# Monitoring Report February 2019

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD | SH (BW) | DETAILS |
|---|---|---|---|---|---|---|---|---|---|
| **80m band informational only! - Amateur co-primary, shared with other also primary allocated services!** | | | | | | | | | |
| 3525.0 | 1041 | 04 | 02 | | | 2x DQPSK | 14x75 | ~6k1 | LINK 11 CLEW; DSB Mode often |
| 3527.0 | 2233 | 04 | 02 | | | F1B | 50 | 200 | almost daily |
| 3532.0 | 2144 | 13 | 02 | | | DQPSK | 14x75 | ~6k1 | LINK 11 DSB or ISB Mode |
| 3549.0 VFO USB | 2234 | 04 | 02 | | | G1D PSK8 | 2400 | 2k7 | MIL 188-110A (D2) mod (Hybrid) preamble 4 tones, PSK4 75Bd 450Hz spacing almost daily |
| 3553.8 | 2238 | 04 | 02 | | | G1D PSK8 | 2400 | 2k4 | STANAG 4285 almost daily |
| 3572.5 | 1633 | 22 | 02 | | | F1B | 50 | 200 | CIS 50-50 |
| 3608.0 | 2055 | 07 | 02 | | | F1B | 50 | 200 | often |
| 3610.0 | 2051 | 07 | 02 | | | B7D DQPSK | 14x75 | ~6k1 | LINK 11 CLEW; DSB Mode |
| 3707.0 | 0044 | 14 | 02 | | | J7D | 12x120 | 2k7 | BPSK; CIS12 |
| 3744.8 | 2238 | 04 | 02 | | | G1D PSK8 | 2400 | 2k7 | MIL 188-110A D2 mod (Hybrid); preamble 4 tones, PSK4 75Bd 450Hz spacing often |
| 3758.0 | 2059 | 07 | 02 | | | J7D | 12x120 | 2k7 | BPSK; CIS12 |
| 5361.8 **VFO USB** | 1606 | 07 | 02 | DNK | | G1D PSK8 | 2400 | 2k7 | STANAG 4285; reported as Danish Navy in Aarhus: **legal !** |
| 5362.0 | 1447 | 20 | 02 | | | J7D | 12x120 | 2k7 | BPSK; CIS12 - (Ham only secondary!) |
| 6978.0 | 1613 | 21 | 02 | | | FMOP | 10 sps | 160k | OTHR 10 sweeps/s; long lasting 6898 - 7058 kHz wide ) illustration below |
| 6999.0 | 2110 | 07 | 02 | | | J3E-U | | 2k1 | unid language; partially in 40m band |
| 7000.0 | 1442 | 20 | 02 | | | N0N | | | long lasting carrier |
| 7000.0 | 1638 | 26 | 02 | | | J3E-U | | | Voice sounds Spanish |
| 7010.0 | 0939 | 04 | 02 | | | J7D | 12x120 | 2k7 | BPSK; CIS12 often |
| 7012.0 | 1233 | 13 | 02 | | | F1B | 75 | 200 | |
| 7013.0 | 2121 | 07 | 02 | | 304003 | MFSK8 | 125 | 1750 | ALE, MIL 188-141A |
| 7014.0 | 2103 | 07 | 02 | | | J3E-L | | | unid language |
| 7014.0 | 1239 | 13 | 02 | | | J7D | 12x120 | 2k7 | BPSK; CIS12 |
| 7020.0 | 1223 | 25 | 02 | | | J3E-L | | | unid language (sounds Asian) |
| 7030.0 | 0912 | 28 | 02 | RUS | | F1B | 75 | 250 | TDoA: greater area of Moscow |
| 7032.0 | 0804 | 02 | 02 | | | J7D | 12x120 | 2k7 | BPSK; CIS12 |
| 7038.4 | vt | 26 | 02 | RUS | M | A1A | | | Letter beacon; Magadan (via JA) |
| 7039.2 | vt | 25 | 02 | RUS | F | A1A | | | Letter beacon, Vladivostok (via JA) |
| 7050.0 | 0616 | 25 | 02 | | | J3E-L | | | Voice and Music often |
| 7055.0 | 1233 | 19 | 02 | UKR | | J3E-L | | | Voice and Music almost daily |
| 7089.0 | 1039 | 02 | 02 | | | J7D | 12x120 | 2k7 | BPSK; CIS12 |
| 7098.0 | 0902 | 12 | 02 | | | F1B | 75 | 250 | |
| 7116.0 | 1316 | 12 | 02 | | | F1B | 75 | 200 | |
| 7140.0 | 1557 | 01 | 02 | ERI | VOBM | A3E | | ~ 9k | BC almost daily |
| 7169.0 | 0754 | 28 | 02 | | | J7D | 12x120 | 2k7 | BPSK; CIS12 (idling) |
| 7180.0 | 1437 | 02 | 02 | ERI | VOBM | A3E | | ~ 9k | BC almost daily |
| 7193.0 | 1107 | 01 | 02 | RUS | RDL | F1B | 36 + 50 | 200 | CIS 36-50 often |

| kHz | UTC | DD | MM | ITU | IDENT | MODE | BD | SH (BW) | DETAILS |
|---|---|---|---|---|---|---|---|---|---|
| 7193.0 | 1449 | 20 | 02 | RUS | RDL | F1A | | 200 | CIS 36-50 |
| 7197.0 | 1950 | 01 | 02 | TUR | 301013 | MFSK8 | 125 | 1750 | ALE, MIL 188-141A |
| 7198.0 | 1239 | 02 | 02 | | | J7D | 12x120 | 2k7 | BPSK; CIS12 often |
| 10130.0 | 0821 | 28 | 02 | | | F1B | 50 | 500 | heavy! (legal) almost daily |
| 14001.8 | 1524 | 01 | 02 | | | G1D PSK8 | 2400 | 2k4 | STANAG 4285 |
| 14020.0 | 0902 | 21 | 02 | | | J3E-U | | appx 2k7 | Voice, Music, Laugther |
| 14098.0 | 0911 | 20 | 02 | | | FMOP ? | 10 sps | 40k | OTHR; (long lasting) |
| 14100.0 | 1104 | 01 | 02 | | | FMOP | 40 sps | appx 13k | OTHR; (long lasting) |
| 14117.5 | 1347 | 08 | 02 | | | FMOP | 40 sps | appx 13k | OTHR; (long lasting) |
| 14136.0 | 0906 | 12 | 02 | | | FMOP | 50 sps | 10k | OTHR; Bursts; BD 3s |
| 14186.0 | 1542 | 21 | 02 | | | FMOP | 40 sps | appx 13k | OTHR; (long lasting) |
| 14186.0 | 1002 | 25 | 02 | | | FMOP | 50 sps | appx 12k | OTHR; (long lasting) |
| 14191.0 | 0924 | 12 | 02 | | | FMOP | 50 sps | 10k | OTHR; Bursts; BD 3s |
| 14192.0 | 1229 | 25 | 02 | | | F1B | 50 | 200 | |
| 14204.0 | 0903 | 25 | 02 | | | FMOP | 40 sps | appx 13k | OTHR; (long lasting) often |
| 14225.0 | 0942 | 20 | 02 | | | FMxx | 66.66 sps | 10k | OTHR; Bursts; BD 3.5s |
| 14240.0 | 0904 | 01 | 02 | | | F1B | 75 | 250 | |
| 14241.0 | 0959 | 04 | 02 | | | FMOP | 50 sps | 10k | OTHR; Bursts; BD 5s; BRI 32s |
| 14249.0 | 0714 | 27 | 02 | | | FMOP | 50 sps | appx 12k | OTHR; (long lasting) |
| 14261.0 | 0826 | 28 | 02 | | | OFDM60 | 35.57 | ~2k8 | spacing 44.45Hz; pilottone |
| 14291.0 | 0912 | 25 | 02 | RUS | | FMOP | 40 sps | appx 13k | OTHR; (long lasting) illustration below |
| 14295.1 | 1048 | 20 | 02 | TJK | | A3E | | appx 9k | Radio Tajik (3rd of 4765 kHz) often |
| 14308.0 | 0900 | 21 | 02 | RUS | | F1B | 75 | 500 | |
| 14317.0 | 0907 | 25 | 02 | | | FMOP | 40 sps | appx 13k | OTHR; (long lasting) illustration below |
| 18065.0 | 0952 | 19 | 02 | | | FMCW | 25 sps | 20k | OTHR (long lasting) partially in 17m Band! |

Errors and omissions excepted

Digital transmissions: Frequency mostly center frequency; otherwise indicated.

**BC** = Broadcast // **BD** = Baud, or also Burst duration // **BRI** = Burst repetition interval // **SH** = Shift or Spacing (Hz)
**BW** = Bandwidth // **OTHR** = over the horizon radar // **FMCW** = frequency modulated continuous wave //
**FMOP** = frequency modulated on pulse // **sps** = sweeps per second // **vd** = various dates // **vt** = various times
**DF** = Direction finding (radio location) // **TDoA** Time difference of arrival


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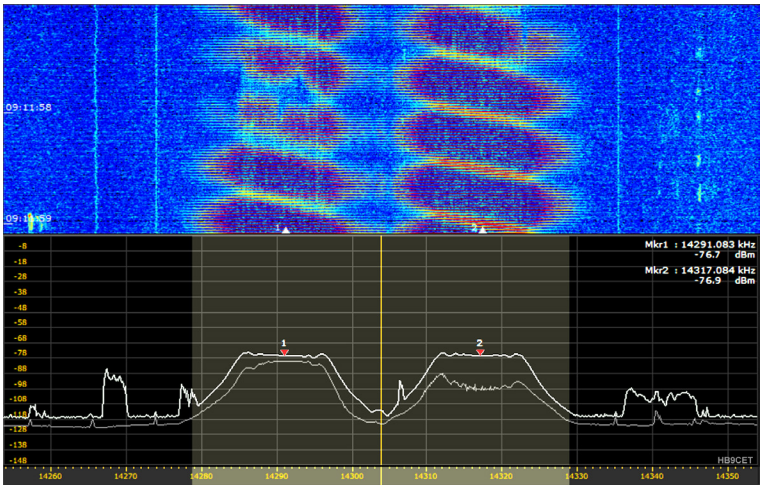
## Viele OTHR in unseren Bändern

Im gesamten Februar war eine äusserst hohe Aktivität verschiedener Überhorizontradare (OTHR) festzustellen



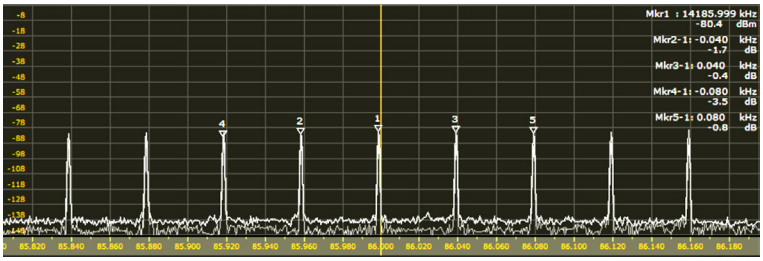

**Gleich zwei Signale nebeneinander!**

QRG: 14291 und 14317 kHz
Bandbreite: je ca. 13 kHz
Modulation: FMOP
Sweeprate: 40 sweeps/s

Insgesamt wurde der Bereich von ca. 14280 bis 14330 kHz über viele Stunden für den Amateurfunk praktisch lahmgelegt!

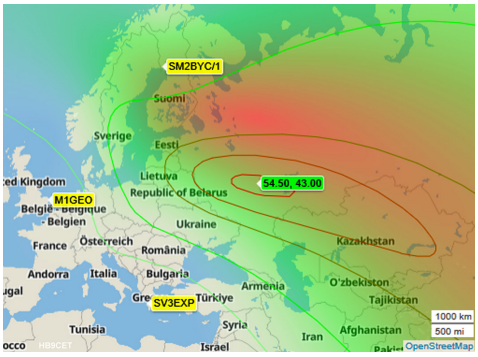
Das System ist bekannt unter dem Namen Contayner 29B6

Screenshot mit Perseus SDR




**Messung der Sweeprate mit dem Perseus SDR**
Einstellung Spektrum Anzeige.
Span 0.4 kHz; max. Peak Hold":
ergibt 40Hz ( 40sps) zwischen allen einzelnen Markern.

(Überprüft mit Oszilloskop: 25ms = 40 sps)




**Ortung des Signals**

Mit dem KIWI SDR lassen sich Ortungen mittels TDoA (Time Difference of Arrival) vornehmen. Sie sind oft zeitaufwendig und es braucht mindestens 3 - 4 geeignete Stationen.

Das oben erwähnte OTHR wurde mehrfach im Grossraum südlich Nizhny Novgorod - Penza geortet.

Screenshot mit remote KIWI SDR Netzwerk

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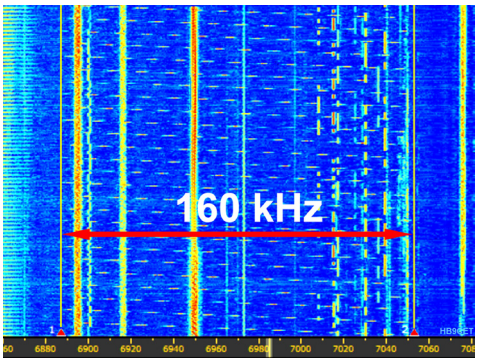


**OTHR mit 160kHz Bandbreite und 10 Sweeps/s**
Dieses System taucht regelmässig auf verschiedenen Bändern auf und kann unseren Funkbetrieb arg stören

Man findet es ua. oft im 40m und 60m Band

Hier auf 6898 - 7058, also teilweise im 40m Band.

Screenshot mit Perseus SDR