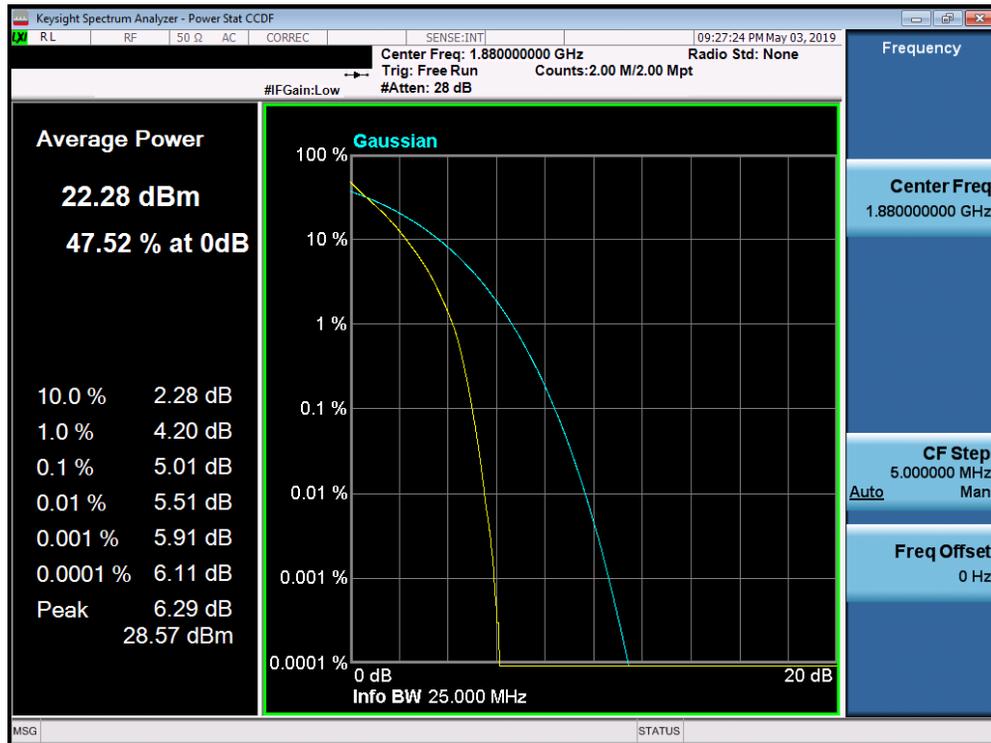
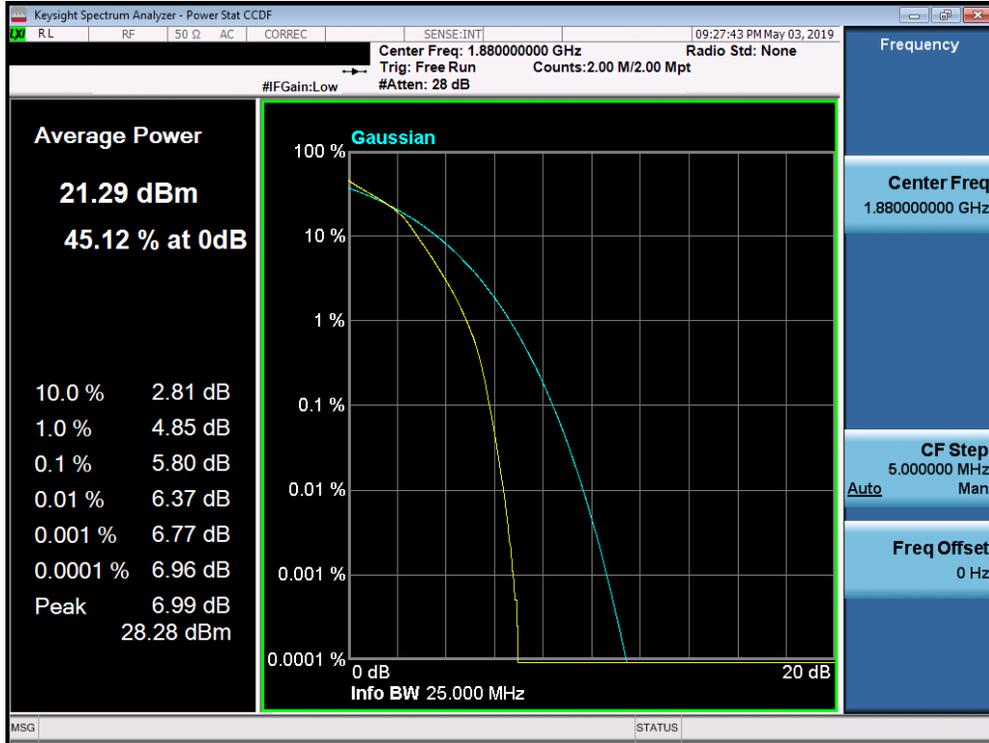


Plot 7-239. PAR Plot (Band 2 - 15.0MHz 64-QAM - Full RB Configuration)

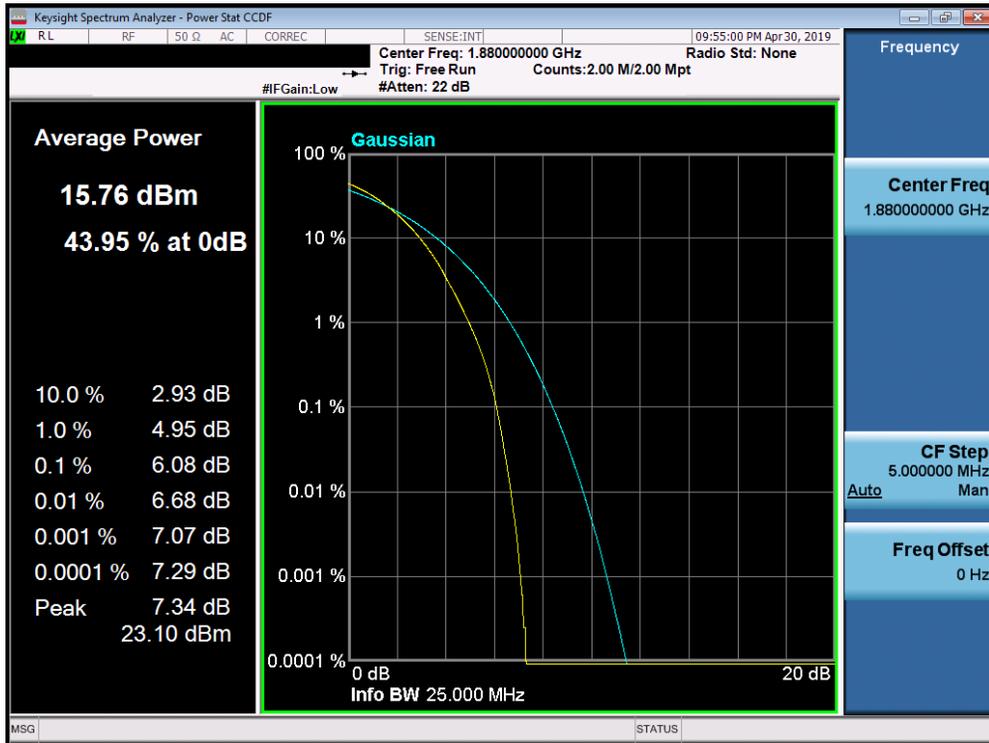


Plot 7-240. PAR Plot (Band 2 - 20.0MHz QPSK - Full RB Configuration)

| | | | | |
|--|--|---------------------------------------|----|---------------------------------|
| FCC ID: ZNFL722DL | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | LG | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 142 of 179 |



Plot 7-241. PAR Plot (Band 2 - 20.0MHz 16-QAM - Full RB Configuration)



Plot 7-242. PAR Plot (Band 2 - 20.0MHz 64-QAM - Full RB Configuration)

| | | | | |
|--|---------------------------------|---------------------------------------|--|---------------------------------|
| FCC ID: ZNFL722DL | | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 143 of 179 |

7.6 Radiated Power (ERP/EIRP)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer’s “channel power” measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW \geq 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points \geq 2 x span / RBW
6. Detector = RMS
7. Trigger is set to “free run” for signals with continuous operation with the sweep times set to “auto”.
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

| | | | | |
|--|---|---------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 144 of 179 | |

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

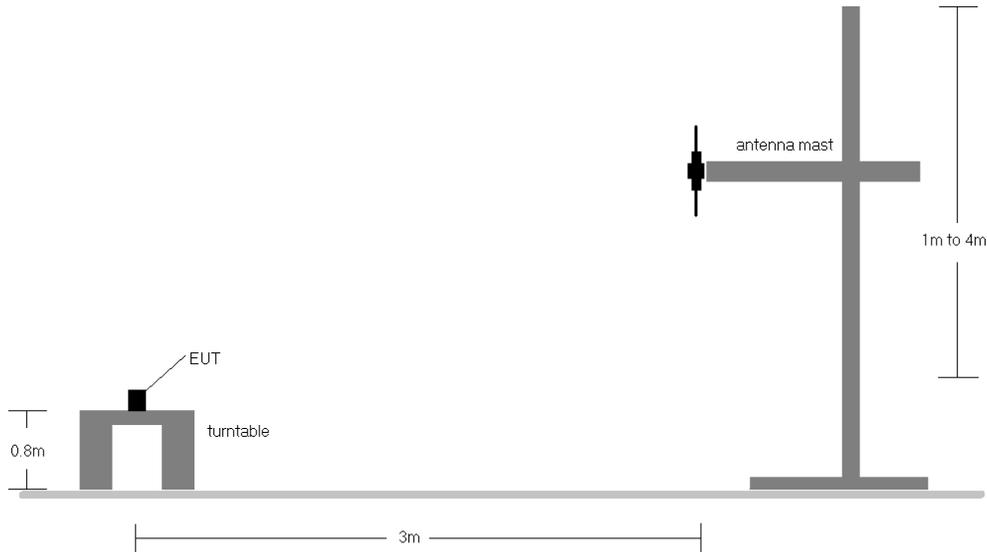


Figure 7-5. Radiated Test Setup <1GHz

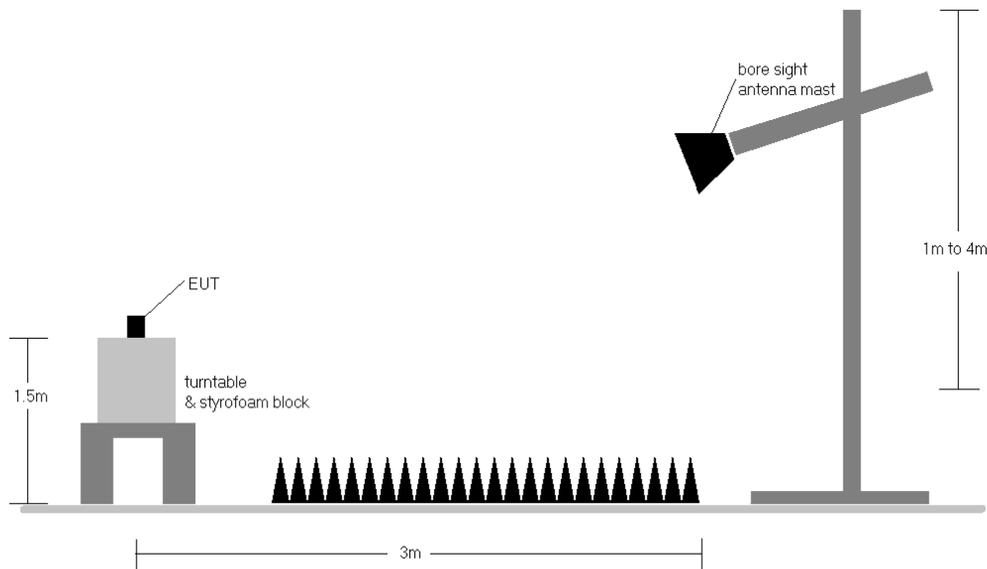


Figure 7-6. Radiated Test Setup >1GHz

Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.

| | | | | |
|---|---|--------------------------------------|---|--|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION) | |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 145 of 179 | |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | ERP [dBm] | ERP [Watts] | ERP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|-----------------|-------------|
| 665.50 | 5 | QPSK | V | 175 | 309 | 1 / 0 | 14.52 | 2.90 | 15.27 | 0.034 | 34.77 | -19.50 |
| 680.50 | 5 | QPSK | V | 183 | 27 | 1 / 0 | 14.75 | 3.20 | 15.80 | 0.038 | 34.77 | -18.97 |
| 695.50 | 5 | QPSK | V | 195 | 311 | 1 / 0 | 14.67 | 3.30 | 15.82 | 0.038 | 34.77 | -18.95 |
| 680.50 | 5 | 16-QAM | V | 183 | 27 | 1 / 0 | 14.66 | 3.20 | 15.71 | 0.037 | 34.77 | -19.06 |
| 680.50 | 5 | 64-QAM | V | 183 | 27 | 1 / 0 | 13.54 | 3.20 | 14.59 | 0.029 | 34.77 | -20.18 |
| 668.00 | 10 | QPSK | V | 108 | 83 | 1 / 49 | 13.99 | 2.90 | 14.74 | 0.030 | 34.77 | -20.03 |
| 680.50 | 10 | QPSK | V | 165 | 90 | 1 / 49 | 14.12 | 3.20 | 15.17 | 0.033 | 34.77 | -19.60 |
| 693.00 | 10 | QPSK | V | 104 | 51 | 1 / 49 | 14.91 | 3.30 | 16.06 | 0.040 | 34.77 | -18.71 |
| 693.00 | 10 | 16-QAM | V | 104 | 51 | 1 / 49 | 14.78 | 3.30 | 15.93 | 0.039 | 34.77 | -18.84 |
| 693.00 | 10 | 64-QAM | V | 104 | 51 | 1 / 49 | 13.79 | 3.30 | 14.94 | 0.031 | 34.77 | -19.83 |
| 670.50 | 15 | QPSK | V | 106 | 252 | 1 / 0 | 14.16 | 3.00 | 15.01 | 0.032 | 34.77 | -19.76 |
| 680.50 | 15 | QPSK | V | 102 | 122 | 1 / 0 | 14.41 | 3.20 | 15.46 | 0.035 | 34.77 | -19.31 |
| 690.50 | 15 | QPSK | V | 199 | 309 | 75 / 0 | 13.95 | 3.30 | 15.10 | 0.032 | 34.77 | -19.67 |
| 680.50 | 15 | 16-QAM | V | 102 | 122 | 1 / 0 | 14.38 | 3.20 | 15.43 | 0.035 | 34.77 | -19.34 |
| 670.50 | 15 | 64-QAM | V | 106 | 252 | 1 / 0 | 13.56 | 3.00 | 14.41 | 0.028 | 34.77 | -20.36 |
| 673.00 | 20 | QPSK | V | 248 | 324 | 1 / 0 | 14.67 | 3.10 | 15.62 | 0.036 | 34.77 | -19.15 |
| 680.50 | 20 | QPSK | V | 255 | 319 | 1 / 0 | 15.17 | 3.20 | 16.22 | 0.042 | 34.77 | -18.55 |
| 688.00 | 20 | QPSK | V | 194 | 309 | 100 / 0 | 14.59 | 3.30 | 15.74 | 0.037 | 34.77 | -19.03 |
| 680.50 | 20 | 16-QAM | V | 255 | 319 | 1 / 0 | 14.94 | 3.20 | 15.99 | 0.040 | 34.77 | -18.78 |
| 680.50 | 20 | 64-QAM | V | 255 | 319 | 1 / 0 | 14.06 | 3.20 | 15.11 | 0.032 | 34.77 | -19.66 |
| 680.50 | 20 | QPSK | H | 247 | 112 | 1 / 0 | 12.11 | 3.20 | 13.16 | 0.021 | 34.77 | -21.61 |

Table 7-2. ERP Data (Band 71)

| | | | |
|--|---|-------------------------------|---------------------------------|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION)  | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 146 of 179 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | ERP [dBm] | ERP [Watts] | ERP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|-----------------|-------------|
| 699.70 | 1.4 | QPSK | H | 289 | 92 | 1 / 5 | 13.48 | 5.19 | 16.52 | 0.045 | 34.77 | -18.25 |
| 707.50 | 1.4 | QPSK | H | 298 | 88 | 1 / 5 | 14.74 | 5.19 | 17.78 | 0.060 | 34.77 | -16.99 |
| 715.30 | 1.4 | QPSK | H | 299 | 97 | 1 / 5 | 15.12 | 5.26 | 18.23 | 0.066 | 34.77 | -16.55 |
| 715.30 | 1.4 | 16-QAM | H | 299 | 97 | 1 / 5 | 14.81 | 5.26 | 17.92 | 0.062 | 34.77 | -16.86 |
| 715.30 | 1.4 | 64-QAM | H | 299 | 97 | 1 / 5 | 13.75 | 5.26 | 16.86 | 0.048 | 34.77 | -17.92 |
| 700.50 | 3 | QPSK | H | 297 | 105 | 1 / 14 | 13.48 | 5.14 | 16.47 | 0.044 | 34.77 | -18.30 |
| 707.50 | 3 | QPSK | H | 295 | 87 | 1 / 14 | 14.65 | 5.19 | 17.69 | 0.059 | 34.77 | -17.08 |
| 714.50 | 3 | QPSK | H | 295 | 95 | 1 / 14 | 15.36 | 5.25 | 18.46 | 0.070 | 34.77 | -16.31 |
| 714.50 | 3 | 16-QAM | H | 295 | 95 | 1 / 14 | 15.00 | 5.25 | 18.10 | 0.065 | 34.77 | -16.67 |
| 714.50 | 3 | 64-QAM | H | 295 | 95 | 1 / 0 | 13.97 | 5.25 | 17.07 | 0.051 | 34.77 | -17.70 |
| 701.50 | 5 | QPSK | H | 301 | 93 | 1 / 24 | 13.89 | 5.15 | 16.89 | 0.049 | 34.77 | -17.88 |
| 707.50 | 5 | QPSK | H | 293 | 100 | 1 / 24 | 14.34 | 5.19 | 17.38 | 0.055 | 34.77 | -17.39 |
| 713.50 | 5 | QPSK | H | 294 | 84 | 1 / 24 | 15.14 | 5.24 | 18.23 | 0.067 | 34.77 | -16.54 |
| 713.50 | 5 | 16-QAM | H | 294 | 84 | 1 / 0 | 14.75 | 5.24 | 17.84 | 0.061 | 34.77 | -16.93 |
| 713.50 | 5 | 64-QAM | H | 294 | 84 | 1 / 24 | 13.52 | 5.24 | 16.61 | 0.046 | 34.77 | -18.16 |
| 704.00 | 10 | QPSK | H | 298 | 106 | 1 / 49 | 14.51 | 5.17 | 17.53 | 0.057 | 34.77 | -17.24 |
| 707.50 | 10 | QPSK | H | 301 | 90 | 1 / 49 | 14.99 | 5.19 | 18.03 | 0.064 | 34.77 | -16.74 |
| 711.00 | 10 | QPSK | H | 294 | 94 | 1 / 49 | 15.10 | 5.22 | 18.17 | 0.066 | 34.77 | -16.60 |
| 711.00 | 10 | 16-QAM | H | 294 | 94 | 1 / 49 | 14.79 | 5.22 | 17.86 | 0.061 | 34.77 | -16.91 |
| 711.00 | 10 | 64-QAM | H | 294 | 94 | 1 / 49 | 13.77 | 5.22 | 16.84 | 0.048 | 34.77 | -17.93 |
| 714.50 | 3 | QPSK | V | 182 | 77 | 1 / 14 | 14.77 | 5.25 | 17.87 | 0.061 | 34.77 | -16.90 |

Table 7-3. ERP Data (Band 12)

| | | | |
|--|---|-------------------------------|---------------------------------|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION)  | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 147 of 179 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod. | Ant. Pol. [H/V] | Antenna Height [cm] | Turtable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | ERP [dBm] | ERP [Watts] | ERP Limit [dBm] | Margin [dB] | EIRP [dBm] | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-----------------|---------------------|---------------------------|----------------|------------------------|-----------------|--------------|--------------|-----------------|-------------|--------------|--------------|------------------|-------------|
| 779.50 | 5 | QPSK | H | 160 | 95 | 1 / 24 | 12.67 | 6.09 | 16.61 | 0.046 | 34.77 | -18.16 | 18.76 | 0.075 | 36.99 | -18.23 |
| 782.00 | 5 | QPSK | H | 167 | 97 | 1 / 24 | 12.32 | 6.13 | 16.30 | 0.043 | 34.77 | -18.47 | 18.45 | 0.070 | 36.99 | -18.53 |
| 784.50 | 5 | QPSK | H | 170 | 83 | 1 / 24 | 12.86 | 6.18 | 16.89 | 0.049 | 34.77 | -17.88 | 19.04 | 0.080 | 36.99 | -17.95 |
| 784.50 | 5 | 16-QAM | H | 170 | 83 | 1 / 24 | 12.45 | 6.18 | 16.48 | 0.044 | 34.77 | -18.29 | 18.63 | 0.073 | 36.99 | -18.36 |
| 784.50 | 5 | 64-QAM | H | 170 | 83 | 1 / 24 | 11.68 | 6.18 | 15.71 | 0.037 | 34.77 | -19.06 | 17.86 | 0.061 | 36.99 | -19.13 |
| 782.00 | 10 | QPSK | H | 164 | 95 | 1 / 0 | 12.99 | 6.13 | 16.97 | 0.050 | 34.77 | -17.80 | 19.12 | 0.082 | 36.99 | -17.86 |
| 782.00 | 10 | 16-QAM | H | 164 | 95 | 1 / 49 | 12.55 | 6.13 | 16.53 | 0.045 | 34.77 | -18.24 | 18.68 | 0.074 | 36.99 | -18.30 |
| 782.00 | 10 | 64-QAM | H | 164 | 95 | 1 / 49 | 11.80 | 6.13 | 15.78 | 0.038 | 34.77 | -18.99 | 17.93 | 0.062 | 36.99 | -19.05 |
| 782.00 | 10 | QPSK | V | 163 | 115 | 1 / 0 | 11.92 | 6.13 | 15.90 | 0.039 | 34.77 | -18.87 | 18.05 | 0.064 | 36.99 | -18.93 |

Table 7-4. ERP Data (Band 13)

| | | | | | |
|---|---|--------------------------------------|---|---|--|
| FCC ID: ZNFL722DL |  | | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | | Page 148 of 179 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | ERP [dBm] | ERP [Watts] | ERP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|-----------------|-------------|
| 824.70 | 1.4 | QPSK | H | 137 | 32 | 1 / 5 | 8.65 | 6.89 | 13.39 | 0.022 | 38.45 | -25.06 |
| 836.50 | 1.4 | QPSK | H | 129 | 144 | 1 / 5 | 11.10 | 7.08 | 16.03 | 0.040 | 38.45 | -22.42 |
| 848.30 | 1.4 | QPSK | H | 139 | 31 | 1 / 5 | 10.56 | 7.28 | 15.69 | 0.037 | 38.45 | -22.76 |
| 836.50 | 1.4 | 16-QAM | H | 129 | 144 | 1 / 5 | 10.75 | 7.08 | 15.68 | 0.037 | 38.45 | -22.77 |
| 836.50 | 1.4 | 64-QAM | H | 129 | 144 | 1 / 5 | 9.63 | 7.08 | 14.56 | 0.029 | 38.45 | -23.89 |
| 825.50 | 3 | QPSK | H | 133 | 39 | 1 / 14 | 8.70 | 6.90 | 13.45 | 0.022 | 38.45 | -25.00 |
| 836.50 | 3 | QPSK | H | 142 | 32 | 1 / 14 | 11.18 | 7.08 | 16.11 | 0.041 | 38.45 | -22.34 |
| 847.50 | 3 | QPSK | H | 137 | 40 | 1 / 0 | 10.39 | 7.26 | 15.50 | 0.036 | 38.45 | -22.95 |
| 836.50 | 3 | 16-QAM | H | 142 | 32 | 1 / 14 | 10.81 | 7.08 | 15.74 | 0.038 | 38.45 | -22.71 |
| 836.50 | 3 | 64-QAM | H | 142 | 32 | 1 / 14 | 9.72 | 7.08 | 14.65 | 0.029 | 38.45 | -23.80 |
| 826.50 | 5 | QPSK | H | 147 | 28 | 1 / 24 | 9.15 | 6.92 | 13.92 | 0.025 | 38.45 | -24.53 |
| 836.50 | 5 | QPSK | H | 140 | 28 | 1 / 24 | 10.96 | 7.08 | 15.89 | 0.039 | 38.45 | -22.56 |
| 846.50 | 5 | QPSK | H | 139 | 35 | 1 / 0 | 10.97 | 7.25 | 16.07 | 0.040 | 38.45 | -22.38 |
| 846.50 | 5 | 16-QAM | H | 139 | 35 | 1 / 0 | 10.63 | 7.25 | 15.73 | 0.037 | 38.45 | -22.72 |
| 846.50 | 5 | 64-QAM | H | 139 | 35 | 1 / 0 | 9.70 | 7.25 | 14.80 | 0.030 | 38.45 | -23.65 |
| 829.00 | 10 | QPSK | H | 139 | 39 | 1 / 49 | 10.40 | 6.96 | 15.21 | 0.033 | 38.45 | -23.24 |
| 836.50 | 10 | QPSK | H | 142 | 34 | 1 / 49 | 11.45 | 7.08 | 16.38 | 0.043 | 38.45 | -22.07 |
| 844.00 | 10 | QPSK | H | 135 | 32 | 1 / 0 | 10.86 | 7.21 | 15.92 | 0.039 | 38.45 | -22.53 |
| 836.50 | 10 | 16-QAM | H | 142 | 34 | 1 / 49 | 11.31 | 7.08 | 16.24 | 0.042 | 38.45 | -22.21 |
| 836.50 | 10 | 64-QAM | H | 142 | 34 | 1 / 49 | 10.13 | 7.08 | 15.06 | 0.032 | 38.45 | -23.39 |
| 836.50 | 10 | QPSK | V | 146 | 243 | 1 / 49 | 11.36 | 7.08 | 16.29 | 0.043 | 38.45 | -22.16 |

Table 7-5. ERP Data (Band 5)

| | | | | | |
|--|---|---|--|---|---------------------------------|
| FCC ID: ZNFL722DL |  | MEASUREMENT REPORT (CERTIFICATION) | |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 149 of 179 | |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | EIRP [dBm] | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|------------------|-------------|
| 1710.70 | 1.4 | QPSK | H | 102 | 7 | 1 / 0 | 12.29 | 9.63 | 21.92 | 0.155 | 30.00 | -8.08 |
| 1745.00 | 1.4 | QPSK | H | 101 | -2 | 1 / 0 | 13.19 | 9.49 | 22.68 | 0.185 | 30.00 | -7.32 |
| 1779.30 | 1.4 | QPSK | H | 102 | 0 | 1 / 0 | 11.02 | 9.35 | 20.37 | 0.109 | 30.00 | -9.63 |
| 1745.00 | 1.4 | 16-QAM | H | 101 | -2 | 1 / 5 | 13.16 | 9.49 | 22.65 | 0.184 | 30.00 | -7.35 |
| 1745.00 | 1.4 | 64-QAM | H | 101 | -2 | 1 / 0 | 12.48 | 9.49 | 21.97 | 0.157 | 30.00 | -8.03 |
| 1711.50 | 3 | QPSK | H | 102 | 6 | 1 / 0 | 12.46 | 9.62 | 22.08 | 0.162 | 30.00 | -7.92 |
| 1745.00 | 3 | QPSK | H | 100 | 3 | 1 / 0 | 13.34 | 9.49 | 22.83 | 0.192 | 30.00 | -7.17 |
| 1778.50 | 3 | QPSK | H | 101 | 4 | 15 / 0 | 11.05 | 9.35 | 20.40 | 0.110 | 30.00 | -9.60 |
| 1745.00 | 3 | 16-QAM | H | 100 | 3 | 1 / 0 | 13.12 | 9.49 | 22.61 | 0.182 | 30.00 | -7.39 |
| 1745.00 | 3 | 64-QAM | H | 100 | 3 | 1 / 0 | 12.55 | 9.49 | 22.04 | 0.160 | 30.00 | -7.96 |
| 1712.50 | 5 | QPSK | H | 104 | 358 | 1 / 24 | 12.61 | 9.62 | 22.23 | 0.167 | 30.00 | -7.77 |
| 1745.00 | 5 | QPSK | H | 104 | 1 | 1 / 0 | 13.28 | 9.49 | 22.77 | 0.189 | 30.00 | -7.23 |
| 1777.50 | 5 | QPSK | H | 100 | 358 | 1 / 0 | 11.08 | 9.36 | 20.44 | 0.111 | 30.00 | -9.56 |
| 1745.00 | 5 | 16-QAM | H | 104 | 1 | 1 / 0 | 13.15 | 9.49 | 22.64 | 0.183 | 30.00 | -7.36 |
| 1745.00 | 5 | 64-QAM | H | 104 | 1 | 1 / 0 | 12.60 | 9.49 | 22.09 | 0.162 | 30.00 | -7.91 |
| 1715.00 | 10 | QPSK | H | 104 | 3 | 1 / 49 | 13.19 | 9.61 | 22.80 | 0.191 | 30.00 | -7.20 |
| 1745.00 | 10 | QPSK | H | 100 | 5 | 1 / 49 | 13.53 | 9.49 | 23.02 | 0.200 | 30.00 | -6.98 |
| 1775.00 | 10 | QPSK | H | 101 | 1 | 1 / 49 | 11.87 | 9.37 | 21.24 | 0.133 | 30.00 | -8.76 |
| 1745.00 | 10 | 16-QAM | H | 100 | 5 | 1 / 49 | 13.39 | 9.49 | 22.88 | 0.194 | 30.00 | -7.12 |
| 1745.00 | 10 | 64-QAM | H | 100 | 5 | 1 / 49 | 12.52 | 9.49 | 22.01 | 0.159 | 30.00 | -7.99 |
| 1717.50 | 15 | QPSK | H | 111 | 359 | 1 / 74 | 13.03 | 9.60 | 22.63 | 0.183 | 30.00 | -7.37 |
| 1745.00 | 15 | QPSK | H | 108 | 1 | 1 / 0 | 14.03 | 9.49 | 23.52 | 0.225 | 30.00 | -6.48 |
| 1772.50 | 15 | QPSK | H | 101 | 130 | 1 / 0 | 11.68 | 9.38 | 21.06 | 0.128 | 30.00 | -8.94 |
| 1745.00 | 15 | 16-QAM | H | 108 | 1 | 1 / 0 | 13.99 | 9.49 | 23.48 | 0.223 | 30.00 | -6.52 |
| 1745.00 | 15 | 64-QAM | H | 108 | 1 | 1 / 0 | 13.19 | 9.49 | 22.68 | 0.185 | 30.00 | -7.32 |
| 1720.00 | 20 | QPSK | H | 129 | 3 | 1 / 0 | 12.77 | 9.59 | 22.36 | 0.172 | 30.00 | -7.64 |
| 1745.00 | 20 | QPSK | H | 114 | 0 | 1 / 0 | 13.61 | 9.49 | 23.10 | 0.204 | 30.00 | -6.90 |
| 1770.00 | 20 | QPSK | H | 122 | 8 | 1 / 99 | 11.68 | 9.39 | 21.07 | 0.128 | 30.00 | -8.93 |
| 1745.00 | 20 | 16-QAM | H | 114 | 0 | 1 / 0 | 13.41 | 9.49 | 22.90 | 0.195 | 30.00 | -7.10 |
| 1745.00 | 20 | 64-QAM | H | 114 | 0 | 1 / 0 | 12.91 | 9.49 | 22.40 | 0.174 | 30.00 | -7.60 |
| 1745.00 | 15 | QPSK | V | 138 | 149 | 1 / 0 | 13.45 | 9.49 | 22.94 | 0.197 | 30.00 | -7.06 |

Table 7-6. EIRP Data (Band 66/4)

| | | | |
|--|---|-------------------------------|---------------------------------|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION)  | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 150 of 179 |

| Frequency [MHz] | Channel Bandwidth [MHz] | Mod. | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | RB Size/Offset | Substitute Level [dBm] | Ant. Gain [dBi] | EIRP [dBm] | EIRP [Watts] | EIRP Limit [dBm] | Margin [dB] |
|-----------------|-------------------------|--------|-----------------|---------------------|----------------------------|----------------|------------------------|-----------------|--------------|--------------|------------------|-------------|
| 1850.70 | 1.4 | QPSK | H | 165 | 5 | 1 / 0 | 11.05 | 9.07 | 20.12 | 0.103 | 33.01 | -12.90 |
| 1880.00 | 1.4 | QPSK | H | 159 | 6 | 1 / 0 | 13.01 | 9.15 | 22.16 | 0.164 | 33.01 | -10.85 |
| 1909.30 | 1.4 | QPSK | H | 152 | 17 | 1 / 0 | 11.13 | 9.27 | 20.40 | 0.110 | 33.01 | -12.61 |
| 1880.00 | 1.4 | 16-QAM | H | 159 | 6 | 1 / 0 | 12.95 | 9.15 | 22.10 | 0.162 | 33.01 | -10.91 |
| 1880.00 | 1.4 | 64-QAM | H | 159 | 6 | 1 / 5 | 12.35 | 9.15 | 21.50 | 0.141 | 33.01 | -11.51 |
| 1851.50 | 3 | QPSK | H | 145 | 23 | 1 / 0 | 11.83 | 9.07 | 20.90 | 0.123 | 33.01 | -12.11 |
| 1880.00 | 3 | QPSK | H | 152 | 13 | 1 / 14 | 13.14 | 9.15 | 22.29 | 0.169 | 33.01 | -10.72 |
| 1908.50 | 3 | QPSK | H | 149 | 21 | 1 / 0 | 11.80 | 9.26 | 21.06 | 0.128 | 33.01 | -11.95 |
| 1880.00 | 3 | 16-QAM | H | 152 | 13 | 1 / 14 | 12.97 | 9.15 | 22.12 | 0.163 | 33.01 | -10.89 |
| 1880.00 | 3 | 64-QAM | H | 152 | 13 | 1 / 0 | 12.27 | 9.15 | 21.42 | 0.139 | 33.01 | -11.59 |
| 1852.50 | 5 | QPSK | H | 159 | 13 | 25 / 0 | 11.97 | 9.07 | 21.04 | 0.127 | 33.01 | -11.97 |
| 1880.00 | 5 | QPSK | H | 153 | 11 | 1 / 24 | 13.40 | 9.15 | 22.55 | 0.180 | 33.01 | -10.46 |
| 1907.50 | 5 | QPSK | H | 148 | 22 | 1 / 0 | 12.21 | 9.26 | 21.47 | 0.140 | 33.01 | -11.54 |
| 1880.00 | 5 | 16-QAM | H | 153 | 11 | 1 / 0 | 13.10 | 9.15 | 22.25 | 0.168 | 33.01 | -10.76 |
| 1880.00 | 5 | 64-QAM | H | 153 | 11 | 1 / 24 | 12.85 | 9.15 | 22.00 | 0.158 | 33.01 | -11.01 |
| 1855.00 | 10 | QPSK | H | 158 | 13 | 1 / 49 | 11.17 | 9.08 | 20.25 | 0.106 | 33.01 | -12.76 |
| 1880.00 | 10 | QPSK | H | 152 | 15 | 1 / 49 | 12.82 | 9.15 | 21.97 | 0.157 | 33.01 | -11.04 |
| 1905.00 | 10 | QPSK | H | 146 | 15 | 1 / 0 | 12.89 | 9.24 | 22.13 | 0.163 | 33.01 | -10.88 |
| 1905.00 | 10 | 16-QAM | H | 146 | 15 | 1 / 0 | 12.74 | 9.24 | 21.98 | 0.158 | 33.01 | -11.03 |
| 1905.00 | 10 | 64-QAM | H | 146 | 15 | 1 / 0 | 12.14 | 9.24 | 21.38 | 0.137 | 33.01 | -11.63 |
| 1857.50 | 15 | QPSK | H | 154 | 354 | 1 / 74 | 12.92 | 9.08 | 22.00 | 0.159 | 33.01 | -11.01 |
| 1880.00 | 15 | QPSK | H | 152 | 6 | 1 / 74 | 13.49 | 9.15 | 22.64 | 0.184 | 33.01 | -10.37 |
| 1902.50 | 15 | QPSK | H | 147 | 9 | 1 / 0 | 13.18 | 9.22 | 22.40 | 0.174 | 33.01 | -10.61 |
| 1880.00 | 15 | 16-QAM | H | 152 | 6 | 1 / 74 | 13.35 | 9.15 | 22.50 | 0.178 | 33.01 | -10.51 |
| 1880.00 | 15 | 64-QAM | H | 152 | 6 | 1 / 74 | 12.88 | 9.15 | 22.03 | 0.160 | 33.01 | -10.98 |
| 1860.00 | 20 | QPSK | H | 151 | 3 | 1 / 99 | 13.28 | 9.09 | 22.37 | 0.173 | 33.01 | -10.64 |
| 1880.00 | 20 | QPSK | H | 155 | 365 | 1 / 0 | 13.43 | 9.15 | 22.58 | 0.181 | 33.01 | -10.43 |
| 1900.00 | 20 | QPSK | H | 157 | 18 | 1 / 0 | 13.29 | 9.20 | 22.49 | 0.178 | 33.01 | -10.52 |
| 1880.00 | 20 | 16-QAM | H | 155 | 365 | 1 / 0 | 13.16 | 9.15 | 22.31 | 0.170 | 33.01 | -10.70 |
| 1880.00 | 20 | 64-QAM | H | 155 | 365 | 1 / 0 | 12.66 | 9.15 | 21.81 | 0.152 | 33.01 | -11.20 |
| 1880.00 | 15 | QPSK | V | 108 | 40 | 1 / 74 | 13.22 | 9.15 | 22.37 | 0.173 | 33.01 | -10.64 |

Table 7-7. EIRP Data (Band 2)

| | | | | |
|--|---|---------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 151 of 179 | |

7.7 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW $\geq 3 \times$ RBW
3. Span = 1.5 times the OBW
4. No. of sweep points $\geq 2 \times$ span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

| | | | | |
|--|---|---------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 152 of 179 |

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

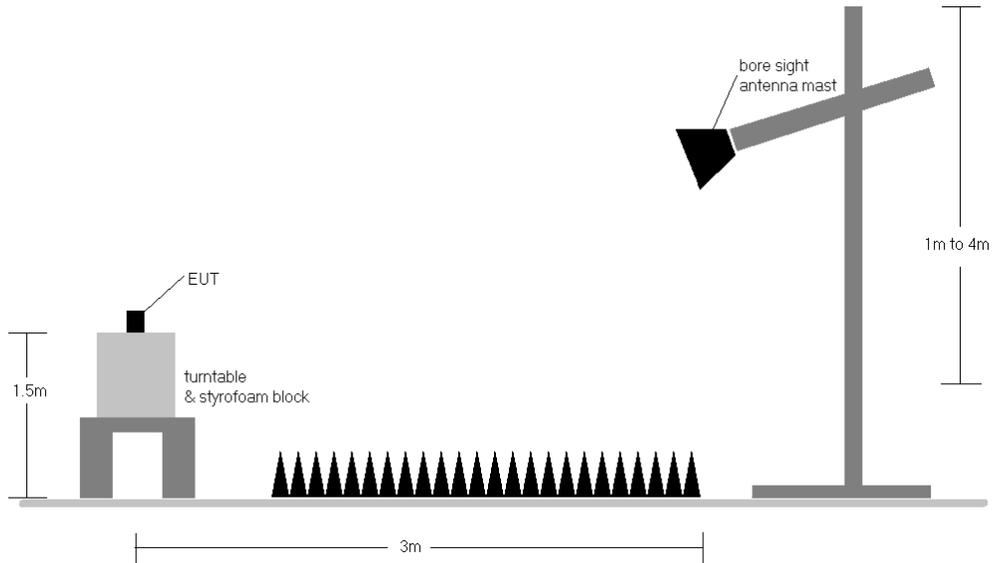


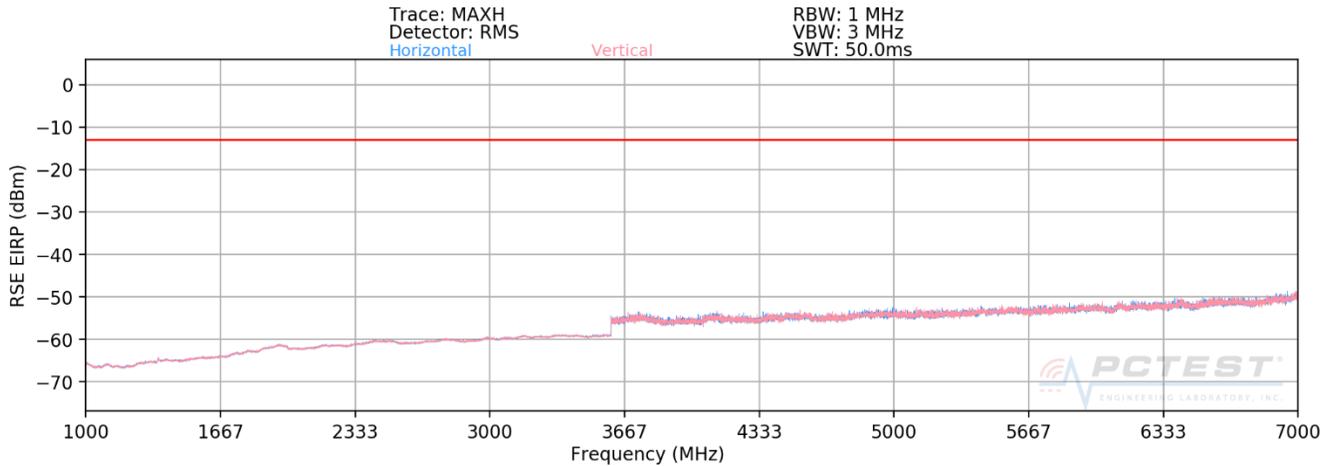
Figure 7-7. Test Instrument & Measurement Setup

Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) This unit was tested with its standard battery.
- 3) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.
- 4) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- 5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

| | | | | |
|---|---|---|---|--|
| FCC ID: ZNFL722DL |  PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) |  LG | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 153 of 179 | |

Band 71



Plot 7-243. Radiated Spurious Plot above 1GHz (Band 71)

OPERATING FREQUENCY: 673.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1346.00 | V | 108 | 287 | -69.96 | 7.47 | -62.48 | -49.5 |
| 2019.00 | V | - | - | -69.94 | 8.68 | -61.26 | -48.3 |
| 2692.00 | V | - | - | -69.37 | 9.99 | -59.39 | -46.4 |
| 3365.00 | V | - | - | -67.33 | 9.66 | -57.67 | -44.7 |
| 4038.00 | V | - | - | -70.06 | 9.84 | -60.22 | -47.2 |

Table 7-8. Radiated Spurious Data (Band 71 – Low Channel)

| | | | |
|--|---|-------------------------------|---------------------------------|
| FCC ID: ZNFL722DL | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 154 of 179 |

OPERATING FREQUENCY: 680.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1361.00 | V | 102 | 276 | -68.04 | 7.48 | -60.56 | -47.6 |
| 2041.50 | V | 149 | 51 | -67.45 | 8.76 | -58.69 | -45.7 |
| 2722.00 | V | - | - | -68.92 | 10.08 | -58.84 | -45.8 |
| 3402.50 | V | - | - | -67.55 | 9.80 | -57.75 | -44.8 |
| 4083.00 | V | - | - | -69.43 | 10.05 | -59.37 | -46.4 |

Table 7-9. Radiated Spurious Data (Band 71 – Mid Channel)

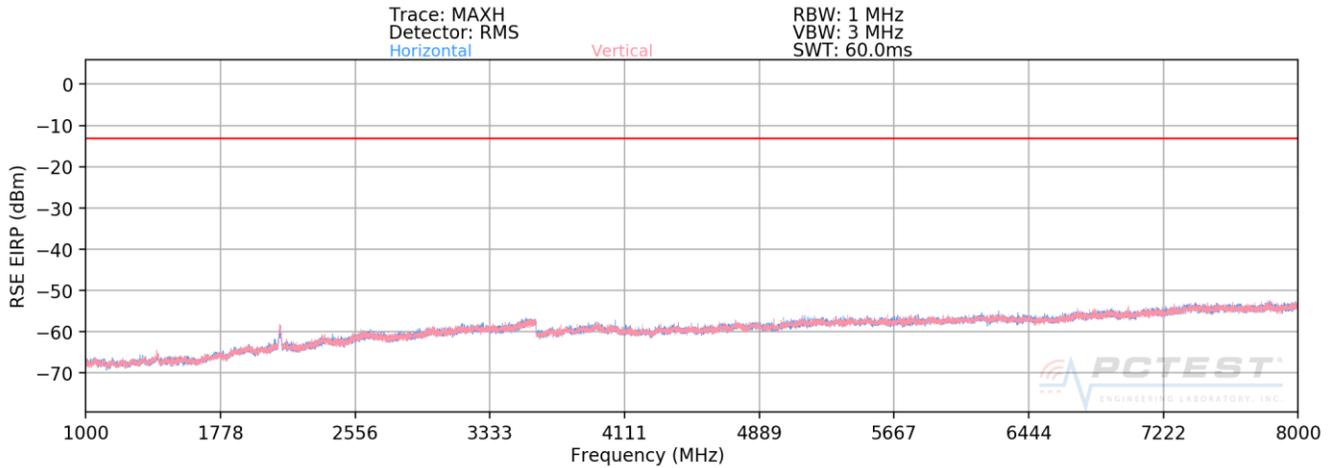
OPERATING FREQUENCY: 688.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 20.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1376.00 | V | 248 | 336 | -69.13 | 7.46 | -61.67 | -48.7 |
| 2064.00 | V | - | - | -68.46 | 8.80 | -59.66 | -46.7 |
| 2752.00 | V | - | - | -70.62 | 10.17 | -60.45 | -47.5 |
| 3440.00 | V | - | - | -68.23 | 9.84 | -58.39 | -45.4 |
| 4128.00 | V | - | - | -69.50 | 10.18 | -59.32 | -46.3 |

Table 7-10. Radiated Spurious Data (Band 71 – High Channel)

| | | | | |
|--|---|---------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 155 of 179 | |

Band 12



Plot 7-244. Radiated Spurious Plot above 1GHz (Band 12)

OPERATING FREQUENCY: 700.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1401.00 | V | 135 | 305 | -63.27 | 7.45 | -55.82 | -42.8 |
| 2101.50 | V | 121 | 136 | -65.04 | 8.84 | -56.20 | -43.2 |
| 2802.00 | V | - | - | -69.17 | 10.14 | -59.03 | -46.0 |
| 3502.50 | V | - | - | -68.94 | 9.92 | -59.01 | -46.0 |
| 4203.00 | V | - | - | -69.93 | 10.42 | -59.51 | -46.5 |

Table 7-11. Radiated Spurious Data (Band 12 – Low Channel)

| | | | |
|--|---|-------------------------------|---------------------------------|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION)  | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 156 of 179 |

OPERATING FREQUENCY: 707.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1415.00 | V | 195 | 307 | -65.04 | 7.63 | -57.41 | -44.4 |
| 2122.50 | V | 190 | 128 | -64.30 | 8.86 | -55.44 | -42.4 |
| 2830.00 | V | - | - | -69.09 | 10.10 | -59.00 | -46.0 |
| 3537.50 | V | - | - | -68.63 | 9.90 | -58.74 | -45.7 |
| 4245.00 | V | - | - | -69.79 | 10.58 | -59.20 | -46.2 |

Table 7-12. Radiated Spurious Data (Band 12 – Mid Channel)

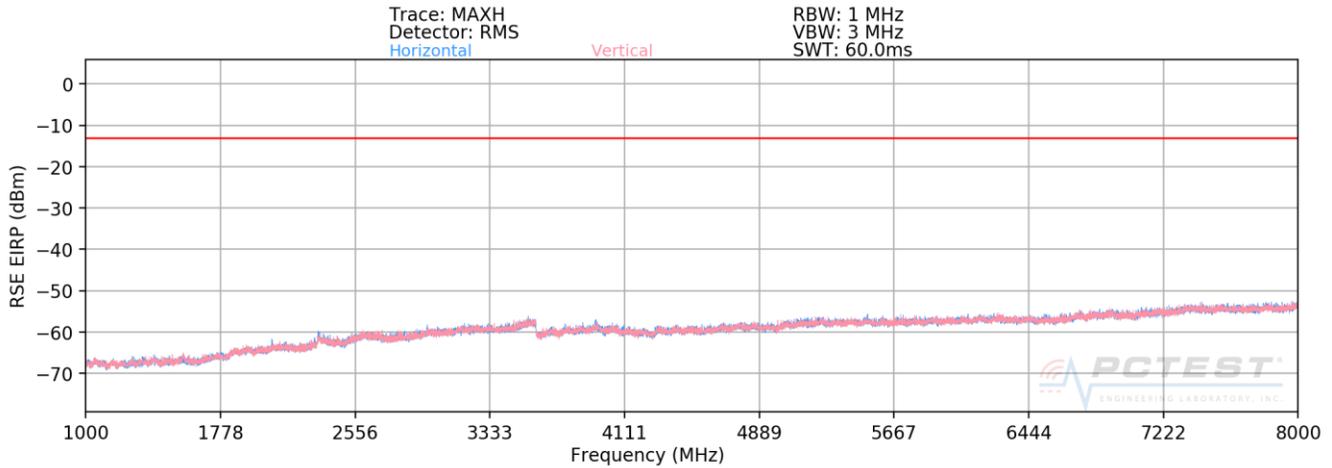
OPERATING FREQUENCY: 714.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 3.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1429.00 | V | 190 | 302 | -63.63 | 7.81 | -55.82 | -42.8 |
| 2143.50 | V | 198 | 126 | -62.42 | 8.88 | -53.54 | -40.5 |
| 2858.00 | V | - | - | -69.89 | 10.04 | -59.84 | -46.8 |
| 3572.50 | V | - | - | -68.69 | 9.93 | -58.76 | -45.8 |
| 4287.00 | V | - | - | -70.41 | 10.71 | -59.70 | -46.7 |

Table 7-13. Radiated Spurious Data (Band 12 – High Channel)

| | | | | |
|--|---|---------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 157 of 179 | |

Band 13



Plot 7-245. Radiated Spurious Plot above 1GHz (Band 13)

OPERATING FREQUENCY: 782.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 2346.00 | H | 111 | 227 | -70.28 | 9.43 | -60.84 | -47.8 |
| 3128.00 | H | - | - | -68.66 | 9.34 | -59.32 | -46.3 |
| 3910.00 | H | - | - | -67.51 | 9.37 | -58.14 | -45.1 |
| 4692.00 | H | - | - | -73.93 | 10.93 | -63.00 | -50.0 |

Table 7-14. Radiated Spurious Data (Band 13 – Mid Channel)

| | | | | | |
|--|---------------------------------|-------------------------------|------------------------------------|-----------------|---------------------------------|
| FCC ID: ZNFL722DL | | | MEASUREMENT REPORT (CERTIFICATION) | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 158 of 179 | |

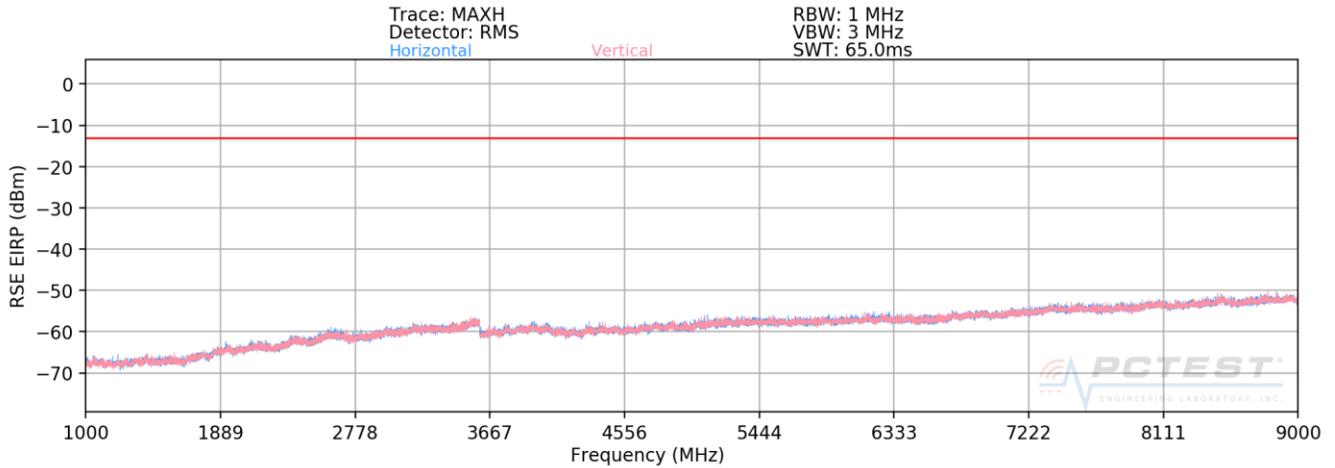
MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.00 MHz
 DISTANCE: 3 meters
 NARROWBAND EMISSION LIMIT: -50 dBm
 WIDEBAND EMISSION LIMIT: -40 dBm/MHz

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1564.00 | H | 376 | 85 | -71.14 | 8.53 | -62.61 | -22.6 |

Table 7-15. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

| | | | | | |
|---|---|--------------------------------------|---|---|--|
| FCC ID: ZNFL722DL |  | | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 159 of 179 | |

Band 5



Plot 7-246. Radiated Spurious Plot above 1GHz (Band 5)

OPERATING FREQUENCY: 829.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1658.00 | H | 310 | 279 | -65.29 | 8.95 | -56.34 | -43.3 |
| 2487.00 | H | - | - | -62.24 | 9.70 | -52.54 | -39.5 |
| 3316.00 | H | - | - | -61.84 | 9.59 | -52.26 | -39.3 |
| 4145.00 | H | - | - | -61.72 | 10.22 | -51.50 | -38.5 |

Table 7-16. Radiated Spurious Data (Band 5 – Low Channel)

| | | | | |
|--|------------------------------------|-------------------------------|-----------------|---------------------------------|
| FCC ID: ZNFL722DL | MEASUREMENT REPORT (CERTIFICATION) | | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 160 of 179 | |

OPERATING FREQUENCY: 836.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1673.00 | H | 243 | 337 | -65.01 | 8.95 | -56.06 | -43.1 |
| 2509.50 | H | - | - | -63.25 | 9.75 | -53.50 | -40.5 |
| 3346.00 | H | - | - | -61.58 | 9.60 | -51.97 | -39.0 |
| 4182.50 | H | - | - | -60.67 | 10.34 | -50.32 | -37.3 |

Table 7-17. Radiated Spurious Data (Band 5 – Mid Channel)

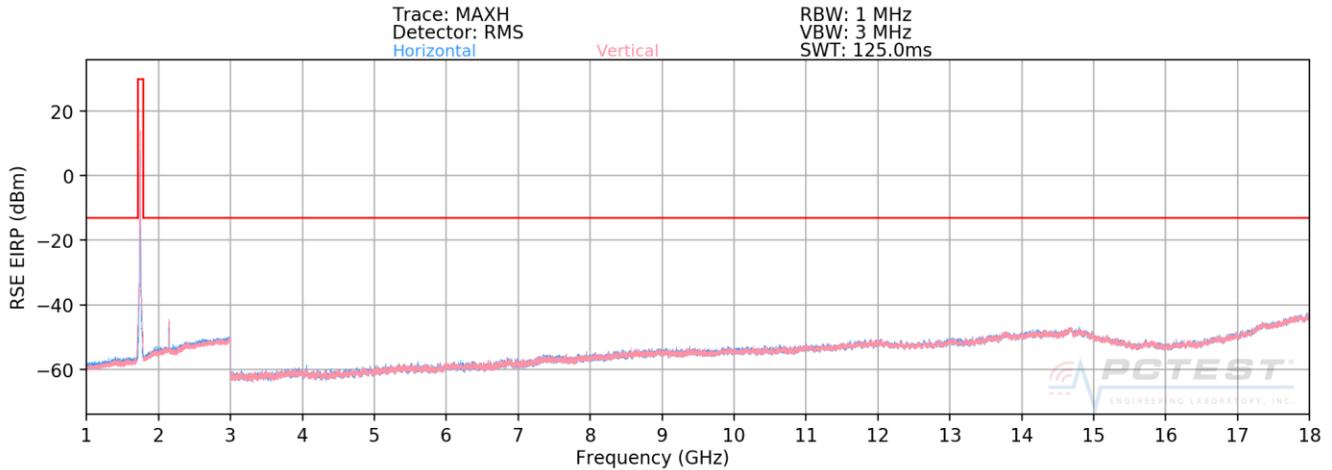
OPERATING FREQUENCY: 844.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 10.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 1688.00 | H | 387 | 323 | -65.01 | 8.95 | -56.06 | -43.1 |
| 2532.00 | H | - | - | -62.44 | 9.75 | -52.69 | -39.7 |
| 3376.00 | H | - | - | -61.91 | 9.71 | -52.21 | -39.2 |
| 4220.00 | H | - | - | -61.23 | 10.48 | -50.74 | -37.7 |

Table 7-18. Radiated Spurious Data (Band 5 – High Channel)

| | | | | | |
|--|---|------------------------------------|--|---|---------------------------------|
| FCC ID: ZNFL722DL |  | MEASUREMENT REPORT (CERTIFICATION) | |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 161 of 179 | |

Band 66/4



Plot 7-247. Radiated Spurious Plot above 1GHz (Band 66/4)

OPERATING FREQUENCY: 1717.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3435.00 | H | 331 | 312 | -67.89 | 9.84 | -58.05 | -45.1 |
| 5152.50 | H | - | - | -66.86 | 10.70 | -56.16 | -43.2 |
| 6870.00 | H | - | - | -67.18 | 11.67 | -55.51 | -42.5 |
| 8587.50 | H | - | - | -63.47 | 11.10 | -52.37 | -39.4 |

Table 7-19. Radiated Spurious Data (Band 66/4 – Low Channel)

| | | | |
|--|---|-------------------------------|---------------------------------|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION)  | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 162 of 179 |

OPERATING FREQUENCY: 1745.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3490.00 | H | 318 | 313 | -66.87 | 9.91 | -56.96 | -44.0 |
| 5235.00 | H | - | - | -66.52 | 10.73 | -55.78 | -42.8 |
| 6980.00 | H | - | - | -67.90 | 11.82 | -56.07 | -43.1 |
| 8725.00 | H | - | - | -63.74 | 11.00 | -52.74 | -39.7 |

Table 7-20. Radiated Spurious Data (Band 66/4 – Mid Channel)

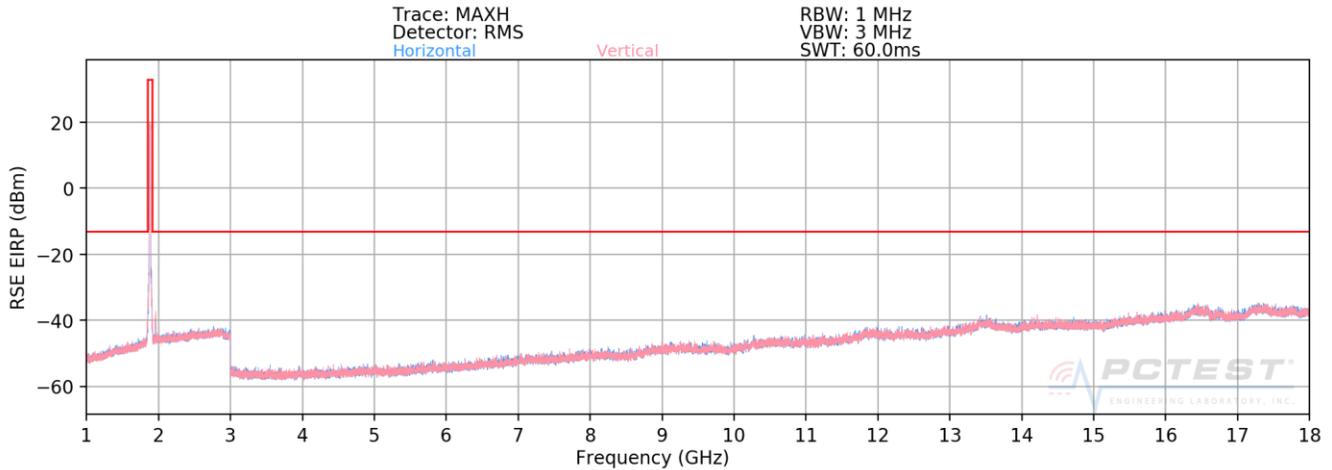
OPERATING FREQUENCY: 1772.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3545.00 | H | 367 | 310 | -67.26 | 9.89 | -57.37 | -44.4 |
| 5317.50 | H | - | - | -66.81 | 10.69 | -56.12 | -43.1 |
| 7090.00 | H | - | - | -66.86 | 11.77 | -55.09 | -42.1 |
| 8862.50 | H | - | - | -63.30 | 11.01 | -52.29 | -39.3 |

Table 7-21. Radiated Spurious Data (Band 66/4 – High Channel)

| | | | | | |
|--|---|-------------------------------|------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
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Band 2



Plot 7-248. Radiated Spurious Plot above 1GHz (Band 2)

OPERATING FREQUENCY: 1857.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3715.00 | H | - | - | -61.01 | 9.53 | -51.49 | -38.5 |
| 5572.50 | H | - | - | -60.17 | 10.97 | -49.19 | -36.2 |
| 7430.00 | H | - | - | -56.13 | 10.98 | -45.15 | -32.2 |
| 9287.50 | H | - | - | -53.27 | 11.61 | -41.66 | -28.7 |

Table 7-22. Radiated Spurious Data (Band 2 – Low Channel)

| | | | |
|--|---|-------------------------------|---------------------------------|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION)  | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 164 of 179 |

OPERATING FREQUENCY: 1880.00 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3760.00 | H | 161 | 329 | -60.50 | 9.37 | -51.14 | -38.1 |
| 5640.00 | H | - | - | -60.46 | 11.17 | -49.29 | -36.3 |
| 7520.00 | H | - | - | -56.51 | 11.11 | -45.40 | -32.4 |
| 9400.00 | H | - | - | -52.89 | 11.57 | -41.31 | -28.3 |

Table 7-23. Radiated Spurious Data (Band 2 – Mid Channel)

OPERATING FREQUENCY: 1902.50 MHz
 MODULATION SIGNAL: QPSK
 BANDWIDTH: 15.0 MHz
 DISTANCE: 3 meters
 LIMIT: -13 dBm

| Frequency [MHz] | Ant. Pol. [H/V] | Antenna Height [cm] | Turntable Azimuth [degree] | Level at Antenna Terminals [dBm] | Substitute Antenna Gain [dBi] | Spurious Emission Level [dBm] | Margin [dB] |
|-----------------|-----------------|---------------------|----------------------------|----------------------------------|-------------------------------|-------------------------------|-------------|
| 3805.00 | H | - | - | -60.44 | 9.29 | -51.15 | -38.2 |
| 5707.50 | H | - | - | -60.04 | 11.33 | -48.71 | -35.7 |
| 7610.00 | H | - | - | -55.66 | 11.26 | -44.40 | -31.4 |
| 9512.50 | H | - | - | -53.30 | 11.70 | -41.60 | -28.6 |

Table 7-24. Radiated Spurious Data (Band 2 – High Channel)

| | | | | | |
|--|---|-------------------------------|------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 165 of 179 | |

7.8 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24, Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI/TIA-603-E-2016

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

None

| | | | | |
|--|---|---------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 166 of 179 | |

Band 71 Frequency Stability Measurements

OPERATING FREQUENCY: 680,500,000 Hz
 CHANNEL: 133297
 REFERENCE VOLTAGE: 4.20 VDC

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 % | 4.20 | - 30 | 680,499,898 | -102 | -0.0000150 |
| 100 % | | - 20 | 680,500,036 | 36 | 0.0000053 |
| 100 % | | - 10 | 680,499,652 | -348 | -0.0000511 |
| 100 % | | 0 | 680,499,586 | -414 | -0.0000608 |
| 100 % | | + 10 | 680,499,983 | -17 | -0.0000025 |
| 100 % | | + 20 | 680,499,794 | -206 | -0.0000303 |
| 100 % | | + 30 | 680,500,408 | 408 | 0.0000600 |
| 100 % | | + 40 | 680,499,904 | -96 | -0.0000141 |
| 100 % | | + 50 | 680,499,863 | -137 | -0.0000201 |
| BATT. ENDPOINT | | 3.59 | + 20 | 680,499,858 | -142 |

Table 7-25. Frequency Stability Data (Band 71)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

| | | | |
|--|---|-------------------------------|---------------------------------|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION)  | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 167 of 179 |

Band 71 Frequency Stability Measurements

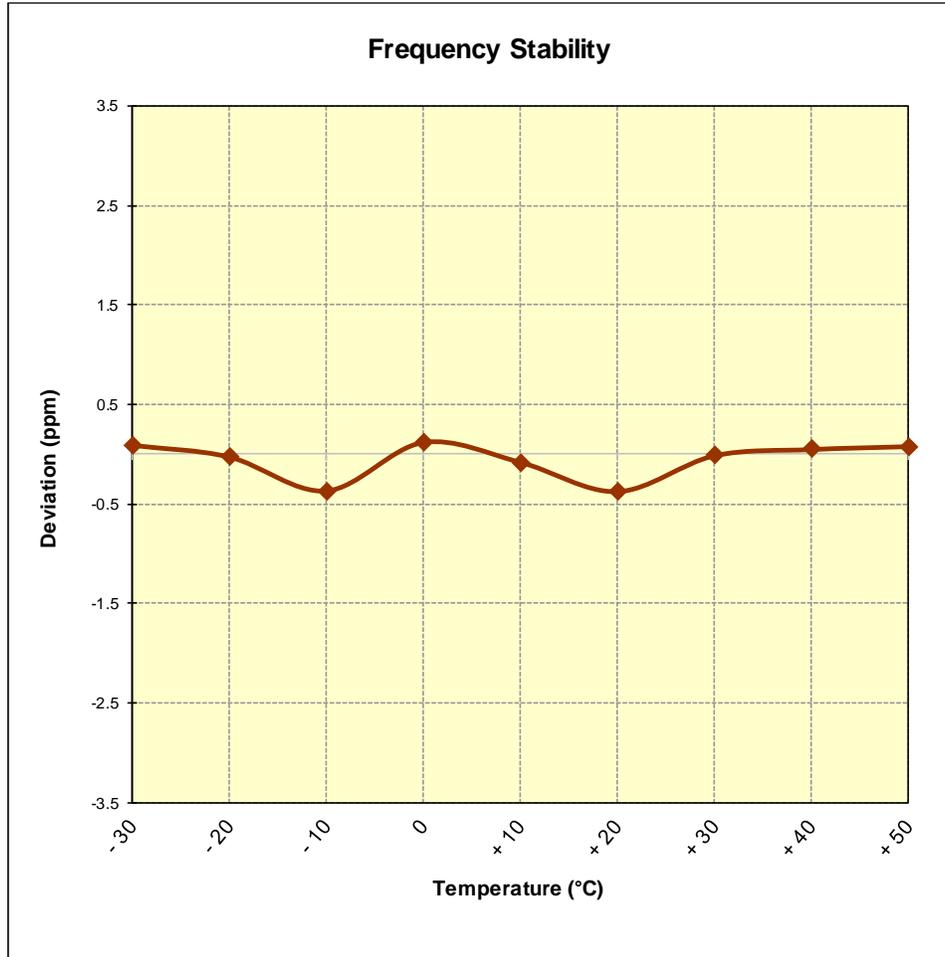


Figure 7-8. Frequency Stability Graph (Band 71)

| | | | | |
|---|---|--------------------------------------|---|--|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION) | |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 168 of 179 | |

Band 12 Frequency Stability Measurements

OPERATING FREQUENCY: 707,500,000 Hz
 CHANNEL: 23790
 REFERENCE VOLTAGE: 4.20 VDC

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 % | 4.20 | - 30 | 707,500,077 | 77 | 0.0000109 |
| 100 % | | - 20 | 707,500,366 | 366 | 0.0000517 |
| 100 % | | - 10 | 707,499,834 | -166 | -0.0000235 |
| 100 % | | 0 | 707,500,093 | 93 | 0.0000131 |
| 100 % | | + 10 | 707,500,143 | 143 | 0.0000202 |
| 100 % | | + 20 | 707,499,954 | -46 | -0.0000065 |
| 100 % | | + 30 | 707,500,160 | 160 | 0.0000226 |
| 100 % | | + 40 | 707,499,972 | -28 | -0.0000040 |
| 100 % | | + 50 | 707,499,928 | -72 | -0.0000102 |
| BATT. ENDPOINT | | 3.59 | + 20 | 707,499,981 | -19 |

Table 7-26. Frequency Stability Data (Band 12)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

| | | | | |
|--|---|---------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 169 of 179 | |

Band 12 Frequency Stability Measurements

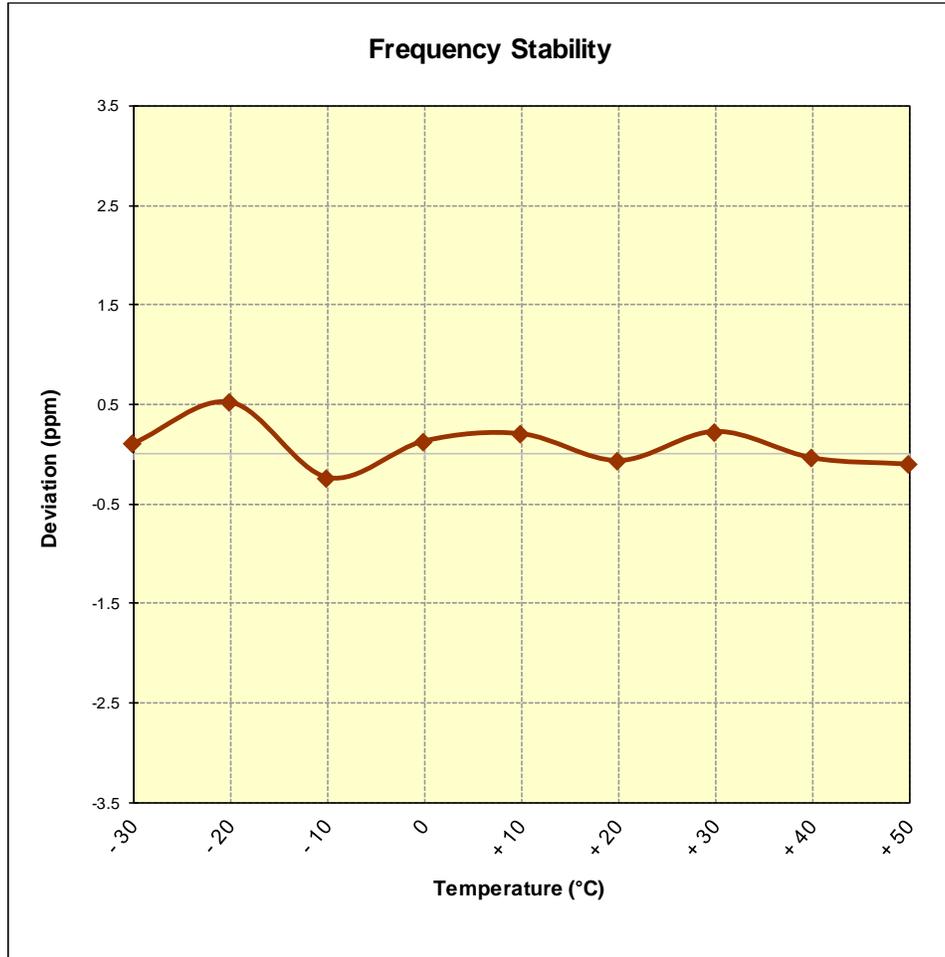


Figure 7-9. Frequency Stability Graph (Band 12)

| | | | | |
|---|---|---|---|--|
| FCC ID: ZNFL722DL |  PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) |  LG | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 170 of 179 | |

Band 13 Frequency Stability Measurements

OPERATING FREQUENCY: 782,000,000 Hz
 CHANNEL: 23230
 REFERENCE VOLTAGE: 4.20 VDC

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 % | 4.20 | - 30 | 782,000,084 | 84 | 0.0000107 |
| 100 % | | - 20 | 781,999,847 | -153 | -0.0000196 |
| 100 % | | - 10 | 782,000,084 | 84 | 0.0000107 |
| 100 % | | 0 | 782,000,068 | 68 | 0.0000087 |
| 100 % | | + 10 | 782,000,037 | 37 | 0.0000047 |
| 100 % | | + 20 | 781,999,813 | -187 | -0.0000239 |
| 100 % | | + 30 | 782,000,323 | 323 | 0.0000413 |
| 100 % | | + 40 | 781,999,916 | -84 | -0.0000107 |
| 100 % | | + 50 | 781,999,594 | -406 | -0.0000519 |
| BATT. ENDPOINT | | 3.59 | + 20 | 781,999,773 | -227 |

Table 7-27. Frequency Stability Data (Band 13)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

| | | | |
|--|---|-------------------------------|---------------------------------|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION)  | | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 171 of 179 |

Band 13 Frequency Stability Measurements

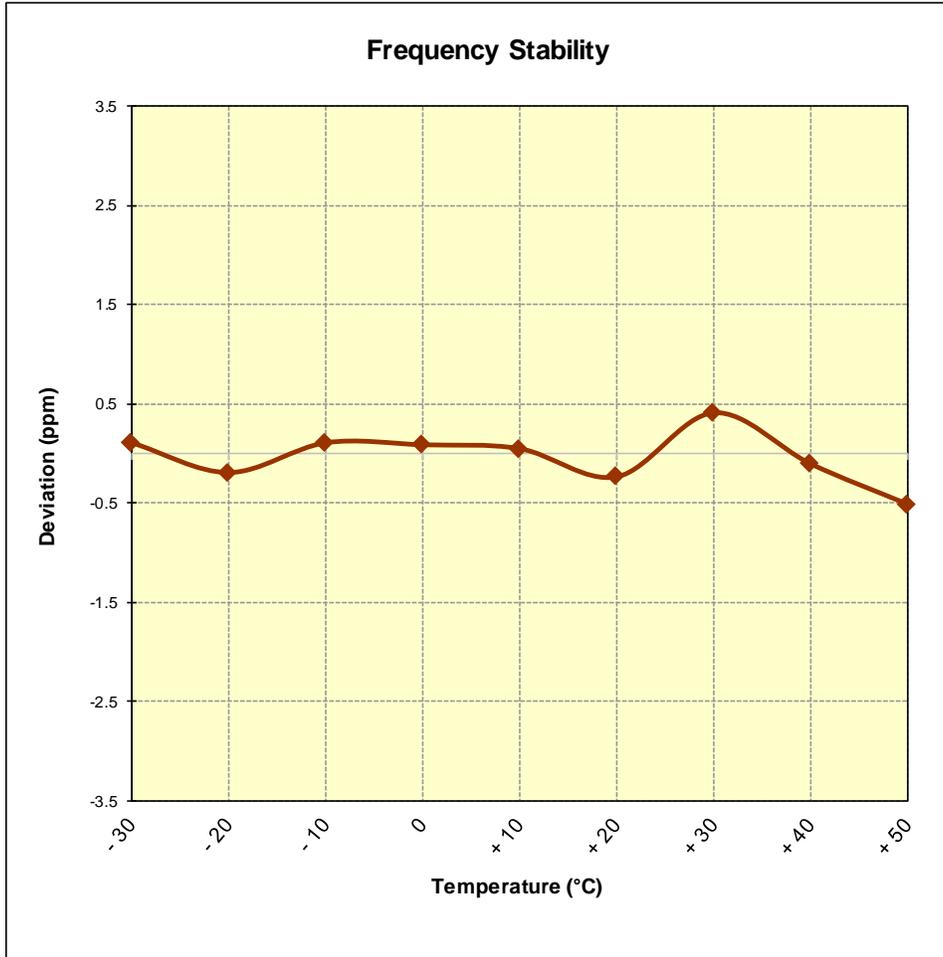


Figure 7-10. Frequency Stability Graph (Band 13)

| | | | | |
|---|---|--------------------------------------|---|--|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION) | |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 172 of 179 | |

Band 5 Frequency Stability Measurements

OPERATING FREQUENCY: 836,500,000 Hz
 CHANNEL: 20525
 REFERENCE VOLTAGE: 4.20 VDC
 DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 % | 4.20 | - 30 | 836,499,890 | -110 | -0.0000132 |
| 100 % | | - 20 | 836,499,957 | -43 | -0.0000051 |
| 100 % | | - 10 | 836,500,239 | 239 | 0.0000286 |
| 100 % | | 0 | 836,499,980 | -20 | -0.0000024 |
| 100 % | | + 10 | 836,499,691 | -309 | -0.0000369 |
| 100 % | | + 20 | 836,500,299 | 299 | 0.0000357 |
| 100 % | | + 30 | 836,500,172 | 172 | 0.0000206 |
| 100 % | | + 40 | 836,499,983 | -17 | -0.0000020 |
| 100 % | | + 50 | 836,500,007 | 7 | 0.0000008 |
| BATT. ENDPOINT | | 3.59 | + 20 | 836,500,156 | 156 |

Table 7-28. Frequency Stability Data (Band 5)

| | | | | | |
|--|---|-------------------------------|---------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 173 of 179 | |

Band 5 Frequency Stability Measurements

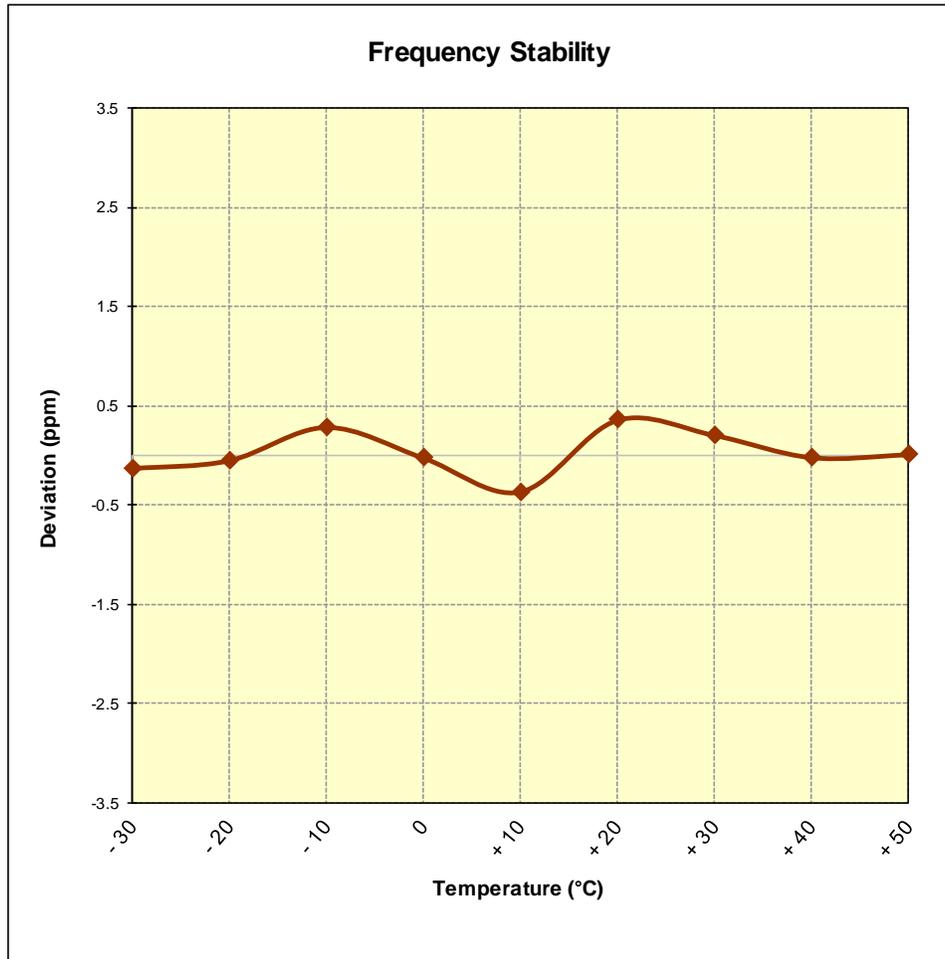


Figure 7-11. Frequency Stability Graph (Band 5)

| | | | | |
|---|---|--------------------------------------|---|--|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION) | |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 174 of 179 | |

Band 66/4 Frequency Stability Measurements

OPERATING FREQUENCY: 1,745,000,000 Hz
 CHANNEL: 132322
 REFERENCE VOLTAGE: 4.20 VDC

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 % | 4.20 | - 30 | 1,745,000,229 | 229 | 0.0000131 |
| 100 % | | - 20 | 1,745,000,165 | 165 | 0.0000095 |
| 100 % | | - 10 | 1,745,000,007 | 7 | 0.0000004 |
| 100 % | | 0 | 1,744,999,712 | -288 | -0.0000165 |
| 100 % | | + 10 | 1,744,999,702 | -298 | -0.0000171 |
| 100 % | | + 20 | 1,745,000,224 | 224 | 0.0000128 |
| 100 % | | + 30 | 1,745,000,238 | 238 | 0.0000136 |
| 100 % | | + 40 | 1,745,000,072 | 72 | 0.0000041 |
| 100 % | | + 50 | 1,745,000,014 | 14 | 0.0000008 |
| BATT. ENDPOINT | | 3.59 | + 20 | 1,744,999,553 | -447 |

Table 7-29. Frequency Stability Data (Band 66/4)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

| | | | | |
|--|---|---------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 175 of 179 | |

Band 66/4 Frequency Stability Measurements

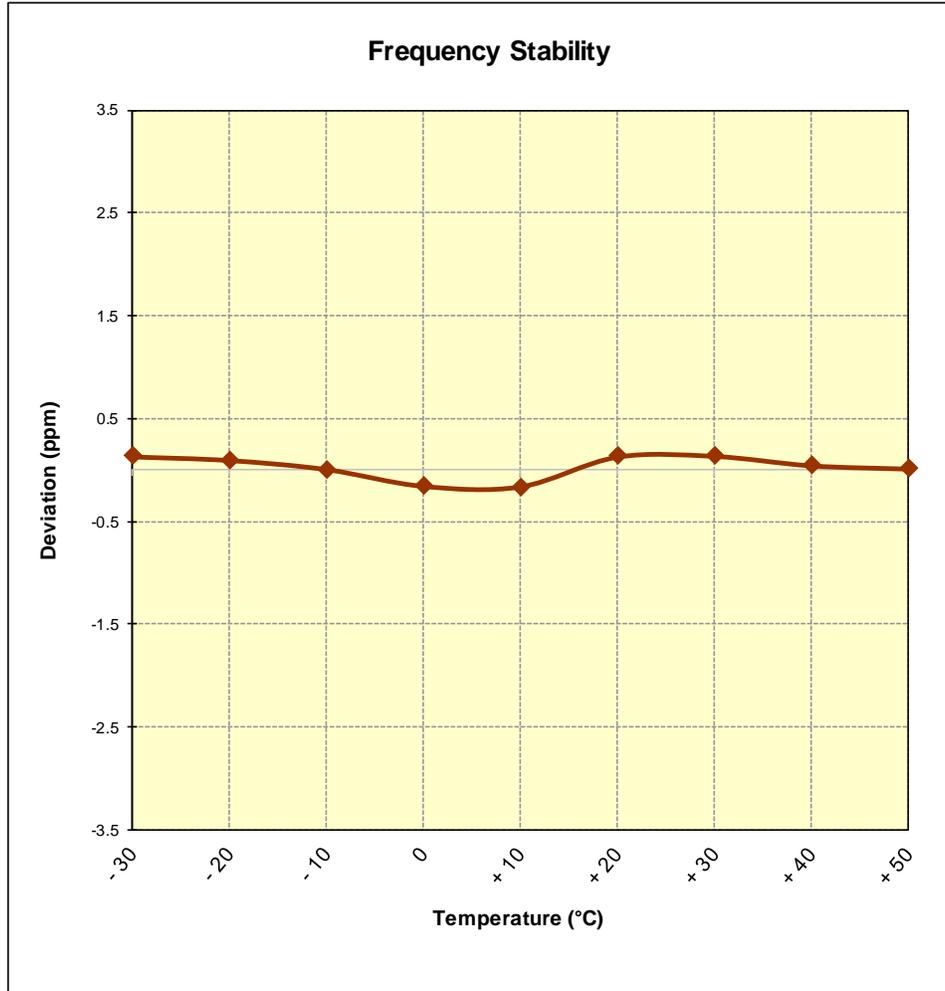


Figure 7-12. Frequency Stability Graph (Band 66/4)

| | | | | |
|--|---|---|---|---------------------------------|
| FCC ID: ZNFL722DL |  PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) |  LG | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 176 of 179 |

Band 2 Frequency Stability Measurements

OPERATING FREQUENCY: 1,880,000,000 Hz
 CHANNEL: 18900
 REFERENCE VOLTAGE: 4.20 VDC

| VOLTAGE (%) | POWER (VDC) | TEMP (°C) | FREQUENCY (Hz) | Freq. Dev. (Hz) | Deviation (%) |
|----------------|-------------|-----------|----------------|-----------------|---------------|
| 100 % | 4.20 | - 30 | 1,879,999,588 | -412 | -0.0000219 |
| 100 % | | - 20 | 1,879,999,941 | -59 | -0.0000031 |
| 100 % | | - 10 | 1,880,000,423 | 423 | 0.0000225 |
| 100 % | | 0 | 1,880,000,247 | 247 | 0.0000131 |
| 100 % | | + 10 | 1,879,999,920 | -80 | -0.0000043 |
| 100 % | | + 20 | 1,879,999,809 | -191 | -0.0000102 |
| 100 % | | + 30 | 1,880,000,174 | 174 | 0.0000093 |
| 100 % | | + 40 | 1,880,000,122 | 122 | 0.0000065 |
| 100 % | | + 50 | 1,879,999,813 | -187 | -0.0000099 |
| BATT. ENDPOINT | | 3.59 | + 20 | 1,879,999,988 | -12 |

Table 7-30. Frequency Stability Data (Band 2)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

| | | | | |
|--|---|---------------------------------------|---|---------------------------------|
| FCC ID: ZNFL722DL |  | MEASUREMENT REPORT (CERTIFICATION) |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | Page 177 of 179 | |

Band 2 Frequency Stability Measurements

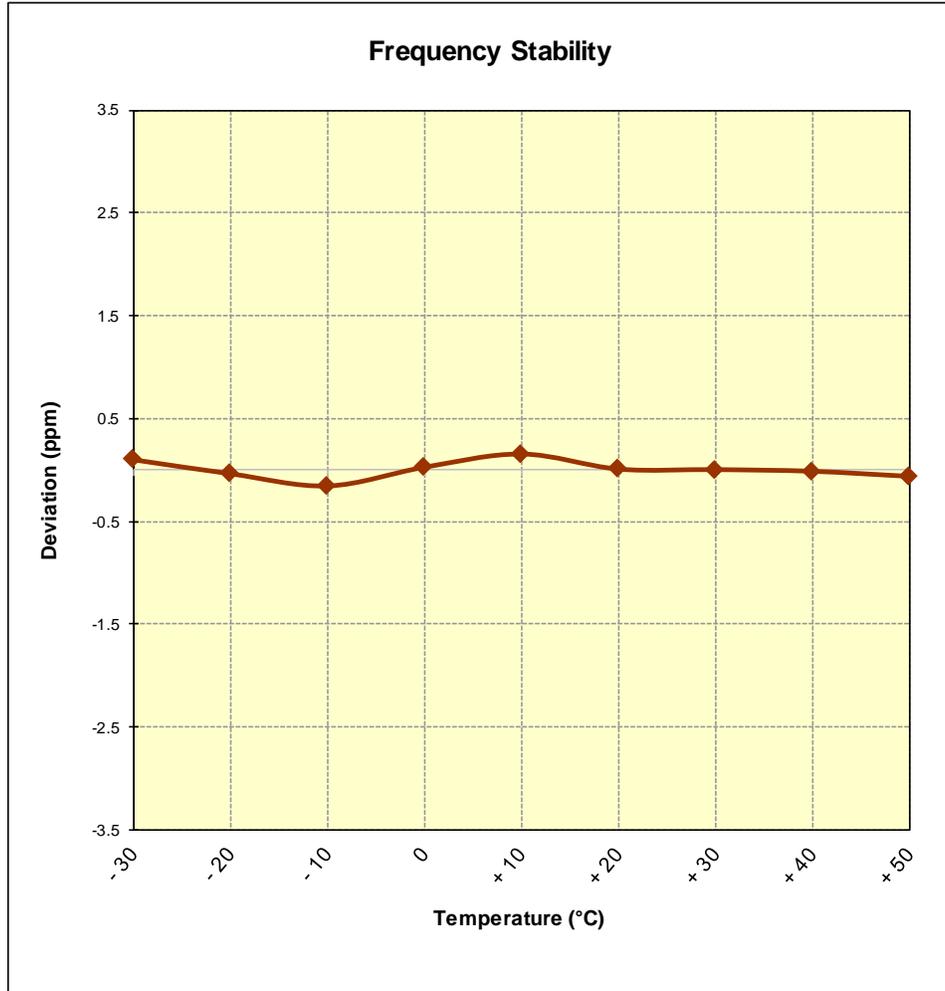


Figure 7-13. Frequency Stability Graph (Band 2)

| | | | | |
|--|--|---------------------------------------|----|---------------------------------|
| FCC ID: ZNFL722DL | PCTEST ENGINEERING LABORATORY, INC. | MEASUREMENT REPORT (CERTIFICATION) | LG | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 178 of 179 |

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **LG Portable Handset FCC ID: ZNFL722DL** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.

| | | | | |
|---|---|--------------------------------------|---|--|
| FCC ID: ZNFL722DL |  MEASUREMENT REPORT (CERTIFICATION) | |  | Approved by: Quality Manager |
| Test Report S/N: 1M1904080056-03-R1.ZNF | Test Dates: 4/08 - 5/03/2019 | EUT Type: Portable Handset | | Page 179 of 179 |