

Section 8
Test name
Specification

Testing data
 Clause 27.53 and RSS-130, 4.6 Spurious emissions at RF antenna connector
 FCC Part 27, RSS-130, Issue 1

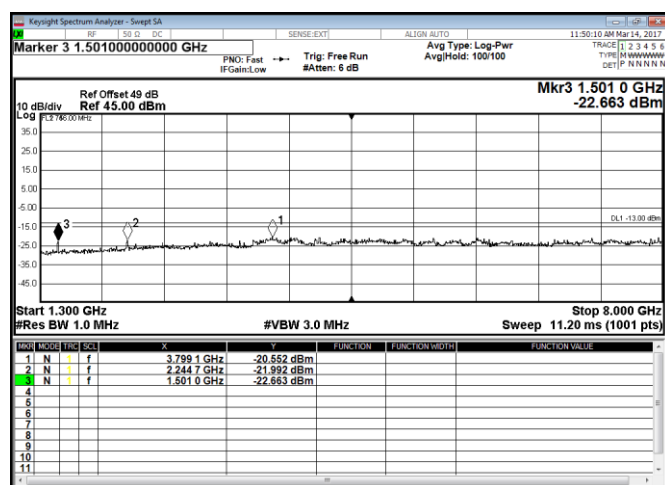


Figure 8.2-19: Conducted spurious emissions within 1.3–8.0 GHz,
 Port B, 5 MHz low channel, QPSK
 MIMO: highest marker value is -17.552 dBm

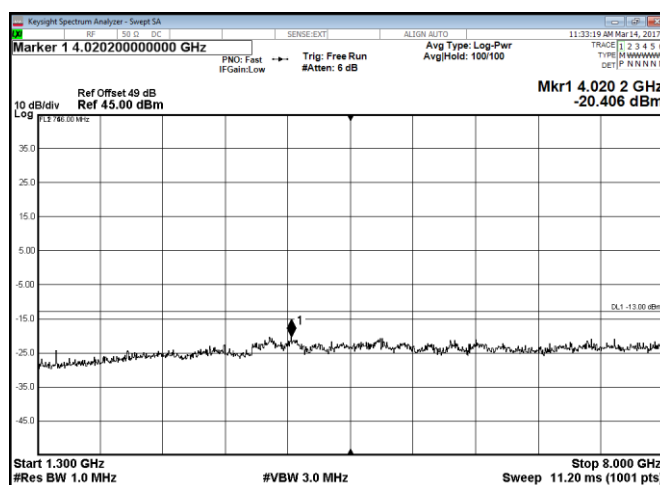


Figure 8.2-20: Conducted spurious emissions within 1.3–8.0 GHz,
 Port B, 5 MHz high channel, QPSK
 MIMO: marker value is -17.406 dBm

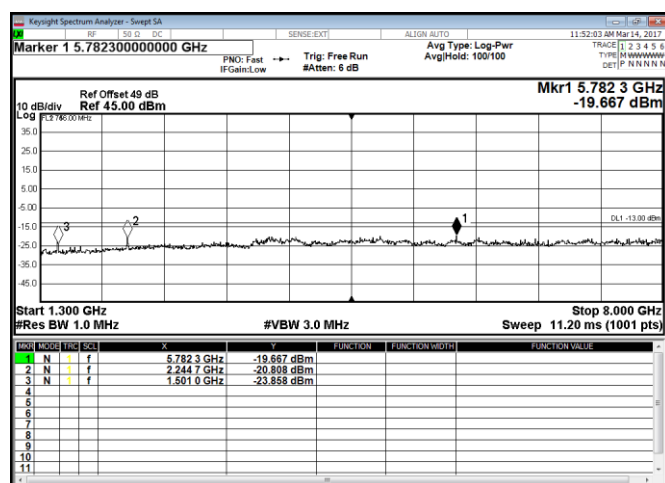


Figure 8.2-21: Conducted spurious emissions within 1.3–8.0 GHz,
 Port B, 5 MHz low channel, 256QAM
 MIMO: highest marker value is -16.667 dBm

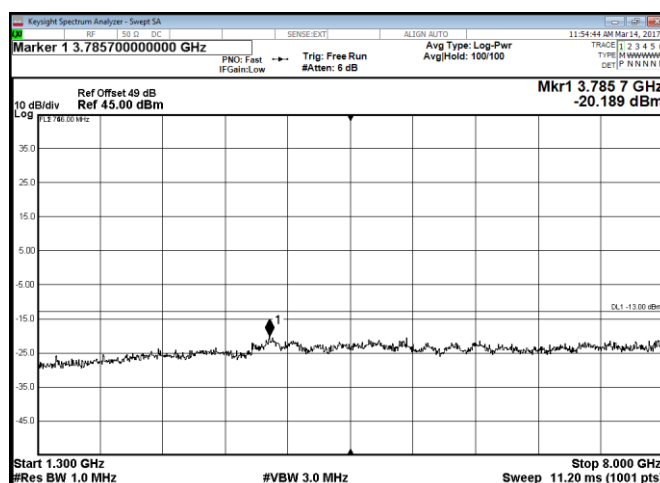


Figure 8.2-22: Conducted spurious emissions within 1.3–8.0 GHz,
 Port B, 5 MHz high channel, 256QAM
 MIMO: marker value is -17.189 dBm

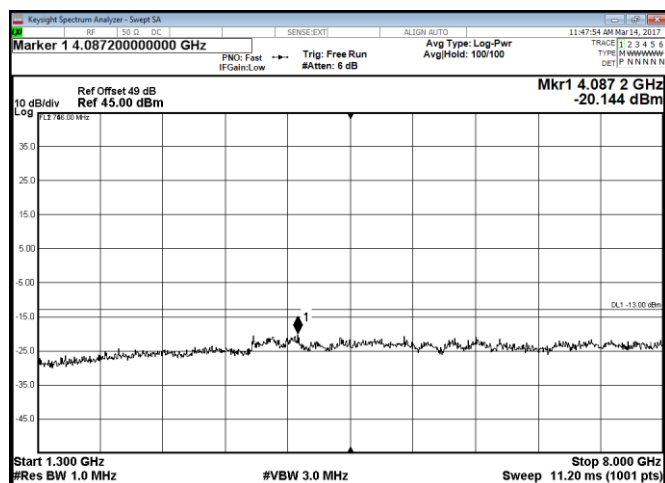


Figure 8.2-23: Conducted spurious emissions within 1.3–8.0 GHz,
Port A, 10 MHz channel, QPSK
MIMO: marker value is -17.144 dBm

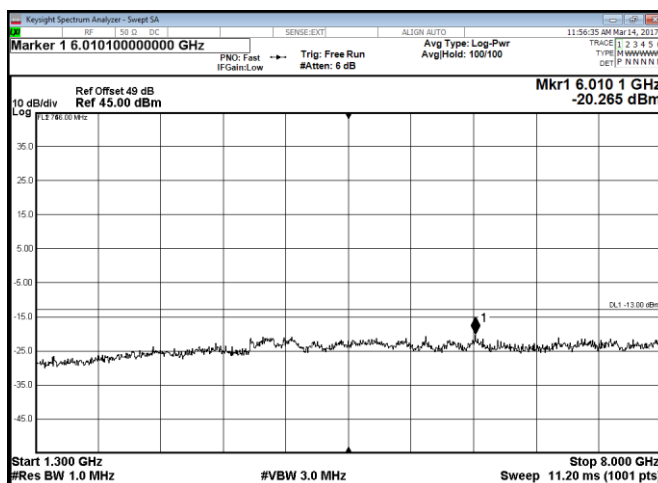


Figure 8.2-24: Conducted spurious emissions within 1.3–8.0 GHz,
Port A, 10 MHz channel, 256QAM
MIMO: marker value is -17.265 dBm

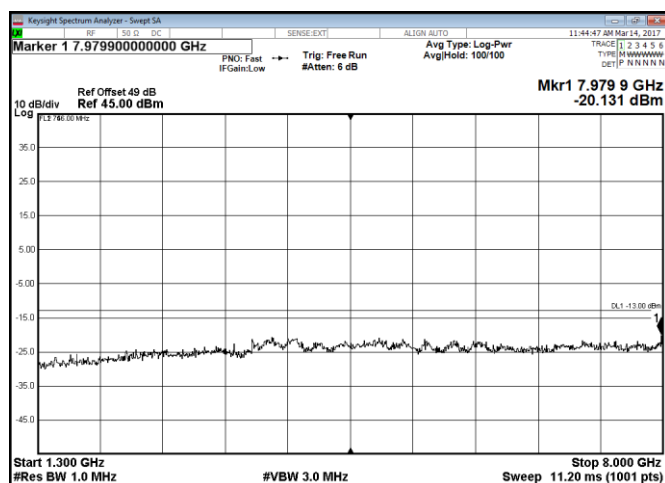


Figure 8.2-25: Conducted spurious emissions within 1.3–8.0 GHz,
Port B, 10 MHz channel, QPSK
MIMO: marker value is -17.131 dBm

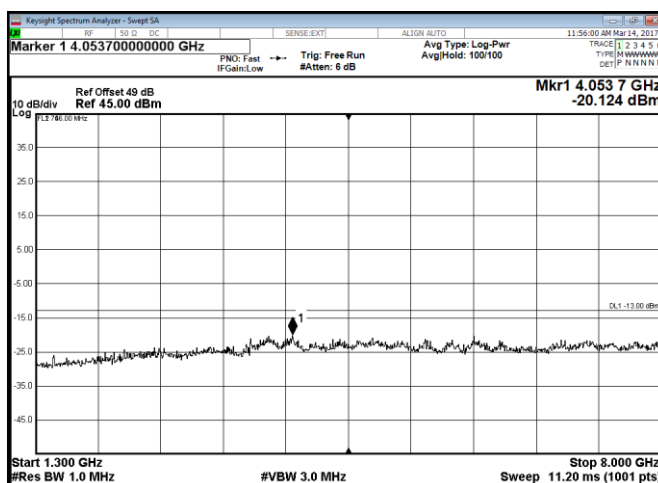


Figure 8.2-26: Conducted spurious emissions within 1.3–8.0 GHz,
Port B, 10 MHz channel, 256QAM
MIMO: marker value is -17.124 dBm

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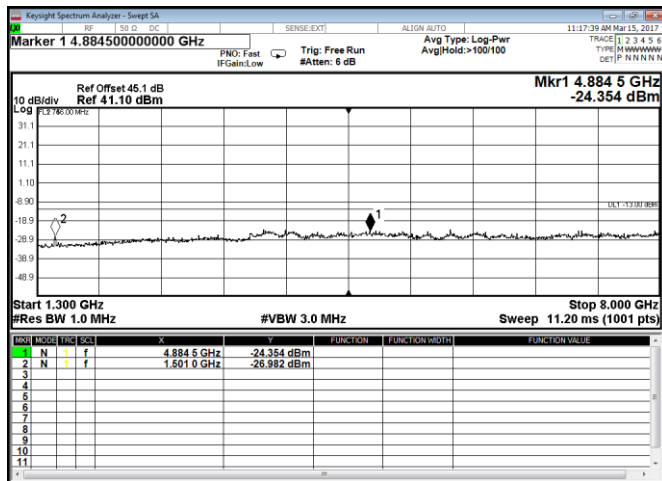


Figure 8.2-27: Conducted spurious emissions within 1.3–8.0 GHz,
 Port A, 5 MHz channel, 2 carriers
 MIMO: highest marker value is -21.354 dBm

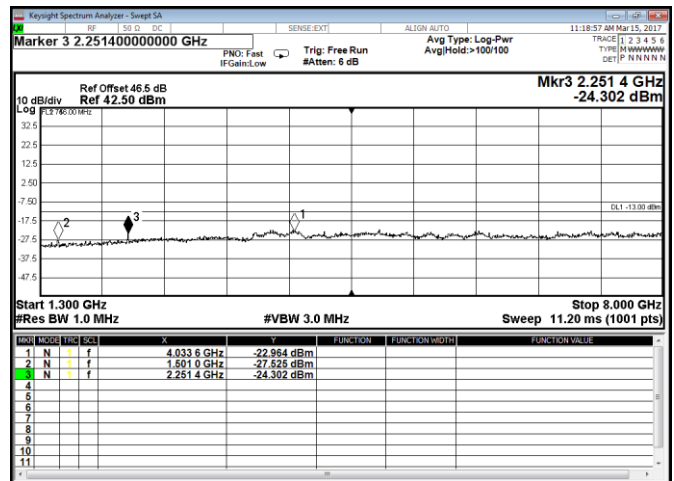


Figure 8.2-28: Conducted spurious emissions within 1.3–8.0 GHz,
 Port B, 5 MHz channel, 2 carriers
 MIMO: highest marker value is -19.964 dBm

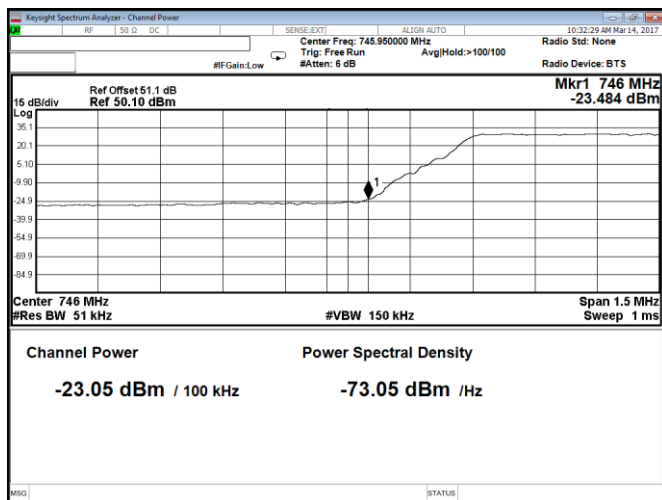


Figure 8.2-29: Conducted band edge emission at 746 MHz,
 Port A, 5 MHz channel, QPSK

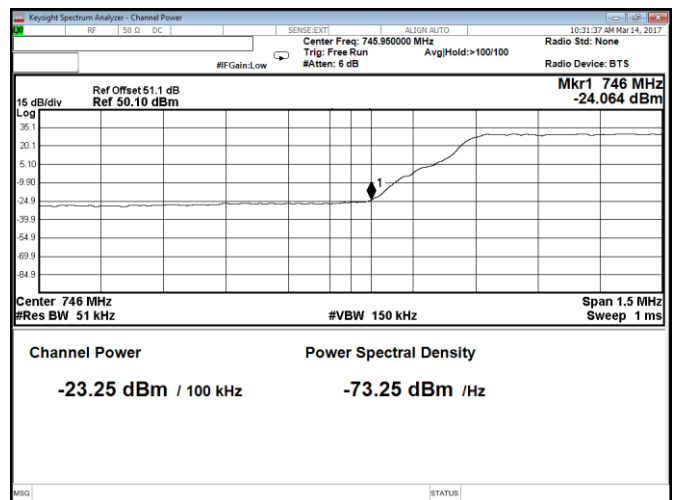


Figure 8.2-30: Conducted band edge emission at 746 MHz,
 Port A, 5 MHz channel, 256QAM

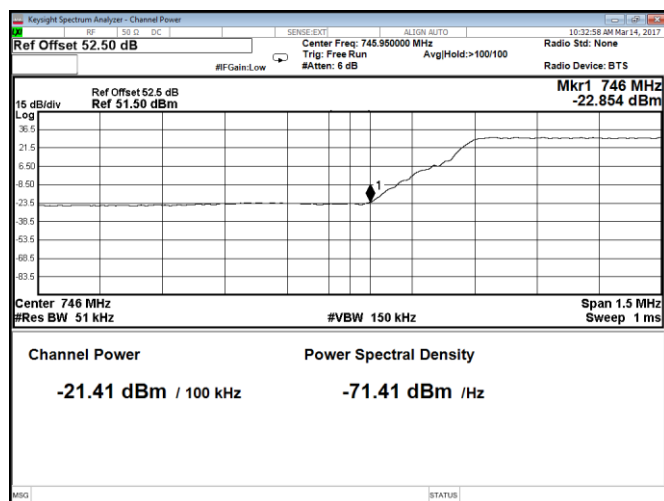


Figure 8.2-31: Conducted band edge emission at 746 MHz, Port B, 5 MHz channel, QPSK

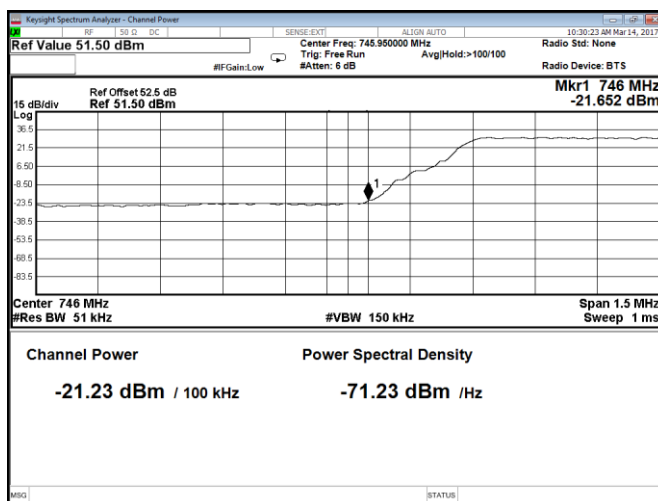


Figure 8.2-32: Conducted band edge emission at 746 MHz, Port B, 5 MHz channel, 256QAM

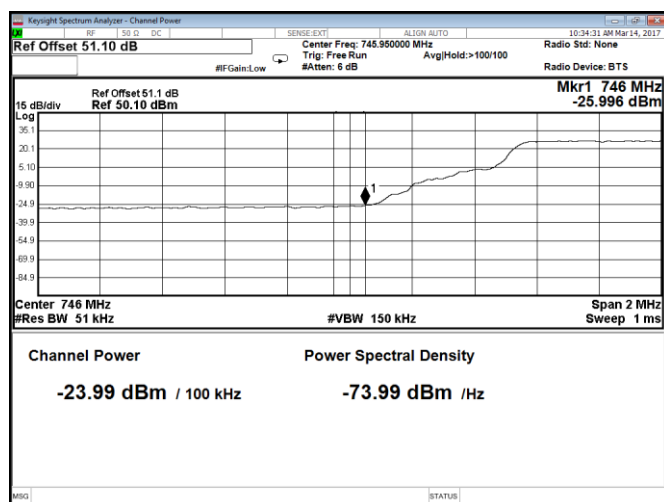


Figure 8.2-33: Conducted band edge emission at 746 MHz, Port A, 10 MHz channel, QPSK

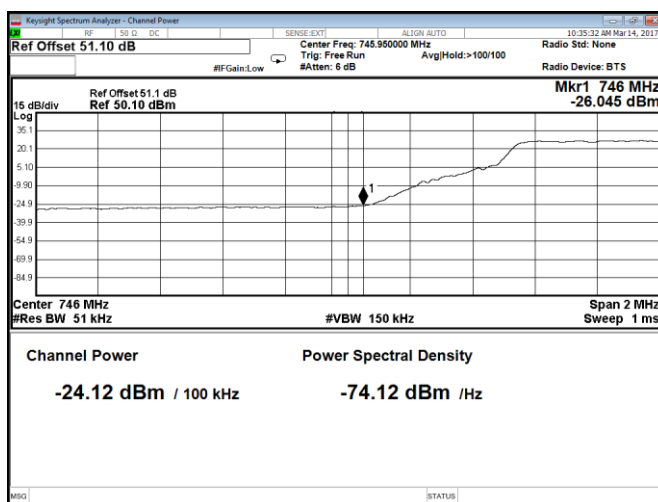


Figure 8.2-34: Conducted band edge emission at 746 MHz, Port A, 10 MHz channel, 256QAM

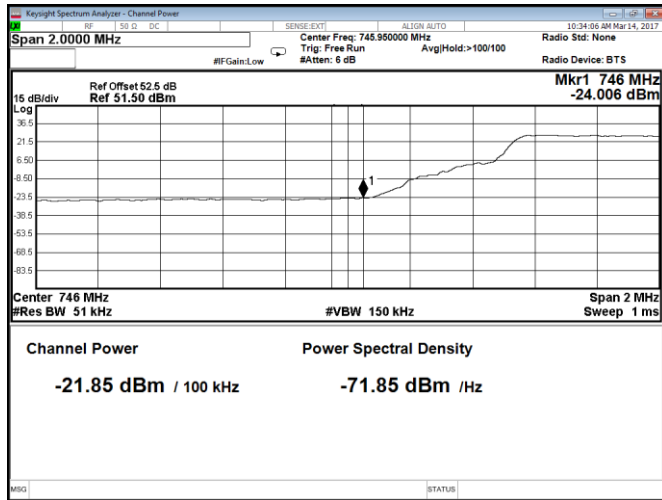


Figure 8.2-35: Conducted band edge emission at 746 MHz, Port B, 10 MHz channel, QPSK

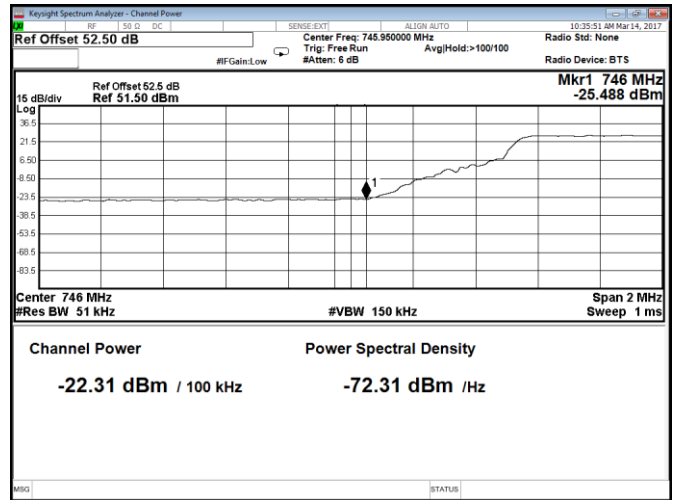


Figure 8.2-36: Conducted band edge emission at 746 MHz, Port B, 10 MHz channel, 256QAM

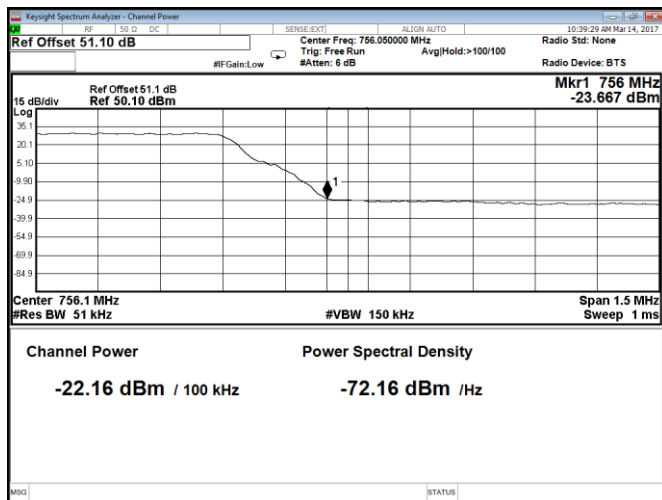


Figure 8.2-37: Conducted band edge emission at 756 MHz, Port A, 5 MHz channel, QPSK

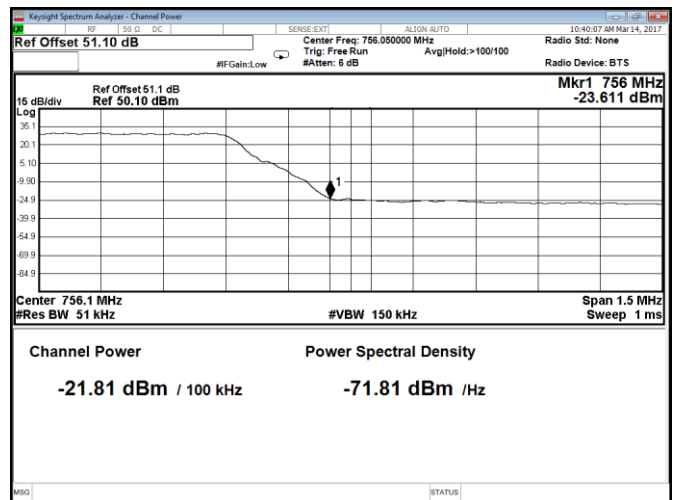


Figure 8.2-38: Conducted band edge emission at 756 MHz, Port A, 5 MHz channel, 256QAM

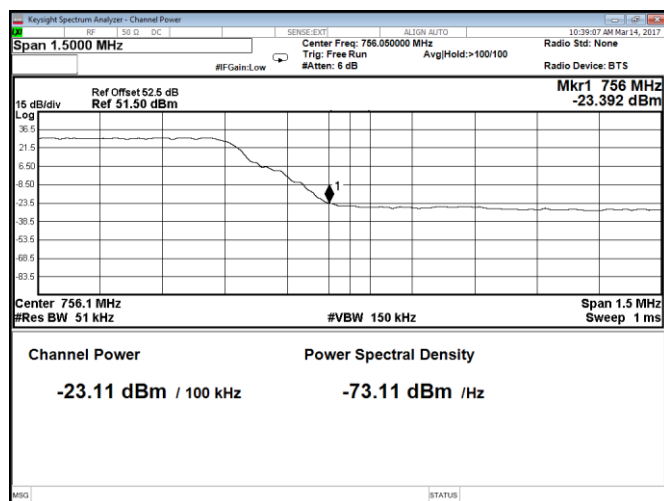


Figure 8.2-39: Conducted band edge emission at 756 MHz, Port B, 5 MHz channel, QPSK

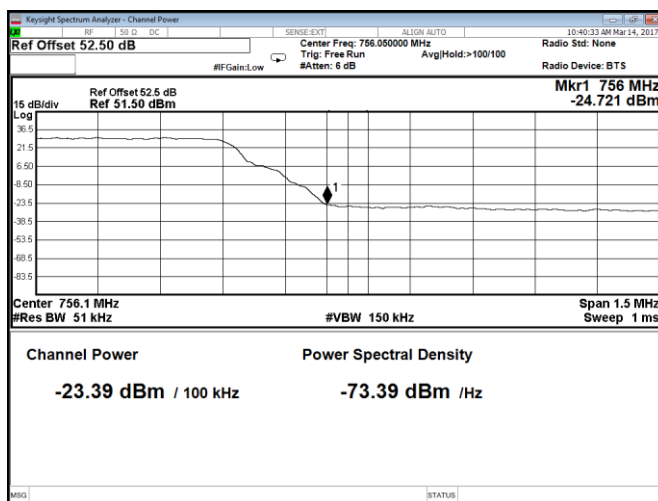


Figure 8.2-40: Conducted band edge emission at 756 MHz, Port B, 5 MHz channel, 256QAM

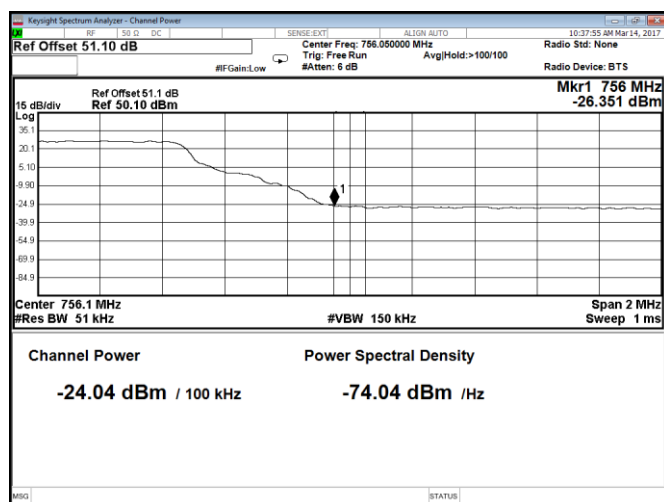


Figure 8.2-41: Conducted band edge emission at 756 MHz, Port A, 10 MHz channel, QPSK

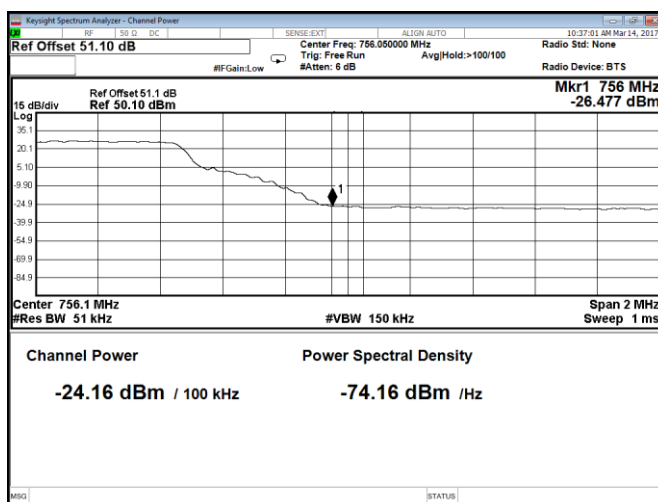


Figure 8.2-42: Conducted band edge emission at 756 MHz, Port A, 10 MHz channel, 256QAM

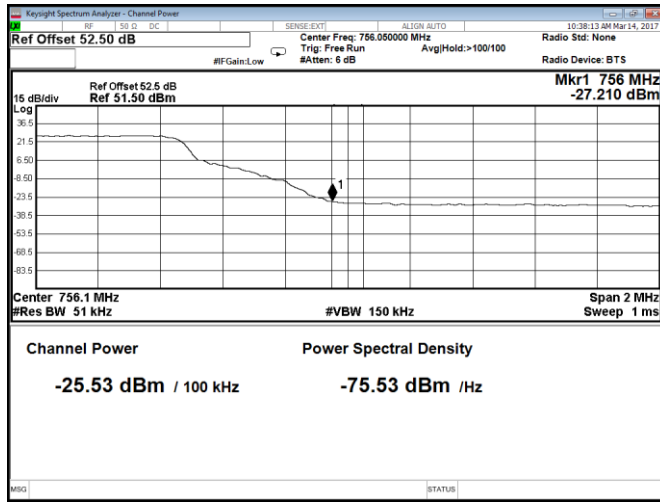


Figure 8.2-43: Conducted band edge emission at 756 MHz, Port B, 10 MHz channel, QPSK

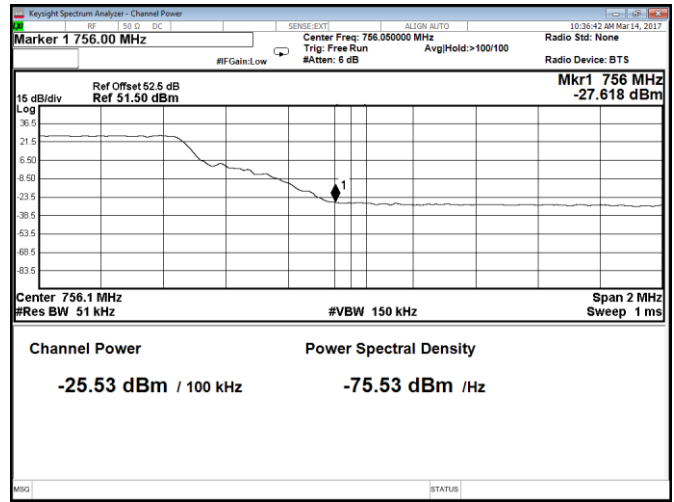


Figure 8.2-44: Conducted band edge emission at 756 MHz, Port B, 10 MHz channel, 256QAM

Table 8.2-1: Band edge measurement results for SISO operation

Remarks	Frequency, MHz	Emission level, dBm	Limit, dBm	Margin, dB
5 MHz channel QPSK, Port A	746	-23.05	-13.00	10.05
5 MHz channel 256QAM, Port A	746	-23.25	-13.00	10.25
5 MHz channel QPSK, Port B	746	-21.41	-13.00	8.41
5 MHz channel 256QAM, Port B	746	-21.23	-13.00	8.23
10 MHz channel QPSK, Port A	746	-23.99	-13.00	10.99
10 MHz channel 256QAM, Port A	746	-24.12	-13.00	11.12
10 MHz channel QPSK, Port B	746	-21.85	-13.00	8.85
10 MHz channel 256QAM, Port B	746	-22.31	-13.00	9.31
5 MHz channel QPSK, Port A	756	-22.16	-13.00	9.16
5 MHz channel 256QAM, Port A	756	-21.81	-13.00	8.81
5 MHz channel QPSK, Port B	756	-23.11	-13.00	10.11
5 MHz channel 256QAM, Port B	756	-23.39	-13.00	10.39
10 MHz channel QPSK, Port A	756	-24.04	-13.00	11.04
10 MHz channel 256QAM, Port A	756	-24.16	-13.00	11.16
10 MHz channel QPSK, Port B	756	-25.53	-13.00	12.53
10 MHz channel 256QAM, Port B	756	-25.53	-13.00	12.53

Table 8.2-2: Band edge measurement results for MIMO operation

Remarks	Frequency, MHz	Emission level, dBm	MIMO correction, dB	Emission level corrected, dBm	Limit, dBm	Margin, dB
5 MHz channel QPSK, Port A	746	-23.05	3.00	-20.05	-13.00	7.05
5 MHz channel 256QAM, Port A	746	-23.25	3.00	-20.25	-13.00	7.25
5 MHz channel QPSK, Port B	746	-21.41	3.00	-18.41	-13.00	5.41
5 MHz channel 256QAM, Port B	746	-21.23	3.00	-18.23	-13.00	5.23
10 MHz channel QPSK, Port A	746	-23.99	3.00	-20.99	-13.00	7.99
10 MHz channel 256QAM, Port A	746	-24.12	3.00	-21.12	-13.00	8.12
10 MHz channel QPSK, Port B	746	-21.85	3.00	-18.85	-13.00	5.85
10 MHz channel 256QAM, Port B	746	-22.31	3.00	-19.31	-13.00	6.31
5 MHz channel QPSK, Port A	756	-22.16	3.00	-19.16	-13.00	6.16
5 MHz channel 256QAM, Port A	756	-21.81	3.00	-18.81	-13.00	5.81
5 MHz channel QPSK, Port B	756	-23.11	3.00	-20.11	-13.00	7.11
5 MHz channel 256QAM, Port B	756	-23.39	3.00	-20.39	-13.00	7.39
10 MHz channel QPSK, Port A	756	-24.04	3.00	-21.04	-13.00	8.04
10 MHz channel 256QAM, Port A	756	-24.16	3.00	-21.16	-13.00	8.16
10 MHz channel QPSK, Port B	756	-25.53	3.00	-22.53	-13.00	9.53
10 MHz channel 256QAM, Port B	756	-25.53	3.00	-22.53	-13.00	9.53

Note: MIMO correction was calculated as follows: $10 \times \log_{10}(2) = 3 \text{ dB}$

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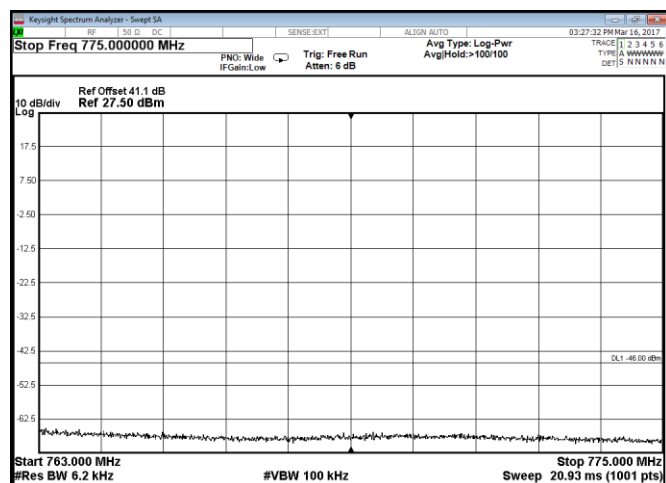


Figure 8.2-45: Conducted spurious emission within 763–775 MHz,
 Port A, QPSK

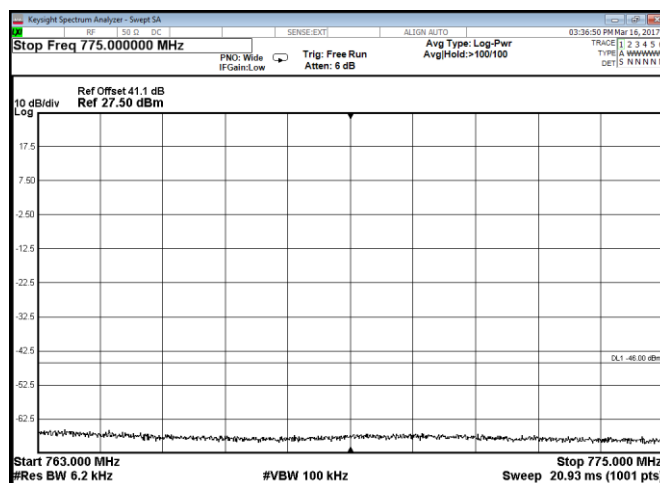


Figure 8.2-46: Conducted spurious emission within 763–775 MHz,
 Port A, 256QAM

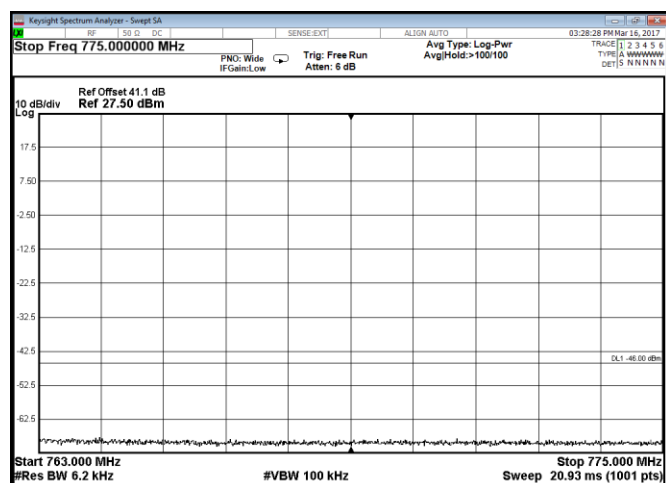


Figure 8.2-47: Conducted spurious emission within 763–775 MHz,
 Port B, QPSK

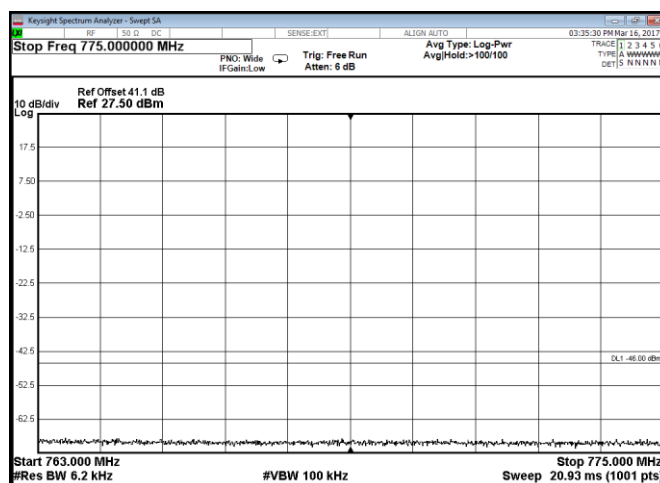


Figure 8.2-48: Conducted spurious emission within 763–775 MHz,
 Port B, 256QAM

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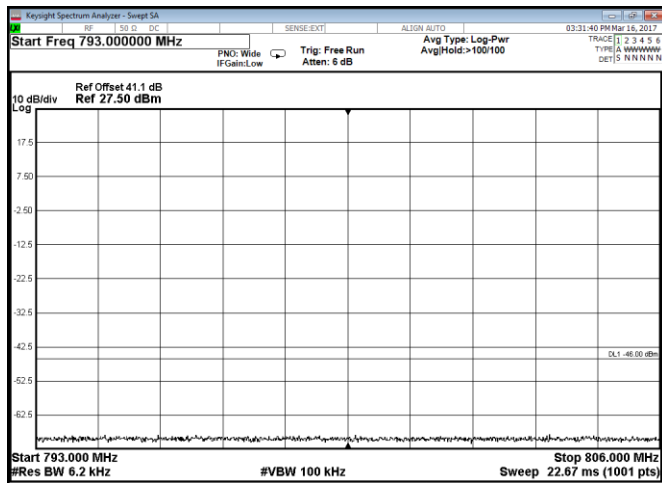


Figure 8.2-49: Conducted spurious emission within 793–806 MHz,
 Port A, QPSK

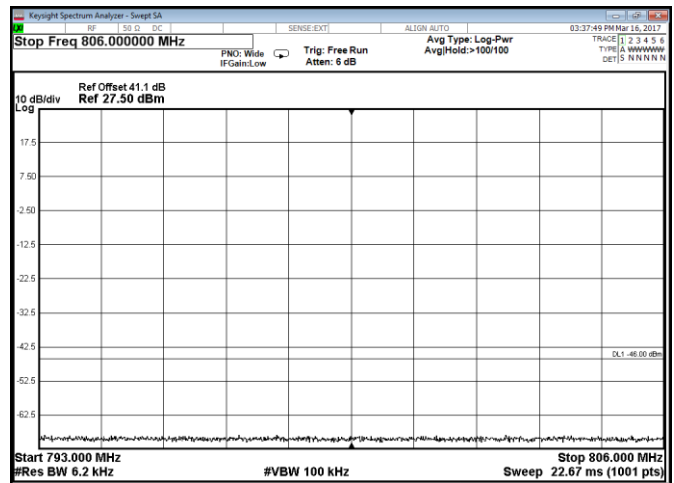


Figure 8.2-50: Conducted spurious emission within 793–806 MHz,
 Port A, 256QAM

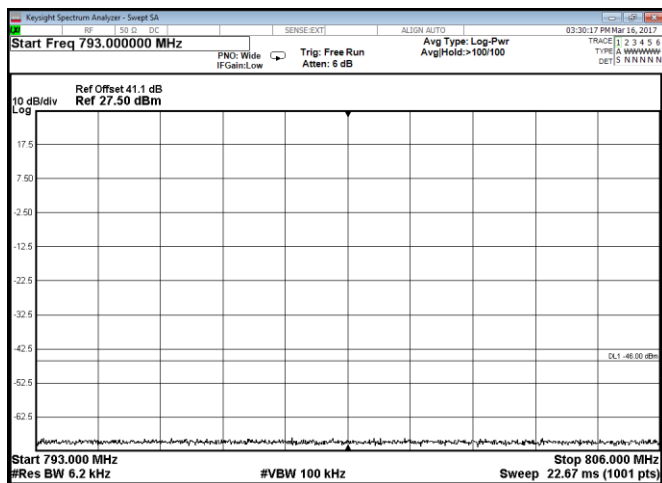


Figure 8.2-51: Conducted spurious emission within 793–806 MHz,
 Port B, QPSK

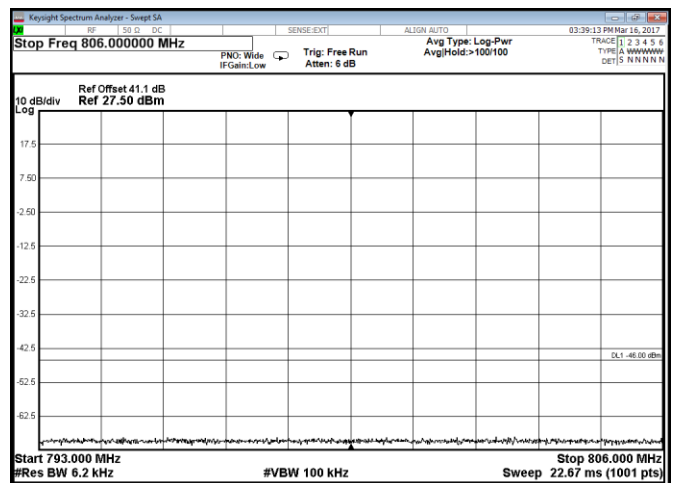


Figure 8.2-52: Conducted spurious emission within 793–806 MHz,
 Port B, 256QAM

8.3 FCC 27.53 and RSS-130, 4.6 Radiated spurious emissions

8.3.1 Definitions and limits

FCC:

(c) For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the 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, in accordance with the following:

- (1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;
- (6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(d) For operations in the 758–763 MHz and 788–793 MHz bands, the power of any emission outside the licensee's frequency bands of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (2) On all frequencies between 769–775 MHz and 799–805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (3) On any frequency between 775–788 MHz, above 805 MHz, and below 758 MHz, by at least $43 + 10 \log (P)$ dB;
- (4) Compliance with the provisions of paragraphs (d)(1) and (d)(2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment;
- (5) Compliance with the provisions of paragraph (d)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed.

(e) For operations in the 775–776 MHz and 805–806 MHz bands, transmitters must comply with either paragraphs (e)(1) to (e)(5) of this section or the ACP emission limitations set forth in paragraphs (e)(6) to (e)(9) of this section.

- (1) On all frequencies between 763–775 MHz and 793–805 MHz, the power of any emission outside the licensee's frequency bands of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (2) On all frequencies between 763–775 MHz and 793–805 MHz, the power of any emission outside the licensee's frequency bands of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;
- (3) On any frequency outside the 775–776 MHz and 805–806 MHz bands, the power of any emission shall be attenuated outside the band below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB;
- (4) Compliance with the provisions of paragraphs (e)(1) and (e)(2) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment;
- (5) Compliance with the provisions of paragraph (e)(3) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed.
- (6) The adjacent channel power (ACP) requirements for transmitters designed for various channel sizes are shown in the tables in this section. Mobile station requirements apply to handheld, car mounted and control station units. The tables specify a value for the ACP as a function of the displacement from the channel center frequency and measurement bandwidth. In the tables, "(s)" indicates a swept measurement may be used.

(f) For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

RSS-130:

4.6.1 The power of any unwanted emissions in any 100 kHz bandwidth on any frequency outside the frequency range(s) within which the equipment is designed to operate shall be attenuated below the transmitter power, P (dBW), by at least $43 + 10 \log_{10} P$ (watts), dB (-13 dBm). However, in the 100 kHz band immediately outside the equipment's operating frequency range, a resolution bandwidth of 30 kHz may be employed.

4.6.2 In addition to the limit outlined in Section 4.6.1 above, equipment operating in the frequency bands 746–756 MHz and 777–787 MHz shall also comply with the following restrictions:

(a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763–775 MHz and 793–806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:

- (i) $76 + 10 \log_{10} P$ (watts), dB (-46 dBm), for base and fixed equipment, and
- (ii) $65 + 10 \log_{10} P$ (watts), dB (-35 dBm), for mobile and portable equipment.

(b) The e.i.r.p. in the band 1559–1610 MHz shall not exceed -70 dBW/MHz (-40 dBm/MHz) for wideband signal and -80 dBW for discrete emission with bandwidth less than 700 Hz.

8.3.2 Test summary

Test date	March 15, 2017	Temperature	22 °C
Test engineer	Predrag Golic	Air pressure	1000 mbar
Verdict	Pass	Relative humidity	30 %

8.3.3 Observations, settings and special notes

The spectrum was searched from 30 MHz to the 10th harmonic.
All measurements were performed using a peak detector.
RBW within 30–1000 MHz was 100 kHz and 1 MHz above 1 GHz. VBW was wider than RBW.
Testing was performed with RF ports terminated with 50 Ohm load.

8.3.4 Test data

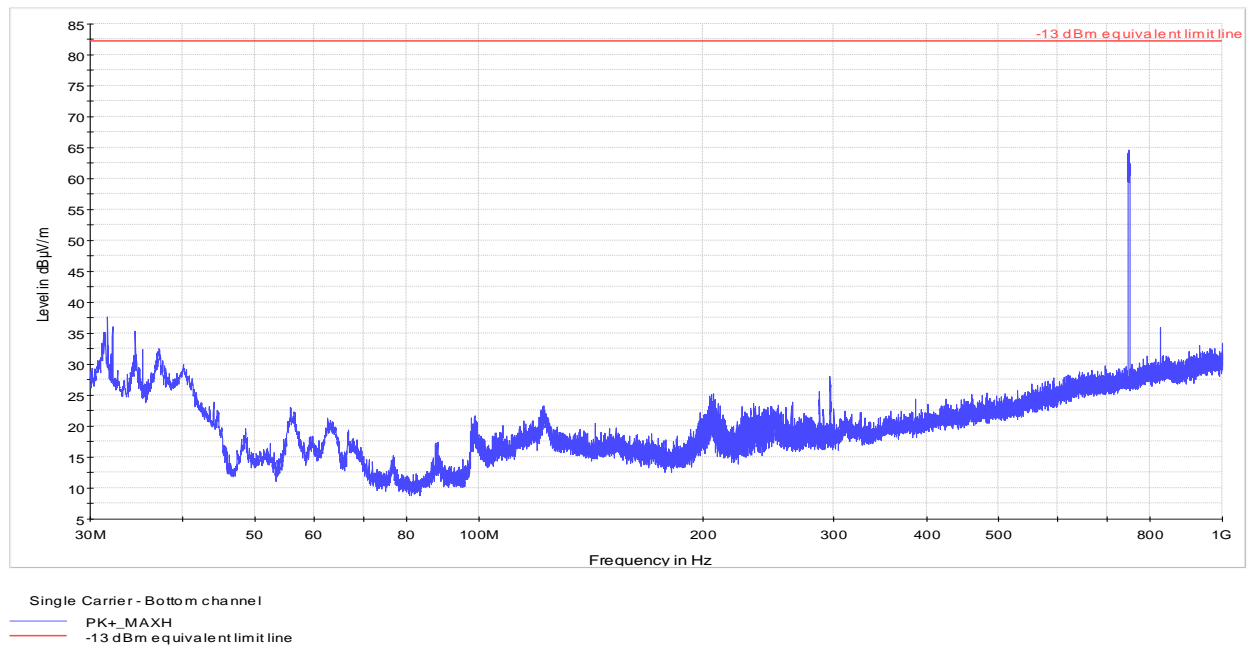


Figure 8.3-1: Radiated spurious emission below 1 GHz, low channel

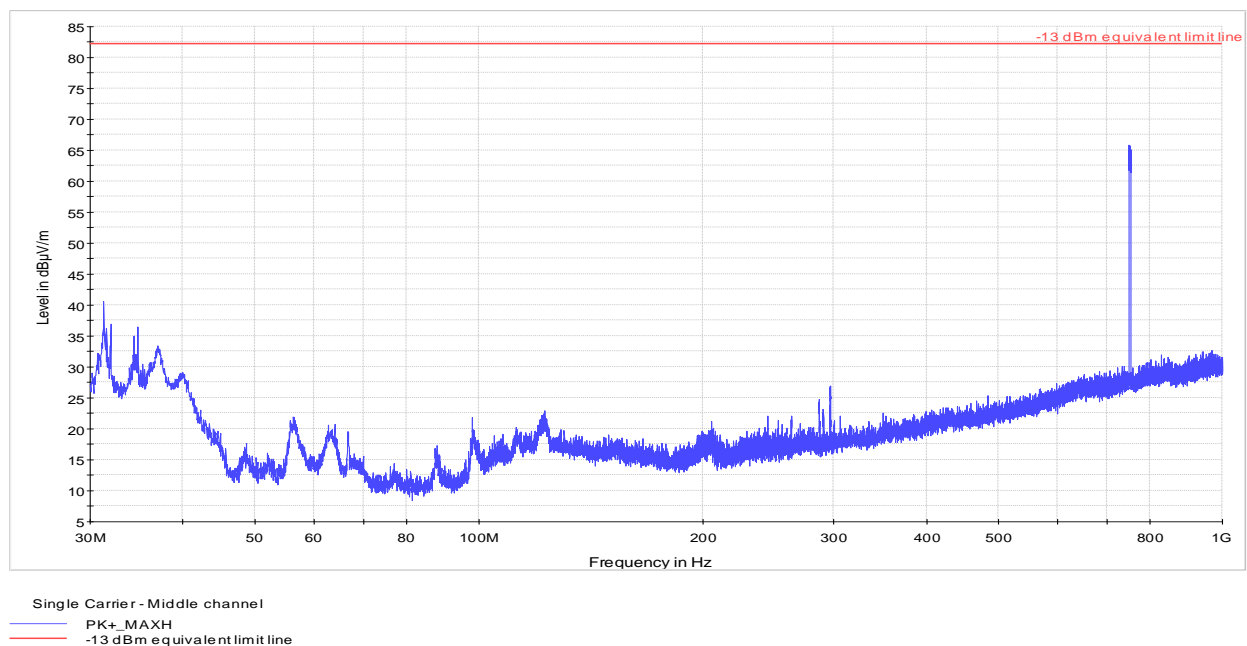


Figure 8.3-2: Radiated spurious emission below 1 GHz, mid channel

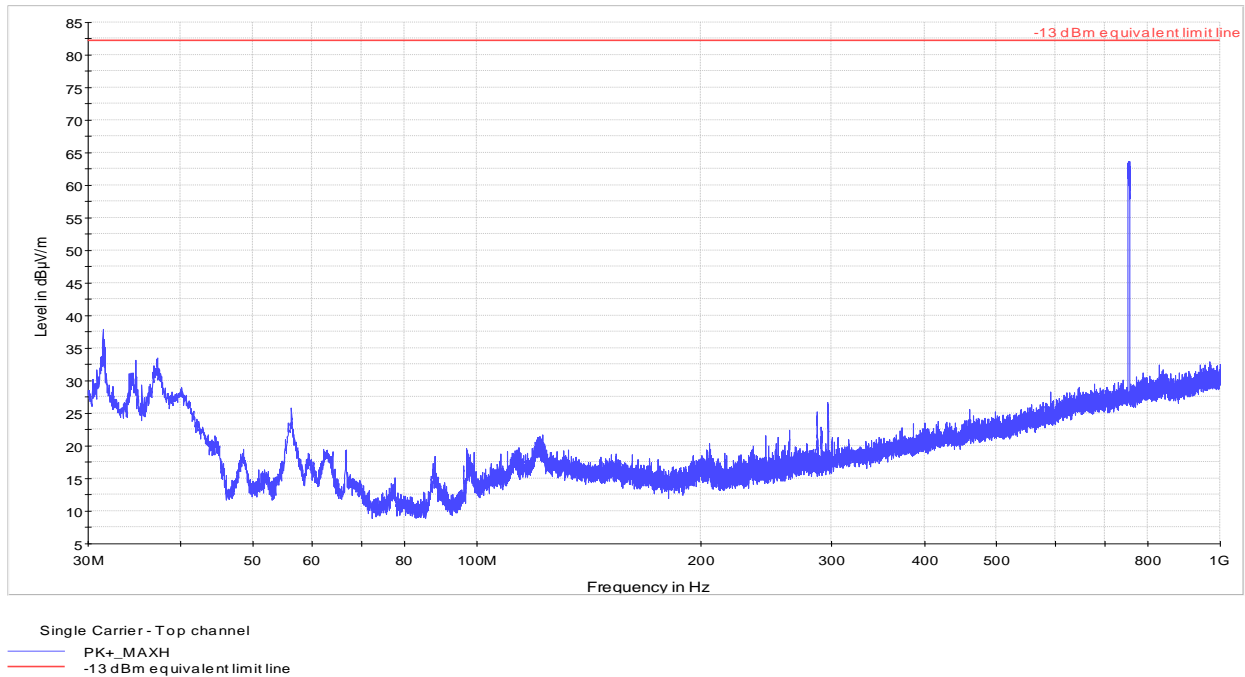


Figure 8.3-3: Radiated spurious emission below 1 GHz, high channel

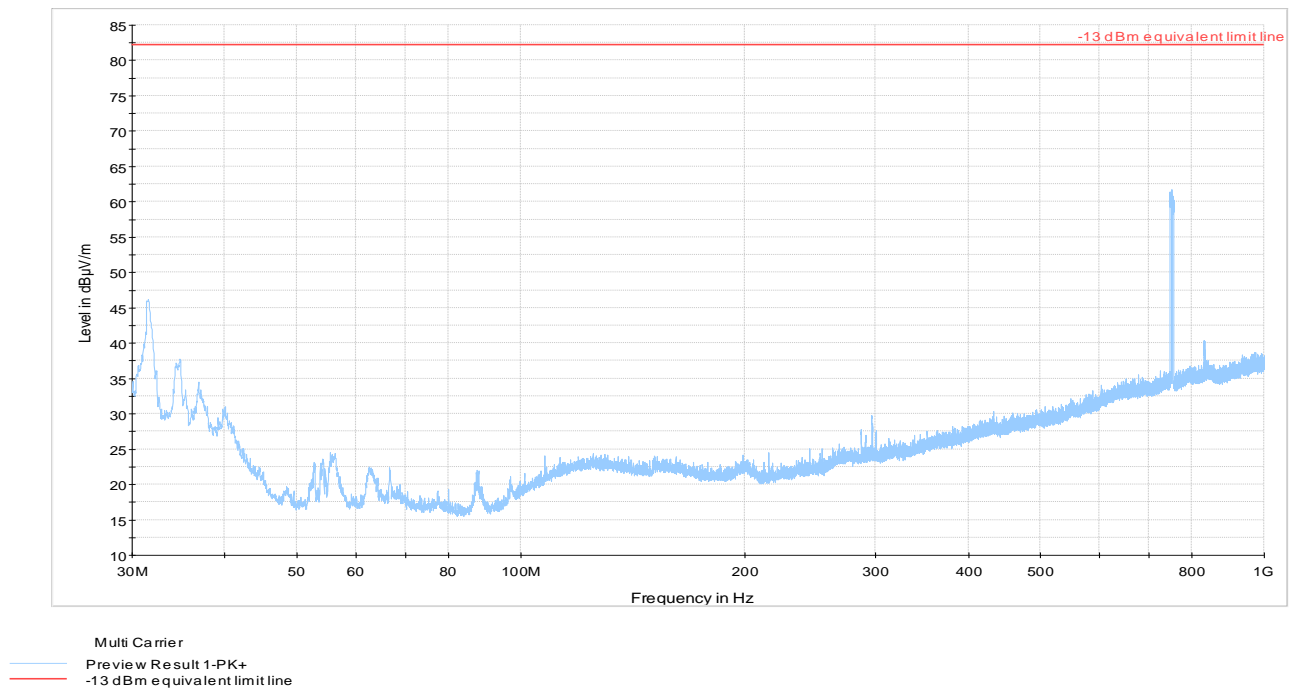


Figure 8.3-4: Radiated spurious emission below 1 GHz, multicarrier

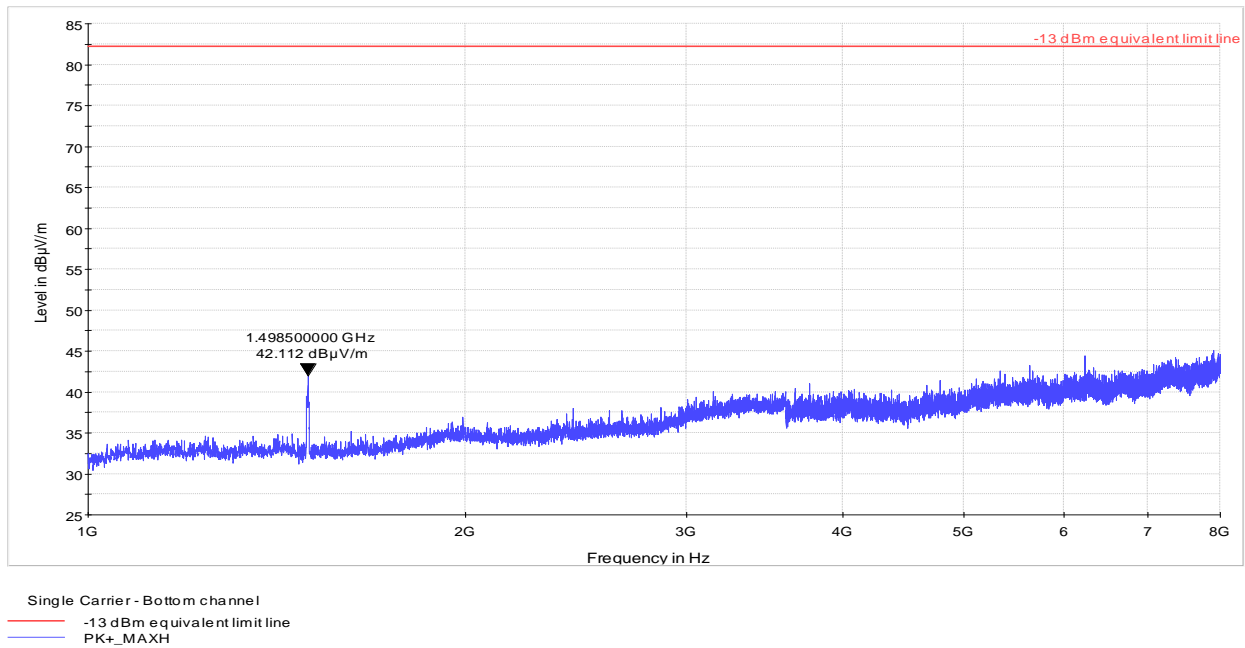


Figure 8.3-5: Radiated spurious emission above 1 GHz, low channel

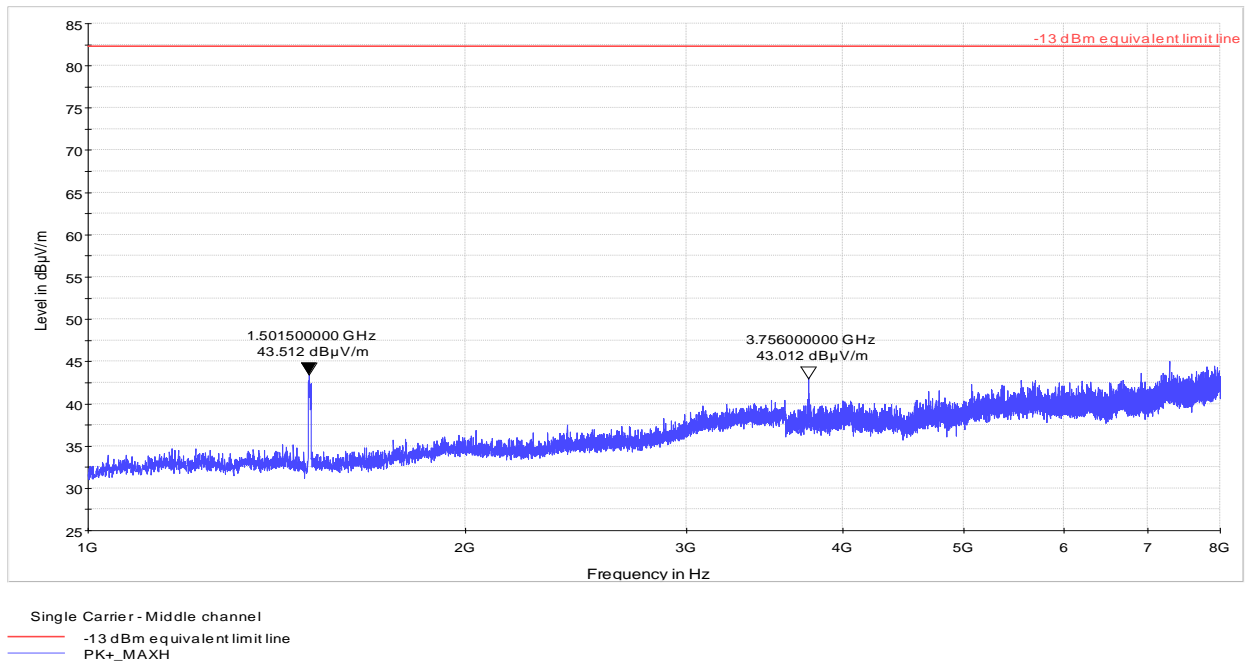


Figure 8.3-6: Radiated spurious emission above 1 GHz, mid channel

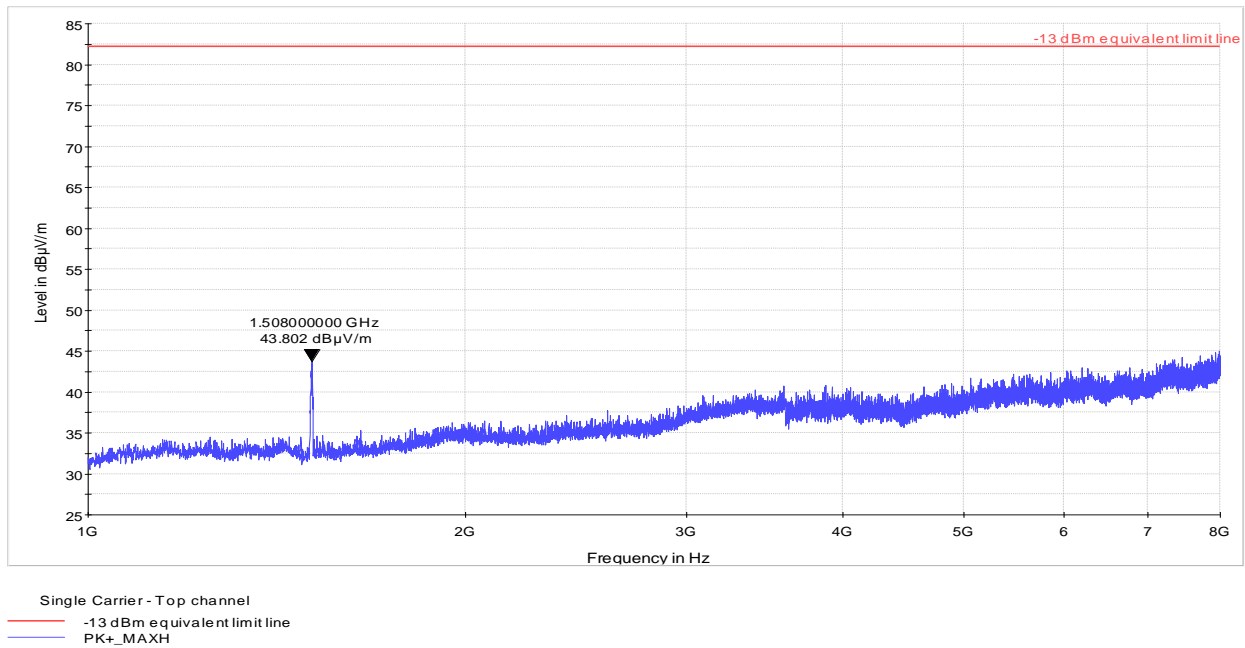


Figure 8.3-7: Radiated spurious emission above 1 GHz, high channel

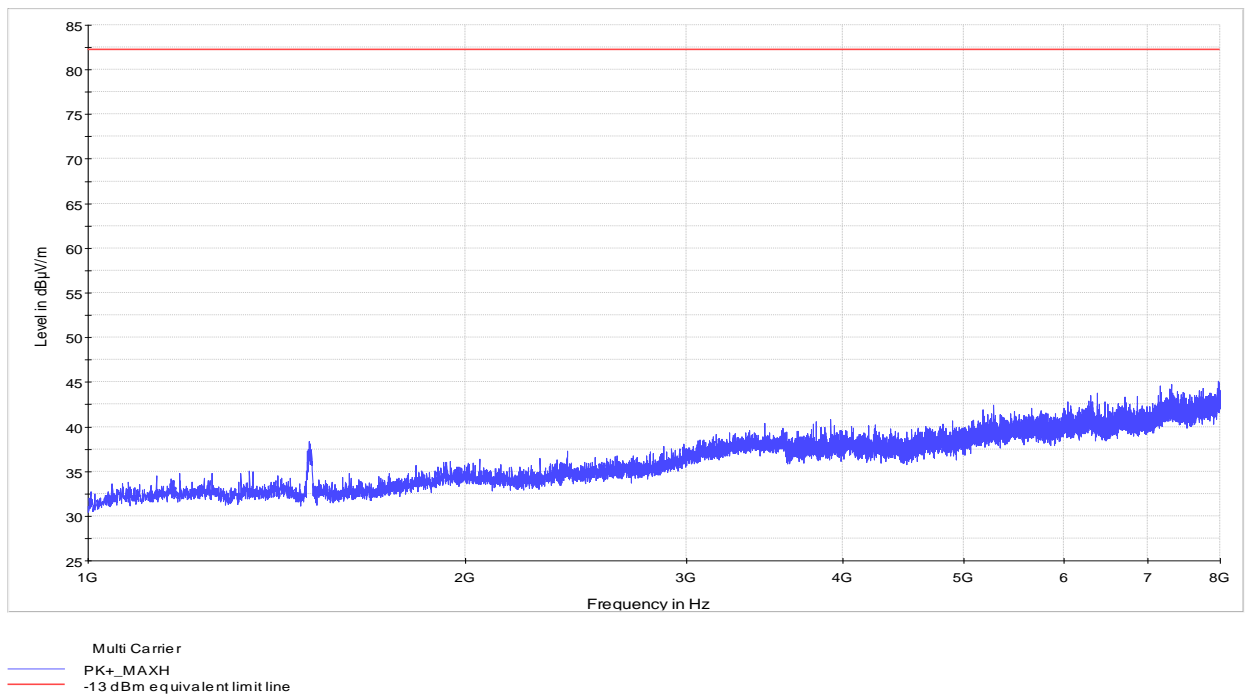


Figure 8.3-8: Radiated spurious emission above 1 GHz, multicarrier

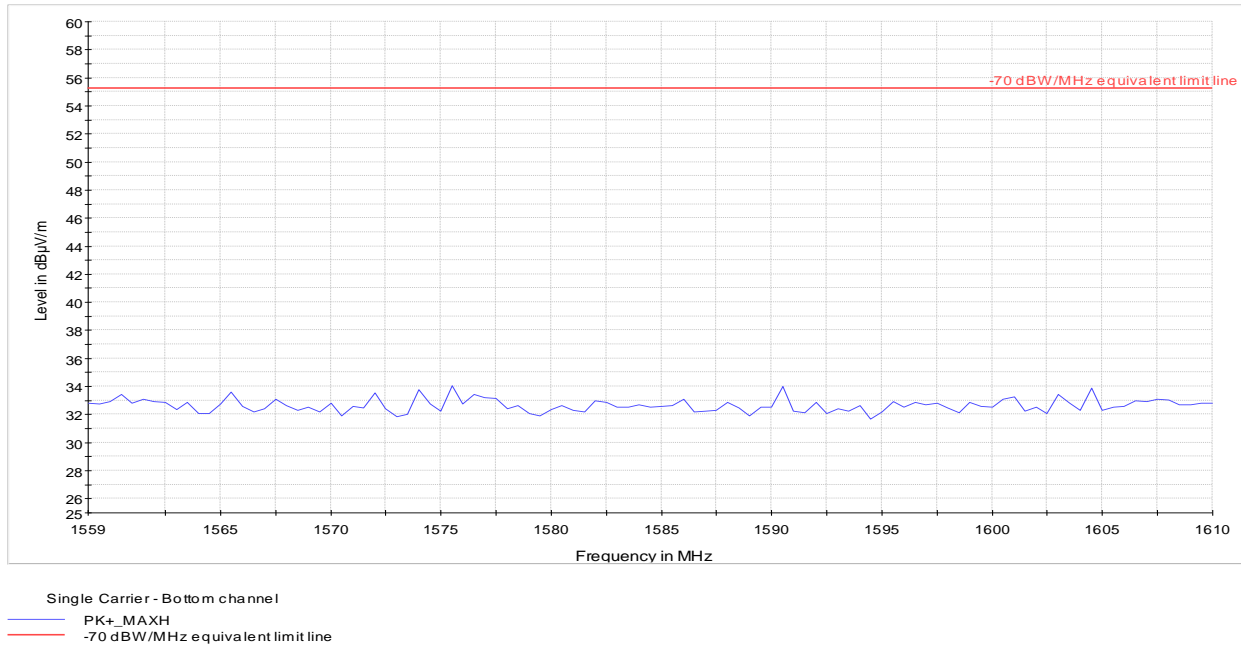


Figure 8.3-9: Radiated spurious emission within 1559–1610 MHz, low channel

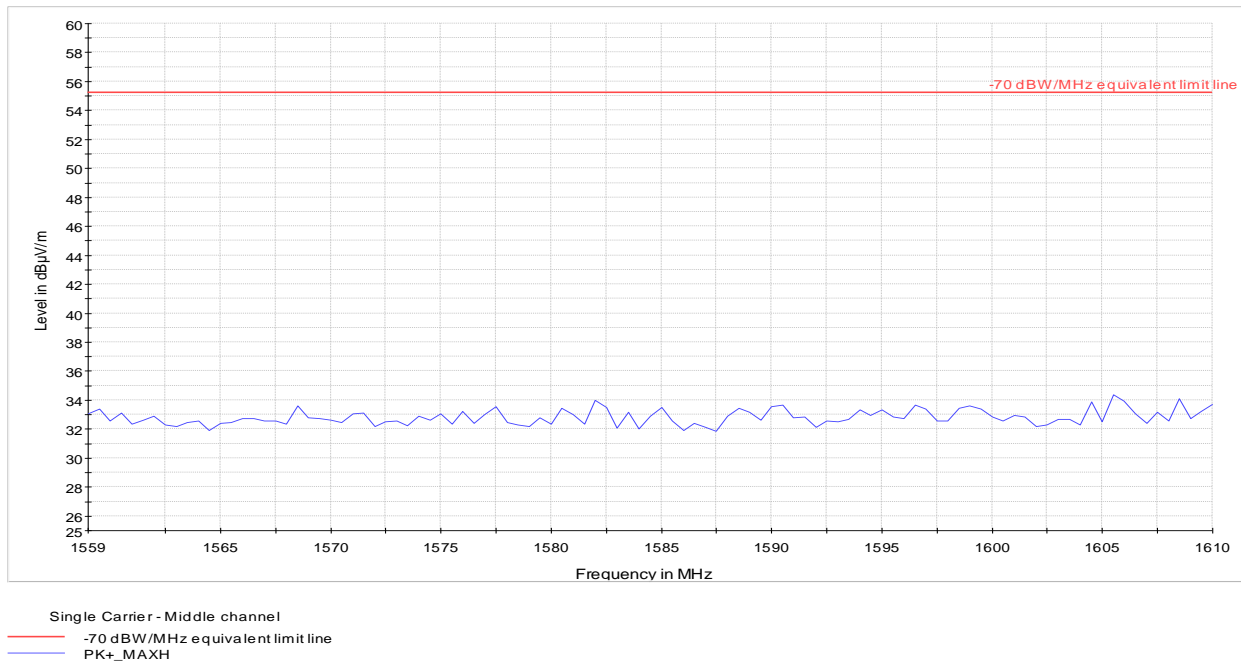


Figure 8.3-10: Radiated spurious emission within 1559–1610 MHz, mid channel

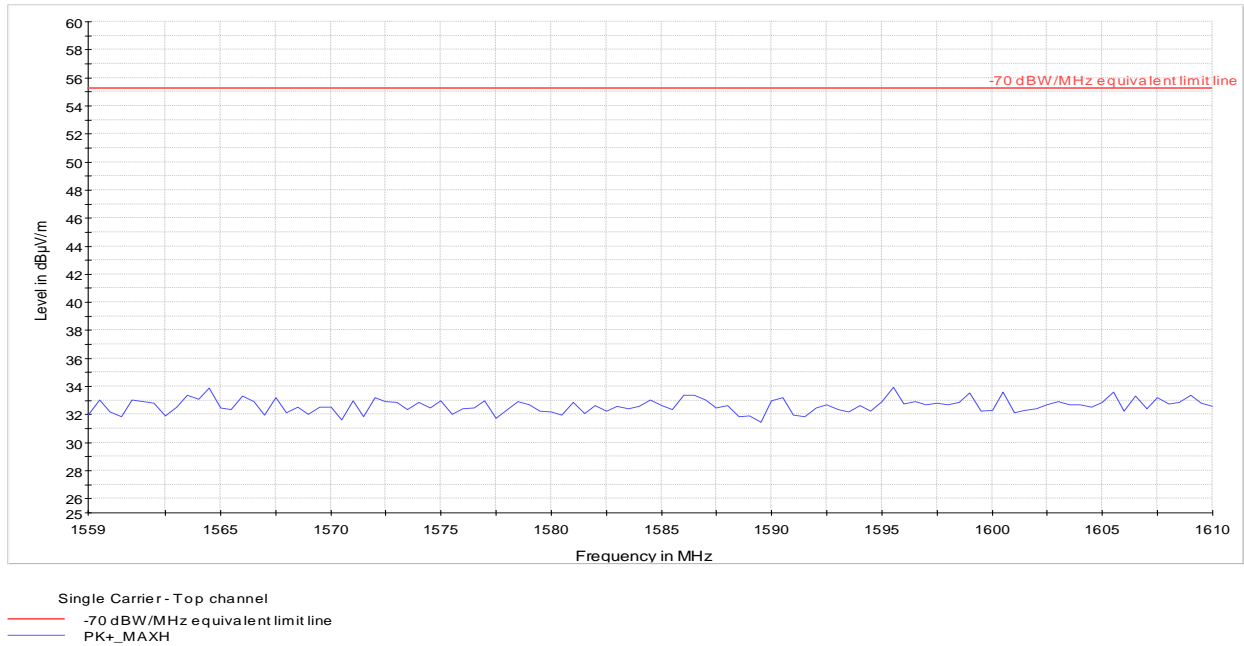


Figure 8.3-11: Radiated spurious emission within 1559–1610 MHz, high channel

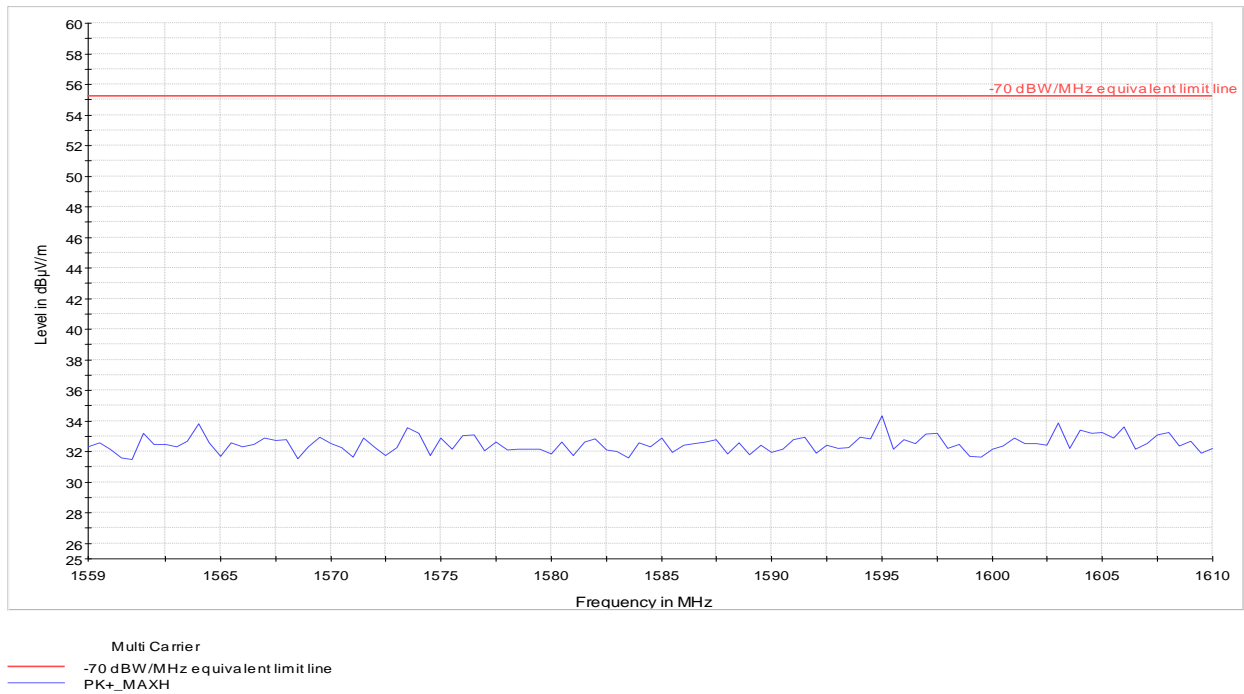


Figure 8.3-12: Radiated spurious emission within 1559–1610 MHz, multicarrier

8.4 FCC 27.54 and RSS-130, 4.3 Frequency stability

8.4.1 Definitions and limits

FCC:

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

RSS-130, 4.6:

The transmitter frequency stability limit shall be determined as follows:

- (a) The frequency offset shall be measured according to the procedure described in RSS-Gen and recorded;
- (b) Using a resolution bandwidth of 1% of the occupied bandwidth, a reference point at the unwanted emission level which complies with the attenuation of $43 + 10 \log_{10} P$ (watts) on the emission mask of the lowest and highest channel shall be selected, and the frequency at these points shall be recorded as f_L and f_H respectively.

The applicant shall ensure frequency stability by showing that f_L minus the frequency offset and f_H plus the frequency offset shall be within the frequency range in which the equipment is designed to operate.

8.4.2 Test summary

Test date	March 15, 2017	Temperature	23 °C
Test engineer	Andrey Adelberg	Air pressure	1010 mbar
Verdict	Pass	Relative humidity	33 %

8.4.3 Observations, settings and special notes

26 dBc points including frequency tolerance were assessed to remain within assigned band.
Spectrum analyzer settings:

Detector mode	Peak
Resolution bandwidth	300 Hz
Video bandwidth	RBW × 3
Trace mode	Max Hold

8.4.4 Test data

Table 8.4-1: Frequency error results

Temperature, °C	Voltage, V _{DC}	Frequency error, Hz
+50	54	+1.255
+40	54	-1.370
+30	54	+1.630
+20	54	+1.300
+20	48	-1.370
+20	40.8	+1.600
+10	54	+1.150
0	54	-0.905
-10	54	+0.728
-20	54	-0.543
-30	54	+0.722

Max negative drift: -1.37 Hz, Max positive drift: +1.63 Hz

Table 8.4-2: Frequency stability within the authorized bands results

Channel, MHz	Port	Modulation	26 dB band edge, MHz	Max. drift, Hz	Corrected BE, MHz	Limit, MHz	Margin, kHz
5, Low	A	QPSK	746.106000	-1.37	746.105999	746.0	105.999
5, High	A	QPSK	755.897000	1.63	755.897002	756.0	102.998
5, Low	B	QPSK	746.101500	-1.37	746.101499	746.0	101.499
5, High	B	QPSK	755.896500	1.63	755.896502	756.0	103.498
5, Low	A	256QAM	746.103000	-1.37	746.102999	746.0	102.999
5, High	A	256QAM	755.905000	1.63	755.905002	756.0	94.998
5, Low	B	256QAM	746.099500	-1.37	746.099499	746.0	99.499
5, High	B	256QAM	755.903500	1.63	755.903502	756.0	96.498
10	A	QPSK	746.189500	-1.37	746.189499	746.0	189.499
10	A	QPSK	755.810500	1.63	755.810502	756.0	189.498
10	B	QPSK	746.200000	-1.37	746.199999	746.0	199.999
10	B	QPSK	755.800000	1.63	755.800002	756.0	199.998
10	A	256QAM	746.212000	-1.37	746.211999	746.0	211.999
10	A	256QAM	755.788000	1.63	755.788002	756.0	211.998
10	B	256QAM	746.212000	-1.37	746.211999	746.0	211.999
10	B	256QAM	755.788000	1.63	755.788002	756.0	211.998

8.5 FCC Part 2.1049 and RSS-Gen, 6.6 Occupied bandwidth

8.5.1 Definitions and limits

FCC:

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

RSS-Gen, 6.6

The emission bandwidth (×dB) is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated × dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3× the resolution bandwidth.

When the occupied bandwidth limit is not stated in the applicable RSS or reference measurement method, the transmitted signal bandwidth shall be reported as the 99% emission bandwidth, as calculated or measured.

The transmitter shall be operated at its maximum carrier power measured under normal test conditions.

The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3×RBW.

The trace data points are recovered and are directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded.

The difference between the two recorded frequencies is the 99% occupied bandwidth.

8.5.2 Test summary

Test date	March 14, 2017	Temperature	22 °C
Test engineer	Andrey Adelberg	Air pressure	1009 mbar
Verdict	Pass	Relative humidity	33 %

8.5.3 Observations, settings and special notes

Spectrum analyzer settings:

Detector mode	Peak
Resolution bandwidth	≥1 % of span
Video bandwidth	RBW × 3
Trace mode	Max Hold

8.5.4 Test data

Table 8.5-1: Occupied bandwidth results

Remarks	99% OBW, MHz	26 dB BW, MHz
5 MHz, QPSK, Port A, Low channel	4.4764	4.788
5 MHz, QPSK, Port A, High channel	4.4768	4.794
5 MHz, 256QAM, Port A, Low channel	4.4819	4.794
5 MHz, 256QAM, Port A, High channel	4.4838	4.810
5 MHz, QPSK, Port B, Low channel	4.4796	4.797
5 MHz, QPSK, Port B, High channel	4.4799	4.793
5 MHz, 256QAM, Port B, Low channel	4.4901	4.801
5 MHz, 256QAM, Port B, High channel	4.4892	4.807
10 MHz, QPSK, Port A	8.9390	9.621
10 MHz, 256QAM, Port A	8.9593	9.576
10 MHz, QPSK, Port B	8.9397	9.600
10 MHz, 256QAM, Port B	8.9591	9.576

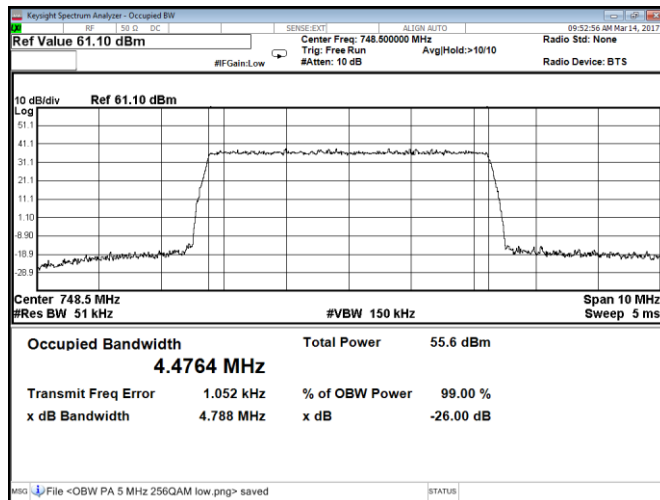


Figure 8.5-1: Occupied bandwidth, Low 5 MHz channel, QPSK, Port A

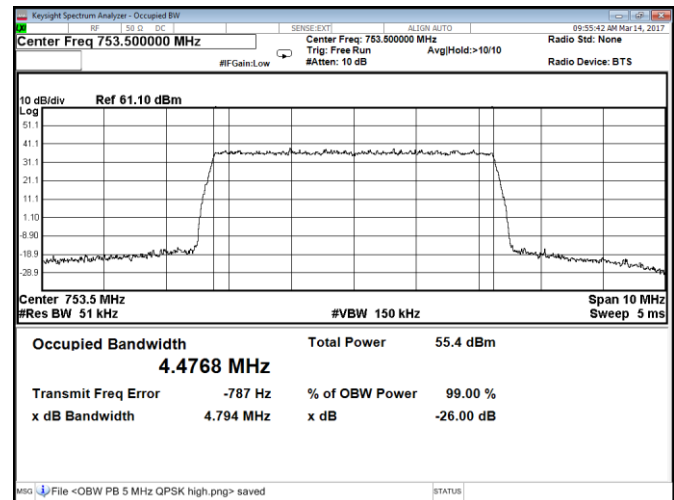


Figure 8.5-2: Occupied bandwidth, High 5 MHz channel, QPSK, Port A

Section 8
Test name
Specification

Testing data
 FCC Part 2.1049 and RSS-Gen, 6.6 Occupied bandwidth
 FCC Part 2, RSS-Gen, Issue 4

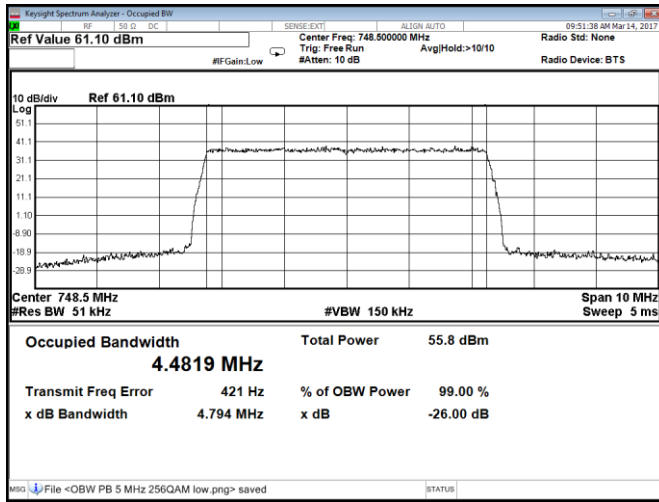


Figure 8.5-3: Occupied bandwidth, Low 5 MHz channel, 256QAM, Port A

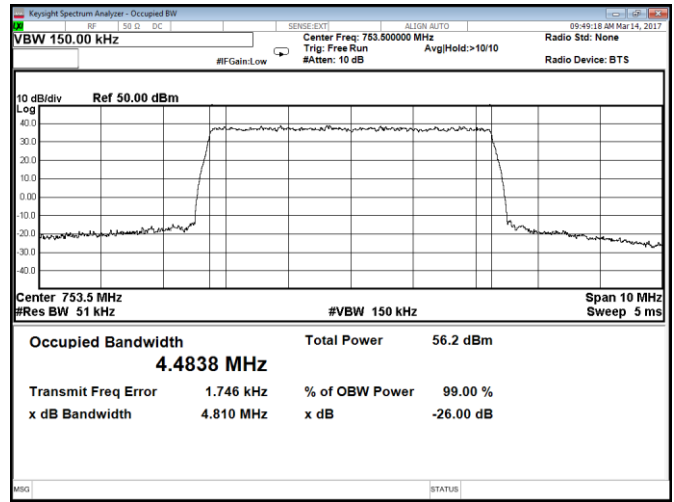


Figure 8.5-4: Occupied bandwidth, High 5 MHz channel, 256QAM, Port A

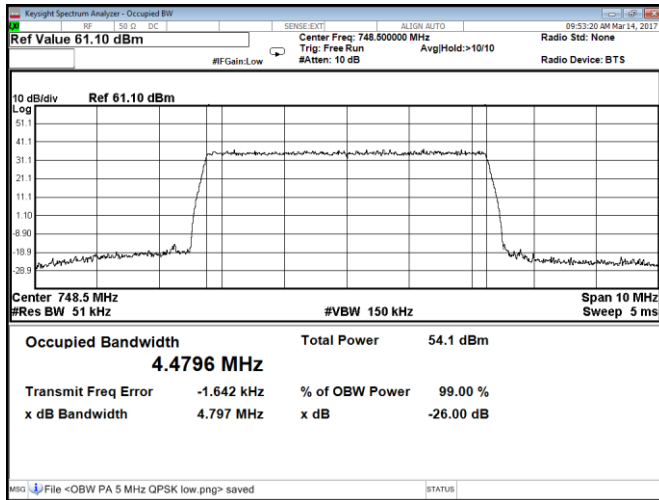


Figure 8.5-5: Occupied bandwidth, Low 5 MHz channel, QPSK, Port B

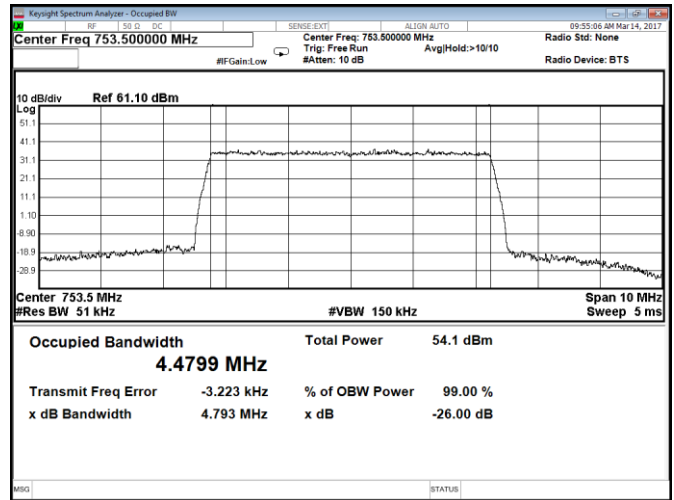


Figure 8.5-6: Occupied bandwidth, High 5 MHz channel, QPSK, Port B

Section 8
Test name
Specification

Testing data
FCC Part 2.1049 and RSS-Gen, 6.6 Occupied bandwidth
FCC Part 2, RSS-Gen, Issue 4

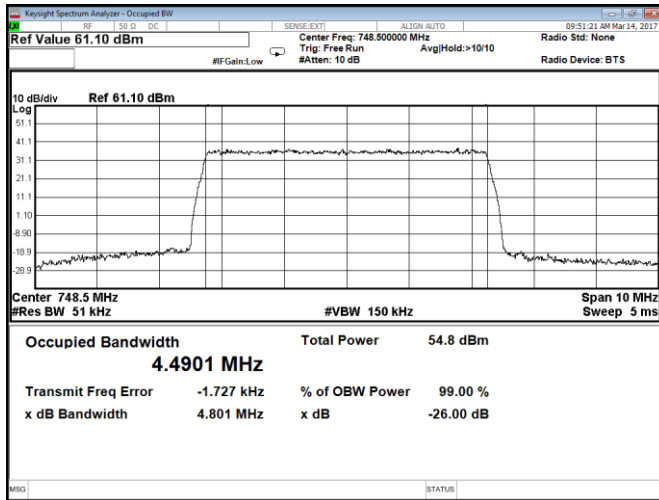


Figure 8.5-7: Occupied bandwidth, Low 5 MHz channel, 256QAM, Port B

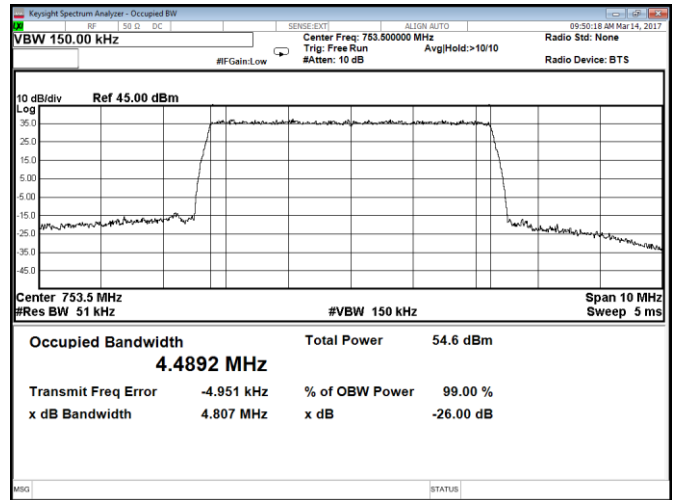


Figure 8.5-8: Occupied bandwidth, High 5 MHz channel, 256QAM, Port B

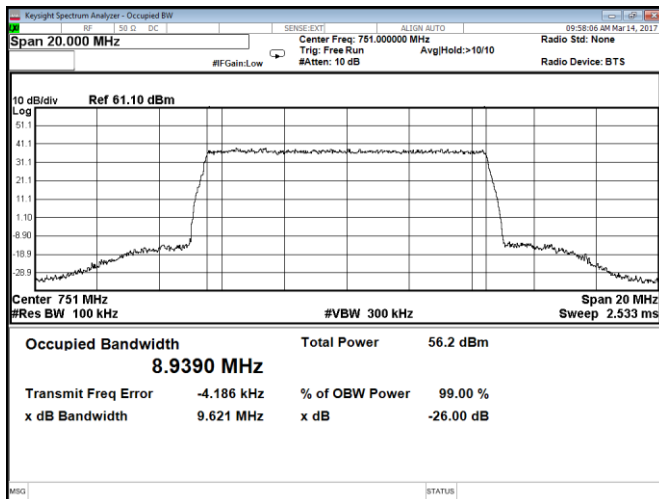


Figure 8.5-9: Occupied bandwidth, 10 MHz channel, QPSK, Port A

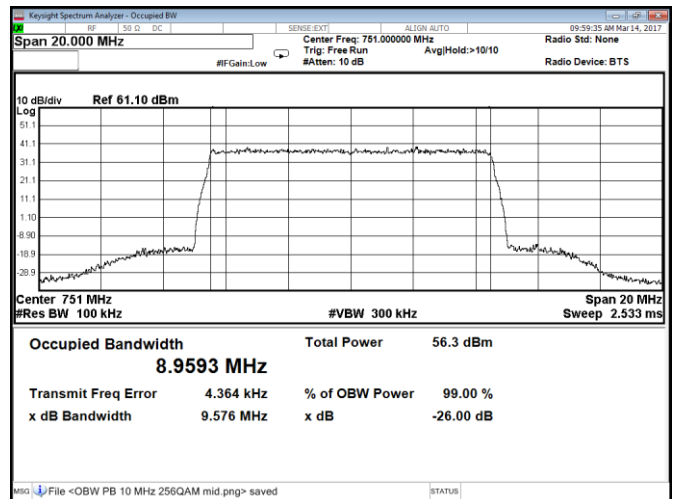


Figure 8.5-10: Occupied bandwidth, 10 MHz channel, 256QAM, Port A

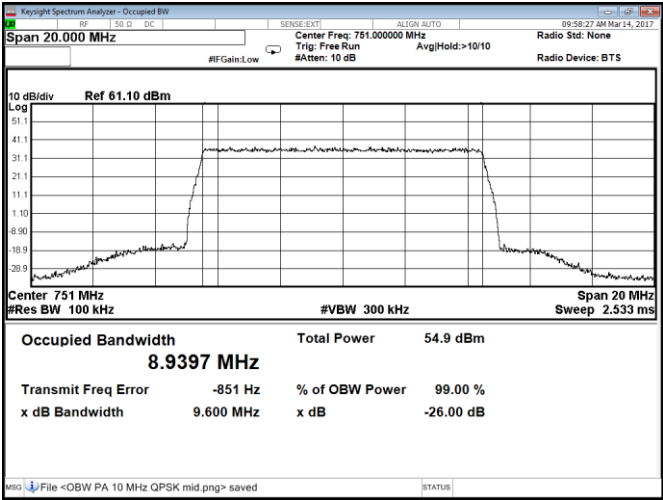


Figure 8.5-11: Occupied bandwidth, 10 MHz channel, QPSK, Port B

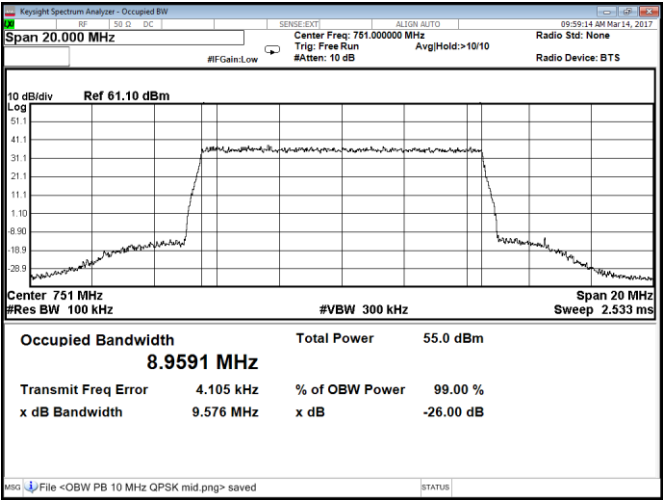


Figure 8.5-12: Occupied bandwidth, 10 MHz channel, 256QAM, Port B

8.6 RSS-Gen, 7.1.3 Receiver conducted limits

8.6.1 Definitions and limits

If the receiver has a detachable antenna of known impedance, an antenna-conducted spurious emissions measurement is permitted as an alternative to radiated measurement. However, the radiated method of Section 7.1.2 is preferred.

The antenna-conducted test shall be performed with the antenna disconnected and with the receiver antenna terminals connected to a measuring instrument having equal impedance to that specified for the antenna.

The receiver-spurious emissions measured at the antenna terminals by the antenna-conducted method shall then comply with the following limits:

Receiver-spurious emissions at any discrete frequency shall not exceed 2 nW in the band 30–1000 MHz, nor 5 nW above 1000 MHz.

8.6.2 Test summary

Test date	March 14, 2017	Temperature	22 °C
Test engineer	Andrey Adelberg	Air pressure	1009 mbar
Verdict	Pass	Relative humidity	33 %

8.6.3 Observations, settings and special notes

Spectrum analyzer settings:

Detector mode	Peak
Resolution bandwidth	100 kHz (below 1 GHz), 1 MHz (above 1 GHz)
Video bandwidth	RBW × 3
Trace mode	Max Hold

8.6.4 Test data

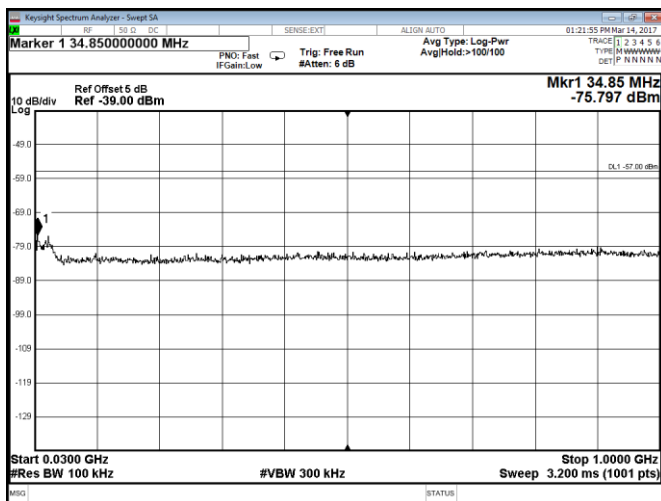


Figure 8.6-1: Receiver spurious emissions at port A, below 1 GHz

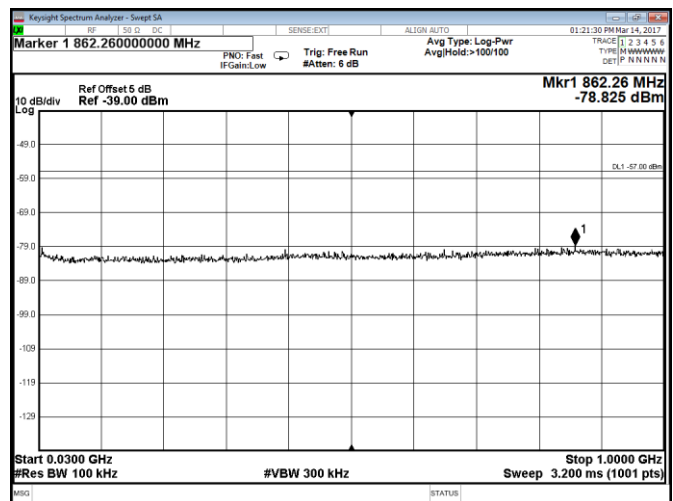


Figure 8.6-2: Receiver spurious emissions at Port B, below 1 GHz

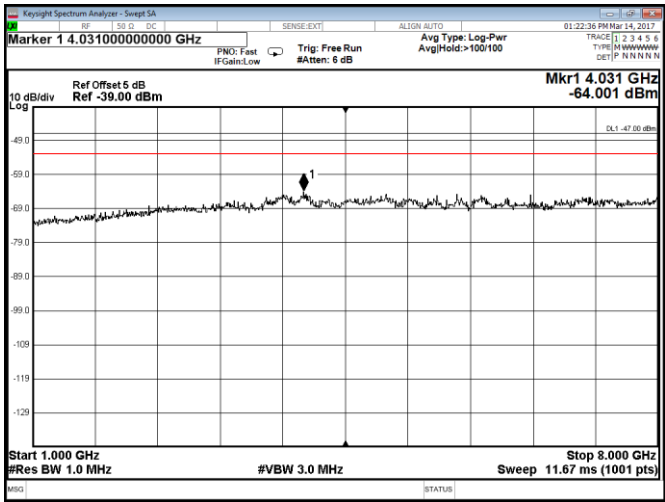


Figure 8.6-3: Receiver spurious emissions at port A, above 1 GHz

Note: limit above 1 GHz is 5 nW (-53 dBm).

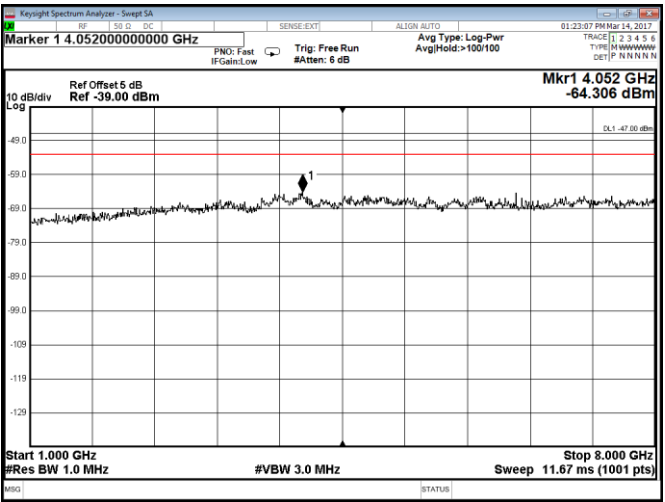
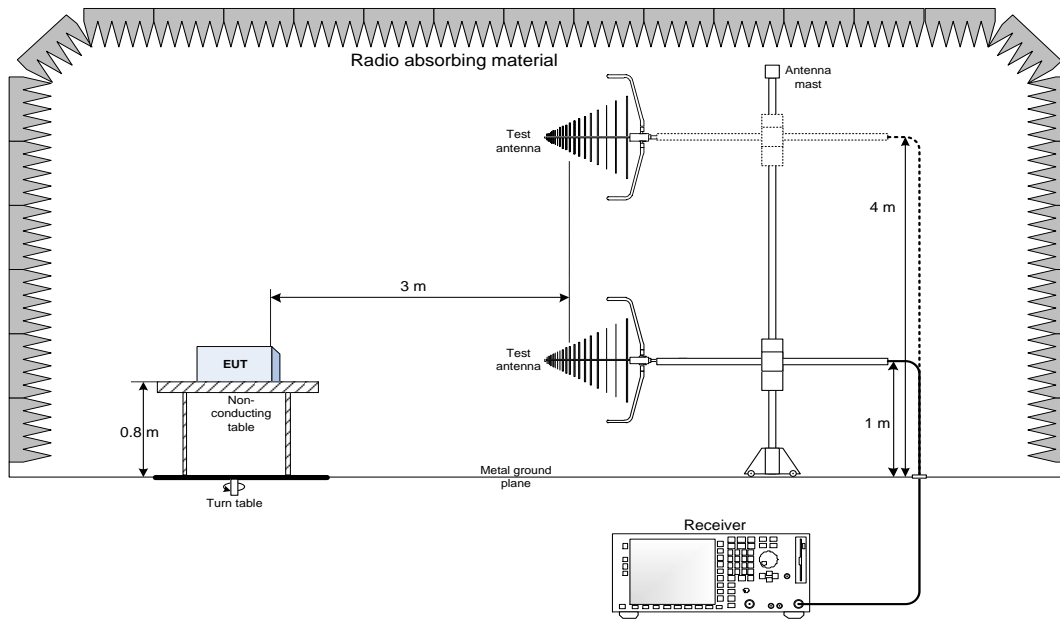


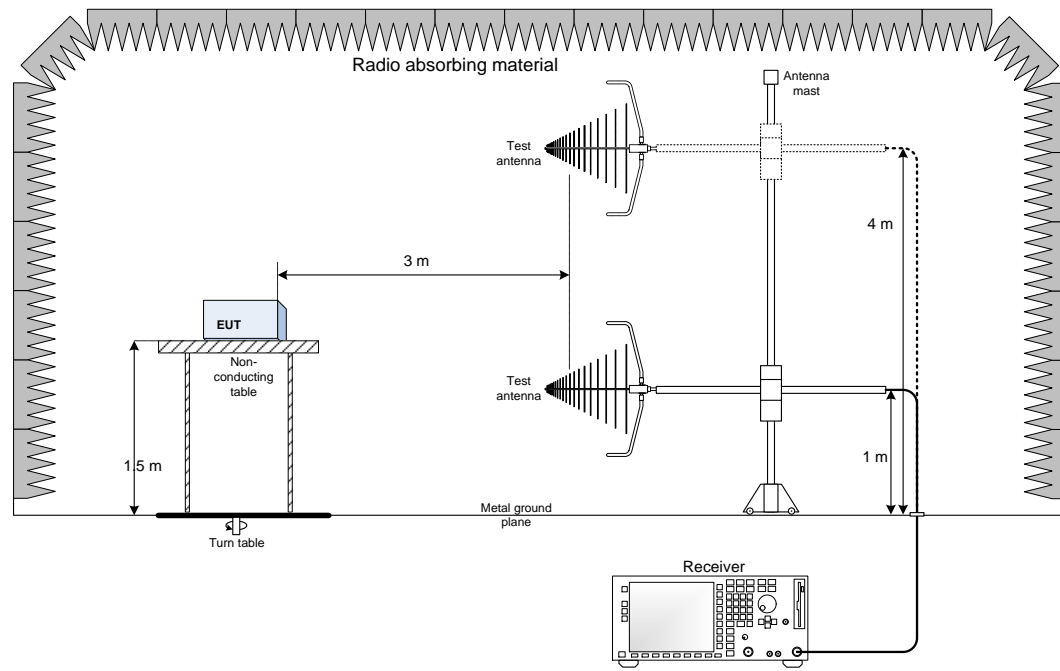
Figure 8.6-4: Receiver spurious emissions at Port B, above 1 GHz

Section 9. Block diagrams of test set-ups

9.1 Radiated emissions set-up for frequencies below 1 GHz



9.2 Radiated emissions set-up for frequencies above 1 GHz



9.3 Conducted emissions set-up

