32 vt*	20 vd*	10	RUS	RDL	F1B F1A	50	200H	CIS 36-50 *Almost daily. 25 reports
*21000.0**	*vt***	*vd***	*10*	*RUS*		*RADAR*	*40*	*12K0E*	*OTHR Contayner TX *on 15m* ***Almost daily. 124 reports*
*21000.0**	*vt***	*vd***	*10*	*G*		*RADAR*	*25 50*	*20K0E*	*OTHR G (UK SBA, Cyprus) TX *on 15m.* *Very often. 22 reports*
*21000.0**	*vt***	*vd***	*10*	*CHN*		*RADAR*	*50*	*10K0E*	*OTHR TX *on 15m* ***Often. 8 reports*
*21000.0**	*vt***	*vd***	*10*	*CHN*		*RADAR*	*41.7 50 66.7*	*10K0E*	*OTHR "Foghorn" busrsts *on 15m* ***Almost daily. 106 reports* *2 simultaneous TX: 32 reports* *3 simultaneous TX: 3 reports* *4 simultaneous TX: 1 report*
*21000.0**	*vt***	*vd***	*10*	*CHN*		*RADAR*	*10*	*160K0E*	*Wideband OTHR TX *on 15m* ***2 reports*
21000.0	07:26	10	10			F1B		1K0E	
21000.0	08:53	23	10			XXX		2K0E	Jammer. 84 Hz
21001.5	06:51 vt*	01 vd*	10			XXX		4K0E	Jammer. 85 Hz *Almost daily. 26 reports
21008.0	08:28	03	10	CHN		RADAR	50	10K0E	OTHR. Long-lasting
21008.5	07:29 vt*	01 vd*	10			F1B	600	600H	DPRK-FSK 600 ARQ Very often. 12 reports
21015.0 USB	16:37	28	10	CHN	BC5 DB5	J7D	125	1K80E	MIL-188-141A ALE 2G
21030.0	12:13	06	10			XXX		CA11K0E	Unidentified pulsating bursts. Hopping all over the 15m band. QRT: 1354Z

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21055.0 USB	16:47	29	10			J7D	125	1K80E	MIL-188-141A ALE 2G
21060.0	07:25	02	10			XXX		5K0E	Jammer. 85 Hz
21061.5 USB	11:19 vt*	02 vd*	10			G7D	75	2K40E	CHN 4+4 a.k.a PRC 4+4 *Also on 18 and on 22/10, vt
21070.0	07:56	22	10	RUS	RDL	F1B		400H	Harmonic of RUS F1B TX SH = 200 Hz on 10535 kHz CF
21101.5 USB	09:02	18	10			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4
21102.0 USB	08:31	14	10			G1D	2400	2K40E	MIL-188-110A
21110.0	09:19	22	10			J3E-U			Unid sts talking. Engine sound. Male voices. Unid lang
21112.0 USB	14:00	03	10			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4
21115.0	06:44	03	10			F1B	50	200H	
21121.2	16:00	02	10			J3E-U		2K40E	Non-amateur traffic. Male voices. Unid lang. Engine sound. Probably fishermen (25 min)
21121.5 USB	10:08	22	10			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4
21145.0 USB	08:12 vt*	01 vd*	10	MRC	MIRADOR1	J7D	125	1K80E	MIL-188-141A ALE 2G Very often. 18 reports
21151.5	16:23 vt*	28 vd*	10			XXX		4K0E	Jammer. 85 Hz *Also on 29/10, 0725Z
21191.5 USB	13:07 vt*	10 vd*	10			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4 *Also on 23/10, 0806Z
21193.5	16:00	23	10			XXX	13.8	16K0E	Unidentified digital bursts. 4 channels. Spacing = 5 kHz. First seen on 21152.50 on 2024-09-16 at 0826 Z
21213.0	07:11	22	10			XXX		600H	Unidentified digital signal. 4 channels
21242.0	16:00	11	10			J7D	120	2K70E	CIS-12
21248.5	12:15	01	10			F1B	600	600H	DPRK-FSK 600 ARQ
21261.5	13:26	19	10			XXX		1K70E	Unidentified digital bursts
21271.5 USB	14:19	15	10			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4
21278.0	07:16	12	10			J7D	120	2K70E	CIS-12
21311.5 USB	09:10	12	10			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4
21311.5 USB	09:12	12	10			XXX	2400	2K40E	XXX. Unid PSK2 after the CHN 4+4 TX
21316.0	07:49	14	10	CHN		RADAR	66.7	10K0E	
21318.0	06:54	03	10			F1D	600	600H	DPRK-FSK 600 ARQ
21318.5	07:47	24	10			F1D	600	600H	DPRK-FSK 600 ARQ
21341.5 USB	06:41	19	10			G7D	75	2K40E	CHN 4+4 a.k.a. PRC 4+4 *Also on 19 and on 23/10; vt
21405.0	16:58 vt*	05 vd*	10	RUS	RDL	F1B	50	600H	Harmonic of the RUS CIS 36-50 on 7135 kHz CF (200 Hz, 50 Bd), "RDL" *Also on 07/10, 1811Z
21422.0 USB	11:50	03	10			XXX		3K0E	Unidentified digital bursts
21432.0 USB	10:14	01	10			G7D	75	2K40E	CHN 4+4 a.k.a PRC 4+4

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21438.0	08:35 vt*	01 vd*	10	RUS	RCV	A1A			RUS navy QTC *Almost daily. 20 reports
21448.5	06:58	03	10			F1B	600	600H	DPRK-FSK 600 ARQ
*24890.0**	*vt***	*vd***	*10*	*RUS*		*RADAR*	*40*	*12K0E*	*OTHR Contayner TX *on 12m **Often. 6 reports*
*24890.0**	*vt***	*vd***	*10*	*G*		*RADAR*	*50*	*20K0E*	*OTHR G (UK SBA, Cyprus) TX *on 12m 2 reports*
*24890.0**	*vt***	*vd***	*10*	*CHN*		*RADAR*	*41.7 50 66.7*	*10K0E*	*OTHR "Foghorn" bursts *on 12m *Often.13 reports*
*28000.0**	*vt***	*vd***	*10*	*G*		*RADAR*	*50*	*20K0E*	*OTHR (UK SBA, Cyprus) TX *on 10m **Very often. 19 reports 2 simultaneous TX: 1 report*
*28000.0**	*vt***	*vd***	*10*	*IRN*		*RADAR*	*150/313*	*Ca45K0E*	*OTHR IRN TX *on 10m Alternating 150 / 313 sps bursts. Long-lasting on same QRG: **Often. 6 reports Hopping. **Very often. 17 reports*
*28000.0**	*vt***	*vd***	*10*	*IRN*		*RADAR*	*333/695*	*Ca45K0E*	*OTHR IRN TX *on 10m Alternating 333 / 695 pps bursts. Hopping after every burst. 3 reports*
28030.0	08:10	24	10			F1B	51	300H	Fishing buoy
28051.5	08:11	24	10			F1B	51	300H	Fishing buoy
28115.0	08:15	01	10			F3E			Non-amateur traffic. Male voices. Slavic language. *Often
28135.0	07:41 vt*	01 vd*	10			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28155.0	08:08 vd*	01 vd*	10			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28165.0	08:09 vt*	01 vd*	10			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28175.0	08:03 vt*	01 vd*	10			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28215.0	07:45 vt*	01 vd*	10			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28245.0	08:08 vt*	01 vd*	10			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28255.0	08:02 vt*	01 vd*	10			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28275.0	07:44 vt*	01 vd*	10			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
*29750.0**	*08:17 vt**	*30 vd**	*10*	*RUS*		*RADAR*		*1592*	*29750 kHz CF: Kazan Federal University Meteor Radar. RUS. Lower side lobes to 29550 kHz. **Often. 4 reports*

VERON: Ruud PG1R, Credits to observers Dick PA0GRU, Kees PA2CHM

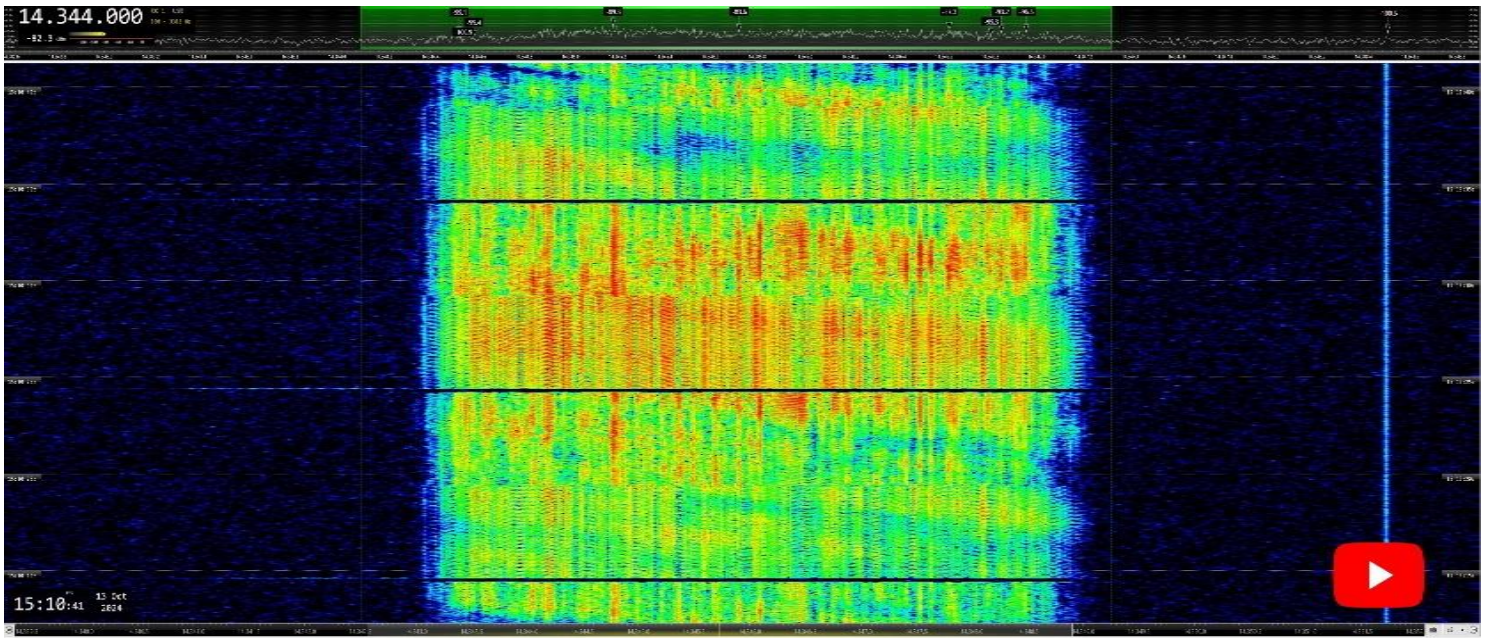
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7000.0	2047	08	10			J7D		2K70E	CF; 12 channel PSK; CIS-12; long lasting
7032.2	vt	vd	10	RUS		J3E-U	100	3K30E	Long lasting 100Hz brum; sometimes also Russian song in loop; very strong at night
7035.0	1752	26	10	RUS		J3E-L			Propanda; Russian language
7035.1	1745	17	10			XXX		500H	3 carriers spaced 250Hz with 1 second pulses like a ticking clock

VERON: Ruud PG1R, Credits to observers Dick PA0GRU, Kees PA2CHM

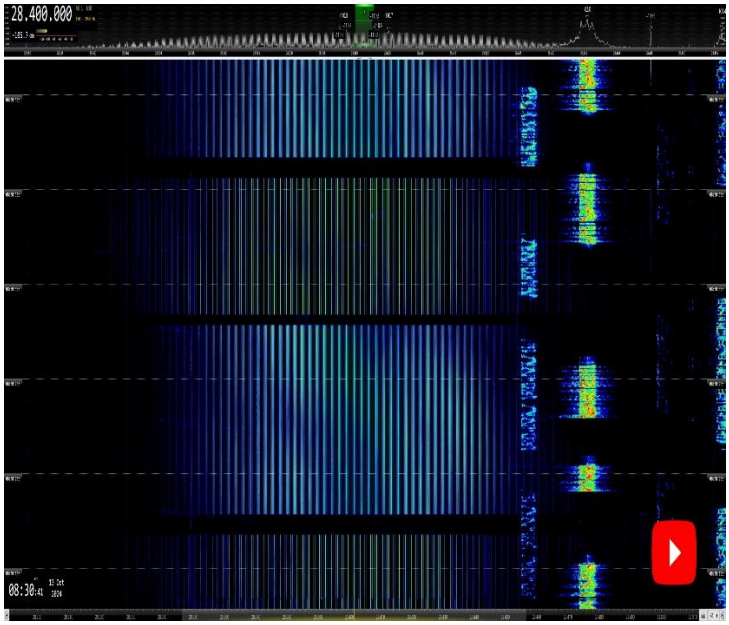
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7055.0	1747	12	10	UKR/ RUS		J3E-L		2K80E	RUS-UKR radiowar; slogans; S4-5
7055.0	2052	13	10	RUS		RADAR	40	12K0E	CF; OTHR Contayner
7055.0	1751	23	10	UKR/ RUS		J3E-L		2K70E	RUS-UKR radiowar; comments; 2nd TX in background with music
7058.0	2051	21	10	RUS		RADAR	40	12K0E	CF; OTHR Contayner
7060.0	1746	12	10	UKR/ RUS		J3E-L		2K70E	RUS-UKR radiowar; comments & music; S5-7, QSB
7100.0	2055	08	10			G7D		2K40E	USB-freq; LINK-11 CLEW SSB
7100.0	2050	14	10	UKR/ RUS		J3E-L		3K0E	RUS-UKR radiowar; slogans in loop; S9++
7135.0	2058	14	10	RUS		F1B		200H	Ptr
14045.0	2022	05	10			RADAR	10	14K0E	CF; OTHR ; famous woodpecker back?
14119.0	0722	09	10	RUS		F1B		200H	UiPtr
14119.0	0722	15	10	RUS		F1B		200H	UiPtr
28028.0	1244	29	10			A1A			Strange messages: CQ CQ CQ PU2TIN WAR UKRAIN, CQ CQ R3QA CQ CQ PU2TIN WAR, CQ CQ PU2TIN etcetera; probably frustrated HAM?
28395.0	1438	02	10	IRN		RADAR	150/313	50K0E	OTHR; alternating audio freq.
28400.0	1310	03	10	IRN		RADAR	150/313	50K0E	OTHR; alternating audio freq.; report by PE1ISP

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

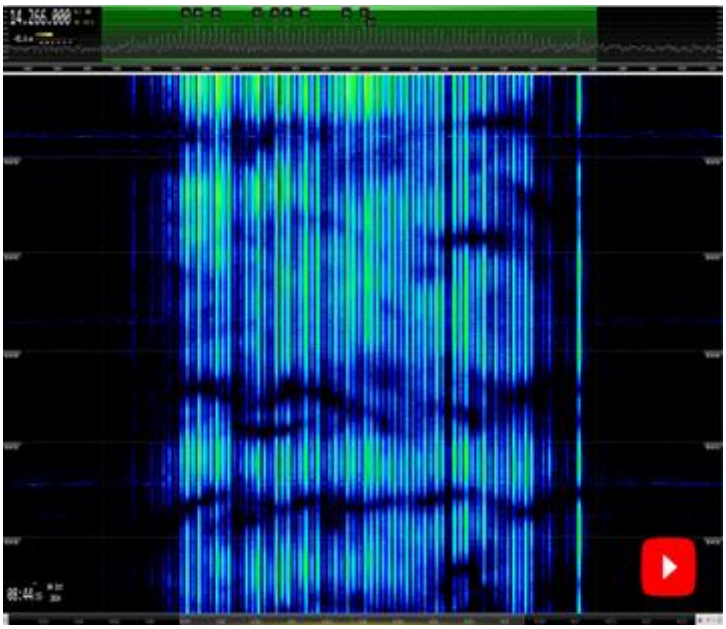
IARUMS R1 Coordinators: https://www.iaru-r1.org/spectrum/monitoring-system/iarums-region-1-coordinators/
Visit our website: https://www.iaru-r1.org/about-us/committees-and-working-groups/iarums/



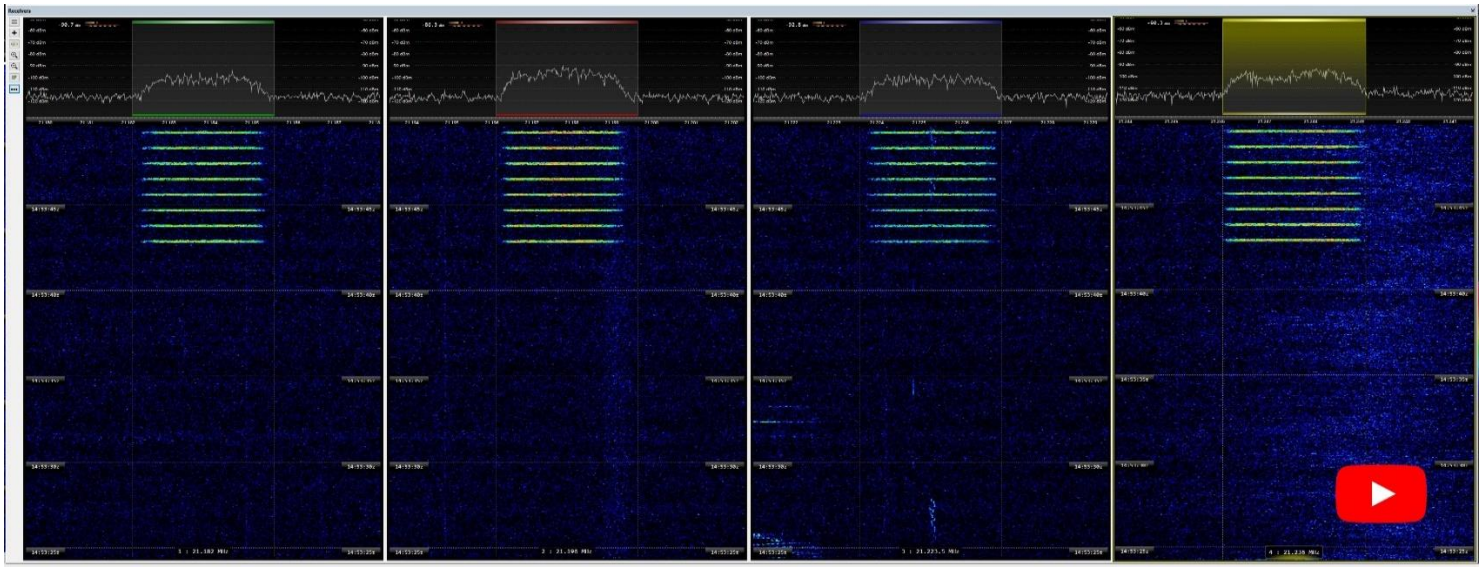
114344 kHz USB: MIL-118-110A. BW = 2.4 kHz. 2400 Bd (first burst = ALE 3G



10m: OTHR IRN.BW ca 45K0E. Alternating 150pps and 313 pps bursts

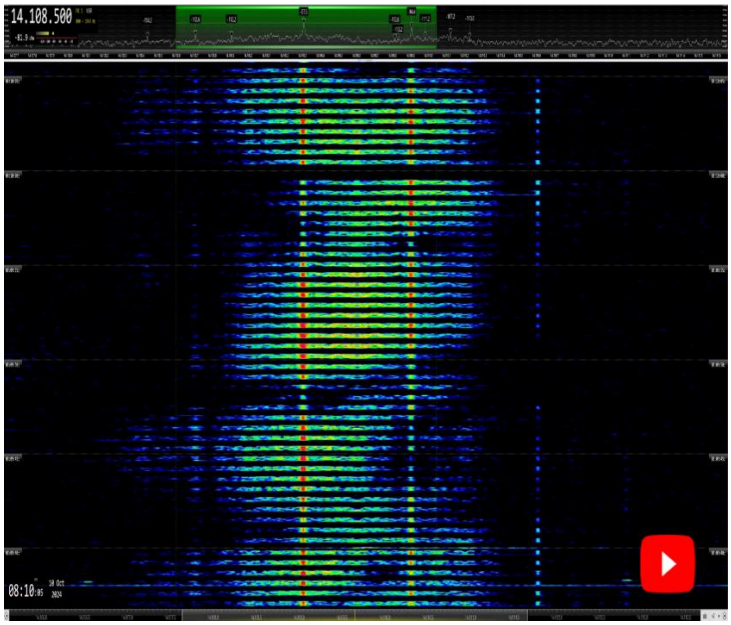


14268 kHz CF: CIS-12. BW = 2.7 kHz. Submode idle

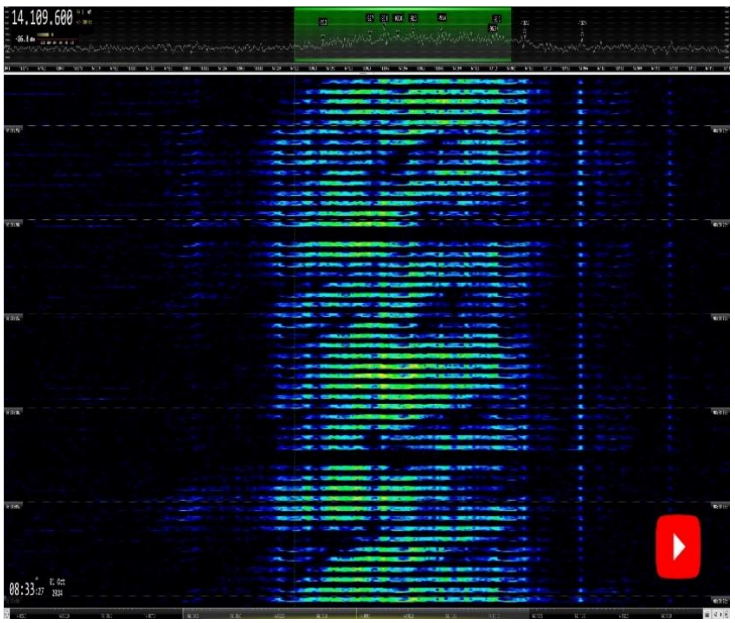


15m: 4 X RACAL / THALES Panther-H groups of 8 bursts (sync. procedure). Mode using frequency hopping. BW = 2.4 kHz. 2400 Bd

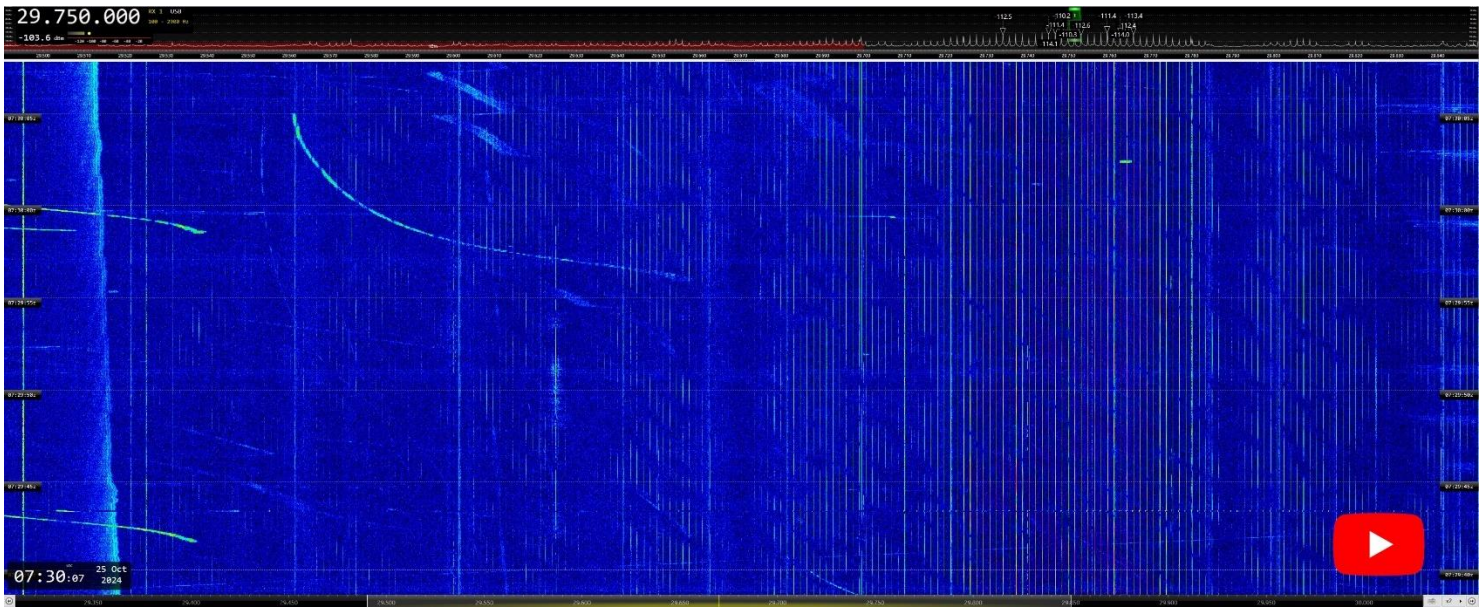
21438 kHz: CW (A1A). RUS navy station „RCV“ QTC



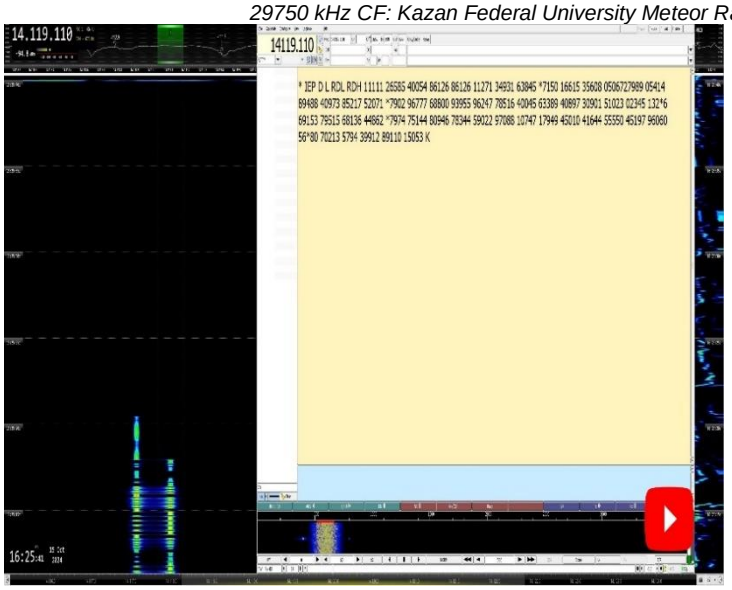
14109.5 kHz CF: DPRK FSK 600. F1D. Shift = 600 Hz. 600 Bd



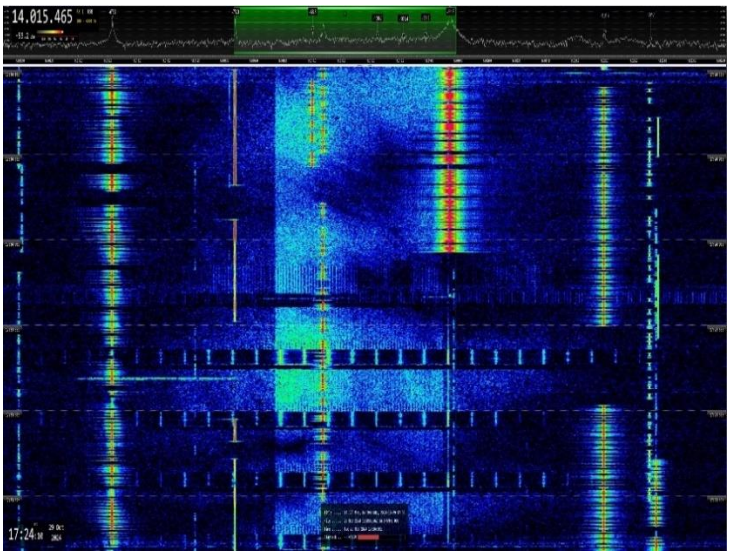
14109.5 kHz CF: DPRK PSK 1200. G1D. BW = 1.2 kHz. 1200 Bd



29750 kHz CF: Kazan Federal University Meteor Radar. RUS. 1592 pps. Lower side lobe to 29550 kHz



14119 kHz CF: CIS 36-65. FSK (F1B & F1A). CW encrypted QTC



14015 kHz USB: CIS-11. Preamble: 8 tones + OFDM 56 tones + 112 tones