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Radio Test report – Radio 2212 B13

322379-1R1TRFWL-R1

Applicant:

Ericsson Canada

Product:

Radio 2212

Models:

Radio 2212 B13

Part numbers:

KRC 161 631/1, KRC 161 631/3

FCC ID:	ISED Reg. Number	HVIN:
TA8AKRC161631-3	287AB-AS1616313	AS1616313

Requirements/Summary:

Standard	Environmental phenomenon	Compliance
FCC 47 CFR Part 27	Miscellaneous wireless communications services	Yes
RSS-130 Issue 1, October 2013	Mobile Broadband Services (MBS) Equipment Operating in the Frequency Bands 698–756 MHz and 777–787 MHz	Yes

Tested by:	Andrey Adelberg, Senior EMC/Wireless Specialist
Reviewed by:	Kevin Rose, Wireless/EMC Specialist
Date of issue:	April 13, 2017
Reviewer signature	

Test location

Company name	Nemko Canada Inc.	
Address	303 River Road	349 Terry Fox
City	Ottawa	Ottawa
Province	Ontario	Ontario
Postal code	K1V 1H2	K2K 2V6
Country	Canada	Canada
Telephone	+1 613 737 9680	+1 613 963 8000
Facsimile	+1 613 737 9691	
Toll free	+1 800 563 6336	
Website	www.nemko.com	
Site number	FCC test site registration number: 176392, IC: 2040A-4 (3 m semi anechoic chamber)	

Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.
This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko Canada's ISO/IEC 17025 accreditation.

Copyright notification

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Section 1. Report summary

1.1 Applicant and manufacturer

Company name	Ericsson Canada Inc.
Address	349 Terry Fox Drive
City	Ottawa
Province/State	Ontario
Postal/Zip code	K2K 2V6
Country	Canada

1.2 Test specifications

FCC 47 CFR Part 27	Miscellaneous wireless communications services
FCC 47 CFR Part 2	Frequency Allocations and Radio Treaty Maters; General Rules and Regulations
RSS-130 Issue 1, October 2013	Mobile Broadband Services (MBS) Equipment Operating in the Frequency Bands 698–756 MHz and 777–787 MHz
RSS-Gen Issue 4, November 2014	General Requirements for Compliance of Radio Apparatus

1.3 Statement of compliance

In the configuration tested, the EUT was found compliant.

Testing was completed against all relevant requirements of the test standard. Results obtained indicate that the product under test complies in full with the requirements tested.

This report applies to the Radio 2212 B13 with model numbers KRC 161 631/1 and KRC 161 631/3. Both Radio Products are physically and electrically identical. The difference is related to marketing where the KRC 161 631/3 product has been subjected to additional product integrity testing against Telcordia / NEBS.

EUT: KRC 161 631/1 is formally tested as the representative.

See “Summary of test results” for full details.

1.4 Exclusions

None

1.5 Test report revision history

Revision #	Details of changes made to test report
TRF	Original report issued
R1TRF	Minor fixes

Section 2. Summary of test results

2.1 FCC Part 27 test results

Part	Test description	Verdict
§27.50(b)	Maximum output power at RF antenna connector	Pass
§27.53	Spurious emissions at RF antenna connector	Pass
§27.53	Radiated spurious emissions	Pass
§27.53(f)	Radiated spurious emissions within 1559–1610 MHz band	Pass
§27.54	Frequency stability	Pass
§2.1049	Occupied bandwidth	Pass

Notes: None

2.2 RSS-130 test results

Part	Test description	Verdict
4.4	Transmitter output power and Equivalent Isotropic Radiated Power (e.i.r.p.)	Pass
4.6	Spurious emissions at RF antenna connector	Pass
4.6	Radiated spurious emissions	Pass
4.6.2 (b)	Radiated spurious emissions within 1559–1610 MHz band	Pass
4.3	Transmitter frequency stability	Pass
RSS-Gen, 6.6	Occupied bandwidth	Pass
RSS-Gen, 7.1.3	Receiver conducted limits	Pass

Notes: None

Section 3. Equipment under test (EUT) details

3.1 Sample information

Receipt date	March 14, 2017
Nemko sample ID number	None

3.2 EUT information

Product name	Radio 2212
Model	Radio 2212 B13
Part number	KRC 161 631/1, KRC 161 631/3
Revision	R1A
Serial number	D8252822199
Antenna ports	2 TX/RX Ports
RF BW / IBW	10 MHz / 10 MHz
FDD	−31 MHz
Frequency	TX (DL): 746–756 MHz RX (UL): 777–787 MHz
Operating Frequencies:	748.5–753.5 MHz (5 MHz channel), 751 MHz (single 10 MHz channel)
Nominal O/P per antenna port Up to 10MHz Carrier BW	Single Carrier: 1 × 60 W (47.7 dBm) Multi-Carrier: 2 × 30 W (44.8 dBm)
Accuracy (nominal)	±0.1 ppm
Nominal voltage	−48 V_{DC} @ 20 A
RAT	LTE: SC, MC
Modulation	LTE: QPSK, 16 QAM, 64 QAM, 256QAM
Channel bandwidth	LTE: 5, 10 MHz
Maximum combined OBW per port	10 MHz
CPRI	10 Gbps
Channel raster	LTE: 100 kHz
Regulatory requirements	Radio: FCC Part 2, 27, RSS-Gen, RSS-130
	EMC: FCC Part 15, ICES-003
	Safety: IEC/EN 62368-1, UL/CSA 62368-1 IEC/EN 60950-22, UL 50E
Emission Designator:	5M00-W7D, 10M0-W7D
Multi-carrier	Single Antenna, TX Diversity, MIMO (2 Carrier Limit / port), Carrier Aggregation
Operating temperature	−40 °C to +55 °C
Total Power based on IBW	2 × 60 W
Supported carrier / port	LTE BW: 5 (1-2), 10 (1)
Optional Fan Tray	NTB: 101 879/1 (BVK 106 208/1, SKX 125 3359/1)

3.3 Product description and theory of operation

EUT description of the methods used to exercise the EUT and all relevant ports:

Description/theory of operation	The Radio 2212 B13 (KRC 161 631/1, KRC 161 631/3) is a multi-standard remote radio forming part of the Ericsson RBS (Radio Base Station) equipment. The Radio 2212 provides radio access for mobile and fixed devices and is designed for the outdoor environment. Radio unit installation is designed for pole, wall or mast mount options intended for co-location near the antenna. A fiber optic interface provides the RRU/RBS control and digital interface between the Radio and the RBS. The Radio 2212 product is convection cooled and shall be mounted vertically. The KRC 161 631/3 is physically and electrically identical to KRC 161 631/1. The KRC 161 631/3 product is subject to additional product integrity testing qualified against NEBS. Horizontal mounting is supported with forced air cooling with an optional fan tray assembly NTB 101 879/1 consisting of BKV 106 208/1 (Fan Assembly) and SXK 125 3359/1 (Cover Assembly). Output RF Power is rated at 2 × 60 W. Altitude during operation: Below 3000 m

Port description

Port	Description
ANT A	RF Out A
ANT B	RF Out B
RET	Antenna Line Device
Alarm	Alarm and DC for Optional Fan Tray
Data 1	Optical Interface Data 1
Data 2	Optical Interface Data 2
DC Input	−48 V_{DC}
MMI	Display - Radio Status
GND	Ground

Physical

Dimensions	420 × 342 × 149 mm (H × W × D) [420 × 342 × 160 mm with fan unit]
Weight	18.2 kg [19.7 kg with fan unit]
Operating Temperature	−40 to +55 °C
Mounting	Pole, Wall Mount
Cooling	Convection (optional fan tray - forced air)

Software details: CXP9017316/7-R66BB

Radio 2212 B13 (R1A) Hardware Configuration

Product: KRC 161 631/1	Revision	Product: KRC 161 631/3	Revision	Description
ROA 128 6280/13	R1A	ROA 128 6280/13	R1A	DRX
ROA 128 6021/1	R1C	ROA 128 6021/1	R1C	PSB
ROA 128 6290/13 ROA 128 6290/08	R1B	ROA 128 6290/13 ROA 128 6290/08	R1B	TPA
KRF 901 281/1	R1B	KRF 901 281/1	R1B	FU
NTB 101 871/1	R1B	NTB 101 871/1	R1B	Parts
SDD 513 0968/3	R1C	SDD 513 0968/3	R1C	FLT Cover (Enclosure)
SXK 125 2692/3 SEB 104 331/6	R1B	SXK 125 2692/3 SEB 104 331/6	R1B	Enclosure

Product Identification Label
KRC 161 631/1
KRC 161 631/3

3.4 EUT test details

EUT setup/configuration rationale:

Down link

RAT	Modulation	Performance Requirement	Test Model / Configuration
LTE	QPSK	N/A	E-TM1.1

Up link

RAT	Modulation	Performance Requirement	Input Signal	Test Model / Configuration
LTE	QPSK	N/A		E-UTRA-UL

Carrier Configurations:

Single carrier

Bandwidth, MHz	Transmit / DL, MHz					
	B	EARFCN	M	EARFCN	T	EARFCN
5	748.5	5205	751.0	5230	753.5	5255
10	751.0	5230	751.0	5230	751.0	5230

Bandwidth, MHz	Receive / UL, MHz					
	B	EARFCN	M	EARFCN	T	EARFCN
5	779.5	23205	782.0	23230	784.5	23255
10	782.0	23230	782.0	23230	782.0	23230

Multiple-Carriers (2x) for spurious emissions IBW: 10 MHz

Bandwidth, MHz	Transmit / DL, MHz											
	B1	EARFCN	B2	EARFCN	M1	EARFCN	M2	EARFCN	T1	EARFCN	T2	EARFCN
5	748.5	5205	753.5	5255	748.5	5205	753.5	5255	748.5	5205	753.5	5255

Bandwidth, MHz	Receive / UL, MHz											
	B1	EARFCN	B2	EARFCN	M1	EARFCN	M2	EARFCN	T1	EARFCN	T2	EARFCN
5	779.5	23205	784.5	23255	779.5	23205	784.5	23255	779.5	23205	784.5	23255

EUT Monitoring Method / Equipment:

Support equipment

Node EMC Test System

- Anritsu MS 2691 VSA/Sig Gen
- HP Laptop
- Timing and Synchronization box (GPS)
- Ethernet Switch
- Isolation Transformer
-

RBS 6601, BFM 901 009/1:

- DUS 4101 KDU 137 624/1, R7B, S/N: CD3B327591
- DUS SW: CXP102051/25-R26DM
- Input Voltage: −48 V_{DC}

3.5 EUT setup diagram

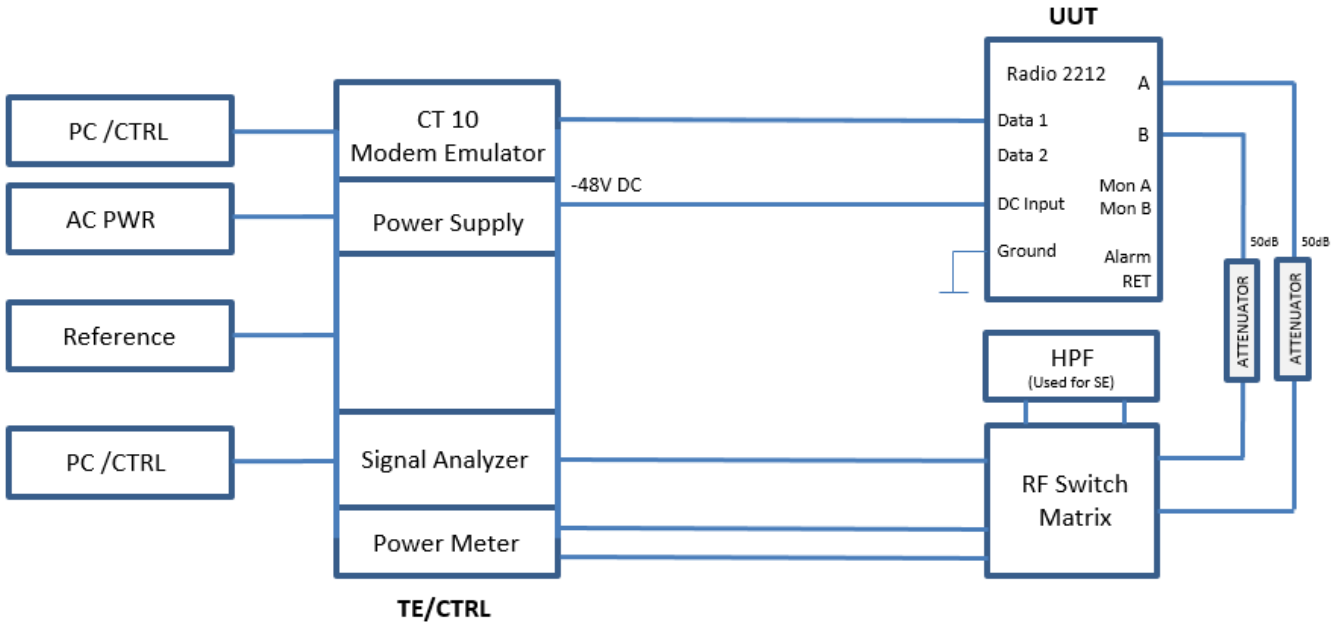

Figure 3.5-1: *Setup diagram*

3.6 Setup photographs

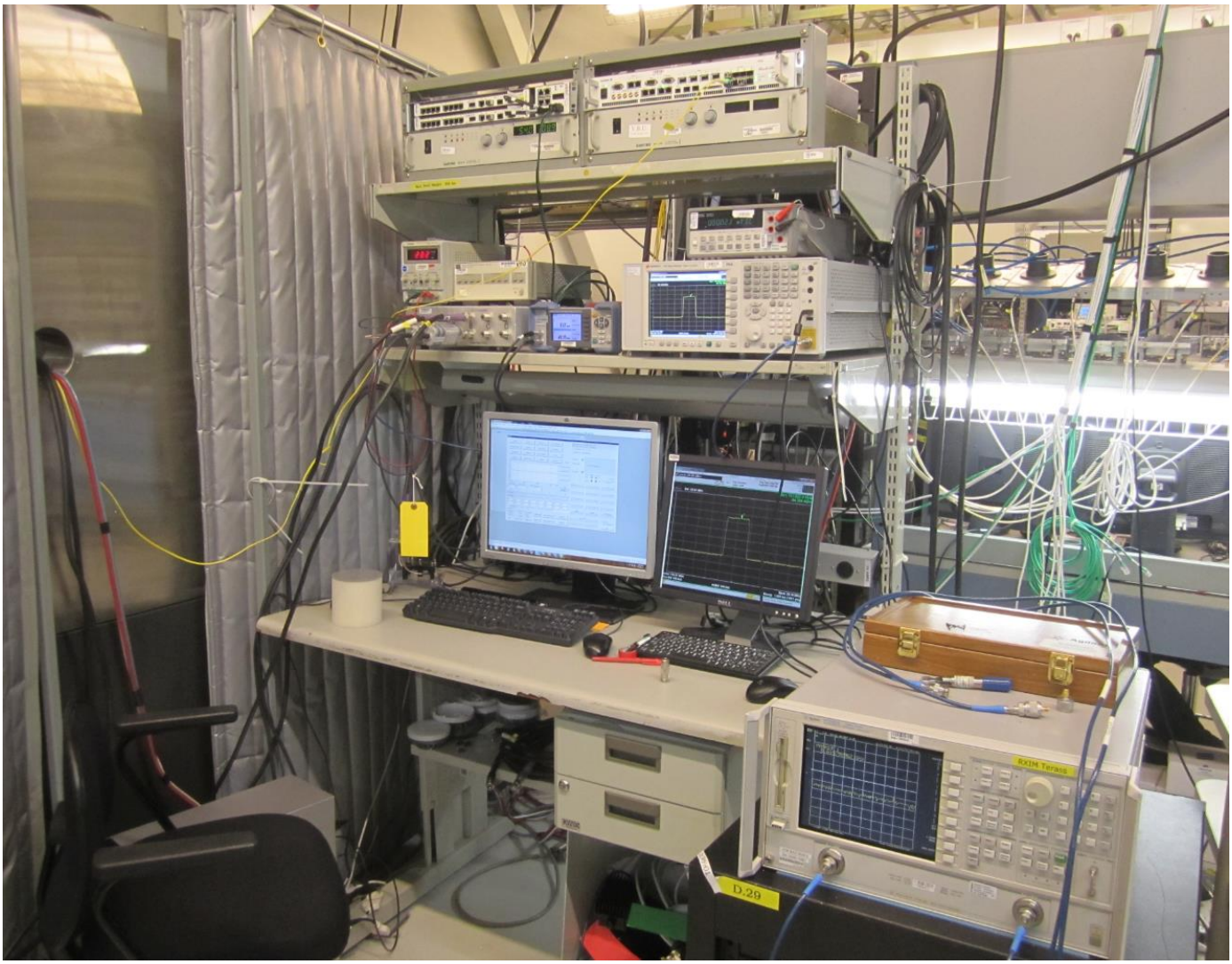

Figure 3.6-1: *Test / Measurement Equipment - Set up for Radio Compliance Testing*

Figure 3.6-2: *EUT Set-up for Radio Compliance Testing*

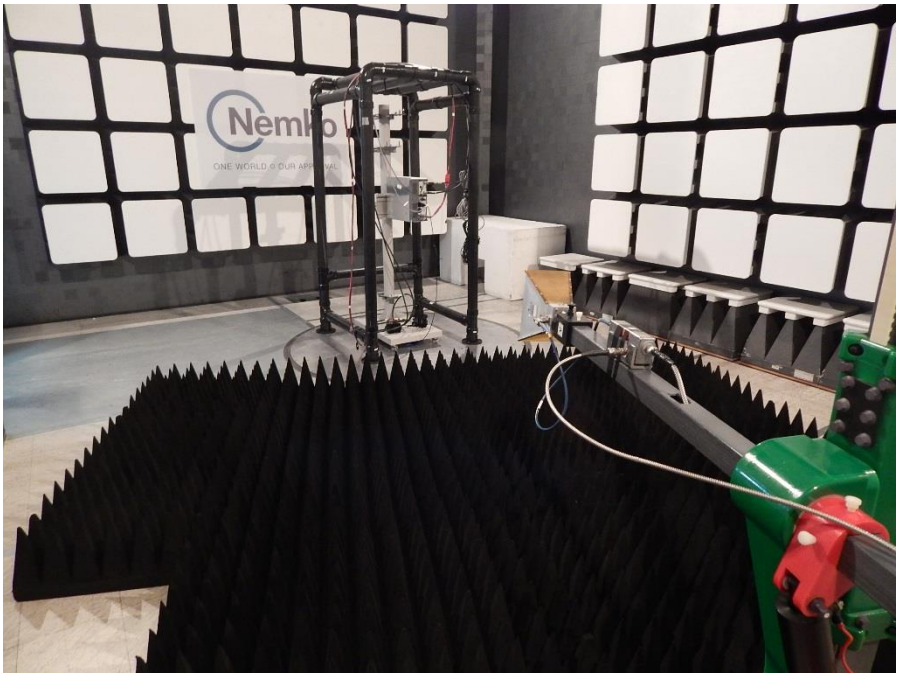

Figure 3.6-3: *EUT Set-up for Radiated Compliance Testing*

Section 4. Engineering considerations

4.1 Modifications incorporated in the EUT

There were no modifications performed to the EUT during this assessment.

4.2 Technical judgment

This report applies to the Radio 2212 B13 with model numbers KRC 161 631/1 and KRC 161 631/3. Both Radio Products are physically and electrically identical. The difference is related to marketing where the KRC 161 631/3 product has been subjected to additional product integrity testing against Telcordia / NEBS

4.3 Deviations from laboratory tests procedures

No deviations were made from laboratory procedures.

Section 5. Test conditions

5.1 Atmospheric conditions

Temperature	15–30 °C
Relative humidity	20–75 %
Air pressure	860–1060 mbar

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

5.2 Power supply range

The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages ±5 %, for which the equipment was designed.

Section 6. Measurement uncertainty

6.1 Uncertainty of measurement

Measurement uncertainty budgets for the tests are detailed below. Measurement uncertainty calculations assume a coverage factor of K = 2 with 95% certainty.

Test name	Measurement uncertainty, dB
All antenna port measurements	0.55
Conducted spurious emissions	1.13
Radiated spurious emissions	3.78
AC power line conducted emissions	3.55

Section 7. Test equipment

7.1 Test equipment list

Table 7.1-1: *Equipment list*

Equipment	Manufacturer	Model no.	Asset no.	Cal cycle	Next cal.
DMM	Digital Multimeter	34401A	US36048294	1 year	30-Apr-17
Spectrum Analyser	Keysight	PXA N9030A	MY55410202	1 year	12-Jul-17
Network Analyser	Agilent	8722ES	US39175389	1 year	31-Oct-17
Power Meter	Rohde & Schwarz	NRP2	1144.1374K02-101123-ea	NCR	NCR
Power Sensor	Rohde & Schwarz	NRP-Z51	1138.0005.02-102838-bR	NCR	NCR
Power Sensor	Rohde & Schwarz	NRP-Z51	1138.0005.02.102476-Fg	NCR	NCR
PSU (DC)	Xantrex	XKW60-50	1001425551	NCR	NCR
Attenuator (10dB)	Weinschel	WA-48-10-43-LIM	A1991	NCR	NCR
Attenuator (10dB)	Weinschel	WA-48-10-43-LIM	A1994	NCR	NCR
Attenuator (40db)	Weinschel	73-40-33	LR715	NCR	NCR
Attenuator	MCE/Weinschel	57-40-43	MX198	NCR	NCR
RF Swtich	Ericsson	RARFSW4X1	1	NCR	NCR
Switch Driver	Hewlett Packard	11713A	3748A06076	NCR	NCR
PSU (DC)	Leader	730-3D	9801135	NCR	NCR
CT10	Ericsson	Testing Equipment	T01F311639	NCR	NCR
Thermometer	Fluke	52 K/J Thermocouple	4815167	1 year	18-Apr-17
3 m EMI test chamber	TDK	SAC-3	FA002047	1 year	Dec. 1/17
Flush mount turntable	Sunol	FM2022	FA002082	NCR	NCR
Controller	Sunol	SC104V	FA002060	NCR	NCR
Antenna mast	Sunol	TLT2	FA002061	NCR	NCR
AC Power source	California Instruments	3001i	FA001021	1 year	Sept. 8/17
Receiver/spectrum analyzer	Rohde & Schwarz	ESU 26	FA002043	1 year	Jan. 31/18
Bilog antenna (20–3000 MHz)	Sunol	JB3	FA002108	1 year	April 28/17
Horn antenna (1–18 GHz)	EMCO	3115	FA000825	1 year	April 26/17
Pre-amplifier (1–18 GHz)	JCA	JCA118-503	FA002091	1 year	April 26/17

Note: NCR - no calibration required

Section 8. Testing data

8.1 FCC 27.50(b) and RSS-130, 4.4 Maximum output power at RF antenna connector

8.1.1 Definitions and limits

§ 27.50(b) Operation within the bands: 746–763 MHz, 775–793 MHz and 805–806 MHz.

(1) Fixed and base stations transmitting a signal in the 757–758 and 775–776 MHz bands must not exceed an effective radiated power (ERP) of 1000 watts and an antenna height of 305 m height above average terrain (HAAT), except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section.

(2) Fixed and base stations transmitting a signal in the 746–757 MHz, 758–763 MHz, 776–787 MHz, and 788–793 MHz bands with an emission bandwidth of 1 MHz or less must not exceed an ERP of 1000 watts and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts ERP in accordance with Table 1 of this section.

(3) Fixed and base stations located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal in the 746–757 MHz, 758–763 MHz, 776–787 MHz, and 788–793 MHz bands with an emission bandwidth of 1 MHz or less must not exceed an ERP of 2000 watts and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 2000 watts ERP in accordance with Table 2 of this section.

(4) Fixed and base stations transmitting a signal in the 746–757 MHz, 758–763 MHz, 776–787 MHz, and 788–793 MHz bands with an emission bandwidth greater than 1 MHz must not exceed an ERP of 1000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 1000 watts/MHz ERP accordance with Table 3 of this section.

(5) Fixed and base stations located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal in the 746–757 MHz, 758–763 MHz, 776–787 MHz, and 788–793 MHz bands with an emission bandwidth greater than 1 MHz must not exceed an ERP of 2000 watts/MHz and an antenna height of 305 m HAAT, except that antenna heights greater than 305 m HAAT are permitted if power levels are reduced below 2000 watts/MHz ERP in accordance with Table 4 of this section.

(6) Licensees of fixed or base stations transmitting a signal in the 746–757 MHz, 758–763 MHz, 776–787 MHz, and 788–793 MHz bands at an ERP greater than 1000 watts must comply with the provisions set forth in paragraph (b)(8) of this section and §27.55(c).

(7) Licensees seeking to operate a fixed or base station located in a county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, and transmitting a signal in the 746–757 MHz, 758–763 MHz, 776–787 MHz, and 788–793 MHz bands at an ERP greater than 1000 watts must:

(i) coordinate in advance with all licensees authorized to operate in the 698–763 MHz, 775–793, and 805–806 MHz bands within 120 kilometers (75 miles) of the base or fixed station

(ii) coordinate in advance with all regional planning committees, as identified in §90.527 of this chapter, with jurisdiction within 120 kilometers (75 miles) of the base or fixed station

(8) Licensees authorized to transmit in the 746–757 MHz, 758–763 MHz, 776–787 MHz, and 788–793 MHz bands and intending to operate a base or fixed station at a power level permitted under the provisions of paragraph (b)(6) of this section must provide advanced notice of such operation to the Commission and to licensees authorized in their area of operation. Licensees who must be notified are all licensees authorized to operate in the 763–775 MHz and 793–805 MHz bands under part 90 of this chapter within 75 km of the base or fixed station and all regional planning committees, as identified in §90.527 of this chapter, with jurisdiction within 75 km of the base or fixed station. Notifications must provide the location and operating parameters of the base or fixed station, including the station's ERP, antenna coordinates, antenna height above ground, and vertical antenna pattern, and such notifications must be provided at least 90 days prior to the commencement of station operation.

(9) Control stations and mobile stations transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands and fixed stations transmitting in the 787–788 MHz and 805–806 MHz bands are limited to 30 watts ERP.

(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

(11) For transmissions in the 757–758, 775–776, 787–788, and 805–806 MHz bands, maximum composite transmit power shall be measured over any interval of continuous transmission using instrumentation calibrated in terms of RMS-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, etc., so as to obtain a true maximum composite measurement for the emission in question over the full bandwidth of the channel.

(12) For transmissions in the 746–757, 758–763, 776–787, and 788–793 MHz bands, licensees may employ equipment operating in compliance with either the measurement techniques described in paragraph (b)(11) of this section or a Commission-approved average power technique. In both instances, equipment employed must be authorized in accordance with the provisions of §27.51

RSS-130, Section 4.4

The transmitter output power shall be measured in terms of average power.
For base and fixed equipment, refer to SRSP-518 for power limits.
The e.i.r.p. shall not exceed 50 watts for mobile equipment or for outdoor fixed subscriber equipment, nor shall it exceed 5 watts for portable equipment or for indoor fixed subscriber equipment.
In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

4.5.1 Correlated Transmission

When multiple antennas are used to:

(a) transmit the same digital data in a given symbol period (even with different coding or phase shifts) for transmission diversity; or
(b) steer signal energy towards a particular direction for enhanced directional gain (i.e. beamforming); or
(c) devise any other transmission mode,

and where signals from different antennas are correlated, the e.i.r.p. shall be calculated based on the aggregate power (conducted across all antennas) and resulting directional gain dBi, $G_{max} + 10 \log_{10} N$, where N is the number of antennas and G_{max} is the highest gain in dBi among all antennas.

4.5.2 Uncorrelated transmission

When multiple transmitted antennas are used and each antenna:

(a) transmits different digital data during any given symbol period (i.e. Space-Time Block Codes or Space-Time Codes); or
(b) transmits independent parallel data stream over the same frequency bandwidth in order to increase data rates (i.e. spatial multiplexing); or
(c) forms any other transmission mode,

and where signals from different antennas are completely uncorrelated, the e.i.r.p. shall be calculated based on the aggregate power (conducted across all antennas) and maximum antenna gain G_{max}.

SRSP-518, Section 5.1

5.1.1 Fixed and base stations

5.1.1.1 For fixed and base stations transmitting in accordance with sections 4.1.1 to 4.1.3 within the frequency range 716–756 MHz with a channel bandwidth equal to or less than 1 MHz, the maximum permissible equivalent isotropically radiated power (e.i.r.p.) is 1640 watts with an antenna height above average terrain (HAAT) up to 305 metres. The same e.i.r.p. limit also applies to fixed and base stations operating at any frequency in the 700 MHz band in accordance with Section 4.1.4.

5.1.1.2 For fixed and base stations transmitting in accordance with sections 4.1.1 to 4.1.3 within the frequency range 716–756 MHz with a channel bandwidth greater than 1 MHz, the maximum permissible e.i.r.p. is 1640 watts/MHz (i.e. no more than 1640 watts e.i.r.p. in any 1 MHz band segment) with a HAAT up to 305 metres. The same e.i.r.p. limit also applies to fixed and base stations operating at any frequency in the 700 MHz band in accordance with Section 4.1.4.

5.1.1.3 Fixed and base stations located in geographical areas at a distance greater than 26 km from large or medium population centres and transmitting in accordance with sections 4.1.1 to 4.1.3 within the frequency range 716–756 MHz, may increase their e.i.r.p. up to a maximum of 3280 watts/MHz (i.e. no more than 3280 watts e.i.r.p. in any 1 MHz band segment), with an antenna HAAT up to 305 metres.

Within 26 km of any large or medium population centre, fixed and base stations may operate at increased e.i.r.p. if more than 50% of the population within a particular sector's coverage is located outside these large and medium population centres.

Fixed and base stations with increased e.i.r.p. must not be used to provide coverage to large and medium population centres. However, some incidental coverage of these large and medium population centres by stations with increased e.i.r.p. is permitted.

This provision also applies for fixed and base stations with a channel bandwidth equal to or less than 1 MHz (i.e. e.i.r.p. may be increased up to a maximum of 3280 watts).

5.1.1.4 For all installations with an antenna HAAT in excess of 305 metres, a corresponding reduction in e.i.r.p. according to the following formula shall be applied:

$$EIRP_{reduction} = 20 \log_{10}(HAAT / 305)\ dB$$

8.1.2 Test summary

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

8.1.3 Observations, settings and special notes

Note: ERP limit is 1000 W/MHz (60 dBm/MHz), EIRP limit is 1640 W/MHz (62.1484 dBm/MHz)
Power density was calculated using the following formula: (For 5 MHz channel, single carrier) Maximum power – 10 × Log_{10} (5 / 1) [dB];
(For 10 MHz channel and 5 MHz two carriers) Maximum power – 10 × Log_{10} (10 / 1) [dB]
Based on the RF margins noted in this report, considerations pertaining to the maximum allowed EIRP and antenna type should be considered for each installation.
Test receiver settings:

Detector mode	RMS
Resolution bandwidth	51 kHz
Video bandwidth	>RBW
Measurement mode	Power over emission bandwidth
Trace mode	Averaging
Measurement time	Auto

8.1.4 Test data

Table 8.1-1: *Output power measurement results for SISO operation*

Remarks	Frequency, MHz	RF output power, W	RF output power, dBm	RF output power, dBm/MHz	ERP limit, dBm/MHz	Margin, dB
QPSK, 5 MHz, Ant A, single carrier	748.5	59.293	47.73	40.74	60.00	19.26
QPSK, 5 MHz, Ant A, single carrier	753.5	57.677	47.61	40.62	60.00	19.38
QPSK, 5 MHz, Ant B, single carrier	748.5	56.624	47.53	40.54	60.00	19.46
QPSK, 5 MHz, Ant B, single carrier	753.5	53.703	47.30	40.31	60.00	19.69
16QAM, 5 MHz, Ant A, single carrier	748.5	59.841	47.77	40.78	60.00	19.22
16QAM, 5 MHz, Ant A, single carrier	753.5	57.943	47.63	40.64	60.00	19.36
16QAM, 5 MHz, Ant B, single carrier	748.5	57.016	47.56	40.57	60.00	19.43
16QAM, 5 MHz, Ant B, single carrier	753.5	59.020	47.71	40.72	60.00	19.28
64QAM, 5 MHz, Ant A, single carrier	748.5	59.293	47.73	40.74	60.00	19.26
64QAM, 5 MHz, Ant A, single carrier	753.5	58.210	47.65	40.66	60.00	19.34
64QAM, 5 MHz, Ant B, single carrier	748.5	55.081	47.41	40.42	60.00	19.58
64QAM, 5 MHz, Ant B, single carrier	753.5	54.325	47.35	40.36	60.00	19.64
256QAM, 5 MHz, Ant A, single carrier	748.5	57.943	47.63	40.64	60.00	19.36
256QAM, 5 MHz, Ant A, single carrier	753.5	57.810	47.62	40.63	60.00	19.37
256QAM, 5 MHz, Ant B, single carrier	748.5	56.364	47.51	40.52	60.00	19.48
256QAM, 5 MHz, Ant B, single carrier	753.5	53.456	47.28	40.29	60.00	19.71
QPSK, 10 MHz, Ant A, single carrier	751.0	57.677	47.61	37.61	60.00	22.39
256QAM, 10 MHz, Ant A, single carrier	751.0	56.885	47.55	37.55	60.00	22.45
QPSK, 10 MHz, Ant B, single carrier	751.0	53.827	47.31	37.31	60.00	22.69
256QAM, 10 MHz, Ant B, single carrier	751.0	53.827	47.31	37.31	60.00	22.69
16QAM, 10 MHz, Ant A, single carrier	751.0	57.943	47.63	37.63	60.00	22.37
64QAM, 10 MHz, Ant A, single carrier	751.0	58.076	47.64	37.64	60.00	22.36
16QAM, 10 MHz, Ant B, single carrier	751.0	53.456	47.28	37.28	60.00	22.72
64QAM, 10 MHz, Ant B, single carrier	751.0	53.827	47.31	37.31	60.00	22.69
QPSK, 5 MHz, Ant A, two carriers	748.5 and 753.5	58.749	47.69	37.69	60.00	22.31
256QAM, 5 MHz, Ant A, two carriers	748.5 and 753.5	57.810	47.62	37.62	60.00	22.38
QPSK, 5 MHz, Ant B, two carriers	748.5 and 753.5	54.828	47.39	37.39	60.00	22.61
256QAM, 5 MHz, Ant B, two carriers	748.5 and 753.5	55.976	47.48	37.48	60.00	22.52

Note: lowest margin is 19.22 dB for single carrier and 22.31 dB for two carriers.

Table 8.1-2: *Output power measurement results for MIMO operation*

Remarks	Frequency, MHz	RF output power Port A, dBm	RF output power Port B, dBm	Total output power, dBm	Total output power, dBm/MHz	ERP limit, dBm/MHz	Margin, dB
QPSK, 5 MHz, single carrier	748.5	47.73	47.53	50.64	43.65	60.00	16.35
QPSK, 5 MHz, single carrier	753.5	47.61	47.30	50.47	43.48	60.00	16.52
16QAM, 5 MHz, single carrier	748.5	47.77	47.56	50.68	43.69	60.00	16.31
16QAM, 5 MHz, single carrier	753.5	47.63	47.71	50.68	43.69	60.00	16.31
64QAM, 5 MHz, single carrier	748.5	47.73	47.41	50.58	43.59	60.00	16.41
64QAM, 5 MHz, single carrier	753.5	47.65	47.35	50.51	43.52	60.00	16.48
256QAM, 5 MHz, single carrier	748.5	47.63	47.51	50.58	43.59	60.00	16.41
256QAM, 5 MHz, single carrier	753.5	47.62	47.28	50.46	43.47	60.00	16.53
QPSK, 10 MHz, single carrier	751.0	47.61	47.31	50.47	40.47	60.00	19.53
256QAM, 10 MHz, single carrier	751.0	47.55	47.31	50.44	40.44	60.00	19.56
16QAM, 10 MHz, single carrier	751.0	47.41	47.28	50.36	40.36	60.00	19.64
64QAM, 10 MHz, single carrier	751.0	47.35	47.31	50.34	40.34	60.00	19.66
QPSK, 5 MHz, two carriers	748.5 and 753.5	47.69	47.39	50.55	40.55	60.00	19.45
256QAM, 5 MHz, two carriers	748.5 and 753.5	47.62	47.48	50.56	40.56	60.00	19.44

Note: lowest margin is 16.31 dB for single carrier and 19.44 dB for two carriers.

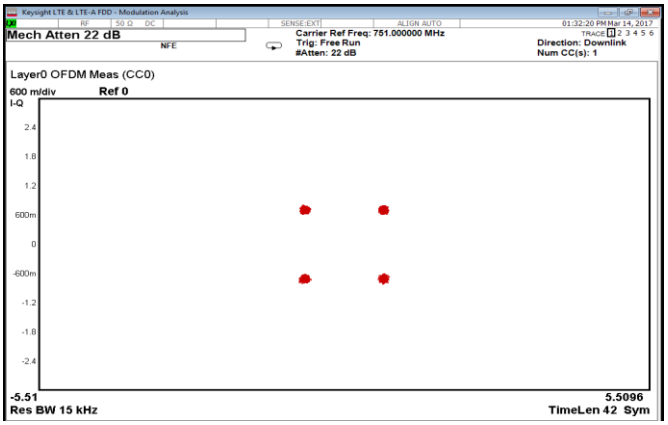

Figure 8.1-1: *Modulation characteristics, QPSK*

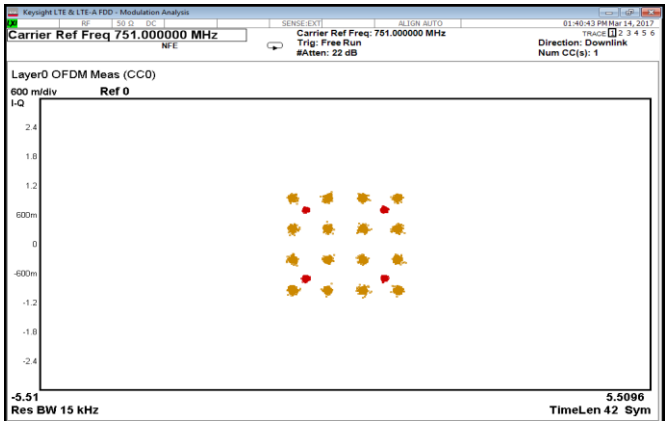

Figure 8.1-2: *Modulation characteristics, 16QAM*

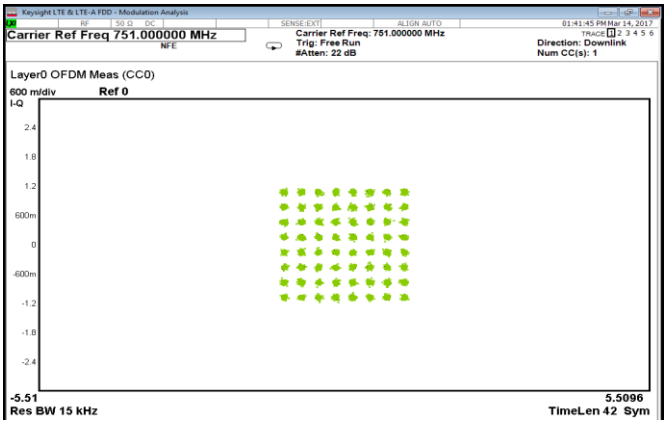

Figure 8.1-3: *Modulation characteristics, 64QAM*

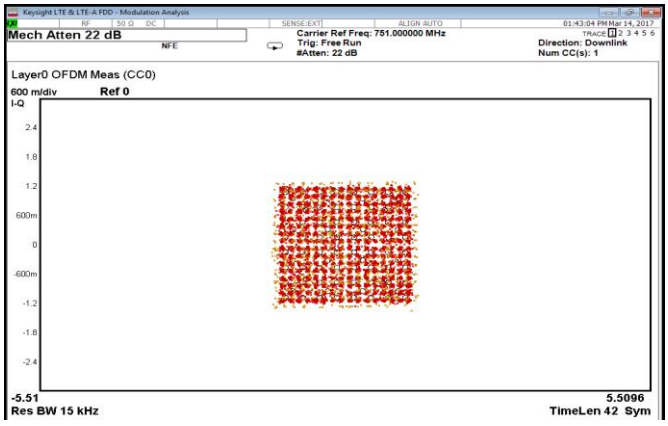

Figure 8.1-4: *Modulation characteristics, 256QAM*

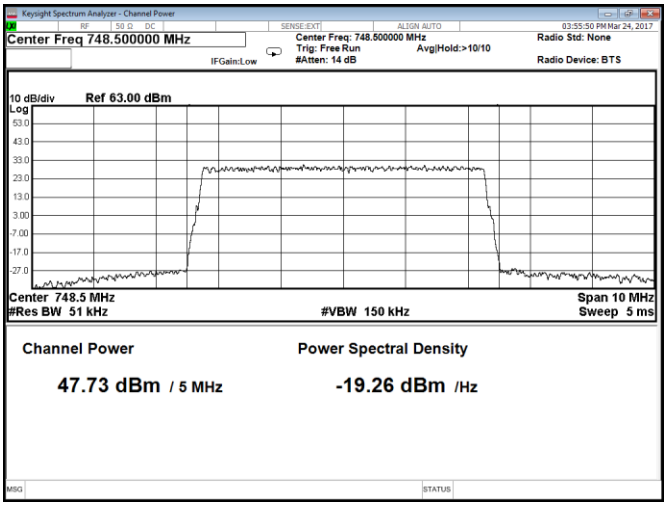

Figure 8.1-5: *Output power at low channel, QPSK, 5 MHz, Port A*

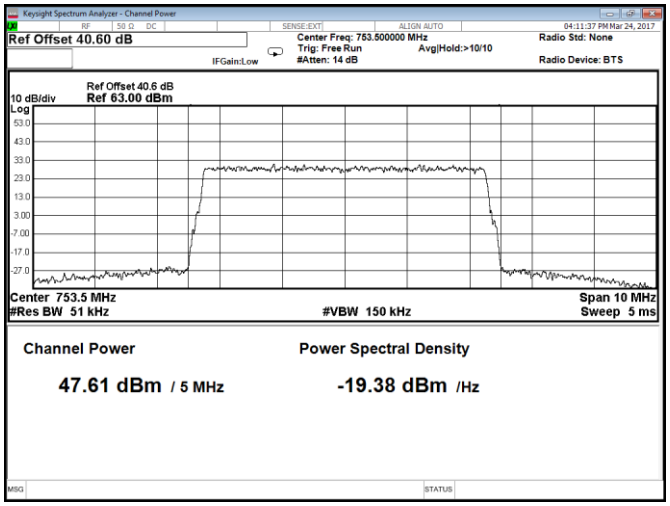

Figure 8.1-6: *Output power at high channel, QPSK, 5 MHz, Port A*

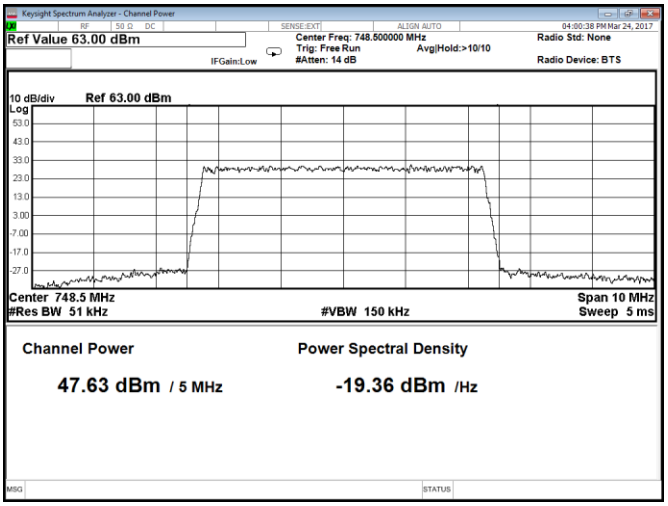

Figure 8.1-7: *Output power at low channel, 256QAM, 5 MHz, Port A*

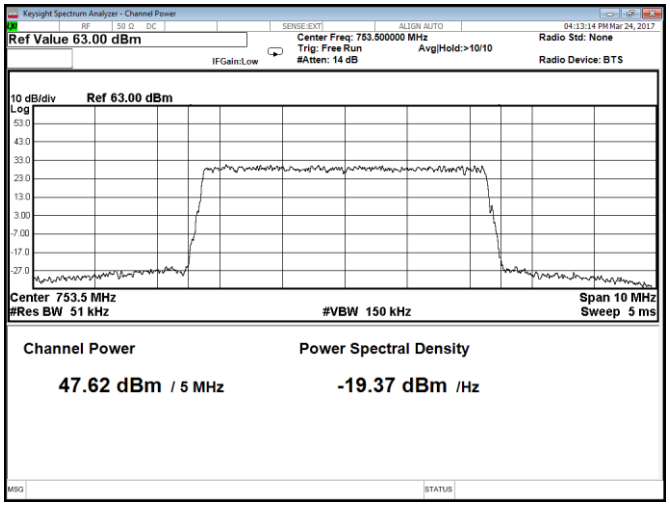

Figure 8.1-8: *Output power at high channel, 256QAM, 5 MHz, Port A*

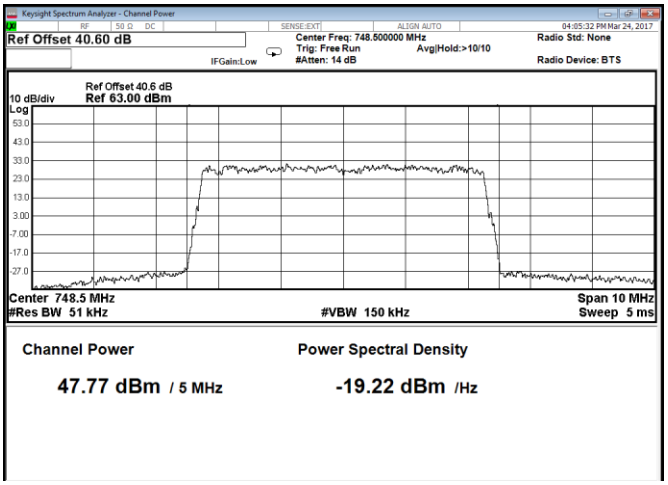

Figure 8.1-9: *Output power at low channel, 16QAM, 5 MHz, Port A*

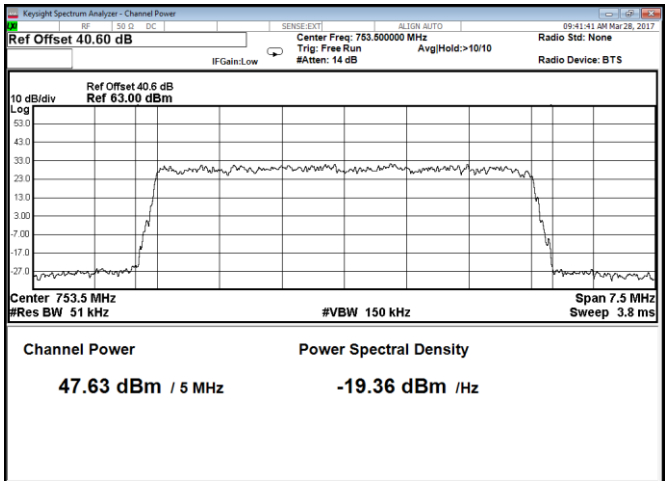

Figure 8.1-10: *Output power at high channel, 16QAM, 5 MHz, Port A*

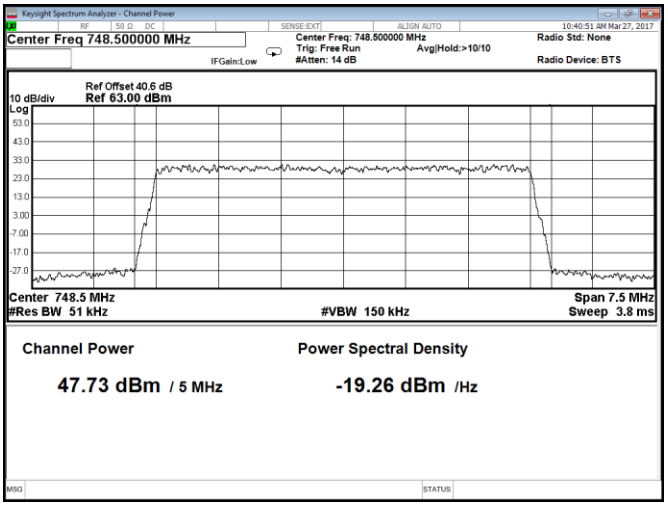

Figure 8.1-11: *Output power at low channel, 64QAM, 5 MHz, Port A*

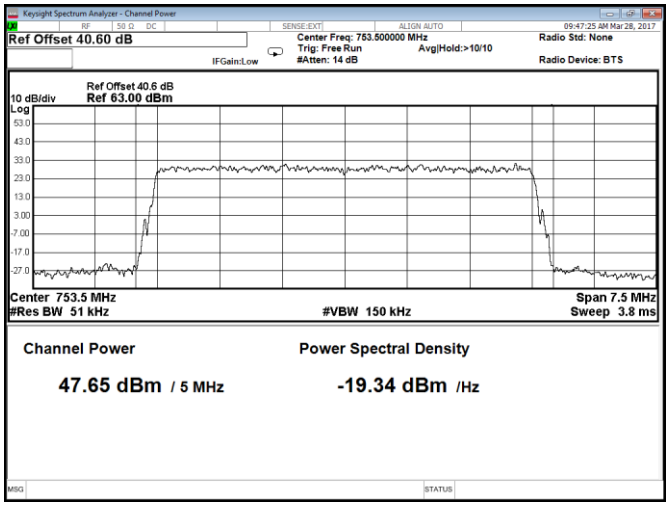

Figure 8.1-12: *Output power at high channel, 64QAM, 5 MHz, Port A*

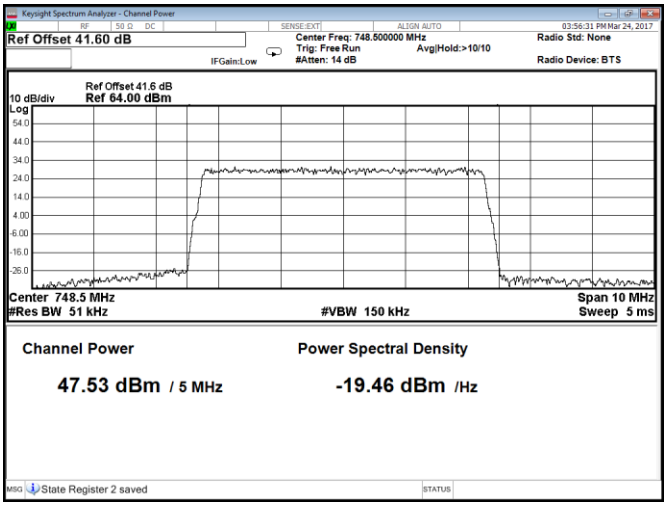

Figure 8.1-13: *Output power at low channel, QPSK, 5 MHz, Port B*

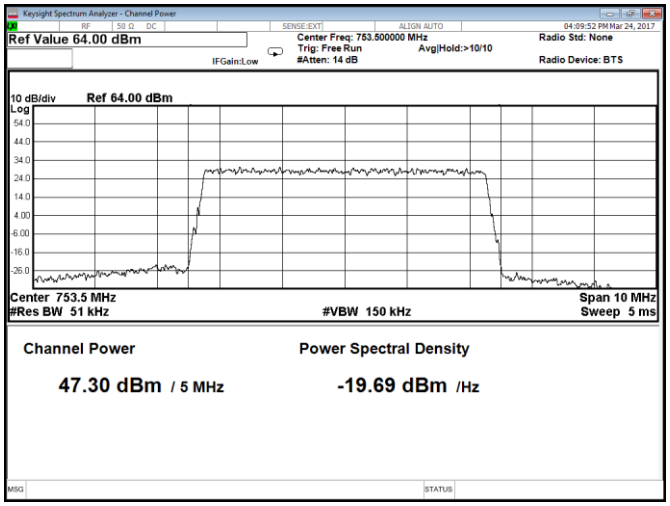

Figure 8.1-14: *Output power at high channel, QPSK, 5 MHz, Port B*

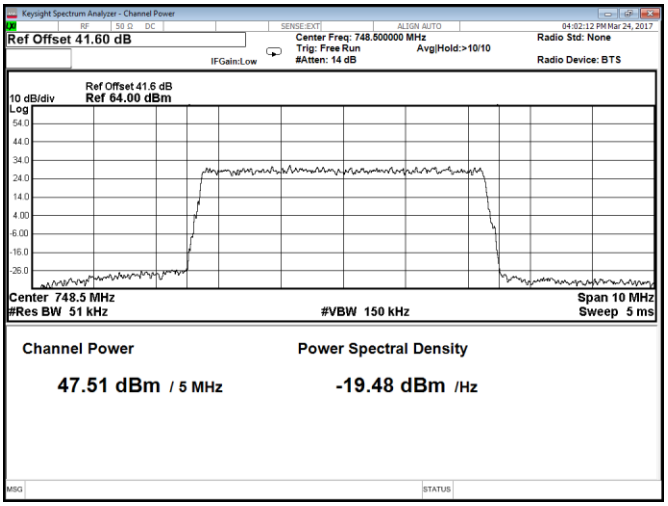

Figure 8.1-15: *Output power at low channel, 256QAM, 5 MHz, Port B*

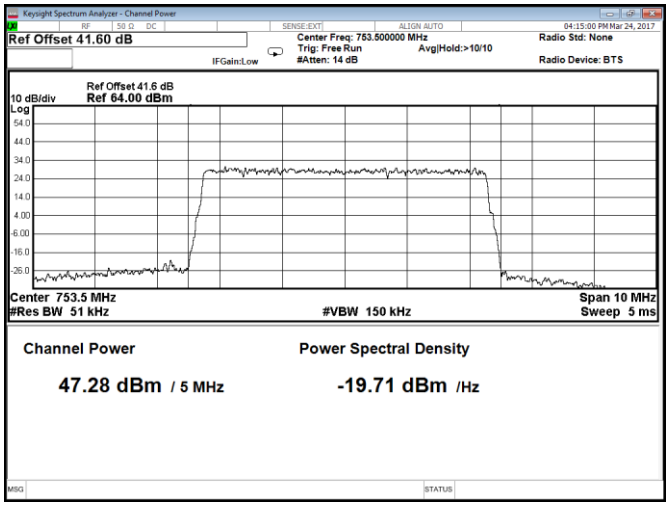

Figure 8.1-16: *Output power at high channel, 256QAM, 5 MHz, Port B*

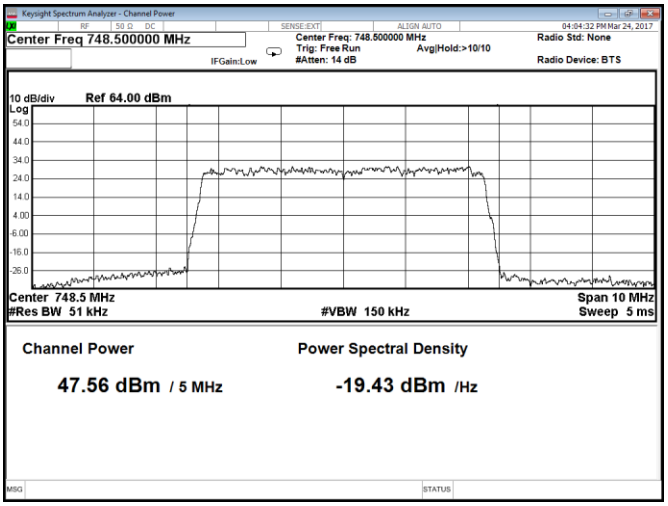

Figure 8.1-17: *Output power at low channel, 16QAM, 5 MHz, Port B*

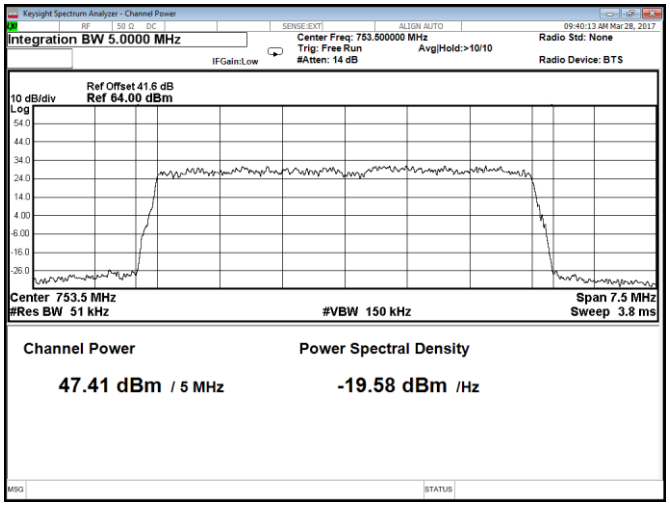

Figure 8.1-18: *Output power at high channel, 16QAM, 5 MHz, Port B*

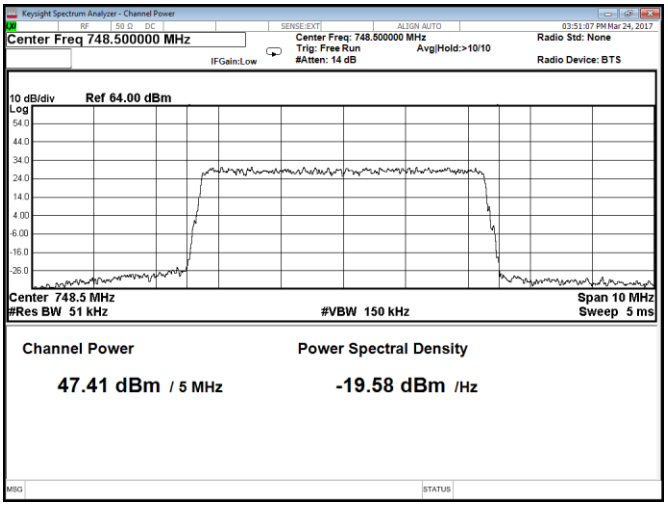

Figure 8.1-19: *Output power at low channel, 64QAM, 5 MHz, Port B*

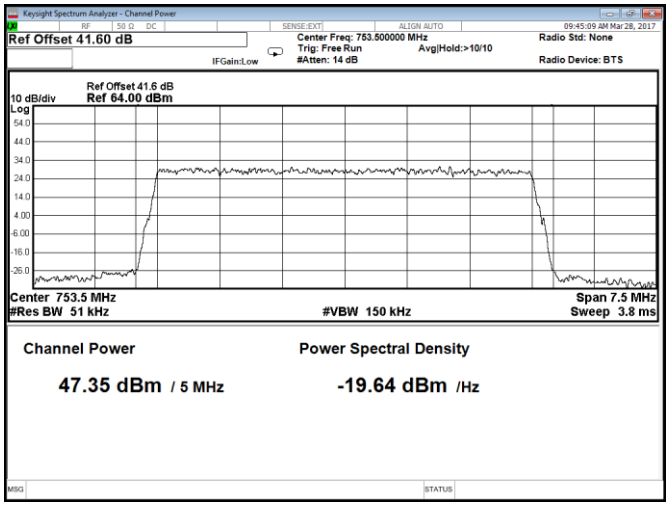

Figure 8.1-20: *Output power at high channel, 64QAM, 5 MHz, Port B*

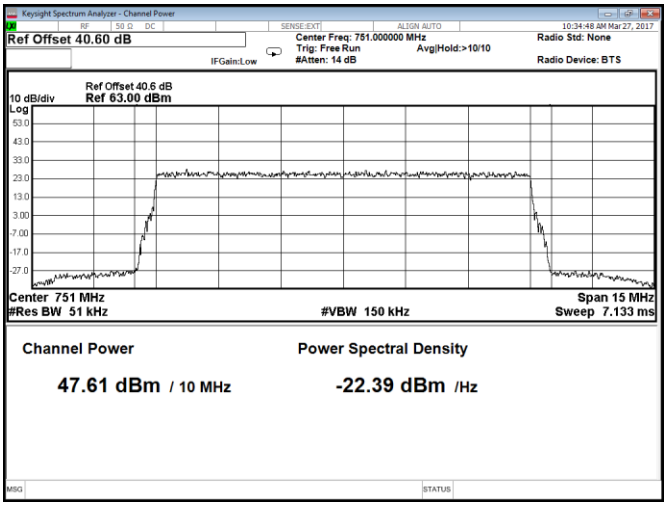

Figure 8.1-21: *Output power, QPSK, 10 MHz, Port A*

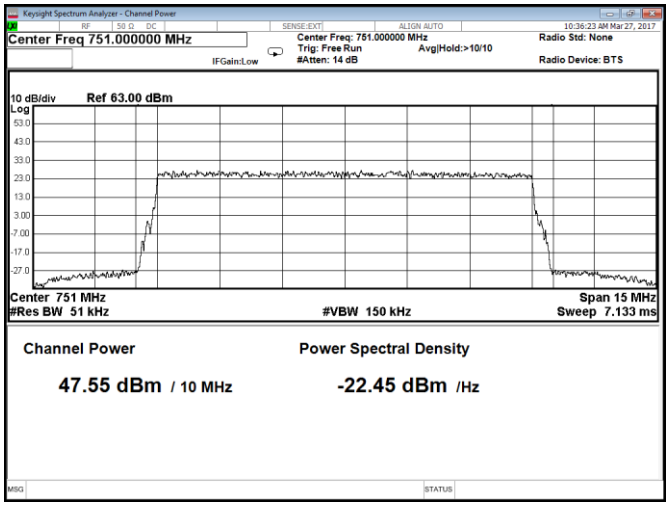

Figure 8.1-22: *Output power, 256QAM, 10 MHz, Port A*

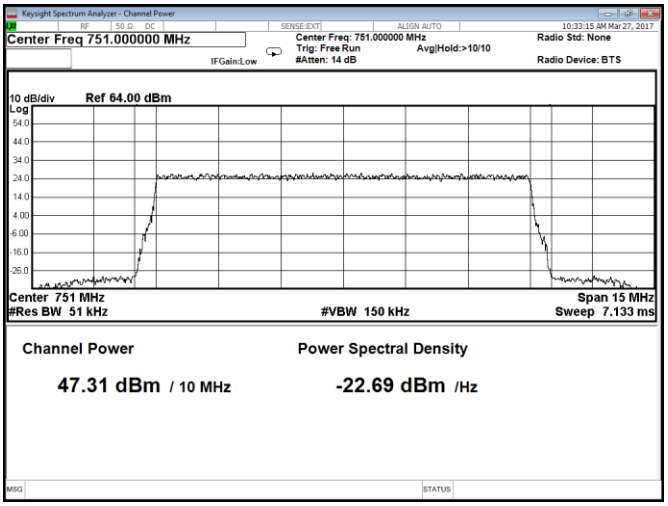

Figure 8.1-23: *Output power, QPSK, 10 MHz, Port B*

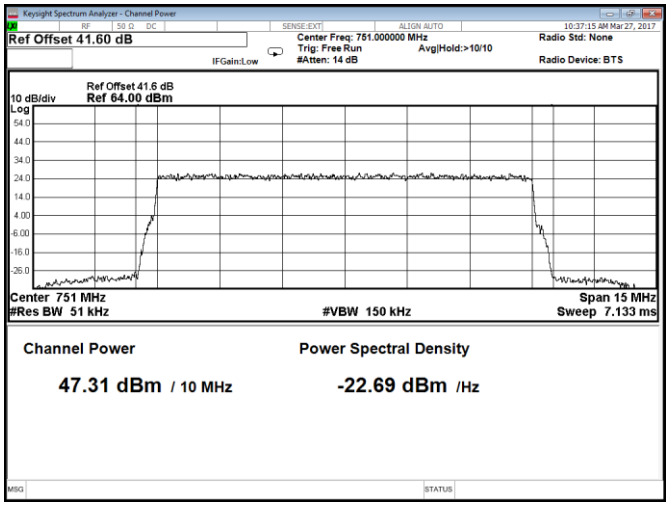

Figure 8.1-24: *Output power, 256QAM, 10 MHz, Port B*

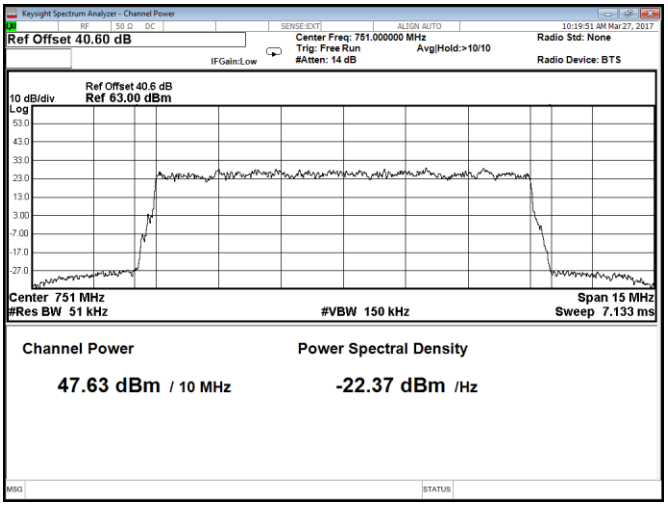

Figure 8.1-25: *Output power, 16QAM, 10 MHz, Port A*

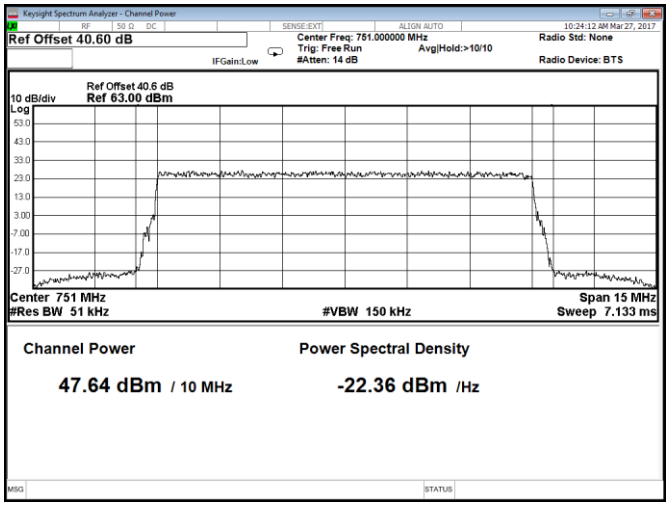

Figure 8.1-26: *Output power, 64QAM, 10 MHz, Port A*

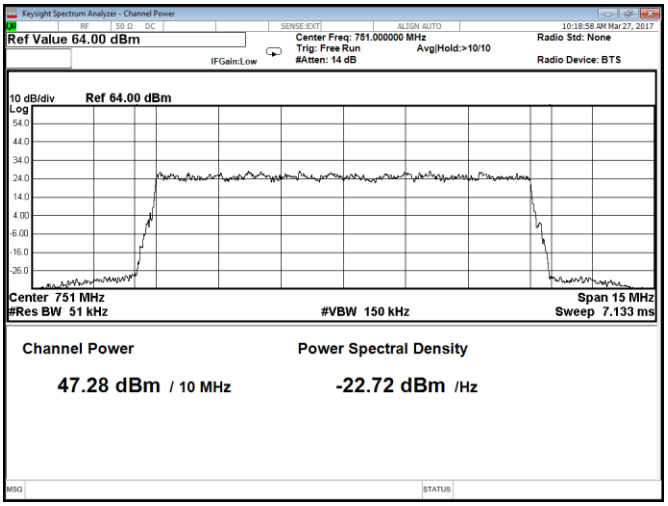

Figure 8.1-27: *Output power, 16QAM, 10 MHz, Port B*

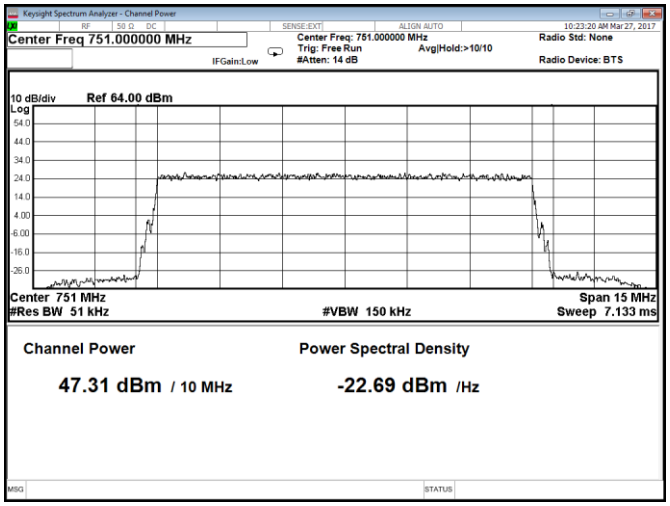

Figure 8.1-28: *Output power, 64QAM, 10 MHz, Port B*

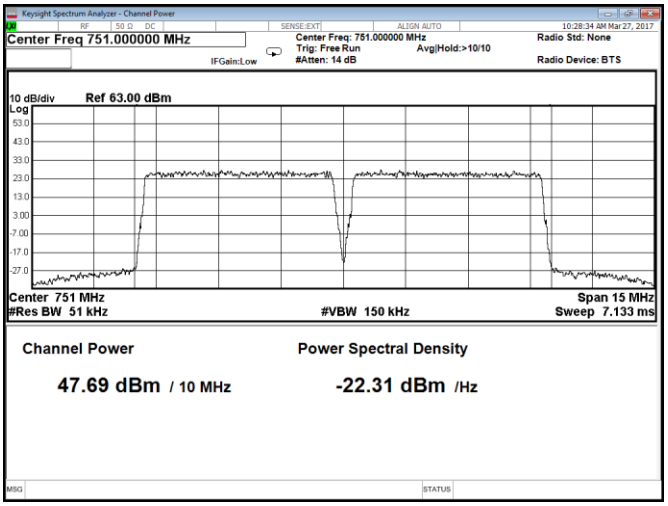

Figure 8.1-29: *Output power, 2 carriers (low and high channels) QPSK, 5 MHz, Port A*

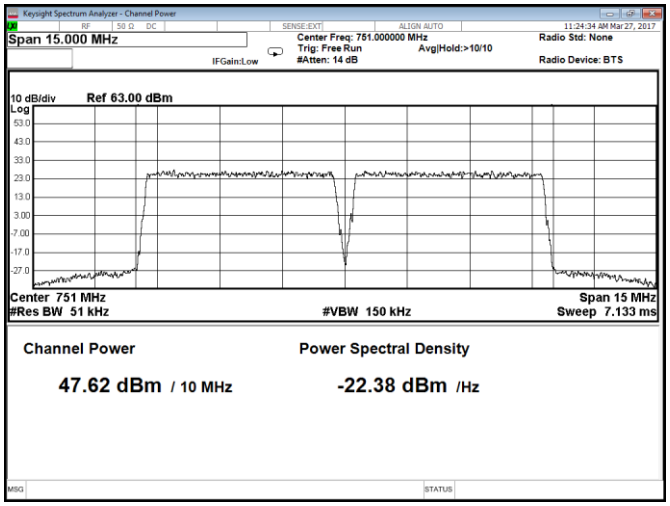

Figure 8.1-30: *Output power, 2 carriers (low and high channels) 256QAM, 5 MHz, Port A*

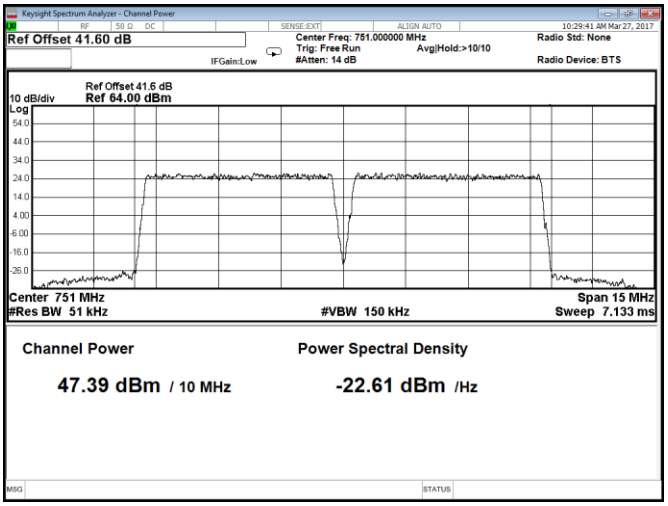

Figure 8.1-31: *Output power, 2 carriers (low and high channels) QPSK, 5 MHz, Port B*

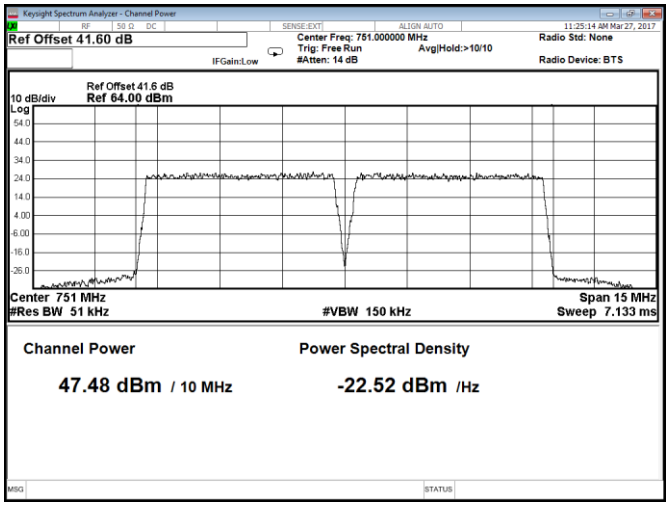

Figure 8.1-32: *Output power, 2 carriers (low and high channels) 256QAM, 5 MHz, Port B*

Table 8.1-3: *Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results*

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
QPSK, 5 MHz, Ant A	748.5	4.53	13.00	8.47
QPSK, 5 MHz, Ant A	753.5	4.60	13.00	8.40
QPSK, 5 MHz, Ant B	748.5	4.89	13.00	8.11
QPSK, 5 MHz, Ant B	753.5	4.94	13.00	8.06
16QAM, 5 MHz, Ant A	748.5	4.48	13.00	8.52
16QAM, 5 MHz, Ant A	753.5	4.49	13.00	8.51
16QAM, 5 MHz, Ant B	748.5	4.83	13.00	8.17
16QAM, 5 MHz, Ant B	753.5	4.79	13.00	8.21
64QAM, 5 MHz, Ant A	748.5	4.51	13.00	8.49
64QAM, 5 MHz, Ant A	753.5	4.52	13.00	8.48
64QAM, 5 MHz, Ant B	748.5	4.86	13.00	8.14
64QAM, 5 MHz, Ant B	753.5	4.88	13.00	8.12
256QAM, 5 MHz, Ant A	748.5	4.55	13.00	8.45
256QAM, 5 MHz, Ant A	753.5	4.57	13.00	8.43
256QAM, 5 MHz, Ant B	748.5	4.89	13.00	8.11
256QAM, 5 MHz, Ant B	753.5	4.95	13.00	8.05
QPSK, 10 MHz, Ant A	751.0	6.39	13.00	6.61
256QAM, 10 MHz, Ant A	751.0	6.45	13.00	6.55
QPSK, 10 MHz, Ant B	751.0	6.61	13.00	6.39
256QAM, 10 MHz, Ant B	751.0	6.62	13.00	6.38
16QAM, 10 MHz, Ant A	751.0	6.38	13.00	6.62
64QAM, 10 MHz, Ant A	751.0	6.43	13.00	6.57
16QAM, 10 MHz, Ant B	751.0	6.52	13.00	6.48
64QAM, 10 MHz, Ant B	751.0	6.59	13.00	6.41

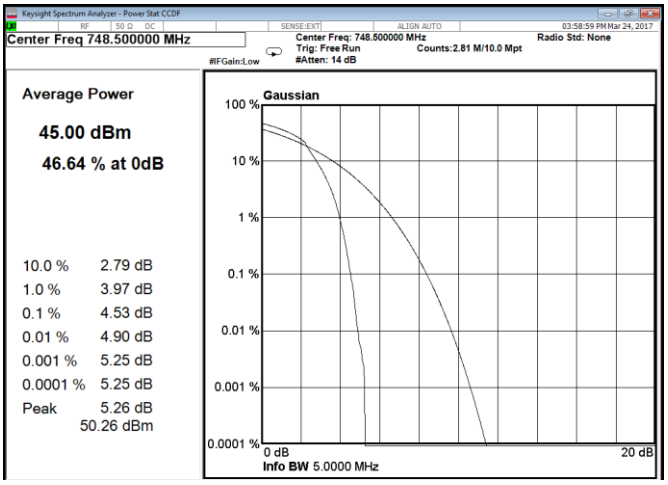

Figure 8.1-33: *CCDF, QPSK, 5 MHz, Port A, Low channel*

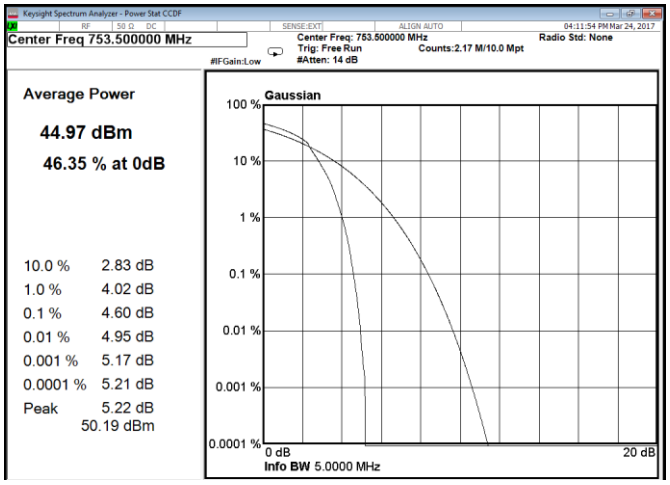

Figure 8.1-34: *CCDF, QPSK, 5 MHz, Port A, High channel*

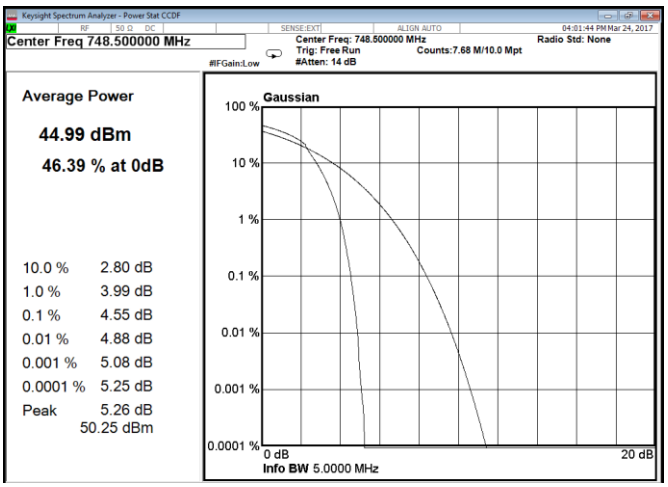

Figure 8.1-35: *CCDF, 256QAM, 5 MHz, Port A, Low channel*

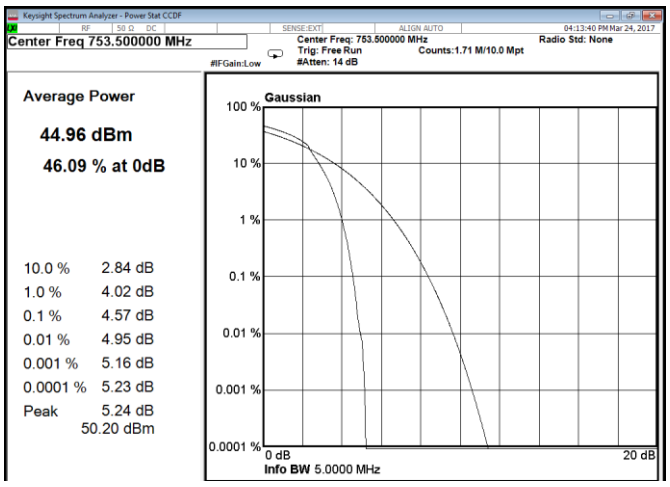

Figure 8.1-36: *CCDF, 256QAM, 5 MHz, Port A, High channel*

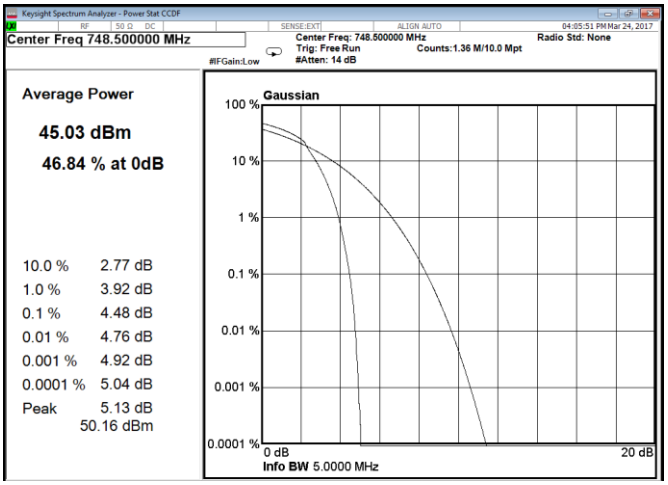

Figure 8.1-37: *CCDF, 16QAM, 5 MHz, Port A, Low channel*

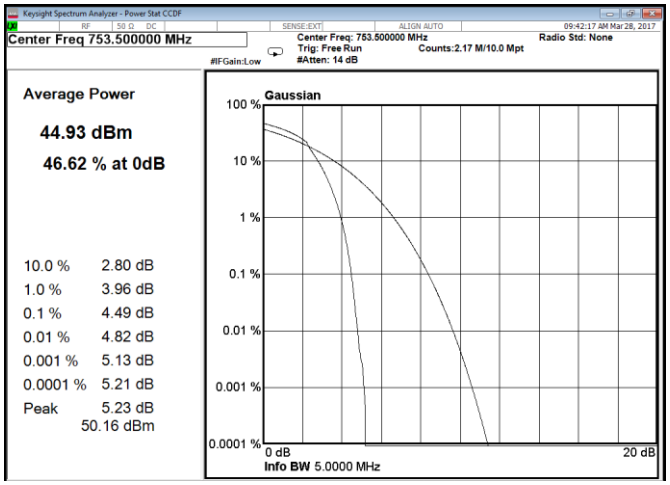

Figure 8.1-38: *CCDF, 16QAM, 5 MHz, Port A, High channel*

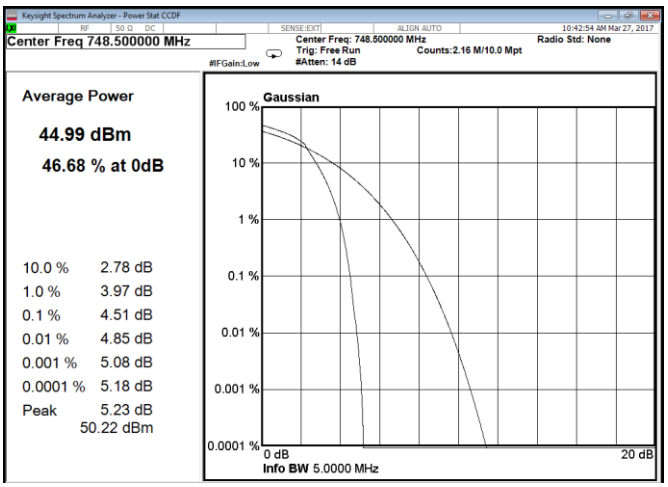

Figure 8.1-39: *CCDF, 64QAM, 5 MHz, Port A, Low channel*

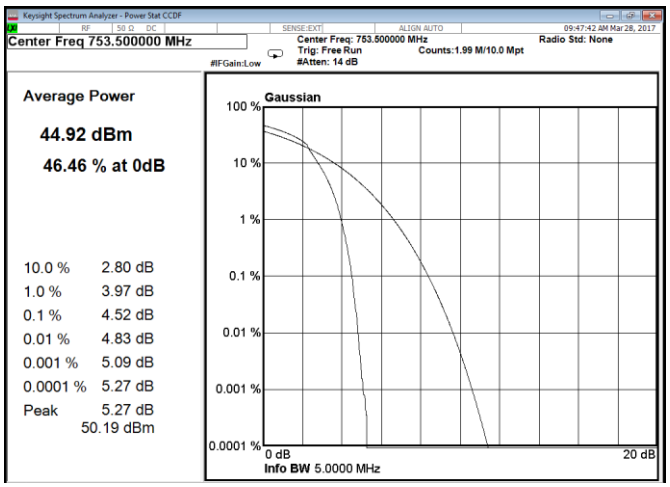

Figure 8.1-40: *CCDF, 64QAM, 5 MHz, Port A, High channel*

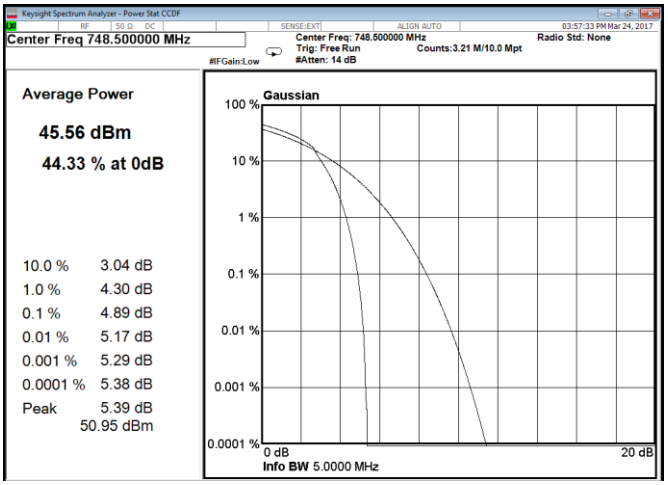

Figure 8.1-41: *CCDF, QPSK, 5 MHz, Port B, Low channel*

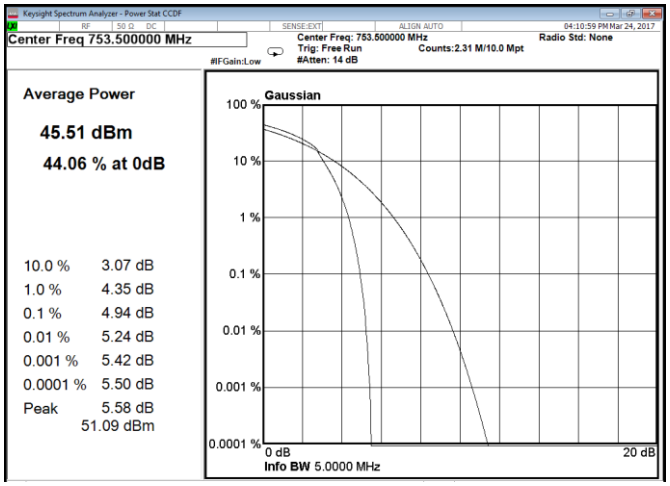

Figure 8.1-42: *CCDF, QPSK, 5 MHz, Port B, High channel*

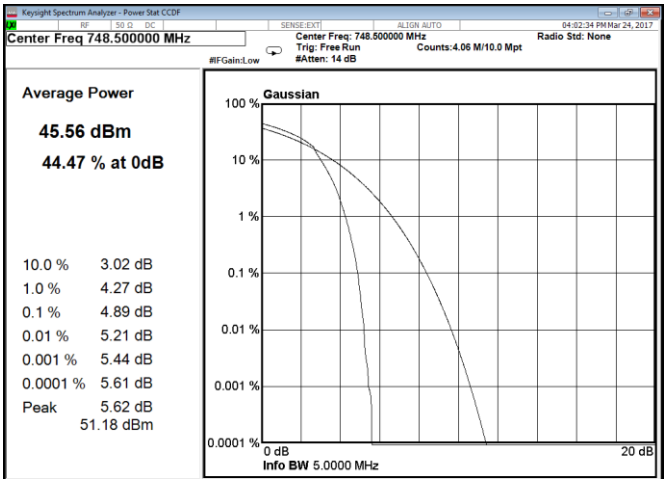

Figure 8.1-43: *CCDF, 256QAM, 5 MHz, Port B, Low channel*

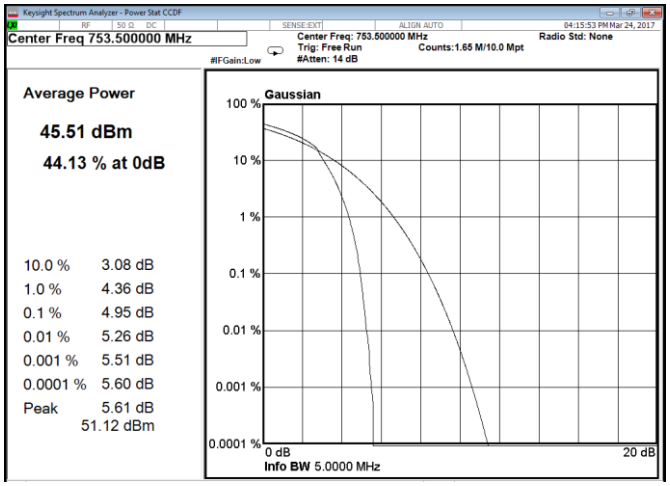

Figure 8.1-44: *CCDF, 256QAM, 5 MHz, Port B, High channel*

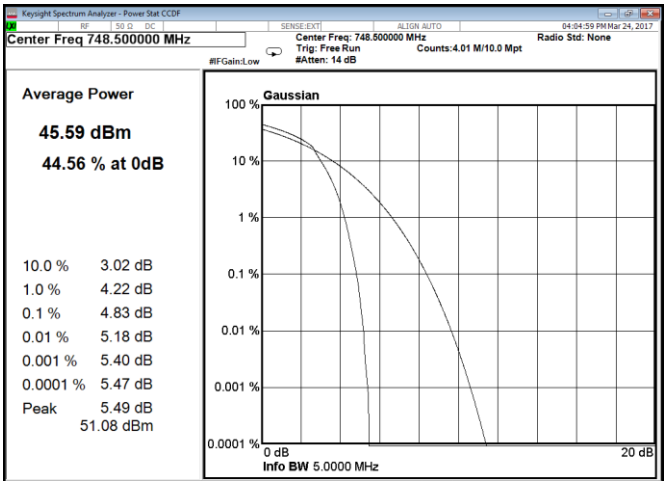

Figure 8.1-45: *CCDF, 16QAM, 5 MHz, Port B, Low channel*

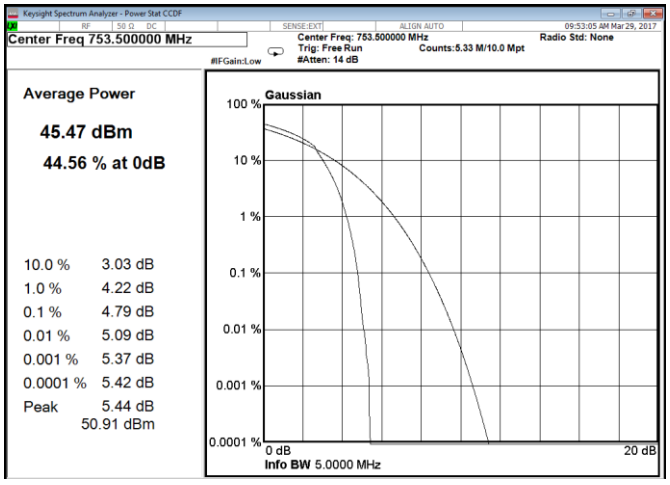

Figure 8.1-46: *CCDF, 16QAM, 5 MHz, Port B, High channel*

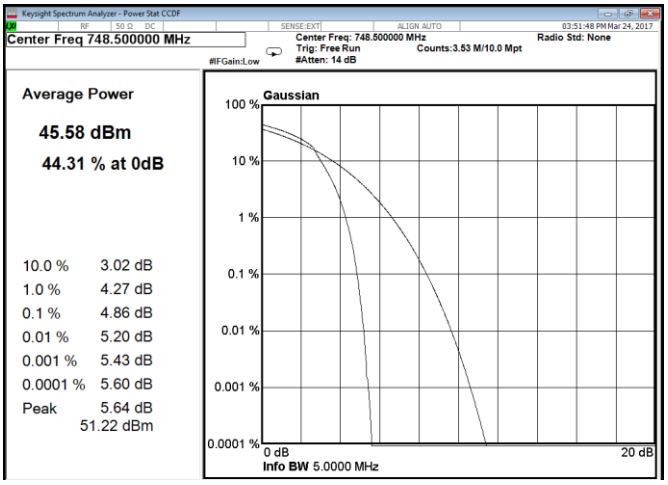

Figure 8.1-47: *CCDF, 64QAM, 5 MHz, Port B, Low channel*

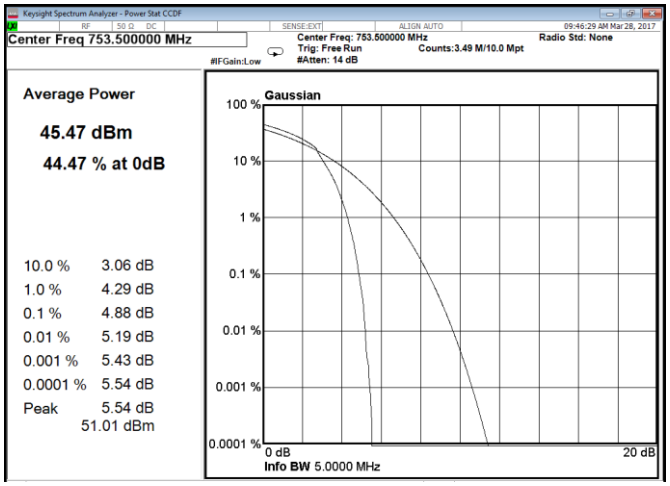

Figure 8.1-48: *CCDF, 64QAM, 5 MHz, Port B, High channel*

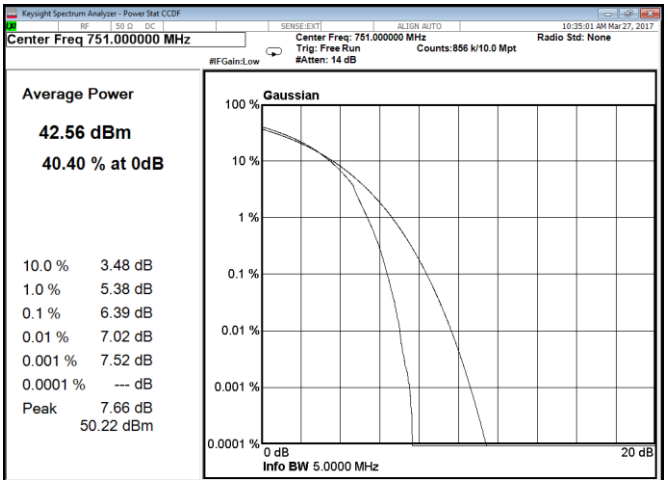

Figure 8.1-49: *CCDF, QPSK, 10 MHz, Port A*

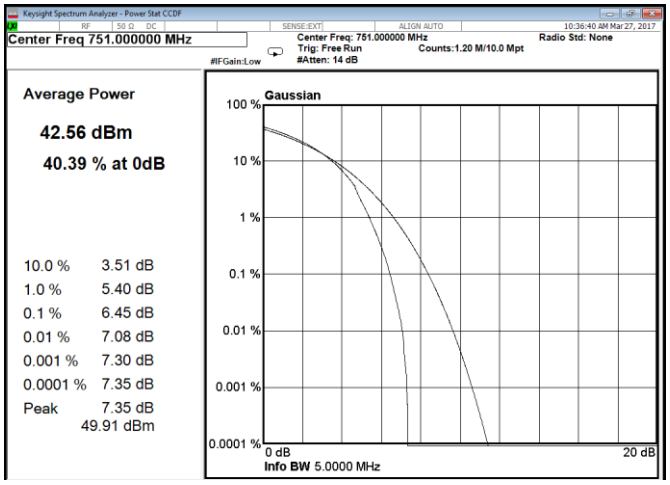

Figure 8.1-50: *CCDF, 256QAM, 10 MHz, Port A*

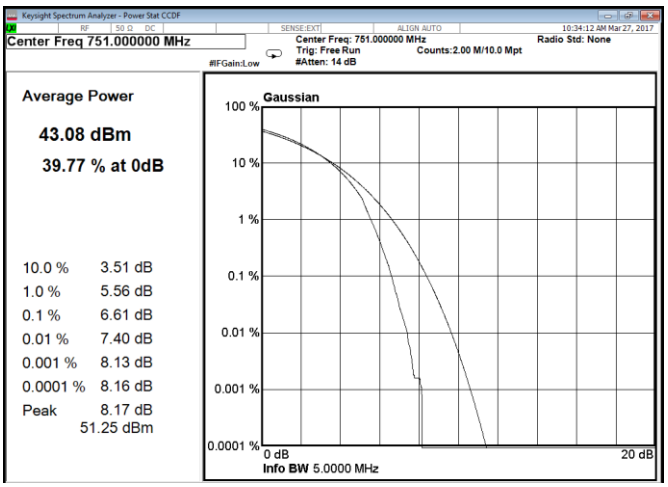

Figure 8.1-51: *CCDF, QPSK, 10 MHz, Port B*

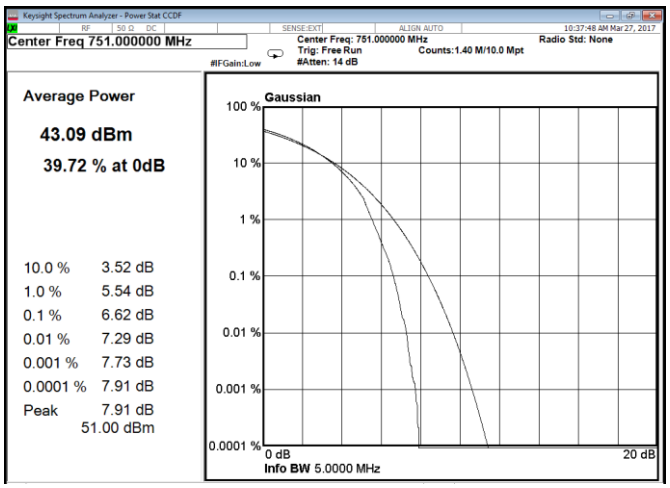

Figure 8.1-52: *CCDF, 256QAM, 10 MHz, Port B*

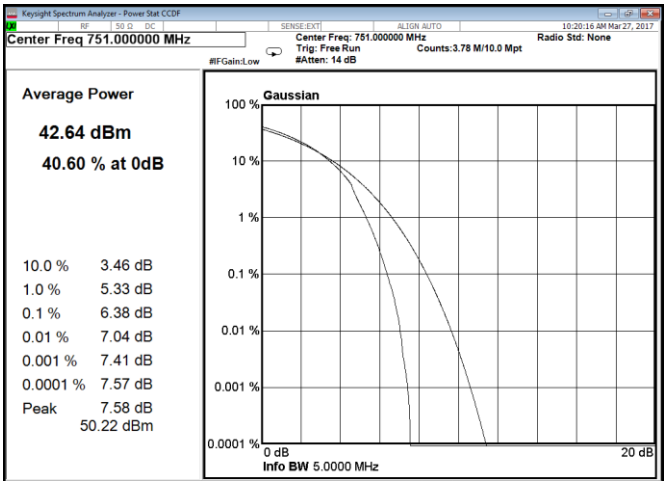

Figure 8.1-53: *CCDF, 16QAM, 10 MHz, Port A*

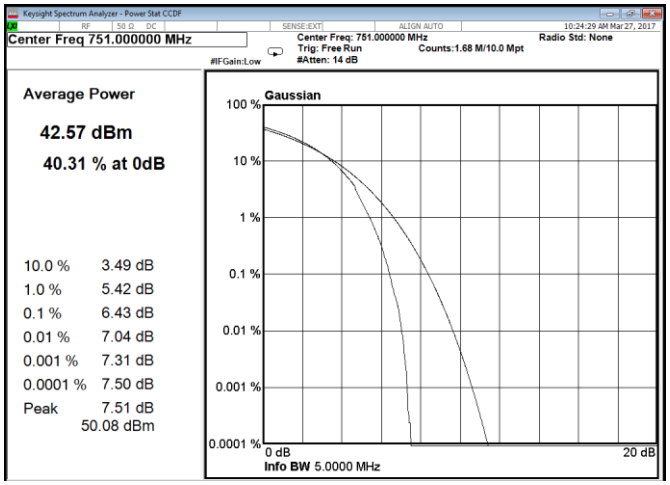

Figure 8.1-54: *CCDF, 64QAM, 10 MHz, Port A*

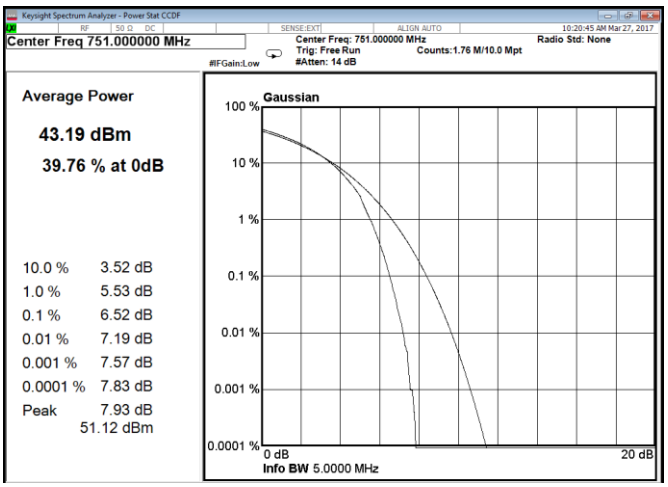

Figure 8.1-55: *CCDF, 16QAM, 10 MHz, Port B*

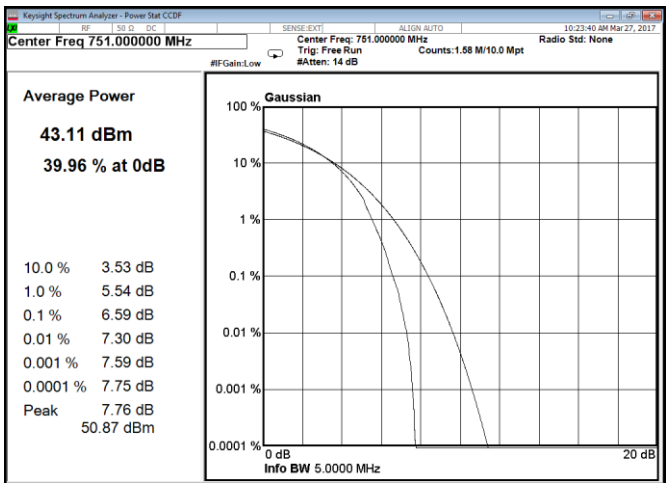

Figure 8.1-56: *CCDF, 64QAM, 10 MHz, Port B*

8.2 FCC 27.53 and RSS-130, 4.6 Spurious emissions at RF antenna connector

8.2.1 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.

8.2.2 Test summary

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

8.2.3 Observations, settings and special notes

The spectrum was searched from 30 MHz to the 10th harmonic.
All measurements were performed using a peak detector.
For MIMO applications all marker values on the plots below should be increased by 3 dB (10 × Log_{10}(2))
RBW within 30–1000 MHz was 100 kHz and 1 MHz above 1 GHz. VBW was wider than RBW.

8.2.4 Test data

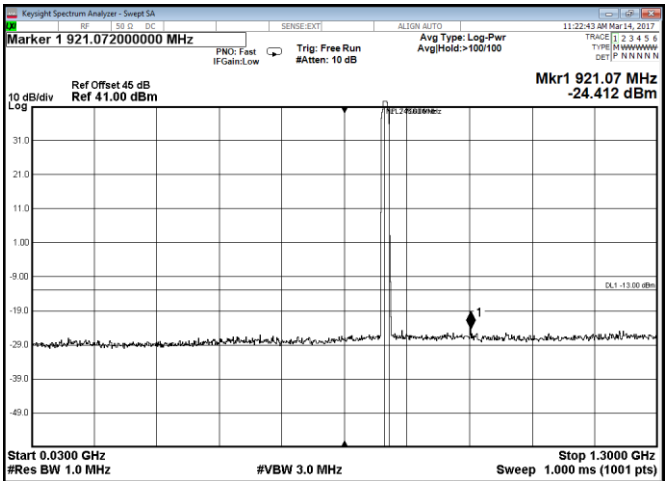

Figure 8.2-1: *Conducted spurious emissions within 30–1300 MHz, Port A, 5 MHz low channel, QPSK*
MIMO: marker value is −21.412 dBm

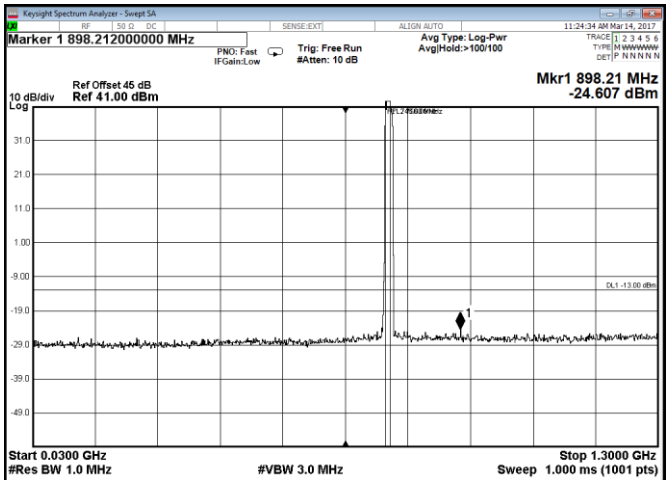

Figure 8.2-2: *Conducted spurious emissions within 30–1300 MHz, Port A, 5 MHz high channel, QPSK*
MIMO: marker value is −21.607 dBm

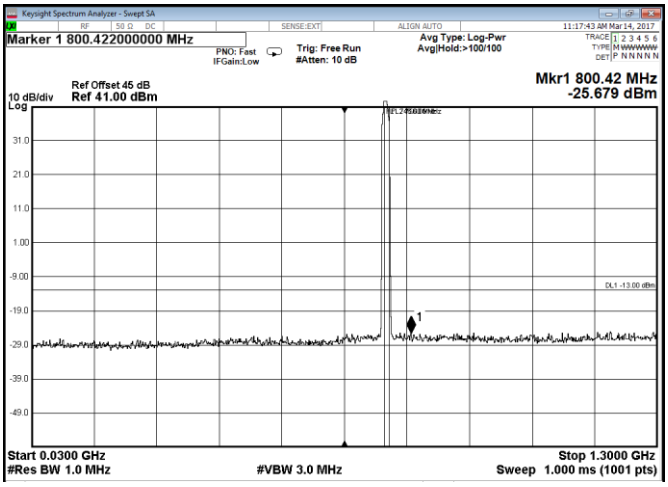

Figure 8.2-3: *Conducted spurious emissions within 30–1300 MHz, Port A, 5 MHz low channel, 256QAM MIMO: marker value is −22.679 dBm*

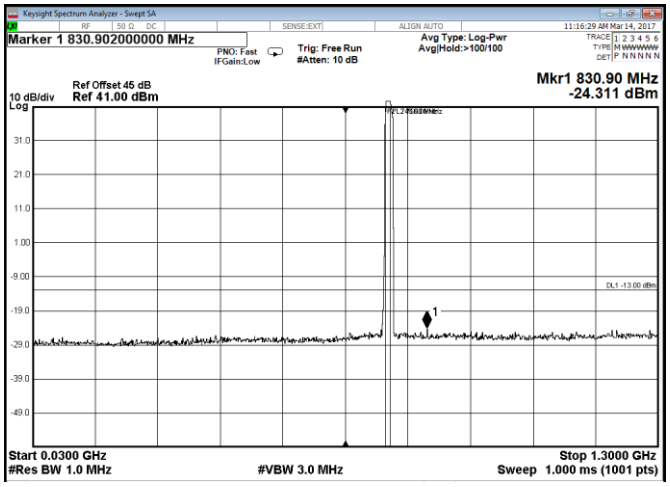

Figure 8.2-4: *Conducted spurious emissions within 30–1300 MHz, Port A, 5 MHz high channel, 256QAM MIMO: marker value is −21.311 dBm*

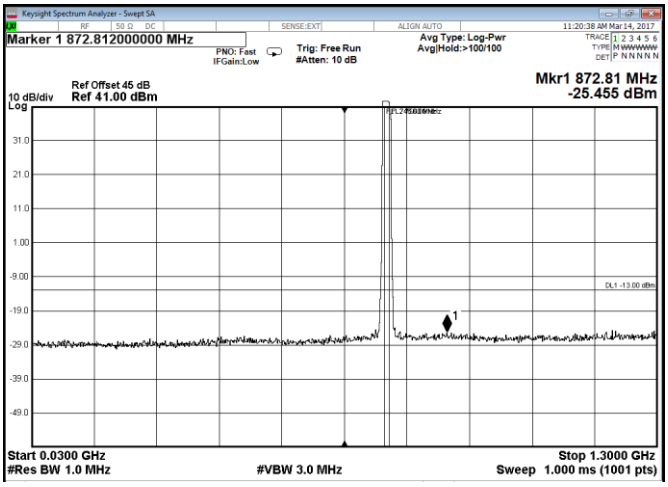

Figure 8.2-5: *Conducted spurious emissions within 30–1300 MHz, Port A, 10 MHz channel, QPSK MIMO: marker value is −22.455 dBm*

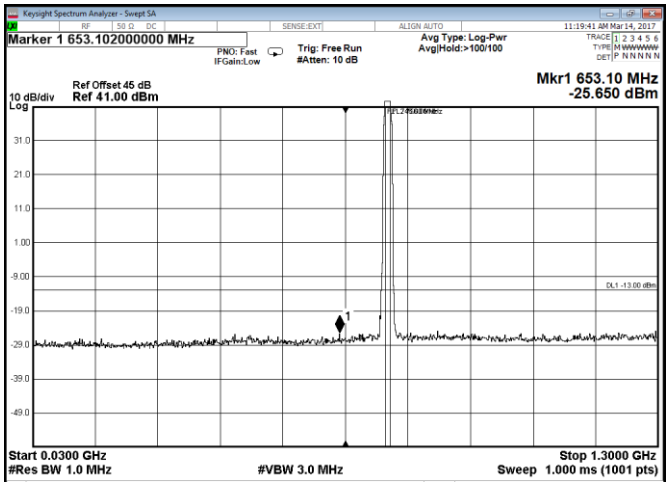

Figure 8.2-6: *Conducted spurious emissions within 30–1300 MHz, Port A, 10 MHz channel, 256QAM MIMO: marker value is −22.650 dBm*

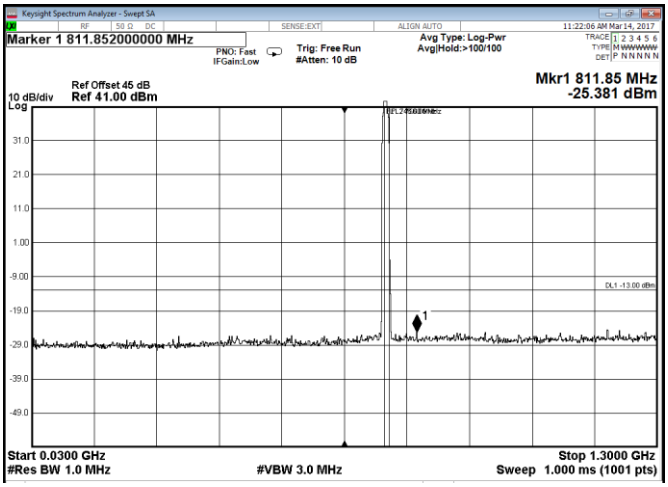

Figure 8.2-7: *Conducted spurious emissions within 30–1300 MHz, Port B, 5 MHz low channel, QPSK MIMO: marker value is −22.381 dBm*

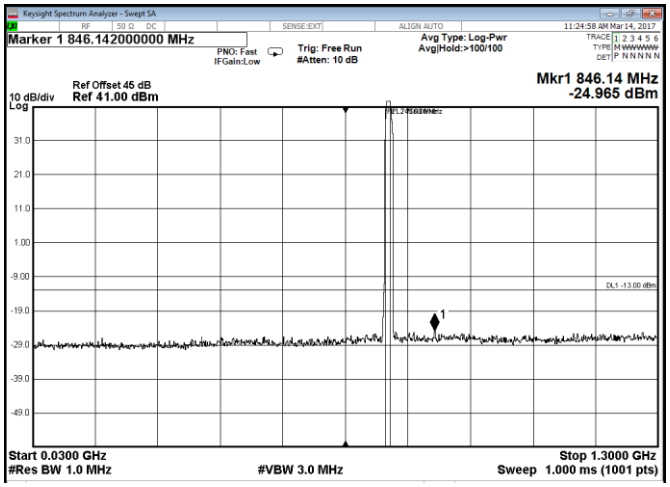

Figure 8.2-8: *Conducted spurious emissions within 30–1300 MHz, Port B, 5 MHz high channel, QPSK MIMO: marker value is −21.965 dBm*

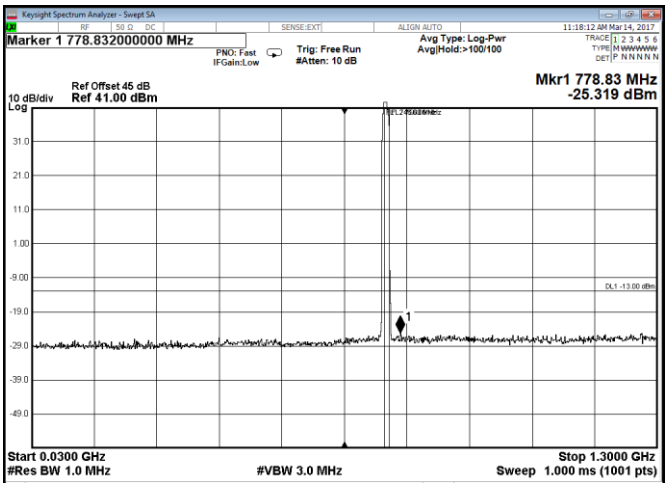

Figure 8.2-9: *Conducted spurious emissions within 30–1300 MHz, Port B, 5 MHz low channel, 256QAM MIMO: marker value is −22.319 dBm*

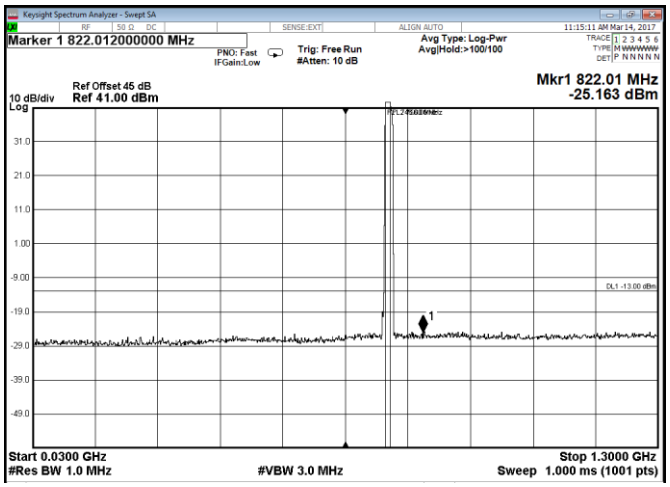

Figure 8.2-10: *Conducted spurious emissions within 30–1300 MHz, Port B, 5 MHz high channel, 256QAM MIMO: marker value is −22.163 dBm*

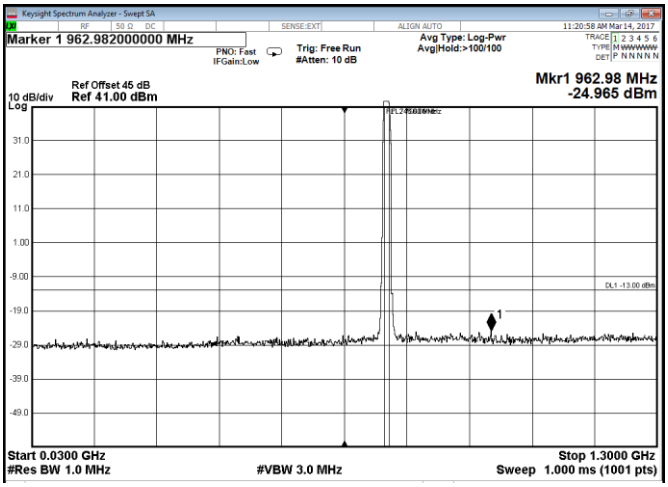

Figure 8.2-11: *Conducted spurious emissions within 30–1300 MHz, Port B, 10 MHz channel, QPSK*
MIMO: marker value is −21.965 dBm

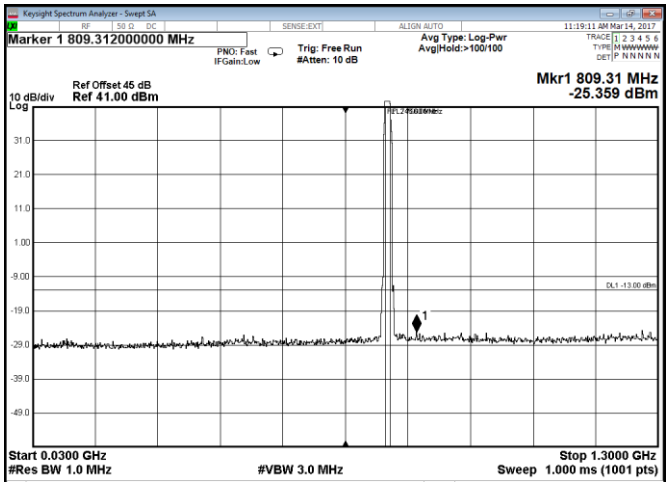

Figure 8.2-12: *Conducted spurious emissions within 30–1300 MHz, Port B, 10 MHz channel, 256QAM*
MIMO: marker value is −22.359 dBm

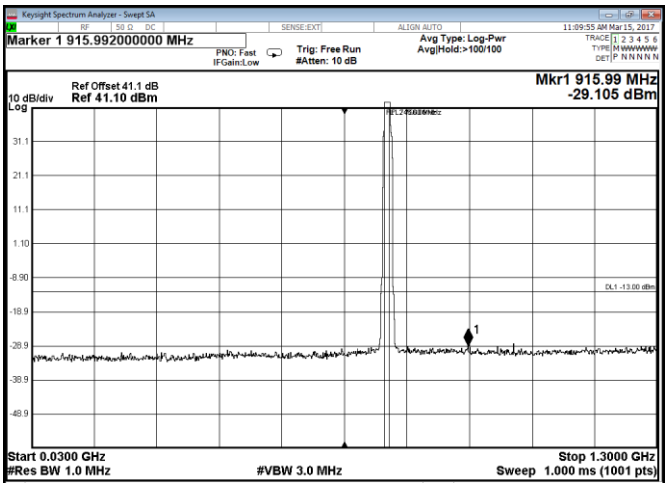

Figure 8.2-13: *Conducted spurious emissions within 30–1300 MHz, Port A, 5 MHz channel, 2 carriers*
MIMO: marker value is −26.105 dBm

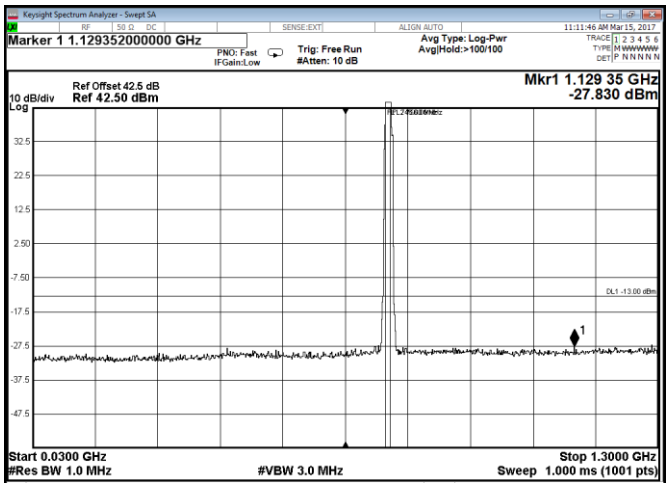

Figure 8.2-14: *Conducted spurious emissions within 30–1300 MHz, Port B, 5 MHz channel, 2 carriers*
MIMO: marker value is −24.830 dBm

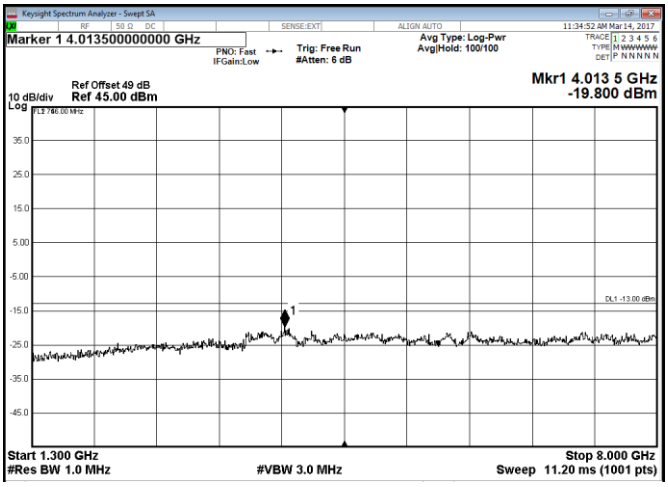

Figure 8.2-15: *Conducted spurious emissions within 1.3–8.0 GHz, Port A, 5 MHz low channel, QPSK MIMO: marker value is −16.800 dBm*

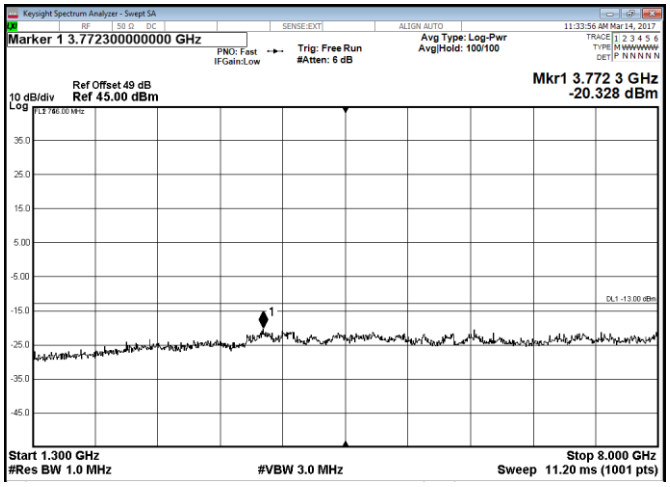

Figure 8.2-16: *Conducted spurious emissions within 1.3–8.0 GHz, Port A, 5 MHz high channel, QPSK MIMO: marker value is −17.328 dBm*

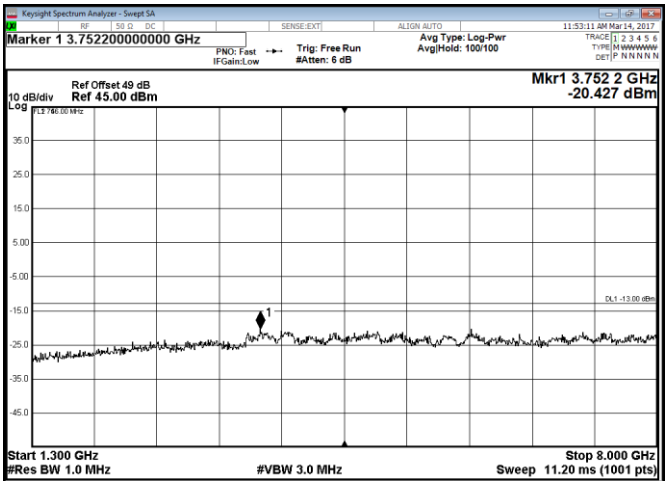

Figure 8.2-17: *Conducted spurious emissions within 1.3–8.0 GHz, Port A, 5 MHz low channel, 256QAM MIMO: marker value is −17.427 dBm*

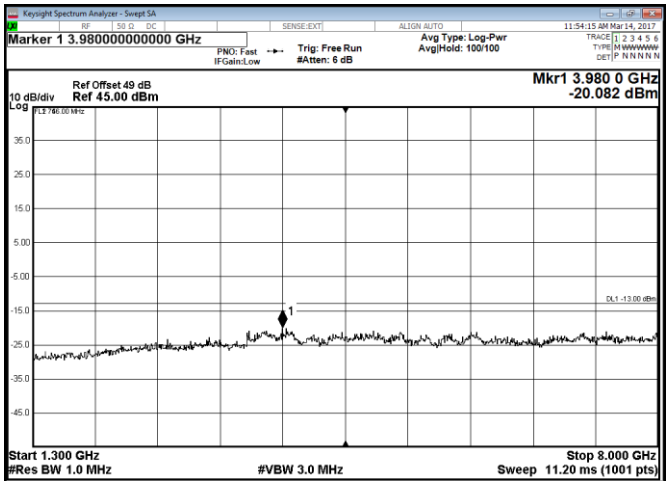

Figure 8.2-18: *Conducted spurious emissions within 1.3–8.0 GHz, Port A, 5 MHz high channel, 256QAM MIMO: marker value is −17.082 dBm*