Monthly Newsletter - September 2024

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

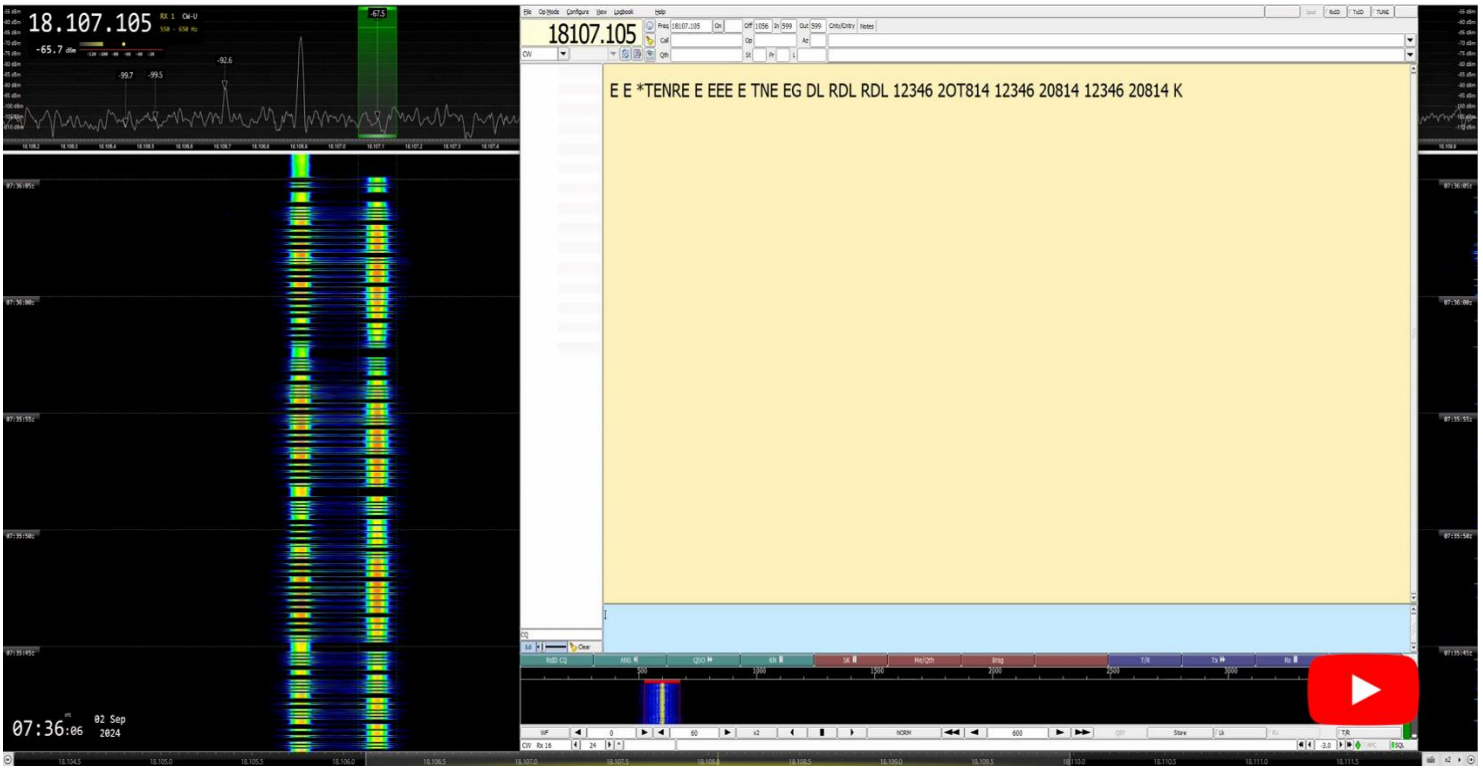
- IARUMS Wiki: *find more information, screenshots, videos and recordings of the transmission modes most used by non-amateur stations on the amateur radio bands:* https://www.iaru-r1.org/spectrum/monitoring-system/iarums-wiki/

News and Info

The month of September, in terms of non-amateur transmissions in amateur radio bands on HF, was undoubtedly marked, among other things, by the massive return, after months of absence, of CIS-## FSK type transmissions on our frequencies, as well as the appearance of some new transmissions in these modes.

Some of these transmissions are well known and of a "seasonal" nature: they transmit for a certain period on a specific frequency, then disappear, only to return at a later time. Such is the case of the Russian Navy station "RDL," which, after transmitting daily on 18107 kHz CF (CIS-36 50; FSK. Shift = 200 Hz. 50 Bd) last April, returned to the same frequency on September 1st and transmitted there for long hours throughout the entire month, also on a daily basis.

Below, as an example of the different CIS 36-50 transmissions received in September, is a video of the one on 18107 kHz CF (ID: "RDL". RUS Navy). This mode is notable for its ability to send FSK telegraphy for automatic reception (F1B) as well as FSK telegraphy for aural reception (F1A). The F1A portion of the transmission, sent in Morse code, can be decoded by listening to the upper frequency with a narrow filter.

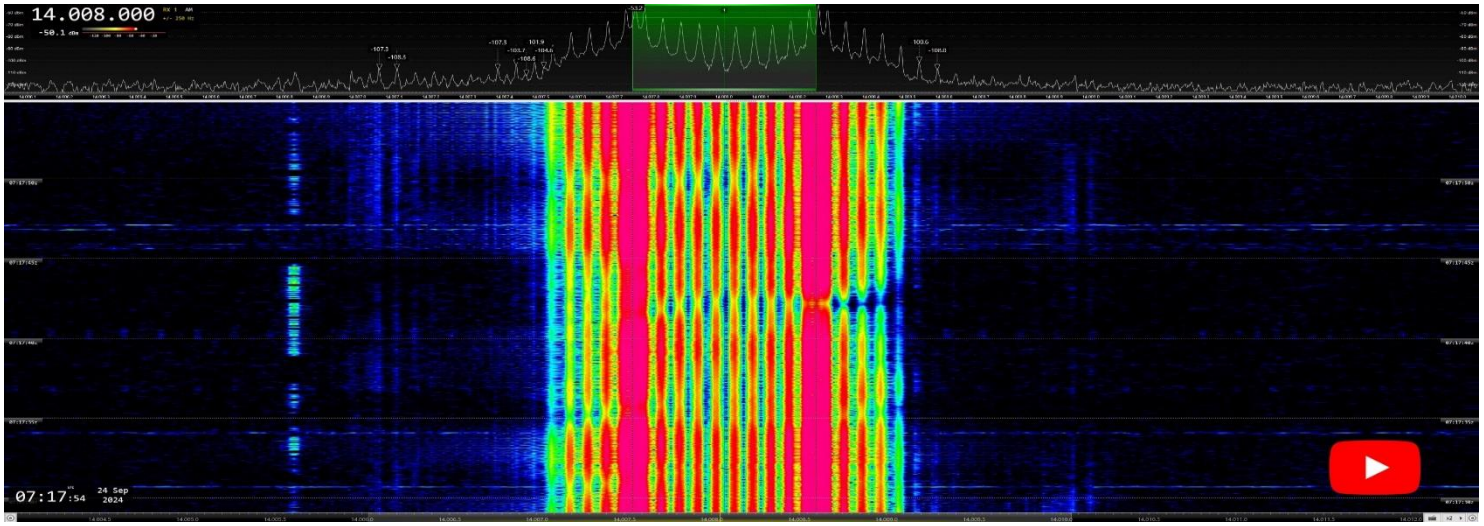


18107 kHz CF: CIS 36-50. FSK (F1B and F1A). Shift = 200 Hz. 50 Bd. RUS. ID = „RDL"

Other transmissions of this type were received on various well-known frequencies in the 20-meter band, such as 7080 kHz CF, 7137 kHz CF, 7114 kHz CF, or 14008 kHz CF. Other RUS FSK transmissions, already present daily in previous months, like the one that can be received on 14192 kHz CF, continued with their long and bothersome transmissions.

However, some transmissions made their first appearance in September, on frequencies such as 14119 kHz CF, 7135 kHz CF, 7052 kHz CF, and 7044 kHz CF.

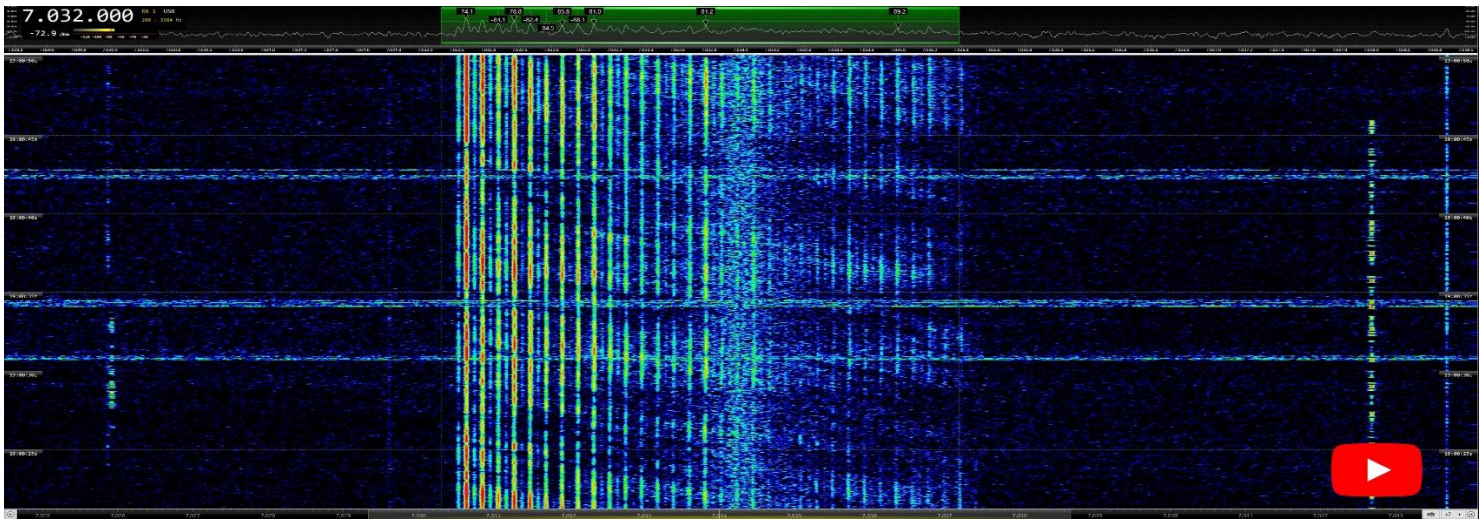
Another example of this type of FSK transmission is the one that was received almost daily on 14008 kHz CF (RUS. Shift = 500 Hz. 50 Bd).



14008 kHz CF: FSK (F1B). Shift = 500 Hz. Bd = 50. Very often on September 2024

Apart from these, other transmissions disrupted the HF amateur radio spectrum and the activity of radio amateurs in their HF bands. In addition to the well-known Over The Horizon radars and transmissions in military or diplomatic modes, we have recently observed, especially since the beginning of the war in Ukraine, an increase in the presence of jammers on our bands. Generally, these transmissions involve sending a signal intended to disrupt the reception of other transmissions on a specific frequency, and their use is becoming more widespread within the realm of electronic warfare.

Previously received in past months in the 40-meter band, annoying non-amateur transmissions on 7032 kHz USB have become a daily and continuous nuisance. Although the exact purpose of this transmission originating from Russia is not entirely clear—whether it is being sent to keep the frequency occupied or to interfere, as a jammer, with other transmissions on the same frequency—it emits noise with a bandwidth of 3.3 kHz and, at times, a sound loop consisting of a pop version of the Russian national anthem.



7032 kHz USB: XXX. Long-lasting. Daily on September 2024

In the 15-meter band, we frequently received, especially towards the end of the month, the transmission of a jammer based on a frequency of 85 Hz. During those days, it transmitted with various bandwidths and was also observed on other frequencies within the 15-meter band. Triangulations performed using KiwiSDR TDoA, which so far have not yielded highly accurate results, lead us to believe that the signal may originate from northern Iran. Recently emerging information from various online sources regarding Iran's use of the Russian long-range communications jamming system known as "Murmansk-BN" would tend to support this theory, as would the fact that similar transmissions (based on an 84 Hz frequency) were received in the past months on the same frequency. These transmissions, with slight difference in the used bandwidths, appeared to originate, approximately, from the Russian surrounding area of war zone between and were also received in the 40-meter band.

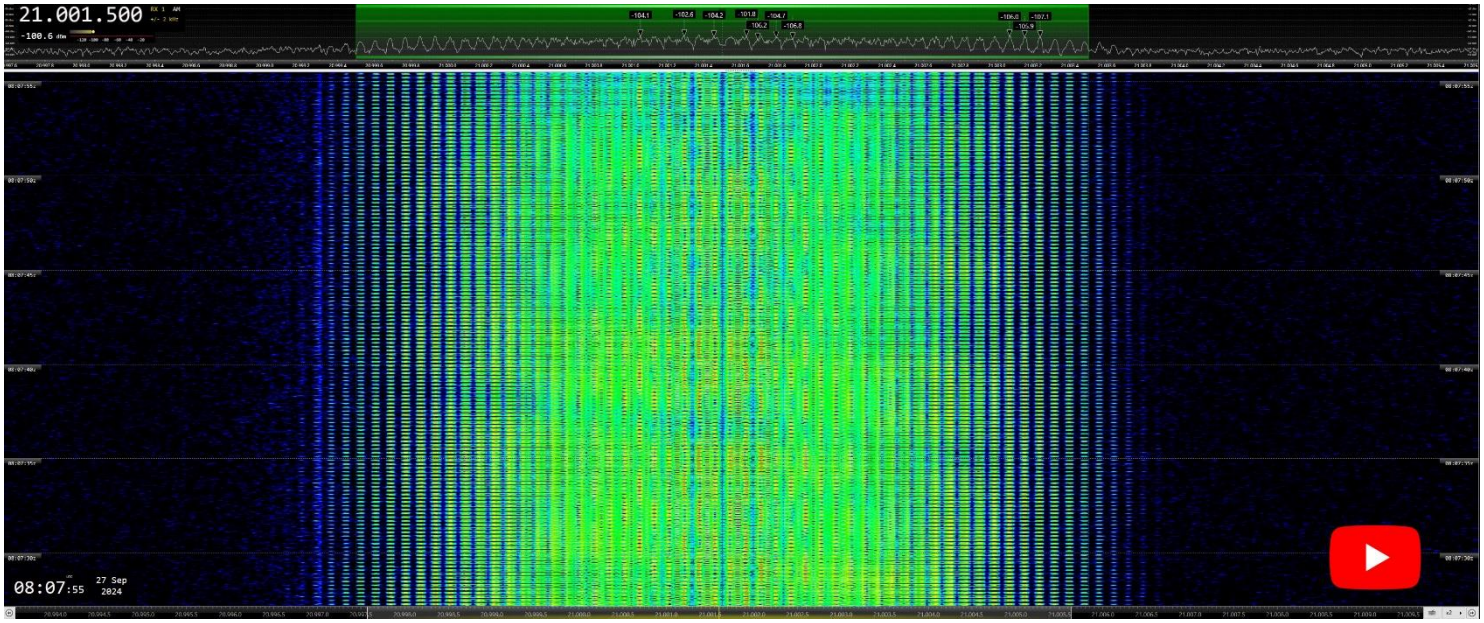
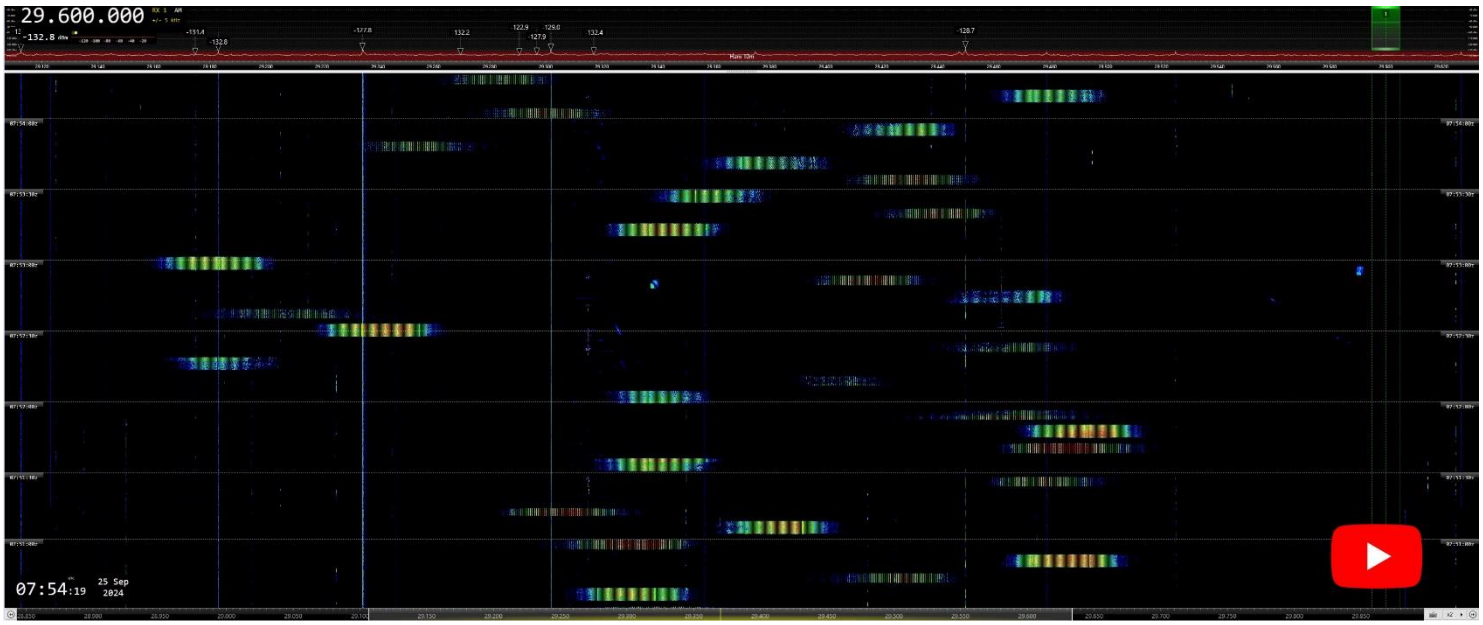


Ilustración 1

September also saw significant activity from the Iranian radar transmitting in the 10-meter band. As in previous months, it surprised us again with a new transmission mode in addition to the already known ones, and also to those recently detected. In September, transmissions from this radar using a new frequency-hopping mode were detected for the first time, jumping frequencies after each burst, as shown in the following video:

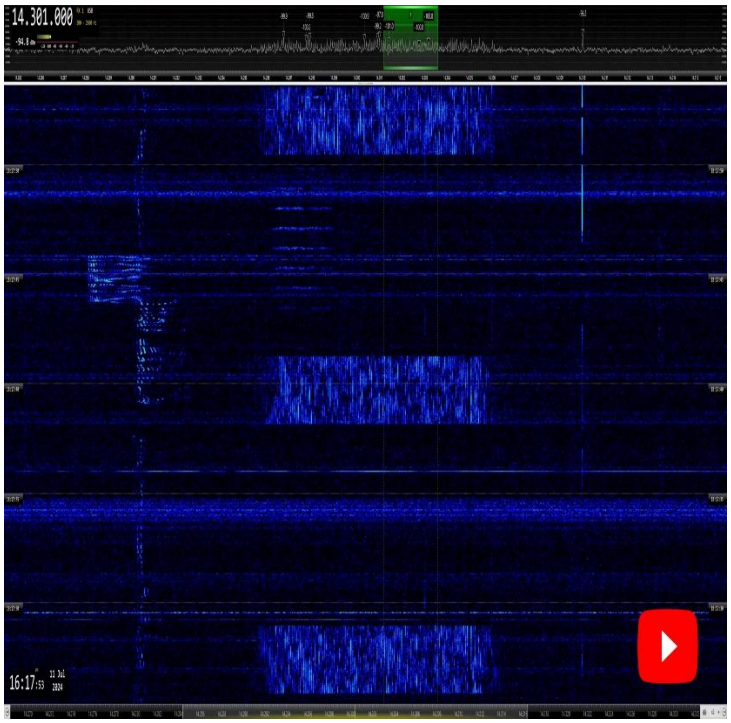


10 meters: OTHR IRN. BW ca 45 kHz. Alternating 333 sps and 695 sps bursts. Jumping after every burst

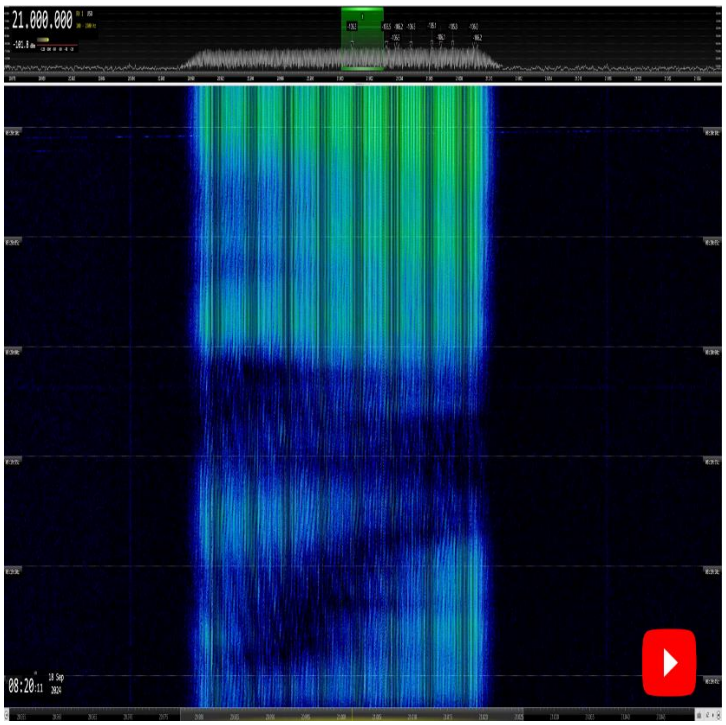
The Chinese OTHR "Foghorn" radars, so nicknamed after their characteristic bursts sound that resemble the sound of a ship's siren, were also very active, making numerous transmissions in the 15-meter band and being frequently received in the 20-meter band.

After the summer months, during which it virtually disappeared from our bands, the British OTH radar located in the UK Sovereign Base Area in Cyprus was often received in the 15-meter band. The Russian OTH "Contayner" radar was frequently received in the 15- and 20-meter bands, and it was also observed in the 40-, 17-, and 12-meter bands.

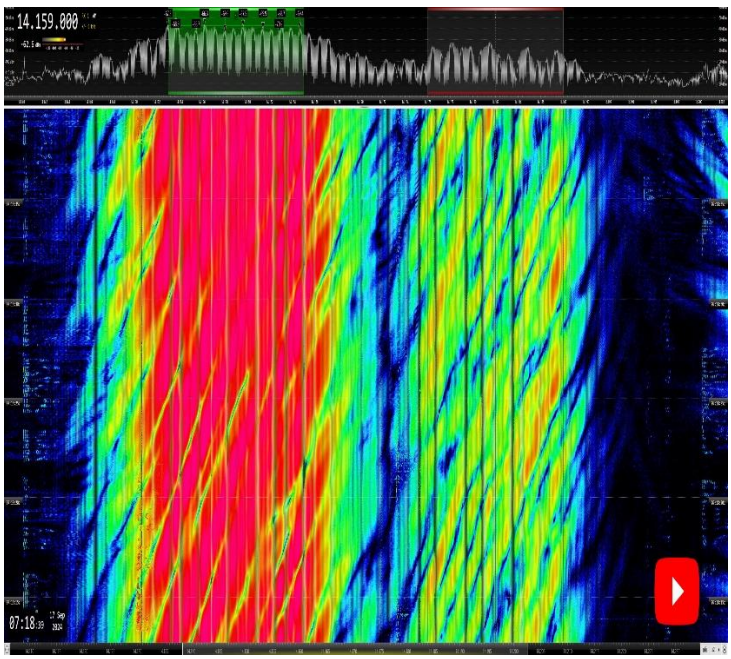
Other types of radars, intended for scientific research, such as CODAR, were received in the 20- and 12-meter bands. We continue to receive daily transmissions from an unidentified radar on 14132 kHz CF.



Example of a CHN OTHR „Foghorn“ TX. (BW = 10 kHz. 83.3 pps)



OTHR. ITU = G (UK SBA, Cyprus). BW = 20 kHz. 50 pps

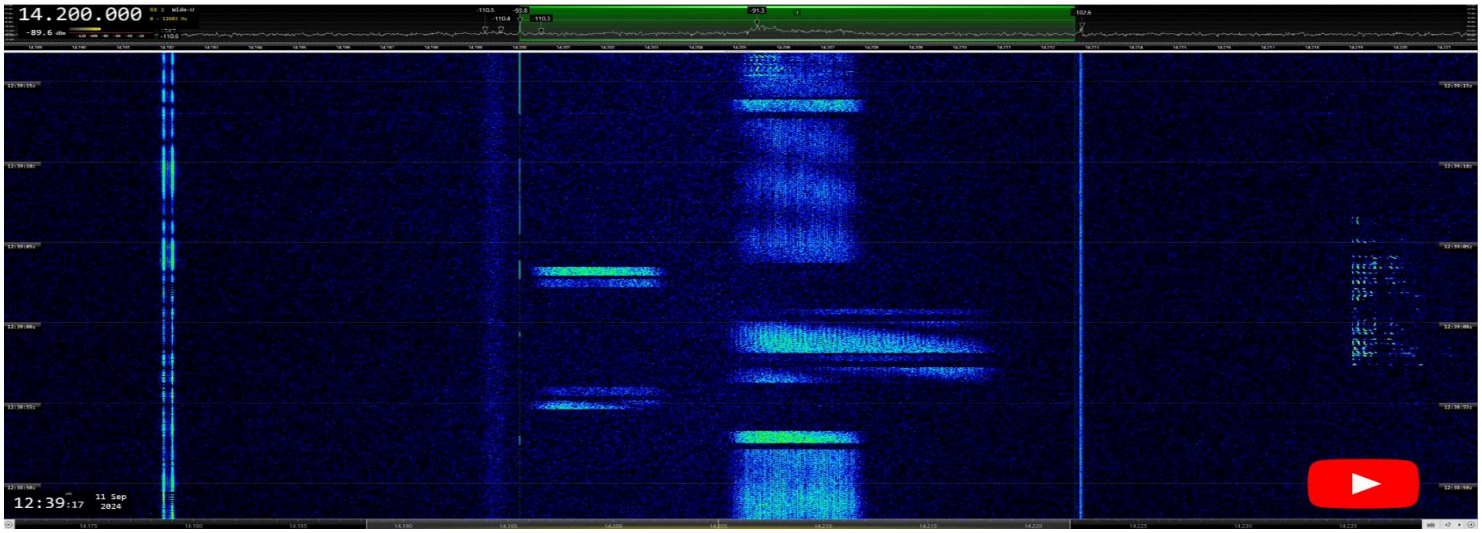


2 X OTHR Contayner (RUS. BW = 12 kHz. 400 pps) on 20m

25000 kHz CF: CODAR-like radar. BW = 200 kHz.2 pps

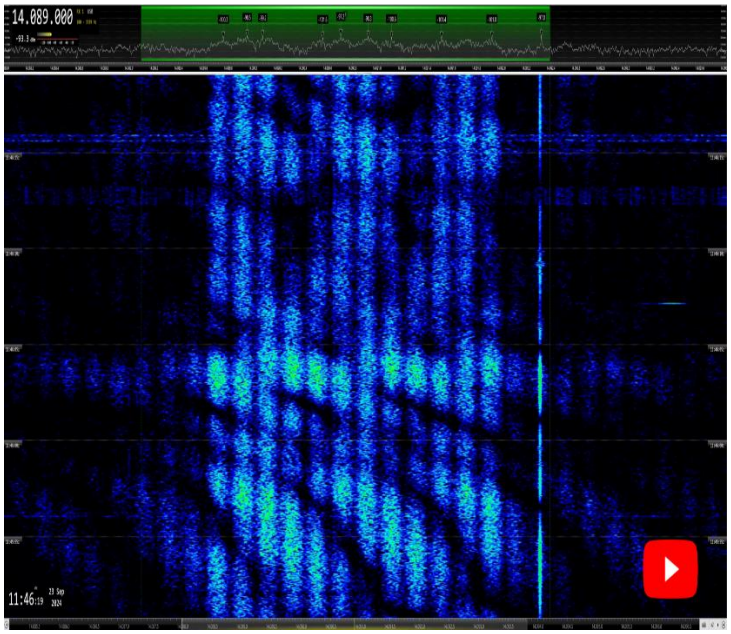
Regarding transmissions sent in military and diplomatic modes, there were no significant changes throughout the month. The well-known RUS MIL CW transmissions sending encrypted QTC, received almost daily on 14108 kHz and on 14292 kHz during the past months and still often heard on September seem to have left those frequencies for others out of the amateur bands.

Perhaps the most notable was the reception of transmissions sent in WHARQ mode in the 20-meter band.
WHARQ (Wideband HF Hybrid Automatic Repeat Request) MIL burst mode is capable of using up to 8 different bandwidths in its transmissions going from 3 kHz to 24 kHz), as well as different modulation types (with baud rates going from 2400 to 19200 Bd).

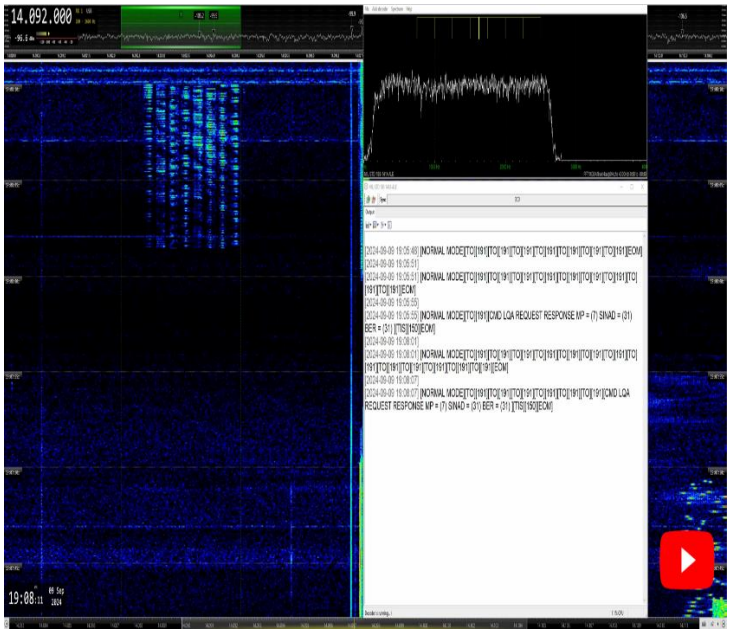


14202 kHz CF: WHARQ

The fact that there were no major changes in this type of transmission, unfortunately, does not mean that they were observed infrequently on our amateur radio bands, nor that their transmissions did not affect these bands for long hours. Over the past month, the sadly usual transmissions in modes such as CIS-12 (J7D. BW = 2.7 kHz. 12 X 120 Bd + pilot tone), ALE 2G (MFSK. BW = 1.8 kHz. 125 Bd), CIS-60 (OFDM. BW = 2.8 kHz. 60 X 30 Bd), ALE 3G (PSK. BW = 2.4 kHz. 2400 Bd), CHN 4+4 (G7D. Bw = 2.4 kHz. 75 Bd) , DPRK-FSK 600 (Shift = 600 Hz. 600 Bd), LINK-11 CLEW DSB (BW ca 6kHz. 75 Bd), among others, were received, mostly on 20 and 15 meters.

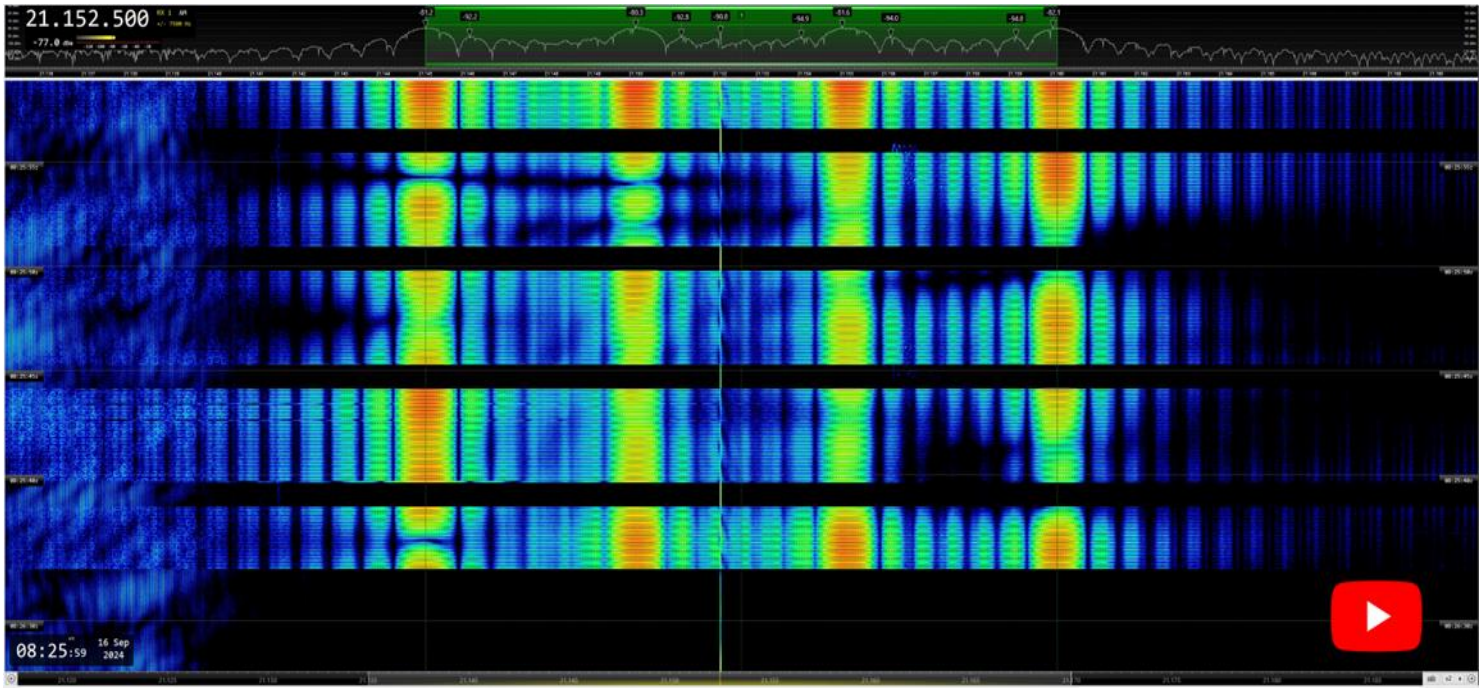


14091 kHz CF: CIS-12. J7D. BW = 2.7 kHz. 12 X 120 Bd + pilot tone



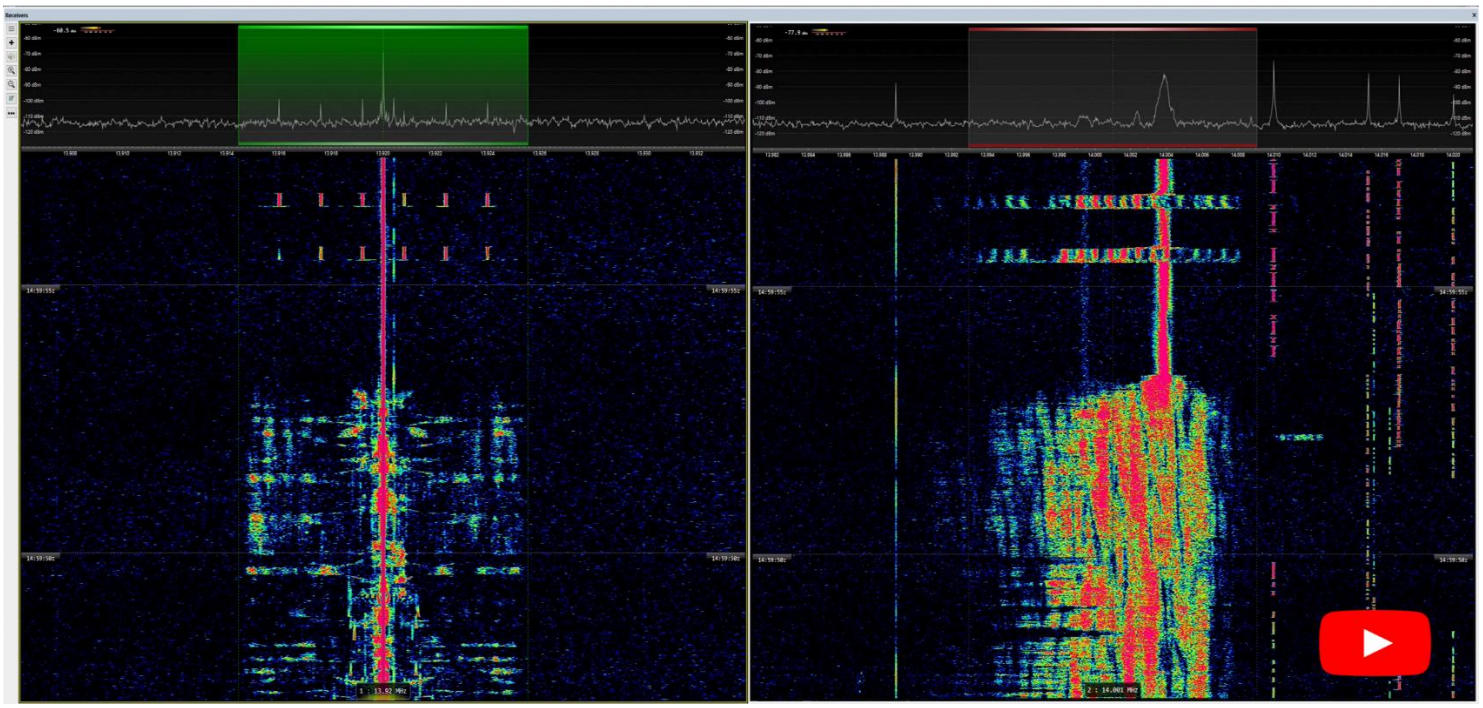
14092 kHz USB: MIL-188-141A ALE 2G. IDs: „191“ and „150“. CHN

Some transmissions using unidentified modes were observed during September. See below an example about one of them



21152.5. XXX. Unidentified bursts. BW ca 15 kHz. 14.2 pps

A wide interferecence (BW ca 12 kHz) received on on September the 14th on 14002 kHz CF was sent by the broadcasting station SOH Xi Wang Zhi Sheng transmitting on 13920 kHz CF (AM; A3E) from Miaoli (Taiwan). Both the interference and the original transmission stopped at 1500 UTC, after the time tones were sent:



Left: SOH Xi Wang Zhi Sheng transmitting on 13920 kHz CF (AM; A3E). Right: interference on 14002 kHz CF caused by this broadcastinf station

- ***Find other videos and screenshots about the transmissions received during September 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
7032.0	18:07 vt*	09 vd*	09	RUS vs UKR		J3E-U		3K30	Russian Anthem (modern version), later humming Carriers, Spaced 50hz, alternating strength. Daily 24/7
7055.0	20:28 vt*	13 vd*	09			J3E-L		3K0E	RUS/UKR Propaganda, Music or Voice Loops , * nearly every day when Band open
7060.0	21:25	15	09	RUS		RADAR	40	12K0E	OTHR Container, also on 7083
7070.0	00:20	28	09	RUS		J7D	120	2K60E	CIS-12, submode idle,
7080.0	19:12	03	09	RUS		F1B	50	0K2	CIS36-50 "RDL" russ. Ny St. Petersburg
7089.0	18:36	15	09	UKR	3K0E	J3E-L			Radiowar , Voice loop
7089.4	16:34	03	09	RUS		A1A			Cluster beacon M Magadan - RUS Navy
7100.0	20:37	26	09			XXX		2K70E	Radiowar,NON Ham Voice : UKR vs RUS
7101.7	20:20	19	09			G7D	75	2K30E	LINK11-CLEW
7108.0	20:36	05	09	RUS		RADAR	40	12K0E	OTHR Container
7130.0	19:51	14	09	RUS		RADAR	40	12K0E	OTHR Container
7140.0	14:49	23	09	RUS		J7D	120	2K60E	CIS-12
7144.0	20:42	11	09			J7D	120	2K7E	CIS12-PSK2
7149.0	17:40	30	09			J7D	125	1K75	MIL-188-141A
7152.8	01:54	29	09			G1D	2400	2K40	MIL-188-141B
7183.0	19:42	23	09	RUS		RADAR	40	12K0E	OTHR Container
10148.0	19:58	02	09	AUS		RADAR	7	12K0	Australian OTH radar JORN
14033.0	15:30 vt*	22	09 vd*	CHN		RADAR	50	10K0E	China OTHR Bursts with 42,50 or 66.7 Hz Sweep, all 10K0E wide. Nearly daily, * 18 Reports in 20M Band.
14040.0	10:38 vt*	11	09 vd*	INS		RADAR	2	80K0E	ocean surface radar 14000 - 14080 kHz *daily, all day when Band open to Asia
14050.0	10:43 vt*	11	09 vd*			XXX			Sweeping signals wandering down the Band , sweeping abt. 1 hz sps, abt 1 khz but wandering over 20 khz sweeps in abt 20 sec. 3 Sweep sequence repeats after 3 minutes, *often
14100.4	18:00	13	09			J3E-L			"Germaniya, govorit Moskva ..." (russ., loop)
14107.0	18:53 vt*	22	09 vd*	RUS		RADAR	40	12K0E	OTHR Container, * often , seen abt. 15 times in 20m Band
14114.0	09:42	16	09	CHN		W7D	44.44	2K40	OFDM 39
14132.0	11:28	11	09			RADAR	0.5	4K0E	Slow radar , blocks of 30 sweeps, repating after 2 minutes
14140.0	08:50	19	09			XXX		2K70E	Radiowar, NON Ham Voice : UKR vs RUS

DARC; Harald, DL9NDW and the DARC IW team

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14164.0	15:01	27	09	INS		RADAR	2	80K0E	Ocean surface radar
14344.0	09:47	25	09	RUS		J7D	120	2K60E	CIS-12, submode idle
18171.0	14:17	26	09	RUS		RADAR	40	12K0E	OTHR Container, spreading down to 18155
21000.0	14:05 vt*	02	09 vt*	E		J3E-U		2K70E	Spanish (Galician) fishermen, Bay of Biscay, *often, 5 reports
21000.0	08:50 vt*	18	09 vd*	G		RADAR	50	20K0E	OTHR Cyprus UK SBA, also reported around 12UT * also 20 and 19th
21000.0	00:14	24	09			XXX		5K0E	Jammer, QTE 100
21001.5	17:40	21	09			XXX		2K70E	Jammer
21028.0	00:09 vt*	01	09 vd*	CHN		RADAR	66.7	10K0E	China OTHR Bursts with 42,50 or 66.7 Hz Sweep, all 10K0E wide. Nearly daily, *25 Reports in 15M Band. Often 2 or 3 occurencies with time delay
21051.0	12:30 vt*	15	09 vd*	RUS		RADAR	40	12K0E	OTHR Container,* often , 10 reports in 15m band
21128.0	09:23	03	09	CHN		RADAR	50	10K0E	OTHR Long lasting
21128.0	13:43	22	09	G		RADAR	50	20K0E	OTHR Cyprus UK SBA
21216.5	10:12	25	09			F1B	600	600H	F1B - DPRK-FSK 600
21228.0	09:30	11	09	CHN		RADAR	50	10K0E	OTHR Long Lasting
21368.0	15:00	27	09	G		RADAR	50	20K0E	OTHR Cyprus UK SBA, long lasting,
28015.0	15:05	19	09	B		A3E		3K0E	Brazilian Pirates (Also 28125,28285,28305)
28051.5	17:48 vt*	21	09 vt*			F1B	51	300H	F1B - Enagal GPS fishing buoy ,* often , 6 reports , different frequencies in 10m Band
28055.0	17:50 vt*	22	09 vt*	B		J3E-U		3K0E	Brazilian Pirates, * often, whenever Band open
28135.0	09:17 vt*	13	09 vt*	RUS		F3E		6K0E	Russian language Taxi Traffic, female Voice , *also on 28155, > 20 reports
28150.0	15:10 vt*	27	09 vt*	IRN		RADAR		46K0E	Iranian radar - 150 sps and 313 sps alternating , * often when Band open
28235.0	14:50	11	09			J3E-U		2K4E	Far East Pirates QTE 70°
28400.0	15:25	18	09	IRN		RADAR		46K0E	Iranian radar - 150 sps and 313 sps alternating , also in the morning at 10:38 by Darc iW
28400.0	14:07	20	09	IRN		RADAR		46K0E	Iranian radar - 150 sps and 313 sps alternating
28450.0	12:17	22	09			XXX	0.2		Sounds like an oscillation sweeping across roughly 200Khz.
29235.0	15:26	11	09	IRN		RADAR	333	46K0E	Iranian radar - usual periods, but not alternating sweeprate
29400.0	12:37	14	09	IRN		RADAR		46K0E	Iranian radar - Alternating 333 and 695 pps bursts. Changing , also on 22th (08:32)
29440.0	08:32	22	09	IRN		RADAR		46K0E	Iranian radar - Alternating 333 and 695 pps bursts. Changing Frequency

SOC: IRTS; Michael EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7032	2030	12	9			USB			Jammer. Huge and persistent. Heard every single day.
7056	2025	12	9	UKR/ RUS		LSB			Ukrainian-Russian radio war. Huge and persistent.”Sieg Heil”!
7060	2220	7	9	UKR/		LSB			Ukrainian-Russian radio war. Very strong

SOC: IRTS; Michael EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
				RUS					and persistent.”Heil Putin!”
7080	2025	20	9			RADAR			Radar from 7080 to 7095 kHz.Strong and persistent.
7098	2150	10	9	UKR/ RUS					Ukrainian-Russian radio war.Loud, persistent. “Russki swinja!”
7160	1145	15	9			PSK			Link-11 Clew. Strong and persistent.
7161.5	815	30	9			PSK			Link-11 Clew. Strong and persistent.
7200	2145	10	9	UKR/ RUS		LSB			Russian-Ukrainian radio war. Shouting of political slogans.Loud.”Russki pederatski!”
14000	1620	11	9	UKR/ RUS		USB			Russian propaganda music and shouting of slogans.”Russenschwein”. Medium signals.
14000	2115	7	9	E or MM		USB			Spanish fishermen. Medium signals.
14000	2130	11	9	B		USB			Brazilian Cbers. Male voices. Medium signals.
14090	1515	26	9			RADAR			Radar from 14090 to 14102 kHz. Weak, on and off.
14118.5	1230	11	9			F1B			Strong and persistent.
14125	1345	24	9	UKR/ RUS		USB			Russian-Ukrainian radio war. Huge signals, persistent. “Russki swinja!”
14192	1145	1	9	RUS		F1B			Russian navy Kaliningrad. Daily all day long with a strong signal.
14281.5	1205	3	9			F1B			Medium signals, persistent.
14297.5	1210	3	9			FSK			North Korean embassy traffic. Very strong and persistent.
14310.5	1505	26	9			F1B			Strong and persistent signals.
14315	1215	3	9			F1B			Medium signal. Persistent.
14340	1150	25	9	CHN		RADAR			Radar from 14340 to 14350 kHz. Weak to medium signals.Persistent.Foghorn.
14349.5	1220	3	9			F1B			Strong and persistent signals.
18166	1340	24	9	UK		RADAR			Radar from 18166 to 18202 kHz. UK base in Cyprus. Huge and persistent signals.
21000	1930	14	9	E or MM		USB			Spanish fishermen. Medium signals.
21001.5	800	30	9						Jammer. Medium signal.
21274.5	1540	26	9			F1B			Weak but persistent signals.
21268	1245	13	9	G		RADAR			Radar from 21268 to 21288 kHz. Huge and persistent. UK base in Cyprus.
21340	1105	4	9			RADAR			Radar from 21340 to 21355 kHz. Medium signals.
21392	1220	11	9			RADAR			Radar from 21392 to 21402 kHz. Weak but persistent.
21395	1345	15	9	G		RADAR			Radar from 21395 to 21415 kHz. Huge and persistent. UK base in Cyprus.
21401	1025	25	9			RADAR			Radar from 21401 to 21414 kHz. Medium signals. Still on at 1140z.
21438	1140	3	9	UKR		CW			Russian navy, Sevastopol. Medium signals. Heard daily all day long.
28350	1135	19	9	IRN		RADAR			Radar from 28350 to 28450 kHz. Medium to strong signals. Persistent.
28725	1250	11	9			FM			SE Asian fishermen. Medium signals, in and out.
28740	1255	29	9			FM			SE Asian fishermen. Medium signals.

SOC: IRTS; Michael EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
28800	1250	29	9			FM			SE Asian fishermen. Medium signals.
28980	1015	11	9	CHN		AM			Mixing product from China Radio International on 9820 and 11980 kHz.Weak signals. Still audible at 1445z.
29100	1230	27	9			FM			Carrier. Strong signal. Persistent.
29100	1245	29	9			FM			SE Asian fishermen. Medium signals.
29200	1315	29	9	IRN		RADAR			Radar from 29200 to 29600 kHz. Moving up and down the band. Very strong and persistent. Also heard on the 30th at 0745z.

PZK; Mirek, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7033.8	1950	28	09			UI		3K4	S9
14008.0	vt	vd	09			F1B		500	S9+
14084.0	0840	03	09			RADAR		16K0E	S7
14093.4	0835	06	09			F1B		200	S9
14102.0	0930	02	09	RUS		CIS		2K7	S9
14105.0	1010	03	09			RADAR		14K0E	S7, also similar at 14084.0
14161.0	0927	02	09			RADAR		10K0E	10 sec. bursts
14174.0	0838	17	09			RADAR		20K0E	S9+ looks like Cyprus
14182.0	1753	12	09			RADAR		10K0E	5 sec burst
14198.5	0710	26	09			UI		2K5E	S9
14242.0	1110	30	09	RUS		CIS-12		2K7	S9
14298.5	0740	18	09			UI		1K0E	short bursts like RTTY 600
14327.0	1525	02	09			RADAR		10K0E	3 sec burst foghorn
18140.0	1250	15	09			RADAR		10K0E	3 sec burst foghorn
18162.0	1045	11	09			RADAR		20K0E	S9+ looks like Cyprus
21000.0	vt	vd	09	CHN		RADAR		20K0E	S6 foghorn
21058.0	1252	15	09			RADAR		12K0E	S7 12:54 stoped
21062.0	0735	18	09			RADAR		20K0E	S9+ looks like Cyprus
21086.0	vt	17	09			RADAR		12K0E	S7
21132.0	0953	24	09			RADAR		12K0E	S5
21150.0	0820	06	09			RADAR		10K0E	3 sec burst foghorn + 21190.0
21172.0	0735	18	09			RADAR		20K0E	S9+ looks like Cyprus
21195.0	1355	01	09			RADAR		20K0E	S9+23dB looks like Cyprus
21236.0	1040	11	09			RADAR		10K0E	S5 2 sec. on 2, sec. off
21375.0	0750	24	09	CHN		RADAR		10K0E	3 sec burst foghorn
21395.0	1010	15	09			RADAR		12K0E	S7
21400.0	0828	22	09			RADAR		14K0E	S7
21407.0	1438	15	09			RADAR		12K0E	S7
21411.0	0750	25	09			RADAR		16K0E	S9
21415.0	0745	03	09			RADAR		10K0E	3 sec burst foghorn
28155.0	0750	18	09			F3E		6K0	In Russian (radio taxi) also 28455.0
28395.0	vt	18	09	IRN		RADAR		60K0E	
28532.0	1255	15	09			UI		8K0E	S7 not sure if OTHR
28900.0	1050	18	09	IRN		RADAR		100K0E	S9

PZK; Mirek, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
29100.0	1105	30	09			F3E		6K0	In Spanish S9
29400.0	1000	25	09	IRN		RADAR		60K0E	also at other freqs

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7 MHz			9	RUS		RADAR	40 sps	13k0E	(WebSDR 29d, 1700-0400)
7000.0	0500-1800	23 - 30	9	RUS		J7D	120	2k60E	Maybe 0000 - 2400
7001.5	1615-1750	*	9			jam		7k0E	*) Days: 14. 21. 22.
7008.5	0745-1230	25 27	9	RUS		J7D	120	2k60E	
7009.0	0440-1300	21 30	9	RUS		J3E-u		3k20E	Russian vox female & male
7010.0	1530-1805	27	9			jam		6k0E	
7011.0	0630-1350/	18 19	9	RUS		J7D	120	2k60E	
7018.0	0740-1710/	*	9	RUS		J7D	120	2k60E	*) Days: 9. 14. 15.
7019.0	0445-1830	18 - 30	9	RUS		F1B/A N0N		200H	5BL
7022.0	0630-0930	*	9	RUS		J7D	120	2k60E	*) Days: 3. 17. 21.
7032.0	0430-1830	01 - 30	9	RUS		J3E-u		3k60E	Non-stop Russian anthem / mx,
7032.0	0000-2400	01 - 30	9	RUS		J3E-u		3k60E	Brum when no music.
7038.8	0000-2400	*	9	RUS	P	A1A	8wpm	50H	*) Days 1. 2. 4. 5.
7044.0	1340-1605/	*	9	RUS		J7D	120	2k60E	*) Days: 10. 11. 16. 18. 23. 28.
7048.5	0850-1320	*	9	RUS		A1A	16wpm	40H	*) Days: 2. 3. 6. 7. 5BL
7062.0	0630-1300	*	9	RUS		J7D	120	2k60E	*) Days: 2. 5. 13. 19. 23.
7066.0	0500-1800	01 - 03	9	RUS	FV9G etc	F1B/A N0N	16wpm	200H	5BL
7067.0	0640-1400	*	9	RUS		J7D	120	2k60E	*) Days: 6. 14. 15. 17. 24. 25.
7076.0	0610-1530	*	9	RUS		J7D	120	2k60E	*) Days: 20. 25. 26. 29.
7080.0	1700-1815	*	9	RUS	RDL	F1B/A		200H	
7088.8	1100-1800	08	9	RUS	P	A1A	8wpm	50H	QSY from 7038.8 kHz
7111.0	0900	29	9	RUS		F1B		250H	
7114.0	0445-1805	*	9	RUS	RDL	F1B/A N0N		200H	*) Days: 1. 2. 3. 5. 7. 9. - 13. 15. 16. 18. 20. 26. 28. 30. 5F
7121.0	0800-1410	16 - 28	9	RUS	RAL2 etc	A1A	14wpm	40H	5BL
7125.0	0930-	28	9	RUS		F1B		200H	

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
	1130								
7135.0	1650-0500	01 - 26	9	RUS	RDL	F1B/A	16wpm	200H	5F
7137.0	1530-1830	*	9	RUS		F1B/A		200H	
7140.0	0530-1600	12 23	9	RUS		J7D	120	2k60E	
7159.0	0830-1630	*	9	RUS		J7D	120	2k60E	
7159.0	0500-0920	*	9	IW		G7D		2k40E	*) Days: 12. 24. 25. LINK11 usb
7159.0	1745-1815	24	9	IW		B7D		6k0E	LINK11 dsb
7172.0	0645	10	9	RUS		A1A	8wpm	40H	
7176.0	0700	08	9	RUS		F1B		200H	
7186.0	1330-1800	24 25	9	RUS		J7D	120	2k60E	Carrier on 7184 kHz
7196.0	0610-1235	*	9	RUS		J7D	120	2k60E	*) Days: 2. 5. 12. 18. 28.
7198.0	1445-1700	*	9	RUS		J7D	120	2k60E	*) Days: 3. 9. 16. 17. 19.
10 MHz			9	G		RADAR	50sps	20k0	(WebSDR 2d)
10 MHz			9	RUS		RADAR	40sps	13k0E	(WebSDR 14d)
14 MHz	0430-1815	*	9	RUS		RADAR	40sps	13k0E	*) Days: 2. 3. 8. 10. 12. 14. 17. 19. 20. 23. (WebSDR 14d)
14 MHz	1220-1800	*	9	CHN		RADAR	50/67sps	10k0E	*) Days: 1. 2. 4. 7. 16. 17. 22. 24. 26. 28. 30. 'foghorn'
14 MHz	1130-1500	*	9	CHN		spurious		5k0E	*) Days: 1. 7. 13. 14. 19. 20. From ‘firedrake’ jammer on S o Hope to 14005 - 14125 kHz
14008.0	0445-1430	06 - 30	9	RUS		F1B		500H	
14091.0	1235	23	9	RUS		J7D	120	2k60E	
14119.0	0600-1630	03 - 24	9	RUS	RDL	F1B/A		200H	5F
14192.0	0445-1930	01 - 30	9	RUS		F1B		200H	
14211.0	0845-1355	11 22	9	RUS		F1B		200H	
14240.0	0510-0700	03	9	RUS		F1B		250H	
18 MHz	1045-1500	*	9	G		RADAR	50 sps	20k0	*) Days: 7. 11. 13. 29. (WebSDR 8d)
18 MHz	0515-1320	*	9	RUS		RADAR	40 sps	13k0E	*) Days: 1. 7. 11. 14. (WebSDR 7d)
18080.0	0710-0735	*	9	TWN	S o Hope	A3E		9k0	*) Days: 15. 17. 19.
21 MHz	0500-1645	*	9	G		RADAR	50/25 sps	20k0	*) Days: 1. 18. 20. - 22. 25. - 30. (WebSDR 10d)
21 MHz	0530-1730	*	9	RUS		RADAR	40 sps	13k0E	*) Days: 4. 5. 6. 8. - 11. 13. 15. - 20. 22. - 28. (WebSDR 21d)
21 MHz	0850-1000	03	9	CHN		RADAR	50 sps	10k0E	

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21 MHz	0545-1715	*	9	CHN		RADAR	50/67sps	10k0E	*) Days: 2. - 6. 10. 11. 15. 20. -29. 'foghorn'
21001.5	0545-1800	*	9			XXX/ jam		5k0E	*) Days: 3. 21. - 30.
21121.5	0905-1530	03	9			XXX/ jam		16k0E	
21184.0	1210-1350	*	9	RUS		F1B		200H	*) Days: 7. 11. 22
21438.0	/0830-1615	01 - 30	9	RUS	RCV	A1A	16 - 22 wpm	40H	Navip etc.
24 MHz	0920-1115	04 25	9	RUS		RADAR	40sps	13k0E	(WebSDR 4d)
24 MHz	0715-1600	*	9	I		CODAR	2 sps	200k0E	*) Days: 1. 4. 7. 8. 11. 13. 15. 16.18. 23. 25. 26. 24900 - 25100 kHz
28 MHz	1200-1630	19 27	9	G		RADAR	12.5/ 25/50sps	20k0	(WebSDR 3d)
28 MHz	0615-1600	*	9	IRN		RADAR	150/ 313	60k0E	*) Days: 11. 18. 20. - 23. 26. 28. (WebSDR 8d)
28 MHz	0500-1630	*	9	IRN		RADAR	333/ 695	60k0E	*) 9. 18. 21. - 30. (WebSDR 12d)
28860.0			9	IRN		RADAR	150/ 313	60k0E	QSY to 27860 kHz
28 MHz	0700-0730	07 08	9	RUS	Taxi disp.	F3E		3k0E	4 reports

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
*7000.0**	*vt***	*vd***	*09*	*RUS*		*RADAR*	*40*	*12K0E*	*OTHR Contayner TX on *40m band. **4 reports*
7000.0	18:25 vt*	01 vd*	09			XXX		CA3K0E	Jammer. 85 Hz *Also on 04/09, 1706Z
7000.0	17:06	04	09			XXX		2K0E	Jammer
7000.0	14:00 vt*	24 vd*	09			J7D	120	2K70E	CIS-12. Long-lasting (24H/24) * Often 7 reports (7 days in a row)
7001.5	16:26 vt*	13 vd*	09			XXX		6K0E	Jammer. 85 hz *Often. 5 reports
7005.0	16:27 vt*	03 vd*	09			XXX	19200	24K0E	WHARQ. HF Hybrid Automatic Repeat Request (ARQ). Burst system. Several BW, modulation types and QRG. *Often. 5 reports
7007.0	15:14 vt*	11 vd*	09			XXX	16800	21K0E	WHARQ Often. 6 reports
7008.5	07:24	27	09			J7D	120	2K70E	CIS-12
7008.8	16:30	13	09			XXX		2K0W	Unknown continuous digital TX
7010.0	15:46	27	09			XXX		C6K0EA	Jammer. 85 Hz
7018.0	16:54	09	09			J7D	120	2K70E	CIS-12
7018.9	16:20 vt*	18 vd*	09			N0N			Carrier. Long-lasting (24H/24) *Very often. 11 reports
7019.0	18:42	28	09			F1B F1A		200H	Short TX. F1A and F1B. Most of the time, carrier on 7018.9 kHz
7022.0	14:39	15	09			J7D		2K70E	CIS-12

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7028.0	19:49	05	09			XXX	19200	24K0E	WHARQ. *Also on 11/09 @ 1935Z and on 14/09, 1611Z
7032.0	17:54 vt*	01 vd*	09			USB		3K30E	7032 kHz USB. Long-lasting (24H/24). Noise. Jammer / channel marker. Sometimes, music loop (RUS anthem rock version).*Daily
7032.0	17:55 vt*	01 vd*	09			F7D		1K80E	OLIVIA 64/2000 under the 7032 kHz USB jammer. Quotation of Schiller's poem "The Cranes of Ibycus." (TNX Tom, DF5JL FER ID!) *Also on 04/09, 1720Z
7040.0	18:45	26	09			XXX		4K0E	Jammer. 85 Hz
7044.0	15:06 vt*	16 vd*	09			F1B	50	250H	*Also on 26/09, 1506Z and on 27/09, 1601Z
7052.0	19:35	05	09			F1B	50	200H	*Also on 11/09, 1939Z & on 18/09, 1937Z
7062.0	10:21	23	09			J7D	120	2K70E	CIS-12
7065.9	18:38	01	09			N0N			N0N. Carrier. Long-lasting
7067.0	14:03	24	09			J7D	120	2K70E	CIS-12
7076.0	11:21	25	09			J7D	12	2K70E	CIS-12
7080.0	19:11 vt*	01 vd*	09	RUS	RDL	F1B F1A	50	200H	CIS 36-50 *Often. 8 reports
7100.0 USB	18:55 vt*	26 vd*	09			G7D	45.45	2K40E	LINK-11 CLEW SSB *Often. 4 reports
7102.0 USB	19:08	26	09			J7D	125	1K80E	MIL-188-141A ALE 2G
7114.0	16:01 vt*	03 vd*	09	RUS	RDL	F1B F1A	50	200H	CIS 36-50. *Also on 12/09, 05/54Z and 13/09, 1637Z
7135.0	19:00 vt*	01 vd*	09	RUS	RDL	F1B F1A	50	200H	CIS 36-50 *Almost daily. 24 reports
7137.0	18:59	01	09	RUS	RDL	F1B F1A	50	200H	CIS 36-50 *Also on 19/09, 1648Z
7138.0	19:04	04	09			F1B	50	200H	
7140.0	13:53	23	09			J7D	120	2K70E	CIS-12
7144.0	20:06	11	09			J7D		2K70E	CIS-12 (submode Idle)
7150.0	17:34	01	09			OTHER	2400	CA3K0E	7150 kHz USB. ALE 3G bursts
7151.0	20:02	11	09			J7D		2K70E	CIS-12 (submode idle)
7155.0	17:35	01	09			XXX		CA5K0E	Jammer. 85 Hz
7157.0 USB	17:09	04	09			XXX		CA3K30E	Unknown digital continuous signal
7159.0	19:48 vt*	24 vd*	09			B7D	75	6K0E	LINK-11 CLEW DSB *Often. 6 reports
7186.0	16:41 vt*	24 vd*	09			J7D	120	2K70E	CIS-12. With additional pilot tone on 7184 kHz. *also on 25/09, 1816Z
7190.0 USB	17:37 vt*	03 vd*	09			OTHER	2400	CA3K0E	ALE 3G bursts *Often. 6 reports
7196.0	17:12	09	09			F1B	75	200H	*Also on 16/09, 1644Z
7198.0	16:45	17	09			J7D	120	2K70E	CIS-12
*10100.0**	*vt***	*vt***	*09*	*AUS*		*RADAR*	*7.2*	*12K0E*	*OTHR JORN. Burst with intro tone. *Often. 4 reports*
*10132.0**	*17:44*	*17*	*09*	*AUS*		*RADAR*		*3K0E*	*OTHR JORN bursts; with intro tone. Various pps*
*14000.0**	*vt***	*vt***	*09*	*RUS*	*40*	*12K0E*			*OTHR Contayner TX on *20m **Very often. 54 reports*

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
									2 simultaneous TX: 6
*14000.0**	*vt***	*vd***	*09*	*CHN*		*RADAR*	*41.7 50 66.7*	*10K0E*	*OTHR Foghorn bursts on *20m *Almost daily: 69 reports*
14000.0	14:37	02	09			OTHER	2400	CA3K0E	14000 kHz USB. ALE 3G; complete link. *4 reports
14000.0	09:14 vt*	04 vd*	09			OTHER	2400	CA3K0E	14000 kHz USB. ALE 3G bursts. Burst Waveform 5 (BW5) only. *Very often. 15 reports
14000.0	11:54	09	09		FPDE	J3E-U		2K80E	Air traffic. German language, male voices. "FPDE"
14000.0	10:20	15	09			OTHER	2400	2K50E	14000 kHz USB. ISR navy hybrid modem bursts
14000.0 USB	15:52	18	09			W7D	44.44	2K40E	CHN OFDM 39
14000.0	11:54	24	09			XXX		2K50E	Jammer. 85 Hz. Short TX
14000.0 USB	14:37	27	09		5551	J7D	125	1K80E	MIL-188-141A ALE 2G
14001.5	09:44	27	09			XXX		2K50E	Jammer. 85 Hz (short TX)
14002.0	14:07	14	09			A3E		CA12K0E	A3E. BC. Unwanted product from BC st on 13920 kHz CF, SOH Xi Wang Zhi Sheng from Taiwan. Both QRT at the same time: 1500 UTC
14008.0	09:28 vt*	09 vd*	09	RUS		F1B	50	500H	*Very often. 15 reports
14008.5	07:12	25	09			F1B	600	600H	DPRK-FSK 600 ARQ
14026.0	13:06	09	09			J7D		2K70E	CIS-12
14028.5	06:38	17	09			F1B	600	600H	DPRK-FSK 600 ARQ
14032.0	07:47	10	09			F1B		500H	Short bursts
14038.0	19:20	09	09			RADAR	2	CA73K0E	CODAR radar. BW, difficult to get (weak signal), ca 73 kHz
14040.0	18:15	16	09			RADAR	2	80K0E	CODAR
14052.0	10:49	05	09			J7D		2K70E	CIS-12
14055.5 USB	18:27	05	09			J7D	125	1K80W	MIL-188-141A ALE 2G
14091.0	11:39	23	09			J7D		2K70E	CIS-12
14092.0 USB	19:05	09	09		150 191	J7D	125	1K80E	MIL-188-141A ALE 2G
14102.0	07:31	02	09			W7D	30	2K80E	CIS-60
14102.0	07:12	10	09			F1B	600	600H	DPRK-FSK 600 ARQ
14108.5	08:04	17	09			F1B	600	600H	DPRK-FSK 600 ARQ
14109.0	08:21	29	09			F1B	600	600H	DPRK-FSK 600H
14109.5	08:07	18	09			OTHER	1200	1K20E	DPRK-PSK 1200 ARQ
14109.5	08:02 vt*	19 vd*	09			F1B	600	600H	DPRK-FSK 600 ARQ *5 reports
14114.0	18:15	14	09			J3E-U		2K80E	Speech, audio loops. Long-lasting. RUS/UKR radiowar
14114.5	15:16	27	09			J3E-U		2K80E	Audio loop, propaganda, insults, UKR/RUS radiowar. Long-lasting
14119.0	07:28	01 vt*	09 vd*	RUS	RDL	F1B	50	200H	F1B and F1A *Almost daily. 23 reports
14119.0	16:10	27	09			J3E-U		2K80E	Audio loop, propaganda, insults UKR/RUS

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
									radiowar. Several QSY
14129.0	06:44	30	09	RUS	RDL	F1B	50	200H	
14133.0	06:29	02	09			F1B	75	250H	
14135.0	12:14	03	09			J3E-U		2K80E	UKR/RUS radiowar. Long-lasting. QSY to 14128 kHz, 14140 kHz, 14144 kHz…
14135.0	08:34	24	09			J7D	120	2K70E	CIS-12
14145.5	12:46	11	09			XXX		2K20E	Jammer. 84 Hz
14148.5	07:14	17	09			OTHER	1200	1K20E	DPRK-PSK 1200 ARQ
14148.5	15:56	18	09			J3E-U		2K80E	Speech, audio loops, propaganda, insults. UKR / RUS radiowar. Long-lasting. Several QSY
14160.0	18:08	25	09			RADAR	2	CA76K0E	CODAR-like radar. CF QRG and BW are aprox (very weak signal here). 2 pps
14169.0	08:16	26	09			F1B	50	200H	
14171.0	07:15	12	09			J7D		2K70E	CIS-12 (submode idle)
14171.0	06:56	25	09			J7D	120	2K70E	CIS-12
14172.0	08:56	13	09			J7D		120K0E	CIS-12 (submode idle)
14188.0	12:45	11	09			XXX		2K0E	Jammer. 84 Hz
14192.0	06:55 vt*	01 vd*	09	RUS		F1B	50	200H	*Almost daily. 24 reports
14198.5	07:22 vt*	01 vd*	09			F1B	600	600H	DPRK-FSK 600 ARQ *Very often. 17 reports
14198.5	07:07	02	09			OTHER	1200	1K20E	DPRK-PSK 1200 ARQ
14202.0	09:43 vt*	10 vd*	09			XXX	19200	24K0E	WHARQ. *Also on 11/09, 1238Z and on 12/09, 0852Z
14233.0 USB	17:54	18	09			G7D	75	2K40E	CHN 4+4 a.k.a PRC 4+4
14238.0	09:49	26	09			XXX		CA3K60E	Unknown signal
14242.0	09:36 vt*	26 vd*	09			J7D	120	2K70E	CIS-12 *Also on 30/09, 1020Z
14272.0	09:01	13	09			J7D	120	2K70E	CIS-12
14274.0	14:51	25	09			J7D	120	2K70E	CIS-12
14291.0	18:40	29	09			XXX		4K0E	XXX. Unknown digital bursts. BW: various (4K0E, 2K0E). Hopping between 14284 kHz and 14298 kHz. QRT: 1844Z
14298.5	06:54 vt*	01 vd*	09			F1B	600	600H	DPK-FSK 600 ARQ *Very Often. 13 reports
14331.5	07:01	15	09			F1B	600	600H	DPRK-FSK 600 ARQ
14331.5	07:07	24	09			OTHER	1200	1K20E	DPRK-PSK 1200 ARQ
14344.0	08:25	24	09			J7D	120	2K70E	CIS-12
14346.0 USB	19:51	11	09			J7D	125	1K80E	MIL-188-141A ALE 2G
14348.0	06:36	02	09			F1B	75	250H	
14350.1	11:14	03	09			F1B	50	200H	Slightly drifting. QSB. Long-lasting
*18068.0**	*vt***	*vd***	*09*	*RUS*		*RADAR*	*40*	*12K0E*	*OTHR Contayner TX on *17m ***4 reports*
*18068.0**	*vt***	*vd***	*09*	*CHN*		*RADAR*	*41.5 50 66.7*		*OTHR "Foghorn" bursts on *17m ***4 reports*
18107.0	07:40 vt*	01 vd*	09	RUS	RDL	F1B	50	200H	F1B and F1A. RDL *Almost daily. 23 reports

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
20998.8	14:52	10	09			XXX		CA3K50E	Unidentified continuos digital signal
20998.8	14:52	10	09			XXX	63	3K0E	MFSK switching from 21 tones (Shift = 125 Hz. 31.5 Bd) to 13 tones (Shift = 250 Hz. 63 Bd)
*21000.0**	*vt***	*vd***	*09*	*RUS*		*RADAR*	*40*	*12K0E*	*OTHR Contayner TX on *15m **Almost daily. 57 reports 2 simultaneous TX: 9*
*21000.0**	*vt***	*vd***	*09*	*CHN*		*RADAR*	*41.7 50 66.7*	*10K0E*	*OTHR "Foghorn" bursts on *17m **Almost daily: 117 reports*
*21000.0**	*vt***	*vd***	*09*	*G*		*RADAR*	*25 50*	*10K0E*	*OTHR. UK SBA, Cyprus TX on *17m. **Very often. 16 reports*
*21000.0**	*vt***	*vd***	*09*	*CHN*		*RADAR*	*50*	*10K0E*	*OTHR. Long-lasting TX on *15m **1 report*
21000.0	07:50	16	09			XXX		5K0E	Jammer. 84 Hz. Changed BW from 5K0E to 2K50E
21000.0	10:21	25	09	IRN		XXX		2K50E	Jammer. 85 Hz
21001.5	07:58 vt*	23 vd*	09			XXX		4K0E 7K0E	Jammer. 85 Hz. 2 different BWs. Often. 6 reports
21005.0	12:34	30	09			J3E-U		2K40E	Unid sts. Loud. Male voices. Unid lang (sounds Asian). Engine sound. Probably fishermen. Also at 1326Z and at 1745Z.
21008.0	06:54 vt*	10 vd*	09			F1B	600	600H	DPRK-FSK 600 ARQ *Often. 10 reports
21008.5	07:22	12	09			OTHER	1200	1K20E	DPRK-PSK 1200 ARQ
21030.0	07:37 vt*	24 vd*	09	IRN		XXX		5K0E	Jammer. 85 Hz *Also on 27/09, 1615Z
21059.0	17:15	09	09			F1B	50	600H	F1A and F1B. "XXX". Same TX on 10535 kHz CF (SH = 200 Hz)
21081.5 USB	14:00	26	09			G7D	75	2K50E	CHN 4+4 a.k.a PRC 4+4
21100.0	06:17	09	09			F1B	75	200H	
21110.0	08:04	18	09			XXX		CA8K0E	Unidentified signal
21120.0	07:03	24	09	IRN		XXX		5K0E	Jammer. 85 Hz
21145.0 USB	09:09 vt*	03 vd*	09	MRC	MIRADOR1	J7D	125	1K80E	MIL-188-141A ALE 2G *Often. 11 reports
21152.5	08:26	16	09			XXX	14.2	15K0E	Unidentified bursts
21210.0	08:54	16	09			XXX		5K0E	Jammer. 85 Hz
21253.5	06:47	10	09			F1B		1K0E	Bursts
21330.0	00:00	15	09			XXX		5K0E	Jammer. 85 Hz
21405.0	17:04	09	09			F1B	50	600H	Harmonic of the RUS F1B 200 Hz 50 Bd on 7135 kHz CF; RDL. *Also on 14/09, 1805Z
21411.5 USB	06:32	09	09			G7D	75	2K40E	CHN 4+4 a.k.a PRC 4+4
21424.0	08:15	01	09			F1B	50	400H	Harmonic of the F1B 200H 50 Bd on 10712 kHz CF
21438.0	08:44 vt*	05 vd*	09	RUS	RCV	A1A			Rus navy QTC *Very often. 16 reports
21444.8	13:59	10	09			XXX	2400	2K40E	Unidentified bursts
21450.0	10:00	09	09			XXX		5K0E	Jammer. 84 Hz
*24890.0**	*vt***	*vd***	*09*	*CHN*		*RADAR*	*41.7 50*	*10K0E*	*OTHR "Foghorn" bursts on *12m **4 reports*

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
24896.0	*08:14*	*09*	*09*	*RUS*		*RADAR*	*40*	*12K0E*	*OTHR Contayner*
24899.8	08:30	29	09			J3E-U		2K80E	Fishers. Spanish language. South-American accent and words.
25000.0	*11:56 vt**	*01 vd**	*09*			*RADAR*	*2*	*200K0E*	*CODAR-like radar* **Very often. 12 reports*
*28.000**	*vt**	*vd**	*09*	*IRN*		*RADAR*	*150 313*	*CA45K0E*	*OTHR, alternating 150 & 313 pps bursts TX on *10m* *- Fixed (28400 kHz CF): **3 reports* *- Hopping: **10 reports*
*28000.0**	*vt**	*vd**	*09*	*IRN*		*RADAR*	*333 695*	*CA45K0E*	*OTHR, alternating 333 and 695 pps bursts. TX on 10m* *- Hopping after every burst: **10 reports*
28000.0	08:02	23	09			J3E-U		2K80E	Unid sts. Male voices. Slavic language
28051.5	19:13	30	09			F1B	51	300H	Fishing buoy
28135.0	07:04 vt*	09 vd*	09			F3E			Non-amateur traffic. Female and male voices. Slavic language.*Often
28155.0	12:15 vt*	16 vd*	09			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28175.0	07:07 vt*	09 vd*	09			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28175.0	09:13 vt*	16 vd*	09			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28195.0	07:05 vt*	09 vd*	09			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28245.0	07:05 vt*	09 vd*	09			F3E			Non-amateur traffic. Female and male voices. Slavic language. *Often
28265.0	09:15 vt*	16 vd*	09			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28275.0	07:06 vt*	09 vd*	09			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
28295.0	09:14 vt*	16 vd*	09			F3E			Non-amateur traffic. Female voice. Slavic language. *Often
29750.0	*06:11 vt**	*04 vd**	*09*	*RUS*		*RADAR*	*1592*		*Kazan Federal University Meteor Radar. Lower side lobe to 29680 kHz. *Also on 24/09, 0657Z*

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7000.0	2215	30	09			J7D		2K70E	CF; 12-channel PSK; CIS-12
7032.1	1655	30	09			J3E-U		3K50E	Brum
7032.2	1910	14	09	RUS/ BLR		J3E-U	100	3K30E	Long lasting 100Hz brum; TDoA area BLR/RUS. Also observed many days at various times
7032.2	0949	27	09	RUS/ BLR		J3E-U		4K30E	Russian song
7055.0	1056	14	09	UKR		J3E-L		2K70E	UKR-RUS radiowar; comments & slogans like: “Slava Ukraina”, “Rosiyska Schwein”; S9
7055.0	2041	16	09	UKR		J3E-L		2K90E	UKR-RUS radiowar; slogans loop; S9+
7135.0	2054	16	09	RUS	RDL	F1B		200H	Ptr; synchr with 7137.0kHz
7135.0	2052	26	09	RUS	RDL	F1B		200H	Ptr; synchr with 7137.0kHz
7137.0	2052	16	09	RUS	RDL	F1B		200H	Ptr; synchr with 7135.0kHz

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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7137.0	2051	26	09	RUS	RDL	F1B		200H	Ptr; synchr with 7135.0kHz
14118.0	0730	30	09	RUS		F1B		250H	UiPtr
14119.0	0949	10	09	RUS		F1B		200H	UiPtr; went soon QRT after observation
14169.0	0731	30	09			F1B		250H	UiPtr
14185.0	0814	17	09			RADAR		Ca 20K	CF
14192.0	0951	10	09	RUS		F1B		200H	UiPtr
14192.0	11:53	15	09	RUS		F1B		200H	Russian navy, Kaliningrad; idle
21407.0	1414	15	09	RUS		RADAR	40	12K0E	OTHR Contayner; with splatters 14kHz wide; long lasting; S9+

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/
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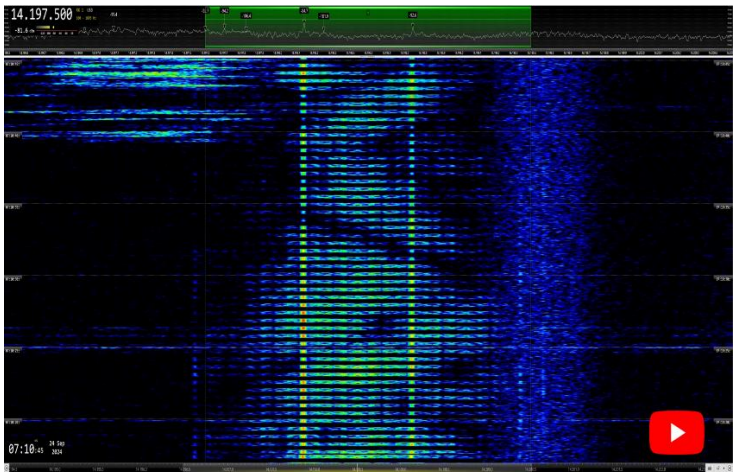
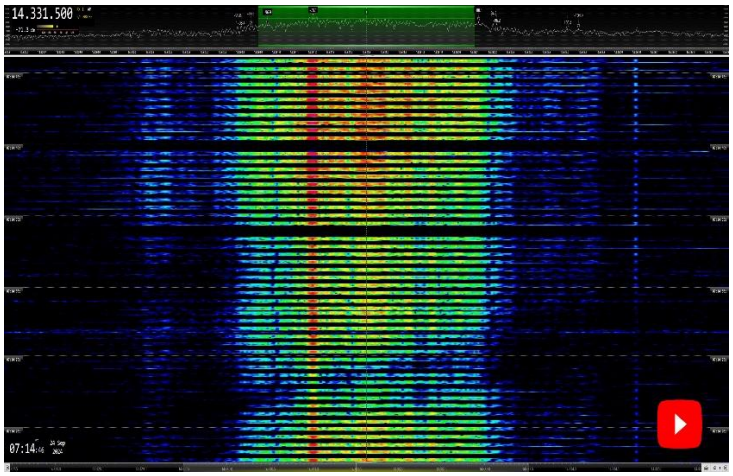
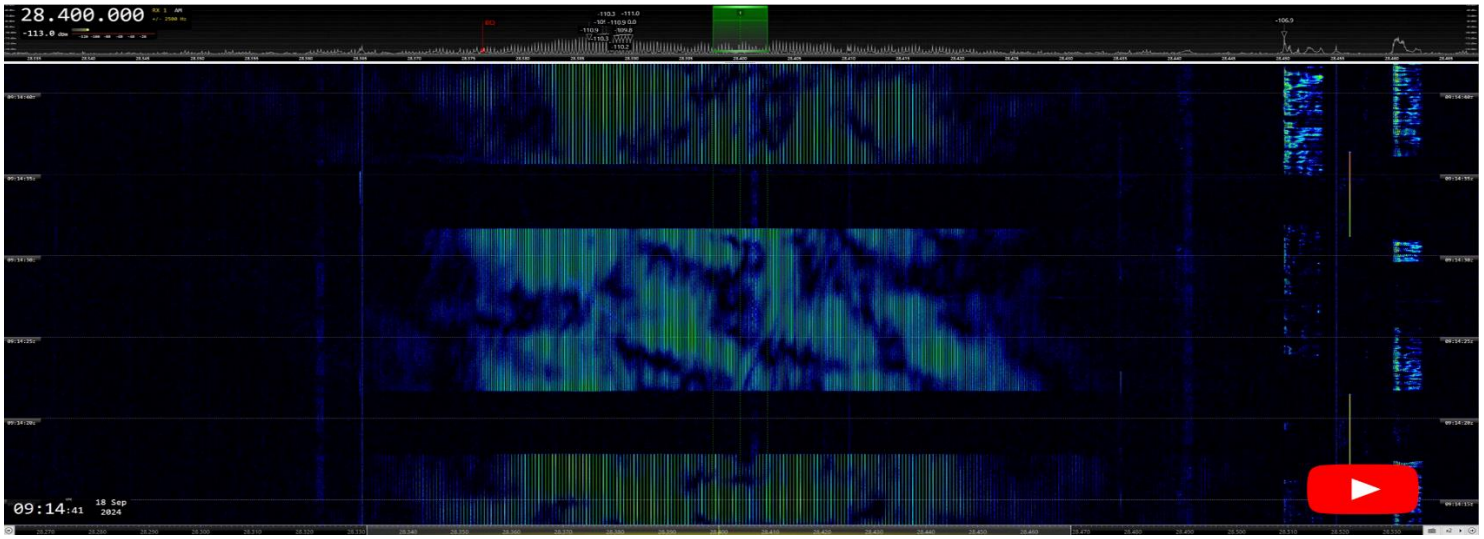


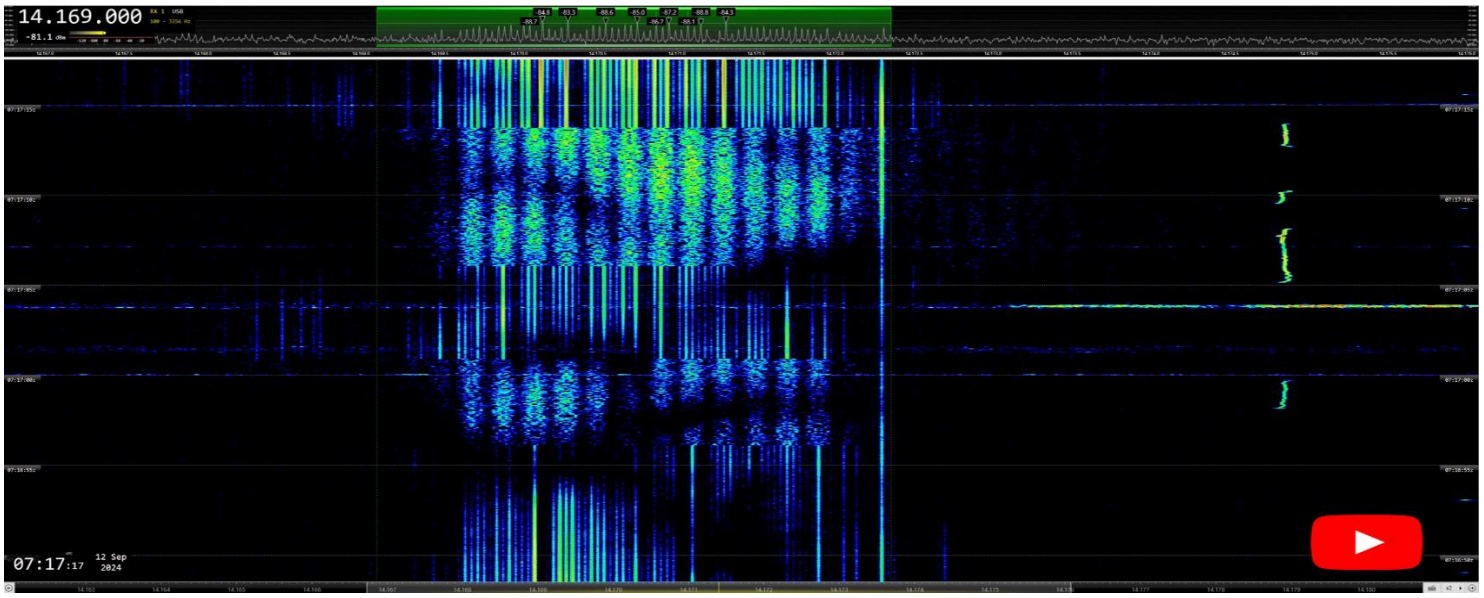
14198.5 kHz CF: DPRK-FSK 600 ARQ. F1D. Shift = 600 Hz. 600 Bd



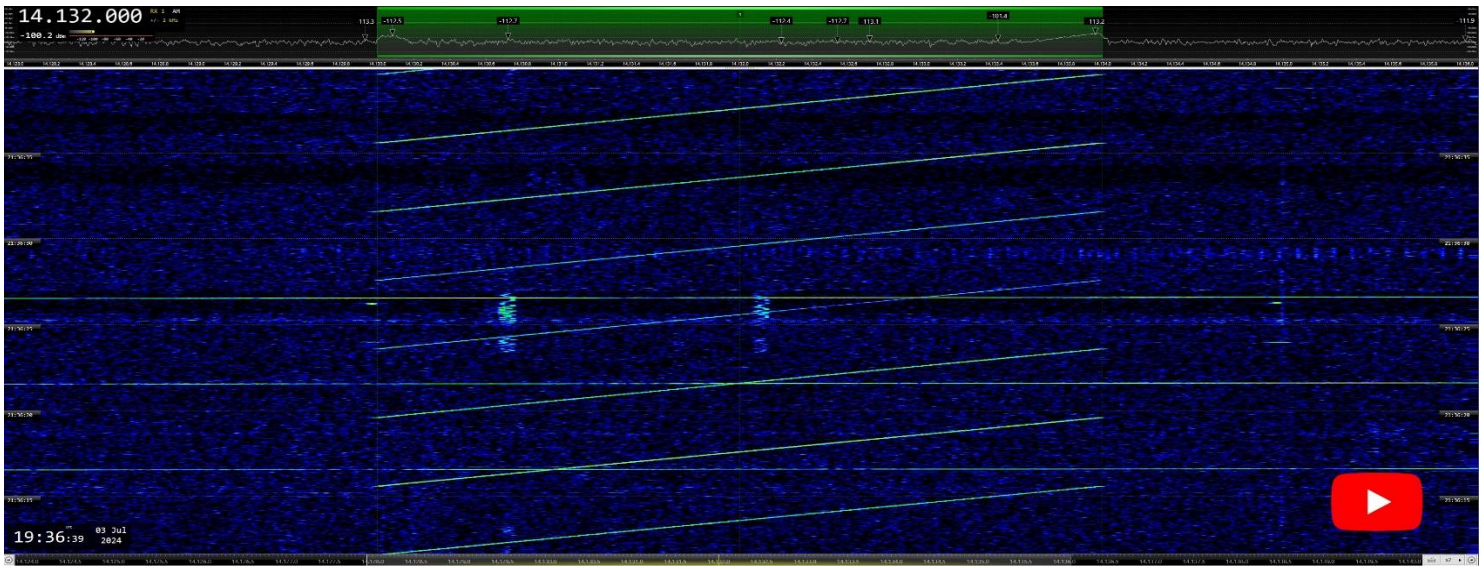
DPRK-PSK 1200 ARQ. G1D. BW = 1.2 kHz. 1200 Bd



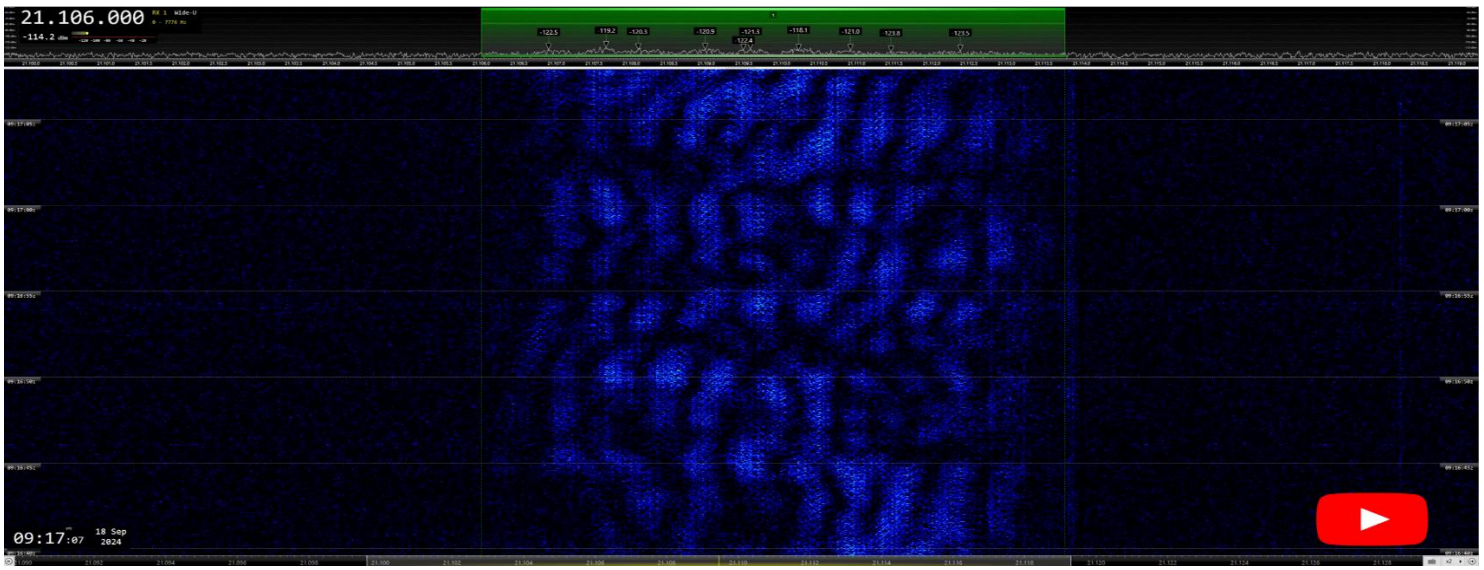
28400 kHz CF. OTHR IRN. BW ca 45 kHz. Alternating 150 and 313 pps bursts. Long-lasting



14171 kHz CF: CIS-12. J7D. BW = 2.7 kHz.



Example of the transmissions received almost daily on 14132 kHz CF in September 2024. (BW = 4 kHz). Radar bursts? BD = 120 sec. BRI = 240 sec



21110.5 kHz CF: XXX. Unidentified signal. BW ca 7 kHz