

Radio Test report – Radio 4449 B13 B5

341574-1TRFWL-R1

Applicant:

Ericsson Canada

Product:

Radio 4449

Model:

Radio 4449 B13 B5

Part number:

KRC 161 749/1

FCC ID:

TA8AKRC161749-1

Requirements/Summary:

Standard	Environmental phenomenon	Compliance
FCC 47 CFR Part 27	Miscellaneous wireless communications services	Yes
FCC 47 CFR Part 22	Public mobile services	Yes

Tested by: Andrey Adelberg, Senior EMC/Wireless Specialist

Reviewed by: Kevin Rose, Wireless/EMC Specialist

Date of issue: November 30, 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: CA2040 (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.

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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 Matters; General Rules and Regulations
FCC 47 CFR Part 27	Public mobile services

1.3 Test method

ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
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1.4 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 4449 B13 B5 with model numbers KRC 161 749/1.

See "Summary of test results" for full details.

1.5 Exclusions

None

1.6 Test report revision history

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

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	Reported
§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 FCC Part 22 test results

Part	Test description	Verdict
§22.913	Effective radiated power limits	Reported
§22.917(a)	Emission limitations for cellular equipment	Pass
§22.917(b)	Emission bandwidth	Pass
§22.355	Frequency tolerance	Pass

Notes: None

Section 3. Equipment under test (EUT) details

3.1 Sample information

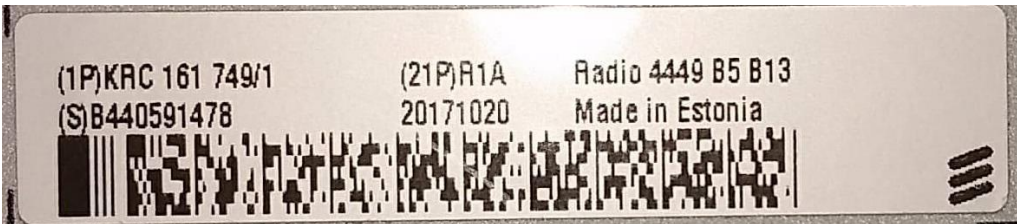
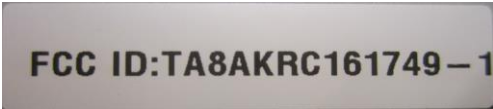
Receipt date	November 15, 2017
Nemko sample ID number	None

3.2 EUT information

Product name	Radio 4449
Model	Radio 4449 B5 B13
Part number	KRC 161 749/1
Revision	R1A
Serial number	B440591478
Antenna ports	4 TX/RX Ports
RF BW / IBW	B5: 25 MHz B13: 10 MHz
FDD	B5: 45 MHz B13: 31 MHz
B5 Frequency range	TX (DL): 869–894 MHz RX (UL): 824–849 MHz
B13 Frequency range	TX (DL): 746–756 MHz RX (UL): 777–787 MHz
Nominal O/P per antenna port	Config 1: B5: Single Carrier, Ports A through D: 1 × 40 W (46 dBm) Config 1: B13: Single Carrier, Ports A through D: 1 × 40 W (46 dBm) Config 2: B5: Single Carrier, Ports A and D: 1 × 60W (47.78 dBm) Config 2: B13: Single Carrier, Ports A and D: 1 × 60W (47.78 dBm)
Accuracy (nominal)	±0.1 ppm
Nominal voltage	2 × −48 V _{DC} @ 20 A
RAT	LTE: SC, MIMO
Modulation	LTE: QPSK, 16 QAM, 64 QAM, 256QAM
Channel bandwidth	LTE: 5 MHz (B5), 10 MHz (B13)
Maximum combined OBW per port	15 MHz
CPRI	10 Gbps
Channel raster	LTE: 100 kHz
Regulatory requirements	Radio: FCC Part 2, 22, 27 EMC: FCC Part 15, ICES-003 Safety: IEC/EN 62368-1, UL/CSA 62368-1 IEC/EN 60950-22, IEC/EN 60529, UL 50E
Emission Designator:	5M00W7D (B5), 10M0W7D (B13)
Supported Configuration	SC, MC, Single Antenna, TX Diversity, MIMO, Carrier Aggregation
Operating temperature	−40 °C to +55 °C
Total Power based on IBW	Config 1: 4 × 40 W (B5) + 4 × 40 W (B13) Config 2: 2 × 60 W (B5) + 2 × 60 W (B13)
Supported carrier / port	LTE BW, B5: 5 (1-3), 10 (1-2); LTE BW, B13: 5 (2), 10 (1)
Optional Fan Tray	N/A

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 4449 B5 B13 (KRC 161 749/1) is a multi-standard remote radio forming part of the Ericsson RBS (Radio Base Station) equipment. The Radio 4449 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 4449 product is convection cooled and shall be mounted vertically Horizontal mounting is not supported on this product. Output RF Power is rated at 4 × 80 W (config 1) and 2 × 120 W (config 2). Altitude during operation: Below 3000 m																																																											
Port description	<table><tr><th>Port</th><th>Description</th></tr><tr><td>ANT A</td><td>RF Out A</td></tr><tr><td>ANT B</td><td>RF Out B</td></tr><tr><td>ANT C</td><td>RF Out C</td></tr><tr><td>ANT D</td><td>RF Out D</td></tr><tr><td>RET</td><td>Antenna Line Device</td></tr><tr><td>Alarm</td><td>Alarm and DC for Optional Fan Tray</td></tr><tr><td>Data 1</td><td>Optical Interface Data 1</td></tr><tr><td>Data 2</td><td>Optical Interface Data 2</td></tr><tr><td>DC Input</td><td>2 × -48 V_{DC}</td></tr><tr><td>MMI</td><td>Display - Radio Status</td></tr><tr><td>GND</td><td>Ground</td></tr></table>					Port	Description	ANT A	RF Out A	ANT B	RF Out B	ANT C	RF Out C	ANT D	RF Out D	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	2 × -48 V _{DC}	MMI	Display - Radio Status	GND	Ground																															
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Physical	<table><tr><td>Dimensions</td><td>455 × 335 × 240 mm (H × W × D)</td></tr><tr><td>Weight</td><td>32 kg</td></tr><tr><td>Operating Temperature</td><td>-40 to +55 °C</td></tr><tr><td>Mounting</td><td>Pole, Wall Mount</td></tr><tr><td>Cooling</td><td>Convection (optional fan tray - forced air)</td></tr></table>					Dimensions	455 × 335 × 240 mm (H × W × D)	Weight	32 kg	Operating Temperature	-40 to +55 °C	Mounting	Pole, Wall Mount	Cooling	Convection (optional fan tray - forced air)																																													
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Software details	CXP9013268/15-R69AJ11																																																											
Radio 2212 B13 (R1A) Hardware Configuration	<table><tr><th>Product: KRC 161 749/1</th><th>Revision</th><th>Description</th><th></th><th></th></tr><tr><td>KRF 901 349/1</td><td></td><td>FU</td><td></td><td></td></tr><tr><td>ROA 128 6579/1</td><td>R1A</td><td>A1B</td><td></td><td></td></tr><tr><td>ROA 128 6611/49</td><td>P1A</td><td>A1B SW</td><td></td><td></td></tr><tr><td>NTB 101 0202/1</td><td>P1B</td><td>Parts</td><td></td><td></td></tr><tr><td>KRY 901 400/491</td><td>R1A</td><td>Radio B5</td><td></td><td></td></tr><tr><td>ROA 128 6610/491</td><td>R1A</td><td>Radio Board B5</td><td></td><td></td></tr><tr><td>NTB 101 171/491</td><td>P1C</td><td>Parts B5</td><td></td><td></td></tr><tr><td>KRY 901 400/492</td><td>R1A</td><td>Radio B13</td><td></td><td></td></tr><tr><td>ROA 128 6610/492</td><td>R1A</td><td>Radio Board B13</td><td></td><td></td></tr><tr><td>NTB 101 171/492</td><td>P1C</td><td>Parts B13</td><td></td><td></td></tr></table>					Product: KRC 161 749/1	Revision	Description			KRF 901 349/1		FU			ROA 128 6579/1	R1A	A1B			ROA 128 6611/49	P1A	A1B SW			NTB 101 0202/1	P1B	Parts			KRY 901 400/491	R1A	Radio B5			ROA 128 6610/491	R1A	Radio Board B5			NTB 101 171/491	P1C	Parts B5			KRY 901 400/492	R1A	Radio B13			ROA 128 6610/492	R1A	Radio Board B13			NTB 101 171/492	P1C	Parts B13		
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Product Identification Label KRC 161 749/1																																																												
Legal Overlay / Label	  ETL LISTED INFORMATION TECHNOLOGY EQUIPMENT Intertek Control number 113613 This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation. CAN ICES-3 (B)/NMB-3(B) IP65/Type 3 Enclosure Ericsson AB 164 80 Stockholm, Sweden http://tracy.ericsson.net/contact																																																											

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 B13

Bandwidth, MHz	Transmit / DL, MHz					
	B	EARFCN	M	EARFCN	T	EARFCN
10	751.0	5230	751.0	5230	751.0	5230

Bandwidth, MHz	Receive / UL, MHz					
	B	EARFCN	M	EARFCN	T	EARFCN
10	782.0	23230	782.0	23230	782.0	23230

Single carrier B5

Bandwidth, MHz	Transmit / DL, MHz					
	B	EARFCN	M	EARFCN	T	EARFCN
5	871.5	2425	881.5	2525	891.5	2625

Bandwidth, MHz	Receive / UL, MHz					
	B	EARFCN	M	EARFCN	T	EARFCN
5	826.5	20425	836.5	20525	846.5	20625

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}
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3.5 EUT setup diagram

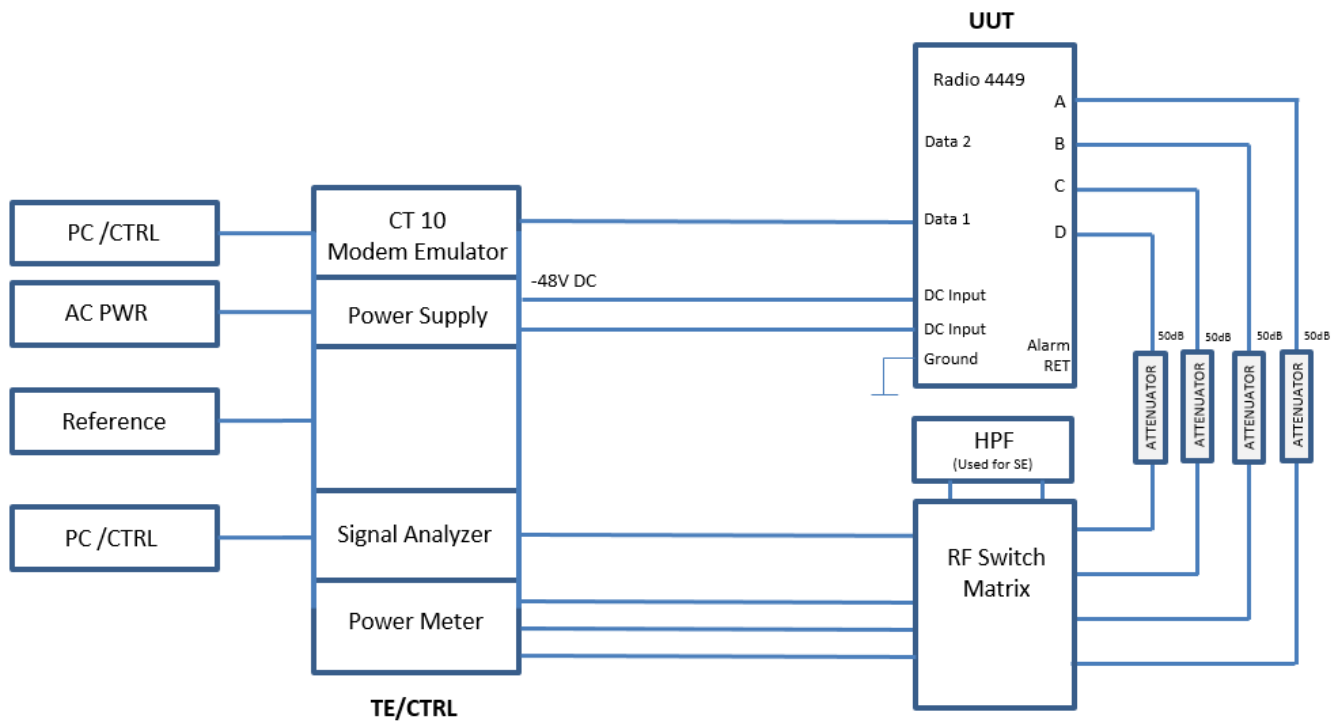


Figure 3.5-1: Setup diagram, conducted

3.6 Setup photographs

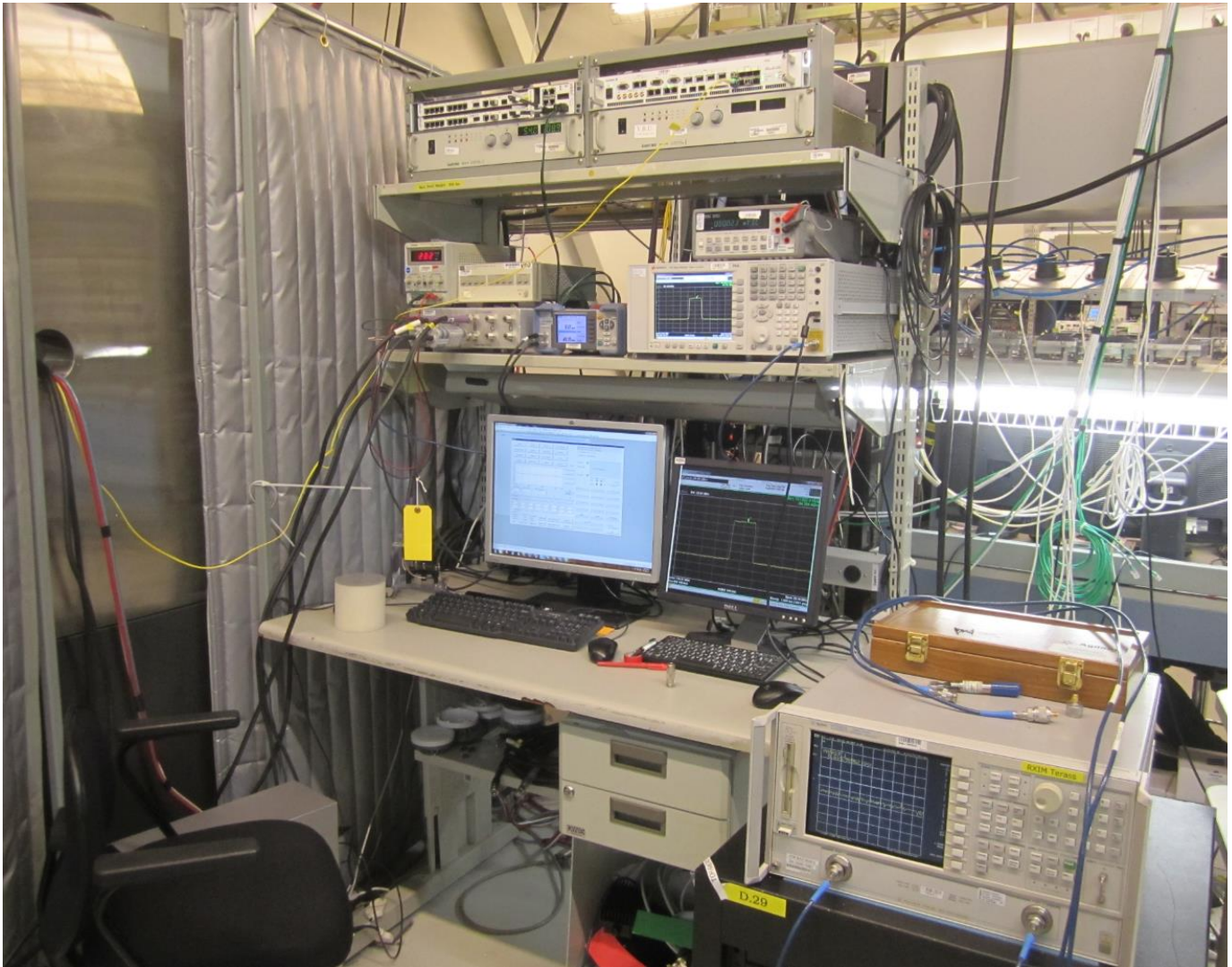


Figure 3.6-1: Test / Measurement Equipment - Set up for Radio Compliance Testing



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

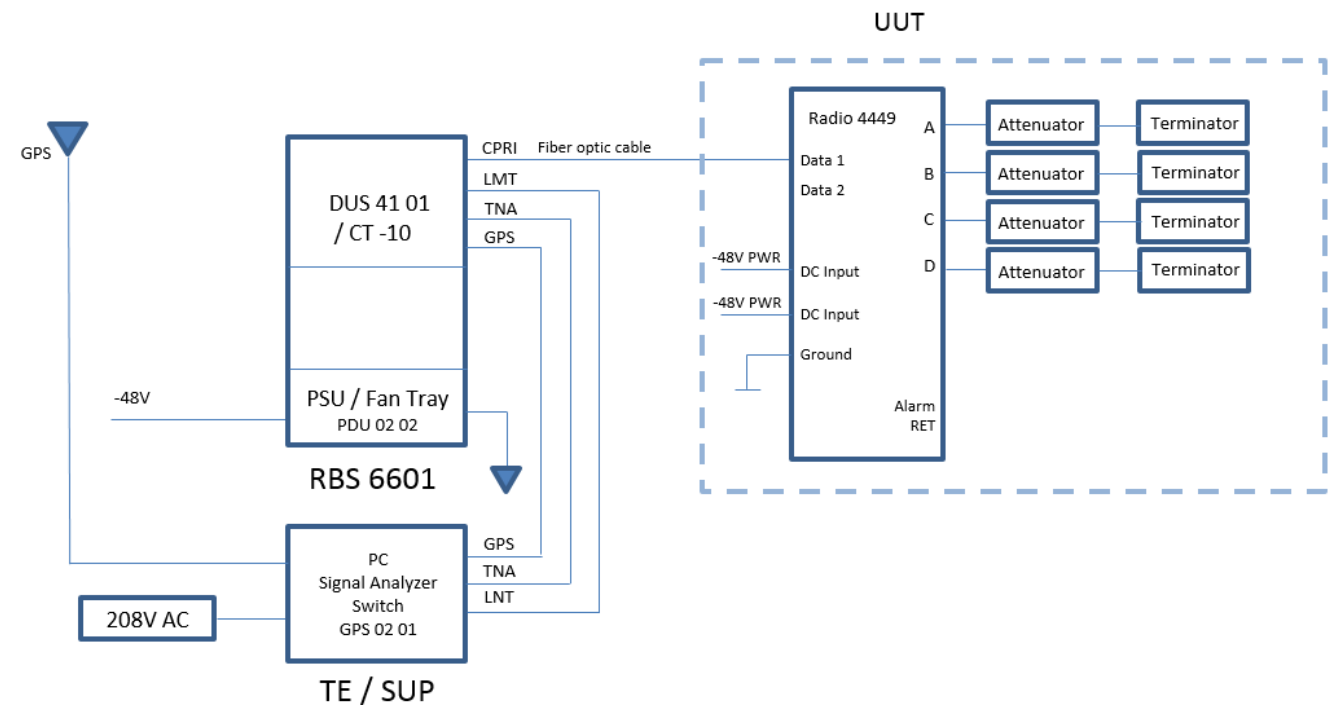


Figure 3.6-3: EUT Set-up diagram for Radiated Compliance Testing

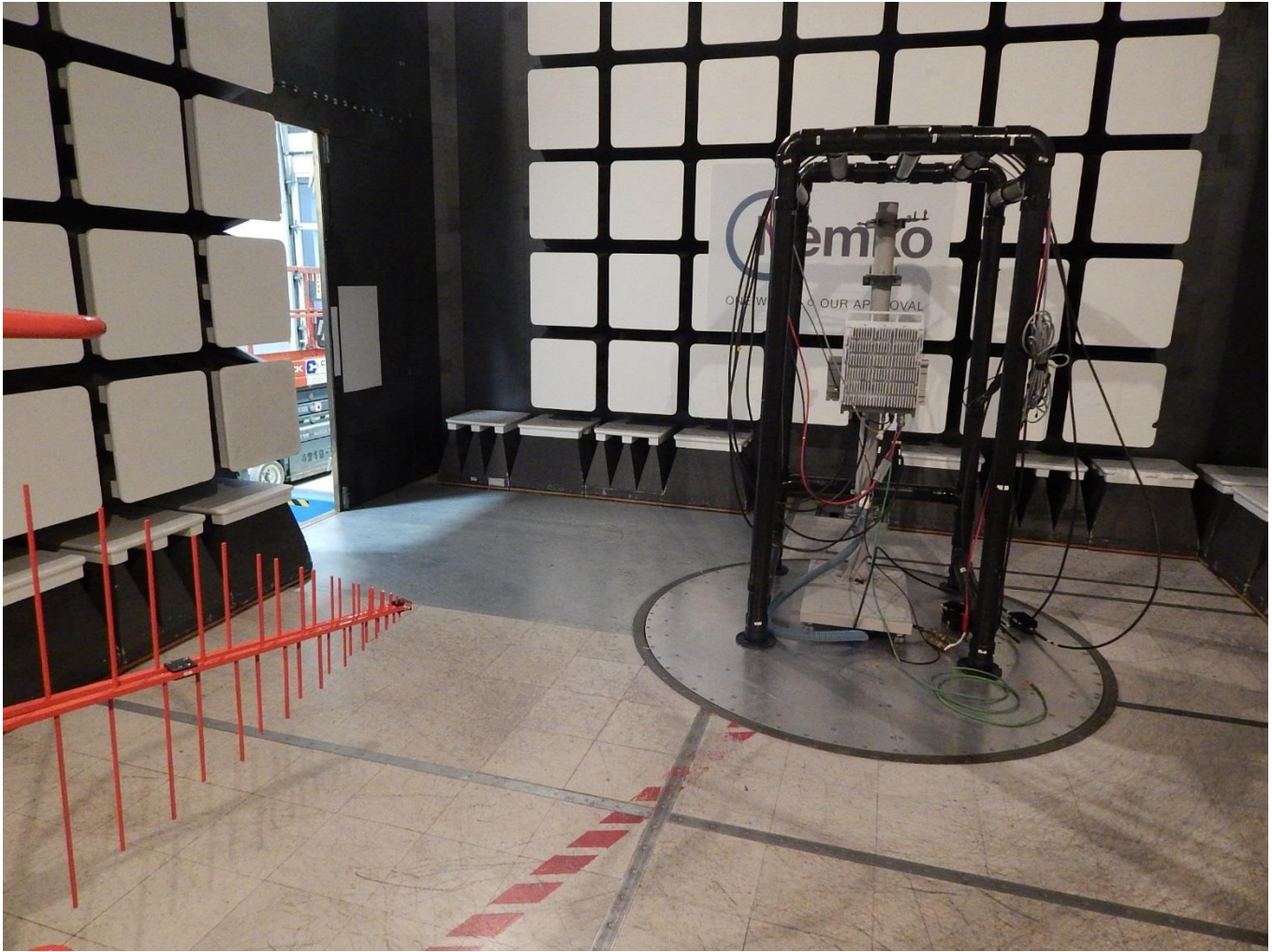


Figure 3.6-4: EUT Set-up for Radiated Compliance Testing

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

None

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 $\pm 5\%$, 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	Apr. 30/18
Spectrum Analyzer	Keysight	PXA N9030A	MY55410202	1-year	Sep. 30/18
Network Analyzer	Agilent	8722ES	US39175389	1-year	May 31/18
Power Meter	Rohde & Schwarz	NRP2	1144.1374K02-101123-ea	NCR	NCR
Power Sensor	Rohde & Schwarz	NRP-Z51	1138.0005.02-102838-bR	2-year	Aug. 23/18
Power Sensor	Rohde & Schwarz	NRP-Z51	1138.0005.02.102476-Fg	2-year	May 11/19
Power Sensor	Rohde & Schwarz	NRP-8S	1419.0006K02-101657-As	2-year	Feb. 11/18
Power Sensor	Rohde & Schwarz	NRP-8S	1419.0006K02-101651-Cw	2-year	Feb. 10/18
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 (10dB)	Weinschel	WA-48-10-43-LIM	A1993	NCR	NCR
Attenuator (10dB)	Weinschel	WA-48-10-43-LIM	A1992	NCR	NCR
Attenuator (30dB)	Weinschel	WA-48-30-33-LIM	A1998	NCR	NCR
Attenuator (30dB)	Weinschel	WA-48-30-33-LIM	A1995	NCR	NCR
Attenuator (30dB)	Weinschel	WA-48-30-33-LIM	A1997	NCR	NCR
Attenuator (30dB)	Weinschel	48-30-43	BJ6051	NCR	NCR
Attenuator	MCE/Weinschel	57-40-43	MX198	NCR	NCR
RF Switch	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	Sep 13/18
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	Chenwa	2700M-10k	FA002716	NCR	NCR
Receiver/spectrum analyzer	Rohde & Schwarz	ESU 26	FA002043	1-year	Jan. 31/18
Bilog antenna (20–3000 MHz)	Sunol	JB3	FA002108	1-year	Jun. 27/18
Horn antenna (1–18 GHz)	EMCO	3115	FA000825	1-year	Jun. 21/18
Preamp (1–18 GHz)	ETS-Lindgren	124334	FA002877	1-year	Nov. 14/18

Note: NCR - no calibration required

Section 8. Testing data

8.1 FCC 27.50(b) Maximum output power at RF antenna connector

8.1.1 Definitions and limits

- (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.
- (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.
- (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

8.1.2 Test summary

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

8.1.3 Observations, settings and special notes

Based on the maximum RF power listed in this report, considerations pertaining to the maximum allowed EIRP (or ERP) and antenna type should be considered for each installation.

Measurement was performed using RMS power meter.

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.

8.1.4 Test data

Table 8.1-1: Output power measurement results for SISO operation (Configuration 1)

Remarks	Frequency, MHz	RF output power, W	RF output power, dBm
Antenna A, QPSK	751.0	39.084	45.92
Antenna B, QPSK	751.0	37.844	45.78
Antenna C, QPSK	751.0	36.559	45.63
Antenna D, QPSK	751.0	38.726	45.88
Antenna A, 16QAM	751.0	38.994	45.91
Antenna B, 16QAM	751.0	37.931	45.79
Antenna C, 16QAM	751.0	36.728	45.65
Antenna D, 16QAM	751.0	38.548	45.86
Antenna A, 64QAM	751.0	36.224	45.59
Antenna B, 64QAM	751.0	38.107	45.81
Antenna C, 64QAM	751.0	36.728	45.65
Antenna D, 64QAM	751.0	38.459	45.85
Antenna A, 256QAM	751.0	38.107	45.81
Antenna B, 256QAM	751.0	38.107	45.81
Antenna C, 256QAM	751.0	36.559	45.63
Antenna D, 256QAM	751.0	38.371	45.84

Table 8.1-2: Power spectral density measurement results for SISO operation (Configuration 1)

Remarks	Frequency, MHz	RF power density, dBm/MHz
Antenna A, QPSK	751.0	35.02
Antenna B, QPSK	751.0	36.04
Antenna C, QPSK	751.0	36.63
Antenna D, QPSK	751.0	36.58

Table 8.1-3: Output power measurement results for MIMO operation (Configuration 1)

Remarks	Frequency, MHz	RF output power port A, dBm	RF output power port B, dBm	RF output power port C, dBm	RF output power port D, dBm	Total output power, dBm
QPSK	751.0	45.92	45.78	45.63	45.88	51.82
16QAM	751.0	45.91	45.79	45.65	45.86	51.82
64QAM	751.0	45.59	45.81	45.65	45.85	51.75
256QAM	751.0	45.81	45.81	45.63	45.84	51.79

Table 8.1-4: Power spectral density measurement results for MIMO operation (Configuration 1)

Remarks	Frequency, MHz	RF power density port A, dBm/MHz	RF power density port B, dBm/MHz	RF power density port C, dBm/MHz	RF power density port D, dBm/MHz	Total power density, dBm/MHz
QPSK	751.0	35.02	36.04	36.63	36.58	42.13

Table 8.1-5: Output power measurement results for multi-band operation (Configuration 1)

Remarks	Frequency, MHz	RF output power port A, dBm	RF output power port B, dBm	RF output power port C, dBm	RF output power port D, dBm	Total output power, dBm
B13 + B5 at low channel	871.5	48.54	48.56	48.64	48.53	54.59
B13 + B5 at mid channel	881.5	48.47	48.62	48.65	48.53	54.59
B13 + B5 at high channel	891.5	48.42	48.56	48.65	48.50	54.55

Table 8.1-6: Output power measurement results for SISO operation (Configuration 2)

Remarks	Frequency, MHz	RF output power, W	RF output power, dBm
Antenna A, QPSK	751.0	63.387	48.02
Antenna D, QPSK	751.0	63.096	48.00
Antenna A, 16QAM	751.0	63.533	48.03
Antenna D, 16QAM	751.0	63.096	48.00
Antenna A, 64QAM	751.0	63.387	48.02
Antenna D, 64QAM	751.0	63.241	48.01
Antenna A, 256QAM	751.0	63.533	48.03
Antenna D, 256QAM	751.0	63.096	48.00

Table 8.1-7: Power spectral density measurement results for SISO operation (Configuration 2)

Remarks	Frequency, MHz	RF power density, dBm/MHz
Antenna A, QPSK	751.0	38.41
Antenna D, QPSK	751.0	37.58

Table 8.1-8: Output power measurement results for MIMO operation (Configuration 2)

Remarks	Frequency, MHz	RF output power port A, dBm	RF output power port D, dBm	Total output power, dBm
QPSK	751.0	48.02	48.00	51.02
16QAM	751.0	48.03	48.00	51.03
64QAM	751.0	48.02	48.01	51.03
256QAM	751.0	48.03	48.00	51.03

Table 8.1-9: Power spectral density measurement results for MIMO operation (Configuration 2)

Remarks	Frequency, MHz	RF power density port A, dBm/MHz	RF power density port D, dBm/MHz	Total power density, dBm/MHz
QPSK	751.0	38.41	37.58	41.03

Table 8.1-10: Output power measurement results for multi-band operation (Configuration 2)

Remarks	Frequency, MHz	RF output power port A, dBm	RF output power port D, dBm	Total output power, dBm
B13 + B5 at low channel	871.5	50.98	50.97	53.99
B13 + B5 at mid channel	881.5	50.89	50.95	53.93
B13 + B5 at high channel	891.5	50.86	50.93	53.91

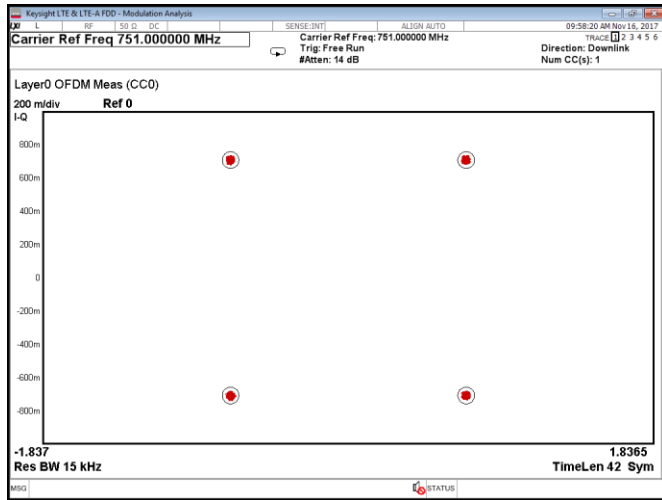


Figure 8.1-1: Modulation characteristics, QPSK

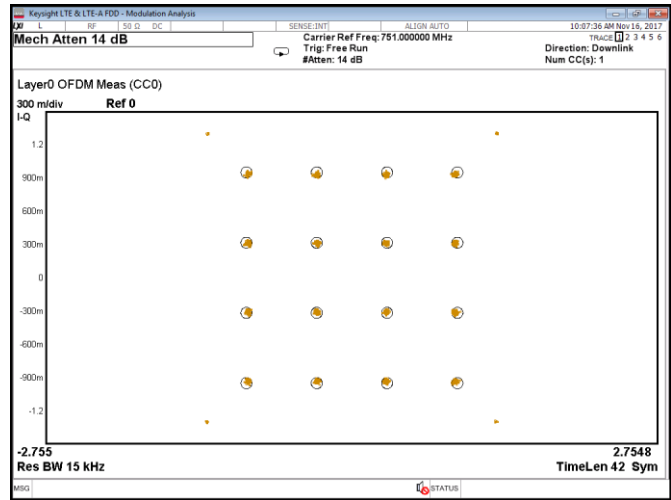


Figure 8.1-2: Modulation characteristics, 16QAM

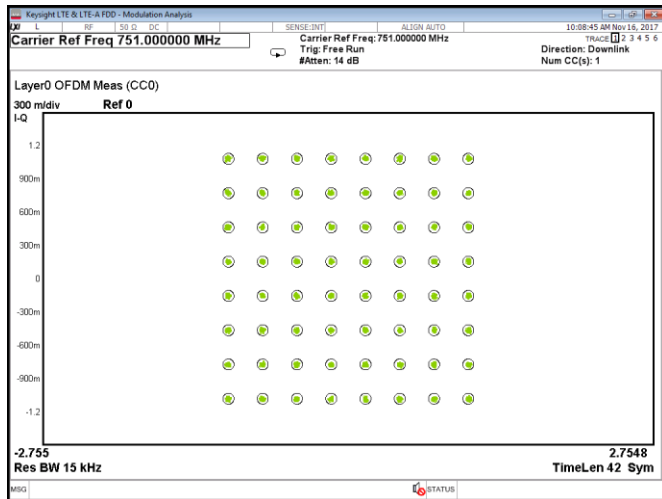


Figure 8.1-3: Modulation characteristics, 64QAM

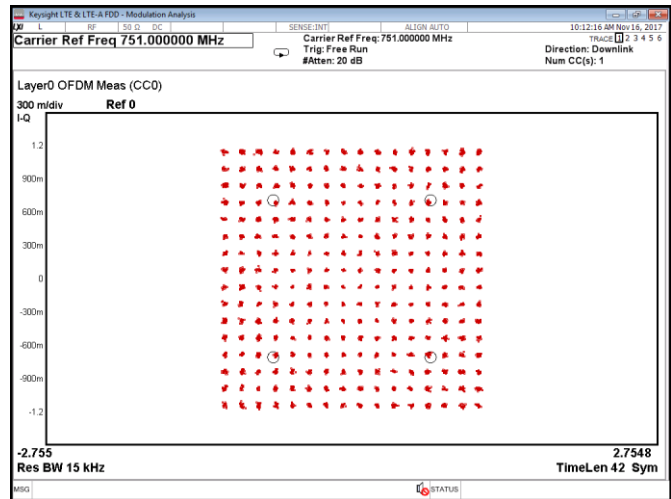


Figure 8.1-4: Modulation characteristics, 256QAM

Table 8.1-11: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results (Configuration 1)

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
Antenna A	751.0	8.33	13.00	4.67
Antenna B	751.0	7.29	13.00	5.71
Antenna C	751.0	7.08	13.00	5.92
Antenna D	751.0	8.23	13.00	4.77

Table 8.1-12: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results (Configuration 2)

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
Antenna A	751.0	7.29	13.00	5.71
Antenna D	751.0	7.29	13.00	5.71

Section 8
Test name
Specification

Testing data
 FCC 27.50(b) Maximum output power at RF antenna connector
 FCC Part 27

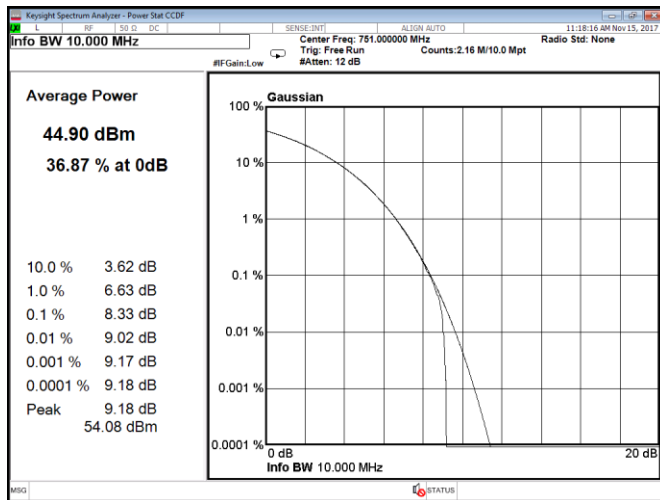


Figure 8.1-5: CCDF, QPSK, Port A, configuration 1

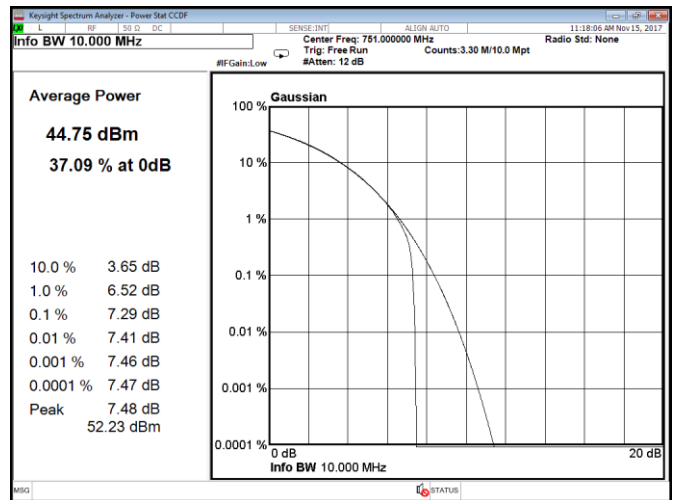


Figure 8.1-6: CCDF, QPSK, Port B, configuration 1

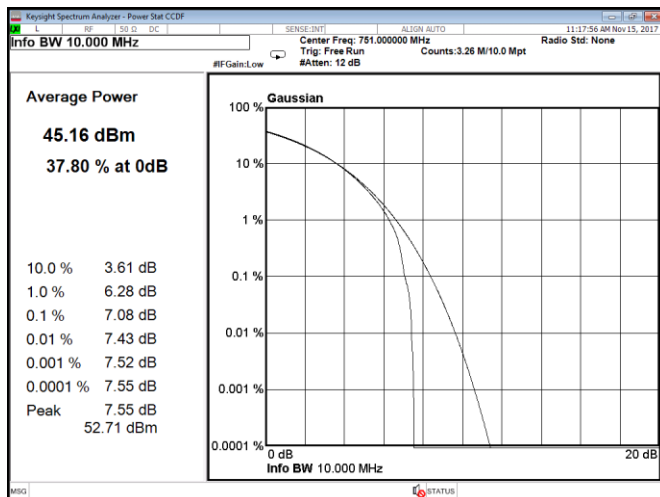


Figure 8.1-7: CCDF, QPSK, Port C, configuration 1

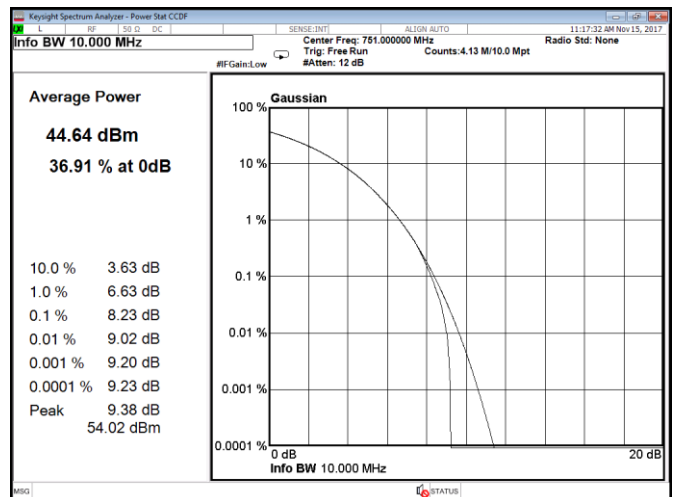


Figure 8.1-8: CCDF, QPSK, Port D, configuration 1

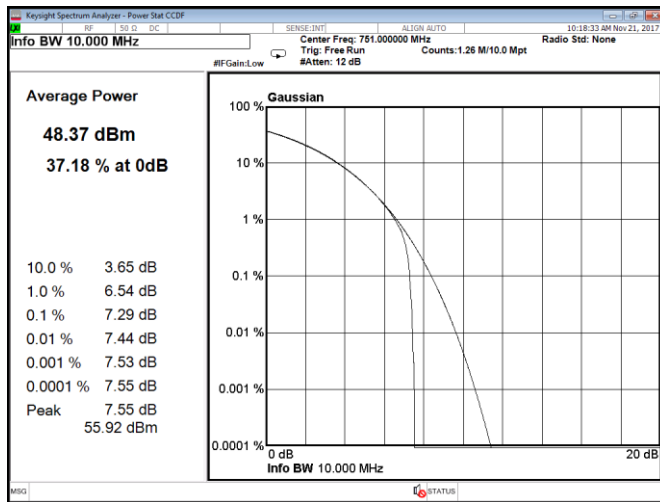


Figure 8.1-9: CCDF, QPSK, Port A, configuration 2

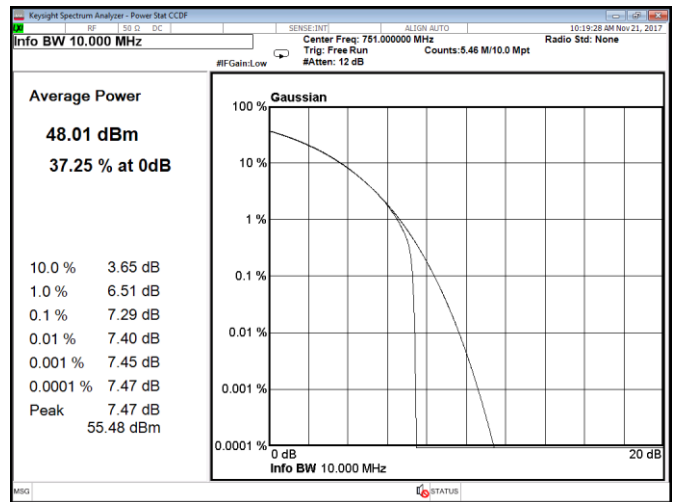


Figure 8.1-10: CCDF, QPSK, Port D, configuration 2

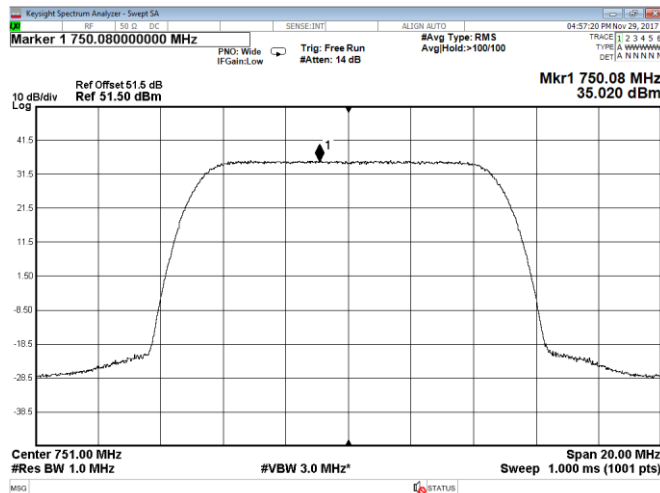


Figure 8.1-11: Power spectral density, QPSK, Port A, configuration 1

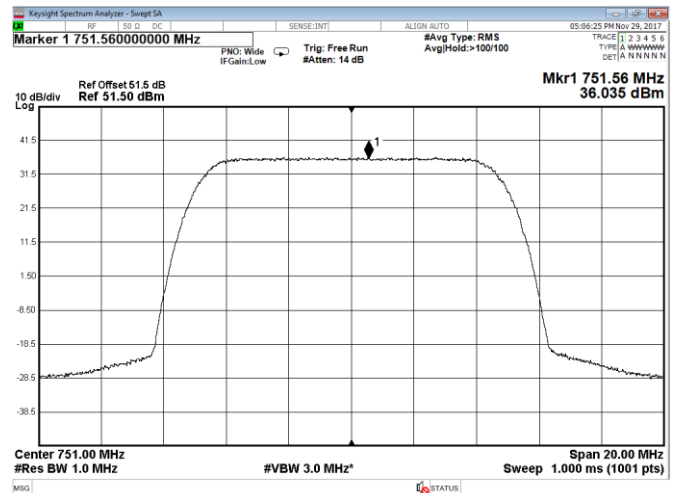


Figure 8.1-12: Power spectral density, QPSK, Port B, configuration 1

Section 8
Test name
Specification

Testing data
 FCC 27.50(b) Maximum output power at RF antenna connector
 FCC Part 27

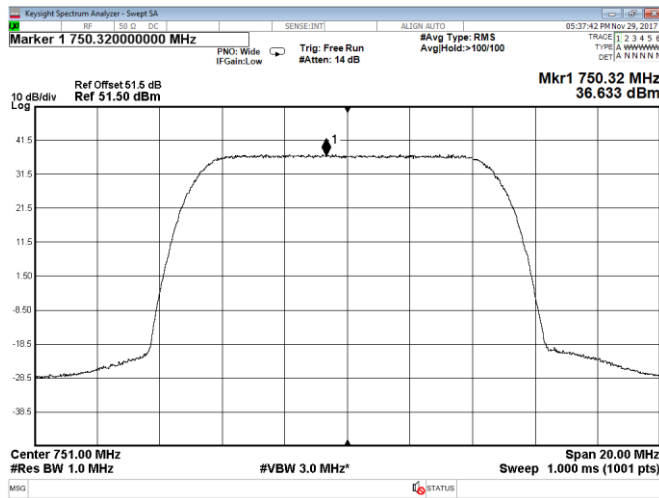


Figure 8.1-13: Power spectral density, QPSK, Port C, configuration 1

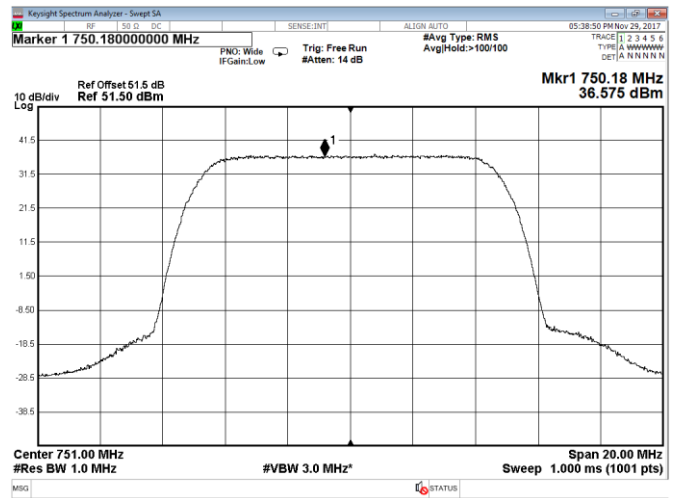


Figure 8.1-14: Power spectral density, QPSK, Port D, configuration 1

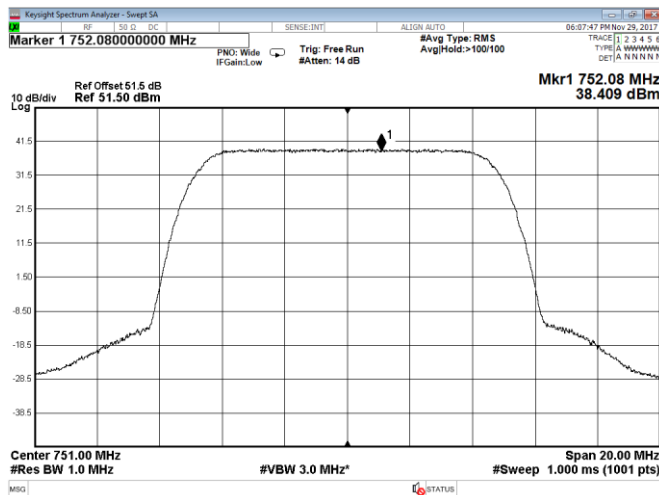


Figure 8.1-15: Power spectral density, QPSK, Port A, configuration 2

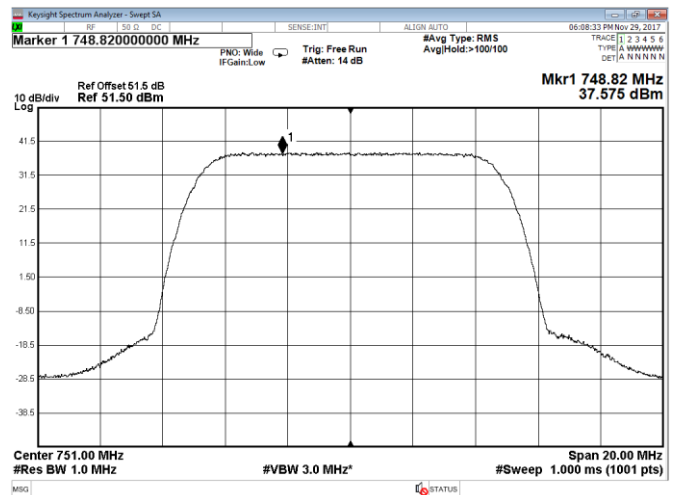


Figure 8.1-16: Power spectral density, QPSK, Port D, configuration 2

8.2 FCC 22.913(a) Maximum ERP

8.2.1 Definitions and limits

Licensees in the Cellular Radiotelephone Service are subject to the effective radiated power (ERP) limits and other requirements in this Section. See also §22.169.

(a) Maximum ERP. The ERP of transmitters in the Cellular Radiotelephone Service must not exceed the limits in this section.

(1) Except as described in paragraphs (a)(2), (3), and (4) of this section, the ERP of base stations and repeaters must not exceed—

(i) 500 watts per emission; or

(ii) 400 watts/MHz (PSD) per sector.

(2) Except as described in paragraphs (a)(3) and (4) of this section, for systems operating in areas more than 72 kilometers (45 miles) from international borders that:

(i) Are located in counties with population densities of 100 persons or fewer per square mile, based upon the most recently available population statistics from the Bureau of the Census; or

(ii) Extend coverage into Unserved Area on a secondary basis (see §22.949), the ERP of base transmitters and repeaters must not exceed—

(A) 1000 watts per emission; or

(B) 800 watts/MHz (PSD) per sector.

(3) Provided that they also comply with paragraphs (b) and (c) of this section, licensees are permitted to operate their base transmitters and repeaters with an ERP greater than 400 watts/MHz (PSD) per sector, up to a maximum ERP of 1000 watts/MHz (PSD) per sector unless they meet the conditions in paragraph (a)(4) of this section.

(4) Provided that they also comply with paragraphs (b) and (c) of this section, licensees of systems operating in areas more than 72 kilometers (45 miles) from international borders that:

(i) Are located in counties with population densities of 100 persons or fewer per square mile, based upon the most recently available population statistics from the Bureau of the Census; or

(ii) Extend coverage into Unserved Area on a secondary basis (see §22.949), are permitted to operate base transmitters and repeaters with an ERP greater than 800 watts/MHz (PSD) per sector, up to a maximum of 2000 watts/MHz (PSD) per sector.

8.2.2 Test summary

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

8.2.3 Observations, settings and special notes

Based on the maximum RF power listed in this report, considerations pertaining to the maximum allowed EIRP and antenna type should be considered for each installation.

Measurement was performed using RMS power meter.

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.

8.2.4 Test data

Table 8.2-1: Output power measurement results for SISO operation (Configuration 1)

Remarks	Frequency, MHz	RF output power, W	RF output power, dBm
Antenna A, QPSK, low channel	871.5	36.813	45.66
Antenna B, QPSK, low channel	871.5	37.068	45.69
Antenna C, QPSK, low channel	871.5	36.813	45.66
Antenna D, QPSK, low channel	871.5	37.670	45.76
Antenna A, 16QAM, low channel	871.5	37.670	45.76
Antenna B, 16QAM, low channel	871.5	37.411	45.73
Antenna C, 16QAM, low channel	871.5	36.983	45.68
Antenna D, 16QAM, low channel	871.5	37.931	45.79
Antenna A, 64QAM, low channel	871.5	38.994	45.91
Antenna B, 64QAM, low channel	871.5	37.068	45.69
Antenna C, 64QAM, low channel	871.5	36.983	45.68
Antenna D, 64QAM, low channel	871.5	37.497	45.74
Antenna A, 256QAM, low channel	871.5	37.497	45.74
Antenna B, 256QAM, low channel	871.5	36.983	45.68
Antenna C, 256QAM, low channel	871.5	36.813	45.66
Antenna D, 256QAM, low channel	871.5	37.497	45.74
Antenna A, QPSK, mid channel	881.5	36.141	45.58
Antenna B, QPSK, mid channel	881.5	37.931	45.79
Antenna C, QPSK, mid channel	881.5	36.813	45.66
Antenna D, QPSK, mid channel	881.5	37.154	45.70
Antenna A, QPSK, high channel	891.5	35.645	45.52
Antenna B, QPSK, high channel	891.5	37.239	45.71
Antenna C, QPSK, high channel	891.5	36.475	45.62
Antenna D, QPSK, high channel	891.5	36.898	45.67

Table 8.2-2: Power spectral density measurement results for SISO operation (Configuration 1)

Remarks	Frequency, MHz	RF power density, dBm/MHz
Antenna A, QPSK, low channel	871.5	40.36
Antenna B, QPSK, low channel	871.5	38.85
Antenna C, QPSK, low channel	871.5	39.65
Antenna D, QPSK, low channel	871.5	39.58
Antenna A, QPSK, mid channel	881.5	39.62
Antenna B, QPSK, mid channel	881.5	39.13
Antenna C, QPSK, mid channel	881.5	39.10
Antenna D, QPSK, mid channel	881.5	39.54
Antenna A, QPSK, high channel	891.5	39.72
Antenna B, QPSK, high channel	891.5	38.83
Antenna C, QPSK, high channel	891.5	39.59
Antenna D, QPSK, high channel	891.5	39.37

Table 8.2-3: Output power measurement results for MIMO operation (Configuration 1)

Remarks	Frequency, MHz	RF output power port A, dBm	RF output power port B, dBm	RF output power port C, dBm	RF output power port D, dBm	Total output power, dBm
QPSK, low channel	871.5	45.66	45.69	45.66	45.76	51.71
16QAM, low channel	871.5	45.76	45.73	45.68	45.79	51.76
64QAM, low channel	871.5	45.91	45.69	45.68	45.74	51.78
256QAM, low channel	871.5	45.74	45.68	45.66	45.74	51.73
QPSK, mid channel	881.5	45.58	45.79	45.66	45.70	51.70
QPSK, high channel	891.5	45.52	45.71	45.62	45.67	51.65

Table 8.2-4: Power spectral density measurement results for MIMO operation (Configuration 1)

Remarks	Frequency, MHz	RF power density port A, dBm/MHz	RF power density port B, dBm/MHz	RF power density port C, dBm/MHz	RF power density port D, dBm/MHz	Total RF power density, dBm/MHz
QPSK, low channel	871.5	40.36	38.85	39.65	39.58	45.66
QPSK, mid channel	881.5	39.62	39.13	39.10	39.54	45.37
QPSK, high channel	891.5	39.72	38.83	39.59	39.37	45.41

Table 8.2-5: Output power measurement results for multi-band operation (Configuration 1)

Remarks	Frequency, MHz	RF output power port A, dBm	RF output power port B, dBm	RF output power port C, dBm	RF output power port D, dBm	Total output power, dBm
B13 + B5 at low channel	871.5	48.54	48.56	48.64	48.53	54.59
B13 + B5 at mid channel	881.5	48.47	48.62	48.65	48.53	54.59
B13 + B5 at high channel	891.5	48.42	48.56	48.65	48.50	54.55

Table 8.2-6: Output power measurement results for SISO operation (Configuration 2)

Remarks	Frequency, MHz	RF output power, W	RF output power, dBm
Antenna A, QPSK, low channel	871.5	61.376	47.88
Antenna D, QPSK, low channel	871.5	62.087	47.93
Antenna A, 16QAM, low channel	871.5	61.376	47.88
Antenna D, 16QAM, low channel	871.5	62.230	47.94
Antenna A, 64QAM, low channel	871.5	61.376	47.88
Antenna D, 64QAM, low channel	871.5	62.373	47.95
Antenna A, 256QAM, low channel	871.5	61.235	47.87
Antenna D, 256QAM, low channel	871.5	62.230	47.94
Antenna A, QPSK, mid channel	881.5	59.020	47.71
Antenna D, QPSK, mid channel	881.5	61.802	47.91
Antenna A, QPSK, high channel	891.5	57.943	47.63
Antenna D, QPSK, high channel	891.5	61.376	47.88

Table 8.2-7: Power spectral density measurement results for SISO operation (Configuration 2)

Remarks	Frequency, MHz	RF power density, dBm/MHz
Antenna A, QPSK, low channel	871.5	41.81
Antenna D, QPSK, low channel	871.5	40.73
Antenna A, QPSK, mid channel	881.5	41.33
Antenna D, QPSK, mid channel	881.5	40.89
Antenna A, QPSK, high channel	891.5	41.29
Antenna D, QPSK, high channel	891.5	41.25

Table 8.2-8: Output power measurement results for MIMO operation (Configuration 2)

Remarks	Frequency, MHz	RF output power port A, dBm	RF output power port D, dBm	Total output power, dBm
QPSK, low channel	871.5	47.88	47.93	50.92
16QAM, low channel	871.5	47.88	47.94	50.92
64QAM, low channel	871.5	47.88	47.95	50.93
256QAM, low channel	871.5	47.87	47.94	50.92
QPSK, mid channel	881.5	47.71	47.91	50.82
QPSK, high channel	891.5	47.63	47.88	50.77

Table 8.2-9: Output power measurement results for multi-band operation (Configuration 2)

Remarks	Frequency, MHz	RF output power port A, dBm	RF output power port D, dBm	Total output power, dBm
B13 + B5 at low channel	871.5	50.98	50.97	53.99
B13 + B5 at mid channel	881.5	50.89	50.95	53.93
B13 + B5 at high channel	891.5	50.86	50.93	53.91

Table 8.2-10: Power spectral density measurement results for MIMO operation (Configuration 2)

Remarks	Frequency, MHz	RF power density port A, dBm/MHz	RF power density port D, dBm/MHz	Total power density, dBm/MHz
QPSK, low channel	871.5	41.81	40.73	44.31
QPSK, mid channel	881.5	41.33	40.89	44.13
QPSK, high channel	891.5	41.29	41.25	44.28

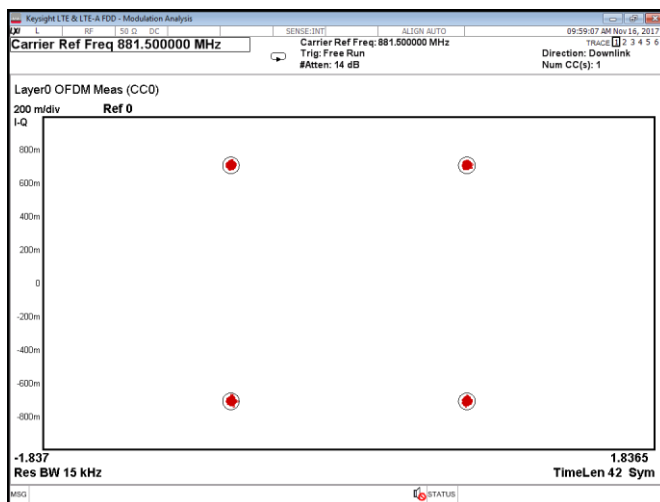


Figure 8.2-1: Modulation characteristics, QPSK

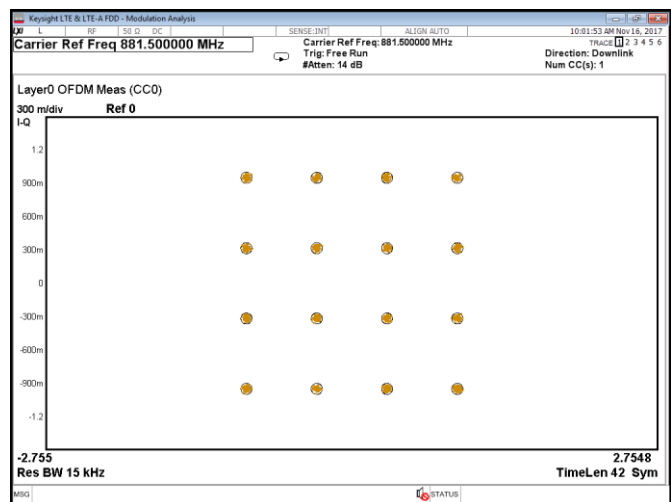


Figure 8.2-2: Modulation characteristics, 16QAM

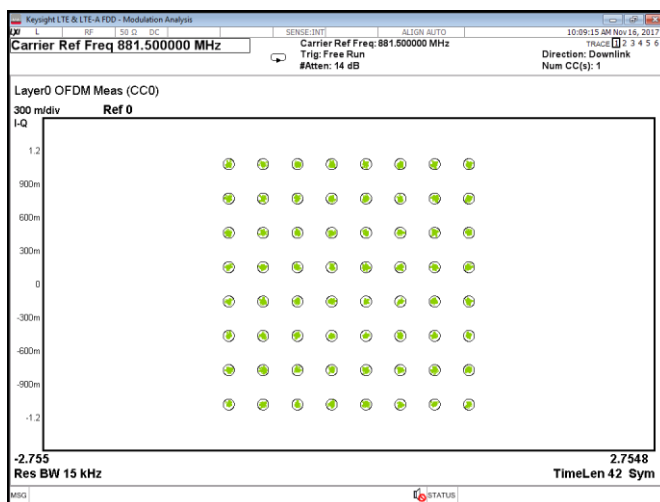


Figure 8.2-3: Modulation characteristics, 64QAM

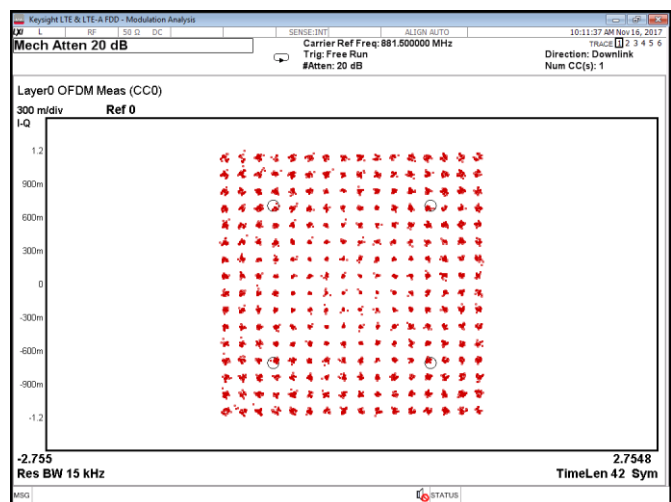


Figure 8.2-4: Modulation characteristics, 256QAM

Table 8.2-11: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results (Configuration 1)

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
Antenna A, low channel	871.5	8.27	13.00	4.73
Antenna B, low channel	871.5	7.32	13.00	5.68
Antenna C, low channel	871.5	7.34	13.00	5.66
Antenna D, low channel	871.5	8.36	13.00	4.64
Antenna A, mid channel	881.5	8.24	13.00	4.76
Antenna B, mid channel	881.5	7.29	13.00	5.71
Antenna C, mid channel	881.5	7.29	13.00	5.71
Antenna D, mid channel	881.5	8.39	13.00	4.61
Antenna A, high channel	891.5	8.23	13.00	4.77
Antenna B, high channel	891.5	7.35	13.00	5.65
Antenna C, high channel	891.5	7.32	13.00	5.68
Antenna D, high channel	891.5	8.32	13.00	4.68

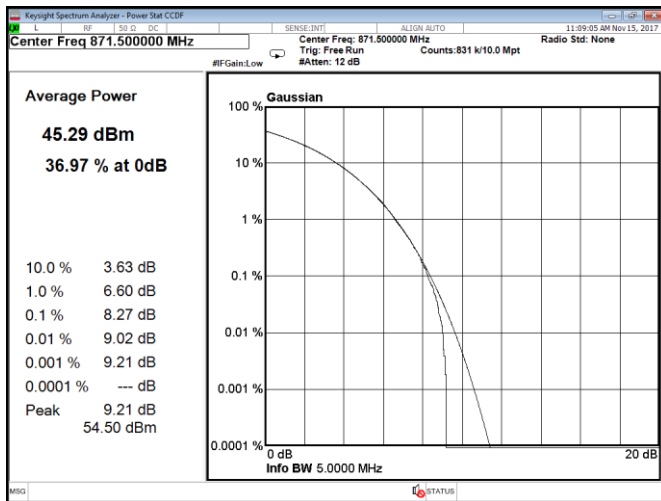


Figure 8.2-5: CCDF, QPSK, Port A, low channel, configuration 1

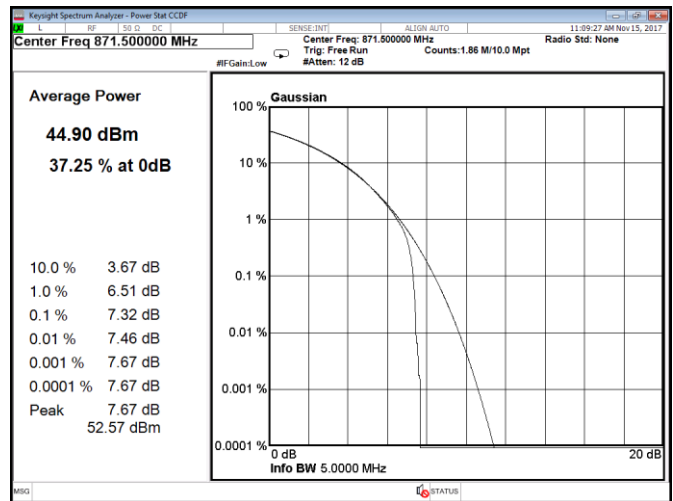


Figure 8.2-6: CCDF, QPSK, Port B, low channel, configuration 1

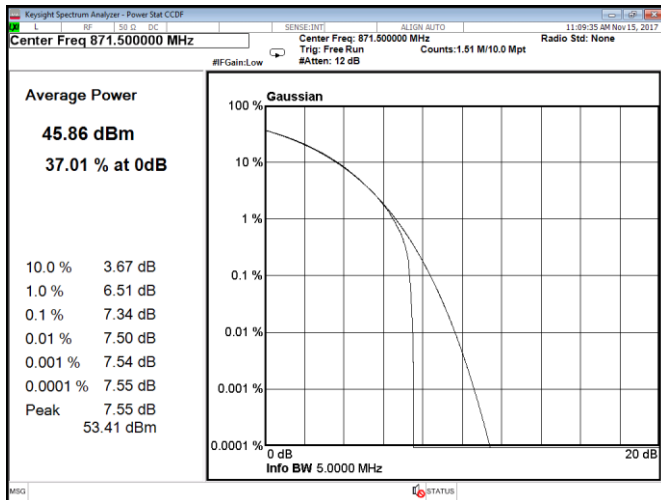


Figure 8.2-7: CCDF, QPSK, Port C, low channel, configuration 1

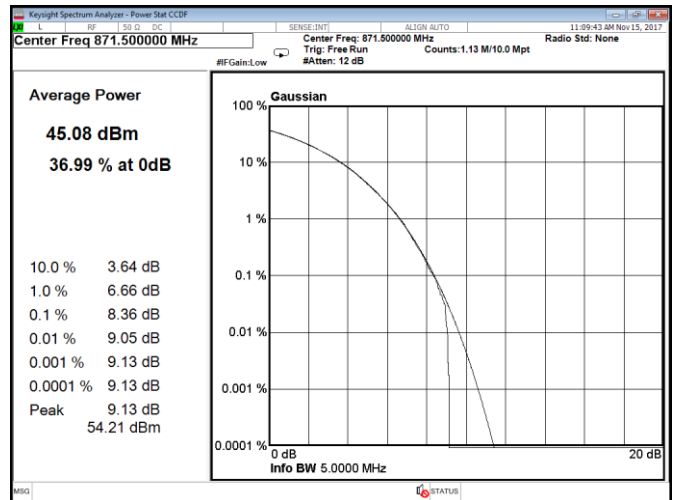


Figure 8.2-8: CCDF, QPSK, Port D, low channel, configuration 1

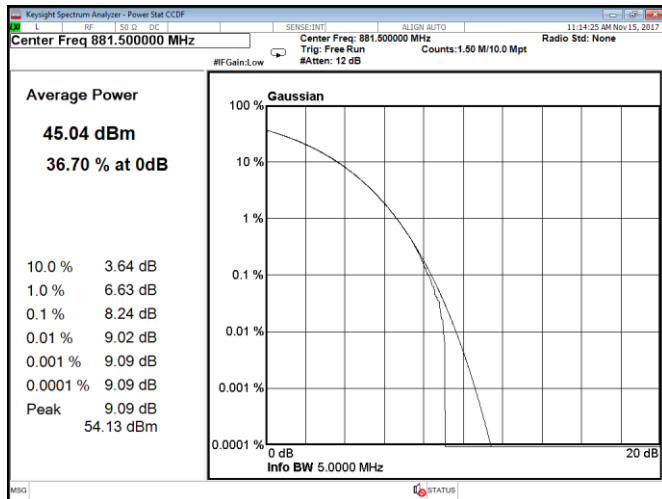


Figure 8.2-9: CCDF, QPSK, Port A, mid channel, configuration 1

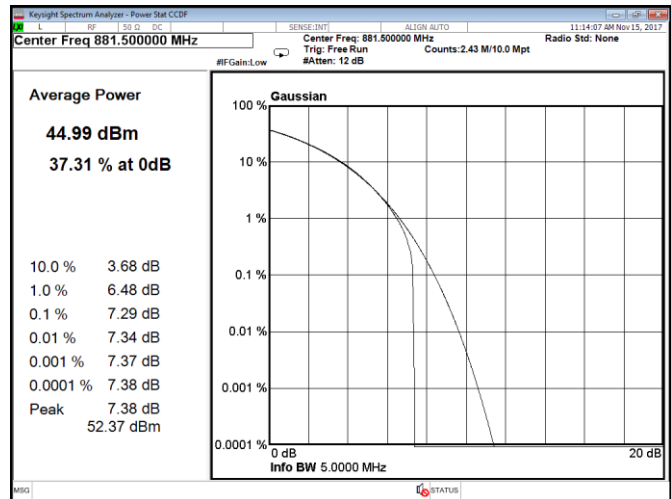


Figure 8.2-10: CCDF, QPSK, Port B, mid channel, configuration 1

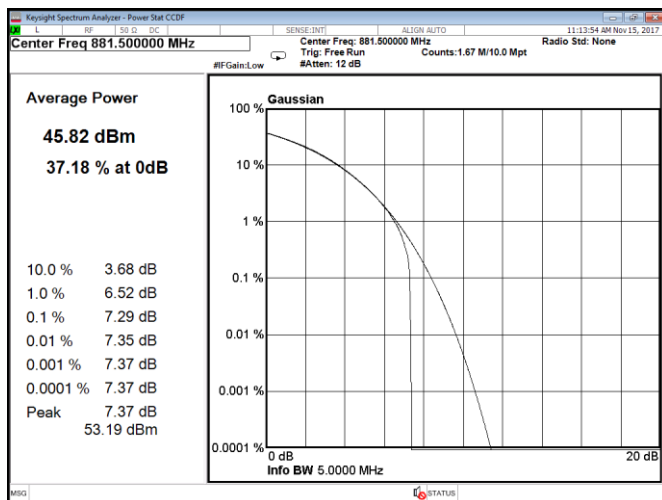


Figure 8.2-11: CCDF, QPSK, Port C, mid channel, configuration 1

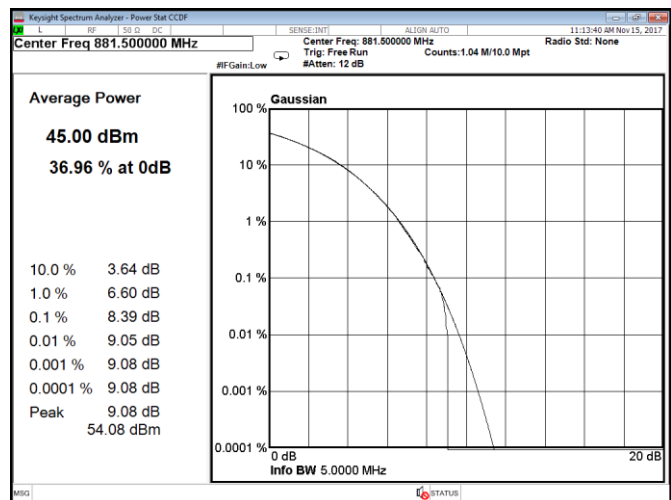


Figure 8.2-12: CCDF, QPSK, Port D, mid channel, configuration 1

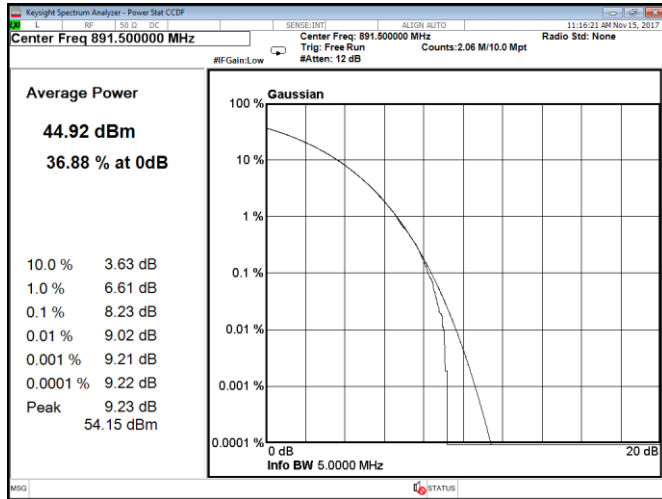


Figure 8.2-13: CCDF, QPSK, Port A, high channel, configuration 1

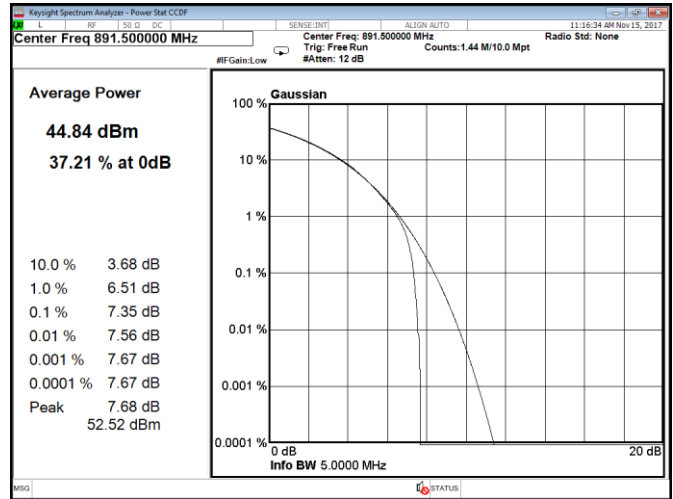


Figure 8.2-14: CCDF, QPSK, Port B, high channel, configuration 1

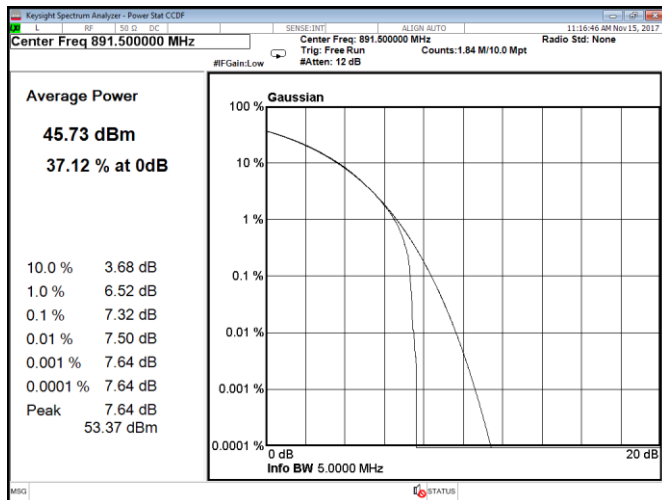


Figure 8.2-15: CCDF, QPSK, Port C, high channel, configuration 1

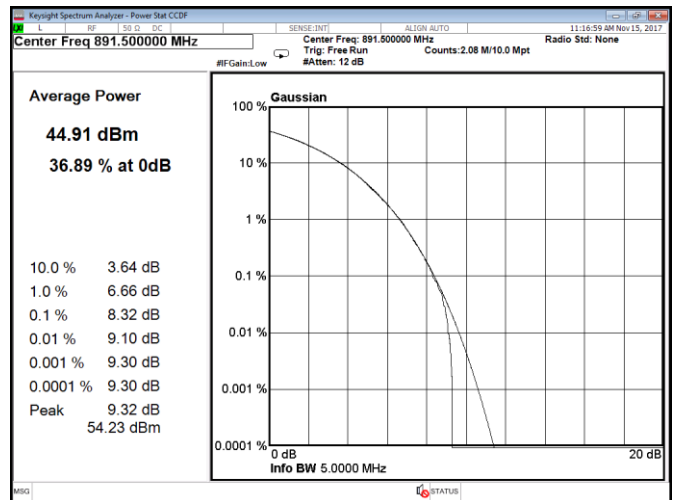


Figure 8.2-16: CCDF, QPSK, Port D, high channel, configuration 1

Table 8.2-12: Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results (Configuration 2)

Remarks	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
Antenna A, low channel	871.5	7.33	13.00	5.67
Antenna D, low channel	871.5	7.31	13.00	5.69
Antenna A, mid channel	881.5	7.28	13.00	5.72
Antenna D, mid channel	881.5	7.29	13.00	5.71
Antenna A, high channel	891.5	7.36	13.00	5.64
Antenna D, high channel	891.5	7.35	13.00	5.65

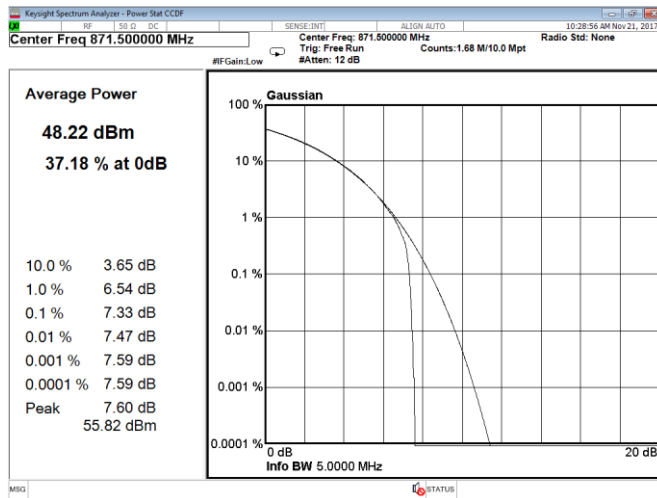


Figure 8.2-17: CCDF, QPSK, Port A, low channel, configuration 2

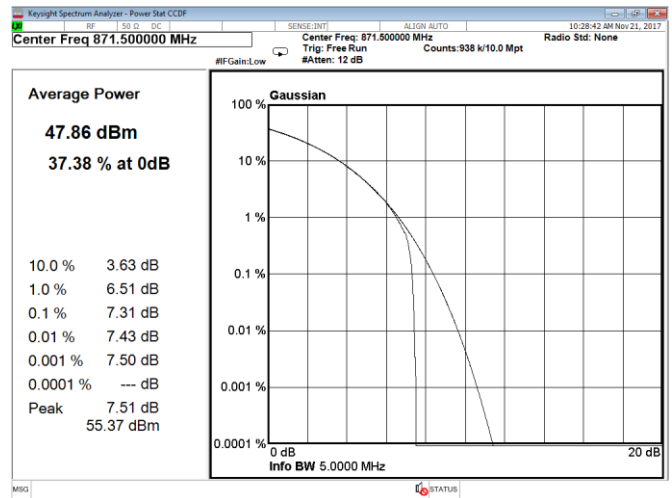


Figure 8.2-18: CCDF, QPSK, Port D, low channel, configuration 2

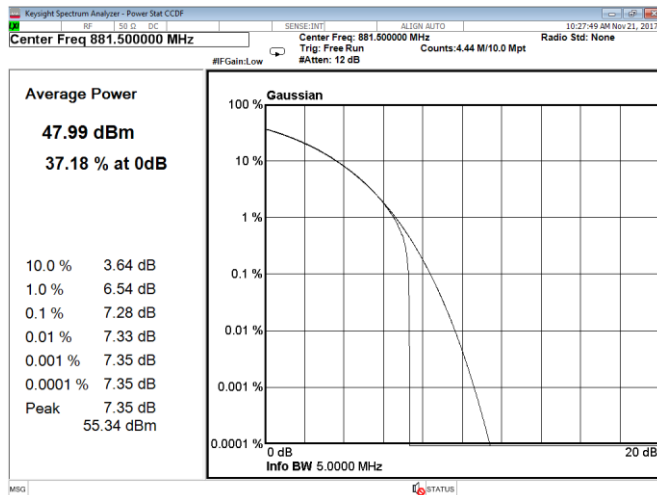


Figure 8.2-19: CCDF, QPSK, Port A, mid channel, configuration 2

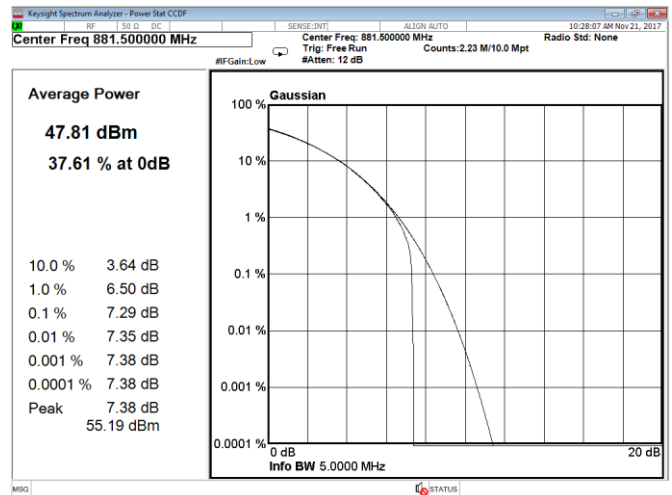


Figure 8.2-20: CCDF, QPSK, Port D, mid channel, configuration 2

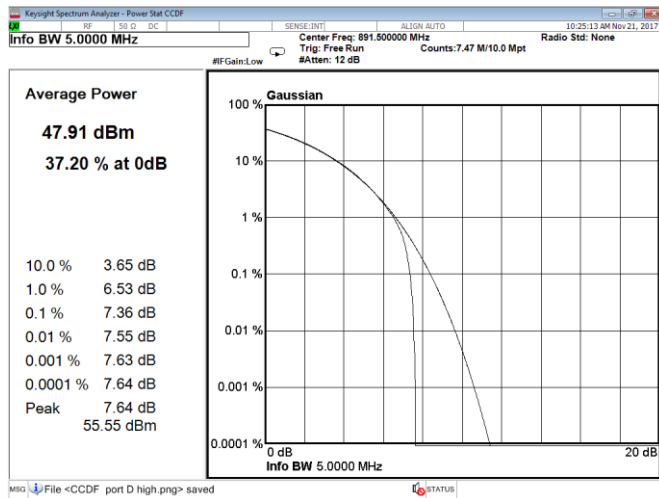


Figure 8.2-21: CCDF, QPSK, Port A, high channel, configuration 2

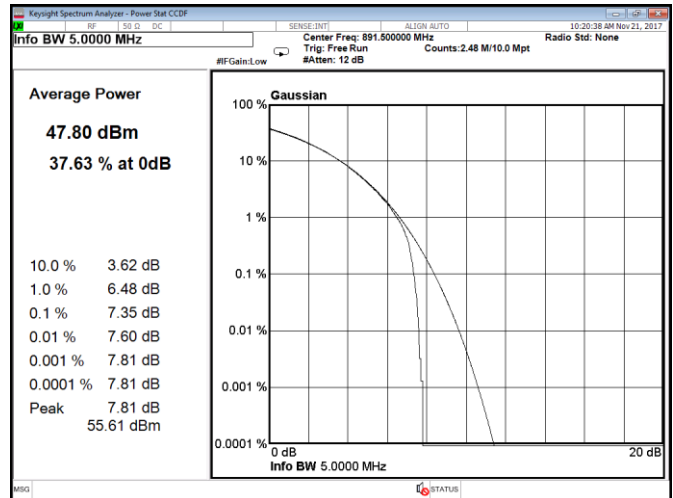


Figure 8.2-22: CCDF, QPSK, Port D, high channel, configuration 2

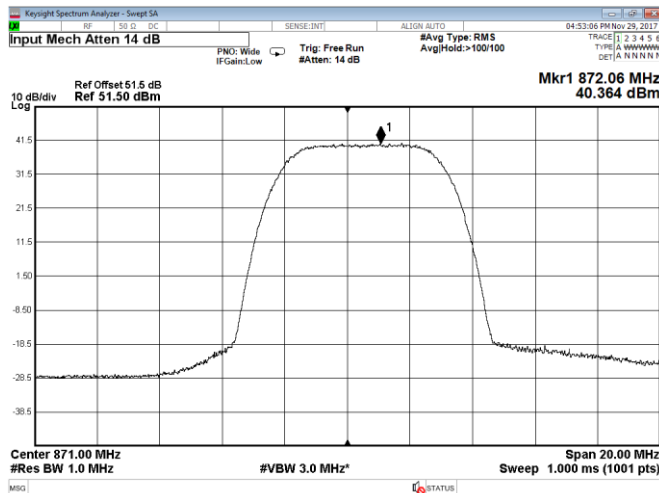


Figure 8.2-23: Power spectral density, QPSK, Port A, low channel, configuration 1

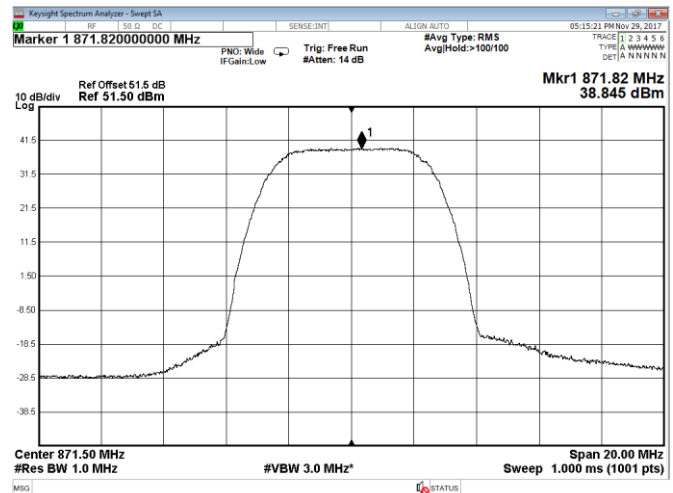


Figure 8.2-24: Power spectral density, QPSK, Port B, low channel, configuration 1

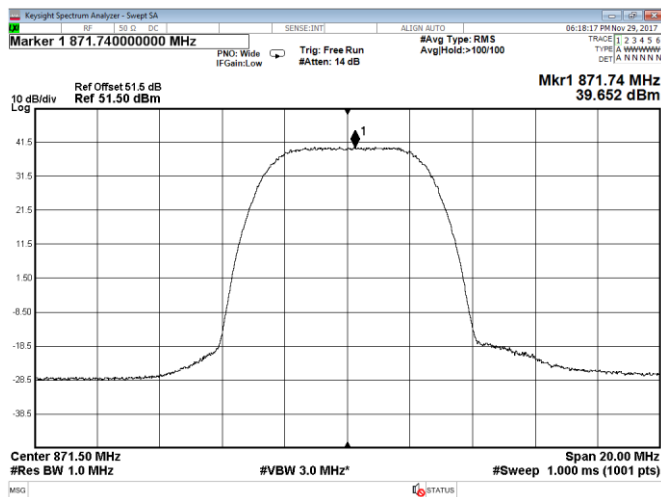


Figure 8.2-25: Power spectral density, QPSK, Port C, low channel, configuration 1

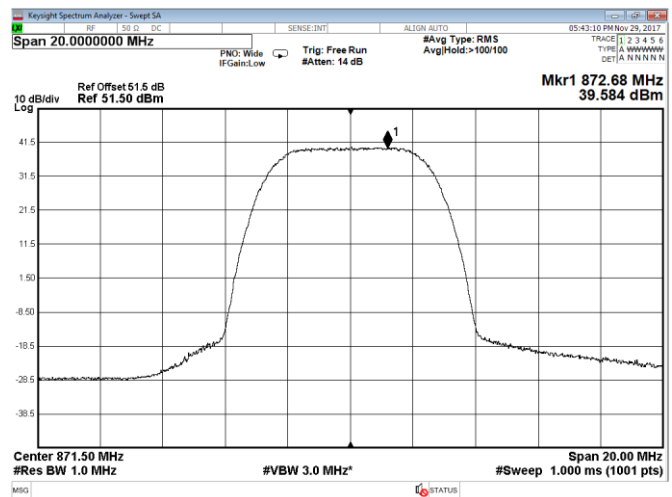


Figure 8.2-26: Power spectral density, QPSK, Port D, low channel, configuration 1

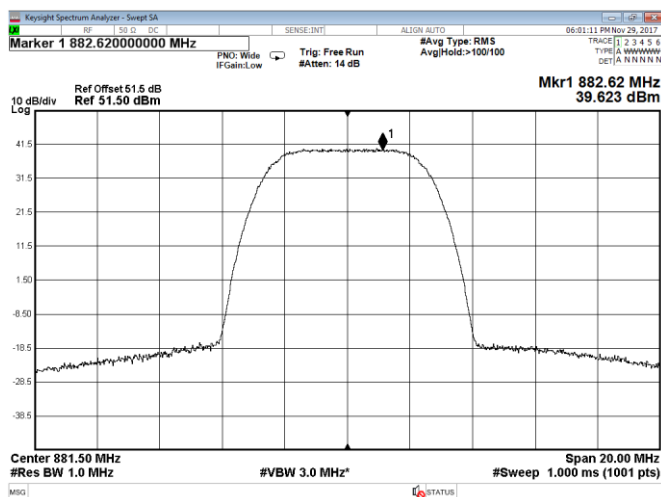


Figure 8.2-27: Power spectral density, QPSK, Port A, mid channel, configuration 1

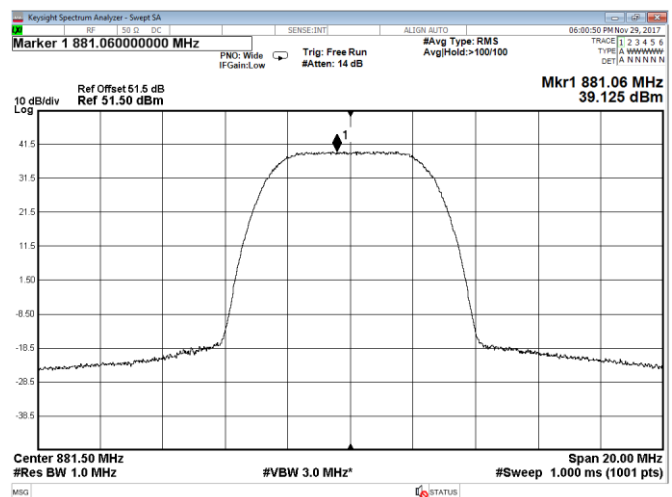


Figure 8.2-28: Power spectral density, QPSK, Port B, mid channel, configuration 1

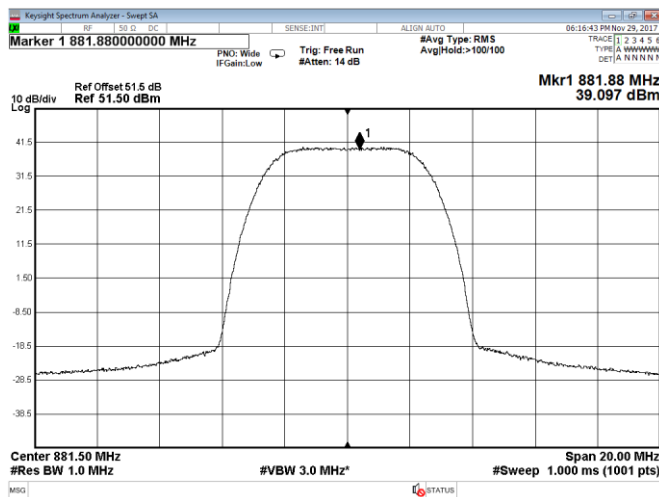


Figure 8.2-29: Power spectral density, QPSK, Port C, mid channel, configuration 1

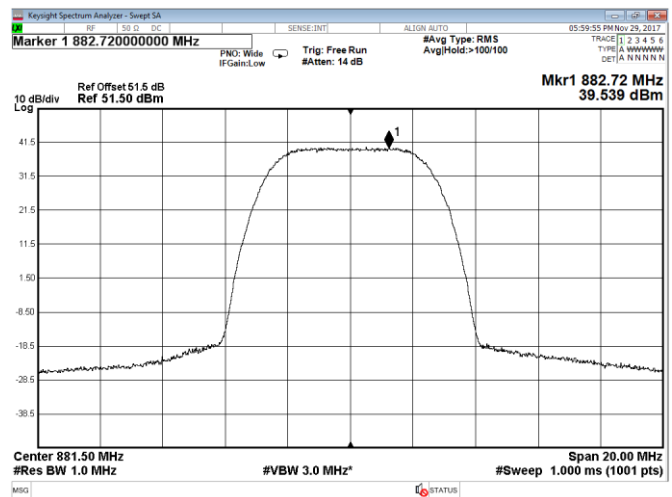


Figure 8.2-30: Power spectral density, QPSK, Port D, mid channel, configuration 1

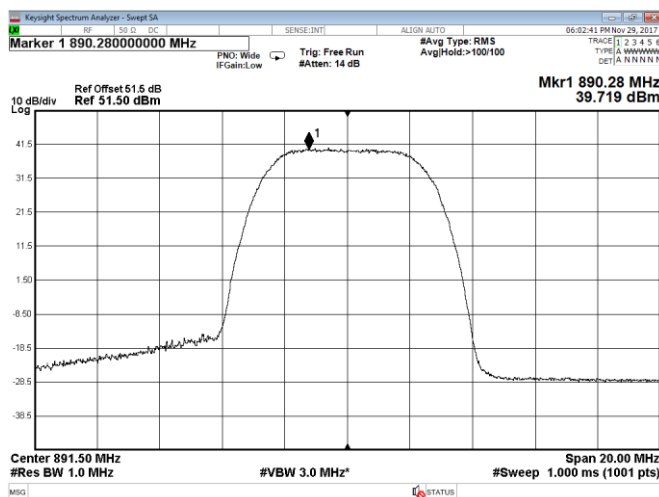


Figure 8.2-31: Power spectral density, QPSK, Port A, high channel, configuration 1

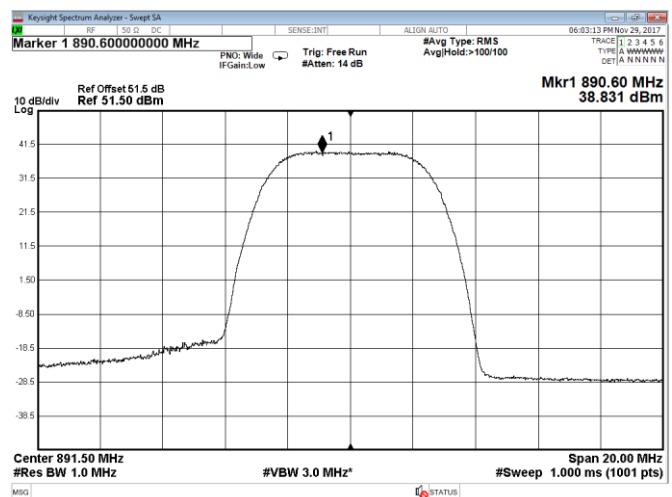


Figure 8.2-32: Power spectral density, QPSK, Port B, high channel, configuration 1

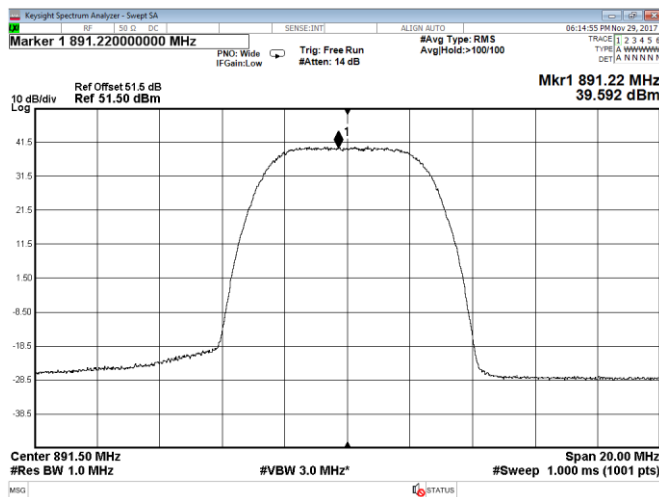


Figure 8.2-33: Power spectral density, QPSK, Port C, high channel, configuration 1

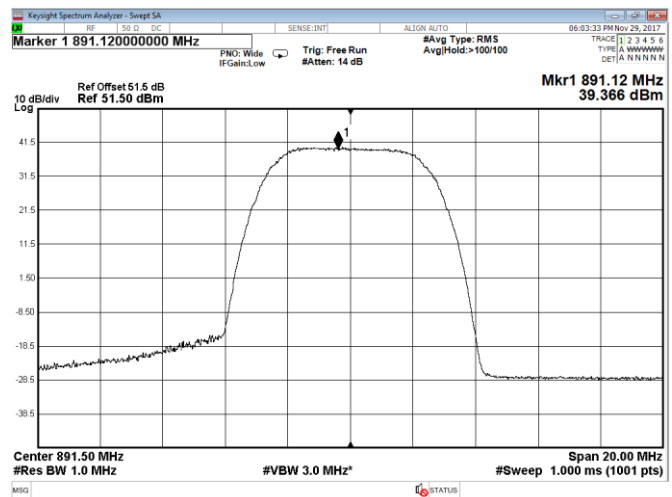


Figure 8.2-34: Power spectral density, QPSK, Port D, high channel, configuration 1

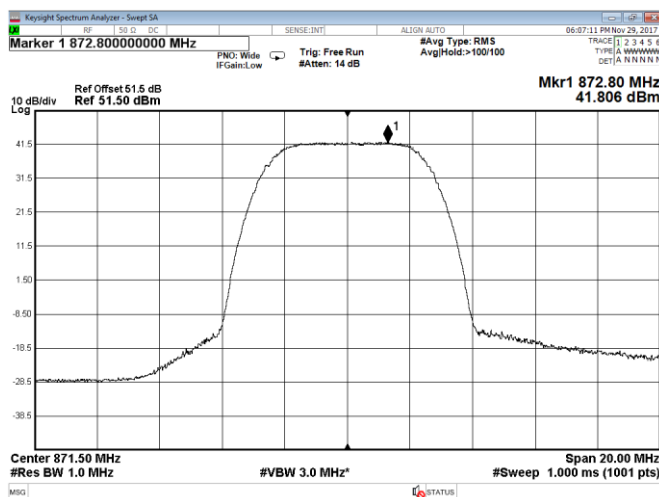


Figure 8.2-35: Power spectral density, QPSK, Port A, low channel, configuration 2

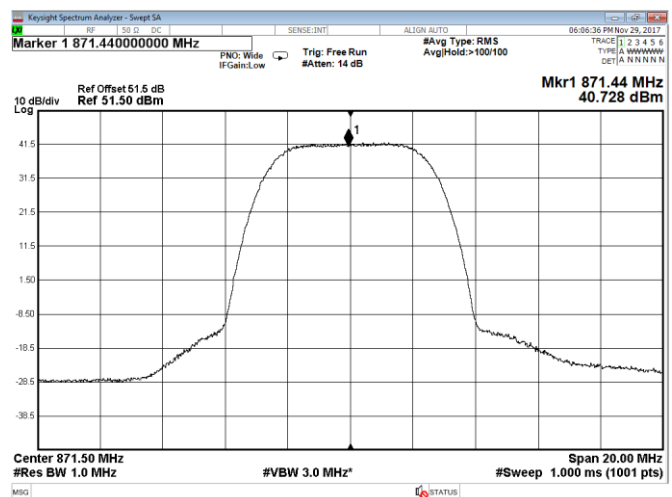


Figure 8.2-36: Power spectral density, QPSK, Port D, low channel, configuration 2

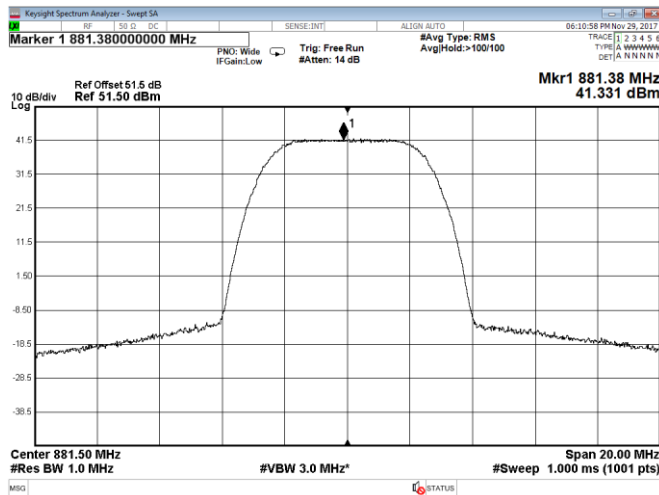


Figure 8.2-37: Power spectral density, QPSK, Port A, mid channel, configuration 2

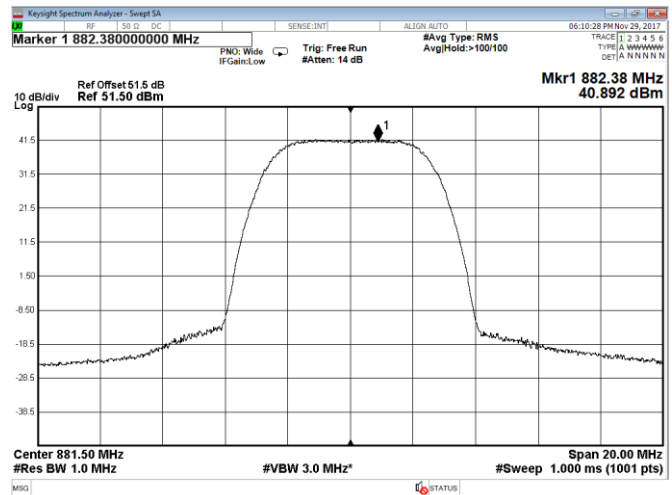


Figure 8.2-38: Power spectral density, QPSK, Port D, mid channel, configuration 2

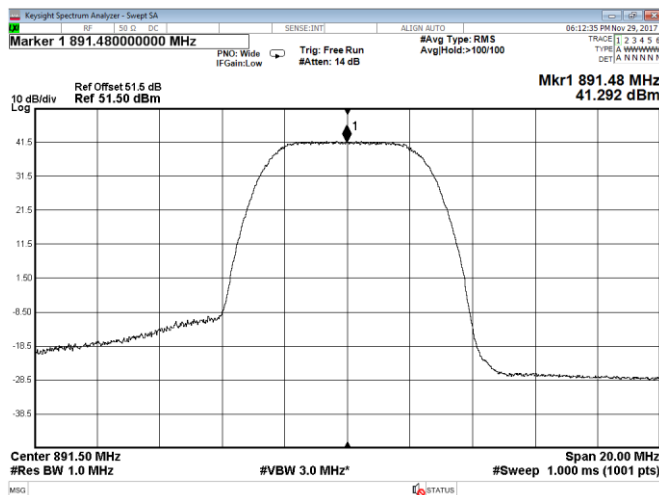


Figure 8.2-39: Power spectral density, QPSK, Port A, high channel, configuration 2

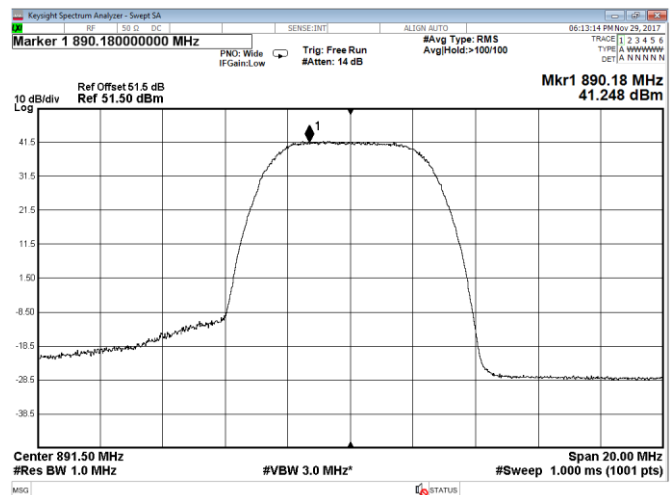


Figure 8.2-40: Power spectral density, QPSK, Port D, high channel, configuration 2

8.3 FCC 27.53 Spurious emissions at RF antenna connector

8.3.1 Definitions and limits

- (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.

8.3.2 Test summary

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

8.3.3 Observations, settings and special notes

The spectrum was searched from 30 MHz to the 10th harmonic.
All measurements were performed using a RMS detector.
For compensation of MIMO 4x4 application (configuration 1) limit lines were adjusted by 6 dB ($10 \times \log_{10}(4)$)
For compensation of MIMO 2x2 application (configuration 2) limit lines were adjusted by 3 dB ($10 \times \log_{10}(2)$)
RBW within 30–1000 MHz was 100 kHz and 1 MHz above 1 GHz. VBW was wider than RBW.
Configuration 1: Port A with 40 W power, Port B with 40 W power, Port C with 40 W power, Port D with 40 W power.
Configuration 2: Port A with 60 W power, Port D with 60 W power.

8.3.4 Test data

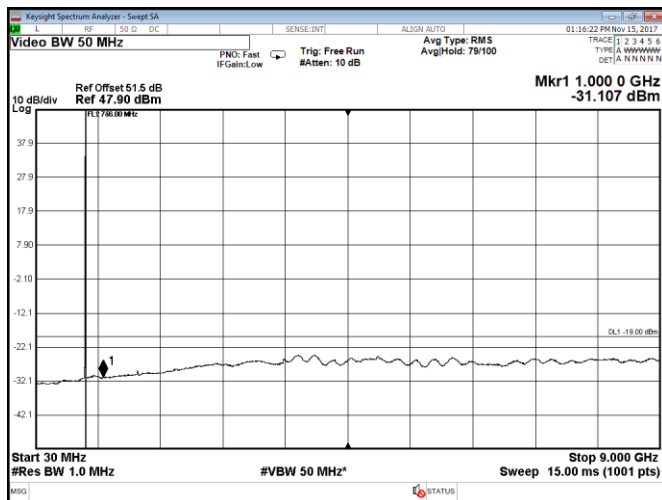


Figure 8.3-1: Conducted spurious emissions within at Port A, QPSK, configuration 1

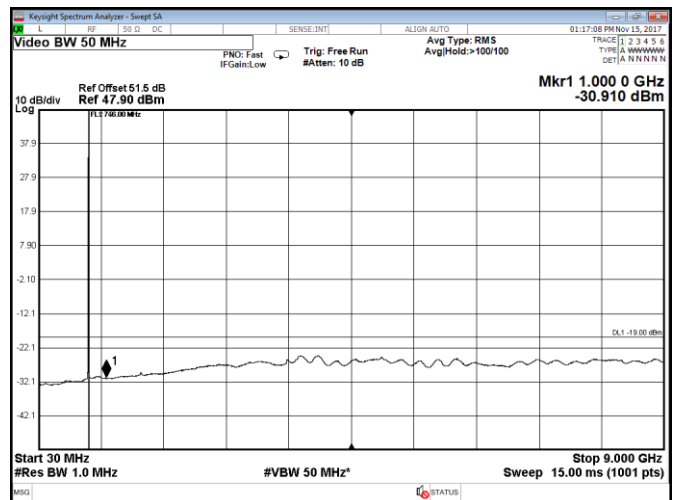


Figure 8.3-2: Conducted spurious emissions within at Port B, QPSK, configuration 1

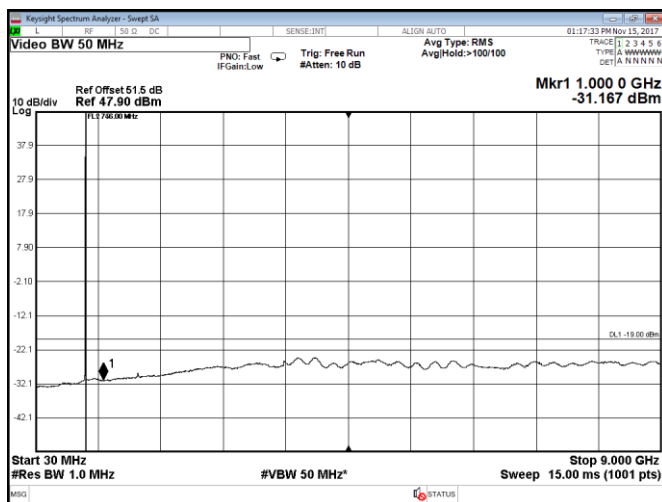


Figure 8.3-3: Conducted spurious emissions within at Port C, QPSK, configuration 1

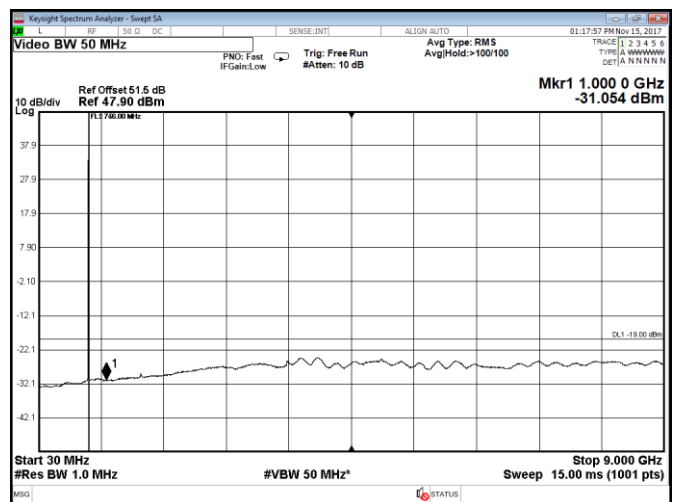


Figure 8.3-4: Conducted spurious emissions within at Port D, QPSK, configuration 1

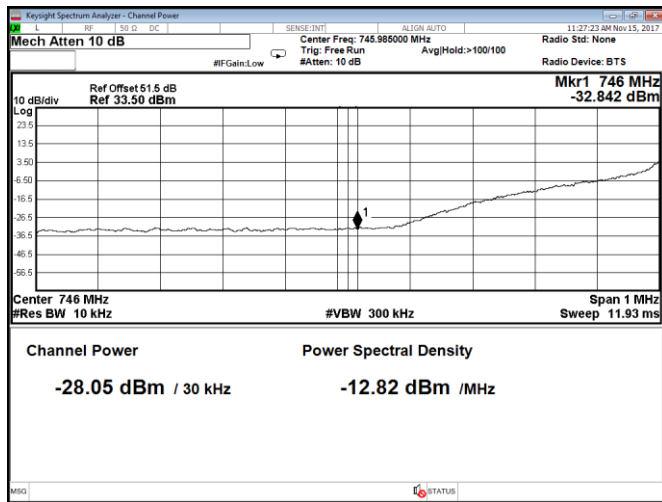


Figure 8.3-5: Conducted band edge emission at 746 MHz, Port A, QPSK, configuration 1

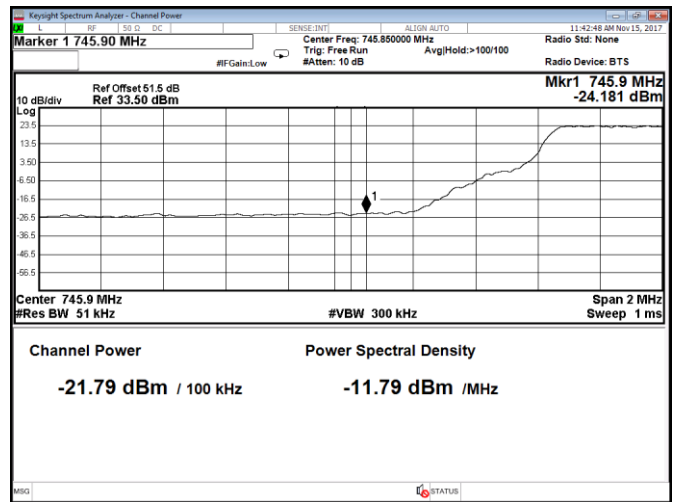


Figure 8.3-6: Conducted band edge emission at 745.9 MHz, Port A, QPSK, configuration 1

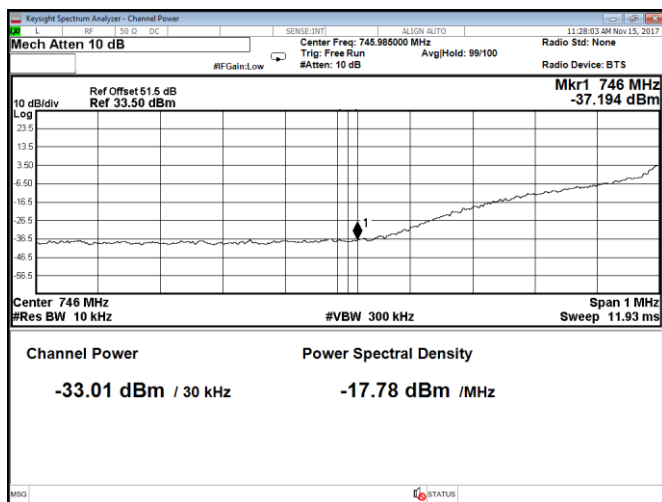


Figure 8.3-7: Conducted band edge emission at 746 MHz, Port B, QPSK, configuration 1

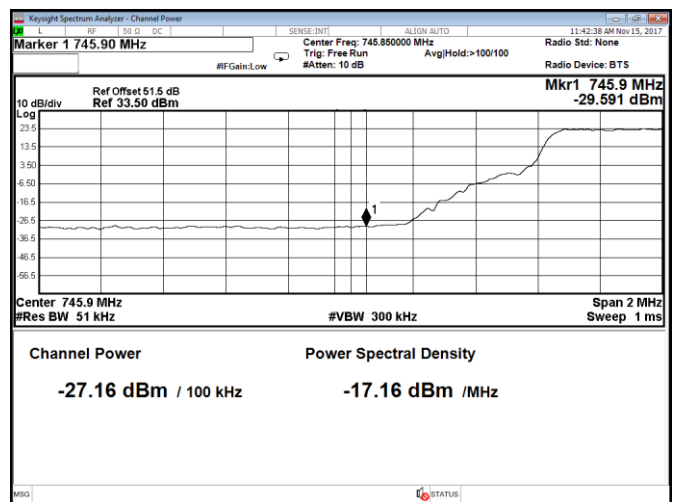


Figure 8.3-8: Conducted band edge emission at 745.9 MHz, Port B, QPSK, configuration 1

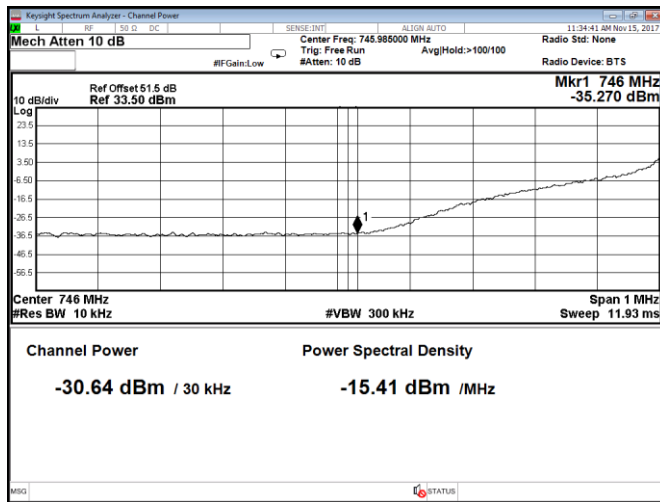


Figure 8.3-9: Conducted band edge emission at 746 MHz, Port C, QPSK, configuration 1

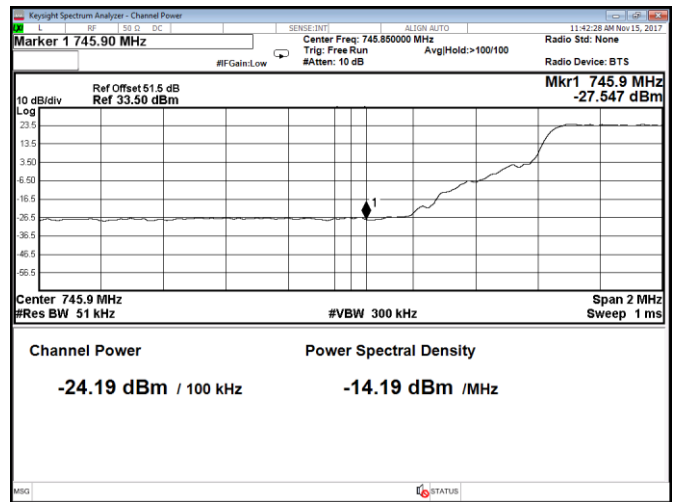


Figure 8.3-10: Conducted band edge emission at 745.9 MHz, Port C, QPSK, configuration 1

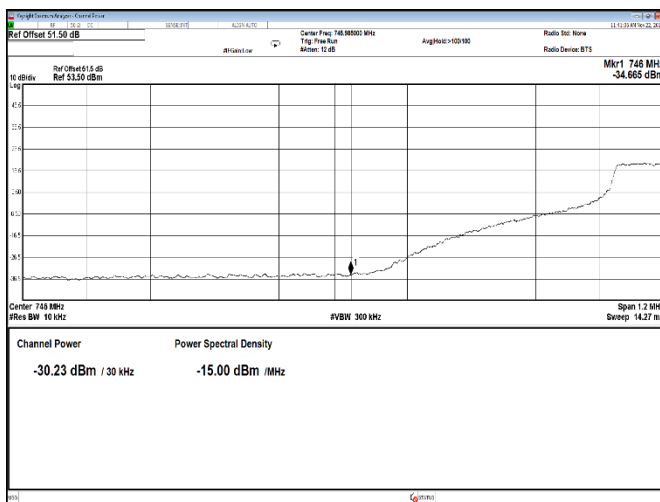


Figure 8.3-11: Conducted band edge emission at 746 MHz, Port D, QPSK, configuration 1

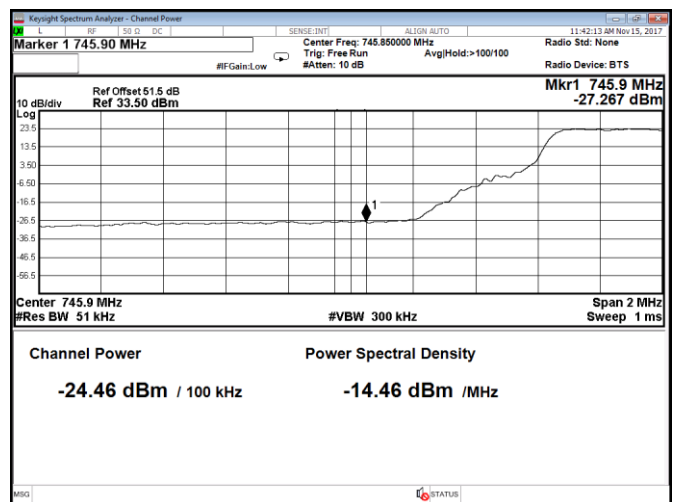


Figure 8.3-12: Conducted band edge emission at 745.9 MHz, Port D, QPSK, configuration 1

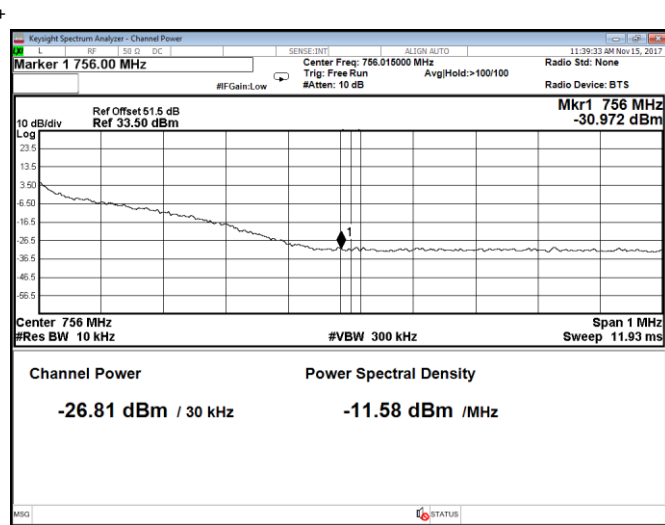


Figure 8.3-13: Conducted band edge emission at 756 MHz, Port A, QPSK, configuration 1

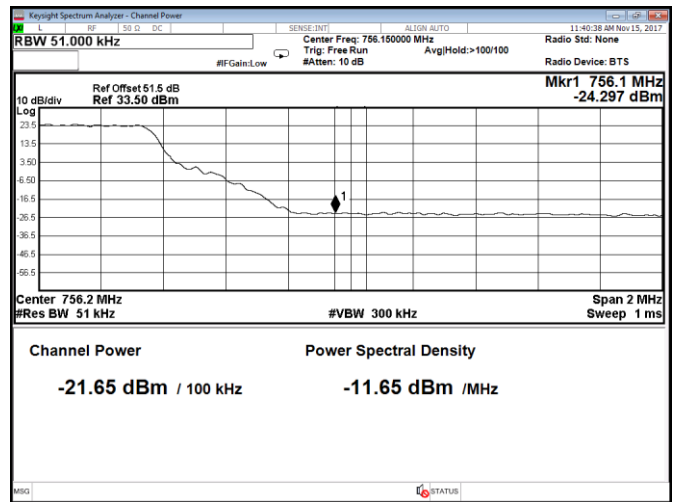


Figure 8.3-14: Conducted band edge emission at 756.1 MHz, Port A, QPSK, configuration 1

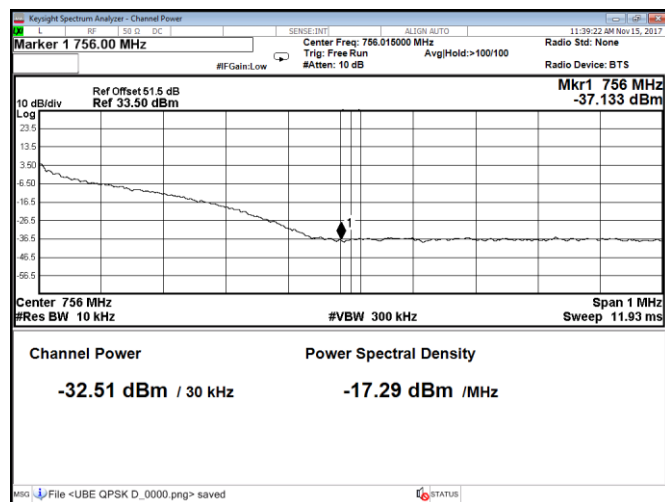


Figure 8.3-15: Conducted band edge emission at 756 MHz, Port B, QPSK, configuration 1

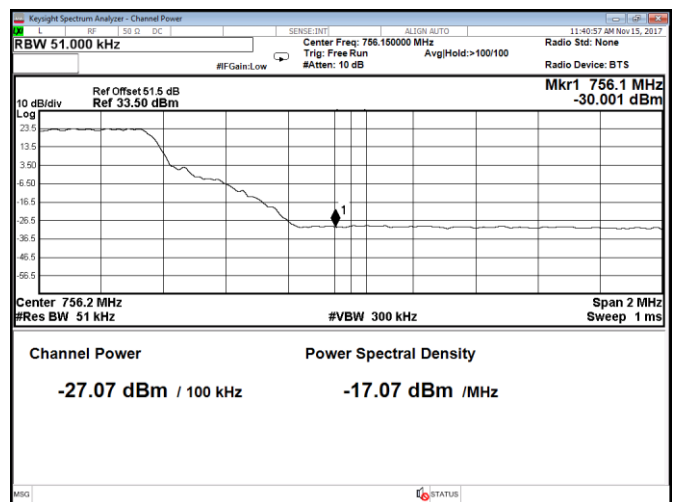


Figure 8.3-16: Conducted band edge emission at 756.1 MHz, Port B, QPSK, configuration 1

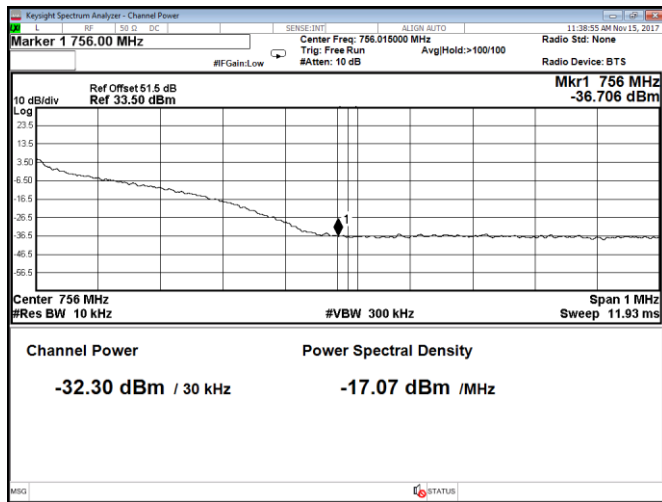


Figure 8.3-17: Conducted band edge emission at 756 MHz, Port C, QPSK, configuration 1

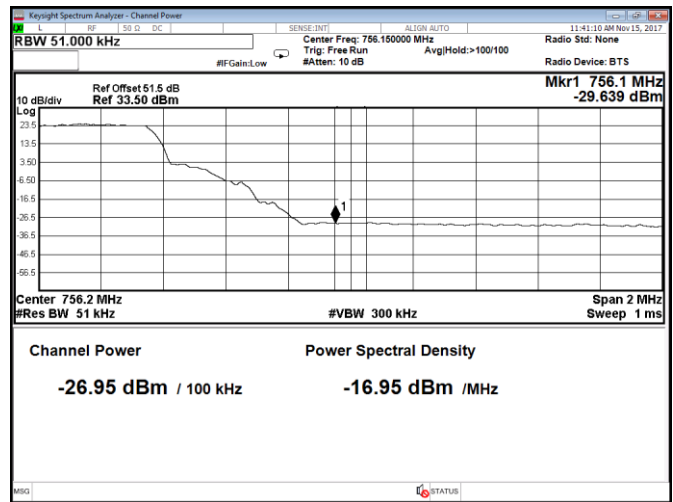


Figure 8.3-18: Conducted band edge emission at 756.1 MHz, Port C, QPSK, configuration 1

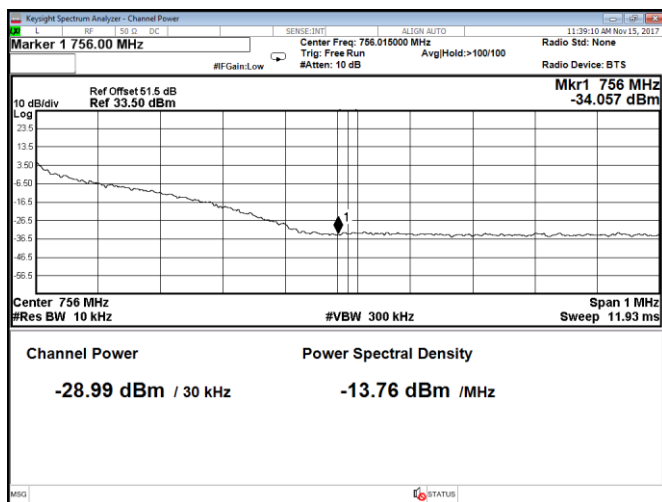


Figure 8.3-19: Conducted band edge emission at 756 MHz, Port D, QPSK, configuration 1

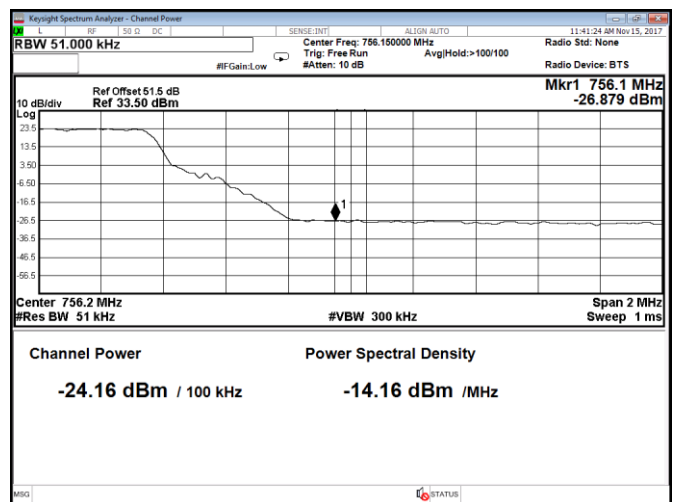


Figure 8.3-20: Conducted band edge emission at 756.1 MHz, Port D, QPSK, configuration 1

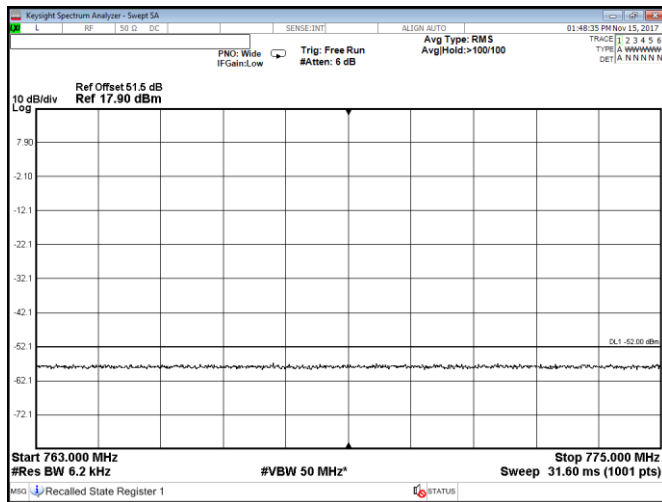


Figure 8.3-21: Conducted spurious emission within 763–775 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 1

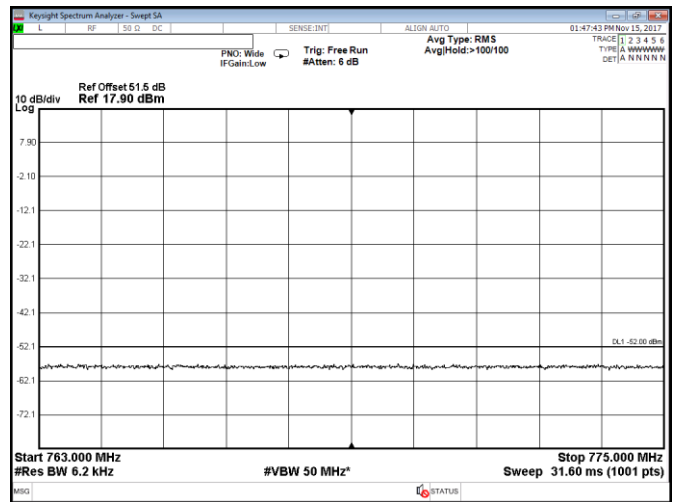


Figure 8.3-22: Conducted spurious emission within 763–775 MHz, Port B, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 1

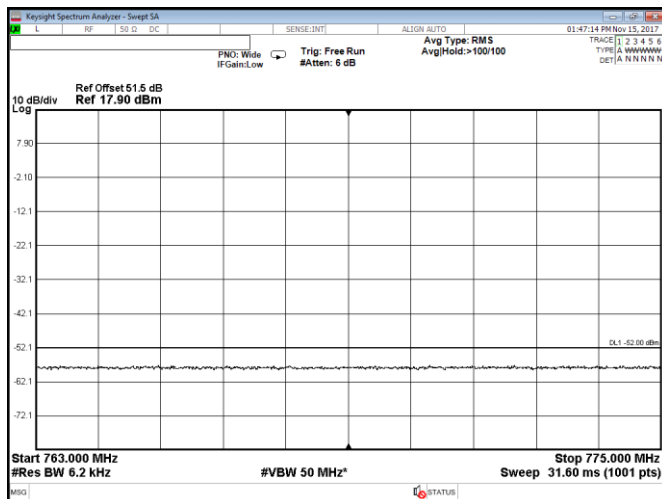


Figure 8.3-23: Conducted spurious emission within 763–775 MHz, Port C, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 1

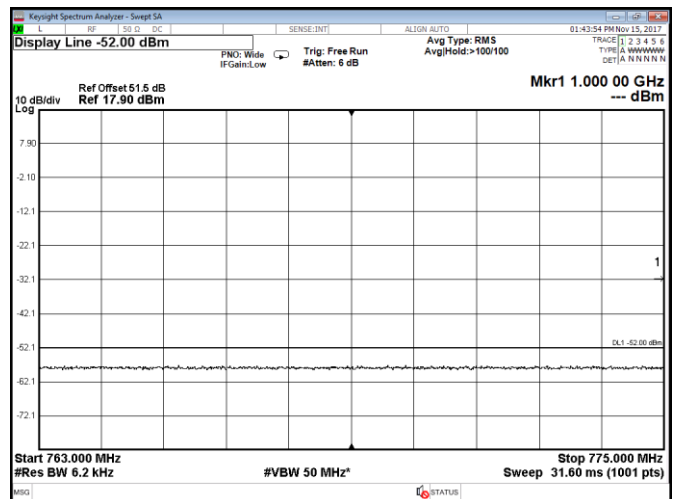


Figure 8.3-24: Conducted spurious emission within 763–775 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at low channel, configuration 1

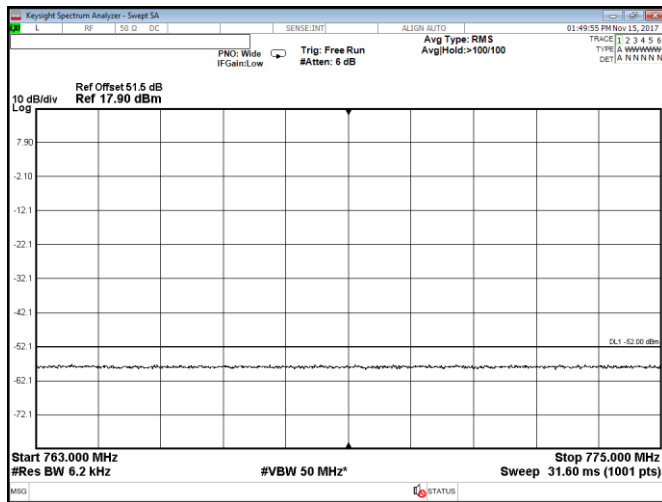


Figure 8.3-25: Conducted spurious emission within 763–775 MHz, Port A, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 1

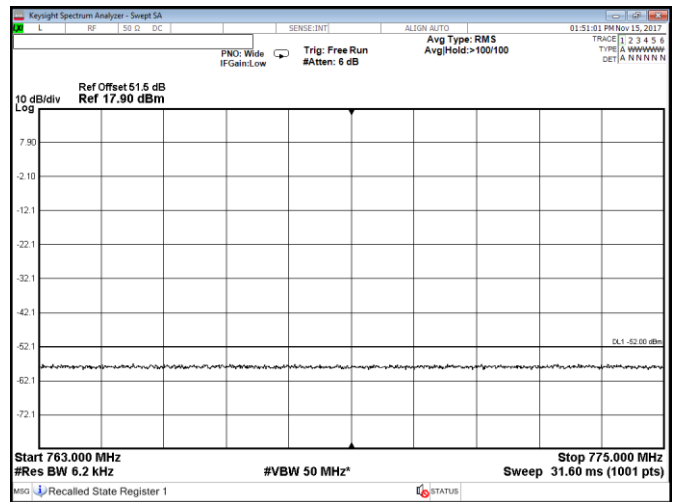


Figure 8.3-26: Conducted spurious emission within 763–775 MHz, Port B, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 1

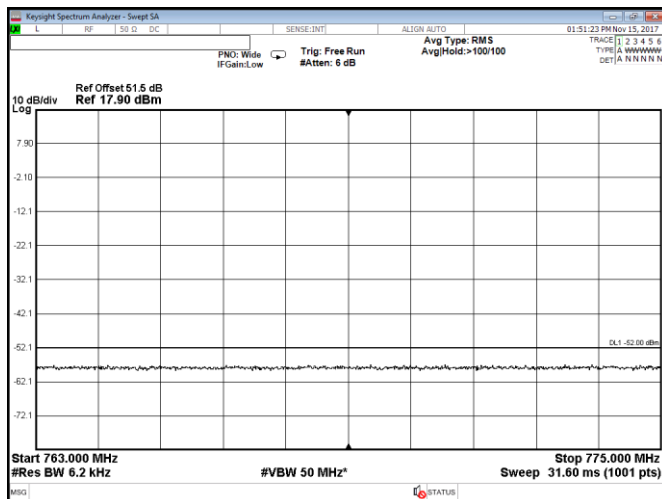


Figure 8.3-27: Conducted spurious emission within 763–775 MHz, Port C, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 1

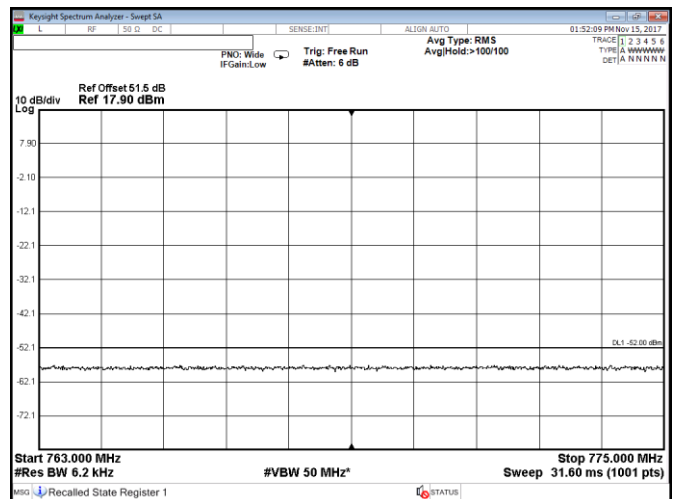


Figure 8.3-28: Conducted spurious emission within 763–775 MHz, Port D, QPSK, multi-band mode: Band 13 and Band 5 at mid channel, configuration 1