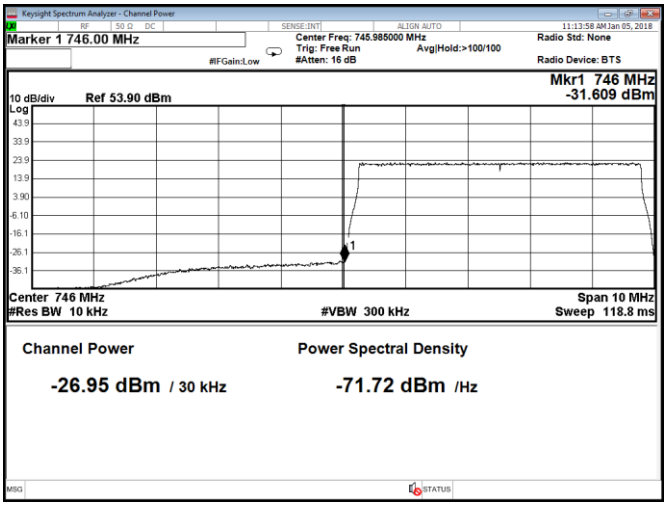

Figure 8.3-77: *Conducted band edge emission at 746 MHz, Port D, QPSK, low channel, configuration 2*

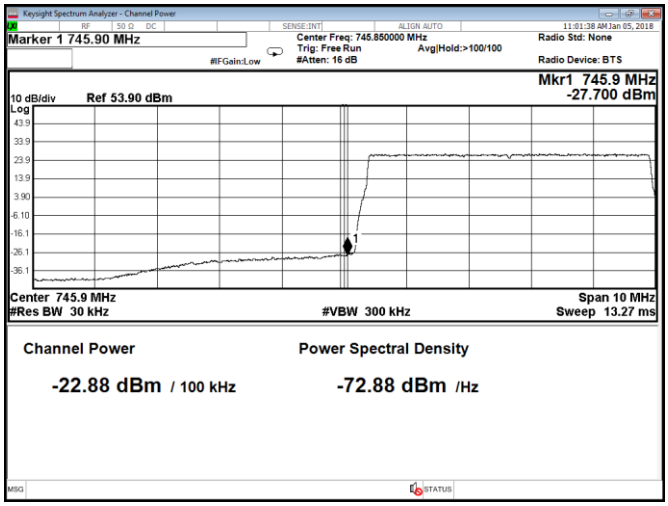

Figure 8.3-78: *Conducted band edge emission at 745.9 MHz, Port D, QPSK, low channel, configuration 2*

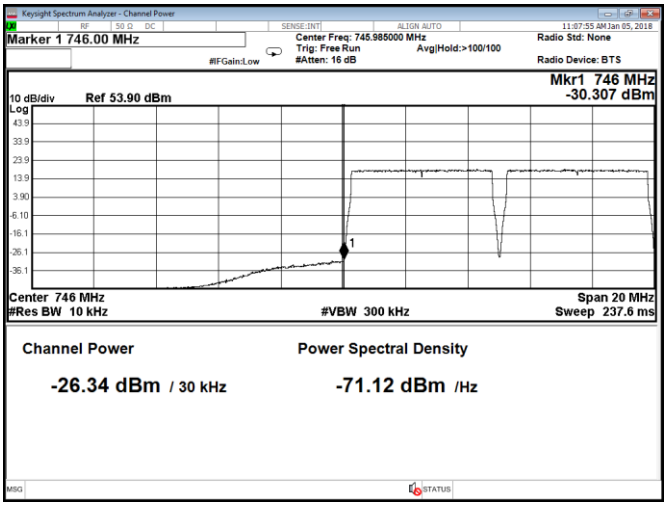

Figure 8.3-79: *Conducted band edge emission at 746 MHz, Port A, QPSK, two-channel operation, configuration 2*

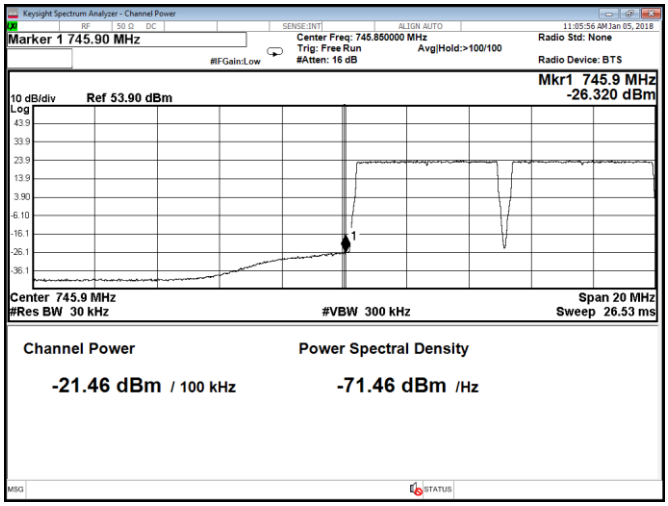

Figure 8.3-80: *Conducted band edge emission at 745.9 MHz, Port A, QPSK, two-channel operation, configuration 2*

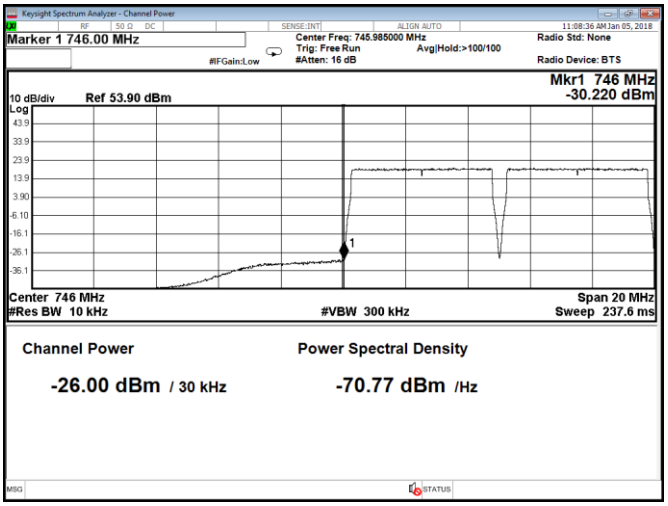

Figure 8.3-81: *Conducted band edge emission at 746 MHz, Port D, QPSK, two-channel operation, configuration 2*

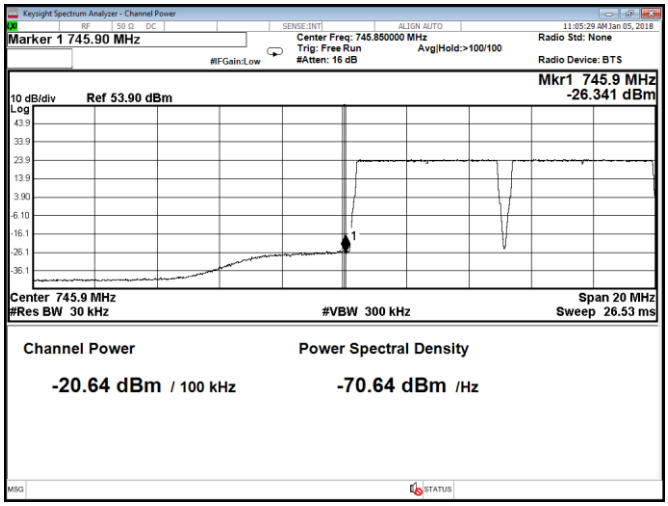

Figure 8.3-82: *Conducted band edge emission at 745.9 MHz, Port D, QPSK, two-channel operation, configuration 2*

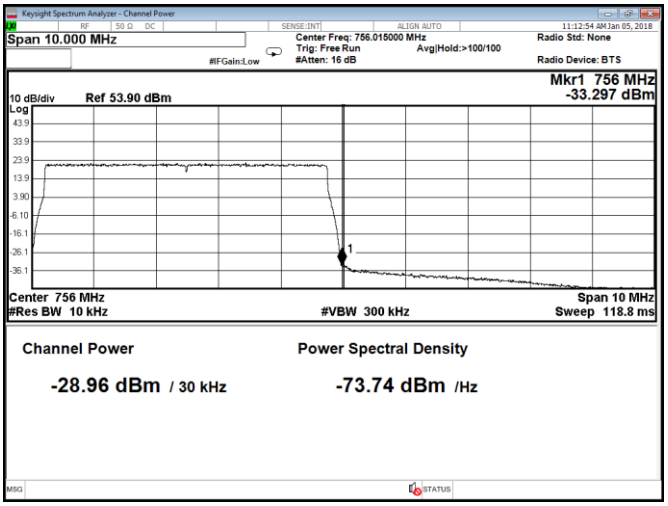

Figure 8.3-83: *Conducted band edge emission at 756 MHz, Port A, QPSK, high channel, configuration 2*

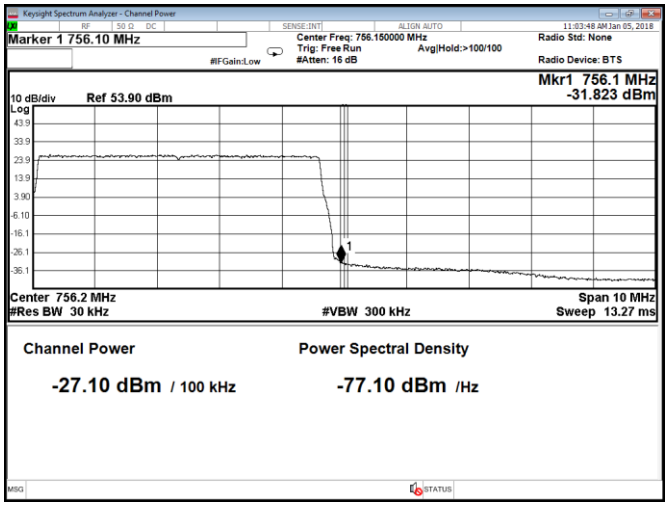

Figure 8.3-84: *Conducted band edge emission at 756.1 MHz, Port A, QPSK, high channel, configuration 2*

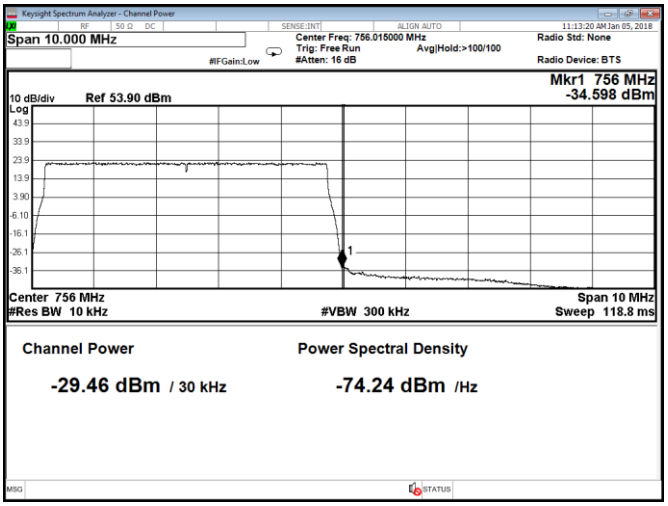

Figure 8.3-85: *Conducted band edge emission at 756 MHz, Port D, QPSK, high channel, configuration 2*

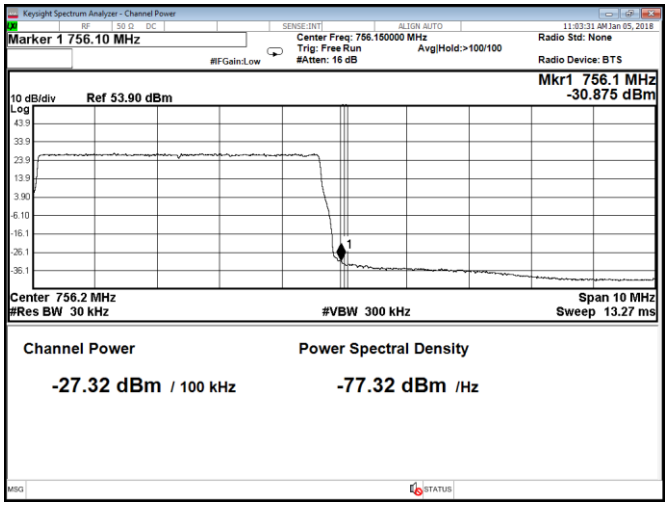

Figure 8.3-86: *Conducted band edge emission at 756.1 MHz, Port D, QPSK, high channel, configuration 2*

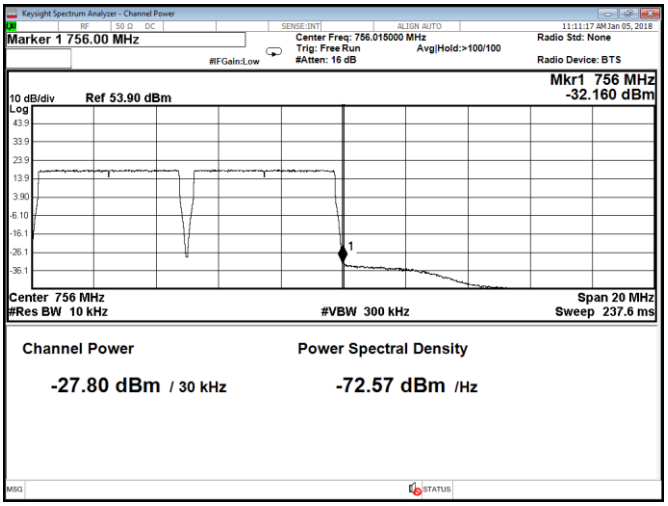

Figure 8.3-87: *Conducted band edge emission at 756 MHz, Port A, QPSK, two-channel operation, configuration 2*

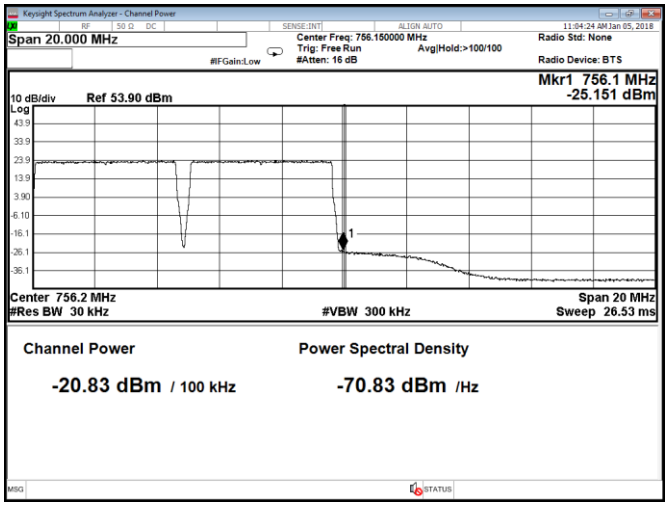

Figure 8.3-88: *Conducted band edge emission at 756.1 MHz, Port A, QPSK, two-channel operation, configuration 2*

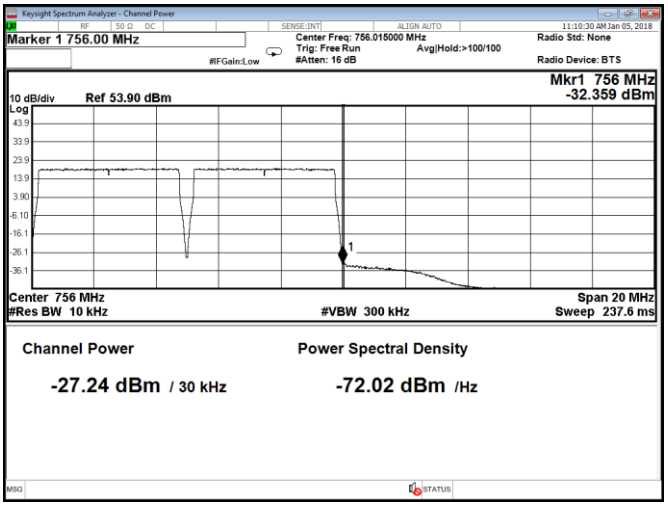

Figure 8.3-89: *Conducted band edge emission at 756 MHz, Port D, QPSK, two-channel operation, configuration 2*

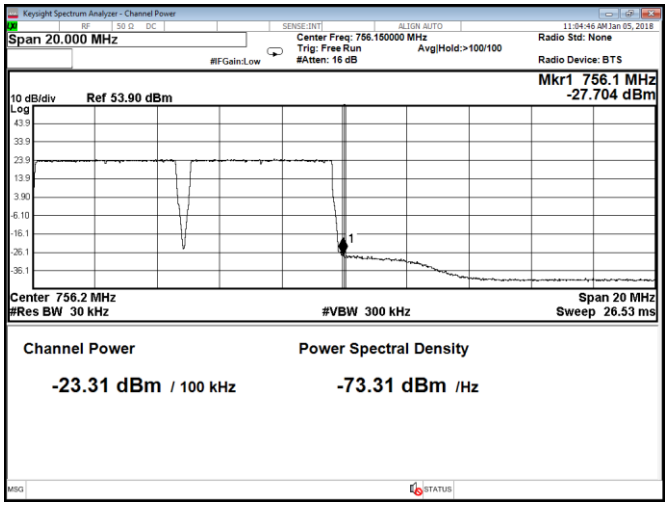

Figure 8.3-90: *Conducted band edge emission at 756.1 MHz, Port D, QPSK, two-channel operation, configuration 2*

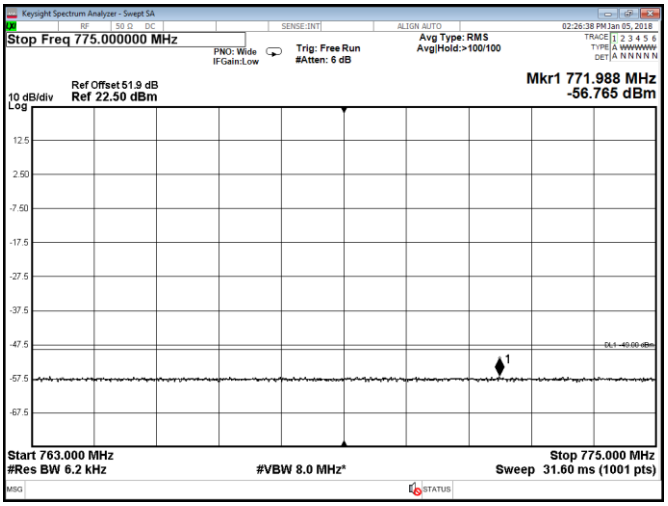

Figure 8.3-91: *Conducted spurious emission within 763–775 MHz, Port A, QPSK, low channel, configuration 2*

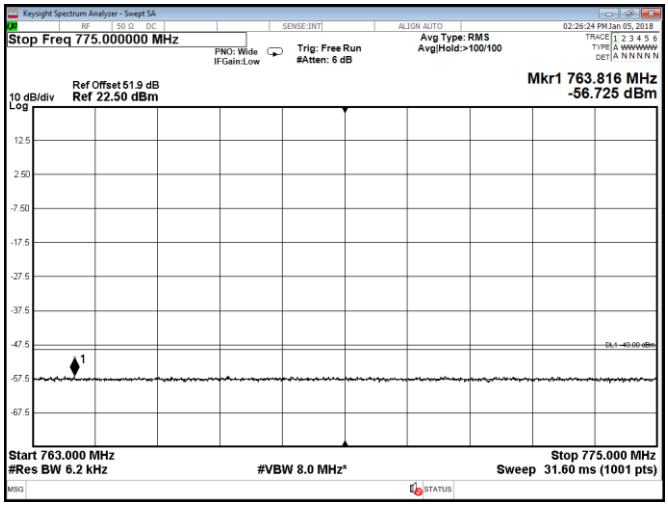

Figure 8.3-92: *Conducted spurious emission within 763–775 MHz, Port D, QPSK, low channel, configuration 2*

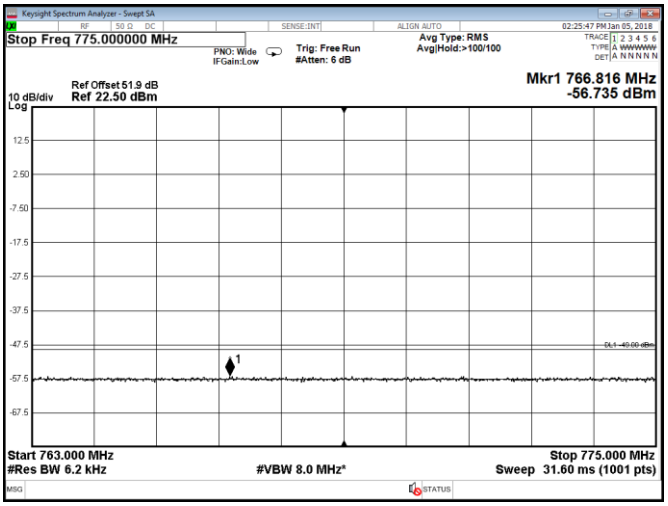

Figure 8.3-93: *Conducted spurious emission within 763–775 MHz, Port A, QPSK, high channel, configuration 2*

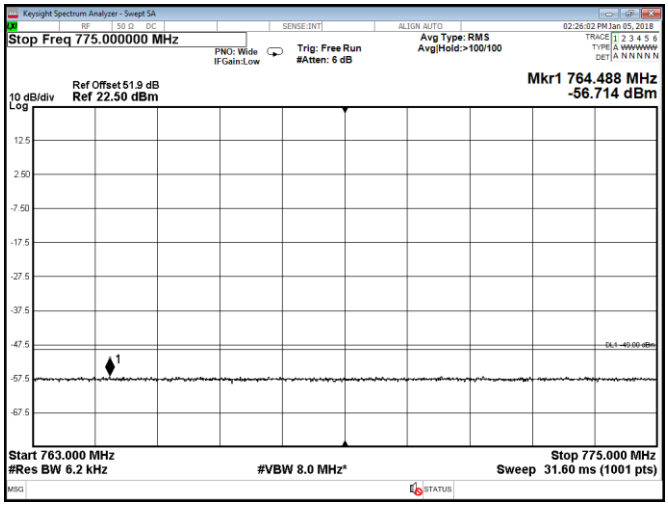

Figure 8.3-94: *Conducted spurious emission within 763–775 MHz, Port D, QPSK, high channel, configuration 2*

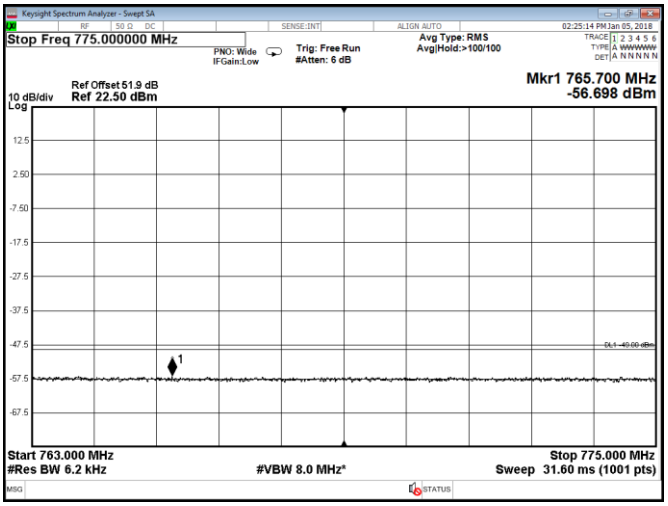

Figure 8.3-95: *Conducted spurious emission within 763–775 MHz, Port A, QPSK, two-channel operation, configuration 2*

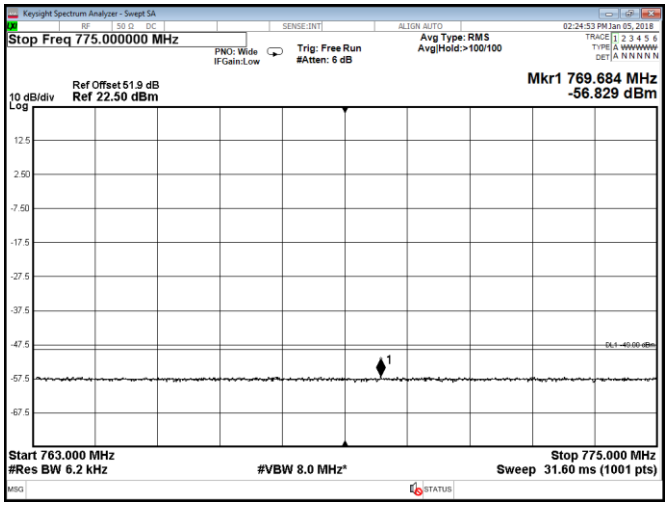

Figure 8.3-96: *Conducted spurious emission within 763–775 MHz, Port D, QPSK, two-channel operation, configuration 2*

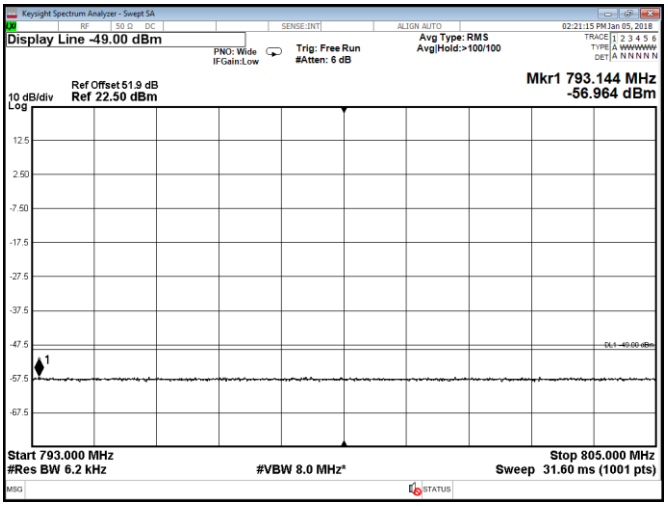

Figure 8.3-97: *Conducted spurious emission within 793–805 MHz, Port A, QPSK, low channel, configuration 2*

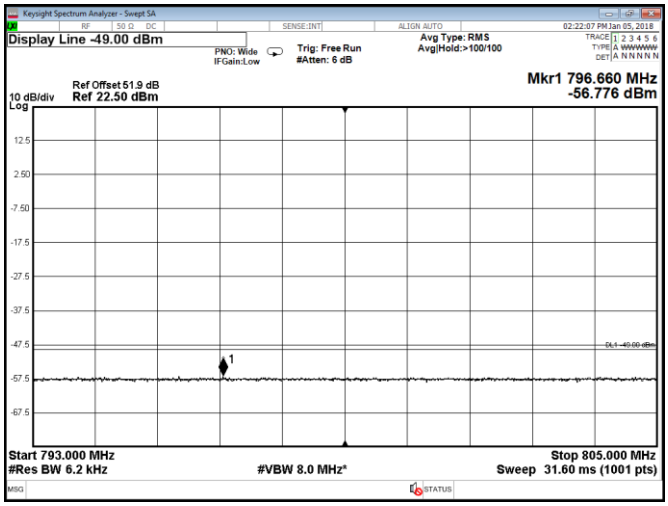

Figure 8.3-98: *Conducted spurious emission within 793–805 MHz, Port D, QPSK, low channel, configuration 2*

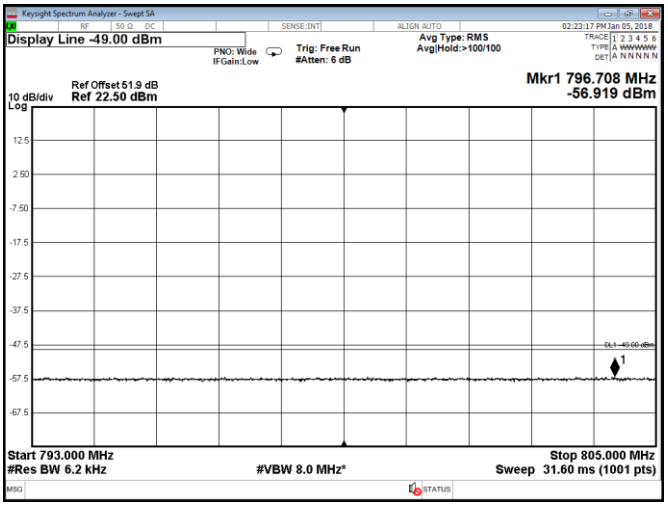

Figure 8.3-99: *Conducted spurious emission within 793–805 MHz, Port A, QPSK, high channel, configuration 2*

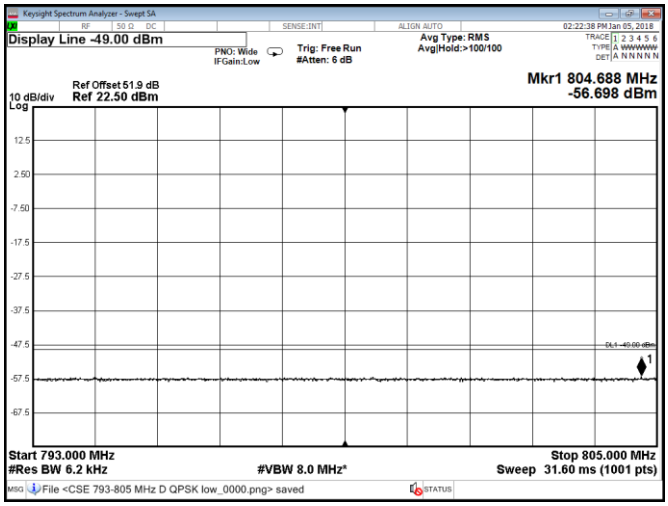

Figure 8.3-100: *Conducted spurious emission within 793–805 MHz, Port D, QPSK, high channel, configuration 2*

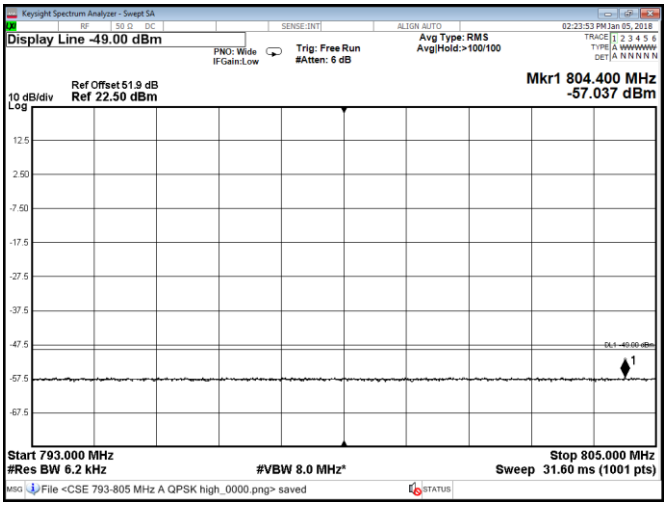

Figure 8.3-101: *Conducted spurious emission within 793–805 MHz, Port A, QPSK, two-channel operation, configuration 2*

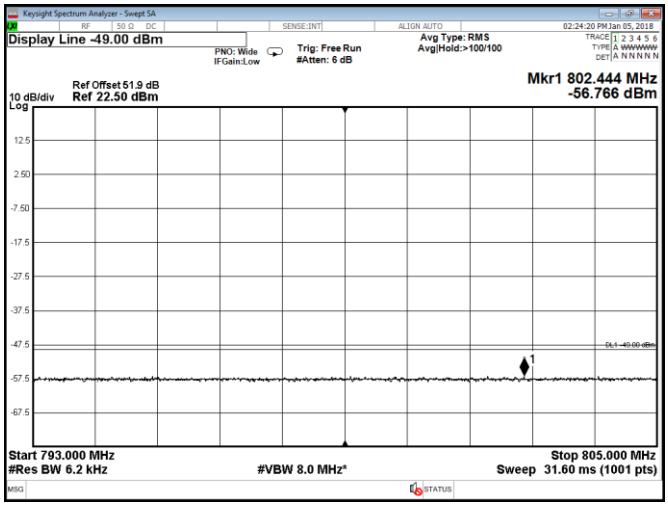

Figure 8.3-102: *Conducted spurious emission within 793–805 MHz, Port D, QPSK, two-channel operation, configuration 2*

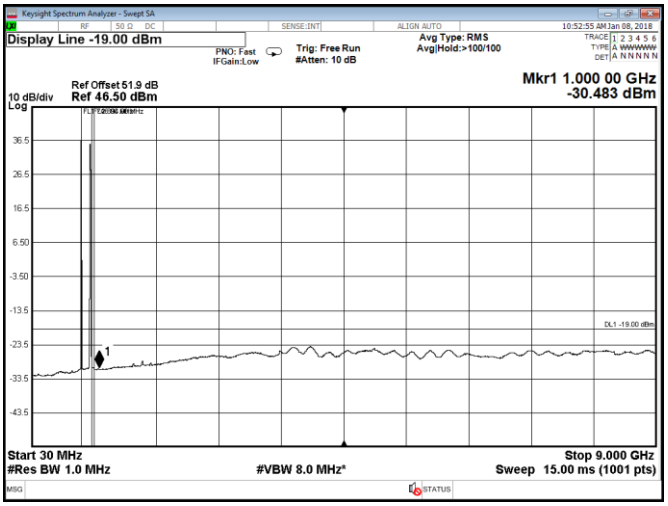

Figure 8.3-103: *Conducted spurious emissions, Port A, QPSK, multi-band operation, B5 10 MHz low channel + B13 5 MHz low channel, configuration 1*

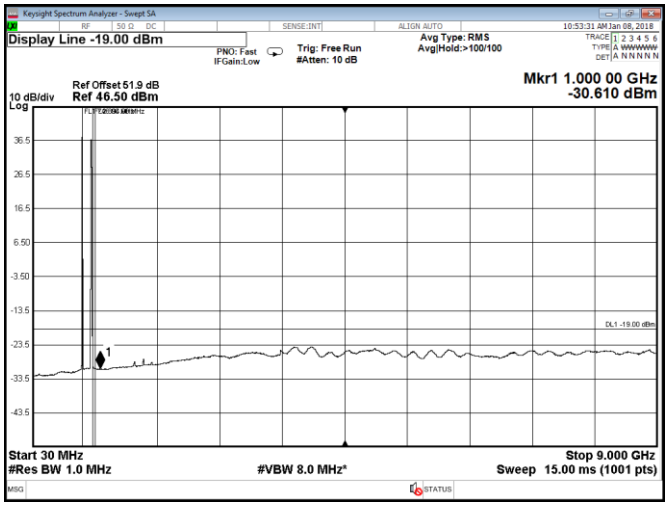

Figure 8.3-104: *Conducted spurious emissions, Port B, QPSK, multi-band operation, B5 10 MHz low channel + B13 5 MHz low channel, configuration 1*

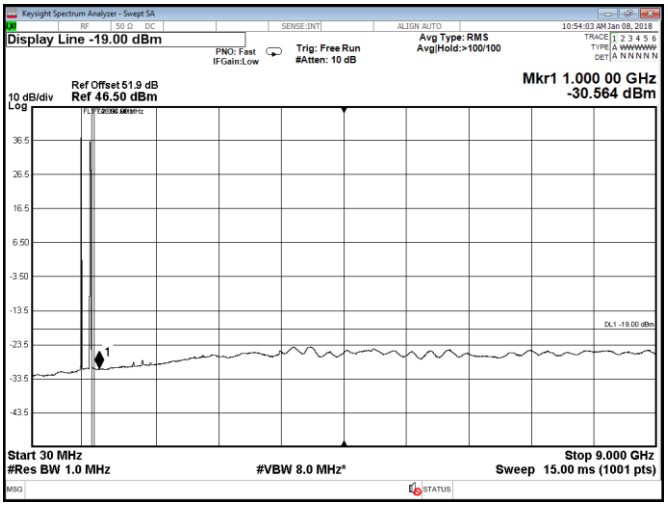

Figure 8.3-105: *Conducted spurious emissions, Port C, QPSK, multi-band operation, B5 10 MHz low channel + B13 5 MHz low channel, configuration 1*

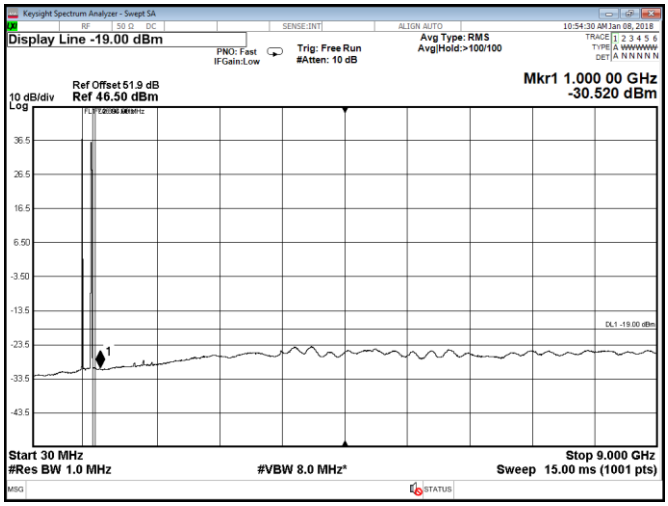

Figure 8.3-106: *Conducted spurious emissions, Port D, QPSK, multi-band operation, B5 10 MHz low channel + B13 5 MHz low channel, configuration 1*

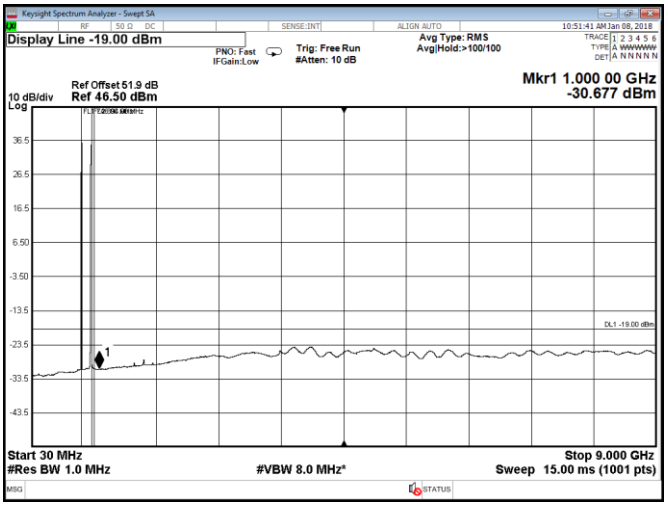

Figure 8.3-107: *Conducted spurious emissions, Port A, QPSK, multi-band operation, B5 10 MHz high channel + B13 5 MHz high channel, configuration 1*

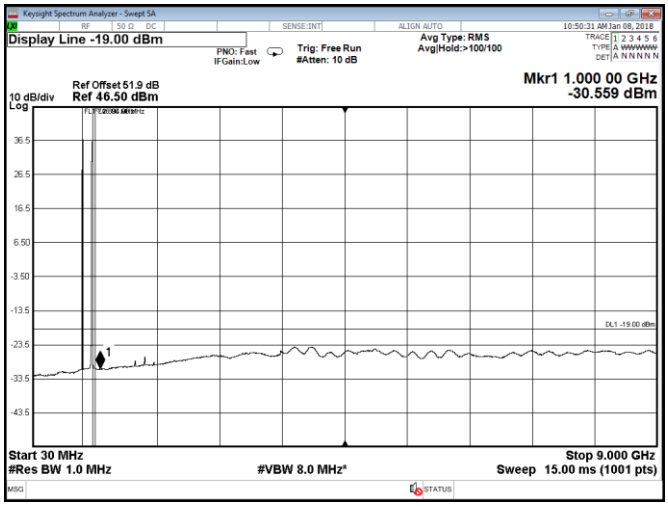

Figure 8.3-108: *Conducted spurious emissions, Port B, QPSK, multi-band operation, B5 10 MHz high channel + B13 5 MHz high channel, configuration 1*

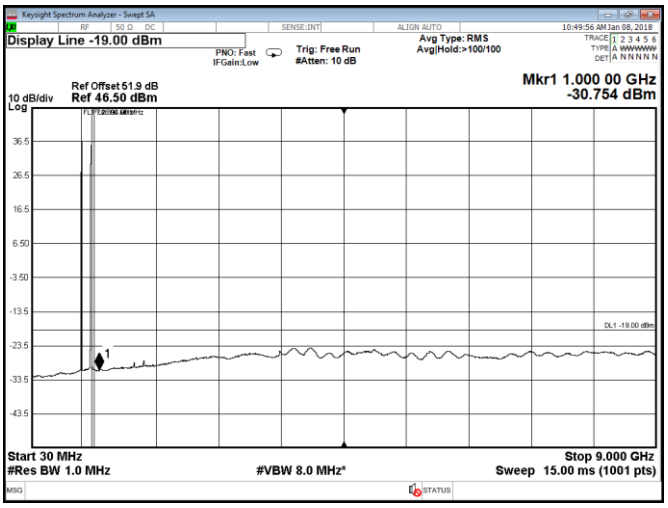

Figure 8.3-109: *Conducted spurious emissions, Port C, QPSK, multi-band operation, B5 10 MHz high channel + B13 5 MHz high channel, configuration 1*

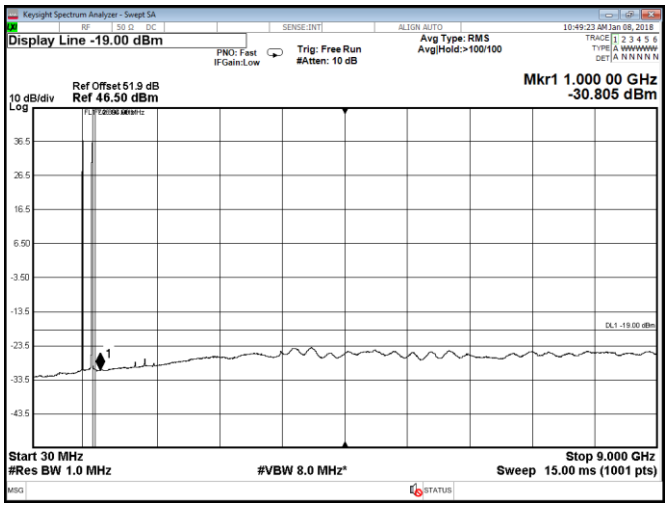

Figure 8.3-110: *Conducted spurious emissions, Port D, QPSK, multi-band operation, B5 10 MHz high channel + B13 5 MHz high channel, configuration 1*

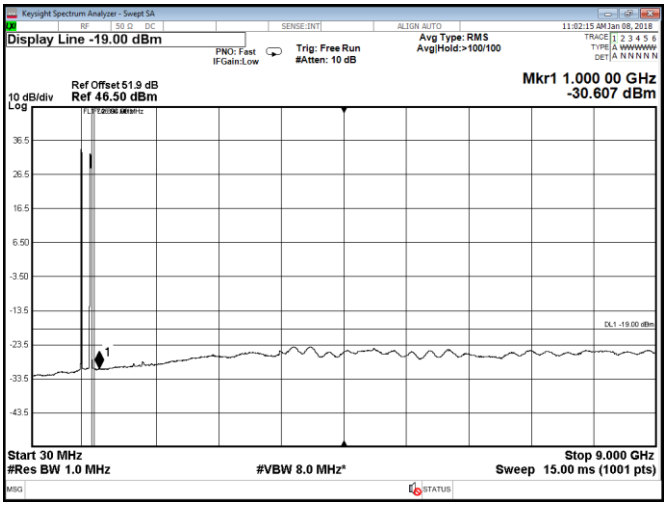

Figure 8.3-111: *Conducted spurious emissions, Port A, QPSK, multi-band operation, B5 2× 5 MHz channels + B13 2× 5 MHz channels, configuration 1*

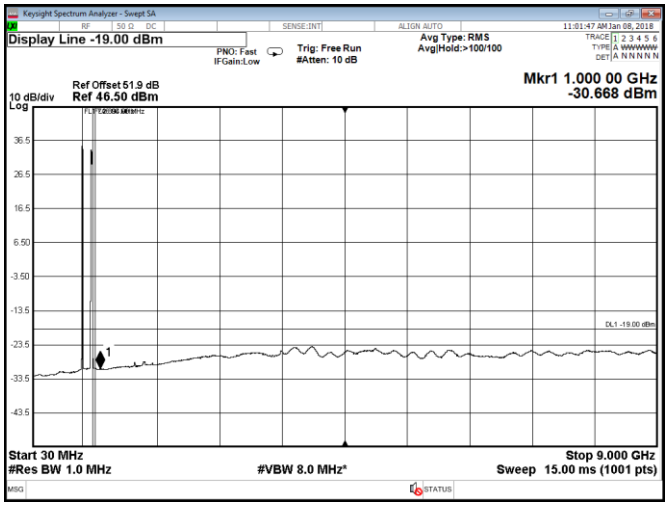

Figure 8.3-112: *Conducted spurious emissions, Port B, QPSK, multi-band operation, B5 2× 5 MHz channels + B13 2× 5 MHz channels, configuration 1*

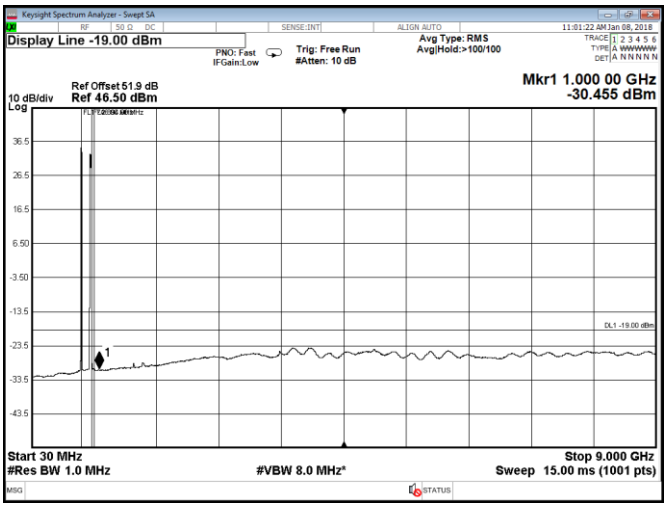

Figure 8.3-113: *Conducted spurious emissions, Port C, QPSK, multi-band operation, B5 2× 5 MHz channels + B13 2× 5 MHz channels, configuration 1*

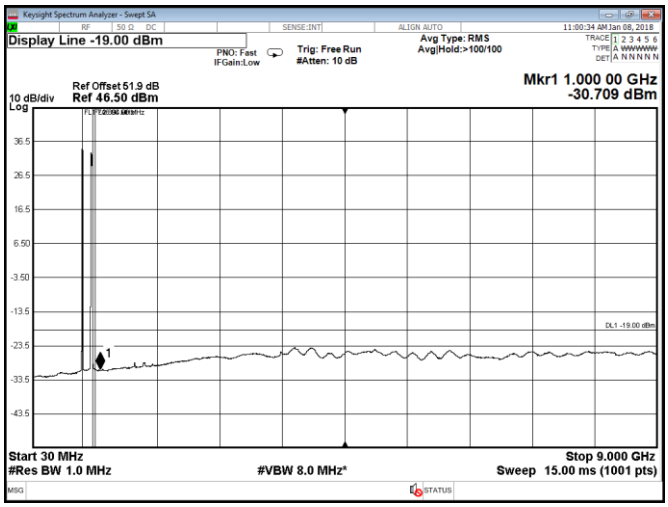

Figure 8.3-114: *Conducted spurious emissions, Port D, QPSK, multi-band operation, B5 2× 5 MHz channels + B13 2× 5 MHz channels, configuration 1*

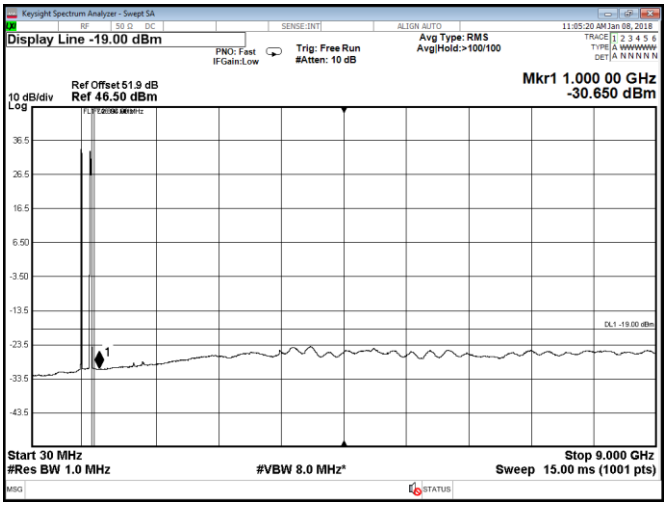

Figure 8.3-115: *Conducted spurious emissions, Port A, QPSK, multi-band operation, B5 3× 5 MHz channels + B13 2× 5 MHz channels, configuration 1*

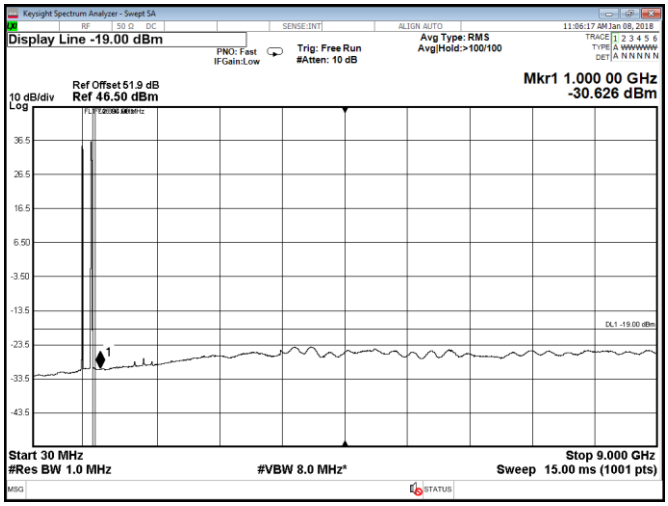

Figure 8.3-116: *Conducted spurious emissions, Port B, QPSK, multi-band operation, B5 3× 5 MHz channels + B13 2× 5 MHz channels, configuration 1*

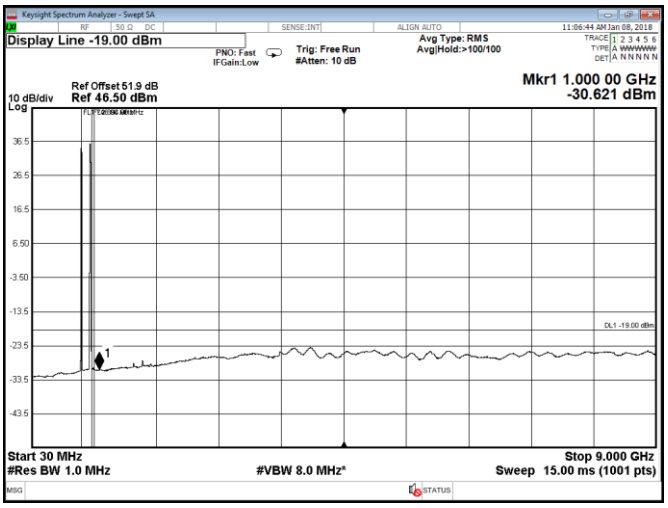

Figure 8.3-117: *Conducted spurious emissions, Port C, QPSK, multi-band operation, B5 3× 5 MHz channels + B13 2× 5 MHz channels, configuration 1*

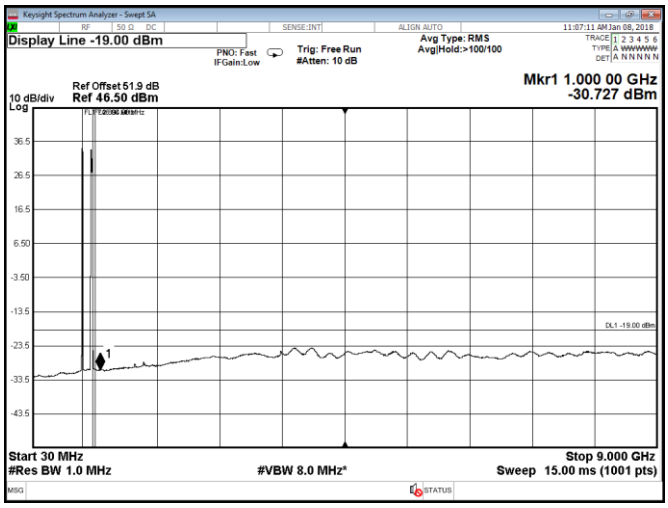

Figure 8.3-118: *Conducted spurious emissions, Port D, QPSK, multi-band operation, B5 3× 5 MHz channels + B13 2× 5 MHz channels, configuration 1*

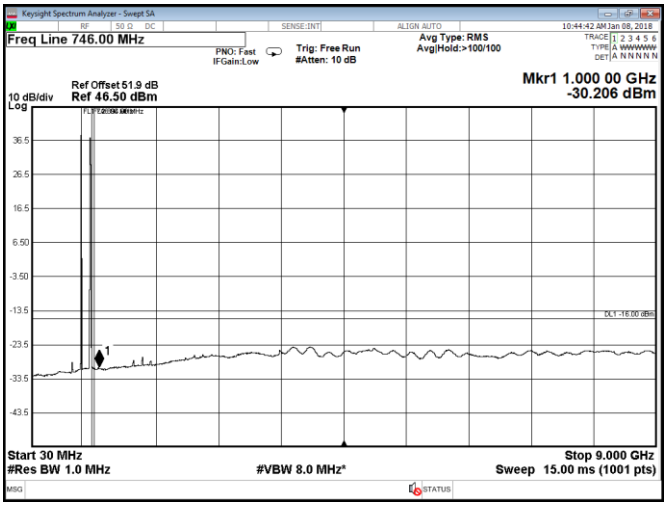

Figure 8.3-119: *Conducted spurious emissions, Port A, QPSK, multi-band operation, B5 10 MHz low channel + B13 5 MHz low channel, configuration 2*

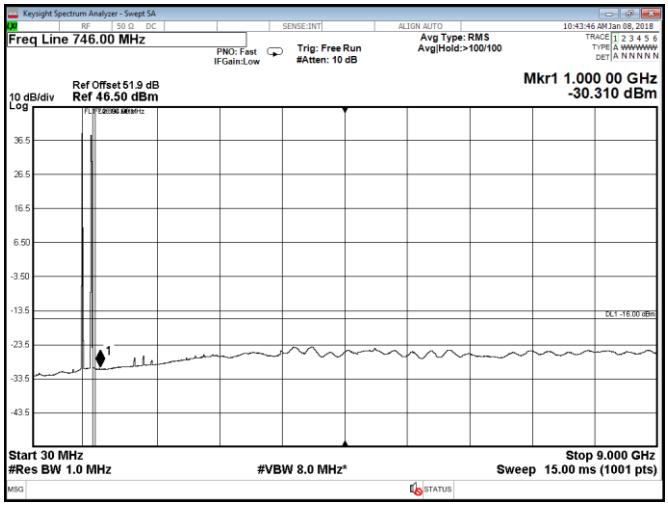

Figure 8.3-120: *Conducted spurious emissions, Port D, QPSK, multi-band operation, B5 10 MHz low channel + B13 5 MHz low channel, configuration 2*

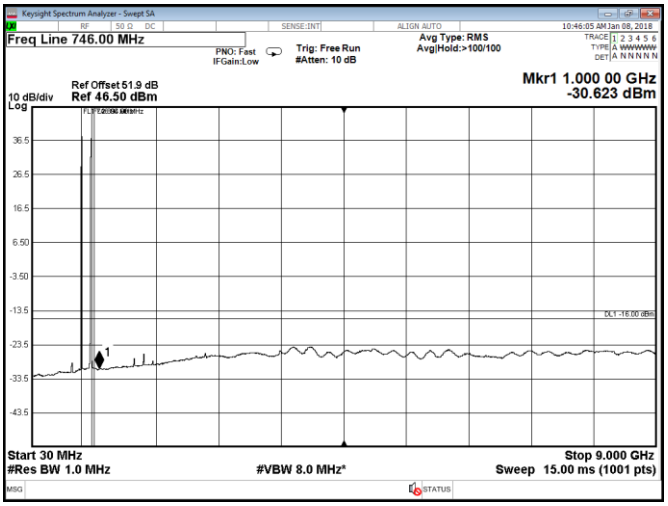

Figure 8.3-121: *Conducted spurious emissions, Port A, QPSK, multi-band operation, B5 10 MHz high channel + B13 5 MHz high channel, configuration 2*

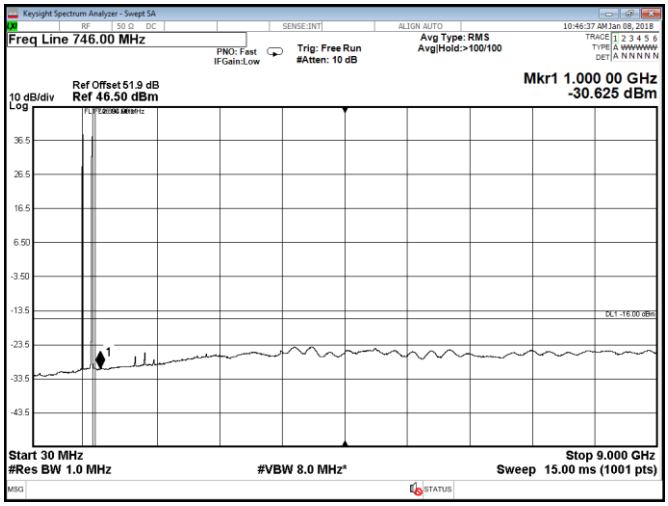

Figure 8.3-122: *Conducted spurious emissions, Port D, QPSK, multi-band operation, B5 10 MHz high channel + B13 5 MHz high channel, configuration 2*

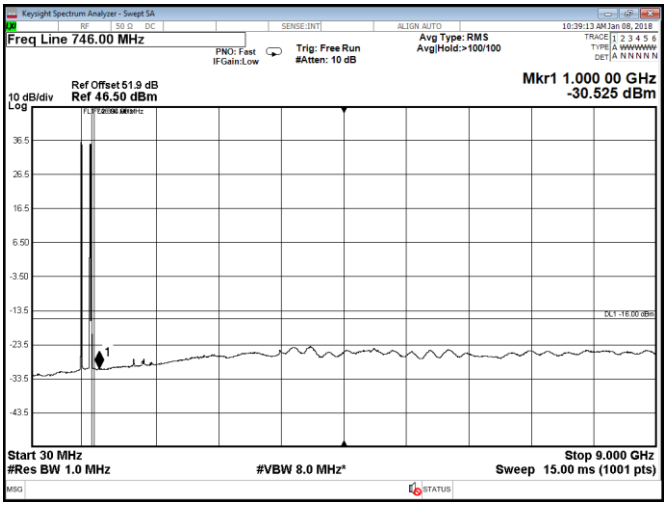

Figure 8.3-123: *Conducted spurious emissions, Port A, QPSK, multi-band operation, B5 2× 5 MHz channels + B13 2× 5 MHz channels, configuration 2*

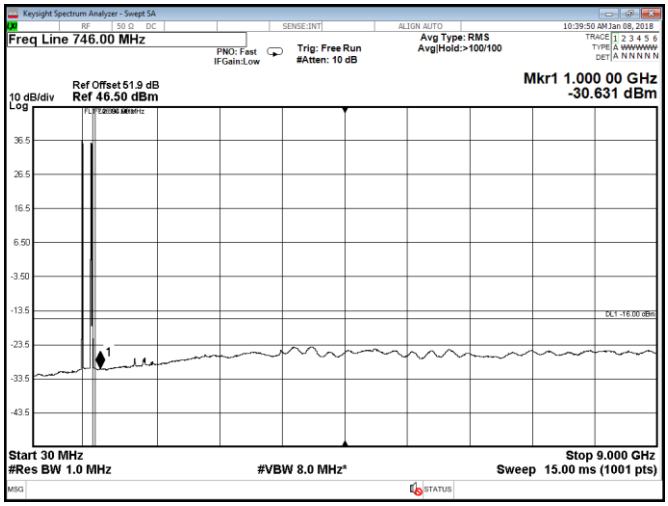

Figure 8.3-124: *Conducted spurious emissions, Port D, QPSK, multi-band operation, B5 2× 5 MHz channels + B13 2× 5 MHz channels, configuration 2*

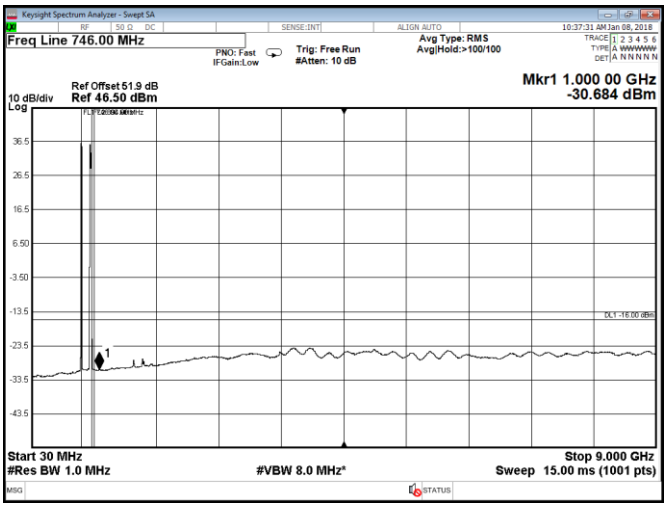

Figure 8.3-125: *Conducted spurious emissions, Port A, QPSK, multi-band operation, B5 3× 5 MHz channels + B13 2× 5 MHz channels, configuration 2*

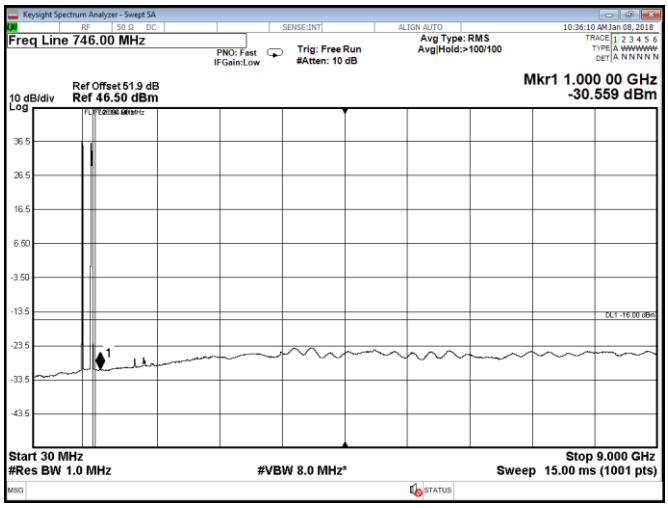

Figure 8.3-126: *Conducted spurious emissions, Port D, QPSK, multi-band operation, B5 3× 5 MHz channels + B13 2× 5 MHz channels, configuration 2*

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	January 5, 2018
Test engineer	Andrey Adelberg
Verdict	Pass

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 4×4 application (configuration 1) limit lines were adjusted by 6 dB ($10 \times \mathrm{Log}_{10}(4)$)
For compensation of MIMO 2×2 application (configuration 2) limit lines were adjusted by 3 dB ($10 \times \mathrm{Log}_{10}(2)$)
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

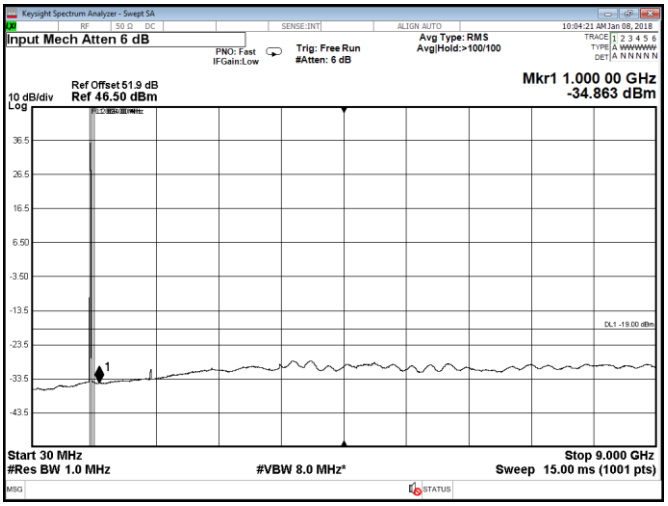

Figure 8.4-1: *Conducted spurious emissions within at Port A, QPSK, low channel, configuration 1*

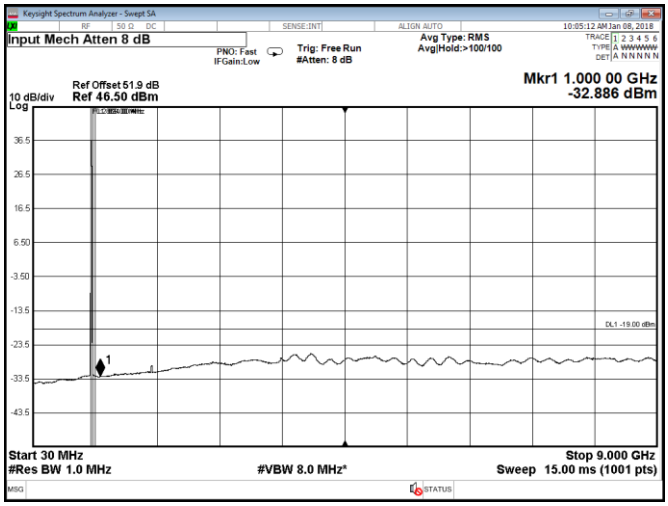

Figure 8.4-2: *Conducted spurious emissions within at Port B, QPSK, low channel, configuration 1*

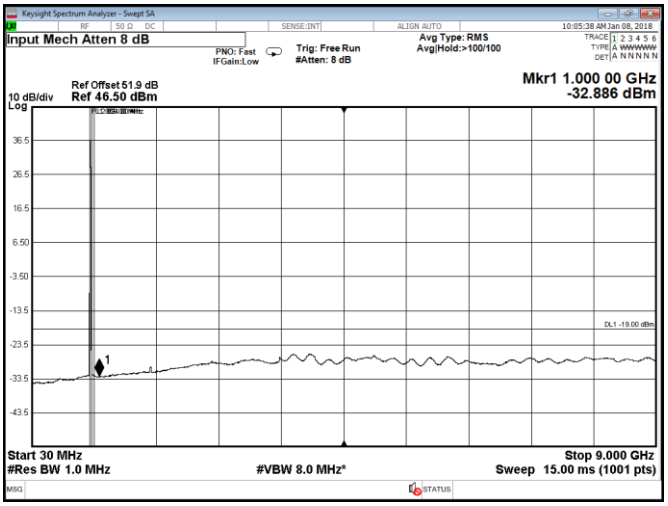

Figure 8.4-3: *Conducted spurious emissions within at Port C, QPSK, low channel, configuration 1*

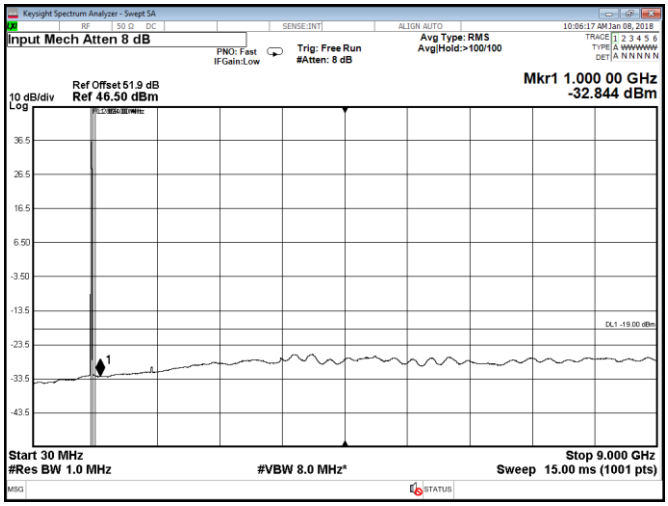

Figure 8.4-4: *Conducted spurious emissions within at Port D, QPSK, low channel, configuration 1*

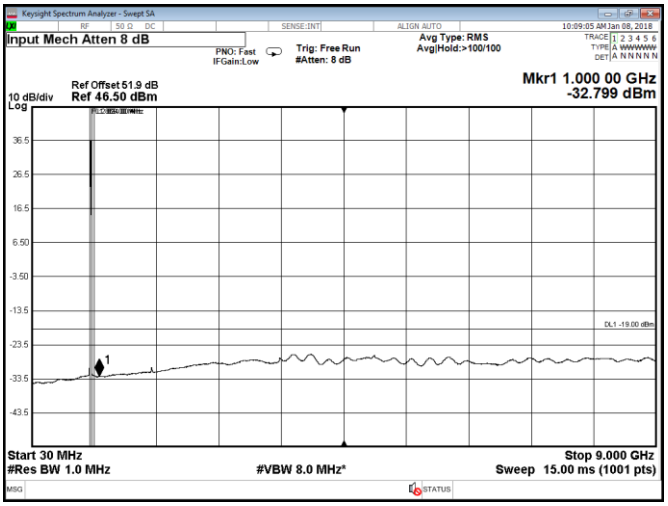

Figure 8.4-5: *Conducted spurious emissions within at Port A, QPSK, mid channel, configuration 1*

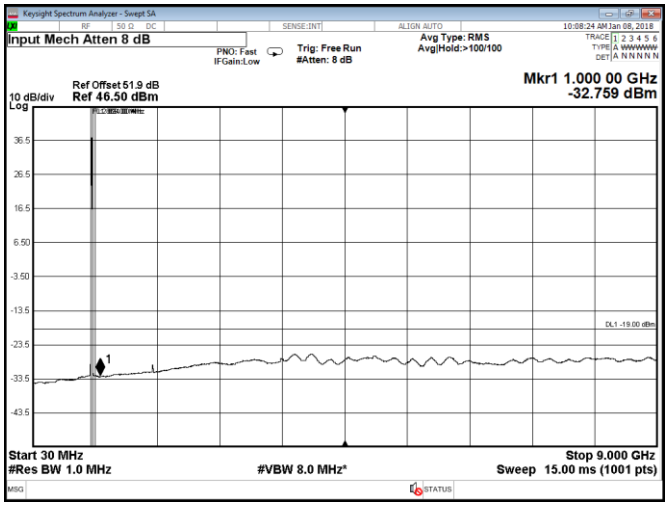

Figure 8.4-6: *Conducted spurious emissions within at Port B, QPSK, mid channel, configuration 1*

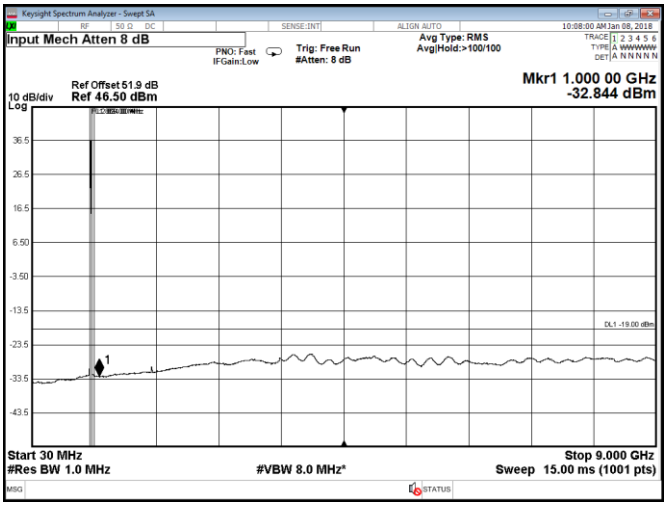

Figure 8.4-7: *Conducted spurious emissions within at Port C, QPSK, mid channel, configuration 1*

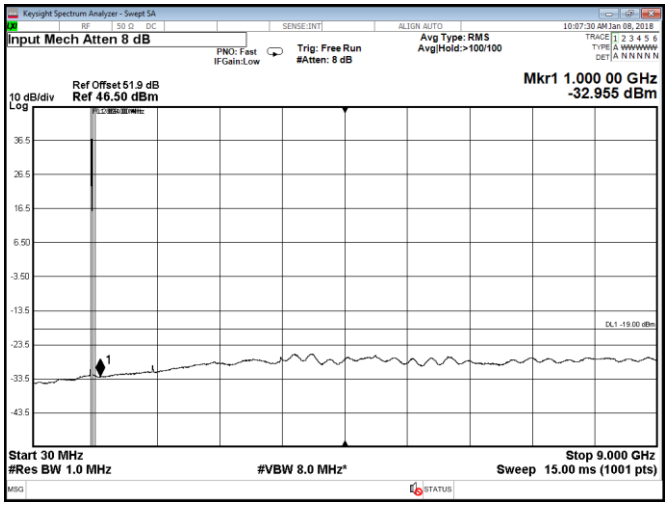

Figure 8.4-8: *Conducted spurious emissions within at Port D, QPSK, mid channel, configuration 1*

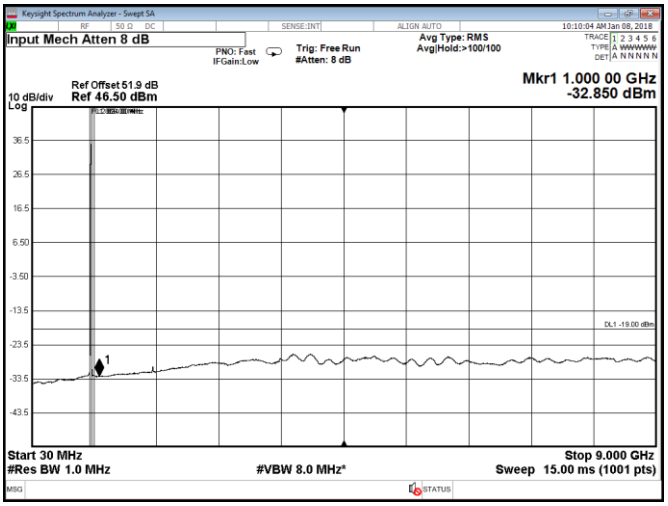

Figure 8.4-9: *Conducted spurious emissions within at Port A, QPSK, high channel, configuration 1*

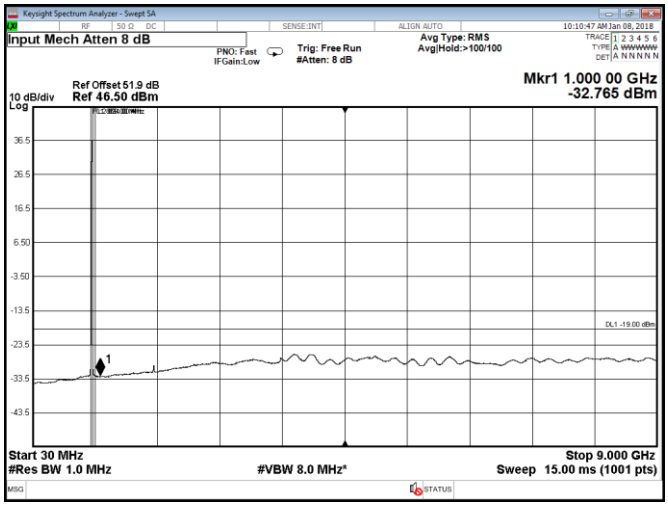

Figure 8.4-10: *Conducted spurious emissions within at Port B, QPSK, high channel, configuration 1*

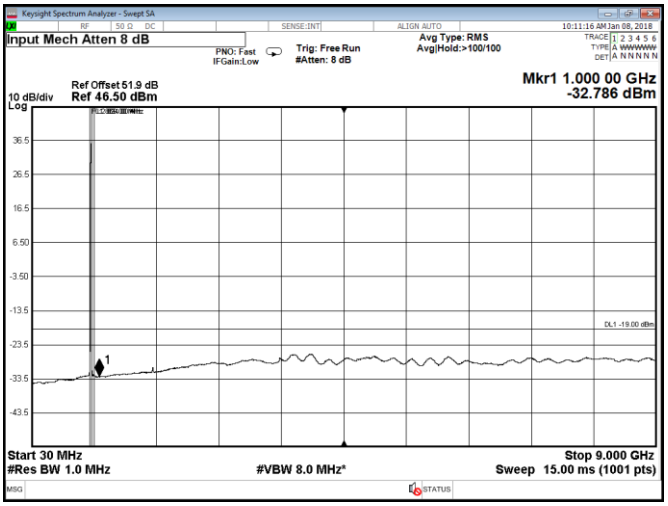

Figure 8.4-11: *Conducted spurious emissions within at Port C, QPSK, high channel, configuration 1*

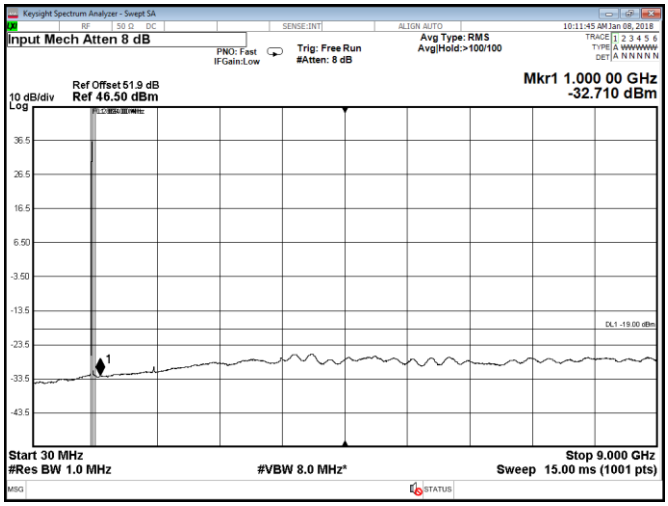

Figure 8.4-12: *Conducted spurious emissions within at Port D, QPSK, high channel, configuration 1*

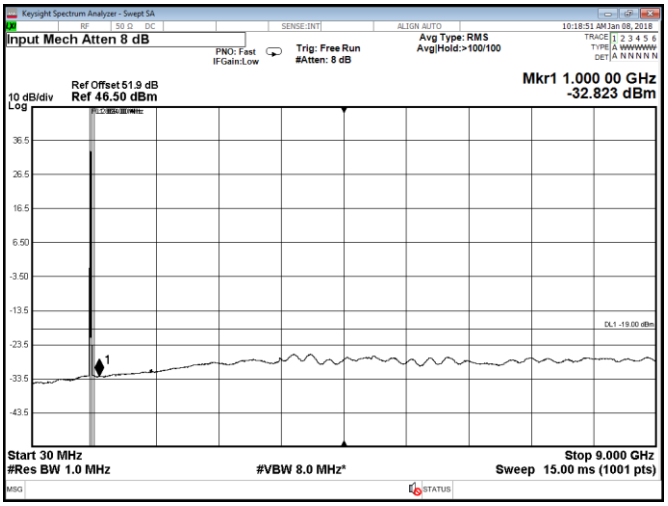

Figure 8.4-13: *Conducted spurious emissions within at Port A, QPSK, two-channel operation, configuration 1*

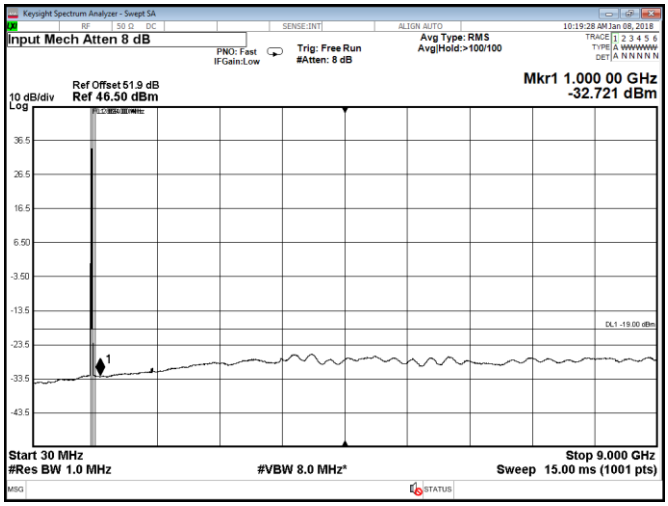

Figure 8.4-14: *Conducted spurious emissions within at Port B, QPSK, two-channel operation, configuration 1*

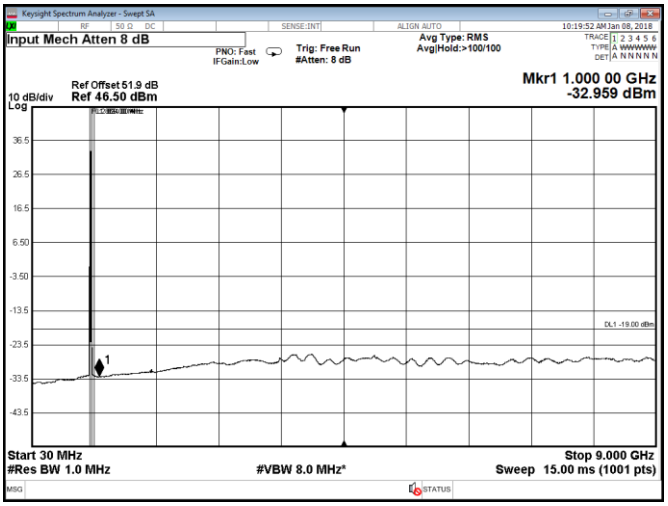

Figure 8.4-15: *Conducted spurious emissions within at Port C, QPSK, two-channel operation, configuration 1*

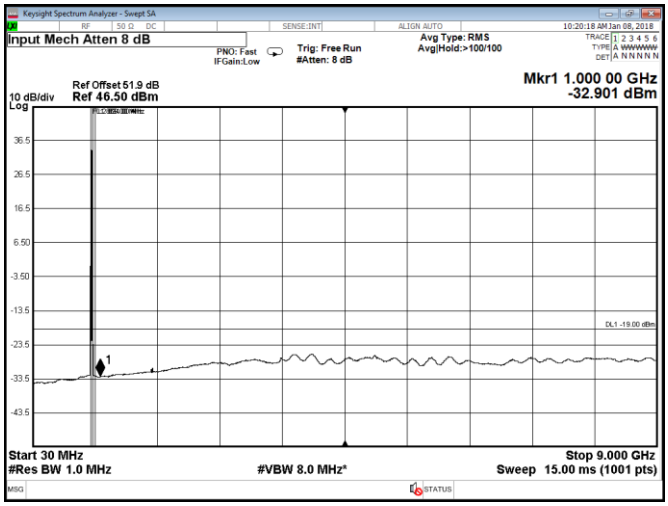

Figure 8.4-16: *Conducted spurious emissions within at Port D, QPSK, two-channel operation, configuration 1*

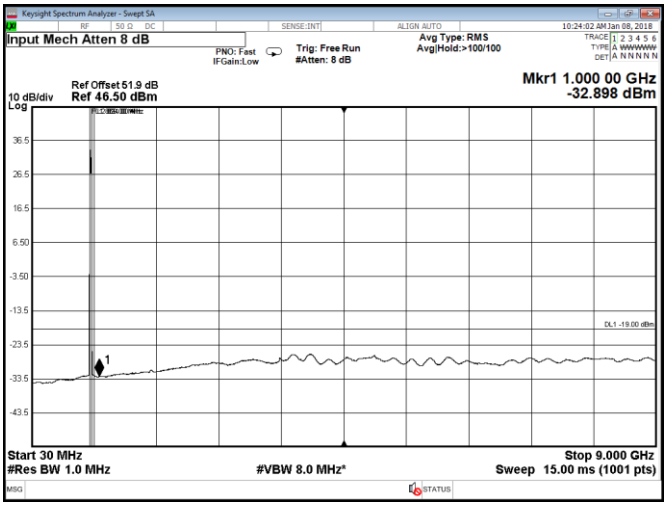

Figure 8.4-17: *Conducted spurious emissions within at Port A, QPSK, three-channel operation, configuration 1*

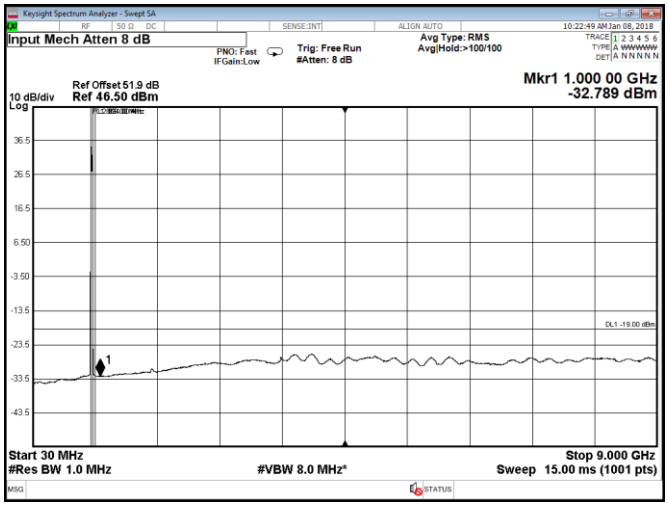

Figure 8.4-18: *Conducted spurious emissions within at Port B, QPSK, three-channel operation, configuration 1*

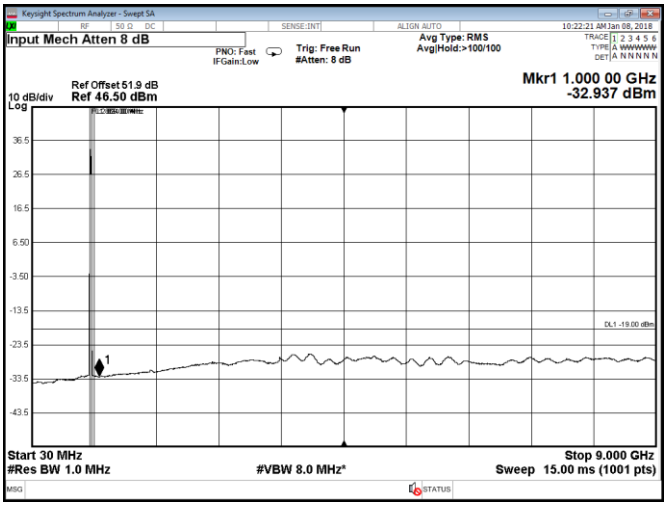

Figure 8.4-19: *Conducted spurious emissions within at Port C, QPSK, three-channel operation, configuration 1*

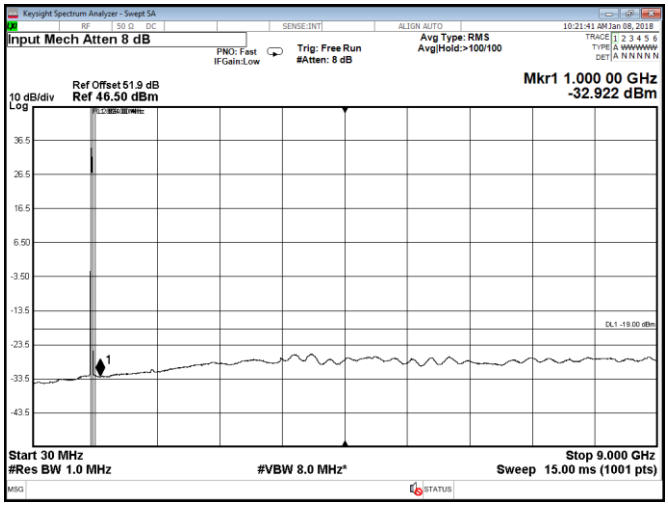

Figure 8.4-20: *Conducted spurious emissions within at Port D, QPSK, three-channel operation, configuration 1*

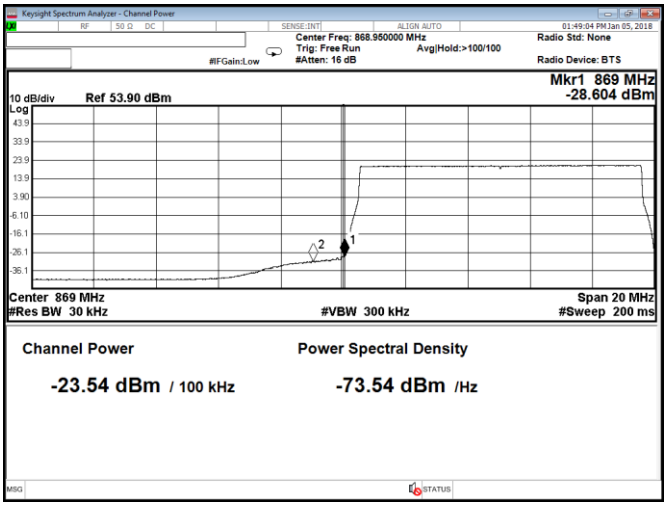

Figure 8.4-21: *Conducted band edge emission at 869 MHz, Port A, QPSK, low channel, configuration 1*

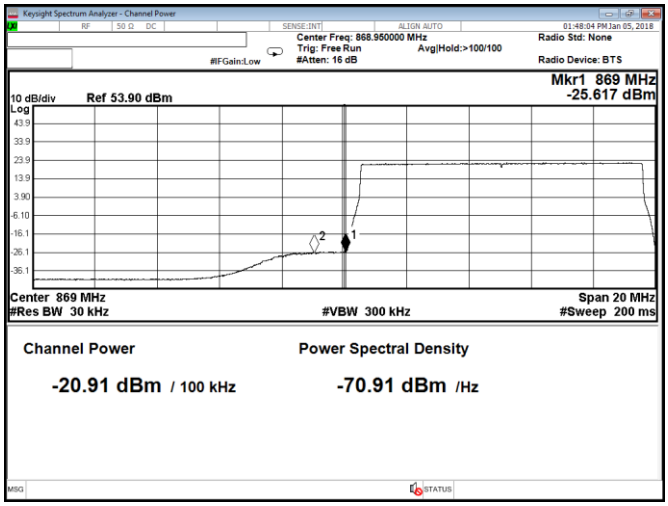

Figure 8.4-22: *Conducted band edge emission at 869 MHz, Port B, QPSK, low channel, configuration 1*

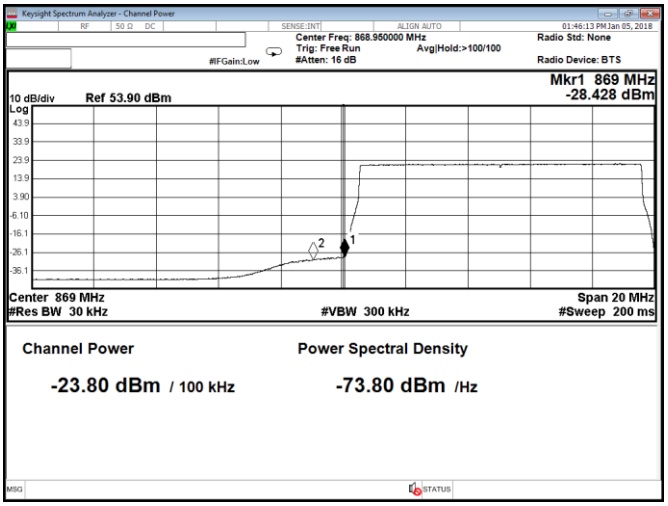

Figure 8.4-23: *Conducted band edge emission at 869 MHz, Port C, QPSK, low channel, configuration 1*

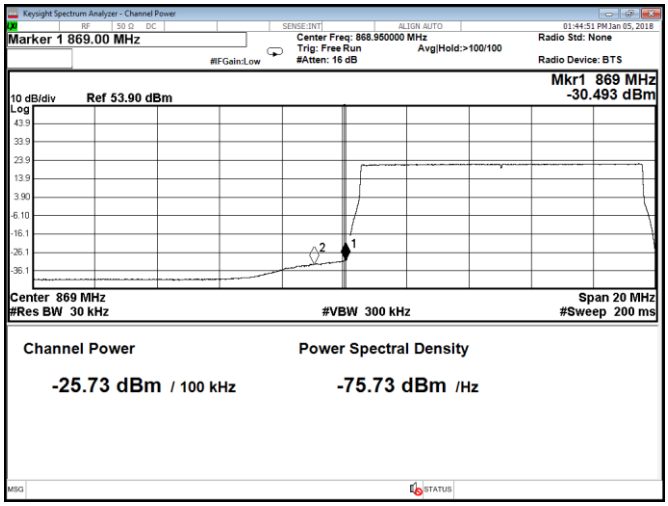

Figure 8.4-24: *Conducted band edge emission at 869 MHz, Port D, QPSK, low channel, configuration 1*

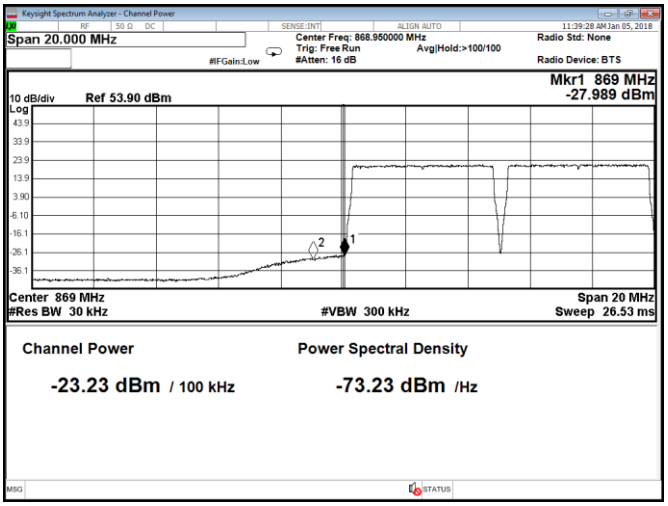

Figure 8.4-25: *Conducted band edge emission at 869 MHz, Port A, QPSK, two-channel operation, configuration 1*

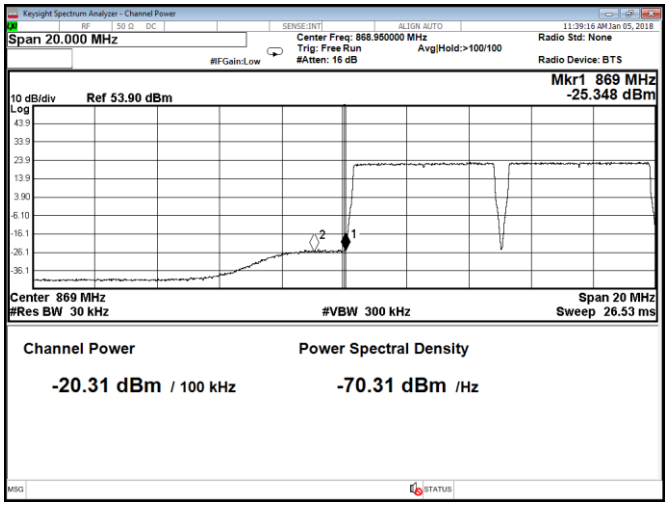

Figure 8.4-26: *Conducted band edge emission at 869 MHz, Port B, QPSK, two-channel operation, configuration 1*

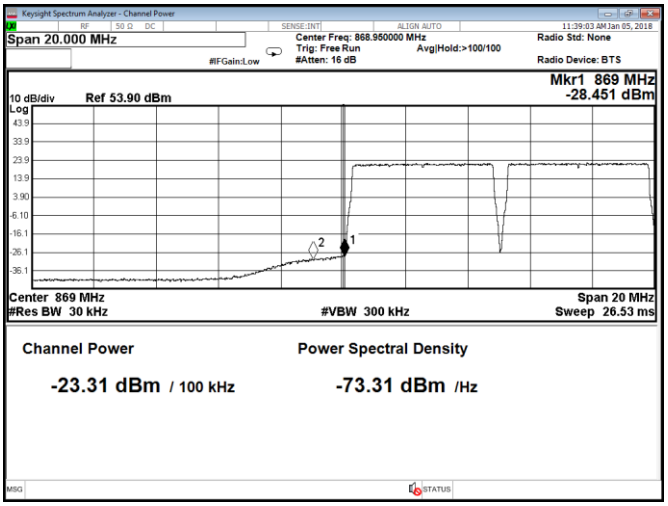

Figure 8.4-27: *Conducted band edge emission at 869 MHz, Port C, QPSK, two-channel operation, configuration 1*

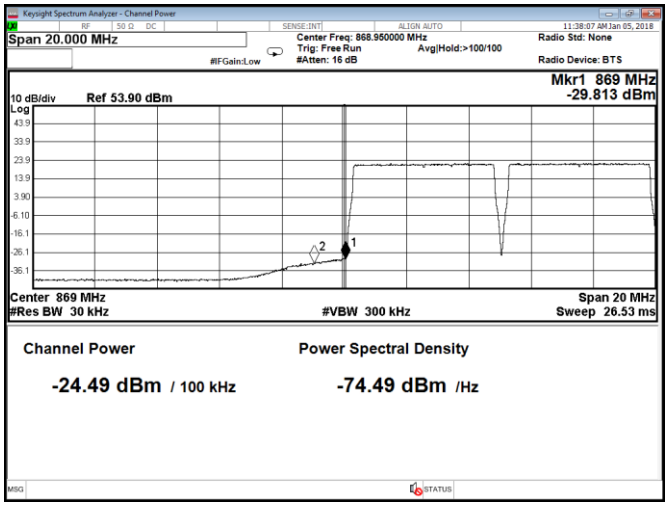

Figure 8.4-28: *Conducted band edge emission at 869 MHz, Port D, QPSK, two-channel operation configuration 1*

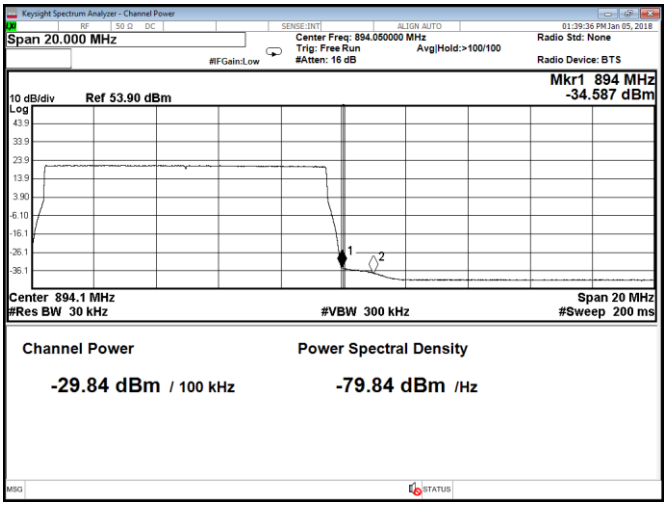

Figure 8.4-29: *Conducted band edge emission at 894 MHz, Port A, QPSK, high channel, configuration 1*

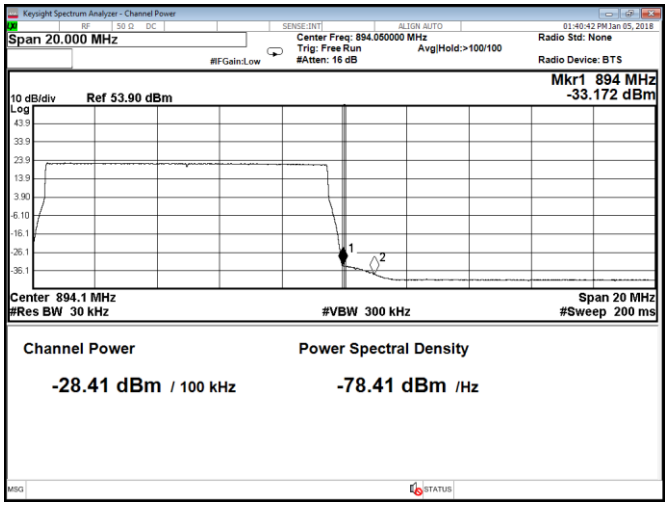

Figure 8.4-30: *Conducted band edge emission at 894 MHz, Port B, QPSK, high channel, configuration 1*

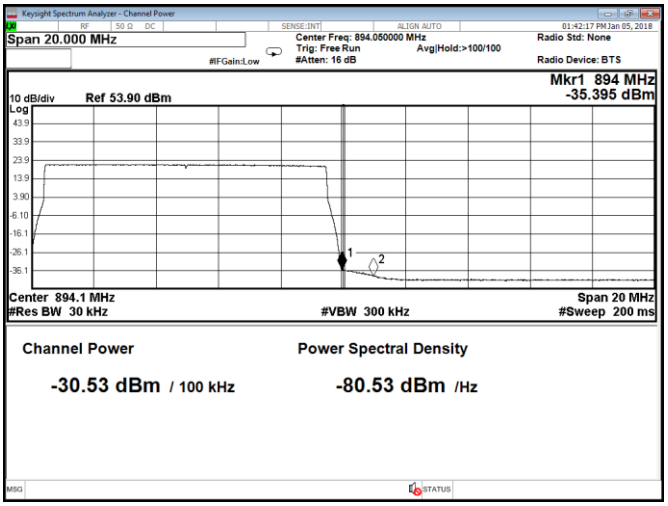

Figure 8.4-31: *Conducted band edge emission at 894 MHz, Port C, QPSK, high channel, configuration 1*

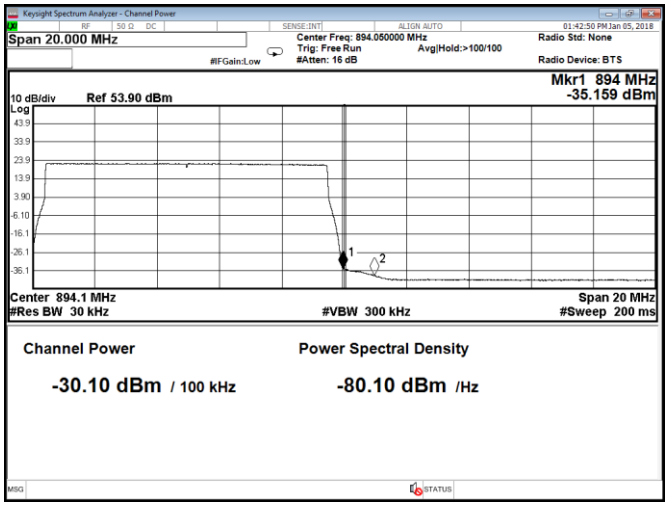

Figure 8.4-32: *Conducted band edge emission at 894 MHz, Port D, QPSK, high channel, configuration 1*

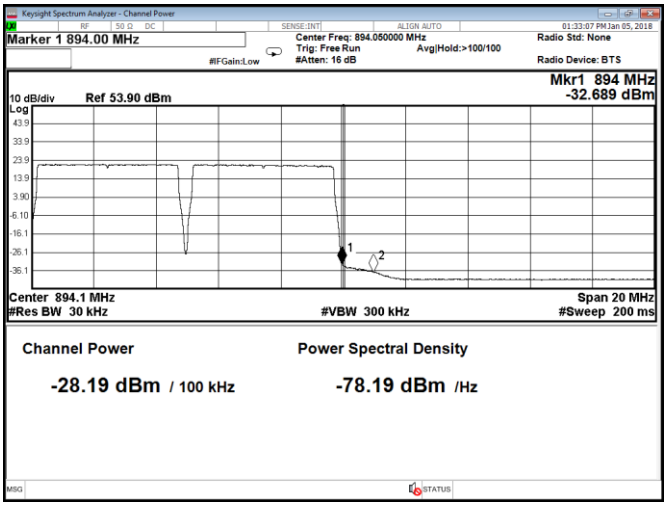

Figure 8.4-33: *Conducted band edge emission at 894 MHz, Port A, QPSK, two-channel operation, configuration 1*

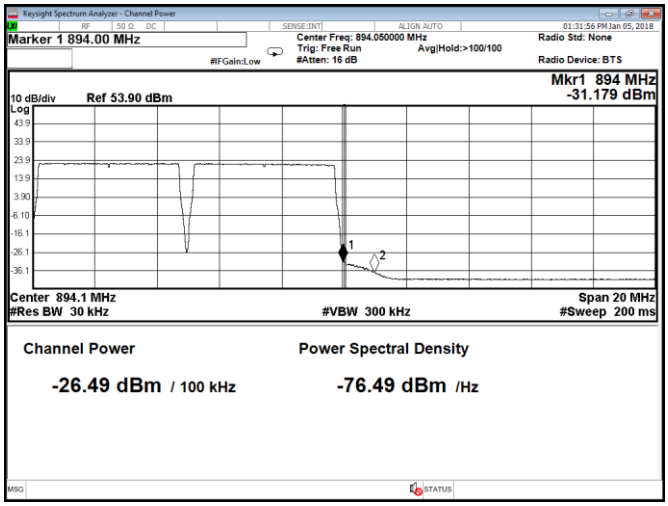

Figure 8.4-34: *Conducted band edge emission at 894 MHz, Port B, QPSK, two-channel operation, configuration 1*

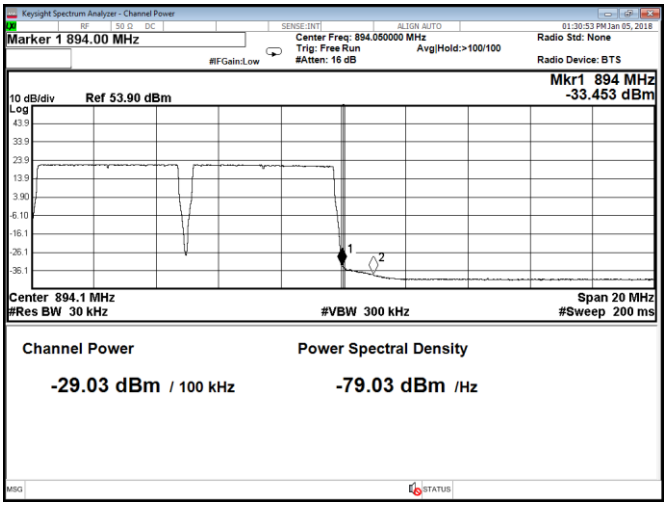

Figure 8.4-35: *Conducted band edge emission at 894 MHz, Port C, QPSK, two-channel operation, configuration 1*

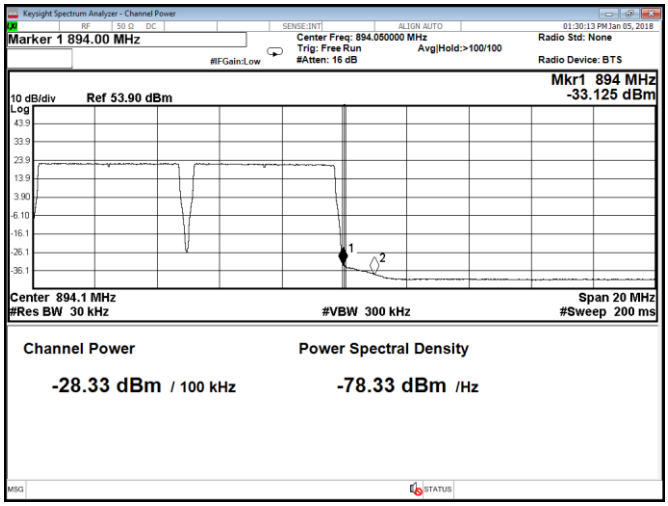

Figure 8.4-36: *Conducted band edge emission at 894 MHz, Port D, QPSK, two-channel operation, configuration 1*

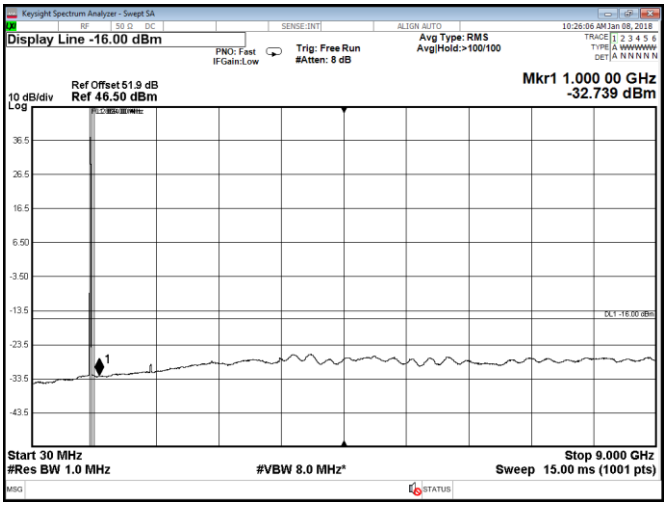

Figure 8.4-37: *Conducted spurious emissions within at Port A, QPSK, low channel, configuration 2*

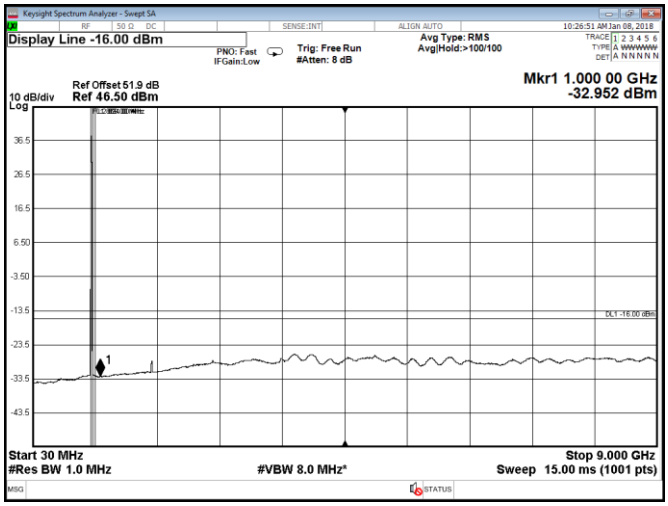

Figure 8.4-38: *Conducted spurious emissions within at Port D, QPSK, low channel, configuration 2*

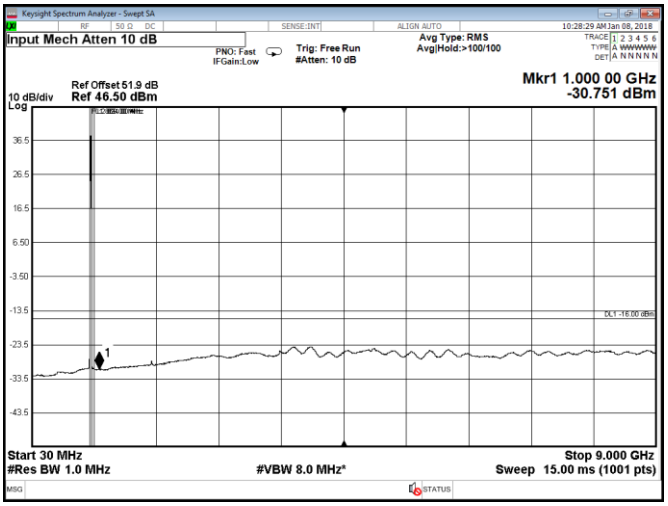

Figure 8.4-39: *Conducted spurious emissions within at Port A, QPSK, mid channel, configuration 2*

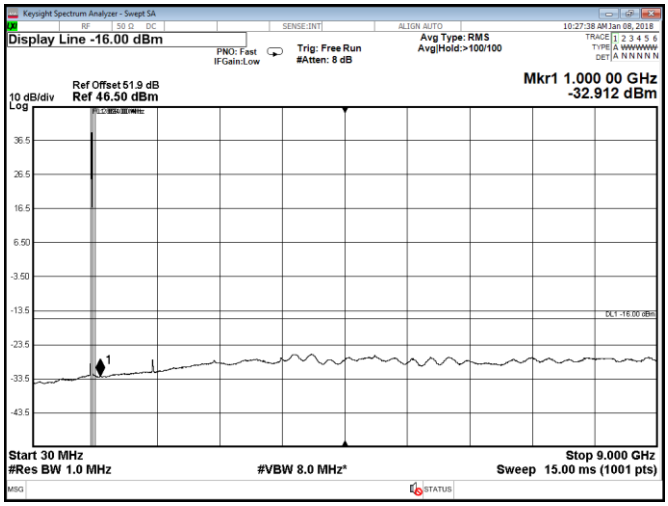

Figure 8.4-40: *Conducted spurious emissions within at Port D, QPSK, mid channel, configuration 2*

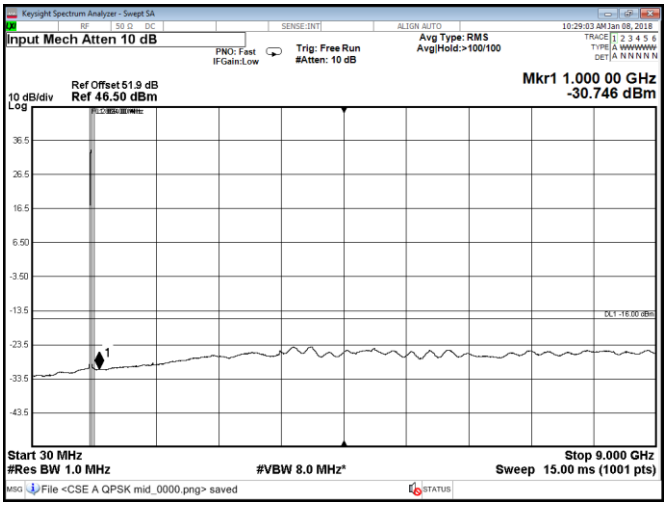

Figure 8.4-41: *Conducted spurious emissions within at Port A, QPSK, high channel, configuration 2*

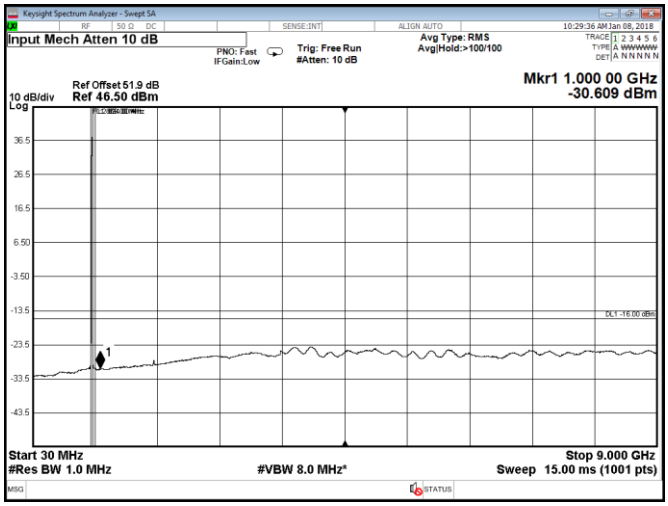

Figure 8.4-42: *Conducted spurious emissions within at Port D, QPSK, high channel, configuration 2*

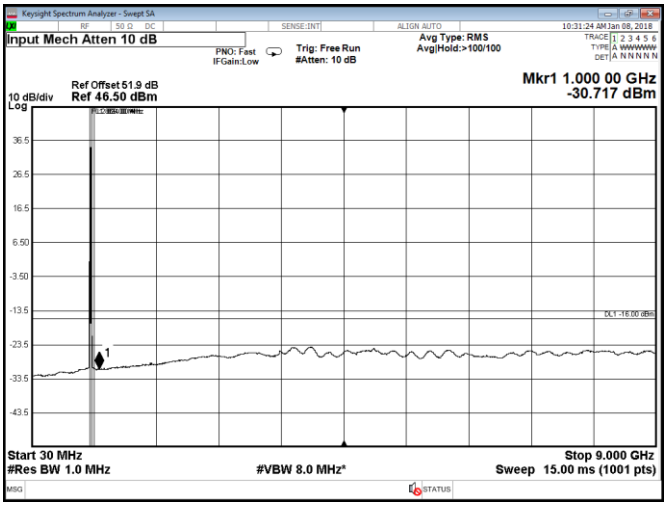

Figure 8.4-43: *Conducted spurious emissions within at Port A, QPSK, two-channel operation, configuration 2*

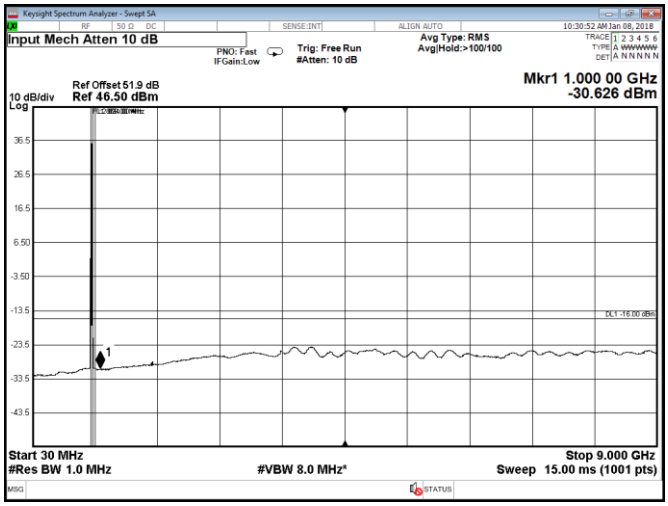

Figure 8.4-44: *Conducted spurious emissions within at Port D, QPSK, two-channel operation, configuration 2*