

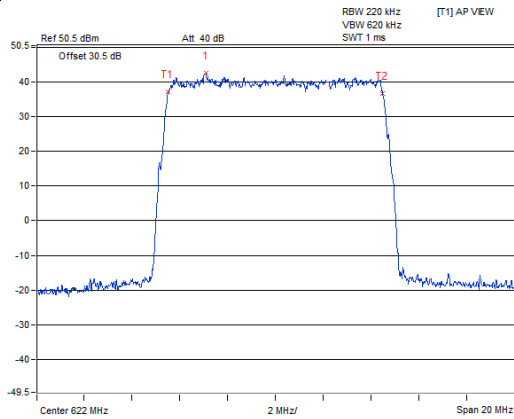
Chain 1

Spectrum Plot of Worst Value

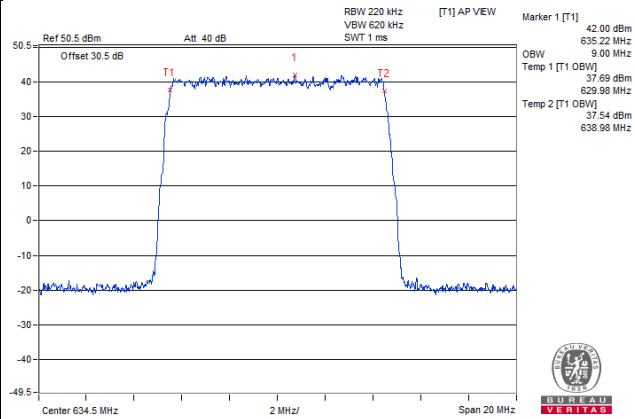
Occupied Bandwidth

QPSK

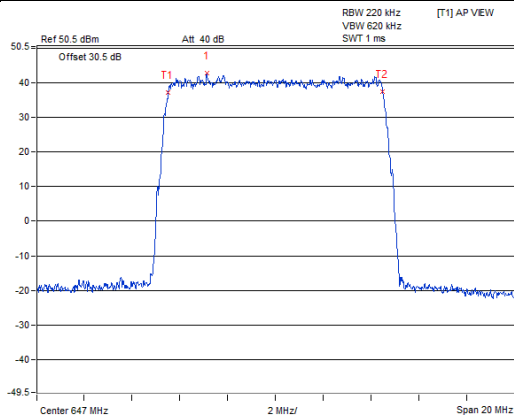
Channel: 68636



Channel: 68761

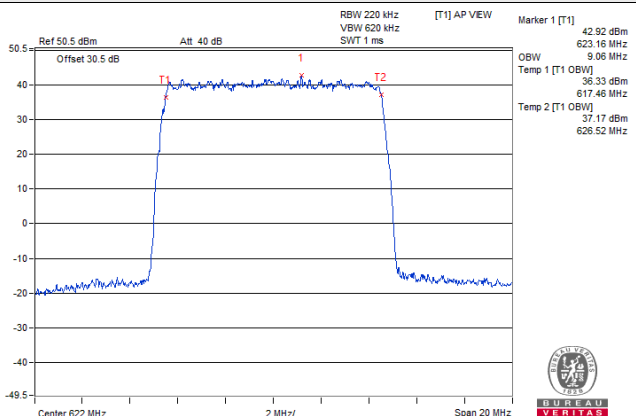


Channel: 68886

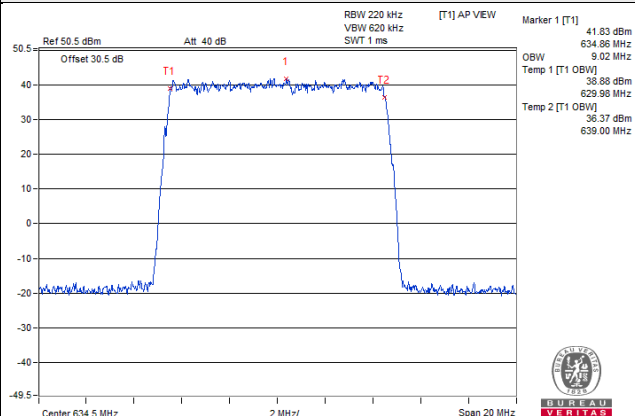


16QAM

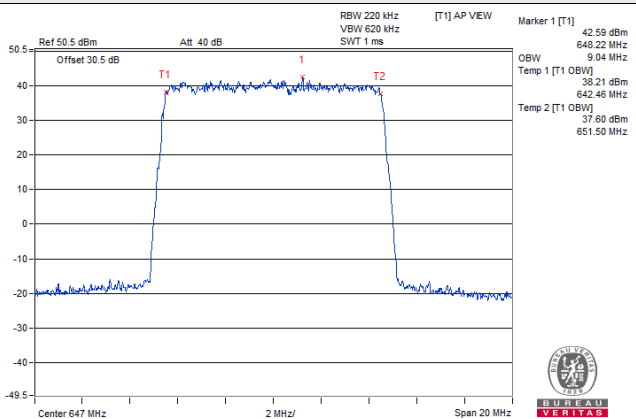
Channel: 68636



Channel: 68761

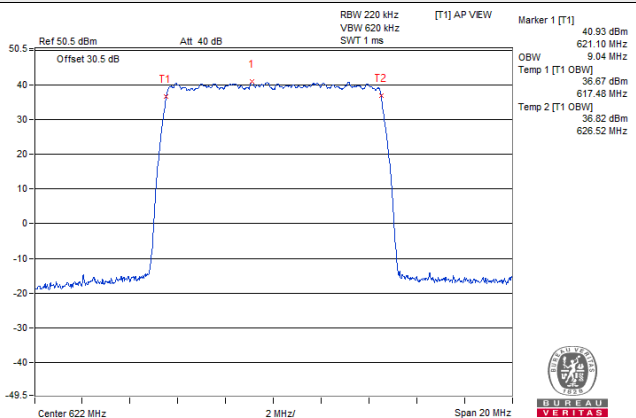


Channel: 68886

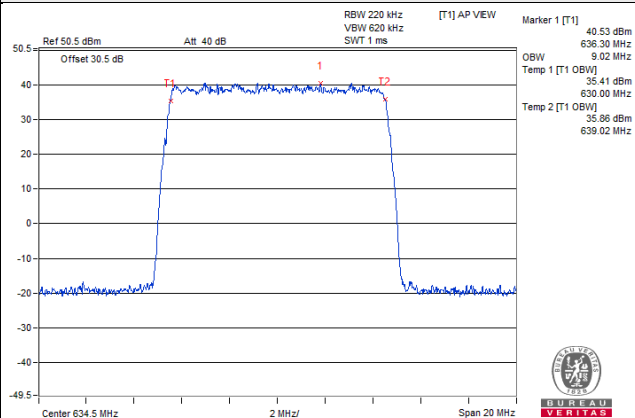


64QAM

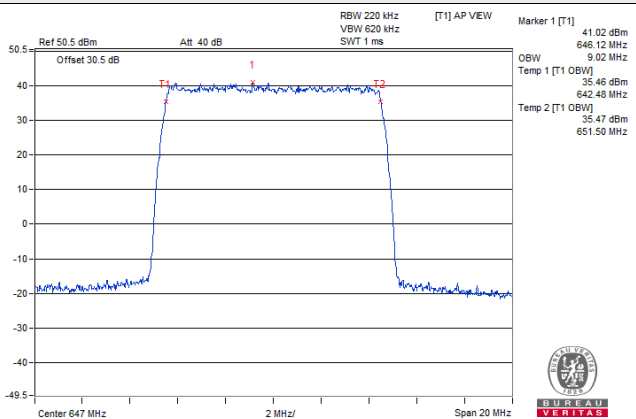
Channel: 68636



Channel: 68761

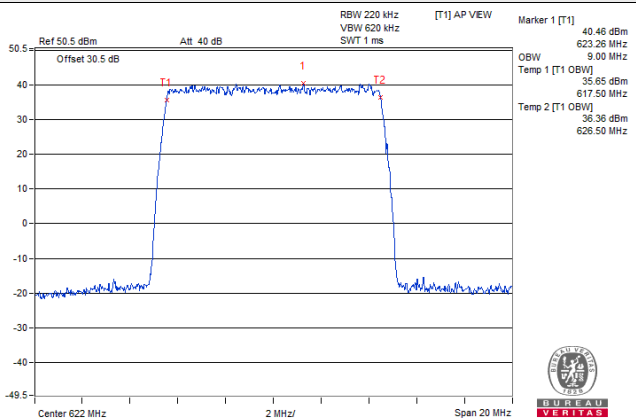


Channel: 68886

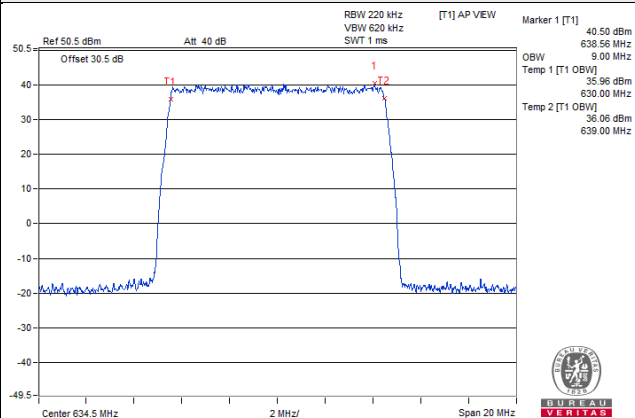


256QAM

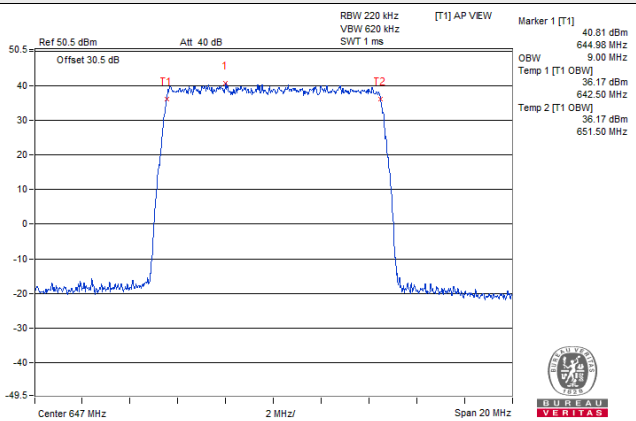
Channel: 68636



Channel: 68761



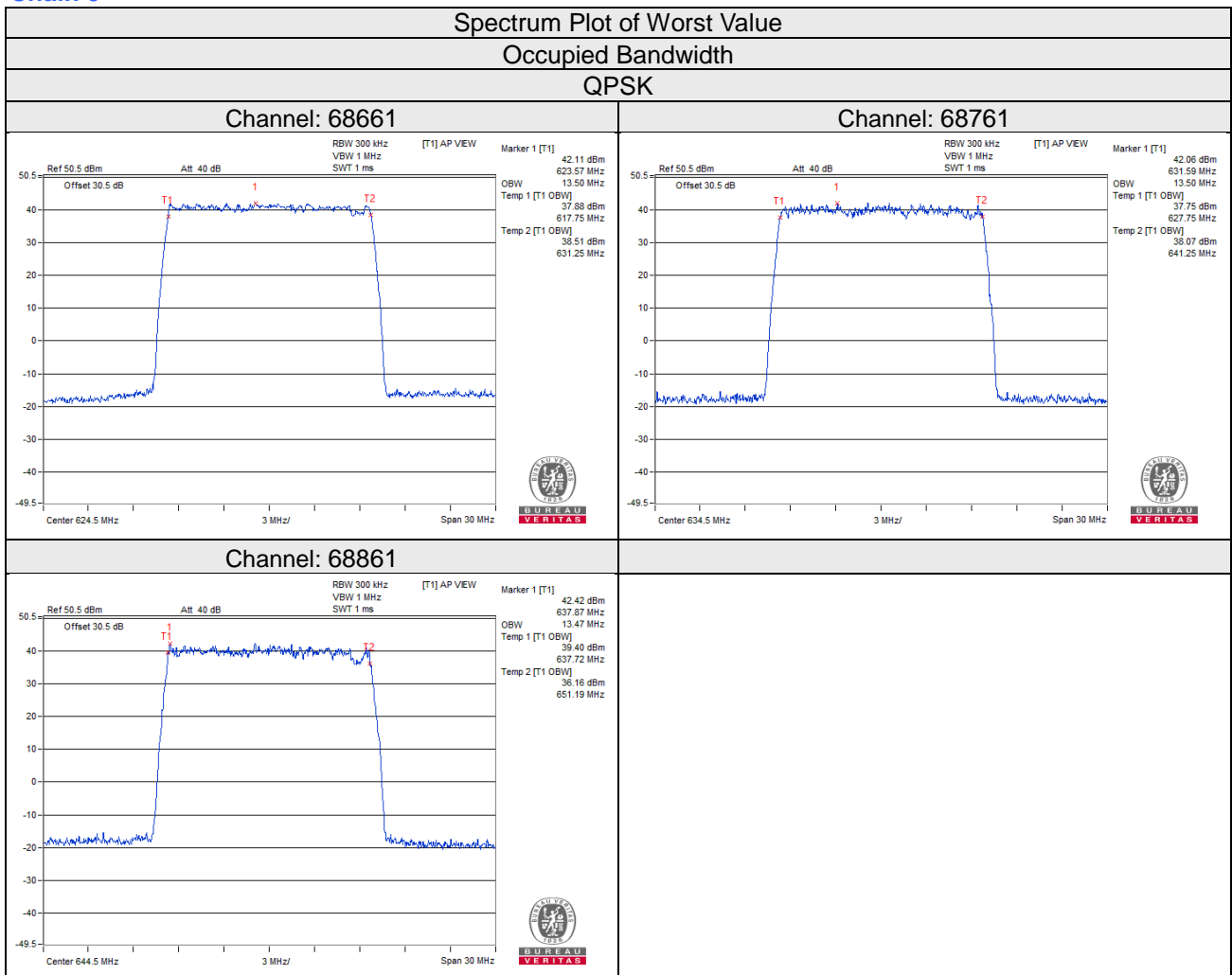
Channel: 68886



15MHz

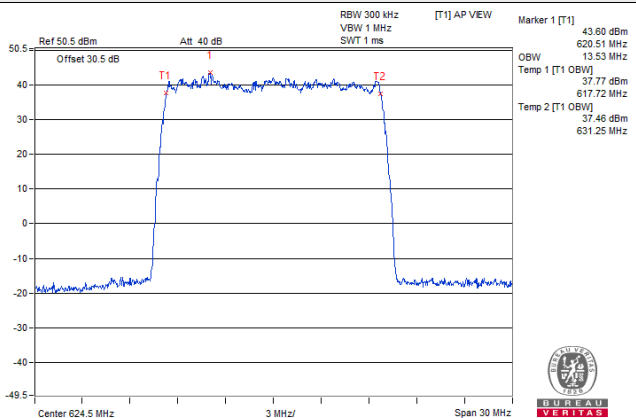
| Channel Number | Freq. (MHz) | OCP 99 BAND WIDTH (MHz) | | | | | | | |
|----------------|-------------|-------------------------|-------|-------|--------|--------|-------|-------|--------|
| | | Chain0 | | | | Chain1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68661 | 624.5 | 13.50 | 13.53 | 13.47 | 13.50 | 13.50 | 13.53 | 13.47 | 13.50 |
| 68761 | 634.5 | 13.50 | 13.50 | 13.47 | 13.50 | 13.53 | 13.53 | 13.47 | 13.47 |
| 68861 | 644.5 | 13.47 | 13.50 | 13.50 | 13.47 | 13.50 | 13.53 | 13.50 | 13.47 |

Chain 0

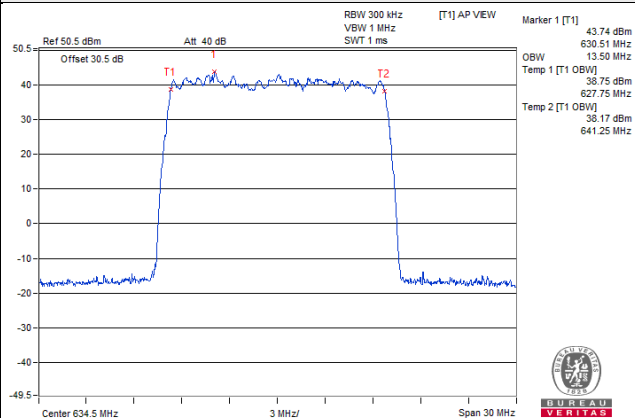


16QAM

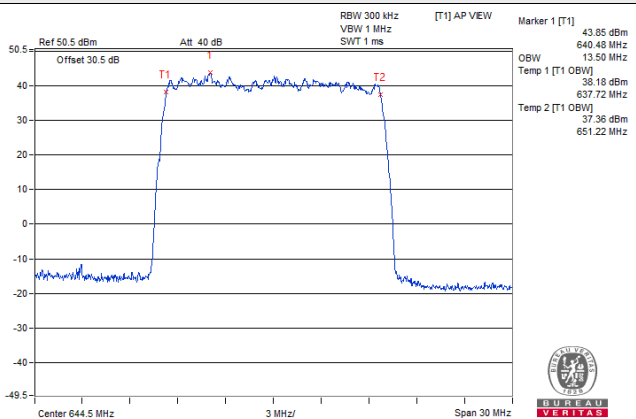
Channel: 68661



Channel: 68761

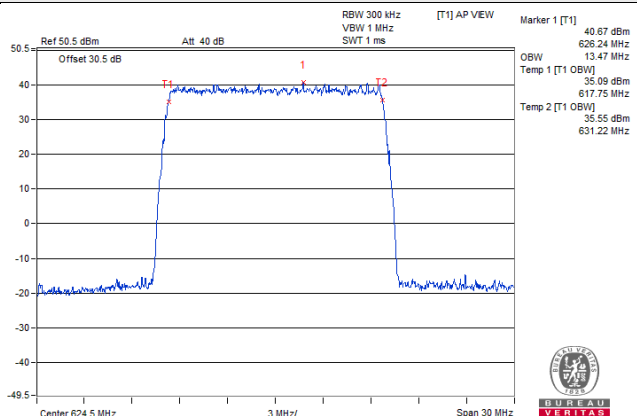


Channel: 68861

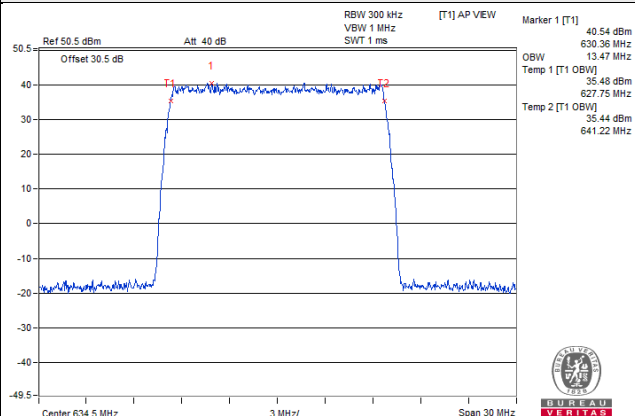


64QAM

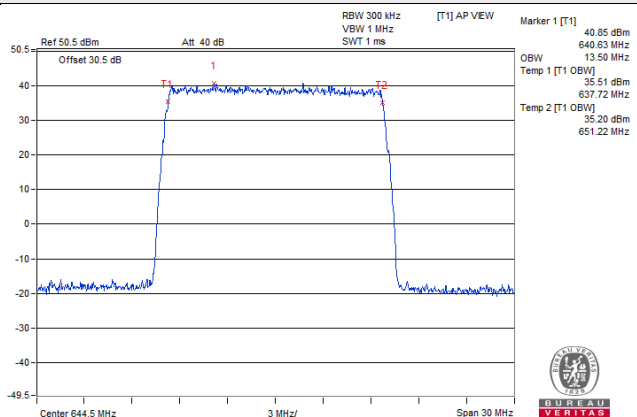
Channel: 68661



Channel: 68761

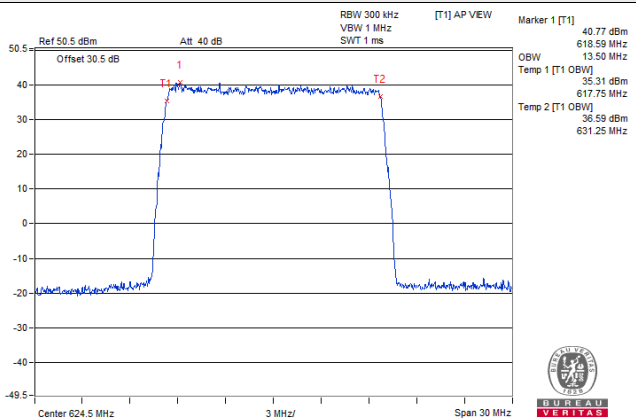


Channel: 68861

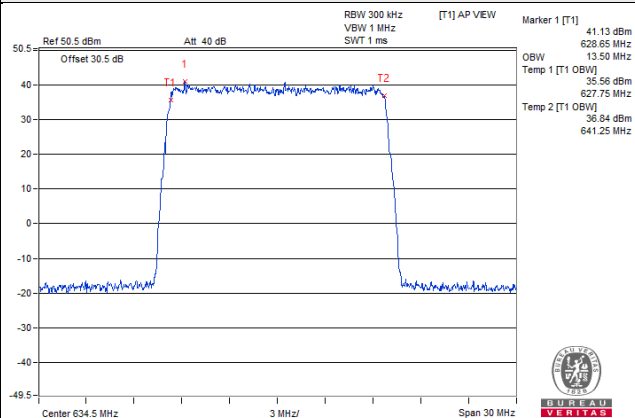


256QAM

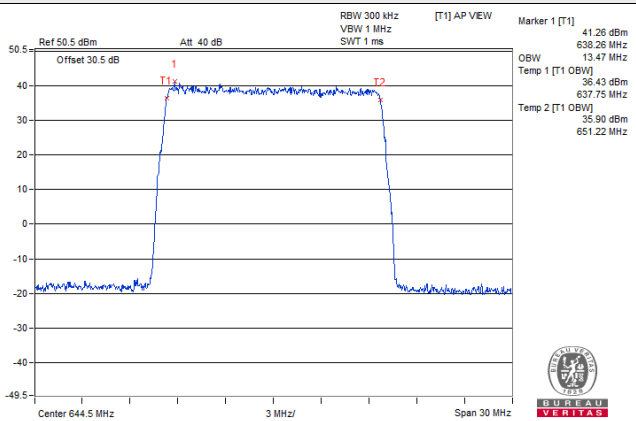
Channel: 68661



Channel: 68761



Channel: 68861



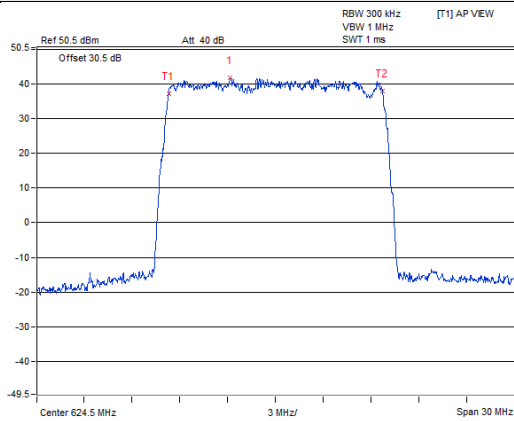
Chain 1

Spectrum Plot of Worst Value

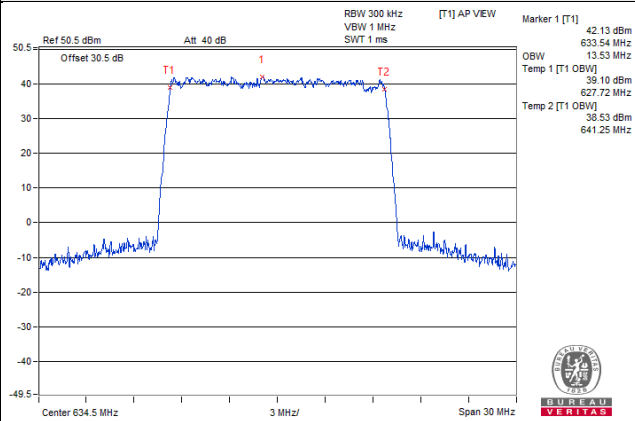
Occupied Bandwidth

QPSK

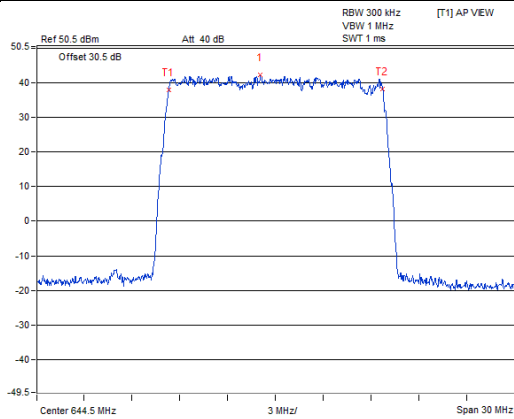
Channel: 68661



Channel: 68761

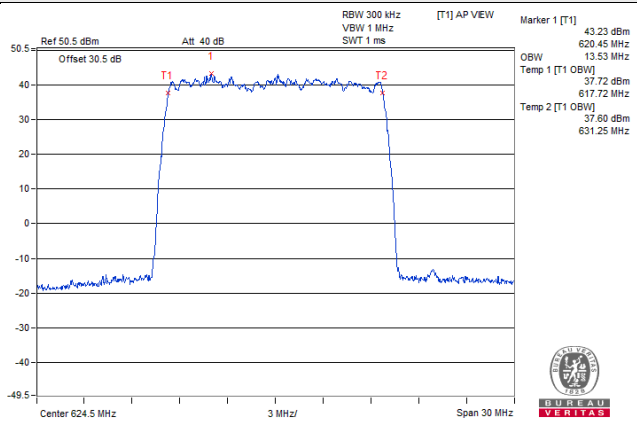


Channel: 68861

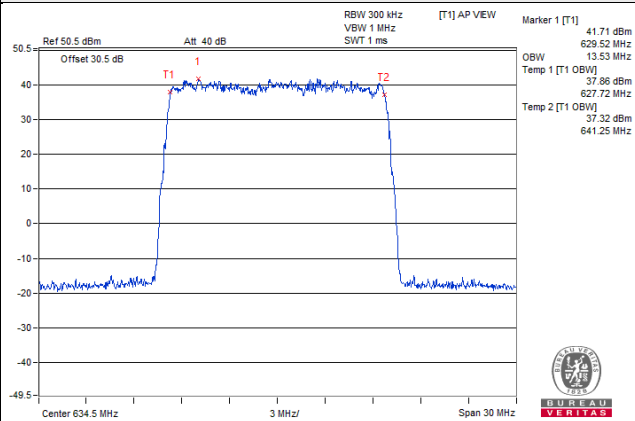


16QAM

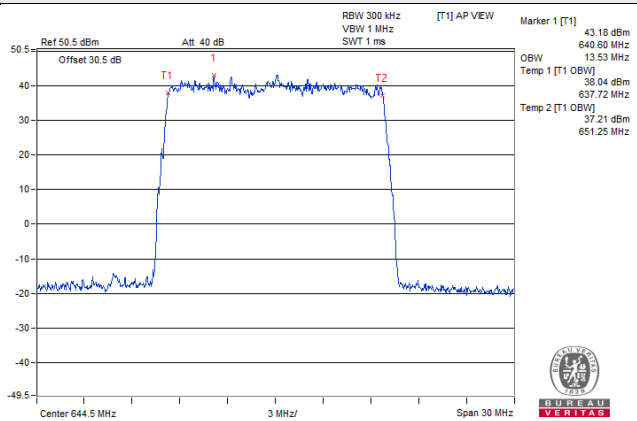
Channel: 68661



Channel: 68761

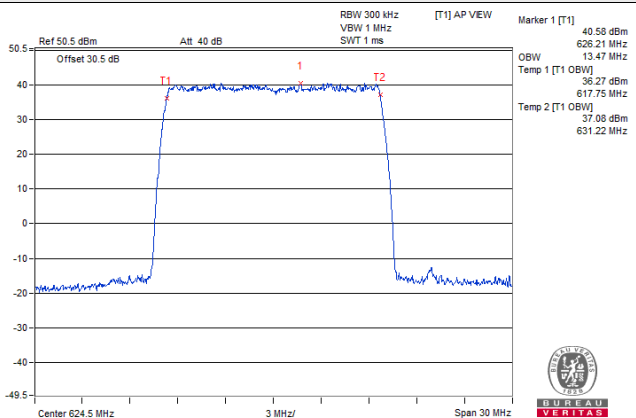


Channel: 68861

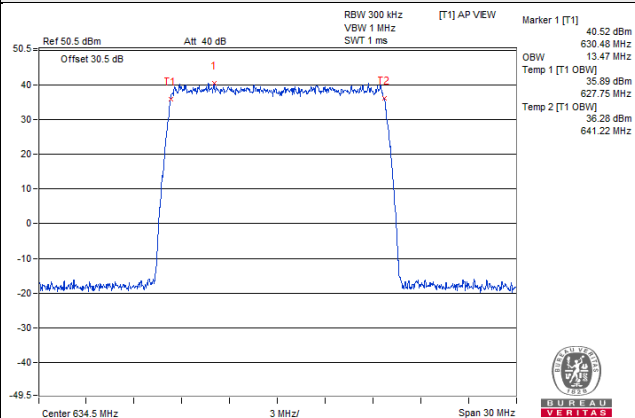


64QAM

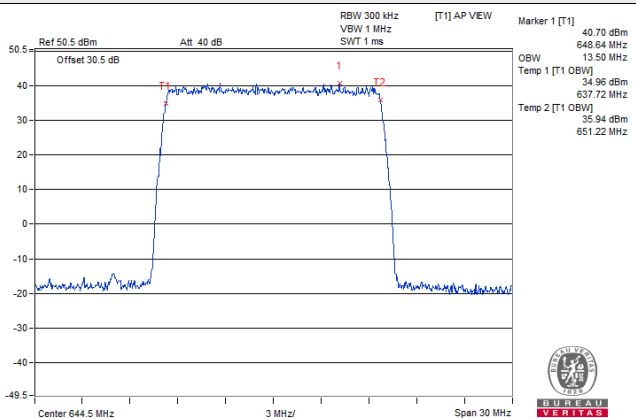
Channel: 68661



Channel: 68761

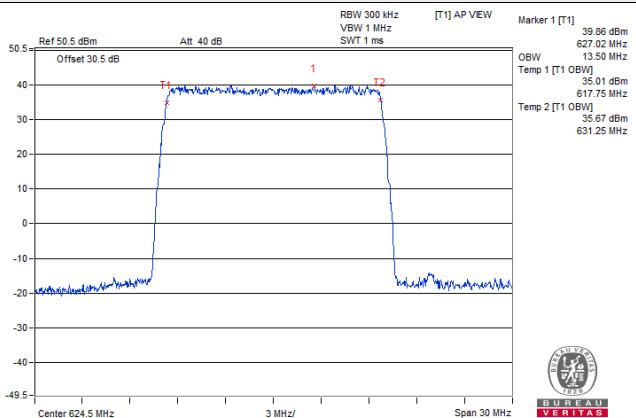


Channel: 68861

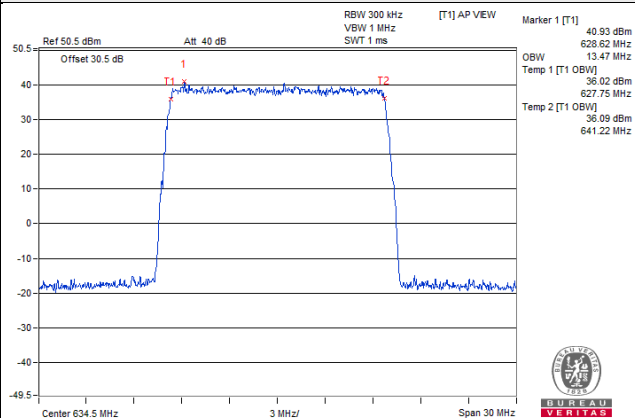


256QAM

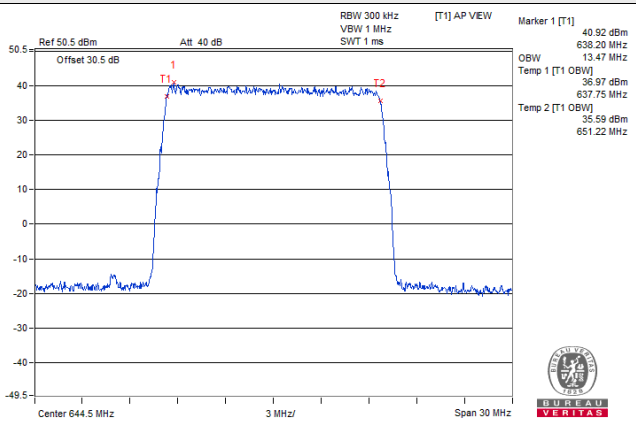
Channel: 68661



Channel: 68761



Channel: 68861



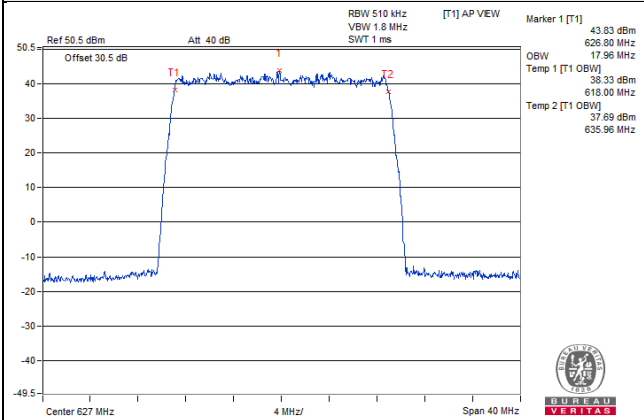
20MHz

| Channel Number | Freq. (MHz) | OCP 99 BAND WIDTH (MHz) | | | | | | | |
|----------------|-------------|-------------------------|-------|-------|--------|--------|-------|-------|--------|
| | | Chain0 | | | | Chain1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68686 | 627 | 17.96 | 18.08 | 18.04 | 18.04 | 18.00 | 18.08 | 18.00 | 18.04 |
| 68761 | 634.5 | 18.00 | 18.12 | 18.04 | 18.00 | 18.00 | 18.12 | 18.04 | 18.00 |
| 68836 | 642 | 18.00 | 18.08 | 17.96 | 18.00 | 18.00 | 18.08 | 18.00 | 18.04 |

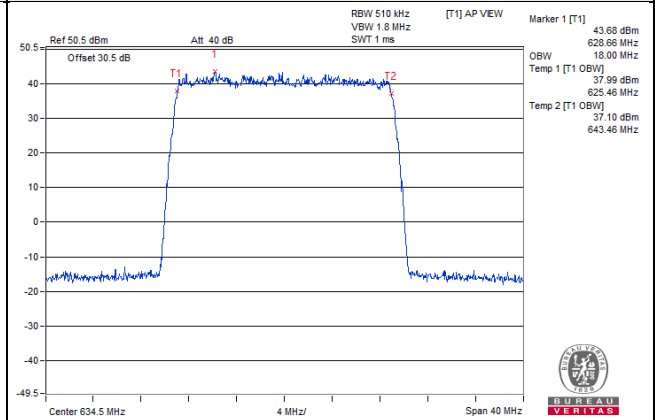
Chain 0

Spectrum Plot of Worst Value Occupied Bandwidth QPSK

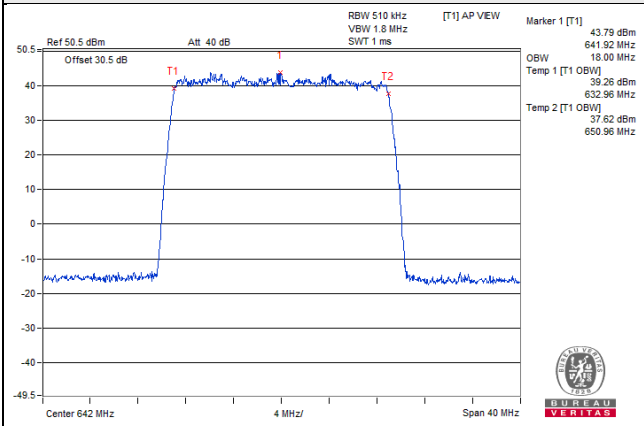
Channel: 68686



Channel: 68761

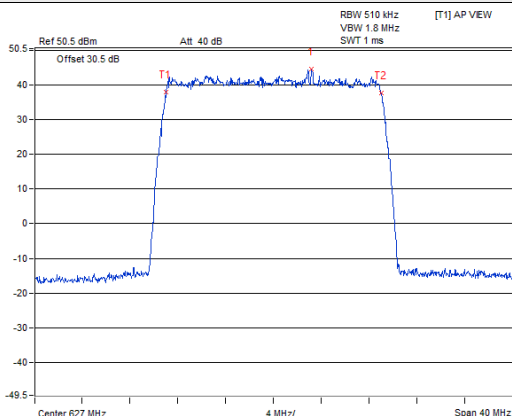


Channel: 68836



16QAM

Channel: 68686

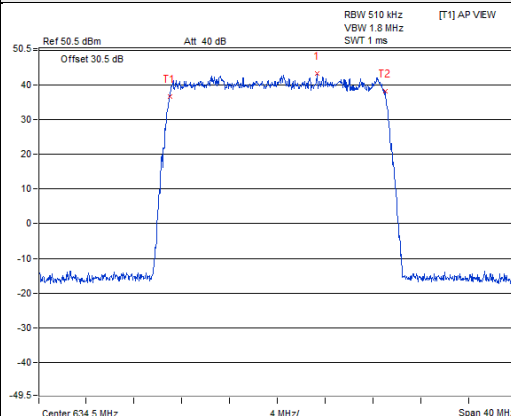


Marker 1 [T1] 44.57 dBm
630.16 MHz
18.08 MHz

OBW 37.88 dBm
617.96 MHz

Temp 2 [T1] OBW 37.75 dBm
636.04 MHz

Channel: 68761

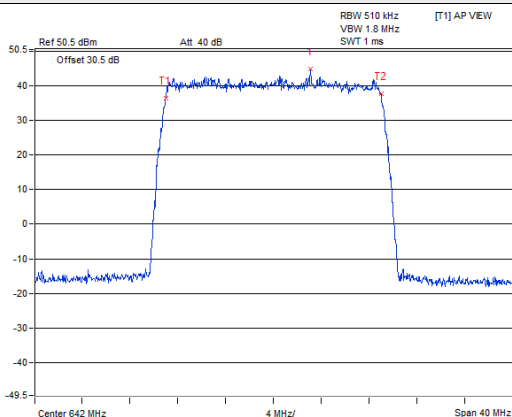


Marker 1 [T1] 43.27 dBm
637.78 MHz
18.12 MHz

OBW 36.80 dBm
625.42 MHz

Temp 2 [T1] OBW 38.20 dBm
643.54 MHz

Channel: 68836



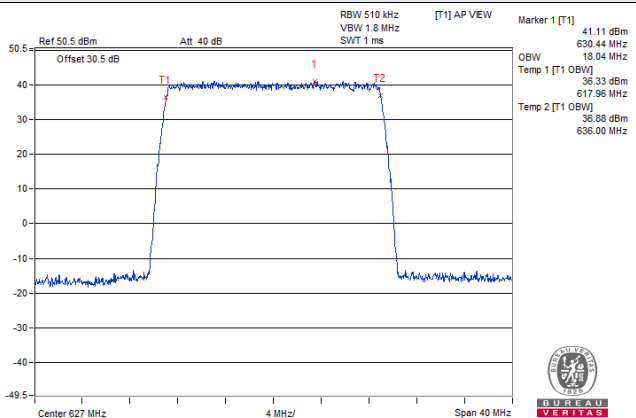
Marker 1 [T1] 44.94 dBm
645.12 MHz
18.08 MHz

OBW 36.42 dBm
632.96 MHz

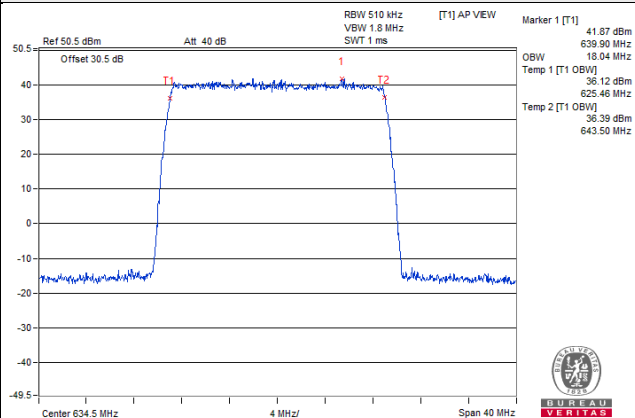
Temp 2 [T1] OBW 37.81 dBm
651.04 MHz

64QAM

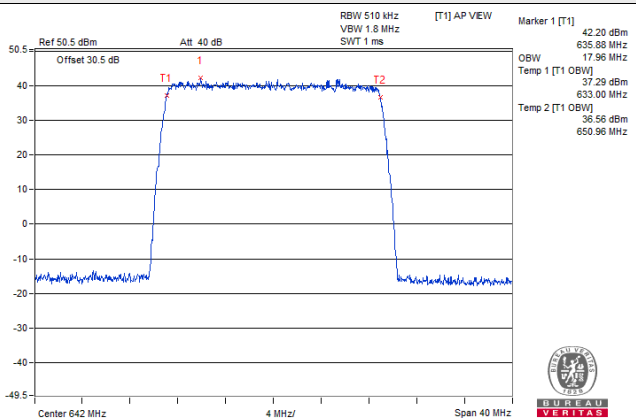
Channel: 68686



Channel: 68761

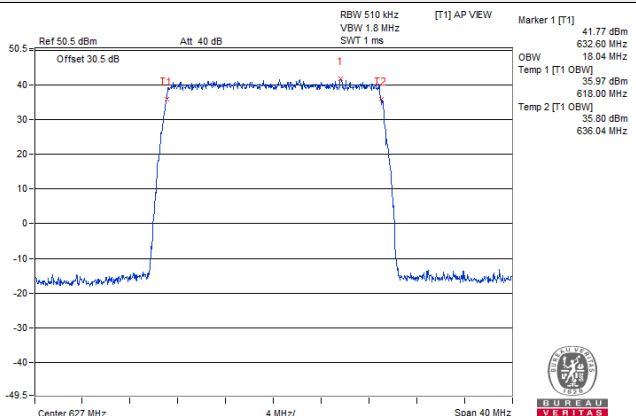


Channel: 68836

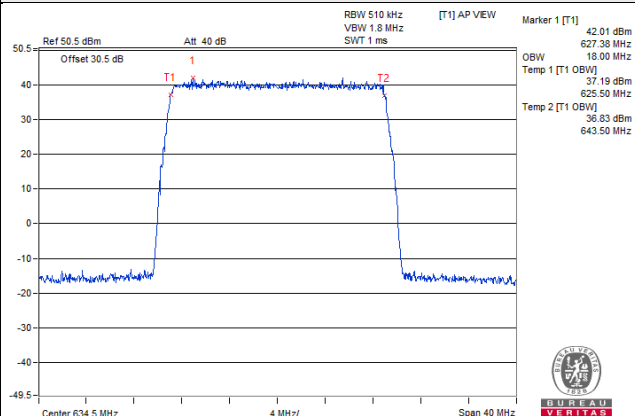


256QAM

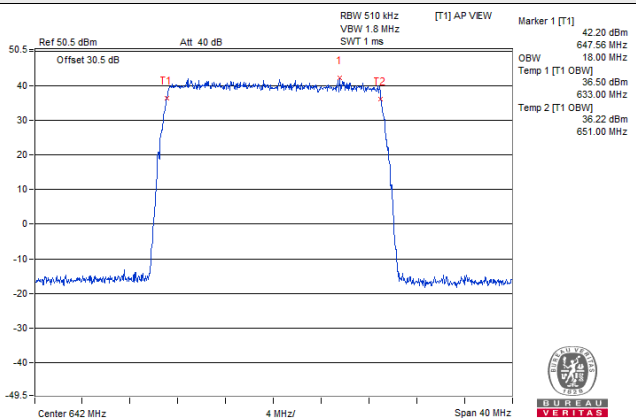
Channel: 68686



Channel: 68761



Channel: 68836



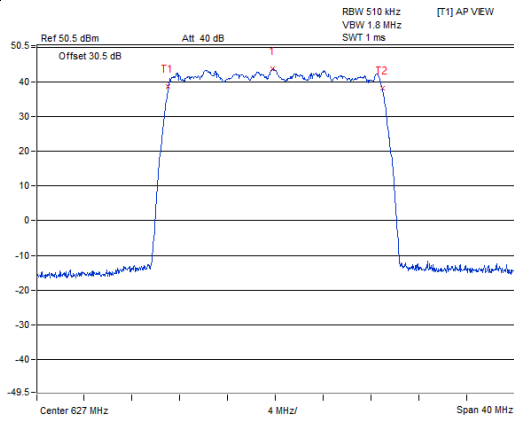
Chain 1

Spectrum Plot of Worst Value

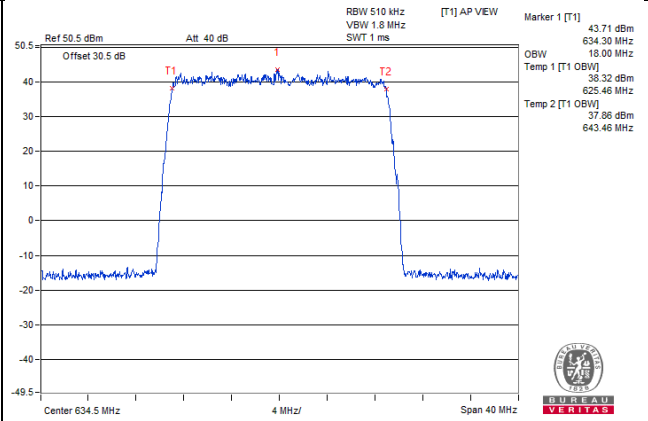
Occupied Bandwidth

QPSK

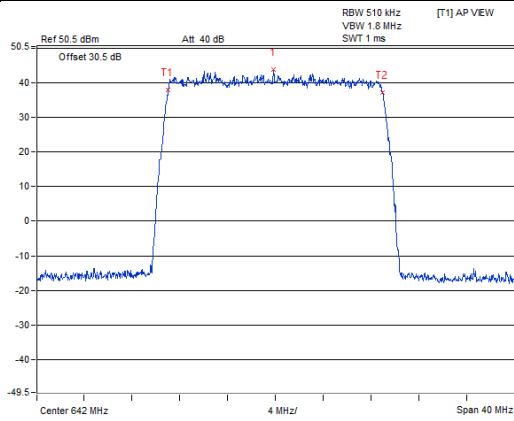
Channel: 68686



Channel: 68761

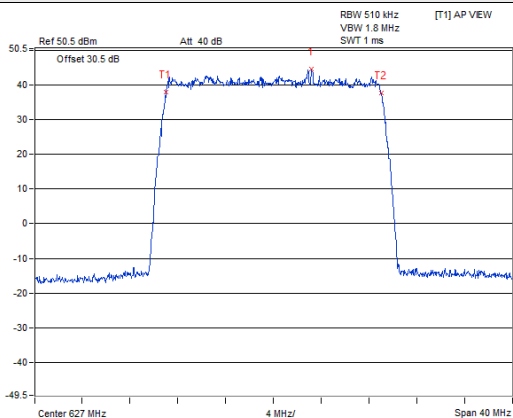


Channel: 68836



16QAM

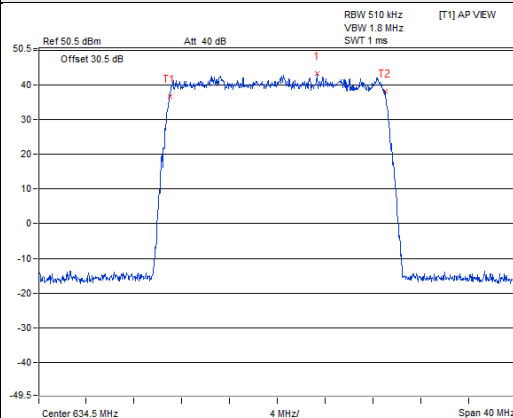
Channel: 68686



Marker 1 [T1] 44.57 dBm
630.16 MHz
18.08 MHz
Temp 1 [T1] [OBW] 37.88 dBm
617.96 MHz
Temp 2 [T1] [OBW] 37.75 dBm
636.04 MHz



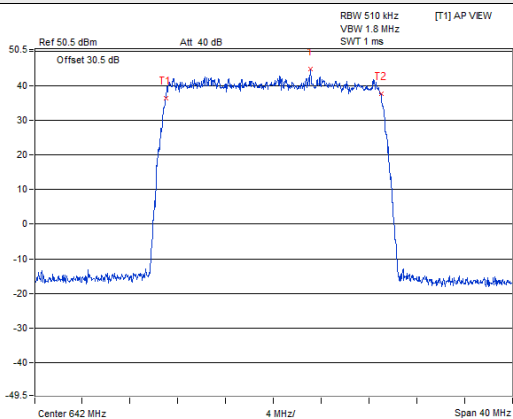
Channel: 68761



Marker 1 [T1] 43.27 dBm
637.78 MHz
18.12 MHz
Temp 1 [T1] [OBW] 36.80 dBm
625.42 MHz
Temp 2 [T1] [OBW] 38.20 dBm
643.54 MHz



Channel: 68836

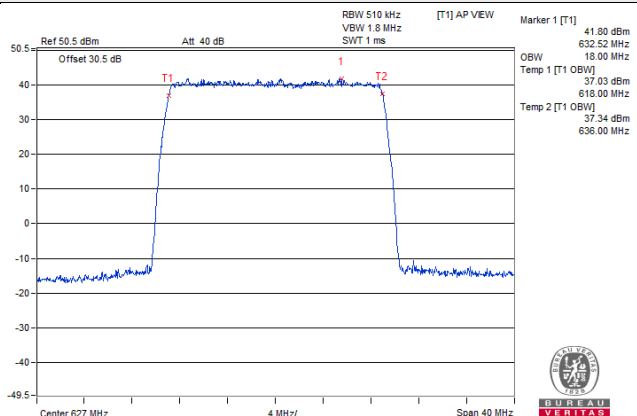


Marker 1 [T1] 44.94 dBm
645.12 MHz
18.08 MHz
Temp 1 [T1] [OBW] 36.42 dBm
632.96 MHz
Temp 2 [T1] [OBW] 37.81 dBm
651.04 MHz

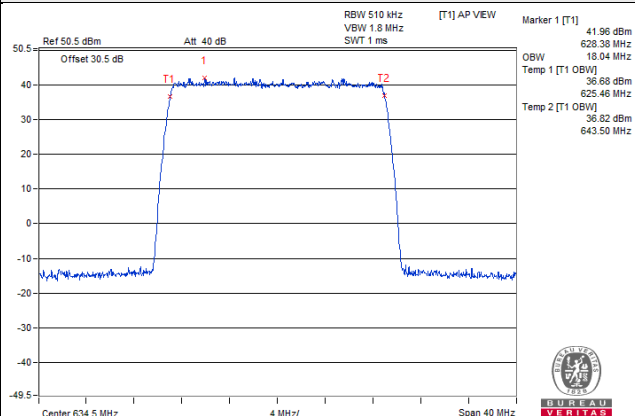


64QAM

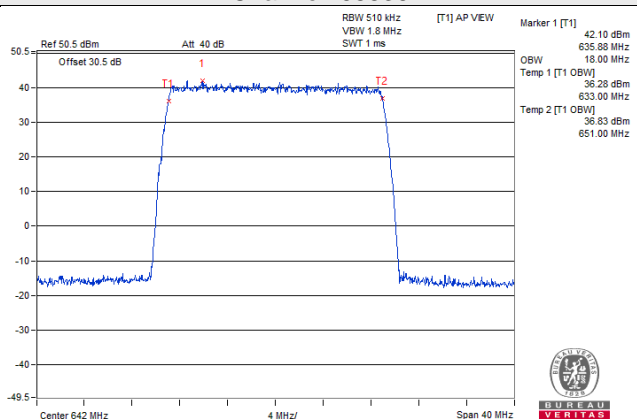
Channel: 68686



Channel: 68761

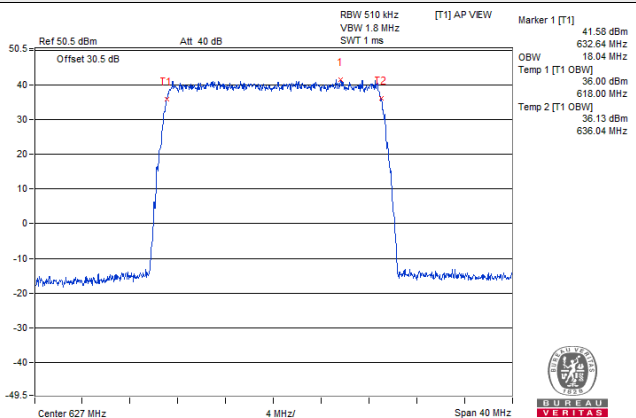


Channel: 68836

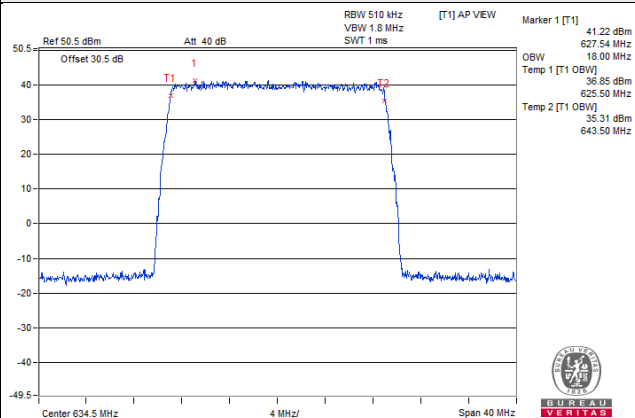


256QAM

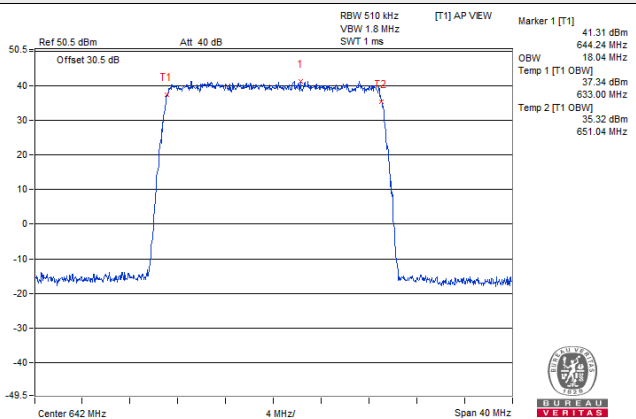
Channel: 68686



Channel: 68761



Channel: 68836

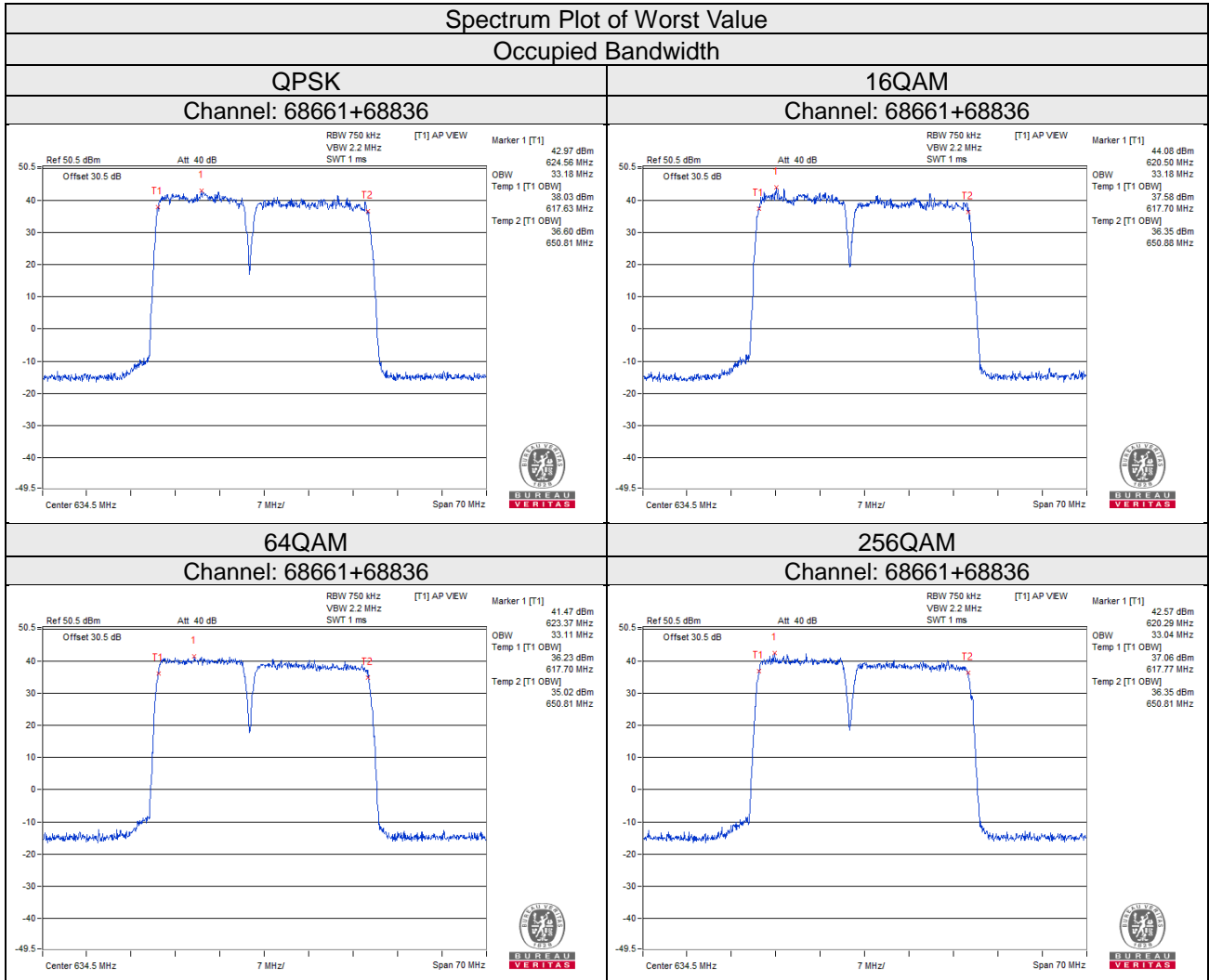


CA Contiguous

15MHz+20MHz

| Channel Number | Freq. (MHz) | OCP 99 BAND WIDTH (MHz) | | | | | | | |
|----------------|-------------|-------------------------|-------|-------|--------|--------|-------|-------|--------|
| | | Chain0 | | | | Chain1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68661+68836 | 624.5+642 | 33.18 | 33.18 | 33.11 | 33.04 | 33.11 | 33.18 | 33.11 | 33.25 |

Chain 0

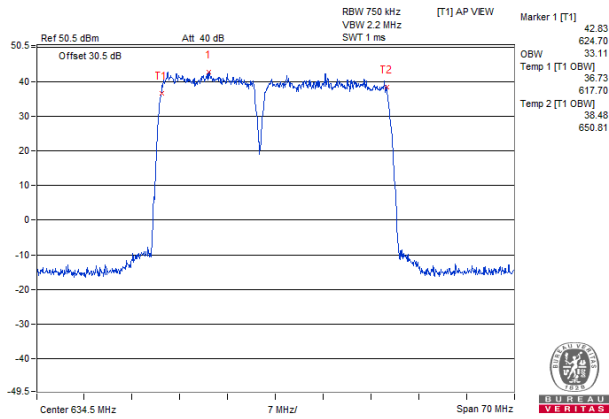


Chain 1

Spectrum Plot of Worst Value
Occupied Bandwidth

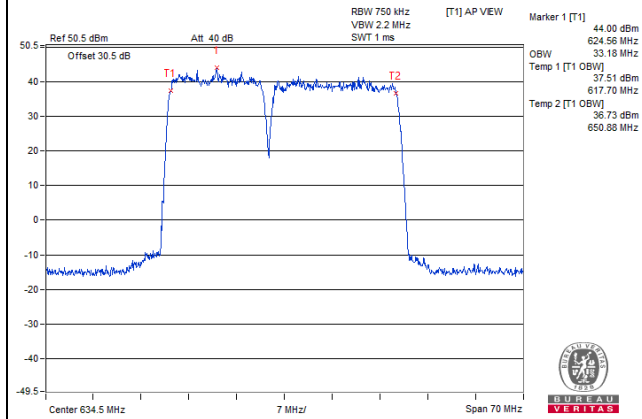
QPSK

Channel: 68661+68836



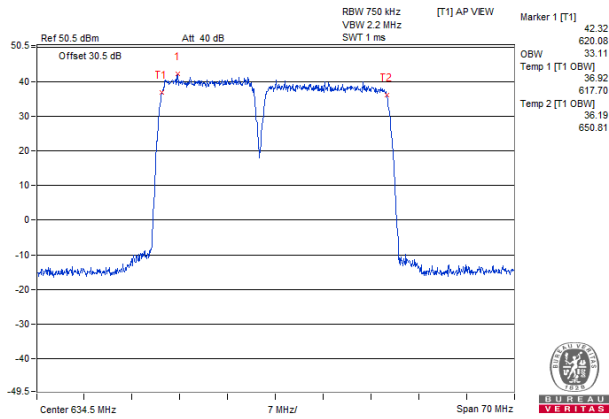
16QAM

Channel: 68661+68836



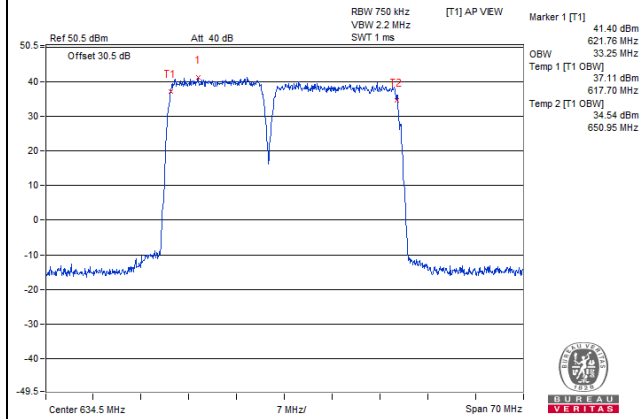
64QAM

Channel: 68661+68836



256QAM

Channel: 68661+68836

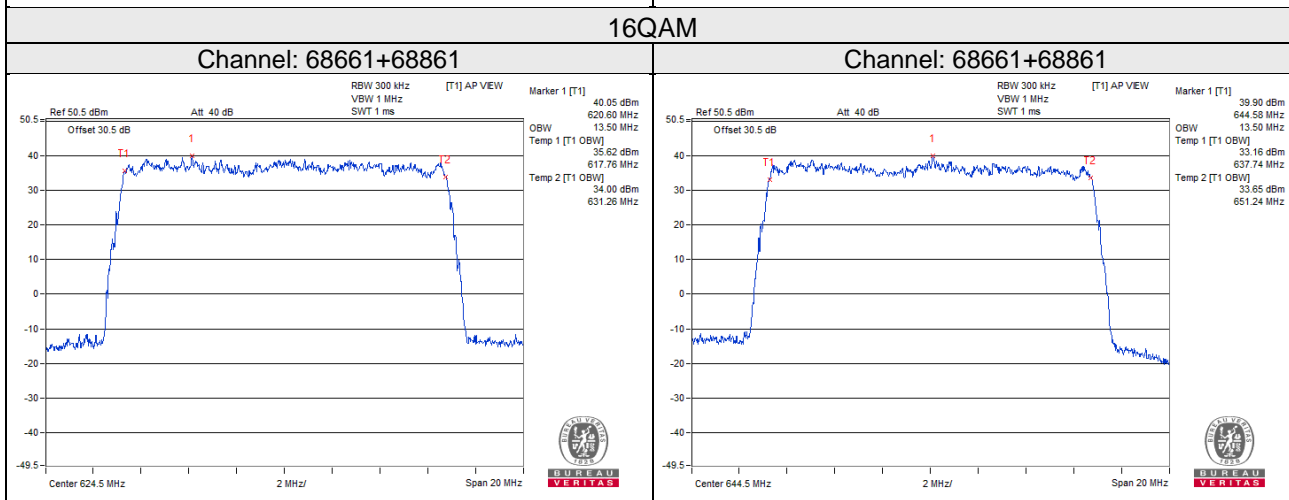
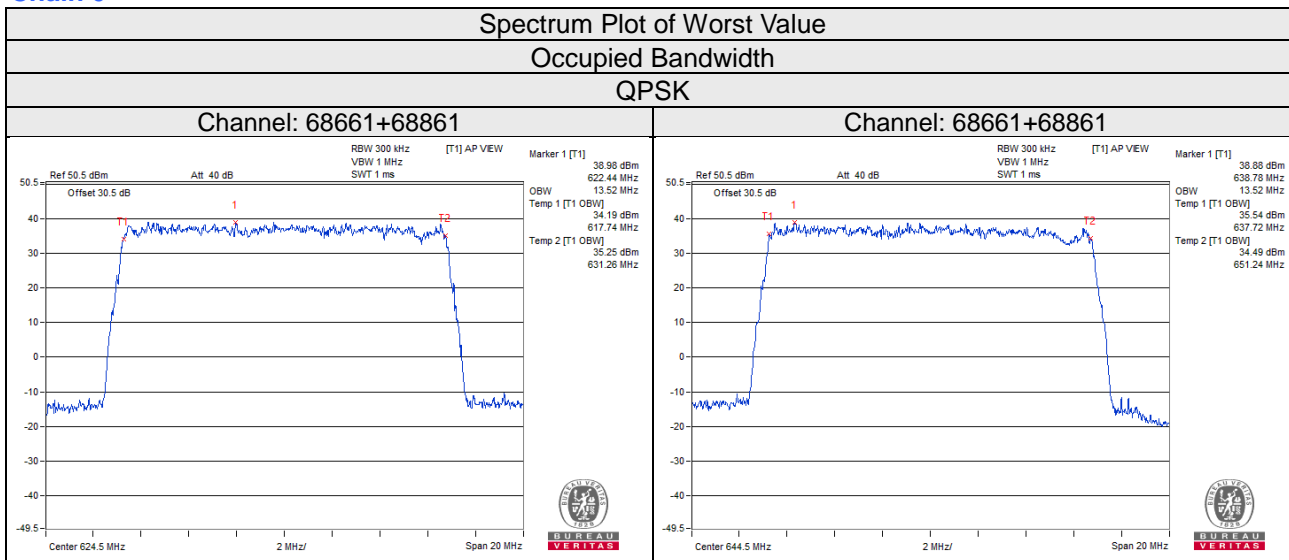


CA-NC Non-Contiguous

15MHz+15MHz

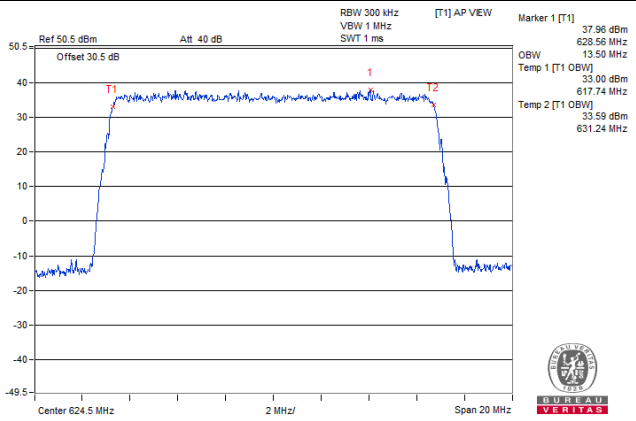
| Channel Number | Freq. (MHz) | OCP 99 BAND WIDTH (MHz) | | | | | | | |
|----------------|-------------|-------------------------|-------|-------|--------|-------|-------|-------|--------|
| | | Chain0 | | | | | | | |
| | | CC0 | | | | CC1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68661+68861 | 624.5+644.5 | 13.52 | 13.50 | 13.50 | 13.48 | 13.52 | 13.50 | 13.46 | 13.48 |
| Channel Number | Freq. (MHz) | CC0+CC1 Total | | | | | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68661+68861 | 624.5+644.5 | 27.04 | 27.00 | 26.96 | 26.96 | | | | |

Chain 0

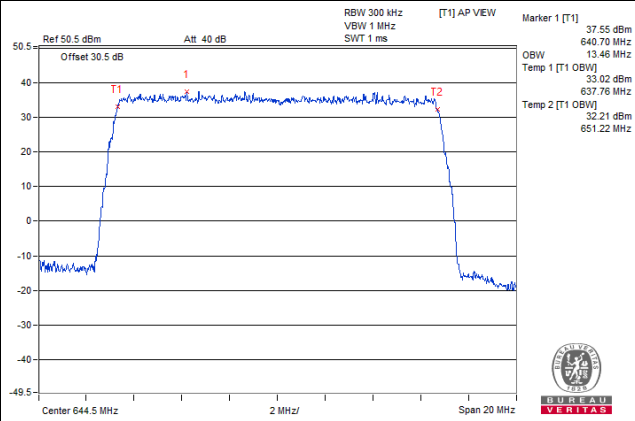


64QAM

Channel: 68661+68861

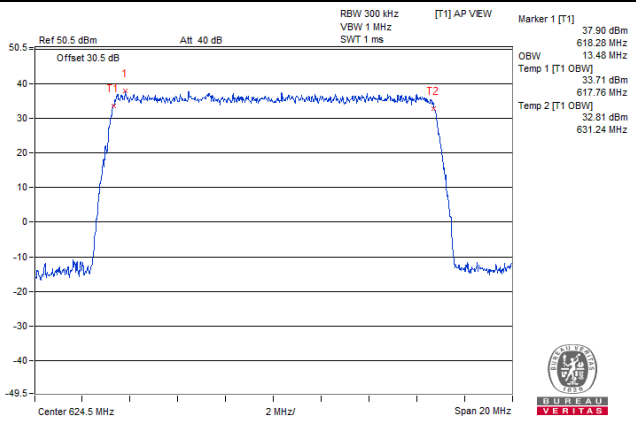


Channel: 68661+68861

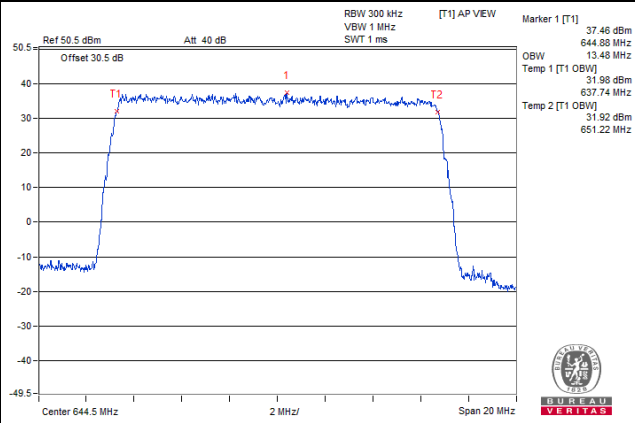


256QAM

Channel: 68661+68861



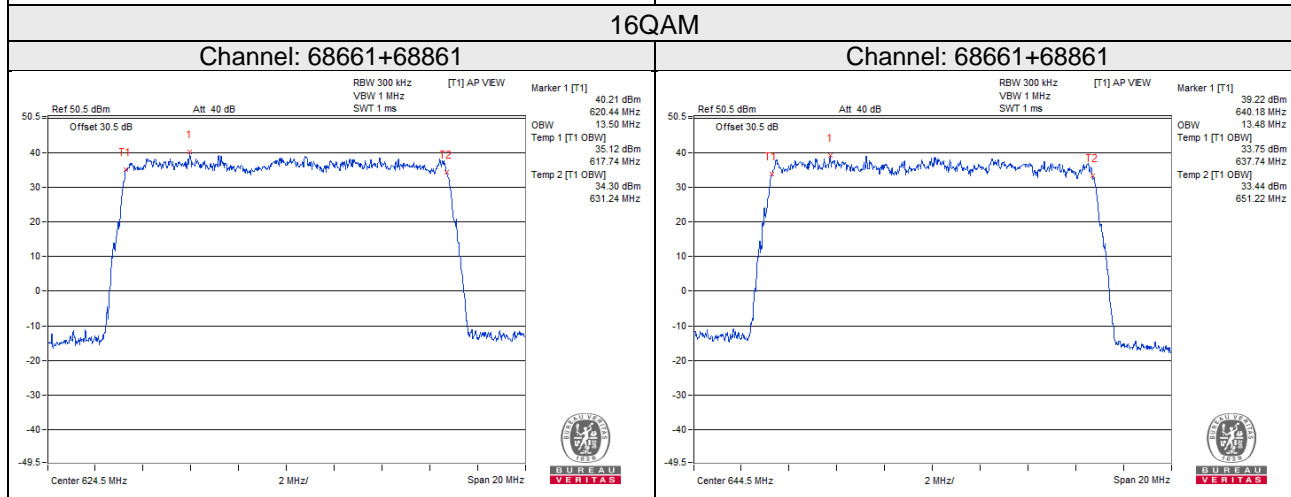
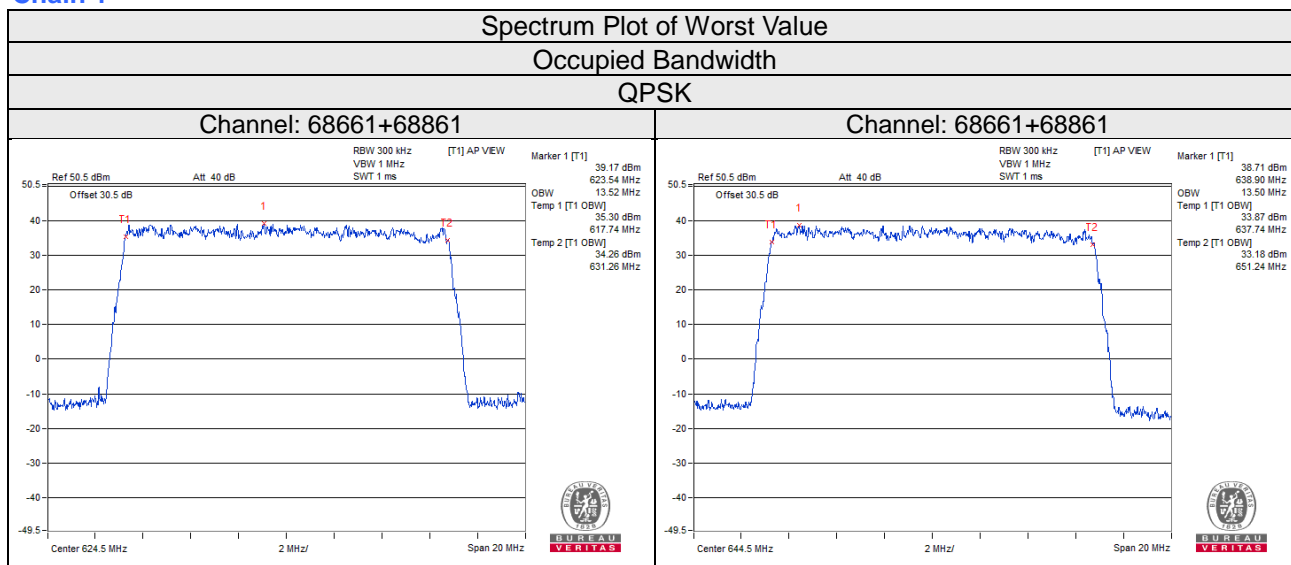
Channel: 68661+68861



15MHz+15MHz

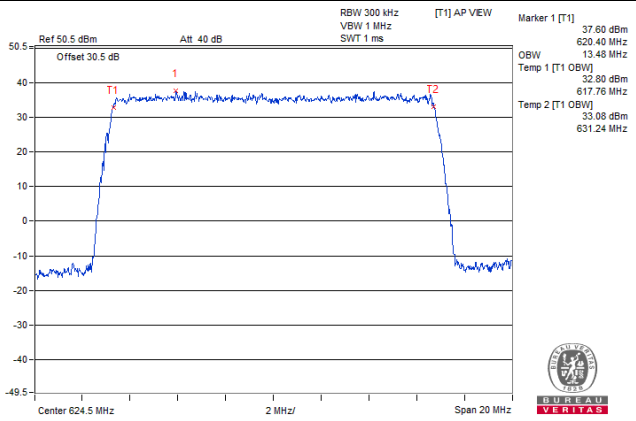
| Channel Number | Freq. (MHz) | OCP 99 BAND WIDTH (MHz) | | | | | | | |
|----------------|-------------|-------------------------|-------|-------|--------|-------|-------|-------|--------|
| | | Chain1 | | | | | | | |
| | | CC0 | | | | CC1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68661+68861 | 624.5+644.5 | 13.52 | 13.50 | 13.48 | 13.48 | 13.50 | 13.48 | 13.46 | 13.48 |
| Channel Number | Freq. (MHz) | CC0+CC1 Total | | | | | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | | | | |
| 68661+68861 | 624.5+644.5 | 27.02 | 26.98 | 26.94 | 26.96 | | | | |

Chain 1

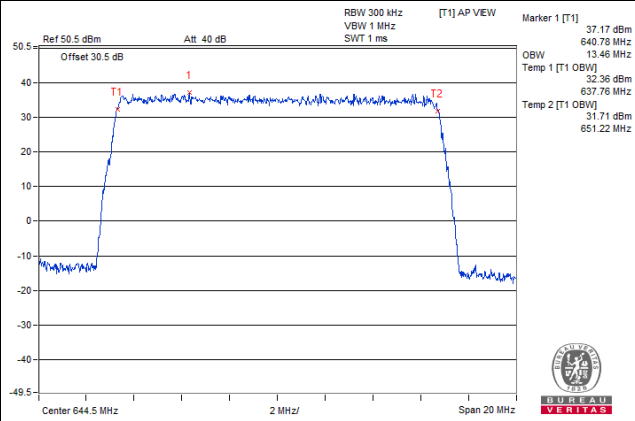


64QAM

Channel: 68661+68861

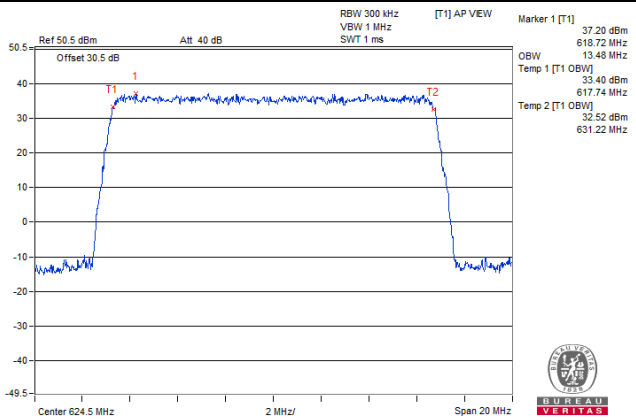


Channel: 68661+68861

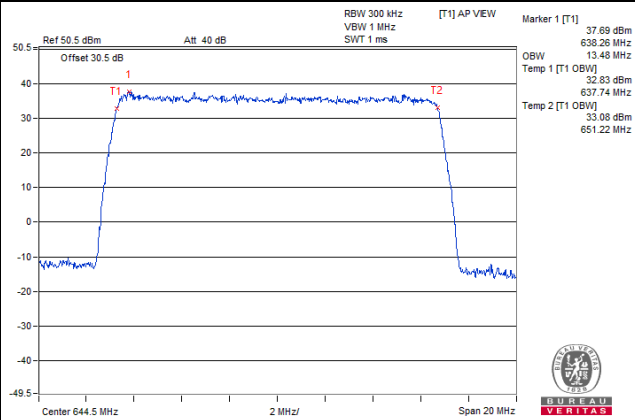


256QAM

Channel: 68661+68861



Channel: 68661+68861

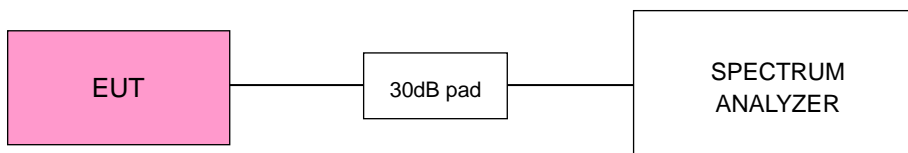


4.5 Channel Edge Measurement

4.5.1 Limits of Band Edge Measurement

According to FCC 27.53(g) for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

4.5.2 Test Setup

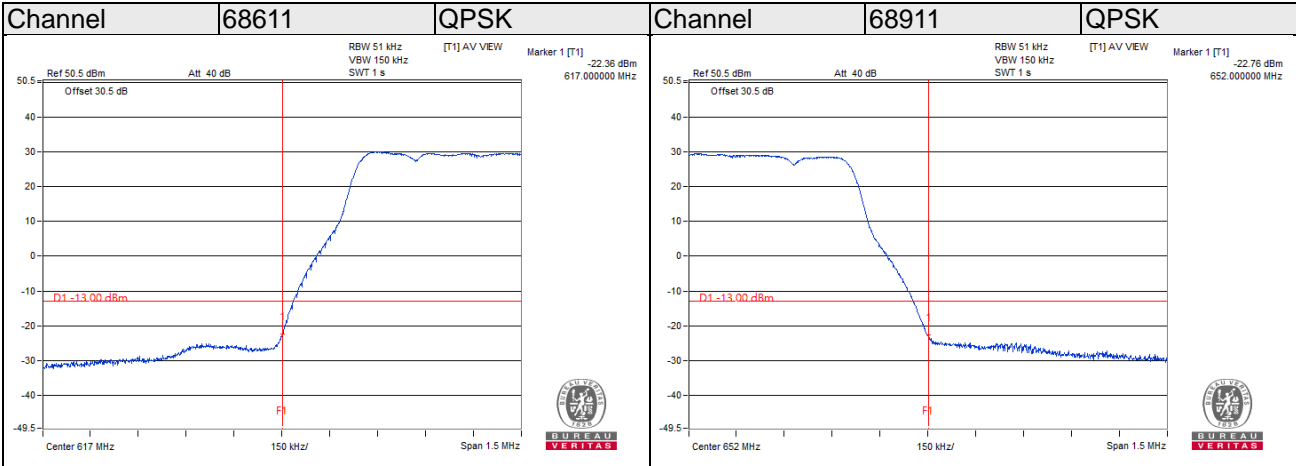


4.5.3 Test Procedures

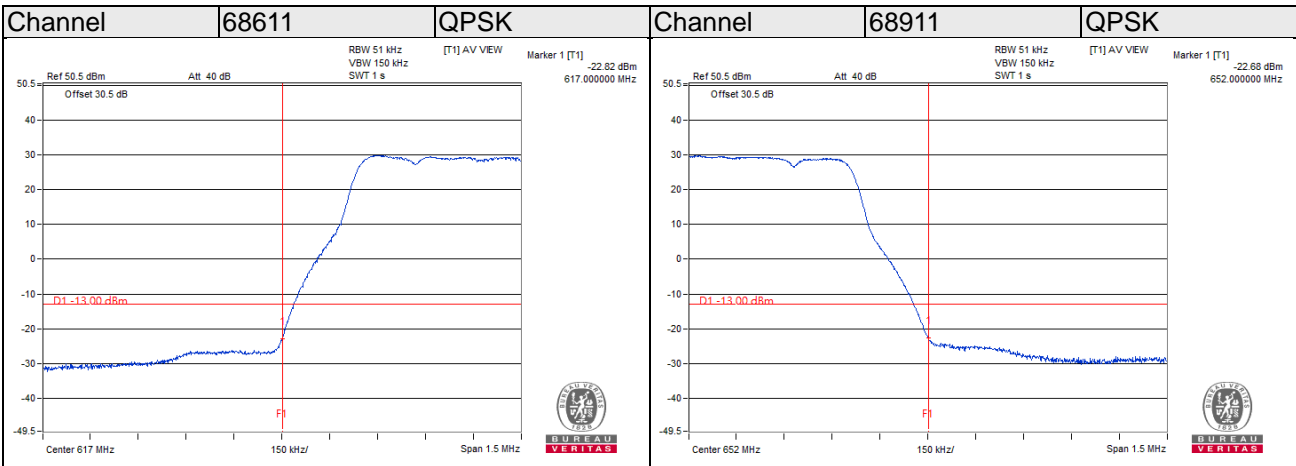
- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and s RB of the spectrum is $>1\%$ EMISSION BANDWIDTH and VB of the spectrum is $\geq 3*RB$, Detector=RMS.
- Record the max trace plot into the test report.

4.5.4 Test Results Single Carrier

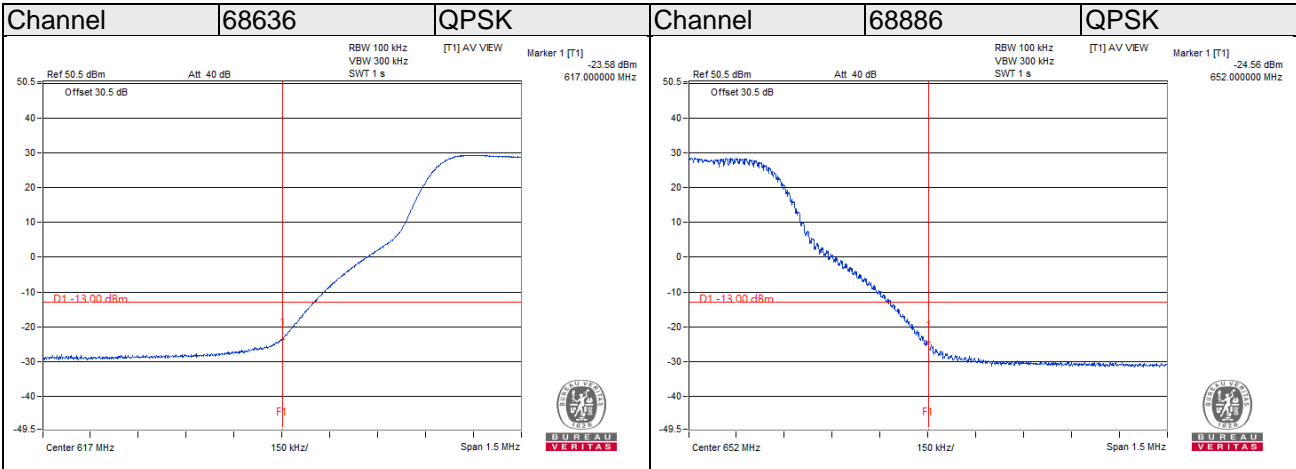
5MHz Chain 0



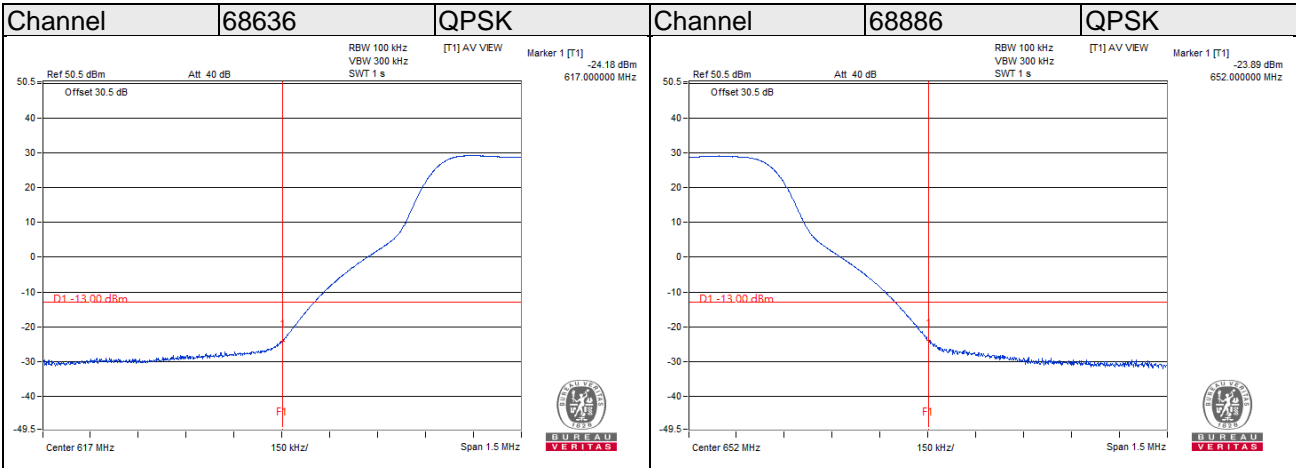
Chain 1



**10MHz
Chain 0**

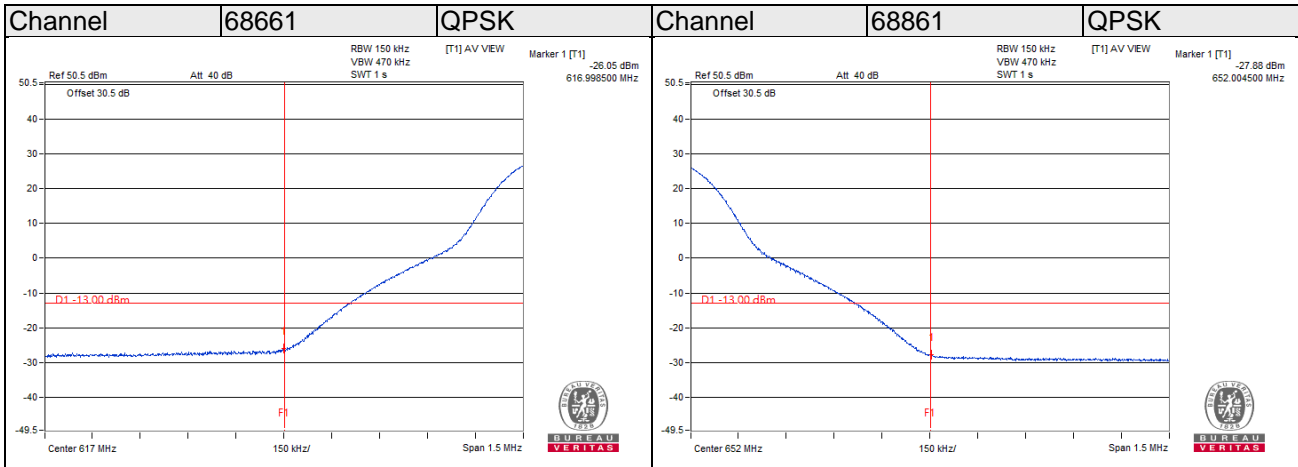


Chain 1

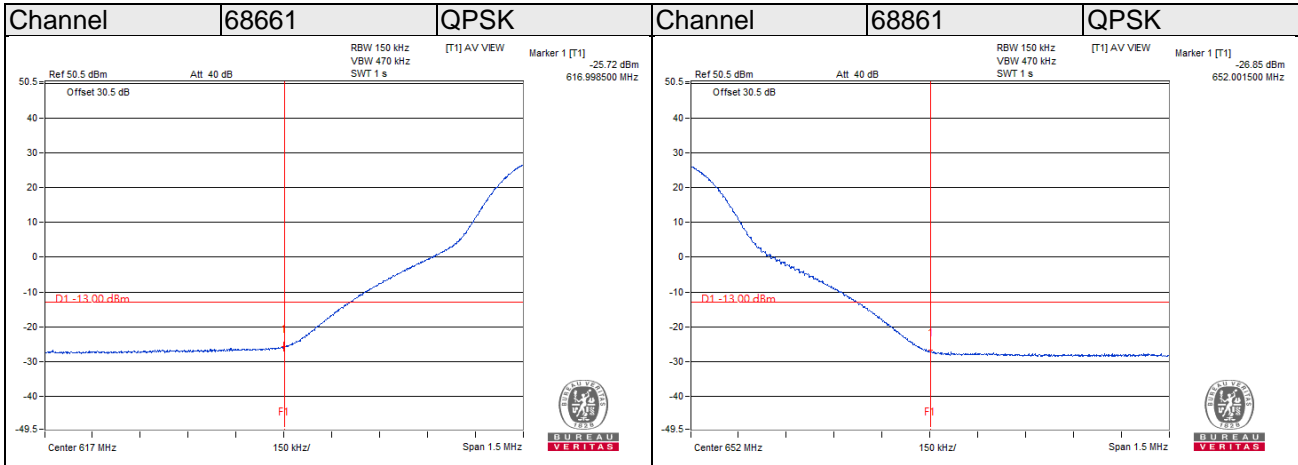


15MHz

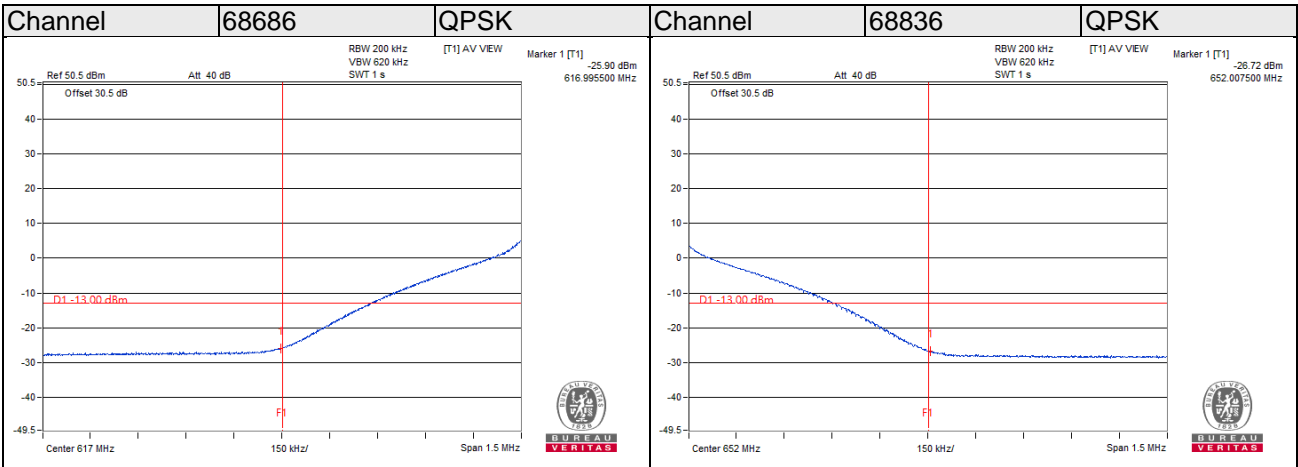
Chain 0



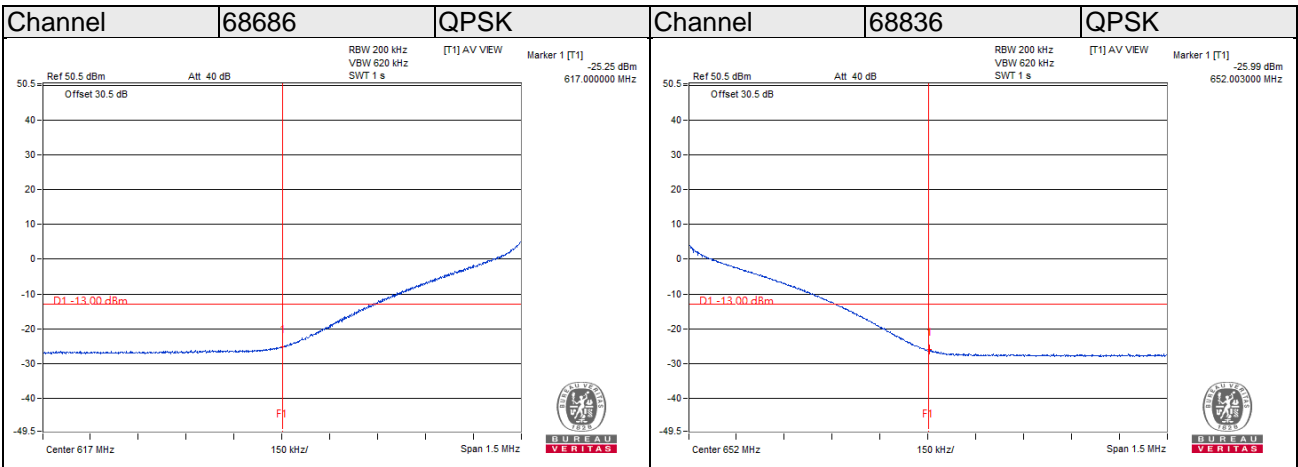
Chain 1



20MHz Chain 0

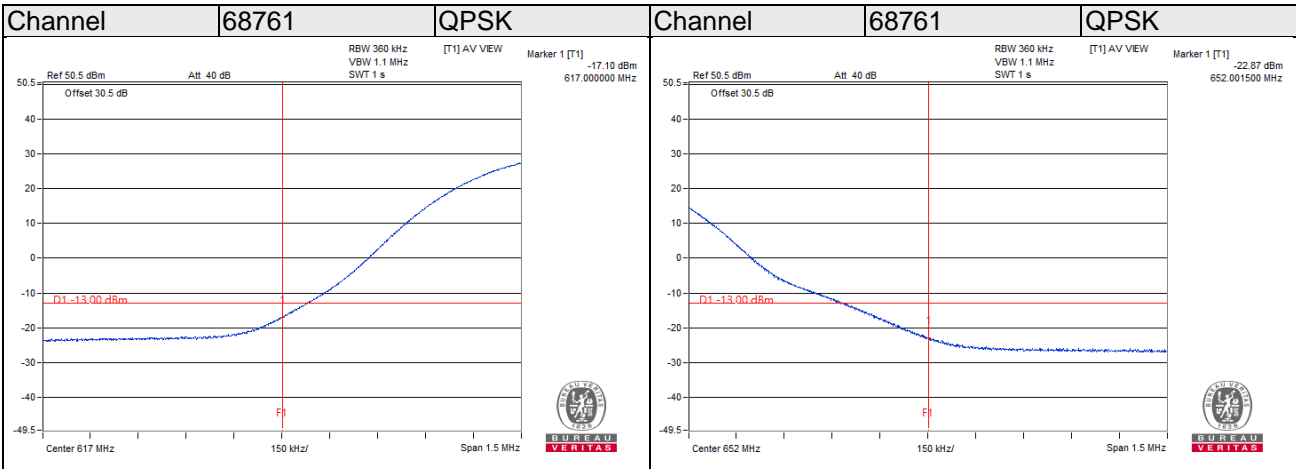


Chain 1

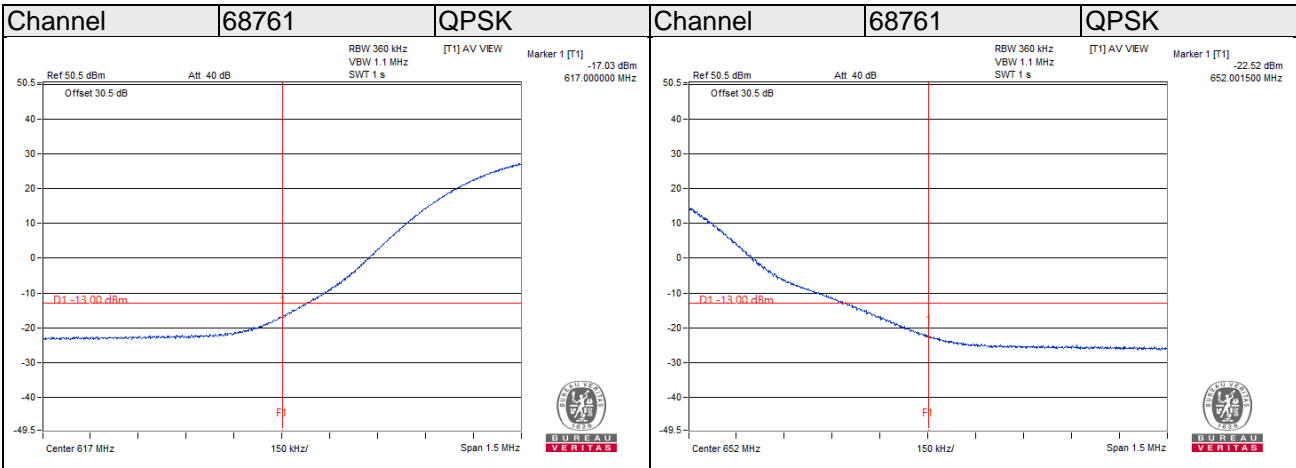


CA Contiguous

15MHz+20MHz Chain 0

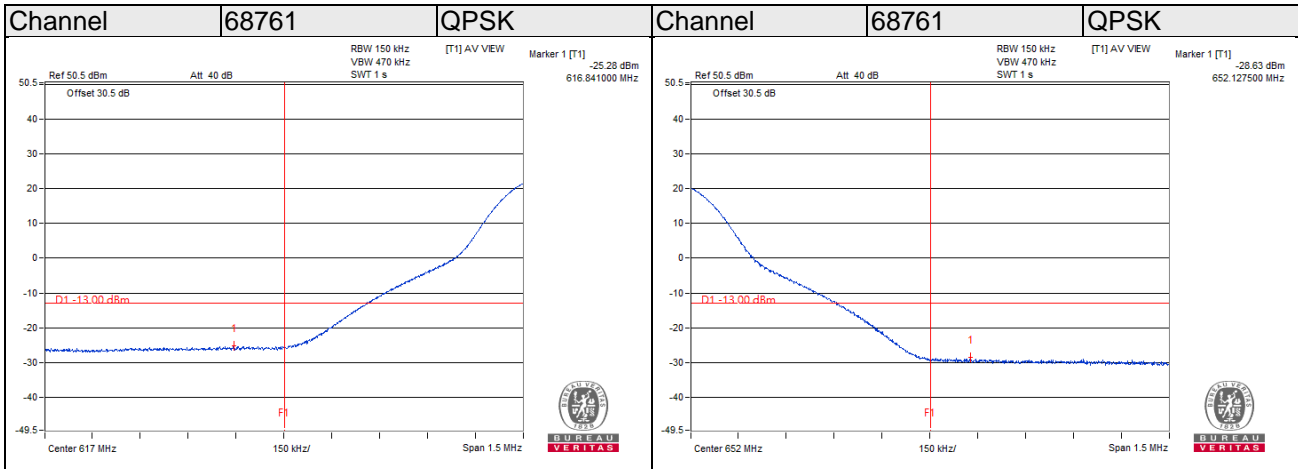


Chain 1

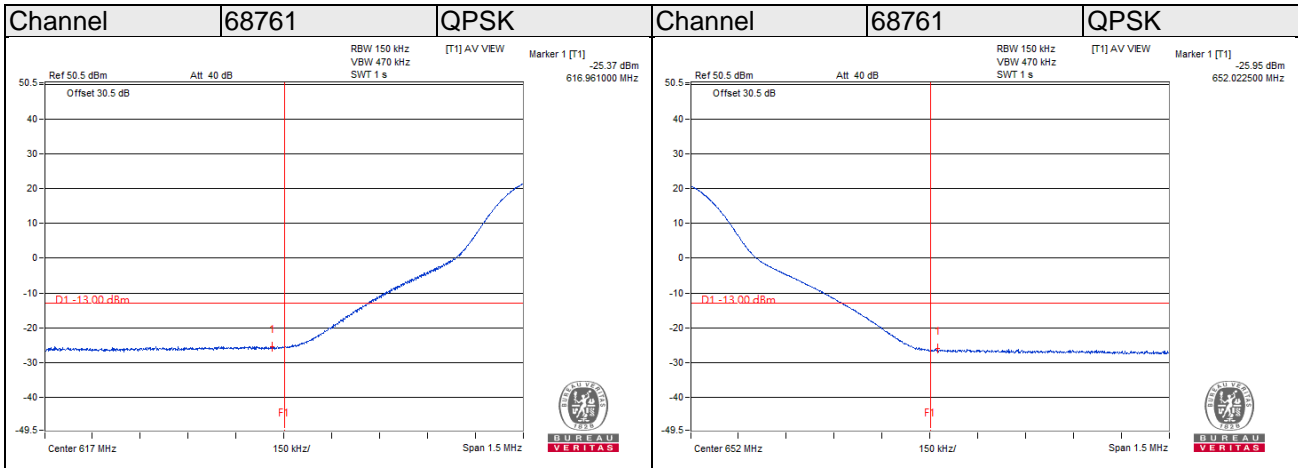


CA-NC Non-Contiguous

15MHz+15MHz Chain 0



Chain 1

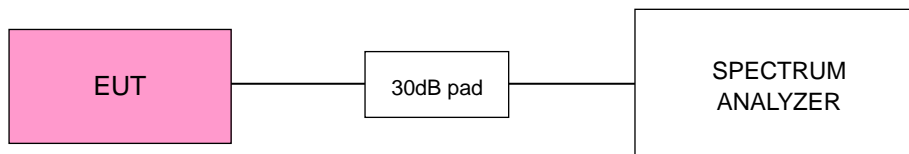


4.6 Peak to Average Ratio

4.6.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

4.6.2 Test Setup



4.6.3 Test Procedures

1. Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

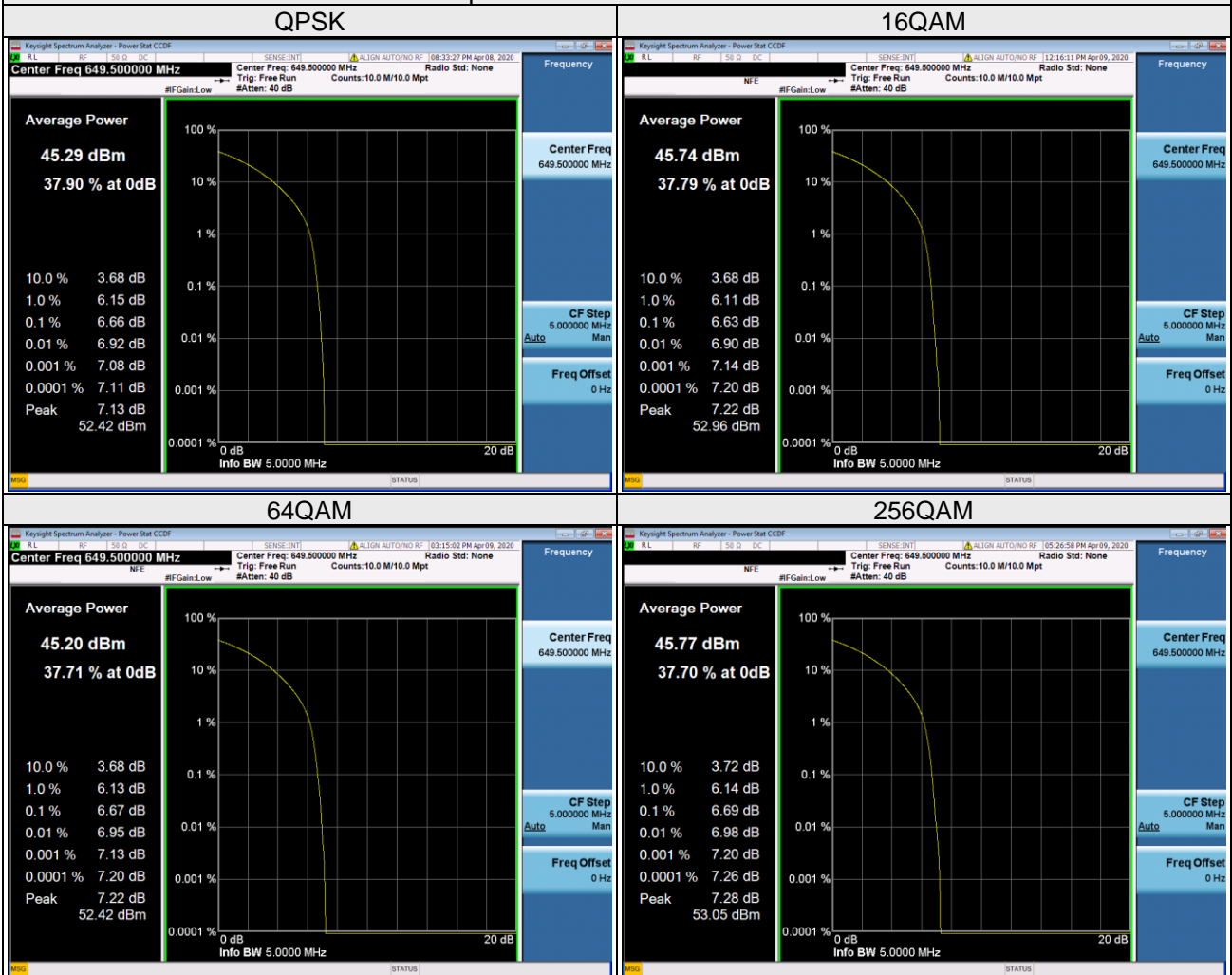
4.6.4 Test Results

Single Carrier

5MHz

| Channel Number | Freq. (MHz) | Peak-to-Average Power Ratio (dB) | | | | | | | |
|----------------|-------------|----------------------------------|-------|-------|--------|--------|-------|-------|--------|
| | | Chain0 | | | | Chain1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68611 | 619.5 | 6.50 | 6.48 | 6.50 | 6.49 | 6.49 | 6.49 | 6.49 | 6.49 |
| 68761 | 634.5 | 6.48 | 6.48 | 6.49 | 6.47 | 6.49 | 6.49 | 6.48 | 6.49 |
| 68911 | 649.5 | 6.66 | 6.63 | 6.67 | 6.69 | 6.57 | 6.57 | 6.57 | 6.59 |

Spectrum Plot of Worst Value

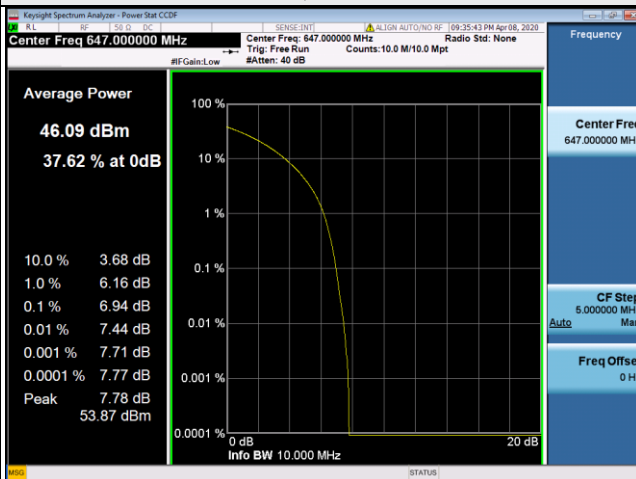


10MHz

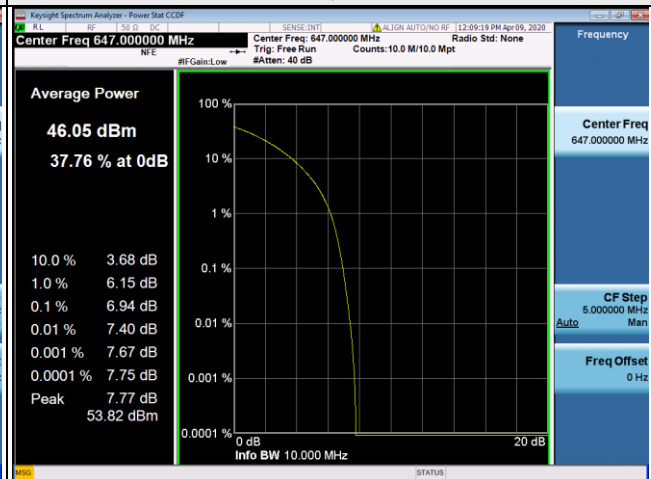
| Channel Number | Freq. (MHz) | Peak-to-Average Power Ratio (dB) | | | | | | | |
|----------------|-------------|----------------------------------|-------|-------|--------|--------|-------|-------|--------|
| | | Chain0 | | | | Chain1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68636 | 622 | 6.52 | 6.51 | 6.54 | 6.52 | 6.51 | 6.51 | 6.53 | 6.52 |
| 68761 | 634.5 | 6.50 | 6.50 | 6.51 | 6.51 | 6.49 | 6.49 | 6.50 | 6.49 |
| 68886 | 647 | 6.94 | 6.94 | 6.96 | 6.96 | 6.75 | 6.77 | 6.75 | 6.77 |

Spectrum Plot of Worst Value

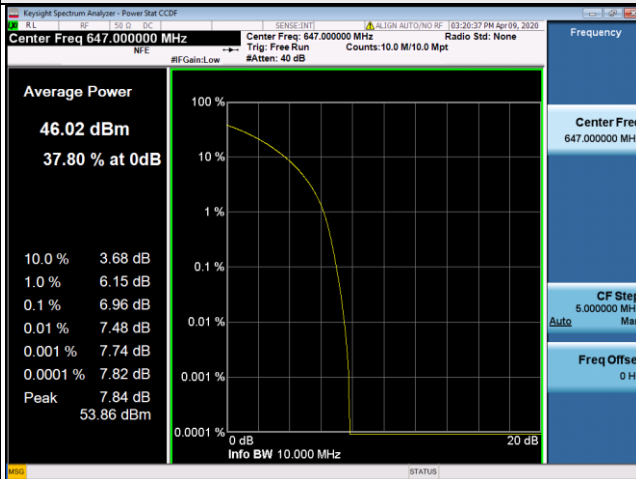
QPSK



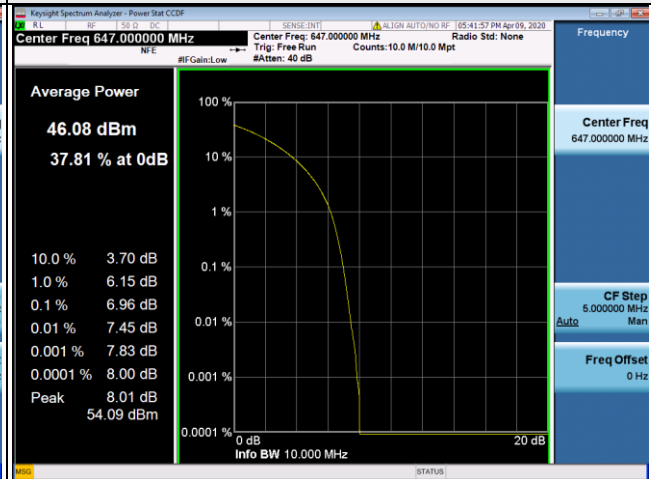
16QAM



64QAM



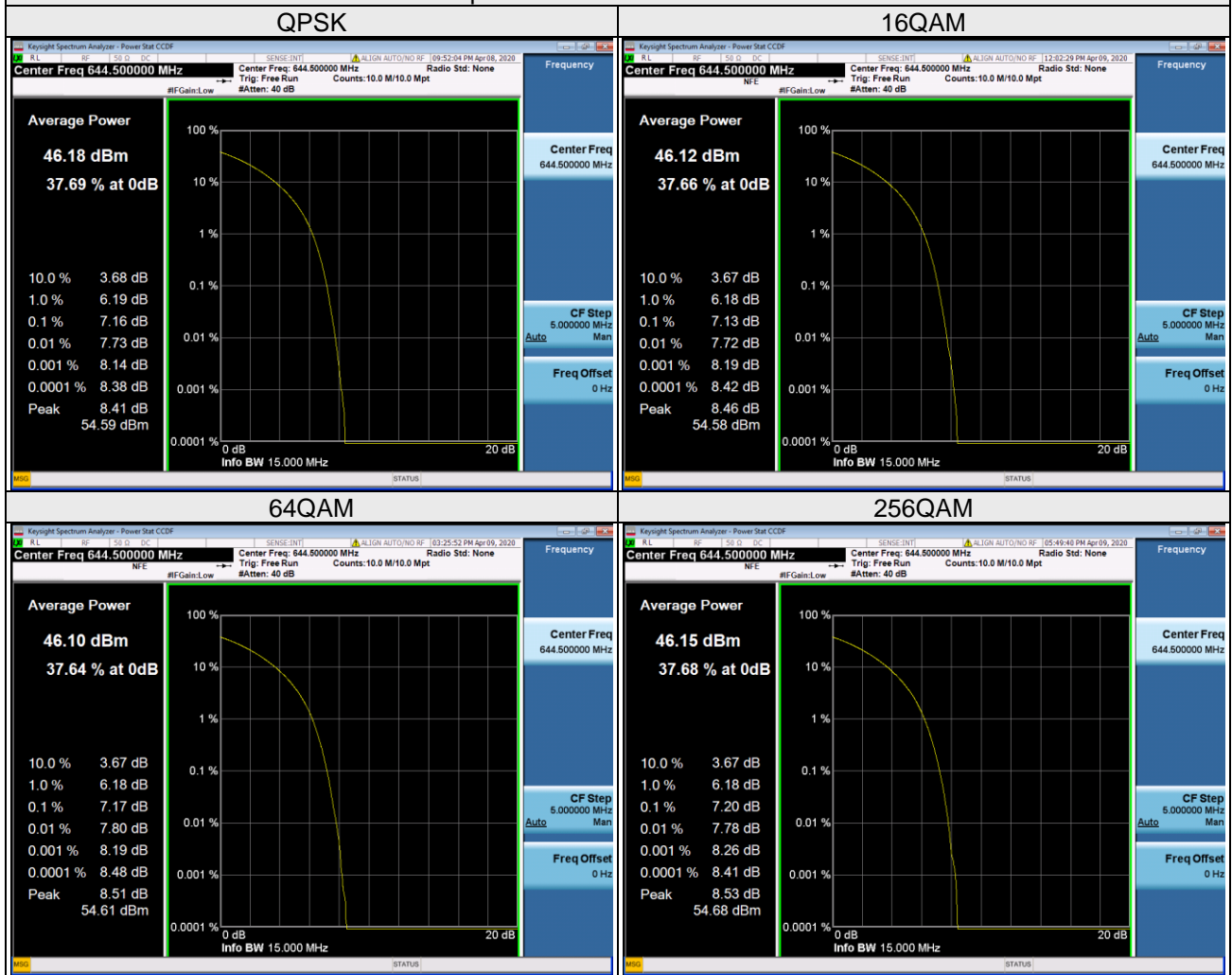
256QAM



15MHz

| Channel Number | Freq. (MHz) | Peak-to-Average Power Ratio (dB) | | | | | | | |
|----------------|-------------|----------------------------------|-------|-------|--------|--------|-------|-------|--------|
| | | Chain0 | | | | Chain1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68661 | 624.5 | 6.54 | 6.54 | 6.54 | 6.53 | 6.54 | 6.52 | 6.54 | 6.54 |
| 68761 | 634.5 | 6.57 | 6.57 | 6.58 | 6.57 | 6.54 | 6.53 | 6.54 | 6.54 |
| 68861 | 644.5 | 7.16 | 7.13 | 7.17 | 7.20 | 6.94 | 6.92 | 6.94 | 6.97 |

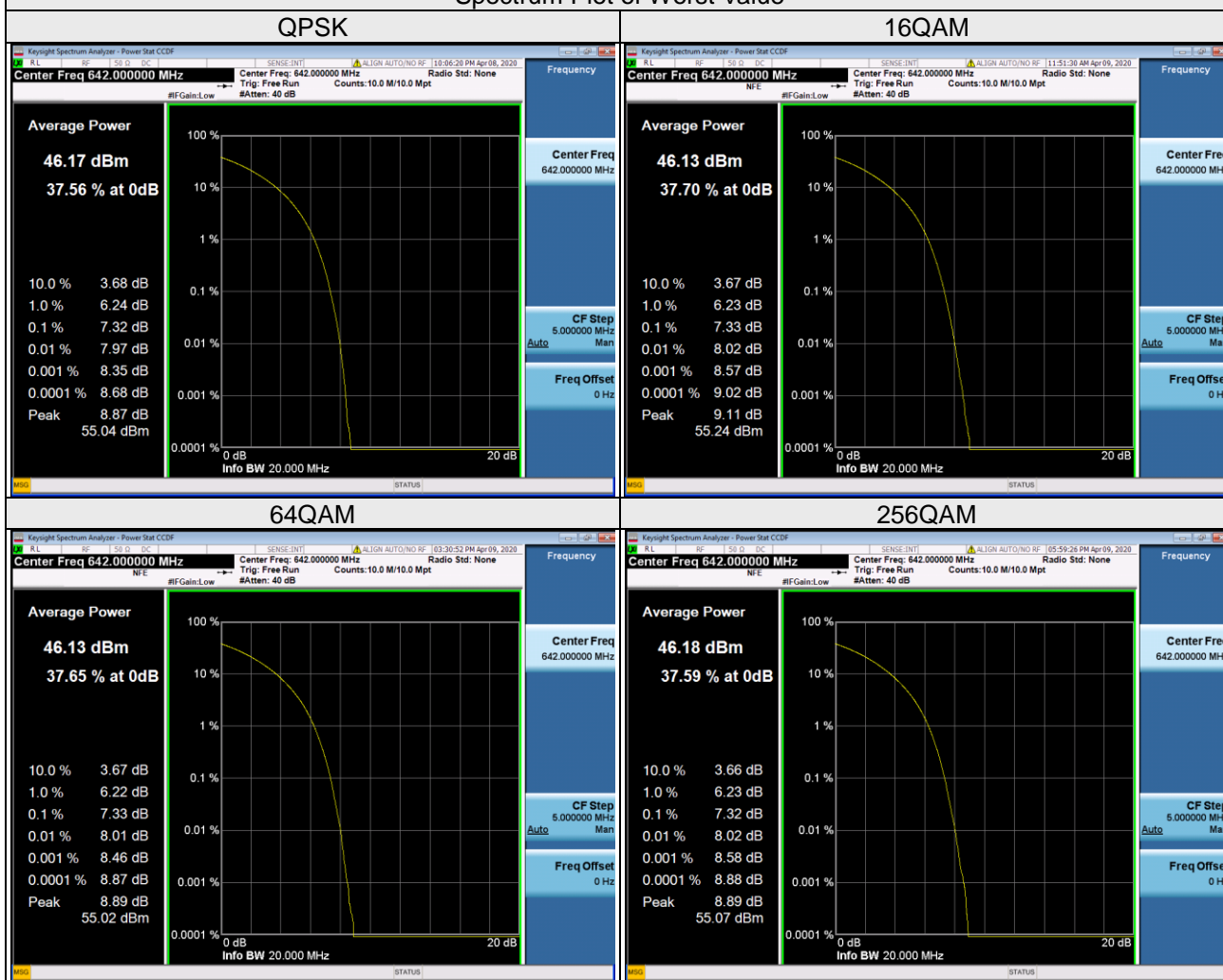
Spectrum Plot of Worst Value



20MHz

| Channel Number | Freq. (MHz) | Peak-to-Average Power Ratio (dB) | | | | | | | |
|----------------|-------------|----------------------------------|-------|-------|--------|--------|-------|-------|--------|
| | | Chain0 | | | | Chain1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68686 | 627 | 6.52 | 6.53 | 6.54 | 6.53 | 6.53 | 6.53 | 6.54 | 6.53 |
| 68761 | 634.5 | 6.71 | 6.70 | 6.70 | 6.70 | 6.63 | 6.63 | 6.63 | 6.63 |
| 68836 | 642 | 7.32 | 7.33 | 7.33 | 7.32 | 7.10 | 7.07 | 7.09 | 7.09 |

Spectrum Plot of Worst Value



CA Contiguous

15MHz+20MHz

| Channel Number | Freq. (MHz) | Peak-to-Average Power Ratio (dB) | | | | | | | |
|----------------|-------------|----------------------------------|-------|-------|--------|------|-------|-------|--------|
| | | Chain0 | | | | | | | |
| | | CC0 | | | | CC1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68661+68836 | 624.5+642 | 7.92 | 7.96 | 7.88 | 7.92 | 8.16 | 8.08 | 8.11 | 8.09 |

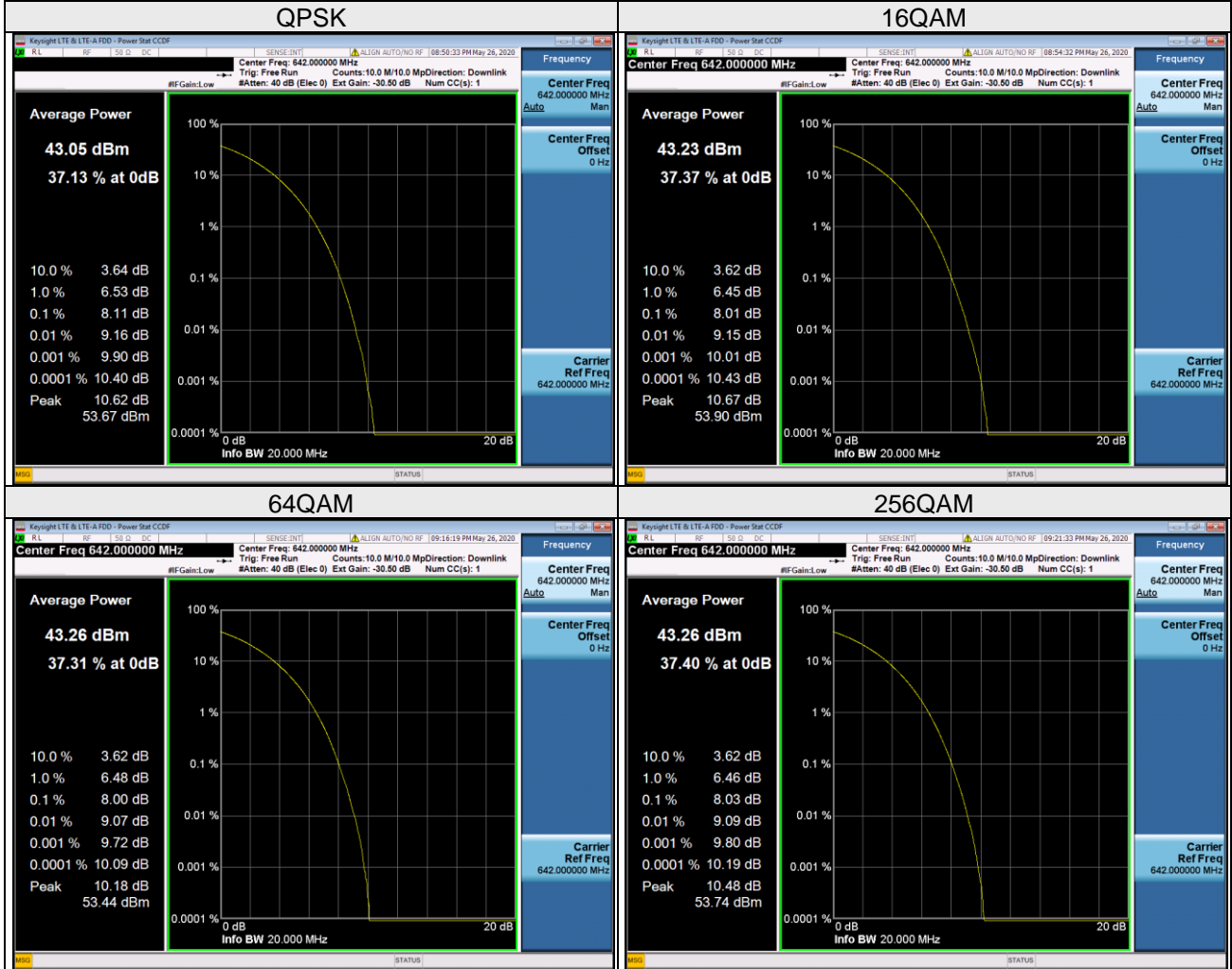
Spectrum Plot of Worst Value



15MHz+20MHz

| Channel Number | Freq. (MHz) | Peak-to-Average Power Ratio (dB) | | | | | | | |
|----------------|-------------|----------------------------------|-------|-------|--------|------|-------|-------|--------|
| | | Chain1 | | | | | | | |
| | | CC0 | | | | CC1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68661+68836 | 624.5+642 | 7.96 | 7.95 | 7.87 | 7.91 | 8.11 | 8.01 | 8.00 | 8.03 |

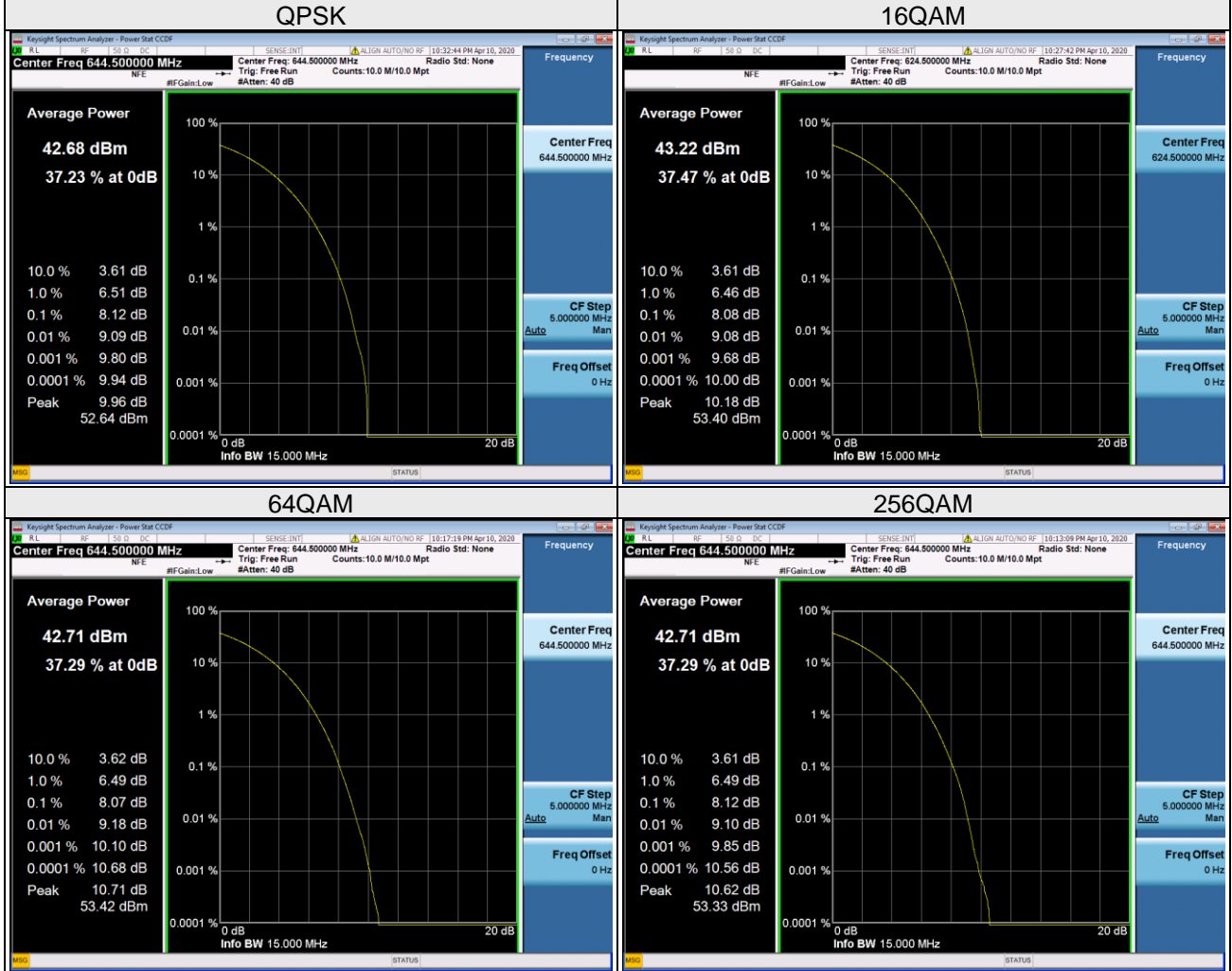
Spectrum Plot of Worst Value



**CA-NC Non-Contiguous
15MHz+15MHz**

| Channel Number | Freq. (MHz) | Peak-to-Average Power Ratio (dB) | | | | | | | |
|----------------|-------------|----------------------------------|-------|-------|--------|------|-------|-------|--------|
| | | Chain0 | | | | | | | |
| | | CC0 | | | | CC1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68661+68861 | 624.5+644.5 | 8.05 | 8.08 | 8.01 | 8.05 | 8.12 | 8.07 | 8.07 | 8.12 |

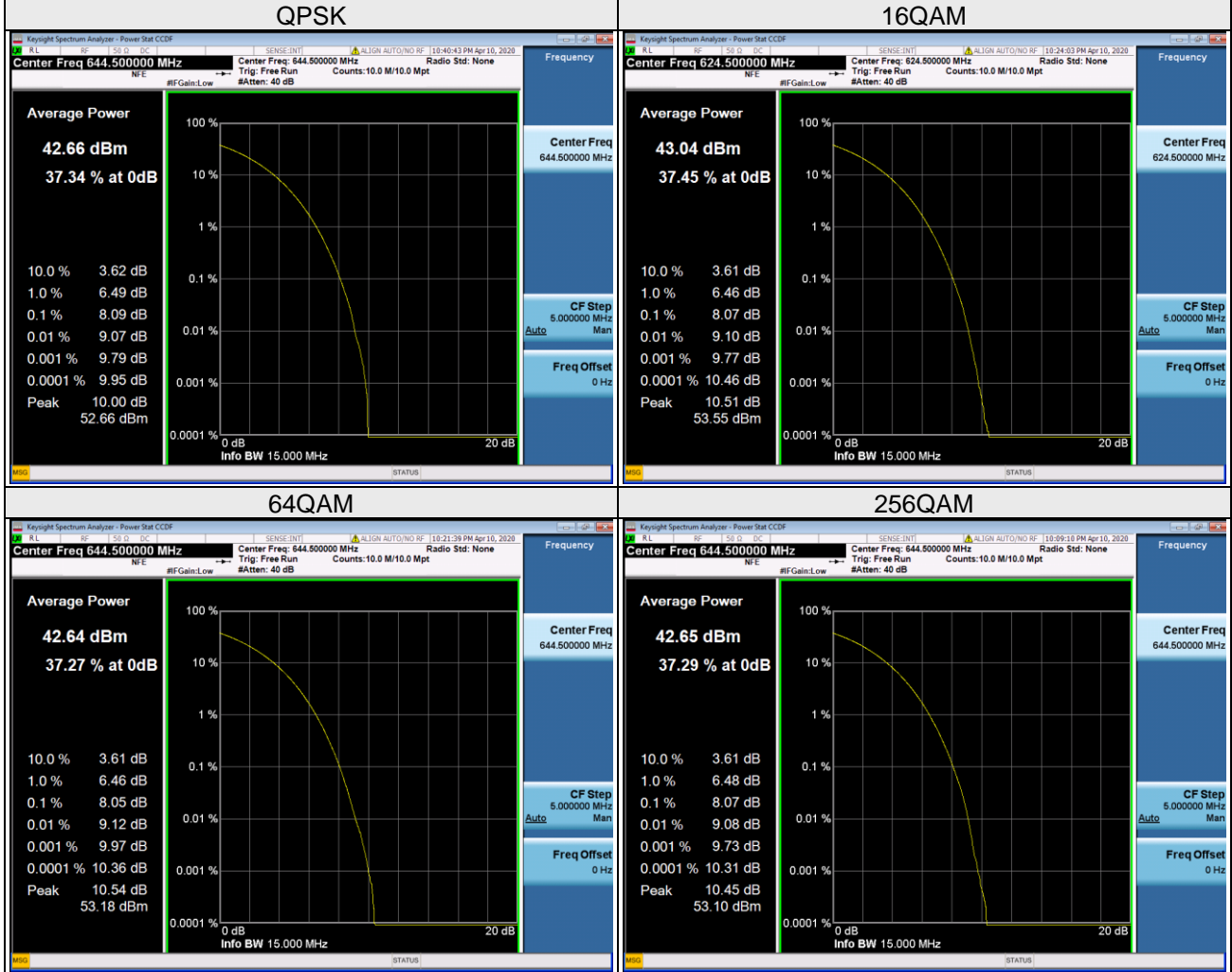
Spectrum Plot of Worst Value



15MHz+15MHz

| Channel Number | Freq. (MHz) | Peak-to-Average Power Ratio (dB) | | | | | | | |
|----------------|-------------|----------------------------------|-------|-------|--------|------|-------|-------|--------|
| | | Chain1 | | | | | | | |
| | | CC0 | | | | CC1 | | | |
| | | QPSK | 16QAM | 64QAM | 256QAM | QPSK | 16QAM | 64QAM | 256QAM |
| 68661+68861 | 624.5+644.5 | 8.02 | 8.07 | 8.02 | 8.06 | 8.09 | 8.04 | 8.05 | 8.07 |

Spectrum Plot of Worst Value

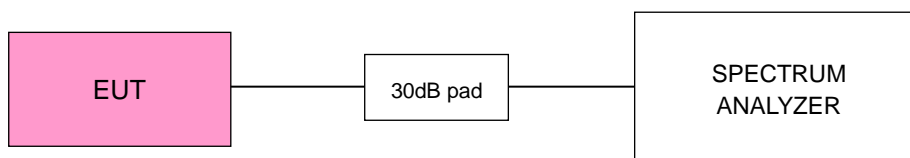


4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

According to FCC 27.53(g) for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

4.7.2 Test Setup



4.7.3 Test Procedure

- a. All measurements were done at 3 channels: low, middle and high operational frequency range.
- b. When the spectrum scanned from 9kHz to 10GHz, it shall be connected to the 30dB pad attenuated the carried frequency.
- c. S.A. setting: RBW=100kHz, VBW=300kHz, Detector=RMS (Power average)

4.7.4 Test Results Single Carrier

5MHz-Chain 0

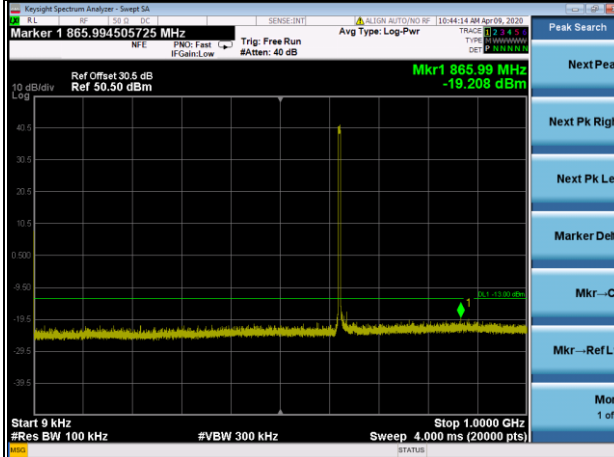


5MHz-Chain 1

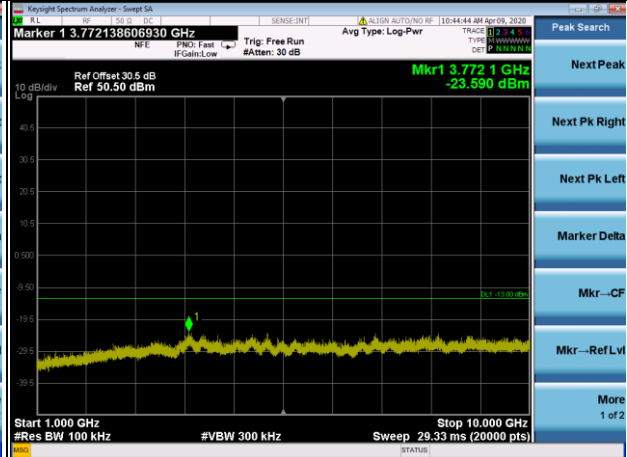
QPSK

Channel 68611

Frequency Range : 9kHz~1GHz

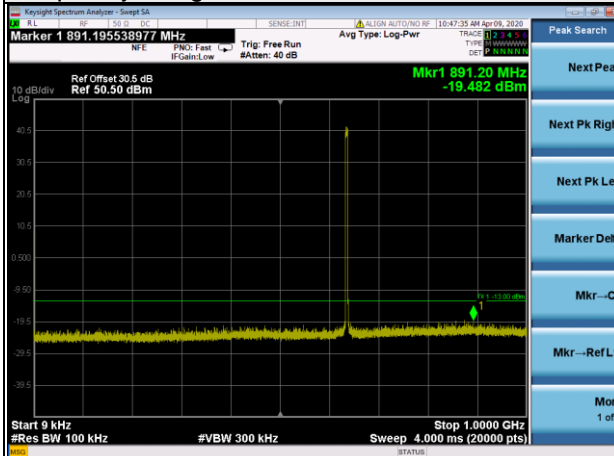


Frequency Range : 1GHz~10GHz

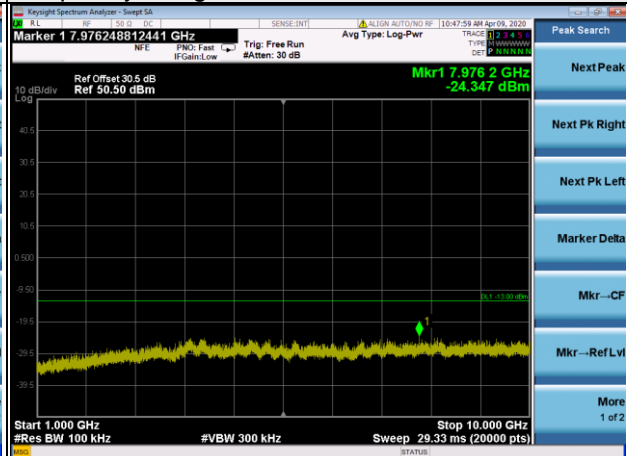


Channel 68761

Frequency Range : 9kHz~1GHz

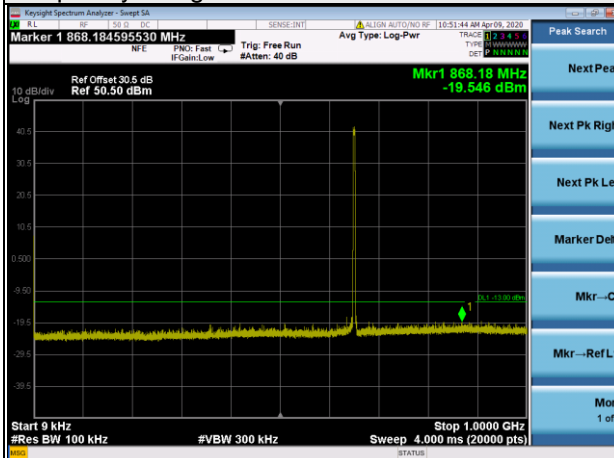


Frequency Range : 1GHz~10GHz



Channel 68911

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz

