



## IARU Monitoring System Region 1

# Monthly Newsletter 1 - January 2020

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## News and Infos

As your new coordinator since 1.1.2020 I would like to thank and recognize each of all the national coordinators, the volunteers and the many helpers in the background, giving us their support, time and effort to make the Monitoring System (also known as Intruder Watch) a success. As we have seen over the past few years, the threat from many different electronic systems like e.g. OTHR (Over the Horizon Radars) and more and more signals of military origin are becoming more frequent and more powerful. But also many other intruders such as e.g. fishery, taxi, village-radio and many unknown systems abuse amateur radio bands practically almost every day. The rules and the frequency allocations of the ITU are completely ignored, that's a shame. However, we also have to be aware of the many national exceptions (footnotes in RR) as well as the ITU Convention, Art 48 "Installations for National Defence Services". Also, that we shouldn't complain in only secondary allocated bands (e.g. 5MHz).

In response, we need to step up and coordinate our efforts and resources worldwide. Above all, we also need broad support from the authorities (OFCOM). Only many and frequent international complaints and actions can help to improve the situation.

Please be aware that **we are not a band police!** The terms of reference clearly state in §12: "*The IARUMS shall not become involved in the monitoring and reporting of harmful interference in amateur bands caused by stations identified as or believed to be amateur stations*".

During January 2020, subjectively it may have had little fewer intruders than it had earlier. But that can be misleading or only a result of the actual propagation conditions.

Let us tackle the challenges and opportunities that lie ahead.

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

## Detailed reports of national coordinators

The reports of the national societies are structured as follows (example only)

SOC name, call									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps /wpm	SH / BW	DETAILS
7020.0	1028	14	01		123456	G1D	2400	2k7	unident language; almost daily
14138.0	0934	20	01	XYZ		FMCW	50	10k0E	OTHR, long lasting

**Row 1 and 2: Header of the table;** reporting Society, followed by Name and Call of the coordinator

**Row 2:** Columns Name

### Column 1: kHz = Frequency

Indicates the frequency of a signal in kHz. For SSB voice, the suppressed carrier ('dial' = RF) frequency is used, and LSB/J3E-L or J3E-U is specified in the mode column. For all other modes (most digital signals) the center frequency (CF) is used.

**Column 2: UTC = Time** Always indicated in UTC, 4 digits: eg 1028

**Column 3: DD = Day** 2 digits: eg 14

**Column 4: MM = Month** Specifies the month of the current report, 2 digits: eg 01

**Column 5: ITU = country of origin**

Indicates the ITU letter code: e.g. SUI (Switzerland)

>see ITU: [http://www.itu.int/en/ITU-R/terrestrial/fmd/Pages/administrations\\_members.aspx](http://www.itu.int/en/ITU-R/terrestrial/fmd/Pages/administrations_members.aspx)

**Column 6: Ident**

Identification like Callsigns, Selcalls, Name of a BC

**Column 7: Mode**

Describes the Mode of an emission

- Classification of emissions as per ITU, e.g. A1A, B7D, F1A, F1B, G1D, J7D, J3E (-U or -L), and so on.
- Modulation, e.g. PSK-8, FSK, FMOP, FMCW, OFDM (##), RTTY, CW, USB/LSB; Names of modems or nicknames, if known, are specified under Details

**Column 8: BD = Baudrate /sps /WPM**

Indicates the Baudrate, CW speed in WPM, Sweeps per second sps; e.g. 40 sps for an OTHR

**Column 9: SH/BW = Shift or Bandwidth**

e.g. for a FSK 200Hz, for a OTHR e.g. 12 kHz (short 12k0)

Also the professional ITU designations may be used. The bandwidth is expressed as four characters: three digits and one letter. The letter occupies the position normally used for a decimal point, and indicates what unit of frequency is used to express the bandwidth. The letter H indicates Hertz, K indicates KiloHertz, M indicates MegaHertz, and G indicates GigaHertz. For instance, "500H" means 500 Hz, and "2M50" means 2.5 MHz. The first character must be a digit between 1 and 9; it may not be the digit 0 or a letter. Adding E as last letter means estimated, e.g. 2k70E.

>see ITU-R: <https://www.itu.int/en/ITU-R/terrestrial/workshops/wrs12/Miscellaneous/Appendix1.pdf>

**Column 10: Details**

Contains additional informations like name of a Mode (if known): e.g. MIL188-141A (ALE), STANAG 4285, Olivia, LINK 11, Pactor; CIS-12; FT-8 or any further helpfull information, e.g. "daily, almost daily, often". TDoA radiolocations are reported as "area of xxx, in the region of xxx" (no coordinates).

**Abbreviations used**

**aka** = also known as | **BC** = Broadcast | **BD** = Baud, (or also Burst duration) | **BRI** = Burst repetition interval | **BW** = Bandwidth | **ca** = approximate | **DF** = Direction finding (radio location) | **MUX** = multiplex | **OTHR** = over the horizon radar | **FMCW** = frequency modulated | continuous wave | **FMOP** = frequency modulated on pulse | **PRC** = People's Republic of China | **SH** = Shift (Hz) | **sps** = sweeps per second | **PRC** = People's Republic of China | **TDoA** = Time difference of arrival | **UI /unid** = unidentified | **vd** = various dates | **vt** = various times.

<b>IRTS; Michael, EI3GYB</b>									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/BW	DETAILS
3510	2050	22	01	RUS		USB			New Russian beacon. Strong signal. Heard on many days.
3550	0720	13	01	F		AM			French Hams violating the band plan.
3590	0715	13	01	F		AM			French Hams violating the band plan. Daily.
3645	2045	13	01			LSB			Somebody keeps playing non-stop the hymn of the Italian fascists "Giovinezza". Transmission ends at 2125z.
3656	0340	01	01	RUS/ UKR		LSB			Loud music. Russian propaganda. Ukrainian-Russian radio war.

<b>IRTS; Michael, EI3GYB</b>									
<b>kHz</b>	<b>UTC</b>	<b>DD</b>	<b>MM</b>	<b>ITU</b>	<b>IDENT</b>	<b>MODE</b>	<b>BD/sps</b>	<b>SH/BW</b>	<b>DETAILS</b>
3750	1255	28	01	E or MM		USB			2 Spanish fishermen with huge signals.
3775	1130-1145	28	01	E or MM		USB			2 Spanish fishermen chatting. Medium strength signals.
5259	1820	02	01	RUS		FMOP			"Sunflower" radar from 5259 to 5339 kHz. Several Irish spot frequencies are unusable.
5305	1640	27	01	RUS		FMOP			Radar from 5305 to 5367 kHz. Sunflower system.
5346	0200	12	01	MM		USB			2 male persons having a chat in Chinese. Also 25/1 between 0145 and 0350. Also 26/1 at 0350z. Again 28/1 at 2010z. Already noticed last month. Covering the EI/US SSB spot frequency of 5346.5 MHz.
5346	0335	19	01	MM		USB			2 male voices chatting in Chinese. Same as last month. Covering US/EI SSB spot frequency of 5346.5 kHz.
5347	0930-0950	18	01			USB			A male person keeps saying "One, two" in English. Covers EI/US SSB spot frequency of 5346.5 kHz.
5360	1730	13	01	MRC or MM		USB			2 Moroccan fishermen having another chat.
5360	1910	20	01	POL		USB			A male voice keeps calling in Polish "Mariya Ewa". Keeps doing it until 1935z. Gets no answer.
5361	0250	23	01	MM		USB			2 male voices chatting in Chinese
5369	1700	27	01			FMOP			Radar from 5369 to 5425 kHz. Huge bursts.
5371	1825	02	01	RUS		FMOP			"Sunflower" radar from 5371 to 5444 kHz. Several Irish spot frequencies are unusable.
5380	0535	19	01	MRC or MM		USB			2 Moroccan fishermen. UK 5 MHz allocation.
5398.5	1340	09	01	HOL		USB			A Dutch HAM calls CQ on this frequency outside of the Dutch allocation. This operator was already spotted last year several times and does not respond to email telling him about his wrong behaviour. He was noticed again on the following days and times calling: 10 <sup>th</sup> at 1440z. 13 <sup>th</sup> at 1220 and 1615z. 14 <sup>th</sup> at 1345z. 17 <sup>th</sup> at 1515 and 1615z. 22 <sup>nd</sup> at 1415z. 29 <sup>th</sup> at 1330 and 1410z. UK/EI SSB spot frequency.
5400	1055	24	01	F or MM		USB			2 French fishermen having a chat. Again at 1630 and 1745z. Again 25/1 at 1545. Again 26/1 at 1315z. Again 27/1 at 1330 and 1515z. 29 <sup>th</sup> at 1355z. UK/EI CW spot frequency.
5403.5	2235 to 2255	04	01	BEL/I/E		USB			When a DXpedition to British bases in Cyprus uses this frequency to listen for North America, stations from Belgium, Italy and Spain call back in violation of

<b>IRTS; Michael, EI3GYB</b>									
<b>kHz</b>	<b>UTC</b>	<b>DD</b>	<b>MM</b>	<b>ITU</b>	<b>IDENT</b>	<b>MODE</b>	<b>BD/sps</b>	<b>SH/BW</b>	<b>DETAILS</b>
									their own national regulations for 5 MHz. Big pile up and everybody shouting like mad. No one gives a damn about rules. UK/EI/US/CAN spot frequency.
5405	2005	05	01	E or MM		USB			2 Spanish fishermen having a conversation. UK/EI/US CW spot frequency. Heard again on the 30 <sup>th</sup> at 1235z.
7008	1418	29	01			F1B			On for several hours. Strong signal.
7055	0730	13	01	UKR / RUS		LSB			Ukrainian-Russian radio war with agitprop and patriotic music. Loud. On many days of the month all day long.
7080	1830	02	01			Digital			Huge digital signal
7089	1730	24	01			PSK			Digital, medium strength.
7090	0725	22	01			LSB			Shouting of propaganda slogans in Russian by a male person. Ukraine, Belarus and Minsk mentioned. Huge signal.
7102	1850	22	01			FMOP			Radar from 7102 to 7115 kHz. Very strong. Spectrum unusable.
7111	2045	30	01			FMOP			Radar from 7111 to 7127 kHz. Strong.
7115	1940	04	01	MRC /MM		USB			2 Moroccan fishermen having a chat. Very strong signals.
7122	0345	01	01			FMOP			Radar from 7122 to 7136 kHz. Very strong signals. All frequencies unusable.
7136	1326	29	01			FMOP			7136 to 7151 kHz strong radar.
7137	1320	20	01			FMOP			7137 to 7145 kHz Radar with strong signals.
7151	1435	30	01			FMOP			Radar from 7151 to 7165 kHz. Very strong bursts.
7161	1245	28	01			Digital			Huge digital signal
7185	2240	12	01			FMOP			Radar from 7185 to 7197 kHz. Strong signals.
7192.7	1110	08	01			F1B			Very strong signal.
7194	1310	29	01			F1B			Strong signal
7199	1110	24	01			Digital			Huge digital signal.
10101	0850	27	01	KOR or MM		USB			2 Korean fishermen chatting. Medium strength signals.
10103	1205	25	01	MRC or MM		USB			2 Moroccan fishermen having a chat until 1330z.
10110	1245	31	01	MRC or MM		USB			2 Moroccan fishermen. Medium strength signals.
10111.2	1200	28	01	MRC or MM		USB			2 Moroccan fishermen chatting. Very strong signals.
10140	1245	13	01	MRC or MM		USB			2 Moroccan fishermen having a chat. Medium strength signal.

<b>IRTS; Michael, EI3GYB</b>									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/BW	DETAILS
14014.5	1250	31	01	E or MM		USB			2 Spanish fishermen chatting.
14093	0835	31	01			FMOP			Radar from 14093 to 14110 kHz. Massive signals. Persistent.
14158	0830	31	01			FMOP			Radar from 14158 to 14171 kHz. Strong and persistent.

<b>MRASZ; Laci, HA7PL</b>									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH/ BW	DETAILS
3503.0	1709	15	01			?			more channels
3520.0	1735	13	01			USB			unidentified language
3525.0	2008	10	01			F1B		200	one side with disturbance
3535.0	2001	05	01			USB			unidentified unkis
3545.0	1710	01	01			F1B		200	
3548.0	1851	03	01			F1B		200	
3554.7	1708	01	01			F1B		250	
3559.0	1659	25	01			OTHR			3554-3564 kHz
3572.0	1708	01	01			OTHR			3567-3577 kHz
3573.0	1011	01	01			OTHR			3570-3576 kHz
3580.0	1938	10	01			F1B		250	
3581.8	1845	03	01	TUR		PSK8A	2400	2400	Stanag-4285
3581.8	1835	06	01	TUR		PSK8A	2400	2400	Stanag-4285
3581.8	1940	10	01	TUR		PSK8A	2400	2400	Stanag-4285
3581.8	1734	13	01	TUR		PSK8A	2400	2400	Stanag-4285
3581.8	1853	14	01	TUR		PSK8A	2400	2400	Stanag-4285
3581.8	1656	15	01	TUR		PSK8A	2400	2400	Stanag-4285
3581.8	1853	16	01	TUR		PSK8A	2400	2400	Stanag-4285
3581.8	1538	17	01	TUR		PSK8A	2400	2400	Stanag-4285
3581.8	1705	22	01	TUR		PSK8A	2400	2400	Stanag-4285
3639.0	1856	14	01			OTHR			3633-3639 kHz
3657.0	1757	01	01	UZB		A1A			beacon "V" Tashkent
3657.0	1848	03	01	UZB		A1A			beacon "V" Tashkent
3657.0	1848	03	01	UZB		A1A			beacon "V" Tashkent
3657.0	1833	06	01	UZB		A1A			beacon "V" Tashkent
3657.0	2009	10	01	UZB		A1A			beacon "V" Tashkent
3657.0	1732	13	01	UZB		A1A			beacon "V" Tashkent
3657.0	1857	14	01	UZB		A1A			beacon "V" Tashkent
3657.0	1708	15	01	UZB		A1A			beacon "V" Tashkent
3657.0	1708	20	01	UZB		A1A			beacon "V" Tashkent
3657.0	1708	22	01	UZB		A1A			beacon "V" Tashkent
3657.0	1708	27	01	UZB		A1A			beacon "V" Tashkent
3712.0	1950	10	01			F1B		250	
3745.0	1700	15	01			PSK2			AT3004D

**MRASZ; Laci, HA7PL**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH/ BW	DETAILS
3790.0	1703	15	01			F1B		200	
3790.5	1949	10	01			F1B		250	
3795.0	1532	17	01			F1B		250	
7013.0	1245	02	01			F1B		200	
7038.0	1545	17	01			F1B		170	
7050.0	1032	23	01			LSB			russian language, curse
7055.0	1248	02	01			LSB			music + propaganda
7055.0	1330	04	01			LSB			chaos
7055.0	0921	09	01			LSB			chaos + music
7055.0	1038	16	01			LSB			chaos, propaganda
7055.0	1022	23	01			LSB			music, singing, chaos
7076.0	0958	01	01			OTHR			7072-7080 kHz
7080.0	1249	02	01			OTHR			7078-7082 kHz
7081.0	1015	01	01			A1A			dashes
7140.0	1714	01	01	ERI		A3E/BC			Radio Eritrea
7140.0	1706	15	01	ERI		A3E/BC			Radio Eritrea
7140.0	1702	22	01	ERI		A3E/BC			Radio Eritrea
7140.0	1432	25	01	ERI		A3E/BC			Radio Eritrea
7142.0	1843	14	01			OTHR			7135-7149 kHz
7180.0	1714	01	01	ERI		A3E/BC			Radio Eritrea
7180.0	1842	14	01			OTHR			7172-7188 kHz
7191.4	1331	04	01			F1B		200	
7191.5	0941	09	01			F1B		250	
7200.0	1500	19	01			OTHR			7194-7210 kHz

**PZK; Marek, SP3AMO + Miro,SP5GNI**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH/ BW	DETAILS
3510.00	vt	vd	01			N0N			Chirp/sweep
3522.00	1234	6	1			F1B		240	
3524.00	1450	19	1			F1B		240	
3525.30	1540	9	1			PSK		2k7	3525,3 pilot and about 12 lines below visible
3526.70	2107	7	01			F1B	100	200	[S9]
3526.70	2046	23	01			PSK			Multitone
3529.70	0726	22	01			UI			QRV 1 min
3531.70	0723	22	01			UI			QRV 3 min
3551.30	1240	29	1			PSK		2k9	3551,3 pilot and about 12 lines below visible
3564.30	1540	9	1			PSK		2k7	3564,3 pilot and about 12 lines below visible
3581.60	vt	vd	1			PSK		2k7	STANAG?
3581.90	1540	9	1			FMOP		2k8	Like OTHR
3582.00	vt	vd	01			PSK		1k2	

**PZK; Marek, SP3AMO + Miro,SP5GNI**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH/ BW	DETAILS
3588.00	1235	6	1			F1B		240	very strong
3617.00	1241	29	1			PSK		1k5	4 lines 500 Hz distance
3699.30	1142	14	1			PSK		2k9	3699,3 pilot and about 12 lines below visible
3710.00	1120	8	1			F1B		500	Marker? Modulated constantly about 5 Hz
3717.00	1545	9	1			FMOP		10k	OTHR. Irregular bursts,
3735.00	1144	14	1			F1B		500	
3746.30	1656	15	1			PSK		2k9	3643,3 pilot and about 12 lines below visible
3756.70	vt	vd	01			UI		650	Beep, 2 Tone
3781.30	1230	6	1			PSK		2k7	3781,3 pilot and about 12 lines below visible
3792.00	1553	9	1			F1B		240	
5353.00	0750	20	01			N0N			[S1]
5363.60	vt	vd	1			PSK		2k7	STANAG? OTHR?
7001.00	vt	23	01			UI			othr [S0+] - Dots
7005.00	1515	17	01			FMOP		10k	OTHR [6995 - 7005kHz] Pulse/Dots
7008.00	vt	vd	01			PSK		1k2[bw]	10 line sh 40 Hz [Signal - S9] - 15.00 UTC QRT
7008.00	vt	vd	1			FSK		250	Strong signal
7008.90	1014	8	01			UI			100 Hz [S9+10dB], QRT 10.15 UTC
7011.00	1620	22	01			FMOP		50k	OTHR [6961,5-7011,0 kHz] Pulse/Dots {QRT 16.45}
7014.50	0845	2	01			F1B	50	200	[S5 - QSB]
7015.00	1515	24	01			FMOP		20k	OTHR [ 7015 - 7035 kHz]
7019.20	0910	16	01			UI			Digi Voice???
7030.00	2049	16	01			FMOP		160k	OTHR [6870 - 7030kHz] Pulse/Dots
7031.00	0757	20	01			N0N			2 Tone, space 200 Hz
7031.70	0810	20	01			N0N			FSK/PSK ??
7043.30	vt	15	1			PSK		2k9	7043,3 pilot and about 12 lines below
7046.00	1536	9	1			UI		1k6	
7055.00	1252	6	1			LSB			Ugly pictures on waterfall
7079.50	0913	3	01			PSK		1k2	6 line sh 120 Hz [S9+10 dB]
7088.40	0855	24	01			PSK		1k6	
7100.00	vt	15	1			FMOP		16k	OTHR
7107.60	0854	16	01			UI			Digi Voice???
7121.60	0900	24	01			F1B	50	200	
7122.00	1006	13	1			FSK		180	
7144.00	0745	2	01			PSK		1k2	6 lines sh 120 Hz [S9] - 8,10 UTC - QRT
7145.00	vt	vd	1			FMOP		10k	OTHR burst a few seconds long
7147.00	1734	4	1			FMOP		24k	OTHR

**PZK; Marek, SP3AMO + Miro,SP5GNI**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH/ BW	DETAILS
7168.20	1649	16	01			FMOP		12k	OTHR [7168- 7180 kHz]
7172.30	1018	23	1			PSK		2k7	7132,3 pilot and 12 lines below visible
7178.60	0905	24	01			PSK		1k	Multitone sp. 40Hz
7179.00	0959	24	01			PSK		1k2	Mode change 10.00 UTC [Multitone sp. 40Hz]
7179.00	1250	24	01			PSK			7179.0 (CF): 12x120Bd spacing 200Hz; PSK-2A, pilot tone at 3300Hz; BW 2k70E: CIS 12 aka AT3004D [Note Peter HB9CET]
7179.00	1145	5	1			FMOP		12k	OTHR short bursts
7181.50	857	27	1			PSK		2k9	7181,5 pilot and about 12 lines below visible S9 +10
7191.00	1734	4	1			FMOP		14k	OTHR
7192.70	1125	8	01			F1B	100	200	[S7]
7192.70	0951	9	01			F1B	100	200	[S7]
7193.00	1130	8	1			F1B		250	
10122.60	0910	24	01			PSK		1k2	
10142.00	951	15	1			FSK		240	S9 +20dB.
14083.00	0911	24	01			FMOP		12k	OTHR [14083 - 14095 kHz]
14084.00	1215	31	01			FMOP		12k	OTHR [14083 - 14095 kHz]
14108.00	948	15	1			FMOP		14k	OTHR longer, but below 1 minute
14114.00	1424	6	1			FMOP		2k4	1 to 4 sec. bursts, and (probably) correlated emission on 14107,5
14143.00	939	15	1			FMOP		10k	OTHR short bursts
14159.00	842	22	1			FMOP		10k	OTHR burst 4 seconds long
14160.00	1300	8	1			FMOP		10k	OTHR bursts
14190.00	1055	5	1			FMOP		12k	OTHR short burts
14199.40	1210	vd	vt			PSK		240	3 tones
14208.50	907	27	1			F1B		600	
14297.00	1302	8	1			FMOP		10k	OTHR bursts
14319.00	911	27	1			FMOP		10k	OTHR bursts a few seconds long
14335.00	830	5	1			FMOP		12k	OTHR short burts
14340.00	1029	23	1			FMOP		12	OTHR
14422.00	910	27	1			FMOP		10k	OTHR bursts a few seconds long
18070.00	935	15	1			FMOP		20k	OTHR
21052.00	0915	24	01			F1B		200	2 lines
21227.00	0907	3	01			UI			FT8 - 3f from 7075,7 kHz - HI
24898.60	0918	24	01			UI			
24959.70	0921	24	01			UI			
28138.10	0924	24	01			UI			
28199.00	1020	13	1			PSK		500	a few tones
28207.60	0928	24	01			NON			
28231.40	0931	24	01			NON			
28257.70	1234	8	1			F1B		200	



**PZK; Marek, SP3AMO + Miro,SP5GNI**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH/ BW	DETAILS
28423.30	0908	16	01			F1B		250	2 lines

**REP; José, CT4AN**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3500	07.00	01	01	E		J3E-U			Fishery
3510	22.10	21	01	RUS					Chirp transmission
3512	00.13	07	01	F		PSK4			LINK11 CLEW
3582	dly	dly	01	TUR		PSK8			NATO Stanag
3595	00.55	13	01	G		PSK8A			STANAG 4285
7000	07.10	10	01			J3E-U			Fishery
7010	08.10	03	01			MFSK8			Mil / Std 188-141A
7020	21.05	09	01			MFSK8			Mil / Std 188-141
7039	22.00	02	01	RUS	M	A1A			MAGADAN Beacon
7039	23.59	09	01	RUS	K	A1A			Beacon
7039	dly	dly	01	RUS	F	A1A			Beacon VLADIVOSTOK
7039	dly	dly	01	RUS	M	A1A			Beacon MAGADAN
7100	19.00	11	01	CHN		FMOP	10	160k	OTH
7135	20.00	11	01	RUS		FSK	75	500	CIS75
7140	dly	dly	01	ETH		8k00 A3EGN			Radio Eritrea
7145	21.43	25	01	RUS		PSK2	120	2600	AT3004
7180	16.00	11	01	RUS		MFSK	120	3k	AT3004D
7180	dly	dly	01	ERI		9k00 A3EGN			Radio Eritrea
10125	13.20	17	01			J3E-U			Fishery
14140	14.00	17	01	CHN		FMOP	10	100k	OTH
14145	15.07	17	01	E		J3E-L			Fishery
14195	08.05	25	01	RUS		FSK	50	200	Navy
14300	07.30	19	01	RUS		OFDM		2750	OFDM-60
18070	14.08	19	01	CYP		FMCW	50	20k	OTH radar
18075	13.00	15	01	TWN		9k00 A3EGN			Radio Sounds of Hope
18100	15.40	04	01	CYP		FMCW	50	20k	OTH
18115	10.12	12	01	MRC	DPRK	F1B	600	600	Diplo
21435	15.50	22	01	RUS		A1A			Navy (very low signals)
28735	11.10	25	01	RUS		F3E			Taxis dispatchers

**RSK; Kamweti, 5Z4BV**

kHz	UTC	DD	MM	Adm	Identity	Mode	BD / sps	Shift	Details
7069	1542	27	01	Asia?		FMOP		20 kHz	Wideband OTHR 10 SPS

**RSK; Kamweti, 5Z4BV**

kHz	UTC	DD	MM	Adm	Identity	Mode	BD / sps	Shift	Details
7093	v.t.	nr.dly	01	E. Africa		PSK		2500	ALE MIL 188-141/STANAG
7120	a.m./p.m.	dly	01	Somalila	Radio Hargeisa	A3E			Commercial broadcast
7140	a.m./p.m.	dly	01	Eritrea	VOBM 1	A3E			Commercial broadcast Voice of the Broad Masses
7145	1542	22	01	Asia?		FMPO		20 kHz	Wideband OTHR 10 SPS
7149.3	1410	24	01	E. Europe?		J3E-L			Recorded 'broadcast'
7150	v.t.	dly	01	Kenya/E. Africa		MFSK		2000	2G ALE
7122	1223	14	01	E. Africa		J3E-u			Kiswahili QSO
7179	1515	20	01	?		PSK		3000	CIS-12
14100.3	1333	31	01	?		J3E-L			Spanish-sounding QSO
14209-14249	0400	21	01	Asia-Russian?		FMOP		40 kHz	Wideband OTHR 10 SPS
14278	v.t.	21	01	Russia		FMOP			Contayner 40 SPS

**RSGB; Richard, G4DYA**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH /BW	DETAILS
3510.0	2218	19	01			J3E			USB repetitive chirp sound
5363.6	vt	vd	01	DNK		G1D		2K40E	USB 5361.8 / STANAG 4285 primary user
5400.0	1655	27	01			P0N		40K0E	81.4 sps
7008.0	1434	29	01			F1B		250	
7010.0	0948	17	01			J7D		2K70E	USB 7008.0 / CIS.12. Ceased at 0949
7015.0	0842	02	01	RUS		F1B	50	200	
7032.0	0850	10	01			J7D		2K70E	USB 7030.0 / CIS-12
7038.496 7038.500 7038.504	ady	dly	01	CZE	OK0EU	A1A			For info: QRP propagation beacons. CW idents offset at +40 Hz.
7051.0	vt	vd	01			F1B	50	200	On air at 2000 UTC approx daily
7062.0	0818	15	91			N0N			Plain carrier. Ceased at 0836
7079.5	1407 1152 0905	01 02 03	01	RUS		J7D		2K70E	USB 7077.5 / CIS-12
7100.0	1419	15	01	RUS		P0N		14K0E	Container OTH radar. 40 sps. Ceased at 1426.
7122.0	1235 0903 0828 0838 1012	09 14 15 21 24	01			F1A/ F1B		200	Ceased at 0904
7124.0	0856	10	01			J7D		2K70E	USB 7122.0 / CIS-12

**RSGB; Richard, G4DYA**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH /BW	DETAILS
7127.0	0836	21	01			F1B		~120	
7140.02	vt	vd	01	ERI	VoBM1	A3E			BC
7162.0	1216	18	01			F1B		250	
7173.0	1539	16	01	RUS		P0N		14K0E	Container OTH radar. 40 sps
7177.0	1425	22	01	RUS		P0N		14K0E	Container OTH radar. 40 sps. Ceased at 1431.
7178.0	0835	27	01	RUS		J7D		2K70E	USB 7176.0 / CIS-12
7179.0	1458	20	01	RUS		J7D		2K70E	USB 7177.0 / CIS-12
7179.5	2020	08	01			J7D		2K70E	USB 7177.5 / CIS-12
7180.02	1528	31	01	ERI	VoBM2	A3E			BC
7186.0	0958	17	01	RUS		J7D		2K70E	USB 7184.0 / CIS-12
7193.0	vt	vd	01	RUS	RDL	F1A/ F1B		200	Shift 250 Hz on DD 08-10
7195.0	2234	04	01	RUS		P0N		14K0E	Container OTH radar. 40 sps.
7199.0	0833 0914	07 09	01			F1B		250	
7201.0	0814 0815	09 22	01			J7D		2K70E	USB 7199.0 / CIS-12
7201.0	1512	19	01	RUS		P0N		14K0E	Container OTH radar. 40 sps. Ceased at 1517
10100.8	ady	dly	01	D	DDK9	F1B	50	450	For info: Primary user: WX broadcast
10121.0	1543	16	01	RUS		P0N		14K0E	Container OTH radar. 40 sps.
14099.0	0947	10	01	RUS		P0N		14K0E	Container OTH radar. 40 sps.
14185.0	0823	22	01	RUS		P0N		14K0E	Container OTH radar. 40 sps.
14189.0	0917	20	01			P0N		10K0E	OTH radar. 50 sps.
14340.0	1058	23	01	RUS		P0N		14K0E	Container OTH radar. 40 sps.
18070.0	1325	11	01	G		F3N		20K0E	FMCW OTH radar, Cyprus

**SRAL; Pekka, OH2BLU**

QRG	TIME	DD	MM	ITU	IDENT	MODE	BD/sps	SH/ BW	REMARKS
7 MHz	0000-1915	*	1	RUS	Kontainer	FMCW			40Hz/ 13kHz, days: 1. 14. 15. 16. 22. 24. 25. 26. 30. 31. (WebSDR 15d)
7 MHz	0615-1930	*	1	CHN	UiOTHR	FMCW			10Hz/ 10kHz, days: 8. 9. 13. 15. 18. 20. 21. 22. 23. 25. 28. 30. 31.
6999.0	1320	25	1	RUS	UiMUX	PSK2	120	2600	
7008.0	0600-1505	*	1	RUS	UiPTR	F1B		250	Days: 9. 21. 28. 29.
7012.0	1240-1430	21	1	RUS	UiPTR	F1B		200	
7015.0	0640-1700	*	1	RUS	UiPTR	F1B		200	Days: 2. - 4.
7030.0	0615-0630	21	1	RUS	UiPTR	F1B		250	

**SRAL; Pekka, OH2BLU**

QRG	TIME	DD	MM	ITU	IDENT	MODE	BD/sps	SH/ BW	REMARKS
7042.0	0915-1045	15	1	RUS	UiMUX	PSK2	120	2600	
7051.0	0530-0600	7	1	RUS	UiPTR	F1B		200	
7055.0	0800-0955	18	1	BLR	UiBC (?)	A3E			MX
7065.0	1150	1	1	RUS	UiMUX	PSK2	120	2600	
7079.5	0840-1230	17	1	RUS	UiMUX	PSK2	120	2600	
7081.0	0630-1600	24	1	RUS	UiMUX	PSK2	120	2600	
7101.0	0900-0920	23	1	RUS	UiMUX	PSK2	120	2600	
7122.0	0740-1400	*	1	RUS	UiPTR	F1B		200	Days: 15. 17. 23. 24.
7127.0	1050-1225	28	1	RUS	UiPTR	F1B		250	
7140.0	0500-0700	*	1	ERI	VoBME	A3E			Days: 1. - 21. 24. - 29. 31.
7140.0	1400-1840	*	1	ERI	VoBME	A3E			Days: 1. - 21. 24. - 29. 31.
7144.0	0750	2	1	RUS	UiMUX	PSK2	120	2600	
7146.0	0645	26	1	RUS	UiMUX	PSK2	120	2600	
7160.0	0615-1015	*	1	RUS	RBL88	A1A			5BL
7160.0	0640-1050	15 23	1	RUS	UiMUX	PSK2	120	2600	
7169.0	1445-1451	29	1	RUS	UiPTR	F1B		200	
7169.0	1030	3	1		UiMUX	PSK2	120	2600	
7169.0	1030-1111	5	1	RUS	UiPTR	F1B		200	
7171.0	0650	20	1		UiMUX	PSK2	120	2600	
7171.0	1030	23	1	RUS	UiMUX	PSK2	120	2600	
7176.0	0815-	154	1	RUS	UiPTR	F1B		200	
7178.0	0840-0945	29	1	RUS	UiMUX	PSK2	120	2600	
7178.5	0730	18	1	RUS	UiCW	A1A			5F, 5BL
7179.0	0600-1730	*	1	RUS	UiMUX	PSK2	120	2600	Ship, days: 8. 9. 20. 24.
7180.0	0530-0700	*	1	ERI	VoBME	A3E			Days: 1. 8. 31.
7180.0	1400-1835	*	1	ERI	VoBME	A3E			Days: 1. 8. 31.
7186.0	1030-1039	17	1	RUS	UiMUX	PSK2	120	2600	
7193.0	0800-1500	*	1	RUS	RDL	F1A/B NON		200/ 250	Days: 1. 3. 4. 6. - 11. 13. - 16. 18. 19. 23.

### SRAL; Pekka, OH2BLU

QRG	TIME	DD	MM	ITU	IDENT	MODE	BD/sps	SH/ BW	REMARKS
7198.0	1045	24	1	RUS	UiMUX	PSK2	120	2600	
7199.0	0845-1000	9	1	RUS	UiPTR	F1B		250	
7201.0	0800-0905	9 22	1	RUS	UiMUX	PSK2	120	2600	
10 MHz	0545-0615	14	1	CYP	UiOTHR	FMCW			25/50Hz/ 20kHz, (WebSDR 12d)
10 MHz	1400-1600	16	1	RUS	Kontainer	FMCW			40Hz/ 13kHz, (WebSDR 3d)
10144.0	0920	15	1	RUS	UiMUX	PSK2	120	2600	
14 MHz	0600-1100	*	1	CHN	UiOTHR	FMCW			67Hz/ 10kHz, days: 8. 11. 15. 16. 20. 23. 24. 26. 27. 28. foghorn
14 MHz	0620-1320	*	1	RUS	Kontainer	FMCW			40Hz/ 15kHz, days: 10. 11. 15. 18. 20. 22. 23. 24. (WebSDR 9d)
14134.0	0635	31	1	CHN	UiOTHR	FMCW			50Hz/ 10kHz
14169.0	0630	28	1	RUS	UiPTR	F1B		200	
14260.0	0905-0930	15	1	CHN	UiOTHR	FMCW			50Hz/ 10kHz
18 MHz	0600-1035	11	1	CYP	UiOTHR	FMCW			25/50Hz/20kHz, (WebSDR 17d)
18118.0	1115	22	1	RUS	Kontainer	FMCW			40Hz/ 13kHz
21 MHz	0900-1334	14 31	1	CYP	UiOTHR	FMCW			25/50Hz/20kHz, (WebSDR 10d)
21438.0	0830-1200	*	1	RUS	RCV	A1A			Days: 2. 11. 16. 26.

### URE; Gaspar, EA6AMM

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/ BW	DETAILS
3603	03:50	26	01			J3E-L			Music. Reported by EB1TR.
7000	22:31	20	01			J3E-U			Unid people talking. Unid language
7001	19:05	29	01	RUS		FMOP	40 sps	12k	OTH Radar Contayner; CF = 6995kHz. Long lasting.
7011	20:19	21	01			A3E			BC. Unknown language. Deep QSB.
7012	14:22	21	01	RUS		F1B	75	250	Moscow
7051	23:26	20	01			F1B		200	
7055	07:56	18	01			A3E (AM)			Music: "Oh, Susanna". Reported by EB1TR
7055	VT	VD	01	RUS / UKR		J3E-L			Music, speech. Almost every day.
7065	21:33	21	01	RUS		FMOP	40 sps	12k	OTH Radar Contayner
7079.5	18:19	02	01			J7D	120	2600	CIS-12 aka AT3004. Also on 3/1
7086	21:45	21	01	RUS		FMOP	40 sps	12k	OTH Radar Contayner
7088	08:18	30	01			F1B		200	
7088.8	08:34	02	01	S	SLOFRO	A1A			CW-trainee, Sweden - SLOFRO - <i>just for info!</i> Also on 08/01 @ 10:23 UTC
7095	19:56	09	01			FMOP	10 sps	10k	OTH Radar bursts..

**URE; Gaspar, EA6AMM**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/ BW	DETAILS
7098	15:52	30	01			FMOP	50 sps	10k	OTH Radar bursts.. Burst ≈ 5 sec.
7116	21:29	09	01	RUS		FMOP	40 sps	12k	OTH Radar Contayner.
7122	09:17	09	01	RUS		F1B	50	200	Severomorsk. Also on 14/01.
7122	19:52	09	01	RUS		FMOP	40 sps	12k	OTH Radar Contayner.
7130	23:07	20	01	CHN		FMOP	66.66 sps	10k	OTH Radar bursts.. "Foghorn"
7144	0815	02	01			J7D	120	2600	CIS-12, aka AT3004D
7145	22:53	20	01			FMOP	10 sps	10 k	OTH Radar bursts..
7157	16:12	02	01	RUS		FMOP	40 sps.	12k	OTH Radar Contayner.
7165	23:07	20	01	CHN		FMOP	66.66 sps	10k	OTH Radar bursts.. "Foghorn".
7165	16:37	27	01			FMOP	10 sps	10k	OTH Radar burts, Burst ≈ 12 sec. QSY across the whole 40 m. band.
7167	16:50	06	01	RUS		FMOP	40 sps	12k	OTH Radar Contayner..
7173	15:26	16	01			FMOP	40 sps	12k	OTH Radar Contayner. Long-lasting.
7175	22:58	03	01	CHN		FMOP	66.66 sps	10k	OTH Radar burst. Burst = 3 sec. - "Foghorn"
7179	06:40	08	01			J7D	120	2600	CIS12 aka AT3004-D.Also on 09, 10, 20/01
7183	21:24	09	01			FMOP	10 sps	10k	OTH Radar bursts. Also on 26/01.
7185	22:58	03	01			FMOP	10 sps	10k	OTH Radar burts. Burst = 10 sec.
7188.8	09:28	24	01			J7D / PSK2A		2600	CIS-12 aka AT3004D
7191	15:50	26	01	RUS		FMOP	40 sps	12k	OTH Radar Contayner. Simultaneous transmission on 7203 kHz. Long-lasting.
7193	VT	VD	01	RUS		F1B	50	200	Kaliningrad, RUS Navy.
7198.5	10:00	09	01					2000	Multitone burts.
7199	08:19	07	01			F1B		250	Also on 09/01.
7199.5	08:13	09	01			J7D	120	2600	CIS12 aka AT3004D (CF 7200.8 kHz). Also on 30 / 01 at 08:18 UTC.
7200	16:54	20	01	RUS		FMOP	40 sps	12k	OTH Radar Contayner. Long-lasting.
7203	15:50	26	01	RUS		FMOP	40 sps	12KE	OTH Radar Contayner. Simultaneous transmission on 7191 kHz.
10113.1	09:27	02	01			A1A			Continuous dot's. long-lasting.
14000	10:37	16	01			J3E-U			Unid people talking. Spanish language. QSB & very low signal.
14007	09:11	16	01			FMOP	10 sps	40k	OTH Radar. 13987 to 14027 kHz.
14011	08:22	26	01			J3E-U			Unid people talking.
14036	08:13	21	01			FMOP	50 sps	10k	OTH Radar bursts. Also on 13996, 14252 & 14305 kHz.
14050	08:05	06	01	CHN		FMOP	66.66 sps	10k	OTH Radar bursts: Burst ≈ 4 sec. "Foghorn".
14090	08:45	07	01			FMOP		10k	OTH Radar burst. Also on 09/01
14099	08:19	10	01	RUS		FMOP	40 sps	12k	OTH Radar Contayner. 40 sps.
14123	09:09	19	01			FMOP	50 sps	10k	OTH Radar. 50sps
14140	08:25	09	01			FMOP	10 sps	10k	OTH Radar bursts. 10 sps
14185	09:20	30	01			FMOP	10 sps	10k	OTH Radar bursts. 10 sps. QSY across the whole 20 m band.
14186	08:08	06	01			F1B		500	
14190	10:48	08	01			FMOP	10 sps	10k	OTH Radar bursts.

**URE; Gaspar, EA6AMM**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/ BW	DETAILS
14195	09:00	14	01			FMOP	10 sps	10k	OTH Radar bursts.
14225	09:30	02	01			FMOP		10k	OTH Radar
14233	08:37	06	01			FMOP		10k	OTH Radar bursts.
14239	08:58	17	01	CHN		FMOP	66.66 sps	10k	OTH Radar burst. "Foghorn"
14260	08:33	30	01			FMOP	50 sps	10k	OTH Radar bursts.. Burst ≈ 10 sec. Bursts also on 14245 & 14314kHz.
14263	08:37	06	01			FMOP	50 sps	10k	OTH Radar.
14293	09:00	25	01			FMOP	48 sps	10k	OTH Radar Bursts.. Burst ≈ 5 sec.
14297	09:00	05	01			FMOP	10 sps	10k	OTH Radar burst.
14298	10:07	24	01	CHN		FMOP	66.66 sps	10k	OTH Radar bursts "Foghorn".
14330	10:36	08	01			FMOP	10 sps	10K	OTH Radar bursts. 10 sps.
14335	08:47	05	01	CHN		FMOP	66.66 sps	10k	OTH Radar bursts. Burst ≈ 4 sec. Every ≈ 50 sec."Foghorn". Also on 11/01.
14338	09:04	17	01	CHN		FMOP	66.66 sps	10k	OTH Radar bursts "Foghorn"
18070	10:21	12	01				25 sps	20k	OTH Radar. 18050 to 18070 kHz

**USKA; Peter, HB9CET**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/ BW	DETAILS
3510.0 USB	2142	20	01			xx		ca. 3k	unid mysteriousChirps often ca 450Hz spacing
3527.0	2214	02	01			F1B	50	200	
3548.0	2216	02	01			F1B	50	200	
3581.8	2218	02	01			G1D	2400	3K00E	STANAG 4285
5361.8	2322	07	01	DNK		G1D	2400	3K00E	STANAG 4285 <b>legal !</b>
6999.8	1305	13	01			G1D PSK8	2400	2k70E	MIL 188-141B (d2)
7000.0	2301	05	01			J3E-U		ca 2k1	Spanish; South - American accent Conversation, more than 30'
7000.0	1642	07	01			J3E-U		ca 2k1	unident language (Balkans ?)
7000.000	2246	13	01			N0N			Long lasting carrier
7008.0	1419	23	01			F1B	75	250	often
7010.0	1001	08	01			G1D PSK-8	2400	2k7	ALE, MIL 188-110B
7010.0	1012	08	01			PSK-2A	1200	ca 2k2	CIS Makhovik (T-230)
7013.0	2231	28	01			MFSK8	125	2k7	ALE, MIL 188-141A
7014.0	1323	29	01			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D
7015.0	0823	02	01			F1B	50	200	CIS 50-50
7022.0	2353	19	01			G7D	2400	2K70E	MIL 188-xxx (strong QRM)
7027.0	1909	02	01			F1B	XX	200	
7029.0	2247	23	01			FMOP	66.66 sps	10k0E	OTHR; short bursts only; BD ca 3.8s
7031.0	1746	02	01		1746	MFSK8	125	2k00E	ALE, MIL 188-141A

**USKA; Peter, HB9CET**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/ BW	DETAILS
7051.0	2322	27	01			F1B	50	200	almost daily
7055.0	1427	23	01			J3E-L		ca 2k9E	Political statements,
7060.0	1034	27	01			J3E-L		ca 2k9E	Music / rap's; hate statements
7079.5	1735	02	01			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D often
7086.2	0952	14	01			G1D	2400	2k7	short bursts only BD ca 0.5s, BRI variable
7088.0	2317	27	01			F1B	75	200	often
7089.0	1541	24	01			J7D	12x120	2k70E	PSK-2; CIS12 aka AT3004D
7089.8	0914	14	01			G1D PSK-8	2400	2k70E	LINK 11 SLEW
7095.0	1916	24	01			G1D PSK-8A	2400	3k00E	MIL 188-141B, App. C; aka STANAG 4539
7100.0	1234	15	01			FMOP	40 sps	ca 12k	OTHR; Contayner 29B6
7106.0	1514	30	01			FMOP	50	10k	OTHR; bursts, BD appx 10s
7113.0	2236	23	01			FMOP	66.66 sps	10k0E	OTHR; short bursts only; BD ca 3.8s
7118.0	1711	14	01			J7D	12x120	2k70E	PSK-2; CIS12 aka AT3004D
7122.0	0942	14	01		RDL	F1A		200	often
7122.0	1416	23	01			F1B	75	250	often
7140.0	1612	03	01	ERI	VOBM 1	A3E		ca. 9k	BC daily
7144.0	0809	02	01			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D
7147.0	1430	23	01			F1B		200	short sequence, also short F1A
7150.0	1637	08	01		0228	MFSK8	125	1750	ALE, MIL 188-141A
7171.0	1334	29	01			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D
7179.0	1211	08	01			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D often
7185.0	1349	08	01			FMOP	10	ca 10k	OTHR; short sequences only
7187.0	1321	03	01			FMOP	10	ca 10k	OTHR; short sequences only
7190.0 LSB	2151	20	01			PSK-4	30x60Bd	ca. 2k	PRC-30; Burst system; tone spacing 75 Hz; Preamble 4x PSK4 60Bd, spacing 600Hz; Pilottone
7191.0	1457	23	01			FMOP	40 sps	ca 12k	OTHR; Contayner 29B6
7192.5	2248	04	01			FMOP	10	ca 10k	OTHR; short sequences only
7193.0	1021	07	01	RUS	RDL	F1B	50	200	almost daily
7193.0	1321	08	01	RUS	RDL	F1B	36 + 50	250	CIS 36-50 TDoA: Kaliningrad
7193.1	1011 0934	09 14	01	RUS		A1A			Jammer, dashes and dots: stupid and illegal
7195.0	2237	04	01			FMOP	40 sps	ca 12k	OTHR; Contayner 29B6
7197.0	2135	02	01	TUR	123466	MFSK8	125	1750	ALE, MIL 188-141A; Network
7197.0	1532	13	01			FMOP	10	ca 10k	OTHR; short sequences only
7199.0	0915	29	01			F1B	75	200	
14093.0	1033	28	01			FMOP	40 sps	12k	OTHR; Contayner 29B6
14099.0	1246	10	01			FMOP	40 sps	12k	OTHR; Contayner 29B6
14119.0	0701	07	01			FMOP	50 sps	10k	OTHR, long lasting
14224.0	0717	07	01			FMOP	66.66 sps	10k	OTHR; Bursts, BD ca 7.6s



**USKA; Peter, HB9CET**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/ BW	DETAILS
14259.0	1002	20	01			FMOP	50 sps	10k	OTHR; Bursts: BD 5s
14260.0	0807	15	01			FMOP	50 sps	10k	OTHR; long lasting
14280.0	1015	08	01			A3E		2k1	Female: russian: figures only
14312.0	0943	20	01			FMOP	50 sps	10k	OTHR; Bursts: BD 5s, BRI18s
14323.3	1239	13	01			F1B	600	600	ARQ; strong QSB often
14340.0	1227	23	01			FMOP	40 sps	12k	OTHR; Contayner 29B6; long lasting

**VERON; Ruud, PG1R**

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3524.0	1903	29	01		UiPTR	F1B			Ptr also 30/1 20.23 UTC
3527.0	2110	20	01	CIS	UiPTR	F1B			Revs
3548.0	1507	02	01	CIS	UiPTR	F1B			XXX Revs/Ptr
3555.5	1810	27	01	CIS	UiCW	A1A			5F ending QLN K
3568.0	2024	28	01		UiPTR	F1B			Ptr
3586.0	1805	30	01		UiPTR	F1B			Ptr
3594.7	2115	20	01	RUS	P	A1A			P beacon
3598.0	1855	29	01		UiCW	A1A			5F
3657.0	2045	28	01	RUS	V	A1A			V beacon
3700.0	1806	30	01		UiPTR	F1B			Ptr
3792.0	2015	18	01	CIS	UiPTR	F1B			Revs/Ptr
3797.0	2101	20	01		UiPTR	F1B			Ptr
6950.0	1956	16	01	CHN	UiRadar	FMOP	10	160k	6870kHz-7030kHz; S3-6
7008.0	1412	29	01	RUS	UiPtr	F1B		250	Ptr, long period
7011.0	1428	21	01	RUS	UiPtr	F1B		250	
7015.0	1003	04	01	RUS	RIT	A1A			RLO de RIT QTC 190 34 4 1258 190 = Radioprognoz 04010 63003
7015.0	1535	05	01	RUS	RIT	A1A			RLO de RIT QTC 268 61 5 1833 268 = Prognoz Pogody
7051.0	2012	04	01	RUS	UiPtr	F1B		200	Idle; S7
7051.0	2025	05	01	RUS	UiPtr	F1B		200	S7-8
7051.0	2058	16	01	RUS	UiPtr	F1B		200	Idle; S8
7051.0	2014	25	01	RUS	UiPtr	F1B		200	Idle; S7-9
7051.0	2020	28	01		UiPTR	F1B			Ptr
7053.0	1031	28	01	UKR	OFDM	SSTV	2300		Ham SSTV TDoA loc. UKR
7055.0	1526	16	01	UKR	UiBc	J3E-L		2k7	Male voices; comments + frog sounds
7055.0	1204	30	01	UKR	UIBC	A3A			Russian speech endless tape located UKR TDoA
7064.0	2140	21	01	RUS	UiRadar	FMOP	40	12k	S8-9
7088.0	1505	24	01	RUS	OTHR	FMOP			Radar
7089.0	1457	24	01	RUS	UiMux	PSK2A		2k6	S9

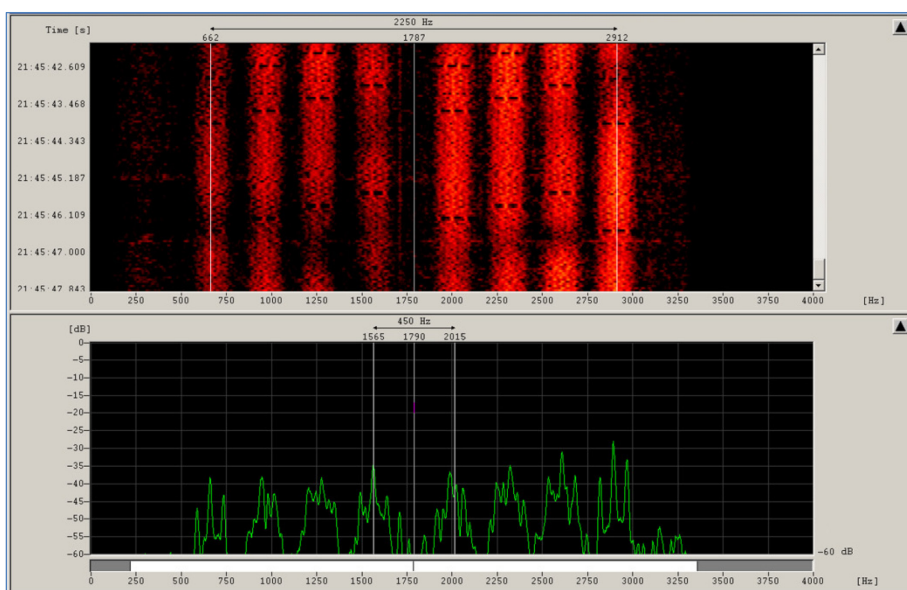
## VERON; Ruud, PG1R

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7178.0	1529	22	01	RUS	UiRadar	FMOP	40	12k	S6-7
7178.8	1447	24	01		UiMux	PSK2A		2k6	S9
7193.0	1522	16	01	RUS	UiPtr	F1B		200	S7-8
7193.0	1055	18	01	CIS	UiPTR	F1B			XXX Revs/Ptr
7193.0	1330	18	01	CIS	UiPTR	F1B			Revs/Ptr
7199.0	1029	22	01		UiPTR	F1B			Ptr
10121.0	1008	24	01		UiPTR	F1B			Ptr
10148.0	1440	24	01	RUS	UiRadar	FMOP	40	12k	S4-7
14308.0	1432	24	01		UiPtr	F1B		500	
14340.0	1119	23	01	RUS	OTHR	FMOP			Radar

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

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### CHN 4+4 Modem (aka PRC 4+4)

CHN 4+4 is an 8 tone transmission mode, consisting of two groups of 4 tones, each PSK-4 modulated. The symbol rate is 75 Bd. The spacing between each tone is 300 Hz, except the 4<sup>th</sup> and 5<sup>th</sup> tone with a spacing of 450 Hz. This makes the signal easy to recognize.

The signal can be found here and there mostly in the 40m band, but it is rather rare.

Many thanks to Wavecom Elektronik AG in Bülach / Switzerland for the valuable support without which many analyzes would not have been possible.