

# 1. Frequency stability

## 1.1 Test Result

| Test Band: 2_1.4MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                   | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                             | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                        | 6             | 0      | NT         | LV         | -1.2445          | -2.9182 | -2.5034 | -0.0007               | -0.0016 | -0.0013 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | -1.6737          | -4.0197 | -1.6165 | -0.0009               | -0.0021 | -0.0008 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | -3.8910          | -3.4618 | -0.9727 | -0.0021               | -0.0018 | -0.0005 | 2.50        | PASS    |
| 16QAM                                                       | 6             | 0      | NT         | LV         | -2.1601          | -2.8038 | -0.9871 | -0.0012               | -0.0015 | -0.0005 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | -0.3433          | -3.3760 | -1.4591 | -0.0002               | -0.0018 | -0.0008 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | -0.9155          | -2.7466 | -0.7725 | -0.0005               | -0.0015 | -0.0004 | 2.50        | PASS    |

| Test Band: 2    1.4MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|--------------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                          | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                    | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                               | 6             | 0      | NV         | -30.00     | -2.3031          | -4.1342 | -0.5436 | -0.0012               | -0.0022 | -0.0003 | 2.50        | PASS    |
|                                                                    |               |        |            | -20.00     | -3.8195          | -4.1485 | -1.1587 | -0.0021               | -0.0022 | -0.0006 | 2.50        | PASS    |
|                                                                    |               |        |            | -10.00     | -2.2888          | -4.0054 | -1.6737 | -0.0012               | -0.0021 | -0.0009 | 2.50        | PASS    |
|                                                                    |               |        |            | 0.00       | -2.6321          | -4.0913 | -1.3733 | -0.0014               | -0.0022 | -0.0007 | 2.50        | PASS    |
|                                                                    |               |        |            | 10.00      | -3.4332          | -4.6062 | -1.1301 | -0.0019               | -0.0025 | -0.0006 | 2.50        | PASS    |
|                                                                    |               |        |            | 20.00      | -4.2915          | -3.8338 | -1.1587 | -0.0023               | -0.0020 | -0.0006 | 2.50        | PASS    |
|                                                                    |               |        |            | 30.00      | -2.9612          | -3.8624 | -1.7166 | -0.0016               | -0.0021 | -0.0009 | 2.50        | PASS    |
|                                                                    |               |        |            | 40.00      | -2.8181          | -3.5048 | -0.5865 | -0.0015               | -0.0019 | -0.0003 | 2.50        | PASS    |
|                                                                    |               |        |            | 50.00      | -2.5034          | -4.2772 | -1.6022 | -0.0014               | -0.0023 | -0.0008 | 2.50        | PASS    |
| 16QAM                                                              | 6             | 0      | NV         | -30.00     | -1.1873          | -4.7922 | -0.5007 | -0.0006               | -0.0025 | -0.0003 | 2.50        | PASS    |
|                                                                    |               |        |            | -20.00     | -0.3433          | -3.4046 | 0.0572  | -0.0002               | -0.0018 | 0.0000  | 2.50        | PASS    |
|                                                                    |               |        |            | -10.00     | -1.1158          | -3.4761 | -1.4305 | -0.0006               | -0.0018 | -0.0007 | 2.50        | PASS    |
|                                                                    |               |        |            | 0.00       | -0.8154          | -2.9182 | -0.2146 | -0.0004               | -0.0016 | -0.0001 | 2.50        | PASS    |
|                                                                    |               |        |            | 10.00      | -0.6723          | -3.7479 | -1.0443 | -0.0004               | -0.0020 | -0.0005 | 2.50        | PASS    |
|                                                                    |               |        |            | 20.00      | -1.9741          | -3.1900 | -0.4721 | -0.0011               | -0.0017 | -0.0002 | 2.50        | PASS    |
|                                                                    |               |        |            | 30.00      | -1.8024          | -4.4918 | -1.5593 | -0.0010               | -0.0024 | -0.0008 | 2.50        | PASS    |
|                                                                    |               |        |            | 40.00      | -2.1029          | -3.0041 | -1.4162 | -0.0011               | -0.0016 | -0.0007 | 2.50        | PASS    |
|                                                                    |               |        |            | 50.00      | -1.7023          | -3.4904 | -0.3576 | -0.0009               | -0.0019 | -0.0002 | 2.50        | PASS    |

| Test Band: 2 3MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-----------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                 | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                           | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                      | 15            | 0      | NT         | LV         | -2.3460          | -2.2173 | -0.6294 | -0.0013               | -0.0012 | -0.0003 | 2.50        | PASS    |
|                                                           |               |        |            | NV         | -2.2459          | -3.3045 | -0.1287 | -0.0012               | -0.0018 | -0.0001 | 2.50        | PASS    |
|                                                           |               |        |            | HV         | -3.6192          | -3.1328 | 0.8440  | -0.0020               | -0.0017 | 0.0004  | 2.50        | PASS    |
| 16QAM                                                     | 15            | 0      | NT         | LV         | -2.1458          | -4.0770 | 1.2445  | -0.0012               | -0.0022 | 0.0007  | 2.50        | PASS    |
|                                                           |               |        |            | NV         | -3.4618          | -3.7050 | 0.0143  | -0.0019               | -0.0020 | 0.0000  | 2.50        | PASS    |
|                                                           |               |        |            | HV         | -3.2043          | -4.6921 | 1.0014  | -0.0017               | -0.0025 | 0.0005  | 2.50        | PASS    |

| Test Band: 2 3MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |        |             |         |
|---------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|--------|-------------|---------|
| Test Mode                                                     | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |        | Limit (ppm) | Verdict |
|                                                               | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH    |             |         |
| QPSK                                                          | 15            | 0      | NV         | -30.00     | -3.6907          | -3.3903 | -0.0715 | -0.0020               | -0.0018 | 0.0000 | 2.50        | PASS    |
|                                                               |               |        |            | -20.00     | -4.1342          | -2.9182 | 0.0858  | -0.0022               | -0.0016 | 0.0000 | 2.50        | PASS    |
|                                                               |               |        |            | -10.00     | -4.3917          | -4.2915 | 0.0715  | -0.0024               | -0.0023 | 0.0000 | 2.50        | PASS    |
|                                                               |               |        |            | 0.00       | -3.3760          | -3.2902 | 0.7582  | -0.0018               | -0.0018 | 0.0004 | 2.50        | PASS    |
|                                                               |               |        |            | 10.00      | -3.2759          | -2.4462 | 0.0572  | -0.0018               | -0.0013 | 0.0000 | 2.50        | PASS    |

|       |    |   |    |        |         |         |         |         |         |        |      |      |
|-------|----|---|----|--------|---------|---------|---------|---------|---------|--------|------|------|
|       |    |   |    | 20.00  | -3.0041 | -2.9325 | 0.4148  | -0.0016 | -0.0016 | 0.0002 | 2.50 | PASS |
|       |    |   |    | 30.00  | -1.9169 | -4.0054 | 0.3290  | -0.0010 | -0.0021 | 0.0002 | 2.50 | PASS |
|       |    |   |    | 40.00  | -0.9871 | -4.2057 | 0.3147  | -0.0005 | -0.0022 | 0.0002 | 2.50 | PASS |
|       |    |   |    | 50.00  | -1.6165 | -4.0340 | 0.4292  | -0.0009 | -0.0021 | 0.0002 | 2.50 | PASS |
| 16QAM | 15 | 0 | NV | -30.00 | -3.3188 | -3.8910 | 0.5007  | -0.0018 | -0.0021 | 0.0003 | 2.50 | PASS |
|       |    |   |    | -20.00 | -2.6321 | -3.6764 | 0.7725  | -0.0014 | -0.0020 | 0.0004 | 2.50 | PASS |
|       |    |   |    | -10.00 | -3.2187 | -3.8767 | 0.3004  | -0.0017 | -0.0021 | 0.0002 | 2.50 | PASS |
|       |    |   |    | 0.00   | -3.0899 | -4.8637 | 1.3733  | -0.0017 | -0.0026 | 0.0007 | 2.50 | PASS |
|       |    |   |    | 10.00  | -2.7895 | -4.4775 | 0.4005  | -0.0015 | -0.0024 | 0.0002 | 2.50 | PASS |
|       |    |   |    | 20.00  | -3.5763 | -4.4775 | 0.4721  | -0.0019 | -0.0024 | 0.0002 | 2.50 | PASS |
|       |    |   |    | 30.00  | -2.9469 | -3.9196 | 0.7868  | -0.0016 | -0.0021 | 0.0004 | 2.50 | PASS |
|       |    |   |    | 40.00  | -2.4319 | -2.9755 | 0.5150  | -0.0013 | -0.0016 | 0.0003 | 2.50 | PASS |
|       |    |   |    | 50.00  | -2.3890 | -2.7752 | -0.0429 | -0.0013 | -0.0015 | 0.0000 | 2.50 | PASS |

| Test Band: 2 5MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-----------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                 | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                           | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                      | 25            | 0      | NT         | LV         | -2.4605          | -2.9182 | 1.9598  | -0.0013               | -0.0016 | 0.0010  | 2.50        | PASS    |
|                                                           |               |        |            | NV         | -2.2745          | -3.8195 | 0.0429  | -0.0012               | -0.0020 | 0.0000  | 2.50        | PASS    |
|                                                           |               |        |            | HV         | -3.1900          | -3.3331 | -0.3290 | -0.0017               | -0.0018 | -0.0002 | 2.50        | PASS    |
| 16QAM                                                     | 25            | 0      | NT         | LV         | -1.5020          | -5.3787 | -1.0300 | -0.0008               | -0.0029 | -0.0005 | 2.50        | PASS    |
|                                                           |               |        |            | NV         | -3.2330          | -4.7779 | 0.6294  | -0.0017               | -0.0025 | 0.0003  | 2.50        | PASS    |
|                                                           |               |        |            | HV         | -2.5034          | -4.0197 | -0.7153 | -0.0014               | -0.0021 | -0.0004 | 2.50        | PASS    |

| Test Band: 2 5MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|---------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                     | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                               | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                          | 25            | 0      | NV         | -30.00     | -2.5320          | -3.5763 | -0.8726 | -0.0014               | -0.0019 | -0.0005 | 2.50        | PASS    |
|                                                               |               |        |            | -20.00     | -1.3018          | -2.2745 | 0.2146  | -0.0007               | -0.0012 | 0.0001  | 2.50        | PASS    |
|                                                               |               |        |            | -10.00     | -2.8324          | -4.6921 | 0.0858  | -0.0015               | -0.0025 | 0.0000  | 2.50        | PASS    |
|                                                               |               |        |            | 0.00       | -2.4033          | -4.7779 | 0.9441  | -0.0013               | -0.0025 | 0.0005  | 2.50        | PASS    |
|                                                               |               |        |            | 10.00      | -2.5034          | -3.4618 | -0.8154 | -0.0014               | -0.0018 | -0.0004 | 2.50        | PASS    |
|                                                               |               |        |            | 20.00      | -2.2316          | -3.5763 | 1.1873  | -0.0012               | -0.0019 | 0.0006  | 2.50        | PASS    |
|                                                               |               |        |            | 30.00      | -3.3045          | -3.3045 | 0.5436  | -0.0018               | -0.0018 | 0.0003  | 2.50        | PASS    |
|                                                               |               |        |            | 40.00      | -3.6049          | -3.0756 | 0.2861  | -0.0019               | -0.0016 | 0.0001  | 2.50        | PASS    |
|                                                               |               |        |            | 50.00      | -2.1029          | -2.9612 | -0.6008 | -0.0011               | -0.0016 | -0.0003 | 2.50        | PASS    |
| 16QAM                                                         | 25            | 0      | NV         | -30.00     | -2.6894          | -4.1914 | -0.8440 | -0.0015               | -0.0022 | -0.0004 | 2.50        | PASS    |
|                                                               |               |        |            | -20.00     | -1.3876          | -4.7207 | -0.8726 | -0.0007               | -0.0025 | -0.0005 | 2.50        | PASS    |
|                                                               |               |        |            | -10.00     | -3.7193          | -4.5204 | -1.4591 | -0.0020               | -0.0024 | -0.0008 | 2.50        | PASS    |
|                                                               |               |        |            | 0.00       | -2.3603          | -4.3058 | 0.2289  | -0.0013               | -0.0023 | 0.0001  | 2.50        | PASS    |
|                                                               |               |        |            | 10.00      | -3.5620          | -5.0068 | 0.7010  | -0.0019               | -0.0027 | 0.0004  | 2.50        | PASS    |
|                                                               |               |        |            | 20.00      | -1.9169          | -4.6062 | -0.1001 | -0.0010               | -0.0025 | -0.0001 | 2.50        | PASS    |
|                                                               |               |        |            | 30.00      | -1.5593          | -2.7752 | -0.4005 | -0.0008               | -0.0015 | -0.0002 | 2.50        | PASS    |
|                                                               |               |        |            | 40.00      | -2.1744          | -4.6206 | 0.0143  | -0.0012               | -0.0025 | 0.0000  | 2.50        | PASS    |
|                                                               |               |        |            | 50.00      | -1.3018          | -3.8481 | -0.9155 | -0.0007               | -0.0020 | -0.0005 | 2.50        | PASS    |

| Test Band: 2 10MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |        |             |         |
|------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|--------|-------------|---------|
| Test Mode                                                  | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |        | Limit (ppm) | Verdict |
|                                                            | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH    |             |         |
| QPSK                                                       | 50            | 0      | NT         | LV         | -3.0613          | -3.0613 | 1.4877  | -0.0017               | -0.0016 | 0.0008 | 2.50        | PASS    |
|                                                            |               |        |            | NV         | -2.7752          | -2.9755 | 0.8726  | -0.0015               | -0.0016 | 0.0005 | 2.50        | PASS    |
|                                                            |               |        |            | HV         | -2.4891          | -3.6907 | 1.2159  | -0.0013               | -0.0020 | 0.0006 | 2.50        | PASS    |
| 16QAM                                                      | 50            | 0      | NT         | LV         | -2.8467          | -2.4462 | -0.0715 | -0.0015               | -0.0013 | 0.0000 | 2.50        | PASS    |
|                                                            |               |        |            | NV         | -2.0456          | -3.2330 | 2.2459  | -0.0011               | -0.0017 | 0.0012 | 2.50        | PASS    |
|                                                            |               |        |            | HV         | -2.8181          | -2.6035 | 0.8726  | -0.0015               | -0.0014 | 0.0005 | 2.50        | PASS    |

| Test Band: 2_10MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                      | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                           | 50            | 0      | NV         | -30.00     | -2.7323          | -3.9768 | 1.4734  | -0.0015               | -0.0021 | 0.0008  | 2.50        | PASS    |
|                                                                |               |        |            | -20.00     | -1.8024          | -3.2187 | 0.8440  | -0.0010               | -0.0017 | 0.0004  | 2.50        | PASS    |
|                                                                |               |        |            | -10.00     | -2.9612          | -3.5763 | 0.8011  | -0.0016               | -0.0019 | 0.0004  | 2.50        | PASS    |
|                                                                |               |        |            | 0.00       | -2.0742          | -2.3031 | 0.2575  | -0.0011               | -0.0012 | 0.0001  | 2.50        | PASS    |
|                                                                |               |        |            | 10.00      | -3.1328          | -2.0027 | 1.1730  | -0.0017               | -0.0011 | 0.0006  | 2.50        | PASS    |
|                                                                |               |        |            | 20.00      | -3.2330          | -3.6764 | 1.4877  | -0.0017               | -0.0020 | 0.0008  | 2.50        | PASS    |
|                                                                |               |        |            | 30.00      | -2.7323          | -4.1342 | 1.3161  | -0.0015               | -0.0022 | 0.0007  | 2.50        | PASS    |
|                                                                |               |        |            | 40.00      | -3.1042          | -4.4489 | 1.3161  | -0.0017               | -0.0024 | 0.0007  | 2.50        | PASS    |
| 16QAM                                                          | 50            | 0      | NV         | 50.00      | -1.4305          | -3.5191 | 1.1301  | -0.0008               | -0.0019 | 0.0006  | 2.50        | PASS    |
|                                                                |               |        |            | -30.00     | -2.2030          | -3.3188 | 1.4448  | -0.0012               | -0.0018 | 0.0008  | 2.50        | PASS    |
|                                                                |               |        |            | -20.00     | -1.6594          | -2.8896 | 2.2745  | -0.0009               | -0.0015 | 0.0012  | 2.50        | PASS    |
|                                                                |               |        |            | -10.00     | -2.1172          | -3.8052 | 0.8726  | -0.0011               | -0.0020 | 0.0005  | 2.50        | PASS    |
|                                                                |               |        |            | 0.00       | -2.2316          | -3.2330 | 0.4721  | -0.0012               | -0.0017 | 0.0002  | 2.50        | PASS    |
|                                                                |               |        |            | 10.00      | -1.8597          | -3.9196 | 1.5736  | -0.0010               | -0.0021 | 0.0008  | 2.50        | PASS    |
|                                                                |               |        |            | 20.00      | -2.2602          | -4.5490 | 1.8024  | -0.0012               | -0.0024 | 0.0009  | 2.50        | PASS    |
|                                                                |               |        |            | 30.00      | -1.8168          | -3.1757 | 0.8297  | -0.0010               | -0.0017 | 0.0004  | 2.50        | PASS    |
|                                                                |               |        |            | 40.00      | -2.8753          | -3.2616 | -0.4292 | -0.0016               | -0.0017 | -0.0002 | 2.50        | PASS    |
|                                                                |               |        |            | 50.00      | -1.8883          | -4.3774 | 1.1873  | -0.0010               | -0.0023 | 0.0006  | 2.50        | PASS    |

| Test Band: 2_15MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                  | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                            | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                       | 75            | 0      | NT         | LV         | -2.8038          | -4.3058 | -4.1485 | -0.0015               | -0.0023 | -0.0022 | 2.50        | PASS    |
|                                                            |               |        |            | NV         | -2.3603          | -4.4489 | -4.4632 | -0.0013               | -0.0024 | -0.0023 | 2.50        | PASS    |
|                                                            |               |        |            | HV         | -2.4033          | -4.9067 | -4.7636 | -0.0013               | -0.0026 | -0.0025 | 2.50        | PASS    |
| 16QAM                                                      | 75            | 0      | NT         | LV         | -3.2330          | -2.9612 | -3.5763 | -0.0017               | -0.0016 | -0.0019 | 2.50        | PASS    |
|                                                            |               |        |            | NV         | -3.8481          | -2.5749 | -2.2602 | -0.0021               | -0.0014 | -0.0012 | 2.50        | PASS    |
|                                                            |               |        |            | HV         | -3.5048          | -3.1900 | -3.3903 | -0.0019               | -0.0017 | -0.0018 | 2.50        | PASS    |

| Test Band: 2_15MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                      | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                           | 75            | 0      | NV         | -30.00     | -4.5204          | -5.0211 | -3.0613 | -0.0024               | -0.0027 | -0.0016 | 2.50        | PASS    |
|                                                                |               |        |            | -20.00     | -4.2343          | -4.3488 | -4.9782 | -0.0023               | -0.0023 | -0.0026 | 2.50        | PASS    |
|                                                                |               |        |            | -10.00     | -3.0613          | -4.0054 | -3.7479 | -0.0016               | -0.0021 | -0.0020 | 2.50        | PASS    |
|                                                                |               |        |            | 0.00       | -2.5749          | -3.4046 | -3.7766 | -0.0014               | -0.0018 | -0.0020 | 2.50        | PASS    |
|                                                                |               |        |            | 10.00      | -3.0613          | -3.9196 | -4.6492 | -0.0016               | -0.0021 | -0.0024 | 2.50        | PASS    |
|                                                                |               |        |            | 20.00      | -3.7193          | -3.8195 | -3.9053 | -0.0020               | -0.0020 | -0.0021 | 2.50        | PASS    |
|                                                                |               |        |            | 30.00      | -2.9469          | -4.3774 | -3.3474 | -0.0016               | -0.0023 | -0.0018 | 2.50        | PASS    |
|                                                                |               |        |            | 40.00      | -2.0742          | -4.6492 | -3.2473 | -0.0011               | -0.0025 | -0.0017 | 2.50        | PASS    |
| 16QAM                                                          | 75            | 0      | NV         | 50.00      | -2.5892          | -4.0627 | -2.6751 | -0.0014               | -0.0022 | -0.0014 | 2.50        | PASS    |
|                                                                |               |        |            | -30.00     | -3.7909          | -4.3058 | -3.0899 | -0.0020               | -0.0023 | -0.0016 | 2.50        | PASS    |
|                                                                |               |        |            | -20.00     | -3.4332          | -3.9625 | -3.7909 | -0.0018               | -0.0021 | -0.0020 | 2.50        | PASS    |
|                                                                |               |        |            | -10.00     | -3.3045          | -2.7323 | -3.6907 | -0.0018               | -0.0015 | -0.0019 | 2.50        | PASS    |
|                                                                |               |        |            | 0.00       | -3.7909          | -3.7050 | -3.7622 | -0.0020               | -0.0020 | -0.0020 | 2.50        | PASS    |
|                                                                |               |        |            | 10.00      | -3.5763          | -3.6192 | -4.1199 | -0.0019               | -0.0019 | -0.0022 | 2.50        | PASS    |
|                                                                |               |        |            | 20.00      | -3.4618          | -4.0627 | -2.8181 | -0.0019               | -0.0022 | -0.0015 | 2.50        | PASS    |
|                                                                |               |        |            | 30.00      | -3.4046          | -2.7895 | -1.9026 | -0.0018               | -0.0015 | -0.0010 | 2.50        | PASS    |
|                                                                |               |        |            | 40.00      | -3.9339          | -3.1471 | -3.9339 | -0.0021               | -0.0017 | -0.0021 | 2.50        | PASS    |
|                                                                |               |        |            | 50.00      | -3.6192          | -3.4761 | -2.1315 | -0.0019               | -0.0018 | -0.0011 | 2.50        | PASS    |

| Test Band: 2   20MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|--------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                    | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                              | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                         | 100           | 0      | NT         | LV         | 0.7725           | -3.1328 | -3.1042 | 0.0004                | -0.0017 | -0.0016 | 2.50        | PASS    |
|                                                              |               |        |            | NV         | 0.9584           | -3.8195 | -3.1185 | 0.0005                | -0.0020 | -0.0016 | 2.50        | PASS    |
|                                                              |               |        |            | HV         | 0.5579           | -3.8052 | -1.5306 | 0.0003                | -0.0020 | -0.0008 | 2.50        | PASS    |
| 16QAM                                                        | 100           | 0      | NT         | LV         | 0.5150           | -4.3058 | -2.4319 | 0.0003                | -0.0023 | -0.0013 | 2.50        | PASS    |
|                                                              |               |        |            | NV         | 1.4019           | -3.9053 | -1.7309 | 0.0008                | -0.0021 | -0.0009 | 2.50        | PASS    |
|                                                              |               |        |            | HV         | 0.3004           | -4.0340 | -1.5306 | 0.0002                | -0.0021 | -0.0008 | 2.50        | PASS    |

| Test Band: 2_ 20MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                       | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                 | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                            | 100           | 0      | NV         | -30.00     | 1.1301           | -3.5620 | -2.0170 | 0.0006                | -0.0019 | -0.0011 | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | 0.6151           | -3.1900 | -2.2030 | 0.0003                | -0.0017 | -0.0012 | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | 1.8454           | -3.9196 | -2.4033 | 0.0010                | -0.0021 | -0.0013 | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | 0.8297           | -3.8624 | -3.0327 | 0.0004                | -0.0021 | -0.0016 | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | 0.5722           | -2.8610 | -1.3733 | 0.0003                | -0.0015 | -0.0007 | 2.50        | PASS    |
|                                                                 |               |        |            | 20.00      | 0.8726           | -3.4761 | -2.1744 | 0.0005                | -0.0018 | -0.0011 | 2.50        | PASS    |
|                                                                 |               |        |            | 30.00      | 0.8440           | -3.1328 | -1.9026 | 0.0005                | -0.0017 | -0.0010 | 2.50        | PASS    |
|                                                                 |               |        |            | 40.00      | 1.5163           | -3.7479 | -2.5320 | 0.0008                | -0.0020 | -0.0013 | 2.50        | PASS    |
|                                                                 |               |        |            | 50.00      | 0.8583           | -3.0613 | -2.9039 | 0.0005                | -0.0016 | -0.0015 | 2.50        | PASS    |
| 16QAM                                                           | 100           | 0      | NV         | -30.00     | 1.2159           | -1.9884 | -2.3031 | 0.0007                | -0.0011 | -0.0012 | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | 2.0456           | -3.0184 | -2.6178 | 0.0011                | -0.0016 | -0.0014 | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | 0.6008           | -3.6049 | -1.9312 | 0.0003                | -0.0019 | -0.0010 | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | 0.8154           | -2.9469 | -2.4605 | 0.0004                | -0.0016 | -0.0013 | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | 0.4435           | -2.5463 | -1.9598 | 0.0002                | -0.0014 | -0.0010 | 2.50        | PASS    |
|                                                                 |               |        |            | 20.00      | 0.5436           | -3.3903 | -3.3188 | 0.0003                | -0.0018 | -0.0017 | 2.50        | PASS    |
|                                                                 |               |        |            | 30.00      | 0.6437           | -4.2629 | -4.2057 | 0.0003                | -0.0023 | -0.0022 | 2.50        | PASS    |
|                                                                 |               |        |            | 40.00      | 0.7296           | -3.2902 | -1.9312 | 0.0004                | -0.0018 | -0.0010 | 2.50        | PASS    |
|                                                                 |               |        |            | 50.00      | 0.2861           | -1.5163 | -2.6894 | 0.0002                | -0.0008 | -0.0014 | 2.50        | PASS    |

## 2. Frequency stability

### 2.1 Test Result

| Test Band: 5_ 1.4MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|--------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                    | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                              | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                         | 6             | 0      | NT         | LV         | -2.2173          | -1.9026 | -0.6151 | -0.0027               | -0.0023 | -0.0007 | 2.50        | PASS    |
|                                                              |               |        |            | NV         | -2.2745          | -1.6594 | 0.4005  | -0.0028               | -0.0020 | 0.0005  | 2.50        | PASS    |
|                                                              |               |        |            | HV         | -0.5865          | -0.8011 | -0.2432 | -0.0007               | -0.0010 | -0.0003 | 2.50        | PASS    |
| 16QAM                                                        | 6             | 0      | NT         | LV         | -1.8311          | -0.5436 | -0.0286 | -0.0022               | -0.0006 | 0.0000  | 2.50        | PASS    |
|                                                              |               |        |            | NV         | -1.1015          | -0.9871 | -0.6151 | -0.0013               | -0.0012 | -0.0007 | 2.50        | PASS    |
|                                                              |               |        |            | HV         | -2.1458          | -1.4305 | -1.0014 | -0.0026               | -0.0017 | -0.0012 | 2.50        | PASS    |

| Test Band: 5_ 1.4MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|------------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                        | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                  | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                             | 6             | 0      | NV         | -30.00     | -0.9871          | -0.6008 | 0.1144  | -0.0012               | -0.0007 | 0.0001  | 2.50        | PASS    |
|                                                                  |               |        |            | -20.00     | -0.9727          | -0.1717 | -1.3733 | -0.0012               | -0.0002 | -0.0016 | 2.50        | PASS    |
|                                                                  |               |        |            | -10.00     | -1.1873          | -0.5007 | 0.2861  | -0.0014               | -0.0006 | 0.0003  | 2.50        | PASS    |
|                                                                  |               |        |            | 0.00       | -1.6737          | -1.0014 | 0.6866  | -0.0020               | -0.0012 | 0.0008  | 2.50        | PASS    |
|                                                                  |               |        |            | 10.00      | -0.6723          | -1.5306 | 1.2016  | -0.0008               | -0.0018 | 0.0014  | 2.50        | PASS    |

|       |   |   |    |        |         |         |         |         |         |         |      |      |
|-------|---|---|----|--------|---------|---------|---------|---------|---------|---------|------|------|
|       |   |   |    | 20.00  | -1.6451 | -0.2003 | 0.1860  | -0.0020 | -0.0002 | 0.0002  | 2.50 | PASS |
|       |   |   |    | 30.00  | -0.4864 | -0.2575 | -0.2432 | -0.0006 | -0.0003 | -0.0003 | 2.50 | PASS |
|       |   |   |    | 40.00  | -1.2732 | -1.3304 | 1.0300  | -0.0015 | -0.0016 | 0.0012  | 2.50 | PASS |
|       |   |   |    | 50.00  | -1.2875 | -1.3018 | -0.3862 | -0.0016 | -0.0016 | -0.0005 | 2.50 | PASS |
| 16QAM | 6 | 0 | NV | -30.00 | -0.7582 | -0.1574 | -1.4448 | -0.0009 | -0.0002 | -0.0017 | 2.50 | PASS |
|       |   |   |    | -20.00 | -0.9441 | 0.0858  | -1.2159 | -0.0011 | 0.0001  | -0.0014 | 2.50 | PASS |
|       |   |   |    | -10.00 | -0.8583 | -1.4734 | -0.7010 | -0.0010 | -0.0018 | -0.0008 | 2.50 | PASS |
|       |   |   |    | 0.00   | -1.4448 | -1.2875 | -1.2732 | -0.0018 | -0.0015 | -0.0015 | 2.50 | PASS |
|       |   |   |    | 10.00  | -2.7323 | -0.5436 | -0.5150 | -0.0033 | -0.0006 | -0.0006 | 2.50 | PASS |
|       |   |   |    | 20.00  | -1.4162 | -1.1158 | -0.4292 | -0.0017 | -0.0013 | -0.0005 | 2.50 | PASS |
|       |   |   |    | 30.00  | -1.4591 | -1.1873 | 0.9012  | -0.0018 | -0.0014 | 0.0011  | 2.50 | PASS |
|       |   |   |    | 40.00  | -0.4435 | 0.7153  | -0.5436 | -0.0005 | 0.0009  | -0.0006 | 2.50 | PASS |
|       |   |   |    | 50.00  | -2.0313 | -1.5306 | -0.0715 | -0.0025 | -0.0018 | -0.0001 | 2.50 | PASS |

| Test Band: 5 3MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-----------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                 | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                           | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                      | 15            | 0      | NT         | LV         | -0.7153          | -0.2718 | -2.3460 | -0.0009               | -0.0003 | -0.0028 | 2.50        | PASS    |
|                                                           |               |        |            | NV         | -0.1860          | -0.9584 | -0.0715 | -0.0002               | -0.0011 | -0.0001 | 2.50        | PASS    |
|                                                           |               |        |            | HV         | -0.4864          | -1.5450 | -2.5177 | -0.0006               | -0.0018 | -0.0030 | 2.50        | PASS    |
| 16QAM                                                     | 15            | 0      | NT         | LV         | -0.4864          | -1.1730 | -2.5177 | -0.0006               | -0.0014 | -0.0030 | 2.50        | PASS    |
|                                                           |               |        |            | NV         | -0.2146          | -1.2016 | -0.8011 | -0.0003               | -0.0014 | -0.0009 | 2.50        | PASS    |
|                                                           |               |        |            | HV         | -0.1001          | -1.0443 | -1.4019 | -0.0001               | -0.0012 | -0.0017 | 2.50        | PASS    |

| Test Band: 5 3MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|---------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                     | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                               | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                          | 15            | 0      | NV         | -30.00     | -0.0572          | 0.0715  | -2.8324 | -0.0001               | 0.0001  | -0.0033 | 2.50        | PASS    |
|                                                               |               |        |            | -20.00     | -0.7296          | -0.5865 | -1.4734 | -0.0009               | -0.0007 | -0.0017 | 2.50        | PASS    |
|                                                               |               |        |            | -10.00     | -0.3433          | -1.3304 | -1.4591 | -0.0004               | -0.0016 | -0.0017 | 2.50        | PASS    |
|                                                               |               |        |            | 0.00       | -0.6294          | -0.9441 | -1.3876 | -0.0008               | -0.0011 | -0.0016 | 2.50        | PASS    |
|                                                               |               |        |            | 10.00      | -0.2432          | 0.0858  | -0.4864 | -0.0003               | 0.0001  | -0.0006 | 2.50        | PASS    |
|                                                               |               |        |            | 20.00      | 0.4292           | 0.5150  | -2.1172 | 0.0005                | 0.0006  | -0.0025 | 2.50        | PASS    |
|                                                               |               |        |            | 30.00      | 0.5722           | -1.0586 | -2.0313 | 0.0007                | -0.0013 | -0.0024 | 2.50        | PASS    |
|                                                               |               |        |            | 40.00      | 0.7868           | -0.1431 | -1.6165 | 0.0010                | -0.0002 | -0.0019 | 2.50        | PASS    |
|                                                               |               |        |            | 50.00      | 1.7881           | -0.4292 | -1.9598 | 0.0022                | -0.0005 | -0.0023 | 2.50        | PASS    |
| 16QAM                                                         | 15            | 0      | NV         | -30.00     | -0.3004          | -0.5150 | -0.8869 | -0.0004               | -0.0006 | -0.0010 | 2.50        | PASS    |
|                                                               |               |        |            | -20.00     | -0.1431          | -1.5450 | -1.4877 | -0.0002               | -0.0018 | -0.0018 | 2.50        | PASS    |
|                                                               |               |        |            | -10.00     | -0.3719          | -0.0429 | -1.5593 | -0.0005               | -0.0001 | -0.0018 | 2.50        | PASS    |
|                                                               |               |        |            | 0.00       | 0.1144           | -0.1574 | -0.9012 | 0.0001                | -0.0002 | -0.0011 | 2.50        | PASS    |
|                                                               |               |        |            | 10.00      | -0.1144          | -0.2861 | -0.9584 | -0.0001               | -0.0003 | -0.0011 | 2.50        | PASS    |
|                                                               |               |        |            | 20.00      | 0.4864           | 0.3576  | -1.4734 | 0.0006                | 0.0004  | -0.0017 | 2.50        | PASS    |
|                                                               |               |        |            | 30.00      | 0.8583           | -0.7153 | -1.8311 | 0.0010                | -0.0009 | -0.0022 | 2.50        | PASS    |
|                                                               |               |        |            | 40.00      | -0.7725          | -1.4019 | -1.7738 | -0.0009               | -0.0017 | -0.0021 | 2.50        | PASS    |
|                                                               |               |        |            | 50.00      | -0.3004          | 0.5865  | -2.3031 | -0.0004               | 0.0007  | -0.0027 | 2.50        | PASS    |

| Test Band: 5 5MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-----------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                 | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                           | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                      | 25            | 0      | NT         | LV         | -2.5463          | -1.7452 | -0.6866 | -0.0031               | -0.0021 | -0.0008 | 2.50        | PASS    |
|                                                           |               |        |            | NV         | -1.9026          | -0.4721 | -0.7153 | -0.0023               | -0.0006 | -0.0008 | 2.50        | PASS    |
|                                                           |               |        |            | HV         | -2.7895          | -1.7166 | 1.1587  | -0.0034               | -0.0021 | 0.0014  | 2.50        | PASS    |
| 16QAM                                                     | 25            | 0      | NT         | LV         | -2.1458          | -0.0572 | -1.4591 | -0.0026               | -0.0001 | -0.0017 | 2.50        | PASS    |
|                                                           |               |        |            | NV         | -1.9598          | -0.3862 | -0.9441 | -0.0024               | -0.0005 | -0.0011 | 2.50        | PASS    |
|                                                           |               |        |            | HV         | -2.0170          | -0.1001 | 0.2432  | -0.0024               | -0.0001 | 0.0003  | 2.50        | PASS    |

| Test Band: 5 5MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|---------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                     | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                               | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                          | 25            | 0      | NV         | -30.00     | -1.9455          | -1.1587 | -1.2875 | -0.0024               | -0.0014 | -0.0015 | 2.50        | PASS    |
|                                                               |               |        |            | -20.00     | -2.3746          | -0.1287 | 0.1144  | -0.0029               | -0.0002 | 0.0001  | 2.50        | PASS    |
|                                                               |               |        |            | -10.00     | -1.7452          | 0.4148  | -1.1587 | -0.0021               | 0.0005  | -0.0014 | 2.50        | PASS    |
|                                                               |               |        |            | 0.00       | -0.9727          | -1.2159 | -0.6437 | -0.0012               | -0.0015 | -0.0008 | 2.50        | PASS    |
|                                                               |               |        |            | 10.00      | -1.3161          | -1.4019 | -0.2146 | -0.0016               | -0.0017 | -0.0003 | 2.50        | PASS    |
|                                                               |               |        |            | 20.00      | -1.4162          | 0.0429  | 0.5579  | -0.0017               | 0.0001  | 0.0007  | 2.50        | PASS    |
|                                                               |               |        |            | 30.00      | -1.5879          | -1.4877 | 0.5436  | -0.0019               | -0.0018 | 0.0006  | 2.50        | PASS    |
|                                                               |               |        |            | 40.00      | -1.5306          | -0.2861 | 1.0729  | -0.0019               | -0.0003 | 0.0013  | 2.50        | PASS    |
|                                                               |               |        |            | 50.00      | -1.2875          | -1.1730 | -0.1860 | -0.0016               | -0.0014 | -0.0002 | 2.50        | PASS    |
| 16QAM                                                         | 25            | 0      | NV         | -30.00     | -0.7296          | 0.0572  | -0.3719 | -0.0009               | 0.0001  | -0.0004 | 2.50        | PASS    |
|                                                               |               |        |            | -20.00     | -1.2016          | 0.3147  | -0.6723 | -0.0015               | 0.0004  | -0.0008 | 2.50        | PASS    |
|                                                               |               |        |            | -10.00     | -2.2602          | 0.7296  | 0.1574  | -0.0027               | 0.0009  | 0.0002  | 2.50        | PASS    |
|                                                               |               |        |            | 0.00       | -1.2732          | -0.0572 | -1.0014 | -0.0015               | -0.0001 | -0.0012 | 2.50        | PASS    |
|                                                               |               |        |            | 10.00      | -0.5579          | -0.6866 | -0.8440 | -0.0007               | -0.0008 | -0.0010 | 2.50        | PASS    |
|                                                               |               |        |            | 20.00      | -2.3460          | 0.0715  | -0.7153 | -0.0028               | 0.0001  | -0.0008 | 2.50        | PASS    |
|                                                               |               |        |            | 30.00      | -0.8869          | -0.6437 | -0.2718 | -0.0011               | -0.0008 | -0.0003 | 2.50        | PASS    |
|                                                               |               |        |            | 40.00      | -0.9012          | 0.5293  | 0.8869  | -0.0011               | 0.0006  | 0.0010  | 2.50        | PASS    |
|                                                               |               |        |            | 50.00      | -1.3161          | -0.0858 | 0.1574  | -0.0016               | -0.0001 | 0.0002  | 2.50        | PASS    |

| Test Band: 5 10MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                  | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                            | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                       | 50            | 0      | NT         | LV         | -0.4864          | -0.7582 | -1.5020 | -0.0006               | -0.0009 | -0.0018 | 2.50        | PASS    |
|                                                            |               |        |            | NV         | -1.7452          | -1.2016 | -1.2159 | -0.0021               | -0.0014 | -0.0014 | 2.50        | PASS    |
|                                                            |               |        |            | HV         | 0.2575           | 0.2003  | -1.3161 | 0.0003                | 0.0002  | -0.0016 | 2.50        | PASS    |
| 16QAM                                                      | 50            | 0      | NT         | LV         | -0.3719          | -1.3447 | -1.5450 | -0.0004               | -0.0016 | -0.0018 | 2.50        | PASS    |
|                                                            |               |        |            | NV         | -0.6294          | -0.6580 | -1.0014 | -0.0008               | -0.0008 | -0.0012 | 2.50        | PASS    |
|                                                            |               |        |            | HV         | -0.9012          | -0.7868 | -1.0300 | -0.0011               | -0.0009 | -0.0012 | 2.50        | PASS    |

| Test Band: 5 10MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                      | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                           | 50            | 0      | NV         | -30.00     | -1.0157          | 0.3719  | -1.1730 | -0.0012               | 0.0004  | -0.0014 | 2.50        | PASS    |
|                                                                |               |        |            | -20.00     | 0.4578           | -0.3576 | -0.6723 | 0.0006                | -0.0004 | -0.0008 | 2.50        | PASS    |
|                                                                |               |        |            | -10.00     | -0.3147          | -1.2732 | -0.8440 | -0.0004               | -0.0015 | -0.0010 | 2.50        | PASS    |
|                                                                |               |        |            | 0.00       | -0.9584          | 0.4721  | -0.6151 | -0.0012               | 0.0006  | -0.0007 | 2.50        | PASS    |
|                                                                |               |        |            | 10.00      | -0.9441          | -0.3576 | -0.8726 | -0.0011               | -0.0004 | -0.0010 | 2.50        | PASS    |
|                                                                |               |        |            | 20.00      | -0.1287          | -0.6151 | -0.6008 | -0.0002               | -0.0007 | -0.0007 | 2.50        | PASS    |
|                                                                |               |        |            | 30.00      | -0.1574          | -0.5722 | -0.9441 | -0.0002               | -0.0007 | -0.0011 | 2.50        | PASS    |
|                                                                |               |        |            | 40.00      | -0.0572          | -0.3862 | -0.7868 | -0.0001               | -0.0005 | -0.0009 | 2.50        | PASS    |
|                                                                |               |        |            | 50.00      | -0.1431          | -0.9871 | -1.5450 | -0.0002               | -0.0012 | -0.0018 | 2.50        | PASS    |
| 16QAM                                                          | 50            | 0      | NV         | -30.00     | -0.1717          | -1.2016 | -0.8583 | -0.0002               | -0.0014 | -0.0010 | 2.50        | PASS    |
|                                                                |               |        |            | -20.00     | 0.5293           | -0.7868 | 0.4005  | 0.0006                | -0.0009 | 0.0005  | 2.50        | PASS    |
|                                                                |               |        |            | -10.00     | -0.5436          | 0.2003  | -1.2159 | -0.0007               | 0.0002  | -0.0014 | 2.50        | PASS    |
|                                                                |               |        |            | 0.00       | -0.2003          | 0.3004  | -0.6294 | -0.0002               | 0.0004  | -0.0007 | 2.50        | PASS    |
|                                                                |               |        |            | 10.00      | -1.2588          | -0.3719 | -0.4435 | -0.0015               | -0.0004 | -0.0005 | 2.50        | PASS    |
|                                                                |               |        |            | 20.00      | -0.6723          | 0.6151  | -0.1431 | -0.0008               | 0.0007  | -0.0002 | 2.50        | PASS    |
|                                                                |               |        |            | 30.00      | -0.1144          | -0.1860 | -1.5879 | -0.0001               | -0.0002 | -0.0019 | 2.50        | PASS    |
|                                                                |               |        |            | 40.00      | -0.8011          | -0.4864 | -0.7296 | -0.0010               | -0.0006 | -0.0009 | 2.50        | PASS    |
|                                                                |               |        |            | 50.00      | -0.3433          | -1.3733 | -1.1015 | -0.0004               | -0.0016 | -0.0013 | 2.50        | PASS    |

### 3. Frequency stability

#### 3.1 Test Result

| Test Band: 38 5MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                  | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                            | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                       | 25            | 0      | NT         | LV         | -3.6621          | -1.6880 | -0.7439 | -0.0014               | -0.0007 | -0.0003 | 2.50        | PASS    |
|                                                            |               |        |            | NV         | -1.5450          | -4.1485 | -1.3733 | -0.0006               | -0.0016 | -0.0005 | 2.50        | PASS    |
|                                                            |               |        |            | HV         | 2.6894           | 1.7166  | 0.4578  | 0.0010                | 0.0007  | 0.0002  | 2.50        | PASS    |
| 16QAM                                                      | 25            | 0      | NT         | LV         | -2.0313          | 2.1887  | -3.7909 | -0.0008               | 0.0008  | -0.0014 | 2.50        | PASS    |
|                                                            |               |        |            | NV         | -0.8154          | -0.6151 | -1.3876 | -0.0003               | -0.0002 | -0.0005 | 2.50        | PASS    |
|                                                            |               |        |            | HV         | -1.3304          | 2.7180  | -1.3876 | -0.0005               | 0.0010  | -0.0005 | 2.50        | PASS    |

| Test Band: 38 5MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                      | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                           | 25            | 0      | NV         | -30.00     | 0.6437           | -0.2289 | 3.6478  | 0.0003                | -0.0001 | 0.0014  | 2.50        | PASS    |
|                                                                |               |        |            | -20.00     | -3.8481          | -0.8726 | -2.5177 | -0.0015               | -0.0003 | -0.0010 | 2.50        | PASS    |
|                                                                |               |        |            | -10.00     | 5.5647           | -4.3917 | -0.6580 | 0.0022                | -0.0017 | -0.0003 | 2.50        | PASS    |
|                                                                |               |        |            | 0.00       | -0.1860          | 2.3746  | -1.3161 | -0.0001               | 0.0009  | -0.0005 | 2.50        | PASS    |
|                                                                |               |        |            | 10.00      | -3.1900          | 1.9741  | -1.1158 | -0.0012               | 0.0008  | -0.0004 | 2.50        | PASS    |
|                                                                |               |        |            | 20.00      | 1.2016           | -0.0572 | 2.3603  | 0.0005                | 0.0000  | 0.0009  | 2.50        | PASS    |
|                                                                |               |        |            | 30.00      | -1.4019          | 3.7050  | -2.3460 | -0.0005               | 0.0014  | -0.0009 | 2.50        | PASS    |
|                                                                |               |        |            | 40.00      | -0.4148          | -0.5579 | -0.9584 | -0.0002               | -0.0002 | -0.0004 | 2.50        | PASS    |
| 16QAM                                                          | 25            | 0      | NV         | 50.00      | 2.8610           | -2.8896 | -2.2316 | 0.0011                | -0.0011 | -0.0009 | 2.50        | PASS    |
|                                                                |               |        |            | -30.00     | -1.3304          | 1.7166  | 1.5879  | -0.0005               | 0.0007  | 0.0006  | 2.50        | PASS    |
|                                                                |               |        |            | -20.00     | 1.3447           | -0.9441 | -4.2486 | 0.0005                | -0.0004 | -0.0016 | 2.50        | PASS    |
|                                                                |               |        |            | -10.00     | 1.5306           | -0.8154 | 1.0729  | 0.0006                | -0.0003 | 0.0004  | 2.50        | PASS    |
|                                                                |               |        |            | 0.00       | -1.4734          | -0.7868 | -0.2003 | -0.0006               | -0.0003 | -0.0001 | 2.50        | PASS    |
|                                                                |               |        |            | 10.00      | -2.1172          | -4.0913 | 4.7493  | -0.0008               | -0.0016 | 0.0018  | 2.50        | PASS    |
|                                                                |               |        |            | 20.00      | 2.0313           | 2.2030  | 0.8297  | 0.0008                | 0.0008  | 0.0003  | 2.50        | PASS    |
|                                                                |               |        |            | 30.00      | -1.8454          | -1.9884 | -4.4918 | -0.0007               | -0.0008 | -0.0017 | 2.50        | PASS    |
|                                                                |               |        |            | 40.00      | -2.4033          | -2.5606 | 2.8610  | -0.0009               | -0.0010 | 0.0011  | 2.50        | PASS    |
|                                                                |               |        |            | 50.00      | -1.7452          | -2.5034 | -1.7309 | -0.0007               | -0.0010 | -0.0007 | 2.50        | PASS    |

| Test Band: 38 10MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |        |             |         |
|-------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|--------|-------------|---------|
| Test Mode                                                   | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |        | Limit (ppm) | Verdict |
|                                                             | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH    |             |         |
| QPSK                                                        | 50            | 0      | NT         | LV         | 5.6934           | -3.4332 | 3.1757  | 0.0022                | -0.0013 | 0.0012 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | 7.4244           | -2.6751 | 8.2397  | 0.0029                | -0.0010 | 0.0032 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 2.0742           | -3.4475 | 14.2908 | 0.0008                | -0.0013 | 0.0055 | 2.50        | PASS    |
| 16QAM                                                       | 50            | 0      | NT         | LV         | 0.7153           | 1.0157  | 8.7261  | 0.0003                | 0.0004  | 0.0033 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | 3.3903           | -1.6594 | 8.3542  | 0.0013                | -0.0006 | 0.0032 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 1.3161           | 1.7595  | 4.6206  | 0.0005                | 0.0007  | 0.0018 | 2.50        | PASS    |

| Test Band: 38_10MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |        |                       |         |        |             |         |
|-----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|--------|-----------------------|---------|--------|-------------|---------|
| Test Mode                                                       | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |        | Freq. vs. rated (ppm) |         |        | Limit (ppm) | Verdict |
|                                                                 | Size          | Offset |            |            | LCH              | MCH     | HCH    | LCH                   | MCH     | HCH    |             |         |
| QPSK                                                            | 50            | 0      | NV         | -30.00     | 5.6934           | -4.0770 | 3.9911 | 0.0022                | -0.0016 | 0.0015 | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | 4.6635           | 0.0858  | 7.5674 | 0.0018                | 0.0000  | 0.0029 | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | 2.7323           | -1.6022 | 4.6492 | 0.0011                | -0.0006 | 0.0018 | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | 5.9938           | -2.5463 | 3.1900 | 0.0023                | -0.0010 | 0.0012 | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | 3.6478           | 2.2745  | 8.2397 | 0.0014                | 0.0009  | 0.0032 | 2.50        | PASS    |

|       |    |   |    |        |         |         |        |         |         |        |      |      |
|-------|----|---|----|--------|---------|---------|--------|---------|---------|--------|------|------|
|       |    |   |    | 20.00  | 2.5320  | 1.6594  | 2.1029 | 0.0010  | 0.0006  | 0.0008 | 2.50 | PASS |
|       |    |   |    | 30.00  | 3.4618  | -0.4292 | 5.5504 | 0.0013  | -0.0002 | 0.0021 | 2.50 | PASS |
|       |    |   |    | 40.00  | 5.4359  | 0.0715  | 8.2970 | 0.0021  | 0.0000  | 0.0032 | 2.50 | PASS |
|       |    |   |    | 50.00  | 5.5218  | 2.0456  | 2.2602 | 0.0021  | 0.0008  | 0.0009 | 2.50 | PASS |
| 16QAM | 50 | 0 | NV | -30.00 | 5.5790  | -2.0885 | 4.2486 | 0.0022  | -0.0008 | 0.0016 | 2.50 | PASS |
|       |    |   |    | -20.00 | 2.9612  | -0.6151 | 4.1628 | 0.0011  | -0.0002 | 0.0016 | 2.50 | PASS |
|       |    |   |    | -10.00 | -0.1431 | -0.5722 | 2.9469 | -0.0001 | -0.0002 | 0.0011 | 2.50 | PASS |
|       |    |   |    | 0.00   | 7.8392  | -2.8467 | 2.3031 | 0.0030  | -0.0011 | 0.0009 | 2.50 | PASS |
|       |    |   |    | 10.00  | 0.8583  | 0.6008  | 4.9925 | 0.0003  | 0.0002  | 0.0019 | 2.50 | PASS |
|       |    |   |    | 20.00  | 2.0742  | 4.3058  | 4.6921 | 0.0008  | 0.0017  | 0.0018 | 2.50 | PASS |
|       |    |   |    | 30.00  | -0.2003 | 2.5749  | 6.0081 | -0.0001 | 0.0010  | 0.0023 | 2.50 | PASS |
|       |    |   |    | 40.00  | 0.6151  | -2.3603 | 7.8106 | 0.0002  | -0.0009 | 0.0030 | 2.50 | PASS |
|       |    |   |    | 50.00  | 1.4162  | -2.3031 | 5.9366 | 0.0005  | -0.0009 | 0.0023 | 2.50 | PASS |

| Test Band: 38 15MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |        |                       |         |        |             |         |
|-------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|--------|-----------------------|---------|--------|-------------|---------|
| Test Mode                                                   | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |        | Freq. vs. rated (ppm) |         |        | Limit (ppm) | Verdict |
|                                                             | Size          | Offset |            |            | LCH              | MCH     | HCH    | LCH                   | MCH     | HCH    |             |         |
| QPSK                                                        | 75            | 0      | NT         | LV         | 8.2541           | 2.7752  | 4.3058 | 0.0032                | 0.0011  | 0.0016 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | 1.1301           | -1.5879 | 3.0756 | 0.0004                | -0.0006 | 0.0012 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 6.9809           | 2.7752  | 3.5763 | 0.0027                | 0.0011  | 0.0014 | 2.50        | PASS    |
| 16QAM                                                       | 75            | 0      | NT         | LV         | 7.4530           | 2.7180  | 1.8168 | 0.0029                | 0.0010  | 0.0007 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | 7.9250           | -0.6866 | 7.7248 | 0.0031                | -0.0003 | 0.0030 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 6.8665           | -1.9312 | 2.5892 | 0.0027                | -0.0007 | 0.0010 | 2.50        | PASS    |

| Test Band: 38 15MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                       | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                 | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                            | 75            | 0      | NV         | -30.00     | 5.1498           | -3.2187 | 2.0742  | 0.0020                | -0.0012 | 0.0008  | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | 3.6335           | -0.8154 | 9.4843  | 0.0014                | -0.0003 | 0.0036  | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | 7.1955           | -3.8767 | 1.9026  | 0.0028                | -0.0015 | 0.0007  | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | 2.0027           | 3.4332  | 6.3801  | 0.0008                | 0.0013  | 0.0024  | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | 6.9523           | 4.9353  | 1.3161  | 0.0027                | 0.0019  | 0.0005  | 2.50        | PASS    |
|                                                                 |               |        |            | 20.00      | 5.9938           | -1.7881 | 9.0122  | 0.0023                | -0.0007 | 0.0034  | 2.50        | PASS    |
|                                                                 |               |        |            | 30.00      | 3.6049           | -3.0041 | 6.0225  | 0.0014                | -0.0012 | 0.0023  | 2.50        | PASS    |
|                                                                 |               |        |            | 40.00      | 9.4700           | -0.6437 | 1.1873  | 0.0037                | -0.0002 | 0.0005  | 2.50        | PASS    |
|                                                                 |               |        |            | 50.00      | 7.2527           | -3.1042 | 4.8065  | 0.0028                | -0.0012 | 0.0018  | 2.50        | PASS    |
| 16QAM                                                           | 75            | 0      | NV         | -30.00     | 8.6260           | -3.2187 | 5.4359  | 0.0033                | -0.0012 | 0.0021  | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | 8.3113           | -2.1458 | 5.4789  | 0.0032                | -0.0008 | 0.0021  | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | 0.8869           | -2.8181 | 9.4843  | 0.0003                | -0.0011 | 0.0036  | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | 5.8365           | 3.0184  | 4.6921  | 0.0023                | 0.0012  | 0.0018  | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | 5.6934           | 0.9871  | 0.7153  | 0.0022                | 0.0004  | 0.0003  | 2.50        | PASS    |
|                                                                 |               |        |            | 20.00      | 3.8910           | 2.1601  | 3.3331  | 0.0015                | 0.0008  | 0.0013  | 2.50        | PASS    |
|                                                                 |               |        |            | 30.00      | 7.0524           | -0.6723 | 7.4244  | 0.0027                | -0.0003 | 0.0028  | 2.50        | PASS    |
|                                                                 |               |        |            | 40.00      | 5.4789           | 1.1587  | 5.3644  | 0.0021                | 0.0004  | 0.0021  | 2.50        | PASS    |
|                                                                 |               |        |            | 50.00      | 9.9134           | 2.8610  | -0.6723 | 0.0038                | 0.0011  | -0.0003 | 2.50        | PASS    |

| Test Band: 38 20MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                   | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                             | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                        | 100           | 0      | NT         | LV         | 0.9871           | -0.3433 | -2.5606 | 0.0004                | -0.0001 | -0.0010 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | -1.2445          | -1.0872 | 3.4046  | -0.0005               | -0.0004 | 0.0013  | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 3.3045           | -4.0913 | 1.6308  | 0.0013                | -0.0016 | 0.0006  | 2.50        | PASS    |
| 16QAM                                                       | 100           | 0      | NT         | LV         | 1.7738           | 2.5606  | -1.8597 | 0.0007                | 0.0010  | -0.0007 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | 0.2718           | 2.0456  | -2.5177 | 0.0001                | 0.0008  | -0.0010 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | -1.3447          | 1.0443  | 1.6165  | -0.0005               | 0.0004  | 0.0006  | 2.50        | PASS    |

| Test Band: 38 20MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                       | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                 | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                            | 100           | 0      | NV         | -30.00     | 0.6580           | 2.0885  | -2.1458 | 0.0003                | 0.0008  | -0.0008 | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | 0.4005           | -0.7439 | 3.8195  | 0.0002                | -0.0003 | 0.0015  | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | 4.4632           | -0.2003 | -2.3317 | 0.0017                | -0.0001 | -0.0009 | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | -1.9026          | 1.8454  | -1.5306 | -0.0007               | 0.0007  | -0.0006 | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | 4.7064           | -1.2588 | -0.1860 | 0.0018                | -0.0005 | -0.0001 | 2.50        | PASS    |
|                                                                 |               |        |            | 20.00      | 1.1873           | -4.5919 | 3.6049  | 0.0005                | -0.0018 | 0.0014  | 2.50        | PASS    |
|                                                                 |               |        |            | 30.00      | 2.9612           | -3.1614 | 4.7350  | 0.0011                | -0.0012 | 0.0018  | 2.50        | PASS    |
|                                                                 |               |        |            | 40.00      | -1.2159          | -0.8726 | 4.3344  | -0.0005               | -0.0003 | 0.0017  | 2.50        | PASS    |
| 16QAM                                                           | 100           | 0      | NV         | 50.00      | 1.4448           | 0.4864  | 3.7336  | 0.0006                | 0.0002  | 0.0014  | 2.50        | PASS    |
|                                                                 |               |        |            | -30.00     | -1.6594          | -0.8154 | 4.6349  | -0.0006               | -0.0003 | 0.0018  | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | 0.1717           | -3.1614 | 6.0654  | 0.0001                | -0.0012 | 0.0023  | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | 0.6294           | 0.2575  | 2.8896  | 0.0002                | 0.0001  | 0.0011  | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | 0.3433           | -1.4591 | -1.5020 | 0.0001                | -0.0006 | -0.0006 | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | -3.3188          | -2.1172 | 2.9755  | -0.0013               | -0.0008 | 0.0011  | 2.50        | PASS    |
|                                                                 |               |        |            | 20.00      | -0.5722          | 1.4591  | -1.5879 | -0.0002               | 0.0006  | -0.0006 | 2.50        | PASS    |
|                                                                 |               |        |            | 30.00      | 0.3719           | -3.0899 | -1.0872 | 0.0001                | -0.0012 | -0.0004 | 2.50        | PASS    |
|                                                                 |               |        |            | 40.00      | -0.6008          | 1.0014  | 1.4448  | -0.0002               | 0.0004  | 0.0006  | 2.50        | PASS    |
|                                                                 |               |        |            | 50.00      | 2.8467           | -4.2486 | -3.0756 | 0.0011                | -0.0016 | -0.0012 | 2.50        | PASS    |

## 4. Frequency stability

### 4.1 Test Result

| Test Band: 40a 5MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                   | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                             | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                        | 25            | 0      | NT         | LV         | 2.8181           | -5.8651 | -3.7766 | 0.0012                | -0.0025 | -0.0016 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | 0.2861           | -2.9325 | -4.0770 | 0.0001                | -0.0013 | -0.0018 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 1.8024           | -0.5150 | 0.9298  | 0.0008                | -0.0002 | 0.0004  | 2.50        | PASS    |
| 16QAM                                                       | 25            | 0      | NT         | LV         | -1.7309          | -5.4359 | 0.9012  | -0.0008               | -0.0024 | 0.0004  | 2.50        | PASS    |
|                                                             |               |        |            | NV         | -0.5722          | -2.1458 | 1.0300  | -0.0002               | -0.0009 | 0.0004  | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 2.9039           | -2.5034 | 4.7350  | 0.0013                | -0.0011 | 0.0020  | 2.50        | PASS    |

| Test Band: 40a 5MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                       | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                 | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                            | 25            | 0      | NV         | -30.00     | 0.9871           | -3.6192 | 0.2575  | 0.0004                | -0.0016 | 0.0001  | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | 3.0470           | -3.2902 | -1.9312 | 0.0013                | -0.0014 | -0.0008 | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | 5.0783           | -4.8351 | 1.4734  | 0.0022                | -0.0021 | 0.0006  | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | 1.5593           | -2.5320 | 0.4292  | 0.0007                | -0.0011 | 0.0002  | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | 2.0170           | -5.4359 | 3.7622  | 0.0009                | -0.0024 | 0.0016  | 2.50        | PASS    |
|                                                                 |               |        |            | 20.00      | 0.8440           | -3.8624 | 0.0143  | 0.0004                | -0.0017 | 0.0000  | 2.50        | PASS    |
|                                                                 |               |        |            | 30.00      | 3.4618           | -4.0197 | 2.8610  | 0.0015                | -0.0017 | 0.0012  | 2.50        | PASS    |
|                                                                 |               |        |            | 40.00      | -0.0429          | -2.9898 | 0.1860  | 0.0000                | -0.0013 | 0.0001  | 2.50        | PASS    |
|                                                                 |               |        |            | 50.00      | 2.1315           | -1.7595 | 0.7868  | 0.0009                | -0.0008 | 0.0003  | 2.50        | PASS    |
| 16QAM                                                           | 25            | 0      | NV         | -30.00     | 3.2759           | -1.1444 | -0.1144 | 0.0014                | -0.0005 | 0.0000  | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | 2.3460           | -3.0899 | 1.2875  | 0.0010                | -0.0013 | 0.0006  | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | 0.3290           | -2.2888 | 0.9871  | 0.0001                | -0.0010 | 0.0004  | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | 5.0211           | -6.3801 | -1.0872 | 0.0022                | -0.0028 | -0.0005 | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | 1.9741           | -2.8324 | 0.3719  | 0.0009                | -0.0012 | 0.0002  | 2.50        | PASS    |

|  |  |  |  |       |         |         |         |         |         |         |      |      |
|--|--|--|--|-------|---------|---------|---------|---------|---------|---------|------|------|
|  |  |  |  | 20.00 | -3.7193 | -6.6519 | 0.3004  | -0.0016 | -0.0029 | 0.0001  | 2.50 | PASS |
|  |  |  |  | 30.00 | 5.2786  | -2.7895 | -2.9325 | 0.0023  | -0.0012 | -0.0013 | 2.50 | PASS |
|  |  |  |  | 40.00 | 4.7922  | -5.4646 | -0.9727 | 0.0021  | -0.0024 | -0.0004 | 2.50 | PASS |
|  |  |  |  | 50.00 | 2.8753  | -2.8038 | -2.1744 | 0.0012  | -0.0012 | -0.0009 | 2.50 | PASS |

| Test Band: 40a 10MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |     |                       |         |     |             |         |
|--------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|-----|-----------------------|---------|-----|-------------|---------|
| Test Mode                                                    | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |     | Freq. vs. rated (ppm) |         |     | Limit (ppm) | Verdict |
|                                                              | Size          | Offset |            |            | LCH              | MCH     | HCH | LCH                   | MCH     | HCH |             |         |
| QPSK                                                         | 50            | 0      | NT         | LV         | /                | -4.1199 | /   | /                     | -0.0018 | /   | 2.50        | PASS    |
|                                                              |               |        |            | NV         | /                | -6.5660 | /   | /                     | -0.0028 | /   | 2.50        | PASS    |
|                                                              |               |        |            | HV         | /                | -4.3917 | /   | /                     | -0.0019 | /   | 2.50        | PASS    |
| 16QAM                                                        | 50            | 0      | NT         | LV         | /                | -2.3174 | /   | /                     | -0.0010 | /   | 2.50        | PASS    |
|                                                              |               |        |            | NV         | /                | -2.5749 | /   | /                     | -0.0011 | /   | 2.50        | PASS    |
|                                                              |               |        |            | HV         | /                | -4.3631 | /   | /                     | -0.0019 | /   | 2.50        | PASS    |

| Test Band: 40a 10MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |     |                       |         |     |             |         |
|------------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|-----|-----------------------|---------|-----|-------------|---------|
| Test Mode                                                        | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |     | Freq. vs. rated (ppm) |         |     | Limit (ppm) | Verdict |
|                                                                  | Size          | Offset |            |            | LCH              | MCH     | HCH | LCH                   | MCH     | HCH |             |         |
| QPSK                                                             | 50            | 0      | NV         | -30.00     | /                | -3.0327 | /   | /                     | -0.0013 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | -20.00     | /                | -4.5633 | /   | /                     | -0.0020 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | -10.00     | /                | -5.5647 | /   | /                     | -0.0024 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 0.00       | /                | -3.2473 | /   | /                     | -0.0014 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 10.00      | /                | -4.6349 | /   | /                     | -0.0020 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 20.00      | /                | -5.0497 | /   | /                     | -0.0022 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 30.00      | /                | -4.6635 | /   | /                     | -0.0020 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 40.00      | /                | -7.9966 | /   | /                     | -0.0035 | /   | 2.50        | PASS    |
| 16QAM                                                            | 50            | 0      | NV         | 50.00      | /                | -7.9823 | /   | /                     | -0.0035 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | -30.00     | /                | -3.0613 | /   | /                     | -0.0013 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | -20.00     | /                | -5.1641 | /   | /                     | -0.0022 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | -10.00     | /                | -0.2289 | /   | /                     | -0.0001 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 0.00       | /                | -4.8351 | /   | /                     | -0.0021 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 10.00      | /                | -2.9182 | /   | /                     | -0.0013 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 20.00      | /                | -6.4230 | /   | /                     | -0.0028 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 30.00      | /                | -6.2513 | /   | /                     | -0.0027 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 40.00      | /                | -3.5048 | /   | /                     | -0.0015 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 50.00      | /                | -5.0926 | /   | /                     | -0.0022 | /   | 2.50        | PASS    |

## 5. Frequency stability

### 5.1 Test Result

| Test Band: 40b 5MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                   | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                             | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                        | 25            | 0      | NT         | LV         | 1.3161           | -3.8767 | 2.9325  | 0.0006                | -0.0016 | 0.0012  | 2.50        | PASS    |
|                                                             |               |        |            | NV         | 3.0899           | -2.7180 | 1.9741  | 0.0013                | -0.0012 | 0.0008  | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 6.8951           | -2.0027 | 3.3331  | 0.0029                | -0.0009 | 0.0014  | 2.50        | PASS    |
| 16QAM                                                       | 25            | 0      | NT         | LV         | -1.0014          | -1.7452 | 4.3631  | -0.0004               | -0.0007 | 0.0019  | 2.50        | PASS    |
|                                                             |               |        |            | NV         | -0.6008          | -2.2888 | -0.6437 | -0.0003               | -0.0010 | -0.0003 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | -1.2732          | -2.3890 | 3.3474  | -0.0005               | -0.0010 | 0.0014  | 2.50        | PASS    |

| Test Band: 40b 5MHz Bandwidth (Frequency Error VS. Temperature) |               |  |      |      |                  |  |  |                       |  |  |       |         |
|-----------------------------------------------------------------|---------------|--|------|------|------------------|--|--|-----------------------|--|--|-------|---------|
| Test Mode                                                       | RB Allocation |  | Test | Test | Freq. Error (Hz) |  |  | Freq. vs. rated (ppm) |  |  | Limit | Verdict |

|       | Size | Offset | Volt. | Temp.  | LCH     | MCH     | HCH     | LCH     | MCH     | HCH     | (ppm) |      |
|-------|------|--------|-------|--------|---------|---------|---------|---------|---------|---------|-------|------|
| QPSK  | 25   | 0      | NV    | -30.00 | 5.5361  | -4.9353 | -2.5463 | 0.0024  | -0.0021 | -0.0011 | 2.50  | PASS |
|       |      |        |       | -20.00 | 2.1458  | -5.5933 | 0.9584  | 0.0009  | -0.0024 | 0.0004  | 2.50  | PASS |
|       |      |        |       | -10.00 | 0.6723  | -2.9612 | -0.4721 | 0.0003  | -0.0013 | -0.0002 | 2.50  | PASS |
|       |      |        |       | 0.00   | 1.2445  | -1.2016 | 3.5048  | 0.0005  | -0.0005 | 0.0015  | 2.50  | PASS |
|       |      |        |       | 10.00  | 0.0715  | -3.7479 | -3.4761 | 0.0000  | -0.0016 | -0.0015 | 2.50  | PASS |
|       |      |        |       | 20.00  | 3.7622  | -5.1498 | 3.3760  | 0.0016  | -0.0022 | 0.0014  | 2.50  | PASS |
|       |      |        |       | 30.00  | 3.3188  | -3.4761 | 3.3760  | 0.0014  | -0.0015 | 0.0014  | 2.50  | PASS |
|       |      |        |       | 40.00  | 0.7153  | -2.3174 | 4.6492  | 0.0003  | -0.0010 | 0.0020  | 2.50  | PASS |
|       |      |        |       | 50.00  | 4.5204  | -5.8079 | 1.5163  | 0.0019  | -0.0025 | 0.0006  | 2.50  | PASS |
| 16QAM | 25   | 0      | NV    | -30.00 | 2.2030  | -1.5879 | 0.8583  | 0.0009  | -0.0007 | 0.0004  | 2.50  | PASS |
|       |      |        |       | -20.00 | 1.4734  | -4.5490 | -0.7153 | 0.0006  | -0.0019 | -0.0003 | 2.50  | PASS |
|       |      |        |       | -10.00 | 3.1042  | -3.4475 | -0.7868 | 0.0013  | -0.0015 | -0.0003 | 2.50  | PASS |
|       |      |        |       | 0.00   | 1.7309  | -5.5075 | 0.7439  | 0.0007  | -0.0023 | 0.0003  | 2.50  | PASS |
|       |      |        |       | 10.00  | 3.1614  | -3.3045 | -0.5865 | 0.0013  | -0.0014 | -0.0002 | 2.50  | PASS |
|       |      |        |       | 20.00  | -2.0599 | -7.3528 | 4.7922  | -0.0009 | -0.0031 | 0.0020  | 2.50  | PASS |
|       |      |        |       | 30.00  | 3.7766  | -4.3488 | 3.5334  | 0.0016  | -0.0018 | 0.0015  | 2.50  | PASS |
|       |      |        |       | 40.00  | 1.7309  | -1.9598 | 1.5450  | 0.0007  | -0.0008 | 0.0007  | 2.50  | PASS |
|       |      |        |       | 50.00  | 3.3474  | -0.0143 | 2.9755  | 0.0014  | 0.0000  | 0.0013  | 2.50  | PASS |

| Test Band: 40b 10MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |     |                       |         |     |             |         |
|--------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|-----|-----------------------|---------|-----|-------------|---------|
| Test Mode                                                    | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |     | Freq. vs. rated (ppm) |         |     | Limit (ppm) | Verdict |
|                                                              | Size          | Offset |            |            | LCH              | MCH     | HCH | LCH                   | MCH     | HCH |             |         |
| QPSK                                                         | 50            | 0      | NT         | LV         | /                | -5.3358 | /   | /                     | -0.0023 | /   | 2.50        | PASS    |
|                                                              |               |        |            | NV         | /                | -5.7364 | /   | /                     | -0.0024 | /   | 2.50        | PASS    |
|                                                              |               |        |            | HV         | /                | -1.4734 | /   | /                     | -0.0006 | /   | 2.50        | PASS    |
| 16QAM                                                        | 50            | 0      | NT         | LV         | /                | -2.1744 | /   | /                     | -0.0009 | /   | 2.50        | PASS    |
|                                                              |               |        |            | NV         | /                | -3.3474 | /   | /                     | -0.0014 | /   | 2.50        | PASS    |
|                                                              |               |        |            | HV         | /                | -4.0627 | /   | /                     | -0.0017 | /   | 2.50        | PASS    |

| Test Band: 40b 10MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |     |                       |         |     |             |         |
|------------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|-----|-----------------------|---------|-----|-------------|---------|
| Test Mode                                                        | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |     | Freq. vs. rated (ppm) |         |     | Limit (ppm) | Verdict |
|                                                                  | Size          | Offset |            |            | LCH              | MCH     | HCH | LCH                   | MCH     | HCH |             |         |
| QPSK                                                             | 50            | 0      | NV         | -30.00     | /                | -5.3215 | /   | /                     | -0.0023 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | -20.00     | /                | -2.4319 | /   | /                     | -0.0010 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | -10.00     | /                | -4.0483 | /   | /                     | -0.0017 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 0.00       | /                | -4.4060 | /   | /                     | -0.0019 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 10.00      | /                | 0.6151  | /   | /                     | 0.0003  | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 20.00      | /                | -2.6321 | /   | /                     | -0.0011 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 30.00      | /                | -1.4591 | /   | /                     | -0.0006 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 40.00      | /                | -3.7909 | /   | /                     | -0.0016 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 50.00      | /                | -1.3304 | /   | /                     | -0.0006 | /   | 2.50        | PASS    |
| 16QAM                                                            | 50            | 0      | NV         | -30.00     | /                | -1.3018 | /   | /                     | -0.0006 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | -20.00     | /                | -1.4877 | /   | /                     | -0.0006 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | -10.00     | /                | -1.2875 | /   | /                     | -0.0005 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 0.00       | /                | -4.6921 | /   | /                     | -0.0020 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 10.00      | /                | -6.0654 | /   | /                     | -0.0026 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 20.00      | /                | -1.8311 | /   | /                     | -0.0008 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 30.00      | /                | -3.9053 | /   | /                     | -0.0017 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 40.00      | /                | -3.1042 | /   | /                     | -0.0013 | /   | 2.50        | PASS    |
|                                                                  |               |        |            | 50.00      | /                | -2.5463 | /   | /                     | -0.0011 | /   | 2.50        | PASS    |

## 6. Frequency stability

## 6.1 Test Result

| Test Band: 41 5MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |        |         |                       |        |         |             |         |
|------------------------------------------------------------|---------------|--------|------------|------------|------------------|--------|---------|-----------------------|--------|---------|-------------|---------|
| Test Mode                                                  | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |        |         | Freq. vs. rated (ppm) |        |         | Limit (ppm) | Verdict |
|                                                            | Size          | Offset |            |            | LCH              | MCH    | HCH     | LCH                   | MCH    | HCH     |             |         |
| QPSK                                                       | 25            | 0      | NT         | LV         | 4.1914           | 0.7010 | 1.2588  | 0.0017                | 0.0003 | 0.0005  | 2.50        | PASS    |
|                                                            |               |        |            | NV         | 5.6648           | 5.6362 | 0.3576  | 0.0023                | 0.0022 | 0.0001  | 2.50        | PASS    |
|                                                            |               |        |            | HV         | 3.9625           | 4.4632 | -1.6022 | 0.0016                | 0.0017 | -0.0006 | 2.50        | PASS    |
| 16QAM                                                      | 25            | 0      | NT         | LV         | 6.3086           | 5.9366 | -0.5150 | 0.0025                | 0.0023 | -0.0002 | 2.50        | PASS    |
|                                                            |               |        |            | NV         | 6.8092           | 1.2588 | 0.7582  | 0.0027                | 0.0005 | 0.0003  | 2.50        | PASS    |
|                                                            |               |        |            | HV         | 0.4148           | 1.3018 | 1.7166  | 0.0002                | 0.0005 | 0.0006  | 2.50        | PASS    |

| Test Band: 41 5MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                      | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                           | 25            | 0      | NV         | -30.00     | 0.0715           | 0.8869  | 0.2289  | 0.0000                | 0.0003  | 0.0001  | 2.50        | PASS    |
|                                                                |               |        |            | -20.00     | 3.7622           | 0.0715  | 2.9469  | 0.0015                | 0.0000  | 0.0011  | 2.50        | PASS    |
|                                                                |               |        |            | -10.00     | 6.8235           | 7.0381  | 3.3188  | 0.0027                | 0.0027  | 0.0012  | 2.50        | PASS    |
|                                                                |               |        |            | 0.00       | 0.4721           | 5.1928  | -1.3447 | 0.0002                | 0.0020  | -0.0005 | 2.50        | PASS    |
|                                                                |               |        |            | 10.00      | 1.6308           | 3.6335  | 3.6478  | 0.0007                | 0.0014  | 0.0014  | 2.50        | PASS    |
|                                                                |               |        |            | 20.00      | 1.4305           | 6.4230  | 0.3433  | 0.0006                | 0.0025  | 0.0001  | 2.50        | PASS    |
|                                                                |               |        |            | 30.00      | 2.0027           | -0.5722 | 0.2432  | 0.0008                | -0.0002 | 0.0001  | 2.50        | PASS    |
|                                                                |               |        |            | 40.00      | 5.2071           | 6.0081  | 2.8610  | 0.0021                | 0.0023  | 0.0011  | 2.50        | PASS    |
|                                                                |               |        |            | 50.00      | 2.2602           | 5.0068  | -0.2432 | 0.0009                | 0.0019  | -0.0001 | 2.50        | PASS    |
| 16QAM                                                          | 25            | 0      | NV         | -30.00     | 4.2915           | 6.0511  | 2.9898  | 0.0017                | 0.0023  | 0.0011  | 2.50        | PASS    |
|                                                                |               |        |            | -20.00     | 4.4346           | 3.2902  | 0.0143  | 0.0018                | 0.0013  | 0.0000  | 2.50        | PASS    |
|                                                                |               |        |            | -10.00     | 4.1914           | 2.8038  | 2.2602  | 0.0017                | 0.0011  | 0.0008  | 2.50        | PASS    |
|                                                                |               |        |            | 0.00       | 4.6778           | 1.2732  | 0.9584  | 0.0019                | 0.0005  | 0.0004  | 2.50        | PASS    |
|                                                                |               |        |            | 10.00      | 0.5579           | 0.1144  | 4.7922  | 0.0002                | 0.0000  | 0.0018  | 2.50        | PASS    |
|                                                                |               |        |            | 20.00      | 3.0470           | 3.1614  | 0.4864  | 0.0012                | 0.0012  | 0.0002  | 2.50        | PASS    |
|                                                                |               |        |            | 30.00      | 0.5579           | 0.0572  | 0.4005  | 0.0002                | 0.0000  | 0.0001  | 2.50        | PASS    |
|                                                                |               |        |            | 40.00      | 3.8338           | 3.2902  | 1.8024  | 0.0015                | 0.0013  | 0.0007  | 2.50        | PASS    |
|                                                                |               |        |            | 50.00      | 6.1083           | 4.9353  | -0.2289 | 0.0024                | 0.0019  | -0.0001 | 2.50        | PASS    |

| Test Band: 41 10MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                   | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                             | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                        | 50            | 0      | NT         | LV         | 8.2111           | -1.1158 | -0.4148 | 0.0033                | -0.0004 | -0.0002 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | 8.3685           | 6.8235  | -0.0572 | 0.0033                | 0.0026  | 0.0000  | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 5.8222           | 5.6505  | -1.5450 | 0.0023                | 0.0022  | -0.0006 | 2.50        | PASS    |
| 16QAM                                                       | 50            | 0      | NT         | LV         | 2.6178           | 5.2071  | -5.4789 | 0.0010                | 0.0020  | -0.0020 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | 3.0899           | 6.2656  | -3.7336 | 0.0012                | 0.0024  | -0.0014 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 3.7050           | 5.7077  | -4.1342 | 0.0015                | 0.0022  | -0.0015 | 2.50        | PASS    |

| Test Band: 41 10MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |         |                       |         |         |             |         |
|-----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|---------|---------|-------------|---------|
| Test Mode                                                       | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |         |         | Limit (ppm) | Verdict |
|                                                                 | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH     | HCH     |             |         |
| QPSK                                                            | 50            | 0      | NV         | -30.00     | 8.9693           | 0.4578  | 0.8583  | 0.0036                | 0.0002  | 0.0003  | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | 2.5177           | 5.7793  | -2.1744 | 0.0010                | 0.0022  | -0.0008 | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | 2.9325           | -0.9155 | -0.5293 | 0.0012                | -0.0004 | -0.0002 | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | 6.6662           | 4.1628  | -0.8440 | 0.0027                | 0.0016  | -0.0003 | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | 9.9134           | 1.5020  | -0.2861 | 0.0040                | 0.0006  | -0.0001 | 2.50        | PASS    |
|                                                                 |               |        |            | 20.00      | 2.9469           | 3.4046  | -1.6880 | 0.0012                | 0.0013  | -0.0006 | 2.50        | PASS    |
|                                                                 |               |        |            | 30.00      | 4.0197           | 6.2370  | -0.7296 | 0.0016                | 0.0024  | -0.0003 | 2.50        | PASS    |
|                                                                 |               |        |            | 40.00      | 4.6635           | 4.8923  | -1.4591 | 0.0019                | 0.0019  | -0.0005 | 2.50        | PASS    |

|       |    |   |    |        |        |         |         |        |         |         |      |      |
|-------|----|---|----|--------|--------|---------|---------|--------|---------|---------|------|------|
|       |    |   |    | 50.00  | 7.9966 | 0.7296  | -1.0872 | 0.0032 | 0.0003  | -0.0004 | 2.50 | PASS |
| 16QAM | 50 | 0 | NV | -30.00 | 6.9237 | 8.3971  | -1.0157 | 0.0028 | 0.0032  | -0.0004 | 2.50 | PASS |
|       |    |   |    | -20.00 | 6.7520 | 8.0395  | -3.6049 | 0.0027 | 0.0031  | -0.0013 | 2.50 | PASS |
|       |    |   |    | -10.00 | 2.7037 | 7.1955  | -0.2289 | 0.0011 | 0.0028  | -0.0001 | 2.50 | PASS |
|       |    |   |    | 0.00   | 6.1798 | 0.6866  | 0.2432  | 0.0025 | 0.0003  | 0.0001  | 2.50 | PASS |
|       |    |   |    | 10.00  | 2.7466 | 6.9094  | -4.6492 | 0.0011 | 0.0027  | -0.0017 | 2.50 | PASS |
|       |    |   |    | 20.00  | 7.0810 | 0.8869  | -0.2861 | 0.0028 | 0.0003  | -0.0001 | 2.50 | PASS |
|       |    |   |    | 30.00  | 6.7520 | 2.0456  | -1.1301 | 0.0027 | 0.0008  | -0.0004 | 2.50 | PASS |
|       |    |   |    | 40.00  | 4.4918 | 0.7582  | -0.9727 | 0.0018 | 0.0003  | -0.0004 | 2.50 | PASS |
|       |    |   |    | 50.00  | 1.4734 | -0.2718 | 1.3733  | 0.0006 | -0.0001 | 0.0005  | 2.50 | PASS |

| Test Band: 41 15MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |        |                       |         |        |             |         |
|-------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|--------|-----------------------|---------|--------|-------------|---------|
| Test Mode                                                   | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |        | Freq. vs. rated (ppm) |         |        | Limit (ppm) | Verdict |
|                                                             | Size          | Offset |            |            | LCH              | MCH     | HCH    | LCH                   | MCH     | HCH    |             |         |
| QPSK                                                        | 75            | 0      | NT         | LV         | -1.5306          | -0.6723 | 8.5831 | -0.0006               | -0.0003 | 0.0032 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | -3.2043          | 0.4435  | 3.4332 | -0.0013               | 0.0002  | 0.0013 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | -0.2861          | 5.5218  | 3.2330 | -0.0001               | 0.0021  | 0.0012 | 2.50        | PASS    |
| 16QAM                                                       | 75            | 0      | NT         | LV         | 0.4435           | 0.1431  | 7.3099 | 0.0002                | 0.0001  | 0.0027 | 2.50        | PASS    |
|                                                             |               |        |            | NV         | -3.2759          | 4.1342  | 2.7752 | -0.0013               | 0.0016  | 0.0010 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | -3.4618          | -0.0286 | 1.4019 | -0.0014               | 0.0000  | 0.0005 | 2.50        | PASS    |

| Test Band: 41_15MHz Bandwidth (Frequency Error VS. Temperature) |               |        |            |            |                  |         |        |                       |         |        |             |         |
|-----------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|--------|-----------------------|---------|--------|-------------|---------|
| Test Mode                                                       | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |         |        | Freq. vs. rated (ppm) |         |        | Limit (ppm) | Verdict |
|                                                                 | Size          | Offset |            |            | LCH              | MCH     | HCH    | LCH                   | MCH     | HCH    |             |         |
| QPSK                                                            | 75            | 0      | NV         | -30.00     | -3.5048          | 1.6451  | 5.8365 | -0.0014               | 0.0006  | 0.0022 | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | -3.4475          | 0.0429  | 1.2302 | -0.0014               | 0.0000  | 0.0005 | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | 0.2146           | 1.3018  | 1.9026 | 0.0001                | 0.0005  | 0.0007 | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | -2.9898          | 2.4748  | 4.2486 | -0.0012               | 0.0010  | 0.0016 | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | 0.2718           | 0.8297  | 6.3086 | 0.0001                | 0.0003  | 0.0024 | 2.50        | PASS    |
|                                                                 |               |        |            | 20.00      | 0.2575           | 2.7752  | 6.4516 | 0.0001                | 0.0011  | 0.0024 | 2.50        | PASS    |
|                                                                 |               |        |            | 30.00      | -1.0586          | 9.6273  | 5.7077 | -0.0004               | 0.0037  | 0.0021 | 2.50        | PASS    |
|                                                                 |               |        |            | 40.00      | -2.5606          | 1.5306  | 5.8222 | -0.0010               | 0.0006  | 0.0022 | 2.50        | PASS    |
|                                                                 |               |        |            | 50.00      | -0.8583          | 3.7622  | 5.7364 | -0.0003               | 0.0015  | 0.0021 | 2.50        | PASS    |
| 16QAM                                                           | 75            | 0      | NV         | -30.00     | -2.1315          | 2.6178  | 3.7336 | -0.0009               | 0.0010  | 0.0014 | 2.50        | PASS    |
|                                                                 |               |        |            | -20.00     | -3.6049          | 3.2330  | 3.9625 | -0.0014               | 0.0012  | 0.0015 | 2.50        | PASS    |
|                                                                 |               |        |            | -10.00     | -1.0872          | -0.0715 | 3.8767 | -0.0004               | 0.0000  | 0.0014 | 2.50        | PASS    |
|                                                                 |               |        |            | 0.00       | -1.3018          | -0.6866 | 4.0913 | -0.0005               | -0.0003 | 0.0015 | 2.50        | PASS    |
|                                                                 |               |        |            | 10.00      | -2.6464          | 3.5906  | 1.4877 | -0.0011               | 0.0014  | 0.0006 | 2.50        | PASS    |
|                                                                 |               |        |            | 20.00      | -1.7881          | 0.4148  | 3.1900 | -0.0007               | 0.0002  | 0.0012 | 2.50        | PASS    |
|                                                                 |               |        |            | 30.00      | -2.5320          | 2.7609  | 3.5334 | -0.0010               | 0.0011  | 0.0013 | 2.50        | PASS    |
|                                                                 |               |        |            | 40.00      | -3.2473          | 1.3018  | 5.3644 | -0.0013               | 0.0005  | 0.0020 | 2.50        | PASS    |
|                                                                 |               |        |            | 50.00      | -2.9612          | 3.0327  | 0.5150 | -0.0012               | 0.0012  | 0.0002 | 2.50        | PASS    |

| Test Band: 41 20MHz Bandwidth (Frequency Error VS. Voltage) |               |        |            |            |                  |         |         |                       |        |         |             |         |
|-------------------------------------------------------------|---------------|--------|------------|------------|------------------|---------|---------|-----------------------|--------|---------|-------------|---------|
| Test Mode                                                   | RB Allocation |        | Test Temp. | Test Volt. | Freq. Error (Hz) |         |         | Freq. vs. rated (ppm) |        |         | Limit (ppm) | Verdict |
|                                                             | Size          | Offset |            |            | LCH              | MCH     | HCH     | LCH                   | MCH    | HCH     |             |         |
| QPSK                                                        | 100           | 0      | NT         | LV         | 1.5306           | 5.8079  | 1.8454  | 0.0006                | 0.0022 | 0.0007  | 2.50        | PASS    |
|                                                             |               |        |            | NV         | 4.4775           | 1.7738  | -0.7582 | 0.0018                | 0.0007 | -0.0003 | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 0.3719           | -0.0572 | -0.2718 | 0.0001                | 0.0000 | -0.0001 | 2.50        | PASS    |
| 16QAM                                                       | 100           | 0      | NT         | LV         | 2.8324           | -0.1001 | 5.7364  | 0.0011                | 0.0000 | 0.0021  | 2.50        | PASS    |
|                                                             |               |        |            | NV         | 5.7936           | 4.5490  | 1.6022  | 0.0023                | 0.0018 | 0.0006  | 2.50        | PASS    |
|                                                             |               |        |            | HV         | 5.4502           | 6.2799  | 3.1042  | 0.0022                | 0.0024 | 0.0012  | 2.50        | PASS    |

|               |                                                   |
|---------------|---------------------------------------------------|
| Test Band: 41 | 20MHz Bandwidth (Frequency Error VS. Temperature) |
|---------------|---------------------------------------------------|

| Test Mode | RB Allocation |        | Test Volt. | Test Temp. | Freq. Error (Hz) |        |         | Freq. vs. rated (ppm) |        |         | Limit (ppm) | Verdict |
|-----------|---------------|--------|------------|------------|------------------|--------|---------|-----------------------|--------|---------|-------------|---------|
|           | Size          | Offset |            |            | LCH              | MCH    | HCH     | LCH                   | MCH    | HCH     |             |         |
| QPSK      | 100           | 0      | NV         | -30.00     | 5.9509           | 1.7452 | 1.0872  | 0.0024                | 0.0007 | 0.0004  | 2.50        | PASS    |
|           |               |        |            | -20.00     | 2.6751           | 4.0483 | 0.2718  | 0.0011                | 0.0016 | 0.0001  | 2.50        | PASS    |
|           |               |        |            | -10.00     | 2.8753           | 2.7323 | 1.4305  | 0.0011                | 0.0011 | 0.0005  | 2.50        | PASS    |
|           |               |        |            | 0.00       | 1.8024           | 4.5347 | 0.8869  | 0.0007                | 0.0017 | 0.0003  | 2.50        | PASS    |
|           |               |        |            | 10.00      | 0.6008           | 1.9884 | 1.9884  | 0.0002                | 0.0008 | 0.0007  | 2.50        | PASS    |
|           |               |        |            | 20.00      | 1.2016           | 0.1001 | -2.5463 | 0.0005                | 0.0000 | -0.0010 | 2.50        | PASS    |
|           |               |        |            | 30.00      | -1.1301          | 5.8937 | 1.6594  | -0.0005               | 0.0023 | 0.0006  | 2.50        | PASS    |
|           |               |        |            | 40.00      | 6.6662           | 1.1873 | 1.3304  | 0.0027                | 0.0005 | 0.0005  | 2.50        | PASS    |
|           |               |        |            | 50.00      | 2.1172           | 3.3617 | 0.3862  | 0.0008                | 0.0013 | 0.0001  | 2.50        | PASS    |
| 16QAM     | 100           | 0      | NV         | -30.00     | 4.0913           | 4.5204 | 0.0572  | 0.0016                | 0.0017 | 0.0000  | 2.50        | PASS    |
|           |               |        |            | -20.00     | 2.9469           | 2.0742 | 3.8052  | 0.0012                | 0.0008 | 0.0014  | 2.50        | PASS    |
|           |               |        |            | -10.00     | 1.8740           | 1.6451 | 2.6751  | 0.0007                | 0.0006 | 0.0010  | 2.50        | PASS    |
|           |               |        |            | 0.00       | 2.4605           | 1.7309 | 1.6594  | 0.0010                | 0.0007 | 0.0006  | 2.50        | PASS    |
|           |               |        |            | 10.00      | 3.7622           | 4.7493 | 4.8923  | 0.0015                | 0.0018 | 0.0018  | 2.50        | PASS    |
|           |               |        |            | 20.00      | 5.7220           | 2.0313 | 1.7452  | 0.0023                | 0.0008 | 0.0007  | 2.50        | PASS    |
|           |               |        |            | 30.00      | 2.9182           | 1.3876 | 0.8440  | 0.0012                | 0.0005 | 0.0003  | 2.50        | PASS    |
|           |               |        |            | 40.00      | 5.5361           | 0.6294 | 2.9898  | 0.0022                | 0.0002 | 0.0011  | 2.50        | PASS    |
|           |               |        |            | 50.00      | 3.2473           | 5.7793 | 3.6764  | 0.0013                | 0.0022 | 0.0014  | 2.50        | PASS    |