

IARU Monitoring System Region 1

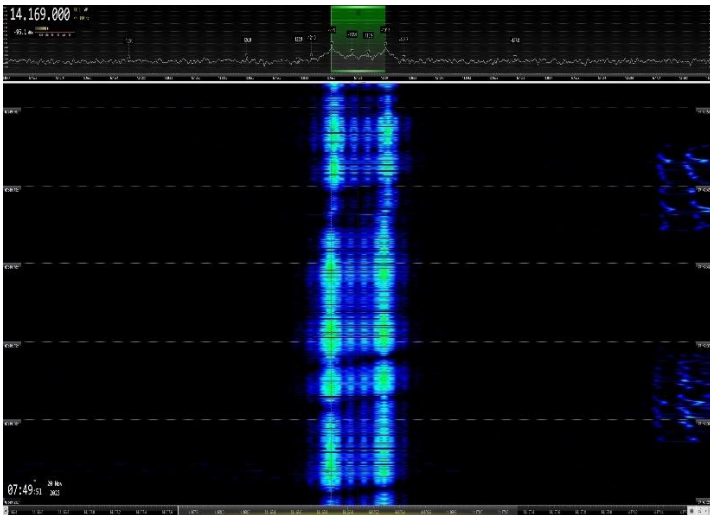


Monthly Newsletter - November 2023

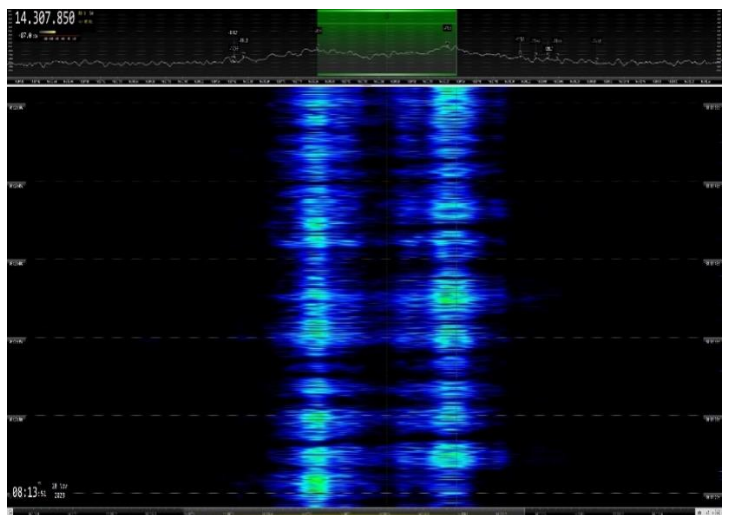
News and info

In November, in addition to the unfortunately numerous and recurrent transmissions of several Over The Horizon radars (OTHR), there were also many carried out in various CIS-## modes based on FSK, which are also too regularly received in the radio spectrum of amateur radio bands on HF. We observed them mainly in the 40 and 20-meter bands.

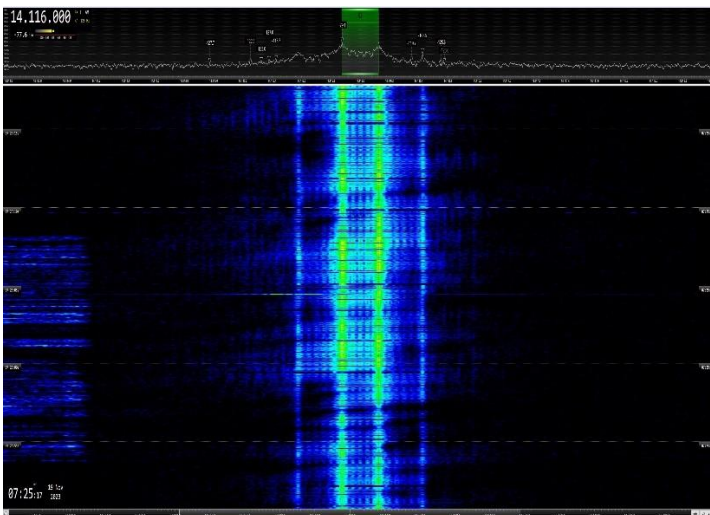
Also based on FSK, transmissions were received almost daily in the DPRK FSK 600 ARQ mode (KRE) - Shift = 600 Hz. 600 Bauds – mostly on the 20-meter band, but also on the 15-meter band. Some examples are presented in the following images:



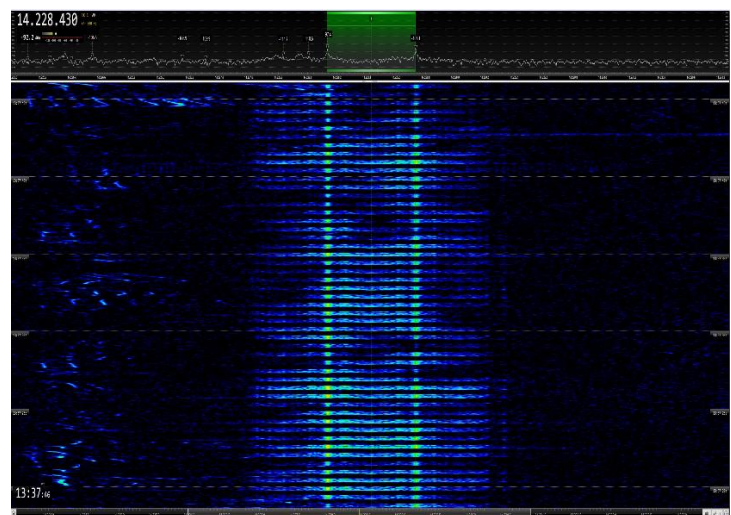
14169 kHz CF: F1B. Shift 200 Hz= Bd = 50



14307.85 kHz CF: F1B. Shift = 170 Hz Bd = 75

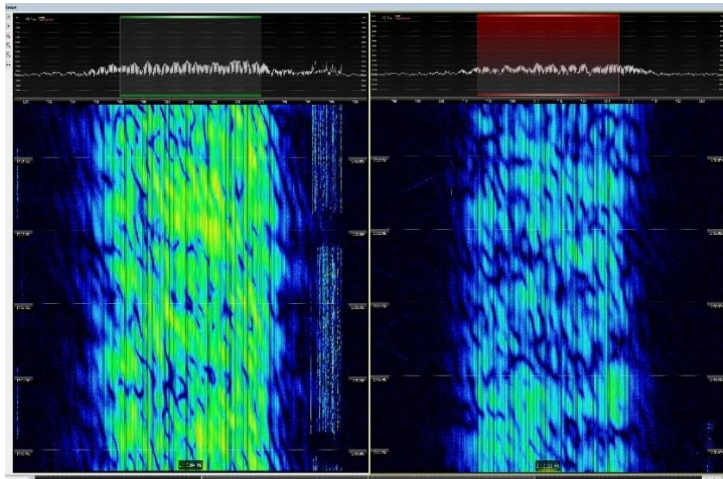


14116 kHz CF: F1B. Shift = 250 Hz Bd = 50

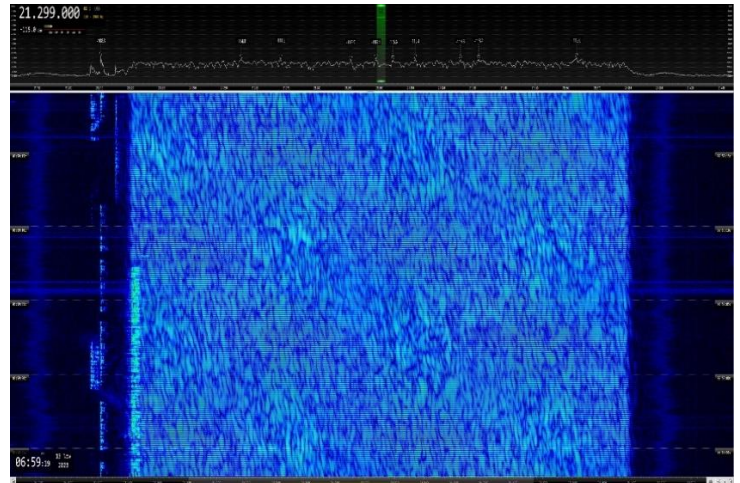


14228.43 kHz CF: F1D. DPRK-FSK 600 ARQ. Shift = 600 Hz. Bd = 600

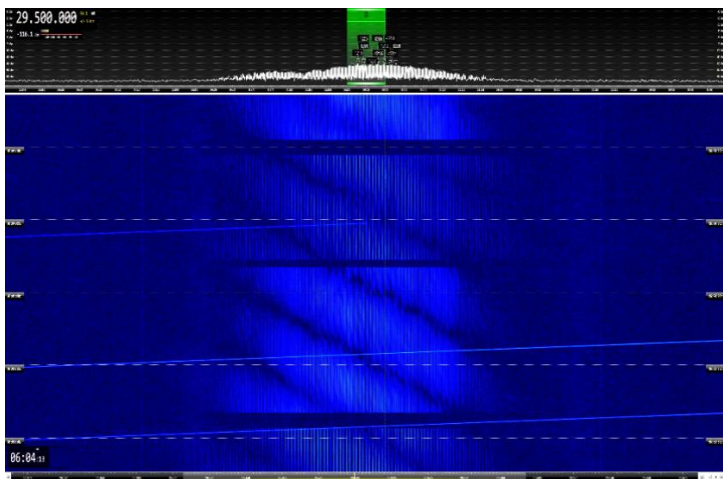
OTH radars were observed on multiple occasions operating on practically all the HF amateur radio bands. They were more frequent on the 40, 20, 15, and 10-meter bands, but were also received on 30, 17, and 12 meters, with frequently multiple simultaneous transmissions from the same radar on the same band.



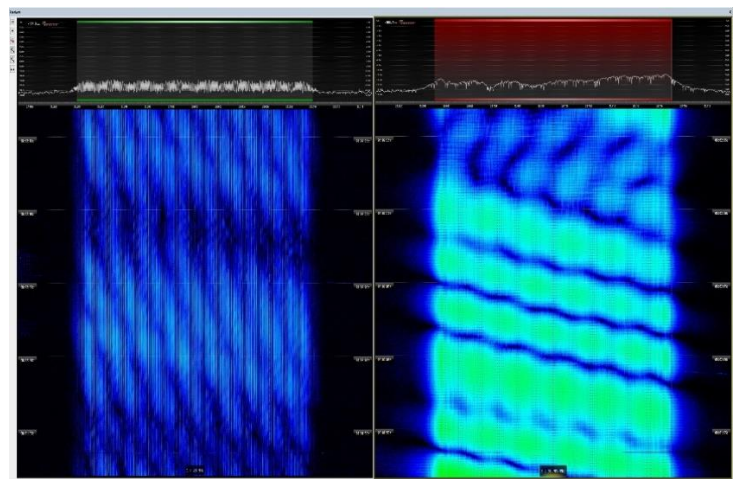
2 x OTHR Contayner on the 40-meter band. FMOP. BW = 12 kHz. 40 sps.



14229 kHz CF: CHN wideband OTHR. FMCW. BW = 160 kHz. 10 sps

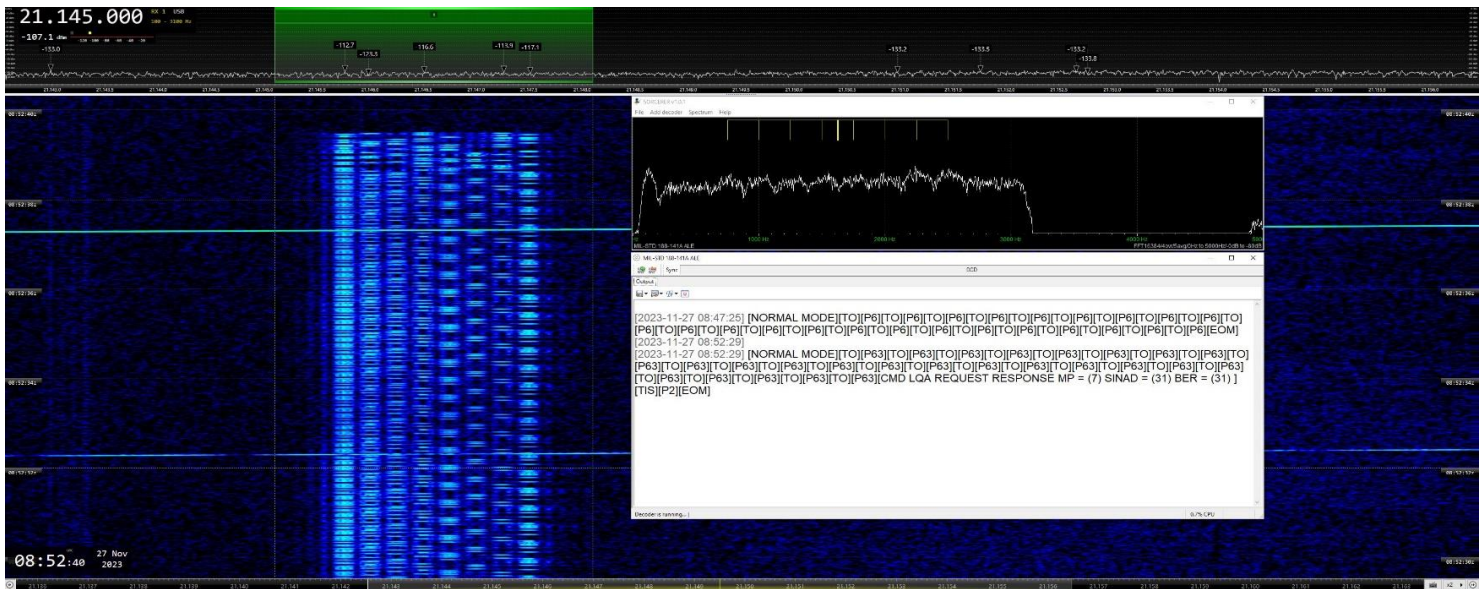


29500 kHz CF: IRN OTHR. AMOP. BW = 45 kHz. 150 and 313 sps

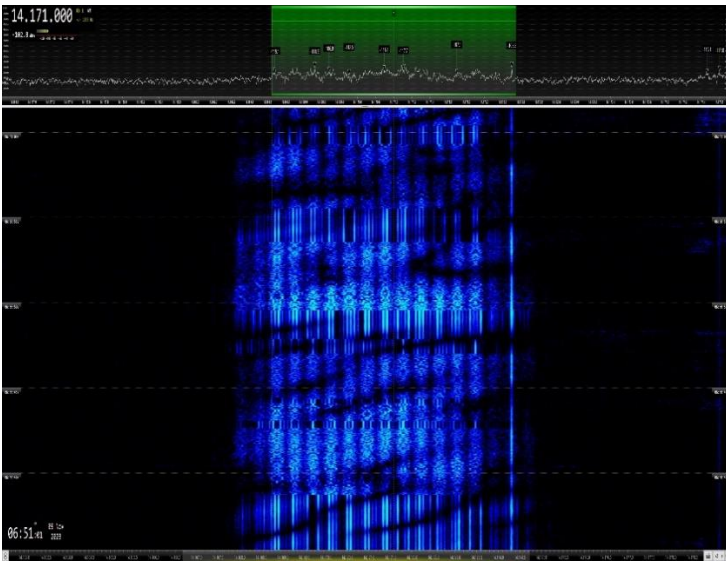


2 X OTHR G (UK SBA, Cyprus) on 10 m. FMCW. BW = 20 kHz. 50 sps

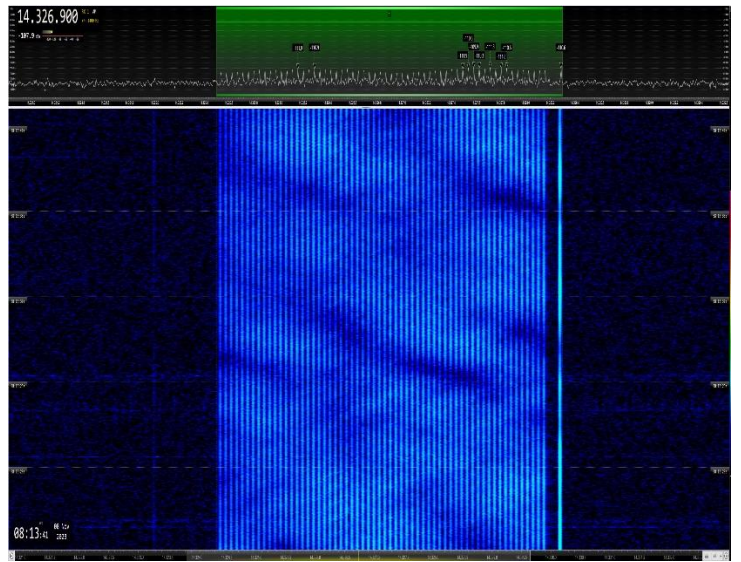
Transmissions in various military modes were also reported. Below, we show some examples of such transmissions received during the month of November.



12145 kHz VFO: MIL-188-141A ALE. J7D. MFSK-8. BW = 1.75 kHz. Bd = 125. ITU: MRC

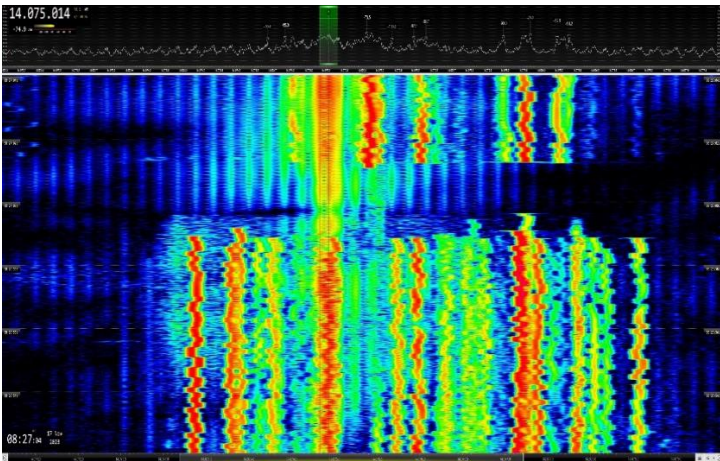


14171 kHz CF: CIS-12. J7D. BW = 2K70E. 8 x 120 Bd

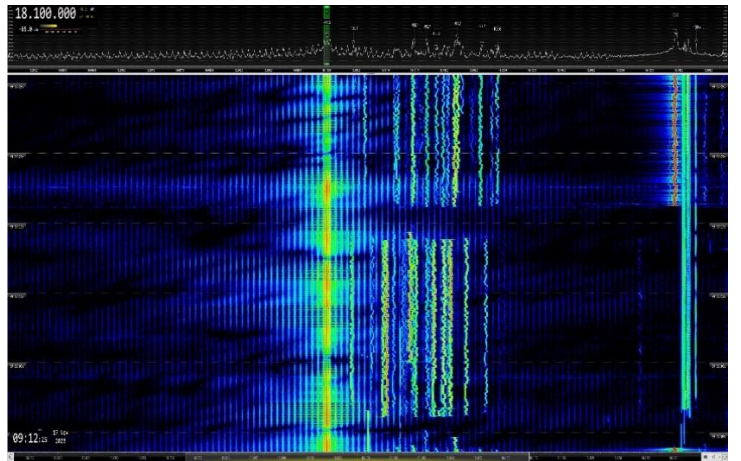


CIS-60. W7D. OFDM. BW = 2K80E. 60 Bd

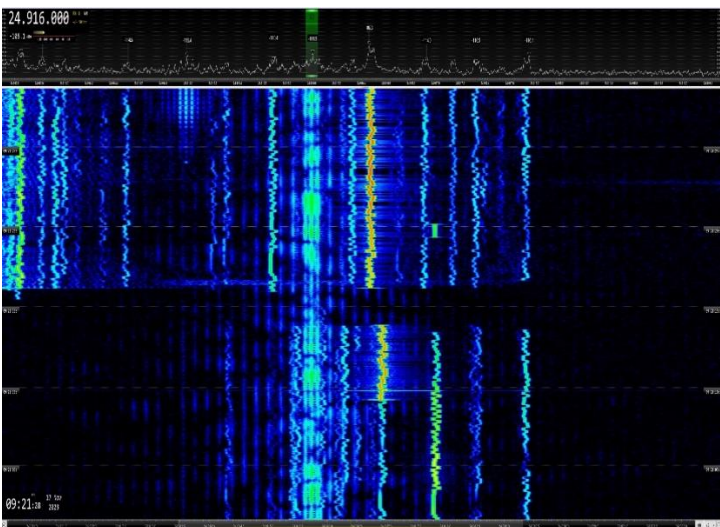
Throughout the month, we observed on some occasions how some transmissions (unknown mode) used as jammers interfered with transmissions sent by radio amateurs in digital modes such as FT-8 or FT-4. That happened in several bands, and sometimes, simultaneously on different bands.



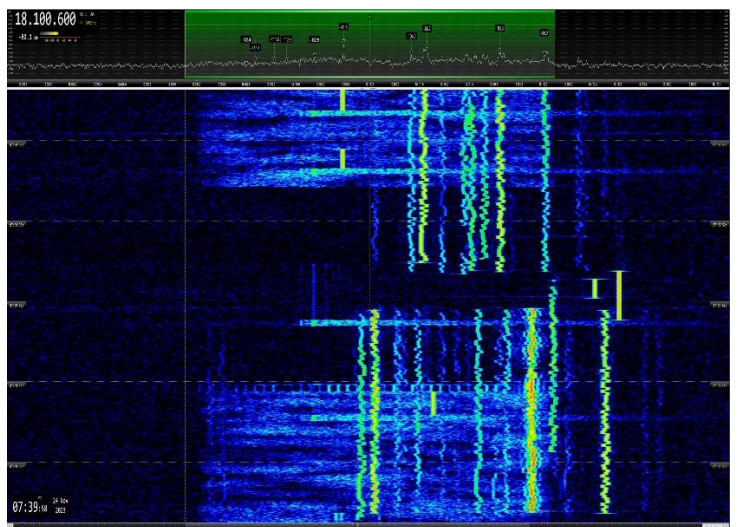
14075 kHz CF: XXX. Jammer. PSK. BW = 50 Hz. 50 Bd.



18100 kHz CF: XXX. Jammer. PSK. BW = 50 Hz. 50 Bd

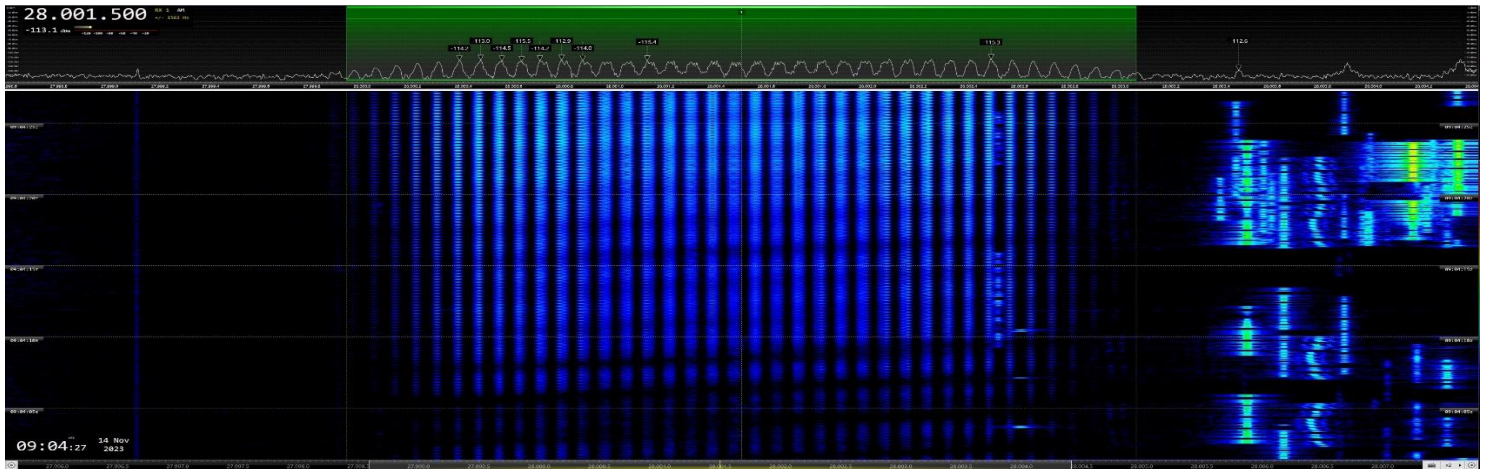


24916 kHz CF: XXX. Jammer. PSK. BW = 50 Hz. 50 bd



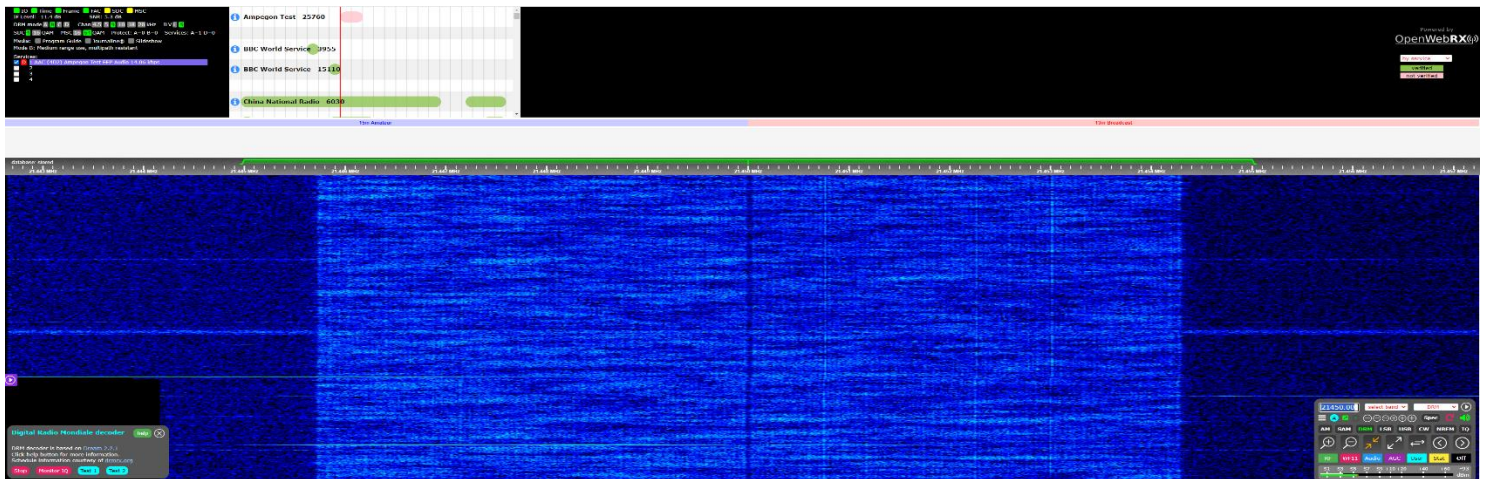
18100.6 kHz CF: XXX. unidentified digital bursts. Jammer. BW ca 3 kHz

Other transmissions sent in unknown modes, also used as jammers, and sometimes, long-lasting were also received, such as those recently operated on 7042 kHz CF and 7168 kHz, although less frequently than in previous months, among others.



28001.5 kHz CF: XXX. Unidentified continuous signal. Jammer. BW ca 3K0E

Spurious signal of the broadcasting station KTRW (Guam), transmitting on 9900KHz A3E, were sometimes heard on the 30-meter band, on 10124 kHz CF and 10134 kHz CF. A DRM ([Digital Radio Mondiale](#)) transmission (Broadcasting; OFDM) from China was received in the 15-meter band, on 21450 kHz CF. BW = 9K0E. Transmissions of an unknown broadcasting station on, most probably being an harmonic or an intermodulation product were sometimes received on 28260 kHz CF (BW = 10K0E. A3E – AM).



DRM (Broadcasting; OFDM) transmission on 21450 kHz CF. CHN. BW = 9K0E

To this large array of intrusions, we must also add the brief but numerous ones supposedly carried out by Russian female taxi operators in FM, as well as those sent by fishing buoys (A1A - CW or F1B - FSK), datawell buoys (F1B), CBers (A3E and F3E) and pirates on the 10-meter band; those of Spanish fishermen on 15 meters operating very frequently on 21 kHz J3E-U (USB), and various "village-radio" type transmissions on different bands coming from countries in the ITU region 3.

- **Find other screenshots about the intrusions received during November 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, (or also 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 | **Radar** = if exact mode unknown | **SH** = Shift (Hz) | **sps** = sweeps per second | **TDoA** = Time difference of arrival | **ui** = **unid** = unidentified.

DARC; Daniel, DL3RTL. Credit to monitors: DL8TOP, Tobias; DL2SCH, Jürgen; DL8LAQ, Norbert; DL1GBZ, Martin; DK4BX, Erwin; DL8NBM, Horst; F4FPR, Benjamin; DO1LR, Christian; DL4YCD, Jürgen; DC7RF, Robert; DL4MFH, Alfons; DL7GAO, Uwe; DF5JL, Tom; DB3TA, Alex

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7000,0	1918	02	11						Idle of unident mode
7025,0	1950	29	11	RUS		F1B	50	200	CIS-36-50 / CIS-50-50
7025,0	1906	30	11	RUS		F1B	50	200	CIS-36-50 / CIS-50-50
7025,0	1925	30	11	RUS		F1A			18 WPM, encrypted, RDL, RUS NY St.Petersburg
7032,0	vt	vd	11	UKR		J3E-U		3k	RUS/UKR radio war
7041,9	1918	02	11					9k2	unid
7051,7	1636	22	11					1k3	unid
7051,7	1830	23	11					1k3	unid
7055,0	1505	26	11			J3E-L		3k	RadioWar RUS-UKR / male Voiceaudio
7060,0	1505	26	11			J3E-L		3k	RadioWar RUS-UKR / male Voiceaudio
7065,0	1820	21	11	RUS		FMOP	40	12k	OTHR Contayner
7066,0	1922	02	11	RUS		FMOP	40	12k	OTHR Contayner
7068,0	0803	05	11	UKR		J3E-L		3k	RUS/UKR radio war
7070,0	1605	27	11			J3E-L		3k	RadioWar RUS-UKR / male Voiceaudio
7085,0	1608	26	11			J3E-L		3k	RadioWar RUS-UKR / male Voiceaudio
7088,0	1737	26	11	RUS		FMOP	40	12k	OTHR Typ Contayner RUS
7090,0	1918	02	11						Idle of unident mode
7090,0	0757	05	11					7k	unid
7090,0	1628	26	11			J3E-L		3k	RadioWar RUS-UKR / male Voiceaudio
7094,0	1715	24	11			J3E-L		3k	RadioWar RUS-UKR
7100,0	vt	vd	11			J3E-L		3k	RadioWar RUS-UKR
7105,0	1653	27	11			J3E-L		3k	RadioWar RUS-UKR / male Voiceaudio
7107,0	1852	23	11	RUS		FMOP	40	12k	OTHR Contayner
7115,0	1928	02	11	RUS		FMOP	40	12k	OTHR Typ Contayner RUS
7123,0	1735	21	11	RUS		FMOP	40	12k	OTHR Contayner
7160,8	1952	20	11			PSK		2k4	LINK11 SLEW
7160,8	1805	21	11			PSK		2k4	LINK11 SLEW
7168,5	2208	02	11					9k2	unid
7170,0	1832	01	11	RUS		FMOP	40	12k	OTHR Typ Contayner RUS
7171,0	1840	01	11	RUS		FMOP	40	12k	OTHR Contayner
7180,0	vt	vd	11	RUS		FMOP	40	12k	OTHR Contayner
7192,0	vt	vd	11	RUS		FMOP	40	12k	OTHR Contayner
7193,0	1925	15	11	RUS		FMOP	40	12k	OTHR Contayner
7196,0	1824	01	11	RUS		FMOP	40	12k	OTHR Typ Contayner RUS
10110,0	1809	03	11	RUS		FMOP	40	12k	OTHR Typ Contayner RUS
10124,0	vt	vd	11	Gua m	KTWR Guam	(A3E)		2k	spurious signal of KTWR Guam 9900KHz
10130,0	1615	22	11	G		FMCW	50	20k	OTHR Pluto Cyprus
10134,0	1244	25	11	Gua m	KTWR Guam	(A3E)		2k	spurious signal of KTWR Guam 9900KHz
14130,0	0800	12	11	UKR		J3E-U		3k	RUS/UKR radio war
14159,0	1544	26	11	RUS		FMOP	40	12k	OTHR Contayner
14190,0	0900	26	11	CHN			10	160k	OTHR wideband
18107,0	1124	12	11	RUS		F1B	50	200	CIS-36-50
21000,0	vt	vd	11			J3E-U		2k7	pirates, suspect spanish fishermen

DARC; Daniel, DL3RTL. Credit to monitors: DL8TOP, Tobias; DL2SCH, Jürgen; DL8LAQ, Norbert; DL1GBZ, Martin; DK4BX, Erwin; DL8NBM, Horst; F4FPR, Benjamin; DO1LR, Christian; DL4YCD, Jürgen; DC7RF, Robert; DL4MFH, Alfons; DL7GAO, Uwe; DF5JL, Tom; DB3TA, Alex

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21109,0	0820	01	11	CHN			10	160k	OTHR wideband
21110,0	0848	19	11	CHN		FMCW	41,67	10k	OTHR 6,1s bursts
21169,0	1415	04	11	RUS		FMOP	40	12k	OTHR Contayner
21175,0	1426	26	11	G		FMCW	50	20k	OTHR Pluto Cyprus
21178,0	0932	05	11	CHN		FMCW	41,67	10k	OTHR 6,1s bursts
21183,0	0736	01	11	CHN		FMCW	41,67	10k	OTHR 6,1s bursts
21246,0	0734	01	11	CHN		FMCW	50	10k	OTHR continuous mode
21288,0	0739	01	11	CHN		FMCW	41,67	10k	OTHR 6,1s bursts
21320,0	0736	01	11	CHN		FMCW	41,67	10k	OTHR 6,1s bursts
21346,0	0932	05	11	CHN		FMCW	66,67	10k	OTHR 3,8s bursts
21352,0	0813	12	11	CHN		FMCW	66,67	10k	OTHR 3,8s bursts
21353,0	0811	12	11	CHN		FMCW	66,67	10k	OTHR 3,8s bursts
21370,0	0736	01	11	CHN		FMCW	41,67	10k	OTHR 6,1s bursts
21370,0	1113	01	11	G		FMCW	50	20k	OTHR Pluto Cyprus
21407,0	0812	12	11	CHN		FMCW	41,67	10k	OTHR 6,1s bursts
21415,0	1648	04	11	RUS		FMOP	40	12k	OTHR Typ Contayner RUS
21415,0	1110	19	11	G		FMCW	50	20k	OTHR Pluto Cyprus
21438,0	1245	21	11	RUS		A1A		10Hz	RUS navi in area of Sevastopol / Crimea WX QTC
21438,0	0833	23	11	RUS		A1A		10Hz	RUS navi in area of Sevastopol / Crimea WX QTC
24948,0	0935	05	11	CHN		FMCW	50	10k	OTHR 5,1s bursts
28155,0	0906	19	11	G		FMCW	25	20k	OTHR Pluto Cyprus
28155,0	0920	19	11	G		FMCW	10	40k	OTHR Pluto Cyprus
28820,0	0926	05	11	G		FMCW	50	20k	OTHR Pluto Cyprus
28845,0	1414	04	11	G		FMCW	25	20k	OTHR Pluto Cyprus
29310,0	1136	25	11	G		FMCW	10	40k	OTHR Pluto Cyprus
29450,0	vt	vd	11	IRN			150/313	45k	Iranian OTHR 9,98/7,19s bursts
29500,0	1205	19	11	IRN			150/313	45k	Iranian OTHR 9,98/7,19s bursts
29630,0	1222	28	11	G		FMCW	50	20k	OTHR Pluto Cyprus

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3623	2358	12	11	UKR/ RUS		LSB			Russian-Ukrainian radio war. Loud and persistent.
7000	2115	17	11	E or MM		USB			Group of Spanish fishermen chatting. Ends at 2135z.
7000	2110	14	11	MM		USB			Group of Japanese males talking. Ends 2125z.
7000	2100	17	11	CHN		AM			China Radio Chinese Service. Mixing product from other frequencies in use. Weak to medium signal. Still on the next evening.
7050	1440	5	11	RUS/ UKR		LSB			Russian-Ukrainian radio war. Loud and persistent.
7195	1440	5	11			F1B			Medium signal. Persistent.
10128	1540	29	11	CHN		AM			Chinese Radio Chinese service. Mixing product out of other frequencies in use.

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14191	730	20	11	RUS		F1B			Russian navy, Kaliningrad. Loud and persistent. Every day all hours of daylight.
18165	950	10	11	G		RADAR			Radar from 18165 to 18220 kHz. Huge and persistent. UK SBA, Cyprus
21000	1155	16	11	E or MM		USB			Group of Spanish fishermen. Medium signals.
21215	900	27	11	G		RADAR			Radar from 21215 to 21230 kHz. Strong and persistent. UK SBA, Cyprus
21425	1435	5	11			F1B			Medium signal.
21438	1400	3	11	UKR		CW			Russian navy Sevastopol. Daily, medium to strong signals. On and off.
25000	1625	11	11	E or MM		USB			Spanish fishermen. Medium signals. Also heard 4 th at 1205z.
28530	1130	17	11	G		RADAR			Radar from 28530 to 28560 kHz. Strong and persistent. UK SBA, Cyprus
28560	1130	13	11	G		RADAR			Radar from 28560 to 28575 kHz. Weakish signals. UK SBA, Cyprus
28580	1230	13	11	G		RADAR			Radar from 28580 to 28610 kHz. Very strong and persistent. UK SBA, Cyprus
28630	955	19	11	G		RADAR			Radar from 28630 to 28670 kHz. Very strong and persistent. UK SBA, Cyprus
28720	1230	4	11	RUS		FM			Russian taxi service, female voices. Very strong.
28820	1245	30	11	IRN		RADAR			Radar from 28820 to 28920 kHz. Strong and persistent.
28830	1415	4	11	G		RADAR			Radar from 28830 to 28860 kHz. Medium signal. UK SBA, Cyprus
28925	1230	4	11			FM			South East Asian fishermen. Weak to medium signals. In and out.
29020	1435	3	11	G		RADAR			Radar from 29020 to 29070 kHz. Very strong and persistent. UK SBA, Cyprus
29100	1130	1	11			FM/AM			Carrier. Persistent. Almost daily with a medium to very strong signal.
29140	1200	4	11	G		RADAR			Radar from 29140 to 29160 kHz. Also heard on 16 th at the same time with same strength. UK SBA, Cyprus
29210	1108	13	11			AM			Russian male voices. Could be military from RUS/UKR area.
29350	1250	30	11	IRN		RADAR			Radar from 29350 to 29450 kHz. Strong and persistent.
29415	1355	25	11	IRN		RADAR			Radar from 29415 to 29495 kHz. Very strong and persistent.
29420	1430	5	11	IRN		RADAR			Radar from 29420 to 29520 kHz. Strong and persistent.
29472	1345	28	11	G		RADAR			Radar from 29472 to 29494 kHz. Strong and persistent. UK SBA, Cyprus
50595	1410	4	11	IRN		RADAR			Radar from 50595 to 50620 kHz. Medium to strong signals.

PZK; SP3AMO, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7192.0	1825	12	11			RADAR		12K0E	S9+

PZK; SP3AMO, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7192.0	1045	10	11			F1B		200H	599++
14104.0	1140	01	11			RADAR		10K0E	5 sec burst
14198.5	0715	13	11			XXX		2K0E	S9
14289,5	1240	08	11			XXX		2K5	S9
14308.7	0718	13	11			XXX		3K0E	S8
14320.5	1210	10	11			XXX		3K0E	S9+
18165.0	0719	14	11			RADAR	50	20K0E	
21108.0	0733	13	11			RADAR		10K0E	5 sec burst
21185.0	0720	13	11			RADAR		20K0E	S9
21201.0	0925	03	11	CHN		RADAR		10K0E	S7 foghorn
21246.0	08150	01	11	CHN		RADAR		10K0E	S7 foghorn
21300.0	0720	13	11			RADAR		160K0E	long bursts
21315.0	0726	14	11			RADAR	50	10K0E	
21365.0	0920	03	11			RADAR		10K0E	3 sec burst foghorn
21370.0	1135	01	11			RADAR		20K0E	S9
21397.0	0730	13	11	CHN		RADAR		10K0E	3 sec burst + 21432.0, 21050.0
21415.0	1140	01	11			RADAR		10K0E	5 sec burst
21426.0	1033	15	11			RADAR		12K0E	S9+
24950.0	0820	13	11	CHN		RADAR		10K0E	3 sec burst
24965.0	0745	13	11	CHN		RADAR		10K0E	3 sec burst
28730.0	0920	03	11			RADAR		10K0E	3 sec burst foghorn
28825.0	1254	18	11			RADAR	25	20K0E	
28910.0	1125	04	11	G		RADAR		20K0E	S9++
29350.0	1328	13	11	IRN		RADAR		100K0E	S9
29500.0	0731	14	11	IRN		RADAR	150/300	46K0E	
29525.0	1330	13	11			RADAR		20K0E	S9+
50300.0	1130	08	11			RADAR		40K0E	S4

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7 MHz	1630-0500	*	11	RUS		RADAR	40 sps	13k0E	*) Days: 2. - 11. 13. - 16. 19. 23. 25. (WebSDR 25d)
7000.0	1230-1920	03 - 30	11			A3E			Weak modulation, Chinese?
7006.5	1145	10	11	RUS		F1B		500H	
7008.0	1250	07	11	RUS		F1B		250H	
7009.0	1200	01	11	RUS		F1B/ NON		200H	
7010.0	0750-1745	*	11	RUS		J7D	120	2k60E	*) Days: 2. 3. 8. 14. 20.
7011.0	1340-1405/	27	11	RUS		J7D	120	2k60E	Strong signal, Leningrad oblast
7014.0	0915-1140	17 18	11	RUS		J7D	120	2k60E	
7014.0	0510-1148/	*	11	RUS		F1A/ NON		250H	*)Days: 10. 14. 20.
7019.0	0840-1630	23	11	RUS		F1B		200H	
7023.0	0615-	15	11	RUS		J7D	120	2k60E	

SRAL; Pekka, OH2BLU									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
	1400	16							
7030.0	0655-1630	21 27	11	RUS		F1B		250H	
7032.0	0500-2000	01 - 30	11	RUS		J3E-u		3k50	Non-stop Russian anthem / mx, spur to 7000.0 & 7064.5 & 7101.7
7032.0	0000-2400	01 - 30	11	RUS		J3E-u		2k50	Brum (50 Hz), when no music, begins after 1 sec, when mx off.
7036.0	1545-1551/	28	11	RUS		F1B		250H	
7042.0	1500-2000	01 - 22	11			jam		7k50E	// 7168 kHz
7051.7	0600-1915	*	11			XXX		1k2E	*) Days: 1. 23. 24. (44 Hz & 1200 Hz)
7054.0	1100-1900	01 - 30	11	RUS		F1B		250H	
7057.5	1445-1501/	30	11	RUS		F1B		250H	
7087.0	1140-1505/	23	11	RUS		F1B		500H	
7098.0	0750-0930/	*	11	RUS		F1B		250H	*) Days: 2. 14. 30.
7101.0	1405	03	11	RUS	WYBR	A1A	18wpm	40H	5BL
7110.0	1515-1805/	01 - 04	11	ETH	R. Ethiopia	A3E			Weak mod.
7159.0	1300-1930	*	11	IW		G7D		2k30E	*)Days: 7. 9. 13. 14. 16. 18. 19. LINK11, mostly usb
7167.0	1310-1830	02	11	RUS		F1B		200H	
7168.0	1500-2000	01 - 17	11			jam		7k50E	// 7042 kHz
7172.0	0500-0600	09	11	RUS	RIB2	A1A		40H	5F
7172.0	1500-1517/	14	11	RUS		F1B		200H	
7179.0	0745-0810/	03	11	RUS		F1B		200H	
7182.0	0630-1645	09 10	11	RUS		F1A/ NON		200H	5BL
7186.0	0600-1345/	14	11	RUS		J7D	120	2k60E	
7192.0	0730-0910	30	11	RUS		J7D	120	2k60E	
7193.0	0600-1500	02 - 15	11	RUS	RDL	F1B/A/ NON		200H	
7195.4	0905-1530	23 24	11	RUS	U	A1A		50H	U and dash every 7 sec, chirpy
7198.0	1155-1203/	25	11	RUS		J7D	120	2k60E	
10 MHz			11	G		RADAR	50sps	20k0	(WebSDR 9d)
10 MHz	1615-1930	08	11	RUS		RADAR	40sps	13k0E	(WebSDR 6d)
10124A	1430-1600	01 - 30	11	TWN	KTWR	xxx		5k0E	// 9900 kHz, chirpy spurious
10134A	1100-1300	01 - 30	11	TWN	KTWR	xxx		5k0E	// 9910 kHz, chirpy spurious, also DRM (as on scedule)

SRAL; Pekka, OH2BLU									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14 MHz	1000-1915	*	11	RUS		RADAR	40sps	13k0E	*) Days: 1. 2. 3. 25. 26. (WebSDR 13d)
14 MHz	0715-1400	*	11	CHN		RADAR	50/67sps	10k0E	*) Days: 5. - 8. 10. 16. 17. 21. 29. 30. 'foghorn'
14002.0	0500-2000	03 - 09	11	GUM		F1B		850H	
14026.0	/1025-	21	11	RUS		J7D	120	2k60E	
14170.0	0845-1000/	26	11	CHN		RADAR	10 sps	160k	
14192.0	0600-1530	01 - 30	11	RUS		F1B		200H	
14206.0	1125	19	11	CHN		RADAR	50 sps	10k	
14258.0	0715-0845	20 21	11	RUS		F1B		500H	
14269.0	0845	16	11			jam		9k0E	30 bursts / min
14336.0	0430-0600/	01 - 19	11	RUS		F1B		200H	
14390.0	1010-1018/	11	11	CHN		RADAR	10 sps	160k	
18 MHz	0530-1515	*	11	G		RADAR	50 sps	20k0	*) Days: 8. 9. 11. 13. 14. 25. (WebSDR 6d)
18 MHz	0630-1530	*	11	RUS		RADAR	40 sps	13k0E	*) Days: 8. 9. 13. 14. 17. 18. 25. (WebSDR 20d)
21 MHz	0615-1430	*	11	G		RADAR	25/50sps	20k0	*) Days: 1. 3. 4. 7. 8. 13. 14. 16. 18. 19. 27. (WebSDR 11d)
21 MHz	0600-1700	*	11	RUS		RADAR	40 sps	13k0E	*) Days: 2. 3. 9. 10. 15. 16. 18. 20. 23. 24. (WebSDR 18d)
21 MHz	0600-1000	*	11	CHN		RADAR	50 sps	10k0	*) Days: 1. 3. 14. 24. 27. (WebSDR 7d)
21 MHz	0600-1230	*	11	CHN		RADAR	50/67sps	10k0E	*) Days: 1. - 4. 6. 9. - 13. 24. 25. 29. 'foghorn'
21020.0	1120	02	11			jam		7k5E	
21220.0	0830-0930/	13	11	CHN		RADAR	10 sps	160k	
21438.0	/0830-1430	01 - 30	11	RUS	RCV	A1A	24 wpm	40H	Navip etc.
24 MHz	0715-0930	24	11	G		RADAR	50 sps	20k	
24 MHz	0615-0856/	28	11	G		RADAR	50 sps	20k	
24 MHz	1015-1445	*	11	RUS		RADAR	40 sps	13k0E	*)Days: 2. 6. 22. (WebSDR 7d)
28 MHz	0600-1445	*	11	G		RADAR	12.5/25/50sps	20k0	*) Days: 2. 4. 8. 9. 11. - 14. 16. 17. 19. 21. 24. 27. - 30. (WebSDR 24d)
28 MHz	0600-1530	*	11	IRN		RADAR	150/313	60k0E	*) Days: 1. 2. 5. 8. 9. 11. - 15. 19. 25. 29. (WebSDR 25d)
28 MHz			11	IRN		RADAR	310/870	120k0E	
28860.0	0730-1530	*	11	IRN		RADAR	150/313	60k0E	*) Days: 1. 29. 30. (WebSDR 3d)
29615.0	1235	02	11	CHN		RADAR	10 sps	40k	
28 MHz	0700-1330	*	11	RUS	Taxi disp.	F3E		3k0E	*) Days: 1. - 5. 7. 9. 10. 11. 14. 15. 17. 22. 23. 30. 72 reports

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
6992.0	17:17	17	11	RUS		RADAR	40	12K0W	OTHR Contayner. Splatter to 7003 kHz
6994.0	18:10 vt*	10 vd*	11	RUS		RADAR	40	12K0E	OTHR Contayner. Splatter to 7003 kHz *Also on 16/11, 1707 UTC
7000.0	20:06	08	11			A3E			A3E. BC. Asian language
7009.0 USB	09:04	30	11			XXX		2K40E	Unidentified digital bursts
7010.0	08:25 vt*	08 vd*	11			J7D	120	2K70E	CIS-12 *Also on 20/11, 0851 UTC
7011.0	13:56	27	11			J7D	120	2K70E	CIS-12
7011.0	17:25	29	11	CHN		RADAR	50	10K0E	OTHR short bursts
7014.0	09:06	17	11			J7D	120	2K70E	CIS-12
7014.0	08:38	20	11			F1B		250H	
7022.8	16:30	08	11			XXX		CA3K20E	XXX. Unidentified continuous signal. Probably, jammer
7023.0	07:35	08	11			J7D	120	2K70E	CIS-12
7025.0	20:08 vt*	08 vd*	11	RUS	RDL	F1B F1A	50	200H	*Often. 15 reports
7030.0	07:13	27	11			F1B	50	250H	
7036.0	17:27	20	11			F1B	50	250H	
7042.0	16:35 vt*	08 vd*	11			XXX		10K0E	Jammer. *Also on 10,12,13,14,15,16 & 17/11; vt
7051.0	07:51	24	11			XXX		CA1K5E	Jammer. Jamming the 7051.7 kHz TDL system
7051.7	07:13 vt*	20 vd*	11			XXX	1200	1K20E	TDL (Tactical Data Link) *Also on 21/11, 0658 UTC
7054.0	16:37 vt*	08 vd*	11	RUS		F1B	50	200H	*Often. 15 reports
7056.2	07:34 vt*	08 vd*	11			NON			Carrier. *Also on 09/11, 0738 UTC
7062.0	17:33	19	11	RUS		RADAR	40	12K0E	OTHR Contayner
7064.0	17:08	16	11	RUS		RADAR	40	12K0E	OTHR Contayner
7066.0	08:32	24	11			F1B	50	200H	
7069.0	08:13	12	11			J7D	120	2K70E	CIS-12
7070.0 USB	17:48	25	11			J7D	125	1K75E	MIL-188-141A ALE
7089.0	17:54	19	11	RUS		RADAR	40	12K0E	OTHR Contayner. *Also on 7062 kHz CF. 2 simultaneous TX on 40m
7089.8	21:03	28	11			G1D	2400	2K40E	LINK-11 SLEW
7090.0 USB	18:04	15	11			J3E-L		2K80E	UKR/RUS "radiowar"
7092.0 USB	17:29	25	11			J7D	125	1K75E	MIL-188-141A ALE
7094.0	21:02	28	11	CHN		RADAR	50	10K0E	OTHR short bursts
7095.0 USB	17:24	25	11			J7D	125	1K75E	MIL-188-141A ALE
7097.0	21:07	15	11	RUS		RADAR	40	12K0E	OTHR Contayner
7098.0	09:06	30	11			F1B	75	250H	
7100.0	17:35	12	11			J3E-L			J3E-L. UKR/RUS "radiowar"
7108.0	17:30	12	11	RUS		RADAR	40	12K0E	OTHR Contayner
7111.0 LSB	17:17 vt*	16 vd*	11			G7D	60	CA2K50E	CHN-30 *Also on 26/11, 1838 UTC

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7111.0	17:52	16	11	RUS		RADAR	40	12K0E	OTHR Contayner. *Also on 7064 kHz CF. 2 simultaneous TX on 40m
7123.0	08:36	20	11			J7D	120	2K70E	CIS-12
7139.0	17:09	17	11	CHN		RADAR	50	10K0E	OTHR short bursts
7147.0 LSB	17:20 vt*	25 vd*	11			G7D	60	2K5E	CHN 30 *Also on 26/11, 1840 UTC
7155.0	17:47	28	11	CHN		RADAR	50	10K0E	OTHR short bursts
7159.0	17:37 vt*	13 vd*	11			G7D	75	2K40E	LINK-11 CLEW SSB. *Also on 14/11 1613 UTC & 19/11, 1801 UTC
7162.0	07:10	27	11	RUS		F1B	75	250H	
7163.0	17:10	17	11	CHN		RADAR	66.7	10K0E	OTHR short bursts; alternating 66.7 and 50 sps bursts
7164.0	08:34	20	11			J7D	120	2K70E	cis-12
7167.0	17:10	16	11	CHN		RADAR	50	10K0E	OTHR short bursts
7168.0	17:40	12	11			XXX		10K0E	Jammer. <u>Same as on 7042 kHz CF</u> *Also on 08, 10, 12, 13, 14 & 17/11, vt
7169.5	14:23	17	11			XXX		CA2K0E	Unidentified bursts
7170.0	16:06	14	11	RUS		F1B	75	200H	
7171.0 LSB	18:10	15	11			G7D	60	2K50E	7171 kHz LSB: CHN-30 *Also on 26, 27, 28 & 29/11; vt
7177.0	18:13	25	11	RUS		RADAR	40	12K0E	OTHR. Contayner
7179.0	17:35	13	11	RUS		RADAR	40	12K0E	OTHR Contayner
7180.0	17:16	16	11	CHN		RADAR	40	10K0E	OTHR short bursts
7184.0	21:12	14	11	RUS		RADAR	40	12K0E	OTHR Contayner
7185.0 USB	21:17	28	11			XXX		2K40E	Unidentified bursts
7186.0	07:23	14	11			J7D	120	2K70E	CIS-12
7192.0	17:37	12	11	RUS		RADAR	40	12K0E	OTHR Contayner. Also on 7108 kHz CF. 2 simultaneous TX on 40m
7192.0 USB	17:34	25	11			J7D	125	1K75E	MIL-188-141A ALE
7193.0	08:34	09	11			F1B	50	200H	
7193.0	19:30	15	11	RUS		RADAR	40	12K0E	OTHR Contayner
7205.0	17:32	25	11		CRI	A3E			BC. China Radio International. Splatter to 7195 kHz
10090.0	16:27	28	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus. Splatter to 10104 kHz
10145.0	17:26	17	11	CHN		RADAR	50	10K0E	OTHR short bursts
10148.0	22:00	12	11	AUS		RADAR	6.9	11K0E	OTHR JORN bursts; with short intro tone
14001.5	08:38	15	11			XXX		CA2K80E	XXX. Unidentified continuous signal
14002.0	06:43 vt*	08 vd*	11	GUM		F1B	50	850H	*Also on 09, 12, 13 14 & 15/11; vt. Long-lasting
14026.0	09:09	12	11			J7D	120	2K70E	CIS-12
14045.0 USB	07:56	20	11			XXX	2400	2K40E	Unidentified PSK bursts
14052.0	10:48	16	11			J7D	120	2K70E	CIS-12; with carrier on 14050 kHz
14053.0	09:40	16	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
14070.0	08:42	27	11			J7D	120	2K70E	CIS-12
14075.0	08:28	17	11			XXX		50H	Overdriven continuous signal. Disturbing FT-8. *Also on 18, 19 & 20/11; vt
14075.0	09:24	27	11			XXX		CA12K0E	XXX. Unidentified bursts. Disturbing FT-8

URE; Gaspar, EA6AMM

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14080.0	06:57	20	11			J7D	125	1K75E	14080 kHz USB: MIL-188-141A ALE
14087.0 USB	07:41 vt*	08 vd*	11			XXX		2K40E	Unidentified signal. BD = 45 sec. BRI = 53 sec. *Also on 09/11, 0750 UTC
14089.0	07:06	08	11			J7D	120	2K70E	CIS-12
14098.5	07:30 vt*	09 vd*	11			F1D	600	600H	DPRK-FSK 600 ARQ *Often. 13 reports
14102.0	08:21	13	11			W7D	30	2K80E	CIS-60
14107.5	06:59	27	11			F1D	600	600H	DPRK-FSK 600 ARQ
14100.0	08:48	30	11			XXX	CA9K40 E		XXX. Unidentified digital bursts
14112.0	09:16	14	11	RUS		RADAR	40	12K0E	OTHR Contayner
14113.5	06:50 vt*	08 vd*	11			F1D	600	600H	DPRK-FSK 600 ARQ *Also on 27/11, 0650 UTC
14116.0	07:27	19	11			F1B	50	250H	
14118.0	09:13	25	11			J7D	120	2K70E	CIS-12
14119.0	09:27 vt*	18 vd*	11	CHN		RADAR	50	10K0E	OTHR short bursts *Also on 30/11, 0938 UTC
14128.0	12:35	28	11			J3E-U		3K0E	USB. UKR/RUS "radiowar"
14130.0	08:08	12	11			J3E-U		2K80E	USB. UKR/RUS "radiowar" *Also on 27/11, 0953 UTC. Long-lasting
14143.5	08:19	08	11			F1D		1K20E	FSK 1200 ARQ. DPRK?
14148.0	11:13	08	11	CHN		RADAR	50	10K0E	OTHR short bursts
14154.0	08:25	14	11			J3E-U		2K80E	J3E-U. Audio loops, UKR/RUS "radiowar"
14155.0	08:42	13	11			J3E-U		2K80E	J3E-U. UKR / RUS "radiowar"
14159.0	14:12	26	11	RUS		RADAR	40	12K0E	OTHR Contayner
14160.0	14:15 vt*	14 vd*	11			J3E-U			USB. UKR/RUS "radiowar" *Also on 15, 17 & 19/11; vt
14162.0	12:38 vt*	14 vd*	11			J3E-U		2K80E	USB. UKR/RUS "radiowar" *Also on 25/11, 0804 UTC
14167.0	11:15	08	11	CHN		RADAR	50	10K0E	OTHR short bursts
14169.0	07:51	20	11			F1B	50	200H	
14169.0*	11:21	24	11			J3E-U		2K80E	USB. UKR/RUS radiowar. 1125 UTC, QSY to *14170 kHz USB
14169.0	08:21	27	11			F1B	50	200H	
14170.0	08:46	26	11	CHN		RADAR	10	160K0E	Wideband OTHR. Continuous TX
14170.0	09:11	26	11	CHN		RADAR	10	40K0E	OTHR
14171.0	06:52 vt*	09 vd*	11			J7D	120	2K70E	CIS-12. *Also on 13/11, 0709 UTC & 27/11, 0719 UTC
14171.0	13:55	15	11			J3E-U		2K80E	USB. UKR/RUS "radiowar"
14179.0	15:38	09	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
14179.0	14:23	26	11	RUS		RADAR	40	12K0E	OTHR Contayner. *Also on 14159 kHz CF. 2 simultaneous TX on 20m
14180.0	08:47	13	11			J3E-U			USB. UKR/RUS "radiowar"
14182.0	14:16	18	11	RUS		RADAR	40	12K0E	OTHR Contayner
14191.9	08:43	30	11			NON			Carrier. Most probably from RUS F1B system on 14192 kHz CF
14192.0	06:49 vt*	08 vd*	11	RUS		F1B	50	200H	*Almost daily. 21 reports
14192.0	15:47	24	11	RUS		RADAR	40	12K0E	OTHR Contayner
14198.5	07:02 vt*	08 vd*	11			F1D	600	600H	DPRK-PSK 600 ARQ *Often. 8 reports

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14198.5	07:10	13	11			G1D		1K20E	DPRK-PSK 1200 ARQ
14206.84*	13:39	30	11			F1D	600	600H	DPRK-FSK 600 ARQ (master; *slave TX on 14208.60 kHz CF)
14219.0	14:36	16	11	RUS		RADAR	40	12K0E	OTHR Contayner
14225.0 USB	07:38	16	11			J7D	125	1K75E	MIL-188-141A ALE
14227.4	08:34	13	11			XXX			2 carriers. Spacing = 745 Hz. Long-lasting
14240.0	08:19	24	11			F1B	50	250H	
14242.0	07:39	29	11			J7D	120	2K70E	CIS-12
14249.0	13:04	09	11	CHN		RADAR	50	10K0E	OTHR short bursts
14254.5	11:57	17	11			XXX		2K40E	Unidentified continuous signal. Long-lasting
14258.0	06:56 vt*	14 vd*	11			F1B	50	500H	*Also on 20/11, 0744 UTC
14261.0 USB	06:50	20	11			XXX		2K40E	Unidentified digital bursts
14269.0	08:45	16	11			XXX		CA3K0E	Unidentified bursts. Jammer
14270.0	06:46	24	11			NON			Carrier
14279.0	11:17	08	11	CHN		RADAR	50	10K0E	OTHR short bursts
14290.0	16:10	30	11	SOM		A3E		10K0E	A3E (AM). BC. Arabic language. Somalia. Female and male speakers. Also RX on several EU KiwiSDR
14293.0	06:54	28	11			F1B	50	200H	
14295.0	07:28	09	11			J7D	120	2K70E	CIS-12
14298.5	07:29 vt*	24 vd*	11			F1D	600	600H	DPRK-FSK 600 ARQ *Often. 13 reports
14300.0	08:53	20	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
14303.5	07:36	29	11			F1D	600	600H	DPRK-FSK 600 ARQ
14307.8	08:01	28	11			F1A	75	170H	
14308.0	13:13 vt*	17 vd*	11			F1B	75	500H	*Also on 27/11, 0745 UTC & 30/11, 0803 UTC
14312.0	08:03	30	11			F1B	75	500H	QSY to 14311.5 kHz CF at 0804 UTC
14314.0	12:23	14	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
14315.0 USB	06:47	20	11			J7D	125	1K75E	MIL-188-141A ALE
14327.0	08:11	08	11			W7D	30	2K80E	OFDM. CIS-60
14329.0	09:43	16	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
14331.0	10:13	10	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
14348.0	10:47	30	10	CHN		RADAR	41.7	10K0E	OTHR short bursts
14414.0	09:31	20	11	CHN		RADAR	10	160K0E	Wideband OTHR. Partially inside the 20m band
18050.0	07:31	27	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus. Splatter to 18080 kHz
18069.0	08:40	13	11	RUS		RADAR	40	12K0E	OTHR Contayner
18090.0	08:00	20	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
18100.0	09:08	17	11			XXX		CA100H	Overdriven continuous signal. Disturbing FT-8
18100.6	07:38	24	11			XXX		CA3K0E	XXX. Unidentified digital bursts. Disturbing FT-8
18106.0	07:52	14	11			XXX		CA20K0E	XXX. Unidentified digital bursts. BW ca 20K0E. Disturbing FT-4
18125.0	06:53	13	11			NON			Carrier

URE; Gaspar, EA6AMM

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
18140.0	07:34	14	11	RUS		RADAR	40	12K0E	OTHR Contayner
18148.0	07:33	09	11	RUS		RADAR	40	12K0E	OTHR Contayner
18158.0	08:56	17	11	RUS		RADAR	40	12K0E	OTHR Contayner
18163.0	07:31	28	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
18164.0	12:54	12	11	RUS		RADAR	40	12K0E	OTHR Contayner
18164.0	07:04	17	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
18165.0	07:01 vt*	14 vd*	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus *Also on 16/11, 1420 UTC
18167.0	15:36	09	11	RUS		RADAR	40	12K0E	OTHR Contayner
18168.0	08:06	13	11	RUS		RADAR	40	12K0E	OTHR Contayner
18170.0	10:28 vt*	08 vd*	11	RUS		RADAR	40	12K0E	OTHR Contayner *Also on 25/11, 0708 UTC
18170.0	12:41	25	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
18172.0	07:28 vt*	08 vd*	11	RUS		RADAR	40	12K0E	OTHR Contayner. Also on 17/11, 0819 UTC & 26/11, 1239 UTC
18176.0	07:24	10	11	RUS		RADAR	40	12K0E	OTHR Contayner. Splatter to 18162 kHz
18179.0	08:59	11	11	RUS		RADAR	40	12K0E	OTHR Contayner. Splatter to 18165 kHz
18180.0	07:33	16	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus. Splatter to 18160 kHz
21000.0	08:13 vt*	09 vd*	11			J3E-U			J3E-U. Spanish fishers *Also on 27/11, 0930 UTC
21035.0 USB	09:12 vt*	15 vd*	11		DN3 CD1	J7D	125	1K75E	MIL-188-141A ALE 2G. *Also on 20/11, 0857 UTC
21035.0 USB	09:26	16	11		DN3 CD1	J7D	125	2K75E	MIL-188-141A ALE 2 G + robust
21063.5 USB	07:42	08	11			G1D	2400	2K40E	MIL-188-110A
21088.0	08:37	16	11	CHN		RADAR	50	10K0E	OTHR short bursts
21096.0 USB	09:04	10	11			J7D	125	1K75E	MIL-188-141A ALE
21103.0	08:58	15	11	CHN		RADAR	50	10K0E	OTHR short bursts
21105.0	07:49	13	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21108.4	08:52	19	11			F1D	600	600H	DPRK-FSK 600 ARQ
21110.0	08:54	19	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
21110.0	14:05	30	11	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus
21117.4	07:03	27	11			F1D	600	600H	DPRK-FSK 600 ARQ
21132.0	08:07	27	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
21139.0	10:16	25	11	CHN		RADAR	50	10K0E	OTHR short bursts
21145.0 USB	08:00 vt*	10 vd*	11	MRC	Q2 Q6 P2 P4 P6 VX1 MIRADOR2	J7D	125	1K75E	MIL-188-141A ALE *Often. 10 reports
21154.0	09:11	27	11	CHN		RADAR	50	10K0E	OTHR short bursts
21161.0	07:27	17	11	RUS		RADAR	40	12K0E	OTHR Contayner
21163.0	07:41	10	11	RUS		RADAR	40	12K0E	OTHR Contayner
21167.0	07:13	25	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
21167.0	14:32	26	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
21175.0	08:27	13	11	CHN		RADAR	66.7	10K0E	OTHR short bursts

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21185.0	07:35	13	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
21185.0 USB	09:14	28	11		CD1 DN3	J7D	125	1K75E	MIL-188-141A ALE 2 G + robust
21191.0	07:30	08	11	CHN		RADAR	50	10K0E	OTHR short bursts
21199.0	08:28	13	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21213.0	09:23	13	11	CHN		RADAR	10	160K0E	Wideband OTHR
21218.0	07:55	14	11	CHN		RADAR	50	10K0E	OTHR. Continuous TX
21223.0	06:52	27	11	CHN		RADAR	50	10K0E	OTHR. Continuous TX
21225.0 USB	08:13	14	11			G1D	2400	2K40E	MIL-188-110A
21229.0	08:29	13	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21245.0	06:35	08	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
21254.0	06:59	09	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21254.0	11:34	25	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
21255.0	09:18	17	11			J3E-U		3K0E	USB. Music
21258.0	09:13	08	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21270.0 USB	08:06	20	11			XXX	2400	2K40E	Unidentified PSK bursts
21273.0	07:57	19	11	CHN		RADAR	50	10K0E	OTHR short bursts
21280.0	07:36	20	11	CHN		RADAR	50	10K0E	OTHR short bursts
21283.0	07:53	17	11	CHN		RADAR	50	10K0E	OTHR short bursts
21284.0 USB	07:13	14	11			XXX	2400	2K40E	Unidentified digital bursts
21285.0	09:10	08	11	CHN		RADAR	10	160K0E	Wideband OTHR
21288.0	07:58	14	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21290.0	08:01	27	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
21293.9	08:35	10	11			XXX		CA2K20E	Unidentified MFSK bursts
21294.0	07:44	29	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21298.0	09:17	10	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21299.0	06:55	13	11	CHN		RADAR	10	160K0E	Wideband OTHR
21306.0	08:23	27	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
21308.0	07:39	10	11	CHN		RADAR	50	10K0E	OTHR short bursts
21312.0	06:38	08	11	CHN		RADAR	50	10K0E	OTHR short bursts
21315.0	07:04	14	11	CHN		RADAR	50	10K0E	OTHR
21315.0 USB	07:36	19	11		DN3 CD1	J7D	125	1K75E	MIL-188-141A ALE 2G
21315.0	09:34	26	11	CHN		RADAR	48	10K0E	OTHR short bursts
21317.0	08:52	15	11	CHN		RADAR	50	10K0E	OTHR short bursts
21319.0	08:57	30	11	CHN		RADAR	50	10K0E	OTHR short bursts
21338.0	06:59	09	11	RUS		RADAR	40	12K0E	OTHR Contayner
21340.0	07:58	10	11	CHN		RADAR	50	10K0E	OTHR short bursts
21344.0 USB	08:25	10	11			XXX		CA2K80E	Unidentified digital bursts
21346.0	08:51	10	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21347.0	07:46	19	11			G1D	2400	2K40E	MIL-188-110A
21350.0	07:32	20	11			XXX			Carrier with many spurious, Very often. Morning UTC times
21351.0	08:20	12	11	CHN		RADAR	62.5	10K0E	OTHR short bursts
21352.0	15:14	10	11	RUS		RADAR	40	12K0E	OTHR Contayner

URE; Gaspar, EA6AMM

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21352.0	07:56	12	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21357.0	09:11	15	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
21363.0	07:45	29	11	CHN		RADAR	47.7	10K0E	OTHR short bursts
21365.0	13:46	18	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
21367.0	09:16	12	11	CHN		RADAR	10	160K0E	Wideband OTHR
21370.0	07:13	24	11	CHN		RADAR	50	10K0E	OTHR short bursts
21371.0	07:34	19	11	CHN		RADAR	50	10K0E	OTHR short bursts
21372.0	08:54	15	11	CHN		RADAR	50	10K0E	OTHR short bursts
21374.0	08:29	14	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21379.0	06:39	08	11	CHN		RADAR	55.7	10K0E	OTHR short bursts
21379.0	07:32	08	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21383.0	14:35	17	11	RUS		RADAR	40	12K0E	OTHR Contayner
21386.0	07:35	19	11	CHN		RADAR	50	10K0E	OTHR short bursts
21387.0	08:33	19	11	CHN		RADAR	10	160K0E	Wideband OTHR
21388.0	07:00	09	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21390.0	07:54	11	11	CHN		RADAR	50	10K0E	OTHR short bursts
21391.0	08:24 vt*	15 vd*	11	CHN		RADAR	50	10K0E	OTHR short bursts *Also on 30/11, 0836 UTC
21395.0	07:08	14	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21398.0	07:50	13	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21407.0	07:58	12	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
21408.0	07:31	16	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
21410.0	08:31 vt*	08 vd*	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus *Also on 12/11, 0906 UTC
21411.0	09:07	11	11	CHN		RADAR	50	10K0E	OTHR short bursts
21413.0	09:16	10	11	CHN		RADAR	50	10K0E	OTHR short bursts
21415.0	10:08	19	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
21420.0	06:40	08	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21423.0	07:00	13	11	CHN		RADAR	50	10K0E	OTHR short bursts
21426.0	08:29	13	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21426.0	10:29	15	11	RUS		RADAR	40	12K0E	OTHR Contayner
21438.0	08:33 vt*	08 vd*	11	RUS	RCV	A1A			RUS navy QTC *Almost daily. 21 reports
21447.0	09:00	29	11	CHN		RADAR	66.7	10K0E	OTHR short bursts
21450.0	07:30	10	11	CHN		OFDM DRM BC		CA9K50E	DRM (Digital Radio Mondiale) BC. BW ca 9K50E. "AAC 4D2 Ampegon Test EEP Audio 14.06 kbps". QRT: 0900 UTC
24885.0	10:27	24	11	RUS		RADAR	40	12K0E	OTHR Contayner
24890.0	07:49	29	11	CHN		RADAR	50	10K0E	OTHR short bursts
24891.0	08:01	09	11	CHN		RADAR	47.8	10K0E	OTHR short bursts
24895.0	08:15	20	11	RUS		RADAR	40	12K0E	OTHR Contayner
24900.0	07:02	09	11	CHN		RADAR	50	10K0E	OTHR short bursts
24900.0	07:18	24	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
24901.0	08:01	19	11			F3E			Unid sts. male voice. Unid language. Short traffic
24916.0	09:21 vt*	17 vd*	11			XXX		50H	Unidentified continuous signal. Overdriven. Disturbing FT-8. <u>Same days & signal as on 14075 kHz CF.</u> *Also on 18/11, 1217 UTC & 19/11, 0929 UTC

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
24930.0	07:03	28	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
24939.0	07:15	24	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
24946.0	09:01	24	11	CHN		RADAR	41.7	10K0E	OTHR short bursts
28000.0	07:04	13	11			F3E			CBers
28000.0	07:59	24	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus. *Also on 28705 kHz CF. 2 simultaneous TX on 10m
28001.5	09:05 vt*	14 vd*	11			XXX		CA3K0E	Unidentified continuous signal. Most probably, jammer. Long-lasting. *Also on 16, 17, 18 and 24/11; vt
28004.0	08:37	08	11			A3E			CBers
28035.0	06:56	08	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
28050.0	10:50	18	11	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus
28100.0	08:45	09	11			F1B		300H	Fishing buoy
28115.0	09:27	17	11	G		RADAR	12.5	40K0E	OTHR. UK SBA, Cyprus
28135.0	09:01 vt*	Vd*	11			F3E			Non amateur comms. Female voice. Slavic language. Short traffic. *Often
28154.0	10:03	26	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
28155.0	07:55 vt	08 vd*	11			F3E			Non amateur comms. Female voice. Slavic language. Short traffic. *Often
28155.0	09:24	19	11	G		RADAR	12.5	40K0E	OTHR. UK SBA, Cyprus
28195.0	07:23 vt*	09 vd*	11			F3E			Non amateur comms. Female voice. Slavic language. Short traffic. *Often
28200.0	08:13	24	11			F3E			Unid st. Male voice. Slavic language. Singing propaganda
28215.0	09:04	15	11			A3E			CBers
28245.0	07:51	08	11			F3E			Non amateur comms. Female voice. Slavic language. Short traffic
28255.0	09:02 vt*	15 vd*	11			F3E			Non amateur comms. Female voice. Slavic language. Short traffic. *Often
28260.0	10:41	16	11			A3E			A3E. BC. Asian language. Also RX on several EU KiwiSDR. *Also on 19/11, 1025 UTC & 26/11, 1005 UTC
28265.0	09:03 vt*	15 vd*	11			F3E			Non amateur comms. Female voice. Slavic language. Short traffic. *Often
28280.0	07:53	25	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
28305.0	10:21	19	11	G		RADAR	12.5	40K0E	OTHR. UK SBA, Cyprus
28310.0	07:23	25	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
28335.0	07:43	27	11	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus
28340.0	07:04	09	11	G		RADAR	50	20K0E	OTHR. UK SBA, Cyprus
28350.0	12:29	28	11	IRN		RADAR	150 313	45K0E	OTHR. Alternating 150 and 313 sps bursts
28529.0	07:31	14	11			XXX		2K40E	28529 kHz USB. XXX. Unidentified digital bursts
28550.0	11:27	17	11	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus
28690.0	08:06	16	11	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus
28750.0	08:07	08	11	IRN		RADAR	226 333	45K0E	OTHR. Alternating 226 and 333 sps bursts. Jumping
28750.0	07:08	17	11	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus
28770.0	08:13	27	11	G		RADAR	50	20K0E	
28785.0	11:09	18	11	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus
28860.0	10:00 vt*	12 vd*	11	IRN		RADAR	150 313	45K0E	OTHR. Alternating 150 and 313 sps bursts. *Also on 29/11, 0751 UTC & 30/11, 0928

URE; Gaspar, EA6AMM

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
									UTC
28890.0	08:58	17	11	G		RADAR	12.5	40K0E	OTHR. UK SBA, Cyprus
28950.0	07:55	26	11	IRN		RADAR	150	45K0E	OTHR. Alternating 150 and 313 sps bursts
28970.0	07:21	24	11	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus
29045.0	07:49	27	11	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus
29050.0*	12:43	30	11	IRN		RADAR	150 313	45K0E	OTHR. Alternating 150 and 313 sps bursts. *Jumping: 1246 UTC, QSY to 29400 kHz CF
29100.0	09:30 vt*	01 vd*	11			NON			Carrier. Long-lasting *Daily
29100.0	13:51	26	11	IRN		RADAR	150	45K0E	OTHR. Alternating 150 and 313 sps bursts
29150.0	12:57 vt*	16 vd*	11	G		RADAR	50	20K0E	OTHR G. UK SBA, Cyprus. *Also on 27/11, 1131 UTC & 28/11, 0909 UTC
29190.0	08:18	30	11	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus
29395.1	09:40	08	11			F1B	81.9	140H	Datawell buoy
29400.0	10:10	26	11	IRN		RADAR	150	45K0E	OTHR. Alternating 150 and 313 sps bursts
29400.0	08:27	29	11	IRN		RADAR	150	45K0E	OTHR. Alternating 150 and 313 sps bursts. Jumping. *Also on 28860 kHz CF. <i>2 simultaneous TX on 10m</i>
29450.0	12:42 vt*	09 vd*	11	IRN		RADAR	150	45K0E	OTHR. Alternating 150 and 313 sps bursts. *Also on 12, 24 & 25/11; vt
29500.0	08:04	10	11	IRN		RADAR	150	45K0E	OTHR. Alternating 150 and 313 sps bursts. *Also on 11, 14, 15, 19, 24, 25 & 28/11; vt
29550.0	07:05	13	11	IRN		RADAR	150	45K0E	OTHR. Alternating 150 and 313 sps bursts
29580.0	10:48	24	11	G		RADAR	12.5	40K0E	OTHR. UK SBA, Cyprus
29630.0	12:32	28	11	G		RADAR	25	20K0E	OTHR. UK SBA, Cyprus

USKA; Peter, HB9CET

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7000.0	1550	18	11			J3E-U			USB, unid language, short sequences only (Endless loop)
7000.0	2201	05	11			A3E			unid BC, very weak, often
7004.7	1605	08	11			G1D PSK8	2400 Bd	ca 2k7	short bursts; 1800 Hz unid often single tone modem MIL 188-xxx
7006.5	0901	16	11			F1B	50 Bd	500H	FSK
7014.0	1009	06	11			J7D	12x 120 Bd	2k70E	CIS12; PSK2-A, additional carrier at 7110.0 kHz
7023.0	1418	15	11			J7D	12x 120 Bd	2k70E	CIS12
7025.0	1306	01	11			F1B	50 Bd	200H	FSK often
7025.0	1417	01	11			F1A		200H	CW-FSK
7050.0 LSB	1439	19	11			J3E-L		ca 3k0E	RUS-UKR Radio War almost daily Music, Voice
7051.7	1201	22	11			X		1k20E	unid signal
7054.0	1357 1814	02 28	11			F1B	50 Bd	200H	FSK daily, since very long time
7055.0 LSB	1438	19	11			J3E-L		ca 3k0E	RUS-UKR Radio War; almost daily Voic, Music
7055.0 LSB	1438	19	11			X		ca 3k0E	Jammer
7072.0	0932	29	11			J7D	12x 120 Bd	2k70E	CIS12; 12 tones + pilottone only

USKA; Peter, HB9CET

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7073.0	1413	15	11			J7D	12x 120 Bd	2k70E	CIS12
7083.0	1604	16	11			J7D	12x 120 Bd	2k70E	CIS12
7089.0	0956	22	11			J7D	12x 120 Bd	2k70E	CIS12
7089.8	1808	28	11			G1D PSK8	2400 Bd	2k40E	LINK11 SLEW (7088.0 USB) often
7100.0	2241	29	11			F1B	75 Bd	250H	FSK
7105.0	2100	05	11			FMOP	40 sps	12k0E	OTHR; Contayner
7108.0	1739	12	11			FMOP	40 sps	12k0E	OTHR; Contayner
7111.0	1047	03	11			F1B	75 Bd	250H	FSK
7111.0 LSB	1639	26	11			PSK-4	30x 60 Bd	2k50E	CHN30 (aka PRC30)
7134.0	1321	01	11			F1B	50 Bd	200H	FSK
7141.0 LSB	1741	22	11			PSK-4	30x 60 Bd	2k50E	CHN30 (aka PRC30) weak
7147.0 LSB	1633	25	11			PSK-4	30x 60 Bd	2k50E	CHN30 (aka PRC30) weak
7150.0 USB	2014	27	11		various ID's	J7D MFSK8	125	1750	ALE MIL 188-141A; weak
7155.0 LSB	1319 1743	01 22	11			PSK-4	30x 60 Bd	2k50E	CHN30 (aka PRC30) very weak
7167.0	1342	02	11			F1B	75 Bd	200H	FSK
7169.0	2042	05	11			X		ca 9k0E	unid signal, often
7170.0	1456	19				FMCW	66.66 sps	10k0E	OTHR
7171.0 LSB	1633 1805	06 28	11			PSK-4	30x 60 Bd	2k50E	CHN30 (aka PRC30) daily
7172.0	1447	14				F1B	75 Bd	200H	FSK
7172.0	2024	05				FMCW	66.66 sps	10k0E	OTHR
7175.5	1609	07	11			G1D	X	ca 1k0E	unid PSK signal
7192.0	1742	12	11			FMOP	40 sps	12k0E	OTHR; Contayner
7193.0	1341 1441	02 14	11			F1B	50 Bd	200H	daily
7198.0 LSB	1647 1336	01 02	11			PSK-4	30x 60 Bd	2k50E	CHN30 (aka PRC30)
7198.5	1354	05	11			G1D PSK-8	2400 Bd	2k70E	Stanag 4285
14002.0	0932	06	11			F1B	50 Bd	850H	FSK
14026.0	0941	22	11			J7D	12x 120 Bd	2k70E	CIS12
14128.0	1718	03	11			FMOP	40 sps	12k0E	OTHR; Contayner
14146.0	1615	25				FMOP	40 sps	12k0E	OTHR; Contayner
14147.0	1549	08	11			FMOP	40 sps	12k0E	OTHR; Contayner
14159.0	1714	03	11			FMOP	40 sps	12k0E	OTHR; Contayner
14160.0 USB	1403	14	11			J3E-L		ca 3k0E	RUS-UKR Radio War; audioloop, strong, jammed
14179.0	0959	20	11			FMCW	50 sps	10k0E	OTHR
14192.0	0819	02	11			F1B	50 Bd	200H	FSK almost daily
14258.0	0905	16	11			F1B	50 Bd	500H	FSK

USKA; Peter, HB9CET

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14298.55	1419	03	11			ARQ FSK	600 Bd	600H	DPRK ARQ FSK often
14298.625	0737	25	11			ARQ FSK	600 Bd	600H	DPRK ARQ FSK often
14307.8	0817	28	11			F1B	75 Bd	170H	FSK, long lasting
18079.0	1537	02	11			FMOP	40 sps	12k0E	OTHR; Contayner
18164.0	1519	14	11			FMOP	40 sps	12K0E	OTHR; Contayner
21000.0	1103	27	11			J3E-U		ca 2k40E	Fishery; Spanish language daily
21108.42	0745	25	11			ARQ FSK	600 Bd	600H	DPRK FSK ARQ system often
21145.0 USB	0901	15	11		various	MFSK-8 J7D	8x 125 Bd	1k75	ALE MIL188-141A
21370.0	1224	01	11	G		FMCW	50 sps	20k0E	OTHR; UK base Cyprus
21382.0	0942	07	11			FMCW	66.66 sps	10k0E	OTHR; Bursts
21438.0	1337	01	11	RUS	RCV	A1A		10H	Area of Sevastopol; since years daily
28000.0	1052	07	11			A3E		ca 6k0E	short sequences, female voice
28001.5	1401	14	11			X	X	2k6	unid signal
28100.125	1553	07	11			F1B	51 Bd	300H	GPS Fishing buoy, short bursts
28100.150	1436	14	11			F1B	51 Bd	300H	GPS Fishing buoy, short bursts
28101.85	1425	14	11			F1B	51 Bd	300H	GPS Fishing buoy, short bursts
28101.90	1432	21	11			F1B	51 Bd	300H	GPS Fishing buoy, short bursts
28102.0	1427	14	11			F1B	51 Bd	300H	GPS Fishing buoy, short bursts
28105.0	1559	07	11			F3E			Taxi often
28125.0	1329	01	11	G		FMCW	50 sps	20k0E	OTHR; UK base Cyprus
28215.0	1045	29	11			F3E			Taxi often
28275.0	1258	01	11			F3E			Taxi often
28280.0	0759	25	11	G		FMCW	50 sps	20k0E	OTHR; UK base Cyprus
28950.0	1424	03	11			OTHR	12	40k0E	OTHR, unid; BW 40 kHz
28985.0	1331	05	11			F3E			Taxi often
29050.0	1434	03	11			OTHR	12	40k0E	OTHR, unid; BW 40 kHz
29449.699	1631 1429	07 14	11			F1B	81.9 Bd	ca 140Hz	FSK Oceanographical measuring buoy often
29450.0	1128	05	11	IRN		OTHR	150+ 313 sps	ca 45k0	OTHR; Bursts: sweep rate alternating often
29500.0	1131 0804	05 25	11	IRN		OTHR	150+ 313 sps	ca 45k0	OTHR; Bursts: sweep rate alternating often
29550.0	1324	02	11	IRN		OTHR	150+ 313 sps	ca 45k0	OTHR; Bursts: sweep rate alternating often

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7025.0	1511	04	11	RUS		F1B		200H	UiPtr
7025.0	0955	22	11			F1B	50	200H	Printer
7025.0	0701	29	11	RUS		F1B		200H	UiPtr
7028.0	1645	20	11	RUS		F1B		250H	Printer
7047.5	1510	30	11			XXX		2K70E	CF; unknown digital signal; bursts
7054.0	1550	10	11	RUS		F1B		200H	Printer
7089.8	1814	28	11			G1D		2K40E	Link 11 SLEW
7193.0	0757	15	11			F1B		200H	UiPtr
14170.0	0846	26	11	CHN		RADAR	10	150K0E	CF; OTHR China; weak but detectable

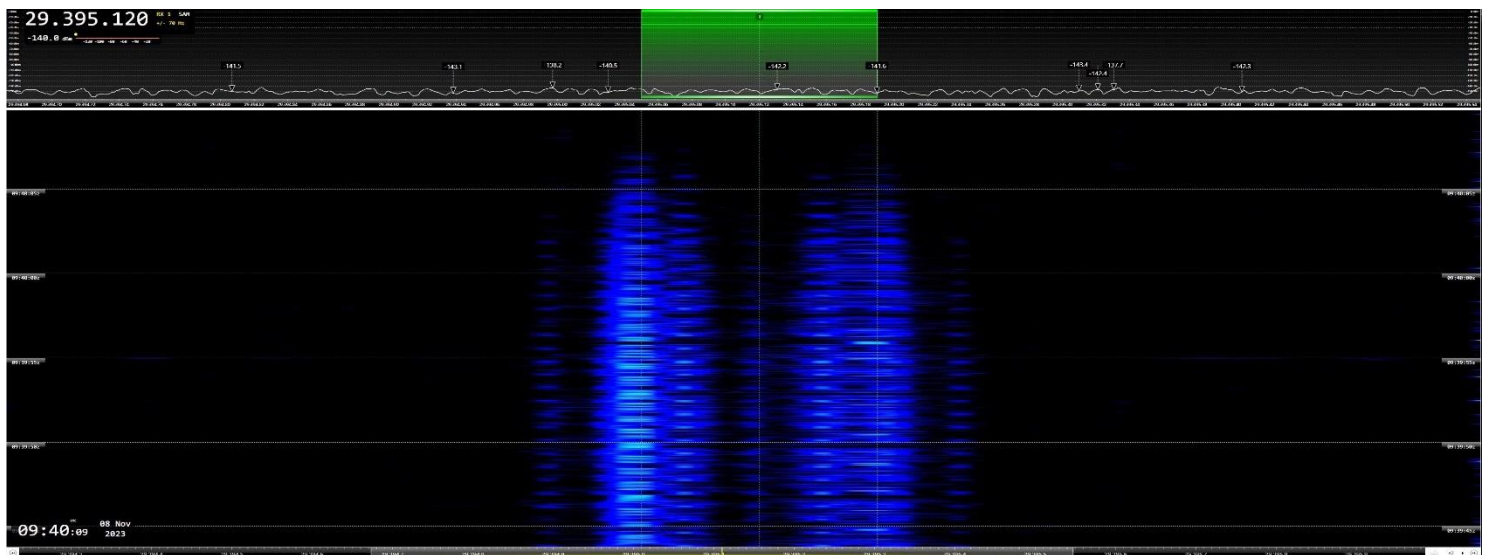
VERON; Ruud, PG1R. Credit to observers: Dick, PA0GRU; Rene, PA3EQO

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14240.0	1020	01	11			J7D			MPSK-12
14269.0	0839	16	11			XXX		2K80E	Unknown signal; wide splatters; most probably jammer
18150.0	0735	09	11	RUS		RADAR	40	12K0E	CF; OTHR Contayner
21102.0	1103	22	11	MRC		J3E-U			Male voices, no callsign; Moroccan fishing
21350.0	1515	10	11	RUS		RADAR	40	12K0E	CF; OTHR Contayner

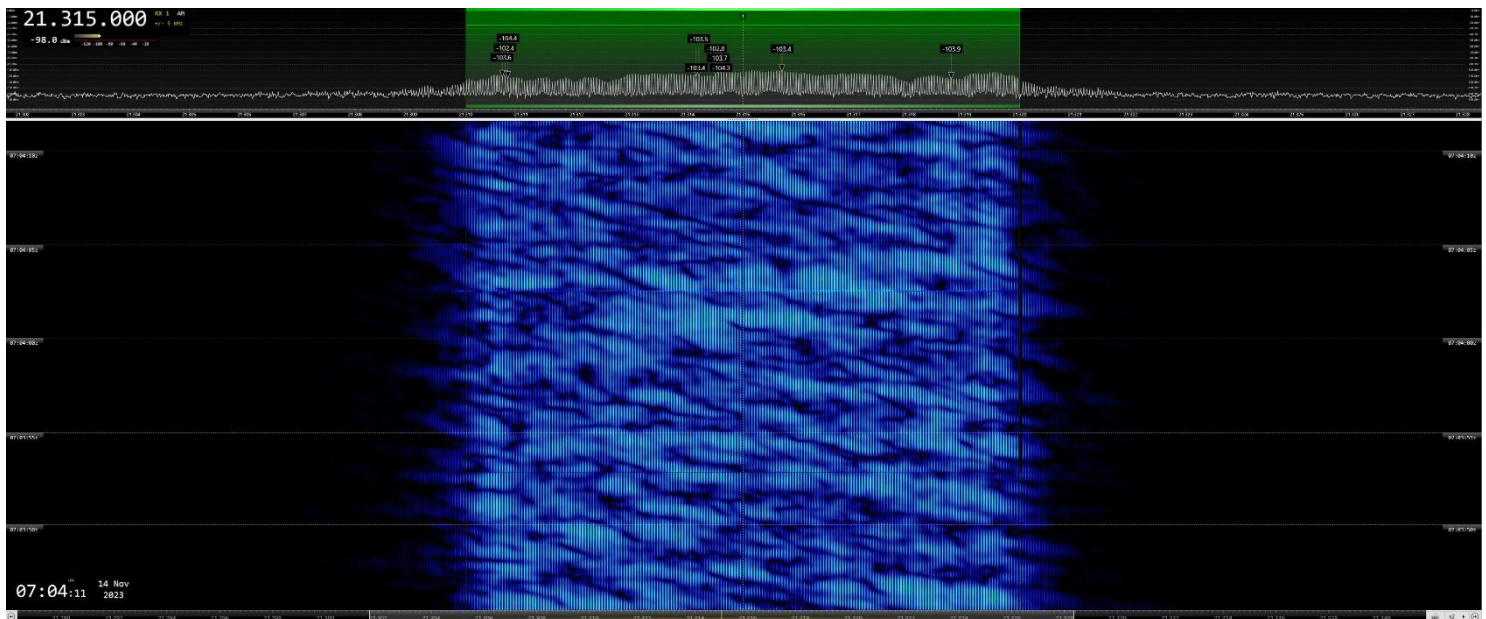
Contact: Gaspar Miró, EA6AMM, iarums@iaru-r1.org

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

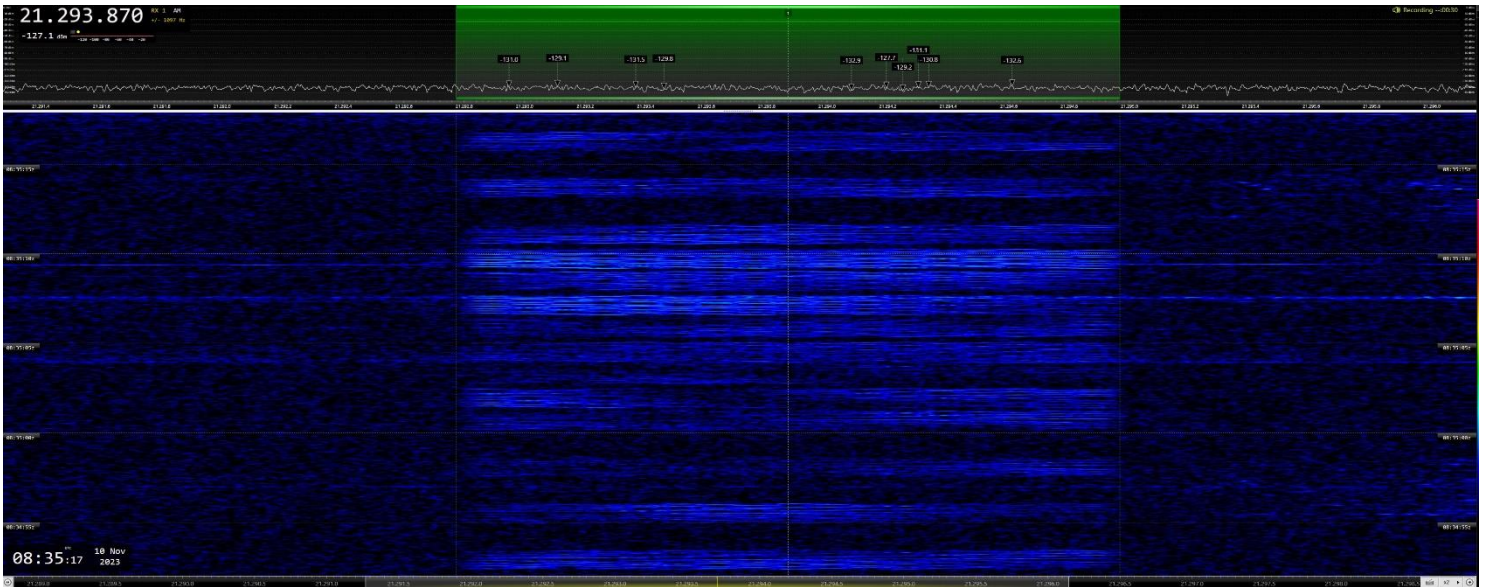
Visit our website: <https://www.iaru-r1.org/about-us/committees-and-working-groups/iarums/>



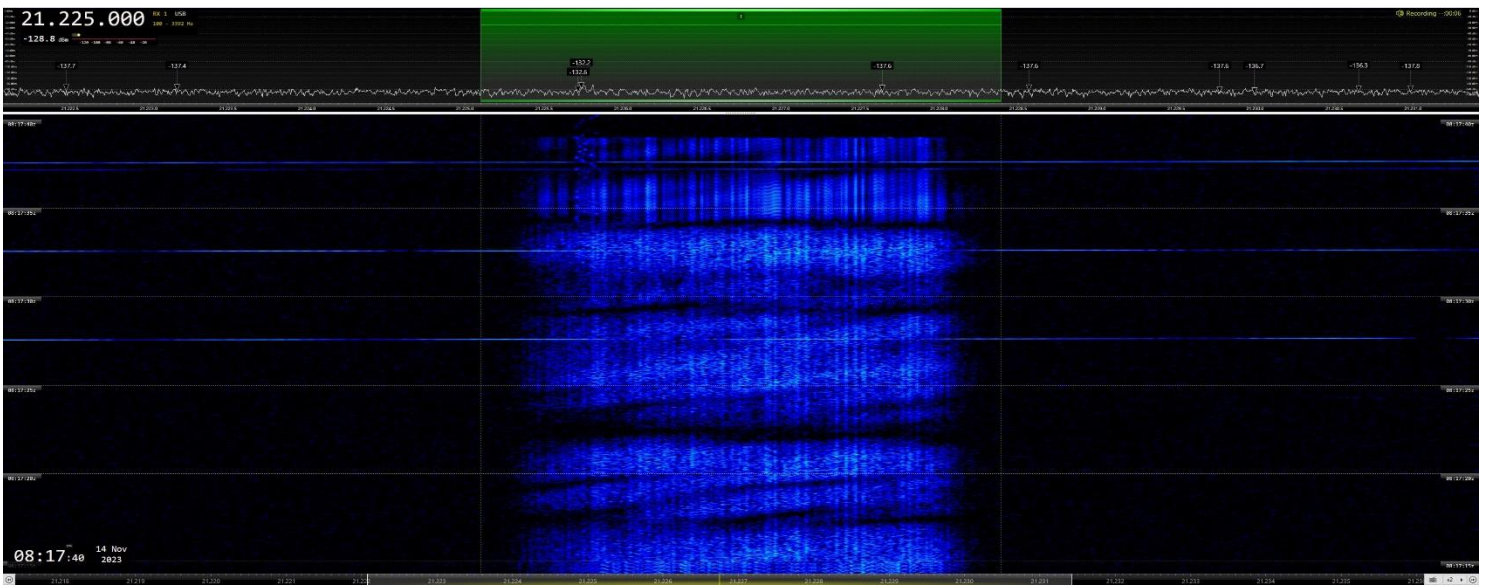
29395.12 kHz CF: F1B. Shift = 140 Hz. 89.1 Bd. Datawell buoy



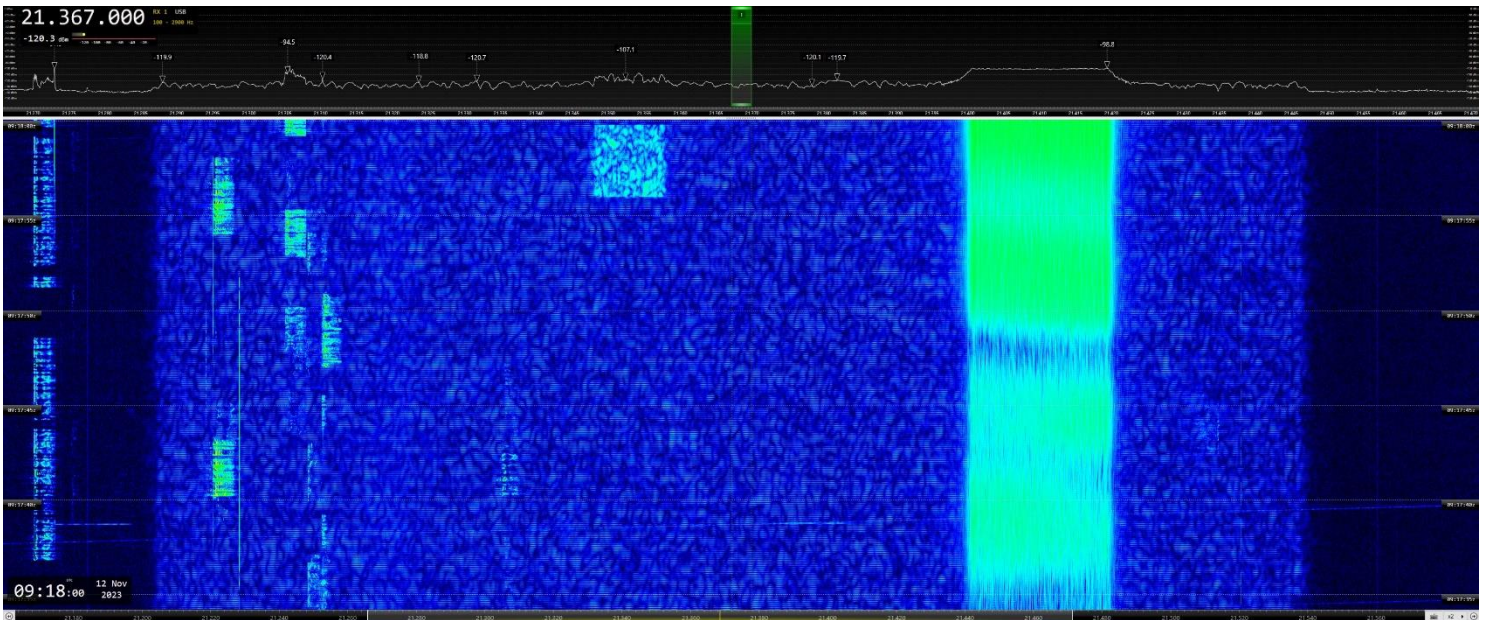
21315 kHz CF: CHN OTHR. BW = 10 kHz. 50 sps. Long-lasting



21293.87 kHz CF: XXX. Unidentified MFSK bursts



21225 kHz VFO: MIL-188-110A. G1D. PSK-8. BW = 2K40E. 2400 Bd



OTH radars onto OTH radars on the 15 meters. 21367 kHz CF: CHN Wideband OTHR (BW = 160 kHz. 10 sps). 21410 kHz CF: OTHR. G (UK SBA, Cyprus). BW = 20 kHz. 50 sps. 21352 kHz CF: CHN OTHR „Foghorn“ bursts. BW = 10K0E. 66.66 sps