



# Monitoring System

DK2OM – Wolf Hadel  
Co-ordinator of IARUMS Region 1  
Editor of the Newsletter

HB9CET – Peter Jost  
Vice Co-ordinator of IARUMS Region 1

The monthly newsletter for Region 1

## July 2017

### The 30 members of the IARUMS Region 1 Monitoring Team:



### Acknowledgements

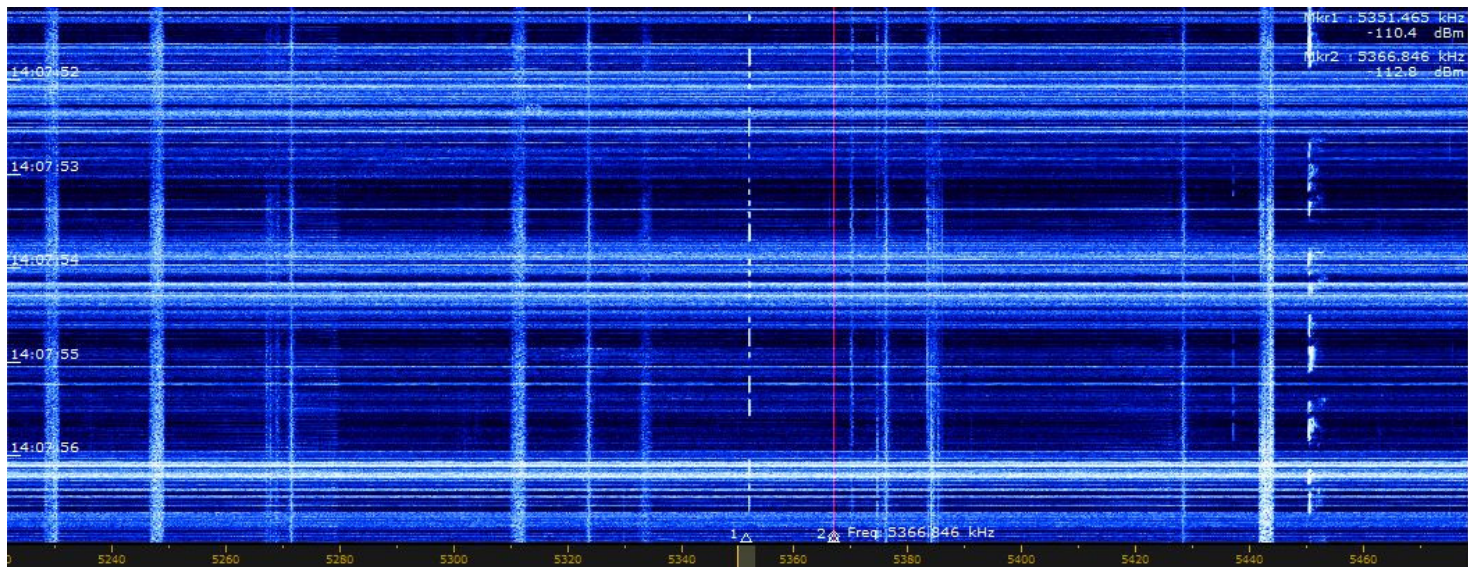
ARAT: 3V8CB – Ahmed ++ ARI: DH7SA – Salvatore ++ ARSK: 5Z4BV - Kamweti ++ DARC: DK2OM – Wolf ++ EARS: A61M – Obaid ++ ERASD: SU1SA – Sayed ++ HRS: 9A5DGZ – Gianluca ++ IARC: 4Z1AB – Amos ++ IRTS: EI3GYB - Michael KARS: 9K2RR – Faisal ++ MARL: 9H1M – Dominic ++ MRASZ: HA7PL - Laci ++ NARS: 5N9AYM – Yusuf ++ NRRL: LA4EU – Hans Arne ++ OEVS: OE3GSA – Gerd ++ PZK: SP9BRP – Jan ++ RAL: OD5RI – Riri ++ REF: F5MIU – Francis ++ REP: CT4AN – Jose ++ ROARS: A41MA - Younis ++ RSGB: G0MGX - Mark ++ SARL: ZS6NS - James ++ SRAL: OH2BLU - Pekka ++ SSA – Ullmar ++ UBA: ON8IM – Ivan ++ URE: EB1TR - Fabian ++ USKA: HB9CET - Peter ++ VERON: PA2GRU - Dick ++ ZRS: S56ZDB – Darko ++ G3VZV – Graham (satellite) ++ TG9ADV – Jorge (Co-ordinator Region 2) ++ YB3PET – Titon (Co-ordinator Region 3) ++ DF8FE – (Webmaster assis.) ++ DL8AAM (ALE) ++ DJ7KG (BUOYS) ++ DF5SX (BC) ++ DARC (server support) ++ OD5TE (Hani) ++ VE6SH – Tim (IARU President) ++ 9K2RR – Faisal (EC-IARU-R1 ++ **unofficial members:** YO9RIJ – Petrica ++ ASTRA - DL1BDF - Mustapha ++ PTTs: BAKOM (Swiss) ++ OFCOM (UK) ++ Dutch AT

# Part 1: News and Infos

## 1. Thunderstorms spoiled observations

Due to many electrical discharges by thunderstorms (QRN) the intruder investigation on all bands was rather difficult and sometimes impossible. Especially the lower bands were concerned.

The screenshot below shows the situation on 5350 kHz on July 30<sup>th</sup> at 1407 UTC. Screenshot: DK2OM

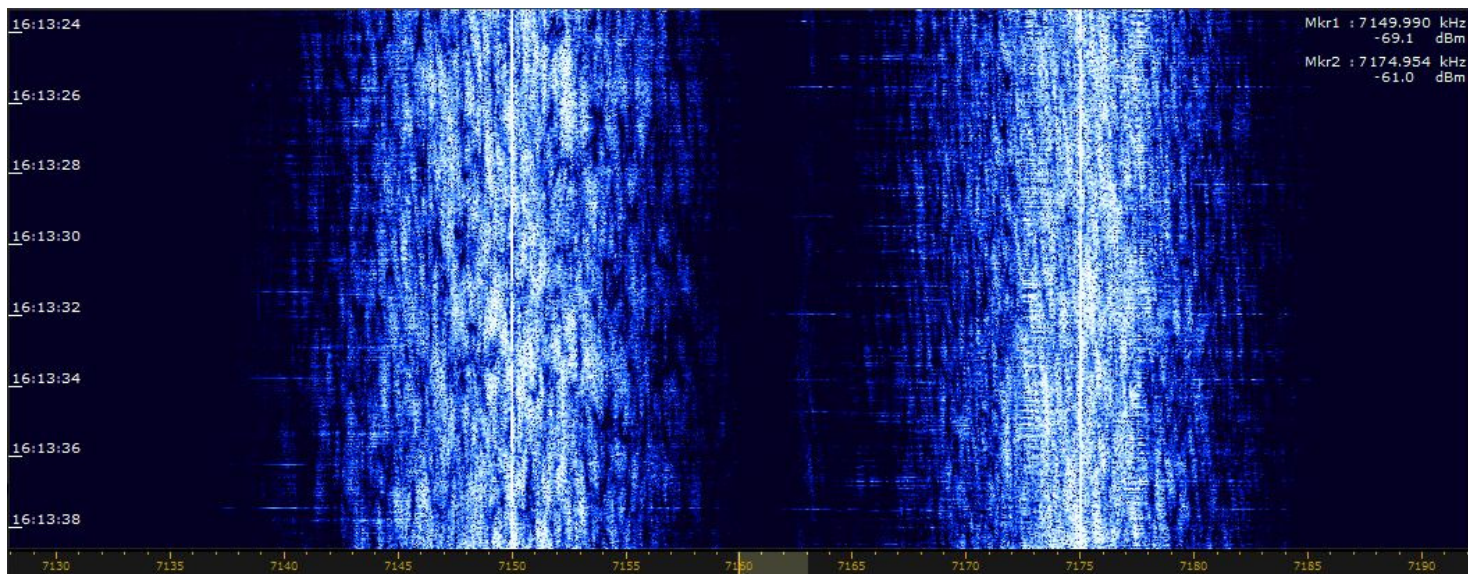


5350

## 2. Radio Eritrea and QRM by Radio Ethiopia on 7 MHz

The hostile brothers were daily active on 7150 and 7175 kHz. Earlier complaints were not regarded. No change.

Screenshot: DK2OM on July 7<sup>th</sup> at 1613 UTC



7150

7175

## 3. HAMRADIO 2017 – Monitoring Meeting DARC and IARUMS Region 1

About 100 Hams visited our meeting. Even our friend Ralph from Philippines came to our meeting as every year.

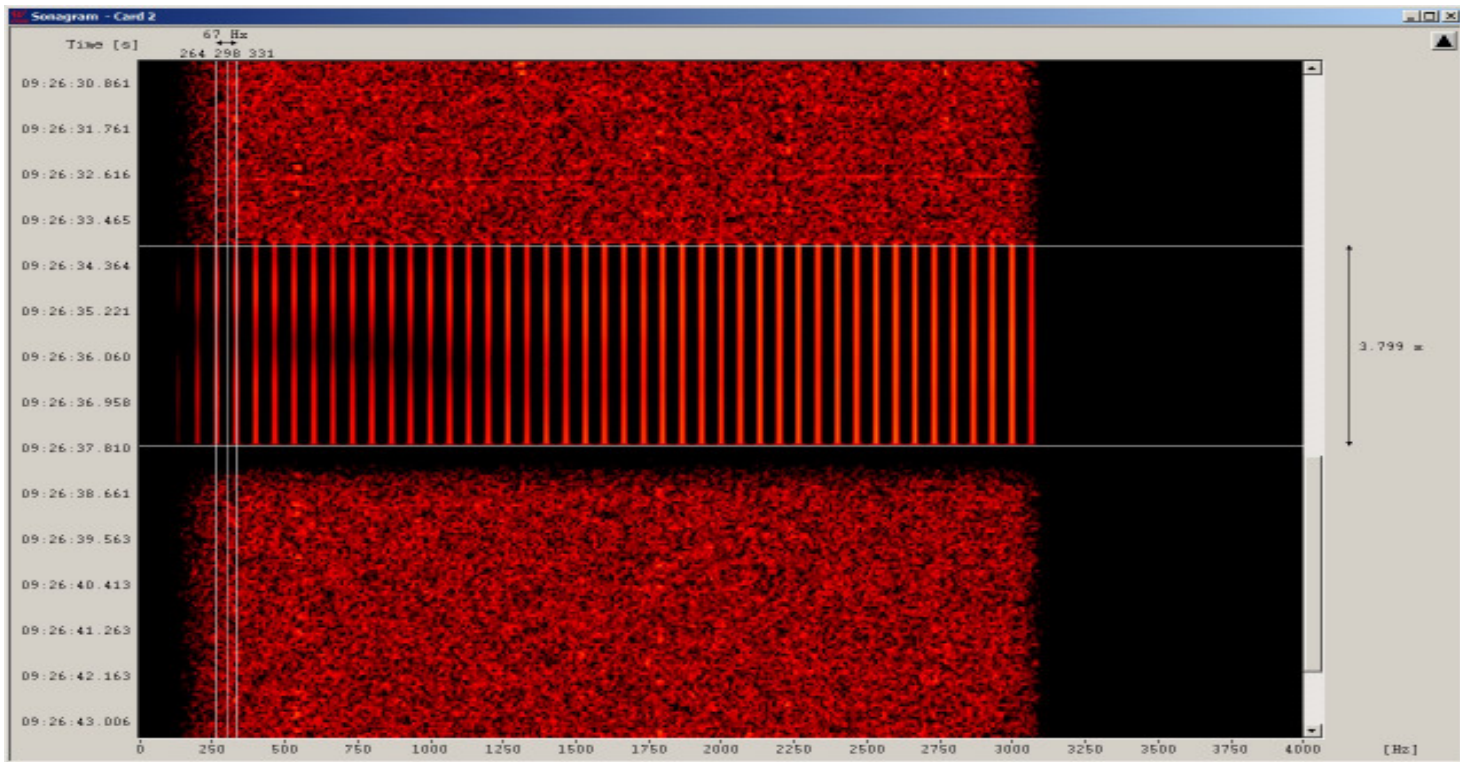


Prof. Dr. Wolfgang Skupin gave an excellent presentation about "Wireless navigation systems on 9 kHz - 30 MHz".

Photo: DK2OM

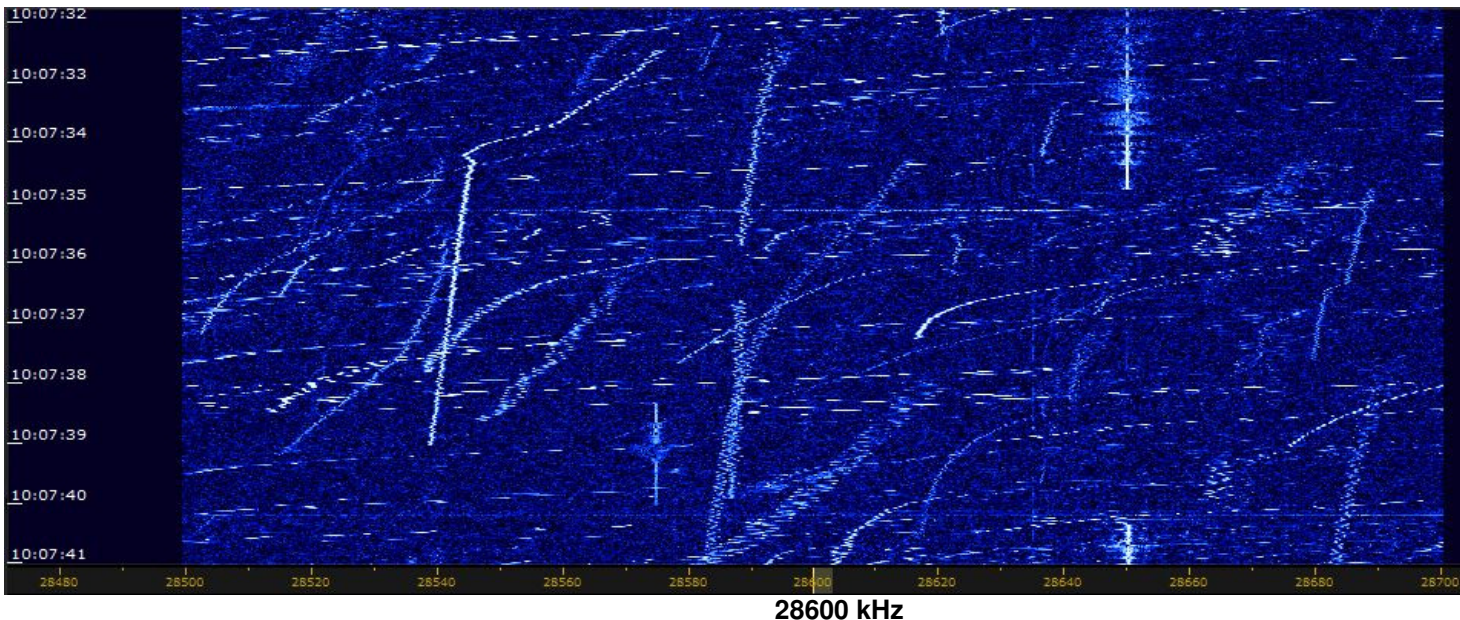
#### 4. Measuring the duration of an OTH radar burst

Measuring the duration of a radar burst is an easy job with Wavecom W-Code. The difference between the horizontal lines shows the duration of the burst, 3.799 sec. The signal below is a Chinese foghorn burst with 66.66 sps (PRF 66.66) on 21308 kHz on July 25<sup>th</sup> at 0926 UTC. Screenshot: DK2OM with W-Code



#### 5. Downchirps from OTH radars in Region 3

You can see many downchirps on 28 MHz in Region 3 on my next screenshot. July 25<sup>th</sup> via remote.



#### 6. Miscellaneous or bad news:

- 7120.0 kHz – Radio Hargaysa Somalia – as usual
- 7150.0 kHz and 7175 kHz – Radio Eritrea and white noise QRM by Radio Ethiopia
- 14295.0 kHz - Radio Tajik (harmonic from 4765 kHz) – no change
- 18080.0 kHz – Sound of Hope - Taiwan
- 21438.0 kHz – Russian Navy Sevastopol on A1A - as usual

#### 7. Homepage IARU Region 1

Homepage IARUMS Region 1

Homepage IARUMS Region 2

Homepage IARUMS Region 3

Intruderlogger Region 1

ITU-Monitoring Reports

<http://www.iaru-r1.org/>

<http://www.iarums-r1.org>

<http://www.iaru-r2.org/>

<http://iaru-r3.org/iaru-region-3-monitoring-system-newsletter/>

<http://peditio.net/intruder/bluechat.cgi>

<http://www.itu.int/en/ITU-R/terrestrial/monitoring/Pages/Regular.aspx>

## Part 2: Detailed reports of the national Co-ordinators

DD = day \*\*\* MM = month \*\*\* dly = daily \*\*\* vt = various times \*\*\* vd = various days \*\*\* BD = Baud \*\*\* SH = shift \*\*\* SP = spacing \*\*\* Mode = mode of transmission \*\*\* A3E = AM \*\*\* A1A = CW \*\*\* J3E-U = USB \*\*\* J3E-L = LSB \*\*\* FSK (F1B) = frequency shift keying \*\*\* PSK = phase shift keying \*\*\* OFDM = orthogonal frequency division multiplex  
**ALE (MIL-188-141A)** = automatic link establishment \*\*\* **MUX** = multiplex \*\*\* **Ui (unid)** = unidentified \*\*\* **Illicit** = illegal \*  
**UiILL** = unidentified illegal \*\*\* **BC** = broadcast \*\*\* **MIL** = military \*\*\* **PTR** = printer \*\*\* **NGO** = non governmental organization \*\*\* **ITU** = ITU country abbreviation \*\*\* **PRC** = People's Republic of China \*\*\* **PLA** = People's Liberation Army \*\*\* **MFA** = Ministry of Foreign Affairs \*\*\* **MOI** = Ministry of Interior \*\*\* **MOPO** = Ministry of Public Order \*\*\* **IARUMS** = IARU Monitoring System \*\*\* **UTC** = Universal Time Coordinated \*\*\* **PRF** = pulse repetition frequency (radar) = **sps** \*\*\* **sps** = sweeps/sec (radar systems) \*\*\* **FMCW** = frequency modulated continuous wave (OTH radars)  
**FMOP** = frequency modulation on pulse (OTH radars) \*\*\* **5BL** = cyrillic 5 lettergroups

### ARSK – Kenya – 5Z4BV (Kamweti)

#### DARC 1 – Germany – DG0JBJ (Mario) – OTH radar intrusions

DG0JBJ (Mario) observed 4 OTH radars on 40 m, 9 OTH radars on 20 m, 6 OTH radars on 17m, 2 OTH radars on 15 m and 8 OTH radars on 10 m in July 2017.

#### DARC 2 – Germany - DK2OM (Wolf)

FSK transmissions -> center frequency between mark and space

PSK transmissions -> center QRG - ALE (MIL188-141A) -> USB QRG

exclusive bands -> black – shared bands -> blue - voice traffic -> green - BC -> red

SH = shift - SP = spread (radar) – SPS = sweeps/sec (radar)-> (aka PRF)

DK2OM	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/SP	DETAILS
DK2OM	3,5 – 50 MHz	1942	09	07	D		QRM			3.5 - 50 MHz intentionally disturbed by a neighbouring LED lamp – sometimes daily - various times
DK2OM	1812,0	ady	dly	07	RUS		USB LSB			14 tones – hyperbolic radio navigation system – RS-10 – Kaliningrad – no carrier - daily, all day
DK2OM	1852,0	vt	dly	07	I	IPP	USB			Palermo Radio, weather reports
DK2OM	1855,0	vt	dly	07	I	IQP	USB			San Benedetto Radio, weather reports
DK2OM	1876,0	vt	dly	07	I	IQN	USB			Lampedusa Radio, weather reports
DK2OM	1888,0	vt	dly	07	I	IPD	USB			Civitavecchia Radio, weather reports
DK2OM	1896,5	ady	dly	07	D		PSK8	2400	2400	Stanag4285 – 600 bps long – German Navy – daily, all day
DK2OM	1925,0	vt	dly	07	I	IPL	USB			Livorno Radio, weather reports
DK2OM	3503,5	vt	dly	07	G	no ITU	FSK8	125	1750	ALE – “XSS” “XPU” “XJR” – British MIL Tascomm – vt, daily - legal!
DK2OM	3525,0	---	--	07	F		PSK4	75	5800	LINK11-CLEW on both sidebands (5800 Hz wide) – area of Marseille – legal!
DK2OM	3527,0	2000	dly	07	RUS		F1B	50	200	Severomorsk - daily
DK2OM	3531,0	2030	02	07	RUS	REA4	N0N			unclean carrier - RUS airforce Moscow, ident: 1940 utc - daily
DK2OM	3532,0	---	--	07	F		PSK4	75	5800	LINK11-CLEW on both sidebands (5800 Hz wide) – area of Brest – legal!
DK2OM	3550,0	0730	dly	07	F		A3E			French amateurs not respecting bandplans - daily
DK2OM	3550,0	vt	vd	07	ALG	no ITU	FSK8	125	1750	ALE, “IU50” “IU52” “FN50”
DK2OM	3550,7	vt	vd	07	ISR		PSK4 PSK8	75 2400	2400 2400	hybrid modem – ISR Navy – PSK4 parallel and PSK8 serial - legal operation!

DK2OM	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/SP	DETAILS
DK2OM	3553,8	ady	dly	07	TUR		PSK8	2400	2400	Stanag4285 – 600 bps long -TUR MIL - Ankara – daily, all day - legal operation
DK2OM	3576,6	ady	dly	07	I	IZ3DVW	A1A			3576.550 - uncoordinated beacon – disturbing JT65
DK2OM	3585,0	ady	dly	07	TWN	HLL	F1C		800	WX-fax Taiwan - 120 rpm, IOC 576, - daily, all day - legal!
DK2OM	3586,0	1800	dly	07	G		PSK2A	40	40	encrypted – every evening Great Britain – purpose unknown
DK2OM	3587,0	vt	vd	07	E	no ITU	FSK8	125	1750	ALE, “TVV” “TXX” - Spanish Guardia Civil
DK2OM	3593,7	---	--	07	RUS	D	A1A			Cluster beacon – Sevastopol RUS Navy – “RCV”
DK2OM	3593,8	---	--	07	RUS	P	A1A			Cluster beacon – Kaliningrad RUS Navy – “RMP”
DK2OM	3593,9	---	--	07	RUS	S	A1A			Cluster beacon – Severomorsk RUS Navy – „RIT“
DK2OM	3594,0	---	--	07	RUS	C	A1A			Cluster beacon C - Moscow RUS Navy - “RIW”
DK2OM	3594,2	---	--	07	RUS	F	A1A			Cluster beacon F - Vladivostok RUS Navy - “RJS”
DK2OM	3595,0	---	--	07	RUS	K	A1A			Cluster beacon - Petropavlovsk Kamchatskiy - RUS Navy - Pacific fleet - “RCC”
DK2OM	3596,0	vt	dly	07	SUI		FSK8	125	1750	ALE, “HB9MHB just for info!
DK2OM	3596,0	vt	dly	07	J		FSK8	125	1750	ALE, “JH1ESB” – just for info!
DK2OM	3617,0	vt	dly	07	HRV	9A5EX	FSK8	125	1750	ALE, “9A5EX” – HAM-ALE - just for info
DK2OM	3622,5	ady	dly	07	J	JMH	F1C		800	Tokyo Meteo – 120 rpm – IOC 576 – daily, all day - legal!!!
DK2OM	3642,0	ady	dly	07	CHN		A1A			loop – DKG6 de 3A7D Chinese military – daily, all day
DK2OM	3649,0	vt	vd	07	ALG	no ITU	FSK8	125	1750	ALE, “BI20” PA20”
DK2OM	3718,0	vt	vd	07	FEa	7CJK	A1A			loop “7CJK”
DK2OM	3720,0	vt	dly	07	S		FSK8	125	1750	ALE, “YU” “YT” “YV” “DZ” – Swedish MIL
DK2OM	3756,0	2000	dly	07	RUS		A3E			RUS MIL – channel marker – Tuapse – East Black Sea – night QRG – daily – even audible in Japan
DK2OM	3757,0	ady	dly	07	FEa	RIS9	A1A			“M8JF de RIS9” - loop
DK2OM	3772,0	ady	dly	07	FEa	A4JC	A1A			“A4JC” - loop
DK2OM	3777,0	vt	dly	07	FEa		A1A			“M8JF de RIS9” – loop – dly
DK2OM	3791,0	vt	vd	07	D	DK0ESD	FSK8	125	1750	ALE, “DK0ESD” – daily - just for info!
DK2OM	3797,0	ady	dly	07	FEa		A1A			“M8JF de RIS9” – loop
DK2OM	5350,0	1940	28	07	E		USB			Spanish fishery – just for info
DK2OM	6998,5	vt	dly	07	POL		FSK8	125	1750	MIL-188-141A – “BU2” “OD6” “OL1” “SZ4” “ZE2” “MA3” until 7001.0 kHz – also voice traffic male and female - Polish MIL
DK2OM	7001,5	ady	dly	07	POL		PSK8	2400	2400	RF QRG 6998.5 kHz – 7000.3 kHz center - MIL-188-110A – 600 / 300 bps short – Polish MIL
DK2OM	7005,0	ady	dly	07	INS		USB LSB			Indonesian pirates
DK2OM	7007,8	1840	19	07	AUS		F1B	100	170	Codan-Selcal
DK2OM	7010,0	ady	dly	07	INS		USB LSB			Indonesian and Philippine pirates
DK2OM	7010,0	vt	vd	07	ALB	no ITU	FSK8	125	1750	ALE, “RS0” - Tirana
DK2OM	7010,0	1316	19	07	RUS		PSK2A	120	2600	AT3004D - Moscow
DK2OM	7011,0	0710	23	07	RUS		PSK2A	120	2600	AT3004D - Stavropol
DK2OM	7015,0	ady	dly	07	INS		USB LSB			Indonesian pirates
DK2OM	7018,0	---	--	07	RUS	REA4	F1B	100	800	mostly idling – Russian airforce Moscow – ident at full

DK2OM	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/SP	DETAILS
										hour + 41 min. on F1A
DK2OM	7020,0	vt	vd	07	ALB		FSK8	125	1750	ALE, "CS004A" "RS004D" "CS004" - daily
DK2OM	7022,0	0805	12	07	RUS		PSK2A	120	2600	AT3004D - Moscow
DK2OM	7023,0	1850	07	07	FEa		FMOP		32k	Codar like ocean surface radar 2.6 sps – 7023 – 7055 kHz
DK2OM	7025,0	ady	dly	07	INS		USB LSB			Indonesian pirates
DK2OM	7027,5	---	--	07	UKR	„V“	A1A			beacon "V" – Kyiv
DK2OM	7030,0	ady	dly	07	INS		LSB USB			Indonesian pirates
DK2OM	7030,0	1638	25	07	FEa		FMOP		32k	Codar like ocean surface radar 2.6 sps – 7030 – 7062 kHz
DK2OM	7039,0	---	--	07	RUS	C	A1A			Cluster beacon C - Moscow RUS Navy - "RIW"
DK2OM	7039,2	---	--	07	RUS	F	A1A			Cluster beacon F - Vladivostok RUS Navy - "RJS"
DK2OM	7039,3	2103	02	07	RUS	D	A1A			Cluster beacon D Petropavlovsk Kamchatskiy - RUS Navy - Pacific fleet - "RCC" - daily
DK2OM	7039,4	ady	dly	07	RUS	M	A1A			Cluster beacon M – Magadan RUS Navy – „RTS“
DK2OM	7040,0	ady	dly	07	I		A1A			<b>IZ3DVW – uncoordinated and unwanted beacon</b>
DK2OM	7040,5	vt	dly	07	HRV		FSK8	125	1750	ALE, "9A5EX" "9A0ALE" – just for info
DK2OM	7047,37	vt	vd	07	D		FSK8	125	1750	ALE, "DL0NOT" – just for info!
DK2OM	7048,0	1705	19	07	FEa		FMOP		32k	Codar like ocean surface radar 2.6 sps – 7048 – 7080 kHz
DK2OM	7049,5	vt	dly	07	HRV G F	9A0ALE M1DFO F6BAZ	FSK8	125	1750	Amateur ALE, just for info! daily – various times
DK2OM	7050,0	vt	dly	07	RUS UKR		LSB			music transmissions – private war ?
DK2OM	7050,0	vt	dly	07	KGZ		FSK8	125	1750	ALE, "X" "810" "820615" "810698" – Kyrgyzstan MIL
DK2OM	7050,0	1616	10	07	IRN		FMOP		35k	radar Iran – 337 sps - 7031 – 7066 kHz
DK2OM	7060,0	1823	06	07	FEa		FMOP		32k	Codar like ocean surface radar 2.6 sps – 7060 – 7092 kHz
DK2OM	7070,0	vt	vd	07	GEO	no ITU	FSK8	125	1750	ALE, "MV" "244" "686" "334" "204" "571" – daily active
DK2OM	7088,8	---	--	07	S	SL0FRO	A1A			7088.830 kHz - cw-trainee, Sweden - SL0FRO - just for info!
DK2OM	7089,8	---	--	07	TUR CYP		PSK8	2400	2400	Link11 - SLEW – aircraft – west of Cyprus
DK2OM	7091,5	---	--	07	KAZ	„V“	A1A			7091.543 kHz - loop with spurious – ident "V" – Almaty - Kazakhstan
DK2OM	7096,0	1600	16	07	FEa		FMOP		32k	Codar like ocean surface radar 2.6 sps – 7096 – 7128 kHz
DK2OM	7099,5	vt	dly	07	HRV	9A0ZG	FSK8	125	1750	ALE, "9A0ZG" "9A5EX1P" "9A0OS" – daily - just for info!
DK2OM	7102,0	vt	dly	07	TWN		FSK8	125	1750	ALE, "BV4AS" – just for info!
DK2OM	7102,0	vt	vd	07	HRV SUI D	9A0MIL	FSK8	125	1750	ALE, "9A3MIL" "9A2KS" "HB9MHB" "9A0ZG" "9A4OS" "DK0ESD" – just for info!
DK2OM	7102,0	0817	01	07			F1B	75	200	disturbed by German HAM on the space-QRG
DK2OM	7102,0	vt	dly	07	J		FSK8	125	1750	ALE, "JH1ESB" – just for info!
DK2OM	7110,0	vt	dly	07	HRV	9A0ALE	FSK8	125	1750	ALE, "9A0ALE" – just for info
DK2OM	7111,0	1925	26	07	RUS		F1B	75	250	Moscow
DK2OM	7113,8	1833	02	07	AUS		F1B	100	170	Codan-Selcal – 3333 - 9211
DK2OM	7117,0	---	--	07	RUS	REA4	F1B	100	1000	mostly idling – Russian airforce Moscow – ident on CW at 1640

DK2OM	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/SP	DETAILS
										utc on the mark-QRG
DK2OM	7118,0	2013	10	07	RUS		PSK2A	120	2600	AT3004D - Moscow
DK2OM	<b>7120,0</b>	<b>vt</b>	<b>dly</b>	<b>07</b>	<b>SOM</b>		<b>A3E</b>		<b>9k</b>	<b>Radio Hargaysa – Somalia – daily – even audible in Australia and Japan</b>
DK2OM	7137,0	vt	dly	07	TWN		FSK8 LSB	125	1750	ALE, “DEGDG” “DRYHD” “DCOY” “DSQLK” “DEIQW” “DETWY” Taiwanese navy – daily
DK2OM	7137,0	1950	27	07			FMOP		32k	Codar like ocean surface radar 2.6 sps – 7137 – 7169 kHz
DK2OM	<b>7150,0</b>	<b>1609</b>	<b>10</b>	<b>07</b>	<b>ERI ETH</b>		<b>A3E</b>		<b>9k</b>	<b>Radio Eritrea disturbed by Radio Ethiopia by white noise emissions - daily</b>
DK2OM	7160,0	1916	31	07	FEa		FMOP		32k	Codar like ocean surface radar 2.6 sps – 7160 – 7192 kHz
DK2OM	<b>7175,0</b>	<b>1611</b>	<b>10</b>	<b>07</b>	<b>ERI ETH</b>		<b>A3E</b>		<b>9k</b>	<b>Radio Eritrea disturbed by Radio Ethiopia by white noise emissions - daily</b>
DK2OM	7179,0	2054	11	07	RUS		PSK2A	120	2600	AT3004D – Russian ship – Turkish west coast
DK2OM	7182,0	0730	19	07	RUS		PSK2A	120	2600	AT3004D - Moscow
DK2OM	7183,0	vt	dly	07	SUI		FSK8	125	1750	ALE, “HB9MHB” – just for info!
DK2OM	7185,5	vt	dly	07	D HRV		FSK8	125	1750	ALE, “9A5EX” “DK0ESD” just for info - daily
DK2OM	<b>7200,0</b>	<b>vz</b>	<b>dly</b>	<b>07</b>	<b>CHN TWN</b>		<b>A3E/BC</b>		<b>9k</b>	<b>Chinese jammer disturbing Taiwan BC</b>
DK2OM	10100,8	ady	dly	07	D		F1B	50	450	Baudot - German Weatherservice – legal!
DK2OM	10110,0	vt	dly	07	SNG	no ITU	FSK8	125	1750	ALE, “CN6” “68” – Singapore Navy - Changi Naval Base
DK2OM	10112,0	---	--	07	I		PSK8A	2400	2400	Stanag-4285 – 600 bps long – area of Rome - daily
DK2OM	10113,0	vt	vd	07	TUN	no ITU	FSK8	125	1750	ALE, “TUD” “STAT5” “STAT154”
DK2OM	10114,0	vt	dly	07	ALG	no ITU	FSK8	125	1750	ALE, “BSF” “ZEN” “CM2OR2”
DK2OM	10114,8	0640	dly	07	RUS		F1B	100	1000	CIS14 – Moscow - daily
DK2OM	10115,0	vt	dly	07	MRC	no ITU	FSK8	125	1750	ALE, “100” “114” “203” “XXZ” – Western Sahara
DK2OM	10116,5	---	--	07	AFS		F7D	54.3	2120	MHF50 – 33 tones - South African navy
DK2OM	10120,0	vt	dly	07	ALG	no ITU	FSK8	125	1750	ALE, “CM6” “01012016”
DK2OM	10123,0	vt	dly	07	ALG	no ITU	FSK8	125	1750	ALE, “CM3” “COF” “BSF” “CM2” “ESA” – Algerian Airforce
DK2OM	10129,0	vt	dly	07	ALG	no ITU	FSK8	125	1750	ALE, “CM1” “CTF” “772”
DK2OM	10136,0	vt	dly	07	ALG	no ITU	FSK8	125	1750	ALE, “CM3” “BLD” “CNC” “TF2”
DK2OM	<b>10144,0</b>	<b>ady</b>	<b>dly</b>	<b>07</b>	<b>D</b>	<b>DK0WCY</b>	<b>A1A</b>			<b>10144.000 kHz - DK0WCY – German aurora beacon – just for info!</b>
DK2OM	10145,5	vt	dly	07		JH1ESB	FSK8	125	1750	ALE, “JH1ESB” - just for info - daily
DK2OM	10145,5	vt	dly	07	TWN AUS	BV4AS	FSK8	125	1750	ALE, “BV4AS” “VK4SAA” – just for info!
DK2OM	14008,0	0810	19	07	RUS		F1B	50	250	Moscow
DK2OM	14060,0	1419	09	07	ISR		FSK8	125	1750	ALE, “AAA”
DK2OM	14100,0	vt	dly	07	ALG	no ITU	FSK8	125	1750	ALE, “6206” “6204” “6212” “6202” “6203” “6207” “6217” “MTL” “IJP” – Mauritanian border – daily, all day
DK2OM	14104,0	0923	03	07	CHN		FMOP		10k	Chinese OTH radar – 50 sps – 5 sec bursts
DK2OM	14108,0	---	--	07	RUS		A1A			RUS MIL - area of Moscow – many spurious emissions
DK2OM	14109,0	vt	dly	07	TWN	HAM	FSK8	125	1750	ALE, “BV4AS” – daily - just for

DK2OM	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/SP	DETAILS
										info!
DK2OM	14109,0	vt	dly	07	INS	HAM	FSK8	120	1750	ALE, "YD00XH" – just for info!
DK2OM	14109,0	vt	dly	07	S HRV D		FSK8	125	1750	ALE, "SM3FXL" "9A4OS" "9A3BRV" "DK0ESD" - just for info!
DK2OM	14109,0	1741	28	07	J		FSK8	125	1750	ALE, "JH1ESB" – just for info
DK2OM	14112,0	1544	27	07	RUS		PSK2A	120	2600	AT3004D - Stavropol
DK2OM	14118,8	1614	24	07			F1B	600	600	DPRK-FSK 600
DK2OM	14120,0	1550	27	07	RUS		F1B	43.6	250	idle – east of Krasnoyark
DK2OM	14123,0	0917	08	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 66.66 sps – 7.6 sec bursts
DK2OM	14137,0	0840	06	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 66.66 and 41.66 sps – 15 sec double bursts
DK2OM	14141,0	0737	06	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 66.66 sps – 7.6 sec bursts
DK2OM	14148,0	0808	30	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 66.66 sps – 3.8 sec bursts
DK2OM	14155,0	0840	08	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 66.66 sps – 7.6 sec bursts - jumping
DK2OM	14160,0	vt	dly	07	MRC		FSK8	125	1750	ALE, "9204" "9228" "9236"
DK2OM	14162,0	1417	10	07	RUS		PSK2A	120	2600	AT3004D - Krasnoyarsk
DK2OM	14175,0	0849	06	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 41.66 sps – 6 sec bursts
DK2OM	14181,0	0936	29	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 66.66 sps – 3.8 sec bursts
DK2OM	14183,0	0915	08	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 66.66 sps – 3.8 sec bursts
DK2OM	14185,0	0804	30	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 63 sps – 7.6 sec bursts
DK2OM	14192,0	vt	vd	07	RUS		F1B	50 75 50 100 100	500 500 200 500 200	RUS navy Kaliningrad - daily
DK2OM	14201,8	0930	22	07	CHN		PSK2	75	2200	PRC 16 tone modem – RF 14200.0 kHz - China – Shanghai - daily
DK2OM	14212,0	---	--	07	UKR		A3E			female voice with encrypted msgs – figures – "SZRU" = Foreign Intelligence Service of Ukraine in Rivne – heard by MOODV
DK2OM	14220,5	1457	18	07	RUS		F1B	1200	600	DPRK-FSK 1200 – DPRK emba Moscow
DK2OM	14221,0	2000	dly	07	KGZ		F1B	50	200	CIS-50-50 - Bishkek – daily – – mostly idling
DK2OM	14223,5	1657	05	07	EGY		PSK4A SITOR A	75 100	1690 170	Codan-9001 and Sitor A (14223.7 kHz – EGY MFA Cairo calling "TVVX" = EGY emba Algiers)
DK2OM	14237,4	1028	05	07	RUS		OFDM	35.55	2760	OFDM 60 – PSK8B
DK2OM	14240,0	1034	05	07	RUS		F1B	75	200	
DK2OM	14247,0	1022	08	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 66.66 sps – 3.8 sec bursts
DK2OM	14260,0	vt	dly	07	SRB	YU1BI	FSK8	125	1750	ALE, "YU1BI" – just for info!
DK2OM	14260,9	1028	05	07	RUS		OFDM	35.55	2760	OFDM 60 – PSK8B - Moscow
DK2OM	14272,0	---	--	07	RUS	RCV	A1A			RUS Navy Sevastopol
DK2OM	14284,6	1034	05	07	RUS		OFDM	35.55	2760	OFDM 60 – PSK8B
DK2OM	14295,0	vt	dly	07	SRB	YU1BI	FSK8	125	1750	ALE, "YU1BI" – just for info!
DK2OM	14295,0	ady	dly	07	TJK		A3E		9k	3 <sup>rd</sup> from Radio Tajik on 4765 kHz – daily, all day
DK2OM	14303,0	0830	21	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 66.66 sps – 3.8 sec bursts
DK2OM	14309,0	0837	08	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 66.66 sps – 7.6 sec bursts -



DK2OM	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/SP	DETAILS
										jumping
DK2OM	14318,0	0920	10	07	RUS		A1A			encrypted – RUS MIL - Crimea
DK2OM	14331,5	1255	26	07	EGY		F1B	600	600	DPRK-FSK 600 – DPRK emba Cairo
DK2OM	14340,0	---	--	07	RUS		PSK2A	120	2600	AT3004D – Vladivostok with spurious emissions +/- 35 kHz and +/- 70 kHz - daily
DK2OM	14345,0	0837	21	07	CHN		FMOP		10k	Chinese OTH radar – 50 sps – 5 sec bursts
DK2OM	14346,0	vt	dly	07	POR		FSK8	125	1750	ALE, “CT2IXQ” just for info – various times, daily
DK2OM	14348,0	vt	dly	07	THA	HS0ZEA	A1A			HS0ZEA beacon – 14347.950 kHz - every 5 minutes – daily - just for info!
DK2OM	14351,6	2016	24	07	E		OFDM PSK4A	30	2700	OFDM 73 + intro tone – HFD+VL - experimental transmissions – Las Palmas – just for info!
DK2OM	18080,0	0730	daily	07	TWN		A3E/BC			Sound of Hope – Taiwan and Chinese BC jammer – daily at 06 utc and later
DK2OM	18100,0	vt	dly	07	MRC	no ITU	FSK8	125	1750	ALE, “A2” “A4” “A5” “A7” “S6” – “C3” “R3” “G401” “CD” “09” “G2” “LG6” “G301” “ELJADIDNET4” - daily, various times
DK2OM	18106,0	vt	vd	07	POR	CT2GOY	FSK8	125	1750	ALE, “CT2GOY” – just for info!
DK2OM	18106,2	vt	dly	07	TWN		FSK8	125	1750	ALE, “BV4AS” – just for info!
DK2OM	18107,0	vd	vt	07	RUS	RDL	F1B	50	200	CIS-50-200 - Moscow – idle and traffic – daily - Russian navy – shared band!
DK2OM	18117,5	vt	vd	07	POR	CT2IXQ	FSK8	125	1750	ALE, “CT2IXQ” – just for info
DK2OM	18140,0	vt	dly	07	SRB	YU1BI	FSK8	125	2600	ALE, “YU1BI” – just for info!
DK2OM	18150,0	---	--	07	RUS		F1B	100	1000	harmonic from 9075 (100 Bd, 500 Hz) - Kaliningrad
DK2OM	21000,0	vt	vd	07	B		USB			Brazilian pirates – Rio de Janeiro with North Brazil – very often
DK2OM	21000,0	---	--	07	SDN		USB			MFA Sudan – Khartoum with emba Yemen – voice traffic
DK2OM	21002,2	---	--	07	SDN	!0000 !9999 !8888	F1B	100	170	21002.15 kHz - Pactor 1 encrypted – MFA Sudan – Khartoum with emba Yemen
DK2OM	21096,0	vt	dly	07	INS	YD00XH	FSK8	125	1750	ALE, “YD00XH3” – daily, various times - just for info!
DK2OM	21096,0	vt	vd	07	G		FSK8	125	1750	ALE, “M1DFO” – just for info!
DK2OM	21145,0	vt	dly	07	MRC	no ITU	FSK8	125	1750	ALE, “A” “B301” “C3”, “IR4” “H4” “IR6” “T4” “E4” “A2” “CD” “K3” “KB2” “J5” “J52” “GR2” “GS4” “R3” “R301” “R33” “R8” “R5” “Y1” “S51” “S3” “S4” “S512” “S552” “G2” “G501” - various times, daily
DK2OM	21145,8	ady	dly	07	I	IZ3DVW	A1A			IZ3DVW beacon – 21145,790 kHz – daily, all day - not coordinated with IARU
DK2OM	21153,0	0728	09	07	CHN		FMOP			Chinese OTH radar – 66 sps – 7.6 sec bursts - foghorn
DK2OM	21220,5	1440	09	07	EGY		F1B	1200	600	DPRK-FSK 1200 – Cairo – DPRK emba
DK2OM	21285,0	0744	11	07	CHN		FMOP		10k	Chinese OTH radar (foghorn) – 66.66 sps – 3.8 sec bursts
DK2OM	21294,0	0926	04	07	CHN		FMOP		10k	Chinese - OTH radar – 66 sps – 3.8 sec bursts - foghorn
DK2OM	21308,0	0926	25	07	CHN		FMOP		10k	Chinese OTH radar – 66 sps – 3.8 sec bursts – foghorn - jumping
DK2OM	21336,0	0748	25	07	CHN		FMOP		10k	Chinese OTH radar – 66 sps – 3.8

DK2OM	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/SP	DETAILS
										sec bursts - foghorn
DK2OM	21353,5	1420	09	07	AGL		F1B	1200	600	DPRK-FSK 1200 – Luanda – DPRK emba
DK2OM	21355,0	0739	09	07	CHN		FMOP		10k	OTH radar – 66 sps – 3.8 sec bursts - foghorn
DK2OM	21395,0	0822	01	07	CHN		FMOP		10k	OTH radar – 66 sps – 3.8 sec bursts - foghorn
DK2OM	21397,0	0734	24	07	CHN		FMOP		10k	OTH radar – 66 sps – 3.8 sec bursts - foghorn
DK2OM	21400,0	0740	09	07	CHN		FMOP		10k	OTH radar – 66 sps – 3.8 sec bursts - foghorn
DK2OM	21400,0	---	--	07	RUS		F1B	50	2000	harmonic from 5350 kHz – area of Moscow
DK2OM	21422,0	0912	22	07	CHN		FMOP		10k	OTH radar – 50 sps – 5 sec bursts
DK2OM	21430,0	0731	09	07	CHN		FMOP		10k	OTH radar – 66 sps – 7.6 sec bursts - foghorn
DK2OM	21438,0	vt	vd	07	RUS	RCV	A1A			RIP90 de RCV - RUS Navy Sevastopol - daily
DK2OM	21446,0	ady	dly	07	THA	HS0ZEA	A1A			HS0ZEA beacon – every 5 minutes - just for info!
DK2OM	21447,0	0736	09	07	CHN		FMOP		10k	OTH radar – 66 sps – 7.6 sec bursts - foghorn
DK2OM	25000,0	---	--	07	FIN		A3E			time signal Helsinki – just for info – carrier on 25000 – dots on 25001 and 24999 – daily, all day – just for info!
DK2OM	28000,0	vt	vd	07	B		A3E			<b>Brazilian CBers – 28000 – 28325 – daily, all day - no change</b>
DK2OM	28000,0	ady	dly	07	CIS		F3E			<b>28000 – 29700 numerous CIS taxi nets – no change</b>
DK2OM	28000,0	1210	25	07			unid			mysterious and unstable oscillations – QTE 220 °
DK2OM	28025,0	---	--	07	POR		F1B	51	320	F1B bursts - west of Lisbon – Atlantic Ocean - Enagal GPS buoy
DK2OM	28075,0	---	--	07	POR		F1B	51	320	F1B bursts - west of Lisbon – Atlantic Ocean - Enagal GPS buoy
DK2OM	28085,1	---	--	07	POR		F1B	51	320	F1B bursts - west of Lisbon – Atlantic Ocean - Enagal GPS buoy
DK2OM	28125,0	1646	27	07	RUS		F3E			RUS taxi
DK2OM	28146,0	vt	vd	07	ARG B		FSK8	125	1750	ALE, “LU8EX” “PY2TI” “DL1” – just for info!
DK2OM	28150,0	1852	18	07	I		A3E			Italian CBers
DK2OM	28160,0	1900	18	07	I		A3E			Italian CBers – roger beep
DK2OM	28215,0	1410	02	07	RUS		F3E			RUS taxi - daily
DK2OM	28235,0	1224	02	07	RUS		F3E			RUS taxi - daily
DK2OM	28245,0	0857	22	07	RUS		F3E			RUS taxi
DK2OM	28275,0	---	--	07	POR		F1B	51	320	F1B bursts - west of Lisbon – Atlantic Ocean - Enagal GPS buoy
DK2OM	28435,0	----	--	07	E		F1B	81.9	140	<b>Datawell-buoy “Waverider” – 28435.040 kHz – Costa del Sol – Malaga</b>
DK2OM	28459,8	---	--	07	GAB		A3E		1060	carrier and dots in USB and LSB, bursts every 60 sec – carrier – Gabon - daily
DK2OM	28499,8	---	--	07	MEa		F1B	81.9	140	<b>Datawell-buoy “Waverider” – 28499.875 kHz – Persian Gulf</b>
DK2OM	28746,5	---	--	07	GAB		A3E			carrier and dots in USB and LSB, bursts every 60 sec – carrier – Gabon
DK2OM	28751,6	---	--	07	GAB		A3E		1080	carrier and dots in USB and LSB, bursts every 60 sec – carrier – Gabon

DK2OM	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH/SP	DETAILS
DK2OM	28960,0	1654	24	07	IRN		FMOP		50k	Iranian radar bursts – 150 and 313 sps – long lasting
DK2OM	29114,0	---	--	07	RUS		F1B	100	2000	harmonic from 14557.0 kHz - Moscow
DK2OM	29249,9	---	--	07	E		F1B	81.9	140	Datawell-buoy “Waverider” – 29249.880 kHz – Spain Fuerteventura - daily, all day
DK2OM	29375,0	---	--	07	I		F1B	81.9	140	Datawell-buoy “Waverider” – 29374.898 kHz – Gallipoli, South Italy - daily, all day
DK2OM	29387,5	---	--	07	IND		F1B	81.9	140	Datawell-buoy “Waverider” – 29387.460 kHz – Indian NW coast, close to Pakistan - daily, all day
DK2OM	29400,0	---	--	07	USA		F1B	81.9	140	Datawell-buoy “Waverider” – 29400.070 kHz - USA north-east coast – NY daily, all day
DK2OM	29450,0	---	--	07	MRC		F1B	81.9	140	Datawell-buoy “Waverider” – 29449.863 kHz - area of El Aaiun – Morocco - daily, all day
DK2OM	29500,0	---	--	07	G		F1B	81.9	140	Datawell-buoy “Waverider” – 29499.974 kHz- area of Gibraltar – daily, all day
DK2OM	29525,0	---	--	07	MRC		F1B	81.9	140	Datawell-buoy “Waverider” – 29524.990 kHz - Agadir - Morocco – daily, all day
DK2OM	29625,0	---	--	07	USA		F1B	81.9	140	Datawell-buoy “Waverider” – 29625.024 kHz - USA north-east coast – daily, all day
DK2OM	29685,0	1802	18	07	I		VFT		2300	Italian MIL – Brescia - daily
DK2OM	29699,5	1802	18	07	I		VFT		1600	Italian MIL – Brescia - daily

### IRTS – Ireland – EI3GYB (Michael)

SOC	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH	DETAILS
IRTS	1812	0200	09	07	RUS		USB/ LSB			RUS navy Kaliningrad, every night
IRTS	1896.5	0146	09	07	D		PSK8			German Navy. Monster signal all night every night. Gone during the daylight.
IRTS	3505	0940 to 0950	10	07	E or MM		USB			2 Spanish fishermen talking about a Korean fisher boat they see. Good signals and clear audio.
IRTS	3520	0655	02	07	E or MM		USB			2 male Spanish fishermen.
IRTS	3520	2140	11	07			Digital			Voice communication encoded with “Cry2001”.
IRTS	3535	0711- 0718	04	07	IRL or MM		USB			2 male Irish fishermen. Very loud signals. Motor noise from both ships. Clear audio. VHF traffic in the background audible from one of the ships. Dublin and Ulster accent.
IRTS	3536	0712 to 0720	04	07	UK or MM		USB			2 male UK fishermen. One is from Scotland, the other one from England.
IRTS	3550	0510	14	07	F		AM			Group of French Hams still violating the band plan.
IRTS	3565	1647	09	07	E or MM		USB			2 Spanish fishermen. Huge signals.
IRTS	3565.5	0529	03	07	E or MM		USB			2 male Spanish fishermen. Loud motor noise. Good audio. Very quick overs (“Cambio”) all the time, no long chats.
IRTS	3570	0640	16	07	F or MM		USB			2 French fishermen

SOC	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH	DETAILS
IRTS	3570	0541	29	07	F or MM		USB			2 French fishermen with huge signals.
IRTS	3567.5	0512	10	07	MM ?		USB			2 male voices chatting happily in Japanese.
IRTS	3639	1032	10	07	IRL or MM		USB			2 Irish fishermen just ending their QSO. One has a Cork accent. One name mentioned is "Ger".
IRTS	3664	1750	04	07	E or MM		USB			2 male Spanish fishermen, very loud.
IRTS	3664	1030	07	07	E or MM		USB			2 Spanish fishermen
IRTS	3670	1456	31	07	HOL or MM		USB			2 Dutch fishermen having a bit of a conversation.
IRTS	3747.5	1421	15	07	F or MM		USB			2 French fishermen. Huge signals, loud motor noise in the background.
IRTS	3747.5	0749	23	07	F or MM		USB			2 French fishermen. Loud motor noise from one of them.
IRTS	3756	0155	09	07	RUS		USB			The Pip. On for decades.
IRTS	5335	0932	31	07	F or MM		USB			2 French fishermen, very strong signals.
IRTS	5349	1812	04	07	F or MM		USB			2 male French fishermen chatting happily.
IRTS	5358	1946	03	07						Huge radar signals from 5358 to 5363 KHz.
IRTS	5353.5	1949	21	07	F or MM		USB			2 French fishermen. Big signals.
IRTS	5360	0459 to 0506	14	07	MRC or MM		USB			2 Moroccan fishermen talking about Agadir.
IRTS	5360	2120 to 2128		07	UK		USB			A UK station makes contact with a Spanish station outside of its own allocation and with high power. Such an intrusion is a very common occurrence. A lot of UK hams do not know their own allocations. One solution for this problem would be a single worldwide allocation with about 100 KHz width and 100 watts PEP instead of this crazy set-up of loads of different allocations and a tiny low power section for the rest of the globe.
IRTS	5356.5	1427	15	07	F or MM		USB			2 French fishermen. Big signals.
IRTS	5400	0840	09	07	E or MM		USB			2 Spanish fishermen, signals bleeding up and down onto two Irish spot channels. Still on at 0915z. Also heard on 17 <sup>th</sup> of July at 1354. Frequency is very popular among the fishing community.
IRTS	5400	0619	26	07	MM		USB			2 Japanese fishermen.
IRTS	5400	0555	28	07	F or MM		USB			2 French fishermen.
IRTS	5405	0253 to 0313	02	07	MRC or MM		USB			2 Arab male voices. Maghreb accent.
IRTS	7050	0955	10	07	RUS/UKR		LSB			UKR-RUS radio war. Shouting of slogans. Agitprop. MX. Most days all day long.
IRTS	7051	2345	04	07						Radar from 7051 to 7081 KHz. Huge signals. All frequencies unusable. Still on at 0241.
IRTS	7055	0520	10	07	RUS/UKR		LSB			RUS-UKR radio war.MX, shouting of slogans. Most days all day.
IRTS	7080	0515	14	07	MRC or MM		USB			2 Moroccan fishermen.
IRTS	7080	1200	31	07	F or		USB			2 French fishermen. Big signals and

SOC	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH	DETAILS
					MM					loud motor noise from both ships.
IRTS	7120	1734	04	07	SOM		AM			Radio Hargaysa.MX. Very loud.
IRTS	7150	1743	04	07	ERI		AM			Radio Eritrea. Very often during the month.
IRTS	7175	1717	20	07	ERI		AM			Radio Eritrea plus white noise from Ethiopia.
IRTS	7180	1740	04	07	ERI		AM			Radio Eritrea. Loud. MX and talk. Often during the month. Sometimes with white noise for jamming purposes from Ethiopia.
IRTS	10131.2	0759	30	07	MRC or MM		USB			2 Moroccan fisherman. Strong signals.
IRTS	10156.5	2114	28	07	KOR or MM		USB			2 Korean fishermen on a frequency just above the 30 metre band.
IRTS	14122	0905 to 0920	15	07			USB			Somebody playing the French national anthem in different versions all the time. Heard on several days in the mornings only..
IRTS	14192	1025	06	07	RUS		F1B			RUS navy Kaliningrad
IRTS	14221	2333	04	07	KGZ		F1B	50		Bishkek. Audible during hours of darkness only.
IRTS	14236	0910-1201	05	07	RUS		OFDM			Huge signal 59 plus plus
IRTS	14259	0910-1201	05	07	RUS		OFDM			Huge signal 59 plus plus
IRTS	14267	1145	07	07						Radar, strong signals from 14267 to 14283 KHz.
IRTS	14271	1801	04	07						Radar from 14271 to 14283 KHz.
IRTS	14284	0910-1201	05	07	RUS		OFDM			Huge signal 59 plus plus
IRTS	14295	0440	22	07	TJK		AM			Radio Tadjikistan , 3rd harmonic. Daily.
IRTS	14307	0910-1201	05	07	RUS		OFDM			Weak, in and out.
IRTS	14330.5	1242	26	07			Digital			Strong digital signals. Probably a NK embassy in West Africa.
IRTS	18080	0649	16	07	TWN		AM			Sound of Hope, Taiwan. Very rarely heard.
IRTS	28175	1246	22	07	I		AM			Italian Cbers.

### KARS – Kuwait – 9K2RR (Faisal)

### MRASZ – Hungary - HA7PL (Laci)

SOC	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH	DETAILS
MRASZ	3524,0	1838	13	7			F1B		200	
MRASZ	3527,0	2044	14	7			F1B		200	
MRASZ	3548,0	2040	14	7			F1B		200	
MRASZ	3582,0	2039	14	7			PSK2			AT3004D
MRASZ	7018,7	1922	7	7			N0N			
MRASZ	7020,0	1630	13	7			A3E			
MRASZ	7050,0	1740	4	7			LSB			translated russian BC, hrd: 20
MRASZ	7050,0	1052	13	7			LSB			antirussian propaganda, mentioned Gorbachov
MRASZ	7050,0	1758	18	7			LSB			russian, politics
MRASZ	7050,0	1803	21	7			LSB			music, chaos
MRASZ	7050,0	1317	28	7			LSB			very strong, antirussian propaganda
MRASZ	7050,0	1403	30	7			LSB			chaos
MRASZ	7055,0	1055	13	7			LSB			antirussian propaganda, mentioned Gorbachov
MRASZ	7055,0	0606	14	7			LSB			music
MRASZ	7055,0	1705	21	7			LSB			translated russian BC, distorted

SOC	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH	DETAILS
MRASZ	7055,0	0644	23	7			LSB			music, chaos
MRASZ	7055,0	1215	28	7			LSB			very strong, antirussian propaganda
MRASZ	7055,0	1404	30	7			LSB			translated antirussian propaganda
MRASZ	7120,0	1742	4	7	SOM		A3E			R. Hargaysa, hrd: 7, 12, 18, 21, 27, 28
MRASZ	7150,0	1743	4	7			A3E			ui. BC, hrd: 8, 12, 18
MRASZ	7151,0	1058	13	7			PSK2			AT3004D
MRASZ	7166,0	1703	21	7			PSK2			AT3004D
MRASZ	7175,0	1743	4	7			A3E			ui. BC, hrd: 18, 21
MRASZ	7176,5	1405	30	7			N0N			
MRASZ	7179,0	1807	12	7			PSK2			AT3004D
MRASZ	7180,2	1808	12	7			N0N			
MRASZ	7187,0	1704	21	7			PSK2			AT3004D
MRASZ	10108,0	1408	31	7			F1B		200	
MRASZ	10108,7	1407	31	7			F1A			"RDL" "62739 22799 62739 22799"
MRASZ	10114,7	0709	27	7			F1B		100 0	
MRASZ	10143,0	1639	13	7			F1B		250	
MRASZ	14008,0	0718	23	7			F1B		250	
MRASZ	14071,0	0817	28	7			A3E			music
MRASZ	14108,0	0946	13	7			F1B		250	
MRASZ	14108,0	0754	23	7			A1A			"UVÄ CGQEW ÄC ODODWE FBHT ZFYEW"
MRASZ	14120,0	1702	27	7			F1B		250	
MRASZ	14192,0	1740	4	7			F1B		200	
MRASZ	14202,0	0712	27	7			???			ui mode
MRASZ	14220,0	1050	13	7			N0N			
MRASZ	14292,0	0609	14	7			A1A			"7UB6 de 2IG5 K" "RK"
MRASZ	14295,0	1744	4	7	TJK		A3E			Radio Tajik, 3rd. harm. hrd: 7, 12, 27

### OEVSV – Austria – OE3GSA (Gerd)

### PZK – Poland – SP9BRP (Jan)

### REF – France – F5MIU (Francis) - F5JBR (Andre)

SOC	kHz	UTC	DD	MM	ITU	IDENT	MODE	Baud	Sh /Bw	DETAILS
<b>R.E.F. F5MIU</b>				<b>07</b>						<b>July 2017</b>
	7120	1658	19				AM		8kHz	Jamming white noise S5
	7150	1658	20				AM		18kHz	Jamming white noise S9 jamming cease at 17h00 but AM remain
	7150	1628	24				AM		18kHz	Jamming white noise S8 jamming cease at 17h00 but AM remain
	7150	1656	28				AM		18kHz	Jamming white noise S8 jamming cease at 16h59 but AM remain
	7175	1538	4				AM		8kHz	Jamming white noise S7 Eritrea ?
	7175	1538	4				AM		8kHz	Jamming white noise S7
	7175	1658	20				AM		12kHz	Jamming white noise S9+ jamming cease at 17h00 but AM remain
	7175	1628	24				AM		15kHz	Jamming white noise S9+ jamming cease at 17h00 but AM remain

SOC	kHz	UTC	DD	MM	ITU	IDENT	MODE	Baud	Sh /Bw	DETAILS
	7175	1656	28				AM		15kHz	Jamming white noise S9+ jamming cease at 17h01 but AM remain
	14122	0754	11				USB		3kHz	Intermittent military music since 2 days
	14122	0800	14				USB		3kHz	continuous military music since 2 days (French foreign Légion ?)
	14130	0742	3				fmcw		20kHz	OTH radar pulsed 20ms S9+20
	14150	0739	17				fmcw		10kHz	OTH radar pulsed 20ms S8

### REP – Portugal – CT4AN (Jose Francisco)

SOC	kHz	UTC	DD	MM	ITU	IDENT	MODE	BD	SH	DETAILS
REP	3500	06.37	25	07	E		J3E-U			Spanish fishery
REP	3549	07.28	10	07	E		J3E-U			Spanish fishery
REP	3568	20.21	05	07	RUS		J3E-U			Russian YL calling, no answer
REP	3683	07.30	10	07	E		J3E-U			Spanish fishery
REP	3747	09.04	22	07	F		J3E-U			French fishery
REP	7005	10.21	12	07			F1B	75	250	Encrypted
REP	7013	07.31	01	07		302	PSK J3E-U			Mil ALE 302 calling 227, Russian voice coms
REP	7015	18.24	05	07	MRC		J3E-U			Fishermen
REP	7020	22.00	19	07	RUS	V	A1A			BEACON
REP	7022	08.15	12	07	RUS		BPSK			AT3004D modem, Russia - CIS12
REP	7050	14.40	27	07	RUS		J3E-L			Ukraine-Russia war of words, bc station
REP	7073	08.21	26	07	G		J3E-U			UK fishery, unid accent
REP	7175	17.45	14	07	ETH		A3E			Radio Eritreia
REP	10115	11.11	02	07	E		J3E-U			Fishery
REP	10130	12.00	04	07			MFSK			Mil-ALE 304003
REP	10145	11.25	07	07			F1B	50	200	Encrypted
REP	10150	20.33	08	07			FMCW	50	20k	OTH radar, down to 10140kHz
REP	14000	14.01	10	07	B		J3E-U			Brazilian fishery, everyday
REP	14148	12.56	17	07			FMCW			OTH radar
REP	14160	06.55	20	07			FMCW	50	18k	OTH radar
REP	14195	11.44	18	07	RUS		F1B	50	200	CIS36 – Russia mil
REP	14345	06.59	04	07			DBPSK	120		?
REP	18065	17.22	01	07	CYP		FMCW	50	20k	OTH Radar
REP	21000	15.11	09	07	E		J3E-U			Intruders
REP	21000	14.01	09	07	B		J3E-U			Brazilian fishery
REP	21035	16.44	17	07			FMCW	50	20k	OTH radar
REP	28035	15.30	23	07	B		A3E			Brazilian intruders, everyday
REP	28075	16.05	23	07	B		A3E			Brazilian intruders, everyday
REP	28145	11.03	15	07	RUS		F3E			Taxis female dispatchers
REP	28265	12.04	23	07	RUS		F3E			YL taxi dispatcher

### RSGB - Great Britain – G0MGX (Mark)

### SRAL – Finland – OH2BLU (Pekka)

Society	kHz	UTC	DD	MM	ITU	IDENT	MODE	BAUD	SHIFT	REMARKS
SRAL	7001,0	0530-1130	27.	7		Uidotter	A1A			Random dots
SRAL	7008,0	0520-1525	19. 25.	7		UiPTR	F1B		250	
SRAL	7010,0	0745-1600	*	7		UiMUX	PSK2	120	2600	Days: 6. 19. 27.
SRAL	7012,0	0925-1230	12.	7		UiMUX	PSK2	120	2600	
SRAL	7014,5	1325	13.	7		UiPTR	F1B			
SRAL	7022,0	0945-1600	12. 27.	7		UiMUX	PSK2	120	2600	
SRAL	7025,0	0540-1535	*	7		UiPTR	F1B		200	Days: 3. 10. 30. 31.
SRAL	7048,0	1855	4.	7		UiMUX	PSK2	120	2600	

Society	kHz	UTC	DD	MM	ITU	IDENT	MODE	BAUD	SHIFT	REMARKS
SRAL	7055,0	1320	11.	7		UiPTR	F1B		250	
SRAL	7056,5	1235	2.	7		UiVOX	J3E-u			Russian 5L
SRAL	7057,0	0820	17.	7		UiMUX	PSK2	120	2600	
SRAL	7058,0	1400-1430	25.	7		UiPTR	F1B		250	
SRAL	7060,0	0530-1300	*	7		UiMUX	PSK2	120	2600	Days: 12. 18. 27.
SRAL	7076,0	1115	2.	7		UiMUX	PSK2	120	2600	
SRAL	7082,0	0600-0730/	5.	7		UiMUX	PSK2	120	2600	
SRAL	7087,0	0715-0950	21.	7		UiMUX	PSK2	120	2600	
SRAL	7099,0	1015-1030	25.	7		UiMUX	PSK2	120	2600	
SRAL	7102,0	0730-1900	1.	7		UiPTR	F1B		200	
SRAL	7103,0	0900-1000	9.	7		UiMUX	PSK2	120	2600	
SRAL	7111,0	1630-1930	26.	7		UiPTR	F1B		250	
SRAL	7112,0	1000-1415	2. 3. 16.	7		UiMUX	PSK2	120	2600	
SRAL	7120,0	/0330-0530/	dly	7	SOM	R.Hargeis a	A3E			
SRAL	7120,0	/1230-1400/	dly	7	SOM	R.Hargeis a	A3E			
SRAL	7120,0	/1500-2000/	dly	7	SOM	R.Hargeis a	A3E			
SRAL	7122,0	0700-1400	8. 12.	7		UiMUX	PSK2	120	2600	
SRAL	7124,0	1520	26.	7		UiMUX	PSK2	120	2600	
SRAL	7140,0	1725	19.	7		UiMUX	PSK2	120	2600	
SRAL	7142,0	1315	23.	7		UiPTR	F1B			idling
SRAL	7150,0	0250-0530	dly	7	ERI	VoBME	A3E			Jammed by ETH
SRAL	7150,0	1430-1835/	dly	7	ERI	VoBME	A3E			Jammed by ETH
SRAL	7151,0	1355	13.	7		UiMUX	PSK2	120	2600	
SRAL	7152,5	1220-1250	30.	7		UiPTR	F1B			
SRAL	7154,5	1100-1200	24. 30.	7		UiMUX	PSK2	120	2600	
SRAL	7160,0	1435	8.	7		UiMUX	PSK2	120	2600	
SRAL	7161,0	0710	12.	7	RUS	UiCW	A1A			MR 5F
SRAL	7162,0	0800-1707/	16. 18.	7		UiPTR	F1B			
SRAL	7164,0	0845	6.	7		UiMUX	PSK2	120	2600	
SRAL	7169,0	0615-1340	*	7		IDOC etc	A1A			Days: 3. 10. 20. 22.
SRAL	7169,0	0800-1000	15. 29.	7		UiPTR	F1B		200	
SRAL	7172,0	0510-0530	24.	7		UiCW	A1A			MR 5BL
SRAL	7175,0	0250-0530	3. – 22.	7	ERI	VoBME	A3E			Jammed by ETH
SRAL	7175,0	1315-1835/	3. – 22.	7	ERI	VoBME	A3E			Jammed by ETH
SRAL	7176,0	1745-1930	26.	7		UiPTR	F1B		250	
SRAL	7176,55	0250-0530	25. – 31.	7	ERI	VoBME	A3E			Jammed by ETH
SRAL	7176,55	1315-1835/	25. – 31.	7	ERI	VoBME	A3E			Jammed by ETH
SRAL	7179,0	0230-0300	12.	7		UiMUX	PSK2	120	2600	
SRAL	7180,0	1500-	1. 2.	7	ERI	VoBME	A3E			Jammed by ETH



Society	kHz	UTC	DD	MM	ITU	IDENT	MODE	BAUD	SHIFT	REMARKS
		1835/	24.							
SRAL	7187,0	1610-1630	21.	7		UiMUX	PSK2	120	2600	
SRAL	7 MHz			7	RUS	29B6	FMCW			50Hz / 15 kHz (WebSDR 2d)
SRAL	7 MHz	0700	4.	7	RUS	UiOTHR	FMCW			10Hz / 15 kHz, 30 sec, with 16 min cycle.
SRAL	10 MHz			7	RUS	29B6	FMCW			50Hz / 15 kHz (WebSDR 8d)
SRAL	14008,0	0550-1250	*	7		UiPTR	F1B/ NON			Days: 16. 18. 20. 29. 30.
SRAL	14102,0	0545	28.	7		UiMUX	PSK2	120	2600	
SRAL	14108,0	0555-1235	*	7	RUS	PG9D etc.	A1A			Days: 2. 8. 9. 10. 11. 14. 20. 22. 29. 30. 31.
SRAL	14116,0	0910-1110	2. 7.	7		UiPTR	F1B		250	
SRAL	14118,0	1210	10.	7		UiMUX	PSK2	120	2600	
SRAL	14118,0	0515-1035	*	7		ZPA8	A1A			Days: 11. 25. 30.
SRAL	14120,0	1550-1615	27.	7		UiPTR	F1B			
SRAL	14141,0	1220-1230	18.	7		UiPTR	F1B		500	
SRAL	14160,0	0725	29.	7		UiPTR	F1B		250	
SRAL	14171,0	1230	26.	7		UiMUX	PSK2	120	2600	
SRAL	14177,0	1035-1215	18. 23.	7		UiPTR	F1B		500	
SRAL	14192,0	0430-1900	*	7	RUS	UiPTR	F1B		200	Days: 1. – 5. 8. 30.
SRAL	14221,0	0130-0600/	dly	7	KGZ	UiPTR	F1B		200	
SRAL	14259,0	0730	20.	7		UiPTR	F1B		400	
SRAL	14261,0	0725-0940	5.	7		UiMUX	PSK2	120	2600	Spurious at +/- 15 kHz
SRAL	14285,0	0725	5.	7		UiMUX	PSK2	120	2600	
SRAL	14292,0	0655-1145	21.	7		1DIH	A1A			
SRAL	14295,0	0330-1930	dly	7	TJK	R Tojikiston	A3E			3f 4765,00 kHz, Yangiyul TX
SRAL	14312,0	0950-1405	18. 19.	7		UiPTR	F1B		200	
SRAL	14 MHz	0530-1500	*	7	RUS	29B6	FMCW			50Hz / 15 kHz, (WebSDR 6d) Days: 4. 6. 7. 8. 17.
SRAL	14 MHz	0400-1445	*	7	RUS	UiOTHR	FMCW			10Hz / 15 kHz, 30 sec, with 16 min cycle. Days: 1. – 12. 14.
SRAL	18080,0	0740	16.	7	TWN	VoAsia	A3E			
SRAL	18 MHz	0745-1745	*	7	CYP / TUR	UiOTHR	FMCW			25/50Hz / 20 kHz, (WebSDR 3d) Days: 22. 23. 29.
SRAL	21 MHz			7	CYP / TUR	UiOTHR	FMCW			25/50Hz / 20 kHz
SRAL	21438,0	/0830-1400	*	7	RUS	RCV	A1A			Days: 8. 22. 27. 30.
SRAL	24 MHz			7		UiOTHR	FMCW			(WebSDR 0d)
SRAL	28600,0			7	IRN	UiOTHR	FMCW			307 & 870 Hz / 60 kHz – 300 kHz
SRAL	28960,0	0530-1730	*	7	IRN	UiOTHR	FMCW			150 & 313 Hz / 60 kHz , days: 1. 2. 4. 5. 6. 8. 10. 14. 16. 18. 21. 26. 27. 28.
SRAL	28 MHz			7		UiOTHR	FMCW			25/50Hz / 20 kHz (WebSDR 0d)
SRAL	28 MHz	0530-1730	*	7	RUS	Taxi disp.	F3E			112 reports, days: 1. – 4. 16. 18. – 22. 24. 26. 31.

## USKA – Switzerland – HB9CET (Peter)

SOC	kHz	UTC	DD	M M	ITU	IDENT	MODE	BD	SH (BW)	DETAILS
USKA	3525.0 (Center)	0421	19	07			DQPSK	14x75	5k9	LINK 11 CLEW; almost daily (Stanag5511): ISP or DSP Mode
USKA	3527.0	2322	03	07			F1B	50	200	daily
USKA	3532.0	2135	09	07			DQPSK	14x75	5k9	LINK 11 CLEW; often (Stanag5511): ISP or DSP Mode
USKA	3549.0 VFO USB	2320	03	07			PSK8	2400	~2k7	MIL188-110A (Hybrid), often preamble 4 tones, 450Hz spacing
USKA	3553.8	2322	03	07			G1D	2400	~2k7	Stanag 4285; PSK8 almost daily
USKA	3572.0	2137	09	07			F1A	75	250	
USKA	3744.5	2139	09	07			PSK8	2400	~2k7	MIL188-110A (Hybrid), often preamble 4 tone PSK4 75Bd
USKA	6998.5	0759	04	07			J3E-U		~2k7	partially in 40m band
USKA	6998.5	0817	04	07		OL1	MFSK8	125	1750	MIL 188-141A; To: OD6
USKA	6998.5	0800 0801	04	07		BU2 OL1	MFSK8	125	1750	MIL 188-141A
USKA	7006.0 VFO USB	2244	03	07		var	F1B	100	170	CODAN Selcall almost daily ID's: 0519, 10000, 10001
USKA	7022.0	0829	12	07			J7D	12x120	2k7	BPSK; CIS12
USKA	7030.0	1409	05	07			J7D	12x120	2k7	BPSK; CIS12
USKA	7039.4	2145	09	07	RUS	M	A1A			Cluster beacon (Magadan)
USKA	7050.0	1601	10	07			J3E-L		~3k	Patriotic slogans
USKA	7060.0	0743	12	07			J7D	12x120	2k7	BPSK; CIS12
USKA	7064.0	2135	04	07			FMCW	50 sps	~13k	OTHR (occupied BW ≥ 30k) Contayner 29B6 system
USKA	7087.0	0654	21	07			J7D	12x120	2k7	CIS12 idling (13 carriers only)
USKA	7099.0	0749	25	07			J7D	12x120	2k7	BPSK; CIS12
USKA	7103.0 VFO USB	2307	03	07		var	F1B	100	170	CODAN Selcall almost daily ID's: 4361; 8205; 6520
USKA	7106.0 VFO USB	2248	03	07		var	F1B	100	170	CODAN Selcall almost daily ID's: 12763; 6055; 10100
USKA	7111.0 VFO LSB	1941	02	07			BPSK	30x60Bd	~2k5	Burst system; tone spacing 75 Hz. Preamble 4x PSK4 60Bd, spacing 600Hz; Pilotone at 450Hz
USKA	7112.0 VFO USB	2254	03	07		var	F1B	100	170	CODAN Selcall almost daily ID's: 10001; 4319; 7555; 9211
USKA	7118.0	2005	10	07			J7D	12x120	2k7	BPSK; CIS12
USKA	7119.0	2119	04	07			J7D	12x120	2k7	BPSK; CIS12 often
USKA	7119.9	1953	02	07	SOM		A3E			BC; Radio Hargaysa daily
USKA	7139.0 VFO USB	2233	10	07		var	F1B	100	170	CODAN Selcall ID's: 82125, 48103
USKA	7141.0	1935	02	07			J7D	12x120	2k7	BPSK; CIS12
USKA	7142.0 VFO USB	2259	03	07		var	F1B	100	170	CODAN Selcall almost daily ID's: 3061; 1719; 4361
USKA	7150.0	0419	19	07	ERI		A3E			BC, massively jammed
USKA	7150.0	0419	19	07					20k	Jammer, white noise
USKA	7166.0	2039	21	07			J7D	12x120	2k7	BPSK; CIS12
USKA	7175.0	1554	10	07	ERI		A3E		~8k	BC, massively jammed
USKA	7175.0	1555	10	07					20k	Jammer, white noise
USKA	7179.0	0723	10	07			J7D	12x120	2k7	BPSK; CIS12 often
USKA	7197.0	0449	19	07		315018	MFSK8	125	1750	MIL 188-141A
USKA	7197.0	0458	19	07		360018	MFSK8	125	1750	MIL 188-141A
USKA	7197.0	0501	19	07		348018	MFSK8	125	1750	MIL 188-141A
USKA	7197.0	0552	19	07		334018	MFSK8	125	1750	MIL 188-141A
USKA	7197.0	0626	19	07		306013	MFSK8	125	1750	MIL 188-141A
USKA	7197.0	0737	19	07		316013	MFSK8	125	1750	MIL 188-141A

SOC	kHz	UTC	DD	M M	ITU	IDENT	MODE	BD	SH (BW)	DETAILS
USKA	14008.0	0705	05	07			F1B	50	250	often
USKA	14026.0	0838	03	07			J7D	12x120	2k7	BPSK; CIS12 system
USKA	14113.5	0634	05	07			PSK-2	1200	1200	ARQ Burst system
USKA	14128.0	1128	06	07			FMOP	50 sps	~13k	OTHR (occupied BW ≥ 30k) Contayner 29B6 system
USKA	14142.0	0833	10	07			FMOP	66.66 sps	~10k	OTHR, Burst system BD appx 15s, appx BRI 34.5s
USKA	14148.0	0926	17	07			FMOP	50 sps	~13k	OTHR (occupied BW ≥ 30k) Contayner 29B6 system
USKA	14182.0	0659	10	07			FMOP	66.66 sps	~10k	OTHR, Burst system BD appx 7.5s, appx BRI 34.5s
USKA	14192.0	0840	03	07			F1B	50	200	almost daily
USKA	14204.0	0824	20	07			OFDM60	30	~2k8	PSK-4B modulated, tone spacing 44.44Hz; pilottone at 3k3
USKA	14221.0	2218	30	07			F1B	50	200	often
USKA	14237.0	1008	05	07			OFDM60	35.56	~2k8	PSK-8B modulated, tone spacing 44.44Hz; pilottone at 3k3
USKA	14240.0	0938	26	07			F1B	50	200	
USKA	14260.8	1006	05	07			OFDM60	35.56	~2k8	PSK-8B modulated, tone spacing 44.44Hz; pilottone at 3k3
USKA	14284.5	0959	05	07			OFDM60	35.56	~2k8	PSK-8B modulated, tone spacing 44.44Hz; pilottone at 3k3
USKA	14295.0	1539	12	07	TAJ		A3E			3 <sup>rd</sup> from 4765 – Radio Tajikistan
USKA	14312.0	0944	18	07			F1B	150	250	
USKA	14317.0	0844	10	07		GBH2 6WPD	A1A			no ham content
USKA	14331.52	1244	26	07			F1B	600	600	ARQ
USKA	14331.52	1303	26	07			PSK2	1200	1200	ARQ; Packet lenth 210ms, Pause time 290ms
USKA	18150.0	0828	10	07			F1B	100	1k	Harmonic of 9075kHz often
USKA	18165.0	0704	26	07			FMCW	50 sps	20k	OTHR

### Veron – Netherlands – PA2GRU (Dick)

SOC	kHz	UTC	DD	MM	ITU	IDENT	MODE	SHIFT	DETAILS
VERON	3527,0	20.03	31	7	CIS	UiPTR	F1B		Revs/Ptr
VERON	7018,0	17.39	20	7	RUS	UiCAR	NON		Russian Airforce
VERON	7020,0	13.00	29	7	RUS	UiPTR	F1B		Prt
VERON	7120,0	17.38	31	7	SOM	R.Har	A3E		speech
VERON	7169,0	05.53	5	7	CIS	ZJXV	A1A		8A6A DE ZJXV proc
VERON	7169,0	06.03	5	7	CIS	ZJXV	A1A		JLO2 DE ZJXV 875 32 5 0840 875 BT 074
VERON	7169,0	06.03	5	7	CIS	ZJXV	A1A		BT (5BL). Ends: 974 K
VERON	7169,0	05.53	5	7	CIS	ZJXV	A1A		8A6A DE ZJXV proc
VERON	7169,0	06.03	5	7	CIS	ZJXV	A1A		JLO2 DE ZJXV 875 32 5 0840 875 BT 074
VERON	7169,0	06.03	5	7	CIS	ZJXV	A1A		BT (5BL). Ends: 974 K
VERON	14008,0	10.03	2	7	CIS	UiPTR	F1B		Carrier/Revs/Ptr also 13/7 17/7 30/7
VERON	14008,0	13.34	29	7	RUS	RUS	F1B		Ptr, qrm during Ham contest
VERON	14011,0	12.03	25	7	CIS	YZXL	A1A		MSKN de YZXL QSA no AS
VERON	14011,0	12.10	25	7	CIS	YZXL	A1A		G6TU de YZXL QBE QYT9 k
VERON	14011,0	12.19	25	7	CIS	YZXL	A1A		MSKN de YZXL 5BL ending 563 rpt al k
VERON	14011,0	12.25	25	7	CIS	YZXL	A1A		MSKN de YZXL ZCK ZAR ZSD k
VERON	14011,0	12.29	25	7	CIS	YZXL	A1A		MSKN de YZXL ZXZ ZBY ZED k
VERON	14108,0	09.55	2	7	CIS	SLQB	A1A		5BL ending 505 k
VERON	14108,0	09.30	6	7	CIS	N1DX	A1A		XXX N1DX 48613 GAZOBAR 7585 4446 k
VERON	14108,0	09.34	13	7	CIS	G5CX	A1A		XXX G5CX F2ET 21107 82245 PIQUHA
VERON	14108,0	12.43	13	7	CIS	WEGI	A1A		XXX WEGI 59177 REJSOKLuo

									4854 9726
VERON	14108,0	09.42	25	7	CIS	PG9D	A1A		PG3L de PG9D QSA ? K r k
VERON	14108,0	09.02	27	7	CIS	PG9D	A1A		Calls to: L2VJ IT5I BO7F IOLE
VERON	14108,0	09.27	30	7	CIS	PG9D	A1A		Calls to: L6J5 L2VJ IT5I BO7F IOLE
VERON	14108,0	07.36	3	7	RUS	SLQB	A1A		QDGI, BR9R, OC5U, VZTF, B1MC, SO7A,
VERON	14108,0	07.36	3	7	RUS	SLQB	A1A		DE SLQB K: proc
VERON	14108,0	05.56	11	7	RUS	LWL8	A1A		LWL8 546 41 11 0846 546 BT 050 BT (5BL)
VERON	14108,00	09.09	21	7	RUS	SSZ7	A1A		IOLE DE SSZ7 QBE QYT9 K
VERON	14108,0	07.36	3	7	RUS	SLQB	A1A		QDGI, BR9R, OC5U, VZTF, B1MC, SO7A,
VERON	14108,0	07.36	3	7	RUS	SLQB	A1A		DE SLQB K: proc
VERON	14108,0	05.56	11	7	RUS	LWL8	A1A		LWL8 546 41 11 0846 546 BT 050 BT (5BL)
VERON	14108,0	09.09	21	7	RUS	SSZ7	A1A		IOLE DE SSZ7 QBE QYT9 K
VERON	14116,0	09.54	2	7		UiPTR	F1B		Revs/Ptr
VERON	14118,0	11.25	5	7	CIS	UiCW	A1A		5BL ending 042 k
VERON	14118,0	11.27	5	7	CIS	M26B	A1A		I3O8 de M26B QTC k
VERON	14118,0	11.29	5	7	CIS	M26B	A1A		169 34 5 1425 169 ZLH 710 = MBPaD 5BL
VERON	14160,0	09.56	26	7	RUS	UiPTR	F1B	250	Prt
VERON	14192,0	10.01	2	7	CIS	UiPTR	F1B		Revs/Ptr also 3/7 5/7
VERON	14223,7	17.05	5	7		UiPTR	F1B		Sitor ARQ/625
VERON	14312	09.53	18	7	CIS	UiPtr	F1B	200	
VERON	21438,0	15.43	18	7	RUS	RCV	A1A		RBE86 DE RCV QTC 586 34 18 1315 586
VERON	21438,0	15.49	18	7	RUS	RCV	A1A		RGX94 DE RCV QTC 894 42 18 1316 894
VERON	21438,0	15.43	18	7	RUS	RCV	A1A		RBE86 DE RCV QTC 586 34 18 1315 586
VERON	21438,0	15.43	18	7	RUS	RCV	A1A		BT NAWIP (etc)
VERON	21438,0	15.49	18	7	RUS	RCV	A1A		RGX94 DE RCV QTC 894 42 18 1316 894
VERON	21438,0	15.49	18	7	RUS	RCV	A1A		BT NAWIP (etc)

# The monitoring team of IARU Region 1

credits:

**Wavecom Elektronik – Buelach – Switzerland**

**All HAMs, friends and contributors worldwide!**

**Many thanks for your interest!**

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