

Appendix A: Effective (Isotropic) Radiated Power Output Data

Test Result

| | - | - | Channe | Bandwidth: 5 MHz | - |
|------------|---------|---------|-----------|---------------------|---------|
| Modulation | Channel | RB Conf | iguration | Average Power [dBm] | Verdict |
| | | Size | Offset | | |
| | | 1 | 0 | 22.86 | PASS |
| | | 1 | 12 | 22.92 | PASS |
| | | 1 | 24 | 22.99 | PASS |
| | LCH | 12 | 0 | 22.11 | PASS |
| | | 12 | 6 | 22.07 | PASS |
| | | 12 | 13 | 22.10 | PASS |
| | | 25 | 0 | 22.18 | PASS |
| | | 1 | 0 | 22.95 | PASS |
| | | 1 | 12 | 22.88 | PASS |
| | | 1 | 24 | 22.87 | PASS |
| QPSK | MCH | 12 | 0 | 22.09 | PASS |
| | | 12 | 6 | 22.02 | PASS |
| | | 12 | 13 | 21.98 | PASS |
| | | 25 | 0 | 22.02 | PASS |
| | | 1 | 0 | 22.93 | PASS |
| | | 1 | 12 | 22.96 | PASS |
| | | 1 | 24 | 22.94 | PASS |
| | НСН | 12 | 0 | 22.11 | PASS |
| | | 12 | 6 | 22.19 | PASS |
| | | 12 | 13 | 22.11 | PASS |
| | | 25 | 0 | 22.05 | PASS |
| | | 1 | 0 | 22.33 | PASS |
| | | 1 | 12 | 22.22 | PASS |
| | | 1 | 24 | 22.27 | PASS |
| | LCH | 12 | 0 | 21.18 | PASS |
| | | 12 | 6 | 21.14 | PASS |
| 16QAM | | 12 | 13 | 21.16 | PASS |
| | | 25 | 0 | 21.17 | PASS |
| | | 1 | 0 | 22.27 | PASS |
| | | 1 | 12 | 22.17 | PASS |
| | MCH | 1 | 24 | 22.11 | PASS |
| | | 12 | 0 | 21.16 | PASS |



| | 12 | 6 | 21.09 | PASS |
|-----|----|----|-------|------|
| | 12 | 13 | 20.97 | PASS |
| | 25 | 0 | 21.00 | PASS |
| | 1 | 0 | 22.35 | PASS |
| | 1 | 12 | 22.24 | PASS |
| | 1 | 24 | 22.16 | PASS |
| HCH | 12 | 0 | 21.11 | PASS |
| | 12 | 6 | 21.22 | PASS |
| | 12 | 13 | 21.12 | PASS |
| | 25 | 0 | 21.07 | PASS |

| | | | Channel | Bandwidth: 10 MHz | |
|------------|---------|---------|-----------|---------------------|---------|
| Modulation | Channel | RB Conf | iguration | Average Power [dBm] | Verdict |
| Modulation | Channel | Size | Offset | | Verdice |
| | | 1 | 0 | 23.01 | PASS |
| | | 1 | 24 | 22.92 | PASS |
| | | 1 | 49 | 22.79 | PASS |
| QPSK | MCH | 25 | 0 | 21.99 | PASS |
| | | 25 | 12 | 22.06 | PASS |
| | | 25 | 25 | 21.96 | PASS |
| | | 50 | 0 | 22.05 | PASS |
| | | 1 | 0 | 22.24 | PASS |
| | | 1 | 24 | 22.15 | PASS |
| | | 1 | 49 | 22.03 | PASS |
| 16QAM | MCH | 25 | 0 | 20.99 | PASS |
| | | 25 | 12 | 21.02 | PASS |
| | | 25 | 25 | 20.88 | PASS |
| | | 50 | 0 | 21.04 | PASS |



Appendix B: Peak-to-Average Ratio

Test Result

Channel Bandwidth: 5 MHz

| | | | Channel | Bandwidth: 5 MHz | | |
|------------|---------|---------|-----------|-----------------------|-------|---------|
| Modulation | Channel | RB Conf | iguration | Peak-to-Average Ratio | Limit | Vordiot |
| Modulation | Channel | Size | Offset | [dB] | [dB] | veruici |
| QPSK | MCH | 1 | 0 | 3.29 | <13 | PASS |
| 16QAM | MCH | 1 | 0 | 4.07 | <13 | PASS |

| | | | Channel E | Bandwidth: 10 MHz | | |
|------------|---------|---------|-----------|-----------------------|-------|---------|
| Madulation | Channel | RB Conf | iguration | Peak-to-Average Ratio | Limit | Vordiot |
| wooulation | Channel | Size | Offset | [dB] | [dB] | verdict |
| QPSK | MCH | 1 | 0 | 3.38 | <13 | PASS |
| 16QAM | MCH | 1 | 0 | 4.17 | <13 | PASS |



Test Graphs

Channel Bandwidth: 5 MHz





Channel Bandwidth: 10 MHz

Channel Bandwidth: 10 MHz_MCH_QPSK_1RB#0









Appendix C: 26dB Bandwidth and Occupied Bandwidth

Test Result

Channel Bandwidth: 5 MHz

| | | | Channe | el Bandwidth: 5 MHz | | |
|------------|---------|---------|-----------|---------------------|----------------|---------|
| Modulation | Channel | RB Conf | iguration | Occupied Bandwidth | 26dB Bandwidth | Vordict |
| wouldtion | Channel | Size | Offset | (MHz) | (MHz) | veruici |
| | LCH | 25 | 0 | 4.4713 | 4.780 | PASS |
| QPSK | MCH | 25 | 0 | 4.4713 | 4.785 | PASS |
| | HCH | 25 | 0 | 4.4615 | 4.766 | PASS |
| | LCH | 25 | 0 | 4.4748 | 4.812 | PASS |
| 16QAM | MCH | 25 | 0 | 4.4809 | 4.789 | PASS |
| | HCH | 25 | 0 | 4.4777 | 4.778 | PASS |

| | | | Channel Bandwidth: 10 MHz | | | | |
|------------|---------|---------|---------------------------|--------------------|----------------|---------|--|
| Modulation | Channel | RB Conf | iguration | Occupied Bandwidth | 26dB Bandwidth | Vordiot | |
| wooulation | Channel | Size | Offset | (MHz) | (MHz) | verdict | |
| QPSK | MCH | 50 | 0 | 8.9190 | 9.373 | PASS | |
| 16QAM | MCH | 50 | 0 | 8.9332 | 9.384 | PASS | |



Test Graphs

Channel Bandwidth: 5 MHz





(Channel Bandwidth: 5 MHz)_HCH_QPSK_25RB#0



| Center Freq 795.500000 MF | FGain:Low #Atten | rree Run Avg Hold : 20 dB | : 10/10 | Radio Device: BTS | |
|--|--|--|---------|------------------------------|-------------------------------|
| Ref Offset 12.86 dB 10 dB/div Ref 20.00 dBm | | | | | |
| 10.0 | Data an antise age to generate the set of the second th | al d'Antonio March March 1996 - Marghaman an | | | Center Freq 795.500000 MHz |
| -10.0 -20.0 -30.0 | | | | Martin and Marcol | |
| -40.0 -50.0 -60.0 | | | | | |
| -70.0 Center 795.5 MHz #Res BW 56 kHz | # | VBW 160 kHz | | Span 10 MHz #Sweep 100 ms | CF Step |
| Occupied Bandwidth 4.4 | 615 MHz | Total Power | 24.1 | dBm | Auto Man Freq Offset |
| Transmit Freq Error | 3.316 kHz | OBW Power | 99 | .00 % | 0 Hz |
| x dB Bandwidth | 4.766 MHz | x dB | -26. | 00 dB | |
| | | | | | |

















Appendix D: Band Edge

Test Graphs

Channel Bandwidth: 5 MHz





(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0



| Ref Offset 12:78 dB Ref Offset 12:78 dB Ref Offset 12:78 dB Auto Tune 00 BUUV Ref Offset 12:78 dB Mk1 770746 MHz Auto Tune 00 BUV Ref Offset 12:78 dB Center Freq 200 Center Freq 200 Center Freq 200 Storp Freq 772.000000 MHz 00 BUV Center Freq 200 Center Freq 200 Storp | Agilent Spectrum Analyzer - Swept SA | SENSE INT | ALIGN AUTO 03:06:32 PM Aug 24, 2018 | |
|---|--|--|---|---|
| Ref Offset 12 76 dB Mkr1 770.746 MHz -80.259 dB Mkr1 770.746 MHz -700 MHz Mkr1 770.746 MHz -80.259 dB Mkr1 770.746 MHz -700 MHz Mkr1 770.746 MHz< | | PNO: Wide C Trig: Free Run | Avg Type: RMS TRACE 123456 Avg Hold:>100/100 Type M | Frequency |
| 200 Center Freq | Ref Offset 12.78 dE 10 dB/div Ref -10.00 dBm | IFGain:Low Atten: 6 db | Mkr1 770.746 MHz -80.259 dBm | Auto Tune |
| 300 | -20.0 | | | Center Freq 772.000000 MHz |
| 2000 759.00000 MH2 600 500 700 500000 MH2 700 5000000 MH2 700000000 MH2 50000000 MH2 7000000000000000000000000000000000000 | -30.0 | | -35.00 dBm | Start Freq |
| 000 300 1 <td>-40.0</td> <td></td> <td></td> <td>Stop Frog</td> | -40.0 | | | Stop Frog |
| 7.700 1 | -60.0 | | | 775.000000 MHz |
| ⁰⁰⁰ peredetable to possible to possible to possible at a second reaction of reaction of | -70.0 | 1 | | CF Step 600.000 kHz <u>Auto</u> Man |
| -100 | -00.0 Marina and an and a second a second | merkestynnypithersphiluspeithsinisekenstelangerseitetpinne | g ^{ha} ng thangangthalis <mark>k dan dan pantang din pangkanan ang antang kalanganang sana dan kalang kalang sana sana sana sana sana sana sana s</mark> | Freq Offset |
| | -100 | | | 0 Hz |
| Start 769.000 MHz Stop 775.000 MHz #Res BW 10 kHz #VBW 30 kHz* Sweep 74.07 ms (1001 pts) | Start 769.000 MHz #Res BW 10 kHz | #VBW 30 kHz* | Stop 775.000 MHz Sweep 74.07 ms (1001 pts) | |





(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24



| LX/ RF 50 Ω A | SENS | E:INT ALIGN AUTO | 03:13:32 PM Aug 24, 2018 | Frequency |
|-----------------------------|--|---|-------------------------------|-------------------------------|
| | PNO: Wide 😱 Trig: Free | Run Avg Hold:>100/100 | TYPE MUMUMAAAA | requeries |
| Ref Offset 12.78 | IF Gain:Low Atten: 6 and 18 | Mk | r1 799.828 MHz -68.475 dBm | Auto Tune |
| -20.0 | | | | Center Freq 802.000000 MHz |
| -30.0 | | | -35.00 dBm | Start Freg |
| -40.0 | | | | 799.000000 MHz |
| -50.0 | | | | Stop Freq 805.000000 MHz |
| -70.0 | | | | CF Step |
| -00.0 Ministration Williams | Alemander and some and all the side the design of the second | al may have made for the second se | have and the second second | <u>Auto</u> Man |
| -90.0 | | | | Freq Offset 0 Hz |
| -100 | | | | |
| Start 799.000 MHz | #1/E1W 20 HILE* | Swaap 7 | Stop 805.000 MHz | |



(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0









(Channel Bandwidth: 5 MHz)_LCH_QPSK_25RB#0









(Channel Bandwidth: 5 MHz)_HCH_16QAM_1RB#24







(Channel Bandwidth: 5 MHz)_HCH_16QAM_25RB#0



| Center Freq 798.000000 Γ | SE MHZ PNO: Wide - Hennik Trig: Fre | Avg Type e Run Avg Hold | ALIGNAUTO 01:09: a: RMS : 29/100 | 35 PM Aug 20, 2018 TRACE 1 2 3 4 5 6 TYPE Michaelan | Frequency |
|--|--|--|---|---|--------------------------------|
| Ref Offset 12.86 dB 10 dB/div Ref 30.00 dBm | IFGain:Low #Atten: 3 | 30 dB | Mkr1 79 | 8.008 MHz 3.115 dBm | Auto Tune |
| 20.0 | | | | | Center Freq 798.000000 MHz |
| 0.00 albhilisterar ann an 1990 - 1-22 ann an 1997 - 1-22 ann an 1997 - 1 | un manager and the second s | | | | Start Freq 797.000000 MHz |
| -10.0 | | | | -13.00 dBm | Stop Freq 799.000000 MHz |
| -20.0 | 100 IN 10 | | | | CF Step 200.000 kHz |
| -40.0 | | ************************************** | Uniterinalization and a state of the second | riensk vitrelstyrfyrfie an forsjólf | <u>Auto</u> Man Freg Offset |
| -60.0 | | | | | 0 Hz |
| Center 798.000 MHz | 4VBW 220 kH | | Spa | n 2.000 MHz | |











Channel Bandwidth: 10 MHz_LCH_16QAM_1RB#0



| Agilent Spectrum Analyzer - Swept SA V RF 50 Ω AC | SENSE:INT | ALIGNAUTO 03:19: | 11 PM Aug 24, 2018 | Frequency |
|--|--|---|---------------------------------|------------------------|
| | PNO: Wide Trig: Free Run IFGain:Low Atten: 6 dB | Avg Hold>100/100 | | |
| Ref Offset 12.78 dB 10 dB/div Ref -10.00 dBm | | Mkr1 77: -80 | 2.840 MHz 0.082 dBm | Auto Tune |
| | | | | Center Freq |
| -20.0 | | | | 772.000000 MHz |
| -30.0 | | | -35.00 dBm | Start Freq |
| -40.0 | | | | 769.000000 MHz |
| -50.0 | | | | Stop Freq |
| +60.0 | | | | 775.000000 MH2 |
| -70.0 | | | | CF Step 600.000 kHz |
| -80.0 | an and manufal bell to a transference , whereas | d - desired a Marca - and a single barren tel and a - Ar - Br | والمراجع والمراجع | <u>Auto</u> Man |
| -90.0 | | tardau finda Shoile à sill dan silde ai bain dans | a fa a sha sha sha shi fa a shi | Freq Offset |
| -100 | | | | 0 H2 |
| | | | | |
| Start 769.000 MHz #Res BM 10 kHz | #VBW 30 kHz* | Stop 7 Sweep 74.07 n | 75.000 MHz | |











Channel Bandwidth: 10 MHz_HCH_QPSK_1RB#49















(Channel Bandwidth: 10 MHz)_LCH_16QAM_50RB#0









Appendix E: Conducted Spurious Emission

Test Graphs

Channel Bandwidth: 5 MHz





(Channel Bandwidth: 5 MHz)_HCH_QPSK_1RB#0









Appendix F: Frequency Stability

Test Result

| Channel Bandwidth: 5 MHz | | | | | | | | |
|--------------------------|---------|------------------|--------------------|-------------------|--------------------|----------------|---------|--|
| Voltage | | | | | | | | |
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict | |
| | | VL | TN | -2.70 | -0.003416 | ± 2.5 | PASS | |
| | LCH | VN | TN | -2.00 | -0.002530 | ± 2.5 | PASS | |
| | | VH | TN | -0.20 | -0.000253 | ± 2.5 | PASS | |
| | МСН | VL | TN | -0.10 | -0.000126 | ± 2.5 | PASS | |
| QPSK | | VN | TN | -0.80 | -0.001009 | ± 2.5 | PASS | |
| | | VH | TN | -1.30 | -0.001639 | ± 2.5 | PASS | |
| | НСН | VL | TN | -1.00 | -0.001257 | ± 2.5 | PASS | |
| | | VN | TN | -0.70 | -0.000880 | ± 2.5 | PASS | |
| | | VH | TN | -2.60 | -0.003268 | ± 2.5 | PASS | |
| Temperature | | | | | | | | |
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict | |
| | LCH | VN | -30 | -2.10 | -0.002657 | ± 2.5 | PASS | |
| | | VN | -20 | -3.90 | -0.004934 | ± 2.5 | PASS | |
| | | VN | -10 | -1.70 | -0.002151 | ± 2.5 | PASS | |
| | | VN | 0 | -1.90 | -0.002404 | ± 2.5 | PASS | |
| | | VN | 10 | -1.70 | -0.002151 | ± 2.5 | PASS | |
| | | VN | 20 | -2.60 | -0.003289 | ± 2.5 | PASS | |
| | | VN | 30 | -0.20 | -0.000253 | ± 2.5 | PASS | |
| | | VN | 40 | -3.20 | -0.004048 | ± 2.5 | PASS | |
| | | VN | 50 | -2.20 | -0.002783 | ± 2.5 | PASS | |
| | МСН | VN | -30 | 1.30 | 0.001639 | ± 2.5 | PASS | |
| OPSK | | VN | -20 | -0.10 | -0.000126 | ± 2.5 | PASS | |
| QPSK | | VN | -10 | -1.10 | -0.001387 | ± 2.5 | PASS | |
| | | VN | 0 | 0.00 | 0.000000 | ± 2.5 | PASS | |
| | | VN | 10 | 1.20 | 0.001513 | ± 2.5 | PASS | |
| | | VN | 20 | -1.00 | -0.001261 | ± 2.5 | PASS | |
| | | VN | 30 | -1.90 | -0.002396 | ± 2.5 | PASS | |
| | | VN | 40 | -3.00 | -0.003783 | ± 2.5 | PASS | |
| | | VN | 50 | -0.50 | -0.000631 | ± 2.5 | PASS | |
| | НСН | VN | -30 | -1.40 | -0.001760 | ± 2.5 | PASS | |
| | | VN | -20 | -0.10 | -0.000126 | ± 2.5 | PASS | |
| | | VN | -10 | 0.90 | 0.001131 | ± 2.5 | PASS | |
| | | VN | 0 | -0.80 | -0.001006 | ± 2.5 | PASS | |



| | VN | 10 | 1.40 | 0.001760 | ± 2.5 | PASS |
|--|----|----|-------|-----------|-------|------|
| | VN | 20 | 0.90 | 0.001131 | ± 2.5 | PASS |
| | VN | 30 | 0.70 | 0.000880 | ± 2.5 | PASS |
| | VN | 40 | 0.00 | 0.000000 | ± 2.5 | PASS |
| | VN | 50 | -0.30 | -0.000377 | ± 2.5 | PASS |

| Channel Bandwidth: 10 MHz | | | | | | | | |
|---------------------------|---------|------------------|--------------------|-------------------|--------------------|----------------|---------|--|
| Voltage | | | | | | | | |
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict | |
| QPSK | MCH | VL | TN | -0.60 | -0.000757 | ± 2.5 | PASS | |
| | | VN | TN | 0.30 | 0.000378 | ± 2.5 | PASS | |
| | | VH | TN | 0.10 | 0.000126 | ± 2.5 | PASS | |
| Temperature | | | | | | | | |
| Modulation | Channel | Voltage [Vdc] | Temperature (℃) | Deviation (Hz) | Deviation (ppm) | Limit (ppm) | Verdict | |
| QPSK | МСН | VN | -30 | -0.60 | -0.000757 | ± 2.5 | PASS | |
| | | VN | -20 | 0.00 | 0.000000 | ± 2.5 | PASS | |
| | | VN | -10 | -0.80 | -0.001009 | ± 2.5 | PASS | |
| | | VN | 0 | -2.00 | -0.002522 | ± 2.5 | PASS | |
| | | VN | 10 | -1.20 | -0.001513 | ± 2.5 | PASS | |
| | | VN | 20 | -0.30 | -0.000378 | ± 2.5 | PASS | |
| | | VN | 30 | -0.40 | -0.000504 | ± 2.5 | PASS | |
| | | VN | 40 | -1.00 | -0.001261 | ± 2.5 | PASS | |
| | | VN | 50 | -1.30 | -0.001639 | ± 2.5 | PASS | |