



IARU Monitoring System Region 1

Monthly Newsletter 2 - February 2020

edited by Peter Jost, HB9CET, assisted by Gaspar Miró, EA6AMM

News and Infos

The Intruder situation in February 2020 was almost the same as in previous months. Due to the current propagation conditions, on the higher bands ($\geq 17m$) intruders could only be discovered very rarely. The observations therefore mainly concentrated on the 20 and 40 meter band in which many, mostly military digital emissions were found (different variants of FSK; CIS12, OTHR and ALE/MIL 188-141A, et cetera)

Also in the 80m band there were daily many digital signals that did not come from amateurs! However, since this band is only co-primary assigned to the Amateur Radio Service (together with FIXED and MOBILE services), it is hardly possible to assess with certainty whether a signal is a real intruder or a legal station. Therefore I personally always mention "only for information".

The Russian OTHR "Contayner 29B6" was and is unfortunately often encountered. Mostly with a sweep rate of 40 sps (sweeps/second), but occasionally 50 sps were

reported. It affects us often and very badly. There are two particularly noteworthy and extremely detailed articles by Tony Roper about this OTHR on his website <https://planesandstuff.wordpress.com/> :

1. [Russian Over-The-Horizon radar system Konteyner \(29B6\)](#) from February 25, 2020
2. [Konteyner follow-up](#) from March 6, 2020

The new transmitter location documented in his first article also fits well with the TDoA locations we have made several times (reported in the greater area of Kovytkino, Penza, Saransk).

As you can see, Tony Roper has a great deal of knowledge and professional tools that are among the best available today. It is extremely commendable that he publishes his knowledge in detail, which really is not for granted! Unfortunately, too many people prefer to keep their knowledge to themselves.

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

Detailed reports of national coordinators

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** = **CHN** = People's Republic of China | **SH** = Shift (Hz) | **sps** = sweeps per second | **TDoA** = Time difference of arrival | **ui** / **unid** = unidentified | **vd** = various dates **vt** = various times.

DARC									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3510.0	2030	06	02	BLR		Unid		3k	Chirps - Orsha - Belarus
3581.8	1800	06	02	TUR		PSK8A	2400	2400	Stanag 4285 - Ankara - shared band!
3586.0	1725	01	02	RUS		F1B	75	250	Vologda - shared band!
5350.0	1900	01	02	E		J3E-U			Spanish fishery - splattering up
5360.5	1551	17	02	RUS	RDL	F1B	50	200	Severomorsk - RUS navy - primary user
5361.8	1210	27	01	DNK	OUA15	PSK8A	2400	2400	Stanag-4285 - DNK navy - primary user
7000.0	1515	02	02	INS		J3E-U			Indonesian pirates, often, USB
7005.0	1618	23	02	RUS		FMOP	40 sps	24k	OTHR Contayner - 6981 - 7005

DARC									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7007.0	2030	20	02	MRC		J3E-U			Maroccan fishery, USB
7010.0	1416	20	02	RUS		PSK2A	120	2600	AT3004D - Moscow
7030.0	1541	20	02	CHN		FMOP	160k		CHN-OTHR - 20 sps - 7030- 7190
7039.3	2117	20	02	RUS	K	A1A			Beacon K - RCC - Petropav. Kamch.
7039.4	1925	20	02	RUS	M	A1A			Beacon M - RTS - Magadan
7039.88	1925	20	02	RUS	F	A1A			Beacon F - RJS - Vladivostok
7050.0	1525	23	02	CLA		J3E			Clandestine radio programme russian-ucrainian conflict
7051.0	2000	08	02	RUS	RDL	F1B	50	200	Sevastopol - RUS navy
7073.0	1440	04	02	RUS		PSK2A	120	2600	AT3004D - modem idle - Yaroslavl
7122.0	1735	16	02	RUS	RDL	F1B	50	200	Severomorsk - RUS navy daily
7140.021	1630	16	02	ERI		A3E/BC		9k	Radio Eritrea daily
7180.021	1730	16	02	ERI		A3E/BC		9k	Radio Eritrea daily
7186.0	1023	02	02	RUS		PSK4B	120	3300	AT3104D - Severomorsk
7193.0	1000	07	02	RUS	RDL	F1B	50	200	Kaliningrad, RUS navy
7198.0	1115	07	02	RUS		PSK2A	120	2600	AT3004D - submode idle - Moscow
7200.0	0850	30	01	RUS		PSK2A	120	2600	AT3004D - Kaliningrad
10123.0	0949	07	02	RUS		PSK2A	120	2600	AT3004D - Ryazan shared band
10127.0	0930	12	02	RUS		PSK2A	120	2600	AT3004D - Kaliningrad shared band
14000.0	1106	21	02	FEa		J3E			Far east pirates, USB
14110.0	0920	20	02	CHN		FMOP	10 sps	160k	CHN OTHR - 140110 - 1414270
14136.0	1404	25	02	RUS		FMOP	40 sps	12k	OTHR Contayner - 14130 - 14142
14160.0	1418	24	02	RUS		FMOP	40 sps	12k	OTHR Contayner - 14154- 14166
14173.0	0902	09	02	MNG		FMOP	10 sps	40k	MNG OTHR - 14153 - 14193
14183.0	1524	24	02	RUS		FMOP	40 sps	12k	OTHR Contayner - 14177- 14189
14295.128	2100	26	02	TJK		A3E		9k	3rd from Radio Tajik on 4765 kHz
14313.5	1008	25	02			F1B	1200	600	DPRK-FSK 1200
14314.0	0930	22	02	CHN		FMOP	67 sps	10k	CHN-OTHR-bursts - 14309 - 14319
14339.0	0938	22	02	CHN		FMOP	50 sps	10k	CHN-OTHR-bursts - 14334 - 14343
21438.0	0925	12	02	RUS	RCV	A1A			RUS navy Sevastopol - RCV with QTCs

IRTS; Michael, EI3GYB									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/BW	DETAILS
7005.1	1405	03	02			LSB			Male voice calling "Dwa dwa" in Russian. Also bad audio.
7012	1945	08	02	MRC or /MM		USB			2 Moroccan fishermen chatting.
7053	1355	27	02			FMOP			Radar from 7053 to 7068 kHz.
7055	1225	02	02	RUS / UKR		LSB			Ukrainian-Russian radio war. Heard many times during the month with big signals. Plenty of propaganda, patriotic music and shouting.
7119	1145	01	02			F1B			Medium strength
7123	1335	15	02			F1B			Medium strength
7140	1815	14	02	ERI		AM			Radio Eritrea, big signal. Heard many times during the month.

IRTS; Michael, EI3GYB									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/BW	DETAILS
7140	1350	27	02			FMOP			Radar from 7140 to 7148 kHz.
7143	1440	26	02			F1B			Huge signal.
7146	0450	16	02	B or /MM		USB			Voices in Brazilian Portuguese. Strong motor noise/generator coming from one of the stations.
7149.5	2020	25	02	MRC or MM		USB			2 Moroccan fishermen chatting. Loud.
7150	2015	08	02	E or /MM		USB			2 Spanish fishermen chatting. Strong signals.
7175	1400	01	02			FMOP			Radar from 7175 to 7187 kHz, strong bursts.
7186	0020	02	02			FMOP			Radar from 7186 to 7201 kHz. Huge signals
7186	1520	02	02						Strong digital signal
7190	1435	18	02			FMOP			Radar from 7190 to 7202 kHz. On and off.
7194	1130	01	02			F1B			Strong
7199	1245	02	02						Huge digital signal
7199	1420	12	02						Huge digital signal
14011	0822	15	02			FMOP			Radar from 14011 to 14024 kHz.
14112.5	1235	12	02			FSK			North Korean embassy, strong.
14145	1255	03	02			LSB			Female voice calling "Dwa dwa" in Russian. Bad audio.
14168	1035	25	02			FMOP			Radar from 14168 to 14182 kHz. On and off.
14176	0930	26	02			FMOP			Radar from 14176 to 14192 kHz. Strong and persistent.
14239	0805	24	02			F1B			Very strong signal.
14307	0825	17	02			F1B			Big signal.
21293	1100	16	02			FMOP			Radar from 21293 to 21319 kHz. Huge signals.
21436	1305	19	02			FMOP			Radar from 21436 to 21459 kHz. Persistent and very strong.

MRASZ; Laci, HA7PL									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH / BW	DETAILS
3507.0	1710	05	02			LSB			numbers, on russian language
3517.0	1632	15	02			A1A			long "V" string
3519.0	1547	24	02			F1B		250	
3522.0	1709	05	02			F1B		250	
3522.0	1819	25	02			F1B		250	
3536.0	1719	05	02			PSK2A			AT3004D
3581.8	1659	03	02			PSK8A	2400	2400	Stanag-4285 almost daily
3581.8	1720	05	02			PSK8A	2400	2400	Stanag-4285
3581.8	1800	12	02			PSK8A	2400	2400	Stanag-4285
3581.8	1634	15	02			PSK8A	2400	2400	Stanag-4285
3581.8	1643	24	02			PSK8A	2400	2400	Stanag-4285
3581.8	1820	25	02			PSK8A	2400	2400	Stanag-4285

MRASZ; Laci, HA7PL									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH / BW	DETAILS
3590.0	1658	03	02			PSK2A			AT3004D
3594.0	1821	25	02			OTHR			3594-3598 kHz
3600.0	1545	24	02			F1B		250	
3601.0	1653	03	02			OTHR			3596-3606 kHz
3621.8	1709	17	02			F1B		200	
3647.3	1722	05	02			OTHR			
3657.0	1723	05	02	UZB		A1A			"V" beacon, Tashkent
3657.0	1705	11	02	UZB		A1A			"V" beacon, Tashkent
3657.0	1752	12	02	UZB		A1A			"V" beacon, Tashkent
3657.0	1635	15	02	UZB		A1A			"V" beacon, Tashkent
3657.0	1713	17	02	UZB		A1A			"V" beacon, Tashkent
3657.0	1644	24	02	UZB		A1A			"V" beacon, Tashkent
3690.5	1823	25	02			F1B		200	
3709.0	1623	24	02			PSK2A			AT3004D
7001.0	1646	03	02			OTHR			6990-7012 kHz
7055.0	0932	01	02			LSB			propaganda
7055.0	1531	23	02			LSB			music, singing
7055.0	0852	27	02			LSB			political propaganda
7055.0	1443	29	02			LSB			propaganda
7062.0	1549	06	02			F1B		200	
7122.0	1550	06	02			F1B		200	almost daily
7122.0	1511	15	02			F1B		200	
7122.0	1530	23	02			F1B		200	
7140.0	1758	12	02	ERI		A3E/BC			Radio Eritrea
7195.0	1815	25	02			OTHR			7190-7200 kHz

PZK; Marek, SP3AMO + Miro, SP5GNI									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
1897.0	1843	19	02	GER		UI		1k2	[S8] German Navy.
3507.5	1918	20	02			J3E			[S0+] - [R1]
3509.5	1721	26	02			F1B	50	200	[S8] 17.42 UTC QRT
3509.5	1801	26	02			NON			[S8]
3510.0	2052	19	02			UI			Chirp
3511.0	1530	7	2			UI		2k2	Very unusual, hard to decribe
3524.0	1917	25	02			F1B	50	200	[S9]
3526.7	vt	vd	02			PSK/F1B	50	200	PSK - 10 lines / Change Mode F1B
3546.5	1900	10	02			MFSK/PSK		1k6 [bw]	Multitone [sp 40Hz] [S9]
3582.0	1648	27	2			MFSK		3k0	3583.5 pilot and about many lines below visible S9 +10
3582.0	1954	5	02			PSK		1k2	[S9] Azymut 0 - 180
3586	1035	10	2			F1B		240	
3592.0	1914	10	02	GER		FSK/A1A	75	200	db0nts ??? [S7 - QSB]
3595	1230	19	2					2k5	Multitone plus pilot 3596.3
3597	1540	20	2			MFSK		3k0	3598.3 pilot and about many lines below visible S9 +10
3598.6	1826	25	02			UI		1k2 [bw]	Multitone

PZK; Marek, SP3AMO + Miro,SP5GNI									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3632.1	2004	10	02			MFSK/PSK			Changeable Mode [S9]
3691	1646	27	2			F1B		200	
3698.2	1942	21	02			UI		1k2	Like a FAX
3709	1419	24	2			PSK		2k5	Multitone plus pilot 3710.3
3722	1442	13	2			MSK			3773.3 pilot and 2 lines below S9
3730.0	1852	19	02			UI		1k2	Multitone / Changeable Mode
3744.5	vt	vd	2			UI		3k	Preamble 4 tones and about 20 seconds transmission
3748.0	1830	25	02			UI		2k7	[S7] Digi Voice????
3750	1639	27	2			UI		2k8	6 groups 3 lines each witht amplitude modulation . or 6 line with phase modulation . or F1B 500 Hz split
3753.5	2135	6	2			UI		2k2	Very unusual, hard to decribe
3756.5	vt	vd	02			NON		650 Hz	Beep 2 Tone
3758	vt	6	2		RUS	UI		3k	
3758	1535	20	2			MFSK		3k0	3759.3 pilot and about many lines below visible S9 +20
3772.0	1839	26	02			F1B	50	200	[S8/9]
3786	1642	27	2			MFSK		2k8	3787.3 pilot and 12 lines below visible
7002	1101	6	2			FMOP		10k	OTHR short bursts
7003.0	1653	20	02			FOMP		20k	OTHR [6984 - 7004 kHz] [S9] - 17.05 UTC QRT
7007.0	1631	26	02			MFSK			sp 40 Hz [S5] 16.43 UTC QRT
7007.5	1310	7	02			MFSK/PSK		1k2 [bw]	Emisja wielotorowa / Changeable Mode (13.25 UTC QRT)
7008.0	1509	4	02			FMOP			OTHR - Dots
7008.0	1335	5	02			PSK		40 Hz	[S9] - QRT 13.50 UTC
7008.0	vt	21	02			F1B/PSK	75	200	PSK - 8 lines. sp 50Hz / Changeable Mode/ F1B [S3/6] - 07.31 UTC QRT
7008.0	1305	24	02			PSK/F1B	75	200	sp 35Hz. bw 350Hz [S5] 13.15 PSK=>F1B / 14.15 Change mode F1B=> PSK. 14.18 UTC QRT
7010.0	1500	3	02			J3E			[S0+] - [R1]
7010.0	1649	3	02			FMOP			OTHR - Dots
7010.0	1541	6	02			UI		30k [bw]	[6980.0 - 7010.0 kHz] - sp 40 Hz (15.50 QRT)
7010.0	1339	22	02			UI		1k3	sp 40Hz. Emisja wielotorowa / Changeable Mode. PSK Sh 7x120 Hz S 5/7. 14.25 UTC QRT
7011.0	1301	25	02			F1B	75	200	[S5] 13.05 UTC QRT
7012.0	1026	5	2			F1B		240	
7012.0	1310	25	02			F1B	75	200	[S6] 14.59 UTC QRT
7013.0	1244	26	02			MFSK		1k3	[S6] 6 x 120 Hz[bw] 13.05 UTC QRT
7031	1342	17	2			UI			A number of lines/emissions 7030-7046. probably correlated.

PZK; Marek, SP3AMO + Miro,SP5GNI									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7033	1234	19	2			UI		2k0	Complex spectrum profile
7045.0	1706	26	02			FMOP		20k	OTHR [7045.0 -7065.0 kHz]
7051	vt	vd	2			F1B		200	S9 +10 in peaks (evenings)
7056.5	1534	7	2			F1B		200	
7096.3	1445	13	2					10k	OTHR short bursts
7100	1056	6	2			UI			Unknown signal about 500Hz wide migating very slowly from up to down entire 40 m band
7101	1500	13	2			FMOP		10k	OTHR short bursts
7120	2003	10	2			FMOP		14k	OTHR
7122	vt	vd	2			F1B		200	
7142	1446	27	2			UI		3k4	Spectrum not seen before. dissapear after 1 minute
7163	1537	8	2			FMOP		10k	OTHR short bursts
7176	2104	22	2			UI		4k5	7176 pilot. spectrum from 7173 to 7177.5
7177	1538	8	2			FMOP		10k	OTHR short bursts
7179.0	1812	25	02			FOMP		20k	OTHR [7179.0 - 7199.0 kHz] [S9]
7180	2225	12	2			FMOP		8k	OTHR short bursts. not strong
7182.8	2109	5	02			FOMP		20k	OTHR [S9+5 dB] Azymut 90- 270 (CF 7185.0 kHz)
7187	1458	13	2			FMOP		10k	OTHR short bursts
7190	2228	12	2			FMOP		8k	OTHR short bursts
10122	1536	7	2			FMOP		16k	OTHR
10125	1239	19	2			UI		1k5	Short burst
14050	1033	5	2			F1B		240	
14110.4	1128	10	2			F1B		200	1130 shift changed to 750 Hz. occasionally 6 lines visible. S5
14159	1424	24	2			FMOP		15k0	OTHR not very strong
14183	1036	5	2			FMOP		10k	OTHR short bursts
14194	1243	19	2			MSK		260	3 strong lines 130 Hz space
14199.4	1147	23	2			MSK		300	5 lines visible
14213.3	2124	5	02			NON			2 lines [sh 680 Hz]
14287.0	1405	17	2			UI		2k7	Continous spectrum. bursts. very strong (OTHR?)
18112	1252	19	2			FMOP		12k0	OTHR not very strong
21085.5	1534	6	02			NON			Lines sp 120 Hz [15.36 QRT]
21199.1	1256	19	2			MSK		0k5	6 lines visible
21399.1	1256	19	2			MSK		0k5	6 lines visible
28198.8	1150	10	2			MSK			6 lines

REF; Francis, F5MIU									
kHz	UTC	DD	MM	ITU	IDENT	MODE	Baud	SH /BW	DETAILS
7065	1648	20	02			fmcw		15kHz	OTH Radar pulsed 100ms,S8
10123.5	900	06	02			usb		3khz	Unident language
14023	0854	7	02			fmcw		20kHz	OTH Radar pulsed 25ms,S7

REF; Francis, F5MIU									
kHz	UTC	DD	MM	ITU	IDENT	MODE	Baud	SH /BW	DETAILS
14100.4	0911	27	02			Data		3kHz	Data channel all hour long same as DRM unable to decode
14175	0907	19	02			fmcw		50kHz	OTH Radar pulsed 100ms,S8
14180	0844	06	02			fmcw		20kHz	OTH Radar pulsed 25ms,S9
14230	0855	21	02			fmcw		200kHz	OTH Radar pulsed 100ms,S9
144200	1018	29	02			fm		12kHz	Hunters net on the frequency ! All day

REP; José, CT4AN									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3505	0805	14	02	E		J3E-U			Fishery
3582	1855	09	02	TUR		PSK8	2400	2400	STANAG
3595	2210	07	02	G		PSK8A			STANAG 4285
3657	1808	05	02	UZB	V	A1A			Beacon
3745	1900	10	02			PSK2			AT3004
7000	0647	20	02			MFSK8			Mil / Std 188-141A
7005	0803	10	02	E		J3E-U			Fishery
7039	2300	01	02	RUS	K	A1A			Beacon
7039	dly	dly	02	RUS	M	A1A			Beacon MAGADAN
7055	1734	02	02			J3E-L			Music and loud talks
7100	1900	11	02	CHN		FMOP	10	160k	OTH
7130	2133	03	02	RUS		FSK	75	500	CIS75
7140	dly	dly	02	ERI		8k00 A3EGN			Radio Eritrea
7140	07.54	19	02	RUS		PSK2	120	2600	AT3004
7199	08.33	16	02			J7D	120	2.6k	CIS12
10114	09.28	16	02			A1A			Dots
10125	13.20	17	02			J3E-U			Fishery
14135	16.21	17	02	E		J3E-L			Fishery
14159	09.00	12	02	CHN		FMOP	10	100k	OTH
14190	14.08	17	02	CYP		FMOP	50	10k	OTH radar
14339	09.12	20	02	CHN		FMOP	60	10k	Foghorn bursts
18100	17.43	22	02	CYP		FMCW	50	10k	OTH

RSK; Kamweti, 5Z4BV									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH/ BW	DETAILS
7035	1425	25	02		?	J3E-L			Vernacular/Kiswahili QSO Central Africa?
7040	vt	nr. dly	02		?	J3E-U			Vernacular/Kiswahili QSO E. Africa
7069	0344	6	02		?	FMOP	10 sps	20 kHz	Wideband OTHR; Russia/Asia
7085	0344	27	02		?	FMOP	40 sps	20 kHz	Wideband OTHR Russia/Asia
7100	1335	occ .	02		?	J3E-L			Vernacular/French QSO Central/E. Africa

RSK; Kamweti, 5Z4BV									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH/ BW	DETAILS
7120	a.m./p.m.	nr. dly	02	SOM	Radio Hargeisa	A3E			Commercial broadcast
7140	a.m./p.m.	dly.	02	ERI	VOBM 1	A3E			Commercial broadcast
7140	vt	occ .	02		?	J3E-U			Vernacular/French QSO Central Africa
7150	1150	14	02		?	J3E-U			Vernacular/French QSO Central Africa
7150	vt	dly.	02		?	MFSK		2000 Hz	2G ALE; Kenya/E. Africa
7175	vt	nr. dly	02		?	PSK		3000 Hz	STANAG 4285; Kenya/E. Africa
7180	a.m./p.m.	nr. dly	02	ERI	VOBM 2	A3E			Commercial broadcast
14100	vt	16	02		?	FMOP	40 sps	10 kHz	Russia/Asia; Russian Kontayner
14135	1440	25	02		?	FMOP	40 sps	10 kHz	Russia/Asia; Russian Kontayner
14180	vt	17	02		?	FMOP	40 sps	30 kHz	Russia/Asia; Russian Kontayner
14185	1640	14	02		?	FMOP	2.7 sps		Southern hemisphere
14278	vt	21	02		?	FMOP	40 sps	20 kHz	Russia/Asia; Russian Kontayner

RSGB; Richard, G4DYA									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
5362.0	0944	01	02			J7D		2K70E	USB 5360.0 / CIS-12 Primary user
7021.0	1525	19	02			F1B		850	
7038.496 7038.500 7038.504	ady	dly	02	CZE	OK0EU	A1A			For info: QRP propagation beacons. CW idents offset at +40 Hz.
7048.9	1032	28	02			J7D		2K80E	USB 7047.0 / CIS-60
7051.0	2218 2133 2221 2157 2000 2041 2058 2031	01 03 04 05 10 11 18 27	02			F1B		200	
7063.5	1322	06	02			F1B		200	
7087.0	1549	01	02			P0N	40	14K0E	Container OTH radar
7088.0	1707	02	02			F1B		200	
7122.0	0808 0949 1025	03 09 28	02			F1B		200	
7126.0	1546	01	02	RUS		P0N	40	14K0E	Container OTH radar
7128.0	1536	01	02	RUS		P0N	40	14K0E	Container OTH radar. Ceased at 1540.
7140.02	1543 1704 1758	01 02 05	02	ERI	VoBM1	A3E			BC
7185.65	1015	02	02			R7D		3K30	USB 7184.0 / CIS-12

RSGB; Richard, G4DYA

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7192.0	1104	07	02			F1B		200	
7193.0	1023 0756 0802	01 03 04	02		RDL	F1A/ F1B		200	
7198.0	1349 1109	03 07	02			J7D		2K70E	USB 7196.0 / CIS-12
10100.8	ady	dly	02	D	DDK9	F1B	50	450	For info: Primary user: WX broadcast
10124.0	1534	10	02	RUS		P0N	40	14K0E	Container OTH radar
14031.0	0855	14	02			P0N	50	10K0E	OTH radar
14033.0	0948	12	02			P0N	10	40K0E	OTH radar
14162.0	1131	15	02	RUS		P0N	40	14K0E	Container OTH radar

SRAL; Pekka, OH2BLU

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/BW	DETAILS
14 MHz	0600-0930	*	02	CHN	UiOTHR	FMOP	67sps	10k0E	*) Days: 1. 2. 3. 4. 7. 12. 13. 15. 18. 19. 20. 22. 23. 28. 29. bursts
14 MHz	0615-0720/	*	02	CHN	UiOTHR	FMCW	50sps	10k0E	*) Days: 14. 19. 21. 26.
14 MHz	0615-1600	*	02	RUS	Kontainer	FMOP	40sps	15k0E	*) Days: 10. 11. 15. 16. 24. (WebSDR 10d)
14 MHz	0800-1000	*	02	CHN	UiOTHR	FMOP	10sps	160kE	Days: 13. 14. 21. 22. 26.
14221.0	0530-0630	29	02	KAZ	UiPTR	F1B		250H	
18 MHz	0615-1433/	*	02	CYP	UiOTHR	FMCW	25/50sps	20k0	Days: 1. 14. 24. (WebSDR 17d)
18 MHz	1205	19	02	RUS	Kontainer	FMCW	40sps	15k0E	
21 MHz	1200-1215	19	02	CYP	UiOTHR	FMCW	25/50sps	20k0	(WebSDR 12d)
7 MHz	0600-1915	*	02	CHN	UiOTHR	FMOP	10sps	10k0E	*) Days: 3. 4. 5. 8. 10. 11. 14. 16. 17. 19. 20. 24. 25. 28. 29.
7 MHz	1500-0500	*	02	RUS	Kontainer	FMOP	40sps	13k0E	*) Days: 1. 2. 3. 5. 10. 19. 22. (WebSDR 14d)
7 MHz	1710	6	02	CHN	UiOTHR	FMOP	10sps	160k0E	
7010.0	1150	2	02	RUS	UiMUX	J7D	120	2k60E	
7011.0	0630-0855	22/ 23	02		UiPTR	F1B			
7012.0	1430-1500	25	02	RUS	UiPTR	F1B		250H	
7015.0	0900-1420	*	02	RUS	UiPTR	F1B		200H	*) Days: 24. 26. 29.
7016.0	0615-0627/	4	02		UiPTR	F1B			
7039.9	1300	17	02	RUS	F	A1A			Beacon, 100 Hz brum
7049.0	1655	28	02	RUS	UiMUX	J7D	120	2k60E	
7051.0	0445-0600/	12 14	02	RUS	UiPTR	F1B		200H	

SRAL; Pekka, OH2BLU									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD/sps	SH/BW	DETAILS
7057.0	1045-1100	17	02	RUS	UiMUX	J7D	120	2k60E	
7063.5	0915-1630	6	02	RUS	UiPTR	F1B		250H	
7066.0	0750-0755/	12	02		UiPTR	F1B		200H	
7081.0	1030-1130	14 22	02	RUS	UiMUX	J7D	120	2k60E	
7103.0	1130-1155/	26	02	RUS	UiMUX	J7D	120	2k60E	
7118.0	1145-1400	26	02	RUS	UiPTR	F1B		400H	
7122.0	0630-1600	*	02	RUS	RDL	F1B		200H	*) Days: 4. 8. 11. 12. 13. 17. 26. 27. 28. 29.
7140,0	0500-0700	dly	02	ERI	VoBME	A3E		9k0	
7140,0	1400-1840/	dly	02	ERI	VoBME	A3E		9k0	
7142.0	0630-1400	26	02	RUS	UiPTR	F1B/ NON		250H	
7149.97	0810-0820/	29	02		UiCarr	NON			
7158.0	0630-0645	17	02	RUS	UiPTR	F1B/ NON		250H	
7160.0	'0745	19	02	RUS	RBL88	A1A			5BL
7176.0	0645-0917/	1	02	RUS	UiPTR	F1B		250H	
7178.0	1100-1215/	20	02	RUS	UiMUX	J7D	120	2k60E	
7180.0	0600-0700	*	02	ERI	VoBME	A3E		9k0	*) Days: 6. 7. 13. 17. 18. 24.
7180.0	1400-1840/	*	02	ERI	VoBME	A3E		9k0	*) Days: 6. 7. 13. 17. 18. 24.
7187.875	1020-1455	10	02		UiCarr	NON			
7192.0	0900-1020	7 13	02	RUS	UiPTR	F1B		250H	
7193.0	0800-1500	1 4	02	RUS	UiPTR	F1B		200H	
7194.0	0855-0900/	13	02	RUS	UiMUX	J7D	120	2k60E	
7198.0	0945-1330	7 13	02	RUS	UiMUX	J7D	120	2k60E	
7200.0	0630-0637/	10	02	RUS	UiPTR	F1B		200H	
10 MHz	0800-0830	12	02	CYP	UiOTHR	FMCW	25/50sps	20k0	(WebSDR 7d)
10 MHz	1500	28	02	CHN	UiOTHR	FMOP	10sps	10k0E	
10 MHz	0600-1500	8 10	02	RUS	Kontainer	FMOP	40sps	13k0E	(WebSDR 16d)

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
7000	2236	04	02			J3E-U			Unid people talking
7007	0828	18	02			J3E-U			Unid people talking. Male voices, Irish accent
7051	2139	04	02			F1B		200	Also on 3, 6, 15, 25 February
7056	0759	11	02			FMOP	40	10K00E	OTHR bursts
7062	0840	12	02			J3E-U			Numbers station. Female voice. Russian language
7063	1906	25	02			FMOP	10	10K00E	OTHR sweeps
7063.5	0828	06	02			F1B		200	
7088	1709	02	02			F1B		200	
7089.5	20:34	02	02			G7D			LINK-11CLEW
7105	2057	02	02			FMOP	10	10K00E	OTHR bursts. QSY across the whole 40 m band
7122	0830	06	02			F1B		200	Also on 6, 11,25 & 29 February
7151	2001	06	02			F1B		200	
7176	1306	27	02			F1B		250	
7181	2213	25	02			FMOP	20	10K00E	OTHR sweeps
7185	1727	01	02			FMOP	40	12K00E	OTHR Contayner. (by EB1TR)
7185.8	1543	02	02			J7D	120	2K6E	CIS-12 a.k.a AT3004-D. Also on 6
7190	1755	06	02			XXX		7K00E	Unknown signal. 40 sps?
7190	1845	25	02			FMOP	40	12K00E	OTHR Contayner, long-lasting
7193	08:47	01	02			F1B		200	Long-lasting. Also on 03, 04
7198.6	1921	05	02			J7D		1750	MIL-188-141A - ALE
10115	1132	14	02			FMOP	50	20K00E	OTHR. Long-lasting
10116.0	2157	25	02			J3E-U			Unid people talking
10121.2	1135	02	02			J3E-U			Unid. people talking
10121.3	2224	25	02			J3E-L			Unid people talking
14031	08:24	14	02			FMOP	50	10K00E	OTHR. Long-lasting
14033	0929	12	02			FMOP	10	40K00E	OTHR. Long-lasting
14045	0951	02	02			FMOP	50	10K00E	OTHR bursts. Burst ca 5 sec. Also on 14315 kHz (burst ca. 9 sec.)
14056	0853	25	02			FMOP	40	10K00E	OTHR bursts. Burst ca. 5 sec
14105	0852	16	02			FMOP	40	12K00E	OTHR Contayner. Long-lasting
14107	1103	15	02			FMOP	40	12K00E	OTHR Contayner. Long-lasting
14115	0839	04	02			FMOP	10	10K00E	OTHR bursts.
14122.5	0810	17	02				600	600	ARQ. DPRK - FSK 600
14123	0908	07	02			FMOP	50	10K00E	OTHR
14132	0951	04	02			FMOP	50	10K00E	OTHR bursts. Burst ca. 5 sec
14146	0815	18	02			FMOP	10	10K00E	OTHR bursts
14149	1552	25	02			FMOP	40	12K00E	OTHR Contayner, long-lasting
14150	0858	05	02			FMOP	50	10K00E	OTHR bursts. Burst ca. 5 sec
14151	0839	17	02			FMOP	50	10k00E	OTHR bursts. Also on 14118 & 14182 kHz. Burst ca. 5sec
14154	0954	12	02			FMOP	10	10K00E	OTHR bursts
14162	1106	15	02			FMOP	40	12K00E	OTHR Contayner. Long-lasting

URE; Gaspar, EA6AMM									
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
14166	0857	25	02			FMOP	10	10K00E	OTHR sweeps. QSY
14170	0826	07	02			J3E-U			Numbers station. Male voice; Russian language. "Test transmission"
14175	0935	23	02			FMOP	50	10K00E	OTHR bursts. Also on 14293 kHz
14176	08:41	06	02			FMOP	40	12K00E	OTHR Contayner. QSY to 14181.5 kHz. Long-lasting
14178	0821	07	02			FMOP	66.66	10K00E	OTHR bursts. Also on 14280 & 14307 kHz
14180	0845	14	02			FMOP	20	160k00E!	OTHR sweeps. BW = 160 kHz!
14180	0728	26	02			FMOP	10	10K00E	OTHR sweeps
14185	0905	11	02			FMOP	50	10K00E	OTHR bursts. Also on 14122 & 14217. BD = 5 sec
14185	0901	14	02			FMOP	10	10K00E	OTHR bursts
14185	0843	17	02			FMOP	10	10K00E	OTHR bursts. QSY along the whole 20 m band
14186	0856	03	02			FIB		200	
14186	0854	18	02			F1B		500HZ	
14206	0757	18	02			J7D	120	2K60E	CIS-12 aka AT3004-D. 12 x 120 Bd. BW lot tone
14234	1239	01	02			FMOP	10	10K00E	OTHR bursts. QSY across the whole 20 m. band
14239	0726	26	02			FMOP	50	10K00E	OTHR, long-lasting
14251	0845	14	02			FMOP	20	160K00E	OTHR sweeps. BW = 160 kHz!
14280	1016	12	02			J3E-U			Numbers station. Female voice
14281	0902	01	02			FMOP	50	10K00E	OTHR bursts. Also on 14320 and 14353 kHz
14285	0856	16	02			FMOP	10	160K0E	OTHR sweeps. BW = 160 Khz !
14285	0804	18	02			FMOP	40	10K00E	OTHR bursts. Also on 14327 & 14334 kHz. Burst ca. 5 sec
14299	0930	23	02			FMOP	66.66	10K00E	OTHR bursts. "Foghorn"
14302	0825	03	02			FMOP	50 / 66.66	10K00E	OTHR Bursts. Burst ca. 5sec. Also on 14340 kHz. Changed from 50 to 66.66 sps
14308	0909	17	02			F1B		500	
14312	0954	04	02			FMOP	50	10K00E	OTHR bursts. Burst ca. 4 sec
14317	0901	06	02			FMOP	50	10K00E	OTHR bursts. burst ca. 5 sec. Also on 14225 kHz
14345	1111	15	02			FMOP	50	10K00E	OTHR Bursts
14347	0811	04	02			FMOP	66.66	10K00E	OTHR bursts. Burst ca 4 sec. Also on 14123 & 14237 kHz
18090	0743	26	02			FMOP	50	20k00E	OTHR, long-lasting

USKA; Peter, HB9CET

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD / sps wpm	SH / BW	DETAILS
80m band informational only! - Amateur co-primary, shared with other also primary allocated services!									
3501.0	1623	05	02			F1B	81	250	CIS 81-81
3510.0 USB	1629	05	02			XX		ca. 3k	unid mysteriousChirps often ca 450Hz spacing
3524.0	1630	05	02			F1B	75	250	
3525.0	1631	05	02			B7D DQPSK	16x75	6k00E	LINK 11 CLEW DSB Mode
3527.0	2207	27	02			F1B	50	200	
3550.0	2212	05	02			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D
3581.8	2218	27	02			G1D PSK8	2400	3K00E	STANAG 4285
3589.8	1634	05	02			G1D PSK8	2400	3K00E	STANAG 4285
3590.0	1638	05	02			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D
3691.0	1557	27	02			F1B	50	200	
3753.8	1647	05	02			G1D PSK8	2400	3k00E	LINK 11 SLEW
3758.8	1643	05	02			G1D	2400	2k7	ALE, MIL 188-110B
3774.0	2221	27	02			J7D	12x120	2k7	PSK-2; CIS12 with a carrier at 3772.0kHz and pilot-tone at 3300Hz
7000.0	2129	04	02			J3E-U		2k1	unident language
7001.0	1304	28	02			OFDM-60 PSK-4A	30	ca 2k80E	tone spacing 44.44Hz; Pilottone
7021.0	1529	26	02			F1B	600	500	
7025.0	1635	18	02			F1B	50	200	
7049.0	1326	28	02			OFDM-60 PSK-4B	30	ca 2k80E	tone spacing 44.44Hz; Pilottone
7051.0	2252	02	02			F1B	50	200	almost daily
7055.0	1528	25	02			J3E-L		ca 3k0E	hate music, singing; statements
7078.0	0900	04	02			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D
7118.0	1520	25	02			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D
7121.0	1543	14	02		811001	MFSK8	125	1750	ALE, MIL 188-141A
7122.0	0901	04	02			F1B	50	200	CIS 50-50 almost dail
7122.0	1523	14	02		RDL	F1A		200	figures and letters often
7134.0	1534	26	02			F1B	50	200	
7140.0	1559	14	02	ERI	VOBM	A3E		~ 9k	BC daily
7142.0	1413	26	02			F1B	75	250	
7150.0	2257	02	02		1028	MFSK8	125	1750	ALE, MIL 188-141A
7151.0	2307	06	02			F1B	75	200	
7192.0	0913	13	02			F1B	75	250	
7193.0	1022	03	02	RUS	RDL	F1B	50	200	TDoA: Kaliningrad almost daily
7193.1	1103	03	02	RUS	RDL	F1A	17 wpm	200	Numbers and letters; encrypted
7197.0	0914	04	02	TUR	var	MFSK8	125	1750	ALE, MIL 188-141A; TUR Network
7198.0	1246	03	02			J7D	12x120	2k7	PSK-2; CIS12 aka AT3004D
7198.3	2331	09	02			PSK4	75		CHN 4+4: 8-tones, spacing 300 Hz between each carrier, 450 Hz between the two middle carriers

USKA; Peter, HB9CET

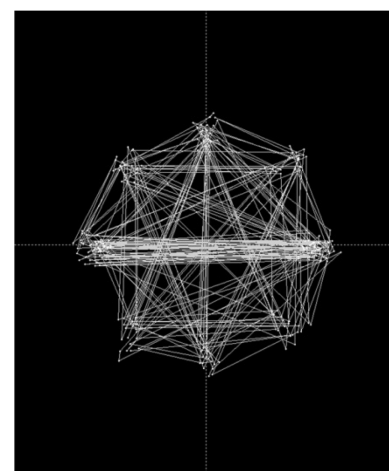
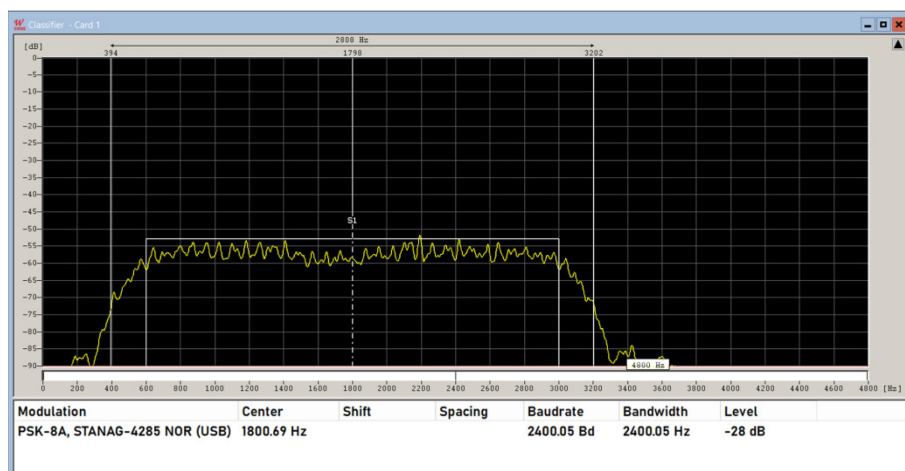
kHz	UTC	DD	MM	ITU	IDENT	MODE	BD / sps wpm	SH / BW	DETAILS
14031.0	0826	14	02			FMOP	50 sps	10k	OTHR; long lasting
14033.0	0902	12	02			FMOP	10 sps	40k	OTHR
14093.0	0852	24	02			FMOP	40 sps	12kOE	OTHR, long lasting; strong fading
14149.0	1556	25	02			FMOP	40 sps	12kOE	OTHR; Contayner 29B6
14151.0	1528	21	02			FMOP	40 sps	12kOE	OTHR; Contayner 29B6
14178.0	0845	14	02			FMOP	10 sps	160k	OTHR (varying frequency)
14186.0	0838	14	02			FMOP	10 sps	160k	OTHR (varying frequency)
14189.0	1500	14	02			FMOP	40 sps	12kOE	OTHR; Contayner 29B6
14192.0	0921	22	02			FMOP	10 sps	160k	OTHR
14250.0	0834	14	02			FMOP	20 sps	160k	OTHR (varying frequency)
14259.0	0958	04	02			FMOP	50 sps	10k	OTHR; Bursts: BD 5s

VERON; Ruud, PG1R

kHz	UTC	DD	MM	ITU	IDENT	MODE	BD /sps	SH / BW	DETAILS
3517.0	1808	17	02	CIS	UicW	A1A			5F
3522.0	1635	02	02		UiPTR	F1B			Ptr
3524.0	2001	02	02	CIS	UiPTR	F1B			Revs
3527.0	2133	17	02	CIS	UiPTR	F1B			Revs/Ptr also 19/2 21.00 UTC
3548.0	1825	15	02		UiPTR	F1B			Ptr
3554.0	2003	02	02		UiPTR	F1B			Ptr
3557.0	2100	25	02		UiPTR	F1B			Ptr
3561.0	2101	25	02		UiPTR	F1B			Ptr
3577.0	2012	02	02	CIS	UicW	A1A			QLW QSA? QRK? QXS AR
3593.6	2056	20	02	RUS	D	A1A			D-beacon
3593.7	2135	17	02	RUS	P	A1A			P-beacon
3594.0	2125	18	02	RUS	A	A1A			A-beacon
3602.0	1803	01	02		UiPtr	F1B		250	Idle
3602.0	1846	19	02		UiPTR	F1B			Ptr also 25/2 21.04 UTC
3622.0	1805	17	02		UiPTR	F1B			Ptr
3657.0	1830	15	02	RUS	V	A1A			V-beacon
3719.0	2005	02	02		UiPTR	F1B			Ptr
3736.0	2029	02	02	CIS	UicW	A1A			5BL ending 513 K
3736.0	2031	02	02	CIS	WYI8	A1A			4HLA de WYI8 QRV K
3797.0	2102	25	02		UiPTR	F1B			Ptr
7015.0	1001	02	02	RUS	RIT	A1A			RLO de RIT QTC 495 34 3 1257 495 = Radio Prognoz 03020 63003 5F
7036.0	1917	25	02		UiPtr	F1B			Ptr idle
7051.0	2010	01	02	RUS	UiPtr	F1B		200	Idle; S5-7
7051.0	2111	09	02	RUS	UiPtr	F1B		200	S4-6
7051.0	2016	24	02	RUS	UiPtr	F1B			Ptr
7055.0	1209	03	02		UiBC	J3E-L			Russian political statements
7055.0	1247	04	02	UKR/ RUS		J3E-L			Comments; S6-8
7055.0	1112	06	02		UiBC	J3E-L			Russian political statements, also on 13/2 14.28 English

7063.5	1434	06	02		UiPtr	F1B		200	S6-9
7122.0	1151	09	02		UiPtr	F1B		200	S7
7122.0	1024	28	02	CIS	UiPTR	F1B			XXX followed by Revs/Ptr
14037.0	1141	17	02	RUS	UiCAR	NON			carrier
14049.0	1100	05	02	RUS	UiPtr	F1B		250	East Russia TD0A
14148.0	1556	24	02	RUS	OTHR	FMCW			Radar, TD0A 52N 34E
18090.0	1427	25	02		OTHR	FMCW			radar

Analysis of a STANAG 4285 Signal



Classifying a STANAG 4285 8-PSK signal

Phase plane

STANAG-4285 is specified by NATO. The modulation technique used in this mode consists of phase shift keying (8-PSK) of a single tone sub-carrier of 1800 Hz. It consists of several sub modes (75-2400 bps) and two different interleaving options. The modulation speed (symbol rate) is always 2400 Bd.

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

Visit the new IARU-R1 Web with our also newly created IARU MS Monitoring pages!

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

Contacts: Peter Jost HB9CET hb9cet@iaru-r1.org
 Gaspar Miró EA6AMM ea6amm@gmail.com