



INTERNATIONAL AMATEUR RADIO UNION

REGION THREE

MONITORING SYSTEM NEWS LETTER



December 2021

Titon Dutono, YB3PET

Reports for December 2021 were contributed by ARSI, JARL and NZART

For this period there were 50 observations from ARSI, 66 observations from JARL, and 14 observations from NZART. By this month's sampling, there are a total of 130 observations of intruders made across the Region.

The most prominent intruders are in the following table,

| No. | Band | Class Emission | Administration | Description |
|---------|------|----------------|--|---|
| 1. 40 m | | J3E/U | CLN | Talk in sinhala by male and fair signal was observed |
| | | A3E | ETHIO | Fair signal from BC station and announcement by male from time to time. |
| | | A3A | NON | han-gul talk and music program 10:58 QRT |
| 2. 20m | PXX | CHN | OTHR Chinese 67 pps S9 4 Second bursts | |
| | | RUS | OTHR Russian 40 pps S6 Continuous | |
| 3. 17m | PXX | CYP | OTHR Cyprus S3 50 pps S8 continuous | |
| 4. 15m | PXX | RUS | OTHR Russian 47 pps 5.5 second bursts S6 | |
| | PXX | CHN | OTHR Chinese 50 pps 10 second bursts S7 | |

Note: <ARSI>This month the 40 meter is dominated by srilankan trawlers and broadcast station from Ethiopia on 7110 khz. Voice masses is audible here in India.

Further, more detail is provided in the attached data report.

Thank you to all the regional observers for their reports, these reports are needed and really appreciated. Monitoring reports can also be sent directly to the monitoring coordinator if you don't have a national monitoring coordinator.

For those who would like a CSV file of data please email me at: titondutono@gmail.com

Just a reminder that reports should be sent to the Monitoring Coordinator by the 14th day of each month.

Thanks for your support.

Titon YB3PET

Attachments of Data Report

ARSI: 50 observations

| kHz | BW | YEAR | MONTH | DD | UTC | Emm | | Bd | Hdg | ADM | ID | Remarks/Details | Grid | Society |
|------|----|------|-------|----|-------------|-------|--|----|-----|------|-------|---|--------|------------------|
| 7022 | 3 | 2021 | 12 | 1 | <0145 0200> | J3E/U | | | | CLN | UNID | Talk in sinhala and male talking to male with fair signal | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 1 | <1530 1600> | A3E | | | | UNID | ETHIO | Today poor signal was oboserved and speech in african language from Ethiopia. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 2 | <1630 1700> | A3E | | | | UNID | ETHIO | Fair signal and talk in african language. | MK71UJ | ARSI-MONI-VU3SIO |
| 7154 | 3 | 2021 | 12 | 4 | <0215 0230> | J3E/U | | | | CLN | UNID | Male talking tto other in sinhala and fair signal noted | MK71UJ | ARSI-MONI-VU3SIO |
| 7151 | 3 | 2021 | 12 | 5 | <0145 0200> | J3E/U | | | | CLN | UNID | signal was fair and male talking. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 5 | <1630 1700> | A3E | | | | UNID | ETHIO | Good signal and talk in african language. | MK71UJ | ARSI-MONI-VU3SIO |
| 7188 | 3 | 2021 | 12 | 7 | <0130 0145> | J3E/U | | | | UNID | UNID | Language spoken similar to thai and poor signal noted. | MK71UJ | ARSI-MONI-VU3SIO |
| 7030 | 3 | 2021 | 12 | 7 | <0200 0215> | J3E/U | | | | CLN | UNID | Sinhala spoken by male and poor reception noted | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 7 | <1530 1600> | A3E | | | | UNID | ETHIO | Fair signal and music and announcement in between | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 8 | <0145 0200> | J3E/U | | | | CLN | UNID | Fair signal and talk in sinhala by male | MK71UJ | ARSI-MONI-VU3SIO |
| 7155 | 3 | 2021 | 12 | 8 | <0200 0215> | J3E/U | | | | CLN | UNID | Male talikng to male in sinhala continuously and fair signal noted. | MK71UJ | ARSI-MONI-VU3SIO |
| 7135 | 3 | 2021 | 12 | 8 | <0215 0230> | J3E/U | | | | CLN | UNID | Fair signal and talk in snhala | MK71UJ | ARSI-MONI-VU3SIO |
| 7098 | 3 | 2021 | 12 | 8 | <1130 1145> | J3E/U | | | | CLN | UNID | Strong signal and talk by male | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 8 | <1645 1700> | A3E | | | | UNID | ETHIO | Songs and announcement and fair signal was noted | MK71UJ | ARSI-MONI-VU3SIO |
| 7102 | 3 | 2021 | 12 | 9 | <0145 0200> | J3E/U | | | | CLN | UNID | Male talking to male in sinhala with fair signal | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 9 | <1600 1630> | A3E | | | | UNID | ETHIO | Fair signal followed byspeech and songs heard. | MK71UJ | ARSI-MONI-VU3SIO |
| 7100 | 3 | 2021 | 12 | 10 | <0145 0200> | J3E/U | | | | UNID | UNID | Language spoken not identified and poor signal noted. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 10 | 1530 1600> | A3E | | | | UNID | ETHIO | Songs and announcement and fair signal was noted | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 11 | <1500 1530> | A3E | | | | UNID | ETHIO | Fair to good signal and songs anad | MK71UJ | ARSI-MONI-VU3SIO |

| | | | | | | | | | | | | | |
|-------|---|------|----|----|--------------|-------|--|--|------|-------|---|--------|------------------|
| | | | | | | | | | | | announcemet followed. | | |
| 7090 | 3 | 2021 | 12 | 14 | <0130 0200> | J3E/U | | | CLN | UNID | Talk in sinhala by male and poor signal was observed | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 14 | <1530 1600> | A3E | | | UNID | ETHIO | Announcement by male and fair signal was obsserved. | MK71UJ | ARSI-MONI-VU3SIO |
| 7090 | 3 | 2021 | 12 | 15 | <0230 0245> | J3E/U | | | CLN | UNID | Language spoken in sinhala and good signal was noted. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 15 | <1600 0145> | A3E | | | UNID | ETHIO | Fair signal from BC station and announcement by male from time to time. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 16 | <0200 0230> | A3E | | | UNID | ETHIO | Announcements in african language and songs in between. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 17 | <1645 1715> | A3E | | | UNID | ETHIO | Fair signal announcements and songs in between. Fair signal was noted., | MK71UJ | ARSI-MONI-VU3SIO |
| 7143 | 3 | 2021 | 12 | 18 | <0200 0215> | J3E/U | | | UNID | UNID | Language not known. Fair signal and male talking to other one. | MK71UJ | ARSI-MONI-VU3SIO |
| 7015 | 3 | 2021 | 12 | 18 | <0215 0230> | J3E/U | | | UNID | UNID | Language similar to thai and male talking to other. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 19 | <1400 1430> | A3E | | | UNID | ETHIO | Songs and announcement and fair signal was noted | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 20 | <1600 1630 > | A3E | | | UNID | ETHIO | Announcement by male and fair signal was obsserved. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 21 | <1500 0530> | A3E | | | UNID | ETHIO | Fair signal with announcement in african and songs | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 22 | <1600 1630> | A3E | | | UNID | ETHIO | Announcement and songs with fair signal | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 23 | ,<1530 1600> | A3E | | | UNID | ETHIO | Announcenent and song heard with fair rexeption. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 24 | < 1630 1700> | A3E | | | UNID | ETHIO | Audi with slight fading and noise followed by announcement and songd | MK71UJ | ARSI-MONI-VU3SIO |
| 7006 | 3 | 2021 | 12 | 25 | <0145 0200> | J3E/U | | | CLN | UNID | Talk in sinhala and male talking to male with fair signal | MK71UJ | ARSI-MONI-VU3SIO |
| 7105 | 3 | 2021 | 12 | 25 | <0200 0215> | J3E/L | | | CLN | UNID | Talk in sinhala by male and fair signal was observed | MK71UJ | ARSI-MONI-VU3SIO |
| 14225 | 3 | 2021 | 12 | 25 | <1115 1130> | J3E/U | | | UNID | UNID | Male to male talking in a language similar ro thai. Fair signal was observed. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 25 | <1600 1630> | A3E | | | UNID | ETHIO | Audio is not clear with slight noise ,but songs and announcement heard | MK71UJ | ARSI-MONI-VU3SIO |

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|-------|---|------|----|----|-------------|-------|--|--|--|------|-------|--|--------|------------------|
| 14205 | 3 | 2021 | 12 | 26 | <1050 1100> | J3E/U | | | | CLN | UNID | Good signal and talk in sinhala | MK71UJ | ARSI-MONI-VU3SIO |
| 14225 | 3 | 2021 | 12 | 26 | <1100 1115> | J3E/U | | | | UNID | UNID | Good signal and language spoken similar to thai, | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 26 | <1530 1600> | A3E | | | | UNID | ETHIO | Fair signal and announcemnet in african language | MK71UJ | ARSI-MONI-VU3SIO |
| 7180 | 3 | 2021 | 12 | 27 | <0200 0230> | J3E/U | | | | UNID | UNID | Language spoken mot identified . Male to male talking with poor signal | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 27 | <1630 1700> | A3E | | | | UNID | ETHIO | Audio is clear ,announcement and songs heard. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 28 | <1500 1530> | A3E | | | | UNID | ETHIO | Announcement and songs with fair signal | MK71UJ | ARSI-MONI-VU3SIO |
| 7151 | 3 | 2021 | 12 | 29 | <0145 0200> | J3E/U | | | | UNID | UNID | Talk in a language which is not identified. Male talking to male | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 29 | <1500 1530> | A3E | | | | UNID | ETHIO | Audio is somewhat clear , announcement and songs broadcasted. | MK71UJ | ARSI-MONI-VU3SIO |
| 7164 | 3 | 2021 | 12 | 30 | <0145 0200> | J3E/U | | | | UNID | UNID | Weak signal and male talking in a langauge which is not known. | MK71UJ | ARSI-MONI-VU3SIO |
| 7143 | 3 | 2021 | 12 | 30 | <0200 0215> | J3E/U | | | | CLN | UNID | Talk in sinhala by male and good signal observed. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 30 | <1500 1530> | A3E | | | | UNID | ETHIO | Fair signal with announcement in african and songs | MK71UJ | ARSI-MONI-VU3SIO |
| 7102 | 3 | 2021 | 12 | 31 | <0145 0200> | J3E/U | | | | CLN | UNID | Male to male talking in sinhala . Fair signal was observed. | MK71UJ | ARSI-MONI-VU3SIO |
| 7110 | 3 | 2021 | 12 | 31 | <1600 1630> | A3E | | | | UNID | ETHIO | Fair signal and songs/ announcements in between in african language. | MK71UJ | ARSI-MONI-VU3SIO |

JARL: 66 observations

| kHz | BW | YYYY | MM | DD | UTC | Emm | Bd | Sft | Hdg | ADM | ID | Description | Grid | Society |
|---------|-----|------|----|----|-------|---------|----|-----|-----|-----|-----|--------------|--------|---------|
| 21173.0 | 3.0 | 2021 | 12 | 21 | 12:20 | Jamming | | | | | | Signal RS:59 | PM84XT | JARL |
| 3530.0 | 3.0 | 2021 | 12 | 14 | 12:20 | Jamming | | | | | | Signal RS:59 | PM84XT | JARL |
| 7038.0 | 3.0 | 2021 | 12 | 28 | 12:15 | Jamming | | | | | | Signal RS:59 | PM84XT | JARL |
| 7039 | | 2021 | 12 | 01 | 1050 | non | | | non | non | non | non | PM97 | JARL |

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|------|--|------|----|----|------|-----|--|--|-----|-----|-----|-----|------|------|
| 7039 | | 2021 | 12 | 02 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 03 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 04 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 05 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 06 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 07 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 08 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 09 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 10 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 11 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 12 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 13 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 14 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 15 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 16 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 17 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 18 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 19 | 1050 | non | | | non | non | non | non | PM97 | JARL |

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|--------|-----|------|----|----|-------|---------|--|--|-----|-----|-----|---|--------|------|
| 7039 | | 2021 | 12 | 20 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 21 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 22 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 23 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 24 | 1100 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 25 | 1100 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 26 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 27 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 28 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 29 | 1100 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 30 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7039 | | 2021 | 12 | 31 | 1050 | non | | | non | non | non | non | PM97 | JARL |
| 7055.0 | 3.0 | 2021 | 12 | 07 | 12:28 | Jamming | | | | | | Signal RS:59 | PM84XT | JARL |
| 7200 | 5 | 2021 | 12 | 01 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 02 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 03 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 04 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 05 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |

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|------|---|------|----|----|-------------|-----|--|--|-----|-----|-----|---|------|------|
| 7200 | 5 | 2021 | 12 | 06 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 07 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 08 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 09 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 10 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 11 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 12 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 13 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 14 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 15 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 16 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 17 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 18 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 19 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 20 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 21 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 22 | 1040 | non | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 23 | 1040 | non | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |

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|------|---|------|----|----|------|-----|--|--|-----|-----|-----|---|------|------|
| 7200 | 5 | 2021 | 12 | 24 | 1050 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 25 | 1050 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 26 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 27 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 28 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 29 | 1050 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 30 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |
| 7200 | 5 | 2021 | 12 | 31 | 1040 | A3E | | | non | non | non | han-gul talk and music program 10:58 QRT | PM97 | JARL |

NZART: 14 observations

| kHz | BW | YYYY | Mon | DD | GMT | UTC | Emm | Bd | Sft | Hdg | ADM | ID | Description | Grid | Society |
|---------|--------|-------|-----|----|--------|------|-----|----|-----|-----|-----|------|---|--------|---------|
| 14263.1 | 160k.7 | 2021 | 12 | 05 | <0408> | 0408 | PXX | | | | CHN | Unid | OTHR Chinese 10 pps continuous S6 | RF73MF | ZL1GWE |
| 14263.1 | 106k.2 | 2021 | 12 | 05 | <0602> | 0602 | PXX | | | | CHN | Unid | OTHR Chinese 11 pps continuous S7 | RF73MF | ZL1GWE |
| 14289 | 14.2 | 2021 | 12 | 16 | <0604> | 0604 | PXX | | | | RUS | Unid | OTHR Russian 40 pps S6 continuous | RF73MF | ZL1GWE |
| 18070 | 20k | 2021 | 12 | 18 | <0612> | 0612 | PXX | | | | CYP | Unid | OTHR Cyprus 50 pps S4 continuous clean signal | RF73MF | ZL1GWE |
| 21098 | 11.6 | 2021 | 12 | 31 | <0314> | 0314 | PXX | | | | RUS | Unid | OTHR Russian 47 pps 5.5 second bursts S6 | RF73MF | ZL1GWE |
| 21169 | 30 | 2021` | 12 | 25 | <0431> | 0431 | PXX | | | | RUS | Unid | OTHR Russian 50 pps continuous S8 | RF73MF | ZL1GWE |
| 21172.2 | 27.8 | 2021 | 12 | 22 | <0608> | 0608 | PXX | | | | RUS | Unid | OTHR 50 pps 5.1 second bursts S8 | RF73MF | ZL1GWE |
| 21218 | 11.8 | 2021` | 12 | 25 | <0506> | 0506 | PXX | | | | CHN | Unid | OTHR Chinese 43 pps 3.1 second bursts S8 | RF73MF | ZL1GWE |
| 21229 | 10.7 | 2021 | 12 | 29 | <0225> | 0225 | PXX | | | | RUS | Unid | OTHR Russian 42 pps 6.05 second | RF73MF | ZL1GWE |

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|---------|------|------|----|----|--------|------|-----|--|--|--|-----|-----------|--|--------|--------|
| | | | | | | | | | | | | bursts S7 | | | |
| 21274.2 | 47.2 | 2021 | 12 | 22 | <0556> | 0556 | PXX | | | | RUS | Unid | OTHR Russian 50 pps 5.1 second bursts S9 | RF73MF | ZL1GWE |
| 21318.6 | 129k | 2021 | 12 | 19 | <0532> | 0532 | PXX | | | | CHN | Unid | OTHR Chinese 50 pps 10.2 second bursts S7 | RF73MF | ZL1GWE |
| 21366 | 22k | 2021 | 12 | 26 | <0518> | 0518 | PXX | | | | RUS | Unid | OTHR Russian 42 pps 6.1 second bursts S7 | RF73MF | ZL1GWE |
| 21396.5 | 161k | 2021 | 12 | 25 | <0453> | 0453 | PXX | | | | CHN | Unid | OTHR Chinese 10 pps 52 second bursts S5 | RF73MF | ZL1GWE |
| 21415.4 | 153k | 2021 | 12 | 19 | <0508> | 0508 | PXX | | | | CHN | Unid | OTHR Chinese 50 pps 10 second bursts S7 | RF73MF | ZL1GWE |

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