# Appendix F: Test Data for E-UTRA Band 12

**Product Name: Ruggedized In-vehicle Tablet**
**Test Model: APOLLO 10L**

**Environmental Conditions**

| | |
|---|---|
| Temperature: | 23.9 ° C |
| Relative Humidity: | 54.1% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Tom Liu |
| Supervised by: | Aking Jin |

## F.1 Conducted Output Power

| Conducted Output Power Test Result (Channel Bandwidth: 1.4 MHz) | | | | | | |
|---|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Average Power [dBm] | Average Power [dBm] | Verdict |
| | | Size | Offset | QPSK | 16QAM | |
| QPSK / 16QAM | LCH | 1 | 0 | 23.29 | 22.32 | PASS |
| | | 1 | 3 | 23.34 | 22.67 | PASS |
| | | 1 | 5 | 23.37 | 22.62 | PASS |
| | | 3 | 0 | 23.40 | 22.47 | PASS |
| | | 3 | 2 | 23.31 | 22.39 | PASS |
| | | 3 | 3 | 23.36 | 22.45 | PASS |
| | | 6 | 0 | 22.27 | 21.31 | PASS |
| | MCH | 1 | 0 | 23.18 | 22.50 | PASS |
| | | 1 | 3 | 23.25 | 22.62 | PASS |
| | | 1 | 5 | 23.27 | 22.61 | PASS |
| | | 3 | 0 | 23.78 | 22.82 | PASS |
| | | 3 | 2 | 23.80 | 22.91 | PASS |
| | | 3 | 3 | 23.77 | 22.79 | PASS |
| | | 6 | 0 | 22.77 | 21.76 | PASS |
| | HCH | 1 | 0 | 23.66 | 22.59 | PASS |
| | | 1 | 3 | 23.39 | 22.90 | PASS |
| | | 1 | 5 | 23.44 | 22.93 | PASS |
| | | 3 | 0 | 23.48 | 22.53 | PASS |
| | | 3 | 2 | 23.56 | 22.51 | PASS |
| | | 3 | 3 | 23.49 | 22.57 | PASS |
| | | 6 | 0 | 23.00 | 22.10 | PASS |

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| Conducted Output Power Test Result (Channel Bandwidth: 3 MHz) | | | | | | |
|---|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Average Power [dBm] | Average Power [dBm] | Verdict |
| | | Size | Offset | QPSK | 16QAM | |
| QPSK / 16QAM | LCH | 1 | 0 | 23.38 | 22.64 | PASS |
| | | 1 | 7 | 23.40 | 22.62 | PASS |
| | | 1 | 14 | 23.06 | 22.29 | PASS |
| | | 8 | 0 | 22.47 | 21.54 | PASS |
| | | 8 | 4 | 22.42 | 21.49 | PASS |
| | | 8 | 7 | 22.40 | 21.53 | PASS |
| | | 15 | 0 | 22.46 | 21.41 | PASS |
| | MCH | 1 | 0 | 23.22 | 22.53 | PASS |
| | | 1 | 7 | 23.35 | 22.64 | PASS |
| | | 1 | 14 | 23.27 | 22.57 | PASS |
| | | 8 | 0 | 22.77 | 21.79 | PASS |
| | | 8 | 4 | 22.79 | 21.91 | PASS |
| | | 8 | 7 | 22.86 | 21.90 | PASS |
| | | 15 | 0 | 22.78 | 21.81 | PASS |
| | HCH | 1 | 0 | 23.50 | 22.66 | PASS |
| | | 1 | 7 | 23.34 | 22.75 | PASS |
| | | 1 | 14 | 23.44 | 22.71 | PASS |
| | | 8 | 0 | 22.99 | 21.99 | PASS |
| | | 8 | 4 | 23.05 | 22.04 | PASS |
| | | 8 | 7 | 23.05 | 21.97 | PASS |
| | | 15 | 0 | 23.00 | 22.02 | PASS |

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| Conducted Output Power Test Result (Channel Bandwidth: 5 MHz) | | | | | | |
|---|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Average Power [dBm] | Average Power [dBm] | Verdict |
| | | Size | Offset | QPSK | 16QAM | |
| QPSK / 16QAM | LCH | 1 | 0 | 23.42 | 22.74 | PASS |
| | | 1 | 12 | 23.26 | 22.68 | PASS |
| | | 1 | 24 | 23.10 | 22.72 | PASS |
| | | 12 | 0 | 22.50 | 21.59 | PASS |
| | | 12 | 6 | 22.48 | 21.60 | PASS |
| | | 12 | 13 | 22.58 | 21.70 | PASS |
| | | 25 | 0 | 22.52 | 21.51 | PASS |
| | MCH | 1 | 0 | 23.10 | 22.54 | PASS |
| | | 1 | 12 | 23.37 | 22.79 | PASS |
| | | 1 | 24 | 23.35 | 22.78 | PASS |
| | | 12 | 0 | 22.79 | 22.00 | PASS |
| | | 12 | 6 | 22.91 | 22.00 | PASS |
| | | 12 | 13 | 22.91 | 21.99 | PASS |
| | | 25 | 0 | 22.84 | 21.84 | PASS |
| | HCH | 1 | 0 | 23.50 | 22.59 | PASS |
| | | 1 | 12 | 23.35 | 22.45 | PASS |
| | | 1 | 24 | 23.34 | 22.29 | PASS |
| | | 12 | 0 | 22.97 | 21.99 | PASS |
| | | 12 | 6 | 23.00 | 22.04 | PASS |
| | | 12 | 13 | 22.99 | 22.05 | PASS |
| | | 25 | 0 | 23.10 | 22.01 | PASS |

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| Conducted Output Power Test Result (Channel Bandwidth: 10 MHz) | | | | | | |
|---|---|---|---|---|---|---|
| Modulation | Channel | RB Configuration | | Average Power [dBm] | Average Power [dBm] | Verdict |
| | | Size | Offset | QPSK | 16QAM | |
| QPSK / 16QAM | LCH | 1 | 0 | 23.04 | 22.52 | PASS |
| | | 1 | 24 | 22.78 | 21.96 | PASS |
| | | 1 | 49 | 23.42 | 22.69 | PASS |
| | | 25 | 0 | 22.52 | 21.62 | PASS |
| | | 25 | 12 | 22.65 | 21.63 | PASS |
| | | 25 | 25 | 22.81 | 21.79 | PASS |
| | | 50 | 0 | 22.69 | 21.77 | PASS |
| | MCH | 1 | 0 | 23.46 | 22.45 | PASS |
| | | 1 | 24 | 23.57 | 22.72 | PASS |
| | | 1 | 49 | 23.23 | 22.51 | PASS |
| | | 25 | 0 | 22.77 | 21.75 | PASS |
| | | 25 | 12 | 22.84 | 21.84 | PASS |
| | | 25 | 25 | 22.89 | 21.95 | PASS |
| | | 50 | 0 | 22.80 | 21.80 | PASS |
| | HCH | 1 | 0 | 23.34 | 22.87 | PASS |
| | | 1 | 24 | 23.45 | 22.86 | PASS |
| | | 1 | 49 | 23.17 | 22.56 | PASS |
| | | 25 | 0 | 22.88 | 21.96 | PASS |
| | | 25 | 12 | 23.01 | 22.06 | PASS |
| | | 25 | 25 | 22.86 | 21.93 | PASS |
| | | 50 | 0 | 22.98 | 22.01 | PASS |

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## F.2 Peak-to-Average Ratio

| Peak-to Average Ratio Test Result (Channel Bandwidth: 1.4 MHz) | | | | |
|---|---|---|---|---|
| Modulation | Channel | Peak-to-Average Ratio [dB] | Limit [dB] | Verdict |
| QPSK | LCH | 5.09 | <13 | PASS |
| | MCH | 5.29 | <13 | PASS |
| | HCH | 4.67 | <13 | PASS |
| 16QAM | LCH | 5.95 | <13 | PASS |
| | MCH | 6.17 | <13 | PASS |
| | HCH | 5.47 | <13 | PASS |

| Peak-to Average Ratio Test Result (Channel Bandwidth: 3 MHz) | | | | |
|---|---|---|---|---|
| Modulation | Channel | Peak-to-Average Ratio [dB] | Limit [dB] | Verdict |
| QPSK | LCH | 4.95 | <13 | PASS |
| | MCH | 5.36 | <13 | PASS |
| | HCH | 4.85 | <13 | PASS |
| 16QAM | LCH | 5.84 | <13 | PASS |
| | MCH | 6.24 | <13 | PASS |
| | HCH | 5.66 | <13 | PASS |

| Peak-to Average Ratio Test Result (Channel Bandwidth: 5 MHz) | | | | |
|---|---|---|---|---|
| Modulation | Channel | Peak-to-Average Ratio [dB] | Limit [dB] | Verdict |
| QPSK | LCH | 4.82 | <13 | PASS |
| | MCH | 5.28 | <13 | PASS |
| | HCH | 4.83 | <13 | PASS |
| 16QAM | LCH | 5.65 | <13 | PASS |
| | MCH | 6.13 | <13 | PASS |
| | HCH | 5.7 | <13 | PASS |

| Peak-to Average Ratio Test Result (Channel Bandwidth: 10 MHz) | | | | |
|---|---|---|---|---|
| Modulation | Channel | Peak-to-Average Ratio [dB] | Limit [dB] | Verdict |
| QPSK | LCH | 5.14 | <13 | PASS |
| | MCH | 5.23 | <13 | PASS |
| | HCH | 5.11 | <13 | PASS |
| 16QAM | LCH | 5.85 | <13 | PASS |
| | MCH | 5.97 | <13 | PASS |
| | HCH | 5.86 | <13 | PASS |

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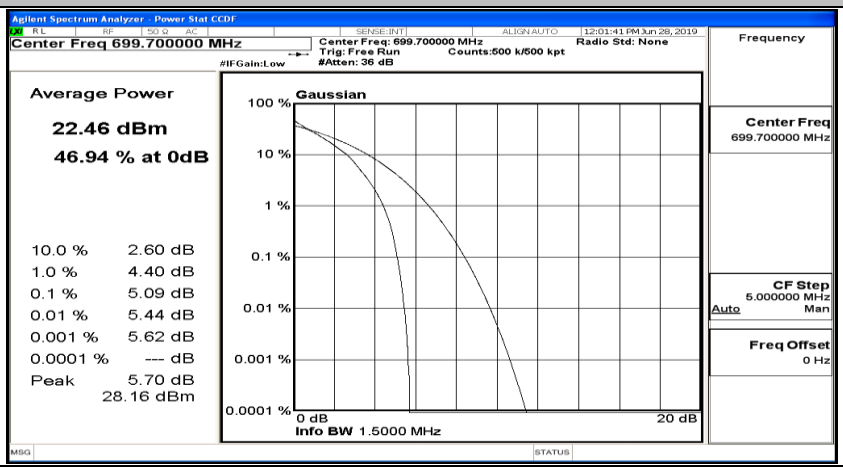
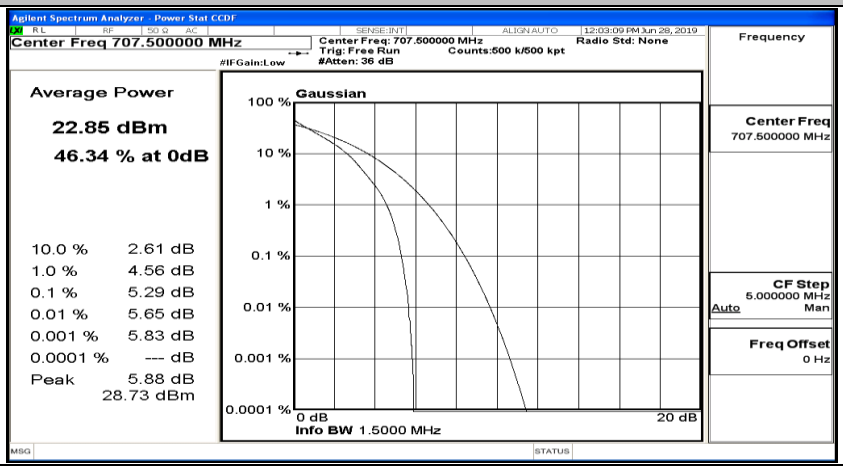
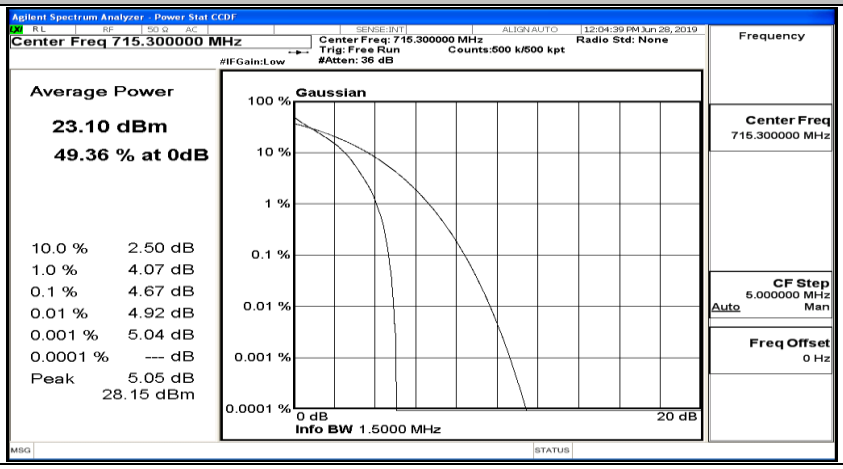
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_QPSK




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_QPSK




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_QPSK

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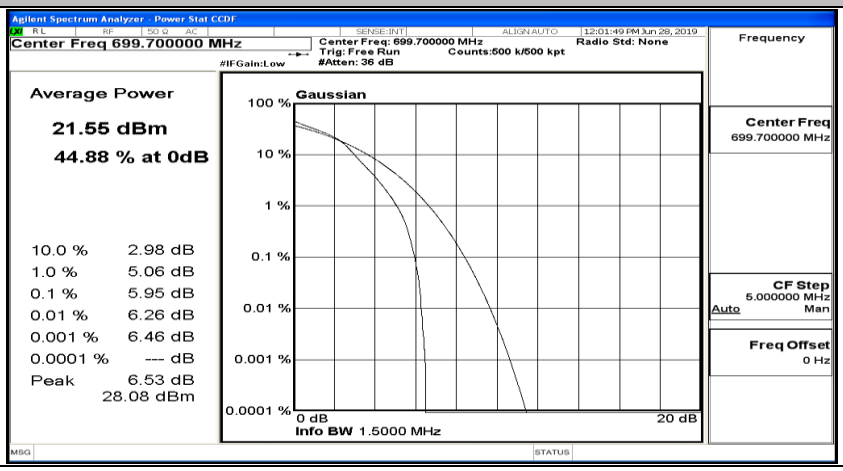
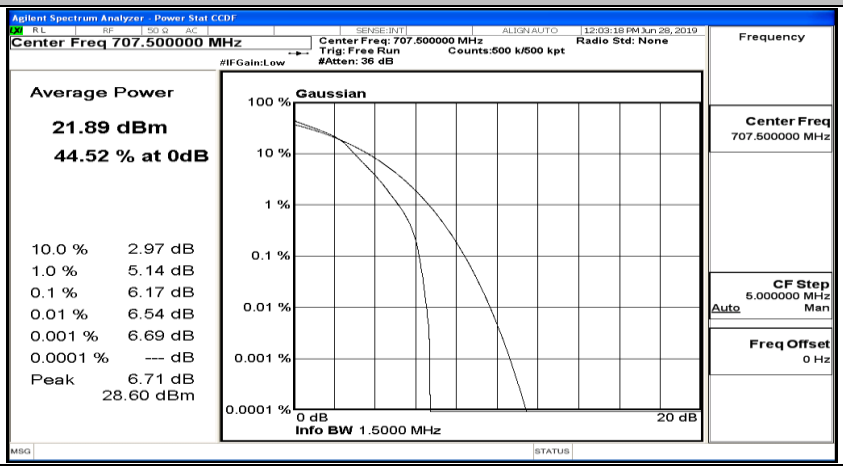
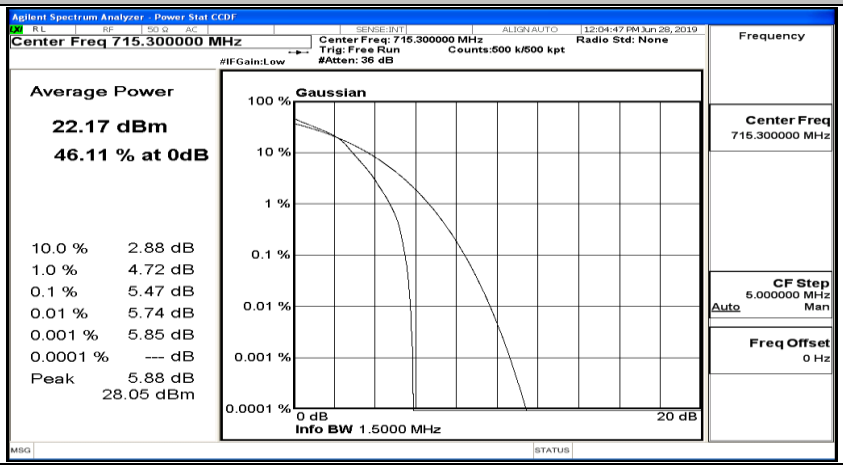
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_16QAM




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_16QAM




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_16QAM

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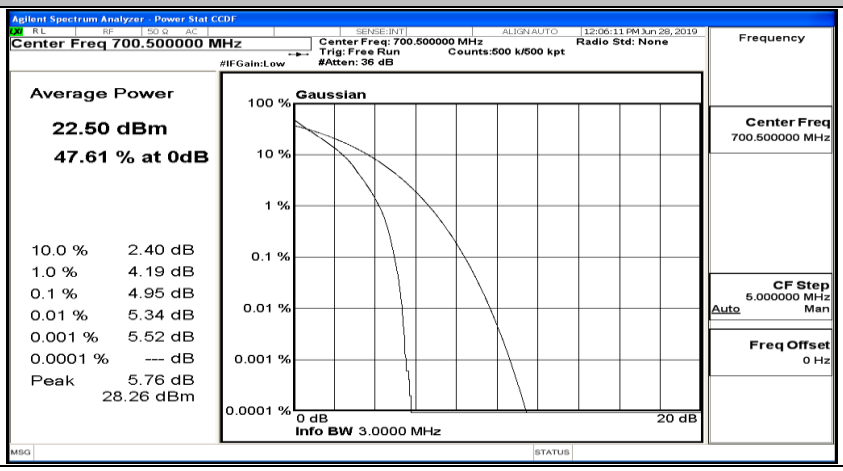
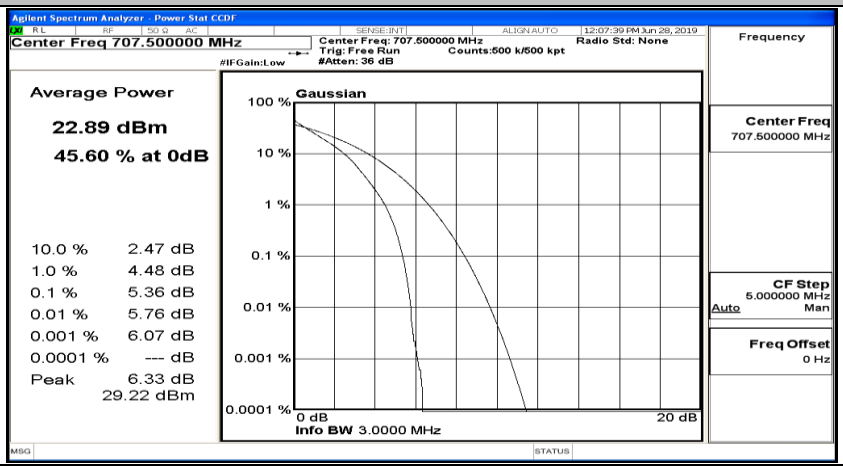
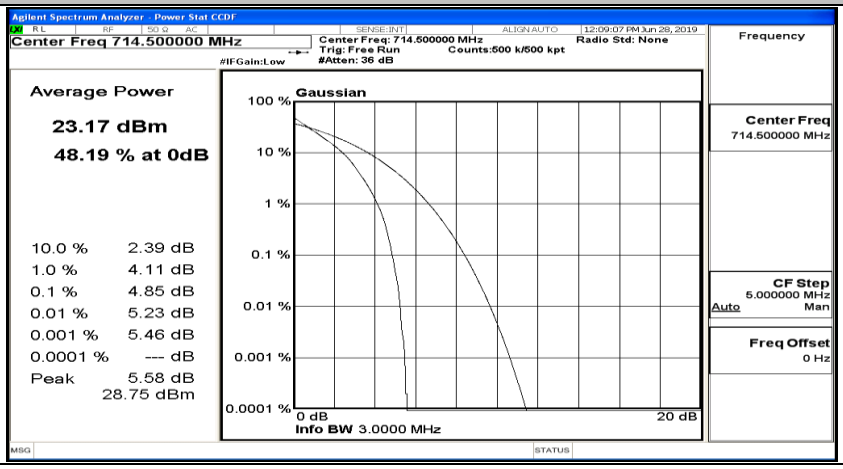
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_QPSK




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_QPSK




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_QPSK

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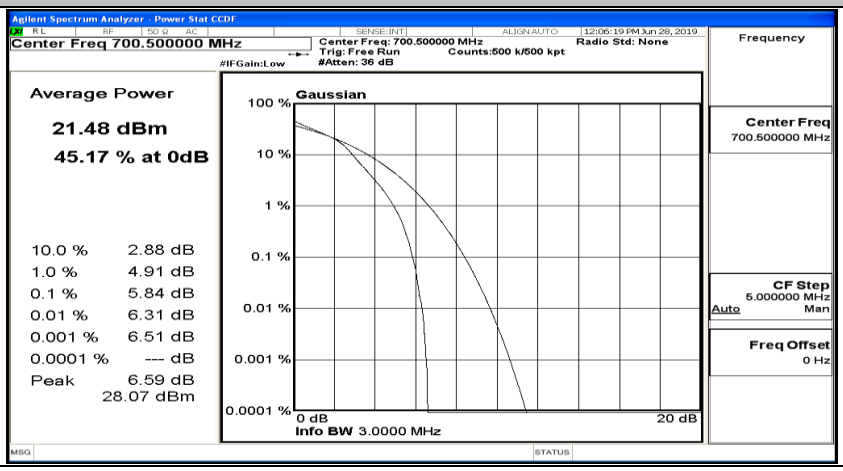
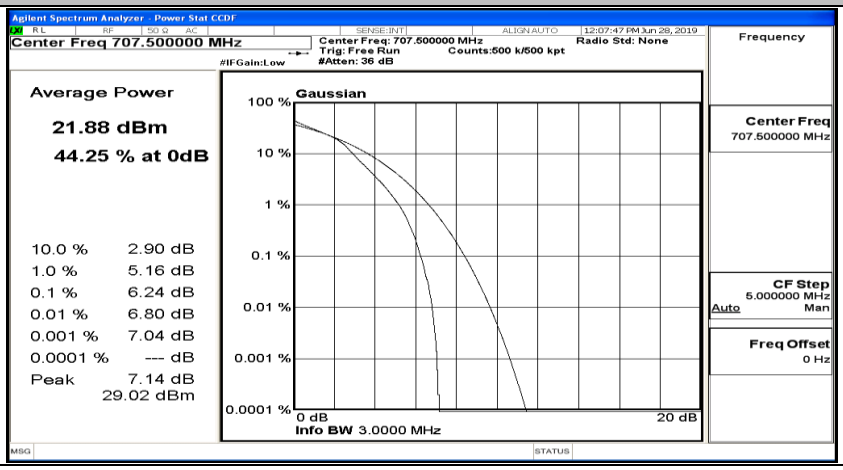
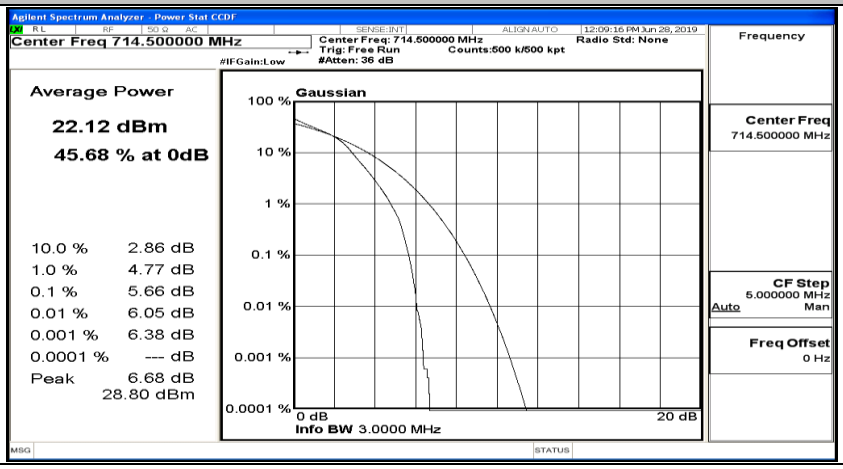
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_16QAM




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_16QAM




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_16QAM

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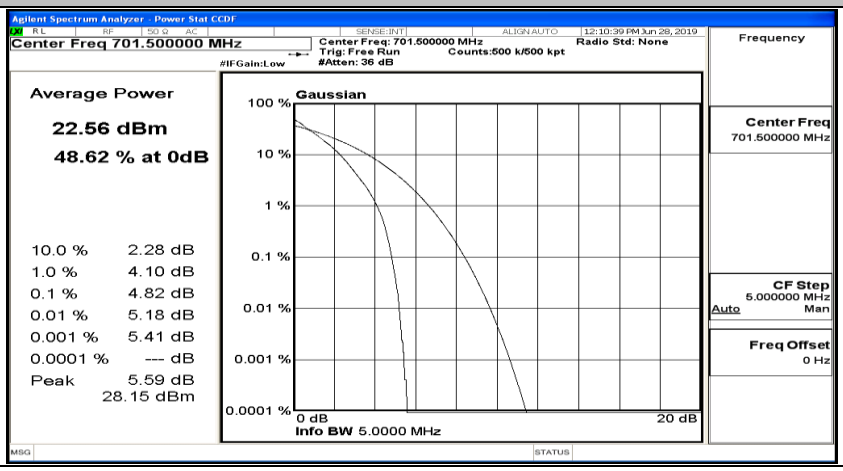
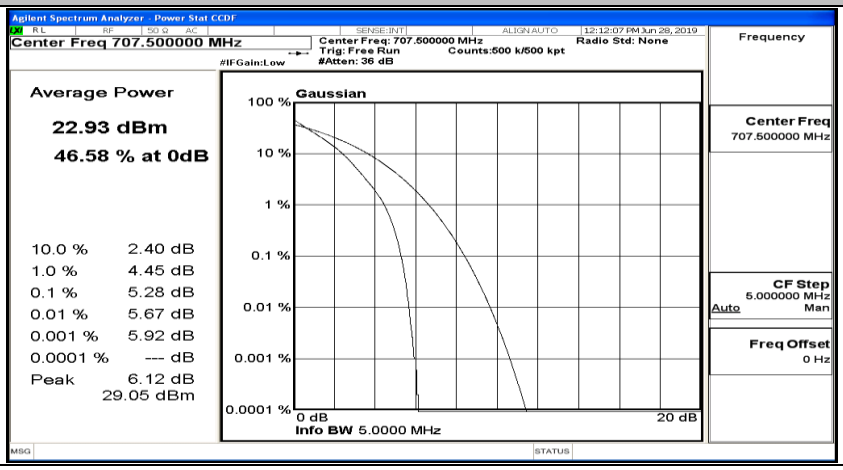
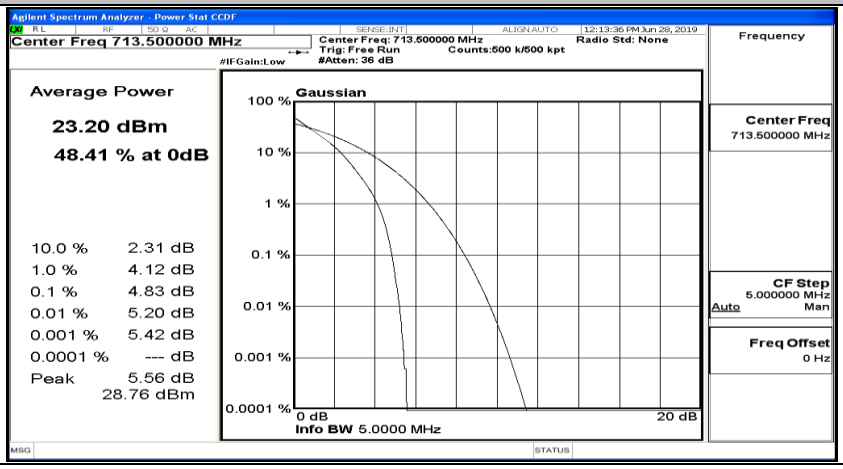
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK



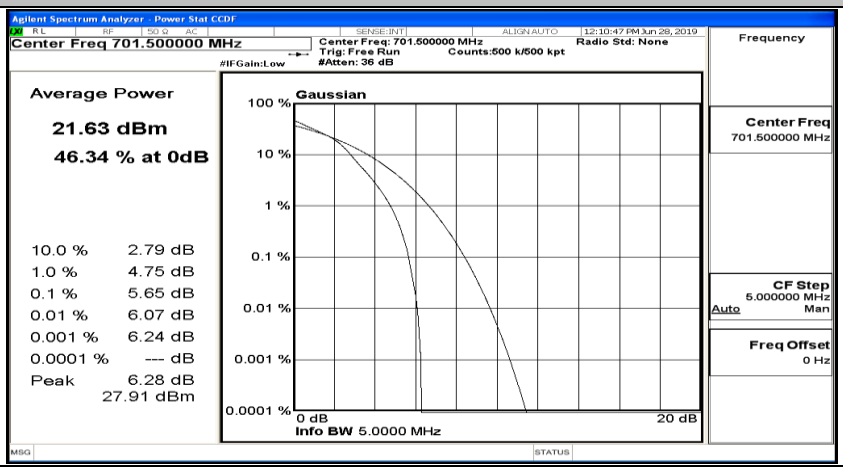

Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK



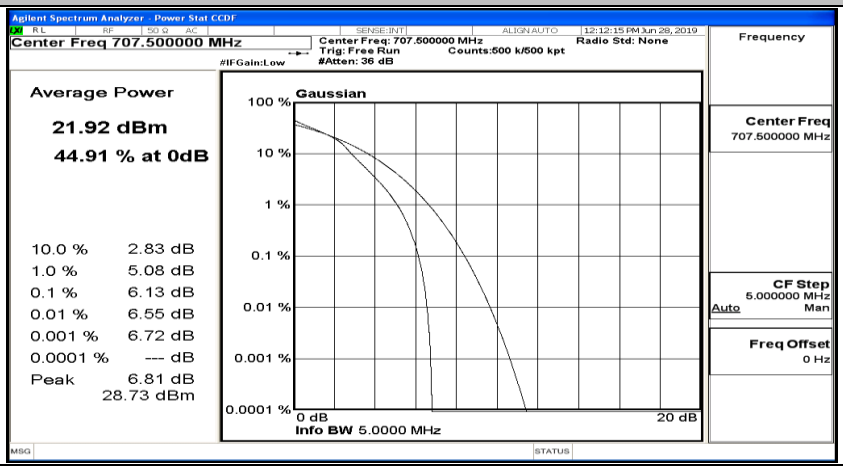

Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK



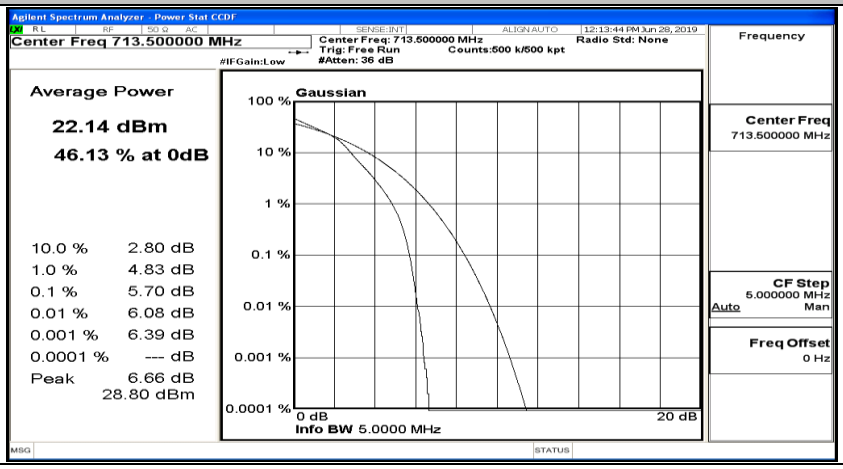
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM

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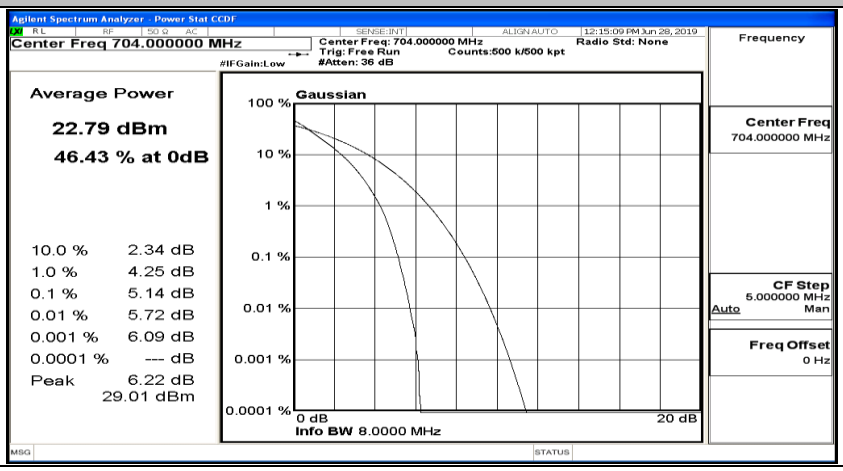
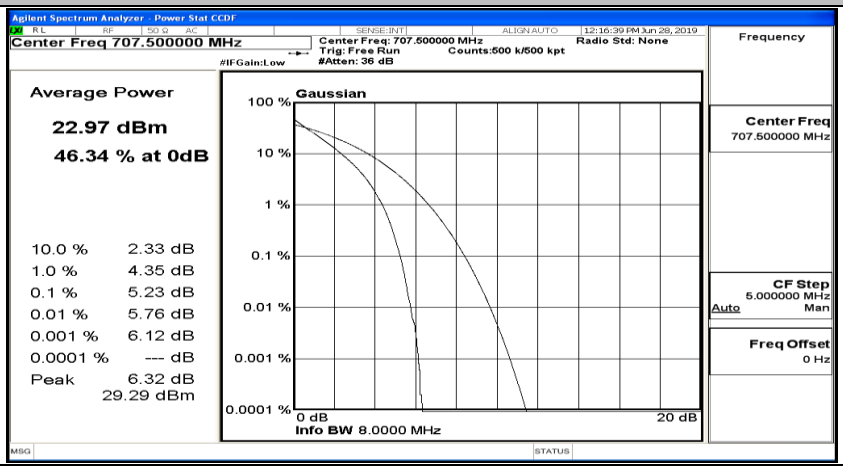
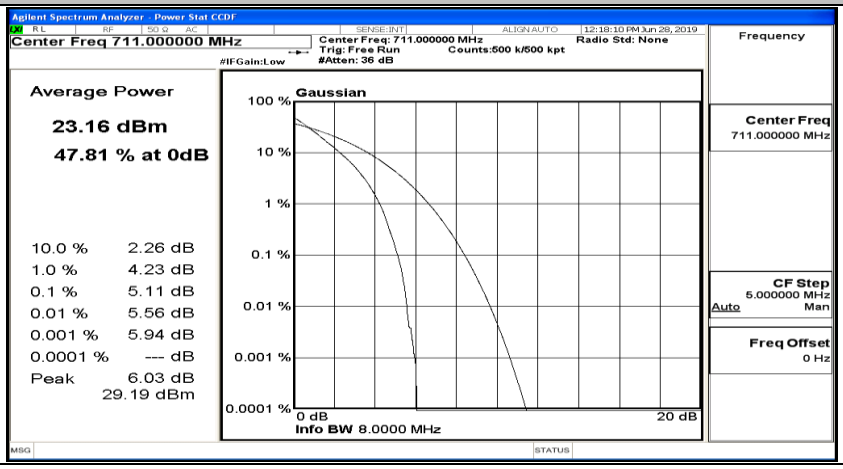
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_QPSK




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK

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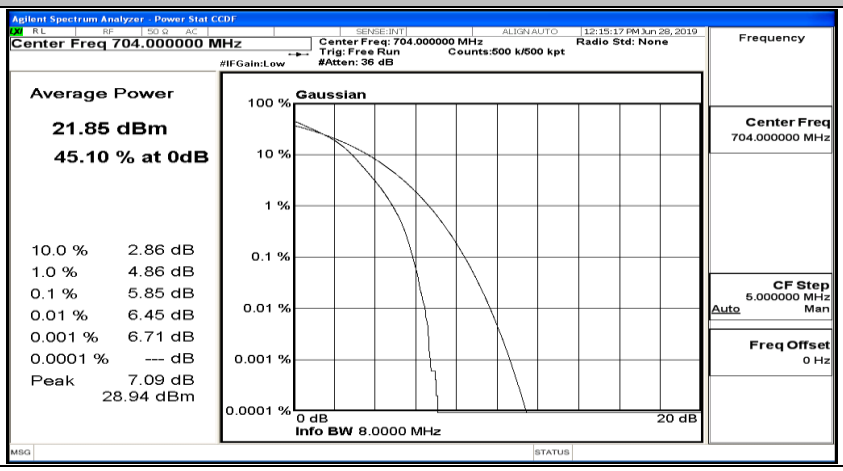
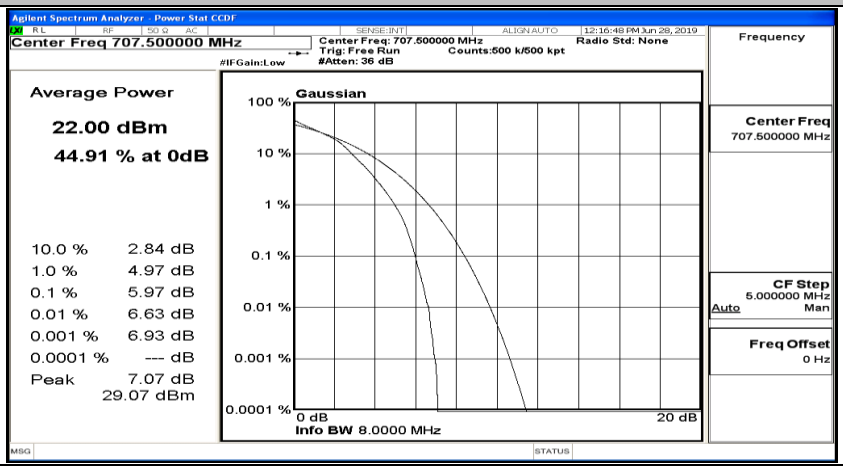
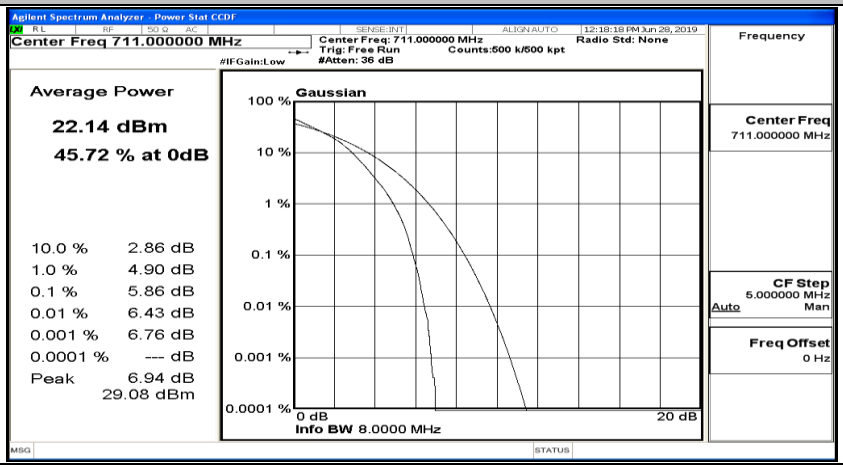
Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_16QAM




Peak-to Average Ratio Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM

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## F.3 26dB Bandwidth and Occupied Bandwidth

| EBW & OBW Test Result (Channel Bandwidth: 1.4 MHz) | | | | |
|---|---|---|---|---|
| Modulation | Channel | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
| QPSK | LCH | 1.0764 | 1.229 | PASS |
| | MCH | 1.0749 | 1.222 | PASS |
| | HCH | 1.0754 | 1.246 | PASS |
| 16QAM | LCH | 1.0780 | 1.221 | PASS |
| | MCH | 1.0773 | 1.236 | PASS |
| | HCH | 1.0789 | 1.250 | PASS |

| EBW & OBW Test Result (Channel Bandwidth: 3 MHz) | | | | |
|---|---|---|---|---|
| Modulation | Channel | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
| QPSK | LCH | 2.6803 | 2.875 | PASS |
| | MCH | 2.6848 | 2.909 | PASS |
| | HCH | 2.6832 | 2.900 | PASS |
| 16QAM | LCH | 2.6803 | 2.882 | PASS |
| | MCH | 2.6820 | 2.912 | PASS |
| | HCH | 2.6874 | 2.885 | PASS |

| EBW & OBW Test Result (Channel Bandwidth: 5 MHz) | | | | |
|---|---|---|---|---|
| Modulation | Channel | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
| QPSK | LCH | 4.4716 | 4.797 | PASS |
| | MCH | 4.4697 | 4.798 | PASS |
| | HCH | 4.4656 | 4.788 | PASS |
| 16QAM | LCH | 4.4655 | 4.787 | PASS |
| | MCH | 4.4738 | 4.835 | PASS |
| | HCH | 4.4719 | 4.765 | PASS |

| EBW & OBW Test Result (Channel Bandwidth: 10 MHz) | | | | |
|---|---|---|---|---|
| Modulation | Channel | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) | Verdict |
| QPSK | LCH | 8.9388 | 9.412 | PASS |
| | MCH | 8.9450 | 9.538 | PASS |
| | HCH | 8.9158 | 9.389 | PASS |
| 16QAM | LCH | 8.9321 | 9.398 | PASS |
| | MCH | 8.9427 | 9.510 | PASS |
| | HCH | 8.9147 | 9.415 | PASS |

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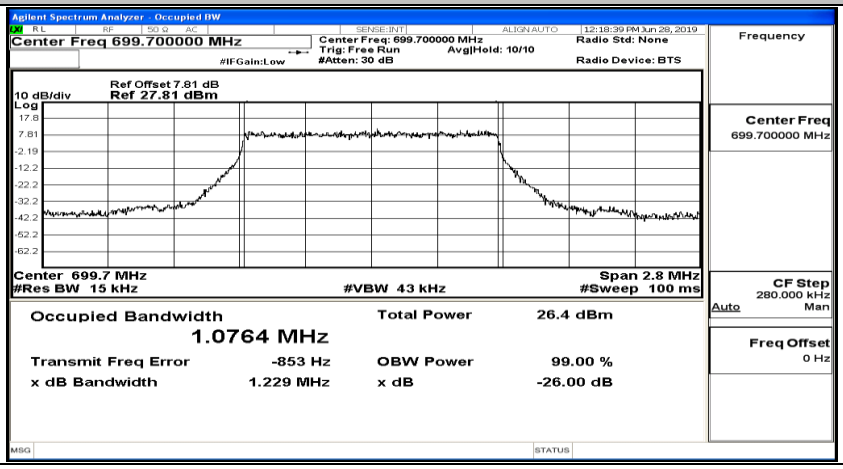
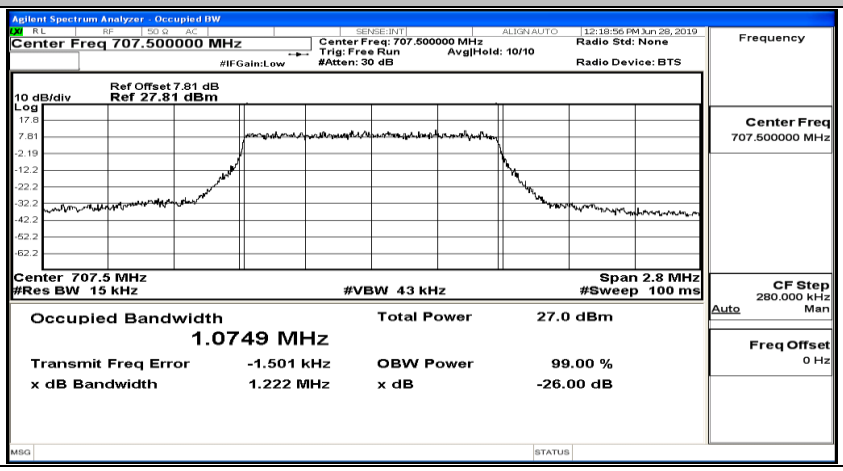
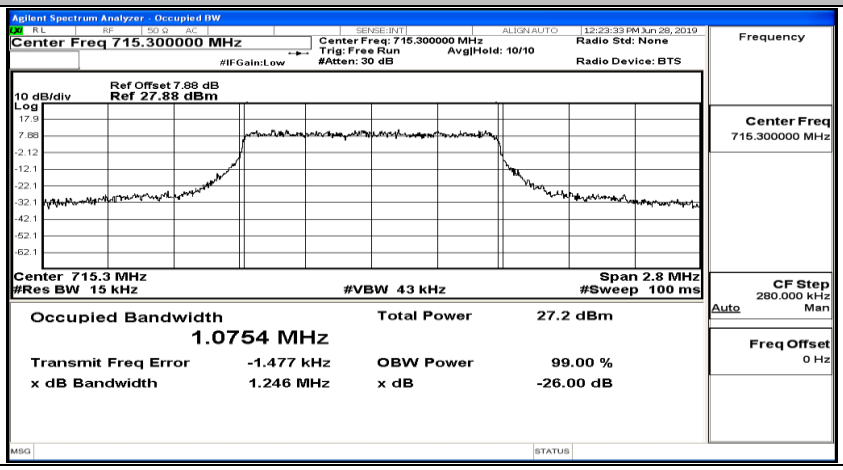
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_QPSK




EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_QPSK




EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_QPSK

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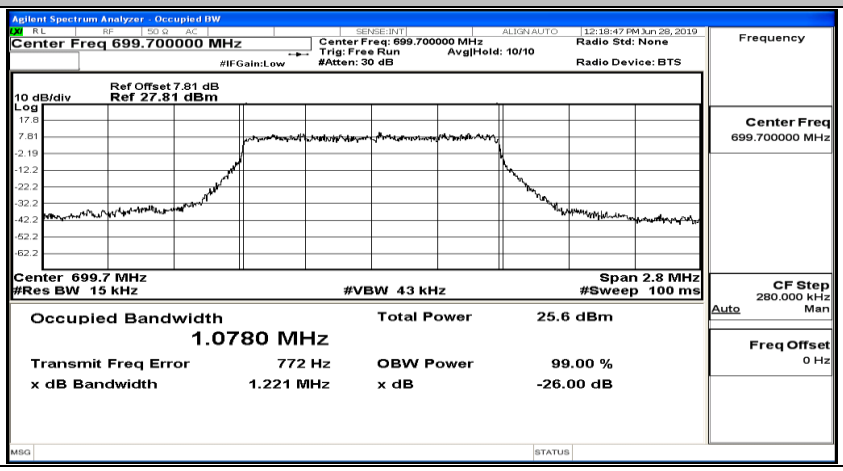
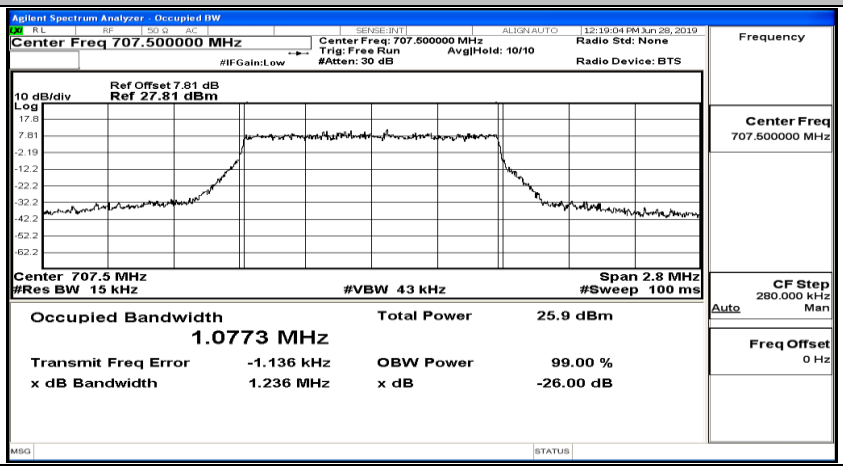
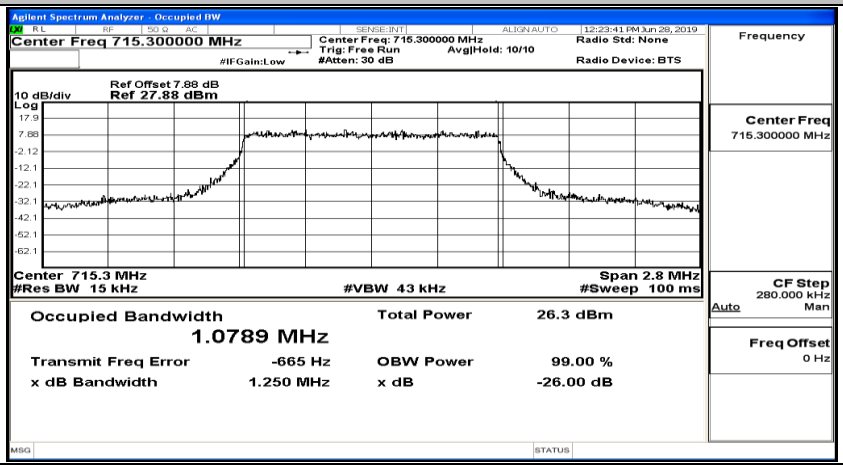
EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_16QAM




EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_MCH_16QAM




EBW & OBW Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_16QAM

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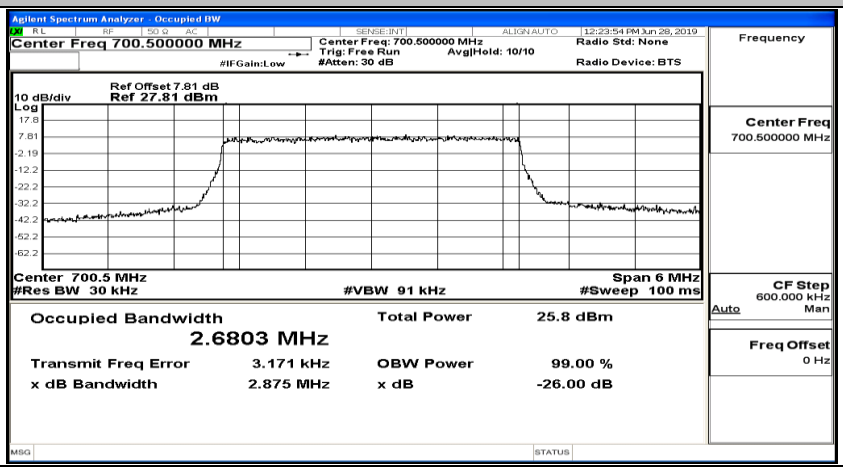
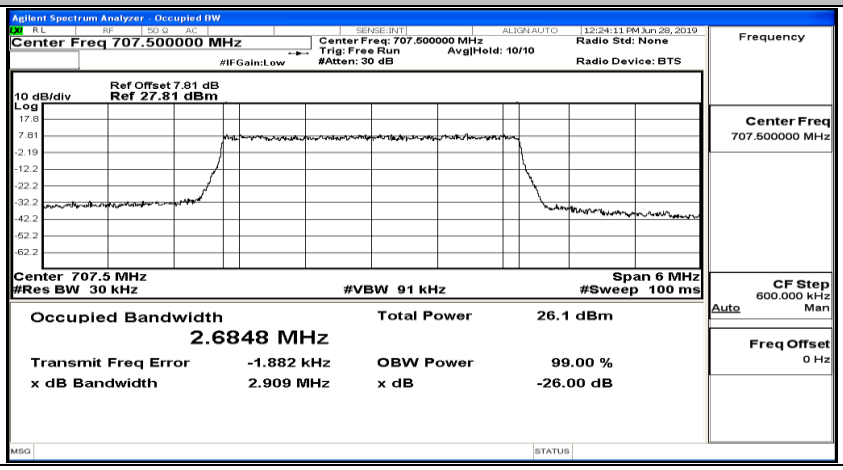
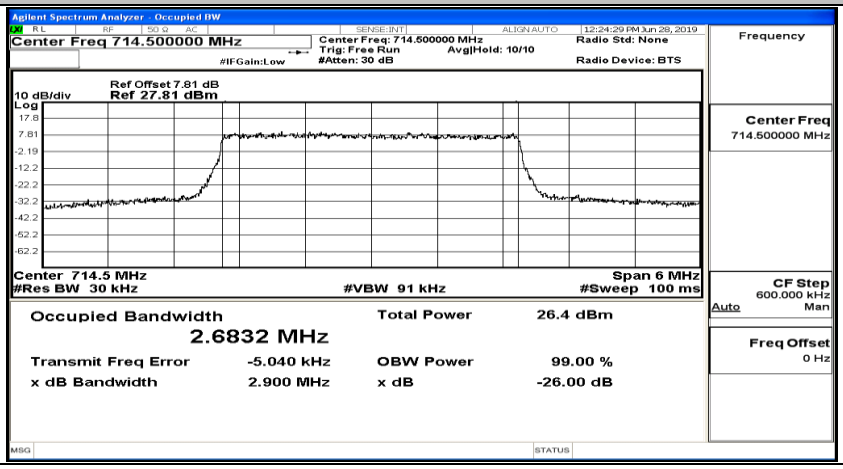
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_QPSK




EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_QPSK




EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_QPSK

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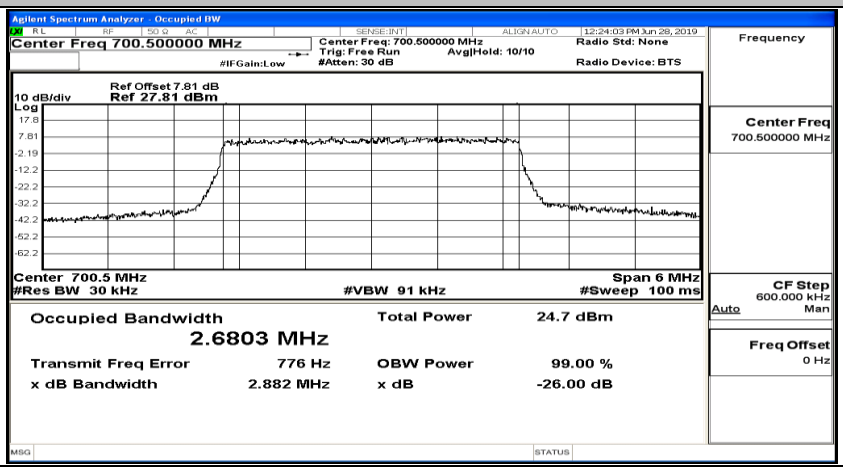
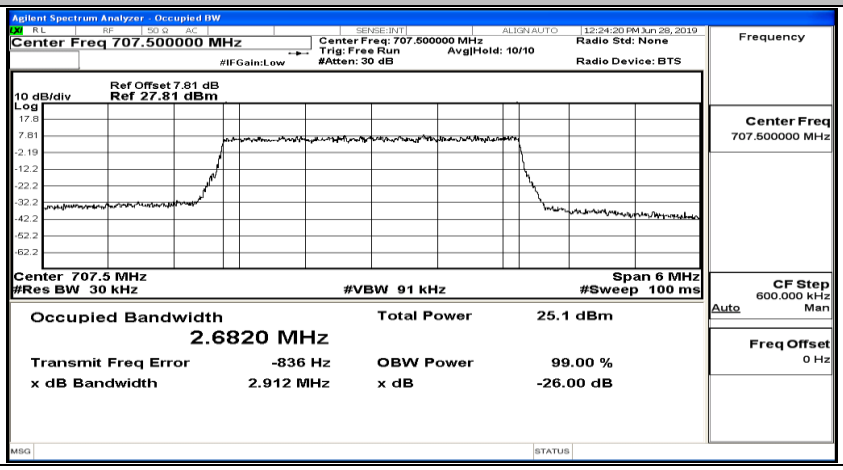
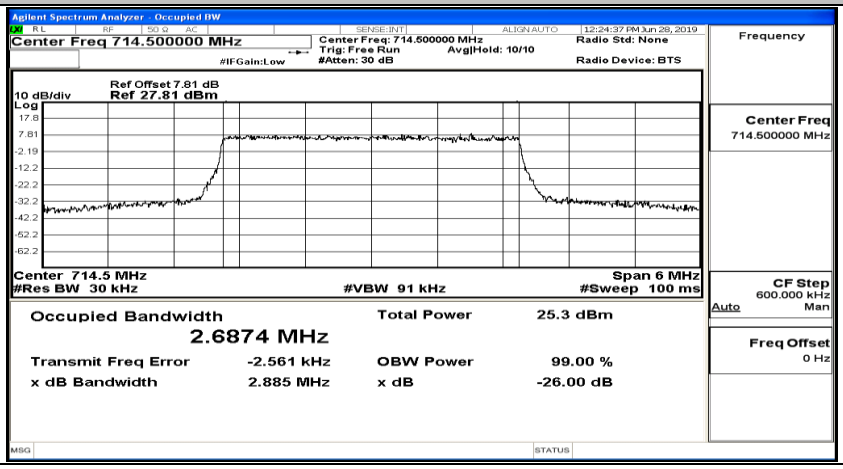
EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_16QAM




EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_MCH_16QAM




EBW & OBW Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_16QAM

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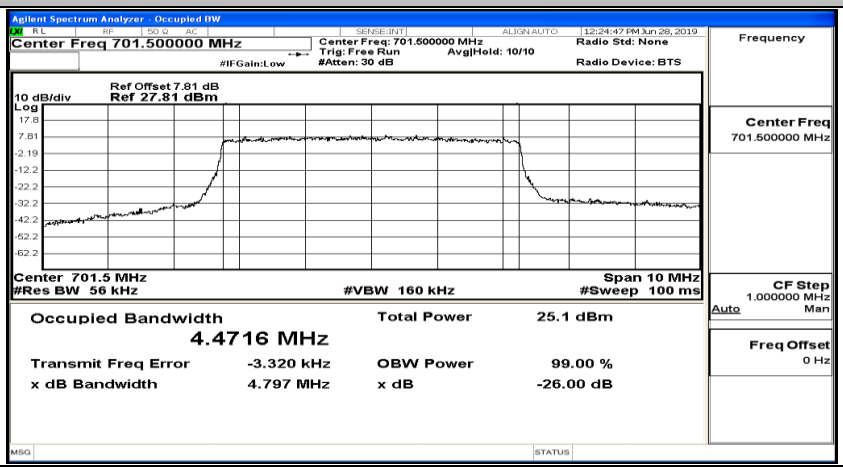
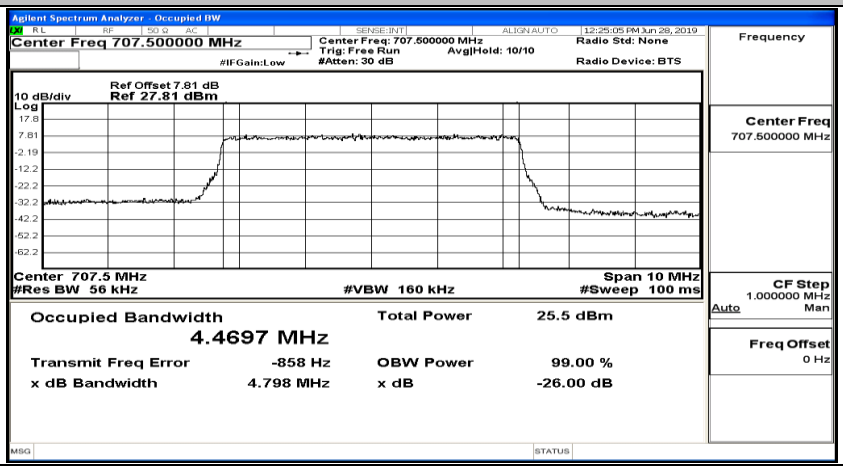
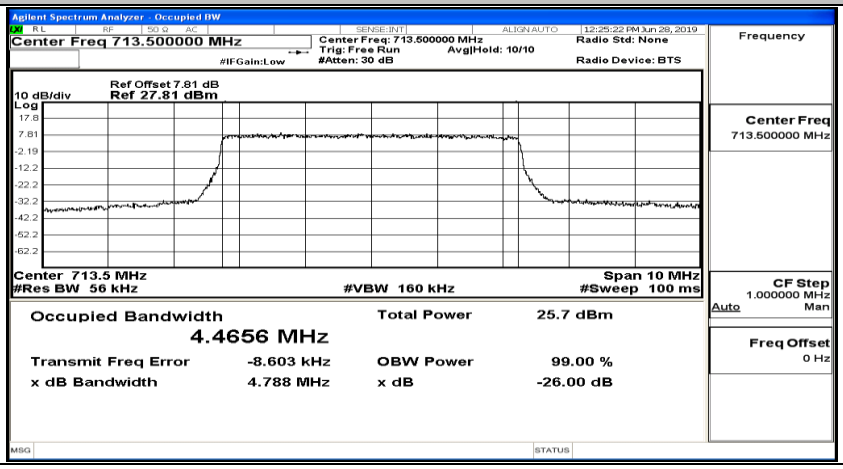
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK




EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_QPSK




EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_QPSK

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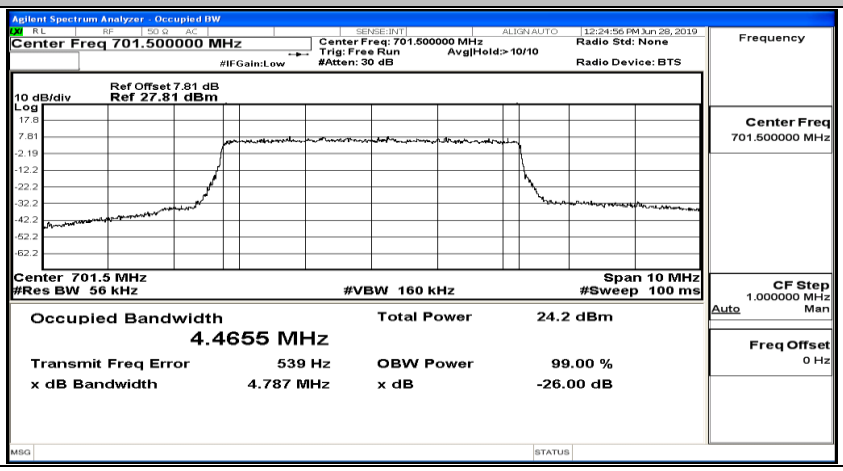
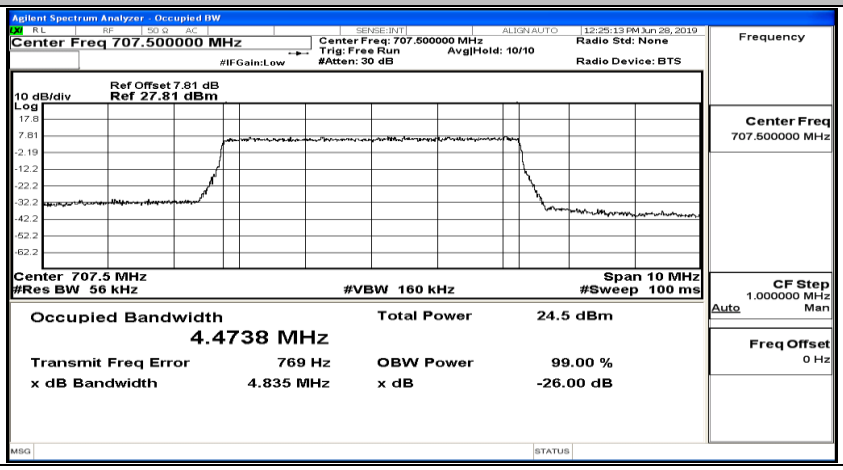
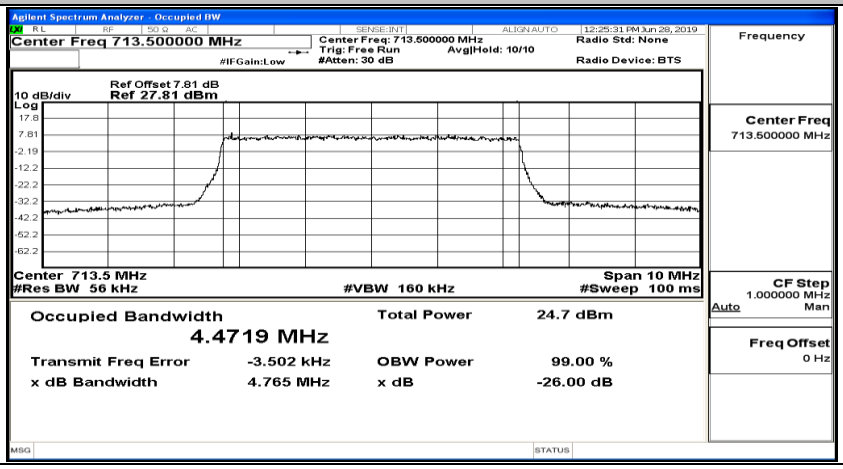
EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_16QAM




EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_MCH_16QAM




EBW & OBW Test Graph(s) (Channel Bandwidth: 5 MHz)_HCH_16QAM

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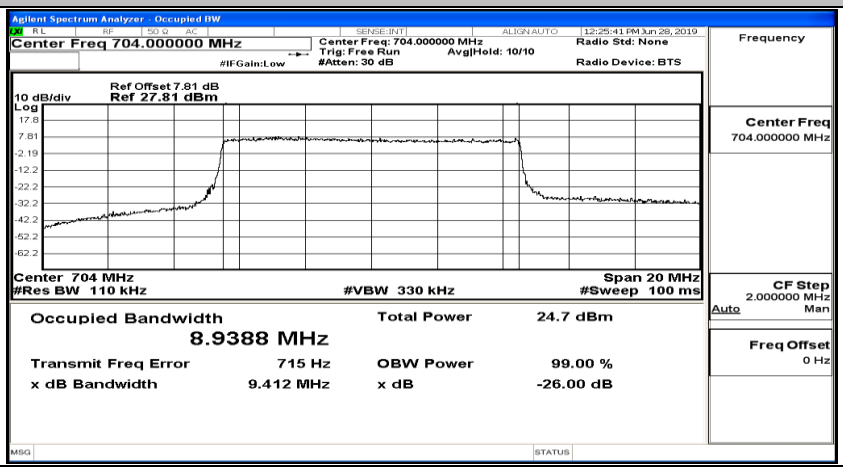
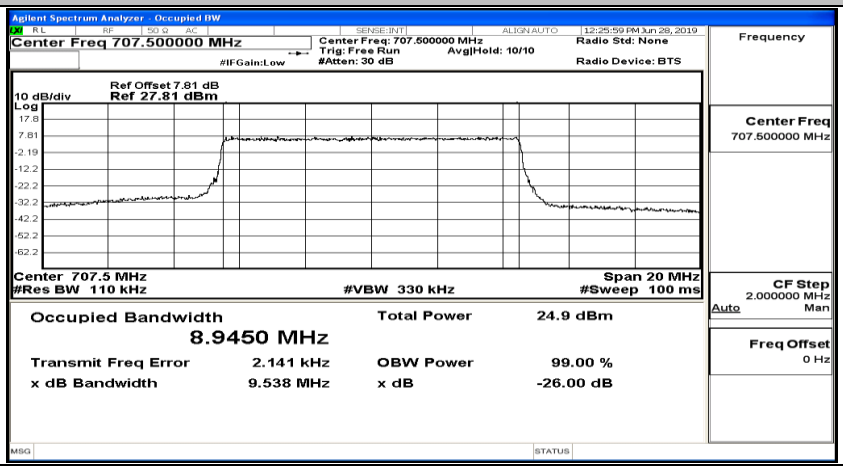
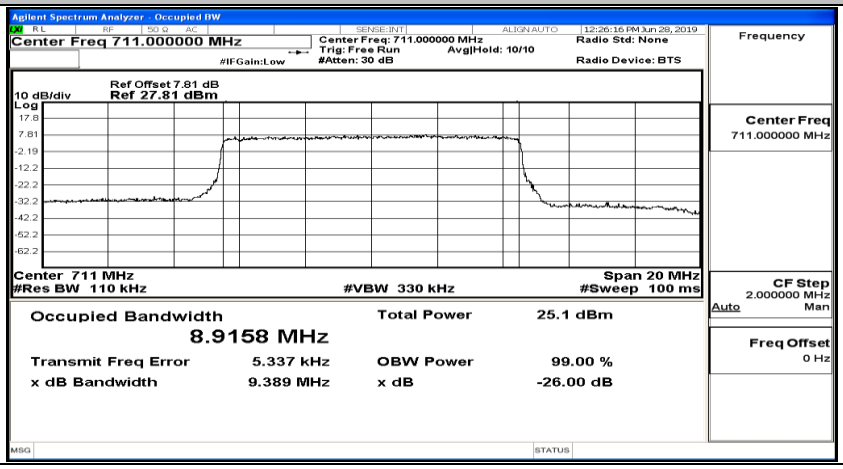
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_QPSK




EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_QPSK




EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_QPSK

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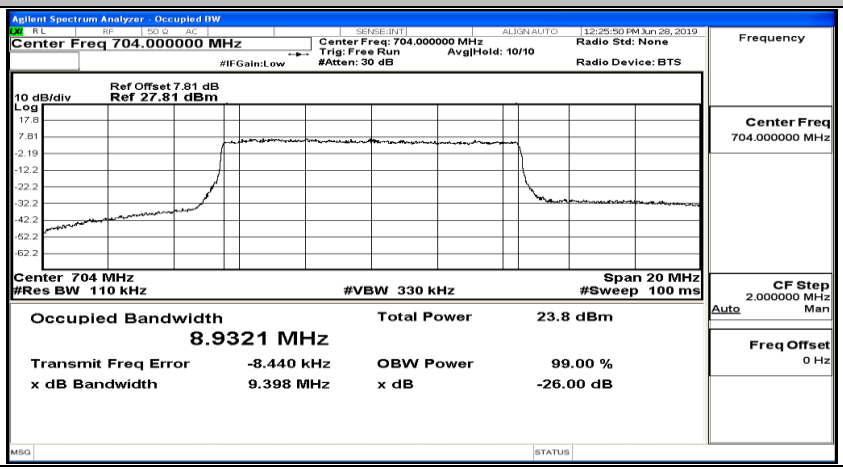
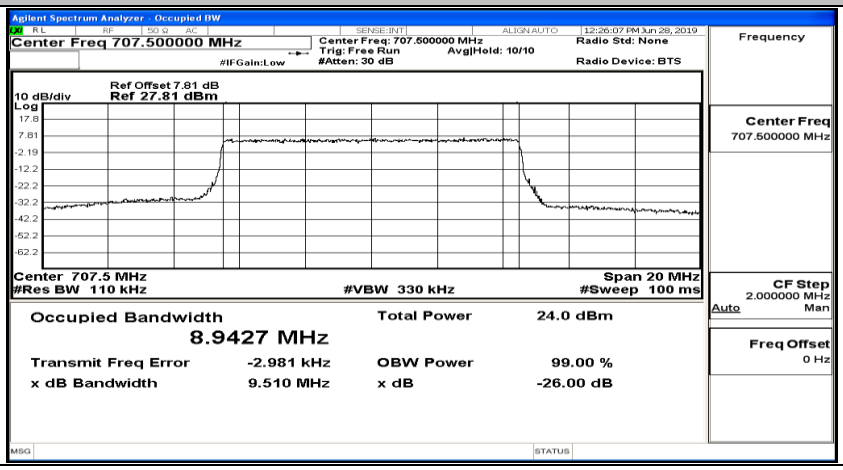
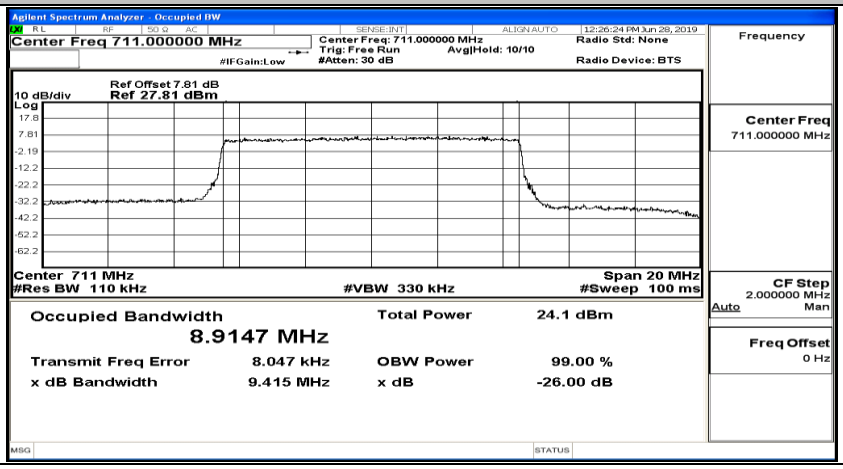
EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_LCH_16QAM




EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_MCH_16QAM




EBW & OBW Test Graph(s) (Channel Bandwidth: 10 MHz)_HCH_16QAM

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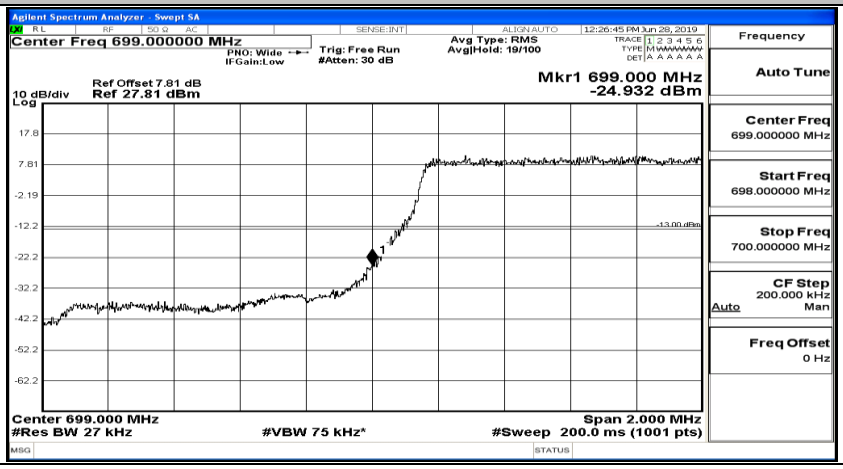
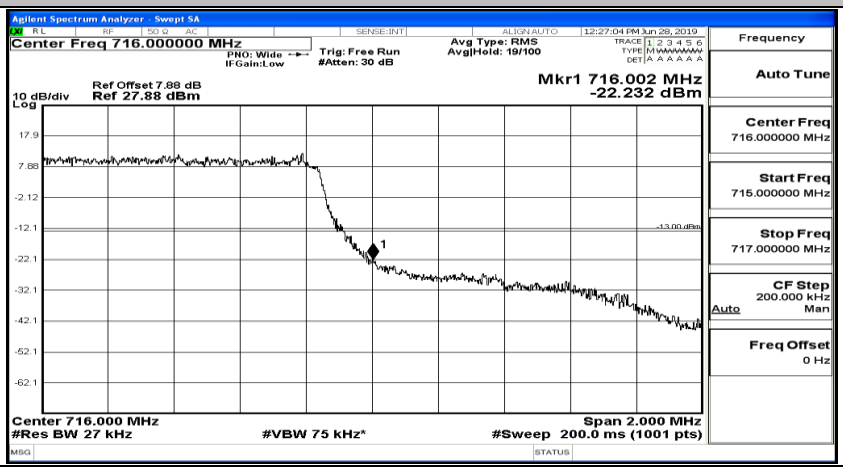
## F.4 Band Edge

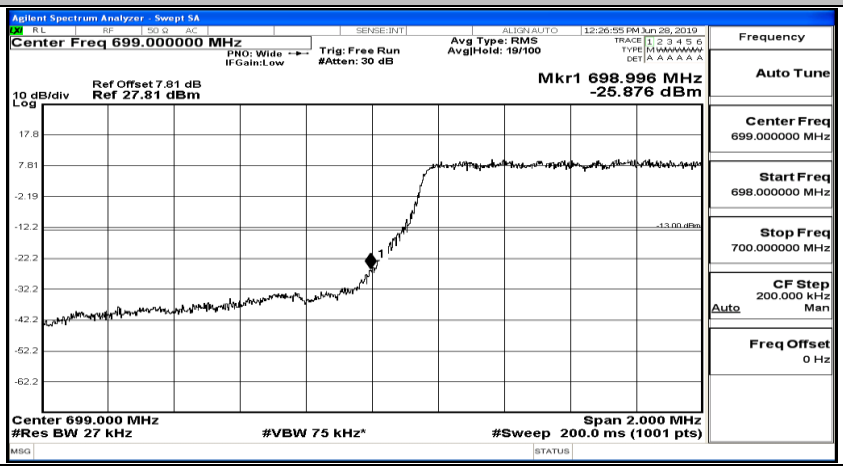
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_QPSK




Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_QPSK




Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_LCH_16QAM

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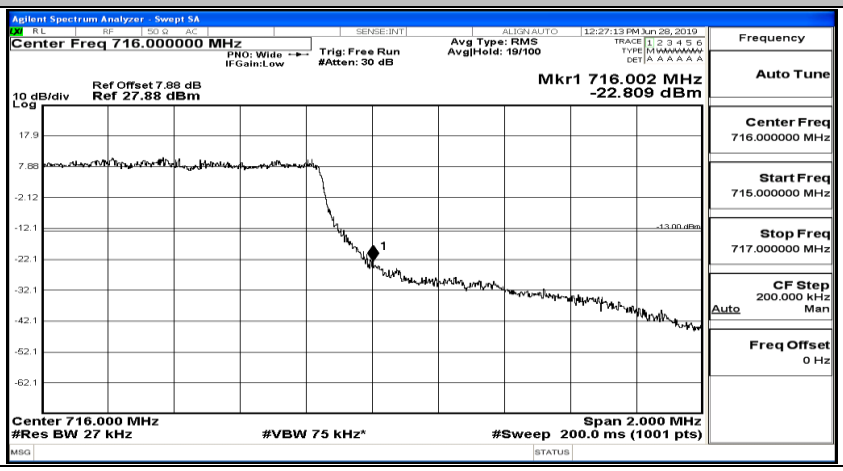
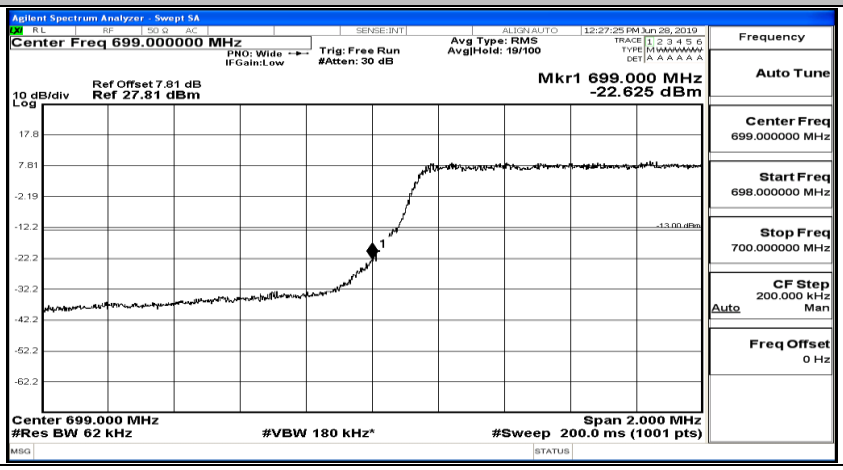
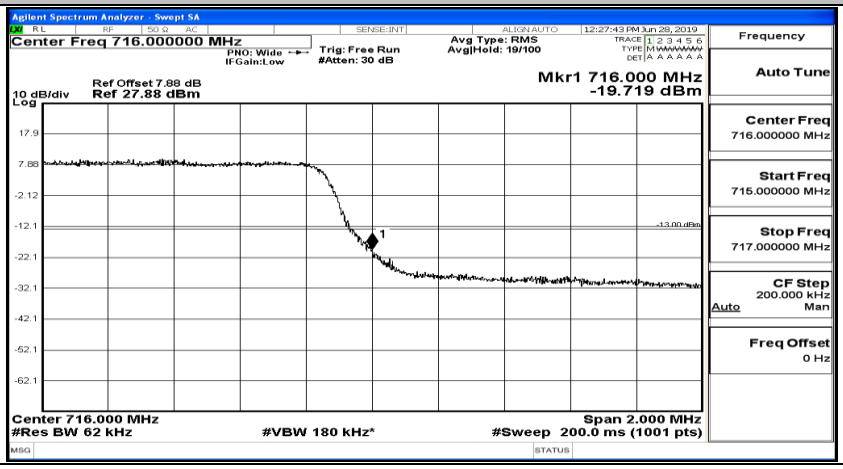
Band Edge Test Graph(s) (Channel Bandwidth: 1.4 MHz)_HCH_16QAM




Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_QPSK




Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_QPSK

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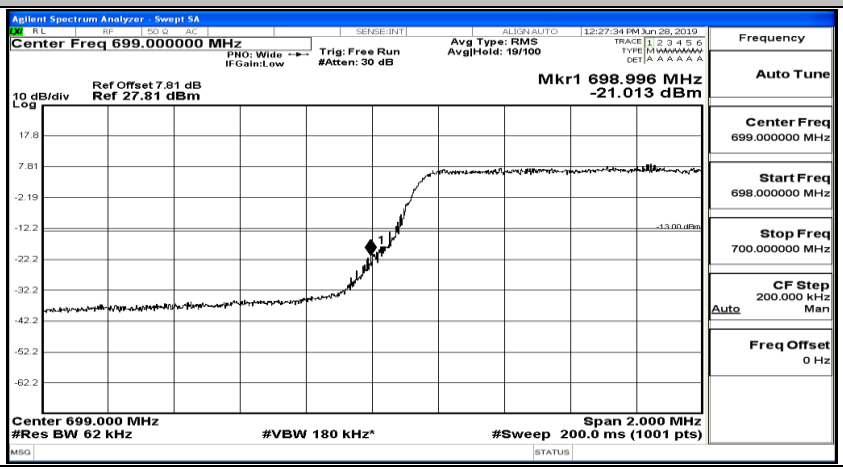
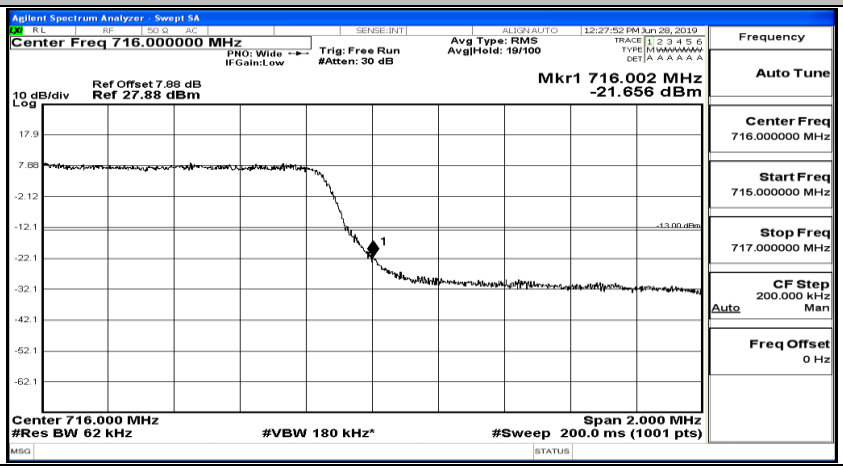
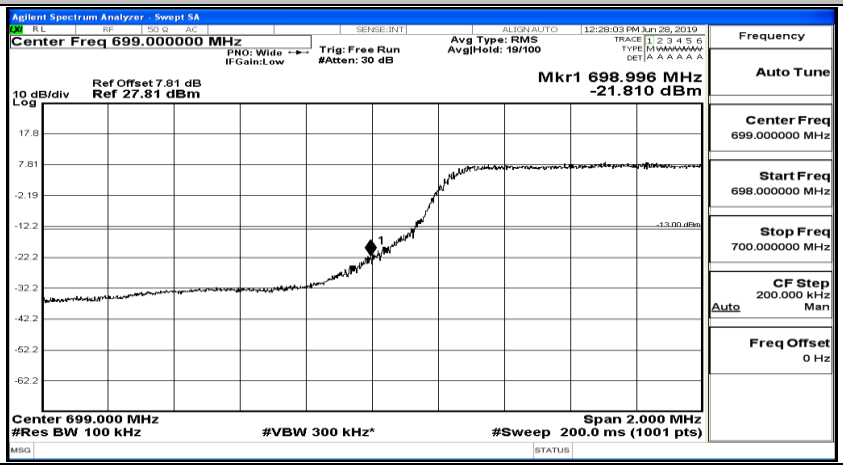
Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_LCH_16QAM




Band Edge Test Graph(s) (Channel Bandwidth: 3 MHz)_HCH_16QAM




Band Edge Test Graph(s) (Channel Bandwidth: 5 MHz)_LCH_QPSK