

Figure 8.3-29: Conducted spurious emission within 763–775 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 1

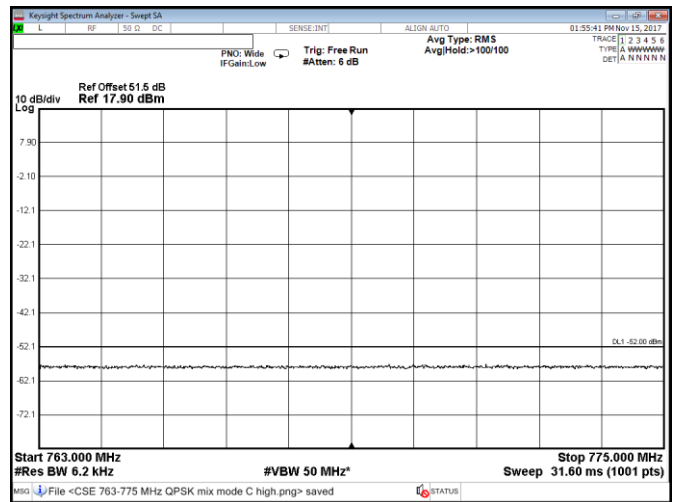


Figure 8.3-30: Conducted spurious emission within 763–775 MHz, Port B, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 1

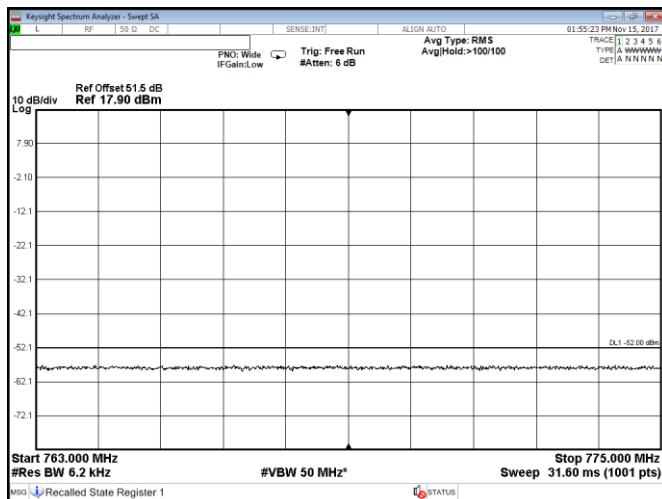


Figure 8.3-31: Conducted spurious emission within 763–775 MHz, Port C, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 1

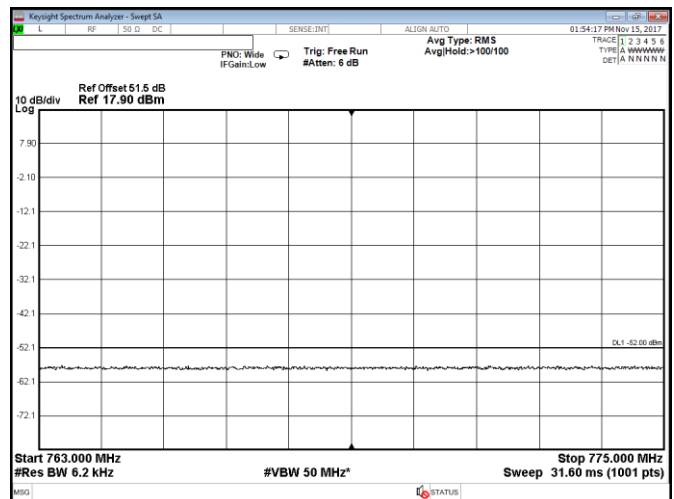


Figure 8.3-32: Conducted spurious emission within 763–775 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 1

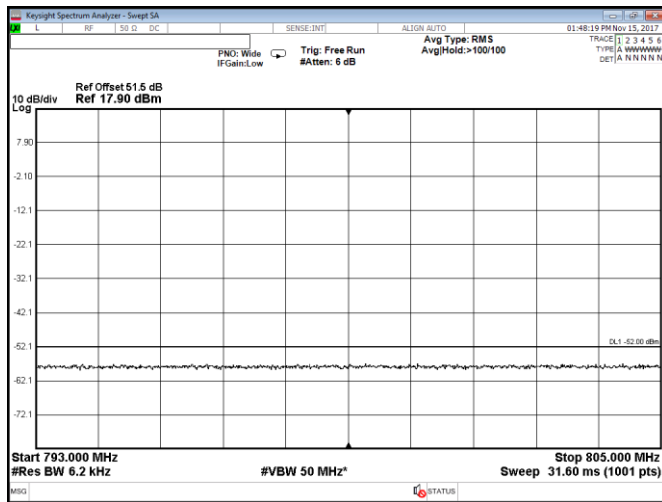


Figure 8.3-33: Conducted spurious emission within 793–805 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 1

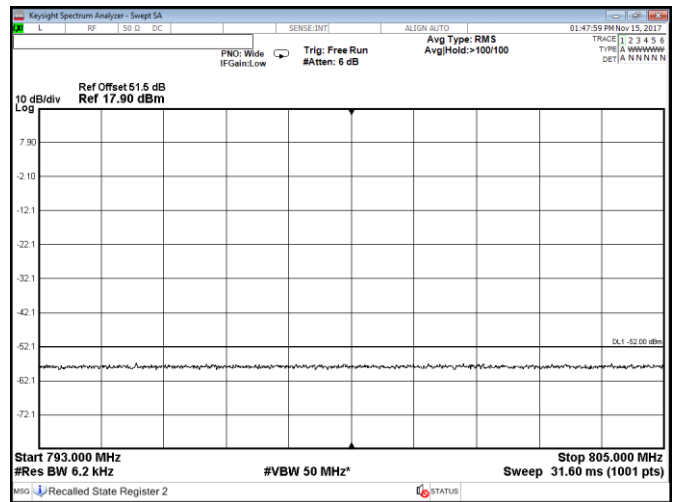


Figure 8.3-34: Conducted spurious emission within 793–805 MHz, Port B, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 1

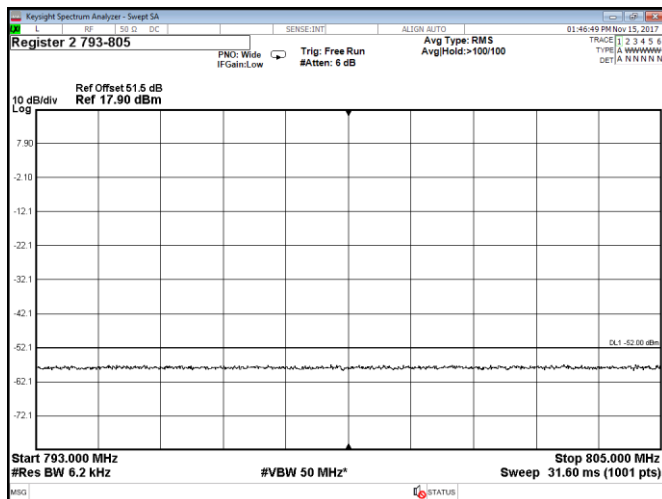


Figure 8.3-35: Conducted spurious emission within 793–805 MHz, Port C, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 1

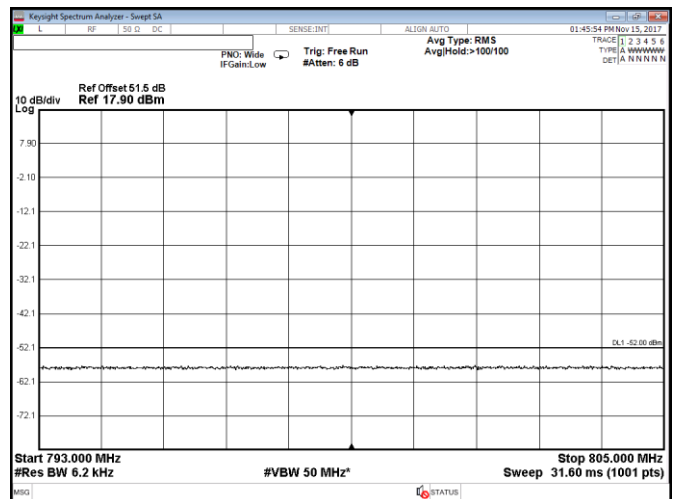


Figure 8.3-36: Conducted spurious emission within 793–805 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 1

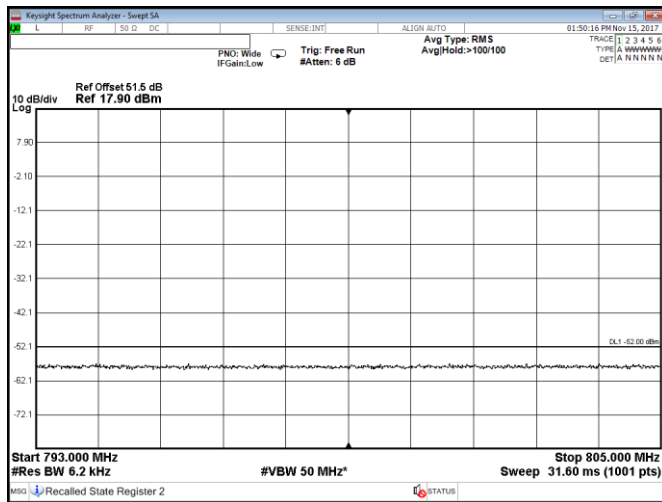


Figure 8.3-37: Conducted spurious emission within 793–805 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 1

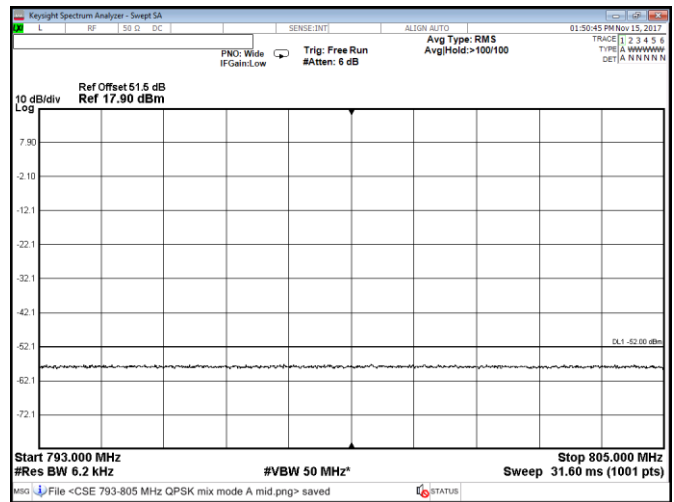


Figure 8.3-38: Conducted spurious emission within 793–805 MHz, Port B, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 1

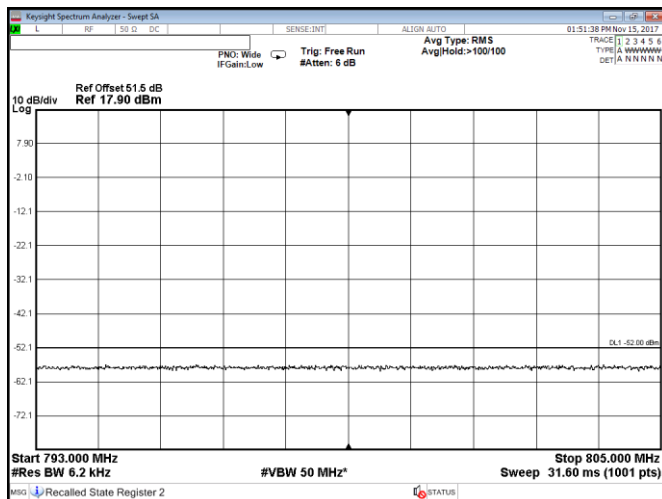


Figure 8.3-39: Conducted spurious emission within 793–805 MHz, Port C, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 1

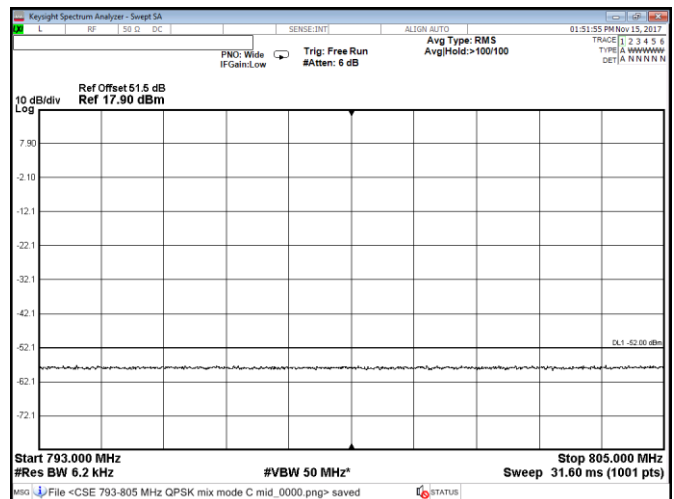


Figure 8.3-40: Conducted spurious emission within 793–805 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 1

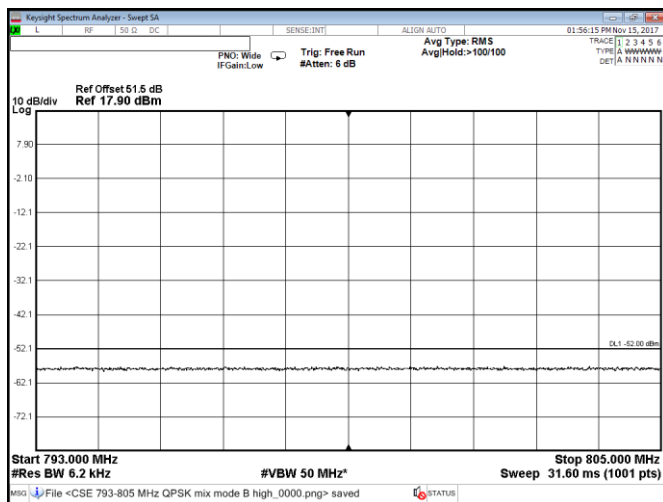


Figure 8.3-41: Conducted spurious emission within 793–805 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 1

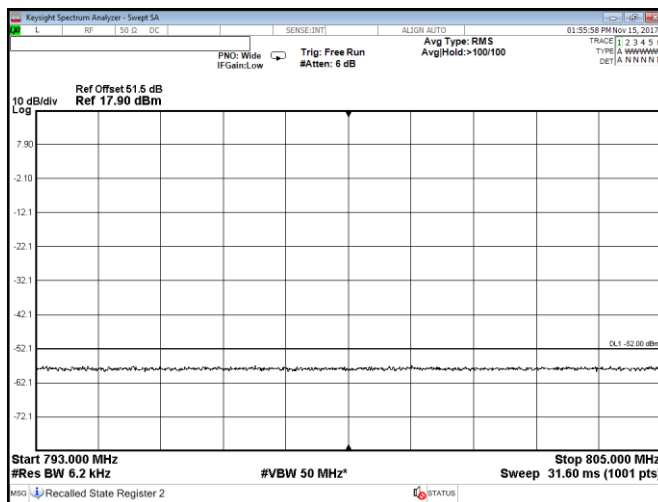


Figure 8.3-42: Conducted spurious emission within 793–805 MHz, Port B, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 1

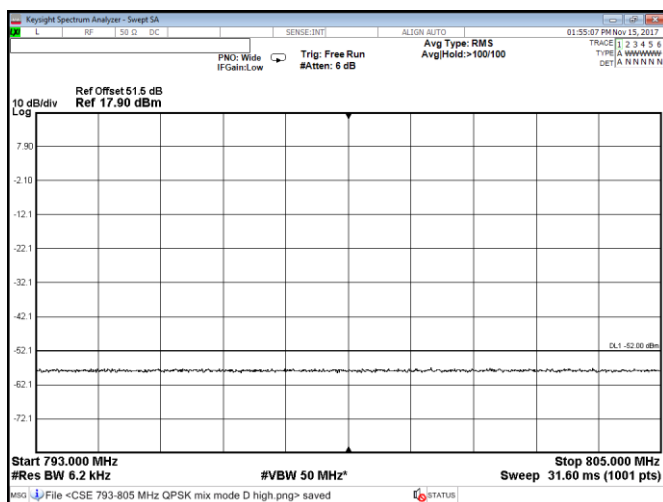


Figure 8.3-43: Conducted spurious emission within 793–805 MHz, Port C, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 1

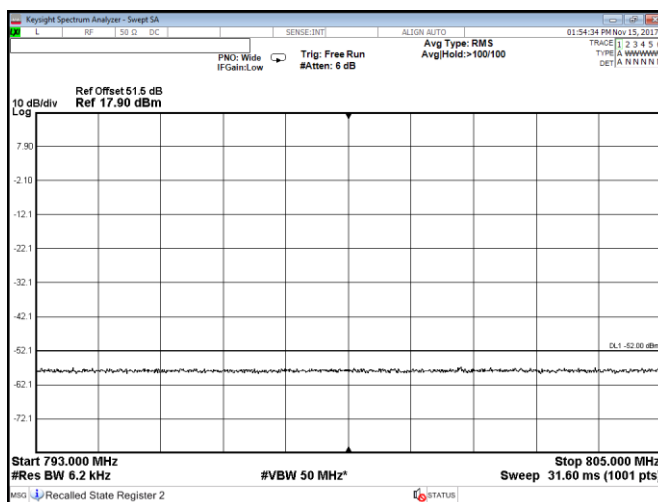


Figure 8.3-44: Conducted spurious emission within 793–805 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 1

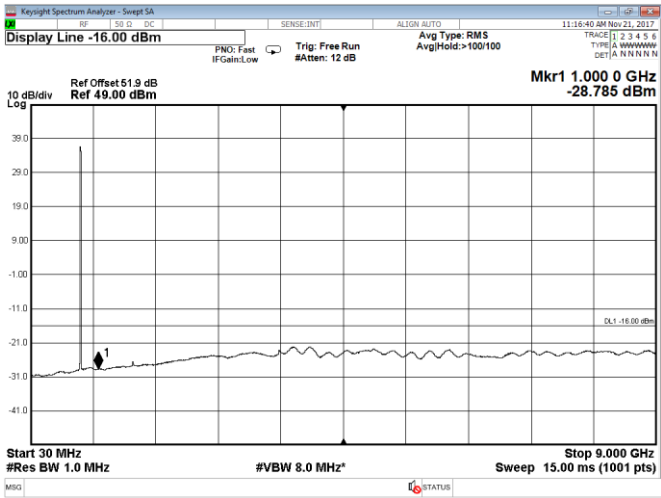


Figure 8.3-45: Conducted spurious emissions at Port A, QPSK, configuration 2

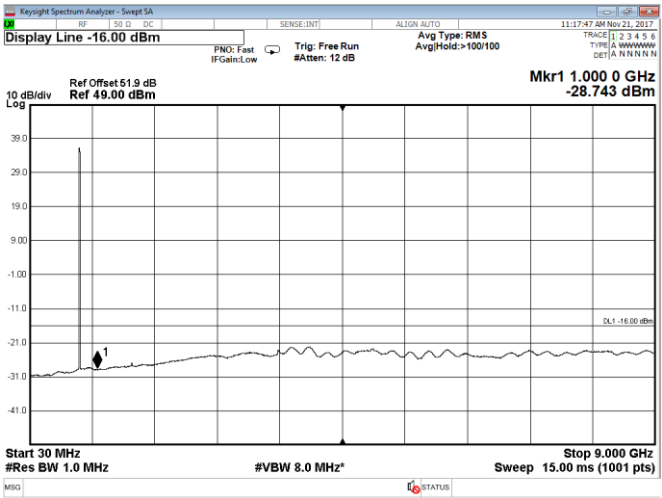


Figure 8.3-46: Conducted spurious emissions at Port D, QPSK, configuration 2

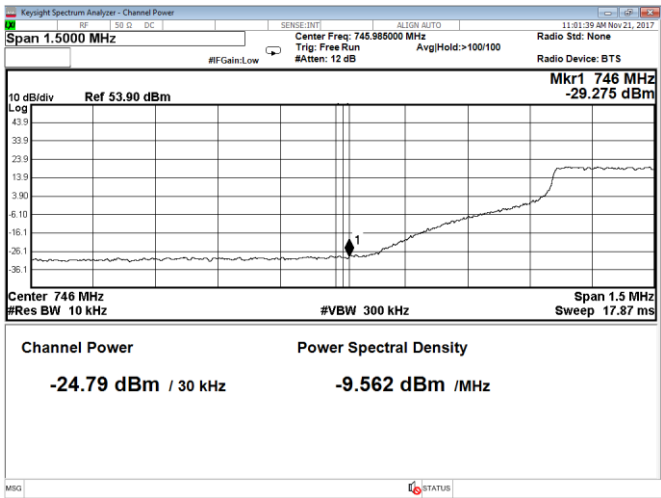


Figure 8.3-47: Conducted band edge emission at 746 MHz, Port A, QPSK, configuration 2

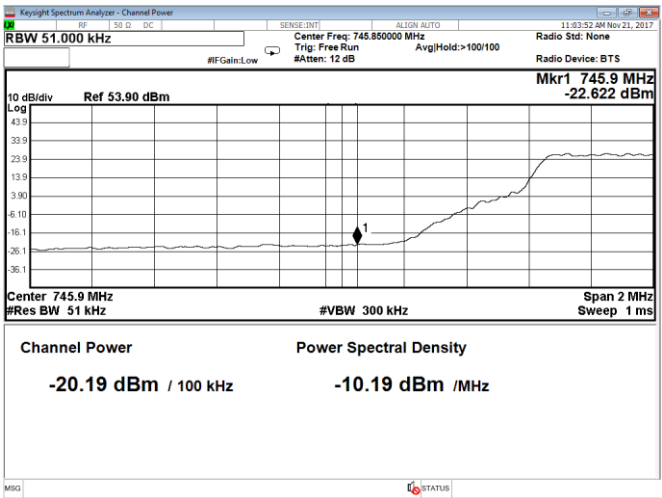


Figure 8.3-48: Conducted band edge emission at 745.9 MHz, Port A, QPSK, configuration 2

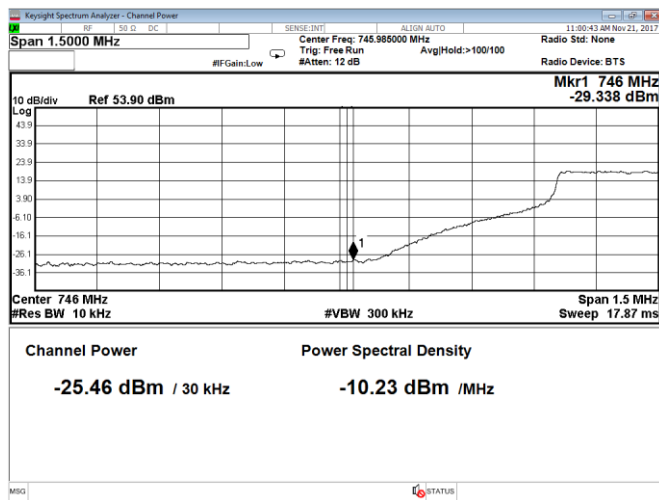


Figure 8.3-49: Conducted band edge emission at 746 MHz, Port D, QPSK, configuration 2

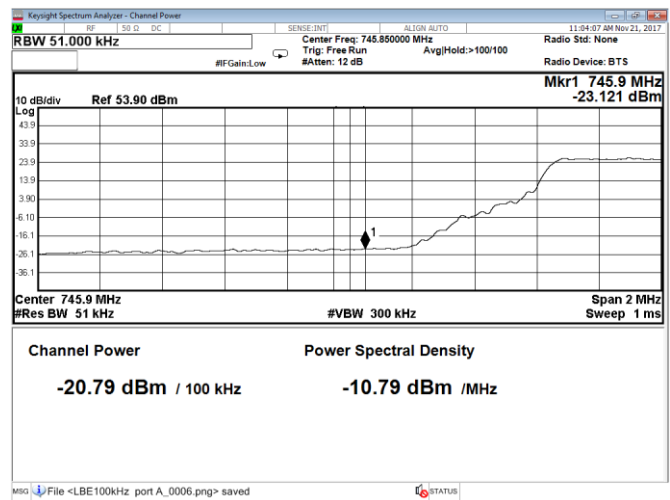


Figure 8.3-50: Conducted band edge emission at 745.9 MHz, Port D, QPSK, configuration 2

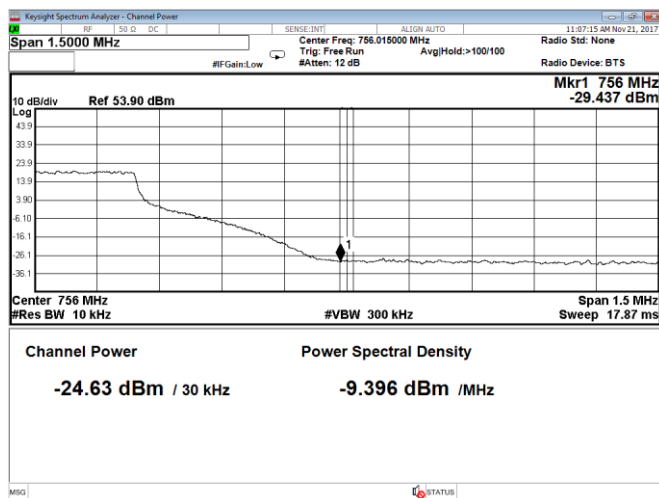


Figure 8.3-51: Conducted band edge emission at 756 MHz, Port A, QPSK, configuration 2

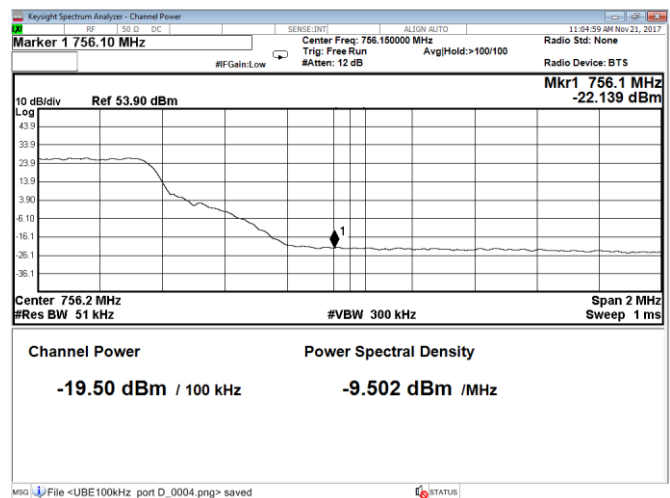


Figure 8.3-52: Conducted band edge emission at 756.1 MHz, Port A, QPSK, configuration 2

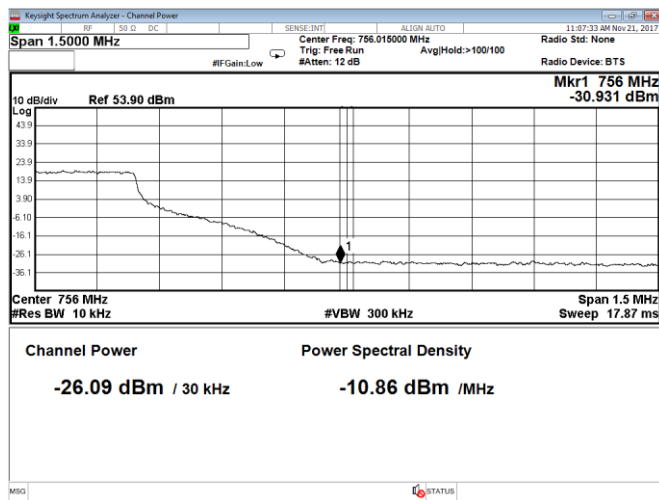


Figure 8.3-53: Conducted band edge emission at 756 MHz, Port D, QPSK, configuration 2

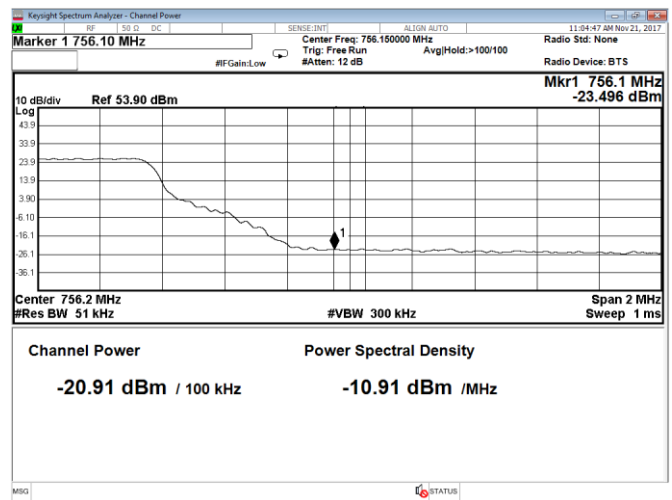


Figure 8.3-54: Conducted band edge emission at 756.1 MHz, Port D, QPSK, configuration 2

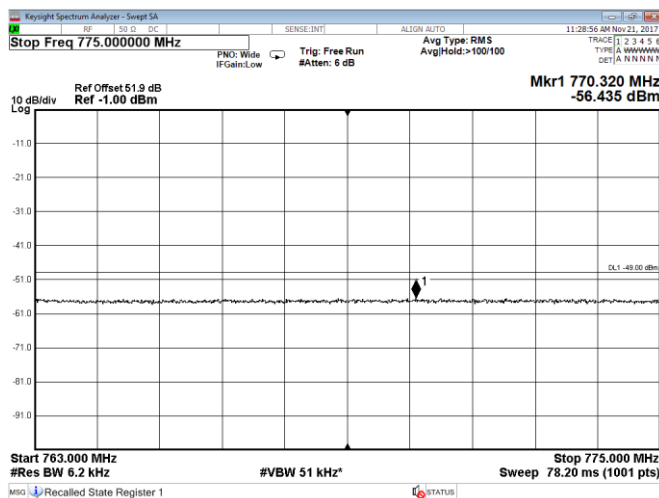


Figure 8.3-55: Conducted spurious emission within 763-775 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 2

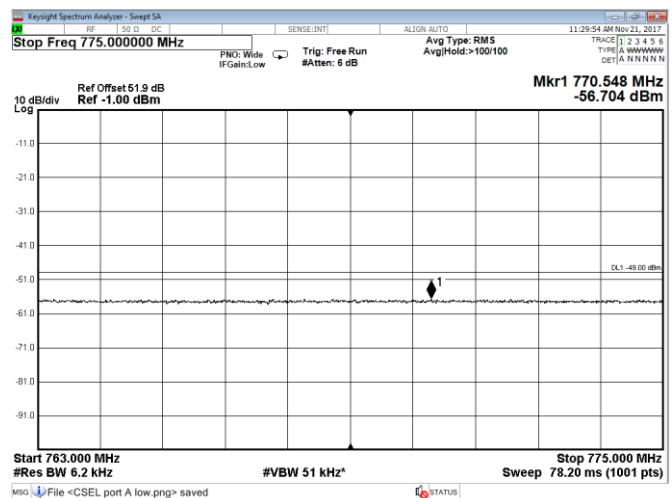


Figure 8.3-56: Conducted spurious emission within 763-775 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 2

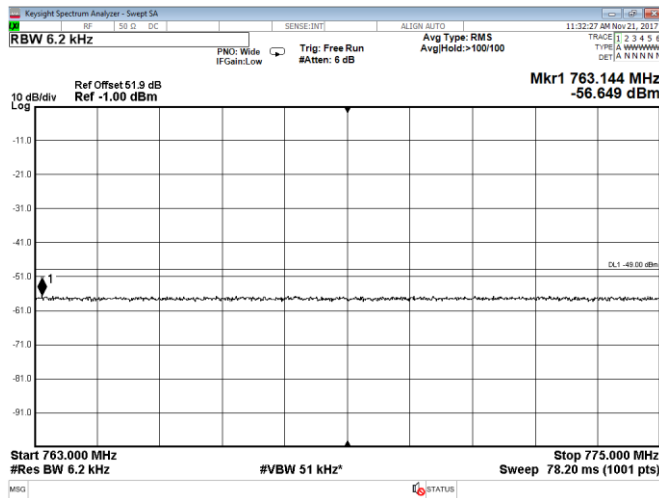


Figure 8.3-57: Conducted spurious emission within 763–775 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 2

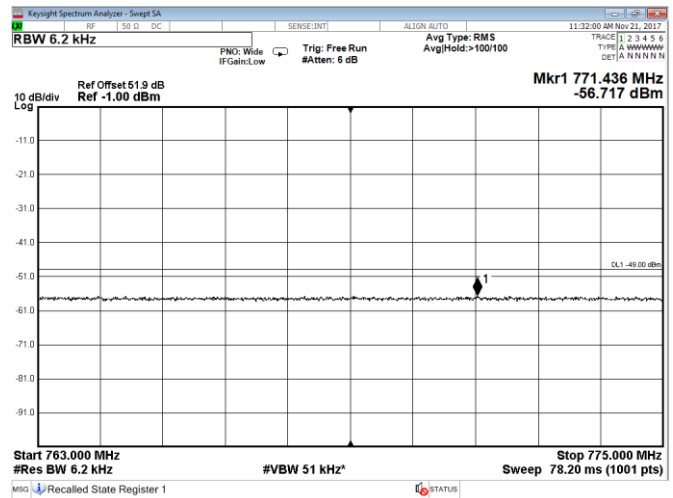


Figure 8.3-58: Conducted spurious emission within 763–775 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 2

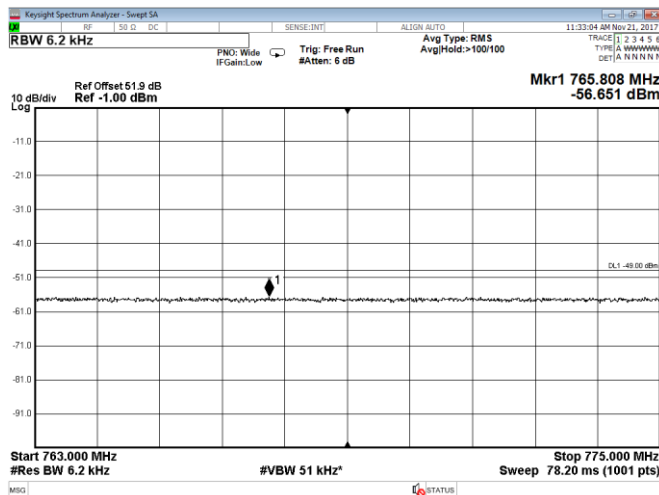


Figure 8.3-59: Conducted spurious emission within 763–775 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 2

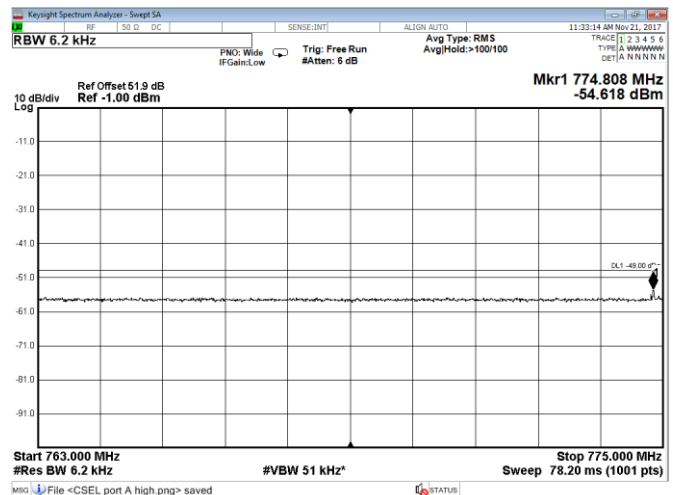


Figure 8.3-60: Conducted spurious emission within 763–775 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 2

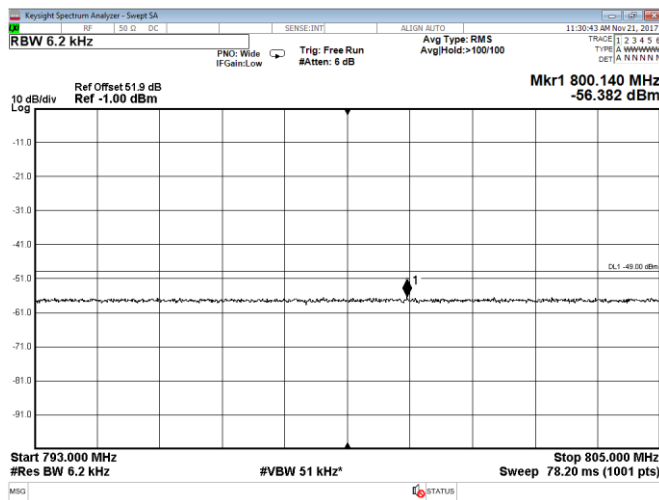


Figure 8.3-61: Conducted spurious emission within 793–805 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 2

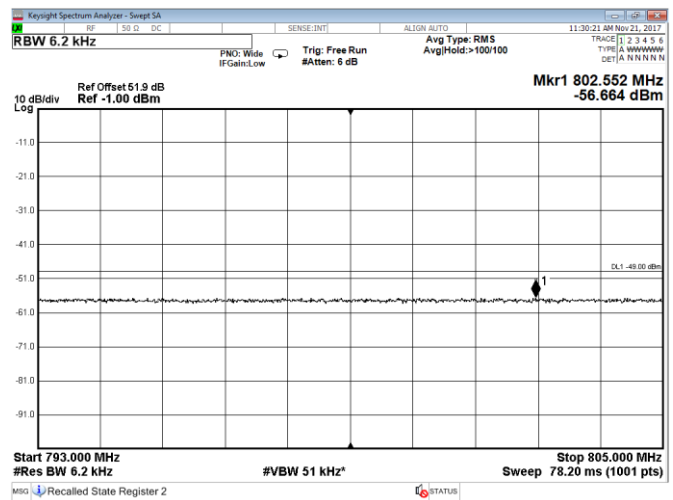


Figure 8.3-62: Conducted spurious emission within 793–805 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 2

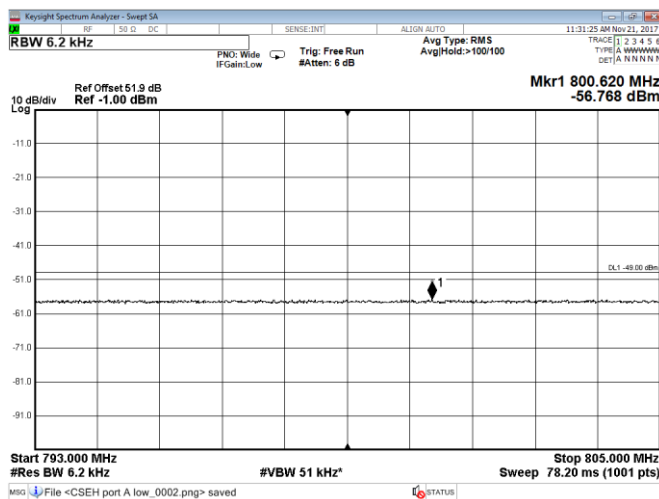


Figure 8.3-63: Conducted spurious emission within 793–805 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 2

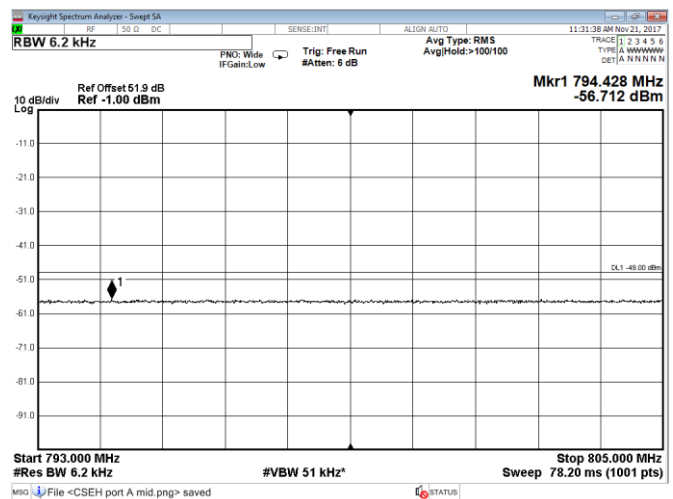


Figure 8.3-64: Conducted spurious emission within 793–805 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 2

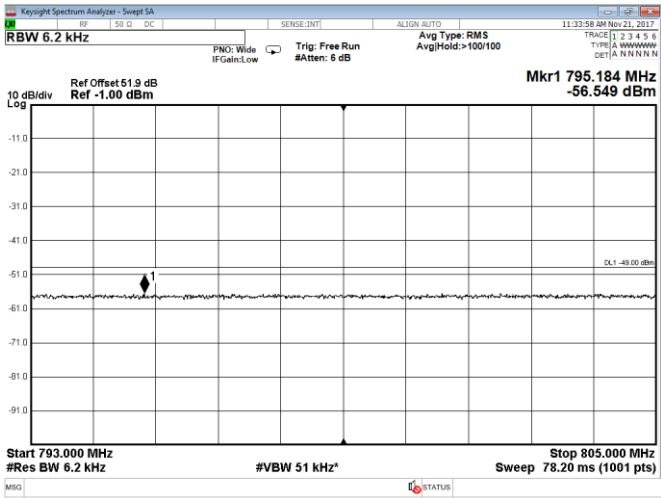


Figure 8.3-65: Conducted spurious emission within 793–805 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 2

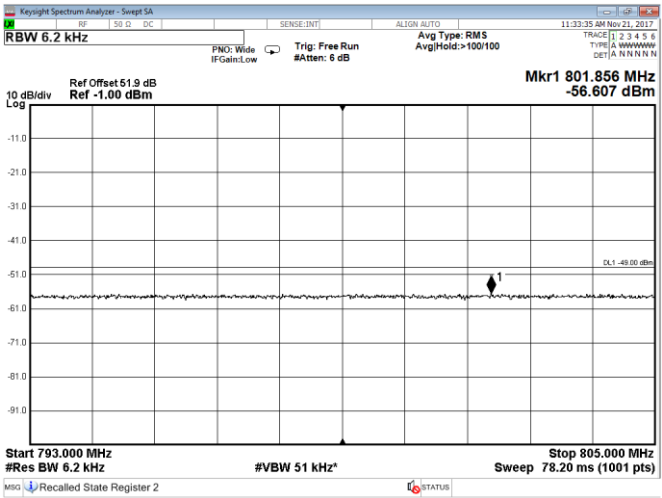


Figure 8.3-66: Conducted spurious emission within 793–805 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at high channel, configuration 2

8.4 FCC 22.917(a) Spurious emissions at RF antenna connector

8.4.1 Definitions and limits

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a reference bandwidth as follows:

(1) In the spectrum below 1 GHz, instrumentation should employ a reference bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy, provided that the measured power is integrated over the full required reference bandwidth (i.e., 100 kHz or 1 percent of emission bandwidth, as specified). 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.

(2) In the spectrum above 1 GHz, instrumentation should employ a reference bandwidth of 1 MHz.

(c) Alternative out of band emission limit. Licensees in this service may establish an alternative out of band emission limit to be used at specified band edge(s) in specified geographical areas, in lieu of that set forth in this section, pursuant to a private contractual arrangement of all affected licensees and applicants. In this event, each party to such contract shall maintain a copy of the contract in their station files and disclose it to prospective assignees or transferees and, upon request, to the FCC.

8.4.2 Test summary

Test date	November 15, 2017	Temperature	22 °C
Test engineer	Andrey Adelberg	Air pressure	1009 mbar
Verdict	Pass	Relative humidity	33 %

8.4.3 Observations, settings and special notes

The spectrum was searched from 30 MHz to the 10th harmonic.

All measurements were performed using a RMS detector.

For compensation of MIMO 4x4 application (configuration 1) limit lines were adjusted by 6 dB ($10 \times \log_{10}(4)$)

For compensation of MIMO 2x2 application (configuration 2) limit lines were adjusted by 3 dB ($10 \times \log_{10}(2)$)

RBW within 30–1000 MHz was 100 kHz and 1 MHz above 1 GHz. VBW was wider than RBW.

Configuration 1: Port A with 40 W power, Port B with 40 W power, Port C with 40 W power, Port D with 40 W power.

Configuration 2: Port A with 60 W power, Port D with 60 W power.

8.4.4 Test data

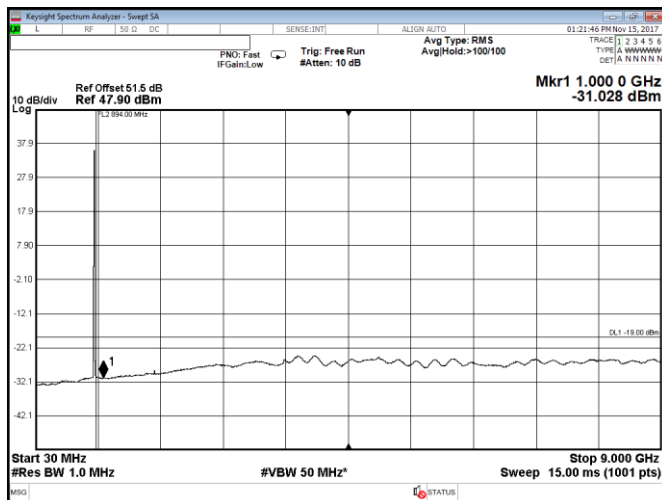


Figure 8.4-1: Conducted spurious emissions within at Port A, QPSK, low channel, configuration 1

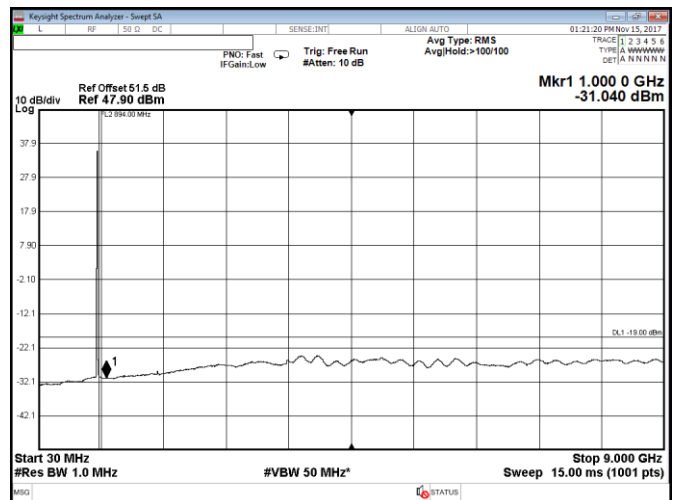


Figure 8.4-2: Conducted spurious emissions within at Port B, QPSK, low channel, configuration 1

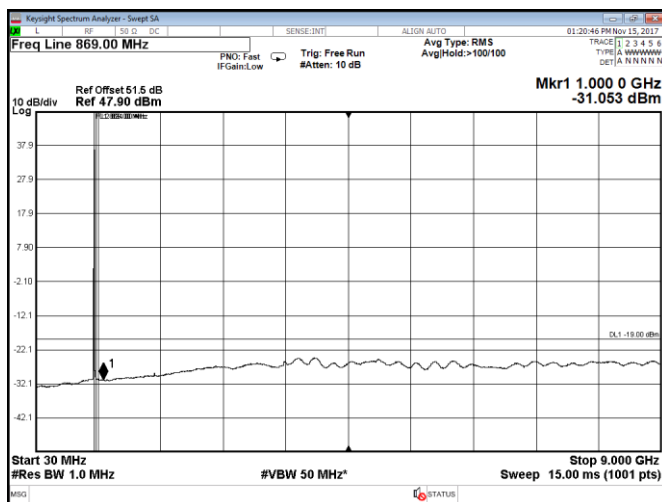


Figure 8.4-3: Conducted spurious emissions within at Port C, QPSK, low channel, configuration 1

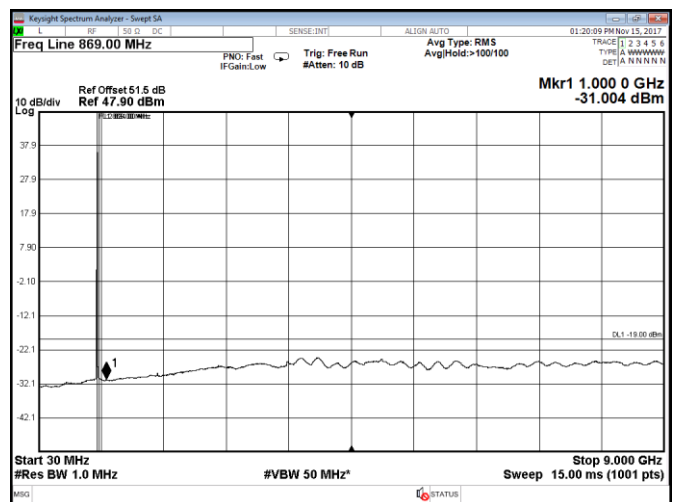


Figure 8.4-4: Conducted spurious emissions within at Port D, QPSK, low channel, configuration 1

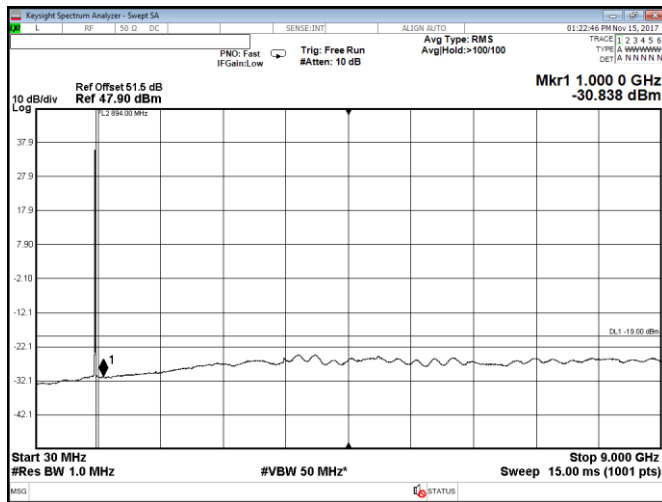


Figure 8.4-5: Conducted spurious emissions within at Port A, QPSK, mid channel, configuration 1

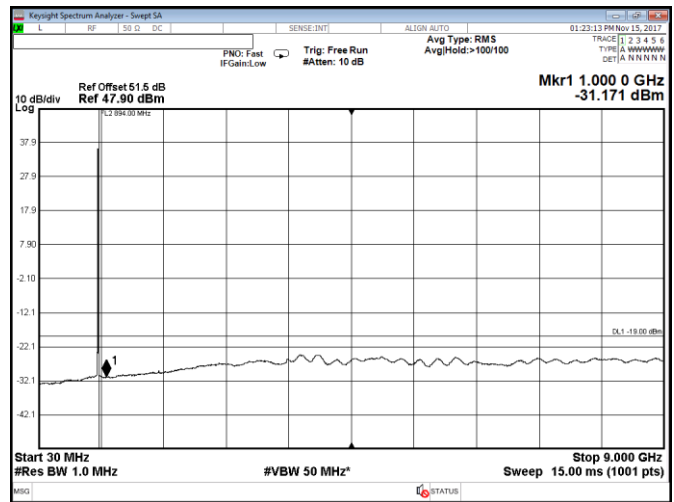


Figure 8.4-6: Conducted spurious emissions within at Port B, QPSK, mid channel, configuration 1

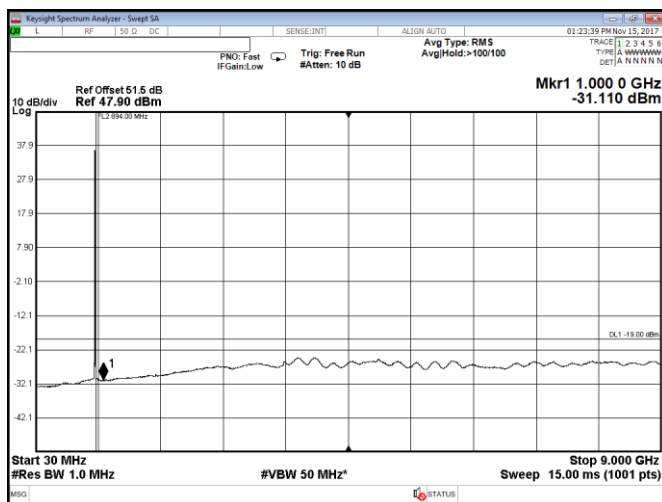


Figure 8.4-7: Conducted spurious emissions within at Port C, QPSK, mid channel, configuration 1

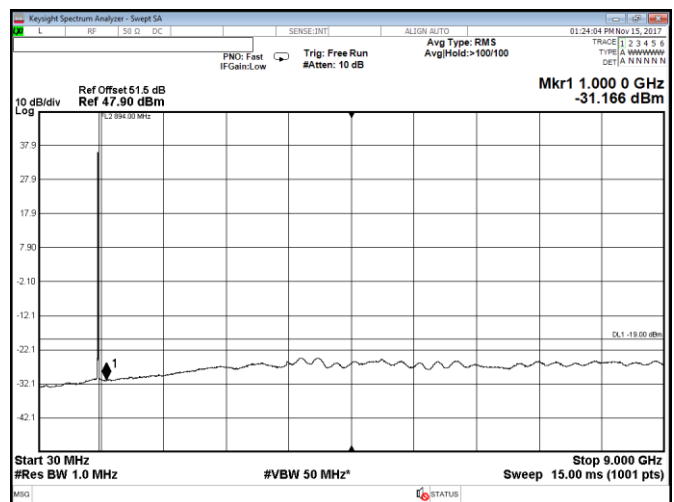


Figure 8.4-8: Conducted spurious emissions within at Port D, QPSK, mid channel, configuration 1

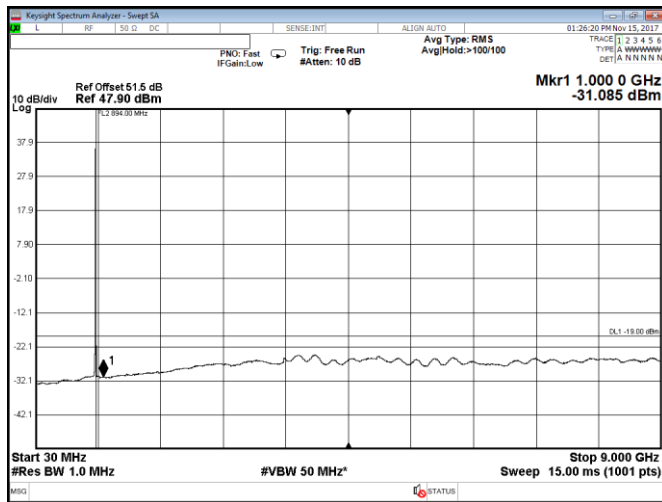


Figure 8.4-9: Conducted spurious emissions within at Port A, QPSK, high channel, configuration 1

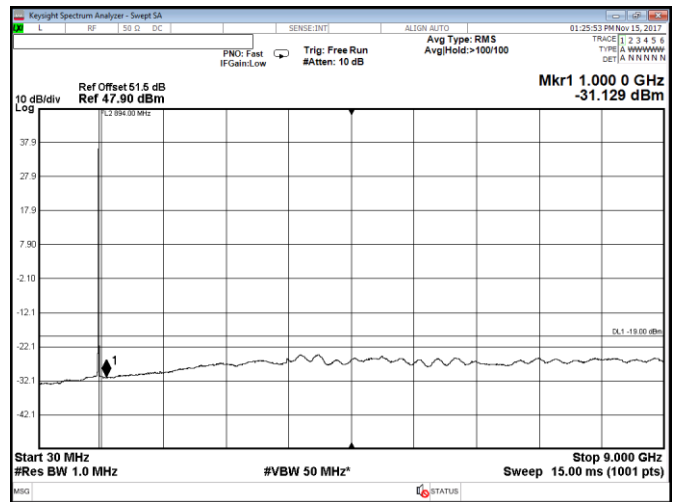


Figure 8.4-10: Conducted spurious emissions within at Port B, QPSK, high channel, configuration 1

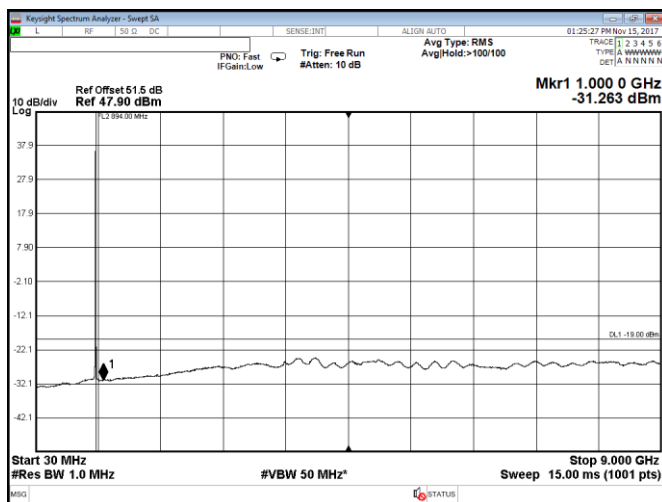


Figure 8.4-11: Conducted spurious emissions within at Port C, QPSK, high channel, configuration 1

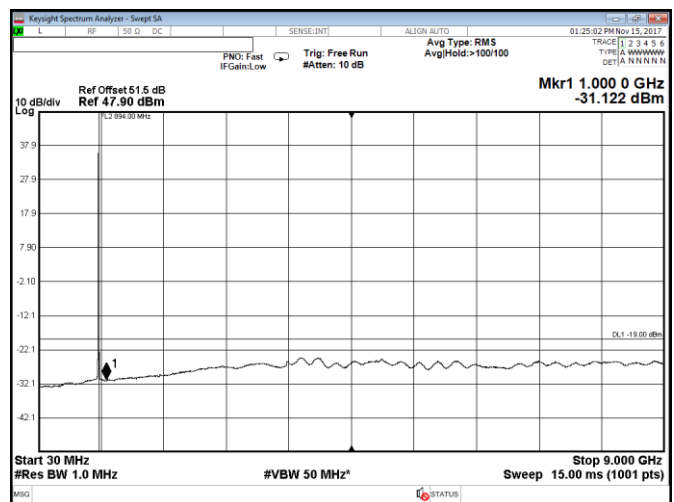


Figure 8.4-12: Conducted spurious emissions within at Port D, QPSK, high channel, configuration 1

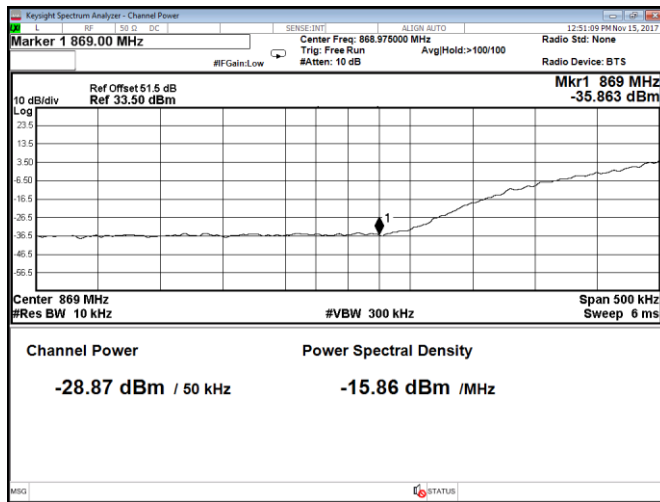


Figure 8.4-13: Conducted band edge emission at 869 MHz, Port A, QPSK, configuration 1

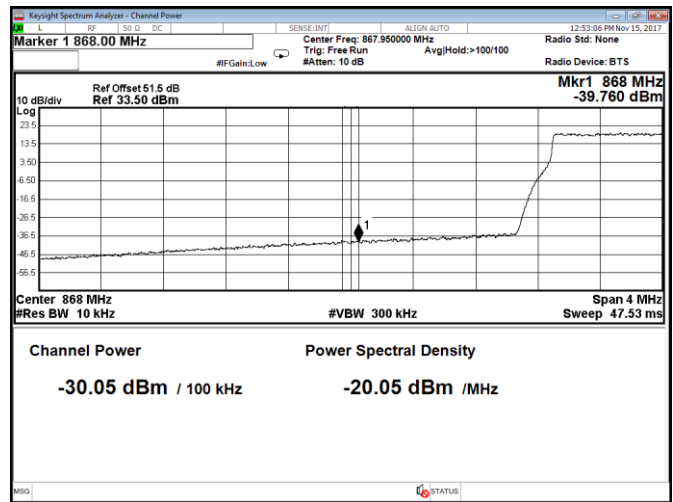


Figure 8.4-14: Conducted band edge emission at 868 MHz, Port A, QPSK, configuration 1

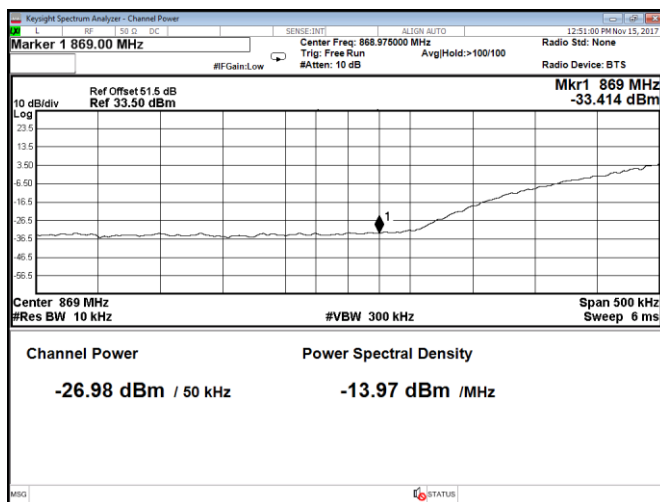


Figure 8.4-15: Conducted band edge emission at 869 MHz, Port B, QPSK, configuration 1

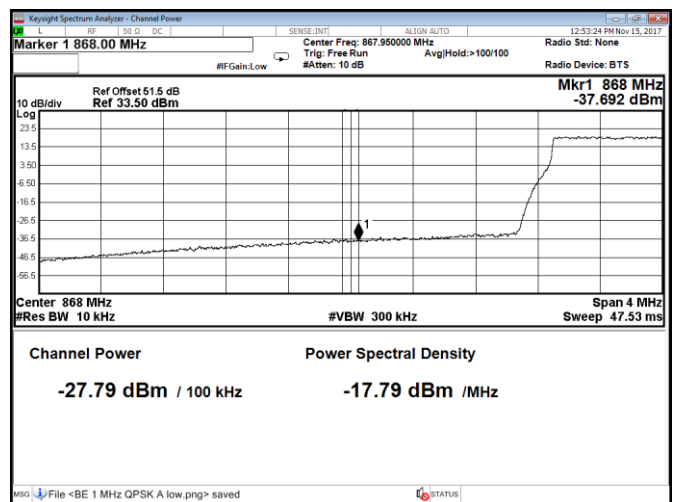


Figure 8.4-16: Conducted band edge emission at 868 MHz, Port B, QPSK, configuration 1

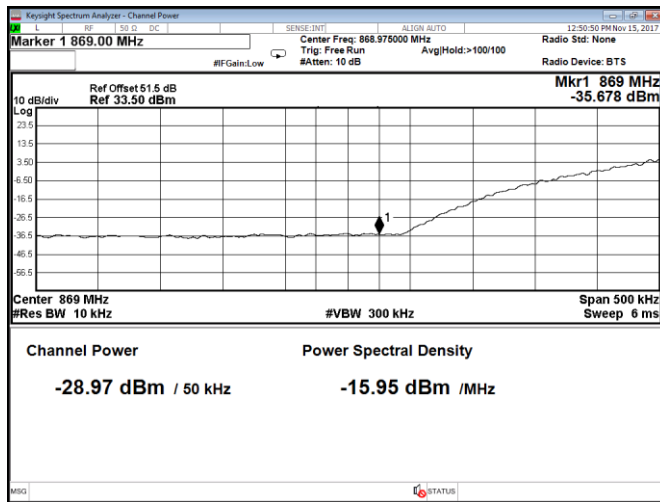


Figure 8.4-17: Conducted band edge emission at 869 MHz, Port C, QPSK, configuration 1

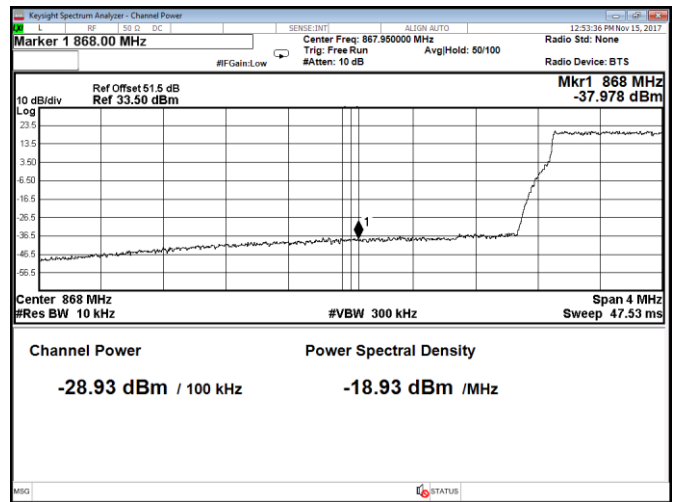


Figure 8.4-18: Conducted band edge emission at 868 MHz, Port C, QPSK, configuration 1

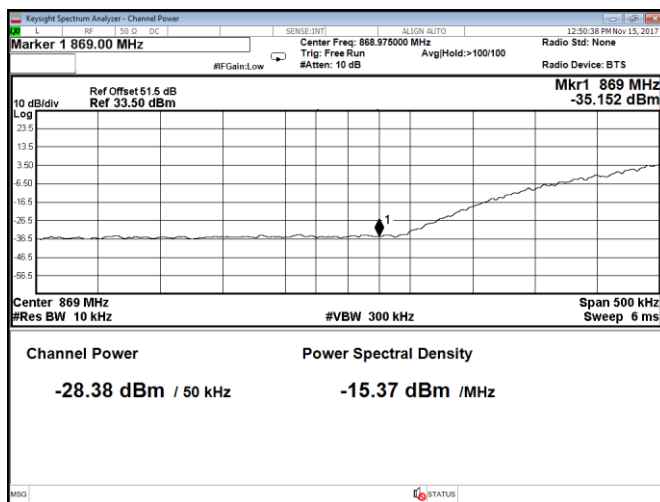


Figure 8.4-19: Conducted band edge emission at 869 MHz, Port D, QPSK, configuration 1

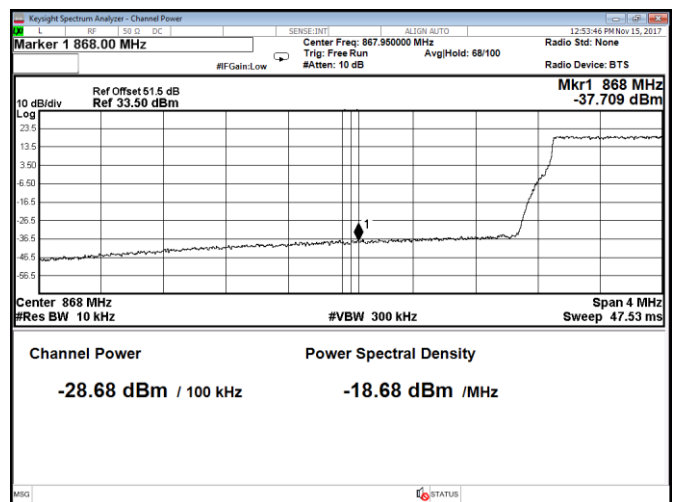


Figure 8.4-20: Conducted band edge emission at 868 MHz, Port D, QPSK, configuration 1

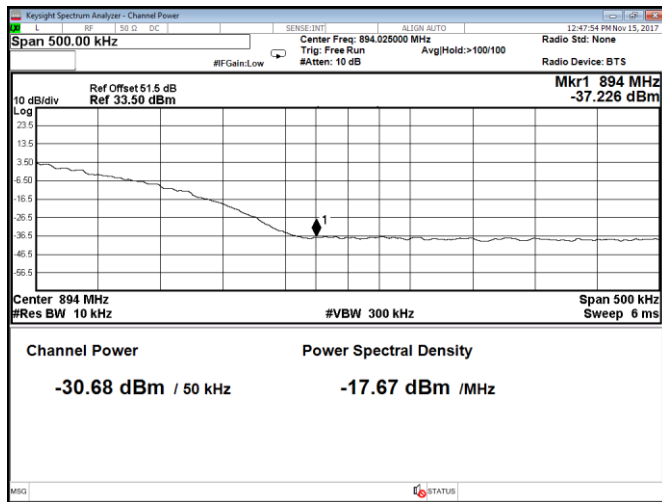


Figure 8.4-21: Conducted band edge emission at 894 MHz, Port A, QPSK, configuration 1

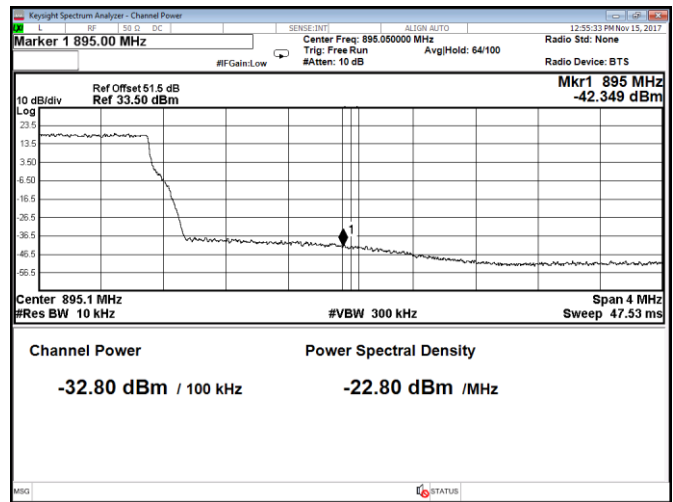


Figure 8.4-22: Conducted band edge emission at 895 MHz, Port A, QPSK, configuration 1

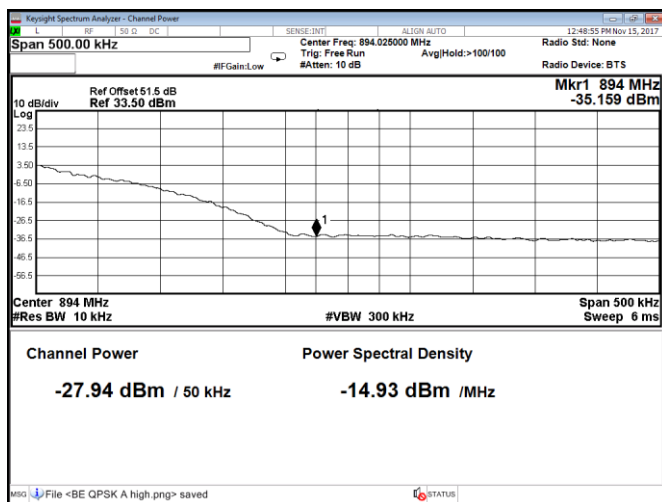


Figure 8.4-23: Conducted band edge emission at 894 MHz, Port B, QPSK, configuration 1

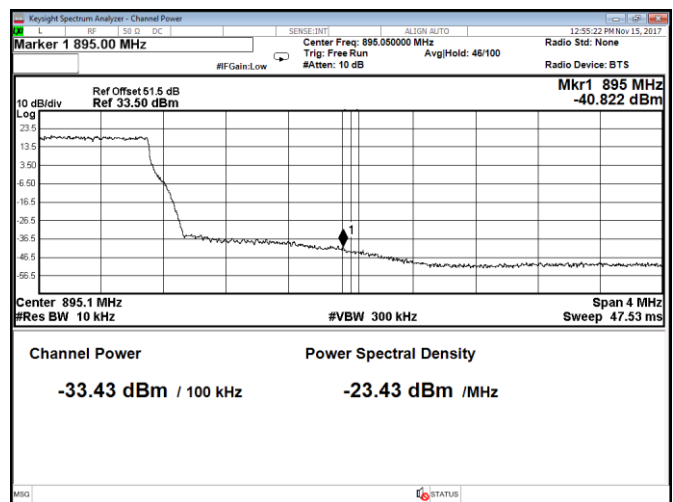


Figure 8.4-24: Conducted band edge emission at 895 MHz, Port B, QPSK, configuration 1

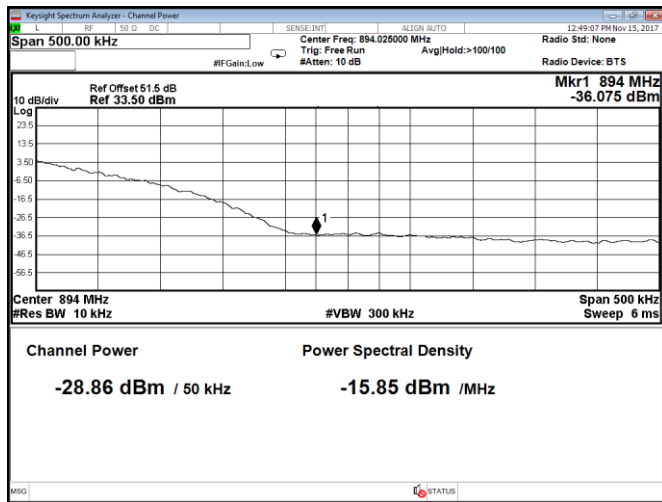


Figure 8.4-25: Conducted band edge emission at 894 MHz, Port C, QPSK, configuration 1

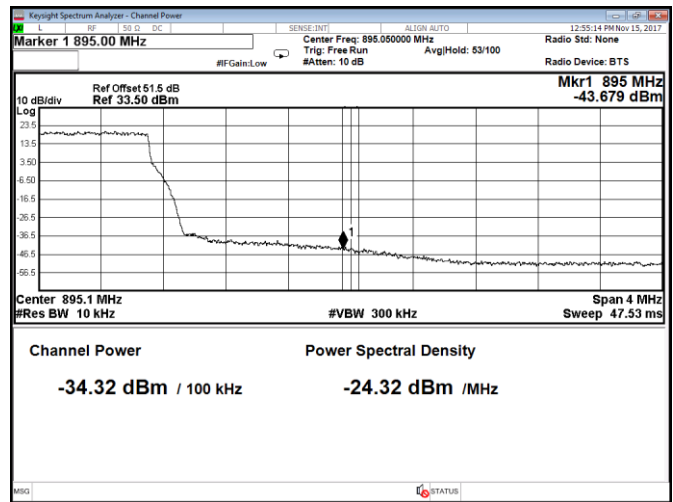


Figure 8.4-26: Conducted band edge emission at 895 MHz, Port C, QPSK, configuration 1

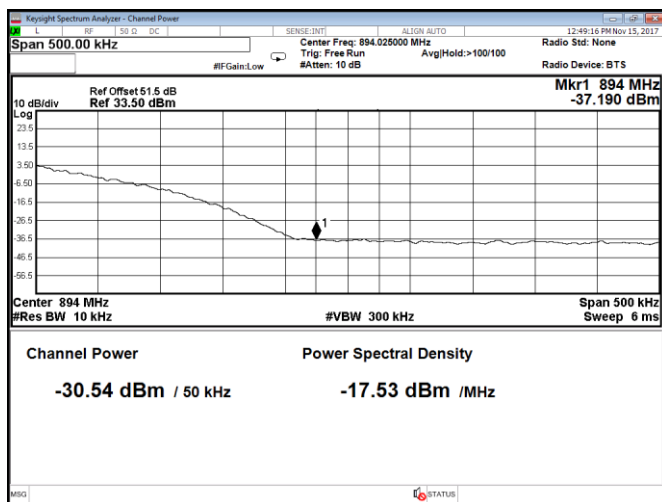


Figure 8.4-27: Conducted band edge emission at 894 MHz, Port D, QPSK, configuration 1

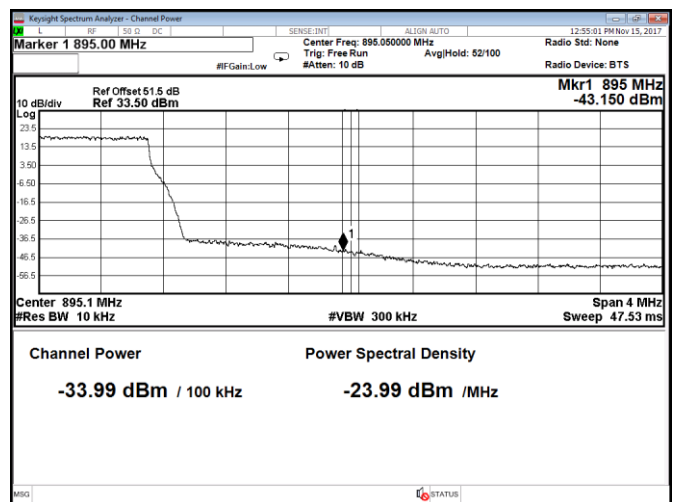


Figure 8.4-28: Conducted band edge emission at 895 MHz, Port D, QPSK, configuration 1

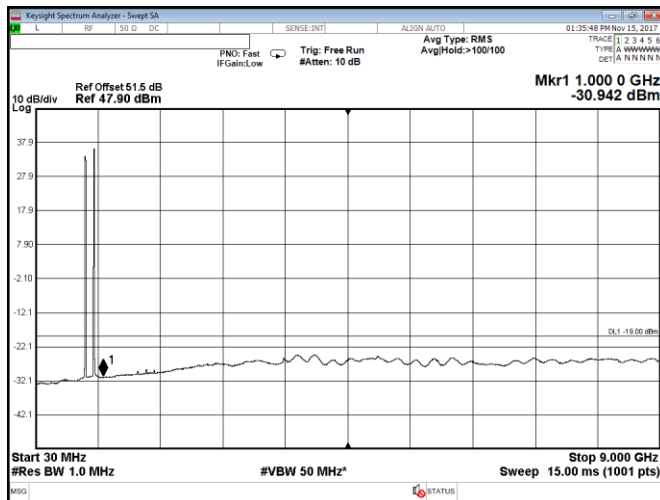


Figure 8.4-29: Conducted spurious emission in multi-band, with B13 + B5 at low channel, Port A, QPSK, configuration 1

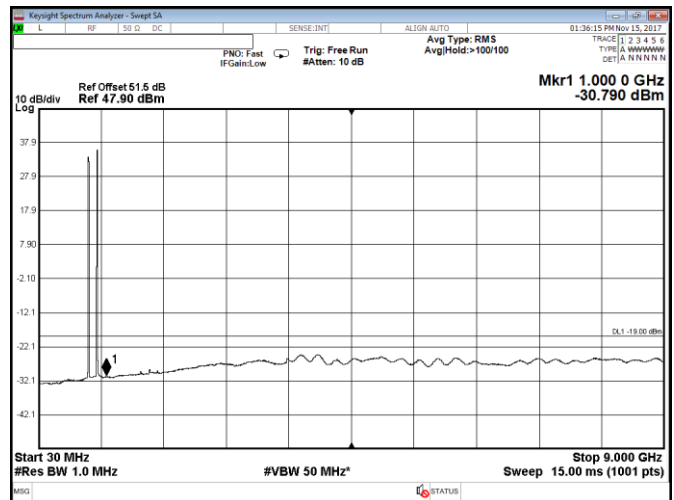


Figure 8.4-30: Conducted spurious emission in multi-band, with B13 + B5 at low channel, Port B, QPSK, configuration 1

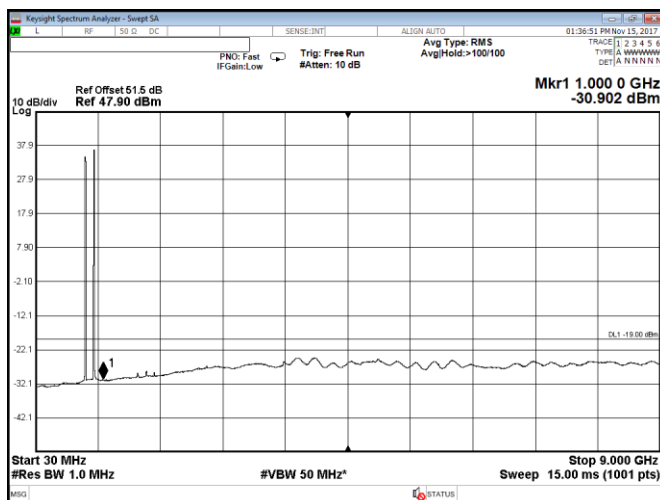


Figure 8.4-31: Conducted spurious emission in multi-band, with B13 + B5 at low channel, Port C, QPSK, configuration 1

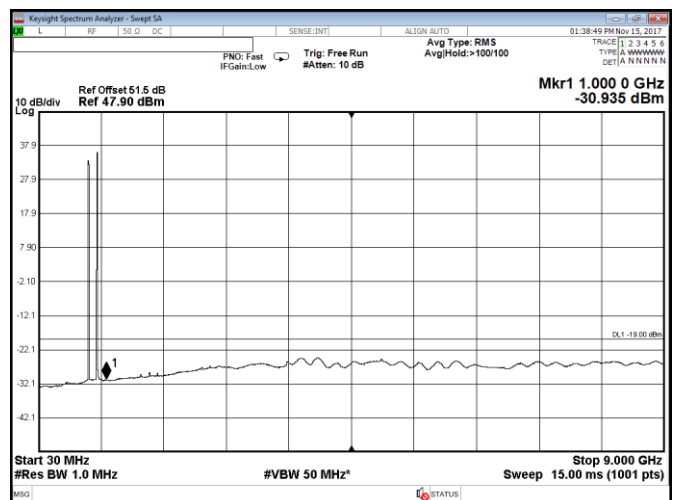


Figure 8.4-32: Conducted spurious emission in multi-band, with B13 + B5 at low channel, Port D, QPSK, configuration 1

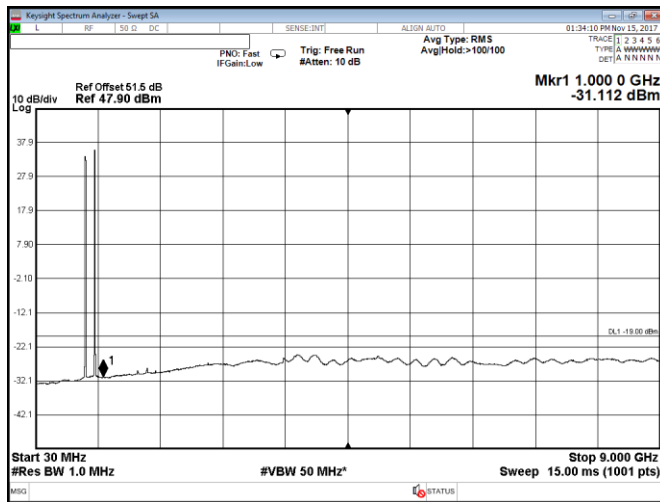


Figure 8.4-33: Conducted spurious emission in multi-band, with B13 + B5 at mid channel, Port A, QPSK, configuration 1

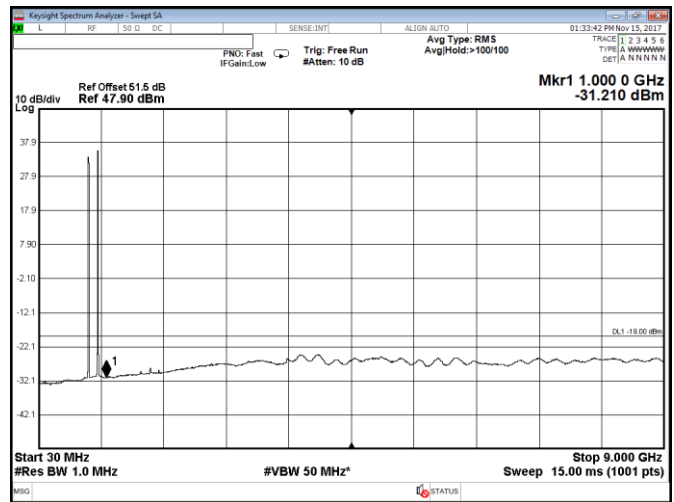


Figure 8.4-34: Conducted spurious emission in multi-band, with B13 + B5 at mid channel, Port B, QPSK, configuration 1

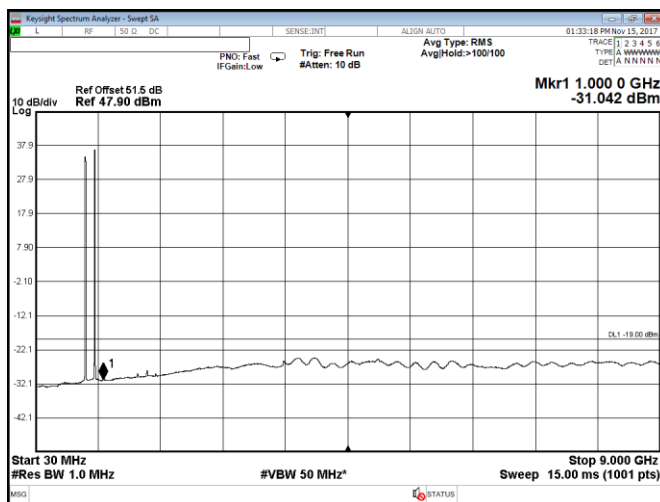


Figure 8.4-35: Conducted spurious emission in multi-band, with B13 + B5 at mid channel, Port C, QPSK, configuration 1

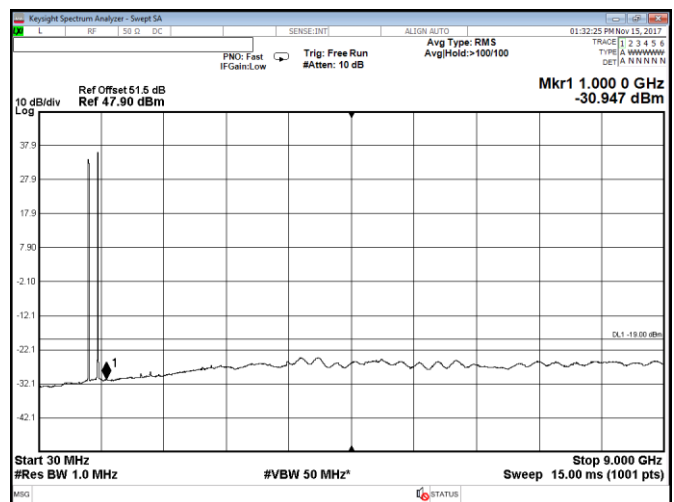


Figure 8.4-36: Conducted spurious emission in multi-band, with B13 + B5 at mid channel, Port D, QPSK, configuration 1

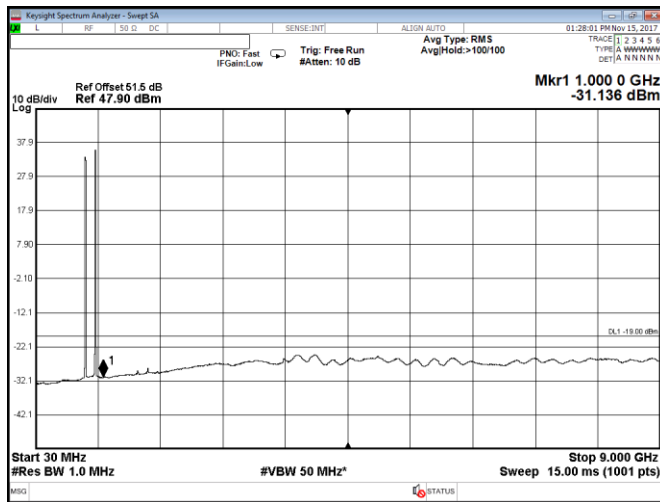


Figure 8.4-37: Conducted spurious emission in multi-band, with B13 + B5 at high channel, Port A, QPSK, configuration 1

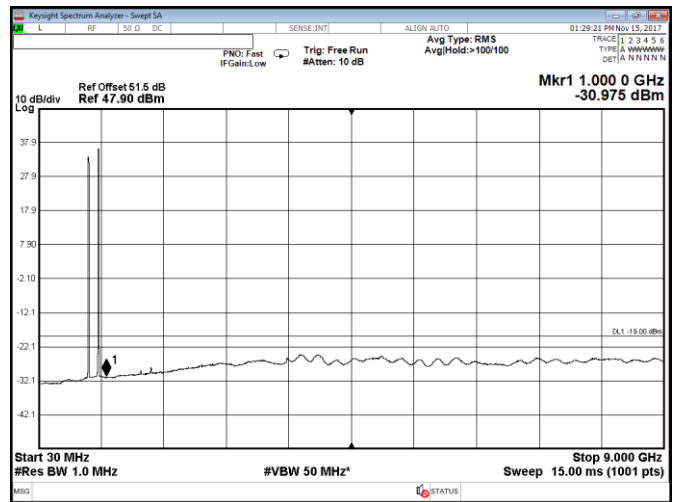


Figure 8.4-38: Conducted spurious emission in multi-band, with B13 + B5 at high channel, Port B, QPSK, configuration 1

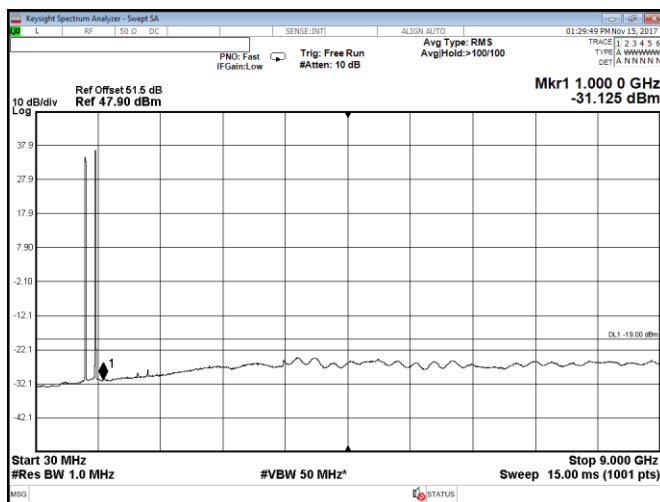


Figure 8.4-39: Conducted spurious emission in multi-band, with B13 + B5 at high channel, Port C, QPSK, configuration 1

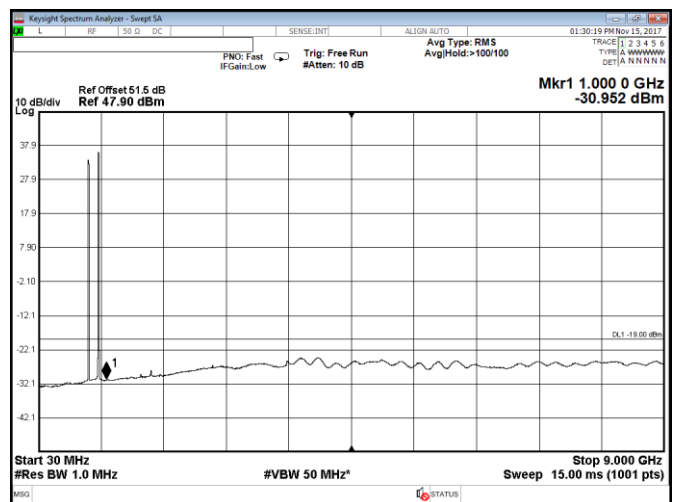


Figure 8.4-40: Conducted spurious emission in multi-band, with B13 + B5 at high channel, Port D, QPSK, configuration 1

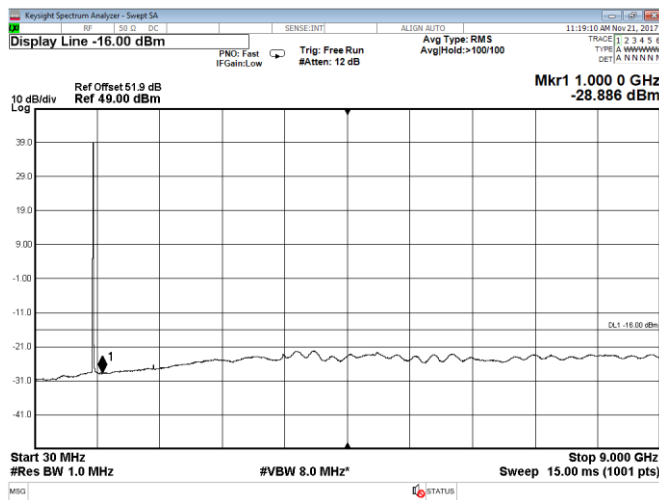


Figure 8.4-41: Conducted spurious emissions within at Port A, QPSK, low channel, configuration 2

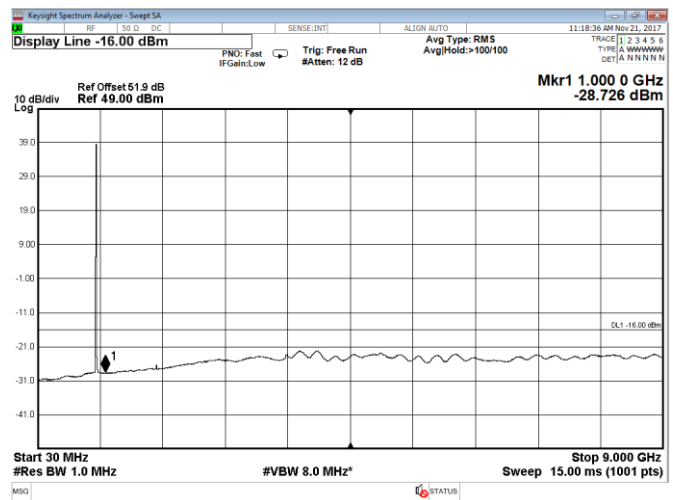


Figure 8.4-42: Conducted spurious emissions within at Port D, QPSK, low channel, configuration 2

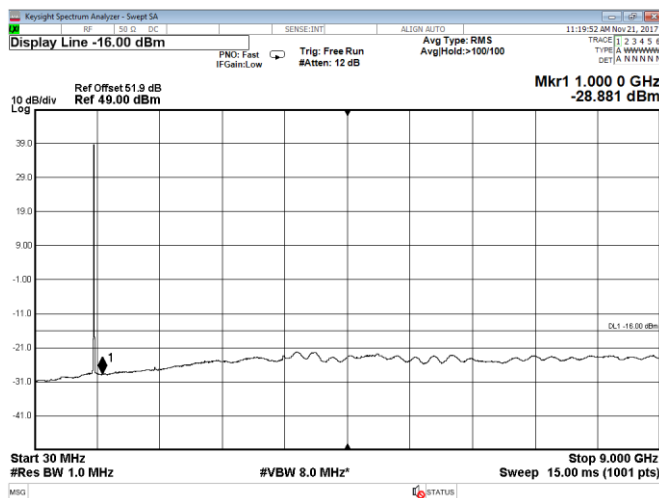


Figure 8.4-43: Conducted spurious emissions within at Port A, QPSK, mid channel, configuration 2

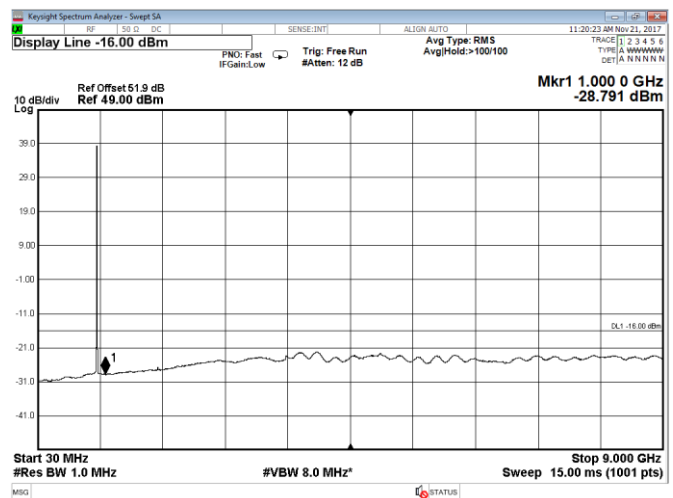


Figure 8.4-44: Conducted spurious emissions within at Port D, QPSK, mid channel, configuration 2

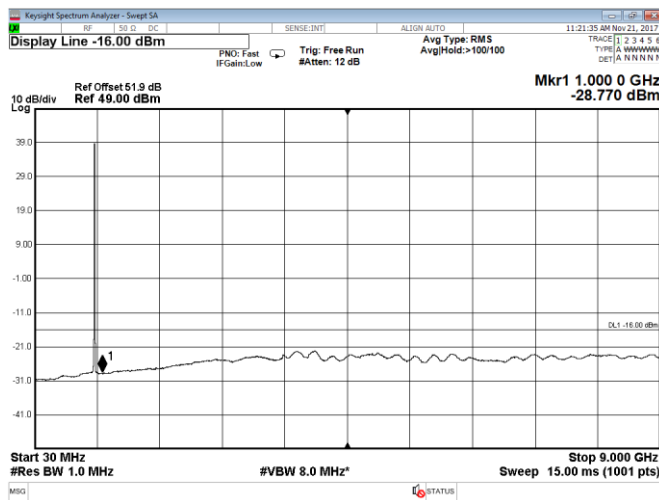


Figure 8.4-45: Conducted spurious emissions within at Port A, QPSK, high channel, configuration 2

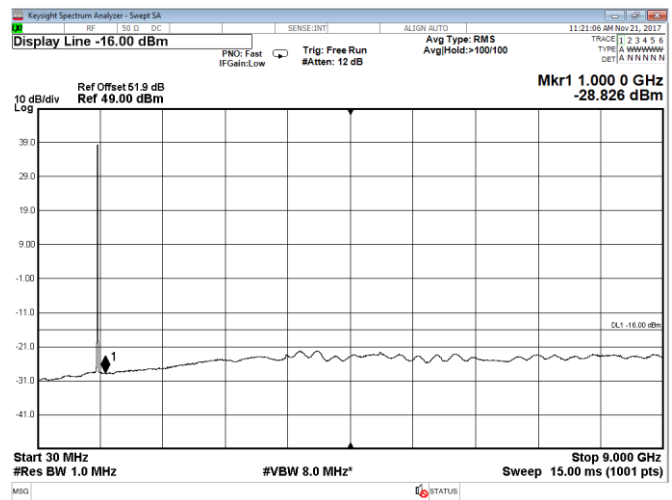


Figure 8.4-46: Conducted spurious emissions within at Port D, QPSK, high channel, configuration 2

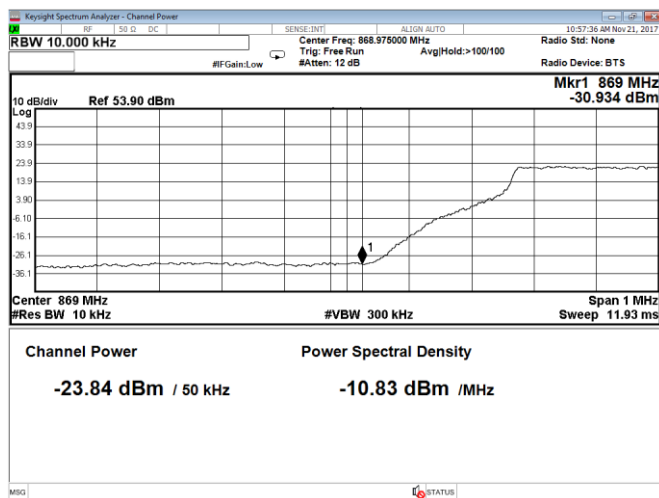


Figure 8.4-47: Conducted band edge emission at 869 MHz, Port A, QPSK, configuration 2

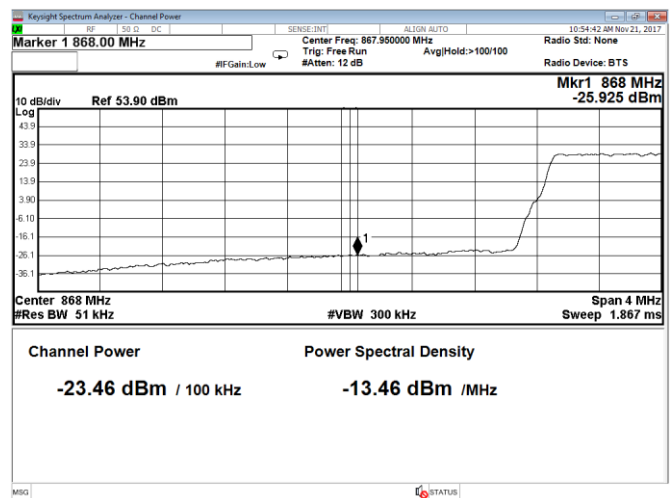


Figure 8.4-48: Conducted band edge emission at 868 MHz, Port A, QPSK, configuration 2

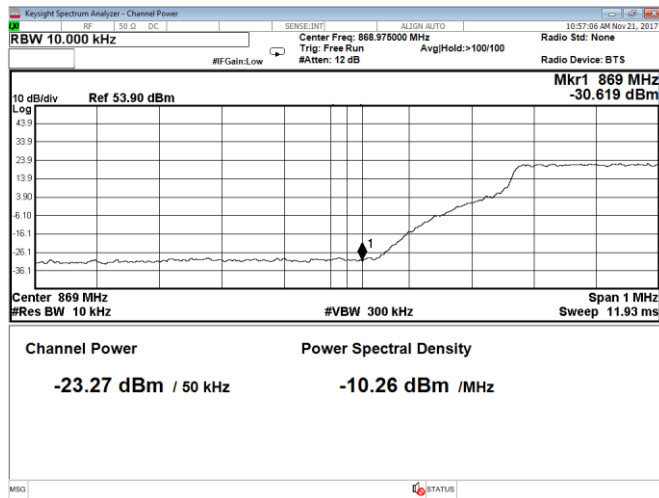


Figure 8.4-49: Conducted band edge emission at 869 MHz, Port D, QPSK, configuration 2

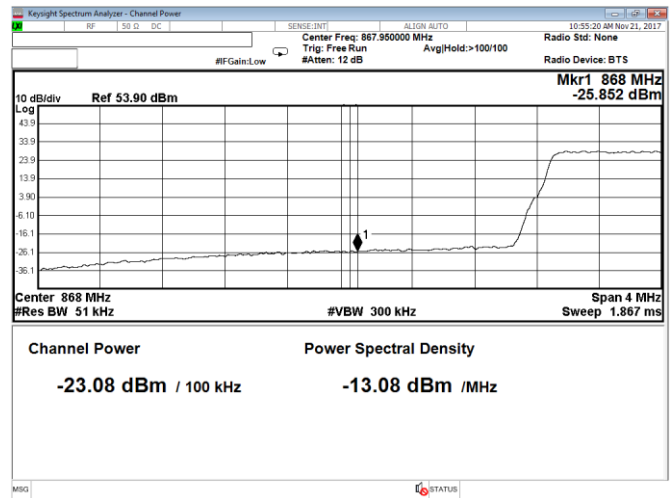


Figure 8.4-50: Conducted band edge emission at 868 MHz, Port D, QPSK, configuration 2

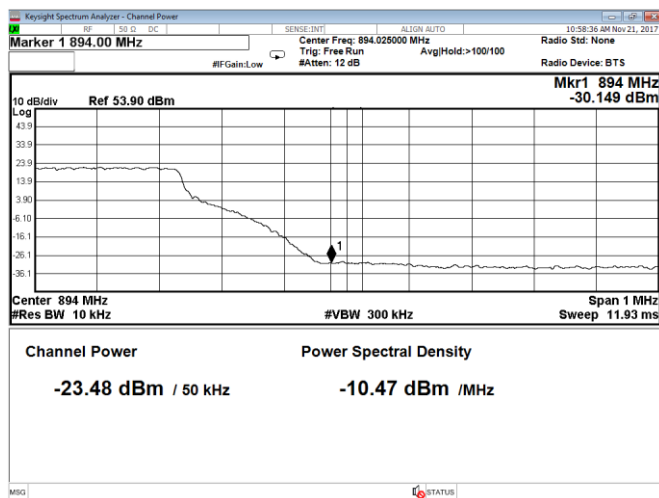


Figure 8.4-51: Conducted band edge emission at 894 MHz, Port A, QPSK, configuration 2

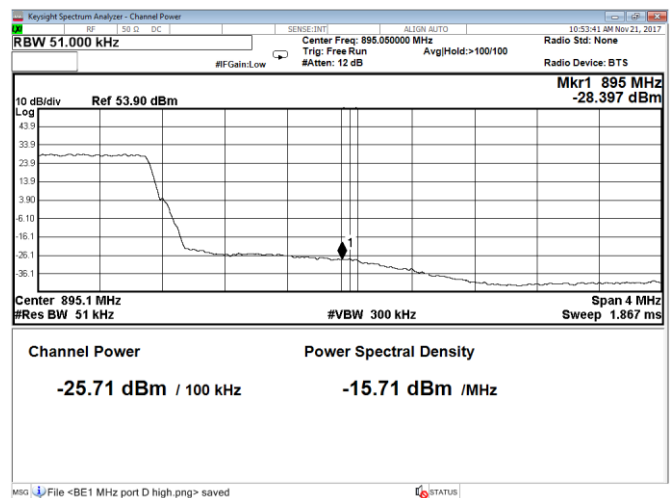


Figure 8.4-52: Conducted band edge emission at 895 MHz, Port A, QPSK, configuration 2

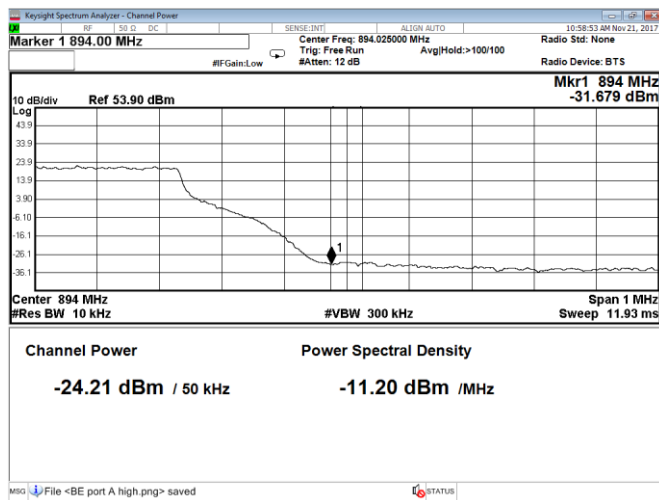


Figure 8.4-53: Conducted band edge emission at 894 MHz, Port D, QPSK, configuration 2

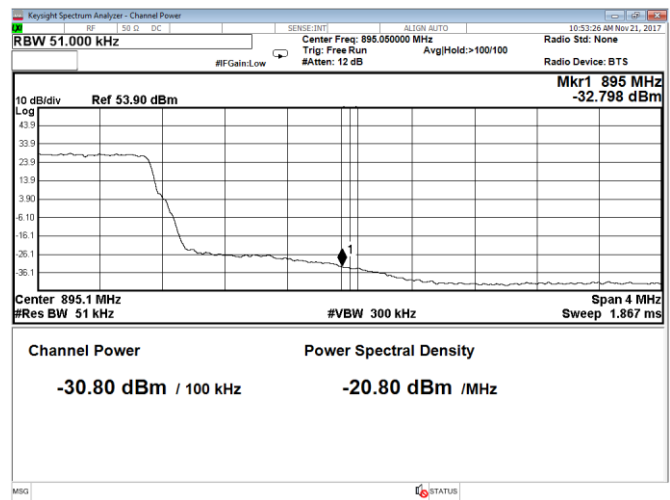


Figure 8.4-54: Conducted band edge emission at 895 MHz, Port D, QPSK, configuration 2

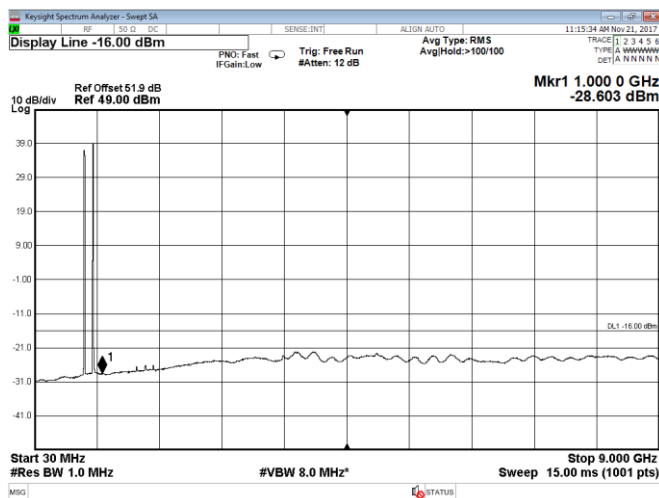


Figure 8.4-55: Conducted spurious emission in multi-band, with B13 + B5 at low channel, Port A, QPSK, configuration 2

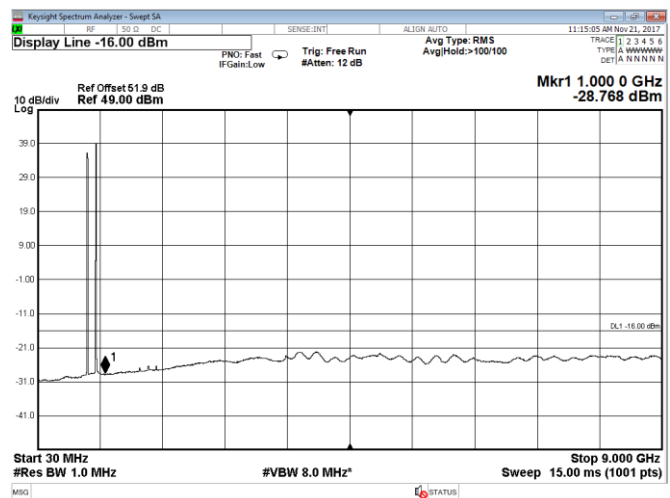


Figure 8.4-56: Conducted spurious emission in multi-band, with B13 + B5 at low channel, Port D, QPSK, configuration 2

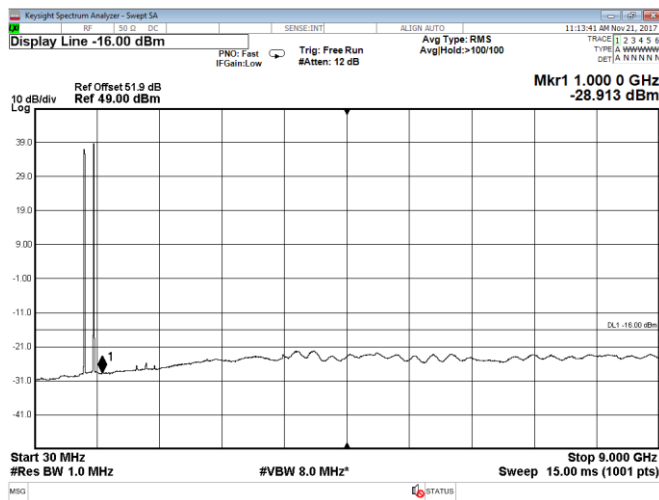


Figure 8.4-57: Conducted spurious emission in multi-band, with B13 + B5 at mid channel, Port A, QPSK, configuration 2

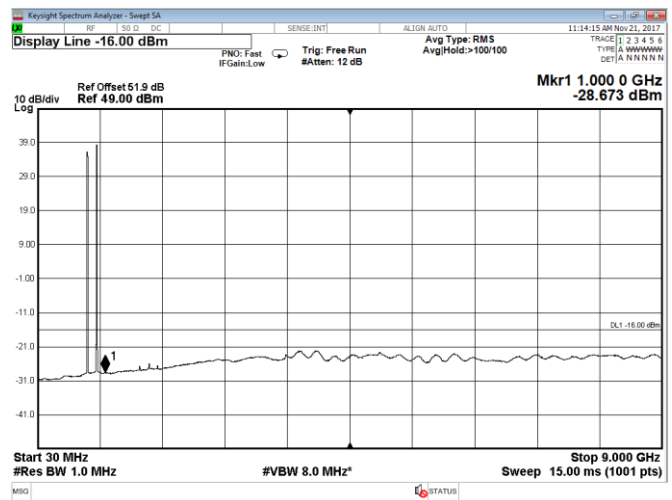


Figure 8.4-58: Conducted spurious emission in multi-band, with B13 + B5 at mid channel, Port D, QPSK, configuration 2

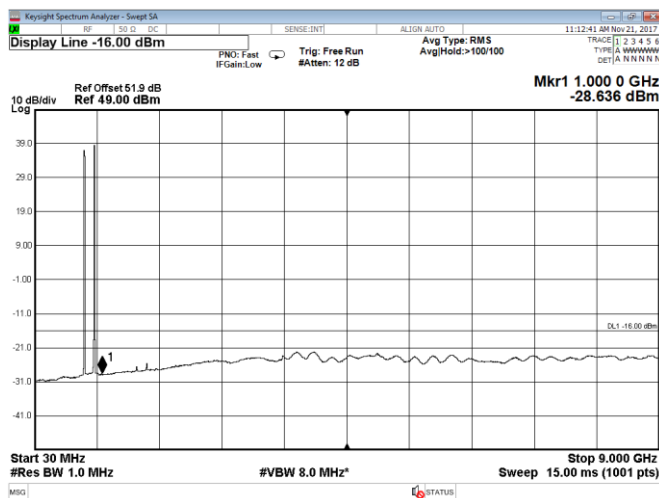


Figure 8.4-59: Conducted spurious emission in multi-band, with B13 + B5 at high channel, Port A, QPSK, configuration 2

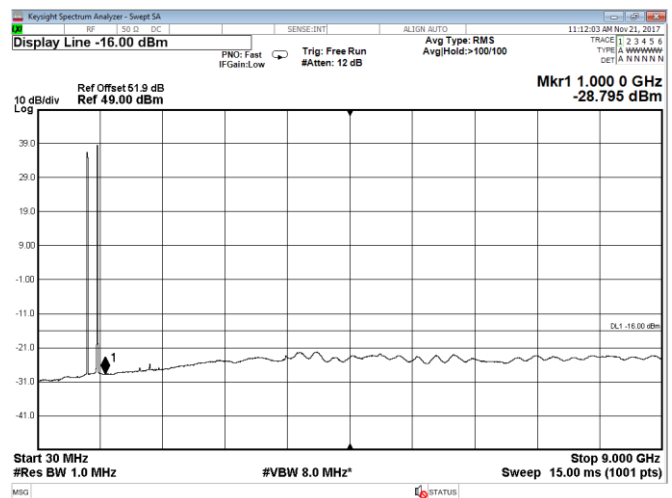


Figure 8.4-60: Conducted spurious emission in multi-band, with B13 + B5 at high channel, Port D, QPSK, configuration 2

8.5 FCC 27.53 and 22.917(a) Radiated spurious emissions

8.5.1 Definitions and limits

FCC 27.53

(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;

(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.

FCC 22.917(a)

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a reference bandwidth as follows:

(1) In the spectrum below 1 GHz, instrumentation should employ a reference bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy, provided that the measured power is integrated over the full required reference bandwidth (i.e., 100 kHz or 1 percent of emission bandwidth, as specified). 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.

(2) In the spectrum above 1 GHz, instrumentation should employ a reference bandwidth of 1 MHz.

(c) Alternative out of band emission limit. Licensees in this service may establish an alternative out of band emission limit to be used at specified band edge(s) in specified geographical areas, in lieu of that set forth in this section, pursuant to a private contractual arrangement of all affected licensees and applicants. In this event, each party to such contract shall maintain a copy of the contract in their station files and disclose it to prospective assignees or transferees and, upon request, to the FCC.

8.5.2 Test summary

Test date	November 16, 2017	Temperature	22 °C
Test engineer	Predrag Golic	Air pressure	1000 mbar
Verdict	Pass	Relative humidity	30 %

8.5.3 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.
Band 5 and Band 13 simultaneous transmission was tested as a worst-case emissions scenario.
Configuration 1: Port A with 40 W power, Port B with 40 W power, Port C with 40 W power, Port D with 40 W power.
Configuration 2: Port A with 60 W power, Port D with 60 W power.

8.5.4 Test data

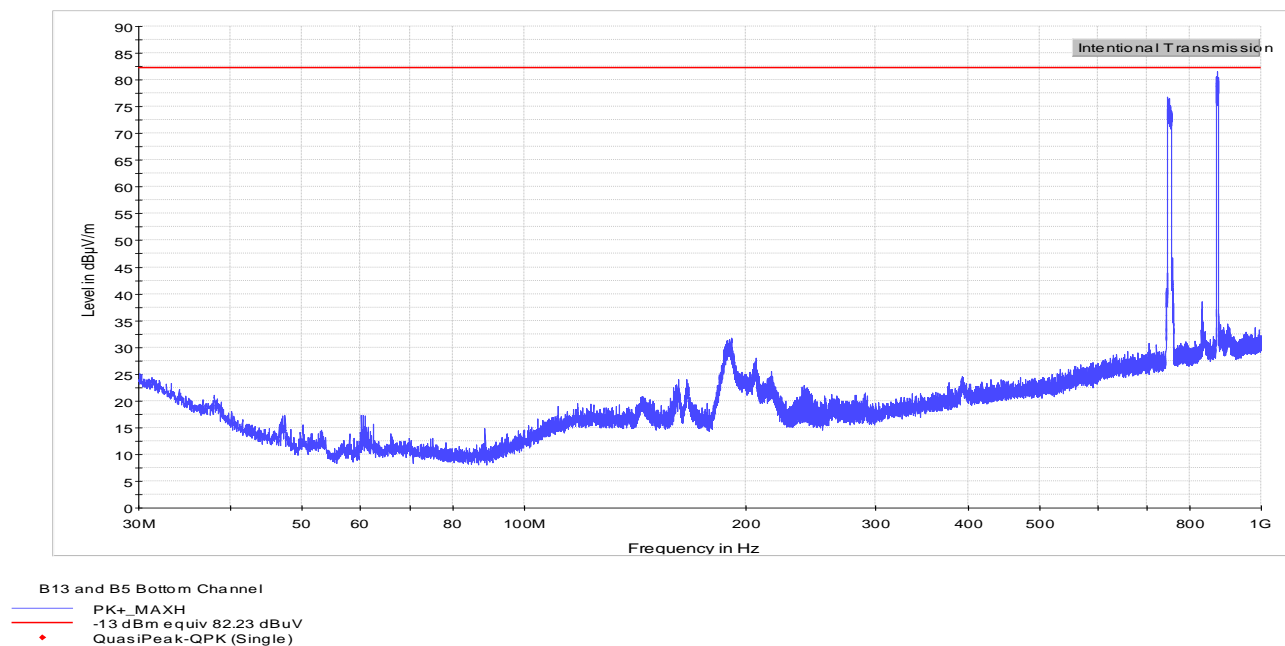


Figure 8.5-1: Radiated spurious emission below 1 GHz, B13 and B5 at low channel, configuration 1

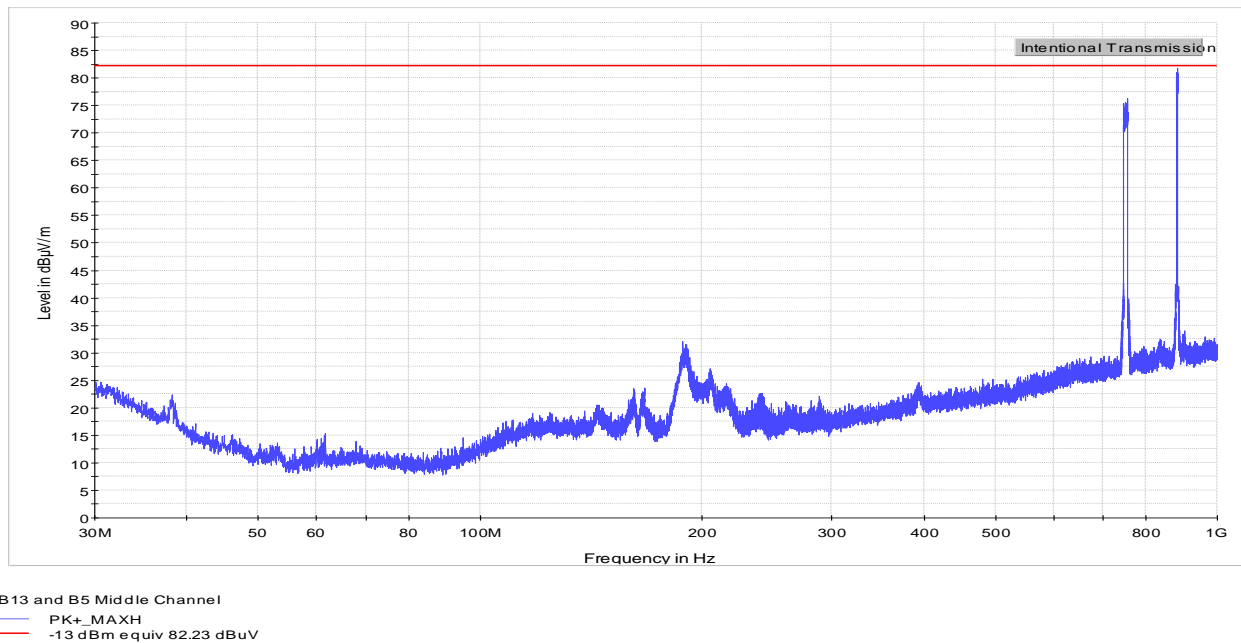


Figure 8.5-2: Radiated spurious emission below 1 GHz, B13 and B5 at mid channel, configuration 1

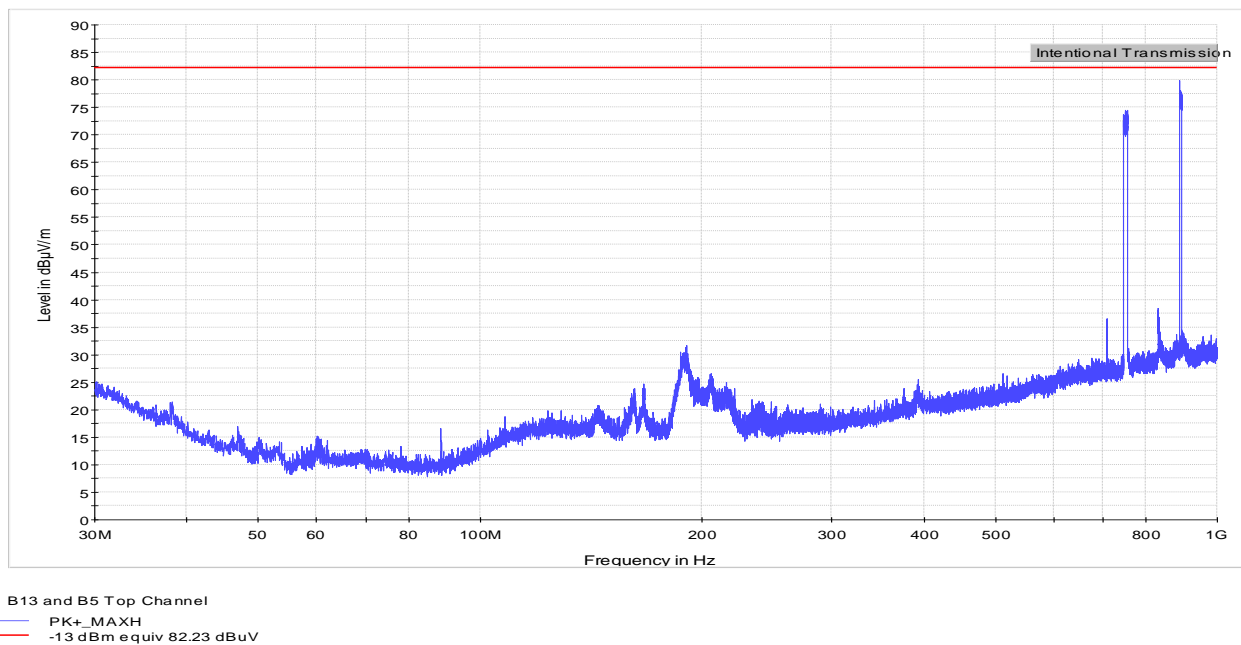


Figure 8.5-3: Radiated spurious emission below 1 GHz, B13 and B5 at high channel, configuration 1

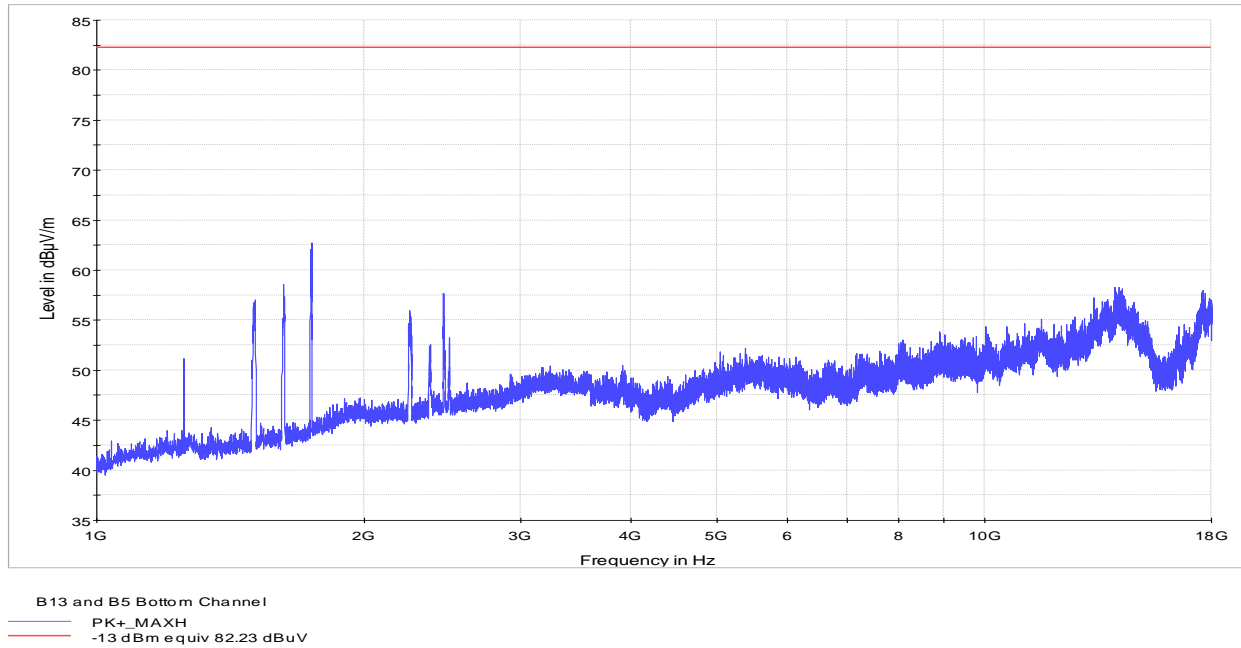


Figure 8.5-4: Radiated spurious emission above 1 GHz, B13 and B5 at low channel, configuration 1

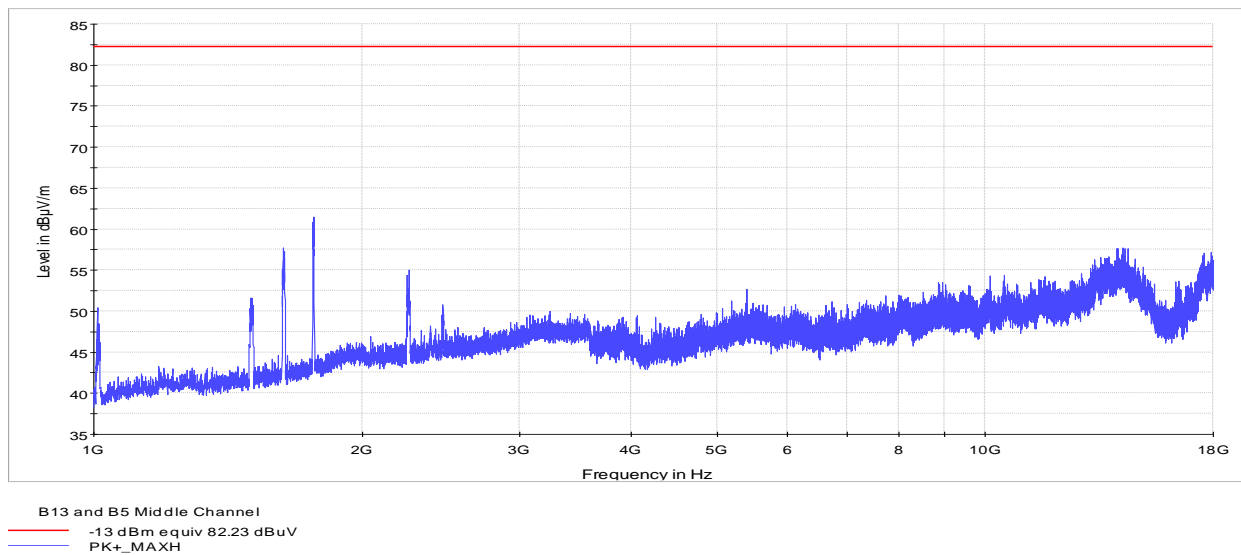


Figure 8.5-5: Radiated spurious emission above 1 GHz, B13 and B5 at mid channel, configuration 1

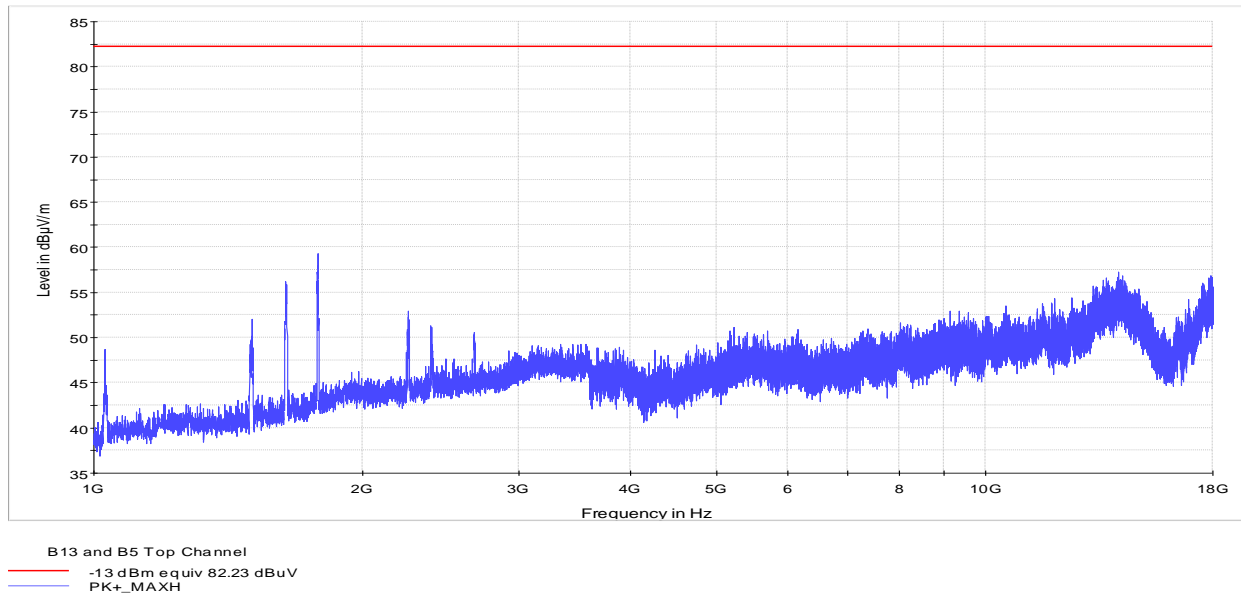


Figure 8.5-6: Radiated spurious emission above 1 GHz, B13 and B5 at high channel, configuration 1

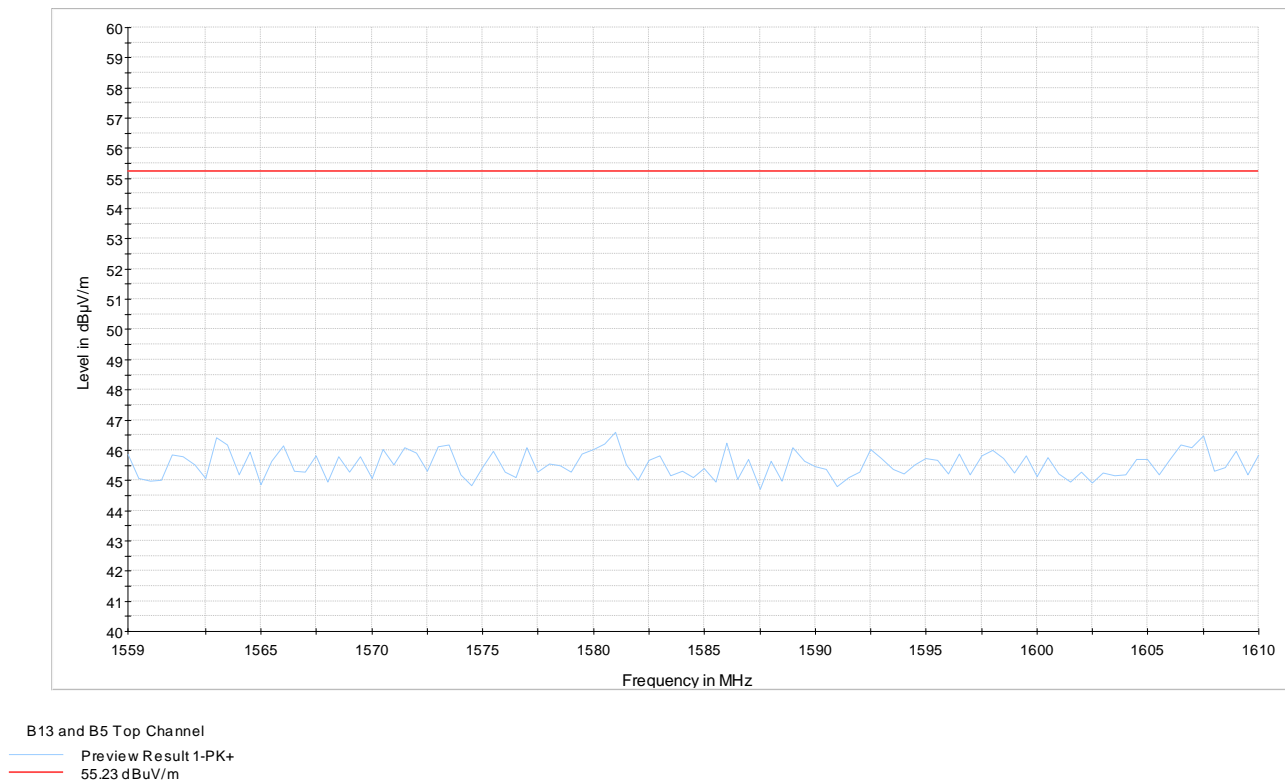


Figure 8.5-7: Radiated spurious emission within 1559–1610 MHz, B13 and B5 at high channel (worst case), configuration 1

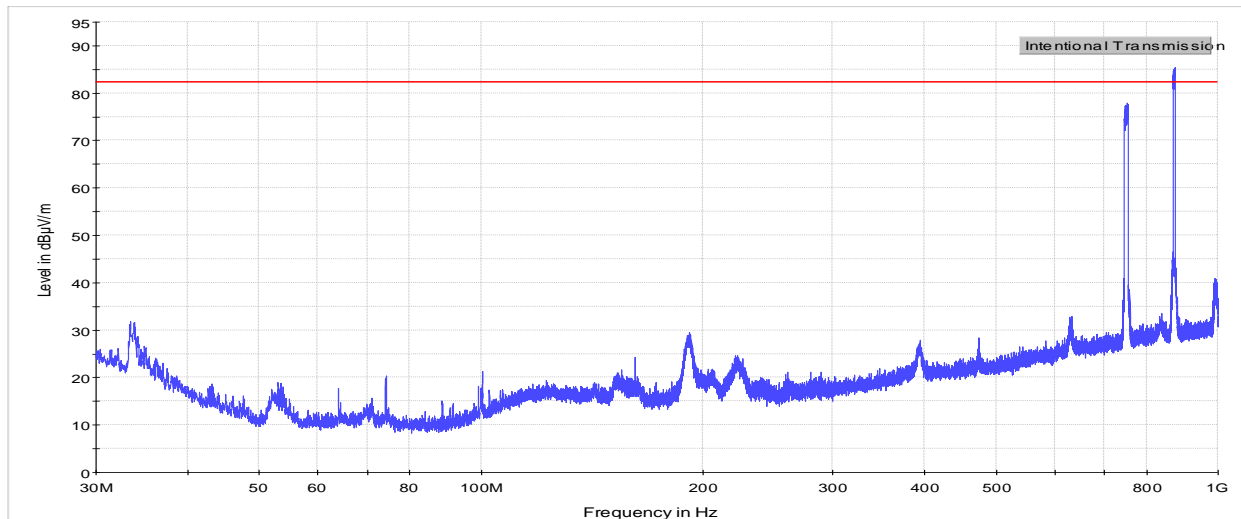


Figure 8.5-8: Radiated spurious emission below 1 GHz, B13 and B5 at low channel, configuration 2

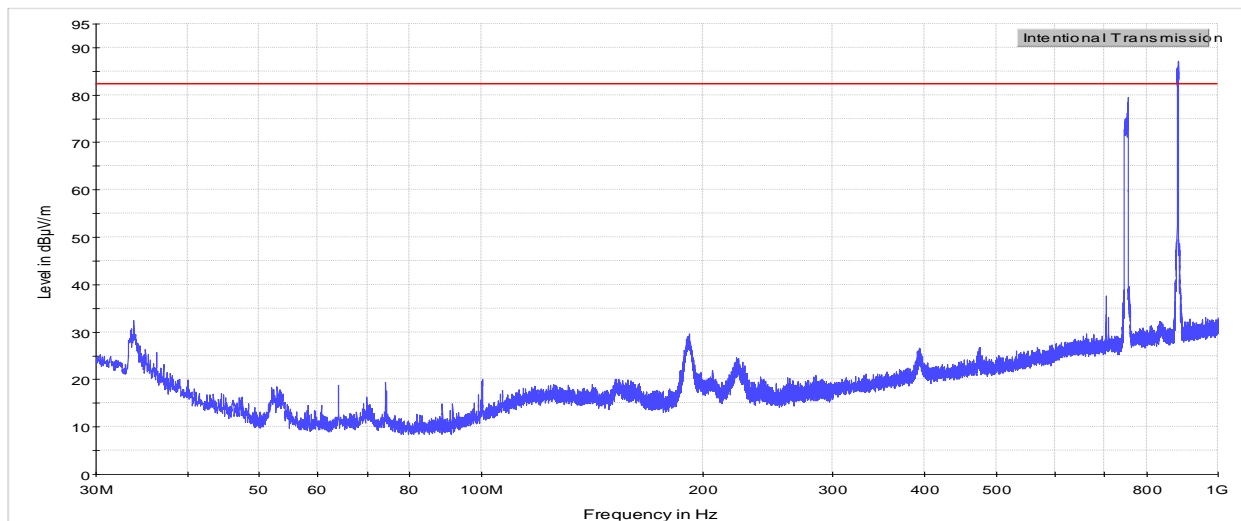
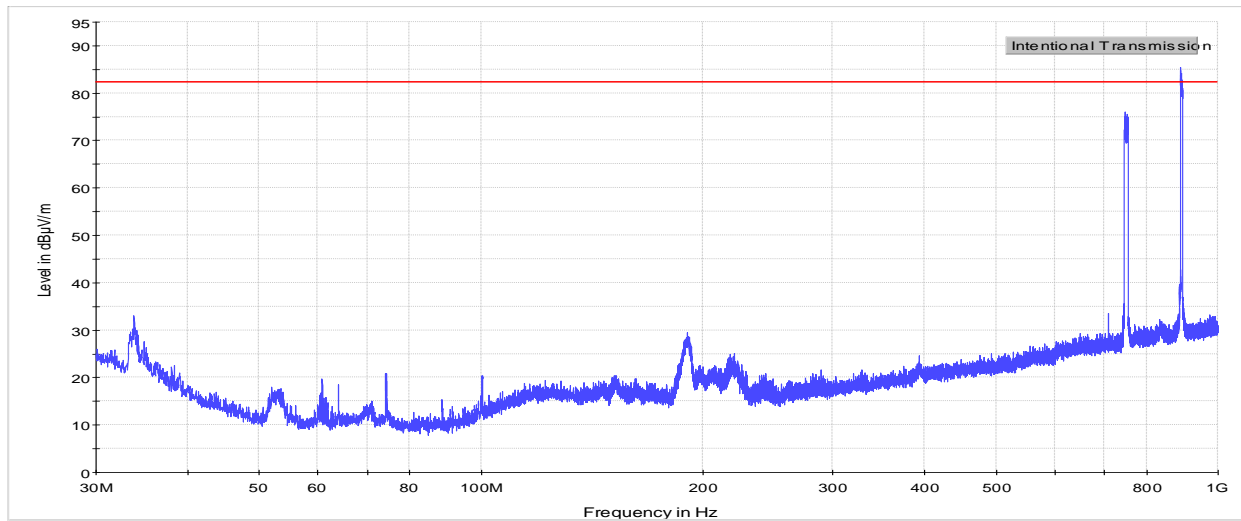
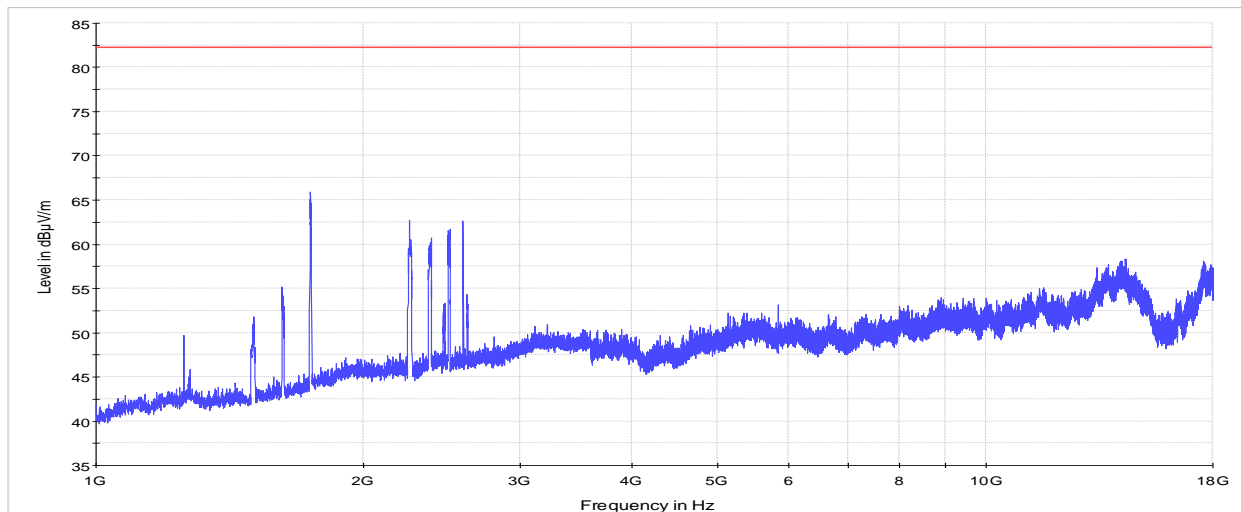


Figure 8.5-9: Radiated spurious emission below 1 GHz, B13 and B5 at mid channel, configuration 2



2 x 2 x 60 Top
PK+_MAXH
-13 dBm equiv 82.23 dBuV

Figure 8.5-10: Radiated spurious emission below 1 GHz, B13 and B5 at high channel, configuration 2



2 x 2 x 60 Bottom
PK+_MAXH
-13 dBm equiv 82.23 dBuV

Figure 8.5-11: Radiated spurious emission above 1 GHz, B13 and B5 at low channel, configuration 2

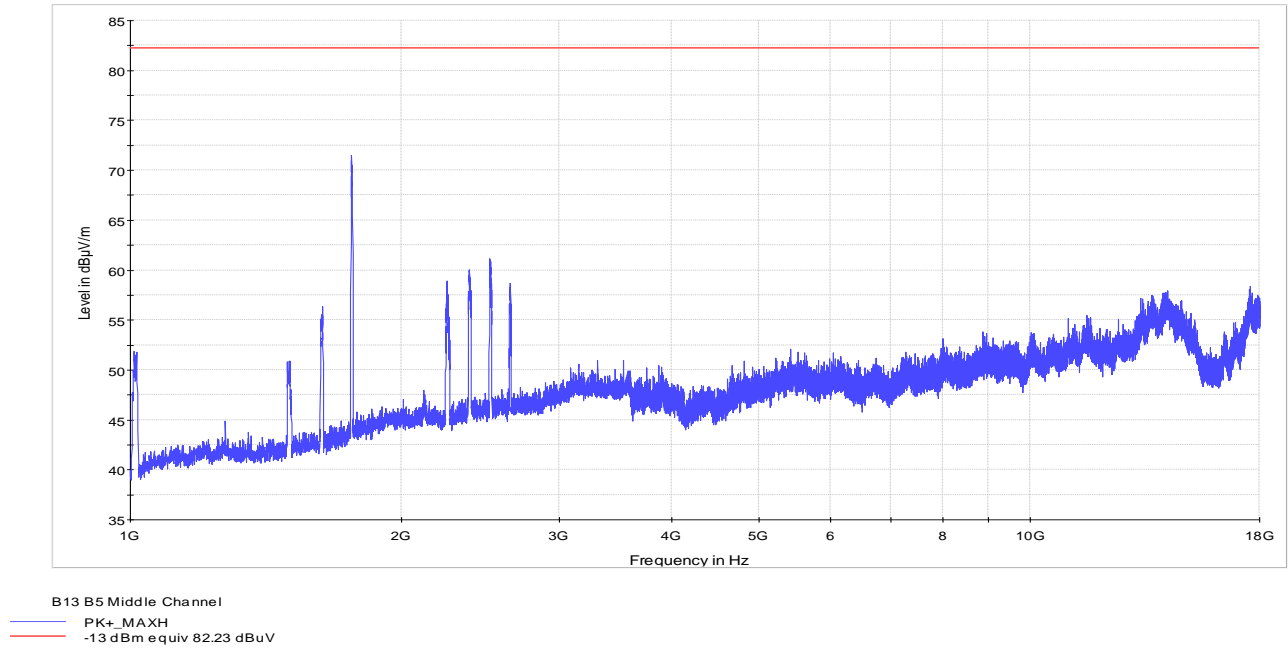


Figure 8.5-12: Radiated spurious emission above 1 GHz, B13 and B5 at mid channel, configuration 2

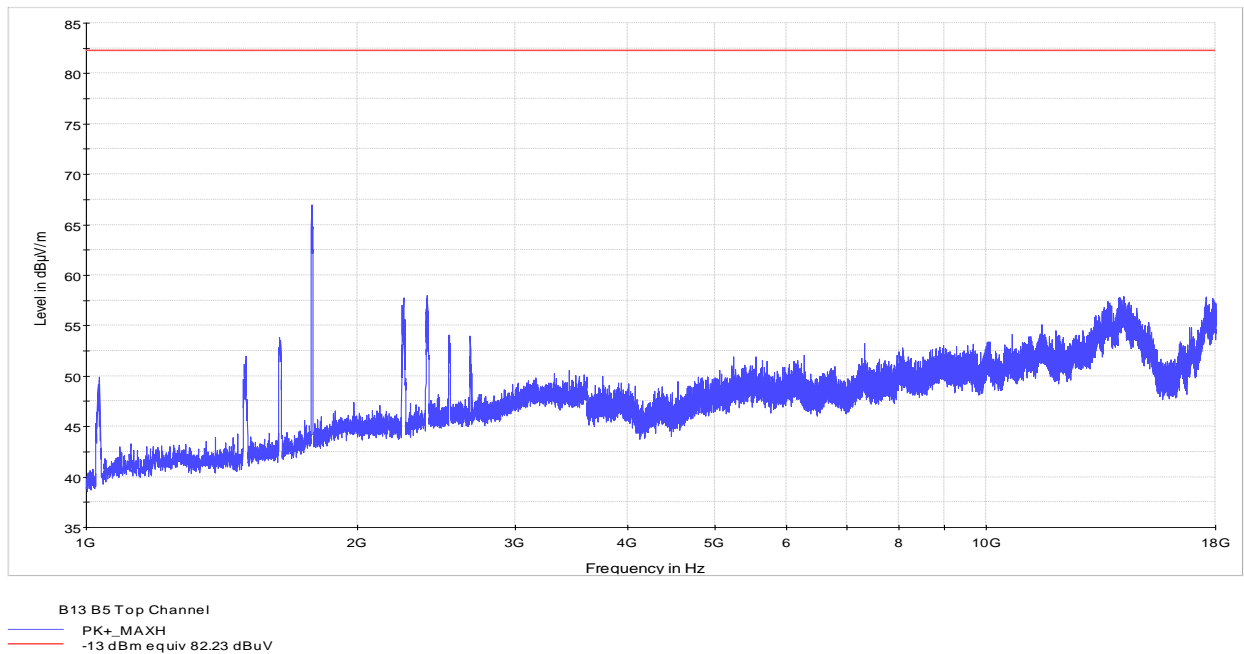
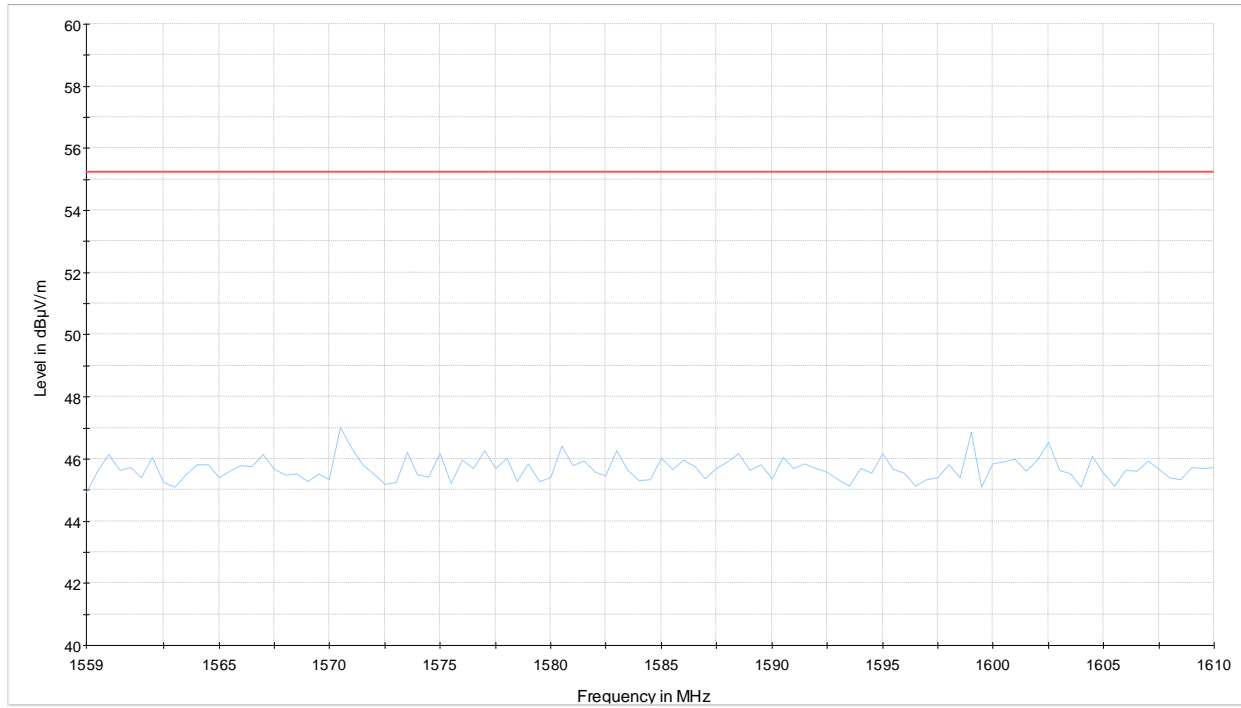


Figure 8.5-13: Radiated spurious emission above 1 GHz, B13 and B5 at high channel, configuration 2



B13 and B5 Bottom Channel
— Preview Result 1-PK+
— 55.23 dBμV/m

Figure 8.5-14: Radiated spurious emission within 1559–1610 MHz, B13 and B5 at high channel (worst case), configuration 2

8.6 FCC 27.54 Frequency stability

8.6.1 Definitions and limits

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

8.6.2 Test summary

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

8.6.3 Observations, settings and special notes

Configuration 1: Port A with 40 W power, Port B with 40 W power, Port C with 40 W power, Port D with 40 W power.
Configuration 2: Port A with 60 W power, Port D with 60 W power.

8.6.4 Test data

Table 8.6-1: Frequency error results for configuration 1

Temperature, °C	Voltage, V _{DC}	Frequency error, Hz
+50	48.0	-1.60
+40	48.0	-1.56
+30	48.0	-1.49
+20	55.2	-1.67
+20	48.0	-2.22
+20	40.8	-1.42
+10	48.0	-1.24
0	48.0	-1.99
-10	48.0	-1.03
-20	48.0	-1.45
-30	48.0	-1.34

Table 8.6-2: Frequency error results for configuration 2

Temperature, °C	Voltage, V _{DC}	Frequency error, Hz
+50	48.0	1.01
+40	48.0	1.21
+30	48.0	1.07
+20	55.2	1.17
+20	48.0	1.19
+20	40.8	1.10
+10	48.0	0.80
0	48.0	1.11
-10	48.0	1.05
-20	48.0	1.08
-30	48.0	-1.09

8.7 FCC 22.355 Frequency tolerance

8.7.1 Definitions and limits

The carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerance of ± 1.5 ppm for Base/fixed stations operating within 821–896 MHz.

8.7.2 Test summary

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

8.7.3 Observations, settings and special notes

1.5 ppm of 881.5 MHz is 1322 Hz.

Configuration 1: Port A with 40 W power, Port B with 40 W power, Port C with 40 W power, Port D with 40 W power.

Configuration 2: Port A with 60 W power, Port D with 60 W power.

8.7.4 Test data

Table 8.7-1: Frequency tolerance results for configuration 1

Temperature, °C	Voltage, V _{DC}	Frequency error, Hz	Limit, \pm Hz	Margin, Hz
+50	48.0	0.78	1322	1321.22
+40	48.0	-0.71	1322	1321.29
+30	48.0	0.74	1322	1321.26
+20	55.2	0.68	1322	1321.32
+20	48.0	0.79	1322	1321.21
+20	40.8	0.73	1322	1321.27
+10	48.0	-0.63	1322	1321.37
0	48.0	-0.81	1322	1321.19
-10	48.0	-0.87	1322	1321.13
-20	48.0	-1.06	1322	1320.94
-30	48.0	0.95	1322	1321.05

Table 8.7-2: Frequency tolerance results for configuration 2

Temperature, °C	Voltage, V _{DC}	Frequency error, Hz	Limit, \pm Hz	Margin, Hz
+50	48.0	-0.89	1322	1321.11
+40	48.0	1.05	1322	1320.95
+30	48.0	1.01	1322	1320.99
+20	55.2	0.91	1322	1321.09
+20	48.0	0.87	1322	1321.13
+20	40.8	-0.85	1322	1321.15
+10	48.0	-0.81	1322	1321.19
0	48.0	-0.82	1322	1321.18
-10	48.0	-0.83	1322	1321.17
-20	48.0	-0.72	1322	1321.28
-30	48.0	-1.1	1322	1320.90

8.8 FCC Part 2.1049 Occupied bandwidth

8.8.1 Definitions and limits

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.

8.8.2 Test summary

Test date	November 15, 2017	Temperature	22 °C
Test engineer	Andrey Adelberg	Air pressure	1009 mbar
Verdict	Pass	Relative humidity	33 %

8.8.3 Observations, settings and special notes

Configuration 1: Port A with 40 W power, Port B with 40 W power, Port C with 40 W power, Port D with 40 W power.
Configuration 2: Port A with 60 W power, Port D with 60 W power.

8.8.4 Test data

Table 8.8-1: Occupied bandwidth results for configuration 1

Remarks	99% OBW, MHz	26 dB BW, MHz
Antenna A	8.9374	9.424
Antenna B	8.9351	9.381
Antenna C	8.9392	9.408
Antenna D	8.9449	9.376

Table 8.8-2: Occupied bandwidth results for configuration 2

Remarks	99% OBW, MHz	26 dB BW, MHz
Antenna A	8.9289	9.341
Antenna D	8.9250	9.355

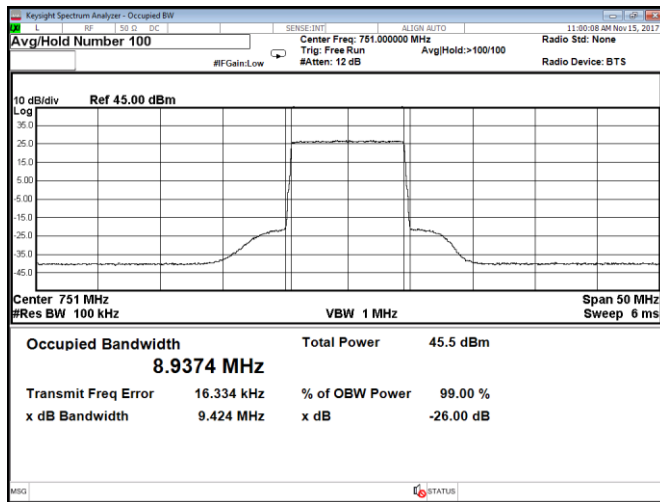


Figure 8.8-1: Occupied bandwidth, QPSK, Port A, configuration 1

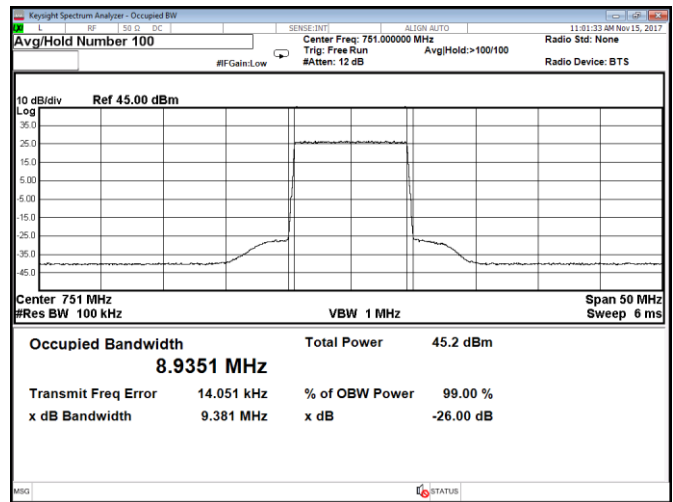


Figure 8.8-2: Occupied bandwidth, QPSK, Port B, configuration 1

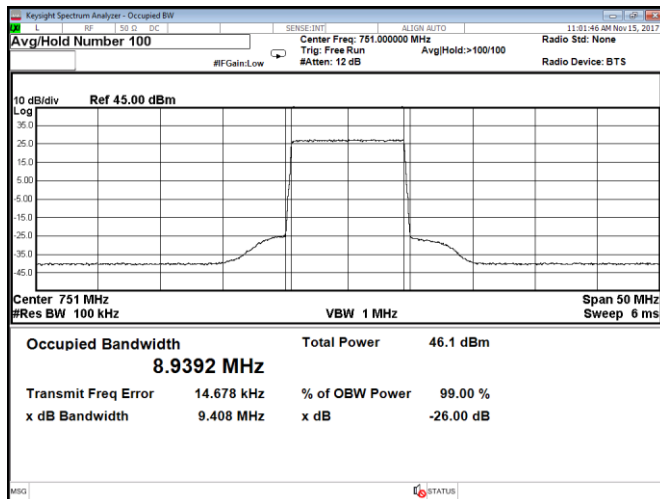


Figure 8.8-3: Occupied bandwidth, QPSK, Port C, configuration 1

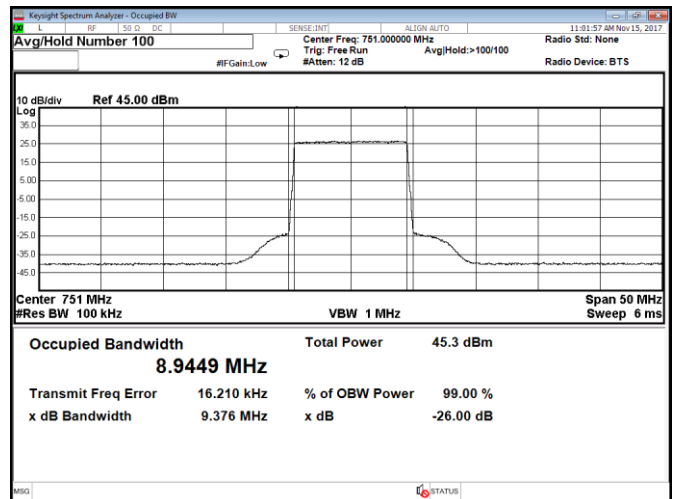


Figure 8.8-4: Occupied bandwidth, QPSK, Port D, configuration 1