



IARU Monitoring System Region 1

Monthly Newsletter 5 - May 2020

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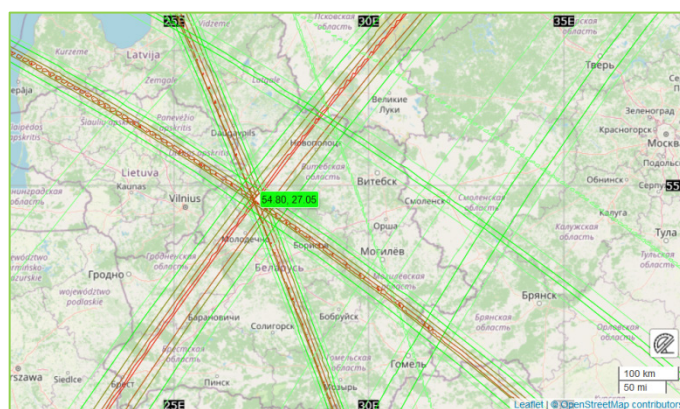
News and Info's

May 2020 was similar to the previous months. But now also in the higher bands (17m to 10m) we observed some intruders, due to the somewhat better conditions at times. Most of our coordinators reported intruders predominantly in the 20m and 40m band. The frontrunners are still the heavy daily emissions of the Russian Over-the-Horizon Radar (OTHR) Contayner 29B6. In the 10 m band, the Iranian OTHR can be heard almost daily with a bandwidth of around 40 kHz, albeit only weak.

The Russian-Ukrainian radio war, which had been raging for years at 7055 kHz LSB (often also 7050 or 7060 kHz), reached a new escalation level in May. Almost every day one heard the most massive mutual insults and aggressive, provocative hate rap music in Russian. It's a great annoyance and a shame! Furthermore, from time to time we saw insulting symbols (e.g. skulls) in the waterfall.

The originators are believed to be in the border region of eastern Ukraine with the Russian Federation. In May, a digital Jammer (interference emission appeared, temporarily up to about 12-15 kHz

wide, which also affected amateur radio massively. Analyses with the W-Code software from Wavecom did not yield any reliable results; most probably it wasn't a real digital mode. Radio location using TDoA (Time Difference of Arrival) at different times and using different receivers in the KIWI network always showed similar results in the region around 54 ° N / 27 - 29 ° E (Belarus).

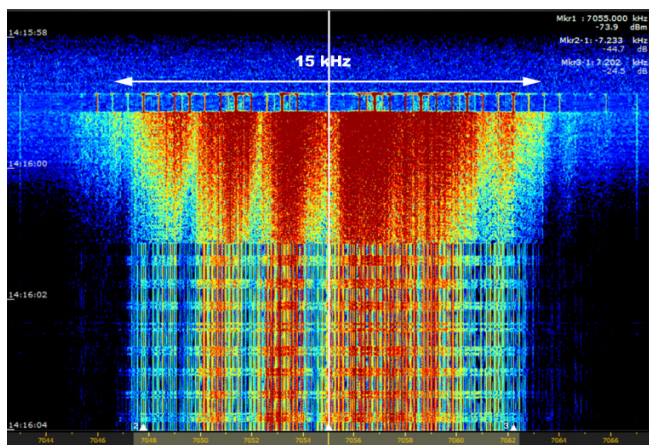


TDoA of the Jammer

The IARU Monitoring System (Intruder watch) has no means to stop this radio war. Only national authorities can hopefully do something against with international complaints. The procedure for solving problems of harmful interference / infringements is indicated in Section VI of Article 15 of the ITU RR.

In the meantime the intruder watch (Bandwacht) of the DARC has submitted an official report to the BNetzA, the German regulator. It would be helpful if other member societies also watch this frequency and send their reports to their regulators.

Peter Jost, HB9CET, IARUMS R1 Coordinator a.l.



Wide Jammer

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 | **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

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7039.80	2050	24	05	F	FDE2	A1A			"VVV DE FDE2 AR", french army
7039.90	0800	26	05	F	FDE2	A1A			"VVV DE FDE2 AR", french army
7050.00	0800	19	05	CLA	unid	J3E-L			female voice in loop, russian
7051.00	2119	05	05	RUS	unid	F1B	50	200	CIS 36-50
7051.00	0450	23	05	RUS	unid	F1B	50	200	CIS 36-50
7055.00	1030	13	05	CLA	Jammer	F1N			Ukrainian-russian radio war
7055.00	0942	15	05	CLA	Jammer	F1N			Ukrainian-russian radio war
7055.00	1735	17	08	CLA	Jammer	F1N			Ukrainian-russian radio war
7055.00	0514	23	05	CLA	unid	J3E-L			Voices and music, russian
7055.00	0930	23	05	CLA	unid	J3E-L			Russian femals voice in loop
7137.00	2052	05	05	RUS	unid	F1B	50	250	CIS 36-50
7160.50	1040	09	05		unid	G7B			LINK11 CLEWS DSB
10100.00	2145	31	05	RUS	Kontayner	G7N	40	12	OTHR
10108.00	0733	06	05	RUS	unid	F1B	50	200	CIS 36-50

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7022	1545	23	05			FMOP			Radar from 7022 to 7034 kHz.
7053	2130	24	05			F1B			Strong signals.
7055	0720	01	05	RUS/ UKR		LSB			Russian-Ukrainian radio war with music and propaganda. Heard very often during the month. Pest.
7055	1550	12	05			PSK-8			Huge signal.
7055	1815	17	05						"Frequency broom". Huge signal. Persistent.
7140	1825	16	05			LSB			Loud music.
7159	0725	09	05			Digital			Link-11 Clew. Very strong. Also heard on 10 th to 14 th of May 24 hours on and off.
7177.5	1700	19	05			F1B			Medium strength signal.
7180	2135	24	05			FMOP			Radar from 7180 to 7182 kHz Short bursts.
7189	1755	16	05			FMOP			Radar from 7189 to 7202 kHz. Very strong. On and off.
7200	1705	19	05			PSK			Very strong signal.
14093	1050	09	05			FMOP			Radar from 14093 to 14105 kHz. Strong, on and off.
14144	1140	06	05			FMOP			Radar from 14144 to 14156 kHz. Strong.
14182	0805	08	05			FMOP			Radar from 14182 to 14195 kHz. Strong.
14184	0535	09	05			FMOP			Radar from 14184 to 14197 kHz. Strong.
14185	0905	22	05			FMOP			Radar from 15185 to 14200 kHz. Strong.
14191	1055	09	05			F1B			Strong.
14207	1605	12	05	UKR		USB			A pirate station form Donetsk City tries to make contacts. Umpteen other stations try to silence him with DQRM in CW, music or shouting. Total chaos.
14220	0550	06	05			F1B			Medium strength.
14235	1220	25	05			PSK			Strong signal. Also heard on the 26 th at 1045z.

IRTS; Michael, EI3GYB

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14258	0810	08	05			FMOP			Radar from 14258 to 14270 kHz. Weak.
14296	1035	04	05			FMOP			Radar from 14296 to 14310 kHz. Medium strength.
14306	1306	02	05			USB			Somebody broadcasts the sound of howling wolves. Very strong signal. Persistent.
14325	1525	06	05			FMOP			Radar from 14325 to 14337 kHz. Medium strength.
14330	1230	27	05			FMOP			Radar from 14330 to 14262 kHz. Very strong and persistent.
18107	1530	29	05	RUS		BPSK			Russian military. Very strong signal. Also heard 30 th at 1200z.
28150	0920	18	05	I		AM			2 male Italian CBers chatting.
28215	0925	18	05	I		AM			2 male Italian CBers chatting.
28225	0935	18	05	I		AM			Group of male Italian CBers chatting.
28830	0910	18	05	IRN		AMOP			Radar from 28830 to 28880 kHz. Weakish.
29183	0915	18	05			AMOP			Radar from 29183 to 29205 kHz. Very strong.
29278	1745	19	05			AMOP			Radar from 29278 to 29305 kHz. Huge signal. Persistent.
50140	1045	20	05			AMOP			Radar from 50140 to 50240 kHz. Huge signal from 1045 onwards. Fades out around 1125z. Also noticed by EI7HBB Lloyd.
50140	1600	29	05			AMOP			Radar from 50140 to 50260 kHz. On and off with medium strength signal.

MRASZ; Laci, HA7PL

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3563.0	1658	22	05			A1A			"47887 16312 62236"
3581.8	1714	06	05			PSK8A	2400	2400	Stanag-4285
7008.7	1904	09	05			A1A			dit's and finally dash
7054.0	1711	22	05			OTHR			periodically QRM
7055.0	1716	07	05			LSB			chaos, propaganda
7055.0	0640	19	05			LSB			chaos
7055.0	1714	22	05			USB			russian military traffic, russian numbers, after 5L with russian names
7055.0	1720	22	05			OTHR			
7055.0	1657	24	05			LSB			music
7055.0	0912	28	05			LSB			music
7055.0	1300	28	05			LSB			frog croaking, propaganda, singing
7123.0	1735	01	05			F1B		250	
7140.0	1725	06	05	ERI		A3E/BC			Radio Eritrea
7140.0	1714	07	05	ERI		A3E/BC			Radio Eritrea
7140.0	1656	08	05	ERI		A3E/BC			Radio Eritrea
7140.0	1708	22	05	ERI		A3E/BC			Radio Eritrea
7180.0	1725	06	05	ERI		A3E/BC			Radio Eritrea
7180.0	1708	22	05	ERI		A3E/BC			Radio Eritrea
7192.0	1715	07	05			OTHR			7185 – 7200 kHz

MRASZ; Laci, HA7PL

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7200.0	0500	28	05			A1A			slow dots
10125.0	1645	22	05			OTHR			10115 – 10135 kHz
14127.0	1050	05	05			OTHR			14118 -14136 kHz
14181.0	1414	23	05			OTHR			14176 – 14190 kHz
14186.0	1026	10	05			OTHR			
14200.0	1420	29	05			OTHR			14195 – 14205 kHz
14258.0	1354	9	05			A1A			"V string", "QSA3 K" "176T 97535"

PZK; Marek, SP3AMO + Miro, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3526.7	vt	vd	05	RUS		F1B	50	200	Every day in the evening, multitone
3536.0	0445	16	05			F1B	50	200	S5
3562.7	1909	11	05			A1A			UU4
3716.0	vt	vd	05			UI		2k	Like packets of digital data
3742.1	1831	11	05			MFSK/PSK			[S8] multitone emission 1838 UTC QRT
3749.0	921	10	05	RUS		A3J		3k5	Mesages with numbers in Russian, USB
3750.0	1854	11	05	CZE	unlis	J3E-LSB		15 min	Conversation in Czech witout callsigns
3758.1	1845	11	05			N0N		700	Beep 2 Tone
3762	1042	06	05	RUS		PSK-4		2k9	CIS-12 3763.3 pilot and 12 lines below visible, not strong
5358	1216	19	05			UI		2k5	Irregural short digital transmissions
5366.3	803	06	05			MSK		600	7 lines, cental strong
7005.0	1534	23	05			FMOP		11k0E	OTHR [6994.0 - 7005.0 kHz] S9
7008.0	1430	26	05			FMOP		bw 18k0E	OTHR S8 [6990.0 - 7008.0 kHz] CF 7005.5 kHz
7020.0	1534	23	05			FMOP		10k0E	OTHR [7020,0 - 7030,0 kHz] S9
7022	1230	23	05	RUS		PSK-4		2k9	CIS-12 pilot 7023.3 S8
7034.5	1232	19	05			UI		12k	Continous, S7
7051.0	vt	vd	05			F1B	50	200	S5-S9
7053.5	1227	19	05			PSK-4		2k2	OFDM60? + 7055 pilot sporadicaly
7055.0	2003	17	05	CIS		UI			S9+10 dB [J3E-LSB] BLR
7056.0	0906	17	05	CIS		UI			S7
7056.5	1230	19	05			MSK		1k5	2 or 6 lines, short packets
7057.0	1634	12	05	BLR		DSB		+/- 10k0E	[S9] az./ dir. 70 deg. BW ±6kHz, Broom ?
7085.7	1223	19	05					3k	Irregural digital transmissions - PSK-4 ?
7088.0	1320	27	05			A1			5 CW signals: 7088 continous, 7088,825 slow telegraphy, 7089,55 dashes, 7090,35 dots, 7091.09 dashes
7099.0	1330	27	05			F1B		200	
7122.0	1241	01	05	RUS	RDL	F1B	50	200	
7158.0	1802	13	05			F1B	50	200	S8-9
10108.0	vt	vd	5			F1B		200	
14152.0	1108	25	05			N0N			3 Tone 350, 650, 1040 Hz
14152.2	1203	25	05			N0N		680	2 Tone
14194	1232	23	05			FMOP		25k	OTHR

PZK; Marek, SP3AMO + Miro, SP5GNI

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14195	858	29	05			FMOP		14k	OTHR (0900 ended)
14236	1336	27	05	RUS		PSK-4		2k9	CIS-12 pilot 14237.3 S9+
14247	730	7	05			FMOP		13k	OTHR S9
14330	1400	6	05			FMOP		12k	OTHR
14348	1335	27	05			FMOP		20k	From 14333 kHz
18080	735	7	05			A3E		8k	Radio in unknown language (like Chinese), male and female voices
18109	1034	29	05	RUS		PSK-4		2k9	CIS-12 pilot 18110.3 S6-8
21407	1419	18	05			UI		2k5	Like short packets of digital data, also on 21353.7 MHz
28860	1420	27	05			UI		40k	Many tones, periodic transmissions up to 10 second long

REF; Francis, F5MIU

kHz	UTC	DD	MM	ITU	IDENT	MODE	Baud	SH / BW	DETAILS
10149	1600	01	05			FMCW		15kHz	OTH Radar pulsed 25ms, S7
10150	1716	07	05			FMCW		20kHz	OTH Radar pulsed 25ms, S9+10
14155	0809	27	05			FMCW		20kHz	OTH Radar pulsed 25ms, S9
14185	1633	27	05			FMCW		20kHz	OTH Radar pulsed 25ms, S9
14190	0801	08	05			FMCW		20kHz	OTH Radar pulsed 25ms, S5
14200	0756	29	05			FMCW		20kHz	OTH Radar pulsed 25ms, S8
14315	0753	28	05			FMCW		20kHz	OTH Radar pulsed 25ms, S9+10
21250	0802	27	05			FMCW		20kHz	OTH Radar pulsed 20ms, S9+10
28270	0805	27	05			FMCW		20kHz	OTH Radar pulsed 20ms, S8

REP; José, CT4AN

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3505	06.00	04	05	E		J3E-U			Fishery
3630	10.20	08	05			J3E-L			Jamming + music
3755	18.12	09	05			J3E-L			Music
7000	21.10	09	05			J3E-U			Fishery
7000	10.18	07	05			CW			Carrier
7010	07.12	07	05			F1B			
7039	22.13	10	05	RUS	K	A1A			Beacon
7039	20.34	25	05		FDE2	A1A			
7040	23.55	26	05		FDE2	A1A			V V V
7055	20.00	21	05	RUS		J3E-L			Insults & propaganda
7058	08.00	20	05		UI	3K2			
7106	08.34	24	05	CHN		PSK-4	75	450	
7120	09.05	30	05	RUS	RDL	A1A			25wpm
7140	06.55	04	05	RUS		PSK2	120	2600	AT3004
7160	08.30	07	05			DSB		6k0E	CLEW
7180	dly	dly	05	ERI	VoBM2	9k00 A3EGN			Radio Eritrea
7195	08.00	04	05			J7D	120	2600	CIS12

REP; José, CT4AN

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
10125	10.38	20	05			J3E-U			Fishery
10150	22.05	27	05	RUS	29B6	FMOP	40	12k	Kontayner
14005	19.45	30	05			J3E-L			Female voice talks
14110	07.30	22	05		7WF30	A1A			Letters & Numbers, groups, Code
14135	18.07	14	05	E		J3E-L			Fishery
14140	17.10	14	05	CHN		FMOP	10	100k	OTHR
14193	06.30	25	05	RUS		OFDM			
14200	15.43	14	05	RUS		FSK	50	200	Navy
18100	18.00	12	05	CYP		FMCW	50	20k	OTHR
18110	14.00	28	05	RUS		J7D	120	2600	CIS12

RSK; Kamweti, 5Z4BV

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
6999	1030	26	5		?	J3E-u		2700	Vernacular/Kiswahili QSO
7055	pm	dly.	5	UKR/ RUS?	?	J3E-I		2700	Russian/Ukrainian looped recordings
7075	vt	occ.	5		?	J3E-u		2500	Vernacular/Kiswahili QSO
7075	am	occ.	5	KEN	?	PSK	2400Bd	2750	STANAG 4285
7089.1	vt	dly.	5	KEN	?	J3E-u		2700	Vernacular/Kiswahili QSO
7100	vt	occ.	5	KEN	?	PSK	2400Bd	2750	STANAG 4285
7100	vt	nr dly	5	KEN	?	MFSK	125Bd	2000	2G ALE
7105	vt	24 - 25	5	KEN	?	PSK	4x PSK4 60Bd	2500	PRC-30; Burst system; 30xPSK4 60Bd tones, spacing 75 Hz; Preamble 4x PSK4 60Bd, spacing 600Hz; Pilot tone at 450Hz
7120	vt	occ.	5	SSD	?	J3E-u		2500	Vernacular/Kiswahili QSO
7140	am/pm	dly.	5	ERI	VOBM 1	A3E			Commercial broadcast Voice of the Broad Masses of Eritrea 1
7150	vt	dly.	5	KEN	?	MFSK	125Bd	2000	2G ALE
7180	vt	dly.	5	ERI	VOBM 2	A3E			Commercial broadcast: Voice of the Broad Masses of Eritrea 2
7185	vt	occ.	5		?	J3E-u		2700	Vernacular/Kiswahili QSO
14115	1055	6	5	RUS	?	FMOP	40 sps	20 kHz	Russian Kontayner
14115	1505	11	5	RUS	?	FMOP	8 sps	10 kHz	Russian Kontayner
14150	vt	10	5	RUS	?	FMOP	40 sps	20 kHz	Russian Kontayner
14155	vt	occ.	5	RUS	?	FMOP	40 sps	10 kHz	Russian Kontayner
14160	1615	24	5	RUS	?	FMOP	40 sps	20 kHz	Russian Kontayner
14200	vt	occ.	5	RUS	?	FMOP	40 sps	15-30 kHz	Russian Kontayner

RSGB; Richard, G4DYA

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7000.0	0944	08	05			NON			
7038.496 7038.500 7038.504	ady	dly	05	CZE	OK0EU	A1A			For info: QRP propagation beacons. CW idents offset at +40 Hz.

RSGB; Richard, G4DYA

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7039.83	0813 0818	25 26	05		FDE2	A1A			
7051.0	2010 2155 2006	06 08 11	05			F1B		200	
7052.0	1702	14	05					11K0E	Unident. bursts: 21s on, 16s off
7053.0	0836	17	05					11K0E	Unident. bursts: 21s on, 15s off
7053.6	1648	22	05					11K0E	Unident. bursts: 25s on, 15s off
7053.9	0813	15	05					11K0E	Unident. bursts: 21s on, 16s off
7055.0	1528 0856	12 13	05					11K0E	Unident. bursts: 21s on, 16s off
7103.0	1706	07	05	CHN		F0N	66.7	9K00E	Foghorn OTH radar
7112.0	1005	22	05			J7D		2K70E	USB 7110.0 / CIS-12
7122.0	1829	01	05			F1B	50	200	
7140.02	1839 1635 1709 1733 1700 1734 1811 1727	01 06 07 14 15 20 21 22	05	ERI	VoBM1	A3E			BC
7159.0	0812 0705 0748 0852 0846 1058 0929 0806	09 10 11 13 14 16 19 20	05			B7D		6K00E	ISB / Link 11 CLEW (Stanag 5511) TDoA: north Atlantic
7159.0	1655	15	05			J7D		2K40E	USB / Link 11 CLEW
7179.0	1709 1004	21 22	05			F1B		200	
7180.02	1839 1635 1643	01 06 22	05	ERI	VoBM2	A3E			BC
10100.8	ady	dly	05	D	DDK9	F1B	50	450	For info: Primary user: WX broadcast
10150.0	1328	26	05			F0N	50	20K0E	OTH radar
10152.0	1715	07	05	RUS		P0N	40	12K0E	Container OTH radar
14008.0	1005 0929	14 28	05	RUS		F1B	50	250	TDoA: Moscow area
14139.0	0710	31	05			J7D		2K70E	USB 14137.0 / CIS-12 Ceased at 0721z
14140.0	0933	28	05	RUS		P0N	40	12K0E	Container OTH radar
14158.0	1434 1638	05 22	05	RUS		P0N	40	12K0E	Container OTH radar
14159.0	1305	08	05	RUS		P0N	40	12K0E	Container OTH radar
14180.0	1305	08	05	RUS		P0N	40	12K0E	Container OTH radar
14190.0	0936	08	05	RUS		P0N	40	12K0E	Container OTH radar

RSGB; Richard, G4DYA

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14236.0	1247 0736 1246 0926	25 26 27 28	05			J7D		2k70E	USB 14234.0 / CIS-12 TDoA: Crimea Ceased 281115z
14253.0	0833	04	05			F1B		250	RR 5.152 ?
14303.0	1047	04	05	RUS		P0N	40	12K0E	Container OTH radar
14340.0	1300	27	05	RUS		P0N	40	12K0E	Container OTH radar
21160.0	0822	25	05	RUS		P0N	40	12K0E	Container OTH radar
21190.0	0716	27	05	G		F0N	50	20K0E	Pluto OTH radar, British Western Sovereign Base Area, Cyprus
21250.0	0812	27	05	G		F0N	50	20K0E	Pluto OTH radar, British Western Sovereign Base Area, Cyprus
28860.0	0843	20	05	IRN		P0N	150/ 313		Ghadir OTH radar

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/BW	DETAILS
7 MHz	0515- 1720/	*	5	RUS	Kontainer	FMOP	40sps	13k0E	*) Days: 18. 19. 23. 27. (WebSDR 2d)
7 MHz	0350- 1530	*	5	RUS		FMOP	10sps	10k0E	*) Days: 13. - 30. short burst, fq jumps up to 21 MHz
7008.0	0720- 0815	23	5			F1B		250H	
7008.5	1200- 1210	20	5	RUS		J7D	120	2k60E	Same tx R3E USB on 7006.5 kHz
7015.0	1345- 1430	6	5	RUS		J7D	120	2k60E	
7018.0	1520	24	5	RUS		J7D	120	2k60E	
7020.0	0530- 0800	20 23	5	RUS		F1B		250H	
7022.0	0745- 1300	23 26	5	RUS		J7D	120	2k60E	
7027.0	0745	28	5	RUS		J7D	120	2k60E	
7030.0	1330- 1415/	1	5	RUS		F1B		250H	
7034.0	0745- 1545	*	5	RUS		F1B		250H	*) Days: 8. 14. 23.
7041.0	1430	1	5	RUS	PQNT	A1A			
7043.0	0730- 1240	23	5	RUS		J7D	120	2k60E	
7051.0	0000- 0600/	*	5	RUS		F1B		200H	*) Days: 1. - 30.
7053.0	h24	*	5	BLR			4800	12k0E	*) Days: 12. - 22. 20 sec on / 15 sec off
7054.0	1530- 1900	*	5	RUS		F1B		200H	*) Days: 13. - 19. 22. 23. 26. 27.
7055.0	1030- 1100/	18	5	RUS		F1B		250H	
7089.9	1330- 1333/	25	5	RUS		F1B		800H	dotter
7099.0	0820- 1700	27 29	5	RUS		F1B		200H	

SRAL; Pekka, OH2BLU									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/BW	DETAILS
7099.5	0720-1250	15 24	5	RUS	7NMK	A1A			5BL
7101.0	1235	23	5	RUS		J7D	120	2k60E	
7110.0	0750-0810/	27	5	RUS		F1B		250H	
7111.0	0900-1030	1 13	5	RUS		F1B		250H	
7112.0	0900-1030	*	5	RUS		J7D	120	2k60E	*) Days: 15. 22. 29.
7114.0	0430-0600/	*	5	RUS		F1B/ NON		250H	*) Days: 1. - 5.
7122.0	0515-1845	*	5	RUS	RDL	F1B/A		200H	*) Days: 1. - 5. 23.
7131.0	1115	3	5	RUS	RMP	A1A			Calls RGX80
7140.0	0400-0600	dly	5	ERI	VoBME	A3E		9k0	
7140.0	1400-1835/	dly	5	ERI	VoBME	A3E		9k0	
7152.5	1100-1215	20 23	5	RUS		F1B		250H	
7158.0	1800-1930	13	5	RUS		F1B		250H	
7159.0	h24	*	5			B7D		6k0E	LINK11 dsb, *) Days: 9. - 20. ship on Atlantic
7160.0	0710-1620	17	5	RUS		J7D	120	2k60E	
7160.0	0715-0845/	19 20	5	RUS	RBL88	A1A			5BL
7162.0	1320-1350/	1	5	RUS		F1B		250H	
7170.0	1245	15	5	RUS	RLO63	A1A			Calls RIT
7174.0	0830-1200/	8 25	5	RUS		J7D	120	2k60E	
7176.0	1215-1430	18 23	5	RUS		F1B/ NON		250H	
7177.0	1645-1810	19	5	RUS		A1A		50H	dotter
7179.0	/1705-1155/	21 22	5	RUS		F1B		200/ 250H	
7180.0	0500-0600	*	5	ERI	VoBME	A3E		9k0	*) Days: 1. - 6. 12. - 25.
7180.0	1400-1835/	*	5	ERI	VoBME	A3E		9k0	*) Days: 1. - 6. 12. - 25.
7196.0	0830-1400	30 31	5	RUS	V	A1A			beacon
7198.0	1040-1717/	*	5	RUS		J7D	120	2k60E	*) Days: 13. 19. 29.
10 MHz			5	CYP		FMCW	25/50s ps	20k0	(WebSDR 7d)
10 MHz	1315-0615	*	5	RUS	Kontainer	FMOP	40sps	13k0E	*) Days: 1. 2. 9. 10. 14. 19. 30. (WebSDR 17d)
10105.0	1645-1700/	28	5	CHN		A3E		9k0	music

SRAL; Pekka, OH2BLU									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/BW	DETAILS
14 MHz	1200-1845	*	5	CHN		FMOP	67sps	10k0E	*) Days: 10. 14. 19. 20. 22. 23. bursts of c. 5 sec
14 MHz	0450-1300	*	5	RUS		FMOP	10sps	10k0E	*) Days: 6. 7. 20. 26. 27. 30.
14 MHz	0530-1830	*	5	RUS	Konteiner	FMOP	40sps	13k0E	*) Days: 3.- 8. 10.- 15. 17.- 20. 22. 23. 25.- 29. 31. (WebSDR 26d)
14000.0	/1400-1500/	*	5	CHN	CRI	A3E		9k0	*) Days: 12. 17. 20. 22. 28. 31.
14008.0	0840-1240	*	5	RUS		F1B/NON		250H	*) Days: 18. 21. 22. 25. 28.
14025.0	-0525/	7	5	RUS		J7D	120	2k60E	
14108.0	0600-1100	*	5	RUS	Y1CQ etc	A1A			*) Days: 9. 10. 14. 18. - 22. 30. 5BL
14111.0	'0920	22	5	RUS		F1B		250H	
14139.0	0455-0610	31	5	RUS		J7D	120	2k60E	
14141.0	0950-1100/	25	5	RUS		F1B		200H	
14193.0	0430-1540	*	5	RUS		J7D	120	2k60E	*) Days: 18. - 25.
14221.0	0030-0600/	dly	5	KAZ		F1B		200H	
14236.0	0355-1625	*	5	RUS		J7D	120	2k60E	*) Days: 25. 28.
14292.0	1030	19	5	RUS		A1A			
14324.0	1145-1217/	8	5	RUS		F1B		200H	
18 MHz	0900-1330	*	5	CYP		FMCW	25/50s ps	20k0	*) Days: 3. 16. 20. 21. 23. 28. (WebSDR 6d)
18 MHz	0500-1005	26 31	5	RUS		FMOP	10sps	10k0E	
18 MHz	1250-1530	*	5	RUS	Konteiner	FMOP	40sps	13k0E	*) Days: 21. 23. 24. 28.
18109.0	0930-1530	29 31	5	RUS		J7D	120	2k60E	
21 MHz	0800-1215	*	5	CYP		FMCW	25/50s ps	20k0	*) Days: 16. 21. 27. (WebSDR 6d)
21 MHz	0455-0540	*	5	RUS		FMOP	10sps	10k0E	*) Days: 27. 28. 29.
21 MHz	0740-1350	*	5	RUS	Konteiner	FMOP	40sps	13k0E	*) Days: 21. 25. - 28.
21438.0	0830-1300	*	5	RUS	RCV	A1A			*) Days: 1. 3. 9. 12. 18. - 26. 28. - 31.
24 MHz			5	CYP		FMCW	25/50s ps	20k0	(WebSDR 0d)
28 MHz	0600-1530	*	5	IRN		FMCW	*	60k0E	*) 307 & 870sps, *) Days: 18. -23. alternating fq
28860.0	0400-1400	*	5	IRN		FMCW	*	60k0E	*) 150 & 313sps, *) Days: 16. - 31.
28 MHz	0545-1815	*	5	RUS	Taxi disp.	F3E		3k0E	68 reports, *) Days: 18. - 21. 24. 26. - 30.
29190.0	'0900	8	5	CYP		FMCW	50sps	20k0	

URE; Gaspar, EA6AMM

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7000	0601	08	05			N0N			Carrier unmodulated. Long-lasting
7008	0608	07	05			F1B		250 Hz	
7008.5	0712	27	05			J7D	120	2K6E	CIS-12 aka AT3004D
7032	2233	17	05			FMOP	40	12K0E	OTHR Contayner
7039.8	1847	24	05		FDE2	A1A			Automated loop TX: "VVV VVV VVV DE FDE2 FDE2 FDE2 AR". Also on 25 May.
7048	2152	15	05			XXX		3K0E	Unknown digital signal. Probably jammer. Long - lasting
7050	0722	16	05			J3E-L			Agitprop, speech, "radiowar"
7051	vt	vd	05			F1B		200	Almost daily
7052.5	1624	17	05			XXX		12K0E	Unknown digital signal. Probably jammer. TX ca. 22 sec. Space between TXs ca. 15 sec. Long - lasting
7053.2	1250	12	05			XXX		3K0E	Unknown digital signal. Probably jammer. TX ca. 22 sec. Space between TXs ca. 15 sec. Long - lasting
7053.2	1911	11	05			XXX		10K0E	Unknown digital signal. TX ca. 22 sec. Space between TXs ca. 15 sec. Probably jammer. Long - lasting
7053.5	2050	19	05			XXX		3K0E	Unknown digital signal. TX ca. 22 sec. Space between TXs ca. 15 sec. Probably jammer. Long - lasting
7054	1847	15	05			XXX		12K0E	Unknown digital signal. TX ca. 22 sec. Space between TXs ca. 15 sec. Probably jammer. Long - lasting
7054	2004	14	05			XXX		11K0E	Unknown digital signal. TX ca. 22 sec. Space between TXs ca. 15 sec. Probably jammer. Long - lasting
7055	0635 vt	07 vd	05			J3E-U			Agitprop, speech, music, BC relaying, images on waterfall, "radiowar"
7056	0641	25	05			XXX		3K2E	Unknown digital signal. TX ca. 22 sec. Space between TXs ca. 15 sec. Probably jammer. Long - lasting
7064	1909	06	05			FMOP	40	12K0E	OTHR Contayner. Long - lasting
7065	2306 vt	17 vd	05			XXX	10	ca. 8KE	Radar sweeps? Ca. 15 sec. QSY UP randomly over all HF spectrum.
7080	1825 1821	05 01	05			F1B		200	Often
7087	2217	03	05			XXX	10	Ca. 8KE	Radar sweeps? Ca. 15 sec. QSY UP randomly over all HF spectrum.
7103	1805	07	05			FMOP	40	10K0E	OTHR bursts. BD ca 4 sec. "Foghorn"
7114	1650 1952	03 05	05			F1B		250	
7131	0642	07	05		RMP	A1A			TX figures & numbers
7137	1704	05	05			F1B		250	Often
7145	0640	08	05			XXX	10	ca. 8KE	Radar sweeps? Ca. 15 sec. QSY UP randomly over all HF spectrum
7159	0604 vt	09 vd	05			G7D		6K0E	LINK11 CLEW DSB. Non - stop from 09 to 15 May.
7164	0718	06	05			J7D	120	2K60	CIS-12 aka AT3004D
7173	1904	17	05			XXX	10	ca. 8KE	Radar sweeps? Ca. 15 sec. QSY UP randomly over all HF spectrum

URE; Gaspar, EA6AMM

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7179	0650	22	05			F1B		200	
7186.5	1734	01	05			J7D	120	2K60	CIS-12 aka AT3004D
7188	1735	01	05			XXX	10	ca. 8KE	Radar sweeps? Ca. 15 sec. QSY UP randomly over all HF spectrum
7190	2221	15	05			XXX	10	ca. 8KOE	Radar sweeps? Ca. 15 sec. QSY UP randomly over all HF spectrum
7205	2134	24	05		RFI	A3E			BC RFI Splatter to 7197.5 kHz
10124	1452	09	05			FMOP	40	12KOE	OTHR Contayner. Just for info
10146	2043	13	05			FMOP	40	12KOE	OTHR Contayner. Just for info
10155	2137	03	05			FMOP	40	12KOE	OTHR Contayner. Just for info
14000.9	1545	29	05			A1A			Unid station TX groups of letters
14008	0910 vt	07 vd	05			F1B	250		Often
14068.4	0632	28	05			XXX		1K2E	DPRK modem.
14080	1022	25	05			F1B		250	
14105	0455	20	05			OTHR	10	ca. 8KE	Radar sweeps? Ca. 15 sec. QSY UP randomly over all HF spectrum
14108	0454 vt	20 vd*	05		7WF3 MZIMPZ 1MXB OUZU	A1A	21		Coded QTCs (figures & numbers). Unid st - probably HAM - DQRMs TX "QSY" repeatedly. *From 20 to 31 May, mornings.
14110	0731	27	05			XXX	10	ca. 8KE	Radar sweeps? Ca. 15 sec. QSY UP randomly over all HF spectrum
14111	0631	11	05			FMOP	40	12KOE	OTHR Contayner. Long - lasting
14118	0714	25	05			FMOP	40	12KOE	OTHR Contayner. Long - lasting
14119	1355	14	05			FMOP	40	12KOE	OTHR Contayner. Long - lasting
14123	1712	05	05			FMOP	40	12KOE	OTHR Contayner. Long - lasting
14127	1511	23	05			FMOP	40	12KOE	OTHR Contayner. 2 TX: 14127 + 14199 kHz. Long - lasting
14138.8	0802	31	05			J7D	120	2K6E	CIS-12 aka AT3004D
14140	0832	27	05			FMOP	40	12KOE	OTHR Contayner. long - lasting
14140	0739	26	05			XXX	10	ca. 8KE	Radar sweeps? Ca. 15 sec. QSY UP randomly over all HF spectrum
14140	0720	27	05			FMOP	40	12KOE	OTHR Contayner. 2 TX side by side: 14140 + 14158 kHz
14140	0832	27	05			FMOP	40	12KOE	OTHR Contayner
14141	1051	25	05			F1B		200	Long - lasting
14144	0642	14	05			FMOP	40	12KOE	OTHR Contayner. Long - lasting
14150.5	0802	25	05			FMOP	40	12KOE	OTHR Contayner. Long - lasting
14152	0745	06	05			FMOP	40	12KOE	OTHR Contayner. Long - lasting
14158	0720	27	05			FMOP	40	12KOE	OTHR Contayner. 2 TX side by side: 14140 + 14158 kHz
14158	0804	27	05			FMOP	40	12KOE	OTHR Contayner
14159	1250	08	05			FMOP	40	12KOE	OTHR Contayner. 2 simultaneous TX: 1459 + 14180 kHz
14180	1250	08	05			FMOP	40	12KOE	OTHR Contayner
14186	0809	06	05			F1B		500	Long - lasting
14188.8	1209	19	05			J7D	120	2K06	CIS-12 aka AT3004D
14190	1908 0710	08 15	05			XXX	10	ca. 8KE	Radar sweeps? Ca. 15 sec. QSY UP randomly over all HF spectrum
14190	0836	08	05			FMOP	40	12KOE	OTHR Contayner. 2 simultaneous TX: 14190 + 14259 kHz. Long - lasting

URE; Gaspar, EA6AMM

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14192	1010 0636 1209	11 25 23	05			FMOP	40	12K0E	OTHR Contayner. Long - lasting
14192.8	0459	19*	05			J7D	120	2K6E	CIS-12 aka AT3004D. Mostly diling. 24 / 24 H *from 19 to 25 May
14192	0815	10	05		7TMH OVLO	A1A			St. "7TMH" TX coded QTCs (figures and letters) to St. "OVLO"
14194	0651	18	05			FMOP	40	12K0E	OTHR Contayner. 2 simultaneous TX: 14194 + 14211 kHz. Long - lasting
14196	0720	18	05			XXX	10	10K0E	Radar sweeps? Ca. 15 sec. QSY UP randomly over all HF spectrum
14199	1511	23	05			FMOP	40	12K0E	OTHR Contayner. 2 simultaneous TX: 14199 + 14127 kHz. Long - lasting
14202	1515	18	05			FMOP	40	12K0E	OTHR Contayner. Long - lasting
14211	1415	14	05			FMOP	66.66	10K0E	OTHR bursts. BD ca. 4 sec. "Foghorn"
14211	0651	18	05			FMOP	40	12K0E	OTHR Contayner. 2 simultaneous TX: 14211 + 14194 kHz. long - lasting
14214	1418	14	05			FMOP	40	10K0E	OTHR bursts. BD ca. 4 sec. "Foghorn"
14221	0537	20	05			F1B		200	Long - lasting
14236	1054 vt*	25 vd*	05			J7D	120	2K6E	CIS-12 aka AT3004D. *24 / 24 H from 25 to 27 May
14242	0934	04	05			J7D	120	2K6E	CIS-12 aka AT3004D
14253	0558	04	05			F1B		250	Long - lasting
14253	0659	09	05			A1A			Unid station TX figures & letters
14259	0836	08	05			FMOP	40	12K0E	OTHR Contayner. 2 simultaneous TX: 14259 + 14140 kHz. Long - lasting
14281.5	0659	26	05			XXX	600	600	DPRK-FSK 600
14285	0707	19	05			XXX		1K2E	DPRK 1200 modem
14289	1423	14	05			FMOP	40 66.66*	10K0E	OTHR bursts. BD ca. 4 sec. *Changed from 40 to 66 sps at 1434 UTC. "Foghorn"
14302	1517	23	05			FMOP	66.66	10K0E	OTHR bursts. BD ca. 4 sec. "Foghorn"
14314.5	0724	18	05			A1A			Pirate beacon. TX = "STAY HOME"
14314.5	0620	24	05			A1A			Pirate beacon. TX = "VVV ML/BJN45HN PIRATE BEACON 300 MW DIPOLE QRP STAY HOME" Long - lasting
14323	1441	14	05			FMOP	66.66	10K0E	OTHR bursts. BD ca. 4 sec. "Foghorn"
14325	0724	21	05			FMOP	66.66	10K0E	OTHR bursts. BD ca. 4 sec. "Foghorn"
14353	0644	20	05			FMOP	40	12K0E	OTHR Contayner. Long - lasting
14354	1827	124	05			FMOP	66.66	10K0E	OTHR bursts. BD ca. 4 sec. "Foghorn"
18080	0701	19	05			A3E			BC "Sound of Hope"
18095	0954	16	05			FMCW	50	20K0E	OTHR. Long - lasting
18109	1321 vt	29 vd*	05			J7D	120	2K6E	CIS-12 aka AT3004D. Long lasting. *Also on 30 & 31 May

USKA; Peter, HB9CET

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD / sps	SH / BW	DETAILS
80m band informational only! - Amateur co-primary, shared with other also primary allocated services!									
3527.0	2138	06	05			F1B	50	200	almost daily
3581.8	2141	06	05			G1D PSK8	2400	3K00E	STANAG 4285 often

USKA; Peter, HB9CET

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD / sps	SH / BW	DETAILS
3744.5	2205	08	05			G1D PSK8	2400	2k70E	MIL 188-110A (D2) mod (Hybrid) preamble 4 tones, PSK4 75Bd 450Hz spacing
7000.0	2151	07	05			N0N			Long lasting carrier
7000.0	1801 0952	23 27	05			FMOP	40 sps	12k0E	OTHR: Contayner 29B6 often
7016.0	0956	27	05			FMOP	40 sps	12k0E	OTHR: Contayner 29B6
7026.0	1801	23	05			FMOP	40 sps	12k0E	OTHR: Contayner 29B6
7032.0	2151	17	05			FMOP	40 sps	12k0E	OTHR: Contayner 29B6
7039.826	2059	24	05		FDE2	A1A			endless loop
7051.0	2219 vt	01 vd	05			F1B	50	200	almost daily
7053.0	2200	17	05			XXX		ca 2k40E	Unid digital signal, used as Jammer
7055.0	1037 2218 0707	12 13 14	05			B7D USB/LSB		10-12k	Unid digital signal
7114.0	2210	01	05			F1B	50	250	
7122.0	2229	01	05		RDL	F1B	50	200	CIS 50-50 almost daily
7122.1	1531	04	05			A1			Jammer: Dashes and dots; stupid and illegal!
7137.0	1623	05	05			F1B	50	250	
7140.0	1541	04	05	ERI	VOBM	A3E		9k0	BC: Voice of the broad Masses 1 daily
7158.0	2224	13	05			F1B	100	250	
7159.0	1152	09	05			B7D	14x75	6K00E	DQPSK: LINK 11 CLEW DSB mode; aka TADIL A long lasting
7179.0	0628	22	05			F1B	75	200	
7180.0	1541	04	05	ERI	VOBM2	A3E		9k0	BC: Voice of the broad Masses 2 often
7197.0	1520 1914 vt	04 27 vd	05	TUR	306013 368018 various	MFSK8	125	1750	ALE, MIL 188-141A; daily TUR Emergency Network
7198.0	1635	19	05			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D
7205.0	2231	13	05			A3E		ca 20k0E	splattering down to 7195 kHz! Bild
13950.0	0734	19	05			FMOP	10 sps	160k	OTHR 13870 - 14030 kHz
14008.0	0950	14	05			F1B	50	250	often
14026.0	1219	20	05			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D
14116.0	0949	25	05			FMOP	40 sps	12k0E	OTHR; Contayner 29B6
14142.0	1436	06	05			FMOP	40 sps	12k0E	OTHR; Contayner 29B6
14150.0	0835	25	05			FMOP	40 sps	12k0E	OTHR; Contayner 29B6
14152.0	1033	06	05			FMOP	40 sps	12k0E	OTHR; Contayner 29B6
14164.0	1631	06	05			FMOP	40 sps	12k0E	OTHR; Contayner 29B6
14181.0	0958	13	05			FMOP	40 sps	12k0E	OTHR; Contayner 29B6
14192.5	0647	22	05			FMOP	40 sps	12k0E	OTHR
14196.0	1228	11	05			FMOP	40 sps	12k0E	OTHR; Contayner 29B6
14196.0	1228	11	05			FMOP	40 sps	12k0E	OTHR; Contayner 29B6
14221.0	0511 2014	08 24	05			F1B	50	200	often
14236.0	1124	25	05			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D
14253.0	0824	04	05			F1B	75	250	CIS 75-250 often
14265.0	1323	23	05			FMOP	66.66 sps	10k	OTHR; Bursts, BD ca 3.8s (Foghorn)
14294.0	2213	24	05			FMOP	66.66 sps	10k	OTHR; Bursts (Foghorn)
14303.0	1110	04	05			FMOP	40 sps	12k0E	OTHR; Contayner 29B6
14340.0	1224	27	05			FMOP	40 sps	12k0E	OTHR; Contayner 29B6

USKA; Peter, HB9CET

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD / sps	SH / BW	DETAILS
18080.0	0739 0654	19 24	05	TWN	Sound of Hope	A3E		ca 12k	BC; Chinese language often
18109.0	1429 1535	29 31	05			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D often
21383.0	0839	25	05			FMOP	40 sps	12k0E	OTHR; Contayner 29B6
21438.0	0853	25	05		RCV	A1A			TDoA: Area of Sevastopol daily
28860.0	0936 1547	23	05	IRN		XXX	150 + 313 sps	ca 40k	OTHR, Bursts; long lasting, sweep rate alternating almost daily

VERON; Ruud, PG1R

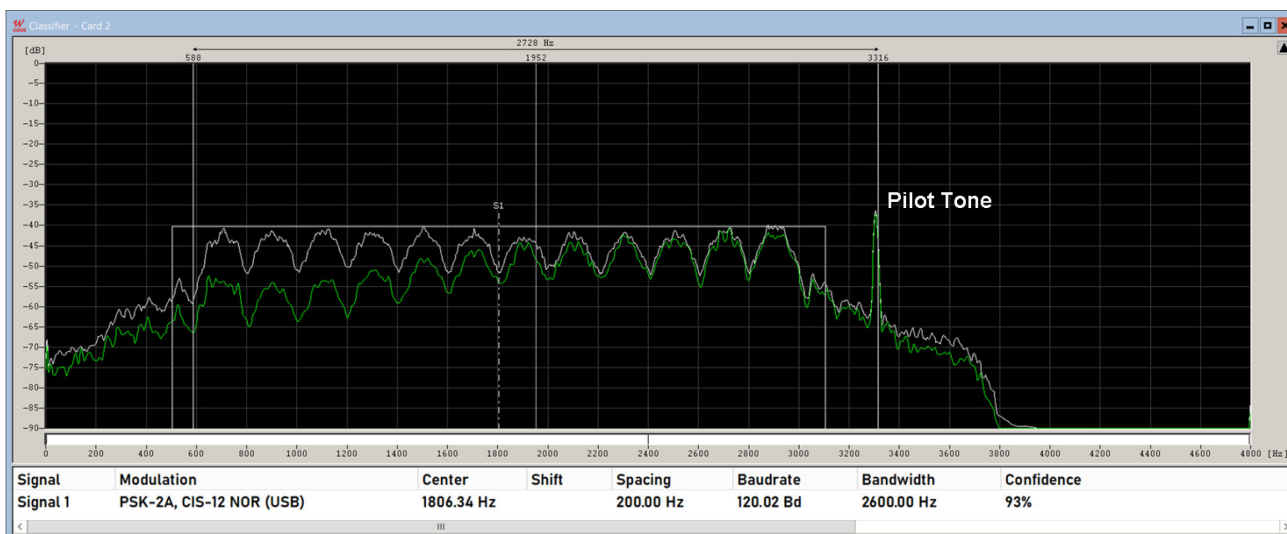
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3527.0	20.00	03	05	CIS	UiPTR	F1B			Revs
3538.0	1915	05	05	CIS	UiCW	A1A			QTC 372 MMMMM 5BL
3796.0	1945	03	05	RUS	RCV	A1A			RIC87 de RCV QTC Prip Noworossijsk
7051.0	1813	09	05	RUS	UiPtr	F1B		200	Printer; S8; no ham calls
7051.0	2000	24	05	CIS	UiPTR	F1B			Revs/Ptr
7055.0	1628	09	05	UKR/ RUS	UiBC	J3E-L			Music & slogans; S7; no ham calls
7055.0	1939	25	05	UKR	UiBC	J3E-L			Political talks
7055.0	0545	26	05	UKR	UiBC	J3E-L			Political talks
7060.0	1822	28	05		UiBC	J3E-L			political talks "Schweine"
7080.0	1934	03	05	CIS	UiPTR	F1B			Ptr
7111.0	1910	05	05		UiPTR	F1B			Ptr
7114.0	1932	03	05	CIS	UiPTR	F1B			Ptr
14007.0	0930	13	05	CIS	UiPTR	F1B			Carrier/Revs/Ptr
14008.0	0717	10	05	RUS	UiPtr	F1B			
14008.0	0946	19	05	CIS	UiPTR	F1B			Carrier/Revs/Ptr
14008.0	1037	22	05	RUS	UiPtr	F1B		200	Ptr
14096.0	1041	29	05			8MPSK			
14108.0	0923	08	05	CIS	3N5V	A1A			Calling 2DIW ZBB ZBJ ZFO
14108.0	0927	08	05	CIS	3N5V	A1A			With 2DIW 201 QTY K
14108.0	1104	25	05	CIS	7WF3	A1A			ZFE ZGF QYT 6 K tfc
14108.0	1010	26	05	CIS	AIDC	A1A			AIDC 722 46 26 1304 722 = 428 = MMMMM 5BL
14108.0	1015	26	05	CIS	AIDC	A1A			Calls to: F1XT KJHK YPAI 7JIH ASNP
14108.0	0949	27	05	CIS	IMZQ	A1A	24 WPM		9VNB DE IMZW QTC K
14108.0	0953	27	05	CIS	IMZP	A1A			9VNB de IMZP QTC K
14108.0	1012	27	05	CIS	IMZP	A1A			IMZP 675 33 27 1248 575 = 519 = MMMMM 5BL ending 733 K
14108.0	1016	27	05	CIS	IMZP	A1A			MOSI de IMZP QTC ZEP K
14108.0	1018	27	05	CIS	IMZP	A1A			IMZP 678 35 27 1304 678 = ZEP 519 = MMMMM 5BL ending 733 K
14108.0	1026	27	05	CIS	IMZP	A1A			Calls to: GCIP APGK WUNK XTLL
14108.0	0820	29	05	CIS	ETLB	A1A	24 WPM		SM1M DE ETLB 399 24 29 1106 399 = ZOY 897 = MMMMM (etc 5BL)
14108.0	0954	29	05	CIS	ETL6	A1A			5HZ8 de ETL6 QTW ZMW K

VERON; Ruud, PG1R

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14108.0	0956	29	05	CIS	ETL6	A1A			ETL6 149 45 29 1248 149 = ZMW 863 = MMMMM 5BL two times AR
14108.0	1007	29	05	CIS	ETL6	A1A			NPY1 de ETL6 QRV K
14109.0	0902	22	05		UiPtr	F1B		250	Ptr
14150.0	1306	13	05	RUS		FMOP	40 sps	12k0E	OTHR; Contayner; S5
14198.0	1505	21	05	RUS		FMOP	40 sps	12k0E	OTHR; Contayner; S6
14236.0	1048	26	05			12MPSK			Loc 43 N 37 E Area Black Sea
14236.0	1549	26	05	RUS		12MPSK			long lasting AT3004D
14236.0	1041	27	05	RUS		12MPSK			12x120Baud 43 N 39 E
18107.0	1400	29	05	RUS		12MPSK			AT3004D 45.8 N 32.6 E Black Sea

CIS 12 (also known as AT-3004D, AT-3104D, MS5, or FIRE)

Since many years we almost daily find CIS 12 emissions in our amateur bands, sometimes long lasting over hours, so also in May. CIS 12 is a multi-channel system using 12 channels, each 120 Bd DBPSK or DQPSK modulated. The spacing between channels is 200 Hz. A characteristic unmodulated pilot tone is placed at +3300 Hz from the suppressed carrier. The total bandwidth (including the pilot tone) is 2700Hz (2k70E).



Live analysis with Wavecom W-Code Decoder

Many thanks to WAVECOM Elektronik AG in Buelach (Switzerland) for the valuable support over years!

Visit and follow us on the new IARU-R1 Web with our newly created IARU MS Monitoring pages!

<https://www.iaru-r1.org/spectrum/monitoring-system/>

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