

IARU Monitoring System Region 1



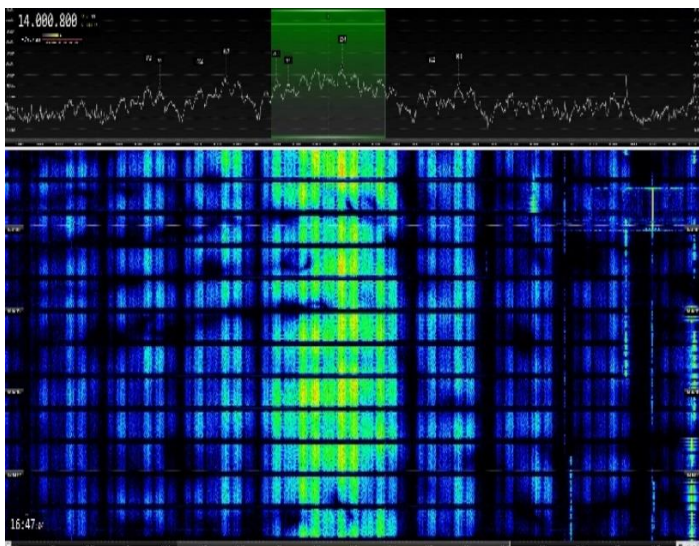
Monthly Newsletter - December 2022

News and info

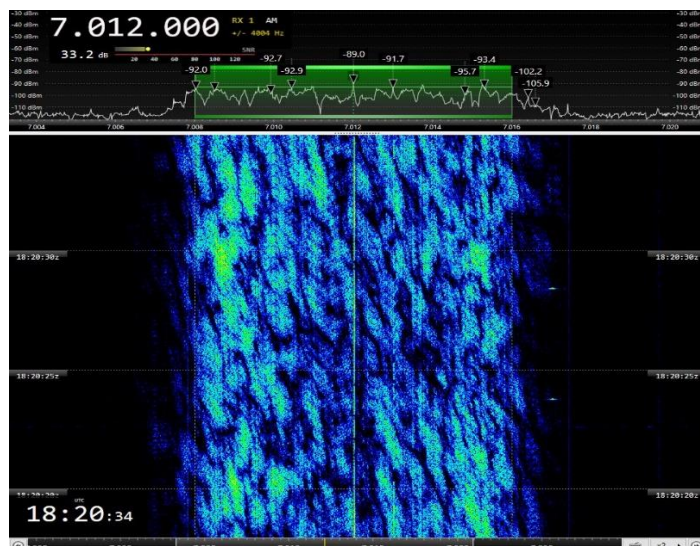
In this issue of the IARUMS R1 Newsletter we summarize the activity of intruders on the HF amateur radio bands in 2022.

Since the end of February 2022, and coinciding with the beginning of the war in Ukraine, several types of unknown emissions appeared. Although we still do not know the exact modulation mode used and their exact purpose, we suppose that most of these signals could be used as jammers. Never received before, these transmissions were sent more frequently in the 40 and 20 m. bands, being sometimes long-lasting, although there were few cases of receptions of the same emissions in the 17 and 15 m. bands. Today we can still receive some of them.

The radiolocations carried out thanks to the KiwiSDR network TDoA indicated areas where the military conflict is taking place.



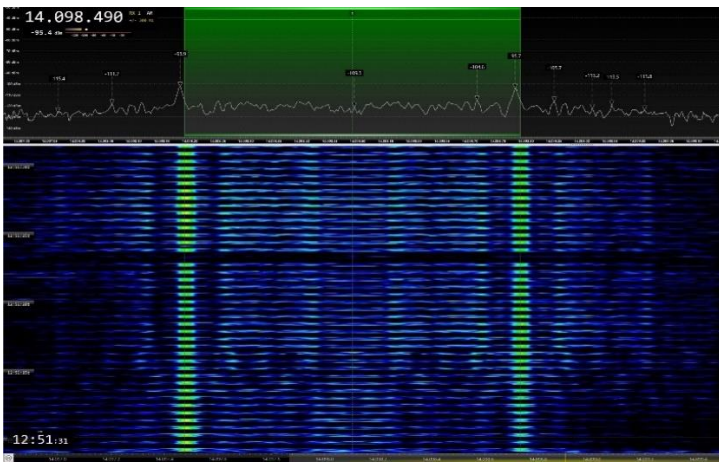
14000.8 kHz CF. XXX. BW ca 2K70E; overdriven. Jammer?



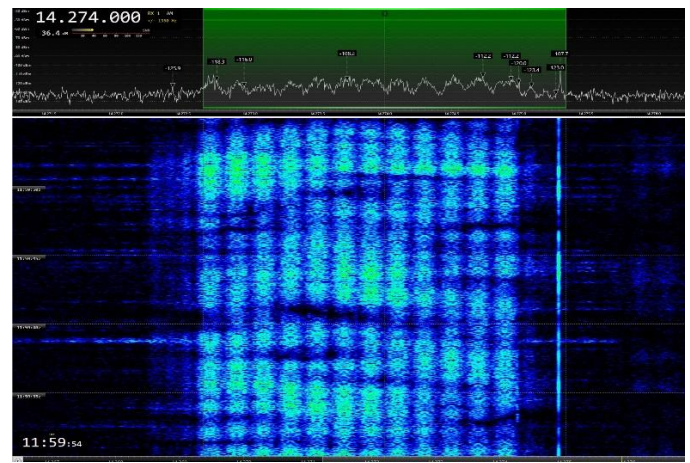
7012 kHz CF: XXX. BW ca 8K0E. Jammer?

Regarding broadcasting stations sending their transmissions on the HF amateur bands, the “Radio Ethiopia” (ETH) station continued transmitting on 7110 kHz CF A3E (AM) throughout the year, and we note that its transmissions have not yet ceased on this frequency. Their transmissions were received daily for several months and joined the nuisance caused by well-known stations such as “Voice of the Broad Masses” (ERI) on 7140.02 kHz C.F, and the splatter on the 40 m. band caused by China Radio International, which is transmitting on 7205 kHz CF (A3E) but is often received down to 7190 kHz, or the transmissions of the “Sound of Hope” station (Taiwan) on 18080 kHz CF, A3E.

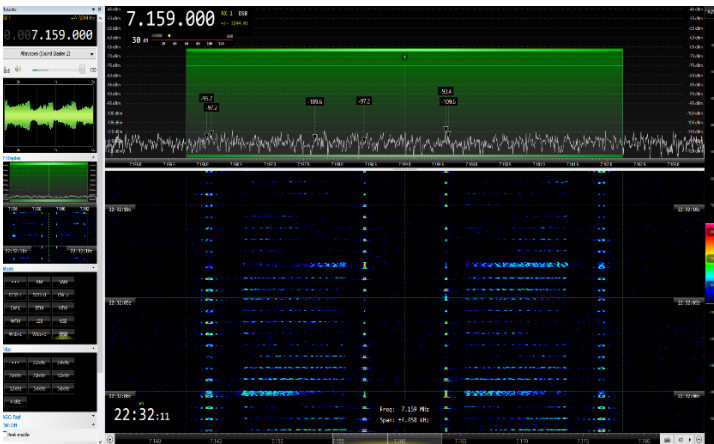
Throughout 2022 we also received numerous transmissions sent in various MIL modes, well-known and unfortunately common on our bands. The most common were various F1B ## CIS modes (FSK) along with other transmissions sent in J7D mode such as CIS-12 (12 x 120 Bd + pilot line at 3300 Hz), or in DPRK 600 ARQ (Bd = 600. SH = 600 Hz), LINK-11 CLEW (G1D; PSK, 2K40E), or CHN-30 (30x60 Bd PSK-4; pilot tone at 450Hz), just naming a few among them.



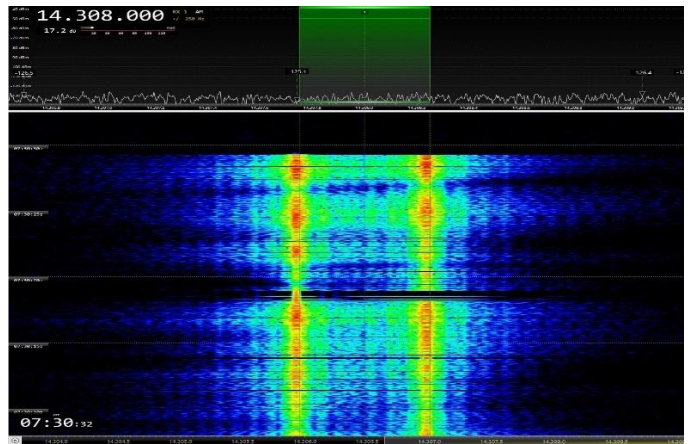
DPRK-FSK 600 ARQ (SH = 600 Hz; Bd = 600)



CIS-12 (J7D. BW = 2K60E; 12 x 120 Bd + pilot line at 3300 Hz)



7159 kHz CF: Link-11 CLEW DSB (B7D; PSK; BW = 6K0E)

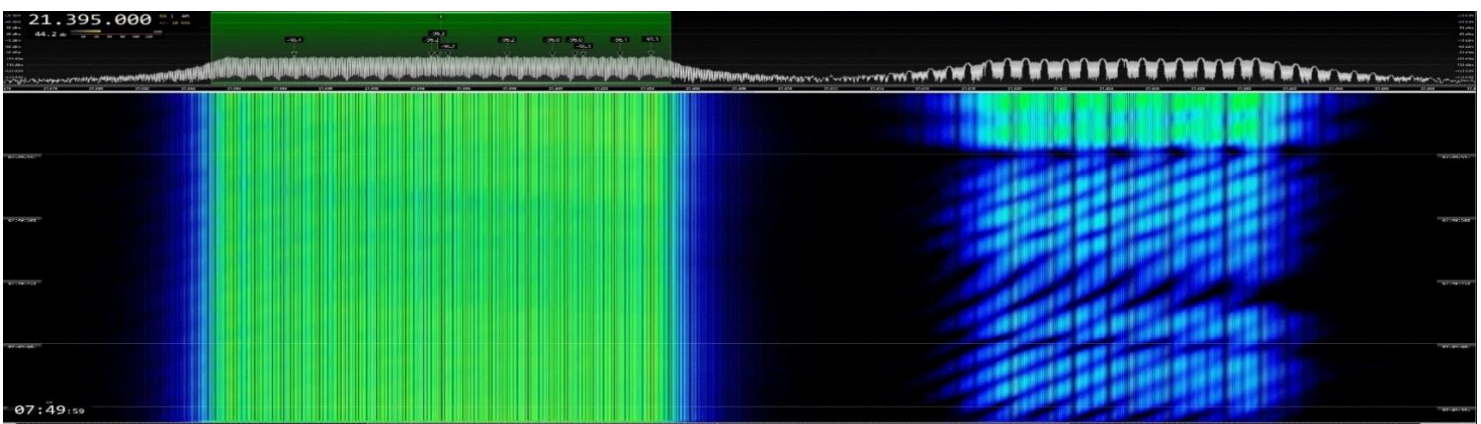


14308 kHz CF: F1B. (FSK) SH = 500 Hz. Bd = 50

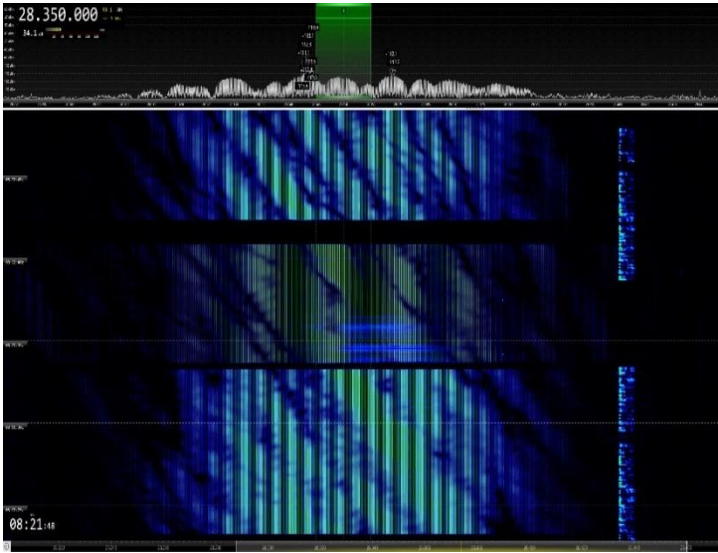
2022 was regrettably no exception to the sad and old rule: the transmissions sent by over-the-horizon radars were the ones that were received the most and caused the most damage to the HF Amateur Radio bands, not only because they were very frequently received, but also due to their very high TX power; besides many of them being long-lasting. From 40 to 10 m., all the bands were too usually harmed by these annoying signals.

We noted an increase in the number of the RUS OTH radar Contayner transmissions (BW = 12K0E; 40 sps), as well as an activity increasement of the Iranian OTH radar (28860 kHz CF; daily. BW = 45K0E, short bursts alternating 150 and 313 sps; but also found along the whole 10 m band, static or jumping, using the same bandwidth and same sps, although sometimes using short bursts alternating 226 and 333 sps, or short bursts alternating 307 and 870 sps; or short bursts with 313 sps only).

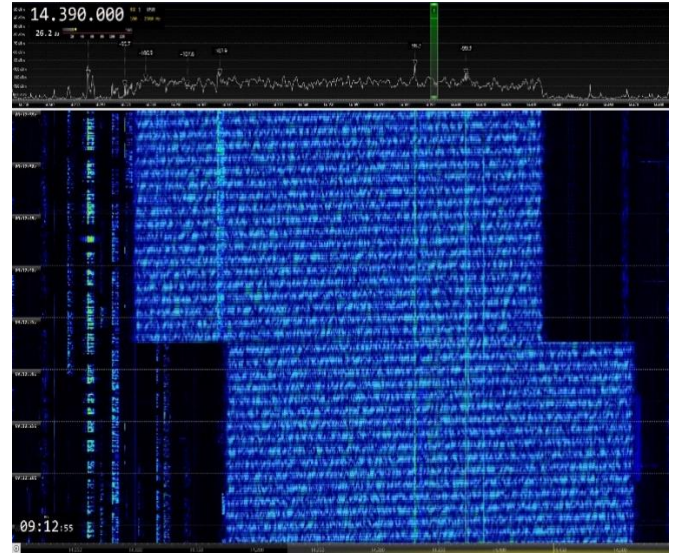
All the other sadly well-known OTH radars, like the British OTH radar transmitting from the UK Sovereign Area Base in Cyprus (BW usually 20K0E, 25 or 50 sps); or the Chinese nicknamed "Foghorn" (BW = 10K0E. Short bursts; 66.7, 50, 83.3, 41.7 sps); or the CHN wideband OTHR (BW = 160K0E; 10 sps) and other CHN OTHR were also many times received.



21395 kHz CF: British OTHR (G; UK SBA, Cyprus) BW = 20K0E. 50 sps. At the same time, 21425 kHz CF: RUS OTHR Contayner (BW = 12K0E. 40 sps)

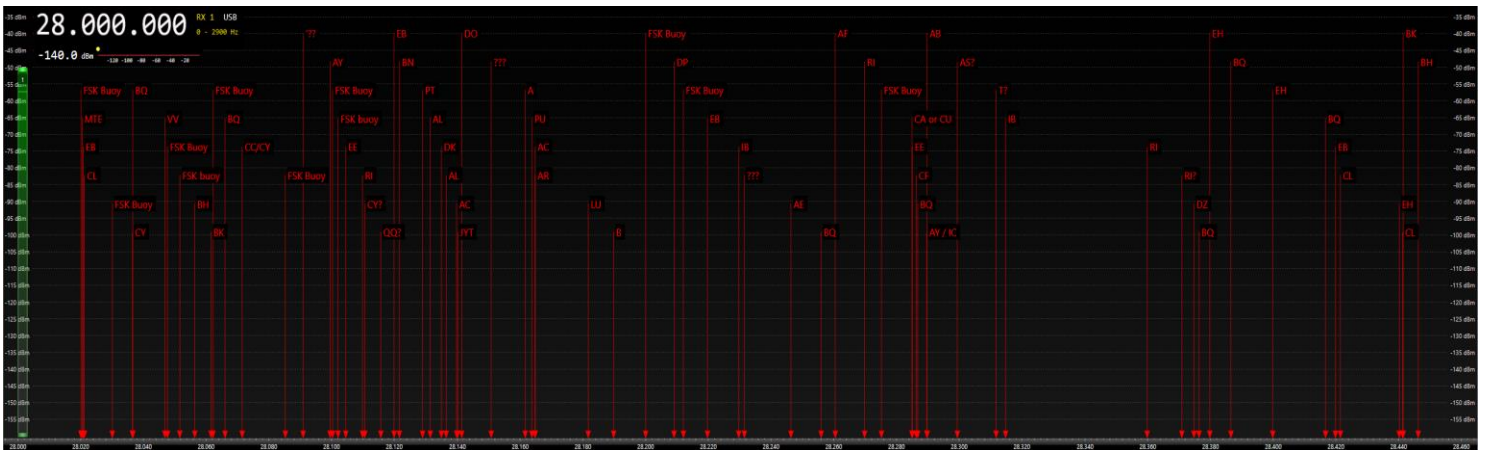


28350 kHz CF: OTHR IRN. BW = 45K0E; 150 and 313 sps; Jumping.



2 X CHN wideband OTHR (BW = 160K0E; 10 sps) partially on 20 m

During 2022 we also had numerous intruders on the 10 m band, as CBers (A3E and J3E; AM and SSB), RUS taxi dispatch stations (F3E; FM), and lots of fishing buoys (A1A and F1B; CW and FSK). We also kept receiving “village radio” transmissions on different bands coming from several Region 3 countries and fishermen illegally using their transmitters on the HF Amateur Radio Bands (like the Spanish fishermen transmitting very often on 21000 kHz USB (J3E)).



Fishing buoys, A1A (CW) and F1B (FSK), June 2022

To fight against the increasing number of intrusions plaguing our HF amateur radio bands, we strongly recommend that the Region 1 member societies join the IARU Monitoring System R1, help the creation of [intruder watch groups](#) and appoint an IARUMS national coordinator to send complaints about the intruders to your national regulators, encouraging them to send official complaints about these illegal transmissions to the International Telecommunication Union (ITU). Please, find more information at the [IARU Monitoring System Region 1 webpage](#).

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** = unidentified.

DARC; Daniel, DL3RTL. Credit to monitors: DL8LAQ, Norbert; DL2SCH, Jürgen; F4FPR, Benjamin; DL5RBW, Roger; DL4HG, Olaf; DK7PE, Rudolf; DF5JL, Tom; DO1MKH, Michael; DD1XX, Thomas; DK5XM, Rolf; DB3TA, Alex									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
6995,0	1709	20	12	RUS		FMOP	40	12k	OTHR Contayner
6997,0	1705	13	12	RUS		FMOP	40	12k	OTHR Contayner
7009,8	0750	11	12	RUS		PSK		2k4	CIS-12
7041,8	1358	28	12	RUS		PSK		2k4	CIS-12
7050,0	1555	18	12	UKR		J3E-L		3k	RUS/UKR radio war
7050,0	1515	03	12			dig.Jam ming		3k	interrupted dig.jamming signal
7058,0	1610	03	12	RUS		FMOP	40	12k	OTHR Contayner
7062,0	vt	vd	12	RUS		FMOP	40	12k	OTHR Contayner
7066,0	vt	vd	12	RUS		FMOP	40	12k	OTHR Contayner
7075,0	1509	03	12			A1N			16 A1N-dashes then pause and endless repeat
7089,8	2032	19	12			PSK	2400	2k5	LINK11 SLEW
7090,0	1721	20	12	RUS		FMOP	40	12k	OTHR Contayner
7102,0	1746	30	12	RUS		FMOP	40	12k	OTHR Contayner
7111,8	1511	18	12	RUS		CIS-12		2k4	CIS-12
7159,6	0709	05	12			A1N			A1N continous dits without any identity
7160,8	vt	vd	12			PSK		2k4	LINK11 CLEW SSB
7185,0	1607	10	12	RUS		FMOP	40	12k	OTHR Contayner
7189,0	1510	04	12	RUS		FMOP	40	12k	OTHR Contayner
7190,0	1853	08	12	RUS		FMOP	40	12k	OTHR Contayner
7192,0	1550	11	12	RUS		FMOP	40	12k	OTHR Contayner
7194,0	1610	01	12	RUS		FMOP	40	12k	OTHR Contayner
10121,0	1552	18	12	RUS		FMOP	40	12k	OTHR Contayner
14053,0	0948	29	12	RUS		FMOP	40	12k	OTHR Contayner
14091,0	1315	27	12	RUS		FMOP	40	12k	OTHR Contayner
14110,0	1326	28	12	RUS		FMOP	40	12k	OTHR Contayner
14140,0	1358	29	12	RUS		FMOP	40	12k	OTHR Contayner
14161,0	1543	23	12	RUS		FMOP	40	12k	OTHR Contayner
14189,0	vt	vd	12	RUS		FMOP	40	12k	OTHR Contayner
14192,0	1104	29	12	RUS		FMOP	40	12k	OTHR Contayner
14208,0	1152	29	12	RUS		FMOP	40	12k	OTHR Contayner
14308,0	1019	29	12			F1B	75	500	F1B Shift ca.500Hz 75Baud unident
18166,0	0929	12	12	RUS		FMOP	40	12k	OTHR Contayner
18170,0	vt	vd	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
18171,0	0916	11	12	RUS		FMOP	40	12k	OTHR Contayner
18172,0	1035	07	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21119,0	0805	18	12	CHN		FMCW	66,67	10k	OTHR 3,8s bursts
21165,0	1106	29	12	CHN		FMCW	66,67	10k	OTHR 3,8s bursts
21173,0	vt	vd	12			FMOP	40	6k	OTHR
21174,0	0912	18	12			FMOP	40	6k	OTHR
21195,0	1405	27	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21210,0	1129	21	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21229,0	1333	13	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21230,0	0843	28	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21280,0	1306	27	12	RUS		A1A			WX Data RUS MIL Wladiwostok

DARC; Daniel, DL3RTL. Credit to monitors: DL8LAQ, Norbert; DL2SCH, Jürgen; F4FPR, Benjamin; DL5RBW, Roger; DL4HG, Olaf; DK7PE, Rudolf; DF5JL, Tom; DO1MKH, Michael; DD1XX, Thomas; DK5XM, Rolf; DB3TA, Alex

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21320,0	vt	vd	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21335,0	1330	06	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21350,0	1131	06	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21361,0	0805	18	12	CHN		FMCW	66,67	10k	OTHR 3,8s bursts
21365,0	0949	12	12				43 / 66	10k	ca.5 Sec. Bursts with 43 to 66 sps Modulation xx suspect Radar
21385,0	1112	28	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21390,0	1045	17	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21400,0	1328	06	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21409,0	1358	29	12	RUS		FMOP	40	12k	OTHR Contayner
21410,0	vt	vd	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21421,0	1302	29	12	RUS		FMOP	40	12k	OTHR Contayner
21423,0	vt	vd	12	RUS		FMOP	40	12k	OTHR Contayner
21424,0	vt	vd	12	RUS		FMOP	40	12k	OTHR Contayner
21425,0	0910	28	12	RUS		FMOP	40	12k	OTHR Contayner
21428,0	0803	18	12	RUS		FMOP	40	12k	OTHR Contayner
21438,0	0918	24	12	RUS		A1A			"RIP90 de RCV" // RUS NVY Sevastopol
21440,0	1328	09	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
21445,0	1143	06	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
28060,0	1135	27	12	IRN			307/87 0	45k	Iranian OTHR 5,81/3,26s bursts
28100,0	0719	04	12	IRN			307/87 0	45k	Iranian OTHR 5,81/3,26s bursts
28115,0	1010	30	12			F3E			suspect RUS TAXI Comm.
28135,0	1011	30	12			F3E			suspect RUS TAXI Comm.
28155,0	1011	30	12			F3E			suspect RUS TAXI Comm.
28165,0	1011	30	12			F3E			suspect RUS TAXI Comm.
28195,0	1012	30	12			F3E			suspect RUS TAXI Comm.
28245,0	1130	19	12	IRN			307/87 0	45k	Iranian OTHR
28350,0	1025	01	12	CYP		FMCW	25	20k	OTHR Pluto Cyprus
28550,0	0937	05	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
28600,0	1215	11	12	IRN			307/87 0	45k	Iranian OTHR 5,81/3,26s bursts
28650,0	1136	28	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
28860,0	vt	vd	12	IRN			150/31 3	45k	Iranian OTHR 9,98/7,19s bursts
28910,0	1132	27	12	CYP		FMCW	50	20k	OTHR Pluto Cyprus
29500,0	1150	27	12	IRN			150/31 3	45k	Iranian OTHR 9,98/7,19s bursts
29615,0	0855	18	12			FMOP	12,5	40k	OTHR

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3623	1800	25	12	RUS /UK R		LSB			Russian-Ukrainian radio war. Total chaos for more than two hours. Still going strong at 2000z.

IRTS; Michael, EI3GYB									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3633	1850	31	12	RUS /UK R		LSB			Russian-Ukrainian radio war. Patriotic music, shouting of propaganda. Ends at 2030z
3755	1710	20	12			LSB			Howling of wolves. Medium strength signal. Persistent.
3762	1630	3	12	F		LSB			From 1630z onwards: DQRM from a French station. Like all the other winters audible with a strong signal. Every single day for hours- even on Christmas Eve and Christmas Day. Male person.
3780	1710	20	12			LSB			Loud pop music. DQRM. Still on a full hour later.
7000	1705	24	12	INS		LSB			Several groups of Indonesian fishermen. Loud. Persistent. Nearly daily audible with medium signals.
7050	1300	9	12	RUS /UK R		LSB			Russia-Ukrainian radio war. Medium to strong signal. Persistent. Daily. Patriotic music. Slogans. "Putin khyilo" "Smert' rosiys'kym okupantam" "Russki pederatski" "Russenschwein"
7108	1845	31	12			RADAR			7108 to 7122 kHz. Radar, on and off. Weak but persistent.
7110	1845	5	12	CHN		RADAR			7110 to 7120 kHz. Loud. On and off. Chinese Foghorn.
7110	1655	15	12	ETH		AM			Radio Ethiopia. Daily with a weak to strong signal.
7161.5	1835	5	12			PSK			Link-11Clew. Strong and persistent.
7170	1245	3	12			RADAR			Radar from 7170 to 7182 kHz Strong. On and off. Heard for several days until the 7th.
7205	1900	15	12	CHN		AM			China Radio International, splattering down to 7198 kHz. Daily.
14000	1500	20	12	CHN		AM			China Radio International. Nearly daily with a weak to medium signal. Mixing product.
14196.5	1250	29	12			PSK			Very strong and persistent signal.
14220	1300	13	12			LSB			Loud pop music. Persistent.
18153	1230	7	12	UK base in Cypr us		RADAR			Radar from 18153 to 18183 kHz. Medium signal. Persistent."Pluto"
18155	1250	13	12	UK base in Cypr us		RADAR			Radar from 18155 to 18170 kHz. Very strong. On and off. "Pluto"
20989	1055	15	12	UK base in		RADAR			Radar from 20989 to 21010 kHz. Huge and persistent. "Pluto"

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
				Cypr us					
21150	1200	5	12	UK base in Cypr us		RADAR			Radar from 21150 to 21189 kHz. Huge and persistent. "Pluto"
21164	1005	9	12	UK base in Cypr us		RADAR			Radar from 21164 to 21176 kHz. Very strong and persistent. "Pluto"
21307	1240	3	12	UK base in Cypr us		RADAR			Radar from 21307 to 21332 kHz. Huge and persistent. "Pluto"
21317.5	1315	4	12			PSK			North Korean embassy traffic. Medium signal.
21320	1330	31	12	UK base in Cypr us		RADAR			Radar from 21320 to 21335 kHz. Weak but persistent. "Pluto"
21396	1135	8	12	UK base in Cypr us		RADAR			Radar from 21396 to 21442 kHz. Very strong and persistent. "Pluto"
21432	1050	12	12	UK base in Cypr us		RADAR			Radar from 21432 to 21455 kHz. Huge and non stop signal. "Pluto"
21438	1205	5	12	UKR		CW			Russian navy Sevastopol. Daily with a medium signal
28800	1000	9	12	IRN		RADAR			Radar from 28800 to 28900 kHz. AM mode. Very strong- nearly daily.
29000	1005	9	12	IRN		RADAR			Radar from 29000 to 29200 kHz. AM mode. Very strong- nearly daily.
29300	1010	9	12	IRN		RADAR			Radar from 29300 to 29500 kHz. AM mode. Very strong- nearly daily.

OëVSV; Christoph, OE1VMC

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
28425	0950	03	12	INS		J3E-U			Fishing boats?
28517	1126	03	12			A3E			East Asia, pirates
28615	1131	03	12	RUS		F3E			Taxi?
29450	1133	03	12	IRN		RADAR		50KOE	
21172	1140	03	12	RUS		RADAR		12KOE	

OëVSV; Christoph, OE1VMC

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21130	1142	03	12			RADAR		20K0E	
21320	1143	03	12	G		RADAR		20K0E	
29450	1039	04	12	IRN		RADAR		45K0E	
28100	1040	04	12	IRN		RADAR		45K0E	
3603	2223	09	12			XXX		3K0E	
3608	2228	09	12			XXX		3K5E	
28600	0801	11	12	IRN		RADAR		45K0E	
28860	0805	11	12	IRN		RADAR		45K0E	
21230	0921	28	12	G		RADAR		20K0E	

PZK; SP3AMO, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7071.5	1150	14	12			PSK	120	2K70E	
7110.0	1707	23	12			A3E		9K0E	
7109.3	1910	22	12			UI		2K0	digital modulation, 1 sec on 5 sec off
7139.0	1958	30	12			RADAR		16K0E	S8
7193.0	1125	vd	vt			F1B		250	S9
14026.0	1020	15	12			CIS-12		3K0	S9+20dB
14025.8	1138	26	12			PSK	120	2K70E	Changable modes
14127.0	1122	20	12			J2E-U		3K0	religious songs/speech in Russian S9+
14148.0	1350	1	12			RADAR		8K0	burst
14177.0	1139	31	12			RADAR		8K0E	3 sec. bursts
14182.0	1205	15	12			RADAR		10K0E	S9 burst and on 14187.0
14187.0	1220	14	12			RADAR		8K0E	burst
14188.0	1120	20	12			RADAR		8K0E	bursts
14275.0	1135	15	12			RADAR		10K0E	1 sec. bursts
14327.0	1142	10	12			RADAR		10K0E	burst
14343.0	1044	13	12			RADAR	66	10K0E	Bursts a few seconds long
18089.0	1105	27	12			RADAR		8K0E	burst 3 sec.
18163.0	1118	20	12			RADAR		12K0E	S9+
18170.0	vt	vd	12			RADAR		20K0E	partially in the band
18182.0	1245	10	12			RADAR		50K0E	partially in the band
21000.0	1015	15	12			RADAR		20K0E	S9
21063.0	0855	22	12			RADAR		12K0E	S9
21130.0	1215	2	12			RADAR		20K0E	S9
21154.0	1147	10	12			RADAR		10K0E	burst 10 sec.
21162.0	1222	18	12			RADAR	40	10K0E	
21164.0	0855	22	12			RADAR		10K0E	bursts
21173.0	1020	vt	vd			RADAR		10K0E	
21176.0	1120	6	12			RADAR		10K0E	S7
21320.0	1105	3	12			RADAR	50	20K0E	S9+
21330.0	1125	31	12			RADAR		12K0E	S5
21350.0	vt	vd	12			RADAR		20K0E	S9++
21365.0	1116	20	12			RADAR		20K0E	S9+
21400.0	0934	20	12			RADAR	50	20K0E	
21420.0	1140	26	12			RADAR	50	20K0E	

PZK; SP3AMO, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21423.0	1150	29	12			RADAR	40	12K0E	QRT 11.53 UTC
21425.0	1010	28	12			RADAR	50	20K0E	599++
21445.0	1143	6	12			RADAR		20K0E	S9
28060.0	0950	27	12	IRN		RADAR		100K0E	Strong and wide
28100.0	1028	4	12	IRN		RADAR	300/87 0	46K0E	599++
28115.0	1239	10	12	IRN		RADAR		100K0E	Bursts a few seconds
28120.0	1225	18	12	IRN		RADAR	300/87 0	46K0E	
28590.0	1028	13	12			RADAR	50	20K0E	
28600.0	vt	vd	12	IRN		RADAR		200K0E	S9 also in a few another freq's
28600.0	vt	vd	12			RADAR	300/87 0	46K0E	
28910.0	0955	27	12			RADAR		20K0E	S9+20dB not IRN
28980.0	1000	27	12			RADAR		20K0E	S9 not like IRN
29045.0	0955	27	12			RADAR		20K0E	S9 10:00 off not IRN
29450.0	1115	20	12	IRN		RADAR		60K0E	
29525.0	0951	21	12			RADAR	50	20K0E	

REF; Francis, F5MIU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
24905	0849	1	12			fmcw	40	10kHz	OTH Radar pulsed 25ms, S8
21172	0919	6	12			fmcw	40	10kHz	OTH Radar pulsed 25ms, S9
18170	1553	12	12			fmcw	50	20kHz	OTH Radar pulsed 20ms, S8
28375	0850	14	12			fmcw	50	20kHz	OTH Radar pulsed 20ms, S9+
7190	1720	19	12			fmcw	40	15kHz	OTH Radar pulsed 25ms, S9
7125	1720	19	12			fmcw	40	15kHz	OTH Radar pulsed 25ms, S9
28310	0837	20	12			fmcw	25	20kHz	OTH Radar pulsed 40ms, S8
21065	0846	22	12			fmcw	40	15kHz	OTH Radar pulsed 25ms, S9
18170	0856	22	12			fmcw	40	15kHz	OTH Radar pulsed 25ms, S9+20dB
10115	1707	24	12			fmcw	40	15kHz	OTH Radar pulsed 25ms, S9
21000	0931	27	12			USB		3Khz	Fisherman's are back ! S8 (Spanish?)
24895	0914	28	12			fmcw	10	15kHz	OTH Radar pulsed 100ms, S8 intermittent
21232	0927	28	12			fmcw	50	25kHz	OTH Radar pulsed 20ms, S9+20
21422	0930	28	12			fmcw	40	15kHz	OTH Radar pulsed 25ms, S9+
28310	0842	28	12			fmcw	40	20kHz	OTH Radar pulsed 25ms, S8
18068	0840	31	12			fmcw	40	15kHz	OTH Radar pulsed 25ms, S9+20dB

RSGB; Richard, G4DYA

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3756.0	1907	12	12			J3E		1K70E	USB 'The Pip'. Daily.
3756.0	1838	20	12			B3E		5K80E	ISB: LSB unknown noise, USB: 'The Pip'.
6999.9	1339	12	12			J3E			USB pirates speaking English with Irish accents

RSGB; Richard, G4DYA									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7030.0	0857	19	12			F1B		250	FSK
7032.0	0823	05	12			J7D		2K70E	USB 7030.0 / CIS-12
7037.0	1832	20	12	CHN		F3N	50	10K0E	FMCW radar bursts
7071.8	0810	14	12			G1D		2K60E	Stanag 4285
7075.00	1541	08	12			A1N			Continuous groups of 16 dashes
7075.01	0829	04	12			A1N			Continuous groups of 16 dashes. Also heard 100716z, 271339z
7075.02	0839	05	12			A1N			Continuous groups of 16 dashes. Also heard 091208z, 120935z, 190900z, 210755z, 250915z, 261002z, 280915z, 291017z, 310835z
7075.03	0817	16	12			A1N			Continuous groups of 16 dashes
7075.05	1423	14	12			A1N			Continuous groups of 16 dashes
7089.0	0856	25	12			J7D		2K70E	USB 7087.0 / CIS-12
7090.0	1505	23	12	RUS		P0N	40	14K0E	Container pulse radar
7092.0	1206	09	12			J7D		2K70E	USB 7090.0 / CIS-12
7110.0	1608	12	12	ETH	R. Ethiopia	A3E			AM broadcasting. Also heard 211753z.
7118.0	1328	26	06			J7D		2K70E	USB 7116.0 / CIS-12
7149.0	1047	24	12			A1A		400HE	Channel marker 9 tones spaced 50 Hz except during Morse groups
7159.0	1043	01	12			J7D		2K40E	USB 7159.0 / Link 11 CLEW. Also heard 050841z, 060830z, 071351z, 081543z
7174.0	2127	01	12	RUS		P0N	40	14K0E	Container pulse radar
7182.0	1506	23	12	RUS		P0N	40	14K0E	Container pulse radar
7192.0	1541	11	12	RUS		P0N	40	14K0E	Container pulse radar
7193.0	0933	01	12			F1B		250	FSK. Also heard 040755z, 050911z, 060831z, 091202z, 130837z, 141426z, 150854z, 161448z, 190902z, 200853z
7199.989	1027	23	12			A3E			AM broadcasting, unidentified
10152.0	1539	11	12	RUS		P0N	40	14K0E	Container pulse radar
14002.0	1124	15	12			F1B		850	FSK
14050.0	0731	10	12			F1B		250	FSK
14100.0	0850	25	12	CHN		F3N	41.7	10K0E	FMCW radar bursts
14105.0	0851	25	12	CHN		F3N	50	10K0E	FMCW radar bursts
14110.0	0911	28	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
14121.0	0908	05	12	CHN		F3N	47.6	10K0E	FMCW radar bursts
14145.0	1010	24	12	CHN		F3N	50	10K0E	FMCW radar bursts
14148.0	0909	05	12	CHN		F3N	50	10K0E	FMCW radar bursts
14150.0	0900	11	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
14161.0	1426	24	12	RUS		P0N	40	14K0E	Container pulse radar
14164.0	0841	14	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
14165.0	1010	24	12	CHN		F3N	50	10K0E	FMCW radar bursts
14246.0	0906	25	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
14255.0	0947	06	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
14256.0	0851	02	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
14258.0	0855	19	12			F1B		500	FSK
14261.0	0813	04	12	CHN		F3N	66.7	10K0E	FMCW radar bursts

RSGB; Richard, G4DYA									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14275.0	0844	07	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
14298.5	1231	19	12					1K20E	Unidentified bursts
14302.0	0937	02	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
14303.5	0803	10	12			F1D		1K20E	DPRK FSK bursts 600 Hz shift
14303.5	0805	13	12					1K20E	Unidentified bursts
14308.0	0852	02	12			F1B		500	FSK. Also heard 230954z, 291012z
14309.0	0936	10	12	CHN		F3N	50	10K0E	FMCW radar bursts
14323.0	0954	25	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
14336.0	0909	28	12	CHN		F3N	50	10K0E	FMCW radar bursts
14339.0	0939	02	12	CHN		F3N	41.7	10K0E	FMCW radar bursts
18065.0	0832	31	12	RUS		P0N	40	14K0E	Container pulse radar
18116.16	0943	22	12			F1B		500	
18121.0	0828	13	12	CHN		F3N	50	10K0E	FMCW radar bursts
18125.0	0951	26	12	CHN		F3N	50	10K0E	FMCW radar bursts
18129.0	1023	24	12	CHN		F3N	50	10K0E	FMCW radar bursts
18137.0	0829	10	12	CHN		F3N	50	10K0E	FMCW radar bursts
18142.0	1022	24	12	CHN		F3N	41.7	10K0E	FMCW radar bursts
18163.0	1113	20	12	RUS		P0N	40	14K7	Container pulse radar
18165.0	1159	09	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
18169.0	0925	12	12	RUS		P0N	40	14K0E	Container pulse radar
18170.0	1605	12	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
18170.0	0854	22	12	RUS		P0N	40	14K0E	Container pulse radar. Also heard 311231z
18171.0	0842	04	12	RUS		P0N	40	14K0E	Container pulse radar
18172.0	0917	15	12	RUS		P0N	40	14K0E	Container pulse radar
21040.0	0824	13	12	CHN		F3N	50	10K0E	FMCW radar bursts
21063.0	0842	22	12	RUS		P0N	40	14K0E	Container pulse radar
21106.0	0922	12	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21106.0	0829	31	12	CHN		F3N	50	10K0E	FMCW radar bursts
21111.0	0927	06	12	CHN		F3N	50	10K0E	FMCW radar bursts
21116.0	0911	29	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21130.0	0818	05	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
21140.0	0901	05	12	CHN		F3N	41.7	10K0E	FMCW radar bursts
21149.0	0912	29	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21157.0	0816	07	12	CHN		F3N	50	10K0E	FMCW radar bursts
21165.0	1029	29	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21170.0	0810	15	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus. Also heard 261405z
21171.0	1146	09	12	RUS		P0N	40	10K5	Container pulse radar
21172.0	0921	06	12	RUS		P0N	40	10K0E	Container pulse radar
21174.0	1313	26	12	RUS		P0N	40	10K0E	Container pulse radar
21176.0	1040	06	12	RUS		P0N	40	10K0E	Container pulse radar. Also heard 191225z
21176.0	0827	31	12	RUS		P0N	40	14K0E	Container pulse radar
21198.0	0844	25	12	CHN		F3N	50	10K0E	FMCW radar (continuous)
21225.0	0850	19	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21230.0	0840	28	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus

RSGB; Richard, G4DYA									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21231.0	1209	12	12	CHN		F3N	50	10K0E	FMCW radar bursts
21270.0	0939	10	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21275.0	0742	15	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
21286.0	0838	14	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21295.0	0908	10	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21297.0	0817	21	12	CHN		F3N	50	10K0E	FMCW radar bursts
21305.0	0801	10	12	CHN		F3N	50	10K0E	FMCW radar bursts
21308.0	0944	12	12	CHN		F3N	41.7	10K0E	FMCW radar bursts
21318.0	0816	21	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21320.0	0953	03	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus. Also heard 061038z
21320.0	0821	07	12	CHN		F3N	41.7	10K0E	FMCW radar bursts
21329.0	0855	15	12	CHN		F3N	41.7	10K0E	FMCW radar bursts
21330.0	0805	14	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
21330.0	1141	31	12	RUS		P0N	40	14K0E	Container pulse radar
21334.0	0918	29	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21339.0	0815	21	12	CHN		F3N	41.7	10K0E	FMCW radar bursts
21345.0	0916	29	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21350.0	1117	06	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
21352.0	0851	06	12	CHN		F3N	50	10K0E	FMCW radar bursts
21357.0	0837	14	12	CHN		F3N	66.7	10K0E	FMCW radar bursts
21365.0	1124	20	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
21370.0	1101	19	12	G		F3N	25	20K0E	FMCW radar, UK SBA, Cyprus. Also heard 160948z
21378.0	0843	31	12	CHN		F3N	47.6	10K0E	FMCW radar bursts
21381.0	0744	15	12	RUS		P0N	40	14K0E	Container pulse radar
21385.0	1014	05	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
21388.0	0905	05	12	CHN		F3N	50	10K0E	FMCW radar bursts
21390.0	0855	28	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
21410.0	0836	06	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus. Also heard 271331z
21414.0	0847	10	12	CHN		F3N	50	10K0E	FMCW radar bursts
21417.0	0812	15	12	RUS		P0N	40	10K0E	Container pulse radar
21423.0	0834	14	12	RUS		P0N	40	10K0E	Container pulse radar. Also heard 231017z
21425.0	0857	28	12	RUS		P0N	40	14K0E	Container pulse radar. Also heard 291008z
21426.0	0911	10	12	CHN		F3N	66.7	10K0E	FMCW radar bursts. Also heard 120942z
21438.0	0903	28	12	RUS	RCV	A1A			Morse
21441.0	0904	05	12	CHN		F3N	41.7	10K0E	FMCW radar bursts
21443.0	0933	22	12	RUS		P0N	40	10K0E	Container pulse radar
21445.0	1041	12	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
28100.0	0834	06	12	IRN		P0N		45K0E	Pulse radar 307.1 / 869.5 pps. Also heard 241006z, 310825z
28310.0	0850	20	12	G		F3N	25	20K0E	FMCW radar, UK SBA, Cyprus
28350.0	1031	01	12	G		F3N	25	20K0E	FMCW radar, UK SBA, Cyprus
28600.0	0840	11	12	IRN		P0N		45K0E	Pulse radar 307.1 / 869.5 pps. Also

RSGB; Richard, G4DYA

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
									heard 150803z, 160811z, 220837z, 311144z
28860.0	0844	11	12	IRN		PON		45K0E	Pulse radar 150.2 / 313.0 pps. Also heard 120916z, 130842z, 190845z, 200848z, 220839z, 250841z, 290908z, 310823z
28900.0	1000	23	12	IRN		PON		45K0E	Pulse radar 150.2 / 313.0 pps
29005.0	0907	29	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
29100.0	0918	12	12	IRN		PON		45K0E	Pulse radar 307.1 / 869.5 pps
29140.0	0821	13	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus
29350.0	1026	29	12	IRN		PON		45K0E	Pulse radar 150.2 / 313.0 pps
29400.0	0955	03	12	IRN		PON		45K0E	Pulse radar 150.2 / 313.0 pps. Also heard 100921z, 160810z, 271330z
29450.0	1158	01	12	IRN		PON		45K0E	Pulse radar 150.2 / 313.0 pps. Also heard 040812z, 060832z, 100918z, 190847z, 200849z
29500.0	0846	02	12	IRN		PON		45K0E	Pulse radar 150.2 / 313.0 pps. Also heard 23-946z
29525.0	0803	21	12	G		F3N	50	20K0E	FMCW radar, UK SBA, Cyprus

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7 MHz	1330-0615	*	12	RUS		RADAR	40sps	13k0E	*)Days: 3. - 6. 8. 11. 13. - 16. 18. 22. 23. 26. 27. (WebSDR 15d)
7 MHz	1330-1910	*	12	CHN		RADAR	50/67s ps	10k0E	*) Days: 1. 3. 5. 6. 8. 13. 18. 19. 22. 26. 'foghorn'
7010.0	0715-1735	11 18	12	RUS		J7D	120	2k60E	
7023.0	0600-1415	*	12	RUS		J7D	120	2k60E	*)Days: 9. 15. 19.
7026.7	0600-1640/	03 04	12	RUS		XXX		1k20E	
7030.0	0855-0945	*	12	RUS		F1B		250H	*) Days: 19. 24.
7031.0	0600-1400	16 - 21	12	RUS		R3E-u		3k6E	Brum / noise, russian vox
7041.7	0615-1200	04	12	RUS		XXX		1k20E	
7054.0	1100-1845	*	12	RUS		F1B		200H	*)Days: 1. 5. - 8. 13. 14. 17. 18. 25. 29. 31.
7059.5	1330-1500	08	12	RUS		J7D	120	2k60E	
7071.8	1430-1500	14	12			G1D		2k60	
7089.0	0620-1900	*	12	RUS		J7D	120	2k60E	*)Days: 21. 23. 25. 26. 28.
7099.0	1400-1415	12 14	12	RUS		F1B/ NON		250H	
7101.0	1355-	*	12	RUS	PQ7S etc	A1A	20	40H	*)Days: 9. 17. 20. 5BL

SRAL; Pekka, OH2BLU									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
	1415						wpm		
7110.0	1600-1810/	01 - 31	12	ETH	R. Ethiopia	A3E		9k0	
7110.0	1345-1500/	01 - 31	12	ETH	R. Ethiopia	A3E		9k0	
7138.0	1045-1845	18	12	RUS		F1B/NON		250H	
7149.0	0630-1305/	24	12	RUS		A1B		400H	50 Hz dotter
7159.0	130-1900	*	12	IW		G7D-u		2k40E	*) Days: 2. - 17. CLEW
7160.0	0615-0700	*	12	RUS		J3E-u		3k30E	*) Days: 2. 8. 17. female russian vox
7193.0	0800-1500/	*	12	RUS		F1B/NON		250H	*) Days: 1. - 9. 13. - 20.
7196.0	0805-0855/	20	12	RUS		F1B		250H	
10 MHz	1445-1515	04	12	G		RADAR	50sps	20k0	(WebSDR 3d)
10 MHz	1500-1600	18 19	12	RUS		RADAR	40sps	13k0E	(WebSDR 11d)
10127 A	1415-1600	01 - 31	12		TWR	A3E?		4k0E	Spurious from 9900 kHz
10137 A	1130-1245	18	12		TWR	A3E?		4k0E	Spurious from 9910 kHz
14 MHz	0600-1620	*	12	RUS		RADAR	40sps	13k0E	*) Days: 8. 22. 23. 26. 28. - 31. (WebSDR 13d)
14 MHz	0800-1200	*	12	CHN		RADAR	50/67sps	10k0E	*) Days: 6. 8. 9. 10. 12. 13. 14. 18. 19. 21. 24. 31. 'foghorn'
14000.0	0705-1250	02 21	12	RUS		A3A		600HE	150 Hz tone
14000.0	1250-1300	31	12	RUS		XXX		5k0E	Carriers 84 Hz spacing
14002.0	1250-1815	15	12	RUS		F1B		850H	
14026.0	1015-1115/	14 15	12	RUS		J7D		2k60E	
14221.0	0530-0600/	*	12	KAZ		F1B		200H	*) Days: 7. 11. 19.
14258.0	0835-1050/	05 19	12	RUS		F1B		500H	
14308.0	0815-1240	*	12	RUS		F1B		500H	*) Days: 2. 9. 12. 23. 29.
14334.3	0730-1210	*	12	RUS		F1B/NON		250H	*)Days: 3. 6. 7. 12. 18. 21. 22. 28.
14380.0	0800-1155	*	12	CHN		RADAR	10	160k0E	*) Days: 11. 15. 21.
18 MHz	1145-1430	*	12	G		RADAR	25/50sps	20k0	*)Days: 1. 2. 9. (WebSDR 9d)
18 MHz	0700-1200	*	12	RUS		RADAR	40 sps	13k0E	*) Days: 4. 7. 9. 12. - 15. 18. 25. (WebSDR 15d)

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
18107.0	0625-1300	06 07	12	RUS		F1B		200H	
21 MHz	0545-1400	*	12	G		RADAR	25/50s ps	20k0	*) Days: 2. - 29. (WebSDR 31d)
21 MHz	0630-1400	*	12	RUS		RADAR	40 sps	13k0E	*) Days: 1. - 6. 9. 11. - 15. 18. 19. 20. 23. 26. 28. 29. 31. (WebSDR 6d)
21 MHz	0600-1130	*	12	CHN		RADAR	50/67s ps	10k0E	*) Days: 2. 4. 5. 7. 9. 10. 13. - 17. 20. 22. 23. 29. 31. 'foghorn'
21438.0	/0830-1330	01 - 31	12	RUS	RCV	A1A	20 wpm	40H	navip
28 MHz	0600-1300	01 - 31	12	G		RADAR	12.5/25/50s ps	20k0	(WebSDR 31)
28 MHz	0700-1300	*	12	IRN		RADAR	150/313	60k0E	*)Days: 1. 3. 6. - 12. 16. 18. 21. 23. 24. 26. (WebSDR 12d)
28 MHz	0600-1300	*	12	IRN		RADAR	310/870	120k0E	*)Days: 4. 5. 6. 8. - 19. 21. - 28. 31.(WebSDR 17d)
28 MHz	0655-1255	*	12	IRN		RADAR	312 sps	50k0E	*) Days: 3. 7. 8. 10. - 16.
28860.0	0600-1300	*	12	IRN		RADAR	150/313	60k0E	*)Days: 6. 7. 9. 10. 13. - 23. 25. - 31. (WebSDR 23d)
28 MHz	0745-1100	*	12	RUS	Taxi disp.	F3E		3k0E	*) Days: 1. 2. 3. 5. - 12. 14. 15. 17. - 21. 23. - 25. 30. 107 reports

USKA; Peter, HB9CET

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7000.0 USB	1433	22	12			X	X	ca 3kHz	7001.8 kHz CF; Burst signal; Hybrid ser/par; FSK Intro 40Bd
7008.0	2246	20	12			FMOP	40 sps	12k0E	OTHR; Contayner
7010.0	1542 1549	29 30	12			J3E-L			Unid language, maybe village radio from Indonesia; weak
7015.0	1533	24	12			J3E-L			Unid language, maybe village radio from Indonesia; weak
7020.0	1528	24	12			J3E-L			Unid language, maybe village radio from Indonesia; weak
7025.0	1553	30	12			J3E-L			Unid language, maybe village radio from Indonesia; weak
7026.0	1541	13	12			OTHR	X	10k0E	OTHR; Bursts
7026.7	2254	03				X	X	ca 2k4	Unid signal
7030.0	1949 1532	21 24	12			J3E-L			Unid language, maybe village radio from Indonesia; weak
7039.0	2234	03	12			FMOP	40 sps	12k0E	OTHR; Contayner
7039.4	1619	30	12	RUS	M	A1A			Channel Marker; Magadan (weak)
7042.0	1353	28	12			J7D	12x 120 Bd	2k60E	CIS12
7050.0 LSB	1409	31	12			J3E-L		ca 3k0E	RUS-UKR Radio War almost daily
7054.0	1457 1404	22 31	12			F1B	50 Bd	200H	FSK almost daily

USKA; Peter, HB9CET

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7055.0 LSB	1411	31	12			J3E-L		ca 3k0E	RUS-UKR Radio War daily
7062.0	1820	23	12			FMOP	40 sps	12k0E	OTHR; Contayner
7071.8	1501 1016	13 14	12			G1D PSK8	2400	2k70E	STANAG 4285
7082.0 LSB	2230	20	12			PSK-4	30x 60 Bd	2k50E	CHN30 (PRC30); Burst system Pilot tone at 450Hz
7086.0	1801	23	12			FMOP	40 sps	12k0E	OTHR; Contayner
7089.0	1347	28	12			J7D	12x 120 Bd	2k60E	CIS12
7089.8	2242	03	12			G1D PSK8	2400	ca 2k40E	LINK11 SLEW often
7095.0	1539	27	12			FMOP	40 sps	12k0E	OTHR; Contayner
7109.0	2217	21	12			OTHR	66.66 sps	10k0E	Bursts
7110.0	1557	22	12	ETH		A3E		ca 9k0E	BC: Radio Ethiopia often
7111.0 LSB	1545	22	12			PSK-4	30x 60 Bd	2k50E	CHN30 (PRC30); Burst system Pilot tone at 450Hz
7114.0 LSB	2217	20	12			PSK-4	30x 60 Bd	2k50E	CHN30 (PRC30); Burst system Pilot tone at 450Hz
7118.0	1538	22	12			J7D	12x 120	2k60E	CIS12
7119.0	1412 1554	28 30	12			J7D	12x 120 Bd	2k60E	CIS12
7123.0 LSB	1548	29	12			PSK-4	30x 60 Bd	2k50E	CHN30 (PRC30); Burst system Pilot tone at 450Hz
7134.0	2233 1403	20 28	12	RUS		F1B		250H	FSK, weak, fading often
7155.0 LSB	2553 1555	27 30	12			PSK-4	30x 60 Bd	2k50E	CHN30 (PRC30); Burst system Pilot tone at 450Hz
7159.0 USB	2334	02	12			G7D DQPSK	75 Bd	ca 2k40E	LINK11 CLEW SSB; 16 tones spacing 110Hz often
7164.0	1454	22	12			F1B	75 Bd	500H	FSK
7178.0	1605	29	12			OTHR	62	10k0E	Bursts
7184.0	1516	24	12			OTHR	50	10K0E	Bursts
7188.0	1255	02				F1B	X	200H	FSK
7193.0	0900	05	12	RUS		F1B	50 Bd	250H	FSK often
7196.0	1004					A1A			CW, encrypted, groups of 5
7196.0	1226	09	12			J7D	12x 120 Bd	2k60E	CIS12
7198.0 LSB	1944 1506	21 24	12			PSK-4	30x 60 Bd	2k50E	CHN30 (PRC30); Burst system Pilot tone at 450Hz
7198.5	1054	04	12			X	X	2k0E	Bursts; unid digital signal
14004.0	0844	05	12			FMOP	40 sps	12k0E	OTHR; Contayner
14110.0	1334	28	12			FMOP	40 sps	12k0E	OTHR; Contayner
14161.0	1453	24	12			FMOP	40 sps	12k0E	OTHR; Contayner
14189.0	1418	31	12			FMOP	40 sps	12k0E	OTHR; Contayner
14194.0	0946	26	12			OTHR	66.66 sps	10k0E	Bursts

USKA; Peter, HB9CET

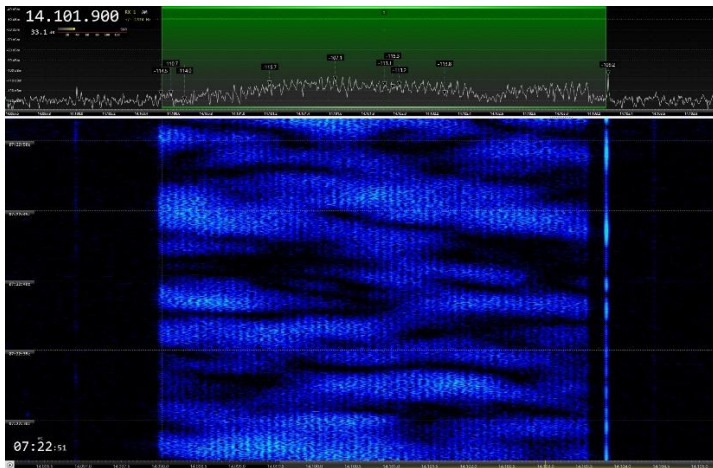
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14211.0	0950	15	12			OTHR	10 sps	160k0E	Wideband radar
14308.0	1024	23	12			F1B	X	500H	FSK
14323.0	1009	26	12			OTHR	66.66 sps	10k0E	Bursts
18170.0	1243	02	12			FMCW	50 sps	20k0E	OTHR; partially in 17m band UK base Cyprus
21000.0	1005	15	12			FMCW	50 sps	20k0E	OTHR; UK base Cyprus
21130.0	1219	02	12			FMCW	25 sps	20k0E	OTHR; UK base Cyprus
21171.0	1221	09	12			FMOP	40 sps	12k0E	OTHR; Contayner
21176.0	1216	02	12			FMOP	40 sps	12k0E	OTHR; Contayner
21330.0	0849	05	12			FMCW	50 sps	20k0E	OTHR; UK base Cyprus
21370.0	0936	05	12			FMCW	25 sps	20k0E	OTHR; UK base Cyprus
21423.0	1020	23	12			FMOP	40 sps	12k0E	OTHR; Contayner
21438.0	1225	02	12	RUS	RCV	A1A		10H	Area of Sevastopol daily
21441.0	0911	05	12			OTHR	41 sps	10k0E	OTHR; bursts
24996.0	1025	15	12			OTHR		200k	Wideband radar
28060.0	1021	27	12			OTHR	307 sps	40k0E	OTHR, bursts, long lasting
28100.0	1038	31	12	IRN		OTHR	307 + 870 sps	ca 45k	OTHR; bursts; long lasting sweep rate alternating
28115.0	1309	02	12			F3E		ca 9k0E	short traffic only; Taxi
28600.0	1031	15	12	IRN		OTHR	307 + 870 sps	ca 45k	OTHR; bursts; long lasting sweep rate alternating
28860.0	0810	11	12	IRN		OTHR	150 + 313 sps	ca 45k	OTHR; bursts; long lasting sweep rate alternating
28910.0	1015	27	12			FMCW	50 sps	20k0E	OTHR; UK base Cyprus
28980.0	1012	27	12			FMCW	25 sps	20k0E	OTHR; UK base Cyprus
29325.0	1030	31	12			F3E			short traffic only; Taxi
29450.0	1250	02	12	IRN		OTHR	150+ 313 sps	ca 45k	OTHR; bursts, long lasting sweep rate alternating
29525.0	1229	21	12			FMCW	50 sps	20k0E	OTHR; UK base Cyprus

VERON; Ruud, PG1R. Credit to observer: Dick PA0GRU

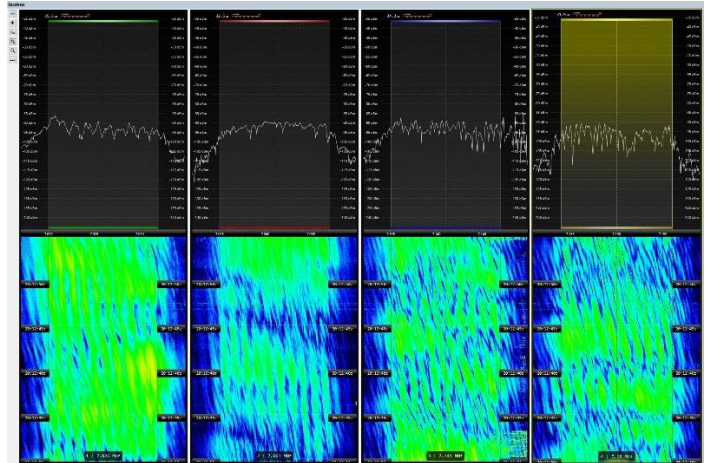
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3582.5	2109	17	12			F1B		200H	UiPtr; idle; (shared band)
3608.0	2023	30	12			F1B		200H	UiPtr; idle; (shared band)
7000.0	1630	12	12	RUS		RADAR			Contayner
7050.0	1645	12	12	UKR /RUS		J3E-L			Broadcast war RUS/UKR; male voice
7055.0	1519	17	12	UKR /RUS		J3E-L		3K50E	Comments/slogans; extremely wide, overmodulated
7056.0	1538	10	12	RUS		J7D		2K60E	CF; CIS-12 PSK
7140.0	2000	30	12	RUS		RADAR	40	12K0E	CF; OTHR Contayner; long lasting
14000.0	1109	21	12	RUS		NON			Carrier; TDoA region St.Petersburg
14025.0	1000	15	12	RUS		12MPSK			TDoA 53N 27E
14039.0	1540	07	12	RUS	RIT	A1A			RLO de RIT qtc117 5F

VERON; Ruud, PG1R. Credit to observer: Dick PA0GRU

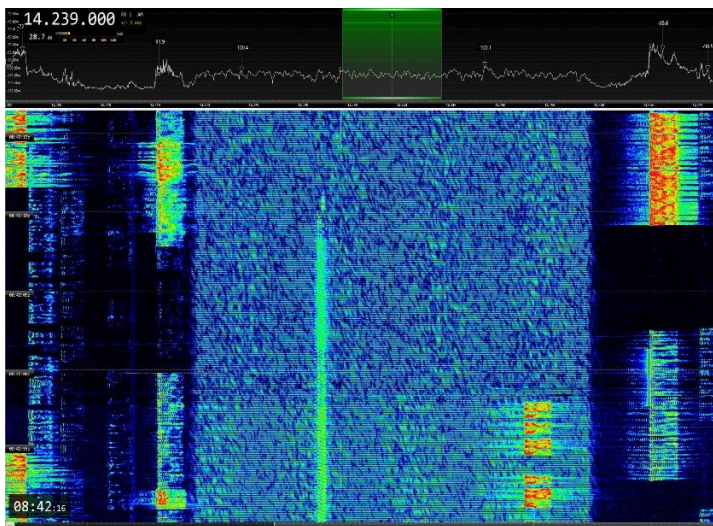
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14091.0	1046	17	12			F1B		200H	UiPtr
14308.0	1056	23	12	RUS		F1B		500H	UiPtr; TDoA 59N 32E; several times/days
21154.0	1031	11	12			PSK		2K20E	CF; 4 channel PSK; unknown type of transmission
28225.0	1045	21	12	RUS		F3E		3K0E	FM-N; Russian taxi service
28562.8	1416	10	12			A1A			Continuous dits; long lasting
28855.0	1158	29	12	IRN		RADAR	150/30 0	40K0E	CF; OTHR; alternating sps



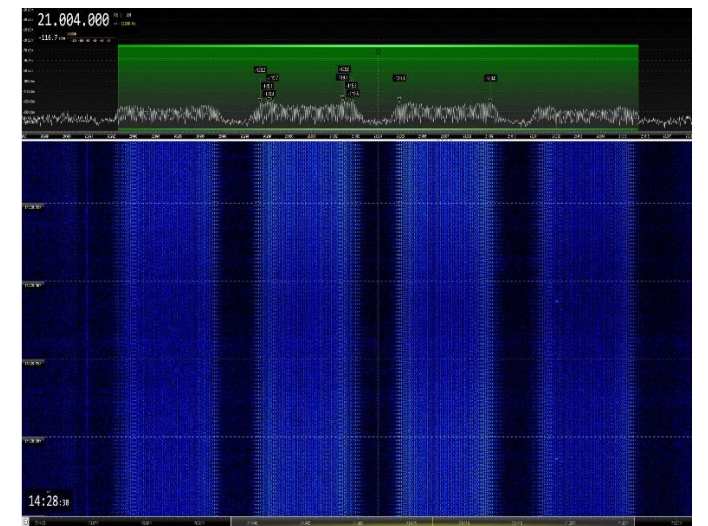
CIS-60.OFDM. „High Data Rate modem“. BW = 2K70E.60 tones + pilot line



OTHR Contayner. RUS. BW = 12K0E.40 sps. 4 simultaneous TX on 40 m



14239 kHz CF. CHN OTHR. BW = 40K0E. 10 sps



21004 kHz CF: XXX. TdoA: IRN. Often received during June 2022

Contact: Gaspar Miró, EA6AMM, ea6amm@iaru-r1.org

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