



TEST REPORT

Test Report No. : UL-RPT-RP11660068JD04A V2.0

Manufacturer : General Dynamics Broadband UK Ltd
Model No. : BHM
FCC ID : PKTNODEBBHM
Technology : LTE - Band 14
Test Standard(s) : FCC Part 90 Subparts I & R

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2. The results in this report apply only to the sample tested.
3. The sample tested is in compliance with the above standard(s).
4. The test results in this report are traceable to the national or international standards.
5. Version 2.0 supersedes all previous versions.

Date of Issue: 19 July 2017

Checked by:

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Senior Engineer, Radio Laboratory

Company Signatory:

Sarah Williams
Senior Engineer, Radio Laboratory
UL VS LTD



This laboratory is accredited by UKAS.
The tests reported herein have been
performed in accordance with its terms
of accreditation.

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1. Customer Information











Company Name:	General Dynamics Broadband UK Ltd
Address:	Unit 7 Greenways Business Park Bellinger Close Chippenham Wiltshire SN15 1BN United Kingdom

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR90
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 90 Private Land Mobile Radio Services. Subpart R Regulations Governing the licensing And Use of Frequencies in the 763-775 and 793-805 MHz Bands
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications): Part 90 Private Land Mobile Radio Services. Subpart I General Technical Standards
Site Registration:	209735
Location of Testing:	UL VS LTD, Unit 3 Horizon, Wade Road, Kingsland Business Park, Basingstoke, Hampshire, RG24 8AH, United Kingdom
Test Dates:	05 April 2017 to 19 May 2017

2.2. Summary of Test Results

FCC Reference (47CFR)	Measurement	Result
90.542(a)(3) / 2.1046	Transmitter Output Power (ERP)	
2.1049	Transmitter Occupied Bandwidth	
90.210(n) / 2.1051	Transmitter Conducted Emission Mask	
90.543(c) / 2.1051	Transmitter Conducted Emissions	
90.543(e)(1) / 2.1051	Transmitter Conducted Emissions Limitations	
90.543(c) / 2.1051	Transmitter Conducted Band Edge Emissions	
90.543(c) / 2.1053	Radiated Spurious Emissions	
2.1055	Transmitter Frequency Stability	
Key to Results		
 = Complied  = Did not comply		

2.3. Methods and Procedures

Reference:	KDB 971168 D01 v02r02 October 17, 2014
Title:	Measurement Guidance for Certification of Licensed Digital Transmitters
Reference:	KDB 662911 D01 v02r01 October 31, 2013
Title:	Emissions Testing of Transmitters with Multiple Outputs in the Same Band

2.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Brand Name:	General Dynamics
Model Name or Number:	BHM
Test Sample Serial Number:	BHMBH01000213
Hardware Version:	Pass 1
Software Version:	10.1.0
FCC ID:	PKTNODEBBHM

3.2. Description of EUT

The Equipment Under Test was a RN2404-02 eNode B supporting LTE Band 14.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

Tested Technology:	LTE Band 14		
Type of Equipment	Base Station		
Channel Bandwidth:	5 & 10 MHz		
Modulation Type:	QPSK, 16QAM & 64QAM		
Duty Cycle:	100 %		
Antenna Gain:	20.0 dBi		
Power Supply Requirement:	Nominal	28.0 VDC	
	Minimum	20.0 VDC	
	Maximum	33.0 VDC	
Transmit Frequency Range:	758 MHz to 768 MHz		
Channel Bandwidth:	5 MHz		
Transmit Channels Tested:	Channel	N_{ul}	Channel Frequency (MHz)
	Bottom	5305	760.5
	Top	5355	765.5
Channel Bandwidth:	10 MHz		
Transmit Channels Tested:	Channel	N_{ul}	Channel Frequency (MHz)
	Single	5330	763.0

3.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	Laptop PC
Brand Name:	Toshiba
Model Name or Number:	Portege Z30-C-151
Serial Number:	5G021563H

Description:	DC power cables with female D38999 connector. Length 10 metres
Brand Name:	Not marked or stated
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Description:	Ethernet cable RJ45 to female D38999 connector. Length 10 metres
Brand Name:	Not marked or stated
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Description:	Serial cable USB to female D38999 connector. Length 2 metres
Brand Name:	Not marked or stated
Model Name or Number:	Not marked or stated
Serial Number:	Not marked or stated

Description:	GPS antenna
Brand Name:	Trimble Bullet antenna
Model Name or Number:	57860-20
Serial Number:	014110185

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

The EUT was tested in the following operating mode(s):

- The EUT was set to transmit on bottom, middle and top channels with maximum output power using the maximum channel allocation for 5 and 10 MHz bandwidths. QPSK, 16QAM and 64QAM modulations were tested.

4.2. Configuration and Peripherals

The EUT was tested in the following configuration(s):

- The EUT was connected to a laptop PC. A terminal application (Tera Term) on the laptop PC was used to configure the EUT for testing.
- Test mode instructions supplied by the customer in document RN2404-02 eNode B Radio Test Instructions V01.02 dated March 2017 were followed.
- The EUT was configured using the following E-UTRA Test Models as defined in 3GPP 36.141 Rel 8:
 - E-TM1.1 for QPSK modulation
 - E-TM3.2 for 16QAM modulation
 - E-TM3.1 for 64QAM modulation
- Radiated spurious emissions tests were performed with the EUT set to transmit with a 5 MHz channel bandwidth with 16QAM modulation applied. As this mode emits the highest transmit output power level, it was deemed to be the worst case.
- Radiated spurious emissions tests were performed with the S1 interface port and service port terminated via suitable cables into a test laptop supplied by the customer. The GPS receiver port was connected to a GPS antenna supplied by the customer.
- The EUT had two Receive only ports which were terminated using suitable 50 Ω loads during all testing.
- The EUT has two RxTx ports. When performing conducted measurements on one port, the other port was terminated via suitable 50 Ω load. For all conducted measurements, the testing was performed on both RxTx ports separately.
- During all tests the EUT was powered, via DC input port and customer supplied cable, with a suitable DC power supply. The voltage was monitored at all times with a calibrated DVM.

5. Measurements, Examinations and Derived Results

5.1. General Comments

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to *Section 6. Measurement Uncertainty* for details.

In accordance with UKAS requirements all the measurement equipment is on a calibration schedule. All equipment was within the calibration period on the date of testing.

5.2. Test Results**5.2.1. Transmitter Output Power (ERP)****Test Summary:**

Test Engineer:	Patrick Jones	Test Date:	05 April 2017
Test Sample Serial Number:	BHMBH01000213		

FCC Reference:	Parts 90.542(a)(3) and 2.1046
Test Method Used:	KDB 971168 D01 Sections 5.4.1, 5.5 and 5.6

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	35

Note(s):

1. Power from both antenna ports was measured and combined using the measure-and-sum method stated in FCC KDB 662911 D01.
2. Measurements were performed with the EUT transmitting with QPSK, 16QAM and 64QAM modulation schemes.
3. The ERP limit of 1000W/MHz has been converted to dBm/MHz, giving a limit of 60 dBm/MHz.
4. The customer stated that the EUT is designed to operate with a maximum antenna gain of 20 dBi. As the limit is an ERP limit the gain in dBi has been converted to dBd. The dBd value was calculated as:

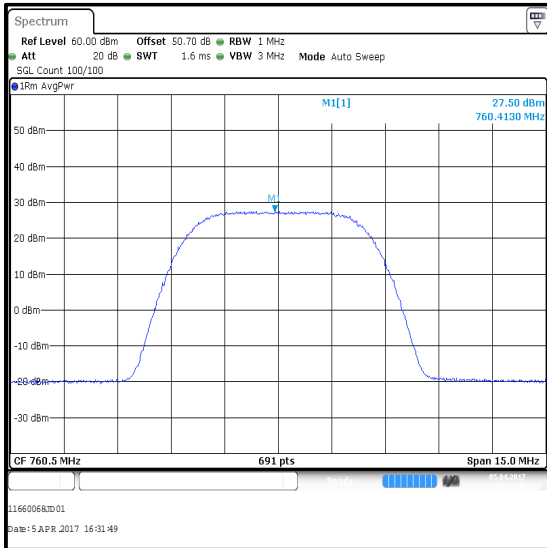
$$20 \text{ dBi} - 2.15 \text{ dB} = 17.85 \text{ dBd.}$$

Transmitter Output Power (ERP) (continued)

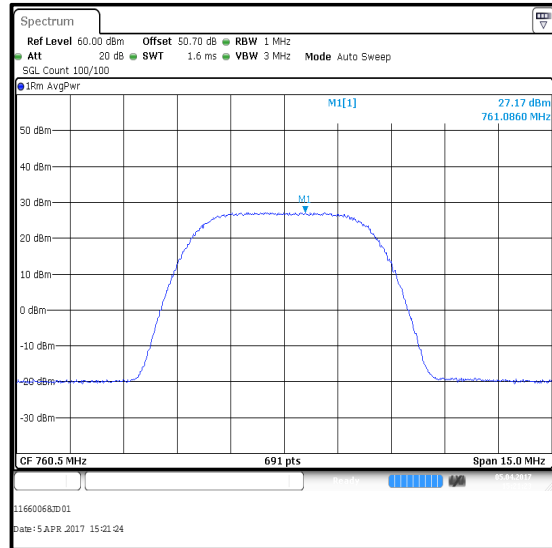
Results: 5 MHz Channel Bandwidth / Bottom Channel

Frequency (MHz)	Modulation	Conducted RF Power at RxTx1 (dBm/MHz)	Conducted RF Power at RxTx2 (dBm/MHz)	Combined Conducted RF Power (dBm/MHz)
760.500	QPSK	27.50	27.17	30.36

Frequency (MHz)	Modulation	Combined Conducted RF Power (dBm/MHz)	Antenna Gain (dBd)	ERP (dBm/MHz)	ERP Limit (dBm/MHz)	Margin (dB)	Result
760.500	QPSK	30.36	17.85	48.21	60.00	11.79	Complied



RxTx1



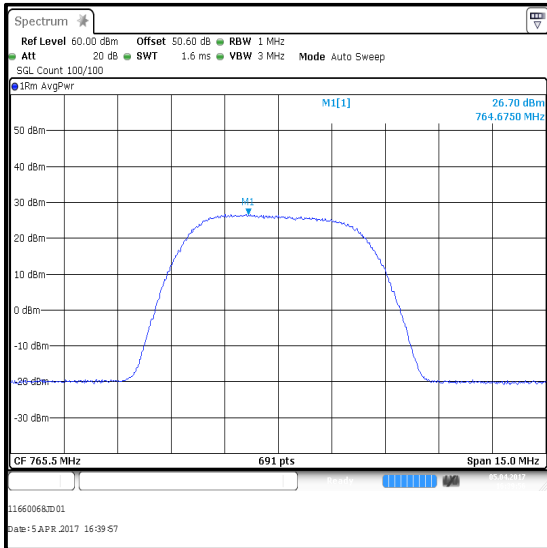
RxTx2

Transmitter Output Power (ERP) (continued)

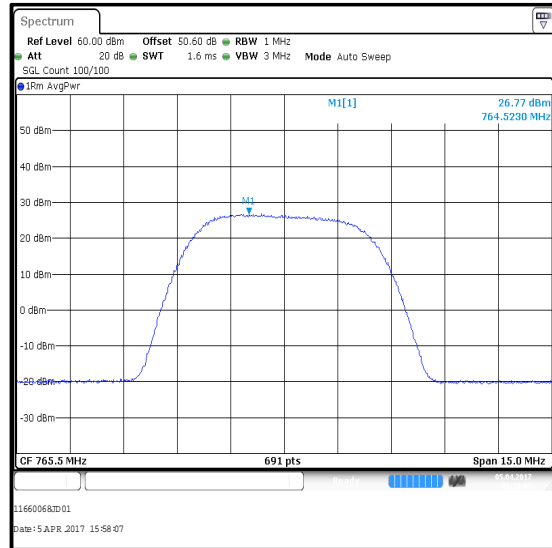
Results: 5 MHz Channel Bandwidth / Top Channel

Frequency (MHz)	Modulation	Conducted RF Power at RxTx1 (dBm/MHz)	Conducted RF Power at RxTx2 (dBm/MHz)	Combined Conducted RF Power (dBm/MHz)
765.500	QPSK	26.70	26.77	29.76

Frequency (MHz)	Modulation	Combined Conducted RF Power (dBm/MHz)	Antenna Gain (dBd)	ERP (dBm/MHz)	ERP Limit (dBm/MHz)	Margin (dB)	Result
765.500	QPSK	29.76	17.85	47.61	60.00	12.39	Complied



RxTx1



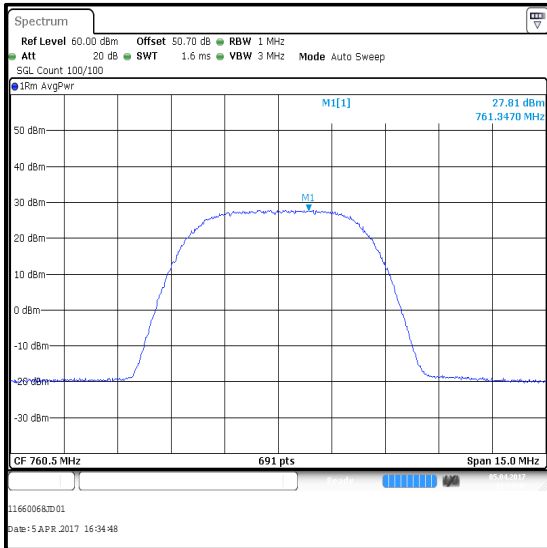
RxTx2

Transmitter Output Power (ERP) (continued)

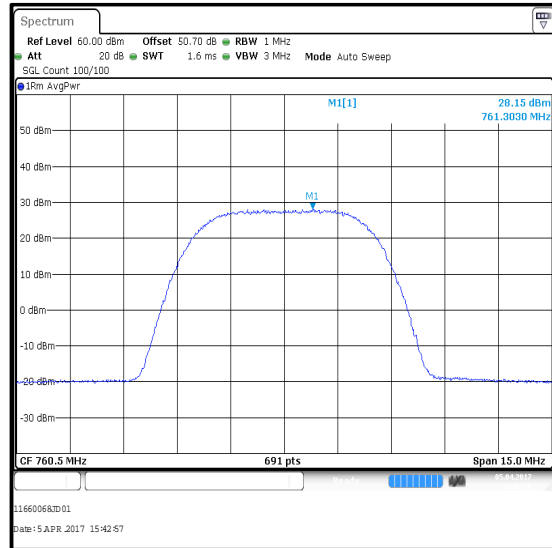
Results: 5 MHz Channel Bandwidth / Bottom Channel

Frequency (MHz)	Modulation	Conducted RF Power at RxTx1 (dBm/MHz)	Conducted RF Power at RxTx2 (dBm/MHz)	Combined Conducted RF Power (dBm/MHz)
760.500	16QAM	27.81	28.15	31.02

Frequency (MHz)	Modulation	Combined Conducted RF Power (dBm/MHz)	Antenna Gain (dBd)	ERP (dBm/MHz)	ERP Limit (dBm/MHz)	Margin (dB)	Result
760.500	16QAM	31.02	17.85	48.87	60.0	11.13	Complied



RxTx1



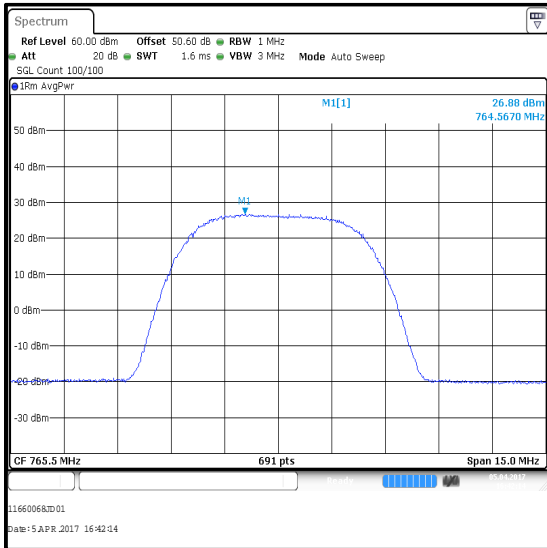
RxTx2

Transmitter Output Power (ERP) (continued)

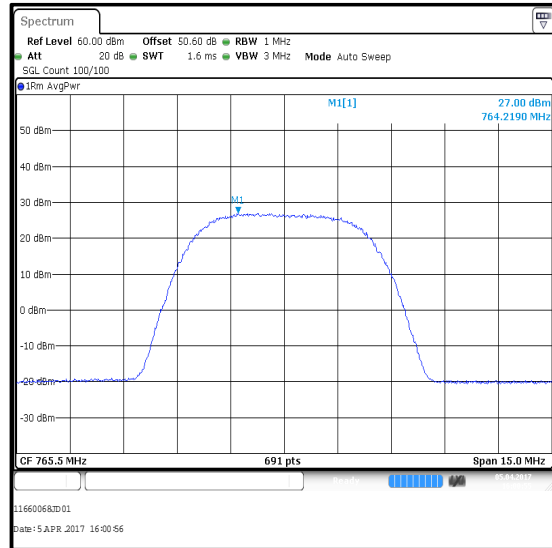
Results: 5 MHz Channel Bandwidth / Top Channel

Frequency (MHz)	Modulation	Conducted RF Power at RxTx1 (dBm/MHz)	Conducted RF Power at RxTx2 (dBm/MHz)	Combined Conducted RF Power (dBm/MHz)
765.500	16QAM	26.88	27.00	29.96

Frequency (MHz)	Modulation	Combined Conducted RF Power (dBm/MHz)	Antenna Gain (dBd)	ERP (dBm/MHz)	ERP Limit (dBm/MHz)	Margin (dB)	Result
765.500	16QAM	29.96	17.85	47.81	60.00	12.19	Complied



RxTx1



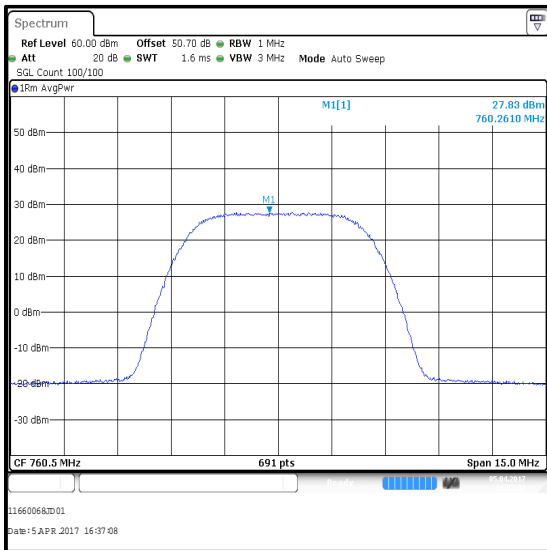
RxTx2

Transmitter Output Power (ERP) (continued)

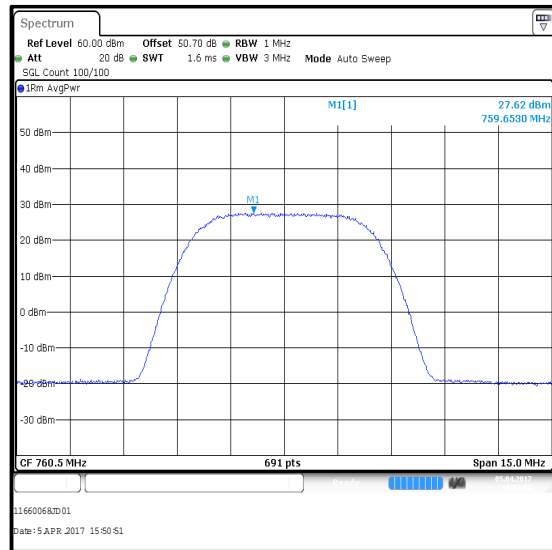
Results: 5 MHz Channel Bandwidth / Bottom Channel

Frequency (MHz)	Modulation	Conducted RF Power at RxTx1 (dBm/MHz)	Conducted RF Power at RxTx2 (dBm/MHz)	Combined Conducted RF Power (dBm/MHz)
760.500	64QAM	27.83	27.62	30.71

Frequency (MHz)	Modulation	Combined Conducted RF Power (dBm/MHz)	Antenna Gain (dBd)	ERP (dBm/MHz)	ERP Limit (dBm/MHz)	Margin (dB)	Result
760.500	64QAM	30.71	17.85	48.56	60.00	11.44	Complied



RxTx1



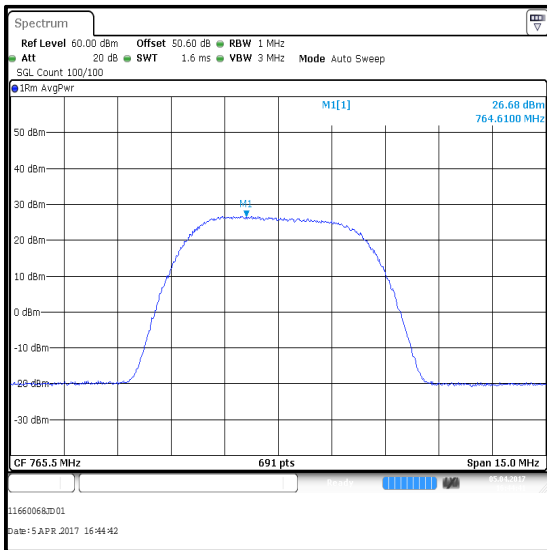
RxTx2

Transmitter Output Power (ERP) (continued)

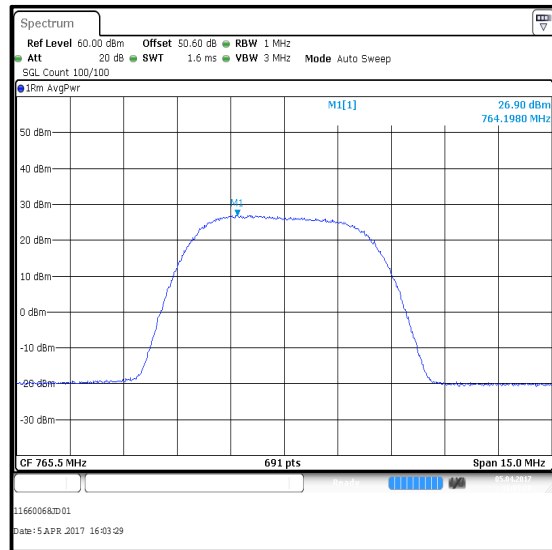
Results: 5 MHz Channel Bandwidth / Top Channel

Frequency (MHz)	Modulation	Conducted RF Power at RxTx1 (dBm/MHz)	Conducted RF Power at RxTx2 (dBm/MHz)	Combined Conducted RF Power (dBm/MHz)
765.500	64QAM	26.68	26.90	29.81

Frequency (MHz)	Modulation	Combined Conducted RF Power (dBm/MHz)	Antenna Gain (dBd)	ERP (dBm/MHz)	ERP Limit (dBm/MHz)	Margin (dB)	Result
765.500	64QAM	29.81	17.85	47.66	60.00	12.34	Complied



RxTx1



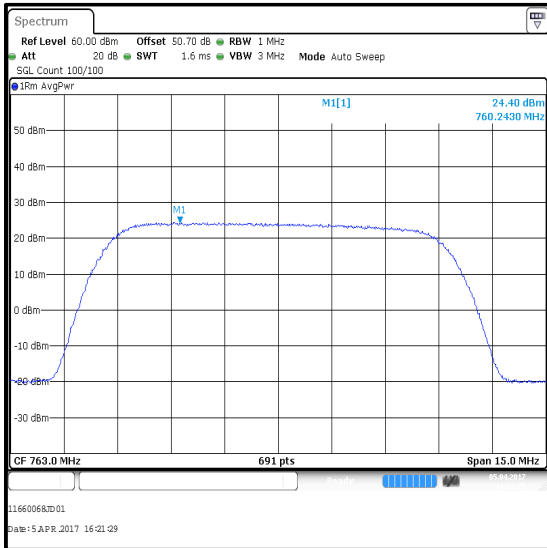
RxTx2

Transmitter Output Power (ERP) (continued)

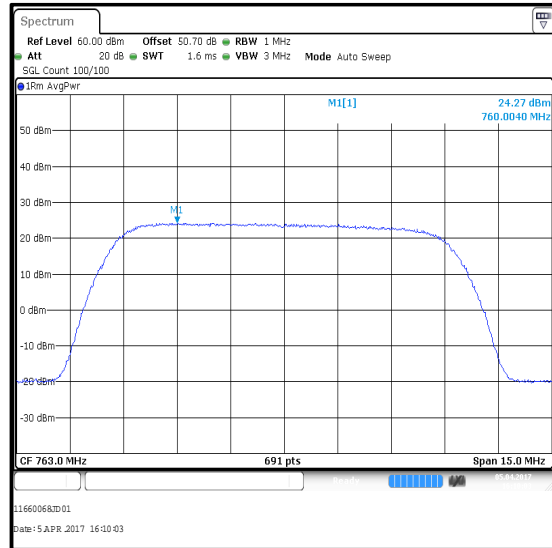
Results: 10 MHz Channel Bandwidth

Frequency (MHz)	Modulation	Conducted RF Power at RxTx1 (dBm/MHz)	Conducted RF Power at RxTx2 (dBm/MHz)	Combined Conducted RF Power (dBm/MHz)
763.000	QPSK	24.40	24.27	27.36

Frequency (MHz)	Modulation	Combined Conducted RF Power (dBm/MHz)	Antenna Gain (dBd)	ERP (dBm/MHz)	ERP Limit (dBm/MHz)	Margin (dB)	Result
763.000	QPSK	27.36	17.85	45.21	60.00	14.79	Complied



RxTx1



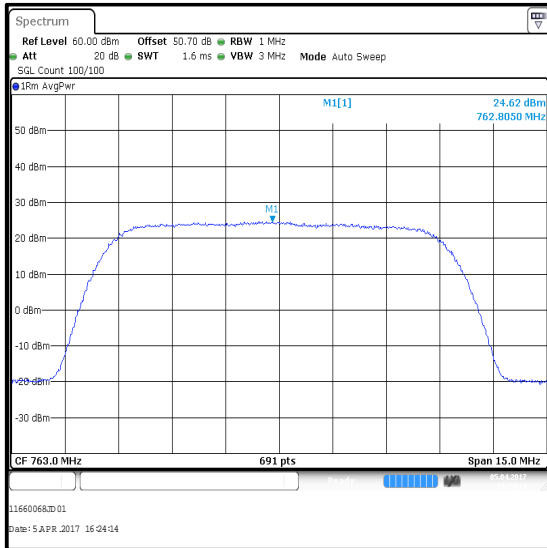
RxTx2

Transmitter Output Power (ERP) (continued)

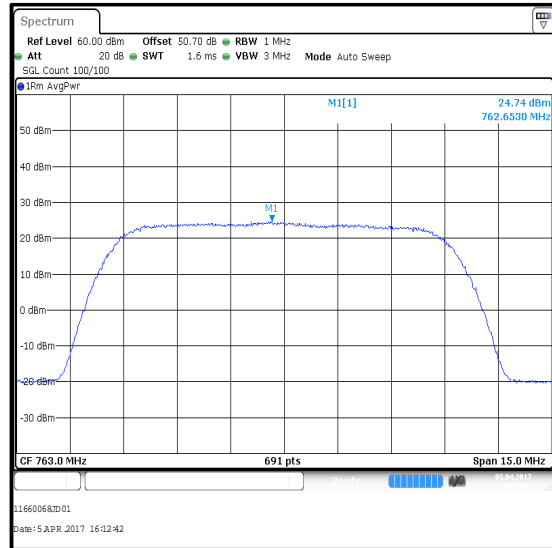
Results: 10 MHz Channel Bandwidth

Frequency (MHz)	Modulation	Conducted RF Power at RxTx1 (dBm/MHz)	Conducted RF Power at RxTx2 (dBm/MHz)	Combined Conducted RF Power (dBm/MHz)
763.000	16QAM	24.62	24.74	27.66

Frequency (MHz)	Modulation	Combined Conducted RF Power (dBm/MHz)	Antenna Gain (dBd)	ERP (dBm/MHz)	ERP Limit (dBm/MHz)	Margin (dB)	Result
763.000	16QAM	27.66	17.85	45.51	60.00	14.49	Complied



RxTx1



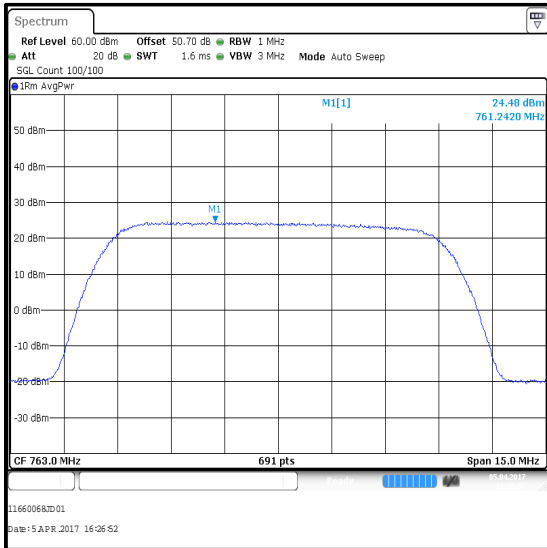
RxTx2

Transmitter Output Power (ERP) (continued)

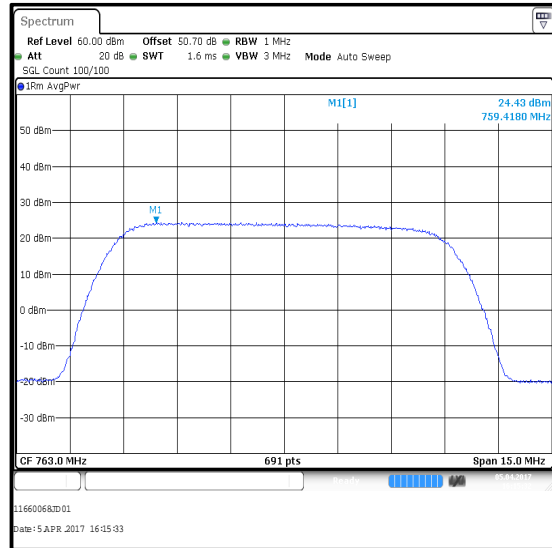
Results: 10 MHz Channel Bandwidth

Frequency (MHz)	Modulation	Conducted RF Power at RxTx1 (dBm/MHz)	Conducted RF Power at RxTx2 (dBm/MHz)	Combined Conducted RF Power (dBm/MHz)
763.000	64QAM	24.48	24.43	27.46

Frequency (MHz)	Modulation	Combined Conducted RF Power (dBm/MHz)	Antenna Gain (dBd)	ERP (dBm/MHz)	ERP Limit (dBm/MHz)	Margin (dB)	Result
763.000	64QAM	27.46	17.85	45.31	60.00	14.69	Complied



RxTx1



RxTx2

Transmitter Output Power (ERP) (continued)**Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1659	Thermohygrometer	JM Handelspunkt	30.5015.13	None stated	22 Feb 2018	12
M1835	Signal Analyser	Rohde & Schwarz	FSV30	103050	06 Mar 2018	12
A2925	Attenuator	AtlanTecRF	AN18W5-30	858580#1	Calibrated before use	-
A2522	Attenuator	AtlanTecRF	AN18-20	832797#3	Calibrated before use	-
M1252	Signal Generator	Hewlett Packard	83640A	3119A00489	26 Oct 2017	24
M281	Power Meter	Hewlett Packard	E4418A	GB37170210-01	16 Feb 2018	12
M1227	Power Sensor	Agilent	8487D	3318A02122	22 Jun 2017	12

5.2.2. Transmitter Occupied Bandwidth**Test Summary:**

Test Engineer:	Patrick Jones	Test Dates:	11 April 2017 to 12 April 2017
Test Sample Serial Number:	BHMBH01000213		

FCC Reference:	Part 2.1049
Test Method Used:	KDB 971168 D01 Section 4.2

Environmental Conditions:

Temperature (°C):	24 to 22
Relative Humidity (%):	32 to 35

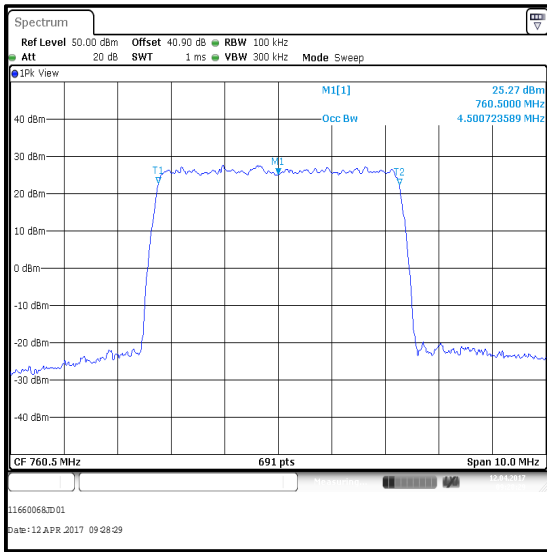
Note(s):

1. Occupied bandwidth (99% bandwidth) was measured using a signal analyser occupied bandwidth function.
2. Measurements were performed with the EUT transmitting with QPSK, 16QAM and 64QAM modulation schemes.
3. The signal analyser was connected to the RxTx port on the EUT using suitable attenuation and RF cable.

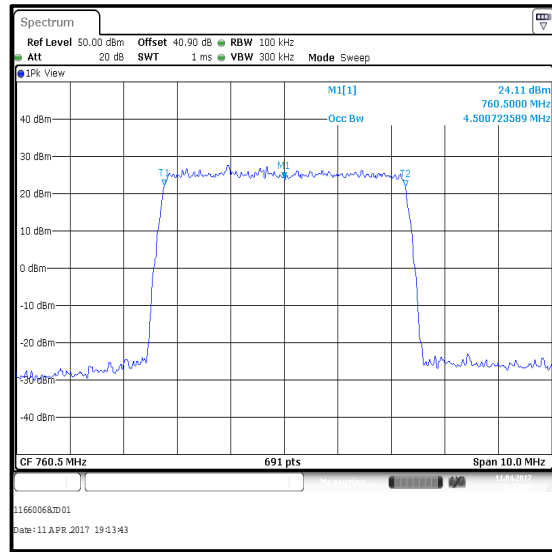
Transmitter Occupied Bandwidth (continued)

Results: 5 MHz Channel Bandwidth / QPSK

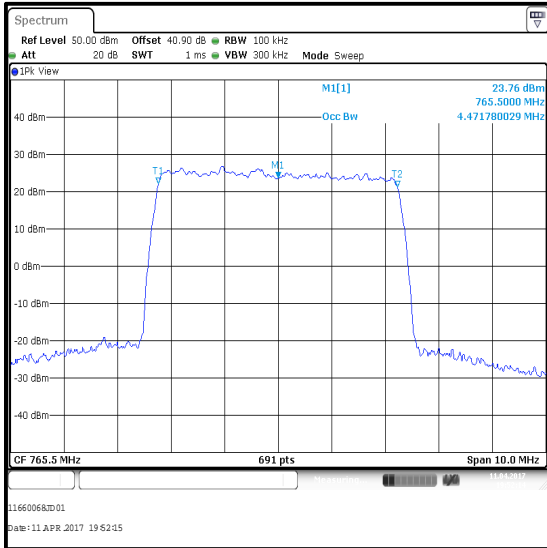
Frequency	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth RxTx1 (MHz)	Occupied Bandwidth RxTx2 (MHz)
760.5	100	300	4.501	4.501
765.5	100	300	4.472	4.486



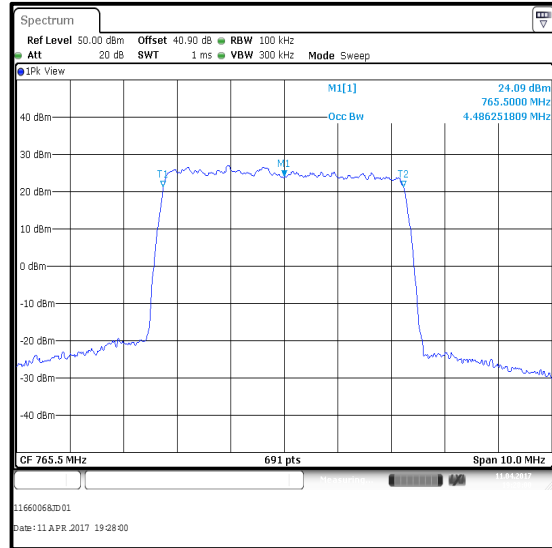
Bottom Channel / QPSK / RxTx1



Bottom Channel / QPSK / RxTx2



Top Channel / QPSK / RxTx1

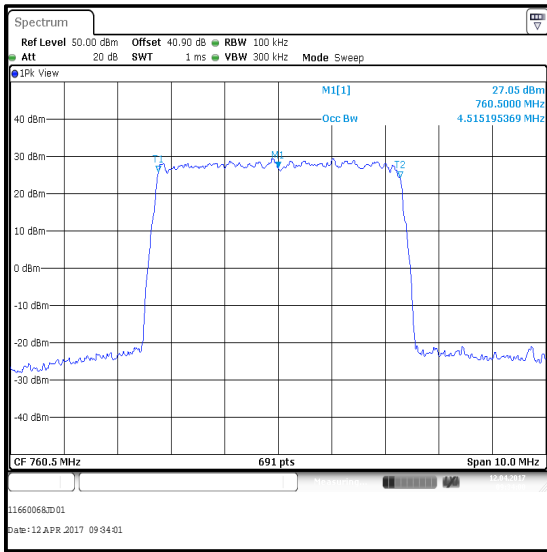


Top Channel / QPSK / RxTx2

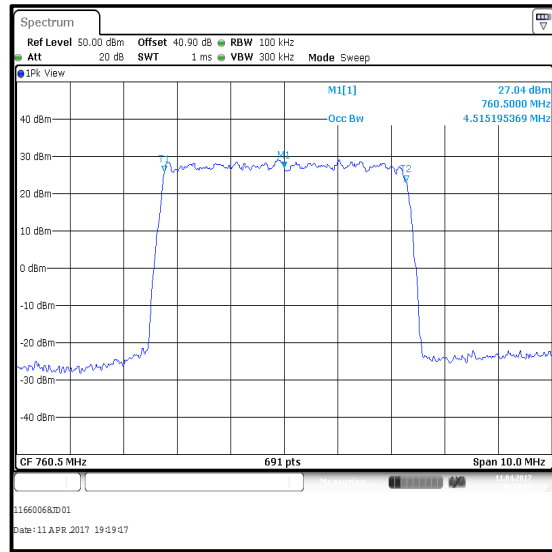
Transmitter Occupied Bandwidth (continued)

Results: 5 MHz Channel Bandwidth / 16QAM

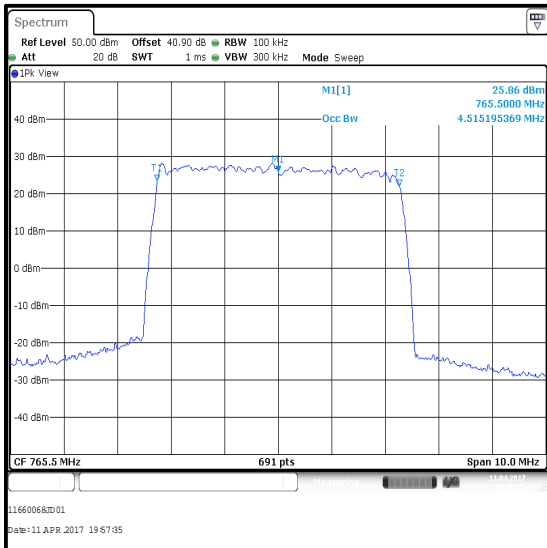
Frequency	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth RxTx1 (MHz)	Occupied Bandwidth RxTx2 (MHz)
760.5	100	300	4.515	4.515
765.5	100	300	4.515	4.515



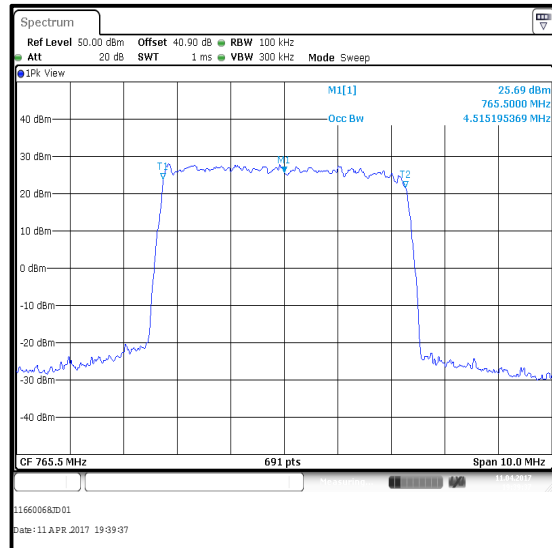
Bottom Channel / 16QAM / RxTx1



Bottom Channel / 16QAM / RxTx2



Top Channel / 16QAM / RxTx1

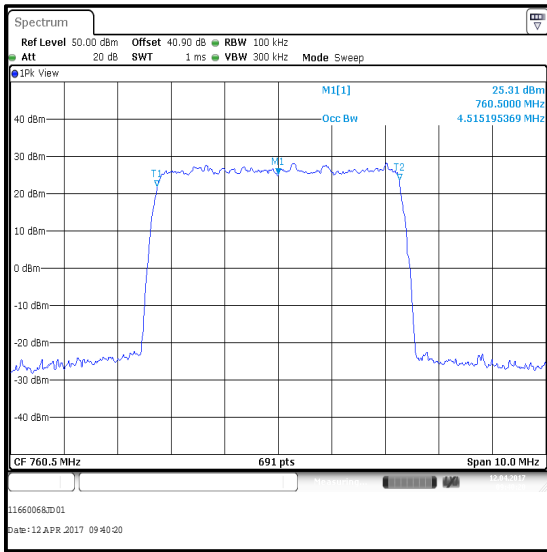


Top Channel / 16QAM / RxTx2

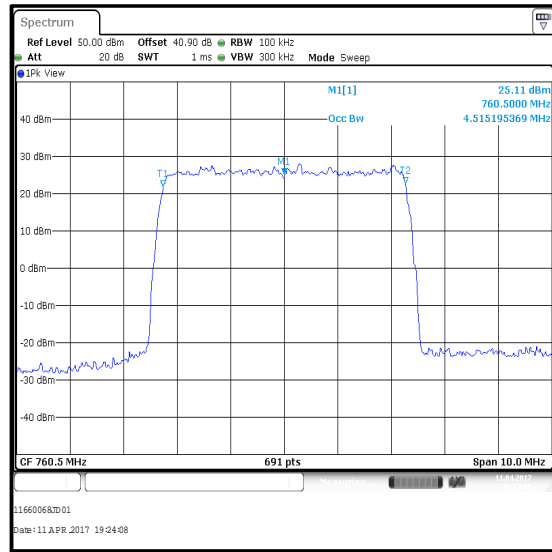
Transmitter Occupied Bandwidth (continued)

Results: 5 MHz Channel Bandwidth / 64QAM

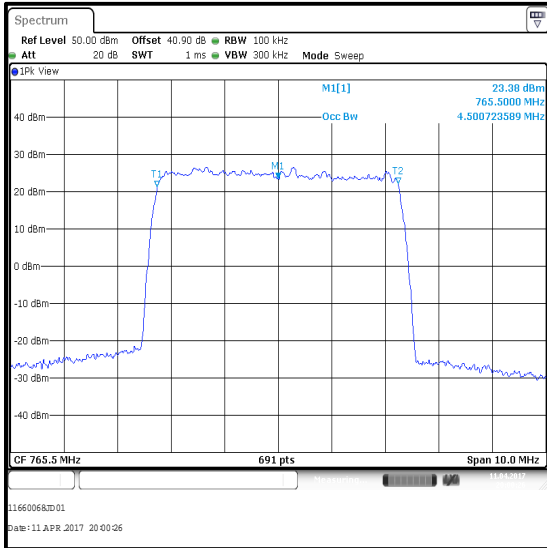
Frequency	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth RxTx1 (MHz)	Occupied Bandwidth RxTx2 (MHz)
760.5	100	300	4.515	4.515
765.5	100	300	4.501	4.501



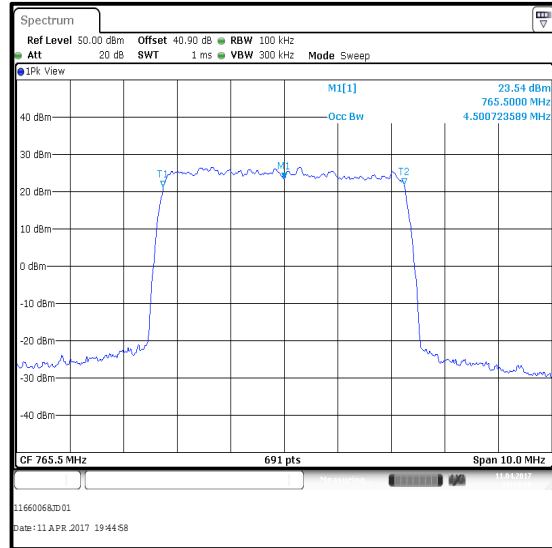
Bottom Channel / 64QAM / RxTx1



Bottom Channel / 64QAM / RxTx2



Top Channel / 64QAM / RxTx1

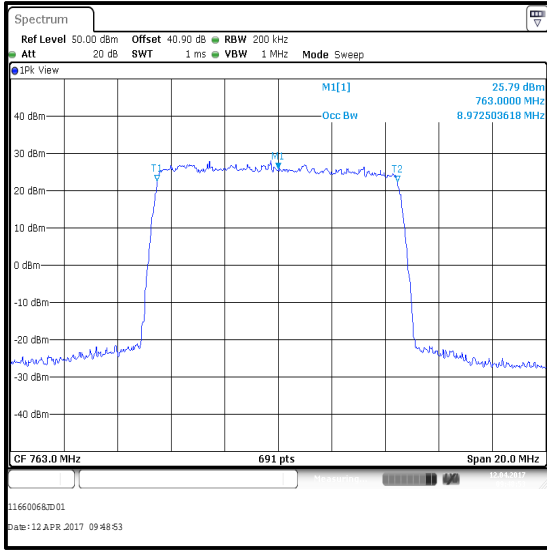


Top Channel / 64QAM / RxTx2

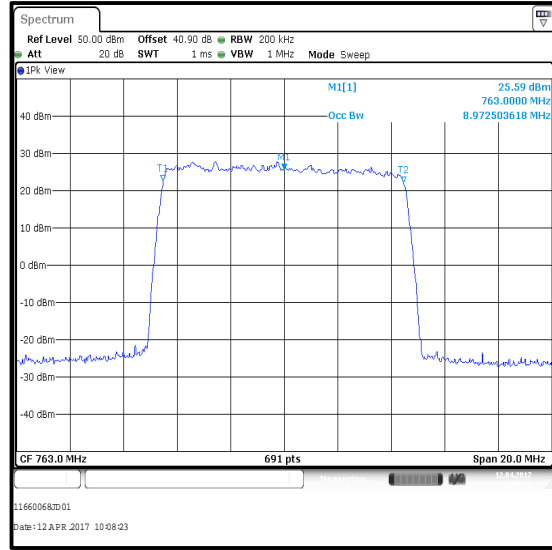
Transmitter Occupied Bandwidth (continued)

Results: 10 MHz Channel Bandwidth / QPSK

Frequency	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth RxTx1 (MHz)	Occupied Bandwidth RxTx2 (MHz)
763.0	200	1000	8.973	8.973



QPSK / RxTx1

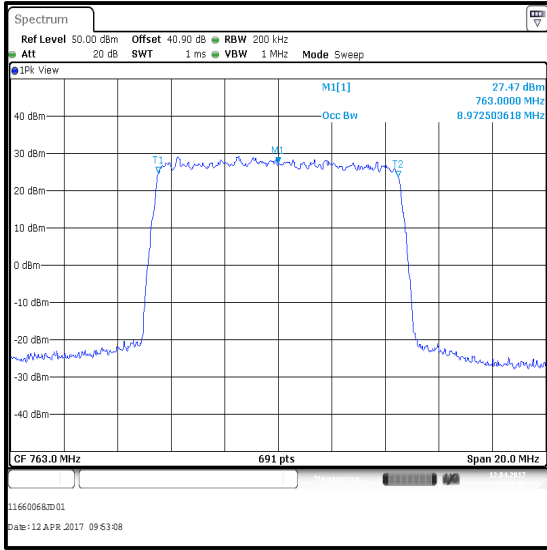


QPSK / RxTx2

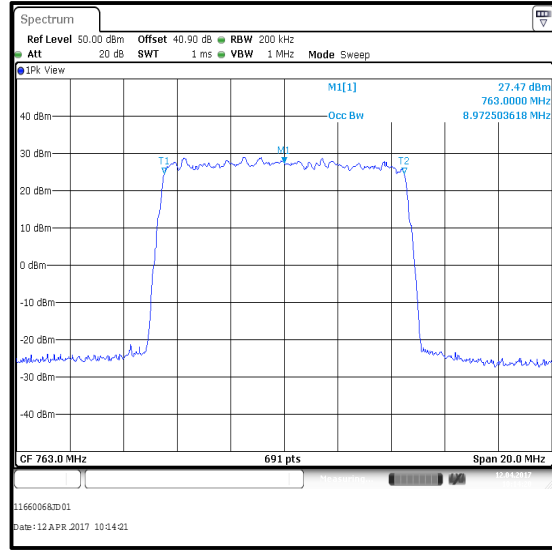
Transmitter Occupied Bandwidth (continued)

Results: 10 MHz Channel Bandwidth / 16QAM

Frequency	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth RxTx1 (MHz)	Occupied Bandwidth RxTx2 (MHz)
763.0	200	1000	8.973	8.973



16QAM / RxTx1

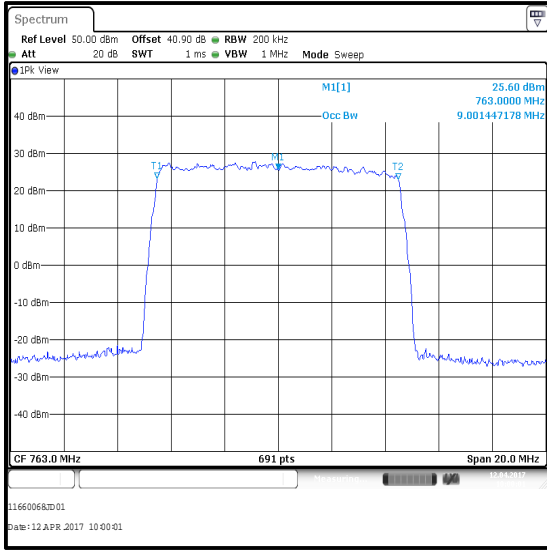


16QAM / RxTx2

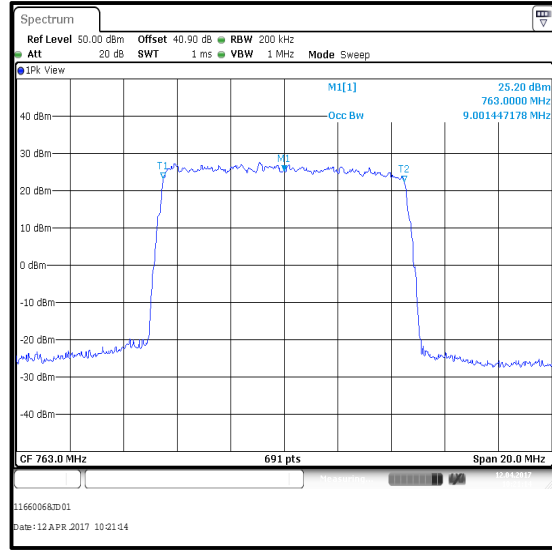
Transmitter Occupied Bandwidth (continued)

Results: 10 MHz Channel Bandwidth / 64QAM

Frequency	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth RxTx1 (MHz)	Occupied Bandwidth RxTx2 (MHz)
763.0	200	1000	9.001	9.001



64QAM / RxTx1



64QAM / RxTx2

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1659	Thermohygrometer	JM Handelspunkt	30.5015.13	None stated	22 Feb 2018	12
M1835	Signal Analyser	Rohde & Schwarz	FSV30	103050	06 Mar 2018	12
A2924	Attenuator	AtlanTecRF	AN18W5-20	832828#7	Calibrated before use	-
A2522	Attenuator	AtlanTecRF	AN18-20	832797#3	Calibrated before use	-
M1252	Signal Generator	Hewlett Packard	83640A	3119A00489	26 Oct 2017	24
M281	Power Meter	Hewlett Packard	E4418A	GB37170210-01	16 Feb 2018	12
M1227	Power Sensor	Agilent	8487D	3318A02122	22 Jun 2017	12

5.2.3. Transmitter Conducted Emission Mask**Test Summary:**

Test Engineer:	Patrick Jones	Test Date:	11 April 2017
Test Sample Serial Number:	BHMBH01000213		

FCC Reference:	Parts 90.210(b) & 2.1051
Test Method Used:	KDB 971168 D01 Section 6.0

Environmental Conditions:

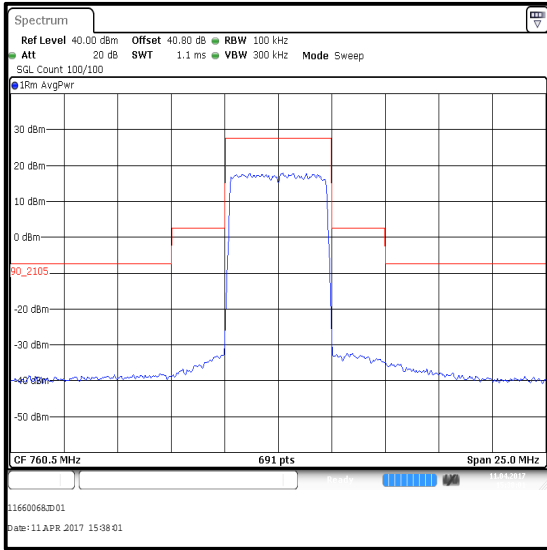
Temperature (°C):	23
Relative Humidity (%):	32

Note(s):

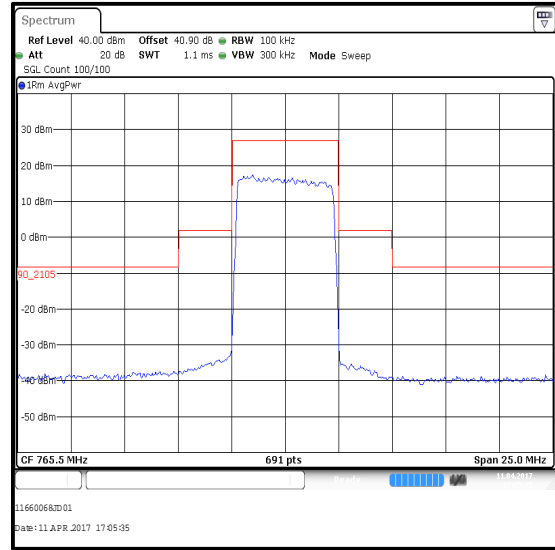
1. The measurement was performed with the EUT antenna port coupled to a signal analyser via suitable attenuation and cable. The power of the modulated signal was measured on a signal analyser using an RMS detector and RMS trace averaging.
2. Measurements were performed with the EUT transmitting with a 5 MHz and 10 MHz channel bandwidth, using QPSK, 16QAM and 64QAM modulation schemes.
3. Part 90.210 emissions mask B was applied to all measurements.
4. As the EUT is unable to produce a full power un-modulated carrier, the mask was referenced to the total power referenced earlier in this report.

Transmitter Conducted Emission Mask (continued)

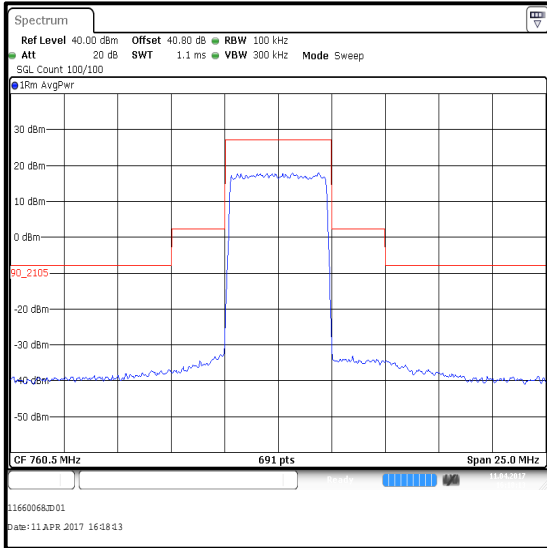
Results: 5 MHz Channel Bandwidth / QPSK



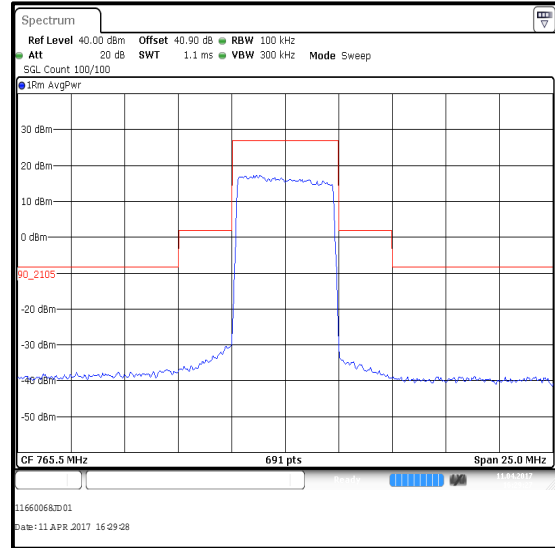
Bottom Channel / QPSK / RxTx1



Top Channel / QPSK / RxTx1



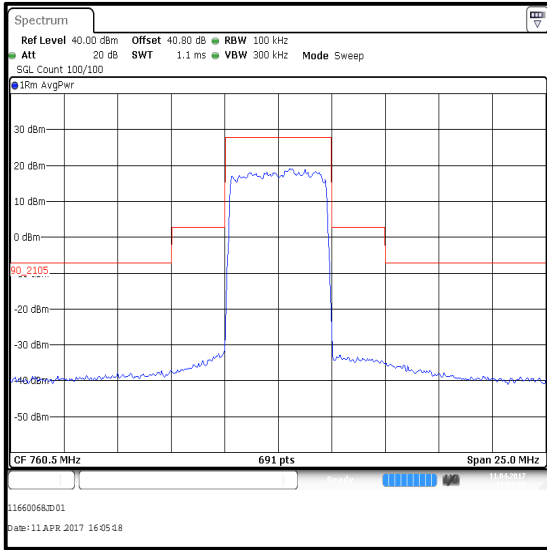
Bottom Channel / QPSK / RxTx2



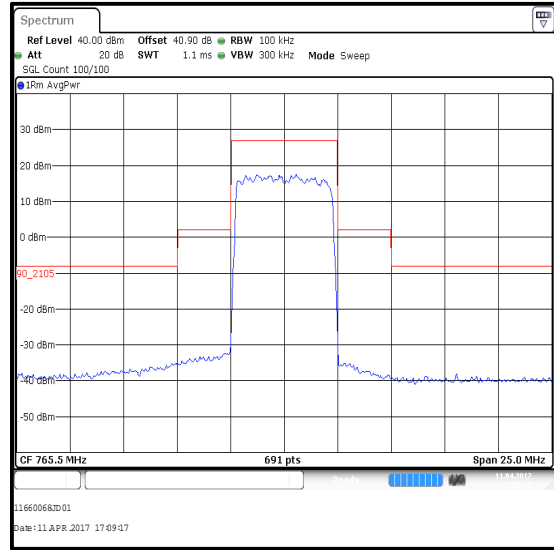
Top Channel / QPSK / RxTx2

Transmitter Conducted Emission Mask (continued)

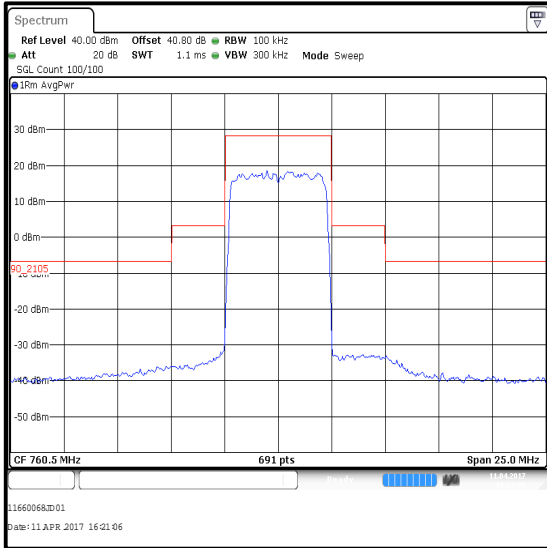
Results: 5 MHz Channel Bandwidth / 16QAM



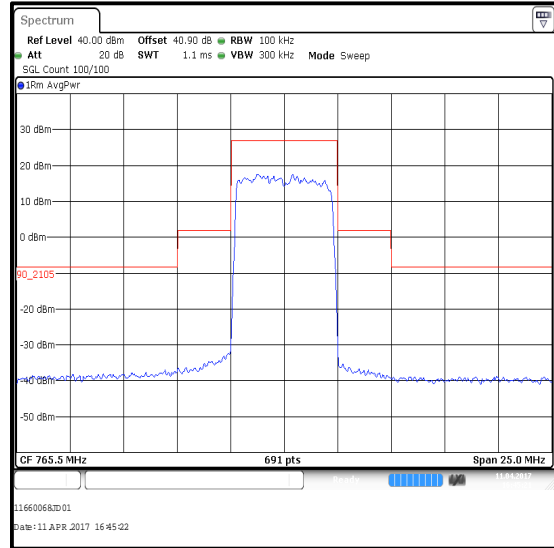
Bottom Channel / 16QAM / RxTx1



Top Channel / 16QAM / RxTx1



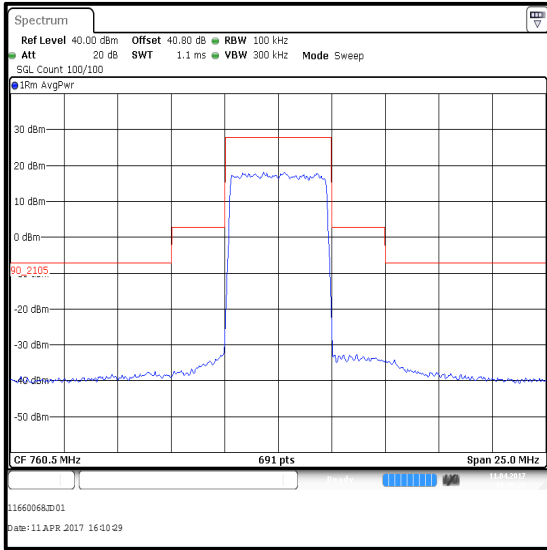
Bottom Channel / 16QAM / RxTx2



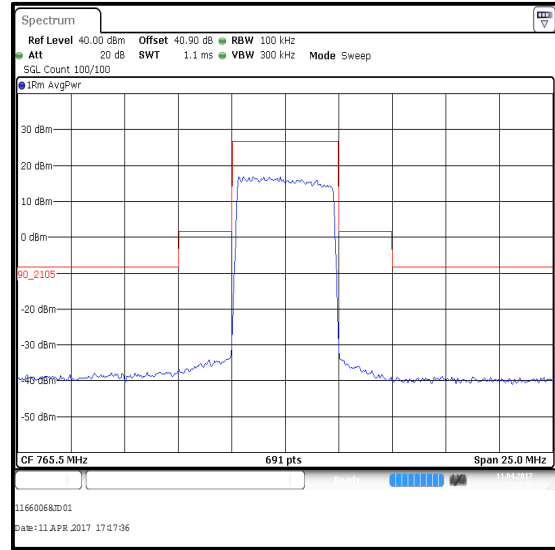
Top Channel / 16QAM / RxTx2

Transmitter Conducted Emission Mask (continued)

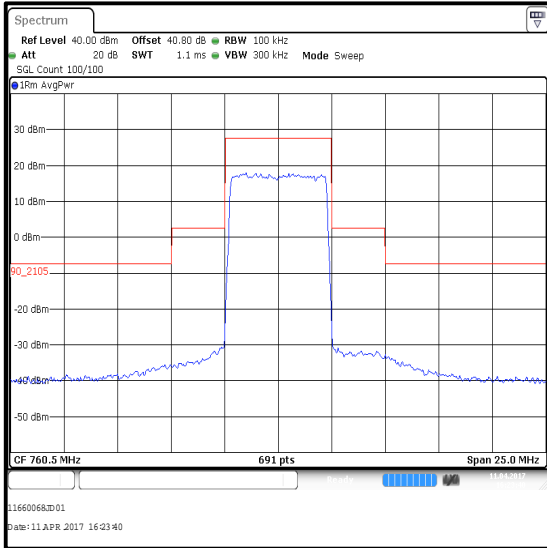
Results: 5 MHz Channel Bandwidth / 64QAM



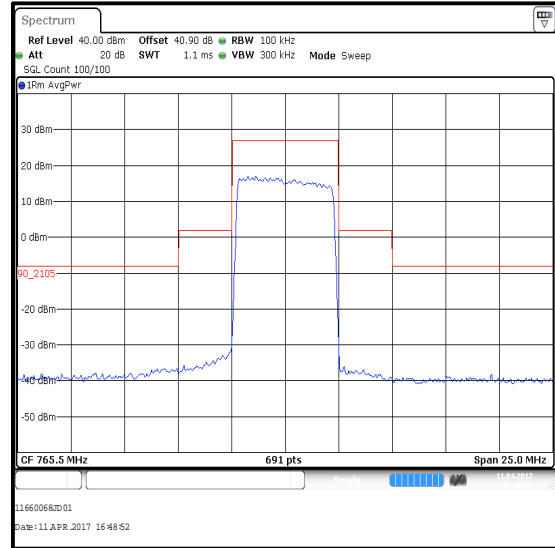
Bottom Channel / 64QAM / RxTx1



Top Channel / 64QAM / RxTx1



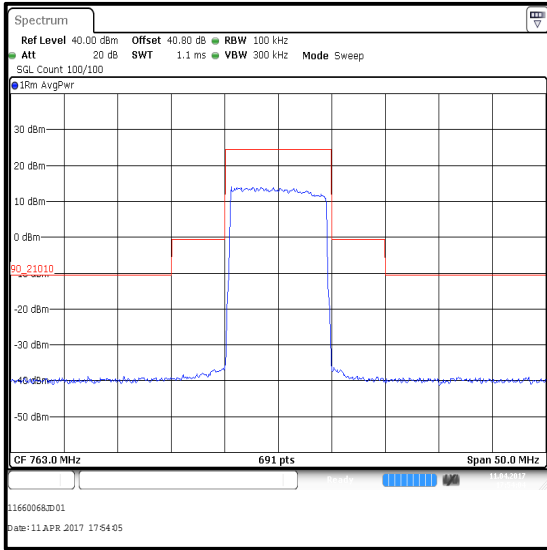
Bottom Channel / 64QAM / RxTx2



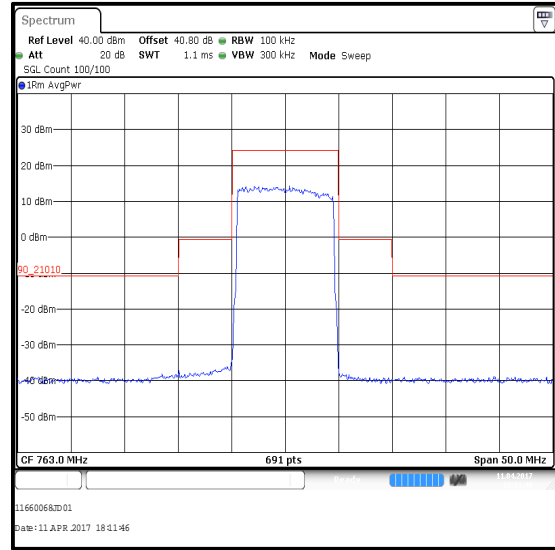
Top Channel / 64QAM / RxTx2

Transmitter Conducted Emission Mask (continued)

Results: 10 MHz Channel Bandwidth / QPSK

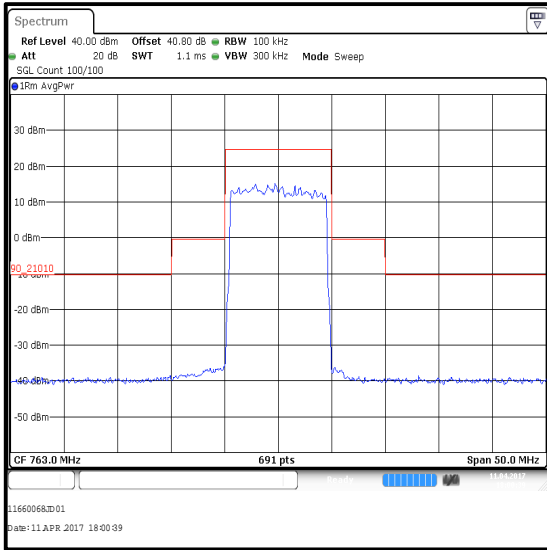


QPSK / RxTx1

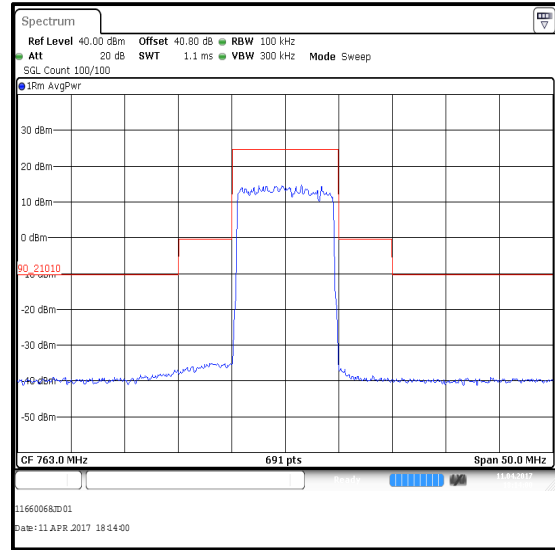


QPSK / RxTx2

Results: 10 MHz Channel Bandwidth / 16QAM



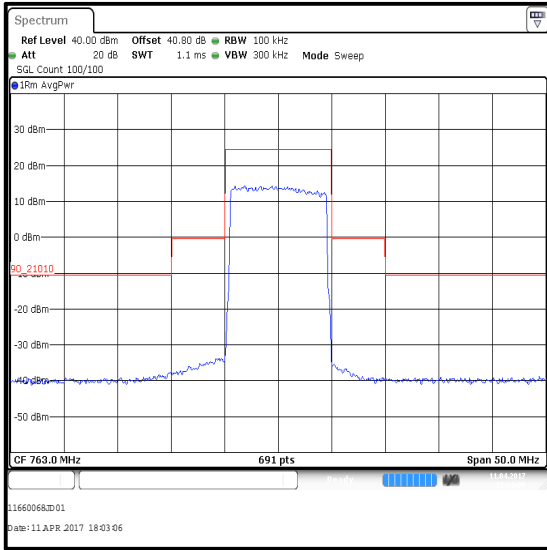
16QAM / RxTx1



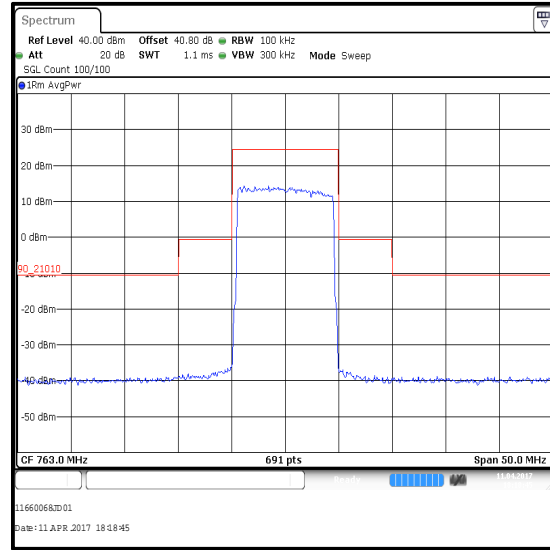
16QAM / RxTx2

Transmitter Conducted Emission Mask (continued)

Results: 10 MHz Channel Bandwidth / 64QAM



64QAM / RxTx1



64QAM / RxTx2

Test Equipment Used:

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1659	Thermohygrometer	JM Handelspunkt	30.5015.13	None stated	22 Feb 2018	12
M1835	Signal Analyser	Rohde & Schwarz	FSV30	103050	06 Mar 2018	12
A2924	Attenuator	AtlanTecRF	AN18W5-20	832828#7	Calibrated before use	-
A2522	Attenuator	AtlanTecRF	AN18-20	832797#3	Calibrated before use	-
M1252	Signal Generator	Hewlett Packard	83640A	3119A00489	26 Oct 2017	24
M281	Power Meter	Hewlett Packard	E4418A	GB37170210-01	16 Feb 2018	12
M1227	Power Sensor	Agilent	8487D	3318A02122	22 Jun 2017	12

5.2.4. Transmitter Conducted Emissions**Test Summary:**

Test Engineer:	Patrick Jones	Test Date:	06 April 2017
Test Sample Serial Number:	BHMBH01000213		

FCC Reference:	Parts 90.543(c) and 2.1051
Test Method Used:	KDB 971168 D01 Section 6.0
Frequency Range:	9 kHz to 32 GHz

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	35

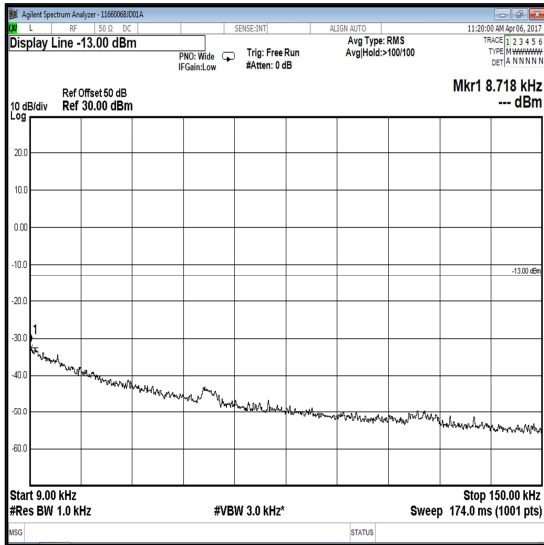
Note(s):

1. Pre-scans were performed with the EUT transmitting at maximum power with 5 MHz Channel Bandwidth using 16QAM modulation scheme, as this was found to produce the highest output level and therefore deemed worst case.
2. The emission seen on the 30 MHz to 1 GHz plot at approximately 760.5 MHz is the EUT carrier.
3. All emissions were >20 dB below the applicable limit or below the level of the noise floor of the measuring receiver, therefore the highest level of noise floor has been recorded in the table below.
4. Spurious emissions measurements were performed to 32 GHz, as the customer declared the highest internally generated clock or oscillator frequency to be 3154.3 MHz.

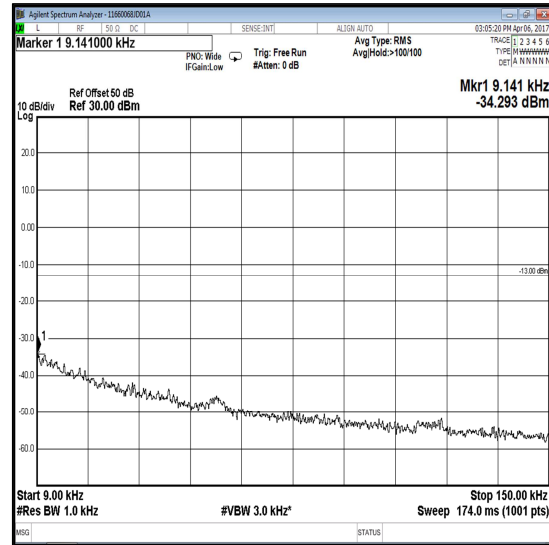
Results: 5 MHz Channel Bandwidth / 16QAM

Frequency (MHz)	Peak Emission Level (dBm)	Limit (dBm)	Margin (dB)	Result
3820.000	-29.6	-13.0	16.6	Complied

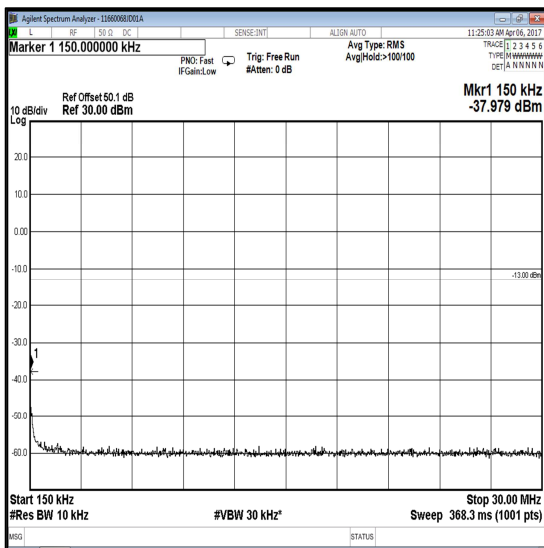
Transmitter Conducted Emissions (continued)



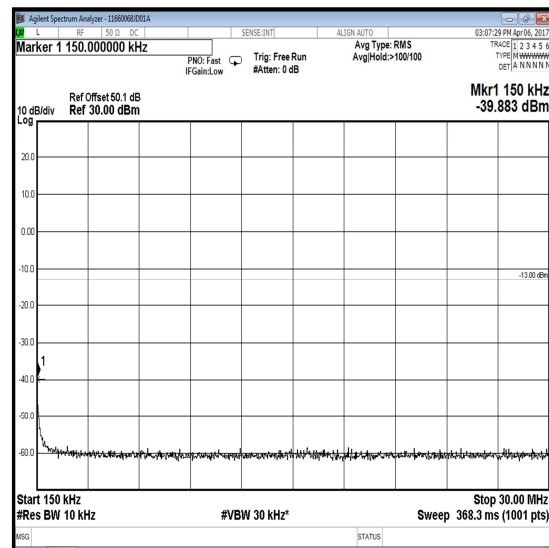
RxTx1



RxTx2

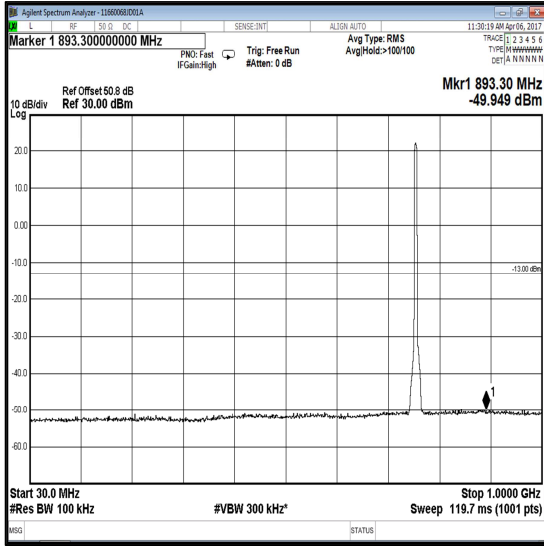


RxTx1

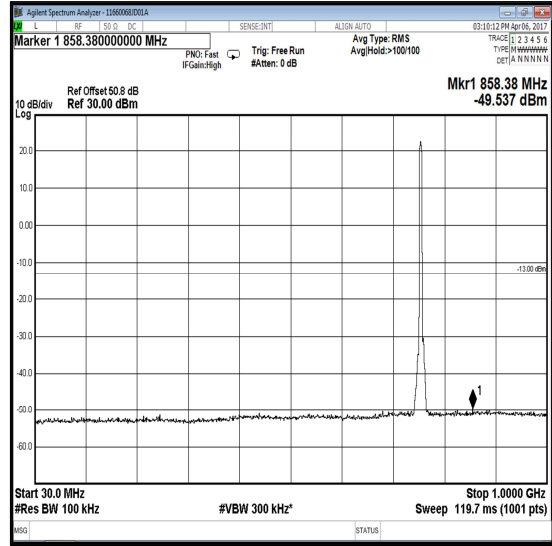


RxTx2

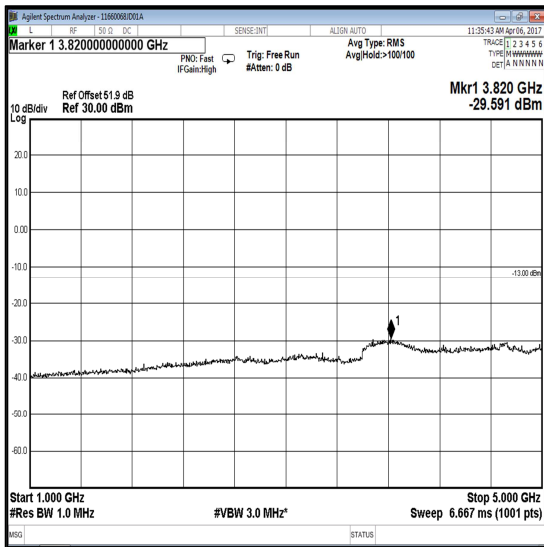
Transmitter Conducted Emissions (continued)



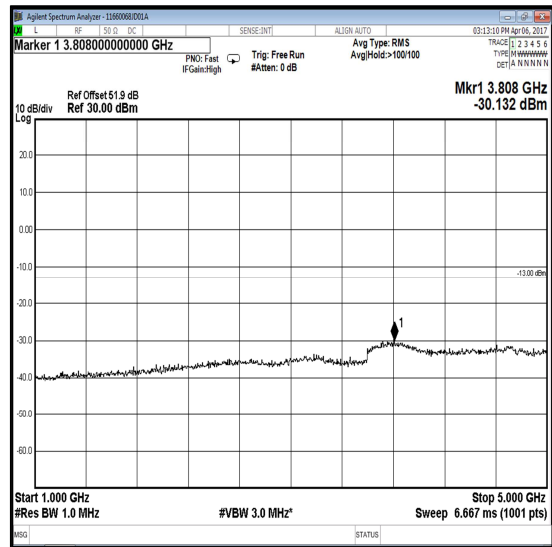
RxTx1



RxTx2

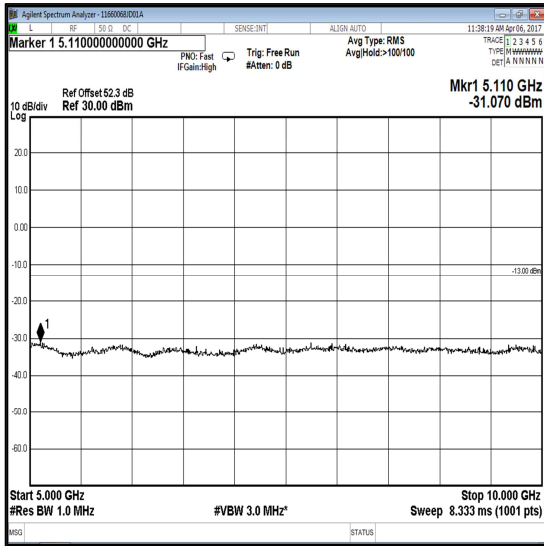


RxTx1

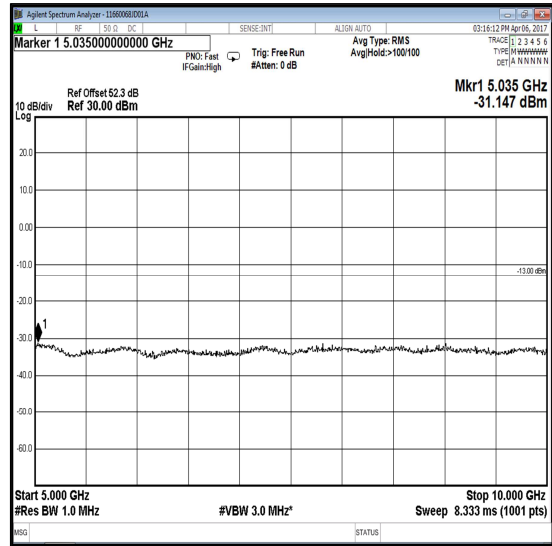


RxTx2

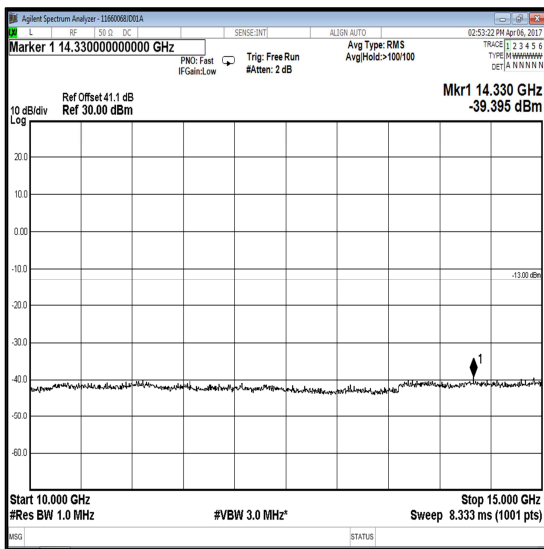
Transmitter Conducted Emissions (continued)



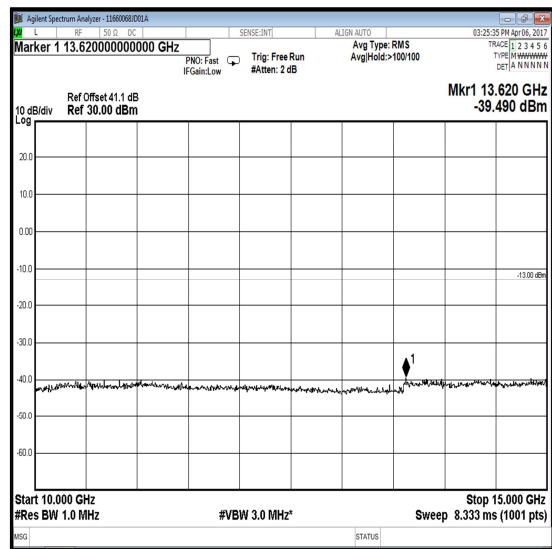
RxTx1



RxTx2

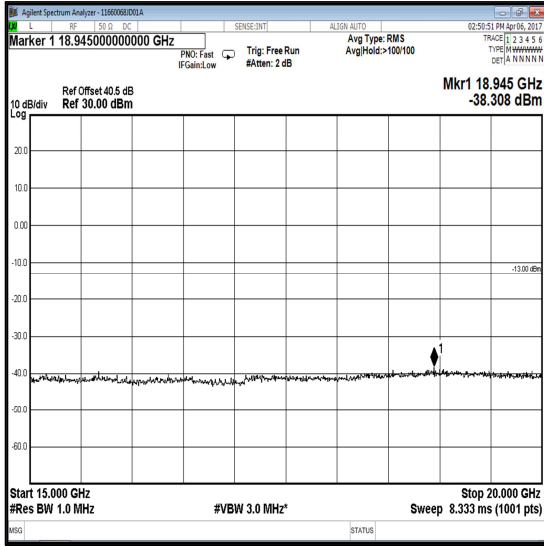


RxTx1

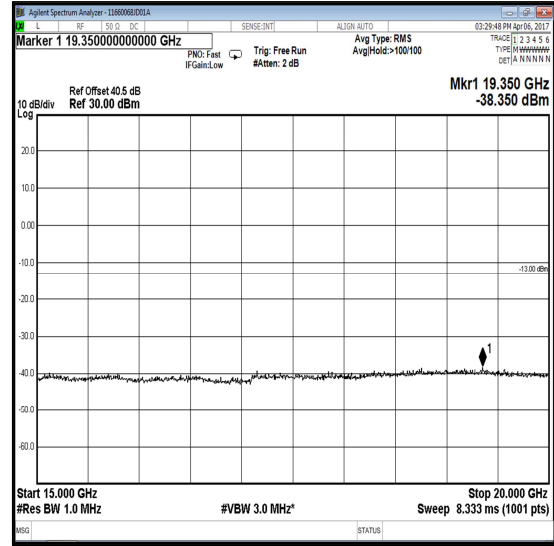


RxTx2

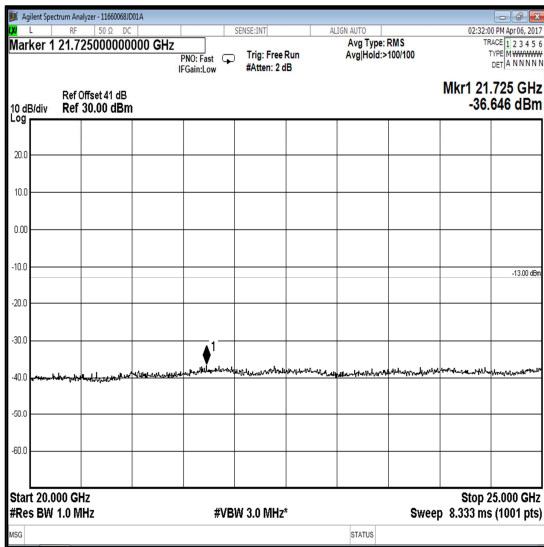
Transmitter Conducted Emissions (continued)



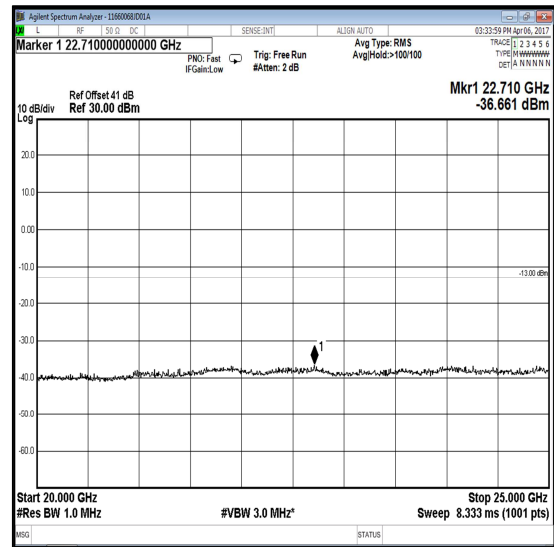
RxTx1



RxTx2

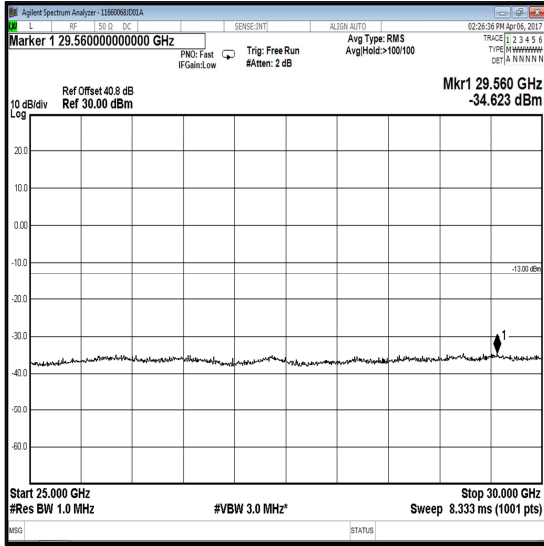


RxTx1

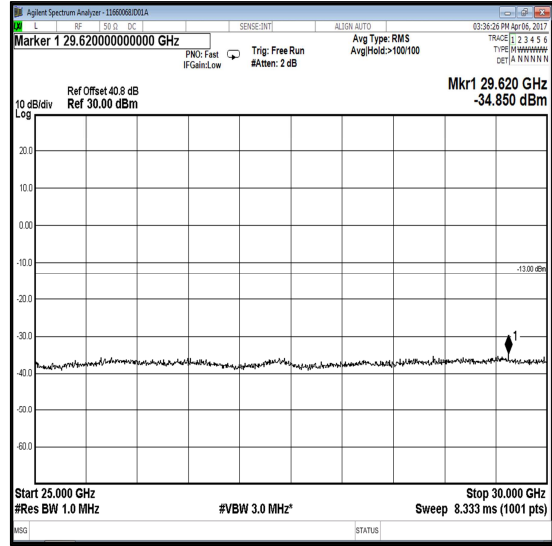


RxTx2

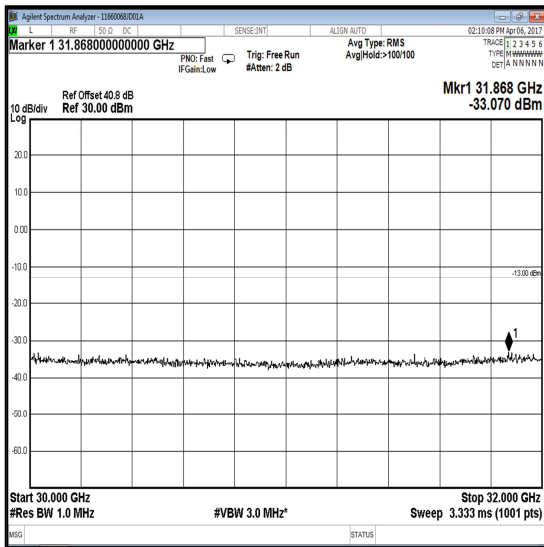
Transmitter Conducted Emissions (continued)



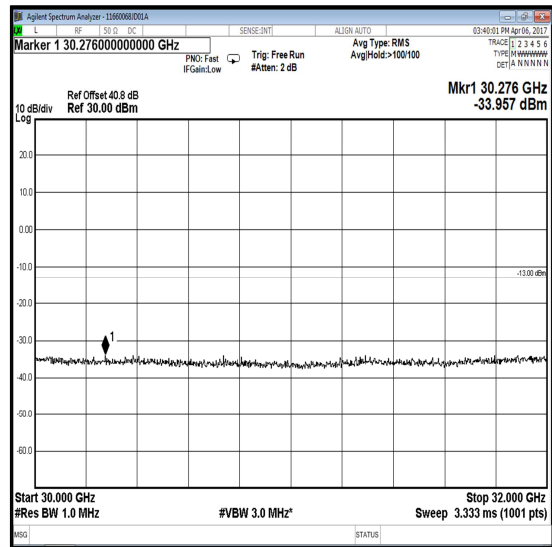
RxTx1



RxTx2



RxTx1



RxTx2

Transmitter Conducted Emissions (continued)**Test Equipment Used:**

Asset No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
M1659	Thermohygrometer	JM Handelspunkt	30.5015.13	None stated	22 Feb 2018	12
M1832	Signal Analyser	Agilent	N9010A	MY53470303	29 Mar 2018	24
A2924	Attenuator	AtlanTecRF	AN18W5-20	832828#7	Calibrated before use	-
A2632	Attenuator	Weinschel Associates	WA75-10-12	A301	Calibrated before use	-
A2633	Attenuator	Weinschel Associates	WA75-10-12	A302	Calibrated before use	-
A1738	Attenuator	Atlantic Microwave	BBS40-10	R1379	Calibrated before use	-
A2056	Attenuator	Atlantic Microwave	WA-54-10-12	A2056	Calibrated before use	-
A2522	Attenuator	AtlanTecRF	AN18-20	832797#3	Calibrated before use	-
M1252	Signal Generator	Hewlett Packard	83640A	3119A00489	26 Oct 2017	24
M281	Power Meter	Hewlett Packard	E4418A	GB37170210-01	16 Feb 2018	12
M1227	Power Sensor	Agilent	8487D	3318A02122	22 Jun 2017	12