FCC Test Report

Product Name	:	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66
Trade Name	:	Sequans Communications
Model No.	:	NB01Q-1
FCC ID	:	2AAGMNB01Q1

Applicant	:	Sequans Communications S.A.
Address	:	15-55 Boulevard Charles de Gaulle, Colombes, 92700, France

Date of Receipt	:	May 06, 2019
Issued Date	:	Sep. 24, 2019
Report No.	:	1950052R-HPUSP51V00
Report Version	:	V6.0

Testing Laboratory
3024

Test Report Certification

Issued Date : Sep. 24, 2019
Report No. : 1950052R-HPUSP51V00

Product Name	:	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66
Applicant	:	Sequans Communications S.A.
Address	:	15-55 Boulevard Charles de Gaulle, Colombes, 92700, France
Manufacturer	:	Sequans Communications S.A.
Model No.	:	NB01Q-1
FCC ID	:	2AAGMNB01Q1
EUT Voltage	:	DC 3.8V
Testing Voltage	:	DC 3.8V
Trade Name	:	Sequans Communications
Applicable Standard	:	FCC CFR Title 47 Part 22 Subpart H FCC CFR Title 47 Part 24 Subpart E FCC CFR Title 47 Part 27 Subpart L, Subpart F ANSI/TIA-603 KDB 971168 D01 Power Meas License Digital Systems v03
Test Lab	:	Hsin Chu Laboratory
Address	:	No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 310, Taiwan, R.O.C. TEL: +886-3-582-8001 / FAX: +886-3-582-8958
Test Result	:	Complied

Documented By : Lyla Yang

(Lyla Yang / Engineering Adm. Specialist)

Tested By : Lion Wang

(Rueyyan Lin / Engineer)

Approved By : Louis Hsu

(Louis Hsu / Deputy Manager)

Revision History

Report No.	Version	Description	Issued Date
1950052R-HPUSP51V00	V6.0	Initial issue of report	Sep. 24, 2019

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1. General Information

1.1. EUT Description

Product Name	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66
Trade Name	Sequans Communications
Model No.	NB01Q-1
Uplink Frequency Range	Band 2: 1850~1910MHz Band 4: 1710~1755MHz Band 5: 824~849MHz Band 12: 699~716MHz Band 13: 777~787MHz Band 66: 1710~1780MHz
Downlink Frequency Range	Band 2: 1930~1990MHz Band 4: 2110~2115MHz Band 5: 869~894MHz Band 12: 729~746MHz Band 13: 746~756MHz Band 66: 2110~2200MHz
Modulation	BPSK / QPSK
IMEI No.	TAC 35973809
HW Version	NB01Q
SW Version	UE6.0.0.0

Antenna Information	
MFR. / Model	Taoglas / TG.08.0113
Antenna Type	Monopole Passive Antenna
Antenna Gain	Band 2: 0.94 dBi Band 4: 0.06 dBi Band 5: -4.93 dBi Band 12/13: -6.46 dBi Band 66: 0.06 dBi

Accessories Information	
USB Cable	Shielded, 1.8m

Note:

1. This NB-IOT Module Supporting 2, 4, 5, 12, 13, 66 supports LTE Band 2/4/5/12/13/66.
2. Regarding frequency band operation, the lowest, middle and highest frequency of channel were selected to perform the test, and the details were shown on this report.
3. The EUT description is from the customer declaration.

1.2. Mode of Operation

DEKRA has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: LTE_NB-IoT_Band 2
Mode 2: LTE_NB-IoT_Band 4
Mode 3: LTE_NB-IoT_Band 5
Mode 4: LTE_NB-IoT_Band 12
Mode 5: LTE_NB-IoT_Band 13
Mode 6: LTE_NB-IoT_Band 66

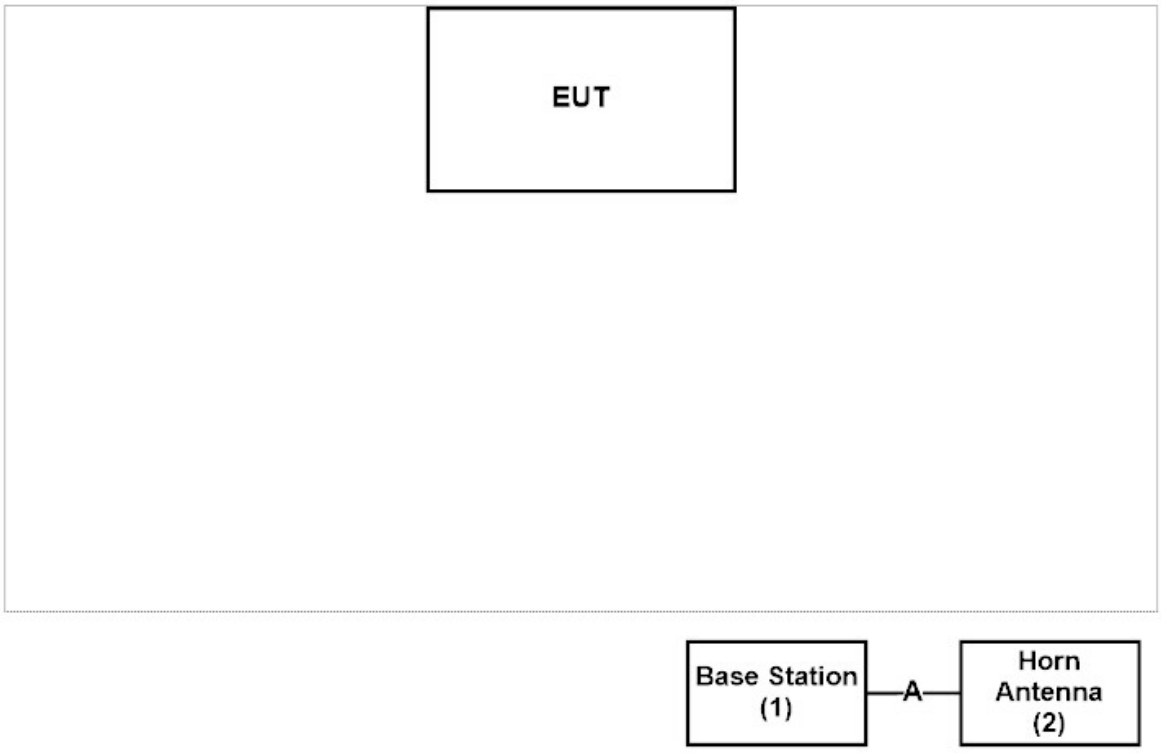
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Base Station	R&S	CMW500	157118	DoC	Non-Shielded, 2m.
2	Horn Antenna	ELECTRO METRICS	EM-6961	103326	DoC	--

1.4. Configuration of Tested System

Connection Diagram



Signal Cable Type		Signal cable Description
A	Flexible Cable	Shielded, 10m

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on 1.4.
2	Turn on the power of all equipment.
3	The EUT will continue receive the signal from LTE NB-IoT function.
4	Repeat the above procedure (3)

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

Band 2

Uplink: 1850-1910MHz

Downlink: 1930-1990MHz

LTE NB-IOT Band 2			
FCC Part 24 Subpart E			
Test item	Reference section	Limit	Result
RF Output Power	§2.1033 §2.1046 §24.232	<2 Watts	Pass
Occupied Bandwidth	§2.1049	N/A	Pass
Peak-to-average power ratio	§24.232	<13 dB	Pass
Spurious Emissions	§2.1053 §24.238	<-13dBm	Pass
Spurious Emissions at Antenna Terminals	§24.238	<-13dBm	Pass
Frequency Stability	§2.1055 §24.235	Within the frequency range	Pass

Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Band 4

Uplink: 1710-1755MHz

Downlink: 2100-2155MHz

LTE NB-IOT Band 4			
FCC Part 27 Subpart L			
Test item	Reference section	Limit	Result
RF Output Power	§2.1033 §2.1046 §27.50	<1 Watt	Pass
Occupied Bandwidth	§2.1049	N/A	Pass
Peak-to-average power ratio	§27.50	<13 dB	Pass
Spurious Emissions	§2.1053 §27.53	<-13dBm	Pass
Spurious Emissions at Antenna Terminals	§27.53	<-13dBm	Pass
Frequency Stability	§2.1055 §27.54	Within the frequency range	Pass

Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Band 5

Uplink: 824-849MHz

Downlink: 869-894MHz

LTE NB-IOT Band 5			
FCC Part 22 Subpart H			
Test item	Reference section	Limit	Result
RF Output Power	§2.1033 §2.1046 §22.913	<7 Watts	Pass
Occupied Bandwidth	§2.1049	N/A	Pass
Peak-to-average power ratio	§22.913	<13 dB	Pass
Spurious Emissions	§2.1053 §22.917	<-13dBm	Pass
Spurious Emissions at Antenna Terminals	§22.917	<-13dBm	Pass
Frequency Stability	§2.1055 §22.355	<±2.5 ppm	Pass

Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

B12

Uplink: 699-716MHz

Downlink: 729-746MHz

LTE NB-IOT Band 12			
FCC Part 27 Subpart F			
Test item	Reference section	Limit	Result
RF Output Power	§2.1033 §2.1046 §27.50	<3 Watts	Pass
Occupied Bandwidth	§2.1049	N/A	Pass
Peak-to-average power ratio	§27.50	<13 dB	Pass
Spurious Emissions	§2.1053 §27.53	<-13dBm	Pass
Spurious Emissions at Antenna Terminals	§27.53	<-13dBm	Pass
Frequency Stability	§2.1055 §27.54	Within the frequency range	Pass

Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

B13

Uplink: 777-787MHz

Downlink: 746-756MHz

LTE NB-IOT Band 13			
FCC Part 27 Subpart F			
Test item	Reference section	Limit	Result
RF Output Power	§2.1033 §2.1046 §27.50	<3 Watts	Pass
Occupied Bandwidth	§2.1049	N/A	Pass
Peak-to-average power ratio	§27.50	<13 dB	Pass
Spurious Emissions	§2.1053 §27.53	<-13dBm	Pass
Spurious Emissions at Antenna Terminals	§27.53	<-13dBm	Pass
Frequency Stability	§2.1055 §27.54	Within the frequency range	Pass

Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

B66

Uplink: 1710~1780MHz

Downlink: 2110~2200MHz

LTE NB-IOT Band 66			
FCC Part 27 Subpart L			
Test item	Reference section	Limit	Result
RF Output Power	§2.1033 §2.1046 §27.50	<1 Watts	Pass
Occupied Bandwidth	§2.1049	N/A	Pass
Peak-to-average power ratio	§27.50	<13 dB	Pass
Spurious Emissions	§2.1053 §27.53	<-13dBm	Pass
Spurious Emissions at Antenna Terminals	§27.53	<-13dBm	Pass
Frequency Stability	§2.1055 §27.54	Within the frequency range	Pass

Determining compliance shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.2. Test Environment

Items	Test Item	Required (IEC 68-1)	Actual	Test Site
Temperature (°C)	RF Output Power	15 - 35	25	3
Humidity (%RH)		20 - 75	50	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	Occupied Bandwidth	15 - 35	25	3
Humidity (%RH)		20 - 75	50	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	Peak To Average Ratio	15 - 35	25	3
Humidity (%RH)		20 - 75	50	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	Spurious Emission	15 - 35	25	2/3
Humidity (%RH)		20 - 75	50	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	Spurious Emissions at Antenna Terminals	15 - 35	25	3
Humidity (%RH)		20 - 75	50	
Barometric pressure (mbar)		860 - 1060	950-1000	
Temperature (°C)	Frequency Stability	15 - 35	25	3
Humidity (%RH)		20 - 75	50	
Barometric pressure (mbar)		860 - 1060	950-1000	

Note: Test site information refers to Laboratory Information.

USA	**:**	**FCC Registration Number: TW3024**
Canada	**:**	**IC Registration Number: 22397-1 / 22397-2 / 22397-3**

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:
http://www.dekra.com.tw/english/about/certificates.aspx?bval=5
The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site : http://www.dekra.com.tw/index_en.aspx

If you have any comments, Please don't hesitate to contact us. Our test sites as below:

1 No. 75-2, 3rd Lin, WangYe Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan (R.O.C.)
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : info.tw@dekra.com
2 No.372, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
TEL: +886-3-582-8001 / FAX: +886-3-582-8958 E-Mail : info.tw@dekra.com
3 No.372-2, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County 31061, Taiwan, R.O.C.
TEL: +886-3-582-8001 / FAX: +886-3-582-8958 E-Mail : info.tw@dekra.com

2.3. List of Test Equipment

RF Output Power / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wideband Radio Communication Tester	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

Occupied Bandwidth / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wideband Radio Communication Tester	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

Peak-to-average power ratio / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wideband Radio Communication Tester	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

Spurious Emissions (Conducted) / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wideband Radio Communication Tester	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

Spurious Emission (Radiated) / CB4-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Horn Antenna	Schwarzbeck	BBHA 9120D	639	2019/05/28	2020/05/27
Bilog Antenna	Teseq	CBL6112D	23191	2019/06/17	2020/06/16
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Signal Analyzer	R&S	FSVA40	101455	2018/11/05	2019/11/04
Horn Antenna	Schwarzbeck	BBHA 9170	202	2019/01/16	2020/01/15
Pre-Amplifier	DEKRA	AP-400C	201801231	2018/12/05	2019/12/04
Pre-Amplifier	EMCI	EMC11830I	980366	2018/12/21	2019/12/20
Horn Antenna	Schwarzbeck	BBHA 9120D	01656	2018/10/17	2019/10/16
Pre-Amplifier	DEKRA	AP-025C	201801236	2019/02/18	2020/02/17
Signal Analyzer	R&S	FSV40	101435	2019/07/08	2020/07/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15
Wideband Radio Communication Tester	R&S	CMW500	157118	2019/08/08	2020/08/07
Coaxial Cable(23.5m)	Suhner	SF102_SF104_ SF106	CB4_1	2019/07/25	2020/07/24

Spurious Emissions at Antenna Terminals / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2019/08/29	2020/08/29
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wideband Radio Communication Tester	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

Frequency Stability / SR10-H

Instrument	Manufacturer	Model No.	Serial No.	Cal. Date	Next Cal. Date
Signal & Spectrum Analyzer	R&S	FSV40	101049	2018/12/21	2019/12/20
EXA Signal Analyzer	Keysight	N9010A	MY51440132	2019/03/15	2020/03/14
Spectrum Analyzer	Keysight	N9030B	MY57140404	2019/06/18	2020/06/17
Spectrum Analyzer	Keysight	N9010B	MY57110159	2019/05/03	2020/05/02
Wideband Radio Communication Tester	R&S	CMW500	157118	2019/08/08	2020/08/07
Wideband Radio Communication Tester	R&S	CMW500	106071	2019/01/16	2020/01/15

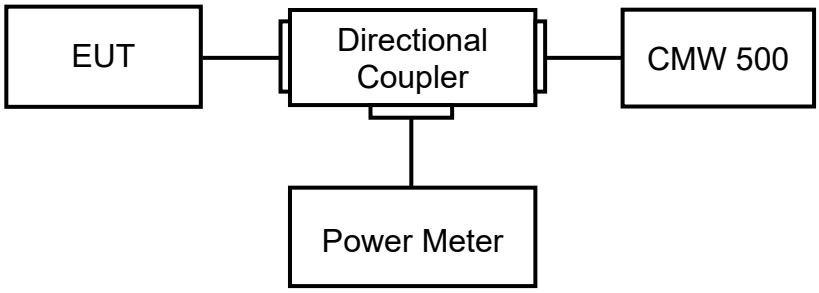
Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.4. Measurement Uncertainty

Test Item	Uncertainty
RF Output Power	±1.27dB.
Occupied Bandwidth	± 10 Hz
Peak To Average Ratio	not exceed 13 dB.
Spurious Emissions	± 1.27 dB for Conducted Measurement. ± 3.2 dB for Radiated Measurement.
Spurious Emissions at Antenna Terminals	± 3.2 dB
Frequency Stability	± 10 Hz

3. RF Output Power

3.1. Test Setup



3.2. Test Procedure

a) The RF output of the transmitter was connected to base station simulator.
b) The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement..
c) Set EUT at maximum average power by base station emulator.
d) Measure lowest, middle, and highest channels for each bandwidth and different modulation.

Effective Isotropic Radiated Power = Conducted Power(dBm) + Antenna Gain(dBi)
Effective Radiated Power = Conducted Power(dBm) + Antenna Gain(dBi) - 2.15dB

3.3. Test Method

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause5.2.4
ANSI C63.26-2015 Sub-clause 5.2.4.2

3.4. Test Result

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	RF Output Power		
Test Mode	Mode 1: LTE_NB-IoT_Band 2		
Date of Test	2019/09/18	Test Site	SR10-H

Channel	Frequency (MHz)	Modulation	BW (kHz)	RB No.	RB offset	Conducted Output Power (dBm)	RF Output Power (W) EIRP	Limit (W) EIRP
18602	1850.2	BPSK	3.75	1	0	23.07	0.252	2
				1	47	22.7	0.231	2
			15	1	0	22.73	0.233	2
				1	11	22.3	0.211	2
		QPSK	3.75	1	0	23.15	0.256	2
				1	47	22.75	0.234	2
			15	1	0	22.71	0.232	2
				1	11	22.38	0.215	2
				12	0	22.36	0.214	2
18900	1880	BPSK	3.75	1	0	23.31	0.266	2
				1	47	22.9	0.242	2
			15	1	0	23	0.248	2
				1	11	22.53	0.222	2
		QPSK	3.75	1	0	23.43	0.274	2
				1	47	22.99	0.247	2
			15	1	0	22.98	0.247	2
				1	11	22.56	0.224	2
				12	0	22.63	0.228	2
19198	1909.8	BPSK	3.75	1	0	23.48	0.277	2
				1	47	22.94	0.244	2
			15	1	0	22.99	0.247	2
				1	11	22.51	0.221	2
		QPSK	3.75	1	0	23.51	0.279	2
				1	47	22.96	0.245	2
			15	1	0	23.07	0.252	2
				1	11	22.55	0.223	2
				12	0	22.84	0.239	2

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	RF Output Power		
Test Mode	Mode 2: LTE_NB-IoT_Band 4		
Date of Test	2019/09/18	Test Site	SR10-H

Channel	Frequency (MHz)	Modulation	BW (kHz)	RB No.	RB offset	Conducted Output Power (dBm)	RF Output Power (W) EIRP	Limit (W) EIRP
19952	1710.2	BPSK	3.75	1	0	23.42	0.223	1
				1	47	23.06	0.205	1
			15	1	0	23.12	0.208	1
				1	11	22.72	0.190	1
		QPSK	3.75	1	0	23.48	0.226	1
				1	47	22.97	0.201	1
			15	1	0	23.11	0.207	1
				1	11	22.72	0.190	1
				12	0	22.64	0.186	1
20175	1732.5	BPSK	3.75	1	0	23.39	0.221	1
				1	47	22.94	0.200	1
			15	1	0	23.04	0.204	1
				1	11	22.72	0.190	1
		QPSK	3.75	1	0	23.41	0.222	1
				1	47	22.95	0.200	1
			15	1	0	23.01	0.203	1
				1	11	22.62	0.185	1
				12	0	22.55	0.182	1
20398	1754.8	BPSK	3.75	1	0	23.17	0.210	1
				1	47	22.83	0.195	1
			15	1	0	22.82	0.194	1
				1	11	22.37	0.175	1
		QPSK	3.75	1	0	23.22	0.213	1
				1	47	22.74	0.191	1
			15	1	0	22.77	0.192	1
				1	11	22.39	0.176	1
				12	0	22.28	0.171	1

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	RF Output Power		
Test Mode	Mode 3: LTE_NB-IoT_Band 5		
Date of Test	2019/09/18	Test Site	SR10-H

Channel	Frequency (MHz)	Modulation	BW (kHz)	RB No.	RB offset	Conducted Output Power (dBm)	RF Output Power (W) ERP	Limit (W) ERP
20402	824.2	BPSK	3.75	1	0	23.35	0.042	7
				1	47	22.81	0.037	7
			15	1	0	22.97	0.039	7
				1	11	22.45	0.034	7
		QPSK	3.75	1	0	23.48	0.044	7
				1	47	22.97	0.039	7
			15	1	0	23	0.039	7
				1	11	22.58	0.035	7
				12	0	22.63	0.036	7
20525	836.5	BPSK	3.75	1	0	23.29	0.042	7
				1	47	22.82	0.037	7
			15	1	0	22.88	0.038	7
				1	11	22.42	0.034	7
		QPSK	3.75	1	0	23.3	0.042	7
				1	47	22.84	0.038	7
			15	1	0	22.83	0.038	7
				1	11	22.43	0.034	7
				12	0	22.5	0.035	7
20648	848.8	BPSK	3.75	1	0	22.97	0.039	7
				1	47	22.43	0.034	7
			15	1	0	22.52	0.035	7
				1	11	22.03	0.031	7
		QPSK	3.75	1	0	22.96	0.039	7
				1	47	22.44	0.034	7
			15	1	0	22.61	0.036	7
				1	11	22.09	0.032	7
				12	0	22.12	0.032	7

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	RF Output Power		
Test Mode	Mode 4: LTE_NB-IoT_Band 12		
Date of Test	2019/09/18	Test Site	SR10-H

Channel	Frequency (MHz)	Modulation	BW (kHz)	RB No.	RB offset	Conducted Output Power (dBm)	RF Output Power (W) ERP	Limit (W) ERP
23011	699.1	BPSK	3.75	1	0	23.28	0.029	3
				1	47	22.75	0.026	3
			15	1	0	22.82	0.026	3
				1	11	22.36	0.024	3
		QPSK	3.75	1	0	23.34	0.030	3
				1	47	22.84	0.026	3
			15	1	0	22.86	0.027	3
				1	11	22.39	0.024	3
				12	0	22.75	0.026	3
23095	707.5	BPSK	3.75	1	0	23.48	0.031	3
				1	47	22.93	0.027	3
			15	1	0	22.95	0.027	3
				1	11	22.4	0.024	3
		QPSK	3.75	1	0	23.49	0.031	3
				1	47	22.96	0.027	3
			15	1	0	23.02	0.028	3
				1	11	22.55	0.025	3
				12	0	22.86	0.027	3
23178	715.8	BPSK	3.75	1	0	23.46	0.031	3
				1	47	22.93	0.027	3
			15	1	0	23.02	0.028	3
				1	11	22.67	0.025	3
		QPSK	3.75	1	0	23.49	0.031	3
				1	47	23.1	0.028	3
			15	1	0	23.1	0.028	3
				1	11	22.61	0.025	3
				12	0	22.91	0.027	3

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	RF Output Power		
Test Mode	Mode 5: LTE_NB-IoT_Band 13		
Date of Test	2019/09/18	Test Site	SR10-H

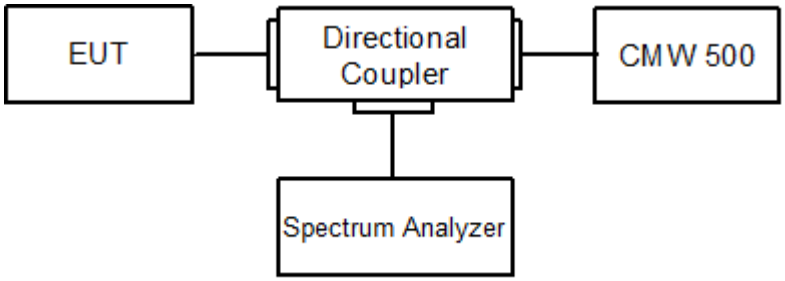
Channel	Frequency (MHz)	Modulation	BW (kHz)	RB No.	RB offset	Conducted Output Power (dBm)	RF Output Power (W) ERP	Limit (W) ERP
23182	777.2	BPSK	3.75	1	0	23.18	0.029	3
				1	47	22.78	0.026	3
			15	1	0	22.89	0.027	3
				1	11	22.31	0.023	3
		QPSK	3.75	1	0	23.29	0.029	3
				1	47	22.84	0.026	3
			15	1	0	22.77	0.026	3
				1	11	22.19	0.023	3
				12	0	22.41	0.024	3
23230	782	BPSK	3.75	1	0	23.22	0.029	3
				1	47	22.64	0.025	3
			15	1	0	22.72	0.026	3
				1	11	22.08	0.022	3
		QPSK	3.75	1	0	23.23	0.029	3
				1	47	22.64	0.025	3
			15	1	0	22.76	0.026	3
				1	11	22.28	0.023	3
				12	0	22.39	0.024	3
23278	786.8	BPSK	3.75	1	0	23.04	0.028	3
				1	47	22.58	0.025	3
			15	1	0	22.43	0.024	3
				1	11	21.8	0.021	3
		QPSK	3.75	1	0	22.99	0.027	3
				1	47	22.43	0.024	3
			15	1	0	22.38	0.024	3
				1	11	22.8	0.026	3
				12	0	22.4	0.024	3

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	RF Output Power		
Test Mode	Mode 6: LTE_NB-IoT_Band 66		
Date of Test	2019/09/18	Test Site	SR10-H

Channel	Frequency (MHz)	Modulation	BW (kHz)	RB No.	RB offset	Conducted Output Power (dBm)	RF Output Power (W) EIRP	Limit (W) EIRP
131974	1710.2	BPSK	3.75	1	0	23.29	0.216	1
				1	47	22.84	0.195	1
			15	1	0	22.93	0.199	1
				1	11	22.51	0.181	1
		QPSK	3.75	1	0	23.29	0.216	1
				1	47	22.93	0.199	1
			15	1	0	22.94	0.200	1
				1	11	22.55	0.182	1
				12	0	22.47	0.179	1
132322	1745	BPSK	3.75	1	0	22.95	0.200	1
				1	47	22.55	0.182	1
			15	1	0	22.62	0.185	1
				1	11	22.13	0.166	1
		QPSK	3.75	1	0	22.96	0.200	1
				1	47	22.56	0.183	1
			15	1	0	22.54	0.182	1
				1	11	22.14	0.166	1
				12	0	22.11	0.165	1
132672	1779.8	BPSK	3.75	1	0	22.98	0.201	1
				1	47	22.52	0.181	1
			15	1	0	22.58	0.184	1
				1	11	22.16	0.167	1
		QPSK	3.75	1	0	22.92	0.199	1
				1	47	22.48	0.179	1
			15	1	0	22.65	0.187	1
				1	11	22.14	0.166	1
				12	0	22.17	0.167	1

4. Occupied Bandwidth

4.1. Test Setup



4.2. Test Procedure

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. The 26 dB bandwidth and 99% occupied bandwidth of the low & middle & high channel for the highest RF powers were measured.

4.3. Test Method

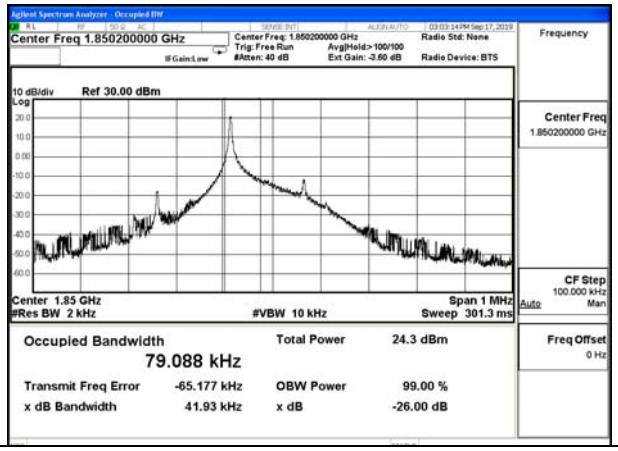
KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause4.2 & 4.3
ANSI C63.26-2015 Sub-clause 5.4.3 & 5.4.4

4.4. Test Result

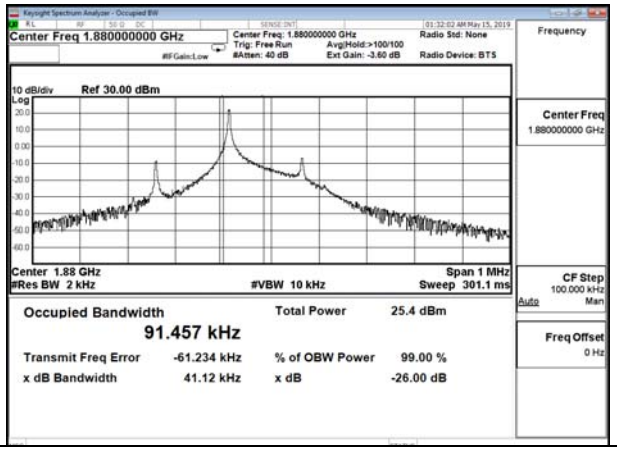
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: LTE_NB-IoT_Band 2		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 2_3.75K_BPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
18602	1850.2	79.088	41.930	N/A
18900	1880.0	91.457	41.120	N/A
19198	1909.8	75.627	41.430	N/A

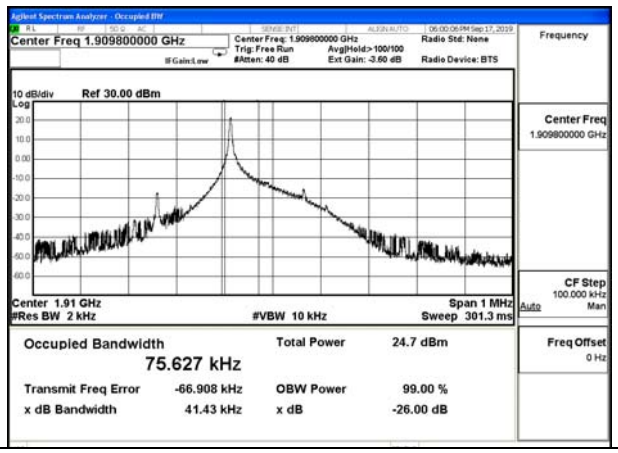
B2_3.75K_CH18602_BPSK_1RB0



B2_3.75K_CH18900_BPSK_1RB0



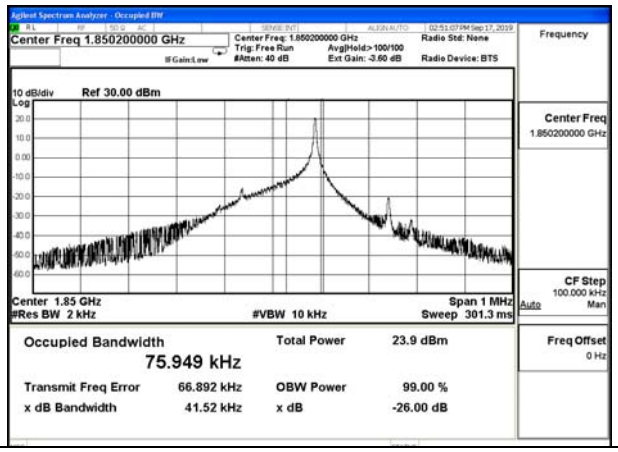
B2_3.75K_CH19198_BPSK_1RB0



Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: LTE_NB-IoT_Band 2		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 2_3.75K_BPSK_1RB47				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
18602	1850.2	75.949	41.520	N/A
18900	1880.0	79.756	40.770	N/A
19198	1909.8	77.468	41.370	N/A

B2_3.75K_CH18602_BPSK_1RB47



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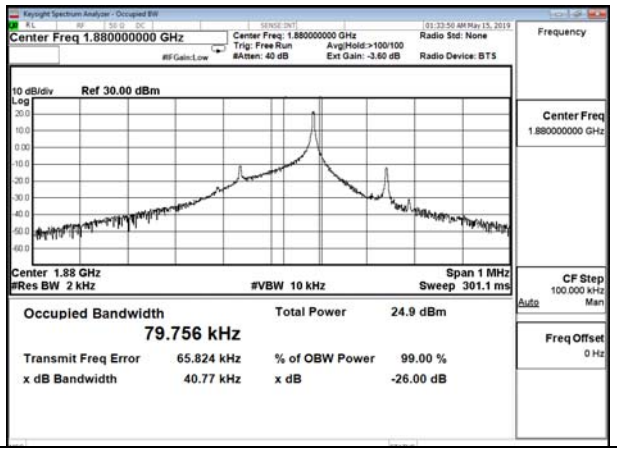

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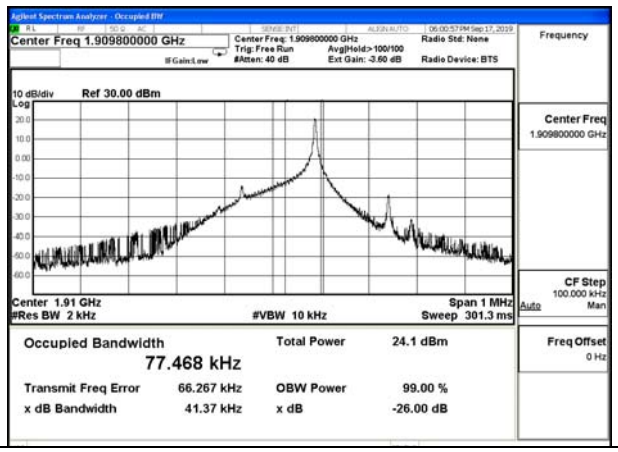
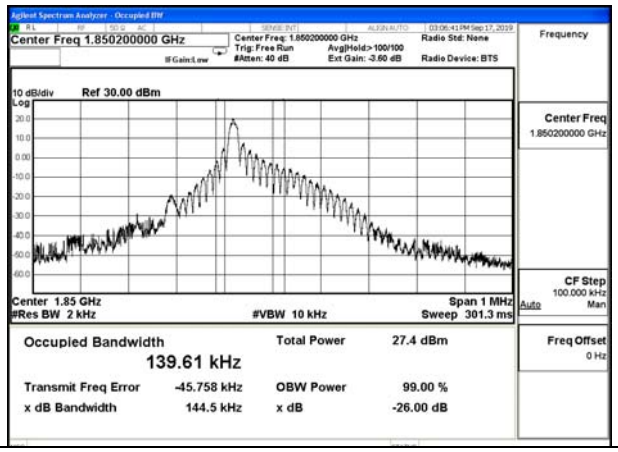


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: LTE_NB-IoT_Band 2		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 2_15K_QPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
18602	1850.2	139.610	144.500	N/A
18900	1880.0	142.580	182.400	N/A
19198	1909.8	137.470	144.600	N/A

B2_15K_CH18621_QPSK_1RB0



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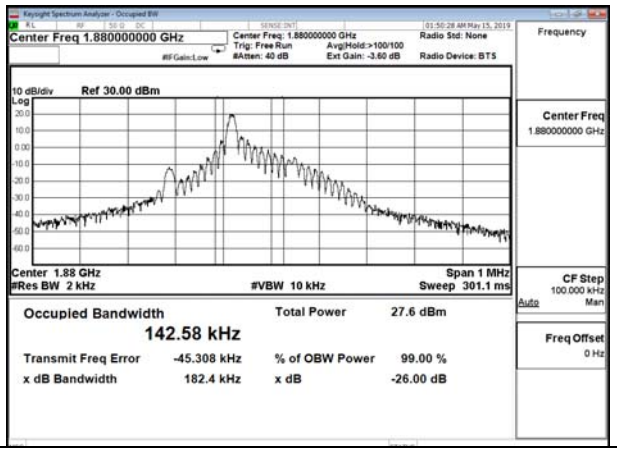

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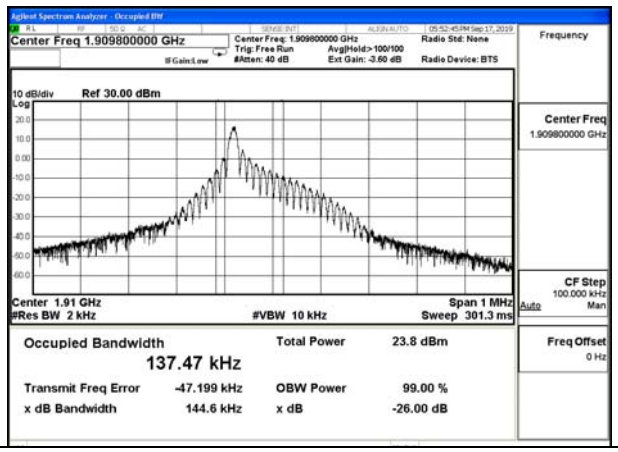
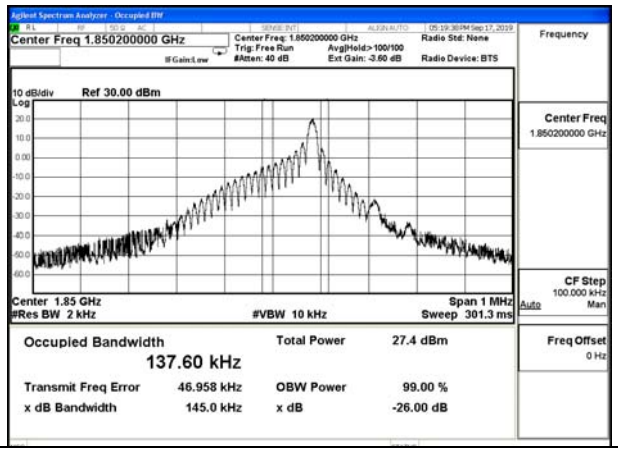


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: LTE_NB-IoT_Band 2		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 2_15K_QPSK_1RB11				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
18602	1850.2	137.600	145.000	N/A
18900	1880.0	139.310	145.700	N/A
19198	1909.8	139.750	169.500	N/A

B2_15K_CH18602_QPSK_1RB11



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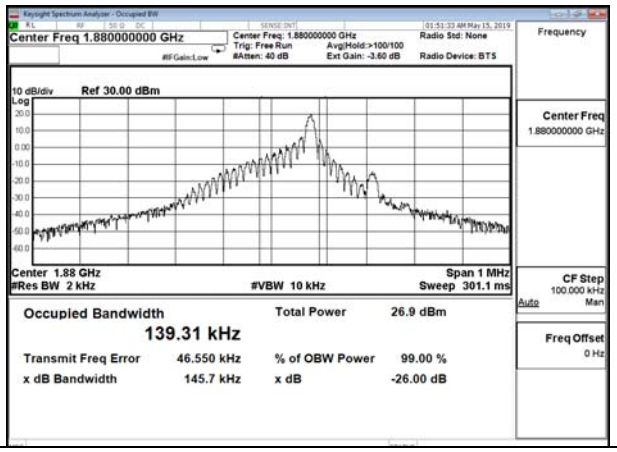

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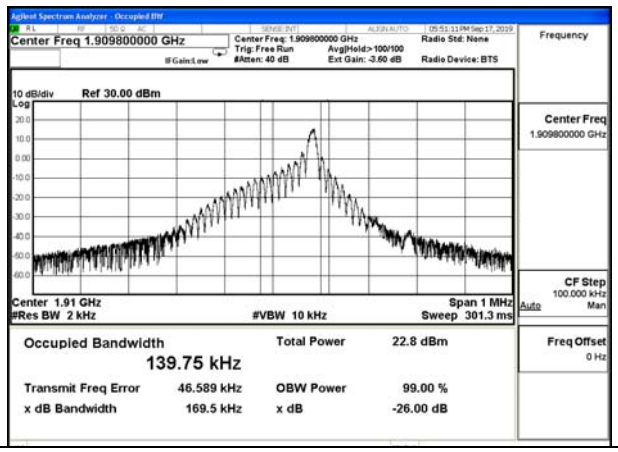
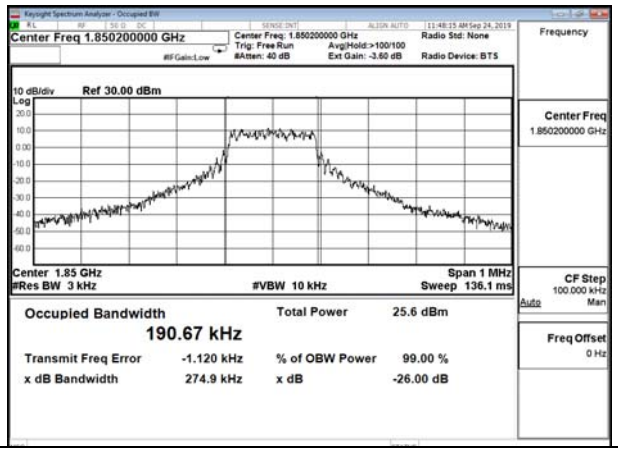


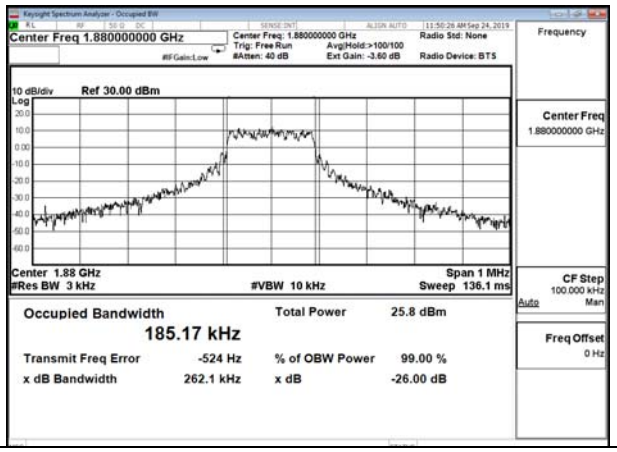
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: LTE_NB-IoT_Band 2		
Date of Test	2019/09/24	Test Site	SR10-H

NB-IoT Band 2_15K_QPSK_12RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
18602	1850.2	190.670	274.900	N/A
18900	1880.0	185.170	262.100	N/A
19198	1909.8	184.190	263.400	N/A

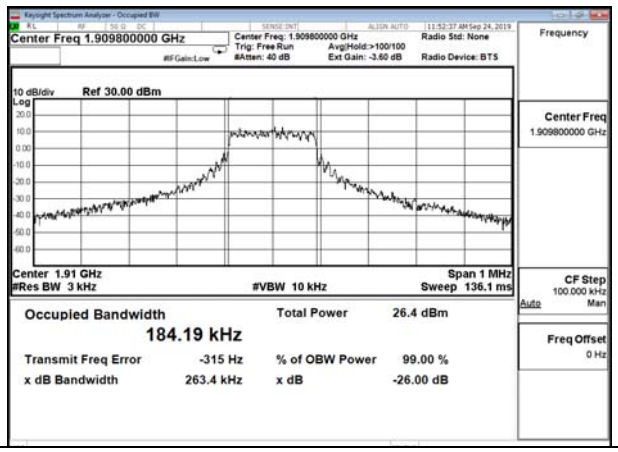
B2_15K_CH18602_QPSK_12RB0



B2_15K_CH18900_QPSK_12RB0



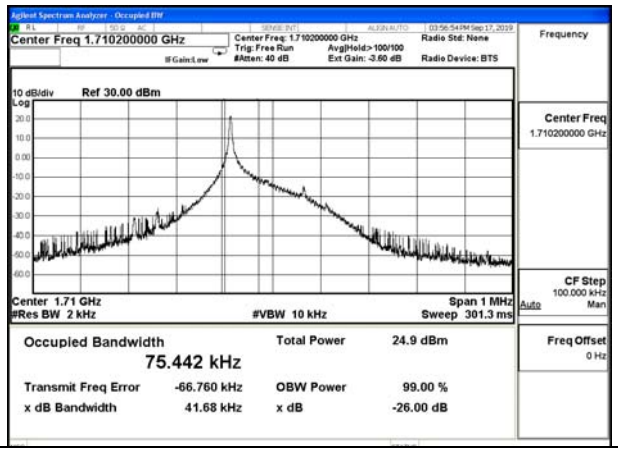
B2_15K_CH19198_QPSK_12RB0



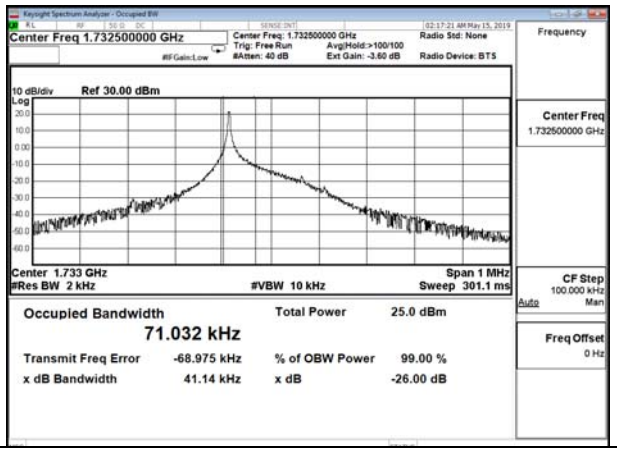
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 2: LTE_NB-IoT_Band 4		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 4_3.75K_BPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
19952	1710.2	75.442	41.680	N/A
20175	1732.5	71.032	41.140	N/A
20398	1754.8	75.443	41.480	N/A

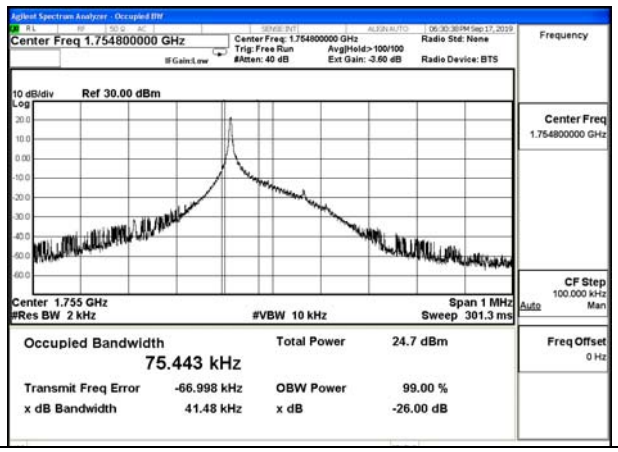
B4_3.75K_CH19952_BPSK_1RB0



B4_3.75K_CH20175_BPSK_1RB0



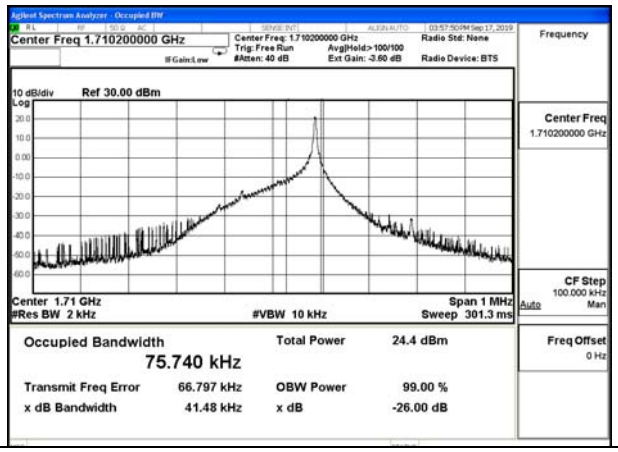
B4_3.75K_CH20398_BPSK_1RB0



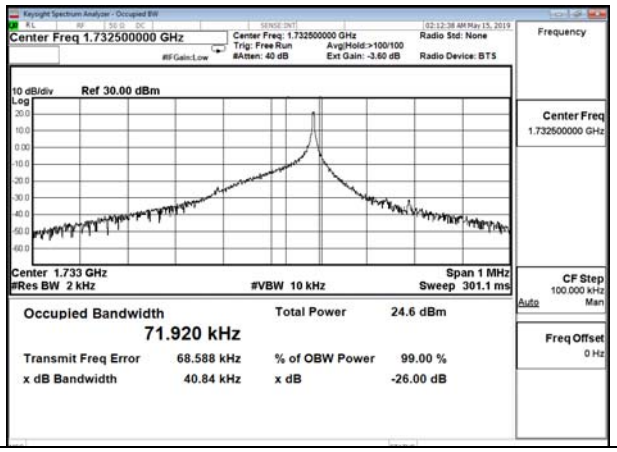
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 2: LTE_NB-IoT_Band 4		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 4_3.75K_BPSK_1RB47				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
19952	1710.2	75.740	41.480	N/A
20175	1732.5	71.920	40.840	N/A
20398	1754.8	75.626	41.530	N/A

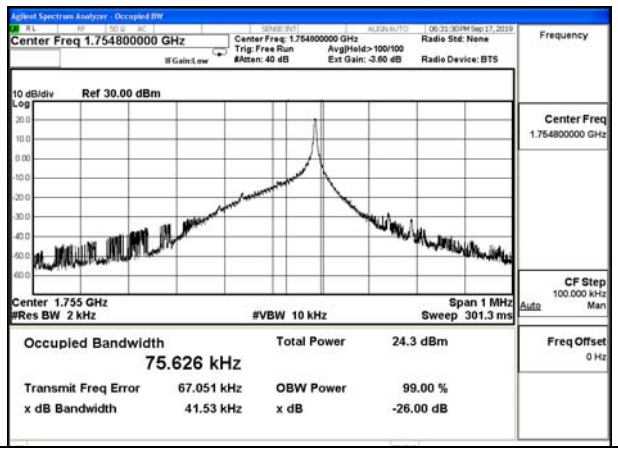
B4_3.75K_CH19952_BPSK_1RB47



B4_3.75K_CH20175_BPSK_1RB47



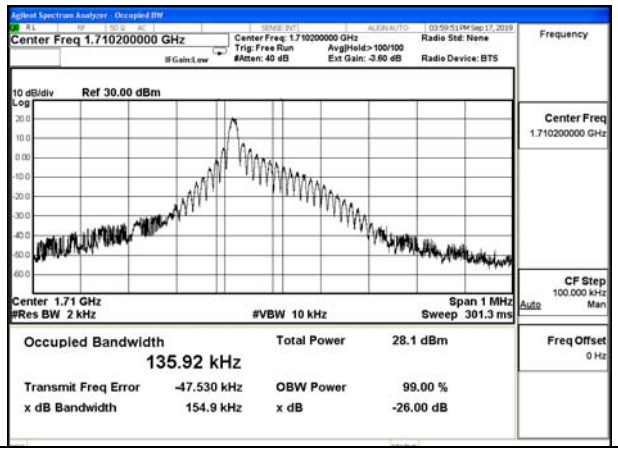
B4_3.75K_CH20398_BPSK_1RB47



Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 2: LTE_NB-IoT_Band 4		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 4_15K_QPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
19952	1710.2	135.920	154.900	N/A
20175	1732.5	130.960	157.000	N/A
20398	1754.8	137.470	144.000	N/A

B4_15K_CH19952_QPSK_1RB0



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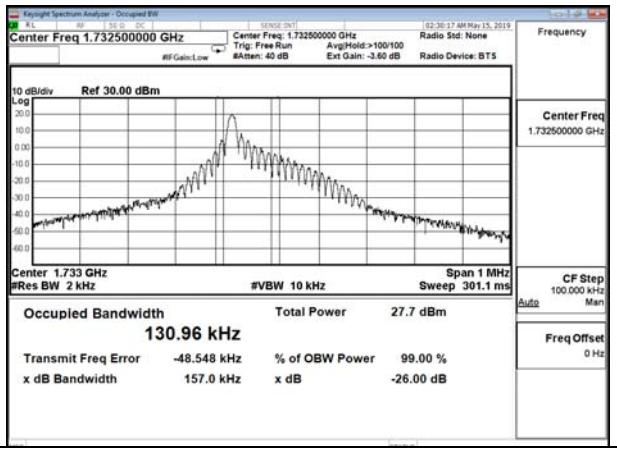

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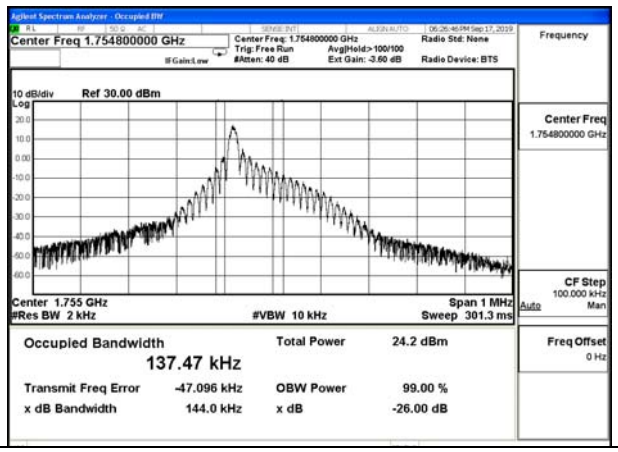
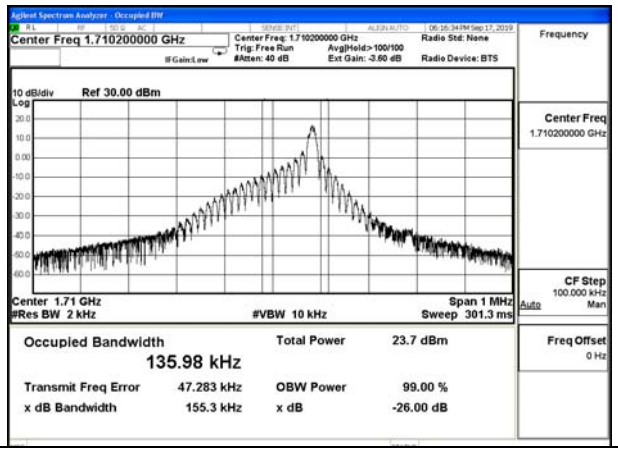


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 2: LTE_NB-IoT_Band 4		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 4_15K_QPSK_1RB11				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
19952	1710.2	135.980	155.300	N/A
20175	1732.5	135.160	132.000	N/A
20398	1754.8	138.930	144.100	N/A

B4_15K_CH19952_QPSK_1RB11



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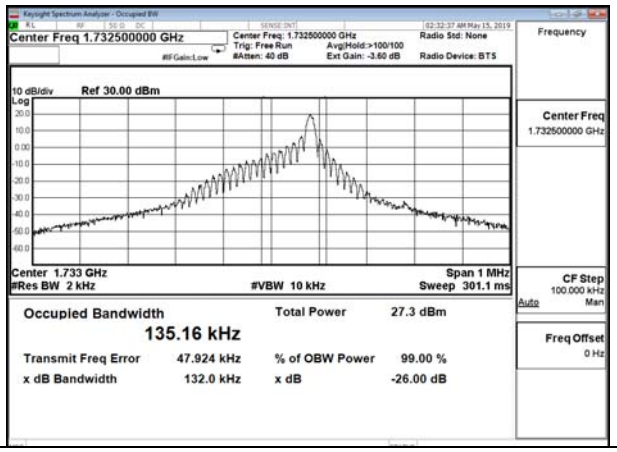

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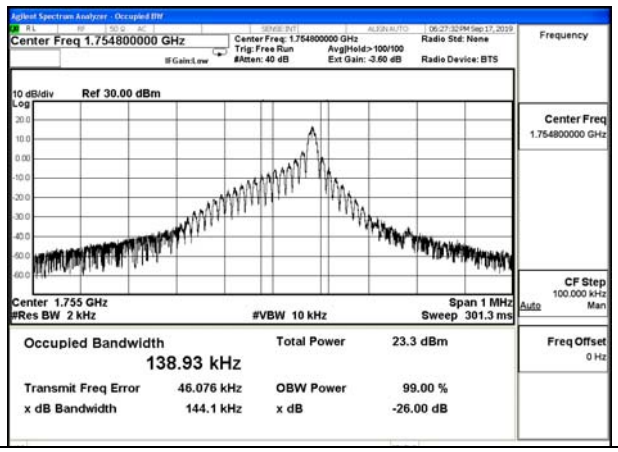
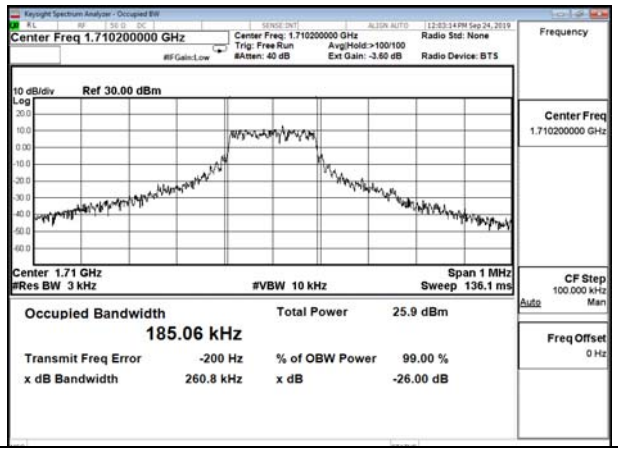


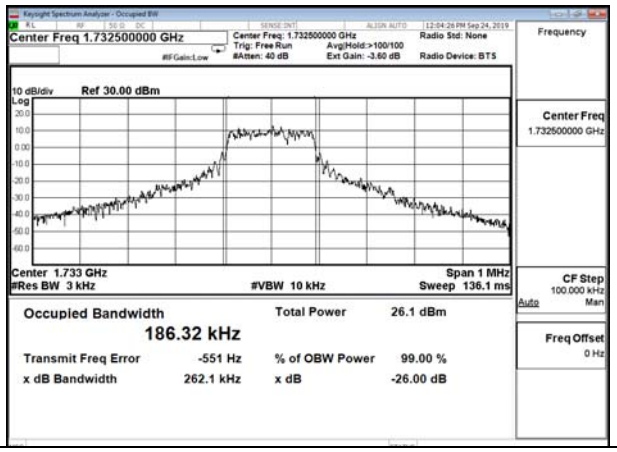
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 2: LTE_NB-IoT_Band 4		
Date of Test	2019/09/24	Test Site	SR10-H

NB-IoT Band 4_15K_QPSK_12RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
19952	1710.2	185.060	260.800	N/A
20175	1732.5	186.320	262.100	N/A
20398	1754.8	187.140	271.700	N/A

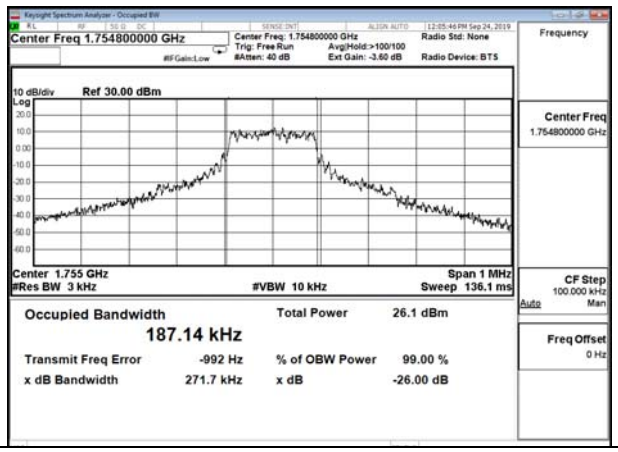
B4_15K_CH19952_QPSK_12RB0



B4_15K_CH20175_QPSK_12RB0



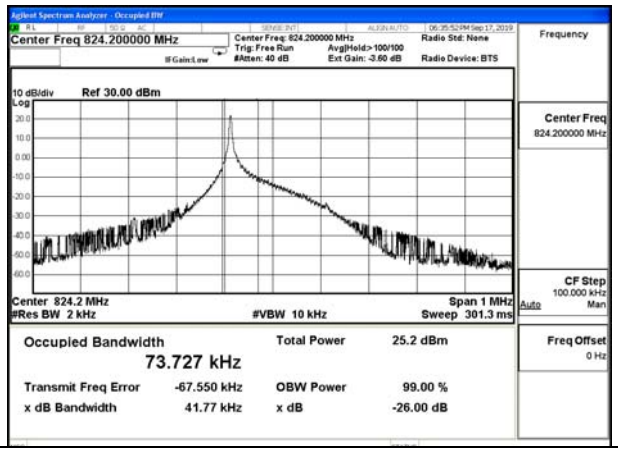
B4_15K_CH20398_QPSK_12RB0



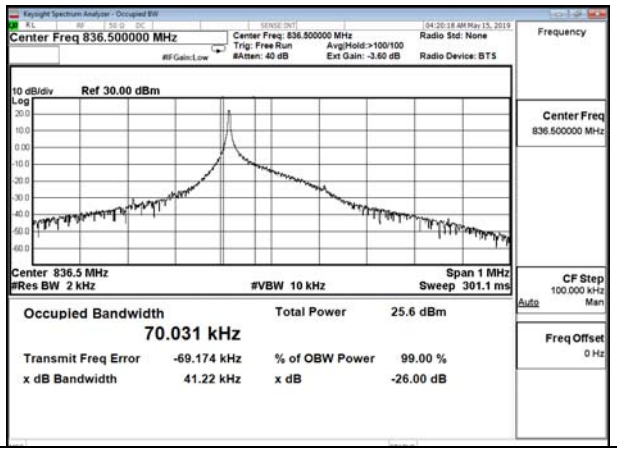
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 3: LTE_NB-IoT_Band 5		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 5_3.75K_BPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
20402	824.2	73.727	41.770	N/A
20525	836.5	70.031	41.220	N/A
20648	848.8	72.602	41.300	N/A

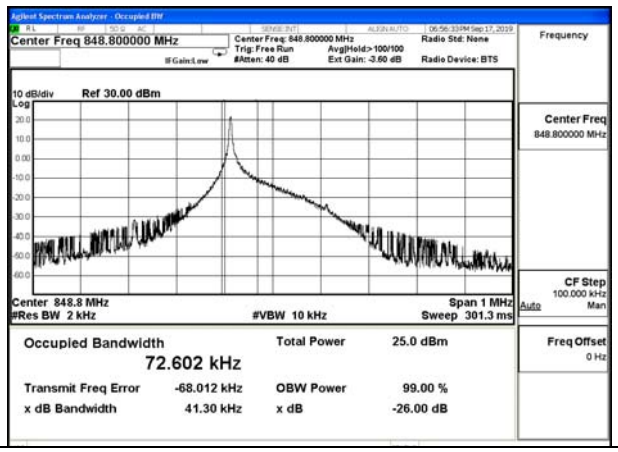
B5_3.75K_CH20402_BPSK_1RB0



B5_3.75K_CH20525_BPSK_1RB0



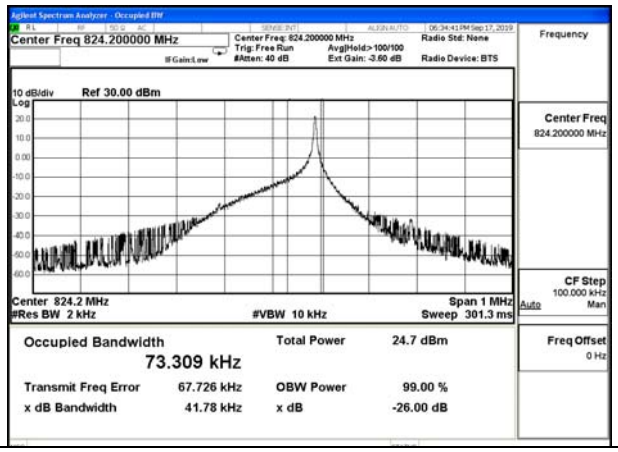
B5_3.75K_CH20648_BPSK_1RB0



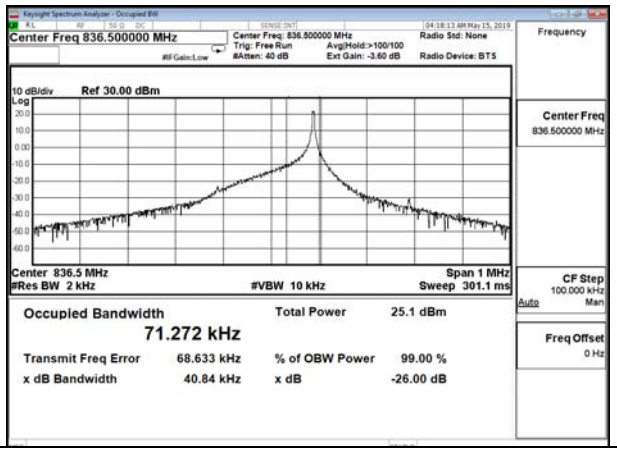
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 3: LTE_NB-IoT_Band 5		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 5_3.75K_BPSK_1RB47				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
20402	824.2	73.309	41.780	N/A
20525	836.5	71.272	40.840	N/A
20648	848.8	73.799	41.780	N/A

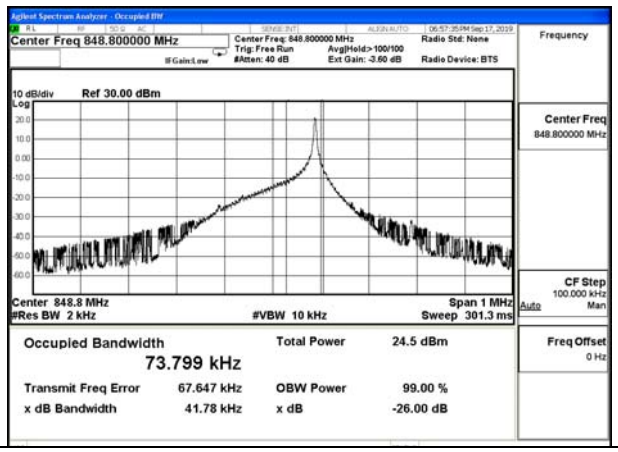
B5_3.75K_CH20402_BPSK_1RB47



B5_3.75K_CH20525_BPSK_1RB47



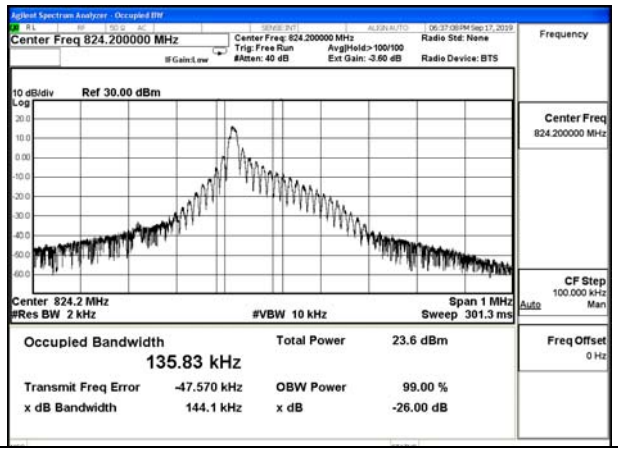
B5_3.75K_CH20648_BPSK_1RB47



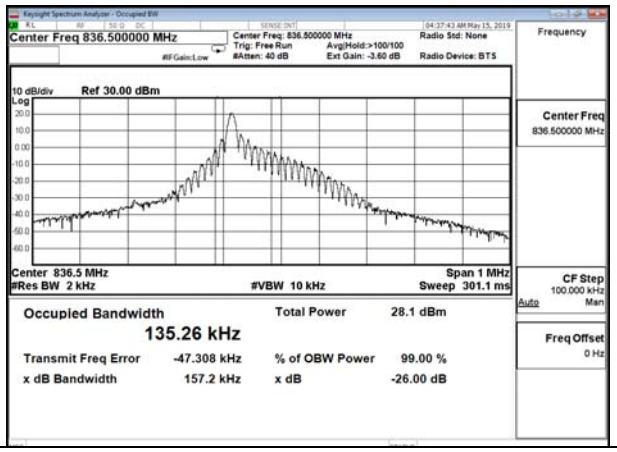
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 3: LTE_NB-IoT_Band 5		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 5_15K_QPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
20402	824.2	135.830	144.100	N/A
20525	836.5	135.260	157.200	N/A
20648	848.8	135.750	143.500	N/A

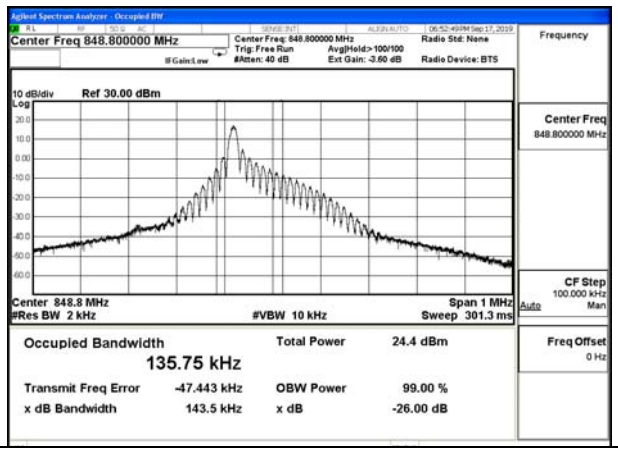
B5_15K_CH20402_QPSK_1RB0



B5_15K_CH20525_QPSK_1RB0



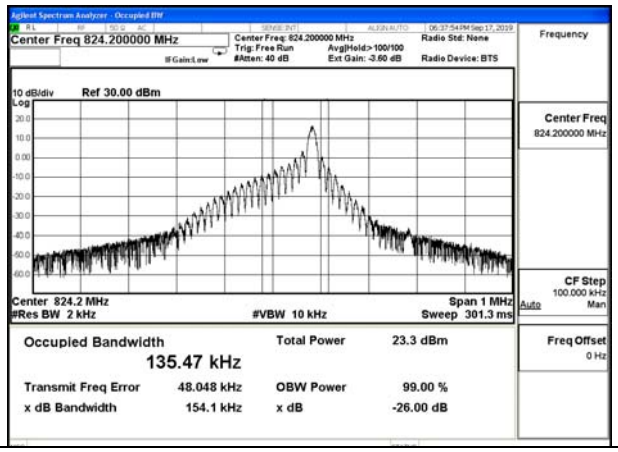
B5_15K_CH20648_QPSK_1RB0



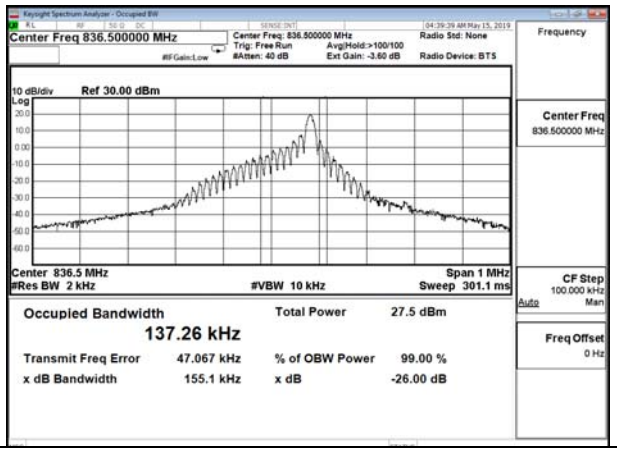
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 3: LTE_NB-IoT_Band 5		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 5_15K_QPSK_1RB11				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
20402	824.2	135.470	154.100	N/A
20525	836.5	137.260	155.100	N/A
20648	848.8	134.510	143.500	N/A

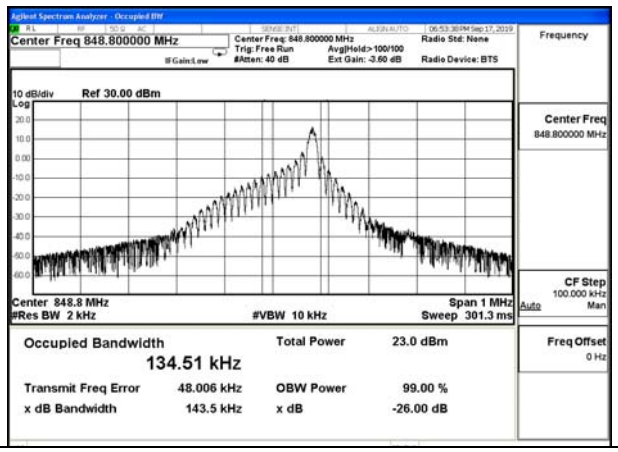
B5_15K_CH20402_QPSK_1RB11



B5_15K_CH20525_QPSK_1RB11



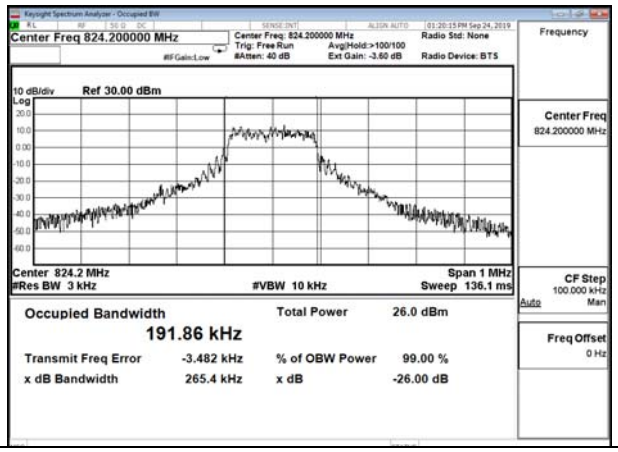
B5_15K_CH20648_QPSK_1RB11



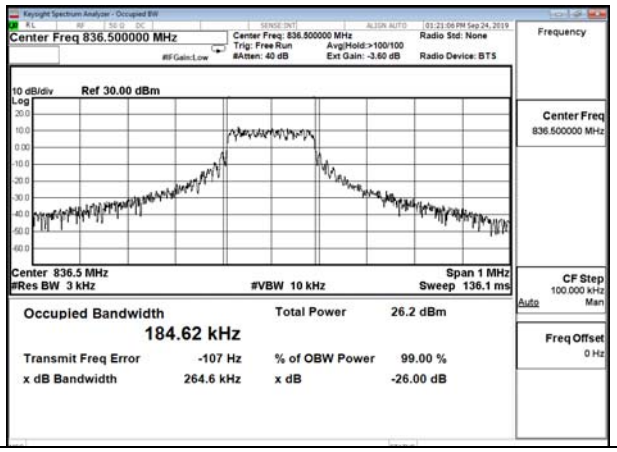
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 3: LTE_NB-IoT_Band 5		
Date of Test	2019/09/24	Test Site	SR10-H

NB-IoT Band 5_15K_QPSK_12RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
20402	824.2	191.860	265.400	N/A
20525	836.5	184.620	264.600	N/A
20648	848.8	185.990	288.000	N/A

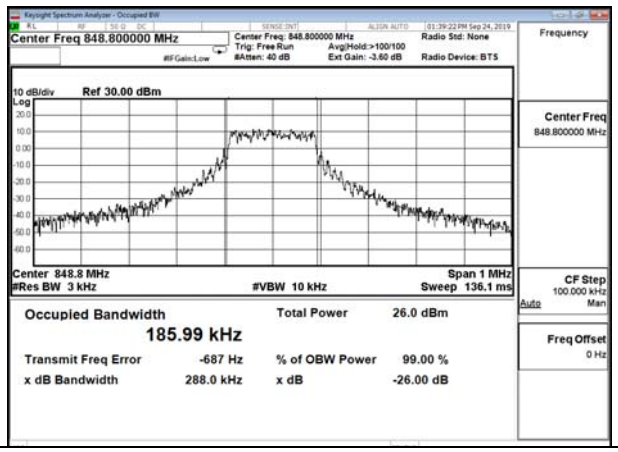
B5_15K_CH20402_QPSK_12RB0



B5_15K_CH20525_QPSK_12RB0



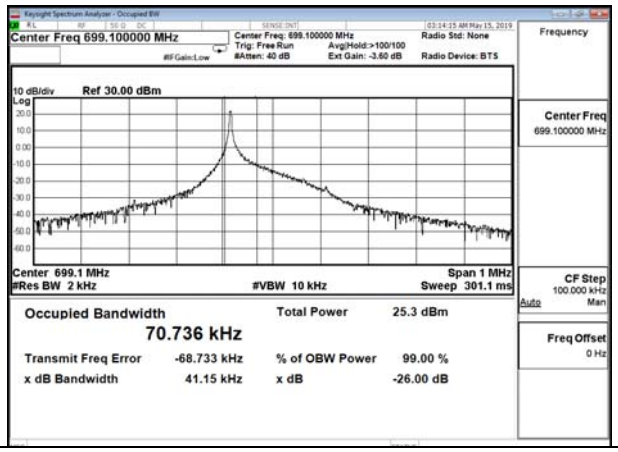
B5_15K_CH20648_QPSK_12RB0



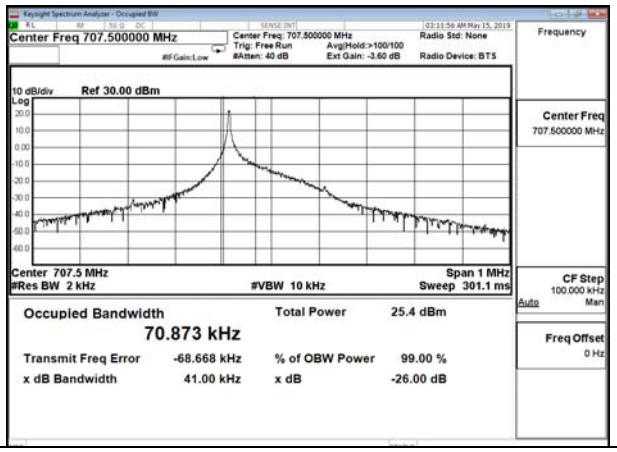
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 4: LTE_NB-IoT_Band 12		
Date of Test	2019/05/15~2019/09/11	Test Site	SR10-H

NB-IoT Band 12_3.75K_BPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
23011	699.1	70.736	41.150	N/A
23095	707.5	70.873	41.000	N/A
23178	715.8	70.004	41.070	N/A

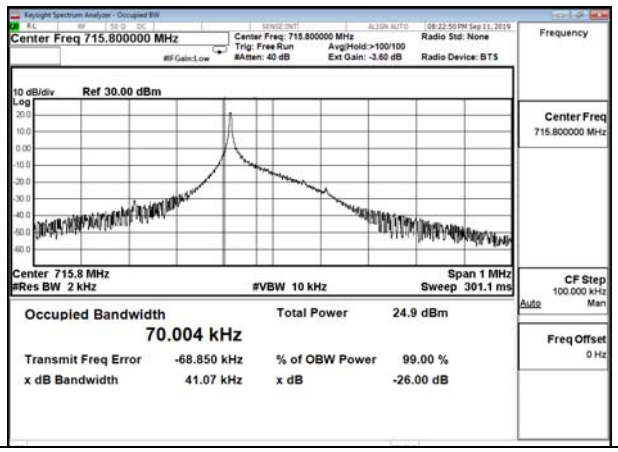
B12_3.75K_CH23011_BPSK_1RB0



B12_3.75K_CH23095_BPSK_1RB0



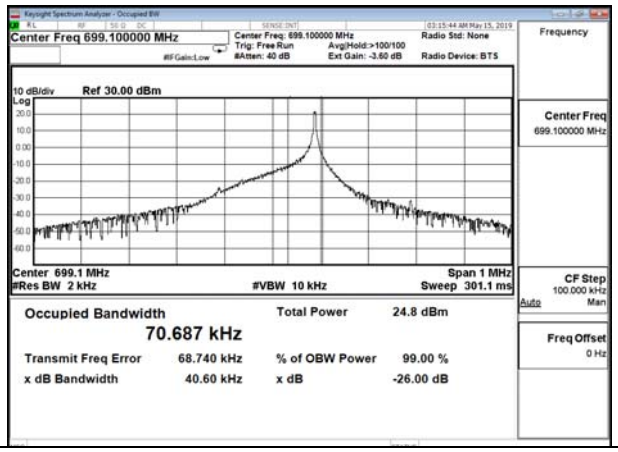
B12_3.75K_CH23178_BPSK_1RB0



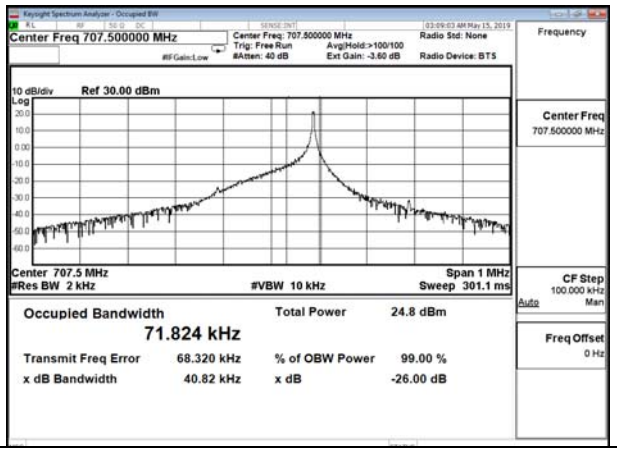
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 4: LTE_NB-IoT_Band 12		
Date of Test	2019/05/15~2019/09/11	Test Site	SR10-H

NB-IoT Band 12_3.75K_BPSK_1RB47				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
23011	699.1	70.687	40.600	N/A
23095	707.5	71.824	40.820	N/A
23178	715.8	71.088	40.690	N/A

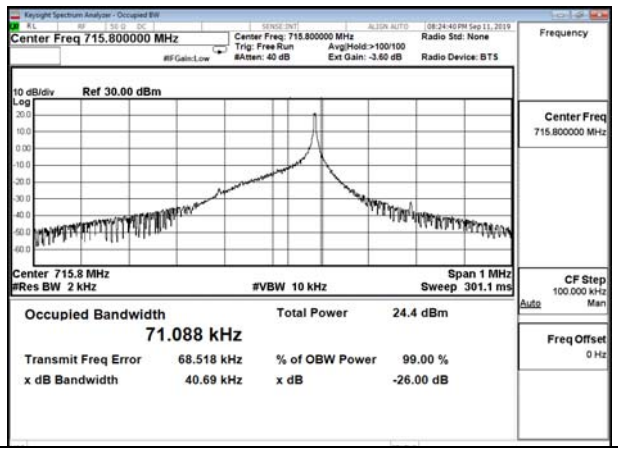
B12_3.75K_CH23011_BPSK_1RB47



B12_3.75K_CH23095_BPSK_1RB47



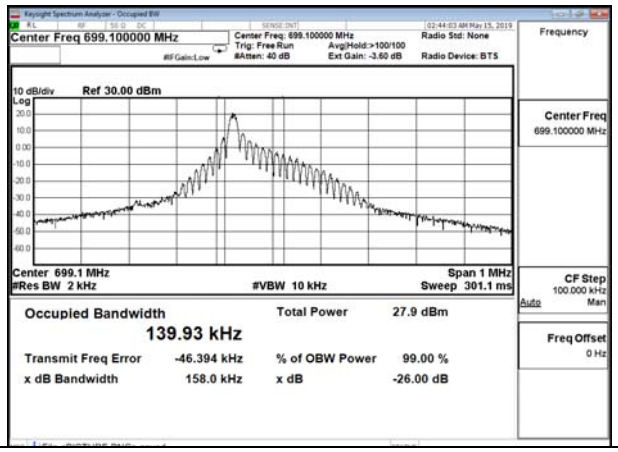
B12_3.75K_CH23178_BPSK_1RB47



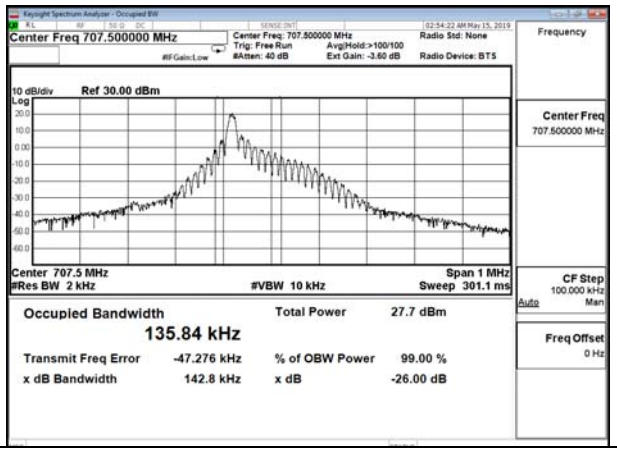
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 4: LTE_NB-IoT_Band 12		
Date of Test	2019/05/15~2019/09/11	Test Site	SR10-H

NB-IoT Band 12_15K_QPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
23011	699.1	139.930	158.000	N/A
23095	707.5	135.840	142.800	N/A
23178	715.8	137.020	156.600	N/A

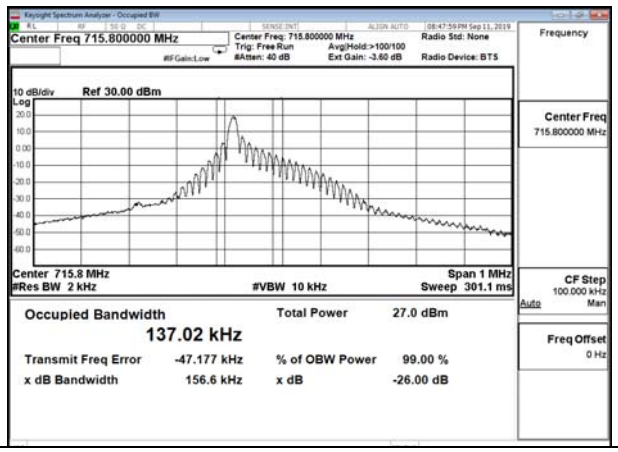
B12_15K_CH23011_QPSK_1RB0



B12_15K_CH23095_QPSK_1RB0



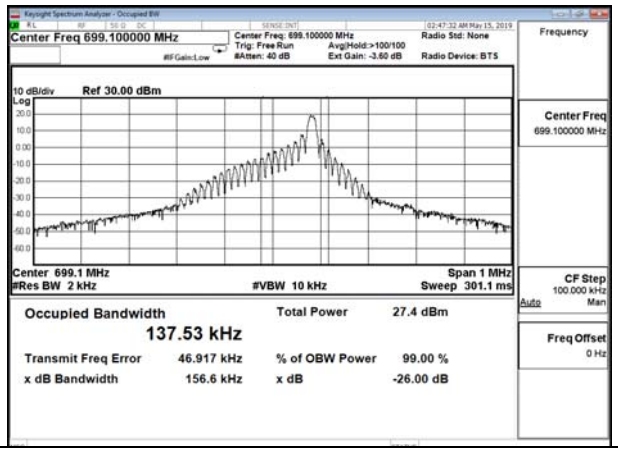
B12_15K_CH23178_QPSK_1RB0



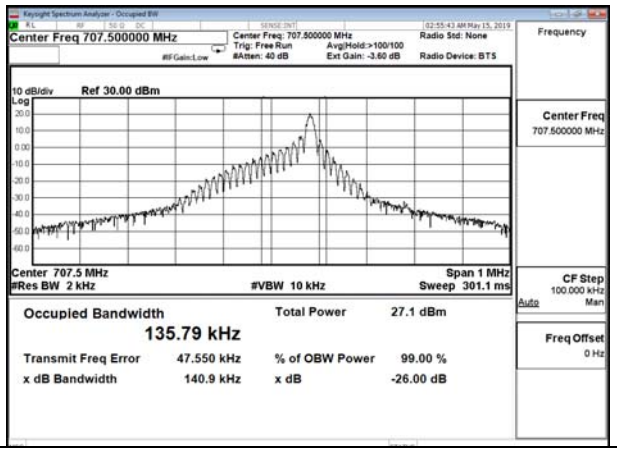
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 4: LTE_NB-IoT_Band 12		
Date of Test	2019/05/15~2019/09/11	Test Site	SR10-H

NB-IoT Band 12_15K_QPSK_1RB11				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
23011	699.1	137.530	156.600	N/A
23095	707.5	135.790	140.900	N/A
23178	715.8	136.620	145.400	N/A

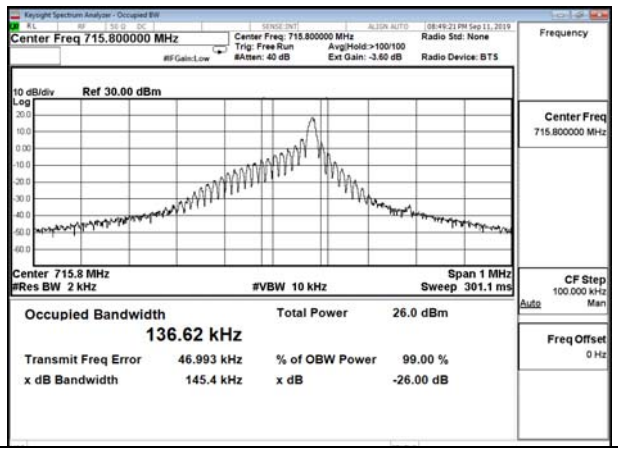
B12_15K_CH23011_QPSK_1RB11



B12_15K_CH23095_QPSK_1RB11



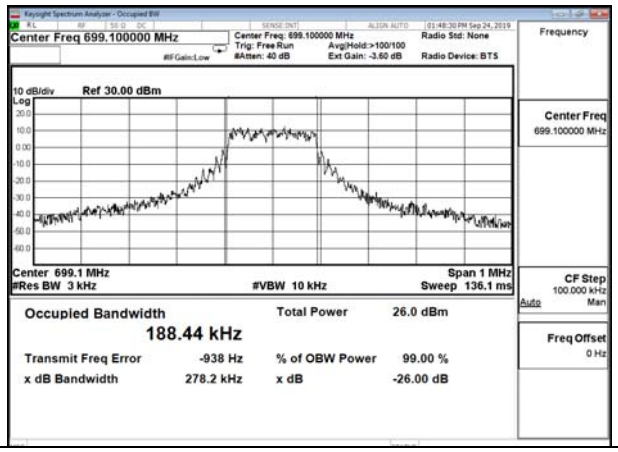
B12_15K_CH23178_QPSK_1RB11



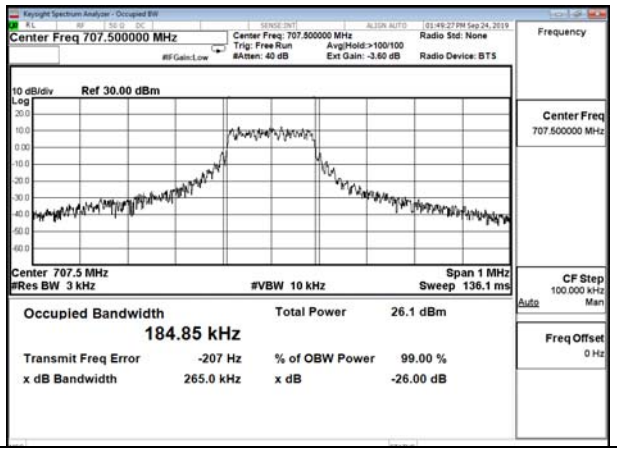
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 4: LTE_NB-IoT_Band 12		
Date of Test	2019/09/24	Test Site	SR10-H

NB-IoT Band 12_15K_QPSK_12RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
23011	699.1	188.440	278.200	N/A
23095	707.5	184.850	265.000	N/A
23178	715.8	186.320	276.500	N/A

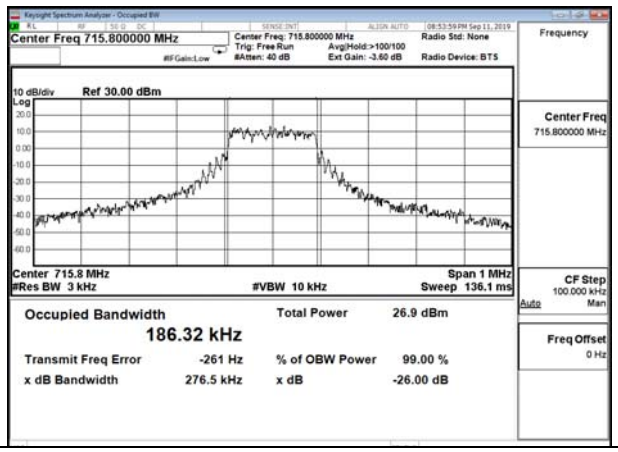
B12_15K_CH23011_QPSK_12RB0



B12_15K_CH23095_QPSK_12RB0



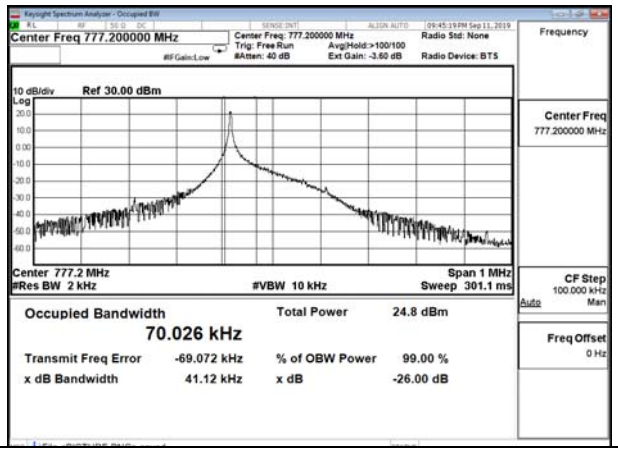
B12_15K_CH23178_QPSK_12RB0



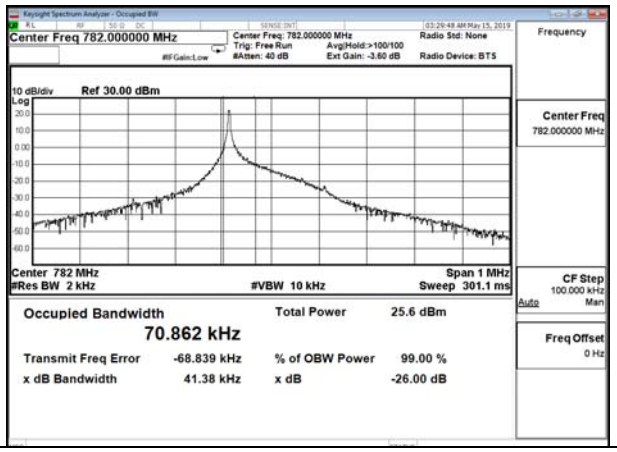
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 5: LTE_NB-IoT_Band 13		
Date of Test	2019/05/15~2019/09/11	Test Site	SR10-H

NB-IoT Band 13_3.75K_BPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
23182	777.2	70.026	41.120	N/A
23230	782.0	70.862	41.380	N/A
23278	786.8	68.946	38.100	N/A

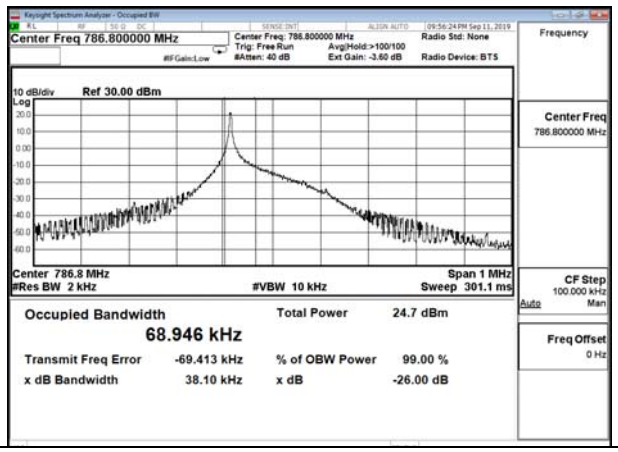
B13_3.75K_CH23182_BPSK_1RB0



B13_3.75K_CH23230_BPSK_1RB0



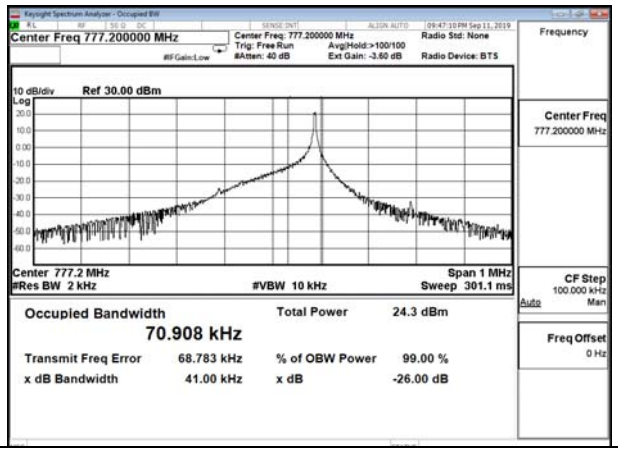
B13_3.75K_CH23278_BPSK_1RB0



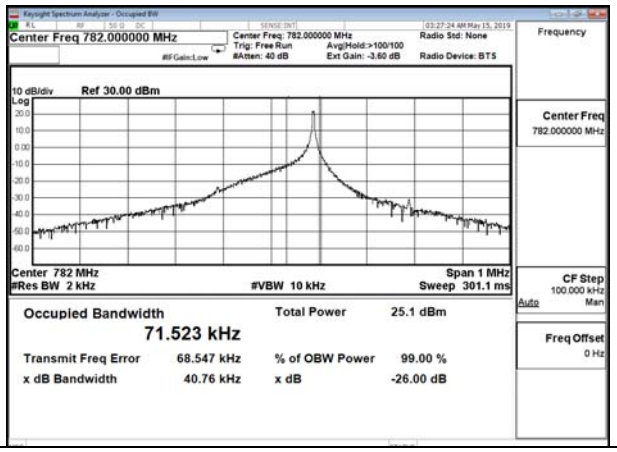
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 5: LTE_NB-IoT_Band 13		
Date of Test	2019/05/15~2019/09/11	Test Site	SR10-H

NB-IoT Band 13_3.75K_BPSK_1RB47				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
23182	777.2	70.908	41.000	N/A
23230	782.0	71.523	40.760	N/A
23278	786.8	70.518	40.830	N/A

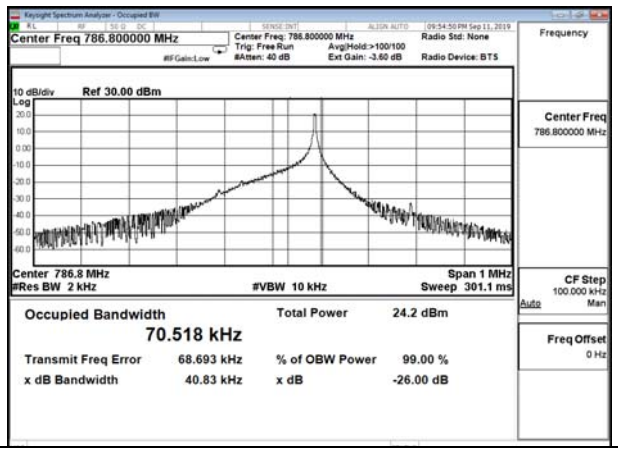
B13_3.75K_CH23182_BPSK_1RB47



B13_3.75K_CH23230_BPSK_1RB47



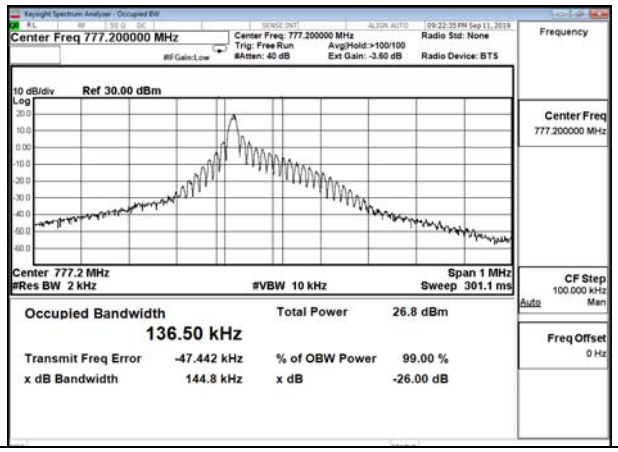
B13_3.75K_CH23278_BPSK_1RB47



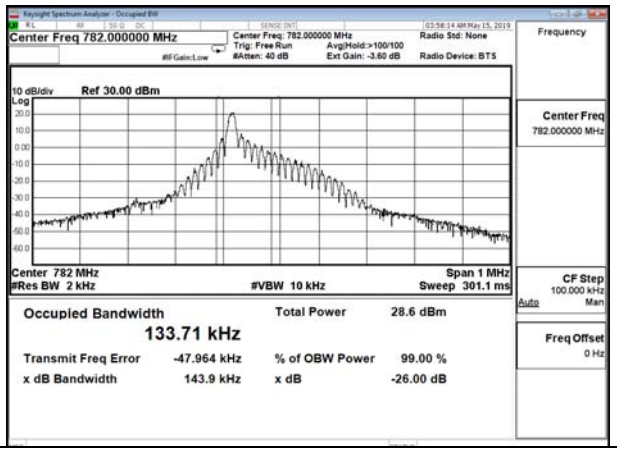
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 5: LTE_NB-IoT_Band 13		
Date of Test	2019/05/15~2019/09/11	Test Site	SR10-H

NB-IoT Band 13_15K_QPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
23182	777.2	136.500	144.800	N/A
23230	782.0	133.710	143.900	N/A
23278	786.8	137.100	143.900	N/A

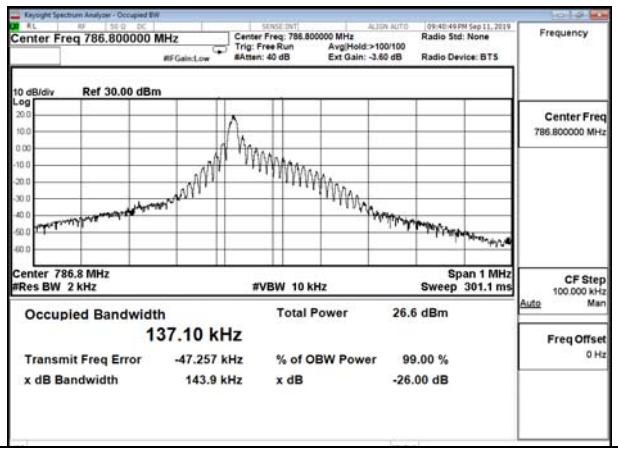
B13_15K_CH23182_QPSK_1RB0



B13_15K_CH23230_QPSK_1RB0



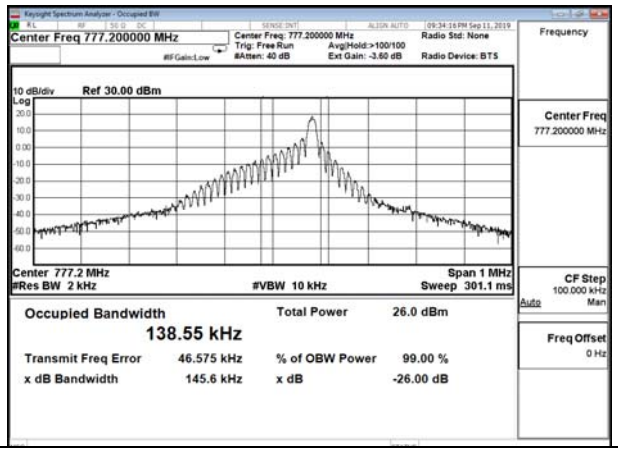
B13_15K_CH23278_QPSK_1RB0



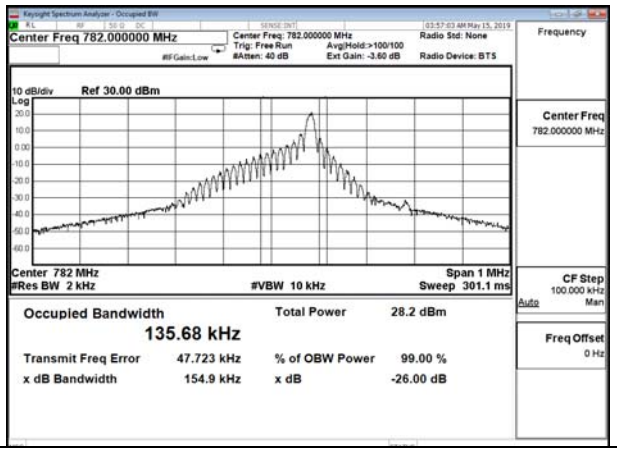
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 5: LTE_NB-IoT_Band 13		
Date of Test	2019/05/15~2019/09/11	Test Site	SR10-H

NB-IoT Band 13_15K_QPSK_1RB11				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
23182	777.2	138.550	145.600	N/A
23230	782.0	135.680	154.900	N/A
23278	786.8	135.310	142.200	N/A

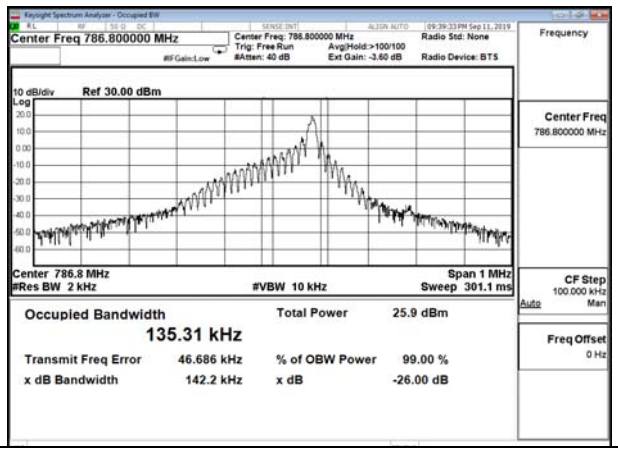
B13_15K_CH23182_QPSK_1RB11



B13_15K_CH23230_QPSK_1RB11



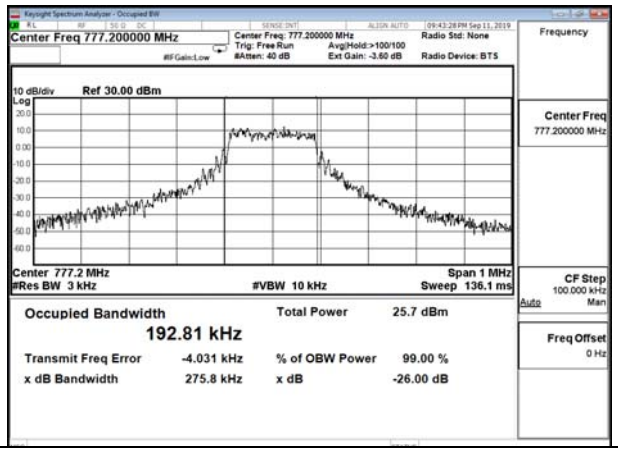
B13_15K_CH23278_QPSK_1RB11



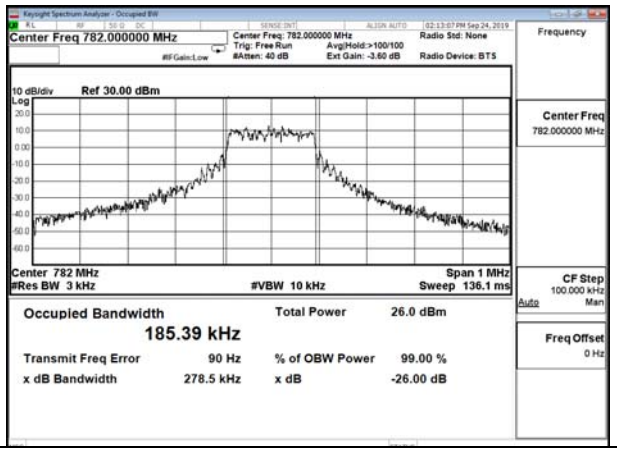
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 5: LTE_NB-IoT_Band 13		
Date of Test	2019/09/24	Test Site	SR10-H

NB-IoT Band 13_15K_QPSK_12RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
23182	777.2	192.810	275.800	N/A
23230	782.0	185.390	278.500	N/A
23278	786.8	191.070	264.800	N/A

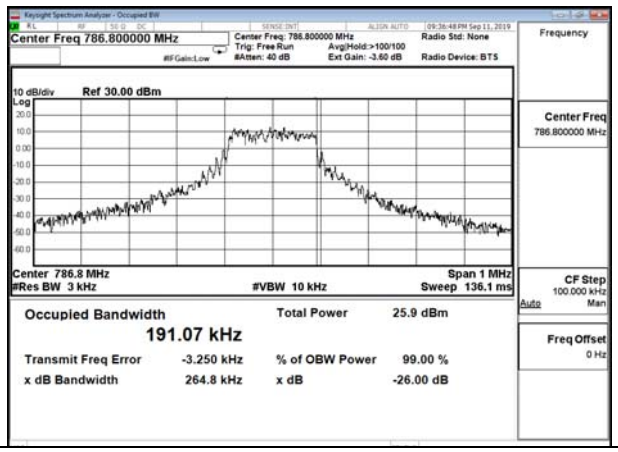
B13_15K_CH23182_QPSK_12RB0



B13_15K_CH23230_QPSK_12RB0



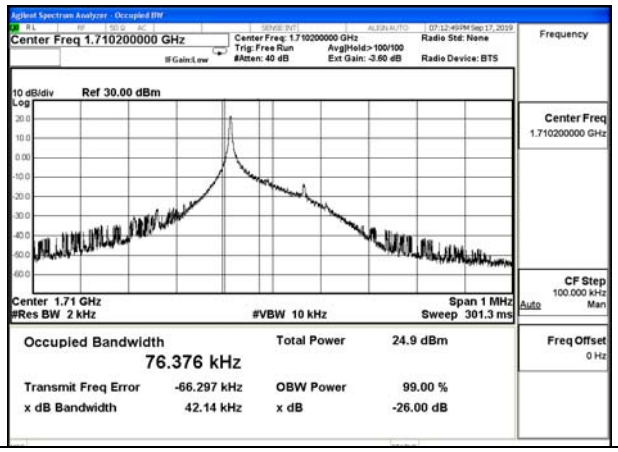
B13_15K_CH23278_QPSK_12RB0



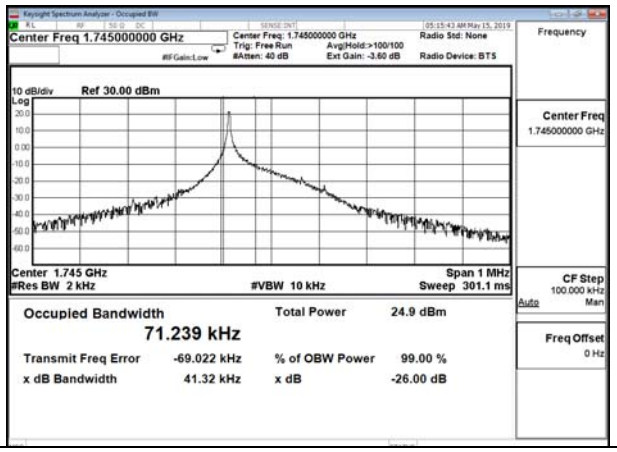
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 6: LTE_NB-IoT_Band 66		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 66_3.75K_BPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
131974	1710.2	76.376	42.140	N/A
132322	1745.0	71.239	41.320	N/A
132670	1779.8	75.457	41.500	N/A

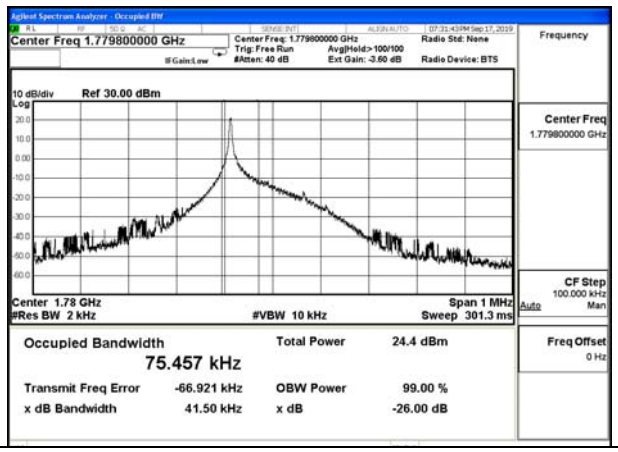
B66_3.75K_CH131974_BPSK_1RB0



B66_3.75K_CH132322_BPSK_1RB0



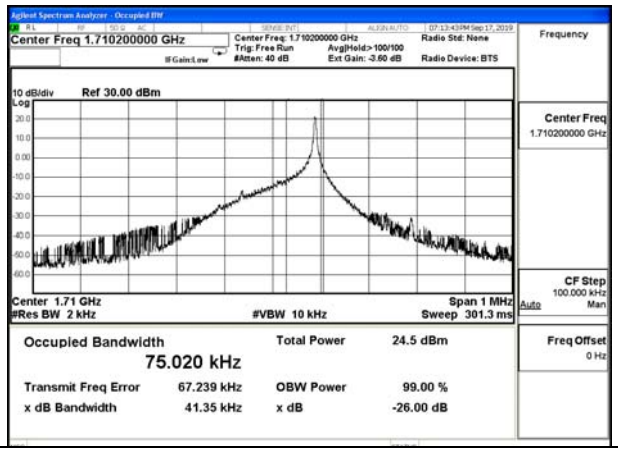
B66_3.75K_CH132670_BPSK_1RB0



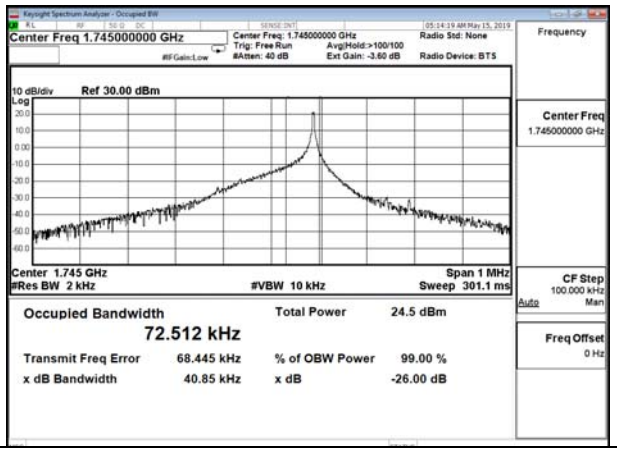
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 6: LTE_NB-IoT_Band 66		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 66_3.75K_BPSK_1RB47				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
131974	1710.2	75.020	41.350	N/A
132322	1745.0	72.512	40.850	N/A
132670	1779.8	76.275	41.420	N/A

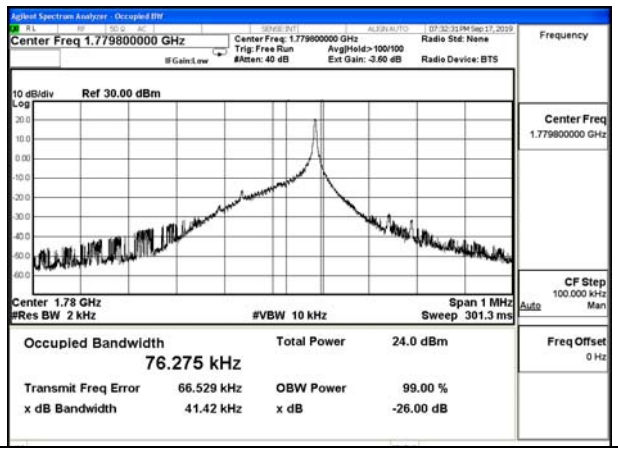
B66_3.75K_CH131974_BPSK_1RB47



B66_3.75K_CH132322_BPSK_1RB47



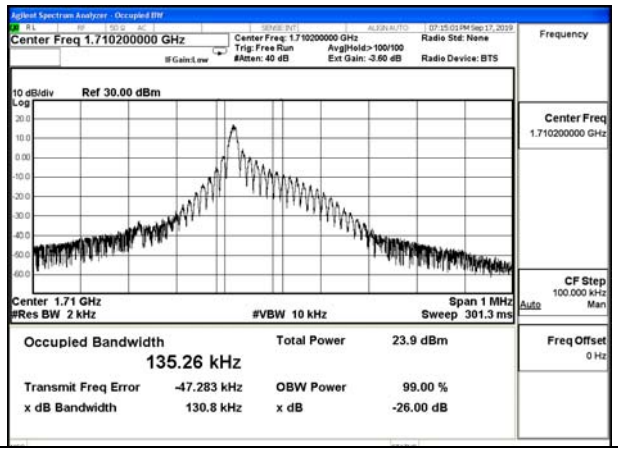
B66_3.75K_CH132670_BPSK_1RB47



Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 6: LTE_NB-IoT_Band 66		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 66_15K_QPSK_1RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
131974	1710.2	135.260	130.800	N/A
132322	1745.0	136.790	144.700	N/A
132670	1779.8	139.750	144.000	N/A

B66_15K_CH131974_QPSK_1RB0



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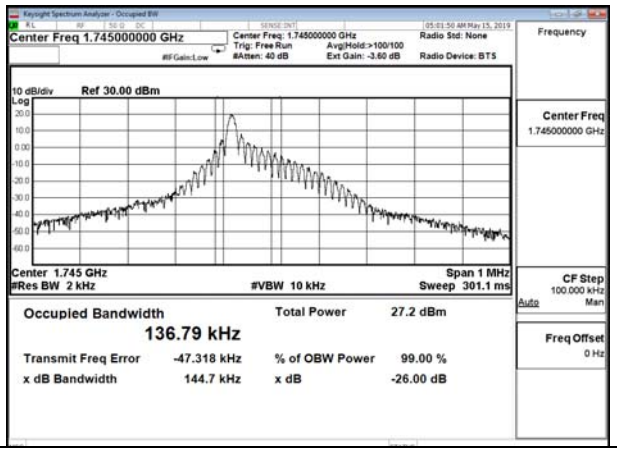

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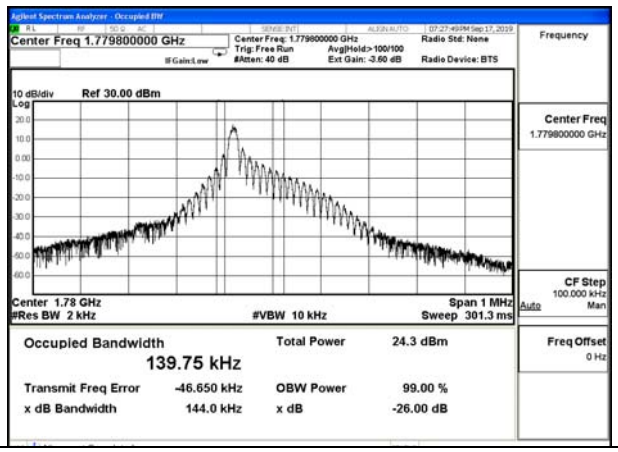
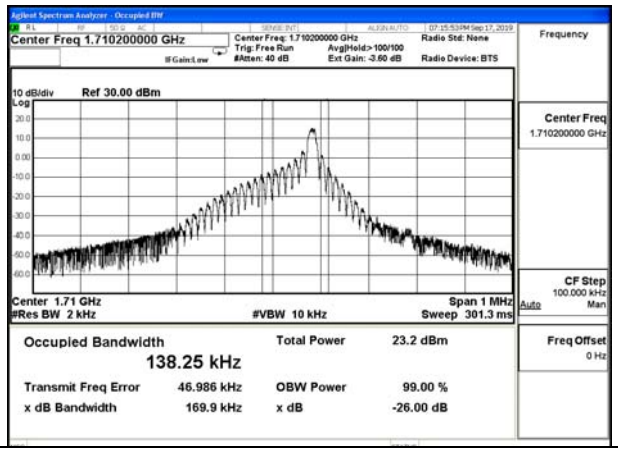


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 6: LTE_NB-IoT_Band 66		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

NB-IoT Band 66_15K_QPSK_1RB11				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
131974	1710.2	138.250	169.900	N/A
132322	1745.0	138.930	156.100	N/A
132670	1779.8	137.590	144.600	N/A

B66_15K_CH131974_QPSK_1RB11



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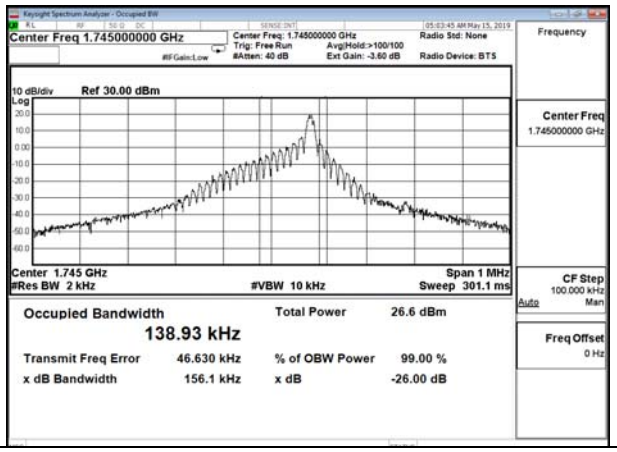

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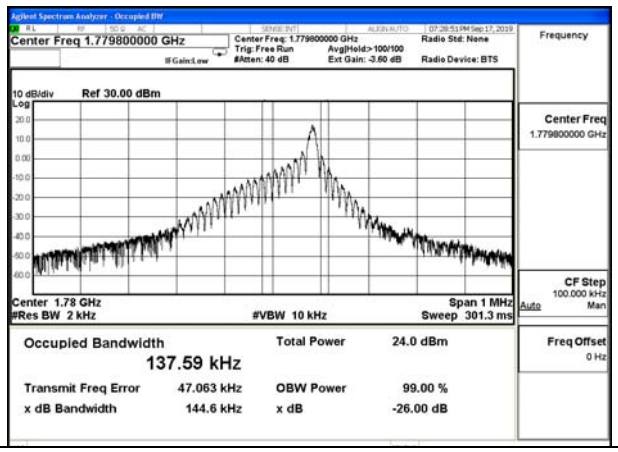
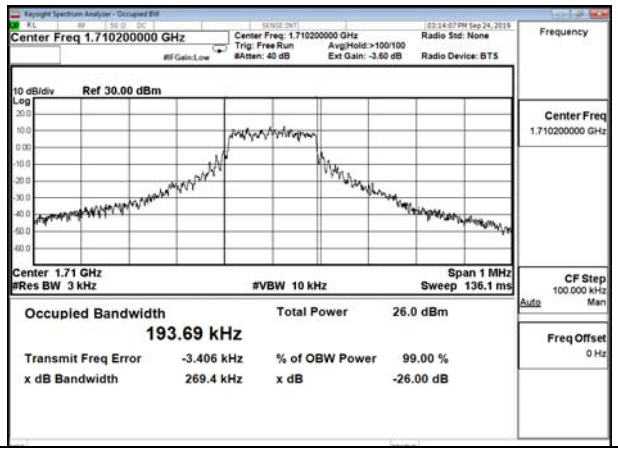


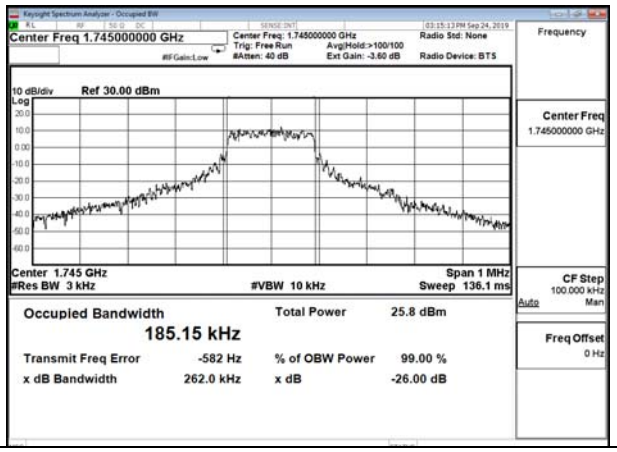
Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Occupied Bandwidth		
Test Mode	Mode 6: LTE_NB-IoT_Band 66		
Date of Test	2019/09/24	Test Site	SR10-H

NB-IoT Band 66_15K_QPSK_12RB0				
Channel	Frequency (MHz)	99% BW Measure Level (kHz)	26dB BW Measure Level (kHz)	Limit (MHz)
131974	1710.2	193.690	269.400	N/A
132322	1745.0	185.150	262.000	N/A
132670	1779.8	185.300	262.200	N/A

B66_15K_CH131974_QPSK_12RB0



B66_15K_CH132322_QPSK_12RB0



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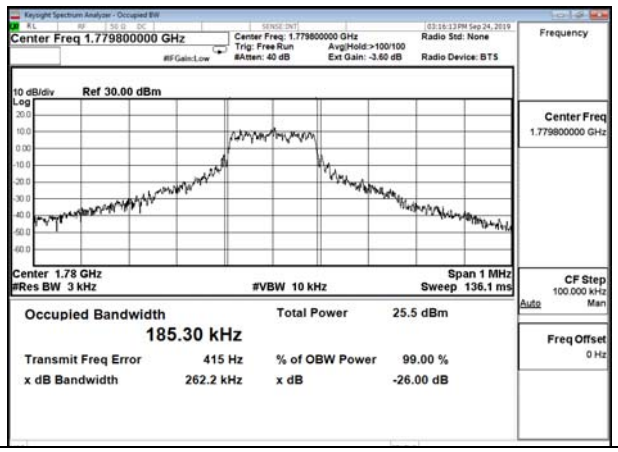
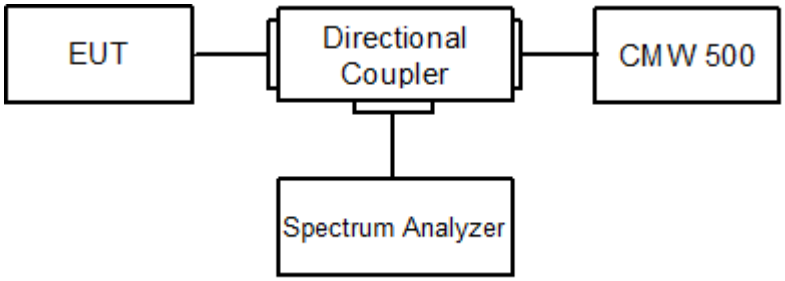


5. Peak To Average Ratio

5.1. Test Setup



5.2. Test Procedure

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth.
2. Set the number of counts to a value that stabilizes the measured CCDF curve.
3. Record the maximum PAPR level associated with a probability of 0.1 %.

5.3. Test Method

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause5.7.2
ANSI C63.26-2015 Sub-clause 5.2.3.4

5.4. Test Result

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 1: LTE_NB-IoT_Band 2		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 2_3.75K_BPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1850.2	26.23	23.46	2.77
1880.0	25.37	23.31	2.06
1909.8	25.67	22.79	2.88

NB-IOT Band 2_3.75K_BPSK_1RB47			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1850.2	26.08	23.02	3.06
1880.0	24.73	22.9	1.83
1909.8	26.14	22.77	3.37

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 1: LTE_NB-IoT_Band 2		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 2_15K_QPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1850.2	25.33	23.82	1.51
1880.0	25.51	23.43	2.08
1909.8	25.73	22.98	2.75

NB-IOT Band 2_15K_QPSK_1RB11			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1850.2	25.41	23.03	2.38
1880.0	24.36	22.56	1.80
1909.8	26.77	22.03	4.74

NB-IOT Band 2_15K_QPSK_12RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1850.2	26.99	22.9	4.09
1880.0	26.49	22.63	3.86
1909.8	26.82	23.59	3.23

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 2: LTE_NB-IoT_Band 4		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 4_3.75K_BPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1710.2	26.53	22.79	3.74
1732.5	25.65	23.39	2.26
1754.8	25.57	22.54	3.03

NB-IOT Band 4_3.75K_BPSK_1RB47			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1710.2	25.67	22.03	3.64
1732.5	25.09	22.94	2.15
1754.8	26.93	23.85	3.08

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 2: LTE_NB-IoT_Band 4		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 4_15K_QPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1710.2	26.54	23.55	2.99
1732.5	25.24	23.41	1.83
1754.8	26.47	21.99	4.48

NB-IOT Band 4_15K_QPSK_1RB11			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1710.2	26.81	23.16	3.65
1732.5	24.42	22.62	1.80
1754.8	25.18	23.71	1.47

NB-IOT Band 4_15K_QPSK_12RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1710.2	26.2	23.99	2.21
1732.5	26.80	22.55	4.25
1754.8	26.23	23.71	2.52

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 3: LTE_NB-IoT_Band 5		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 5_3.75K_BPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
824.2	25.63	23.07	2.56
836.5	25.29	23.29	2.00
848.8	26.21	23.83	2.38

NB-IOT Band 5_3.75K_BPSK_1RB47			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
824.2	26.07	23.09	2.98
836.5	24.70	22.82	1.88
848.8	26.86	22.79	4.07

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 3: LTE_NB-IoT_Band 5		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 5_15K_QPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
824.2	26.82	22.42	4.4
836.5	25.14	23.3	1.84
848.8	26.49	23.62	2.87

NB-IOT Band 5_15K_QPSK_1RB11			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
824.2	26.97	22.33	4.64
836.5	24.89	22.43	2.46
848.8	25.37	22.16	3.21

NB-IOT Band 5_15K_QPSK_12RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
824.2	26.28	23.83	2.45
836.5	26.56	22.5	4.06
848.8	26.94	22.29	4.65

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 4: LTE_NB-IoT_Band 12		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 12_3.75K_BPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
699.1	25.72	23.28	2.44
707.5	25.04	23.22	1.82
715.8	25.86	23.21	2.65

NB-IOT Band 12_3.75K_BPSK_1RB47			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
699.1	25.17	22.81	2.36
707.5	24.55	22.64	1.91
715.8	25.85	22.72	3.13

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 4: LTE_NB-IoT_Band 12		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 12_15K_QPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
699.1	25.51	23.35	2.16
707.5	25.08	23.23	1.85
715.8	26.45	22.69	3.76

NB-IOT Band 12_15K_QPSK_1RB11			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
699.1	24.38	22.29	2.09
707.5	24.37	22.28	2.09
715.8	26.74	22.05	4.69

NB-IOT Band 12_15K_QPSK_12RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
699.1	26.56	22.49	4.07
707.5	26.66	22.39	4.27
715.8	26.07	22.83	3.24

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 5: LTE_NB-IoT_Band 13		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 13_3.75K_BPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
777.2	25.87	23.4	2.47
782	25.98	23.48	2.50
786.8	26.91	23.77	3.14

NB-IOT Band 13_3.75K_BPSK_1RB47			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
777.2	25.94	23.87	2.07
782	24.97	22.93	2.04
786.8	25.02	22.41	2.61

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 5: LTE_NB-IoT_Band 13		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 13_15K_QPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
777.2	26.8	23.41	3.39
782	25.61	23.49	2.12
786.8	26.4	23.05	3.35

NB-IOT Band 13_15K_QPSK_1RB11			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
777.2	26.2	22.98	3.22
782	24.66	22.55	2.11
786.8	26.79	22.96	3.83

NB-IOT Band 13_15K_QPSK_12RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
777.2	25.31	23.21	2.1
782	27.11	22.86	4.25
786.8	26.95	23.84	3.11

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 6: LTE_NB-IoT_Band 66		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 66_3.75K_BPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1710.2	26.05	22.28	3.77
1745	24.88	22.95	1.93
1779.8	25.02	23.87	1.15

NB-IOT Band 66_3.75K_BPSK_1RB47			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1710.2	25.76	23.7	2.06
1745	24.78	22.55	2.23
1779.8	26.53	23.52	3.01

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Peak To Average Ratio		
Test Mode	Mode 6: LTE_NB-IoT_Band 66		
Date of Test	2019/05/15~2019/09/18	Test Site	SR10-H

NB-IOT Band 66_15K_QPSK_1RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1710.2	25.67	23.84	1.83
1745	25.17	22.96	2.21
1779.8	25.18	22.26	2.92

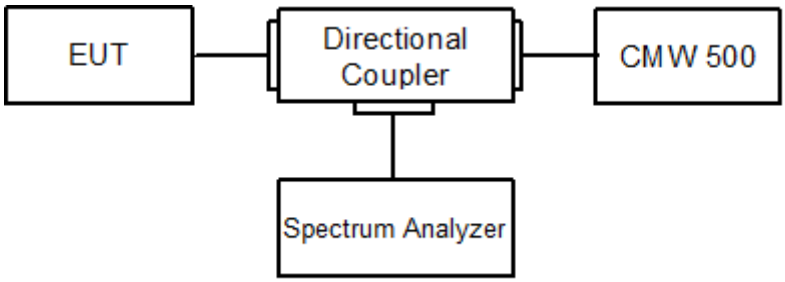
NB-IOT Band 66_15K_QPSK_1RB11			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1710.2	25.46	22.57	2.89
1745	24.61	22.14	2.47
1779.8	26.36	22.24	4.12

NB-IOT Band 66_15K_QPSK_12RB0			
Frequency (MHz)	Peak (dBm)	Average (dBm)	PAPR (dB)
1710.2	25.93	23.96	1.97
1745	26.53	22.11	4.42
1779.8	25.16	22.86	2.3

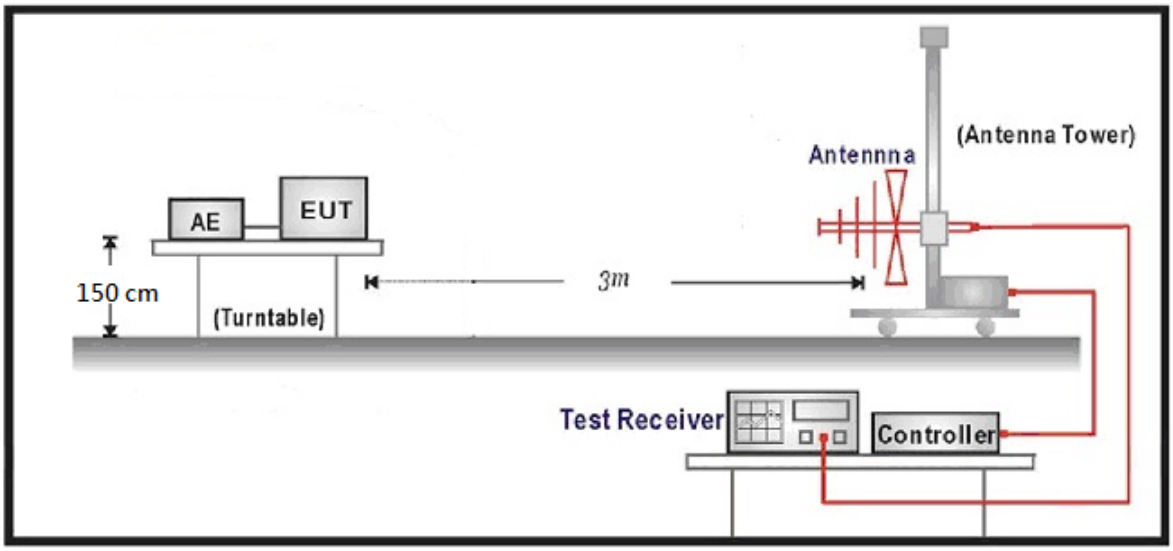
6. Spurious Emissions

6.1. Test Setup

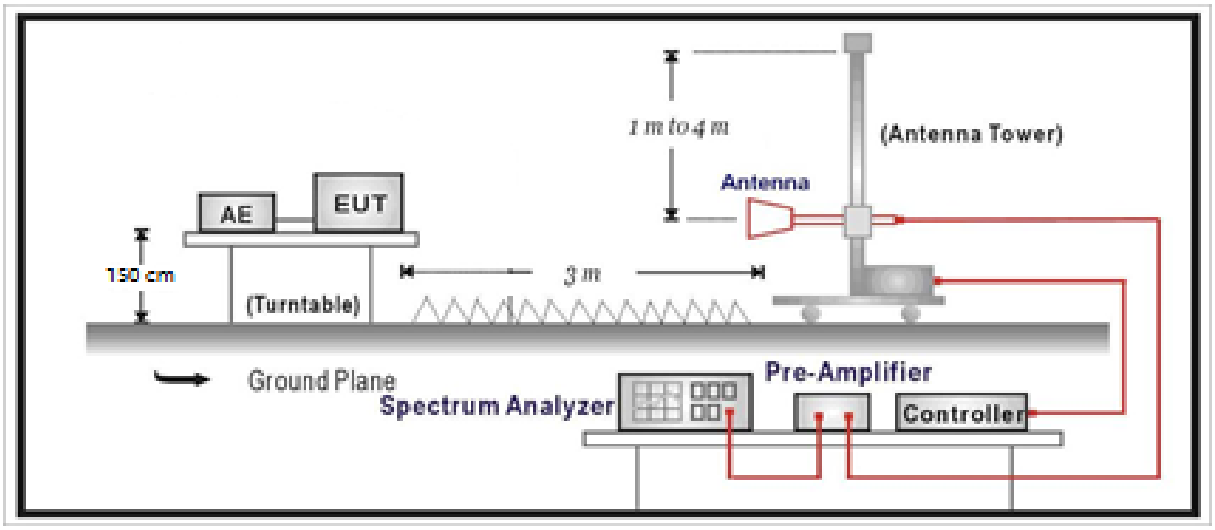
Conducted Spurious Measurement: below 1GHz



Radiated Spurious Measurement: below 1GHz



Radiated Spurious Measurement: above 1GHz



6.2. Test Procedure

Conducted Spurious Measurement:

a) Place the EUT on a bench and set it in transmitting mode.
b) Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMW500 by a Directional Couple.
c) EUT Communicate with CMW500, then select a channel for testing.
d) Add a correction factor to the display of spectrum, and then test.
e) The resolution bandwidth of the spectrum analyzer was set at 1 MHz, sufficient scans were taken to show the out of band Emission if any up to 10^{th} harmonic.

Radiated Spurious Measurement:

a) The EUT was placed on a rotatable wooden table with 1.5 meter above ground.
b) The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
c) The table was rotated 360 degrees to determine the position of the highest spurious emission.
d) The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
e) Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 1MHz, Sweep 500ms, Taking the record of maximum spurious emission.
f) A horn antenna was substituted in place of the EUT and was driven by a signal generator.
g) Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
h) Taking the record of output power at antenna port.
i) Repeat step 7 to step 8 for another polarization.
j) EIRP = SG - Cable loss + Antenna Gain

6.3. Test Method

Conducted Spurious Measurement:

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause6.1
ANSI C63.26-2015 Sub-clause 5.7

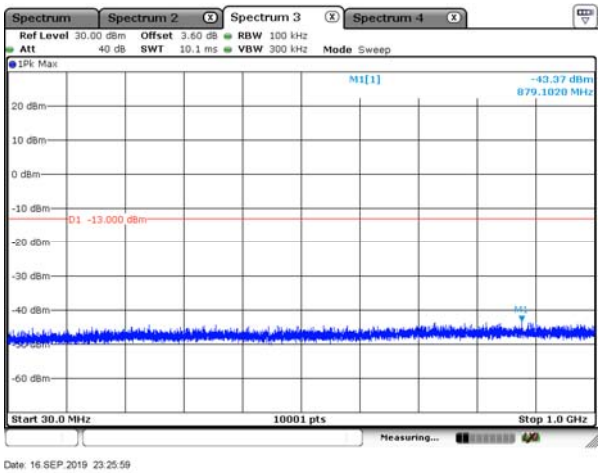
Radiated Spurious Measurement:

KDB 971168 D01 Power Meas License Digital Systems v03 sub-clause5.8
ANSI C63.26-2015 Sub-clause 5.5.3.2

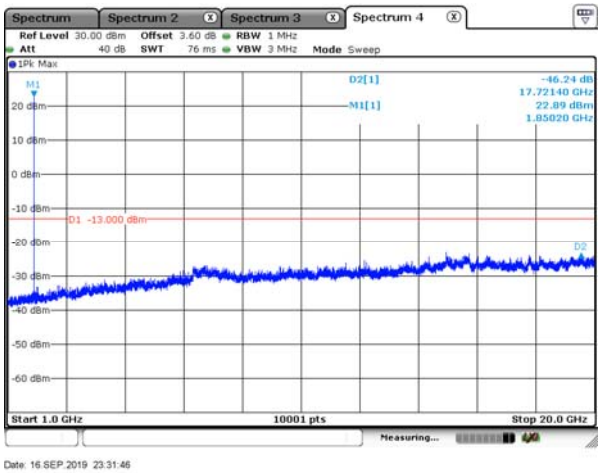
6.4. Test Result

Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Spurious Emissions (Conducted)		
Test Mode	Mode 1: LTE_NB-IoT_Band 2		
Date of Test	2019/05/15~2019/09/16	Test Site	SR10-H

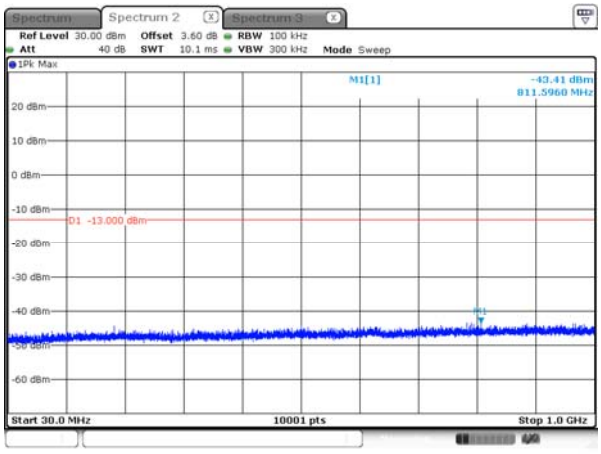
B2_3.75K_CH18602_BPSK_1RB0_under 1G



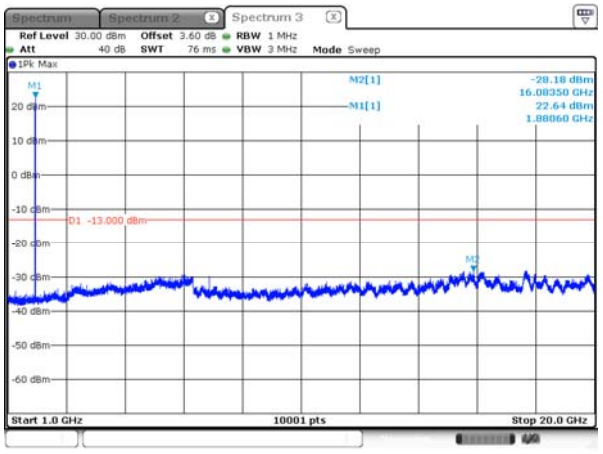
B2_3.75K_CH18601_BPSK_1RB0_above 1G



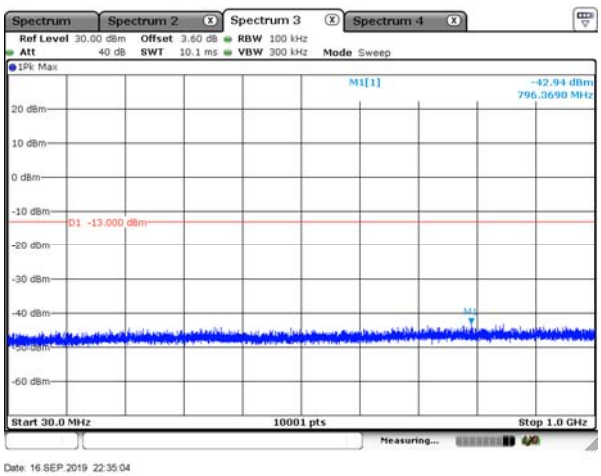
B2_3.75K_CH18900_BPSK_1RB0_under 1G



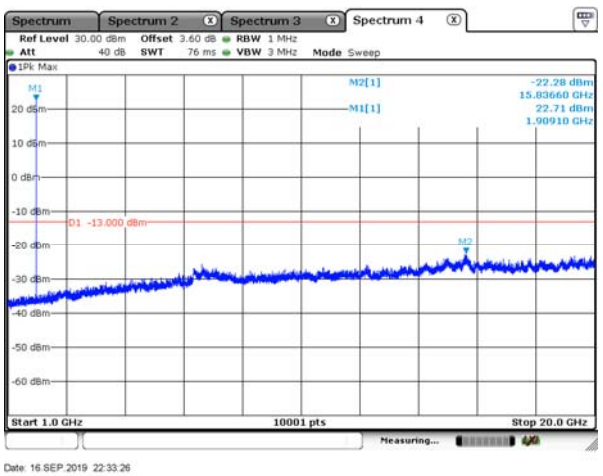
B2_3.75K_CH18900_BPSK_1RB0_above 1G



B2_3.75K_CH19198_BPSK_1RB0_under 1G

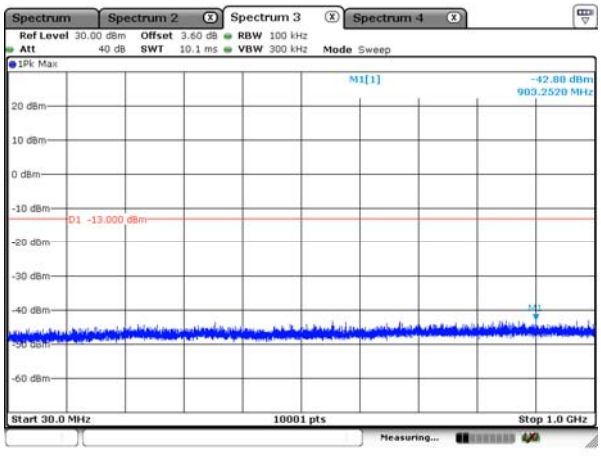


B2_3.75K_CH19198_BPSK_1RB0_above 1G

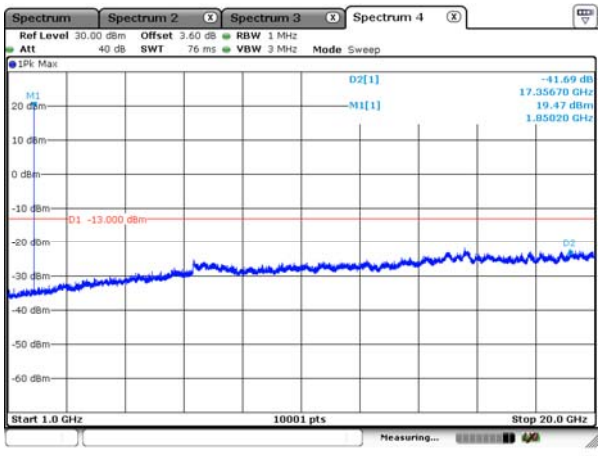


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Spurious Emissions (Conducted)		
Test Mode	Mode 1: LTE_NB-IoT_Band 2		
Date of Test	2019/05/15~2019/09/16	Test Site	SR10-H

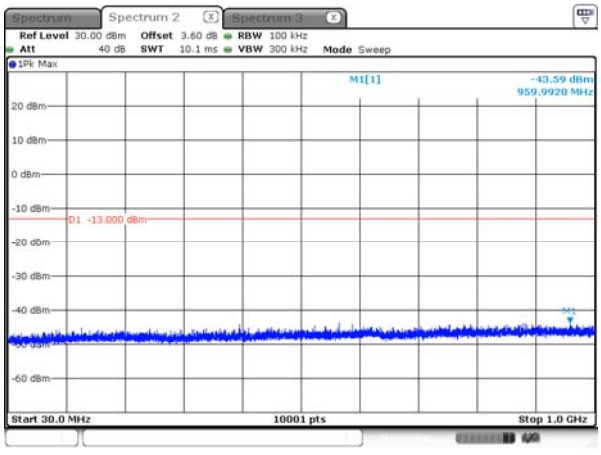
B2_15K_CH18602_QPSK_1RB0_under 1G



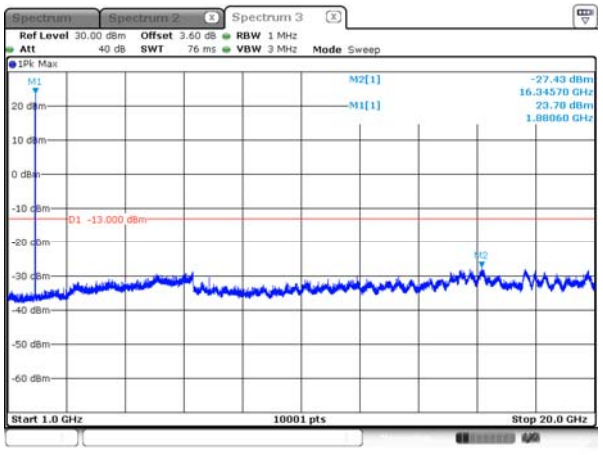
B2_15K_CH18602_QPSK_1RB0_above 1G



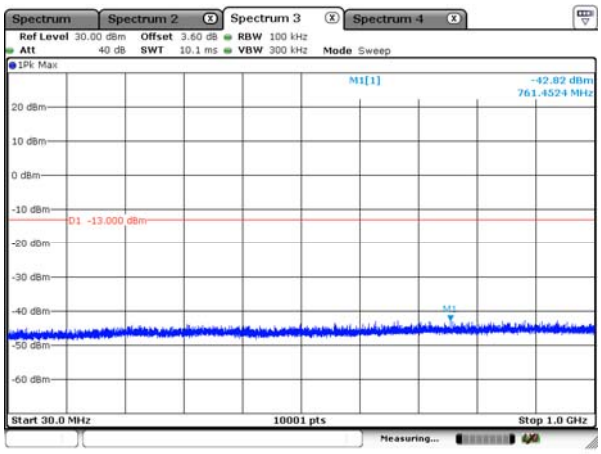
B2_15K_CH18900_QPSK_1RB0_under 1G



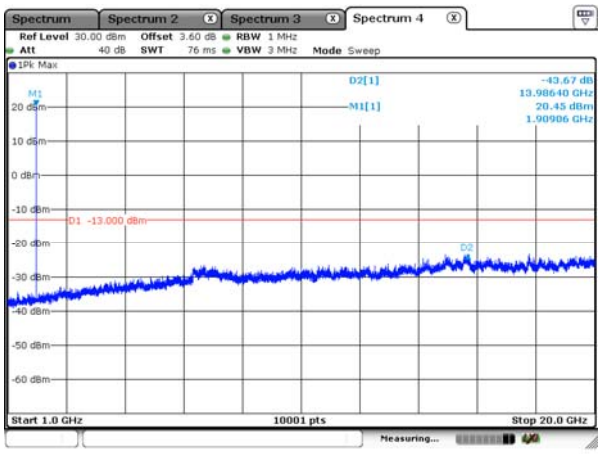
B2_15K_CH18900_QPSK_1RB0_above 1G



B2_15K_CH19198_QPSK_1RB0_under 1G

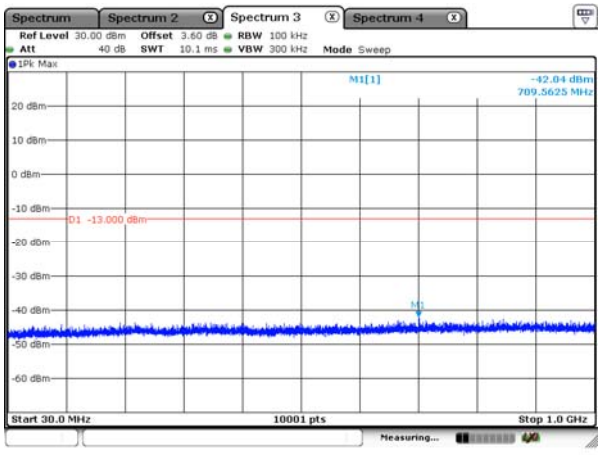


B2_15K_CH19198_QPSK_1RB0_above 1G

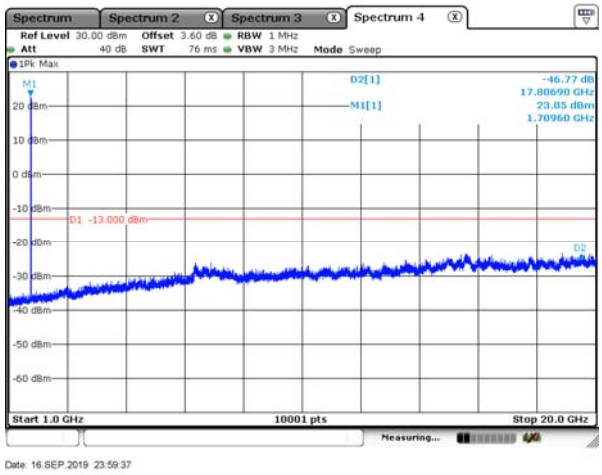


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Spurious Emissions (Conducted)		
Test Mode	Mode 2: LTE_NB-IoT_Band 4		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

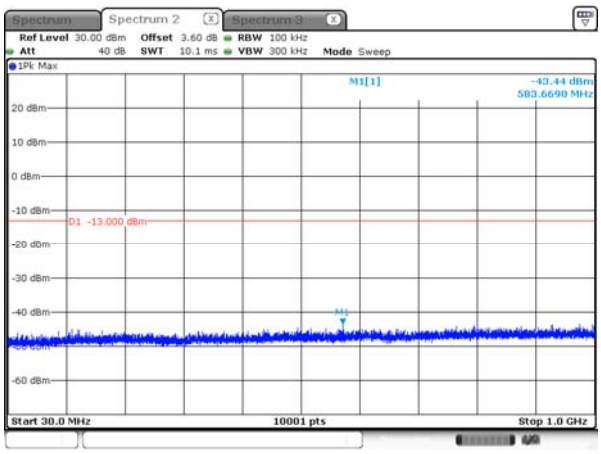
B4_3.75K_CH19952_BPSK_1RB0_under 1G



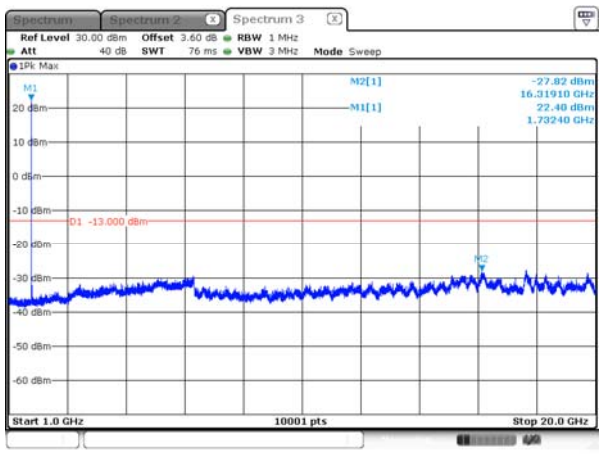
B4_3.75K_CH19952_BPSK_1RB0_above 1G



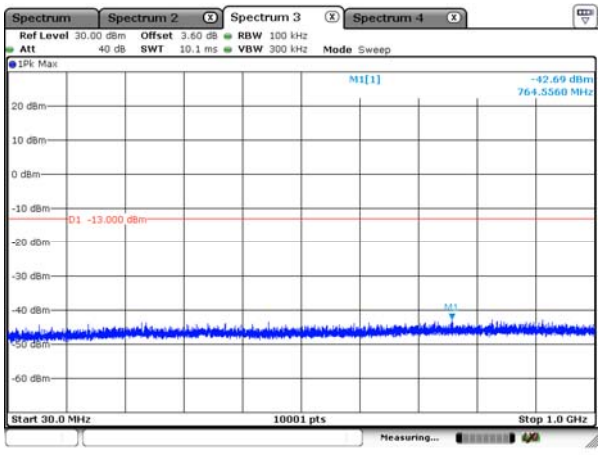
B4_3.75K_CH20175_BPSK_1RB0_under 1G



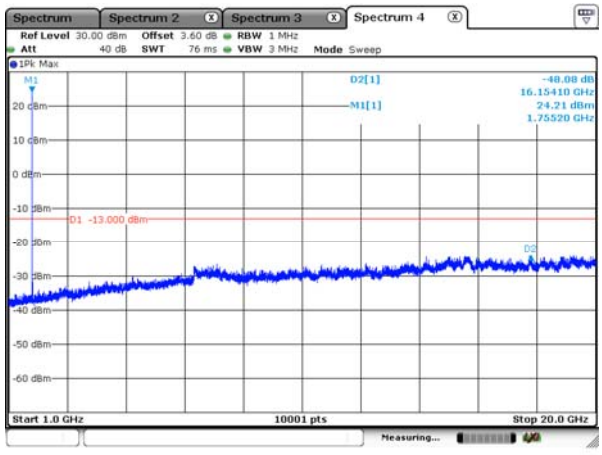
B4_3.75K_CH20175_BPSK_1RB0_above 1G



B4_3.75K_CH20398_BPSK_1RB0_under 1G

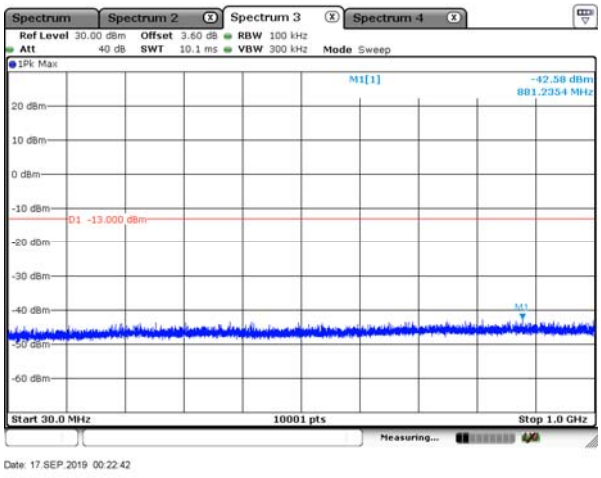


B4_3.75K_CH20398_BPSK_1RB0_above 1G

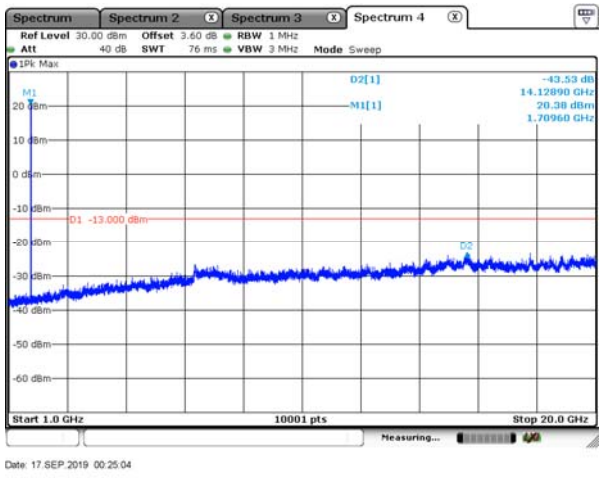


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Spurious Emissions (Conducted)		
Test Mode	Mode 2: LTE_NB-IoT_Band 4		
Date of Test	2019/05/15~2019/09/17	Test Site	SR10-H

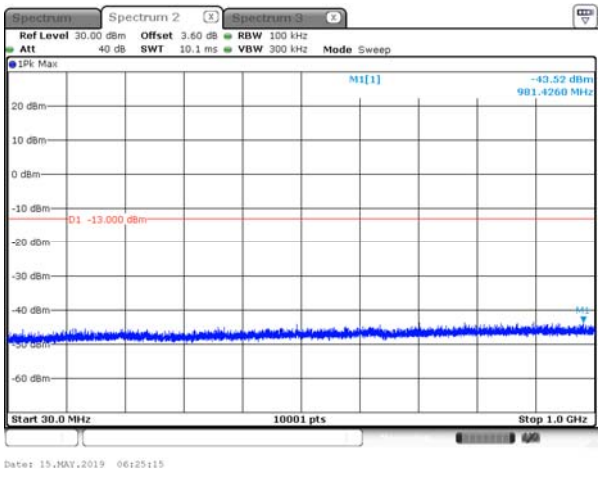
B4_15K_CH19952_QPSK_1RB0_under 1G



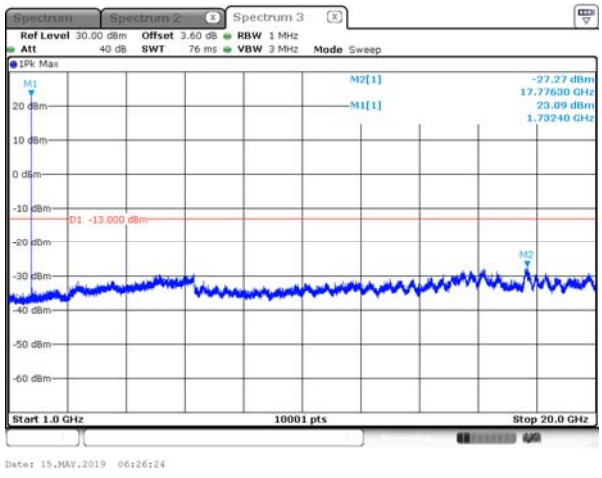
B4_15K_CH19952_QPSK_1RB0_above 1G



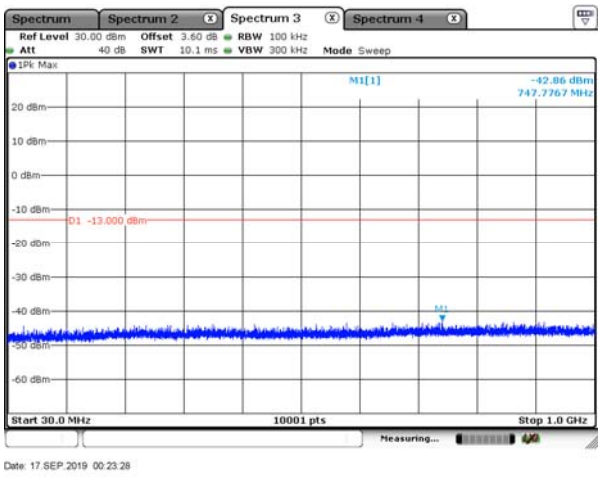
B4_15K_CH20175_QPSK_1RB0_under 1G



B4_15K_CH20175_QPSK_1RB0_above 1G



B4_15K_CH20398_QPSK_1RB0_under 1G



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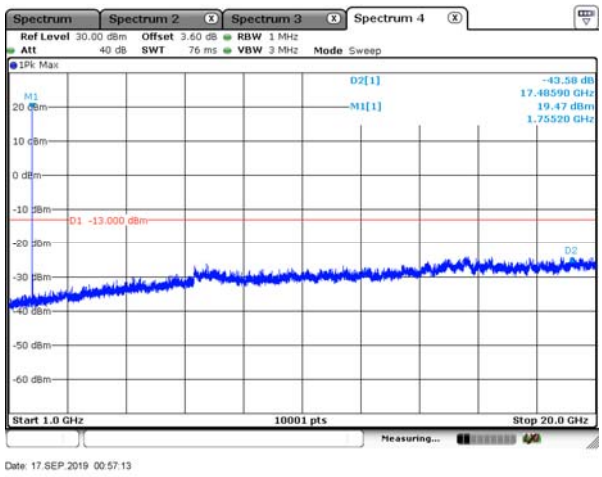
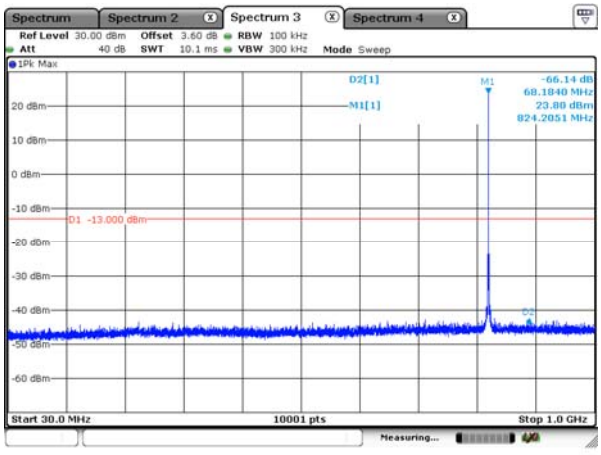
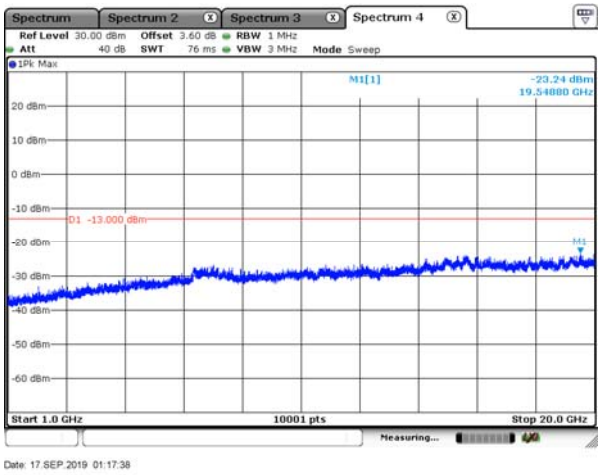


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Spurious Emissions (Conducted)		
Test Mode	Mode 3: LTE_NB-IoT_Band 5		
Date of Test	2019/05/16~2019/09/17	Test Site	SR10-H

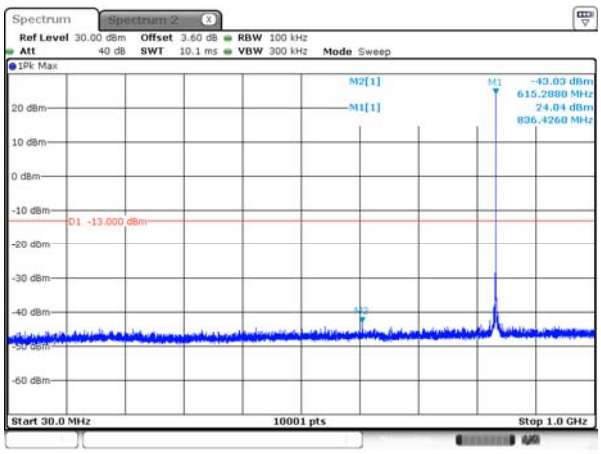
B5_3.75K_CH20402_BPSK_1RB0_under 1G



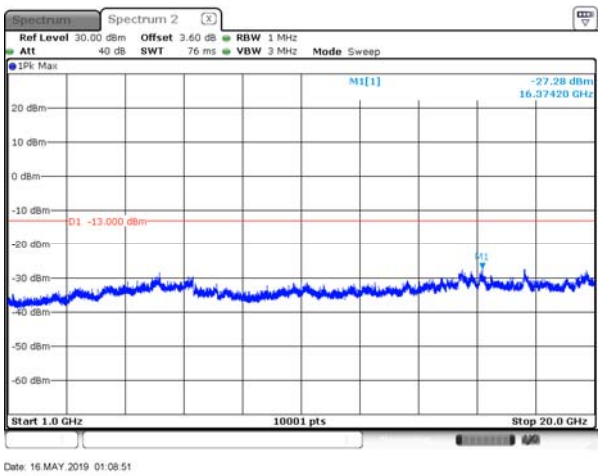
B5_3.75K_CH20402_BPSK_1RB0_above 1G



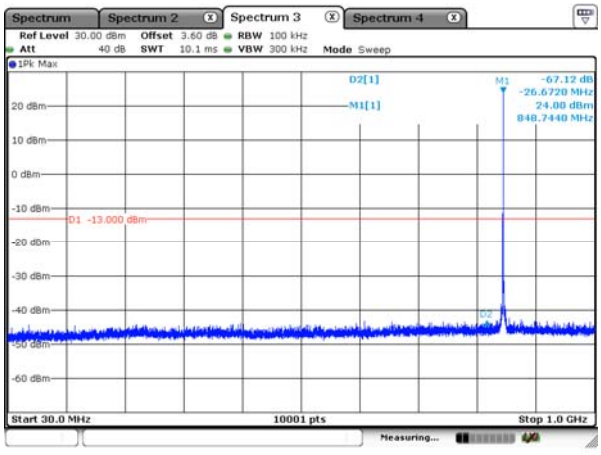
B5_3.75K_CH20525_BPSK_1RB0_under 1G



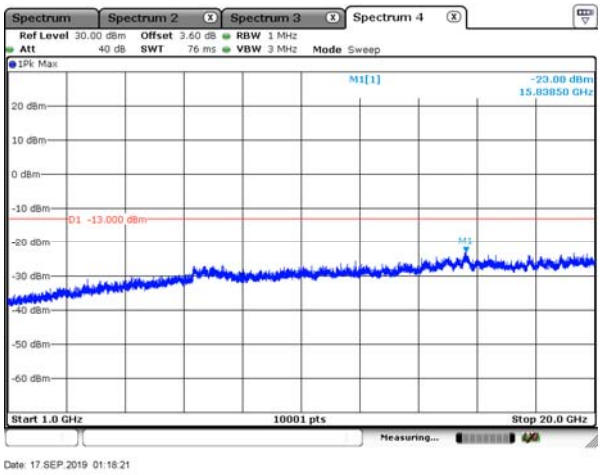
B5_3.75K_CH20525_BPSK_1RB0_above 1G



B5_3.75K_CH20648_BPSK_1RB0_under 1G

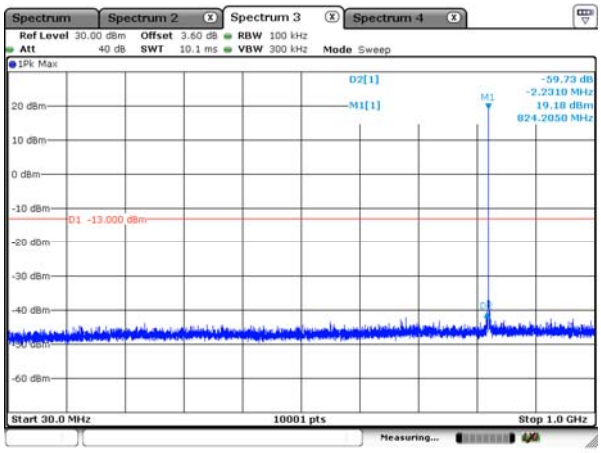


B5_3.75K_CH20648_BPSK_1RB0_above 1G

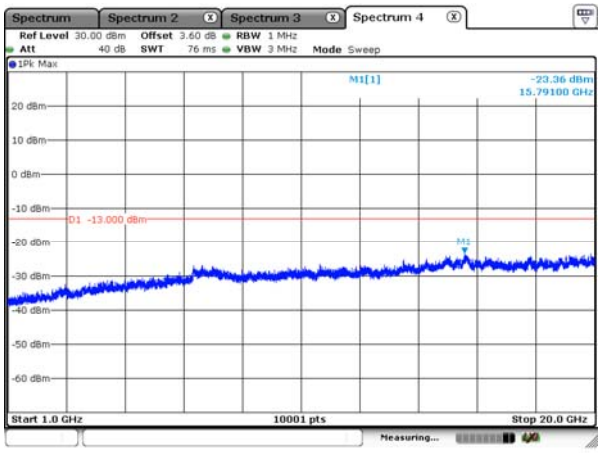


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Spurious Emissions (Conducted)		
Test Mode	Mode 3: LTE_NB-IoT_Band 5		
Date of Test	2019/05/16~2019/09/17	Test Site	SR10-H

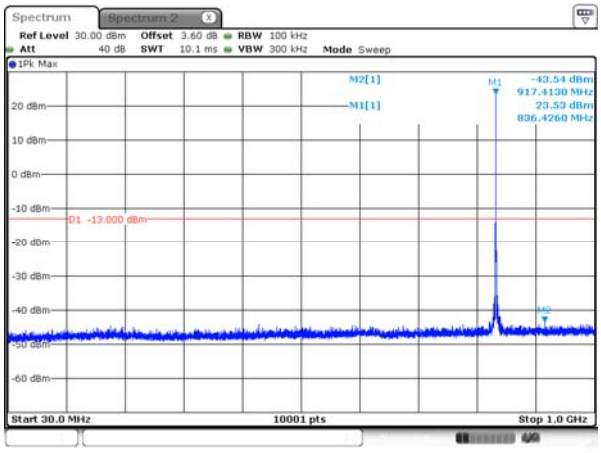
B5_15K_CH20402_QPSK_1RB0_under 1G



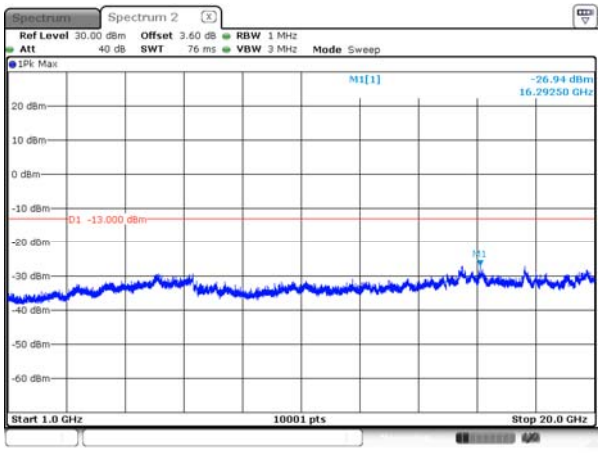
B5_15K_CH20402_QPSK_1RB0_above 1G



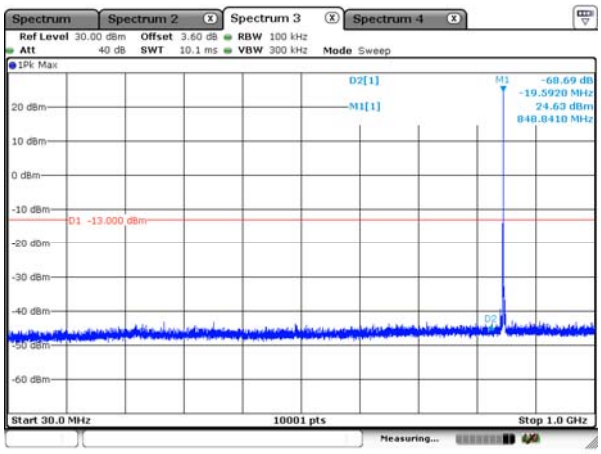
B5_15K_CH20525_QPSK_1RB0_under 1G



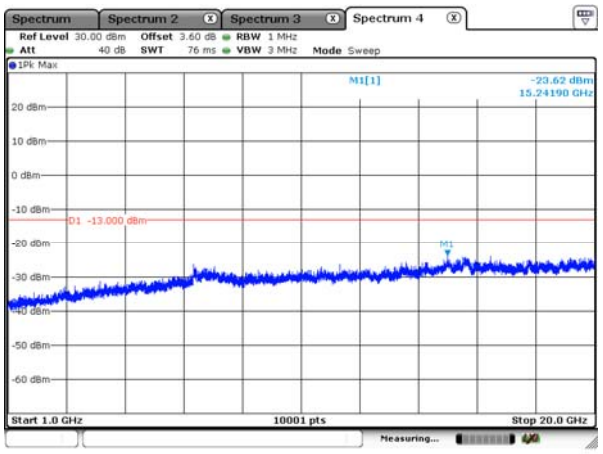
B5_15K_CH20525_QPSK_1RB0_above 1G



B5_15K_CH20648_QPSK_1RB0_under 1G

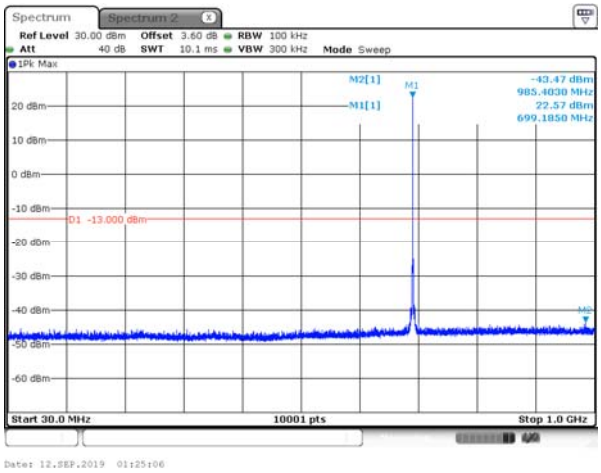


B5_15K_CH20648_QPSK_1RB0_above 1G

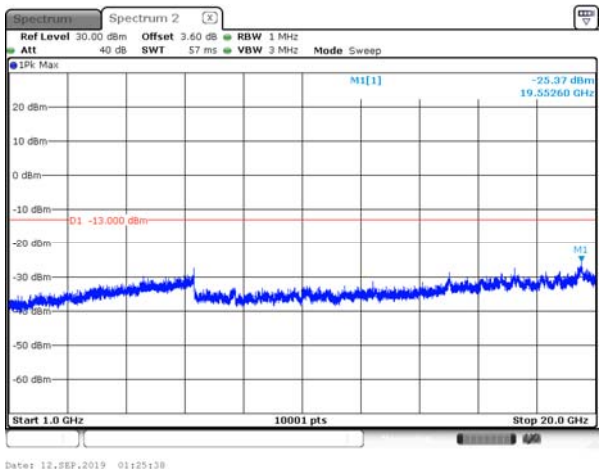


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Spurious Emissions (Conducted)		
Test Mode	Mode 4: LTE_NB-IoT_Band 12		
Date of Test	2019/05/15~2019/09/12	Test Site	SR10-H

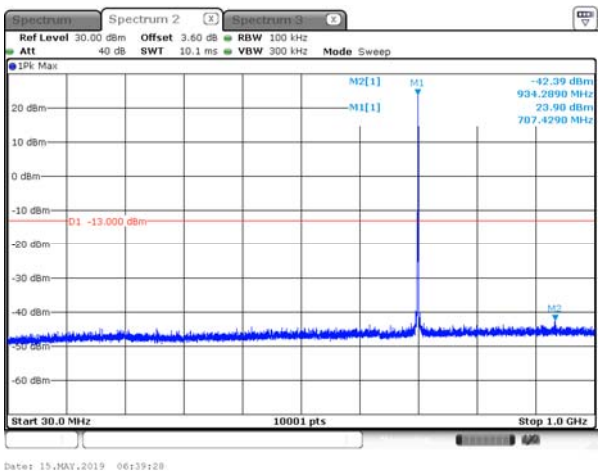
B12_3.75K_CH23012_BPSK_1RB0_under 1G



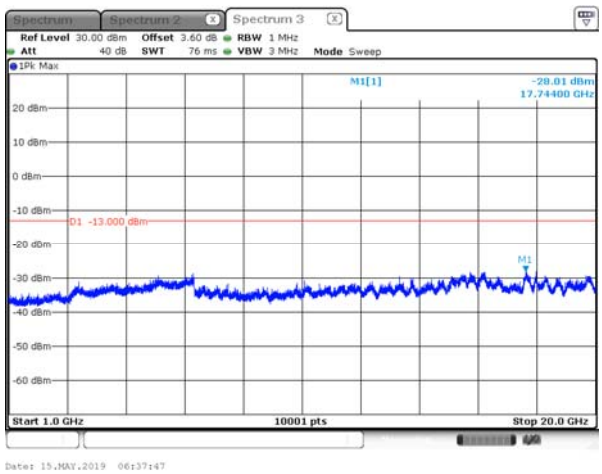
B12_3.75K_CH23012_BPSK_1RB0_above 1G



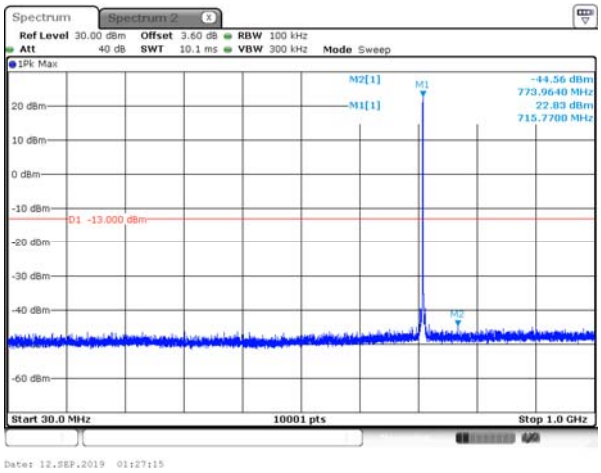
B12_3.75K_CH23095_BPSK_1RB0_under 1G



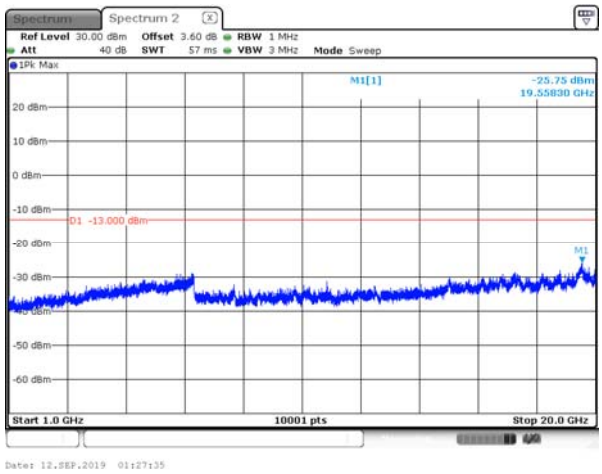
B12_3.75K_CH23095_BPSK_1RB0_above 1G



B12_3.75K_CH23178_BPSK_1RB0_under 1G

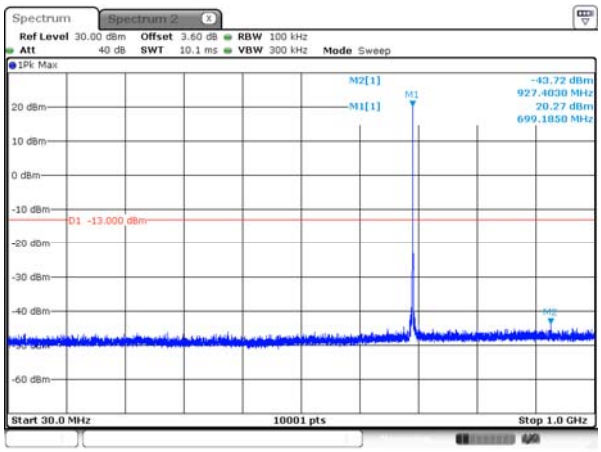


B12_3.75K_CH23178_BPSK_1RB0_above 1G

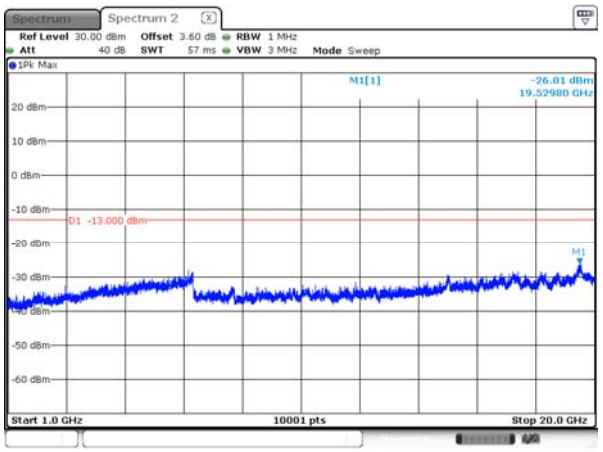


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Spurious Emissions (Conducted)		
Test Mode	Mode 4: LTE_NB-IoT_Band 12		
Date of Test	2019/05/15~2019/09/12	Test Site	SR10-H

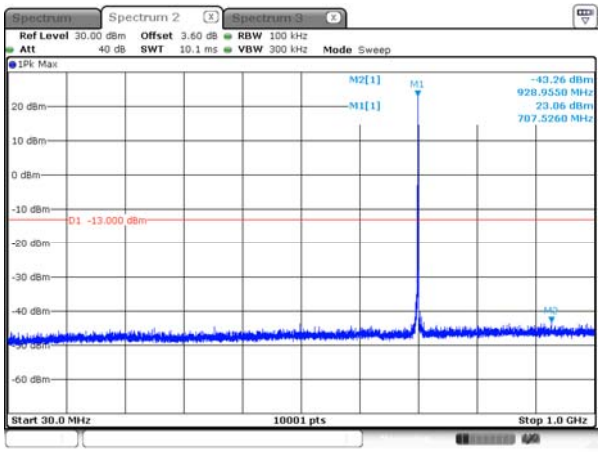
B12_15K_CH23012_QPSK_1RB0_under 1G



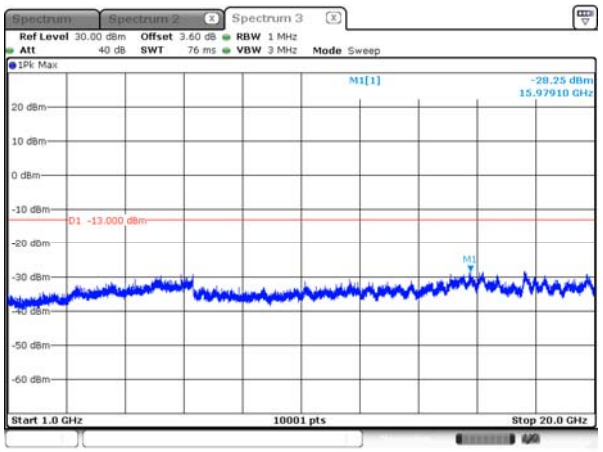
B12_15K_CH23012_QPSK_1RB0_above 1G



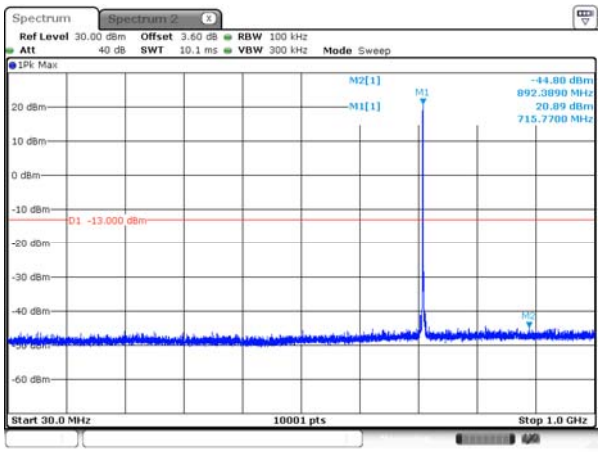
B12_15K_CH23095_QPSK_1RB0_under 1G



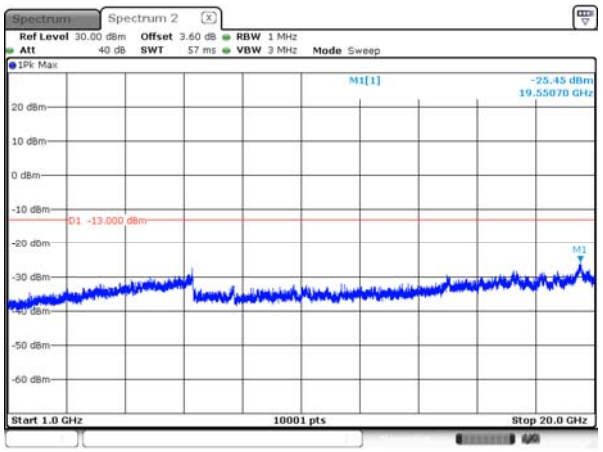
B12_15K_CH23095_QPSK_1RB0_above 1G



B12_15K_CH23178_QPSK_1RB0_under 1G

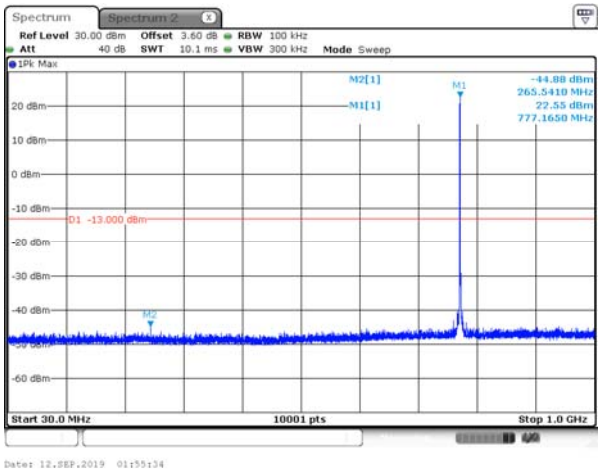


B12_15K_CH23178_QPSK_1RB0_above 1G

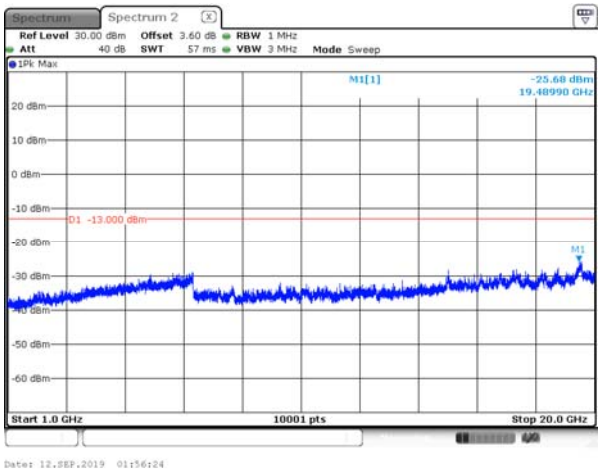


Product	NB-IOT Module Supporting 2, 4, 5, 12, 13, 66		
Test Item	Spurious Emissions (Conducted)		
Test Mode	Mode 5: LTE_NB-IoT_Band 13		
Date of Test	2019/05/15~2019/09/12	Test Site	SR10-H

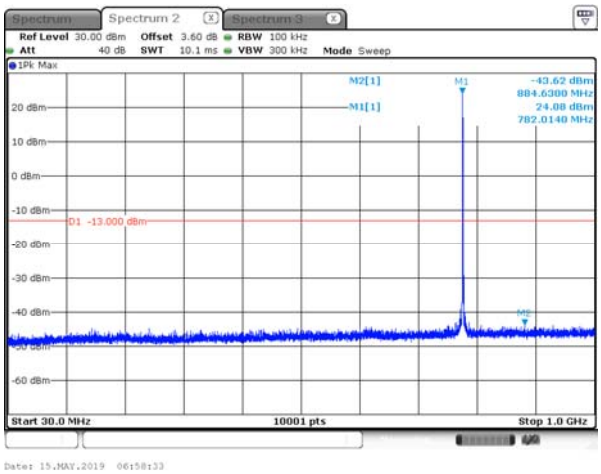
B13_3.75K_CH23182_BPSK_1RB0_under 1G



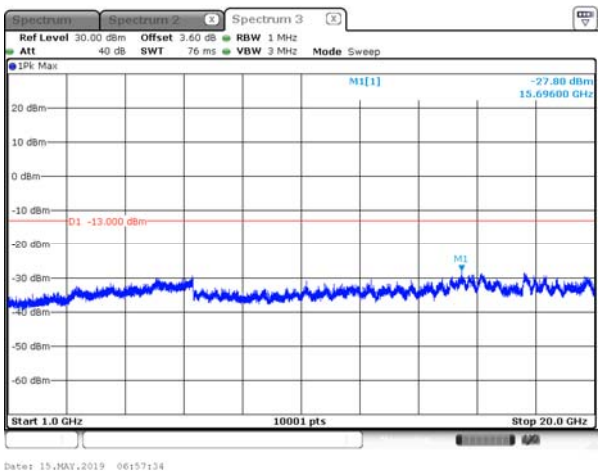
B13_3.75K_CH23182_BPSK_1RB0_above 1G



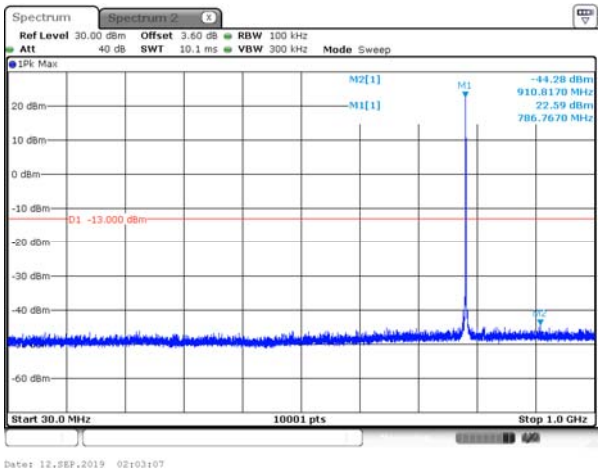
B13_3.75K_CH23230_BPSK_1RB0_under 1G



B13_3.75K_CH23230_BPSK_1RB0_above 1G



B13_3.75K_CH23278_BPSK_1RB0_under 1G



B13_3.75K_CH23278_BPSK_1RB0_above 1G