

IARU Monitoring System Region 1



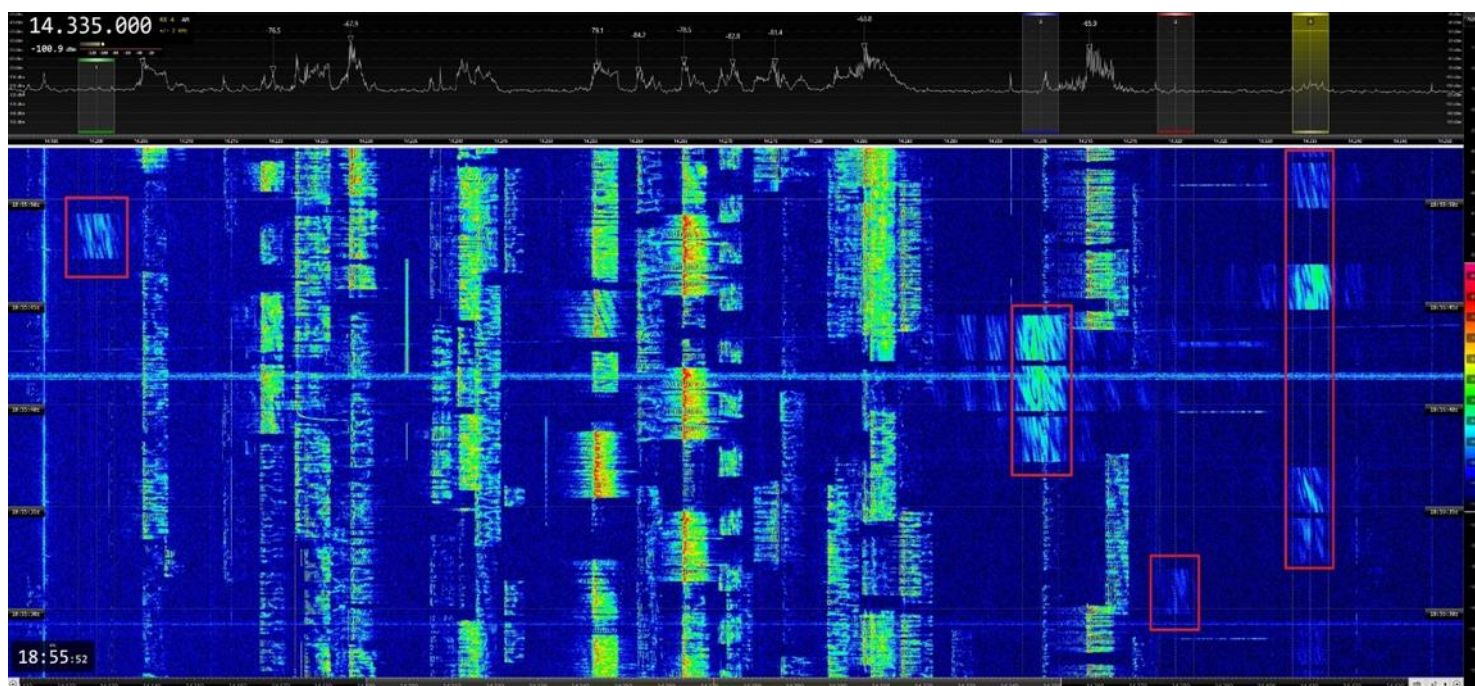
Monthly Newsletter - July 2023

IARUMS R1 successful action

On April 13, 2023, Pekka, OH2BLU, the SRAL (Finland) IARU Monitoring System coordinator, reported at 1119 UTC the reception of transmissions sent by a SuperDARN radar (SuperDARN: *Super Dual Auroral Radar Network*) on the 20 meters band, specifically on 14200 kHz CF: short bursts using an approximate bandwidth of about 4.5 kHz. In the following days, several IARUMS Region 1 volunteers also reported such transmissions.

These transmissions could also be observed during May 2023 on other frequencies in the 20 meters band too, due to the frequency hopping method that this radar often uses.

Several members of the IARUMS R1 team worked actively in the identification of these transmissions, providing screenshots, audio recordings, IQ recordings and triangulations performed by TDoA through the KiwiSDR network.



SuperDARN radar bursts on 20 meters, May 2023

The IARUMS R1 coordinator, Gaspar, EA6AMM, contacted a SuperDARN network's representative, who is also a North American licensed radio amateur operator, to inform him of the reception of the transmissions in the 20 meters band and to provide him with all the data collected about these transmissions.

The SuperDARN Network representative actively cooperated with the IARU Monitoring System Region 1 in order to identify the signals, performing extensive research on all transmissions sent by all SuperDARN Network radars around the world.

On June 2023, after his research, he confirmed that the transmissions were indeed coming from a recently activated radar of the Network that was in the testing phase. He also conveyed the apologies of the entire SuperDARN community for

those transmissions and communicated to his colleagues the ITU RR on the frequencies of the 20 m amateur radio band, which we provided to him, so that these transmissions would not be sent again in this frequency range in the future.

The IARU monitoring System Region 1 wishes to thank this SuperDARN Network representative for his cooperation and help, and appreciates the resolution of this case.

New IARUMS R1 national coordinators

During June 2023, three new volunteers joined the IARU Monitoring system Region 1 as national coordinator:

- Ahmad, 9K2DB, KARS (Kuwait) IARUMS coordinator
- Hassan, CN8HAN, ARRAM (Morocco) IARUMS coordinator
- Magdi, ST2M, SARU (Sudan) IARUMS coordinator

We welcome them to the IARU Monitoring System Region 1 and thank them for their help, wishing them success in the intruder monitoring tasks. We encourage the IARU Region 1 member societies that had not yet appointed an IARUMS national coordinator to do it, so we can all contribute to the voluntary force of this IARU workgroup.

Find here the complete list of the IARUMS R1 national coordinators:

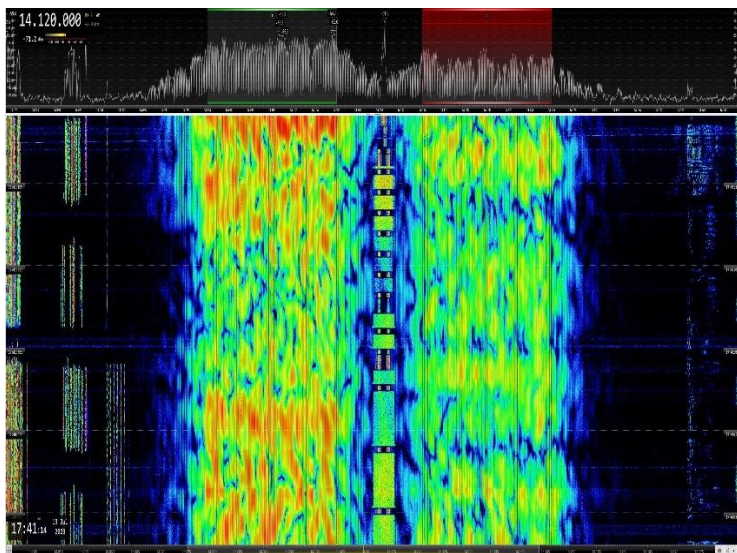
<https://www.iaru-r1.org/spectrum/monitoring-system/iarums-region-1-coordinators/>

News and info

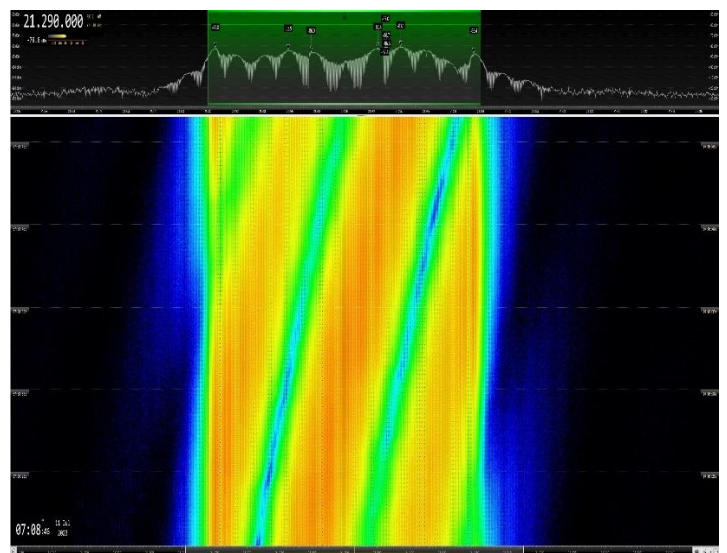
As far as intruder activity on the HF amateur radio bands is concerned, there were no major changes from last month.

OTH radar transmissions were once again, as always, the most reported by the various IARU monitoring System Region 1 national coordinators, with all known radars on the various bands remaining active.

Among them, due to their greater activity, we highlight the Russian Contayner OTHR (BW = 12K0E. 40 sps), the British OTHR (BW = 20K0E. 50 or 25 sps. Located at the UK SBA on Cyprus) and the Iranian OTHR on the 10 m band (BW ca 45K0E. Alternating 150 and 313 sps short bursts), as well as the Chinese ones sending short bursts (BW = 10K0E. 50, 66.7, 83.3 or 41.7 sps).

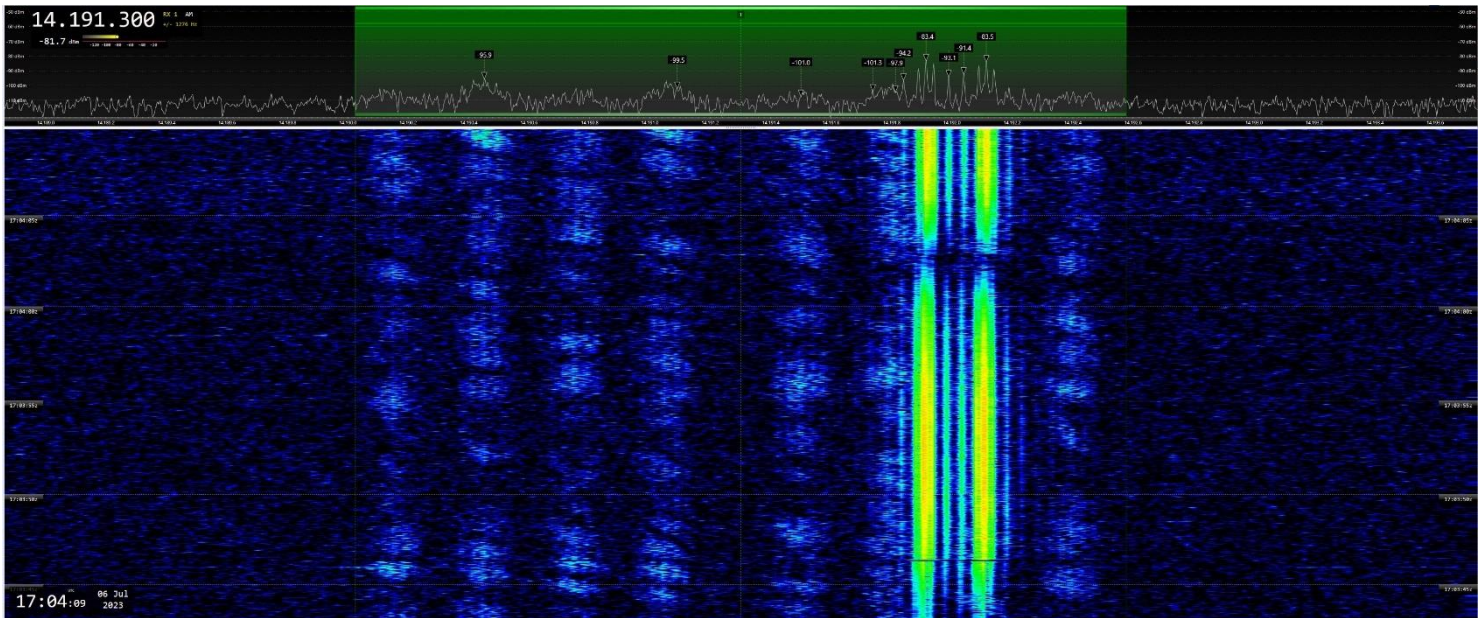


2 x OTHR Contayner (RUS; BW = 12K0E. 40 sps) side by side on 20 m



British OTHR (UK Sovereign Base Area, Cyprus) on 15 m. 20K0E, 25 sps

As far as military modes are concerned, in addition to the well-known F1B CIS-## transmissions (e.g., RUS F1B SH = 200 Hz, 50 Bd daily on 14192 kHz CF), we highlight the presence of a CIS-12 (J7D. BW = 2K70E. 12 x 120 Bd + pilot line) for long hours almost daily on 7000 kHz and the reception of long F1B transmissions (Shift = 850 Hz; Bd = 50) sent on 14002 kHz CF from the Guam area. We also received several transmissions sent on different CHN MIL modes.



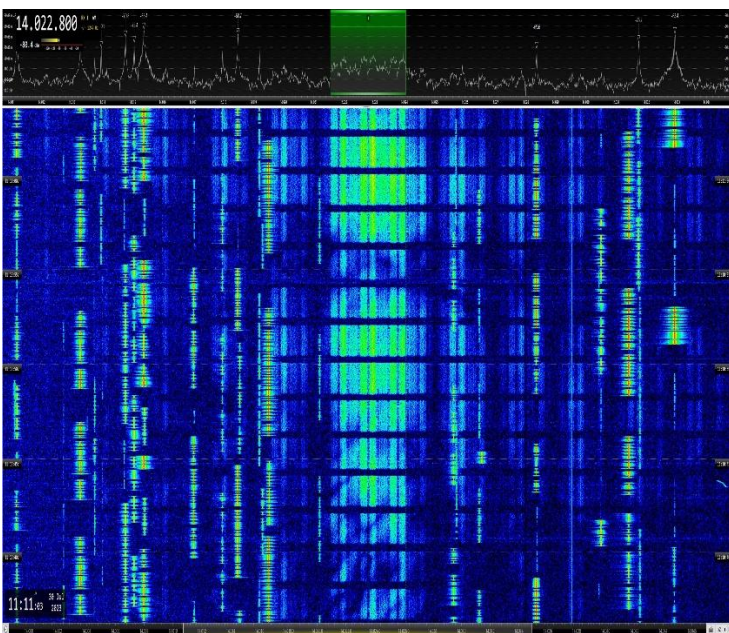
14191.3 kHz CF: CHN 4+4 a.k.a PRC 4+4. G7D. BW = 2K40E. 8x75 Bd / 14192 kHz CF: F1B. SH = 200 Hz. 50 Bd

A1A (CW) RUS MIL encrypted QTC and transmissions continue to take place daily on 14108 kHz, just as DPRK-FSK 600 ARQ (F1D. Shift = 600 Hz, 600 Bd) and DPRK-PSK 1200 ARQ (G1D. BW = 1K20E. 600 or 1200 Bd) transmissions were observed almost daily on 14098.5 kHz CF, 14198.5 kHz CF and 14298.5 kHz CF.

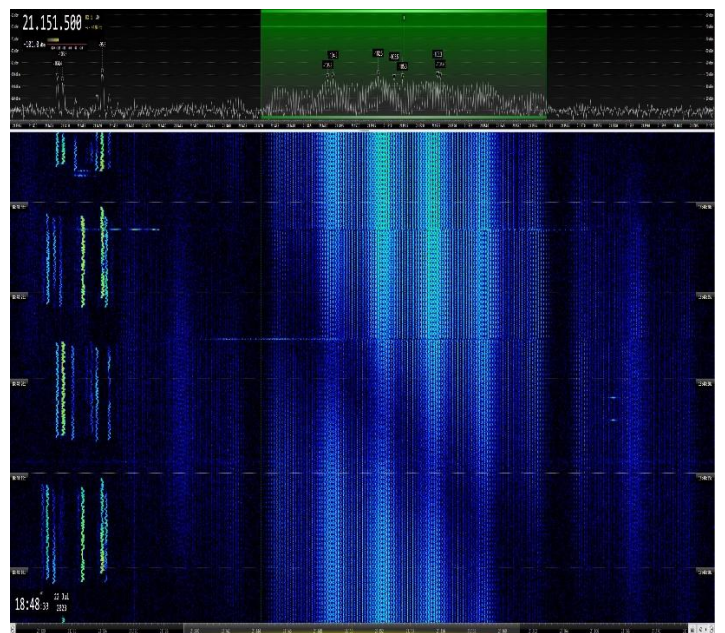
STANAG 4285 (G1D. BW = 2K40E. 2400 Bd) short bursts were received almost daily on 14001.8 kHz CF.

Well-known since many years, RUS A1A (CW) QTC sent from Sevastopol by the RUS navy station "RCV" on 21438 kHz were also heard almost daily.

Some unknown modes were also received during July:



XXX. 14022 kHz CF. BW ca 3K50E



XXX. BW ca 8K0E. Most probably, jammer

About non-MIL transmissions, The China Radio International intermodulation from 13855 and 13710 kHz was daily heard on 14000 kHz. The Spanish fishers kept transmitting on 21000 kHz (J3E-U; USB) and were received very often. CBers (J3E, F3E, A3E) and fishing buoy (A1A / CW and F1B / FSK. SH ca 300 Hz. Encrypted) were observed very often on the 10 m band.

Find other screenshots about the intrusions received during July at the end of this Newsletter

Detailed reports of national coordinators

Abbreviations used (as per IARUMS definitions)

aka = also known as | **BC** = Broadcast | **BD** = Baud, (or also Burst duration) | **BRI** = Burst repetition interval | **BW** = Bandwidth | **ca** = approximate | **CHN** = **PRC** = People’s Republic of China | **CF** = Center frequency | **DF** = Direction finding (radio location; see also TDoA) | **FMCW** = frequency modulated continuous wave | **FMOP** = frequency modulated on pulse | **OTHR** = over the horizon radar | **Radar** = if exact mode unknown | **SH** = Shift (Hz) | **sps** = sweeps per second | **TDoA** = Time difference of arrival | **ui** = unidentified.

DARC; Daniel, DL3RTL. Credit to monitors: DL2SCH, Jürgen; DL8LAQ, Norbert; DL4HG, Olaf; F4FPR, Benjamin; DC7RT, Robin; DL8DWW, Wolfgang; DB3TA, Alex

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|---------|------|----|----|-----|-------|-------|---------|---------|--------------------------------|
| 7000,0 | vt | vd | 07 | RUS | | PSK | | 2k6 | CIS-12 |
| 7027,0 | 1836 | 20 | 07 | RUS | | PSK | | 2k6 | CIS-12 on idle |
| 7048,5 | 1813 | 27 | 07 | | | | | 2k9 | unid |
| 7051,0 | 1725 | 27 | 07 | | | | | 6k | Jammer, BW 6k @-3dB, 16k total |
| 7051,7 | 2016 | 25 | 07 | | | | | 1k2 | unid |
| 7051,7 | 1900 | 02 | 07 | | | | | 1k2 | unid |
| 7058,5 | 1740 | 27 | 07 | | | | | 2k9 | unid |
| 7060,0 | 2100 | 25 | 07 | UKR | | J3E-L | | 3k | RUS/UKR radio war |
| 7063,5 | 1812 | 27 | 07 | | | | | 2k9 | unid |
| 7086,0 | 2240 | 14 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 7086,0 | 2240 | 14 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 14006,0 | 1621 | 14 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 14019,0 | 1656 | 11 | 07 | RUS | | FMOP | 40 | 12k | OTHR Typ Contayner RUS |
| 14045,0 | 1850 | 28 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 14048,0 | 0632 | 08 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 14048,0 | 1756 | 26 | 07 | CHN | | FMCW | 41,67 | 10k | OTHR 6,1s bursts |
| 14064,0 | 1658 | 11 | 07 | RUS | | FMOP | 40 | 12k | OTHR Typ Contayner RUS |
| 14064,0 | 1015 | 23 | 07 | RUS | | PSK2 | | 2k6 | CIS-12 NOR |
| 14066,0 | 1856 | 18 | 07 | CHN | | FMCW | 66,67 | 10k | OTHR 3,8s bursts |
| 14087,0 | 0752 | 08 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 14110,0 | 1756 | 26 | 07 | CHN | | FMCW | 50 | 10k | OTHR 5,1s bursts |
| 14134,0 | 0756 | 08 | 07 | RUS | | FMOP | 40 | 12k | OTHR Typ Contayner RUS |
| 14160,0 | 0619 | 08 | 07 | | | J3E-U | | 3k | Clandestine Radio RUS/UKR War |
| 14207,0 | 1225 | 01 | 07 | RUS | | FMOP | 40 | 12k | OTHR Typ Contayner RUS |
| 14210,0 | 1245 | 09 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 14228,0 | 0725 | 01 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 14228,0 | 1602 | 24 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 14259,0 | 1605 | 20 | 07 | CHN | | FMCW | 66,67 | 10k | OTHR 3,8s bursts |
| 14295,0 | 0712 | 12 | 07 | RUS | | FMOP | 40 | 12k | OTHR Typ Contayner RUS |
| 14303,0 | 0523 | 05 | 07 | RUS | | FMOP | 40 | 12k | OTHR Typ Contayner RUS |
| 14318,0 | 0725 | 01 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 14325,0 | 1852 | 17 | 07 | CHN | | FMCW | 50 | 10k | OTHR 5,1s bursts |
| 14329,0 | 1545 | 02 | 07 | RUS | | FMOP | 40 | 12k | OTHR Typ Contayner RUS |
| 14340,0 | 1605 | 20 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 18065,0 | 0851 | 19 | 07 | G | | FMCW | 50 | 20k | OTHR Typ Pluto on Cypres |
| 18070,0 | 1010 | 09 | 07 | G | | FMCW | 25 | 20k | OTHR Pluto Cyprus |
| 18101,0 | 1902 | 14 | 07 | | | | | 3k | unid |

DARC; Daniel, DL3RTL. Credit to monitors: DL2SCH, Jürgen; DL8LAQ, Norbert; DL4HG, Olaf; F4FPR, Benjamin; DC7RT, Robin; DL8DWW, Wolfgang; DB3TA, Alex

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|---------|------|----|----|-----|-------|-------|---------|------------|--------------------------------------|
| 18119,0 | 1626 | 19 | 07 | RUS | | FMOP | 40 | 12k | OTHR Typ Contayner RUS |
| 18170,0 | 1432 | 28 | 07 | G | | FMCW | 50 | 20k | OTHR Typ Pluto on Cypres |
| 21000,0 | 0646 | 05 | 07 | | | J3E-U | | approx. 3k | Fisher in intercom /spanish language |
| 21035,0 | 0920 | 08 | 07 | G | | FMCW | 50 | 20k | OTHR Pluto Cyprus |
| 21120,0 | 1458 | 08 | 07 | G | | FMCW | 25 | 20k | OTHR Pluto Cyprus |
| 21150,0 | 1434 | 08 | 07 | G | | FMCW | 25 | 20k | OTHR Pluto Cyprus |
| 21151,5 | 1805 | 08 | 07 | | | | | 3k | unid |
| 21151,5 | 1900 | 10 | 07 | | | | | 3k | unid |
| 21167,0 | 0926 | 05 | 07 | RUS | | FMOP | 40 | 12k | OTHR Typ Contayner RUS |
| 21170,0 | 0725 | 01 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 21174,0 | 1136 | 09 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 21182,0 | 1136 | 09 | 07 | RUS | | FMOP | 40 | 12k | OTHR Contayner |
| 21241,0 | 1023 | 23 | 07 | | | | 50 | 20k | OTHR |
| 21270,0 | 0626 | 30 | 07 | G | | FMCW | 50 | 20k | OTHR Pluto Cyprus |
| 21385,0 | 0825 | 05 | 07 | G | | FMCW | 50 | 20k | OTHR Typ Pluto on Cypres |
| 21390,0 | 1445 | 21 | 07 | | | | 12,5 | 40k | OTHR |
| 21404,0 | 0745 | 05 | 07 | RUS | | FMOP | 40 | 12k | OTHR Typ Contayner RUS |
| 21420,0 | 1430 | 08 | 07 | G | | FMCW | 25 | 20k | OTHR Pluto Cyprus |
| 21423,0 | 0745 | 05 | 07 | RUS | | FMOP | 40 | 12k | OTHR Typ Contayner RUS |
| 21445,0 | 1240 | 15 | 07 | G | | FMCW | 25 | 20k | OTHR Pluto Cyprus |
| 28500,0 | 0910 | 30 | 07 | IRN | | | 150/313 | 45k | Iranian OTHR 9,98/7,19s bursts |
| 28860,0 | 0910 | 30 | 07 | IRN | | | 150/313 | 45k | Iranian OTHR 9,98/7,19s bursts |
| 29450,0 | 1823 | 11 | 07 | IRN | | | 150/313 | 45k | Iranian OTHR 9,98/7,19s bursts |
| 29500,0 | 1000 | 08 | 07 | IRN | | | 150/313 | 45k | Iranian OTHR 9,98/7,19s bursts |

IRTS; Michael, EI3GYB

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|-------|------|----|----|-----------------|-------|-------|---------|---------|---|
| 7000 | 2120 | 31 | 7 | | | PSK | | | Strong and persistent signal. |
| 7050 | 1930 | 10 | 7 | RUS/ UKR | | LSB | | | Russian-Ukrainian radio war.Strong. Daily. |
| 7053 | 2145 | 20 | 7 | | | RADAR | | | Radar from 7053 to 7071 kHz. Strong and persistent. |
| 7065 | 1815 | 19 | 7 | RUS/ UKR | | LSB | | | Russian-Ukrainian radio war. Very strong and persistent. |
| 7171 | 400 | 24 | 7 | MRC or MM | | USB | | | Group of Moroccan fishermen chatting. Strong signals. Heard until fade out at around 0615z. |
| 13990 | 1435 | 14 | 7 | | | RADAR | | | Radar from 13990 to 14020 kHz. Huge signals, persistent. |
| 14000 | 1410 | 10 | 7 | CHN | | AM | | | China Radio International. Mixing product. Weak but persistent. |
| 14040 | 1745 | 19 | 7 | | | RADAR | | | Radar from 14040 to 14320 kHz. Covers most of the band as weak to medium strenght back ground.Persistent. |
| 14110 | 1655 | 11 | 7 | | | RADAR | | | Radar from 14110 to 14128 kHz. Huge and persistent. |
| 14148 | 1655 | 11 | 7 | | | RADAR | | | Radar from 14148 to 14172 kHz. Huge and persistent signals. |

| IRTS; Michael, EI3GYB | | | | | | | | | |
|------------------------------|------------|-----------|-----------|------------|--------------|-------------|----------------|----------------|--|
| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
| 14164 | 1530 | 3 | 7 | | | RADAR | | | Radar from 14164 to 14180 kHz. Strong and persistent. |
| 14180 | 1400 | 10 | 7 | | | RADAR | | | Radar from 14180 to 14192 kHz. Medium strength, persistent. |
| 14192 | 1525 | 3 | 7 | RUS | | F1B | | | Medium to strong signals- all hours of daylight every day. Russian navy Kaliningrad. |
| 14193 | 930 | 14 | 7 | | | RADAR | | | Radar from 14193 to 14212 kHz. Huge signals, persistent. |
| 14198 | 1210 | 19 | 7 | | | FSK | | | Medium signals. Persistent. Probably a N.Korean embassy. |
| 14210 | 1655 | 11 | 7 | | | RADAR | | | Radar from 14210 to 14225 kHz. Huge and persistent signals. |
| 14210 | 515 | 7 | 7 | | | RADAR | | | Radar from 14210 to 14230 kHz. Strong and persistent signals. |
| 14211 | 910 | 18 | 7 | | | RADAR | | | Radar from 14211 to 14223 kHz. Strong and persistent. |
| 14228 | 1515 | 19 | 7 | | | RADAR | | | Radar from 14228 to 14241 kHz. Persistently weak in the background. |
| 14235 | 2230 | 5 | 7 | CHN | | RADAR | | | Chinese Foghorn. Strong and persistent. |
| 14241 | 935 | 14 | 7 | | | PSK | | | Huge and persistent signals. |
| 14243 | 1425 | 10 | 7 | | | RADAR | | | Radar from 14243 to 14256 kHz. Medium signals, persistent. |
| 14250 | 1240 | 31 | 7 | | | RADAR | | | Radar from 14250 to 14290 kHz. Huge and persistent signals. |
| 14298 | 1205 | 19 | 7 | | | FSK | | | Medium signals, persistent. Probably traffic from a N.Korean embassy. |
| 14316 | 1520 | 3 | 7 | | | RADAR | | | Radar from 14316 to 14337 kHz. VY strong and persistent. |
| 14325 | 1920 | 4 | 7 | | | RADAR | | | Chinese Foghorn from 14325 to 14335 kHz. Strong and persistent. Also heard on the 20th at 2150z. |
| 14331 | 1245 | 13 | 7 | | | RADAR | | | Radar from 14331 kHz to 14344 kHz. Medium signals, persistent. |
| 14338 | 1430 | 10 | 7 | | | RADAR | | | Radar from 14338 to 14370 kHz. Huge and persistent signals. |
| 18093 | 1630 | 19 | 7 | G | | RADAR | | | Radar from 18093 to 18143 kHz. Huge signals- covers most of the band. Persistent. UK SBA, Cyprus |
| 18100 | 1810 | 14 | 7 | G | | RADAR | | | Radar from 18100 to 18144 kHz. Very strong and persistent. UK SBA, Cyprus |
| 18108 | 1755 | 13 | 7 | G | | RADAR | | | Radar from 18108 to 18129 kHz. Huge and persistent signals. UK SBA, Cyprus |
| 18110 | 1635 | 4 | 7 | G | | RADAR | | | Radar from 18110 to 18150 kHz. Weak in the background. Persistent. UK SBA, Cyprus |
| 18140 | 745 | 22 | 7 | CHN | | RADAR | | | Chinese Foghorn from 18140 to 18150 kHz. Low to medium signal. Persistent. |
| 18144 | 1620 | 13 | 7 | G | | RADAR | | | Radar from 18144 to 18178 kHz. Huge and persistent signals. UK SBA, Cyprus |
| 18145 | 1645 | 11 | 7 | | | RADAR | | | Radar from 18145 to 18155 kHz. Strong bursts every few minutes. Persistent. |
| 18160 | 1050 | 11 | 7 | G | | RADAR | | | Radar from 18160 to 18190 kHz. Huge and persistent signals. UK SBA, Cyprus |
| 18162 | 1210 | 29 | 7 | G | | RADAR | | | Radar from 18162 to 18185 kHz. Huge and persistent. UK SBA, Cyprus |

IRTS; Michael, EI3GYB

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|-------|------|----|----|---------|-------|-------|---------|---------|---|
| 18163 | 1320 | 10 | 7 | G | | RADAR | | | Radar from 18163 to 18192 kHz. Very strong and persistent signals. UK SBA, Cyprus |
| 21000 | 1045 | 11 | 7 | E or MM | | USB | | | Spanish fishermen. Daily all day. Medium to strong signals. |
| 21121 | 1805 | 19 | 7 | | | USB | | | Male voices in an Asiatic language. Medium signals. Motor noise in the background. |
| 21185 | 1035 | 7 | 7 | G | | RADAR | | | Radar from 21185 to 21210 kHz. Very strong and persistent signals. UK SBA, Cyprus |
| 21256 | 1420 | 10 | 7 | G | | RADAR | | | Radar from 21256 to 21282 kHz. Huge and persistent signals. UK SBA, Cyprus |
| 21438 | 1015 | 12 | 7 | UKR | | CW | | | Russian navy base Sevastopol. Daily with medium to strong signals. |
| 28460 | 750 | 30 | 7 | IRN | | RADAR | | | Radar from 28460 to 28560 kHz. Heard all day long with weak but persistent signals. |
| 28840 | 755 | 30 | 7 | IRN | | RADAR | | | Radar from 28840 to 28880 kHz. Heard all day long with weak but persistent signals. |

PZK; SP3AMO, SP5GNI

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|---------|------|----|----|-----|-------|--------|---------|---------|-----------------------------|
| 7000.0 | 2210 | 26 | 07 | | | CIS-12 | | 2K7 | S9 |
| 7017.0 | 0932 | 24 | 07 | | | PSK | | 2K70E | |
| 7020.0 | 0930 | 24 | 07 | | | PSK | | 2K0E | |
| 7049.0 | 2208 | 26 | 07 | | | RADAR | | 12K0E | S9 in parallel at 7085.0 S7 |
| 7051.5 | 0935 | 24 | 07 | | | UI | | 2K0E | |
| 14008.0 | vt | vd | 07 | | | F1B | | 250 | |
| 14019.0 | 1555 | 11 | 07 | | | RADAR | 40 | 14K0E | |
| 14048.0 | 1018 | 08 | 07 | | | RADAR | | 12K0E | S8 |
| 14064.0 | 1556 | 11 | 07 | | | RADAR | 40 | 14K0E | |
| 14087.0 | 1018 | 08 | 07 | | | RADAR | | 12K0E | S8 |
| 14152.0 | 0755 | 28 | 07 | | | RADAR | 40 | 12K0E | |
| 14166.0 | 1810 | 19 | 07 | | | RADAR | | 8K0E | 5 sec. burst |
| 14175.0 | 0651 | 2 | 07 | | | RADAR | 40 | 12K0E | |
| 14208.0 | 1810 | 19 | 07 | | | RADAR | | 10K0E | short 3 sec. bursts |
| 14218.0 | 1420 | 05 | 07 | | | RADAR | | 12K0E | S7 |
| 14218.0 | 0923 | 16 | 07 | | | RADAR | | 8K0E | 5 sec. Burst |
| 14220.0 | 0855 | 16 | 07 | | | RADAR | | 12K0E | S7 |
| 14229.0 | 0620 | 26 | 07 | | | RADAR | 40 | 12K0E | |
| 14242.0 | 1205 | 25 | 07 | | | CIS-12 | | 2K7 | S9 |
| 14266.0 | 0622 | 26 | 07 | | | RADAR | 40 | 12K0E | |
| 14292.0 | 1141 | 05 | 07 | | | F1B | | 500 | S9+ |
| 14299.0 | 1905 | 04 | 07 | | | RADAR | | 10K0E | short 3 sec. bursts |
| 14340.0 | 2003 | 20 | 07 | | | RADAR | | 20K0E | S9 |
| 18080.0 | 0624 | 26 | 07 | | | A3E | | 9K0E | |
| 18086.0 | 0945 | 27 | 07 | | | RADAR | | 10K0E | S5 09:50 finished |
| 18100.0 | 1845 | 13 | 07 | | | UI | | 6K0E | S8, 2 sec. packets |
| 21162.0 | 0730 | 13 | 07 | | | RADAR | | 24K0E | S7 |
| 21246.0 | 0950 | 04 | 07 | | | RADAR | | 10K0E | short 3 sec. bursts |

PZK; SP3AMO, SP5GNI

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|---------|------|----|----|-----|-------|-------|---------|---------|-------------------|
| 21335.0 | 0955 | 21 | 07 | | | RADAR | | 20K0E | S5 |
| 21385.0 | 0805 | 05 | 07 | | | RADAR | | 20K | S5 |
| 21427.0 | 1138 | 05 | 07 | | | RADAR | | 14K0E | S6 11:39 finished |
| 24890.0 | 1030 | 31 | 07 | | | RADAR | | 20K0E | S6 |
| 24898.0 | 1840 | 13 | 07 | | | RADAR | | 10K0E | S5 |
| 24903.0 | 0737 | 13 | 07 | | | RADAR | | 12K0E | burst |
| 24930.0 | 0945 | 04 | 07 | | | RADAR | | 20K0E | S6 |
| 28500.0 | 0946 | 30 | 07 | | | RADAR | | 60K0E | |
| 28540.0 | 1135 | 05 | 07 | | | RADAR | | 20K | S5 |
| 28860.0 | vt | vd | 07 | | | RADAR | 150/300 | 46K0E | |
| 29095.0 | 0735 | 13 | 07 | | | RADAR | | 20K0E | S5 |

REF; Francis, F5MIU

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|-------|------|----|----|-----|-------|------|---------|---------|---|
| 14220 | 0814 | 4 | 07 | | | fmcw | 40 | 20kHz | OTH Radar pulsed 25ms, S9 synchron with below |
| 14260 | 0814 | 4 | 07 | | | fmcw | 40 | 20kHz | OTH Radar pulsed 25ms, S9 |
| 21000 | 0800 | 5 | 07 | | | usb | | 3kHz | Fisherman's network Spanish ? |
| 14155 | 1601 | 5 | 07 | | | fmcw | 40 | 20kHz | OTH Radar pulsed 25ms, S9+20dB |
| 18070 | 0805 | 9 | 07 | | | fmcw | 50 | 20kHz | OTH Radar pulsed 20ms, S8 |
| 21340 | 0812 | 11 | 07 | | | fmcw | 25 | 20kHz | OTH Radar pulsed 40ms, S9 |
| 21175 | 0802 | 20 | 07 | | | fmcw | 50 | 20kHz | OTH Radar pulsed 20ms, S9 |
| 14153 | 0746 | 28 | 07 | | | fmcw | 40 | 20kHz | OTH Radar pulsed 25ms, S9 |

RSGB; Richard, G4DYA

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|----------|------|----|----|-----|-------|------|---------|---------|---|
| 3756.0 | 1854 | 17 | 07 | | | J3E | | 2K20E | USB 'The Pip'. Daily. |
| 7000.0 | 2052 | 07 | 07 | | | A3E | | | BC |
| 7000.0 | 2048 | 14 | 07 | | | J7D | | 2K70E | USB 6998.0 / CIS-12. Also heard 171825z |
| 7065.9 | 2052 | 14 | 07 | | | NON | | | Plain carrier. Probably idling F1B |
| 14006.0 | 1316 | 14 | 07 | RUS | | P0N | 40 | 14K0E | Container pulse radar |
| 14008.0 | 0745 | 16 | 07 | | | F1B | | 250 | FSK |
| 14048.0 | 0714 | 08 | 07 | RUS | | P0N | 40 | 14K0E | Container pulse radar |
| 14087.0 | 0735 | 08 | 07 | RUS | | P0N | 40 | 14K0E | Container pulse radar |
| 14098.36 | 0730 | 08 | 07 | | | F1D | | 1K20E | DPRK FSK bursts. 600 Hz shift. |
| 14192.0 | 0746 | 16 | 07 | | | F1B | | 200 | FSK |
| 14313.0 | 1444 | 25 | 07 | CHN | | F3N | 66.7 | 10K0E | FMCW radar bursts |
| 14318.0 | 1443 | 25 | 07 | CHN | | F3N | 66.7 | 10K0E | FMCW radar bursts |
| 14325.0 | 1822 | 17 | 07 | CHN | | F3N | 50 | 10K0E | FMCW radar bursts |
| 18060.0 | 1058 | 08 | 07 | G | | F3N | 50 | 20K0E | FMCW radar, UK SBA, Cyprus |
| 18124.0 | 1412 | 08 | 07 | CHN | | F3N | 41.7 | 10K0E | FMCW radar bursts |
| 18144.0 | 0846 | 17 | 07 | CHN | | F3N | 62.5 | 10K0E | FMCW radar bursts |
| 18170.0 | 1056 | 08 | 07 | G | | F3N | 50 | 20K0E | FMCW radar, UK SBA, Cyprus |
| 18173.0 | 2029 | 08 | 07 | RUS | | P0N | 40 | 14K0E | Container pulse radar |
| 21035.0 | 1140 | 08 | 07 | G | | F3N | 50 | 20K0E | FMCW radar, UK SBA, Cyprus |

| SRAL; Pekka, OH2BLU | | | | | | | | | |
|---------------------|-------------|---------|----|-----|-------------|----------|---------|---------|--|
| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
| 7 MHz | (2100-0200) | | 7 | RUS | | RADAR | 40 sps | 13k0E | (WebSDR 13d) |
| 7000.0 | 0000-2400 | 13 - 31 | 7 | RUS | | J7D | 120 | 2k60E | |
| 7009.1 | 0455-1750 | * | 7 | | | A1A | | 100H | *)Days: 9. 16. - 28. chirpy "t t t ..." |
| 7019.0 | 0445-1830 | 01 - 04 | 7 | RUS | | F1B/A | | 200H | 5BL |
| 7025.0 | 0530-0830 | * | 7 | RUS | | F1B | | 200H | *)Days: 13. 17. 20. 21. xxx-msg |
| 7032.0 | 0455-1630 | * | 7 | RUS | | J3E-u | | 3k50 | *)Days: 1. 2. 5. 8. - 12. 19. Non-stop Russian anthem / mx |
| 7032.0 | 0455-1630 | 20 - 31 | 7 | RUS | | J3E-u | | 3k50 | Non-stop Russian anthem / mx QRO + spur to 7064.5 & 7101.7 |
| 7032.0 | 0615-1750 | 29 - 31 | 7 | RUS | | J3E-u | | 2k50 | brum |
| 7041.8 | 1615-1815 | 01 | 7 | RUS | S | A1A | | 40H | One letter beacon (?) |
| 7041.8 | 0840 | 02 | 7 | RUS | S | A1A | | 40H | One letter beacon (?) |
| 7051.7 | 0450-1830 | 01 - 07 | 7 | RUS | | XXX | | 1k2E | Tactical Data Link |
| 7054.0 | 0510 | 27 | 7 | RUS | | F1B | | 400H | |
| 7066.0 | 0445-1830 | * | 7 | RUS | | F1B/ NON | | 200H | *)Days: 1. - 4. 15. 16. |
| 7110.0 | 1600-1825/ | 01 - 31 | 7 | ETH | R. Ethiopia | A3E | | 9k0 | |
| 7111.0 | 0500-1230 | 09 23 | 7 | RUS | | F1B | | 500H | |
| 7111.0 | 0500-1230 | 26 31 | 7 | RUS | | F1B | | 250H | |
| 7122.0 | 1300-1400 | 01 03 | 7 | RUS | | F1B | | 250H | |
| 7162.0 | 1200-1300 | 03 18 | 7 | RUS | | F1B | | 250H | |
| 7162.0 | 0800-0830 | 09 | 7 | RUS | | F1B | | 500H | |
| 7164.0 | 0500-1300 | 04 16 | 7 | RUS | | J7D | | 2k60E | |
| 7179.0 | 1000-1300 | 19 | 7 | RUS | | F1B | | 200H | |
| 7184.0 | 1450-1455 | 25 | 7 | RUS | | RADAR | 20sps | 13k0E | Kaliningrad ? |
| 7186.0 | 1555 | 31 | 7 | RUS | | J7D | 120 | 2k60E | |
| 7196.0 | 1245-1300 | 13 | 7 | RUS | RIT | A1A | 16wpm | 40H | 5F |
| 7200.0 | 1130-1830 | 21 | 7 | RUS | | J7D | 120 | 2k60E | |
| 7200.0 | 1200-1500/ | 01 - 31 | 7 | TWN | NUR | A3E | | 9k0 | National unity radio to KRE. Frequency offset – 7 Hz |
| 10 MHz | 1800-1830 | 31 | 7 | G | | RADAR | 50sps | 20k0 | (WebSDR 10d) |
| 10 MHz | 1350-1400 | 01 | 7 | RUS | | RADAR | 40sps | 13k0E | (WebSDR 7d) |
| 10124A | 1500- | 12 - | 7 | TWN | KTWR | xxx | | 5k0E | // 9900 kHz, spurious |

SRAL; Pekka, OH2BLU

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|---------|------------|---------|----|-----|------------|-------|---------------|---------|---|
| | 1600 | 31 | | | | | | | |
| 14 MHz | 0000-2300 | 01 - 30 | 7 | RUS | | RADAR | 40sps | 13k0E | (WebSDR 25d) |
| 14 MHz | 0800-1830 | * | 7 | CHN | | RADAR | 50/67sps | 10k0E | *) Days: 1. 3. - 8. 10. 11. - 13. 16. 18. 24. - 26. 28. 'foghorn' |
| 14000.0 | 1357-1500/ | 01 - 31 | 7 | CHN | RCI | A3E | | 9k0 | TX intermod. // 13710 & 13855 kHz |
| 14002.0 | 0640-1705 | 28 - 31 | 7 | RUS | | F1B | | 850H | |
| 14018.2 | 1140 | 25 | 7 | | | A1A | | 200H | 2f, chirpy "t t t ..." |
| 14023.0 | 1205-1520 | 28 - 31 | 7 | RUS | | xxx | | 2k0E | Splatter to 30 kHz +/- |
| 14068.0 | 0655-1055 | 13 | 7 | RUS | | F1B | | 500H | |
| 14116.0 | 0810-0835 | 18 | 7 | RUS | | F1B | | 200H | |
| 14169.0 | 0715-0820 | 03 13 | 7 | RUS | | F1B | | 200H | *)Days: 1. 2. 5. 9. 11. 18. - 24. 28. 29. |
| 14192.0 | 0500-1830 | * | 7 | RUS | | F1B | | 200H | *)Days: 1. 3. - 9. 11. 12. 13. 16. - 19. 22. 23. 26. - 29. |
| 14240.0 | 0835 | 18 | 7 | RUS | | F1B | | 250H | |
| 14258.0 | 0820 | 28 | 7 | RUS | | F1B | | 500H | |
| 14292.0 | 0840-1250 | 05 | 7 | RUS | | F1B | | 500H | |
| 18 MHz | 0415-1645 | * | 7 | G | | RADAR | 50 sps | 20k0 | *) Days: 1. 2. 4. 9. 11. 12. 18. 21. 22. 29. (WebSDR 14d) |
| 18 MHz | 0915-1700 | 27 28 | 7 | RUS | | RADAR | 40 sps | 13k0E | (WebSDR 13d) |
| 18169.0 | 0630 | 12 | 7 | CHN | | RADAR | 50sps | 10k0 | |
| 21 MHz | 0430-1530 | * | 7 | G | | RADAR | 12.5/25/50sps | 20k0 | *) Days: 4. 6. - 13. 18. 20. - 23. 25. 26. 27. 30. (WebSDR 21d) |
| 21 MHz | 0500-1245 | * | 7 | RUS | | RADAR | 40 sps | 13k0E | *) Days: 1. 3. 4. 5. 12. 16. 18. 28. . (WebSDR 13d) |
| 21 MHz | 0445-1700 | * | 7 | CHN | | RADAR | 50/67sps | 10k0E | *) Days: 2. 4. - 7. 9. 16. 17. 19. 21. 22. 27. 29. 'foghorn' |
| 21095.5 | 1305-1400/ | * | 7 | | | XXX | | 6k5E | *)Days: 2. 5. 6. 11. 12. 16. 17. |
| 21151.5 | 0515-1815 | * | 7 | | | XXX | | 6k5E | *)Days: 3. 5. 7. - 13. 16. |
| 21438.0 | /0830-1630 | 01 - 31 | 7 | RUS | RCV | A1A | 24 wpm | 40H | navip |
| 24 MHz | 0740-0930 | * | 7 | G | | RADAR | 25/50sps | 20k0 | *)Days: 4. 27. 31. (WebSDR 2d) |
| 28 MHz | 0800-1400 | 01 13 | 7 | G | | RADAR | 25/50sps | 20k0 | (WebSDR 2d) |
| 28 MHz | 0500-1815 | * | 7 | IRN | | RADAR | 150/313 | 60k0E | *) Days: 1. 2. 5. 6. 7. 12. 16. 30. (WebSDR 5d) |
| 28 MHz | | | 7 | IRN | | RADAR | 310/870 | 120k0E | (WebSDR 0d) |
| 28860.0 | 0500-1815 | * | 7 | IRN | | RADAR | 150/313 | 60k0E | *)Days: 1. - 4. 19. 20. 22. 27. -30. (WebSDR 7d) |
| 28960.0 | 0500-1815 | * | 7 | IRN | | RADAR | 150/313 | 60k0E | *)Days: 5. 6. 7. (WebSDR 3d) |
| 28 MHz | 0450-1815 | * | 7 | RUS | Taxi disp. | F3E | | 3k0E | *)Days: 1. 3. - 6. 10. - 13. 19. 21. 27. 28. 92 reports |

| URE; Gaspar, EA6AMM | | | | | | | | | |
|---------------------|--------------|-----------|----|-----|--------------|-------|---------|---------|---|
| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
| 7000.0 | 23:22 Vt* | 13 vd* | 07 | | | J7D | 120 | 2K70E | CIS-12. Long-lasting. *Almost daily since 13/07 |
| 7050.0 | 20:17 | 05 | 07 | | | J3E-L | | | Music |
| 7051.7 | 19:41 vt* | 01 vd* | 07 | | | OTHER | 1200 | 1K20E | TDL (Tactical Data Link) *Often |
| 7055.0 | 23:24 | 14 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 7055 | 18:55 | 29 | 07 | | | J3E-L | | | UKR/RUS "radiowar" |
| 7060.0 | 19:47 | 25 | 07 | | | J3E-L | | 2K80E | UKR/RUS "radiowar" |
| 7061.0 | 18:41 | 22 | 07 | | | J3E-L | | 2K80E | UKR /RUS "radiowar" |
| 7065.9 | 23:23 | 14 | 07 | | | NON | | | |
| 7110.0 | 20:08 | 19 | 07 | | | XXX | | CA2K0E | XXX. Continuous unid signal |
| 7197.0 | 19:50 | 25 | 07 | | | J7D | 175 | 1K75E | 7197 kHz USB. MIL-188-141-ALE. Turkish emergency net. Often |
| 10126.0 | 22:24 | 04 | 07 | AUS | | RADAR | 7 | 10K0E | OTHR JORN bursts. BW = 10K0E. 7 sps |
| 13998.0 | 07:38 | 24 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14000.0 | 14:00 vt* | 01 vd* | 07 | CHN | CRI | A3E | | | CRI intermodulation from 13855 and 13710 kHz. *Daily |
| 14000.0 | 14:19 | 18 | 07 | | | J7D | 175 | 1K75E | 14000 kHz USB. MIL-188-141A ALE |
| 14000.0 | 16:50 | 26 | 07 | | | J3E-U | | | Music |
| 14001.8 | 06:49 vt* | 02 vd* | 07 | | | G1D | 2400 | 2K40E | STANAG 4285 bursts. *Almost daily |
| 14002.0 | 19:14 vt* | 04 vd* | 07 | GUM | | F1B | 50 | 850H | TDoA: area of Guam *Also on 28, 29, 30 and 31/07, vt |
| 14006.0 | 06:28 | 14 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. Long-lasting |
| 14008.0 | 11:05 vt* | 05 vd* | 07 | RUS | | F1B | 50 | 250H | *Very often |
| 14013.0 | 16:07 | 18 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14019.0* | 12:14 | 11 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 14064 kHz CF and on 14254 kHz CF. 3 simultaneous TX on 20m |
| 14023.0 | 14:09 | 28 | 07 | RUS | | XXX | 1000 | 2K0E | XXX. Unid digital bursts. BW = 2K0E. 1000 Bd. TDoA: NW of Volgograd (RUS) |
| 14032.0 | 17:26 | 14 | 07 | | | XXX | | CA250HZ | XXX. Unid bursts. BW ca 250 Hz. |
| 14038.4 | 07:26 | 04 | 07 | | | F1B | 600 | 600H | DPRK-PSK 600 ARQ |
| 14051.0 | 15:59 | 18 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14053.3 | 15:43 | 22 | 07 | | | G7D | 75 | 2K40E | 14051.5 kHz USB. PRC 4+4. 8 x 75 Bd |
| 14058.0 | 09:30 | 18 | 07 | | | F1B | | 500H | FSK. SH = 500 Hz |
| 14064.0 | 12:16 | 11 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14068.0 | 09:31 | 10 | 07 | | | F1B | 75 | 500H | |
| 14068.0 | 08:00 | 13 | 07 | | | F1B | 75 | 500H | |
| 14078.5 | 16:57 | 13 | 07 | | | XXX | | Ca13K0E | XXX. Unidentified bursts. |
| 14090 | 17:07 | 29 | 07 | | | XXX | | Ca12K0E | XXX. Unid digital bursts |
| 14098.5 | 13:09 vt* | 13 vd* | 07 | | | F1D | 600 | 600H | DPRK-FSK 600 ARQ *Almost daily |
| 14098.5 | 12:05 vt* | 04 vd* | 07 | | | G1D | | 1K20E | DPRK-PSK 1200 ARQ *Often |
| 14100.0* | 16:12 | 13 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 14120 kHz CF. 2 simultaneous TX on 20m |
| 14108.0 | 06:09 vt* | 02 vd* | 07 | | LNZD 7WOC | A1A | | | RUS MIL CW traffic. Encrypted QTC. 5 characters groups. Cyrillic CW alphabet |

URE; Gaspar, EA6AMM

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|----------------|--------------|-----------|----|-----|---|-------|---------|---------|---|
| | | | | | MWDV 6WEA O29S ADYR AWGA GGTN A8DD XFTF ... | | | | used. Split traffic with other (out of band) sts. "RK" . *Almost daily |
| 14109.0 | 07:43 | 24 | 07 | | | J7D | 175 | 1K75E | 14109 kHz USB. MIL-188-141A-ALE |
| 14110.0 | 14:23 | 23 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14113.0 | 12:59 | 24 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14113.0 | 15:40 | 24 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14118.0 | 10:02 | 23 | 07 | | | J7D | 120 | 2K70E | CIS-12 |
| 14118.0 | 11:50 | 25 | 07 | | | J7D | 120 | 2K70E | CIS-12 |
| 14120.0 | 16:13 | 13 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14124.0 | 12:58 | 24 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14125.0 | 11:33 | 06 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14138.0 | 14:45 | 01 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14140.0 | 14:33 | 29 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14141.0 LSB | 08:16 | 07 | 07 | | | G7D | 60 | 2K50E | CHN-30. A.k.a PRC-30 |
| 14142.0 | 16:27 | 29 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14145.0 | 23:43 | 21 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14146.0* | 10:29 | 18 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 14182 kHz CF. 2 simultaneous TX on 20m |
| 14147.0 | 18:36 | 16 | 07 | | | J3E-U | | | BC relaying. Slavic language, male voices; jammed with music. UKR /RUS "radiowar" style |
| 14148.0 | 09:32 | 20 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14149.0 | 09:53 vt* | 18 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner *Also on 29/07, 1722 UTC |
| 14153.0 | 09:26 vt* | 18 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner *Also on 28/07, 0838 UTC |
| 14154.0 | 09:25 | 20 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14155.0 | 16:29 | 05 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14156.0 | 18:53 | 03 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14156.0 | 15:56 | 29 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14158.0 | 15:21 | 02 | 07 | RUS | | RADAR | 40 | 14K0E | OTHR Contayner |
| 14159.0 | 19:33 | 15 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14160.0 | 18:57 | 26 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14160.0 | 13:09 vt* | 29 vd* | 07 | | | J3E-U | | 2K80E | UKR/RUS "radiowar" (propaganda, audio loops, music). *Also on 30/07, 1020 UTC |
| 14161.0 | 11:15 vt* | 06 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner *Also on 19/07, 0937 UTC |
| 14162.0 | 06:22 vt* | 02 vd* | 07 | | | J7D | 120 | 2K70E | CIS-12 *Also on 12/07, 0659 UTC |
| 14162.0 | 18:48 | 30 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14164.0 | 17:54 | 15 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14166.0* | 10:57 | 03 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 14221 kHz CF. 2 simultaneous TX on 20m |

| URE; Gaspar, EA6AMM | | | | | | | | | |
|---------------------|--------------|-----------|----|-----|-------|-------|---------|---------|--|
| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
| 14167.0 | 13:10 | 02 | 07 | | | J3E-U | | 2K80E | broadcast relaying. Propaganda. Insults. Music. Audio loops. Slavic language. (UKR / RUS "radiowar" style) |
| 14169.0 | 07:18 vt* | 03 vd* | 07 | | | F1B | 50 | 200H | *Also on 12 and 26/07, vt* |
| 14170.0 | 14:13 | 02 | 07 | | | J3E-U | | 2K80E | Audio loops. Propaganda. Slavic language (UKR/RUS "radiowar" style) |
| 14170.0 | 14:07 | 07 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14171.0 | 07:45 | 24 | 07 | | | J7D | 120 | 2K70E | CIS-12 |
| 14175.0 | 10:55 | 31 | 07 | | | J3E-U | | 3K20E | Music |
| 14178.0 | 09:28 | 18 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. Short TX |
| 14181.0 | 09:06 | 07 | 07 | CHN | | RADAR | 83.3 | 10K0E | OTHR short bursts |
| 14182.0 | 09:44 vt* | 07 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner *Also on 18/07, 1029 UTC |
| 14183.0 | 09:38 | 18 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14184.0 | 10:01 vt* | 20 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 26/07, 1046 UTC and 30/07, 1406 UTC |
| 14185.0 | 09:35 | 19 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14186.0 | 07:17 vt* | 03 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner *Also on 12/07, 1640 UTC |
| 14187.0 | 07:11 | 02 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14188.0* | 14:07 | 10 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 14251 kHz CF. 2 simultaneous TX on 20m |
| 14191.0 | 13:34 | 10 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14191.3 | 17:04 | 06 | 07 | | | G7D | 75 | 2K40E | CF QRG. CHN 4+4. AKA PRC 4+4. 8X 75 Bd. |
| 14192.0 | 11:58 vt* | 01 vd* | 07 | RUS | | F1B | 50 | 200H | *Daily |
| 14196.0 | 17:28 | 29 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14198.0 | 12:53 | 24 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14198.5 | 06:31 vt* | 14 vd* | 07 | | | F1D | 600 | 600H | DPRK-FSK 600 ARQ *Almost daily |
| 14198.4 | 07:25 vt* | 03 vd* | 07 | | | G1D | | 1K20E | DPRK-PSK 1200 ARQ *Often |
| 14200.0* | 19:46 vt* | 10 vd* | 07 | RUS | | RADAR | 40 | 14K0E | OTHR Contayner. *Also on 11 and 12/07, vt |
| 14202.0 | 07:27 | 11 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14205.0 | 09:47 | 14 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14206.0 | 16:05 | 11 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14207.0 | 11:57 | 01 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14207.0* | 07:38 | 14 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 14006 kHz CF. 2 simultaneous TX on 20m |
| 14211.0* | 15:55 | 10 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 14187 kHz CF. 2 simultaneous TX on 20m |
| 14212.0 | 20:45 | 15 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14217.0 | 11:37 | 05 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14218.0 | 08:09 vt* | 02 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 04 and 11/07, vt |
| 14218.0* | 16:38 | 11 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 14019 kHz CF and 14064 kHz cf. 3 simultaneous TX on 20m |
| 14218.0 | 08:54 | 18 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR |
| 14219.0 | 08:43 | 13 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |

| URE; Gaspar, EA6AMM | | | | | | | | | |
|---------------------|--------------|-----------|----|-----|-------------|-------|---------|---------|--|
| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
| 14220.0 | 12:05 vt* | 11 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner *Also on 16/07, 0844 UTC |
| 14221.0* | 08:08 | 03 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 14184 kHz CF. 2 simultaneous TX on 20m |
| 14222.0 | 18:27 | 02 | 07 | RUS | | RADAR | 40 | 14K0E | OTHR Contayner |
| 14228.0 | 12:08 vt* | 04 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner *Also on 24/07, 1538 UTC |
| 14230.0* | 06:19 | 26 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 14267 kHz CF. 2 simultaneous TX on 20m |
| 14233.0 USB | 14:27 vt* | 23 vd* | 07 | CHN | | J7D | 175 | 1K75E | CHN MIL-188-141A - ALE 2G *Also on 31/07, 1759 UTC |
| 14242.0 | 07:26 | 20 | 07 | | | J7D | 120 | 2K70E | CIS-12 |
| 14244.0 | 15:24 | 02 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14248.0 | 15:47 | 22 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14251.0 | 14:08 | 10 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14253.0 | 11:37 | 11 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14254.0 | 12:07 | 11 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14260.0 | 15:53 | 07 | 07 | CHN | | RADAR | 41.7 | 10K0E | OTHR short bursts |
| 14260.0 | 13:18 | 13 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14261.0 | 08:27 | 26 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14265.0 | 16:42 | 26 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14267.0 | 06:20 | 26 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14268.0 | 09:19 | 07 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14268.0 | 19:34 | 15 | 07 | CHN | | RADAR | | 10K0E | OTHR short bursts |
| 14286.5 | 18:26 | 07 | 07 | | | XXX | | CA3K0E | Offensive images on waterfall (UKR /RUS "radiowar" style) |
| 14287.0 | 18:15 | 15 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14289.0 | 08:41 | 13 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14290.0 | 09:22 | 07 | 07 | CHN | | RADAR | 83.3 | 10K0E | OTHR short bursts |
| 14291.0 | 09:25 | 07 | 07 | CHN | | RADAR | 83.3 | 10K0E | OTHR short bursts |
| 14292.0 | 10:24 | 05 | 07 | RUS | | F1B | 100 | 500H | Idling sinewave. From 1052 UTC on, clear F1B. Long-lasting |
| 14292.0 | 14:33 vt* | 06 vd* | 07 | | W4X8 ... | A1A | | | Non-amateur split comms with sts out of band. "RK". Probably, RUS MIL . *Often |
| 14294.0 | 18:19 | 03 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14294.0 | 06:31 | 12 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14295.0 | 16:43 | 26 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14296.0 | 17:23 | 29 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14297.0 | 20:55 | 19 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14298.5 | 08:08 | 02 | 07 | | | G1D | | 1K20E | DPRK-PSK 1200 ARQ |
| 14298.5 | 07:34 vt* | 04 vd* | 07 | | | F1D | 600 | 600H | DPRK-FSK 600 ARQ *Almost daily |
| 14298.5 | 12:09 vt* | 04 vd* | 07 | | | | | 1K20E | DPRK-PSK 1200 ARQ *Often |
| 14300.0 | 18:46 | 23 | 07 | CHN | | RADAR | 83.3 | | CHN OTHR bursts. 1 burst every 4 sec |
| 14302.0 | 10:27 | 26 | 07 | | | W7D | 30 | 2K80E | OFDM. CIS-60 |
| 14305.0 | 12:56 vt* | 24 vd* | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts *Also on 30/07, 1509 UTC |
| 14306.0 | 08:45 | 22 | 07 | CHN | | RADAR | 83.3 | 10K0E | OTHR short bursts |
| 14307.0 | 15:41 | 24 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |

URE; Gaspar, EA6AMM

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|----------------|--------------|-----------|----|-----|-------|-------|---------|---------|--|
| 14310.0 | 12:41 | 06 | 07 | CHN | | RADAR | 83.3 | 10K0E | OTHR short bursts |
| 14310.0 | 07:50 | 26 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14312.0 USB | 16:17 | 18 | 07 | | | J3E-U | | 2K40E | USB. Speech in Slavic language. Male voice. Religious content. Music |
| 14312.0 | 16:12 | 26 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14313.0 | 14:49 | 25 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14316.0 | 15:08 | 23 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14318.0 | 15:39 | 11 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14318.0 | 14:47 | 25 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14319.0 | 19:50 | 10 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14320.0 | 18:36 | 22 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14323.0 USB | 14:37 | 25 | 07 | CHN | | J7D | 175 | 1K75 | CHN MIL-188-141A ALE 2G. + Robust |
| 14323.0 | 14:47 | 25 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14323.0 | 16:15 | 26 | 07 | | | J7D | 175 | 1K75E | 14323 kHz USB. CHN MIL-188-141-A-ALE 2G |
| 14324.0 | 12:39 | 06 | 07 | CHN | | RADAR | 62.5 | 10K0E | OTHR Short bursts |
| 14325.0 | 14:35 | 29 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14324.0 | 16:10 | 18 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14328.0 | 20:58 | 19 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14329.0 | 15:48 | 02 | 07 | RUS | | RADAR | 40 | 14K0E | OTHR Contayner |
| 14331.3 | 17:33 | 07 | 07 | | | G7D | 75 | 2K40E | CF QRG. CHN 4+4. 8 X 75 Bd |
| 14332.0 | 19:11 | 04 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14332.0 | 20:23 | 10 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14333.0 | 18:03 | 03 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14333.0 | 19:36 | 15 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14334.0 | 14:44 | 01 | 07 | CHN | | RADAR | 66.7 | | OTHR short bursts |
| 14336.0 | 16:31 | 05 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14338.0 | 19:38 | 15 | 07 | CHN | | RADAR | 41.7 | 10K0E | OTHR short bursts |
| 14338.0 | 16:00 | 18 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14338.0 | 14:36 | 25 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14341.0 | 13:07 | 29 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14342.0 | 19:57 vt* | 27 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner *Also on 29/07, 1957 UTC |
| 14344.0 | 15:48 | 07 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14344.0 | 19:08 | 30 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14345.0 | 17:48 | 31 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14347.0 | 18:03 | 06 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14347.0 | 08:02 | 20 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 14348.5 | 12:36 | 06 | 07 | | | F1D | 600 | 600H | DPRK-FSK 600 ARQ |
| 14349.0 | 18:04 | 06 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 14350.0 | 17:15 | 14 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 14356.0 | 14:32 | 10 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. Splatter to 14346 kHz |
| 14358.0 | 11:25 | 04 | 07 | RUS | | RADAR | 40 | 14K0E | OTHR Contayner. Splatter to 14345 kHz |
| 14366.0 | 16:14 | 26 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. Splatter to 14340 kHz |
| 14370.0 | 20:24 | 25 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus. - 50 dBm. Splatter to 14345 kHz |
| 18050.0 | 15:58 | 03 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |

URE; Gaspar, EA6AMM

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|----------------|--------------|-----------|----|-----|-------|-------|---------|---------|--|
| 18060.0 | 12:13 | 02 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 18065.0 | 08:50 | 19 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 18114.0 | 09:49 | 15 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 18116.0* | 20:22 | 19 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 18171 kHz CF. 2 simultaneous TX on 17m |
| 18121.0* | 17:44 | 13 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. *Also on 18163 kHz CF. 2 simultaneous TX on 17 m. |
| 18122.0 | 18:20 | 14 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 18134.0 | 18:28 | 13 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. <i>Sending spurious covering the whole 17 m band</i> |
| 18144.0 | 07:40 | 22 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 18150.0 | 17:59 vt* | 04 vd* | 07 | | | XXX | | 10K0E | XXX: Continuous digital signal. *Also on 05, 06 and 07/7, vt. Long-lasting |
| 18153.0 | 05:56 | 17 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 18161.0 | 06:24 | 26 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 18163.0 | 16:44 | 13 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 18165.0 | 09:49 | 11 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 18167.0 | 08:15 | 20 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 18168.0 | 19:54 | 25 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 18169.0 | 05:59 | 11 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR |
| 18170.0 | 10:08 | 02 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 18171.0 | 08:41 vt* | 10 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner *Also on 19/07, 2024 UTC |
| 18175.0 | 11:05 | 11 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 18182.0 | 07:43 | 22 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. Bad TX. Spurious to 18150 kHz |
| 21000.0 USB | 06:53 | 04 | 07 | | | J3E-U | | 2K40E | Spanish fishers. Same as always. Spanish language with strong Southern accent. |
| 21000.0 | 16:07 | 13 | 07 | | | XXX | | CA7K0E | XXX: unidentified bursts. BW ca 7K0E |
| 21005.0 | 06:52 | 12 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21095.0 | 13:46 vt* | 12 vd* | 07 | | | XXX | | CA7K20E | XXX. Continuous digital signal. BW ca 7K20E *Also on 29/07, 1304 UTC |
| 21104.0 | 09:10 | 28 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21118.0 | 08:14 | 22 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 21125.0 | 06:46 | 12 | 07 | CHN | | RADAR | 50 | 50K0E | OTHR |
| 21129.0 | 06:24 | 03 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 21132.0 | 06:06 | 17 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21151.5 | 16:48 vt* | 01 vd* | 07 | | | XXX | | CA5K0E | XXX. BW ca 5K0E. Most probably, jammer. *Very often |
| 21158.0 | 11:58 vt* | 01 vd* | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner *Also on 14/07, 0727 UTC |
| 21160.0 | 09:56 | 11 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 21161.0 | 07:34 | 11 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 21164.0 | 10:00 | 14 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 21175.0 | 06:34 | 02 | 07 | RUS | | RADAR | 40 | 14K0E | OTHR Contayner |
| 21175.0 | 14:39 | 14 | 07 | G | | RADAR | 25 | 20K0E | OTHR. UK SBA, Cyprus |
| 21175.0 | 07:42 | 20 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 21189.0 | 08:57 | 19 | 07 | CHN | | RADAR | 41.7 | 10K0E | OTHR short bursts |
| 21189.0 | 08:26 | 23 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 21191.0 | 09:12 | 28 | 07 | CHN | | RADAR | | 10K0E | OTHR short bursts |

URE; Gaspar, EA6AMM

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|---------|--------------|-----------|----|-----|-------|-------|---------|---------|---|
| 21195.0 | 06:21 | 03 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 21200.0 | 06:46 | 04 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 21200.0 | 15:09 | 14 | 07 | G | | RADAR | 25 | 20K0E | OTHR. UK SBA, Cyprus |
| 21205.0 | 17:55 | 13 | 07 | CHN | | RADAR | 41.7 | 10K0E | OTHR short bursts |
| 21215.0 | 06:44 | 14 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21269.0 | 08:55 | 19 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21270.0 | 06:46 | 30 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 21277.0 | 06:56 | 04 | 07 | CHN | | RADAR | 41.7 | 10K0E | OTHR short bursts |
| 21280.0 | 06:36 | 02 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 21289.0 | 06:24 | 17 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21290.0 | 06:46 | 06 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 21290.0 | 07:07 | 11 | 07 | G | | RADAR | 25 | 20K0E | OTHR. UK SBA, Cyprus |
| 21293.0 | 09:04 | 19 | 07 | CHN | | RADAR | 41.7 | 10K0E | OTHR short bursts |
| 21297.0 | 08:58 | 19 | 07 | CHN | | RADAR | 41.7 | 10K0E | OTHR short bursts |
| 21305.0 | 08:02 | 07 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 21307.0 | 08:15 | 22 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21330.0 | 14:13 | 10 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 21341.0 | 06:36 | 11 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21341.0 | 06:35 | 14 | 07 | RUS | | RADAR | 40 | 112K0E | OTHR Contayner |
| 21351.0 | 06:51 | 04 | 07 | CHN | | RADAR | 41.7 | 10K0E | OTHR short bursts |
| 21353.0 | 07:21 | 20 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21355.0 | 09:05 | 19 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21359.0 | 06:55 | 12 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21367.0 | 09:03 | 19 | 07 | CHN | | RADAR | 41.7 | 10K0E | OTHR short bursts |
| 21379.0 | 08:16 | 20 | 07 | REU | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 21384.0 | 06:23 | 03 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 21384.0 | 07:41 | 14 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 21386.0 | 05:48 | 12 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 21389.0 | 06:57 | 24 | 07 | CHN | | RADAR | 83.3 | 10K0E | OTHR short bursts |
| 21395.0 | 07:12 | 11 | 07 | | | J7D | 125 | 1K75E | 21395 kHz USB: CHN MIL-188-141A - ALE 2G. 8 x 125Bd |
| 21395.0 | 13:40 | 12 | 07 | | | J7D | 125 | 1K75E | USB. CHN MIL-188-141A ALE 2G. |
| 21402.0 | 06:54 | 12 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21410.0 | 09:48 | 11 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 21410.0 | 13:35 | 15 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 21414.0 | 08:18 | 20 | 07 | CHN | | RADAR | 66.7 | 10K0E | OTHR short bursts |
| 21415.0 | 19:09 | 11 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner |
| 21424.0 | 18:46 | 16 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts. First burst with short into tone |
| 21427.0 | 11:38 | 05 | 07 | RUS | | RADAR | 40 | 12K0E | OTHR Contayner. QRT: 1139 UTC |
| 21430.0 | 07:01 | 24 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21432.0 | 06:49 | 06 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21433.0 | 06:39 | 14 | 07 | CHN | | RADAR | 50 | 10K0E | OTHR short bursts |
| 21438.0 | 12:18 vt* | 03 vd* | 07 | | RCV | A1A | | | RUS navy QTC. "RCV" *Very often |
| 21445.0 | 12:38 | 15 | 07 | G | | RADAR | 25 | 20K0E | OTHR. UK SBA, Cyprus |
| 21446.0 | 06:37 | 11 | 07 | CHN | | RADAR | 41.7 | 10K0E | OTHR short bursts |
| 28025.1 | 19:25 | 05 | 07 | | | F1B | | CA300H | Fishing buoy |

URE; Gaspar, EA6AMM

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|---------|--------------|-----------|----|-----|-------|-------|---------|---------|--|
| 28051.4 | 19:26 | 05 | 07 | | | F1B | | CA300H | Fishing buoy |
| 28151.3 | 20:09 | 05 | 07 | | O? | A1A | | | Fishing buoy. ID = O? (weak) |
| 28165.0 | 07:00 | 04 | 07 | F | | A3E | | | French CBers (truck drivers) |
| 28189.8 | 18:43 | 06 | 07 | | B | A1A | | | Fishing buoy |
| 28200.0 | 19:45 | 05 | 07 | | | F1B | | 300H | Fishing buoy |
| 28220.9 | 18:47 | 06 | 07 | | AD | A1A | | | Fishing buoy |
| 28246.5 | 18:50 | 06 | 07 | | AE | A1A | | | Fishing buoy |
| 28289.7 | 18:45 | 06 | 07 | | AC | A1A | | | Fishing buoy |
| 28349.8 | 20:01 | 05 | 07 | | CC | A1A | | | Fishing buoy |
| 28376.7 | 19:52 | 05 | 07 | | AI | A1A | | | Fishing buoy |
| 28410.0 | 09:12 | 07 | 07 | G | | RADAR | 50 | 20K0E | OTHR. UK SBA, Cyprus |
| 28445.0 | 11:08 | 11 | 07 | G | | RADAR | 25 | 20K0E | OTHR. UK SBA, Cyprus |
| 28500.0 | 07:55 | 30 | 07 | IRN | | RADAR | 150 | 45K0E | Alternating 150 and 313 sps bursts |
| 28860.0 | 12:00 vt* | 01 vd* | 07 | IRN | | RADAR | 150 | 45K0E | Alternating 150 and 313 sps bursts *Very often |
| 28930.0 | 14:50 | 01 | 07 | G | | RADAR | 25 | 20K0E | UK SBA, Cyprus |
| 28960.0 | 06:54 | 06 | 07 | IRN | | RADAR | 150 | 45K0E | Alternating 150 and 313 sps bursts |
| 29275.0 | 09:09 | 07 | 07 | G | | RADAR | 50 | 20K0E | UK SBA, Cyprus |
| 29350.0 | 16:49 | 13 | 07 | IRN | | RADAR | 150/313 | 45K0E | OTHR.Alternating 150 and 313 sps bursts |
| 29450.0 | 17:03 *vt | 01 vd* | 07 | IRN | | RADAR | 150/313 | 45K0E | OTHR. Alternating 150 and 313 sps bursts *Also on 12/07, 0550 UTC |
| 29450.0 | 05:50 | 12 | 07 | IRN | | RADAR | 150/313 | 45K0E | OTHR. Alternating 150 and 313 sps bursts |
| 29500.0 | 10:04 vt* | 14 vd* | 07 | IRN | | RADAR | 150/313 | 45K0E | OTHR.Alternating 150 and 313 sps bursts *Also on 16 and 19/07, vt |

USKA; Peter, HB9CET

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|---------------|--------------|----------|----|-----|-------|--------------|--------------|---------|--|
| 7000.0 | 2302 2300 | 14 31 | 07 | | | J7D | 12x120 Bd | 2k70E | CIS12; very long lasting daily |
| 7009.0 | 2310 | 31 | 07 | | | FMOP | 40 sps | 12k0E | OTHR; Contayner |
| 7021.8 | 1233 | 13 | 07 | | | G1D | X | ca 2k6 | unid; maybe MIL188-xxx |
| 7024.0 | 2218 | 31 | 07 | | | FMOP | 40 sps | 12k0E | OTHR; Contayner; strong ≥ 50dbm |
| 7051.7 | 1439 | 06 | 07 | | | X | X | 1k20E | unid; maybe TDL -Tactical data link ? |
| 7055.0 LSB | 2224 | 27 | 07 | | | J3E-L | | ca 3k0E | RUS-UKR Radio War; Music daily |
| 7064.0 | 0730 | 26 | 07 | | | J7D | 12x120 Bd | 2k70E | CIS12 |
| 7176.0 | 0924 | 26 | 07 | | | J7D | 12x120 Bd | 2k70E | CIS12; weak |
| 7186.0 | 1453 | 31 | 07 | | | J7D | 12x120 Bd | 2k70E | CIS12; idling only |
| 14001.8 | 1415 | 28 | 07 | | | G1D PSK-8 | 2400 Bd | 2k40E | STANAG 4285; short bursts only, often |
| 14002.0 | 1417 | 28 | 07 | | | F1B | 50 Bd | 850H | FSK; weak, fading |
| 14008.0 | 1411 0842 | 06 12 | 07 | | | F1B | 50 Bd | 250H | FSK almost daily |
| 14019.0 | 1544 | 11 | 07 | | | FMOP | 40 sps | 12K0E | OTHR; Contayner |
| 14023.0 | 1443 | 28 | 07 | | | X | X | ca 2k0 | unid, long lasting |
| 14064.0 | 1535 | 11 | 07 | | | FMOP | 40 sps | 12K0E | OTHR; Contayner |

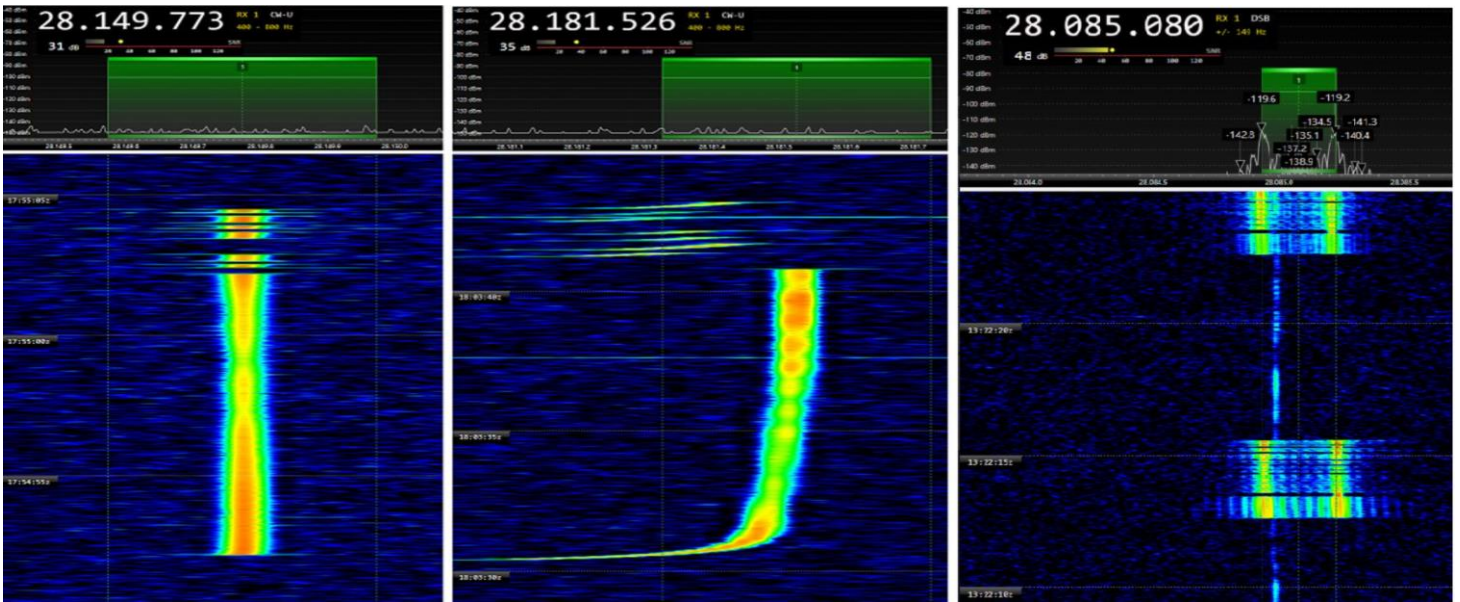
USKA; Peter, HB9CET

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|----------------|--------------|----------|----|-----|-------|---------------|------------------|--------------|---|
| 14068.0 | 0806 | 13 | 07 | | | F1B | 75 Bd | 500H | FSK; strong often |
| 14098.3 | 0739 | 01 | 07 | | | ARQ PSK | | 1k20E | DPRK PSK ARQ system often |
| 14108.0 | 0638 0813 | 06 13 | 07 | | MWD3 | A1A | | | CW; groupes of 5, encrypted often |
| 14142.0 | 1652 | 29 | 07 | | | FMOP | 40 sps | 12K0E | OTHR; Contayner |
| 14152.0 | 0901 | 28 | 07 | | | FMOP | 40 sps | 12K0E | OTHR; Contayner |
| 14155.0 | 1627 | 05 | 07 | | | FMOP | 40 sps | 12K0E | OTHR; Contayner |
| 14167.0 | 1559 | 30 | 07 | | | FMCW | 50 sps | 10k0E | OTHR; bursts |
| 14192.0 | 1301 1657 | 01 29 | 07 | | | F1B | 50 Bd | 200H | FSK; TDoA area of Moscow long lasting daily |
| 14198.5 | 1206 1211 | 05 13 | 07 | | | ARQ FSK / PSK | 600 1200 | 600H 1k20 | DPRK FSK or PSK ARQ system often |
| 14200.0 | 1433 | 12 | 07 | | | FMOP | 40 sps | 12K0E | OTHR; Contayner |
| 14202.0 | 0647 | 11 | 07 | | | FMOP | 40 sps | 12K0E | OTHR; Contayner |
| 14292.0 | 0841 | 05 | 07 | | | F1B | 100 Bd | 500H | FSK |
| 14298.5 | 1221 | 13 | 07 | | | ARQ FSK | 600 Bd | 600H | DPRK FSK ARQ system often |
| 14303.4 | 0811 | 01 | 07 | | | ARQ PSK | X | 1.2k | DPRK ARQ PSK often |
| 14318.0 | 0736 | 01 | 07 | | | FMOP | 40 sps | 12K0E | OTHR; Contayner |
| 21000.0 | 1211 | 05 | 07 | | | J3E-U | | ca 2k70E | Spanish, Fishermen almost daily |
| 21104.0 | 0915 | 28 | 07 | | | FMCW | 50 sps | 10k0E | OTHR; bursts |
| 21152.0 | 1706 | 11 | 07 | | | X | X | ca 12 k | unid; probably jammer? |
| 21161.0 | 0738 | 11 | 07 | | | FMOP | 40 sps | 12K0E | OTHR; Contayner |
| 21169.0 | 0847 | 13 | 07 | | | FMOP | 40 sps | 12K0E | OTHR; Contayner |
| 21174.0 | 0851 | 12 | 07 | | | FMOP | 40 sps | 12K0E | OTHR; Contayner; weak, fading |
| 21290.0 | 0727 | 11 | 07 | G | | FMCW | 25 sps | 20k0E | OTHR; UK base Cyprus |
| 21385.0 | 0823 | 05 | 07 | G | | FMCW | 50 sps | 20k0E | OTHR; UK base Cyprus |
| 21395.0 USB | 1348 | 12 | 07 | | | J7D MFSK-8 | 8x 125 Bd | 1k75 | ALE MIL188-141A |
| 21438.0 | 0854 | 12 | 07 | RUS | RCV | A1A | | 10H | Area of Sevastopol; since years daily |
| 28860.0 | 0819 | 01 | 07 | IRN | | | 150 + 313 sps | ca 45k | OTHR; Bursts; long lasting, sweep rate alternating almost daily |
| 28960.0 | 1221 | 05 | 07 | IRN | | | 150 + 313 sps | ca 45k | OTHR; Bursts; long lasting, sweep rate alternating almost daily |
| 29275.0 | 0836 | 07 | 07 | G | | FMCW | 50 sps | 20k0E | OTHR; UK base Cyprus |
| 29450.0 | 0751 | 01 | 07 | IRN | | OTHR | 150+ 313 sps | ca 45k0 | OTHR; Bursts: long lasting sweep rate alternating |
| 29524.99 | 1301 | 01 | 07 | | | F1B | 81.9 Bd | ca 140Hz | FSK, oceanographic measurig buoy |

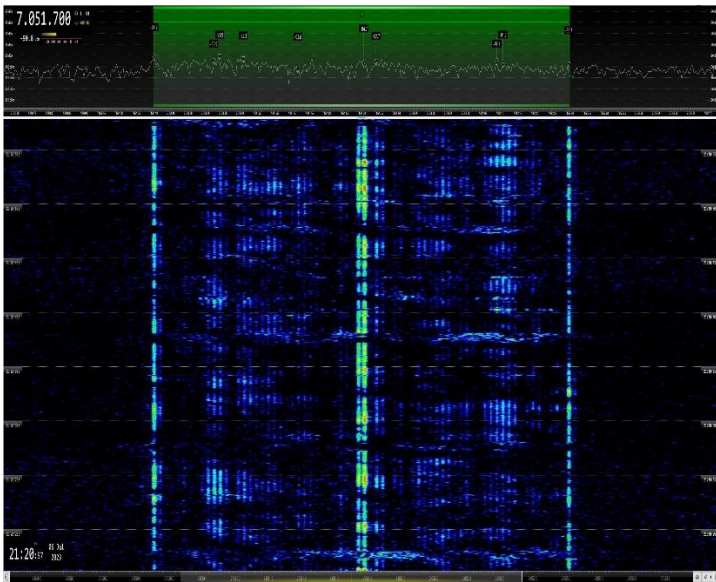
VERON; Ruud, PG1R

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
|--------|------|----|----|-----------------|-------|-------|---------|---------|---|
| 3608.0 | 2053 | 29 | 07 | | | F1B | | 200H | UiPtr; shared band! |
| 7050.0 | 1845 | 22 | 07 | UKR /RU S | | J3E-L | | 2K80E | UKR-RUS radiowar; comments; almost daily |
| 7055.0 | 1754 | 22 | 07 | UKR /RU S | | J3E-L | | 2K70E | UKR-RUS radiowar; Music/songs followed by slogans; almost daily; sometimes 2 TX on same frequency |

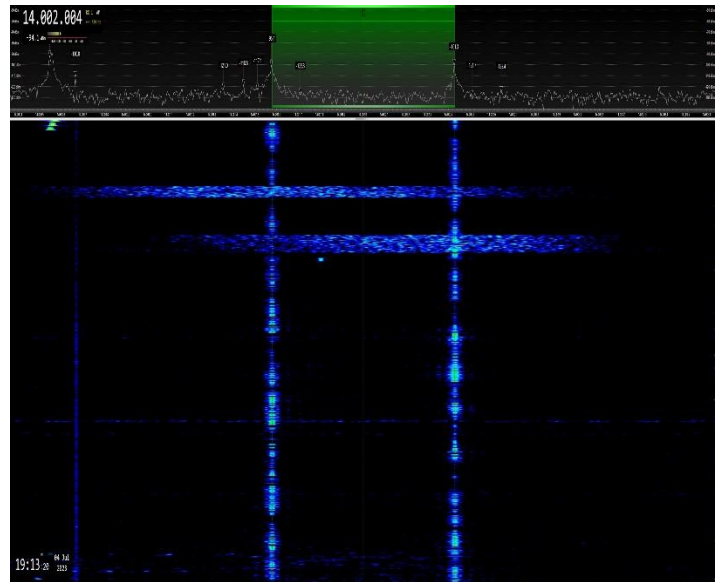
| VERON; Ruud, PG1R | | | | | | | | | |
|--------------------------|------------|-----------|-----------|------------|--------------|-------------|----------------|----------------|---|
| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD /sps | SH / BW | DETAILS |
| 14008.0 | 0726 | 23 | 07 | RUS | | F1B | | 200H | UiPtr; TDoA 56N 39E |
| 14008.0 | 1005 | 25 | 07 | RUS | | F1B | 50 | 250H | Ptr; S6 |
| 14019.0 | 1200 | 10 | 07 | RUS | | RADAR | 40 | 12K0E | CF; OTHR Contayner; report by PF5X |
| 14045.0 | 0931 | 08 | 07 | RUS | | RADAR | | 12K0E | OTHR; TDoA appr. 53N 34E |
| 14064.0 | 1800 | 10 | 07 | RUS | | RADAR | 40 | 12K0E | CF; OTHR Contayner; same time also on 14019.0 kHz; report by PF5X |
| 14068.0 | 0906 | 13 | 07 | RUS | | F1B | | 500H | UiPtr; TdoA Russia |
| 14108.0 | 0741 | 24 | 07 | | S63Y | A1A | | | 5F 5L; mil |
| 14114.0 | 0938 | 27 | 07 | RUS | | F1B | | 200H | UiPtr; TDoA 56N 39E |
| 14139.0 | 1916 | 29 | 07 | RUS | | RADAR | 40 | 12K0E | CF; OTHR Contayner |
| 14140.0 | 1036 | 03 | 07 | | | F1B | | 200H | UiPtr |
| 14150.0 | 0917 | 20 | 07 | G | | RADAR | | 20K0E | OTHR; most likely UK AB Cyprus |
| 14160.0 | 0710 | 12 | 07 | | | RADAR | | | |
| 14160.0 | 1235 | 29 | 07 | UKR /RUS | | J3E-U | | 2k70E | UKR-RUS radiowar; slogans |
| 14160.0 | 1028 | 30 | 07 | UKR /RUS | | J3E-U | | 2K70E | UKR-RUS radiowar; comments; weak S4 |
| 14187.0 | 1358 | 27 | 07 | RUS | | RADAR | 40 | 12K0E | CF; OTHR Contayner |
| 14192.0 | 1705 | 06 | 07 | RUS | | F1B | 50 | 200H | UiPtr, S9+ |
| 14192.0 | 0629 | 14 | 07 | RUS | | F1B | 50 | 200H | UiPtr |
| 14213.0 | 1031 | 03 | 07 | | | NON | | | UiCar |
| 14218.0 | 1000 | 04 | 07 | | | RADAR | | | |
| 14258.0 | 0806 | 28 | 07 | | | F1B | | 500H | UiPtr |
| 14274.0 | 1021 | 03 | 07 | | | NON | | | UiCar; long lasting; TDoA Germany |
| 14292.0 | 0715 | 12 | 07 | | | RADAR | | | |
| 14312.0 | 1000 | 03 | 07 | | | A1A | | | 5F groups; mil |
| 14340.0 | 1958 | 29 | 07 | RUS | | RADAR | 40 | 12K0E | CF; OTHR Contayner |
| 18169.0 | 0902 | 09 | 07 | G | | RADAR | 50 | 20K0E | FMCW; OTHR UK AB Cyprus; partly in 17m band |
| 21000.0 | 1230 | 01 | 07 | S | | J3E-U | | | Spanish fishermen; many days |
| 21151.0 | 1530 | 30 | 07 | | | J3E-L | | | Unknown Asian language; male voices. |
| 21305.0 | 0911 | 07 | 07 | G | | RADAR | | 20K0E | OTHR; TdoA Cyprus; most likely UK AB |
| 28495.0 | 0819 | 30 | 07 | IRN | | RADAR | 150/313 | 45K0E | CF; alternating 150sps and 313sps |



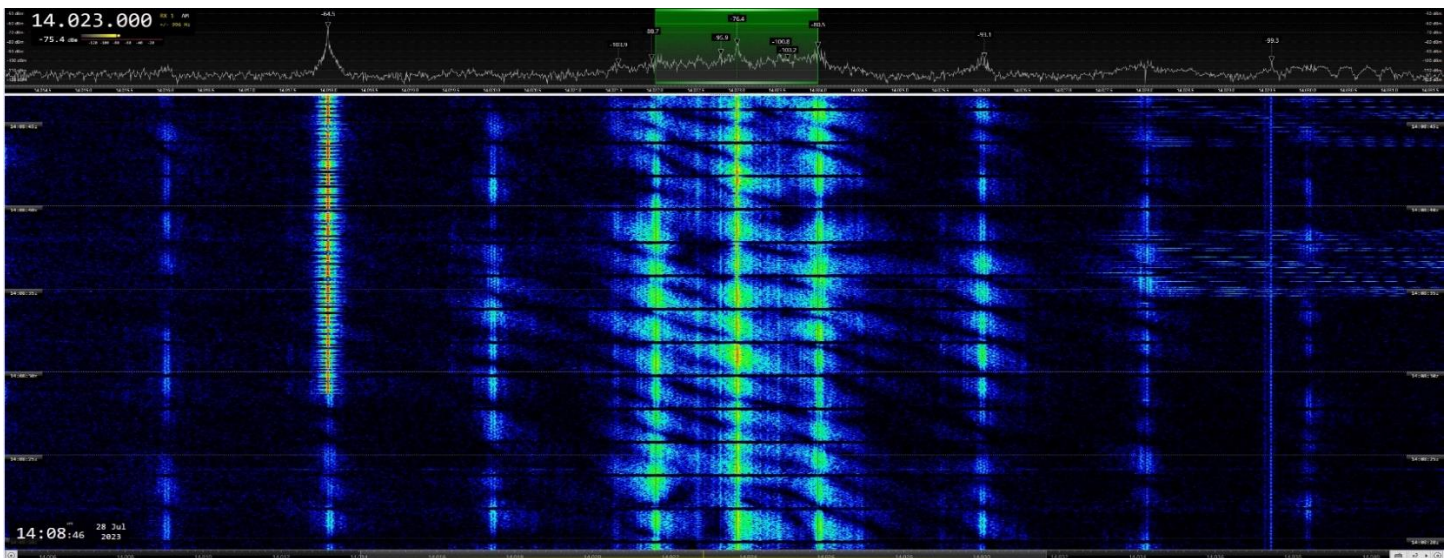
Fishing buoys on the 10 m band. Left and center images: A1A (CW). Right: F1B (FSK). Sh = 300 Hz.



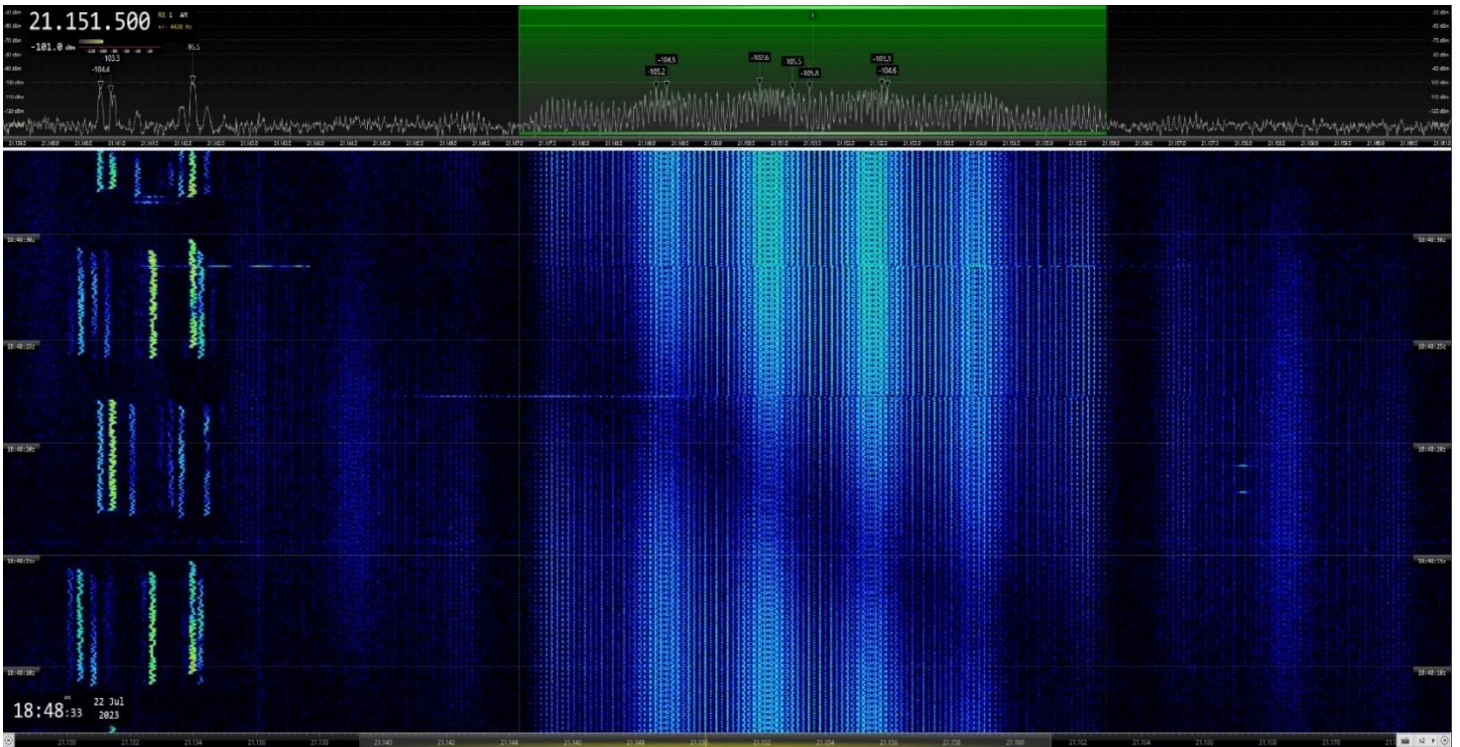
7051.7 kHz CF: TDL (Tactical Data Link). RUS. BW = 1K20E



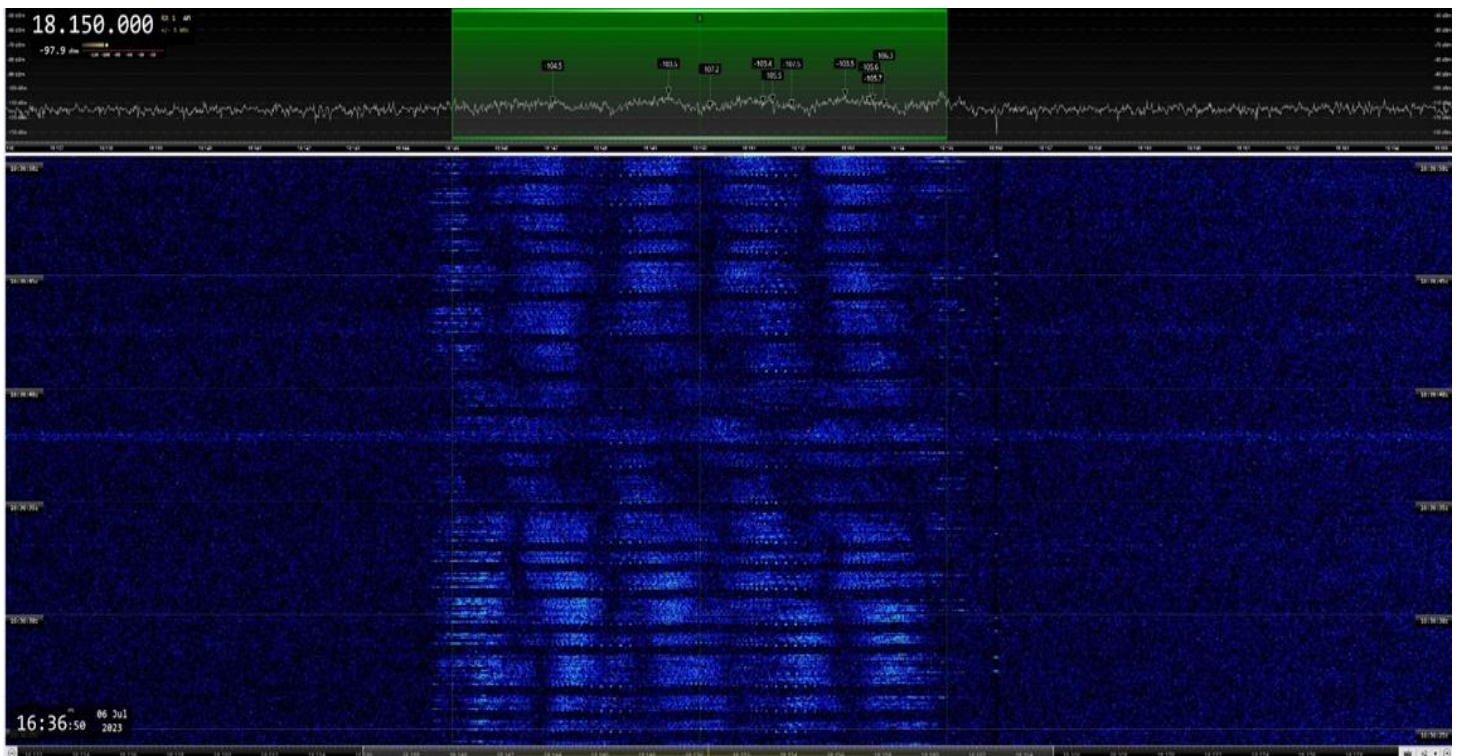
14002 kHz CF: F1B (FSK). Shift = 1K20E. 850 Bd. TDoA: Area of Guam



XXX. 14023 kHz CF: Unidentified bursts. BW ca 2K0E



14151.5 kHz CF: Unidentified digital signal. Long-lasting. Most probably used as jammer



18150 kHz CF: XXX. Unidentified digital signal. BW ca 10KOE.

Contact: Gaspar Miró, EA6AMM, ea6amm@iaru-r1.org

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