



IARU Monitoring System Region 1

Monthly Newsletter 11 - November 2020

edited by Peter Jost, HB9CET and Gaspar Miró, EA6AMM

News and Info's

From the monitoring board

In November propagation conditions were better from time to time, sometimes with band openings up to the 10m band. For example, signals from fishing buoys or the Iranian OTH radar could be heard occasionally. The unspeakably annoying over the horizon radars (OTHR) were unfortunately to be found every day and also regularly occupied the 40m band almost daily, sometimes in groups of two or even three. Also the Chinese OTH Radar (nickname "Foghorn") was and is a daily trouble-maker. In November, however, both the once numerous (CIS) FSK emissions and the characteristic CIS12 signals decreased significantly. The LINK 11 CLEW signal, which already appeared in October on 7159 kHz, was also repeatedly observed in November, partly in SSB mode (G7D), partly in DSB or ISB mode (B7D).

LINK 11 SLEW, an article worth reading

Earlier this year I referred to an article of Tony Roper about OTHR radar's. He published also another interesting article about LINK 11 SLEW (Single Tone Link Eleven Waveform) signals (not to be confused with LINK11 CLEW). This mode can be heard here and there on our bands, but only rarely. It is easy to recognize by its typical sound. Read here:

<https://planesandstuff.wordpress.com/2020/01/01/link-11-slew-with-go2monitor/>

vy 73, stay safe

Peter Jost, HB9CET

Detailed reports of national coordinators

Abbreviations used (as per IARUMS definitions; please do not use "own, home brew" abbreviations)

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 | **DF** = Direction finding (radio location; see also TDoA) | **OTHR** = over the horizon radar | **FMCW** = frequency modulated continuous wave | **FMOP** = frequency modulated on pulse | **SH** = Shift (Hz) | **sps** = sweeps per second | **TDoA** = Time difference of arrival | **ui** = **unid** = unidentified | **vd** = various dates | **vt** = various times.

DARC; Daniel, DL3RTL; Credits to monitors: Wolf DK2OM, Alex DB3TA, Tom DF5JL, Michael DK7AGL, Martin DO1MFB, Karsten DK7BY, Thomas DO1TBE									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7010.0	1714	12	11	CHN		FMOP	50	10k	Chinese OTH radar - 7005 - 7015 kHz - 2.5 sec bursts
7025.0	1121	06	11	CHN		FMOP	50	10k	Chinese OTH radar - 7020 - 7030 kHz - 5 sec bursts
7035.0	2216	26	11	RUS		FMOP	40	12k	OTH radar Contayner - nw of Saransk - 7029 - 7041 kHz
7039.4	2014	05	11	RUS	"M"	A1A			Cluster beacon "M" - Magadan RUS Navy - "RTS" - daily
7055.0	vt	dly	11	UKR		LSB			music and Russian voices
7057.0	2000	30	11	RUS		FMOP	40	12k	OTHR Contayner
7064.0	1933	26	11	RUS		FMOP	40	12k	OTH radar Contayner - nw of Saransk - 7058 - 7070 kHz
7068.0	1615	04	11	CHN		FMOP	50	10k	Chinese OTH radar - 7063 - 7073 kHz - 5 sec bursts
7083.0	1925	01	11	CHN		FMOP	66.66	10k	Chinese OTH radar - 7078 - 7088 kHz - 3.8 sec bursts - "foghorn"
7086.0	1945	12	11			FMOP	40	12k	OTH-Radar

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kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7088.0	1950	30	11			FMOP	40	12k	OTH-Radar
7090.0	2110	10	11	RUS		FMOP	40	12k	OTH radar Contayner - nw of Saransk - 7184 - 7096 kHz
7091.0	2000	29	11	RUS		FMOP	40	12k	OTH radar Contayner - nw of Saransk - 7091 kHz CF and 7171 kHz CF - synchronous
7097.0	1533	22	11	CHN		FMOP	50	10k	Chinese OTH radar - 7092 - 7002 kHz - 5 sec bursts
7100.0	1830	10	11	RUS		FMOP	40	12k	OTH radar Contayner - nw of Saransk - 7094 - 7106 kHz
7100.0	1027	11	11	CHN		FMOP	50	10k	Chinese OTH radar - 7095 - 7105 kHz - 10 sec bursts - CF 7100 for 5 sec and CF 7099 for 5 sec
7100.0	1919	16	11	RUS		FMOP	40	12k	OTH radar Contayner - nw of Saransk - 7094 - 7106 kHz - long lasting
7105.0	1650	13	11	CHN		FMOP		10k	Chinese OTH radar - 7100 - 7110 kHz - 66.66 sps - 3.8 sec bursts - "foghorn"
7107.0	1950	30	11			FMOP	40	12k	OTH-Radar
7110.0	1801	01	11	CHN		FMOP	66.66	10k	Chinese OTH radar - 7105 - 7115 kHz - 3.8 sec bursts - "foghorn"
7112.0	2221	23	11	CHN		FMOP	47.2	10k	Chinese OTH radar - 7107 - 7127 kHz - 5.2 sec bursts
7115.0	1607	06	11	CHN		FMOP	50	10k	Chinese OTH radar - 7110 - 7120 kHz - 5 sec bursts
7115.0	1643	20	11	CHN		FMOP	50	10k	Chinese OTH radar - 7110 - 7120 kHz - 5 sec bursts
7116.0	1728	29	11	RUS		FMOP	40	12k	OTH radar Contayner - nw of Saransk 7110 - 7122 kHz
7117.0	1639	03	11	CHN		FMOP	50	10k	Chinese OTH radar - 7112 - 7122 kHz - 5 sec bursts
7118.0	1358	29	11	RUS		FMOP	40	12k	OTH radar Contayner - nw of Saransk 7112 - 7124 kHz
7119.0	1853	11	11	CHN		FMOP	50	10k	Chinese OTH radar - 7114 - 7124 kHz - 5 sec bursts
7119.0	1520	14	11	RUS		PSK2A	120	2600	CIS-12 - Vladivostok - long lasting
7126.0	1929	12	11			FMOP	40	12k	OTH-Radar
7135.0	1717	01	11	CHN		FMOP	66.66	10k	Chinese OTH radar - 7130 - 7140 kHz - 3.8 sec bursts - "foghorn"
7135.0	1426	23	11	CHN		FMOP	50	10k	Chinese OTH radar - 7130 - 7140 kHz - 2.5 sec bursts
7140.0	1700	01	11	ERI		A3E		9k	7140.021 kHz - Radio Eritrea
7149.0	1956	14	11	CHN		FMOP	50	10k	Chinese OTH radar - 7144 - 7154 kHz - 5 sec bursts
7151.0	1650	03	11	CHN		FMOP	66.66	10k	Chinese OTH radar - 7146 - 7156 kHz - 3.8 sec bursts - "foghorn"
7158.0	2010	09	11	RUS		FMOP	40	12k	OTH radar Contayner - nw of Saransk 7152 - 7164 kHz
7159.0	2025	07	11	RUS		FMOP	40	12k	OTH radar Contayner - nw of Saransk 7153 - 7165 kHz
7159.0	1705	11	11	RUS		FMOP	40	12k	OTH radar Contayner - nw of Saransk - 7153 - 7165 kHz

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kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7165.0	2225	07	11	CHN		FMOP	50	10k	Chinese OTH radar - 7160 - 7170 kHz - 2.5 sec bursts
7172.0	1713	22	11	CHN		FMOP	66.66	10k	Chinese OTH radar - 7167 - 7177 kHz - 3.8 sec bursts - "foghorn"
7175.0	1740	16	11	CHN		FMOP	40	10k	Chinese OTH radar - 7170 - 7180 kHz - 10 sec bursts
7180.0	1700	01	11	ERI		A3E		9k	7180.021 kHz - Radio Eritrea
7182.0	1635	30	11	RUS		FMOP	40	12k	Contayner - nw of Saransk - 7176 - 7188 kHz
7183.0	1936	04	11	CHN		FMOP	50	10k	Chinese OTH radar - 7178 - 7188 kHz - 5 sec bursts
7188.0	1917	15	11	CHN		FMOP	66.66	10k	Chinese OTH radar - 7183 - 7193 kHz - 3.8 sec bursts - "foghorn"
7190.0	1800	dly	11	CHN		A3E		40k	China Radio International on 7210 kHz - with splatters on 7190 kHz - 7230 kHz - daily 1800 - 1900 utc
7200.0	1210	16	11	TWN	NUR	A3E		9k	7195.5 - 7204.5 kHz - BC transmission from Taiwan - carrier: 7199.997
10100.0	ady	dly	11	FEA		USB			10100.0 - 10150.0 - Far East - crowded of pirates - possibly Indonesia
10130.0	1451	27	11			FMOP	40	12k	OTH-Radar
14000.0	1400	01 daily	11	CHN		A3E		9k	China Radio International - intermodulation from 13855 and 13710 kHz - 13855 x 2 - 13710 = 14000 kHz
14052.0	0952	24	11	CHN		FMOP	50	10k	Chinese OTH radar - 14047 - 14057 kHz - 5 sec bursts
14055.0	1000	11	11	CHN		FMOP	66.66	10k	Chinese OTH radar - 14050 - 14060 kHz - 3.8 sec bursts - "foghorn"
14100.0	1020	01	11	CHN		FMOP	10	160k	Chinese wideband OTHR - 14100 - 14260 kHz
14187.0	1000	07	11	CHN		FMOP	50	10k	Chinese OTH radar - 14182 - 14192 kHz - 2.5 sec bursts
14201.7	1011	03	11	CHN		PSK2	75	2200	PRC 16 tone modem - USB mode - pilot tone 600 Hz - RF 14200.0 kHz - China - Shanghai
14252.0	0906	29	11			FMOP	50	10k	OTH-Radar
14280.0	1013	18	11	UKR		A3E USB + carrier			female voice with encrypted msgs - figures - "SZRU" = Foreign Intelligence Service of Ukraine in Rivne
18080.0	0750	dly	11	TWN		A3E/BC			Sound of Hope - Taiwan and Chinese BC jammer - daily at 06 utc and later
18170.0	0943	14	12	RUS		FMOP	40	14	OTHR Contayner
21000.2	1300	02	12			J3E-U			Span. Fischer? USB
21050.0	1336	29	11			FMOP	50	20k	OTH-Radar
21070.0	1118	05	11	CYP		FMOP	25	20k	UK OTH radar Cyprus - 21060 - 21080 kHz - Pluto
21130.0	0914	29	11			FMOP	50	20k	OTH-Radar
21150.0	0815	29	11			FMOP	50	20k	OTH-Radar
21330.0	1015	27	11	CYP		FMOP	25	20k	UK OTH radar Cyprus - 21320 - 21340 kHz - Pluto
21340.0	0836	29	11			FMOP	50	20k	OTH-Radar

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kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21415.0	0912	29	11			FMOP	50	20k	OTH-Radar
21420.0	0835	29	11			FMOP	50	20k	OTH-Radar
28860.0	0938	27	11	IRN		AMOP	150 313	45k	Iranian radar - 28837 - 28883 kHz - 150 sps and 313 sps alternating - North Iran

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3516	1025	02	11	EI/UK /MM		USB			2 voices in Japanese. Very strong signals. Plenty of "dodo". Must be close by in EI, UK in coastal or International Waters.. Chat stops at 1120z. Also heard on 03/11 at 1150z.
3730	1310	01	11	E or MM		USB			2 Spanish fishermen. Huge signals.
3745	1700	16	11	F		LSB			DQRM of unknown origin. Loud music. Shouting of obscenities in French. Group of French Hams on the frequency complains and moves to 3762 kHz. The QRM producer follows the crowd. Total chaos which ends at 1745z.
3762	1640	13	11	F		LSB			DQRM by a station most likely located in France. Music, shouting. Persistent. Only ends at 1815z. Heard several times during the month.
6980	1740	10	11			FMOP			Radar from 6980 to 7005 kHz. Huge persistent signals. Still on at 2145z.
7045	1730	20	11			FMOP			Radar from 7045 to 7075 kHz. Huge persistent signals.
7055	1645	01	11	RUS/ UKR		LSB			Russian-Ukrainian radio war. Heard daily with big signals. Shouting of obscenities. "Ruski swina" "Putin swina".
7075	1740	11	11			FMOP			Radar from 7075 to 7115 kHz, Strong and persistent.
7080	2150	10	11			FMOP			Radar from 7080 to 7105 kHz. Big signals. Persistent.
7081	1930	25	11			FMOP			Radar from 7081 to 7095 kHz. Medium signals, drifting in and out.
7086	1520	23	11			FMOP			Radar from 7086 to 7116 kHz. Strong and persistent. Slowly moving up the band to 7104 to 7132 kHz in the time to s/off at 1620z.
7090	1730	20	11			FMOP			Radar from 7090 to 7120 kHz. Huge persistent signals.
7094	1630	16	11			FMOP			Radar from 7094 to 7110 kHz. Strong.
7115	1755	03	11			FMOP			Radar from 7115 to 7146 kHz. Strong and persistent.
7123.5	1300	27	11			F1B			Strong and persistent.
7124	1220	13	11			F1B			Very strong and persistent. Also 23 rd at 1620z.
7122	1930	02	11			FMOP			Radar from 7122 to 7145 kHz. Strong and persistent.
7152	1755	03	11			FMOP			Radar from 7152 to 7168 kHz. Strong and persistent.
7152	1530	02	11			FMOP			Radar from 7152 to 7166 kHz. Big signals, persistent.
7153	1625	11	11			FMOP			Radar from 7153 to 7167 kHz. Strong and persistent.
7161	1215	13	11			PSK			Link-11 Clew. Strong and persistent.

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7170	1505	24	11			FMOP			Radar from 7170 to 7182 kHz. Strong-on and off.
7183	1500	24	11			FMOP			Radar from 7183 to 7196 kHz. Very strong, persistent.
7194	1135	18	11			F1B			Strong and persistent.
7200	1105	06	11	TJK		AM			Unity Radio with relay Dushanbe. Heard daily until s/off at 1258z. Very strong.
14140	1530	16	11			FMOP			Radar from 14140 to 14168 kHz. Strong and persistent. Still on at 1630z.
14307	1200	03	11			F1B			Huge and persistent signal.
21162	1100	02	11			FMOP			Radar from 21162 to 21175 kHz. Very strong and persistent signals.
21279.5	1435	16	11			PSK			Persistent, strong. S/off at 1630z.
21318	1000	29	11			FMOP			Radar from 21318 to 21338 kHz. Strong and persistent.
28840	1130	01	11	IRN		AMOP			Radar from 28840 to 28880 kHz. Very strong and persistent.

MRASZ; Laci, HA7PL

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3762.0	1741	18	11			LSB			music
3790.0	0535	01	11			F1B		200H	
7000.0	1350	05	11			LSB			chaos with noise
7018.0	1357	14	11			A1A			"N" continuously
7055.0	1254	09	11			LSB			chaos, hrd many times, many days
7060.0	1728	18	11			OTHR			7050 – 7070 kHz
7061.0	1523	13	11			OTHR			7052 – 7070 kHz
7182.0	1018	22	11			OTHR			
7193.0	0931	18	11			F1B		200H	
10112.0	0740	17	11			F1B		1000H	
14198.5	0929	18	11			PSK2			
14229.0	0950	15	11			USB			chaos

PZK; Marek, SP3AMO + Miro, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3527	vt	vd	11		UI	F1B	50	200	S 8
3741	0623	6	11		UI	F1B	75	500	S 8
3748	1344	7	11	RUS		PSK		2K9	CIS-12 S9 +10
7000	1300	12	11		UI	N0N			S 7
7005	1540	12	11			RADAR		12K0E	S 7 OTHR - sps 40Hz
7014	1557	2	11		UI	PSK		1K0E	5x120Hz, sps 40 Hz, changeble modes, 1611 UTC QRT
7030	1635	8	11			RADAR		16k0E	S 9 OTHR , sps 40 Hz [7022,0 - 7038,0 kHz]
7047	vt	6	11	RUS		PSK		2K9	CIS-12 pilot 7048.3 S9 +10
7047.5	0840	6	11			PSK		1K0E	S 8, [4 x 120Hz]
7055	2103	5	11			RADAR	50	18K0E	OTHR, S 8, [7052.0 - 7060.0 kHz]
7056	1520	7	11			RADAR		12K0E	OTHR S9

PZK; Marek, SP3AMO + Miro, SP5GNI									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7100	1845	16	11			RADAR		14KOE	OTHR S8
7107	1938	8	11			RADAR		12KOE	OTHR S10 +25dB
7110	1755	29	11			RADAR		12KOE	S7
7113	2222	28	11			RADAR		14KOE	S9+
7121.5	0724	3	11		UI	FSK			S 7, 0725 UTC QRT
7128	1032	13	11			UI		3K3	
7131	2355	2	11			RADAR		16K	OTHR S9+10
7159.4	1550	2	11		UI	A1A/F2B		1KOE	Scan ?, 500 ms sps
7161.8	1018	2	11			F1B	50	200	S 9
7191	1555	2	11			RADAR		10KOE	[7186.0 - 7196.0 kHz]
7200	1243	2	11			A3E		6KOE	Radio (unknow language)
7200	1213	17	11			A3E		6KOE	Radio pretty strong S9 (pop music)
14051	954	24	11			RADAR		10KOE	4 seconds bursts
14102	1020	4	11			UI			
14146.8	1139	4	11			RADAR		10KOE	S0+ sps 40 Hz
14159	1318	6	11			RADAR		10KOE	OTHR S7 (a few seconds burst)
14187	1244	30	11			RADAR		10KOE	In bursts
14189	1233	2	11			RADAR		10KOE	OTHR S7 (a few seconds burst)
14200	1208	12	11			RADAR		12KOE	OTHR S9
14234.5	1258	30	11			UI		2K5	S7-9 Stanag?
14273	0630	6	11			NON			S0+
14317.6	vt	vd	11			UI		1K7	Multitone (about 12) S7
14324	945	25	11			RADAR		10KOE	4 seconds bursts S8
14336	0633	6	11			NON			S0+
18075	1025	4	11			RADAR			OTHR starting from 18010 and occupying beginning of 17 m band up to 18075 S7
18076.4	1142	4	11			RADAR			S0+ sps 40 Hz [CF 18076.4 kHz]
18165	927	12	11			RADAR		20KOE	OTHR S7
18168	952	26	11			RADAR		12KOE	Center 18172 out of the band, but occupying 18166-68
21000	1100	24	11			USB		3KOE	Non amateur conversation in (probably) Spanish
21017	1111	30	11		UI	NON			od 21017 kHz co 60 kHz do 21410 kHz
21053.5	0637	6	11			NON			S0+
21114.8	0640	6	11			NON			S0+
21195	1134	17	11			RADAR		20KOE	OTHR weak but clear S4-5
21320	1012	12	11			RADAR		20KOE	OTHR S6
21370	1327	6	11			RADAR		20KOE	OTHR S5 1329 end
21437.5	0645	6	11			NON			S0
21437.8	0915	8	11			A1A			S0 +
28860	vt	27	11			RADAR		60KOE	Very wide spectrum. Transmitted with short breaks. S7 peak.

REF; Francis, F5MIU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD / sps	SH /BW	DETAILS
7060	1721	18	11			FMCW		15kHz	OTH Radar pulsed 25ms,S7
7060	1713	20	11			FMCW		25kHz	OTH Radar pulsed 25ms,S9
7100	1725	16	11			FMCW		15kHz	OTH Radar pulsed 25ms,S5
7115	1642	29	11			FMCW		20kHz	OTH Radar pulsed 25ms,S6
7120	1807	7	11			FMCW		20kHz	OTH Radar pulsed 25ms,S9+20
7120	1759	30	11			FMCW		15kHz	OTH Radar pulsed 25ms,S7
7125	1728	23	11			FMCW		15kHz	OTH Radar pulsed 25ms,S7
7125	1722	25	11			FMCW		15kHz	OTH Radar pulsed 25ms,S6
7195	1639	29	11			FMCW		20kHz	OTH Radar pulsed 25ms,S9
7205	1731	16	11			AM		12kHz	Radio China ? 1kHz inside OM Band (not splatters)
7320	1823	13	11			FMCW		15kHz	OTH Radar pulsed 25ms,S7
14250	0915	20	11			FMCW		15kHz	OTH Radar pulsed 20ms,S8
14285	852	17	11			FMCW		10kHz	OTH Radar pulsed 20ms,S6
14285	0855	28	11			FMCW		15kHz	OTH Radar pulsed 20ms,S4
14320	0920	8	11			FMCW		15kHz	OTH Radar pulsed 20ms,S9
18102	0902	12	11			FMCW		20kHz	OTH Radar pulsed 25ms,S6
18150	0917	26	11			FMCW		15kHz	OTH Radar pulsed 25ms,S4
18158	0855	12	11			FMCW		20kHz	OTH Radar pulsed 25ms,S9+20
21290	1056	29	11			FMCW		20kHz	OTH Radar pulsed 20ms,S7

RSGB; Richard, G4DYA

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3510.0	vt	vd	11			J3E		2K70E	USB 'The Air Horn'
3756.0	vt	dly	11			J3E		1K70E	USB 'The Pip'
7002.0	1754	23	11	RUS		P0N		14K0E	Container OTH radar
7005.0	1521	19	11			J3E			LSB Non-amateur voice net
7006.0	1806	22	11	RUS		P0N		14K0E	Container OTH radar
7008.0	1009	13	11			F1B		250	
7039.60	vt	vd	11			A1A			4-character groups every 20 minutes at HH+02, 22, 42. Duration ~70 seconds.
7039.82	1531	04	11		FDE2	A1A			Continuous "VVV DE FDE2"
7047.0	0857	06	11			J7D		2K70E	USB 7045.0 / CIS-12
7057.0	1343	02	11			J7D		2K70E	USB 7055.0 / CIS-12. Ceased at 1345z.
7061.0	1849	24	11	RUS		P0N		14K0E	Container OTH radar
7062.0	1519	13	11	RUS		P0N		14K0E	Container OTH radar
7066.0	1521	12	11	RUS		P0N		14K0E	Container OTH radar. Ceased at 1525z.
7074.39	1729	03	11			A1A			Continuous 0s (five dashes)
7074.79	1406	03	11			A1N			Continuous long dashes
7074.99	0949	22	11			A1N			6 dashes, continuous
7074.80	0955	04	11			A1A			Continuous 0s (five dashes)
7074.99	vt	vd	11			A1A A1N			Continuous 0s (five dashes) 6 dashes, continuous
7075.00	0932	20	11			A1A			Continuous 0s (five dashes)
7075.03	0913	17	11			A1A			Continuous 0s (five dashes)
7085.0	1532	25	11	RUS		P0N		14K0E	Container OTH radar
7091.0	2032	12	11	RUS		P0N		14K0E	Container OTH radar
7095.0	1524	23	11	RUS		P0N		14K0E	Container OTH radar

RSGB; Richard, G4DYA									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7098.0	1712	26	11	RUS		P0N		14K0E	Container OTH radar. Ceased at 1713z.
7100.0	1824	16	11	RUS		P0N		14K0E	Container OTH radar
7100.006	1003	27	11			H3X			Carrier with low-level USB noise to 3.4 kHz. Ceased at ~1333z.
7104.0	1541	25	11	RUS		P0N		14K0E	Container OTH radar
7113.0	1750	04	11	RUS		P0N		14K0E	Container OTH radar
7114.0	1504	20	11	RUS		P0N		14K0E	Container OTH radar
7120.0	0819	26	11			J7D		2K70E	USB 7118.0 / CIS-12
7122.0	vt	vd	11			F1B	50	200	
7124.0	2108	15	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts
7131.0	2012 1721	02 03	11	RUS		P0N		14K0E	Container OTH radar
7134.0	1530	23	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts
7137.0	0852	26	11			J7D		2K70E	USB 7135.0 / CIS-12
7138.0	2316	24	11	RUS		P0N		14K0E	Container OTH radar
7149.874	1645	18	11			N0N			Possibly 7150.0 idling F1B
7158.0	1745 1527	03 04	11	RUS		P0N		14K0E	Container OTH radar
7159.0	1046	02	11			J7D		2K50E	USB / Link 11 CLEW
7159.0	2050	17	11			J7D		2K50E	USB / Link 11 CLEW. TDoA: Bay of Biscay
7159.0	2322 0944	18 29	11			B7D		6K00E	ISB / Link 11 CLEW
7159.0	1512	19	11			J7D		2K50E	USB / Link 11 CLEW
7162.0	1044	02	11			F1B		250	
7172.0	1641	15	11	RUS		P0N		14K0E	Container OTH radar
7176.0	1117 1022	02 13	11			F1B		250	
7178.0	2044	07	11	RUS		P0N		14K0E	Container OTH radar
7181.0	1639	30	11	RUS		P0N		14K0E	Container OTH radar
7187.0	1827	17	11	RUS		P0N		14K0E	Container OTH radar
7191.0	1534	25	11	RUS		P0N		14K0E	Container OTH radar. Ceased at 1539z.
7193.0	vt	vd	11			F1B		200	
7196.0	1128	18	11			J7D		2K70E	USB 7194.0 / CIS-12
7199.995	1058- 1258	dly	11			A3E		9K50E	BC
14049.0	0905	16	11			F3N	41.7	10K0E	OTH radar bursts
14051.0	1019	24	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts
14054.0	0936	27	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts
14069.0	0923	02	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts
14097.0	0841	03	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14110.0	1012	24	11	RUS		P0N		14K0E	Container OTH radar
14131.0	0920	16	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14136.0	0848	26	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14202.0	0935	18	11			J7D		2K70E	USB 14200.0 / CIS-12
14210.0	0926	02	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts

RSGB; Richard, G4DYA									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14221.0	0911	10	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14225.0	0854	16	11			F3N		10K0E	OTH radar bursts, alternating between 41.7 and 50 sps
14232.0	0811	26	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14233.0	0938 0841	02 11	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14247.0	0937	27	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts
14248.0	0913	20	11			F3N	50	10K0E	OTH radar
14250.0	0857	22	11			F3N	50	10K0E	OTH radar
14264.0	0847	03	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts
14265.0	0927	17	11			F3N	41.7	10K0E	OTH radar bursts
14268.0	0847	16	11			F3N	10	40K0E	FMCW radar. Ceased at 0851z.
14268.0	0932	18	11			F3N	50	10K0E	OTH radar. Ceased at ~1000z.
14280.0	1007	25	11			A3E		7K00E	Numbers station. Carrier on 1007 UTC. Audio starts at 1010. LSB/USB audio out of phase. QRT at 1016. Every Wednesday?
14285.0	0845	28	11			F3N	50	10K0E	OTH radar
14286.0	0847	06	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts
14286.0	0923	17	11			F3N	50	10K0E	OTH radar
14292.0	0846	26	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14297.0	0917	20	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14307.75	0941 1203	06 23	11			N0N			Plain carrier
14310.0	0846	03	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14310.0	0918	20	11	CHN		F3N	50	10K0E	OTH radar bursts
14313.0	0903	02	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14314.0	0930	06	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14318.0	0930 0847	04 07	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14323.0	0843	11	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts
14325.0	0934	16	11			F3N	41.7	10K0E	OTH radar bursts
14331.0	0919	17	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14334.0	0850	06	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts
14335.0	0917	10	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14338.0	0848	06	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14339.0	0848	22	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14344.0	0937	27	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14347.0	0849	28	11	CHN		F3N	66.7	10K0E	'Foghorn' OTH radar bursts
14351.0	0935	02	11	CHN		F3N	50	10K0E	'Foghorn' OTH radar bursts
18070.0	0906	10	11			F3N	25	20K0E	OTH radar. Ceased at 0908z.
18070.0	1145	26	11	G		F3N	25	20K0E	Pluto OTH radar. British Western SBA, Cyprus
18147.0	1009	24	11	RUS		P0N	40	14K0E	Container OTH radar
18156.0	1003	25	11	RUS		P0N	40	14K0E	Container OTH radar
18172.0	0920	16	11	RUS		P0N	40	14K0E	Container OTH radar (OBW 18165-18179 kHz). Ceased at 0926z.
18172.0	1113	21	11	RUS		P0N	40	14K0E	Container OTH radar
21120.0	1015	27	11			F3N	50	20K0E	OTH radar.

RSGB; Richard, G4DYA									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
21130.0	1000	12	11	G		F3N	25	20K0E	Pluto OTH radar. British Western SBA, Cyprus. Ceased at 1009z.
21176.0	1222	01	11	RUS		P0N	40	14K0E	Container OTH radar
21210.0	0831	26	11	G		F3N	50	20K0E	Pluto OTH radar. British Western SBA, Cyprus. Ceased at 0834z.
21245.0	0843	28	11			F3N	50	20K0E	OTH radar
21330.0	1009	27	11			F3N	25	20K0E	OTH radar. Ceased at 1017z.
21418.0	1216	25	11	RUS		P0N	40	14K0E	Container OTH radar
21438.0	vt	vd	11	RUS	RCV	A1A			~20 wpm

SRAL; Pekka, OH2BLU									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/BW	DETAILS
7 MHz	1515-0700	*	11	RUS		FMOP	40sps	13k0E	*) Days: 1. - 5.9. - 12. 14. - 21. 23. 25. 30. (WebSDR 28d): Kontainer
7 MHz	0610-1900	*	11	RUS		FMOP	10sps	10k0E	*) Days: 1. 2. 8. 9. 10. 16. 19. - 21. 23. 24. 28.
7 MHz	1350-1700	*	11	CHN		FMOP	50/67sps	10k0E	*) Days: 6. 13. 18.: 'foghorn'
7008.0	0930-1103/	13	11	RUS		F1B		250H	
7009.0	0900-0920/	10	11	RUS		N0N		160H	80 Hz brum
7015.0	0800-1215	3	11	RUS	RIT	A1A		200H	Calls RLO, 5F 14 wpm
7027.0	1250	2	11	RUS		F1B		250H	
7039.2	1200-1300	12	11	RUS	F	A1A		20H	beacon
7047.0	1145-1500	2	11	RUS		J7D	120	2k60E	
7057.0	1330-1344/	2	11	RUS		J7D	120	2k60E	
7101.0	1400-1420/	2	11	RUS	T34W	A1A		20H	
7101.0	1030	5	11	RUS		J7D	120	2k60E	
7111.0	0625	6	11	RUS		F1B		250H	
7120.0	1045-1300	26	11	RUS		J7D	120	2k60E	*) Days: 1. 4. 15. 23.
7122.0	0745-1430	*	11	RUS	RDL	F1B/A N0N		200H	*) Days: 2. 5. - 7. 9. - 16. 18. 24. - 27. 30. calls RLO
7126.0	0640-1400/	*	11	RUS		R3E-u			*) Days: 12. - 15. russian fem vox
7159.0	1550	2	11			G7D		3k0E	LINK11 usb
7159.0	0730-	25	11			G7D		3k0E	LINK11 usb
7162.0	1040-1106/	2	11	RUS		F1B		250H	
7167.0	1200-1300	9	11	RUS		F1B		250H	
7168.0	0840-0900	17	11	RUS		F1B		200H	
7169.0	0645-0717/	10	11	RUS		F1B		250H	
7171.0	0600-0640	10	11	RUS		J7D	120	2k60E	

SRAL; Pekka, OH2BLU									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/BW	DETAILS
7176.0	0930-1325/	*	11	RUS		F1B		250H	*) Days: 5. 9. 13.
7178.5	0600-1240	*	11	RUS	8S1Q	A1A		50H	*) Days: 16. 18. 20. 5F 5BL
7186.0	1300-1330	16	11	RUS		F1B		500H	
7186.0	1810-1850/	27	11	RUS		J7D	120	2k60E	
7193.0	0815-1455/	*	11	RUS		F1A/B NON		200H	*) Days: 1. 3. 4. 11. 13. 14. 16. 17. 18. 27. 5F
7196.0	1315-1545/	18	11	RUS		J7D	120	2k60E	
7199.0	0900-0930/	11	11	RUS		F1B		250H	
7200.0	1058-1258	dly	11	TWN	National Unity R.	A3E		9k0	Korean px
10 MHz			11	RUS		FMOP	40sps	13k0E	(WebSDR 2d): Kontainer
14 MHz	0610-1900	*	11	RUS		FMOP	10sps	10k0E	*) Days: 1. 2. 8. 9. 10. 19. - 21. 23. 24. 28.
14 MHz	0600-1515	*	11	RUS		FMOP	40sps	13k0E	*) Days: 1. 2. 4. 11. 12. 22. - 26. 28. (WebSDR 15d): Kontainer
14 MHz	0600-1000	*	11	CHN		FMOP	50/67sps	10k0E	*) Days: 1. 4. - 7. 10. - 14. 16. 17. 18. 23. 27. 28.: 'foghorn'
14 MHz	0615-0900/	*	11	CHN		FMOP	50sps	10k0E	Days: 17. 20. 21. 23. 26. 27. 28.
14052.0	0840-1020/	1 30	11	RUS		J7D	120	2k60E	
14170.0	0650-	21	11	RUS		J7D	120	2k60E	
14221.0	0630-	23	11	KAZ		F1B		200H	
14292.0	0810-	18	11	RUS		F1B		500H	Legal if ERP < 400 W
14294.0	0805-	4	11	RUS		J7D	120	2k60E	
14311.0	0635-	19	11			F1B		250H	
18 MHz	1145-1515	26	11	CYP		FMCW	50sps	20k0	(WebSDR 7d)
18 MHz	0620-1130	*	11	RUS		FMOP	40sps	13k0E	*) Days: 11. 12. 14. 22. 24. 26. (WebSDR 8d): Kontainer
21 MHz	0600-1400	*	11	CYP		FMCW	50sps	20k0	*) Days: 1. 3. 4. 17. 20. 22. 26. - 29. 30. (WebSDR 22d)
21 MHz	0645-1030	1 21	11	RUS		FMOP	40sps	13k0E	(WebSDR 8d): Kontainer
21438.0	/0830-1230	*	11	RUS	RCV	A1A	16	20H	*) Days: 1. - 12. 14. 15. 18. 20. 22. 23. 25. 28. 20wpm
28200.0	1040-	29	11	IRN	Ghadir	FMCW	*	60k0E	*) 307 & 870sps
28800.0	0840-	2	11	IRN	Ghadir	FMCW	*	60k0E	*) 307 & 870sps
28860.0	0815-1045	*	11	IRN	Ghadir	FMCW	*	60k0E	*) 150 & 313sps, days: 1. 2. 5. 9. 14. 29. 30.

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
6992	2151	10	11			FMOP	40	12K0E	OTHR Contayner: splatter to 7003 kHz
6993	1539	12	11			FMOP	40	12K0E	OTHR Contayner: Splatter to 7002 kHz
6994	1604	08	11			FMOP	40	12K0E	OTHR Contayner. 2 simultaneous TX on 40m: 6994 + 7031 kHz

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
6994	1517	11	11			FMOP	40	12KOE	OTHR Contayner. Splatter to 7002 kHz
6996	2221	05	11			FMOP	40	12KOE	OTHR Contayner. 2 simultaneous TX on 40 m: 6996 + 7188 kHz
6999	1733	18	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
7000.5	1255	12	11			XXX		ca 1KOE	Unknown digital signal
7010	1828	12	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
7014	1534	02	11			J7D	120	2K70E	CIS-12
7015	1802	12	11			FMOP	40	12KOE	OTHR Contayner
7021	1524	25	11			F1B	300	500H	
7027	2011	23	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
7030	2215	10	11			FMOP	40	12KOE	OTHR Contayner
7031	1602	08	11			FMOP	40	12KOE	OTHR Contayner
7032	1823	13	11			FMXX	40	10KOE	Radar bursts. "Foghorn"
7035	2212	13	11			FMOP	40	12KOE	OTHR Contayner. 2 simultaneous TX on 40m: 7035 + 7086 kHz
7039	1922	23	11			FMOP	40	12KOE	OTHR Contayner
7050	0724	23	11			J3E-L			Speech, UKR / RUS "radiowar"
7053	1942	01	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
7055	1737 vt	01 vd	11			J3E-L		3KOE	Music, speech, loops, propaganda, abuse. UKR /RUS "radiowar". Often
7057	1919	24	11			FMOP	40	12KOE	OTHR Contayner. 2 simultaneous TX on 40m: 7057 + 7172 kHz
7058	1747	10	11			FMOP	40	12KOE	OTHR Contayner
7059	1713 vt*	18 vd*	11			FMOP	40	12KOE	OTHR Contayner. *Also on 20/11, 1710 UTC. 24/11, 1941 UTC
7061	1841	24	11			FMOP	40	12KOE	OTHR Contayner
7062	1738	20	11			FMOP	40	12KOE	OTHR Contayner. 2 simultaneous TX on 40M: 7062 + 7107 kHz
7063	2052 vt*	05 vd*	11			FMOP	40	12KOE	OTHR Contayner. *Also on 26/11, 1952 UTC
7065	1821 vt*	19 vd*	11			FMOP	40	12KOE	OTHR Contayner. *Also on 20/11, 1909 UTC. 30/11, 1649 UTC
7066	1708 vt*	24 vd*	11			FMOP	40	12KOE	OTHR Contayner. *Also on 25/11, 1517 UTC
7070	1849	15	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
7074.4	1928	01	10			A1A			Series of 5 dashes, loop. Often
7074.8	0624	04	11			A1A			Series of 5 dashes, loop. Often
7074.995	0727 vt	01 vd	11			A1N			CW, continuous dashes. Often
7074.995	1600 vt	08 vd	11			A1A			Series of 5 dashes, loop. Often
7082	1725	18	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
7083	1922	01	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
7085	1814	14	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
7085	1612	25	11			FMOP	40	12KOE	OTHR Contayner
7086	2212	13	11			FMOP	40	12KOE	OTHR Contayner. 2 simultaneous TX on 40m: 7086 + 7035 kHz
7088	1900	30	11			FMOP	40	12KOE	OTHR Contayner
7089	2123 vt*	10 vd*	11			FMOP	40	12KOE	OTHR Contayner. *Also on 20/11, 2009 UTC

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7092	1846	14	11			FMOP	40	12K0E	OTHR Contayner
7097	1810	14	11			FMOP	40	12K0E	OTHR Contayner
7100	1830 vt*	10 vd*	11			FMOP	40	12K0E	OTHR Contayner. *Also on 15/11, 1832 UTC
7101	2123 vt*	01 vd*	11		T34W CFD2 S2DC	A1A	16		CW. Encrypted QTCs. *Also on 11/11, 2118 UTC
7107	1935 vt*	08 vd*	11			FMOP	40	12K0E	OTHR Contayner.*Also on 20/11, 1740 UTC. 21/10, 1816 UTC
7109	1915	15	11			FMOP	40	12K0E	OTHR Contayner
7110	2137 vt*	01 vd*	11			FMOP	40	12K0E	OTHR Contayner. *Also on 21/10, 1842 UTC. 24/11, 1930 UTC
7110	2007	17	11			FMXX	66.66	10K0E	Radar bursts. "Foghorn"
7111	2018	10	11			FMOP	40	12K0E	OTHR Contayner
7112	1909	20	11			FMOP	40	12K0E	OTHR Contayner. 2 simultaneous TX on 40M: 7112 + 7065 kHz
7113	1622	20	11			FMOP	40	12K0E	OTHR Contayner
7117	1925	01	11			FMOP	40	12K0E	OTHR Contayner
7119	1502	14	11			J7D		2K70E	CIS-12. Idling
7120	0813	26	11			J7D	120	2K70E	CIS-12
7121	1651	30	11			FMOP	40	12K0E	OTHR Contayner. 3 simultaneous TX on 40m: 7121 + 7065 + 7181 kHz
7122	0808 vt*	12 vd*	11			F1B	50	200H	*Also on 13/11, 1833 UTC
7126	0739	13	11			XXX		ca 3K0E	Unknown digital signal
7126	2048	15	11			FMXX	50	10K0E	Radar bursts. "Foghorn"
7126	1645	25	11			FMOP	40	12K0E	OTHR Contayner. 2 simultaneous TX on 40m: 7126 + 7175 kHz
7127.8	0644	11	11			XXX		3K0E	Unknown digital signal
7129	2006	15	11			FMOP	40	12K0E	OTHR Contayner
7130	1617	25	11			FMXX	66.66	10K0E	Radar bursts. "Foghorn"
7131	1857 vt*	02 vd*	11			FMOP	40	12K0E	OTHR Contayner. *Also on 03/11, 1727 UTC 04/11, 0514 UTC
7133	1720	18	11			FMXX	50	10K0E	Radar bursts. "Foghorn"
7135	1911	10	11			FMOP	40	12K0E	OTHR Contayner
7139	2110	17	11			FMOP	41.6	10K0E	Radar bursts. "Foghorn"
7142	1946	23	11			FMOP	40	12K0E	OTHR Contayner. 2 simultaneous TX on 40m: 7142 + 7039 kHz
7144	1850	10	11			FMOP	40	12K0E	OTHR Contayner
7157	1537	02	11			FMOP	40	12K0E	OTHR Contayner
7158	1945	03	11			FMOP	40	12K0E	OTHR Contayner. 2 simultaneous TX on 40m: 7158 + 7131 kHz
7158	2248	05	11			FMOP	40	12K0E	OTHR Contayner
7159	2106 vt*	17 vd*	11			B7D		6K0E	LINK 11 CLEW DSB. *Also on 30/11, 1737 UTC
7159	2216	09	11			FMOP	40	12K0E	OTHR Contayner
7160.8	2014 vt*	17 vd*	11			G7D		ca 2K30E	LINK 11 CLEW. *Also on 19/11, 1710 UTC. 25/11, 0734 UTC
7161	2036	06	11			XXX		ca 2K0e	Unid digistal signal . Broken system? Also on 7190.6 kHz CF

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7161	1640	08	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
7162	1829	17	11			FMXX	41.6	10KOE	Radar bursts. "Foghorn"
7168	2145	05	11			FMOP	40	12KOE	OTHR Contayner. 2 simultaneous TX on 40m: 7168 + 7063 kHz
7172	1919	24	11			FMOP	40	12KOE	OTHR Contayner. 2 simultaneous TX on 40m: 7172 + 7057 kHz
7175	1646	25	11			FMOP	40	12KOE	OTHR Contayner. 2 simultaneous TX. 7176 + 7126 kHz
7176	1748	01	11			FMOP	40	12KOE	OTHR Contayner
7176	2006	03	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
7181	1540 vt*	19 vd*	11			FMOP	40	12KOE	OTHR Contayner. *Also on 30/11, 1642 UTC
7183	1657	25	11			FMOP	40	12KOE	OTHR Contayner
7184	1700	14	11			FMOP	40	12KOE	OTHR Contayner
7185	1734	01	11			FMOP	40	12KOE	OTHR Contayner
7186	1835	15	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
7187	1826	17	11			FMOP	40	12KOE	OTHR Contayner
7188	2249 vt*	01 vd*	11			FMOP	40	12KOE	OTHR Contayner. *Also on 05/11, 2218 UTC 06/11, 1939
7189	1750 vt*	19 vd*	11			FMOP	40	12KOE	OTHR Contayner. *Also on 24/11, 1503 UTC
7190.6	2036	06	11			XXX		ca 2KOE	Unid digital signal. Broken signal? Also on 7161 kHz CF.
7193	2221	09	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
7194	1629	19	11			FMOP	40	12KOE	OTHR Contayner
7195	1838	15	11			FMOP	40	12KOE	OTHR Contayner
7075	0820	05	11			A1A			Series of 5 dashes, loop.
7154	1948	01	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
7171	2008	06	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
7205	1902	18	11			A3E			BC. "RFI", splatter to 7186 kHz
10124	2021	22	11			FMXX	7	10KOE	Radar bursts? BD ca 15 sec.
14016	0707	11	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14024	0755	05	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14026	0802	25	11			J7D	120	2K70E	CIS-12
14029	0709	10	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14045	0716	10	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14051	0813	05	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14052	0905	07	11			J7D	120	2K70E	CIS-12, with carrier on 14050 kHz
14097	0704	11	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14100	0806	21	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14108	0718	26	11			FMOP	50	10KOE	OTHR
14110	1005	24	11			FMOP	40	12KOE	OTHR Contayner
14110.5	0743	19	11			F1B	600	600H	DRPK-FSK 600 ARQ
14111	0730	23	11			FMOP	50	20KOE	Radar bursts. "Foghorn" 20KOE
14113.5	1409	03	11			F1B	600	600	DPRK-FSK 600 ARQ
14116	0816	12	11			F1B	75	250H	
14134	0745 vt*	12 vd*	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn". *Also on 13/11, 0803 UTC

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14136	0828	16	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14140	1110	18	11			FMOP	40	12KOE	OTHR Contayner
14144	0802 vt*	05 vd*	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14145	0809	14	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14148	1146	04	11			FMOP	40	12KOE	OTHR Contayner. *Also on 10/11, 0711 UTC
14152	1446	12	11			FMOP	40	12KOE	OTHR Contayner
14154.5	1511	11	11			F1B	600	600H	DPRK-FSK 600 ARQ
14169	0810 vt*	23 vd*	11			F1B	50	200H	*Also on 20/11, 0732 UTC
14171	0729 vt*	19 vd*	11			J7D	120	2K70E	CIS-12. *Also on 21/11, 0706 UTC
14174	0739	12	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14178	0907	04	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14180	0712	10	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14186	1456 vt*	02 vd*	11			FMOP	40	12KOE	OTHR Contayner. *Also on 11/11, 1509 UTC
14186	0702	20	11			FMOP	50	10KOE	OTHR
14189	1440	20	11			FMOP	40	12KOE	OTHR Contayner
14197.6	0802 vt*	16 vd*	11			F1B		900H	*Also on 19/11, 0808 UTC. 20/11, 0727 UTC. 24/11, 0741 UTC
14201	0741	12	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14202	0804	18	11			J7D	120	2K70E	CIS-12
14206	114	03	11			J7D	120	2K70E	CIS-12
14213	0832	16	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14224	0805	05	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14229	0828	25	11			FMXX	41.6	10KOE	Radar bursts. "Foghorn"
14232	0739	26	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14233	0717	07	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14246	0757	20	11			FMOP	50	10KOE	OTHR
14247	0900	13	11			FMOP	50	10KOE	OTHR
14247	0856	27	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14248	0849	20	11			FMOP	50	10KOE	OTHR
14249	0850	21	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14252	0833	18	11			FMXX	50	20KOE	Radar bursts. "Foghorn". BW = 20KOE
14252	0813	30	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14253	0727	27	11			FMOP	50	10KOE	OTHR
14255	0702	01	11			XXX	40	50KOE	Radar?
14258	0759	13	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14259	0805	05	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14260	0704	10	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14262	0717	30	11			FMXX	10	160KOE	OTHR. Alternating QSY between 14262 & 14128 kHz
14263	0723	10	11			FMOP	40	12KOE	OTHR Contayner
14264	0719	21	11			FMOP	50	10KOE	OTHR

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14268	0657 vt*	03 vd*	11			FMOP	50	10KOE	OTHR. *Also on 18/11, 0920
14268	0811	16	11			FMOP	10	40KOE	OTHR
14274	0757	24	11			FMOP	50	10KOE	OTHR
14278	0712	11	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14280	1010 vt*	04 vd*	11			A3E			Numbers station "S06s", "Russian Lady". Female voice. RUS language. *Also on 11/11, 1010 UTC. 18/11, 1010 UTC. 25/11, 1007 UTC
14283	0821	30	11			FMOP	50	10KOE	OTHR
14299	0844	21	10			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14292	0808	18	11			F1B	500H		
14293.7	0759	04	11			J7D	120	2K70E	CIS-12. With a carrier on 14292.1 kHz. (<i>ITU RR 5.152</i> ?)
14297	0748	20	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14299	1247	12	11			FMOP	40	12KOE	OTHR Contayner
14301	0719	07	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14303	0707	10	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14303	0747 vt*	12 vd*	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn". *Also on 23/11, 0806 UTC
14304	0717	01	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14305	0914	14	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14307	0824	24	11			FMXX	50 / 66.66	10KOE	Radar bursts. "Foghorn". Sps, alternating
14308	0811 vt*	18 vd*	11			F1B	75	500H	*Also on 23/11, 0908 UTC
14308	0751	21	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14310	0810	25	11			OFDM		2K80E	OFDM
14311	0717	19	11			F1B		200H	
14318	0806	04	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14318	0807	05	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14320	0816	18	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14322	0723	02	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14322	0713 vt*	10 vd+	11			FMXX	50	10KOE	Radar bursts. "Foghorn". *Also on 11/11, 0756 UTC. 23/11, 0932 UTC
14324	0754	12	11			F1B	75	500H	
14325	0930	16	11			FMXX	41.6	10KOE	Radar bursts. "Foghorn"
14327	0819	24	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14329	0835	25	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14331	0747	13	11			FMXX	83.33	10KOE	Radar bursts. "Foghorn"
14331	0740	20	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14331.5	0825	12	11			F1B	600	600H	DPRK-FSK 600 ARQ
14334	0808	06	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
14334	0754	11	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14335	1010	14	11			FMOP	50	10KOE	Radar bursts. "Foghorn"
14338	0838	25	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14342	0845	27	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14343	0748	12	11			FMXX	50	10KOE	Radar bursts. "Foghorn"

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14344	0845	27	11			FMXX	66.66	10KOE	Radar bursts. "Foghorn"
14350	0928	05	11			FSK	125 250	1KOE	FSK4. Bd: changing: 125 & 250.
14353	0819	18	11			J7D	120	2K70E	CIS-12. Splatter to 14348 kHz
18100	0807	13	11			FMOP	20KOE	25	OTHR PLUTO
18127	0829	12	11			FMOP	40	12KOE	OTHR Contayner
18150	0732 VT	02	11			F1B	100	1KOE	Shared band. Often
18158	0854	12	11			FMOP	40	12KOE	OTHR Contayner
18164	1109	10	11			FMOP	40	12KOE	OTHR Contayner
18166	0840 vt*	16 vd*	11			FMOP	40	12KOE	OTHR Contayner. *Also on 30/11, 0958 UTC
18170	0726	10	11			FMCW	50	20KOE	OTHR PLUTO
18175	1045	19	11			FMCW	50	20KOE	OTRHR PLUTO
21045	0730	26	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
21061	0949	21	11			FMOP	40	12KOE	OTHR Contayner
21081.5	0708	07	11			F1B	600	600H	DPRK-FSK 600 ARQ
21099	0712	21	11			FMOP	40	12KOE	OTHR Contayner
21106.8	0841	06	11			XXX		1K20E	DPRK 1200
21106.8	0834	12	11			F1B	600	600H	DPRK-FSK 600 ARQ
21106.8	0842 vt*	20 vd*	11			XXX		1K20E	DPRK-1200. *Also on 24/11, 0832 UTC. 30/11, 0832 UTC
21108.5	0747	26	11			F1B	600	600H	DPRK-FSK 600 ARQ
21118.5	0943 vt*	25 vd*	11			F1B	600	600H	DPRK-FSK 600 ARQ. *Also on 26/11, 0725 UTC
21130	0809	20	11			FMXX	12.5	40KOE	OTHR
21150	0920 vt*	20 vd*	11			J3E-U		ca 3K5E	Non amateur comms. Male voice, RUS language. *Also on 25/11, 0921 UTC
21165	0745	23	11			FMCW	25	20KOE	OTHR PLUTO
21170	0719	11	11			FMCW	25	20KOE	OTHR PLUTO
21172	0748	24	11			FMXX	50	10KOE	Radar bursts. "Foghorn"
21200	1328	03	11			FMCW	50	20KOE	OTHR PLUTO
21215	0722	26	11			FMCW	25	20KOE	OTHR PLUTO
21241	0755	21	11			FMOP	40	12KOE	OTHR Contayner
21250	0803	19	11			FMCW	50	20KOE	OTHR PLUTO
21270	0734	11	11			FMCW	25	20KOE	OTHR PLUTO
21350	0732	02	11			FMCW	50	20KOE	OTHR PLUTO
21400	0622	01	11			FMOP	40	12KOE	OTHR Contayner
21409.5	0751	30	11			F1B		2KOE	
21410	0820	23	11			FMCW	25	20KOE	OTHR PLUTO
21420	0944	24	11			FMXX	12.5	40KOE	OTHR
21438	0917 vt	02 vd	11		RCV	A1A			"RCV" QTCs. Often
28860	0900	27	11			FMXX	150 313	ca 45KOE	OTHR bursts.Sps, alternating

USKA; Peter, HB9CET									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD / sps	SH / BW	DETAILS
3525.0	1757	30	11			B7D	75 Bd	ca 6k0E	LINK 11 CLEW, DSB/ISB mode often legal, shared band
6999.0	2315	12	11			FMOP	40 sps	12k0E	OTHR; Contayner; partially in 40m band
7000.0	1729	16	11			J3E-U		2k10E	unid language
7000.0 USB	1657	17	11			ev. G1D		ca 2k30E	unident digital signal, bursts
7000.0	1618	18	11			FMOP	40 sps	12k0E	OTHR; Contayner; partially in 40m band
7001.5	1735	16	11			F1B		600H	sounds like Pactor calling
7008.0	0709	20	11			F1B		250H	
7009.0	1821	19	11			FMOP	50 sps	10k0E	OTHR
7030.0	2227	12	11			J7D	12x120 Bd	2k70E	CIS12; BPSK or QPSK
7030.0	1630 2343	17 30	11			FMOP	40 sps	12k0E	OTHR; Contayner often
7039.2	2314	19	11	RUS	F	A1A			Cluster Beacon "F": Vladivostok daily weak in HB9, strong via SDR rx JA
7039.4	2314	19	11	RUS	M	A1A			Cluster Beacon "M": Magadan daily weak in HB9, strong via SDR rx JA
7050.0	1631	18	11			FMOP	40 sps	12k0E	OTHR; Contayner
7059.0	1713	20	11			FMOP	40 sps	12k0E	OTHR; Contayner
7060.0	2220	12	11			FMOP	40 sps	12k0E	OTHR; Contayner
7062.0	1440	24	11			FMOP	40 sps	12k0E	OTHR; Contayner
7064.0	1824	19	11			FMOP	40 sps	12k0E	OTHR; Contayner
7065.0	1700	30	11			FMOP	40 sps	12k0E	OTHR; Contayner
7074.995	1049	19	11			A1A			slow CW; mostly only dashes (as a 0) almost daily
7085.0	1622	25	11			FMOP	40 sps	12k0E	OTHR; Contayner
7088.0	2334	30	11			FMOP	40 sps	12k0E	OTHR; Contayner
7093.0	1728	30	11			FMOP	40 sps	12k0E	OTHR; Contayner
7095.0	1531	23	11			FMOP	40 sps	12k0E	OTHR; Contayner
7100.0	1609	16	11			FMOP	40 sps	12k0E	OTHR; Contayner
7104.0	1658	20	11			FMOP	47 sps	ca 10k0E	OTHR
7104.0	1543	25	11			FMOP	40 sps	12k0E	OTHR; Contayner
7113.0	1628	20	11			FMOP	40 sps	12k0E	OTHR; Contayner
7118.0	1602	16	11			J7D	12x120 Bd	2k70E	CIS12; BPSK or QPSK
7121.0	1651	30	11			FMOP	40 sps	12k0E	OTHR; Contayner
7122.0	1627	18	11			F1B	50	250H	sometimes F1A FSK-CW; often
7131.0	1807	03	11			FMOP	40 sps	12k0E	OTHR; Contayner
7134.0	1535	23	11			FMXX	50 sps	10k0E	OTHR
7141.0 LSB	1632 1652	17 18	11			PSK-4	30x60Bd	ca 2k50E	CHN30 (PRC30); Burst system; tone spacing 75 Hz; Preamble 4x PSK4 60Bd, spacing 600Hz; Pilot tone at 450Hz
7143.0	2301 2333	19 23	11			FMOP	40 sps	12k0E	OTHR; Contayner
7158.0	2340	12	11			FMOP	40 sps	12k0E	OTHR; Contayner
7159.0 USB	2349	17	11			G7D	75 Bd	ca 2k50E	LINK11 CLEW SSB Mode
7159.0	1731	30	11			B7D	75 Bd	ca 6k0E	LINK11 CLEW DSB or ISB Mode
7161.0	1816	19	11			FMOP	50 sps	10k0E	OTHR
7164.0	2229	19	11			FMOP	66.66 sps	10k0E	OTHR, Foghorn
7170.0	1604	16	11			FMOP	40 sps	12k0E	OTHR; Contayner
7175.0	1627	25	11			FMOP	40 sps	12k0E	OTHR; Contayner

USKA; Peter, HB9CET									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD / sps	SH / BW	DETAILS
7181.0	1658	30	11			FMOP	40 sps	12kOE	OTHR; Contayner
7187.0	0013	18	11			FMOP	40 sps	12kOE	OTHR; Contayner
7188.0	2251	01	11			FMOP	40 sps	12kOE	OTHR; Contayner
7189.0	1504	24	11			FMOP	40 sps	12kOE	OTHR; Contayner, 1505 QRT
7191.0	1537	25	11			FMOP	40 sps	12kOE	OTHR; Contayner
7193.0	0854	19	11			F1B	50 Bd	200H	jammed
7193.100	0854	19	11			A1N			fast dots: Jammer: stupid and illegal
7196.0	1602	16	11			FMOP	40 sps	12kOE	OTHR; Contayner
7197.0	2301	30	11	TUR	various	MFSK8	125 Bd	1750	ALE, MIL 188-141A; daily TUR Emergency Network legal?
7198.0	1544	18	11			J7D	12x120Bd	2k70E	CIS12; BPSK
7200.0 (7199.95)	1239 1116	11 19	11			A3E		ca. 8kOE	BC, Asian language daily
14026.0	1116	03	11			J7D	12x120 Bd	2k70E	CIS12 BPSK or QPSK
14098.5	1311	30	11			F1B/ARQ	600 Bd	600H	ARQ system
14110.0	0832	23	11			FMxx	50 sps	20kOE	OTHR; bursts BD ca 10s
14246.0	0806	20	11			FMxx	50 sps	10kOE	OTHR
14297.0	0753	20	11			FMOP	66.66 sps	ca 10kOE	OTHR, type "Foghorn"
14308.0	0914	23	11			F1B		500H	
14325.0	0938	16	11				42 sps	ca. 10kOE	OTHR
14331.0	0751	20	11			FMOP	66.66 sps	ca 10kOE	OTHR, type "Foghorn"
18061.0	0944	28	11			FMCW	50 sps	ca 20kOE	OTHR; partially in 17m band
18068.0	1445	26	11			FMxx	xx	ca 20kOE	OTHR (observed by HB9FSV)
18165.0	1119	30	11			FMOP	40 sps	12kOE	OTHR; Contayner
21130.0	0813	20	11			FMOP	12.5 sps	40kOE	
21438.0	0944	03	11		RCV	A1A		10H	TDoA: Area of Sevastopol daily

VERON; Ruud, PG1R; Credits to observers: Dick PA0GRU, Joeke PA0VDV, Kees PA2CHM, Arie PA3CNK, Rene PA3EQO									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3792.0	1942	09	11		UiPTR	F1B			Revs/Ptr; shared band
7048.0	1600	06	11		UiMux	PSK2			12mpsk; AT3004D 43N 33E Black Sea
7055.0	vt	vd	11		UiBC	J3e-L			Loops; political slogans; daily
7055.0	1450	21	11		UiBC	J3E-L			Simultaneous 2 nd TX; music
7056.0	1540	07	11	RUS	Radar	FMOP	40 sps	12kOE	OTHR contayner; CF
7065.0	1438	14	11		UiBC	J3E-L			Loops; political slogans
7074.9	1537	07	11		UiCW	A1A			Continuous dashes; s7
7101.0	2121	21	11	RUS	Radar	FMOP	40 sps	12kOE	OTHR; CF
7106.0	2014	22	11	MRC		J3E-U			Moroccan fishery
7107.0	1821	21	11	RUS	Radar	FMOP	40	12kOE	OTHR; CF
7170.0	0941	08	11		UiPtr	F1B		200	Printer
7193.0	1007	04	11		UiCW	F1A			5F
7193.0	1010	04	11		UIPTR	F1B			Revs/Ptr
14026.0	0810	25	11	RUS	UiMux	PSK			12mpsk; 56N 44E nr Novogorod
14099.0	1046	16	11		UiPTR	F1B			Revs
14176.0	0918	08	11		UiRadar	FMOP	50	10kOE	OTHR; CF
14249.0	0930	22	11		UiRadar	FMOP	50	10kOE	OTHR; CF
14277.0	1014	04	11	RUS	276	A3E			Fig groups in Russian Language

VERON; Ruud, PG1R; Credits to observers: Dick PA0GRU, Joeke PA0VDV, Kees PA2CHM, Arie PA3CNK, Rene PA3EQO									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14280.0	1010	18	11	UKR		A3E			Female encrypted msgs
14306.0	1100	23	11		UiCAR	NON			Rs 59 55N 16E Baltic Area
21438.0	1039	20	11		ONG4	A1A			XXX ONG4 43757 BORTOTATX 7669 5170 BUNTOSLOG 4456 8260 K; vt, almost daily transmissions



Season's greetings

to all of our friends, colleagues and helpers in the background. Thank you very much for your work and every form of valuable support throughout the year.

**Merry Christmas and a happy New Year - Feliz Navidad y un Feliz Año Nuevo - Buon Natale e un Felice Anno Nuovo
Feliz Natal e um Feliz Ano Novo - Frohe Weihnachten und ein glückliches Neues Jahr - Joyeux Noël et bonne année**



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