

RF TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.



FOR
QLM100 Module

ISSUED TO
Queclick Wireless Solutions Co., Ltd.

No.30, Hongqiao Wanchuang Center Phase I, Lane 500, Xinlong Road,
Minhang District, Shanghai, China 201101



Tested by: *Wu Huihui*

Wu Huihui

Date: *Jun. 25, 2021*

Approved by: *Wei Yanguan*

Wei Yanguan
(Chief Engineer)

Date: *Jun. 25, 2021*

Report No.: BL-EC2140498-501

EUT Name: QLM100 Module

Model Name: QLM100

Brand Name: Queclick

Test Standard: 47 CFR Part 2

47 CFR Part 22

47 CFR Part 24

47 CFR Part 27

FCC ID: YQD-QLM100

Test Conclusion: Pass

Test Date: Apr. 16, 2021 ~ Jun. 18, 2021

Date of Issue: Jun. 25, 2021

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Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
<u>Rev. 01</u>	<u>Jun. 25, 2021</u>	<u>Initial Issue</u>

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1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China.
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20 °C to 35 °C
Ambient Relative Humidity	30 % to 60 %
Ambient Pressure	98 kPa to 102 kPa

1.4 Announce

- (1) The test report reference to the report template version v6.2.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
- (5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.
- (6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (7) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant. The applicant is responsible for the impact of the information provided on the validity of the results.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Queclink Wireless Solutions Co., Ltd.
Address	No.30, Hongqiao Wanchuang Center Phase I, Lane 500, Xinlong Road, Minhang District, Shanghai, China 201101

2.2 Manufacturer Information

Manufacturer	Queclink Wireless Solutions Co., Ltd.
Address	No.30, Hongqiao Wanchuang Center Phase I, Lane 500, Xinlong Road, Minhang District, Shanghai, China 201101

2.3 Factory Information

Factory	N/A
Address	N/A

2.4 General Description for Equipment under Test (EUT)

EUT Name	QLM100 Module
Model Name Under Test	QLM100
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	V1.03
Software Version	QLM100R00A01M512
Dimensions (Approx.)	26.5 mm(L) × 22.5 mm(W) × 2.25 mm(H)
Weight (Approx.)	3g

2.5 Technical Information

Note: The information provided by the applicant, except for The Max RF Output Power (EIRP/ERP).

All Network and Wireless connectivity for EUT	2G Network GPRS/EGPRS 850/900/1800/1900 MHz 4G Network FDD LTE-M1 Band 1/2/3/4/5/8/12/13/18/19/2025/27/28/66/85 FDD NB-IoT Band 1/2/3/4/5/8/12/13/18/19/20/25/28/71/66/85 GPS, GLONASS, Beidou, Galileo, QZSS
About the Product	The equipment is QLM100 Module, intended for used with information technology equipment.

The requirement for the following technical information of the EUT was tested in this report:

Operating Bands	GPRS/EGPRS 850/ 1900 MHz FDD LTE-M1 Band 2/4/5/12/13/25/66/85; FDD NB-IoT Band 2/4/5/12/13/25/66/71/85;	
Modulation Type	GPRS	GMSK
	EGPRS	8PSK
	LTE-M1	QPSK
		16QAM
	NB-IoT	BPSK
QPSK		
TX Frequency Range	GPRS/EGPRS 850: 824 MHz ~ 849 MHz GPRS/EGPRS 1900: 1850 MHz ~ 1910 MHz FDD LTE Band 2: 1850 MHz ~ 1910 MHz FDD LTE Band 4: 1710 MHz ~ 1755 MHz FDD LTE Band 5: 824 MHz ~ 849 MHz FDD LTE Band 12: 699 MHz ~ 716 MHz FDD LTE Band 13: 777 MHz ~ 787 MHz FDD LTE Band 25: 1850 MHz ~ 1915 MHz FDD LTE Band 66: 1710 MHz ~ 1780 MHz FDD LTE Band 71: 663 MHz ~ 698 MHz FDD LTE Band 85: 698 MHz ~ 716 MHz	
Rx Frequency Range	GPRS/EGPRS 850: 869 MHz ~ 894 MHz GPRS/EGPRS 1900: 1930 MHz ~ 1990 MHz FDD LTE Band 2: 1930 MHz ~ 1990 MHz FDD LTE Band 4: 2110 MHz ~ 2155 MHz FDD LTE Band 5: 869 MHz ~ 894 MHz FDD LTE Band 12: 729 MHz ~ 746 MHz FDD LTE Band 13: 746 MHz ~ 756 MHz FDD LTE Band 25: 1930 MHz ~ 1995 MHz FDD LTE Band 66: 2135 MHz ~ 2155 MHz FDD LTE Band 71: 617 MHz ~ 652 MHz FDD LTE Band 85: 728 MHz ~ 746 MHz	
Power Class	GPRS 850: 4 GPRS 1900: 1 EGPRS 850/1900: E2	

	FDD LTE-M1 Band 2: 3 FDD LTE-M1 Band 4: 3 FDD LTE-M1 Band 5: 3 FDD LTE-M1 Band 12: 3 FDD LTE-M1 Band 13: 3 FDD LTE-M1 Band 25: 3 FDD LTE-M1 Band 66: 3 FDD LTE-M1 Band 85: 3 FDD NB-IoT 2: 3 FDD NB-IoT 4: 3 FDD NB-IoT 5: 3 FDD NB-IoT 12: 3 FDD NB-IoT 13: 3 FDD NB-IoT 25: 3 FDD NB-IoT 66: 3 FDD NB-IoT 71: 3 FDD NB-IoT 85: 3
Multislot Class	GPRS/EGPRS: 33
Antenna Type	Omni Antenna
Antenna Gain	GPRS/EGPRS 850: -0.76dBi GPRS/EGPRS 1900: -1.20dBi FDD LTE-M1 Band 2: -1.20dBi FDD LTE-M1 Band 4: -0.90dBi FDD LTE-M1 Band 5: -0.76dBi FDD LTE-M1 Band 12: -3.0dBi FDD LTE-M1 Band 13: -0.81dBi FDD LTE-M1 Band 25: -1.20dBi FDD LTE-M1 Band 66: -0.90dBi FDD LTE-M1 Band 85: -2.4dBi FDD NB-IoT Band 2: -1.20dBi FDD NB-IoT Band 4: -0.90dBi FDD NB-IoT Band 5: -0.76dBi FDD NB-IoT Band 12: -3.0dBi FDD NB-IoT Band 13: -0.81dBi FDD NB-IoT Band 25: -1.20dBi FDD NB-IoT Band 66: -0.90dBi FDD NB-IoT Band 71: -4.1dBi FDD NB-IoT Band 85: -2.4dBi
The Max RF Output Power (EIRP/ERP)	GPRS/ EGPRS 850: 30.39dBm GPRS/ EGPRS 1900: 29.69dBm FDD LTE-M1 Band 2: 21.78dBm FDD LTE-M1 Band 4: 21.89dBm FDD LTE-M1 Band 5: 19.89dBm FDD LTE-M1 Band 12: 17.65dBm FDD LTE-M1 Band 13: 19.70dBm

	FDD LTE-M1 Band 25: 21.30dBm
	FDD LTE-M1 Band 66: 21.58dBm
	FDD LTE-M1 Band 85: 17.94dBm
	FDD NB-IoT 2: 21.20dBm
	FDD NB-IoT 4: 21.49dBm
	FDD NB-IoT 5: 19.49dBm
	FDD NB-IoT 12: 17.19dBm
	FDD NB-IoT 13: 19.41dBm
	FDD NB-IoT 25: 21.10dBm
	FDD NB-IoT 66: 21.41dBm
	FDD NB-IoT 71: 15.63dBm
	FDD NB-IoT 85: 17.74dBm

Note 1: The EUT information are declared by manufacturer. For more detailed features description, please refer to the manufacturer's specifications or user's manual.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 Subpart H	Cellular Radiotelephone Service
3	47 CFR Part 24 Subpart E	Broadband PCS
4	47 CFR Part 27	Miscellaneous Wireless Communications Services
5	ANSI/TIA-603-E-2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
6	KDB 971168 D01 v03	Measurement Guidance for Certification of Licensed Digital Transmitters

3.2 Test Verdict

No.	Test Description	FCC Part No.	Test Result	Test Verdict
1	Conducted RF Output Power	2.1046	Reporting only (ANNEX A.1)	Pass
2	Effective (Isotropic) Radiated Power	2.1046 22.913 24.232 27.50	ANNEX A.1	Pass
3	Peak to Average Ratio	2.1046 24.232(d) 27.50(d)	ANNEX A.2	Pass
4	Occupied Bandwidth	2.1049 22.917 24.238 27.53	ANNEX A.3	Pass
5	Frequency Stability	2.1055 22.355 24.235 27.54	ANNEX A.4	Pass
6	Spurious Emission at Antenna Terminals	2.1051 22.917 24.238 27.53	ANNEX A.5	Pass
7	Band Edge	2.1051 22.917 24.238 27.53	ANNEX A.6	Pass
8	Field Strength of Spurious Radiation	2.1053 22.917 24.238 27.53	ANNEX A.7	Pass

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the environmental conditions were within the listed ranges:

Test Voltage of the EUT	NV (Normal Voltage)	3.8 V _{DC}
	LV (Low Voltage)	3.3 V _{DC}
	HV (High Voltage)	4.4 V _{DC}
Test Temperature of the EUT	NT (Normal Temperature)	+25 °C
	LT (Low Temperature)	-40 °C
	HT (High Temperature)	+85 °C

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Software /Firmware Version	Cal. Date	Cal. Due
Conducted Test System						
Test Software 1	R&S	CMUgo	N/A	V2.0.1	N/A	N/A
Test Software 2	R&S	CMWRun	N/A	V1.9.8	N/A	N/A
Test Software 3	BALUN	BL410R	N/A	V2.1.1.48 8	N/A	N/A
Universal Radio Communication Tester	R&S	CMU 200	119280	V5.13	2021.01.14	2022.01.13
Wideband Radio Communication Tester	R&S	CMW 500	127794	V3.5.137	2021.06.08	2022.06.07
Wideband Radio Communication Tester	R&S	CMW 500	120598	V3.5.137	2021.01.14	2022.01.13
Spectrum Analyzer	R&S	FSV-30	103118	2.30.SP1	2021.06.08	2022.06.07
Spectrum Analyzer	Agilent	E4440A	MY45304434	A.11.21	2021.09.25	2022.09.24
Spectrum Analyzer	Agilent	E4440A	MY46181663	A.11.21	2021.10.21	2022.10.20
Temperature Chamber	AHK	SP20	1412	N/A	2021.06.10	2022.06.09
DC Power Supply	ITECH	IT6863A	6000140106 87210020	N/A	2021.06.12	2022.06.11
Power Sensor	Agilent	E9304A H18	MY41497164	N/A	2020.09.25	2021.09.24
Power Splitter	KMW	DCPD- LDC	1305003215	N/A	N/A	N/A
Attenuator (20 dB)	KMW	ZA-S1-201	110617091	N/A	N/A	N/A

Description	Manufacturer	Model	Serial No.	Software /Firmware Version	Cal. Date	Cal. Due
Attenuator (6 dB)	KMW	ZA-S1-61	1305003189	N/A	N/A	N/A
Wideband Radio Communication Tester	R&S	CMW 500	168792	V3.5.137	2021.04.14	2022.04.13
Radiated Test System						
Test Software	BALUN	BL410_E	N/A	V16.921	N/A	N/A
Test Antenna-Bi-Log(30 MHz-3 GHz)	Schwarzbeck	VULB 9163	9163-624	N/A	2021.07.02	2023.07.01
Test Antenna-Horn(1-18 GHz)	Schwarzbeck	BBHA 9120D	9120D-1148	N/A	2021.07.02	2023.07.01
Test Antenna-Horn(18-40 GHz)	A-INFO	LB-180400KF	J211060273	N/A	2021.01.04	2023.01.03
Anechoic Chamber	YIHENG	9m*6m*6m	#3	N/A	2018.07.18	2021.07.17
Shielded Enclosure	ChangNing	CN-130701	130703	N/A	N/A	N/A
EMI Receiver	KEYSIGHT	N9038A	MY53220118	A.14.16	2020.09.18	2021.09.17
Spectrum Analyzer	R&S	FSV-30	103118	2.30.SP1	2021.06.08	2022.06.07
Wideband Radio Communication Tester	R&S	CMW 500	127794	V3.2.73	2021.06.08	2022.06.07
Wideband Radio Communication Tester	R&S	CMW 500	168792	V3.5.137	2021.04.14	2022.04.13

4.3 Test Configurations

Test Items	Test Mode	Test Channel		
		LCH	MCH	HCH
Effective (Isotropic) Radiated Power	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v
Occupied Bandwidth	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v
Frequency Stability	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v
Spurious Emission at Antenna Terminals	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v
Band Edge	GPRS 850	v	--	v
	GPRS 1900	v	--	v
	EGPRS 850	v	--	v
	EGPRS 1900	v	--	v
Field Strength of Spurious Radiation	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v

Note 1: The mark "v" means that this configuration is chosen for testing.

Test Mode	UL Channel	UL Channel No.	UL Frequency (MHz)
GPRS/EGPRS 850	Low Channel	128	824.2
	Middle Channel	190	836.6
	High Channel	251	848.8
GPRS/EGPRS 1900	Low Channel	512	1850.2
	Middle Channel	661	1880.0
	High Channel	810	1909.8

LTE-M1 Band	Bandwidth (MHz)						Modulation Type		RB#			Test Channel		
	1.4	3	5	10	15	20	QPSK	16-QAM	1	Half	Full	LCH	MCH	HCH
Effective (Isotropic) Radiated Power														
2	v	v	v	v	v	v	v	v	v	--	v	v	v	v
4	v	v	v	v	v	v	v	v	v	--	v	v	v	v
5	v	v	v	v	n	n	v	v	v	--	v	v	v	v
12	v	v	v	v	n	n	v	v	v	--	v	v	v	v
13	n	n	v	v	n	n	v	v	v	--	v	v	v	v
25	v	v	v	v	v	v	v	v	v	--	v	v	v	v
66	v	v	v	v	v	v	v	v	v	--	v	v	v	v
85	n	n	v	v	n	n	v	v	v	--	v	v	v	v
Peak to Average Ratio														
2	--	--	--	--	--	v	v	v	--	--	v	v	v	v
4	--	--	--	--	--	v	v	v	--	--	v	v	v	v
5	--	--	--	v	n	n	v	v	--	--	v	v	v	v
12	--	--	--	v	n	n	v	v	--	--	v	v	v	v
13	n	n	--	v	n	n	v	v	--	--	v	v	v	v
25	--	--	--	--	--	v	v	v	--	--	v	v	v	v
66	--	--	--	--	--	v	v	v	--	--	v	v	v	v
85	n	n	--	v	n	n	v	v	--	--	v	v	v	v
Occupied Bandwidth														
2	v	v	v	v	v	v	v	v	--	--	v	v	v	v
4	v	v	v	v	v	v	v	v	--	--	v	v	v	v
5	v	v	v	v	n	n	v	v	--	--	v	v	v	v
12	v	v	v	v	n	n	v	v	--	--	v	v	v	v
13	n	n	v	v	n	n	v	v	--	--	v	v	v	v
25	v	v	v	v	v	v	v	v	--	--	v	v	v	v
66	v	v	v	v	v	v	v	v	--	--	v	v	v	v
85	n	n	v	v	n	n	v	v	--	--	v	v	v	v
Frequency Stability														
2	--	--	--	--	--	v	v	v	--	--	v	--	v	--
4	--	--	--	--	--	v	v	v	--	--	v	--	v	--
5	--	--	--	v	n	n	v	v	--	--	v	--	v	--
12	--	--	--	v	n	n	v	v	--	--	v	--	v	--
13	n	n	--	v	n	n	v	v	--	--	v	--	v	--
25	--	--	--	--	--	v	v	v	--	--	v	--	v	--
66	--	--	--	--	--	v	v	v	--	--	v	--	v	--
85	n	n	--	v	n	n	v	v	--	--	v	--	v	--
Spurious Emission at Antenna Terminals														
2	v	v	v	v	v	v	v	v	v	--	--	v	v	v
4	v	v	v	v	v	v	v	v	v	--	--	v	v	v
5	v	v	v	v	n	n	v	v	v	--	--	v	v	v
12	v	v	v	v	n	n	v	v	v	--	--	v	v	v

LTE-M1 Band	Bandwidth (MHz)						Modulation Type		RB#			Test Channel		
	1.4	3	5	10	15	20	QPSK	16-QAM	1	Half	Full	LCH	MCH	HCH
13	n	n	v	v	n	n	v	v	v	--	--	v	v	v
25	v	v	v	v	v	v	v	v	v	--	--	v	v	v
66	v	v	v	v	v	v	v	v	v	--	--	v	v	v
85	n	n	v	v	n	n	v	v	v	--	--	v	v	v
Band Edge														
2	v	v	v	v	v	v	v	v	v	--	v	v	--	v
4	v	v	v	v	v	v	v	v	v	--	v	v	--	v
5	v	v	v	v	n	n	v	v	v	--	v	v	--	v
12	v	v	v	v	n	n	v	v	v	--	v	v	--	v
13	n	n	v	v	n	n	v	v	v	--	v	v	--	v
25	v	v	v	v	v	v	v	v	v	--	v	v	--	v
66	v	v	v	v	v	v	v	v	v	--	v	v	--	v
85	n	n	v	v	n	n	v	v	v	--	v	v	--	v
Field Strength of Spurious Radiation														
2	v	v	v	v	v	v	v	--	v	--	--	--	v	--
4	v	v	v	v	v	v	v	--	v	--	--	--	v	--
5	v	v	v	v	n	n	v	--	v	--	--	--	v	--
12	v	v	v	v	n	n	v	--	v	--	--	--	v	--
13	n	n	v	v	n	n	v	--	v	--	--	--	v	--
25	v	v	v	v	v	v	v	--	v	--	--	--	v	--
66	v	v	v	v	v	v	v	--	v	--	--	--	v	--
85	n	n	v	v	n	n	v	--	v	--	--	--	v	--

Note 1: The mark "v" means that this configuration is chosen for testing.
 Note 2: The mark "n" means that this bandwidth is not supported.

NB-IoT Band	Sub-carrier spacing (kHz)		Modulation Type		Test Channel		
	3.75	15	BPSK	QPSK	LCH	MCH	HCH
Effective (Isotropic) Radiated Power							
2	v	v	v	v	v	v	v
4	v	v	v	v	v	v	v
5	v	v	v	v	v	v	v
12	v	v	v	v	v	v	v
13	v	v	v	v	v	v	v
25	v	v	v	v	v	v	v
66	v	v	v	v	v	v	v
71	v	v	v	v	v	v	v
85	v	v	v	v	v	v	v
Peak to Average Ratio							
2	v	v	v	v	v	v	v
4	v	v	v	v	v	v	v
5	v	v	v	v	v	v	v

NB-IoT Band	Sub-carrier spacing (kHz)		Modulation Type		Test Channel		
	3.75	15	BPSK	QPSK	LCH	MCH	HCH
12	v	v	v	v	v	v	v
13	v	v	v	v	v	v	v
25	v	v	v	v	v	v	v
66	v	v	v	v	v	v	v
71	v	v	v	v	v	v	v
85	v	v	v	v	v	v	v
Occupied Bandwidth							
2	v	v	v	v	v	v	v
4	v	v	v	v	v	v	v
5	v	v	v	v	v	v	v
12	v	v	v	v	v	v	v
13	v	v	v	v	v	v	v
25	v	v	v	v	v	v	v
66	v	v	v	v	v	v	v
71	v	v	v	v	v	v	v
85	v	v	v	v	v	v	v
Frequency Stability							
2	v	v	v	v	--	v	--
4	v	v	v	v	--	v	--
5	v	v	v	v	--	v	--
12	v	v	v	v	--	v	--
13	v	v	v	v	--	v	--
25	v	v	v	v	--	v	--
66	v	v	v	v	--	v	--
71	v	v	v	v	--	v	--
85	v	v	v	v	--	v	--
Spurious Emission at Antenna Terminals							
2	v	v	v	v	v	v	v
4	v	v	v	v	v	v	v
5	v	v	v	v	v	v	v
12	v	v	v	v	v	v	v
13	v	v	v	v	v	v	v
25	v	v	v	v	v	v	v
66	v	v	v	v	v	v	v
71	v	v	v	v	v	v	v
85	v	v	v	v	v	v	v
Band Edge							
2	v	v	v	v	v	--	v
4	v	v	v	v	v	--	v
5	v	v	v	v	v	--	v
12	v	v	v	v	v	--	v

NB-IoT Band	Sub-carrier spacing (kHz)		Modulation Type		Test Channel		
	3.75	15	BPSK	QPSK	LCH	MCH	HCH
13	v	v	v	v	v	--	v
25	v	v	v	v	v	--	v
66	v	v	v	v	v	--	v
71	v	v	v	v	v	--	v
85	v	v	v	v	v	--	v
Field Strength of Spurious Radiation							
2	v	v	v	v	--	v	--
4	v	v	v	v	--	v	--
5	v	v	v	v	--	v	--
12	v	v	v	v	--	v	--
13	v	v	v	v	--	v	--
25	v	v	v	v	--	v	--
66	v	v	v	v	--	v	--
71	v	v	v	v	--	v	--
85	v	v	v	v	--	v	--
Note 1: The mark "v" means that this configuration is chosen for testing. Note 2: The mark "n" means that this bandwidth is not supported.							

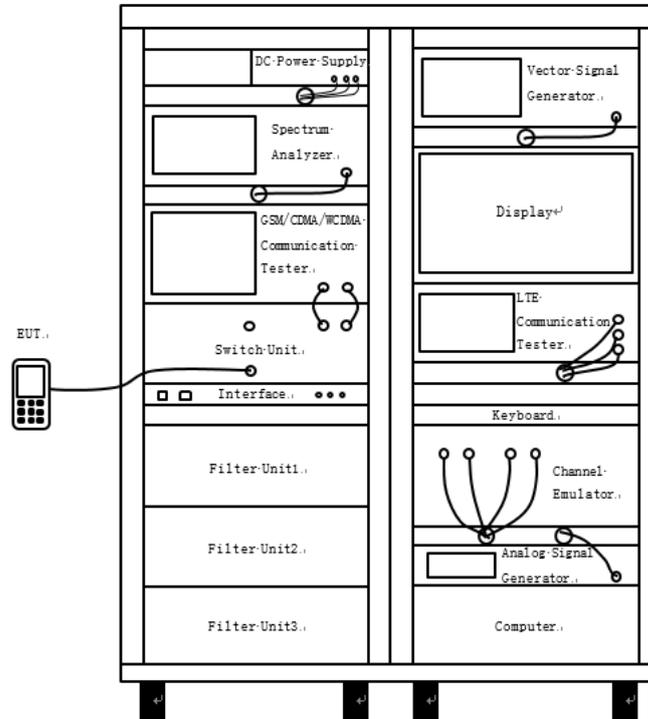
Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
LTE Band 2	Low Range	1.4	18607	1850.7
		3	18615	1851.5
		5	18625	1852.5
		10	18650	1855
		15	18675	1857.5
		20	18700	1860
	Middle Range	1.4/3/5/10/15/20	18900	1880
	High Range	1.4	19193	1909.3
		3	19185	1908.5
		5	19175	1907.5
		10	19150	1905
		15	19125	1902.5
20		19100	1900	
LTE Band 4	Low Range	1.4	19957	1710.7
		3	19965	1711.5
		5	19975	1712.5
		10	20000	1715
		15	20025	1717.5
		20	20050	1720
	Middle Range	1.4/3/5/10/15/20	20175	1732.5
	High Range	1.4	20393	1754.3
		3	20385	1753.5
		5	20375	1752.5
		10	20350	1750
		15	20325	1747.5
20		20300	1745	
LTE Band 5	Low Range	1.4	20407	824.7
		3	20415	825.5
		5	20425	826.5
		10	20450	829
	Middle Range	1.4/3/5/10	20525	836.5
	High Range	1.4	20643	848.3
		3	20635	847.5
		5	20625	846.5
10		20600	844	
LTE Band 12	Low Range	1.4	23017	699.7
		3	23025	700.5
		5	23035	701.5
		10	23060	704
	Middle Range	1.4/3/5/10	23095	707.5
	High Range	1.4	23173	715.3
		3	23165	714.5

Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
		5	23155	713.5
		10	23130	711
LTE Band 13	Low Range	5	23205	779.5
		10	--	--
	Middle Range	5/10	23230	782
	High Range	5	23255	784.5
10		--	--	
LTE Band 25	Low Range	1.4	26047	1850.7
		3	26055	1851.5
		5	26065	1852.5
		10	26090	1855
		15	26115	1857.5
		20	26140	1860
	Middle Range	1.4/3/5/10/15/20	26363	1882.5
	High Range	1.4	26683	1914.3
		3	26675	1913.5
		5	26665	1912.5
		10	26640	1910
		15	26615	1907.5
		20	26590	1905
LTE Band 66	Low Range	1.4	131979	1710.7
		3	131987	1711.5
		5	131997	1712.5
		10	132022	1715
		15	132047	1717.5
		20	132072	1720
	Middle Range	1.4/3/5/10/15/20	132322	1745
	High Range	1.4	132665	1779.3
		3	132657	1778.5
		5	132647	1777.5
		10	132622	1775
		15	132597	1772.5
20		132572	1770	
LTE Band 85	Low Range	5	134027	700.5
		10	134052	703
	Middle Range	5/10	134092	707
	High Range	5	134147	712.5
10		134132	711	
NB-IoT Band 2	Low Range	---	18601	1850.1
	Middle Range	---	18900	1880.0
	High Range	---	19199	1909.9
NB-IoT	Low Range	---	19951	1710.1

Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
Band 4	Middle Range	---	20175	1732.5
	High Range	---	20399	1754.9
NB-IoT Band 5	Low Range	---	20401	824.1
	Middle Range	---	20525	836.5
	High Range	---	20649	848.9
NB-IoT Band 12	Low Range	---	23011	699.1
	Middle Range	---	23095	707.5
	High Range	---	23179	715.9
NB-IoT Band 13	Low Range	---	23181	777.1
	Middle Range	---	23230	782.0
	High Range	---	23279	786.9
NB-IoT Band 25	Low Range	---	26041	1850.1
	Middle Range	---	26365	1882.5
	High Range	---	26689	1914.9
NB-IoT Band 66	Low Range	---	131973	1710.1
	Middle Range	---	132322	1745
	High Range	---	132671	1779.9
NB-IoT Band 71	Low Range	---	133123	663.1
	Middle Range	---	133297	680.5
	High Range	---	133471	697.9
NB-IoT Band 85	Low Range	---	134003	698.1
	Middle Range	---	134092	707
	High Range	---	134181	715.9

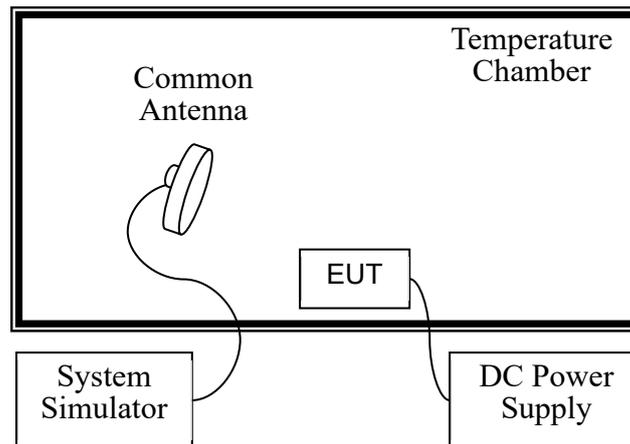
4.4 Test Setup

4.4.1 For Antenna Port Test



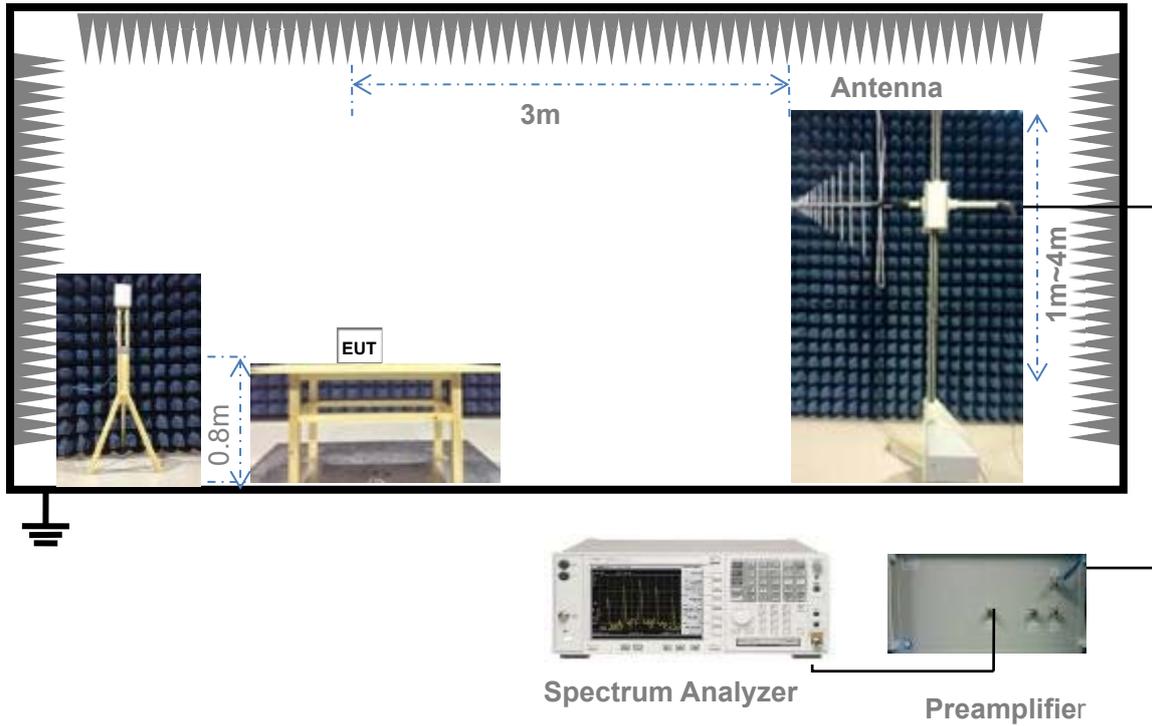
(Diagram 1)

4.4.2 For Frequency Stability Test



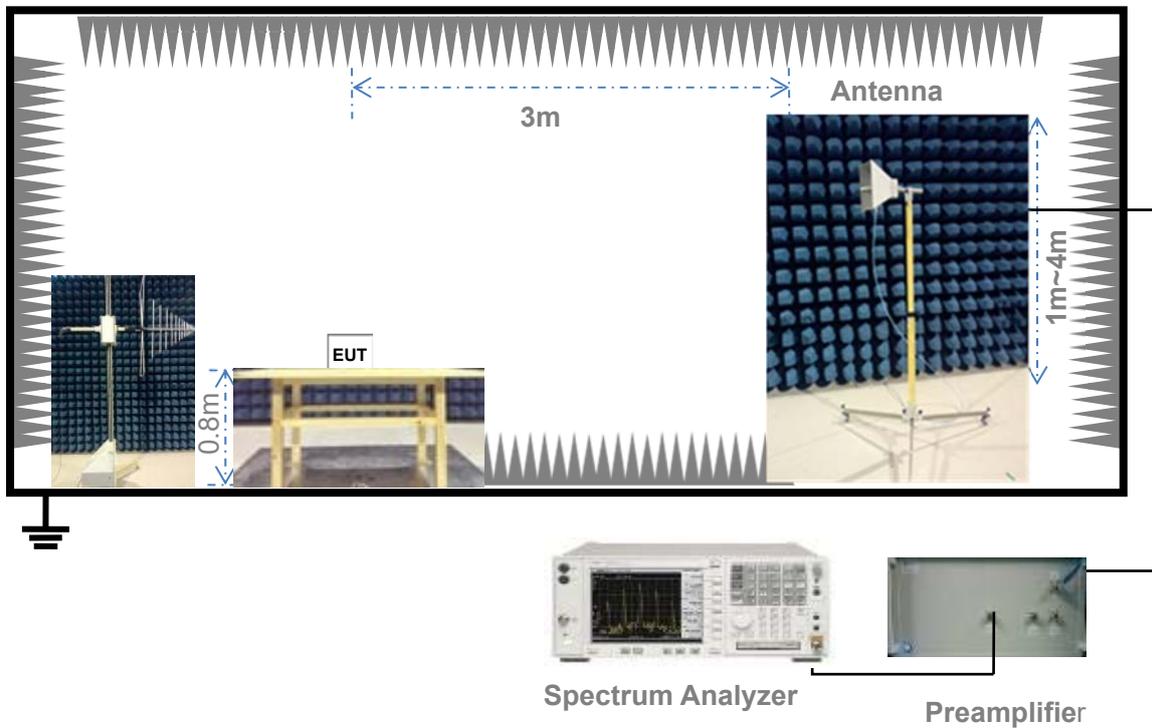
(Diagram 2)

4.4.3 For Radiated Test (30 MHz ~ 1 GHz)



(Diagram 3)

4.4.4 For Radiated Test (Above 1 GHz)



(Diagram 4)

5 TEST ITEMS

5.1 Transmitter Radiated Power (EIRP/ERP)

5.1.1 Limit

FCC § 2.1046 & 22.913(a) & 24.232(c) & 27.50(a) & 27.50(b) & 27.50(c) & 27.50(d) & 27.50(h)

According to FCC section 22.913(a) (5), the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC section 24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to FCC section 27.50(a) (3), for mobile and portable stations transmitting in the 2305-2315MHz band or the 2350-2360MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards.

FCC section 27.50(b) (10), portable stations (hand-held devices) transmitting in the 746-757MHz, 776-788MHz, and 805-806MHz bands are limited to 3 watts ERP.

FCC section 27.50(c) (10), portable stations (hand-held devices) in the 600MHz uplink band and the 698-746MHz band, and fixed and mobile stations in the 600MHz uplink band are limited to 3 watts ERP.

FCC section 27.50(d) (4), fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

(7) Fixed, mobile, and portable (hand-held) stations operating in the 2000-2020 MHz band are limited to 2 watts EIRP.

And FCC section 27.50(h) (2), for mobile and other user stations, mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

5.1.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description is used for conducted test, and the section 4.4.3 and 4.4.4 (Diagram 3, 4) test setup description is used for radiated test. The photo of test setup please refer to ANNEX B.

5.1.3 Test Procedure

Description of the Conducted Output Power Measurement

The EUT is coupled to the SS with attenuator through power splitter; the RF load attached to EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. A system simulator is used to establish communication with the EUT, and its parameters are set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The relevant equation for determining the conducted measured value is:

Conducted Output Power Value (dBm) = Measured Value (dBm) + Path Loss (dB)

where:

Conducted Output Power Value = final conducted measured value in the conducted power test, in dBm;

Measured Value = measured conducted power received by spectrum analyzer or power meter, in dBm;

Path Loss = signal attenuation in the connecting cable between the transmitter and spectrum analyzer or power meter, including external cable loss, in dB;

During the test, the data of Path Loss (dB) is added in the spectrum analyzer or power meter, so Measured Value (dBm) is the final values which contains the data of Path Loss (dB).

For example:

In the conducted output power test, when measured value for GSM850 is 24.7 dBm, and path loss is 8.5 dB, then final conducted output power value is:

Conducted Output Power Value (dBm) = 24.7 dBm + 8.5 dB = 33.2 dBm

Description of the Transmitter Radiated Power Measurement

In many cases, the RF output power limits for licensed digital transmission devices is specified in terms of effective radiated power (ERP) or equivalent isotropic radiated power (EIRP). Typically, ERP is specified when the operating frequency is less than or equal to 1 GHz and EIRP is specified when the operating frequency is greater than 1 GHz. Both are determined by adding the transmit antenna gain to the conducted RF output power with the primary difference between the two being that when determining the ERP, the transmit antenna gain is referenced to a dipole antenna (i.e., dBd) whereas when determining the EIRP, the transmit antenna gain is referenced to an isotropic antenna (dBi).

Final measurement calculation as below:

The relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP/EIRP} = P_{\text{Meas}} + \text{GT} - \text{LC}$$

where:

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P_{Meas} , typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

dBd (ERP)=dBi (EIRP) -2.15 dB

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit

antenna gain term to be used in the above equation.

For example:

In the EIRP test, when P_{Meas} value for GSM1900 is 30.2 dBm, LC is 0.6 dB, and GT is -3.4 dB, then final EIRP value is:

$$\text{EIRP for GSM1900} = 30.2 \text{ dBm} - 3.4 \text{ dBi} - 0.6 \text{ dB} = 26.2 \text{ dBm}$$

The relevant equation for determining the ERP/EIRP from the radiated RF output power is:

$$\text{ERP/EIRP (dBm)} = \text{SA Read Value (dBm)} + \text{Correction Factor (dB)}$$

where:

ERP/EIRP = effective or equivalent radiated power, in dBm;

SA Read Value = measured transmitter power received by EMI receiver or spectrum analyzer, in dBm;

Correction Factor = total correction factor including cable loss, in dB;

During the test, the data of Correction Factor (dB) is added in the EMI receiver or spectrum analyzer, so SA Read Value (dBm) is the final values which contains the data of Correction Factor (dB).

For example:

In the ERP test, when SA read value for GSM850 is 21dBm, and correction factor is 8dB, then final ERP value for GSM850 is:

$$\text{ERP (dBm)} = 21\text{dBm} + 8\text{dB} = 29\text{dBm}$$

5.1.4 Test Result

Please refer to ANNEX A.1.

5.2 Peak to Average Ratio

5.2.1 Limit

FCC § 2.1046 & 24.232(d) & 27.50(d)

In addition, when the transmitter power is measured in terms of average value, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

According to FCC section 24.232(d), power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with 24.232 (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of § 24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

FCC section 24.232(e), peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

According to FCC section 27.50(d) (5), in measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

5.2.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description is used for this test. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

Here the lowest, middle and highest channels are selected to perform testing to verify the peak-to-average ratio.

According to KDB 971168 D01, there is CCDF procedure for PAPR:

- a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- b) Set resolution/measurement bandwidth \geq signal's occupied bandwidth;
- c) Set the number of counts to a value that stabilizes the measured CCDF curve;
- d) Set the measurement interval as follows:
 - 1) for continuous transmissions, set to 1 ms,
 - 2) for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
- e) Record the maximum PAPR level associated with a probability of 0.1%.

Alternate procedure for PAPR:

Use one of the procedures presented in 4.1 to measure the total peak power and record as P_{Pk} . Use one of the applicable procedures presented 4.2 to measure the total average power and record as P_{Avg} . Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$$PAPR (dB) = P_{Pk} (dBm) - P_{Avg} (dBm).$$

5.2.4 Test Result

Please refer to ANNEX A.2.

5.3 Occupied Bandwidth

5.3.1 Limit

FCC § 2.1049

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Many of the individual rule parts specify a relative OBW in lieu of the 99% OBW. In such cases, the OBW is defined as the width of the signal between two points, one below the carrier center frequency and on above the carrier center frequency, outside of which all emissions are attenuated by at least X dB below the transmitter power, where the value of X is typically specified as 26.

5.3.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description is used for this test. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

The following procedure shall be used for measuring power bandwidth.

- a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the anticipated OBW).
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
- c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least $10\log(\text{OBW} / \text{RBW})$ below the reference level.
- d) NOTE—Steps a) through c) may require iteration to adjust within the specified tolerances.
- e) For -26 dB OBW, the dynamic range of the spectrum analyzer at the selected RBW shall be at least 10dB below the target “-X dB down” requirement, e.g. -26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be 36dB below the reference value.
- f) Set the detection mode to peak, and the trace mode to max hold.
- g) For 99% OBW, use the 99 % power bandwidth function of the spectrum analyzer (if available) and report the measured bandwidth.

If the instrument does not have a 99 % power bandwidth function, the trace data points are to be recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99 % power bandwidth is the difference between these two frequencies.

h) For -26 dB OBW, determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).

Determine the “-X dB down amplitude” as equal to (reference value -X). Alternatively, this calculation can be performed by the analyzer by using the marker-delta function.

Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below “-X dB down amplitude” determined in step g). If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.

i) The OBW shall be reported by providing plot(s) of the measuring instrument display. The frequency and amplitude axes and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

j) Change variable modulations, coding, or channel bandwidth settings, then repeat above test procedures.

5.3.4 Test Result

Please refer to ANNEX A.3.

5.4 Frequency Stability

5.4.1 Limit

FCC § 2.1055 & 22.355 & 24.235 & 27.54

FCC § 2.1055

The frequency stability shall be measured with variation of ambient temperature as follows:

(1) The temperature is varied from -30°C to +50°C.

(2) Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than 10°C through the range.

The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating and point which shall be specified by the manufacture.

(3) The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

FCC § 22.355

Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of this section.

Table C-1—Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency range (MHz)	Base, fixed (ppm)	Mobile > 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	n/a	n/a
929 to 960	1.5	n/a	n/a
2110 to 2220	10.0	n/a	n/a

FCC § 24.235

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

FCC § 27.54

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

5.4.2 Test Setup

The section 4.4.2 (Diagram 2) test setup description is used for this test. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

1. The EUT is placed in a temperature chamber.
2. The temperature is set to 25°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured.
3. The temperature is increased by not more than 10 degrees, allowed to stabilize and soak, and then repeat the frequency error measurement.
4. Repeat procedure 3 until +50°C and -30°C is reached.
5. Change supply voltage, and repeat measurement until extreme voltage is reached.

5.4.4 Test Result

Please refer to ANNEX A.4.

5.5 Spurious Emission at Antenna Terminals

5.5.1 Limit

FCC § 2.1051 & 22.917(a) & 24.238(a) & 27.53(a) & 27.53(c) & 27.53(f) & 27.53(g) & 27.53(h) & 27.53(m)

In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC § 22.917(a) & 24.238(a)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. This is calculated to be -13 dBm.

FCC § 27.53(a) (4)

For mobile and portable stations operating in the 2305-2315MHz and 2350-2360MHz bands:

(1) By a factor of not less than: $43 + 10 \log(P)$ dB on all frequencies between 2305 and 2320MHz and on all frequencies between 2345 and 2360MHz that are outside the licensed band(s) of operation, not less than $55 + 10 \log(P)$ dB on all frequencies between 2320 and 2324MHz and on all frequencies between 2341 and 2345MHz, not less than $61 + 10 \log(P)$ dB on all frequencies between 2324 and 2328MHz and on all frequencies between 2337 and 2341MHz, and not less than $67 + 10 \log(P)$ dB on all frequencies between 2328 and 2337MHz.

(2) By a factor of not less than $43 + 10 \log(P)$ dB on all frequencies between 2300 and 2305MHz, $55 + 10 \log(P)$ dB on all frequencies between 2296 and 2300MHz, $61 + 10 \log(P)$ dB on all frequencies between 2292 and 2296MHz, $67 + 10 \log(P)$ dB on all frequencies between 2288 and 2292MHz, and $70 + 10 \log(P)$ dB below 2288MHz.

(3) By a factor of not less than $43 + 10 \log(P)$ dB on all frequencies between 2360 and 2365MHz, and not less than $70 + 10 \log(P)$ dB above 2365MHz.

FCC § 27.53(c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

FCC § 27.53(f)

For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to - 70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and - 80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC § 27.53(g)

For operations in the 600MHz band and the 698-746MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43+10*\log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC § 27.53(h) (1)

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.

FCC § 27.53(m) (4)

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

- $40+10\log P$ dB (-10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.
- $43+10\log P$ dB (-13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,
- $55+10\log P$ dB (-25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on

frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

5.5.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency blocks a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

1. The EUT is coupled to the system simulator and spectrum analyzer; the RF load attached to EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.
2. CMW500 is used to establish communication with the EUT, and its parameters are set to force the EUT transmitting at maximum output power.
3. The RF output of the transmitter is connected to the input of the spectrum analyzer through sufficient attenuation.
4. Spurious emissions are tested with 0.001MHz RBW for frequency less than 150kHz, 0.01MHz RBW for frequency less than 30MHz, 0.1MHz RBW for frequency less than 1GHz, and 1MHz RBW for frequency above 1GHz. And sweep point number are at least 401, referring to following formula.

Sweep point number = Span/RBW

VBW=3*RBW

Detector Mode=mean or average power

5. Record the frequencies and levels of spurious emissions.

5.5.4 Test Result

Please refer to ANNEX A.5.

5.6 Band Edge

5.6.1 Limit

FCC § 2.1051 & 22.917(a) & 24.238(a) & 27.53(a) & 27.53(c) & 27.53(g) & 27.53(h) & 27.53(m)

In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC § 22.917(a) & 24.238(a)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. This is calculated to be -13 dBm.

FCC § 27.53(a) (4)

For mobile and portable stations operating in the 2305-2315MHz and 2350-2360MHz bands:

(1) By a factor of not less than: $43 + 10 \log(P)$ dB on all frequencies between 2305 and 2320MHz and on all frequencies between 2345 and 2360MHz that are outside the licensed band(s) of operation, not less than $55 + 10 \log(P)$ dB on all frequencies between 2320 and 2324MHz and on all frequencies between 2341 and 2345MHz, not less than $61 + 10 \log(P)$ dB on all frequencies between 2324 and 2328MHz and on all frequencies between 2337 and 2341MHz, and not less than $67 + 10 \log(P)$ dB on all frequencies between 2328 and 2337MHz.

(2) By a factor of not less than $43 + 10 \log(P)$ dB on all frequencies between 2300 and 2305MHz, $55 + 10 \log(P)$ dB on all frequencies between 2296 and 2300MHz, $61 + 10 \log(P)$ dB on all frequencies between 2292 and 2296MHz, $67 + 10 \log(P)$ dB on all frequencies between 2288 and 2292MHz, and $70 + 10 \log(P)$ dB below 2288MHz.

(3) By a factor of not less than $43 + 10 \log(P)$ dB on all frequencies between 2360 and 2365MHz, and not less than $70 + 10 \log(P)$ dB above 2365MHz.

FCC § 27.53(c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $76 + 10 \log(P)$ dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

FCC § 27.53(g)

For operations in the 600MHz band and the 698-746MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43+10*\log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC § 27.53(h) (1)

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.

FCC § 27.53(m) (4)

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

- $40+10\log P$ dB (-10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.
- $43+10\log P$ dB (-13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,
- $55+10\log P$ dB (-25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

5.6.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.6.3 Test Procedure

The EUT, which is powered by the Battery, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading.

1. The EUT is coupled to the system simulator and spectrum analyzer; the RF load attached to EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading.
2. CMW500 is used to establish communication with the EUT, and its parameters are set to force the EUT transmitting at maximum output power.
3. The RF output of the transmitter is connected to the input of the spectrum analyzer through sufficient attenuation.
4. The center of the spectrum analyzer was set to block edge frequency.
5. Band edge are tested with 1%*cBW (RBW), and sweep point number referred to following formula.

$$\text{Sweep point number} = 2 * \text{Span} / \text{RBW}$$

$$\text{VBW} = 3 \text{RBW}$$

6. Record the frequencies and levels of spurious emissions.

For mobile and portable stations, on all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment. Since it was not possible to set the resolution bandwidth to 6.25 kHz with the available equipment, a bandwidth of 10 kHz was used instead to show compliance. By using a 10 kHz bandwidth on the spectrum analyzer.

$$10 * \log(10 \text{ kHz} / 6.25 \text{ kHz}) = 2.04 \text{ dB}$$

$$\text{Limit Line} = -35 \text{ dBm} + 2.04 \text{ dB} = -32.96 \text{ dBm}$$

5.6.4 Test Result

Please refer to ANNEX A.6.

5.7 Field Strength of Spurious Radiation

5.7.1 Limit

FCC § 2.1053 & 22.917(a) & 24.238(a) & 27.53(a) & 27.53(c) & 27.53(f) & 27.53(g) & 27.53(h) & 27.53(m)

FCC § 22.917(a) & 24.238(a)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43+10\log(P)$ dB. This is calculated to be -13 dBm.

FCC § 27.53(a) (4)

For mobile and portable stations operating in the 2305-2315MHz and 2350-2360MHz bands:

(1) By a factor of not less than: $43 + 10 \log (P)$ dB on all frequencies between 2305 and 2320MHz and on all frequencies between 2345 and 2360MHz that are outside the licensed band(s) of operation, not less than $55 + 10 \log (P)$ dB on all frequencies between 2320 and 2324MHz and on all frequencies between 2341 and 2345MHz, not less than $61 + 10 \log (P)$ dB on all frequencies between 2324 and 2328MHz and on all frequencies between 2337 and 2341MHz, and not less than $67 + 10 \log (P)$ dB on all frequencies between 2328 and 2337MHz.

(2) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2300 and 2305MHz, $55 + 10 \log (P)$ dB on all frequencies between 2296 and 2300MHz, $61 + 10 \log (P)$ dB on all frequencies between 2292 and 2296MHz, $67 + 10 \log (P)$ dB on all frequencies between 2288 and 2292MHz, and $70 + 10 \log (P)$ dB below 2288MHz.

(3) By a factor of not less than $43 + 10 \log (P)$ dB on all frequencies between 2360 and 2365MHz, and not less than $70 + 10 \log (P)$ dB above 2365MHz.

FCC § 27.53(c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be

adjusted to indicate spectral energy in a 6.25 kHz segment.

FCC § 27.53(f)

For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to - 70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and - 80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC § 27.53(g)

For operations in the 600MHz band and the 698-746MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43+10\log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC § 27.53(h) (1)

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

FCC § 27.53(m) (4)

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

- $40+10\log P$ dB (-10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.
- $43+10\log P$ dB (-13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,
- $55+10\log P$ dB (-25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

5.7.2 Test Setup

The section 4.4.3 and 4.4.4 (Diagram 3, 4) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.7.3 Test Procedure

1. On a test site, the EUT shall be placed at 80cm height on a turn table, and in the position close to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. During the measurement of the EUT, the resolution bandwidth was to 1 MHz and the average bandwidth was set to 1 MHz.
5. The transmitter shall be switched on; the measuring receiver shall be tuned to the frequency of the transmitter under test.
6. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.
7. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
8. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.
9. The maximum signal level detected by the measuring receiver shall be noted.
10. The EUT was replaced by half-wave dipole (824 ~ 849 MHz) or horn antenna (1 850 ~ 1 910 MHz) connected to a signal generator.
11. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
12. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
13. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring received, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
14. The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
15. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.

Final measurement calculation as below:

The relevant equation for determining the ERP/EIRP from the radiated RF output power is:

$$\text{ERP/EIRP (dBm)} = \text{SA Read Value (dBm)} + \text{Correction Factor (dB)}$$

where:

ERP/EIRP = effective or equivalent radiated power, in dBm;

SA Read Value = measured transmitter power received by EMI receiver or spectrum analyzer, in dBm;

Correction Factor = total correction factor including cable loss, in dB;

During the test, the data of Correction Factor (dB) is added in the EMI receiver or spectrum analyzer, so SA Read Value (dBm) is the final values which contains the data of Correction Factor (dB).

For example:

In the ERP test, when SA read value for GSM850 is 21dBm, and correction factor is 8dB, then final ERP value for GSM850 is:

$$\text{ERP (dBm)} = 21\text{dBm} + 8\text{dB} = 29\text{dBm}$$

5.7.4 Test Result

Please refer to ANNEX A.7.

ANNEX A TEST RESULTS

A.1 Transmitter Radiated Power (EIRP/ERP)

GSM Mode Test Data

Test Band	Test Channel	Conducted Output Peak Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
GPRS 850	LCH	32.95	-0.76	-2.91	30.04	1.01	7.00	Pass
	MCH	33.30	-0.76	-2.91	30.39	1.09	7.00	Pass
	HCH	33.14	-0.76	-2.91	30.23	1.05	7.00	Pass
EGPRS 850	LCH	27.53	-0.76	-2.91	24.62	0.29	7.00	Pass
	MCH	27.57	-0.76	-2.91	24.66	0.29	7.00	Pass
	HCH	27.37	-0.76	-2.91	24.46	0.28	7.00	Pass

Test Band	Test Channel	Conducted Output Peak Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
GPRS 1900	LCH	30.89	-1.20	29.69	0.93	2.00	Pass
	MCH	30.76	-1.20	29.56	0.90	2.00	Pass
	HCH	30.35	-1.20	29.15	0.82	2.00	Pass
EGPRS 1900	LCH	25.82	-1.20	24.62	0.29	2.00	Pass
	MCH	25.54	-1.20	24.34	0.27	2.00	Pass
	HCH	25.29	-1.20	24.09	0.26	2.00	Pass

Note 1: For the GPRS and EGPRS mode, all slots were tested and just the worst data were recorded in this table.

Note 2: $ERP/EIRP = P_{Meas} + GT - LC$

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P_{Meas} , typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

$ERP = EIRP - 2.15$; where ERP and EIRP are expressed in consistent units.

Note 3: Set PCL to 5 for GSM/GPRS 850 (power class 4) and 0 for GSM/GPRS 1900 (power class 1).

Set PCL to 8 for EGPRS850 (power class E2) and 2 for EGPRS1900 (power class E2).

GPRS Conducted Output Power

Band	Channel	Conducted Output Peak Power							
		1 Slot (dBm)	1 Slot (W)	2 Slots (dBm)	2 Slots (W)	3 Slots (dBm)	3 Slots (W)	4 Slots (dBm)	4 Slots (W)
GPRS 850	LCH	32.95	1.97	31.41	1.38	29.87	0.97	28.29	0.67
	MCH	33.30	2.14	31.76	1.50	29.57	0.91	28.12	0.65
	HCH	33.14	2.06	31.74	1.49	29.53	0.90	28.41	0.69
GPRS 1900	LCH	30.89	1.23	29.35	0.86	28.38	0.69	26.96	0.50
	MCH	30.76	1.19	29.22	0.84	27.89	0.62	26.79	0.48
	HCH	30.35	1.08	29.42	0.87	28.01	0.63	26.91	0.49

EGPRS Conducted Output Power

Band	Channel	Conducted Output Peak Power							
		1 Slot (dBm)	1 Slot (W)	2 Slots (dBm)	2 Slots (W)	3 Slots (dBm)	3 Slots (W)	4 Slots (dBm)	4 Slots (W)
EGPRS 850	LCH	27.53	0.57	26.34	0.43	25.24	0.33	23.98	0.25
	MCH	27.57	0.57	26.48	0.44	25.18	0.33	24.16	0.26
	HCH	27.37	0.55	26.09	0.41	24.99	0.32	23.89	0.24
EGPRS 1900	LCH	25.82	0.38	24.95	0.31	23.19	0.21	22.19	0.17
	MCH	25.54	0.36	24.83	0.30	23.04	0.20	21.94	0.16
	HCH	25.29	0.34	24.47	0.28	22.76	0.19	21.98	0.16

Note 1: $ERP/EIRP = P_{Meas} + GT - LC$

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P_{Meas} , typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

$ERP = EIRP - 2.15$; where ERP and EIRP are expressed in consistent units.

LTE-M1 Mode Test Data

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE-M1 BAND2									
1.4 MHz	LCH	QPSK	RB1#0	22.86	-1.2	21.66	0.147	2.00	Pass
			RB6#0	22.74	-1.2	21.54	0.143	2.00	Pass
		16-QAM	RB1#0	22.85	-1.2	21.65	0.146	2.00	Pass
			RB5#0	22.85	-1.2	21.65	0.146	2.00	Pass
	MCH	QPSK	RB1#0	22.59	-1.2	21.39	0.138	2.00	Pass
			RB6#0	22.15	-1.2	20.95	0.124	2.00	Pass
		16-QAM	RB1#0	22.88	-1.2	21.68	0.147	2.00	Pass
			RB5#0	22.53	-1.2	21.33	0.136	2.00	Pass
	HCH	QPSK	RB1#0	22.00	-1.2	20.80	0.120	2.00	Pass
			RB6#0	22.42	-1.2	21.22	0.132	2.00	Pass
		16-QAM	RB1#0	22.32	-1.2	21.12	0.129	2.00	Pass
			RB5#0	22.89	-1.2	21.69	0.148	2.00	Pass
3 MHz	LCH	QPSK	RB1#0	22.85	-1.2	21.65	0.146	2.00	Pass
			RB6#0	22.27	-1.2	21.07	0.128	2.00	Pass
		16-QAM	RB1#0	22.43	-1.2	21.23	0.133	2.00	Pass
			RB5#0	22.17	-1.2	20.97	0.125	2.00	Pass
	MCH	QPSK	RB1#0	22.51	-1.2	21.31	0.135	2.00	Pass
			RB6#0	22.11	-1.2	20.91	0.123	2.00	Pass
		16-QAM	RB1#0	22.51	-1.2	21.31	0.135	2.00	Pass
			RB5#0	22.45	-1.2	21.25	0.133	2.00	Pass
	HCH	QPSK	RB1#0	22.25	-1.2	21.05	0.127	2.00	Pass
			RB6#0	22.04	-1.2	20.84	0.121	2.00	Pass
		16-QAM	RB1#0	22.65	-1.2	21.45	0.140	2.00	Pass
			RB5#0	22.25	-1.2	21.05	0.127	2.00	Pass
5 MHz	LCH	QPSK	RB1#0	22.79	-1.2	21.59	0.144	2.00	Pass
			RB6#0	22.18	-1.2	20.98	0.125	2.00	Pass
		16-QAM	RB1#0	22.53	-1.2	21.33	0.136	2.00	Pass
			RB5#0	22.52	-1.2	21.32	0.136	2.00	Pass
	MCH	QPSK	RB1#0	22.35	-1.2	21.15	0.130	2.00	Pass
			RB6#0	22.75	-1.2	21.55	0.143	2.00	Pass
		16-QAM	RB1#0	22.74	-1.2	21.54	0.143	2.00	Pass
			RB5#0	22.27	-1.2	21.07	0.128	2.00	Pass
	HCH	QPSK	RB1#0	22.87	-1.2	21.67	0.147	2.00	Pass
			RB6#0	22.79	-1.2	21.59	0.144	2.00	Pass
		16-QAM	RB1#0	22.41	-1.2	21.21	0.132	2.00	Pass
			RB5#0	22.01	-1.2	20.81	0.121	2.00	Pass
10 MHz	LCH	QPSK	RB1#0	22.54	-1.2	21.34	0.136	2.00	Pass
			RB6#0	22.12	-1.2	20.92	0.124	2.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict	
LTE-M1 BAND2										
		16-QAM	RB1#0	22.04	-1.2	20.84	0.121	2.00	Pass	
			RB5#0	22.94	-1.2	21.74	0.149	2.00	Pass	
		MCH	QPSK	RB1#0	22.34	-1.2	21.14	0.130	2.00	Pass
				RB6#0	22.07	-1.2	20.87	0.122	2.00	Pass
		16-QAM	RB1#0	22.73	-1.2	21.53	0.142	2.00	Pass	
			RB5#0	22.39	-1.2	21.19	0.132	2.00	Pass	
	HCH	QPSK	RB1#0	22.09	-1.2	20.89	0.123	2.00	Pass	
			RB6#0	22.45	-1.2	21.25	0.133	2.00	Pass	
		16-QAM	RB1#0	22.07	-1.2	20.87	0.122	2.00	Pass	
			RB5#0	22.00	-1.2	20.80	0.120	2.00	Pass	
	15 MHz	LCH	QPSK	RB1#0	22.06	-1.2	20.86	0.122	2.00	Pass
				RB6#0	22.51	-1.2	21.31	0.135	2.00	Pass
16-QAM			RB1#0	22.94	-1.2	21.74	0.149	2.00	Pass	
			RB5#0	22.64	-1.2	21.44	0.139	2.00	Pass	
MCH		QPSK	RB1#0	22.45	-1.2	21.25	0.133	2.00	Pass	
			RB6#0	22.50	-1.2	21.30	0.135	2.00	Pass	
		16-QAM	RB1#0	22.02	-1.2	20.82	0.121	2.00	Pass	
			RB5#0	22.52	-1.2	21.32	0.136	2.00	Pass	
HCH		QPSK	RB1#0	22.92	-1.2	21.72	0.149	2.00	Pass	
			RB6#0	22.98	-1.2	21.78	0.151	2.00	Pass	
		16-QAM	RB1#0	22.72	-1.2	21.52	0.142	2.00	Pass	
			RB5#0	22.97	-1.2	21.77	0.150	2.00	Pass	
20 MHz	LCH	QPSK	RB1#0	22.69	-1.2	21.49	0.141	2.00	Pass	
			RB6#0	22.37	-1.2	21.17	0.131	2.00	Pass	
		16-QAM	RB1#0	22.32	-1.2	21.12	0.129	2.00	Pass	
			RB5#0	22.13	-1.2	20.93	0.124	2.00	Pass	
	MCH	QPSK	RB1#0	22.21	-1.2	21.01	0.126	2.00	Pass	
			RB6#0	22.74	-1.2	21.54	0.143	2.00	Pass	
		16-QAM	RB1#0	22.22	-1.2	21.02	0.126	2.00	Pass	
			RB5#0	22.77	-1.2	21.57	0.144	2.00	Pass	
	HCH	QPSK	RB1#0	22.62	-1.2	21.42	0.139	2.00	Pass	
			RB6#0	22.81	-1.2	21.61	0.145	2.00	Pass	
		16-QAM	RB1#0	22.25	-1.2	21.05	0.127	2.00	Pass	
			RB5#0	22.36	-1.2	21.16	0.131	2.00	Pass	

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE-M1 BAND4									
1.4 MHz	LCH	QPSK	RB1#0	22.22	-0.9	21.32	0.136	1.00	Pass
			RB6#0	22.56	-0.9	21.66	0.147	1.00	Pass
		16-QAM	RB1#0	22.79	-0.9	21.89	0.155	1.00	Pass
			RB5#0	22.38	-0.9	21.48	0.141	1.00	Pass
	MCH	QPSK	RB1#0	22.77	-0.9	21.87	0.154	1.00	Pass
			RB6#0	22.72	-0.9	21.82	0.152	1.00	Pass
		16-QAM	RB1#0	21.93	-0.9	21.03	0.127	1.00	Pass
			RB5#0	22.54	-0.9	21.64	0.146	1.00	Pass
	HCH	QPSK	RB1#0	21.92	-0.9	21.02	0.126	1.00	Pass
			RB6#0	22.78	-0.9	21.88	0.154	1.00	Pass
		16-QAM	RB1#0	22.32	-0.9	21.42	0.139	1.00	Pass
			RB5#0	21.85	-0.9	20.95	0.124	1.00	Pass
3 MHz	LCH	QPSK	RB1#0	22.24	-0.9	21.34	0.136	1.00	Pass
			RB6#0	21.82	-0.9	20.92	0.124	1.00	Pass
		16-QAM	RB1#0	22.41	-0.9	21.51	0.142	1.00	Pass
			RB5#0	22.34	-0.9	21.44	0.139	1.00	Pass
	MCH	QPSK	RB1#0	22.35	-0.9	21.45	0.140	1.00	Pass
			RB6#0	22.04	-0.9	21.14	0.130	1.00	Pass
		16-QAM	RB1#0	22.07	-0.9	21.17	0.131	1.00	Pass
			RB5#0	21.94	-0.9	21.04	0.127	1.00	Pass
	HCH	QPSK	RB1#0	22.25	-0.9	21.35	0.136	1.00	Pass
			RB6#0	22.63	-0.9	21.73	0.149	1.00	Pass
		16-QAM	RB1#0	22.05	-0.9	21.15	0.130	1.00	Pass
			RB5#0	22.33	-0.9	21.43	0.139	1.00	Pass
5 MHz	LCH	QPSK	RB1#0	22.7	-0.9	21.80	0.151	1.00	Pass
			RB6#0	21.91	-0.9	21.01	0.126	1.00	Pass
		16-QAM	RB1#0	22.11	-0.9	21.21	0.132	1.00	Pass
			RB5#0	22.27	-0.9	21.37	0.137	1.00	Pass
	MCH	QPSK	RB1#0	22.61	-0.9	21.71	0.148	1.00	Pass
			RB6#0	22.6	-0.9	21.70	0.148	1.00	Pass
		16-QAM	RB1#0	22.46	-0.9	21.56	0.143	1.00	Pass
			RB5#0	21.95	-0.9	21.05	0.127	1.00	Pass
	HCH	QPSK	RB1#0	22.74	-0.9	21.84	0.153	1.00	Pass
			RB6#0	22.45	-0.9	21.55	0.143	1.00	Pass
		16-QAM	RB1#0	21.88	-0.9	20.98	0.125	1.00	Pass
			RB5#0	22.03	-0.9	21.13	0.130	1.00	Pass
10 MHz	LCH	QPSK	RB1#0	21.93	-0.9	21.03	0.127	1.00	Pass
			RB6#0	22.77	-0.9	21.87	0.154	1.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict	
LTE-M1 BAND4										
		16-QAM	RB1#0	22.29	-0.9	21.39	0.138	1.00	Pass	
			RB5#0	21.82	-0.9	20.92	0.124	1.00	Pass	
		MCH	QPSK	RB1#0	21.98	-0.9	21.08	0.128	1.00	Pass
				RB6#0	21.81	-0.9	20.91	0.123	1.00	Pass
		16-QAM	RB1#0	22.22	-0.9	21.32	0.136	1.00	Pass	
			RB5#0	22.02	-0.9	21.12	0.129	1.00	Pass	
	HCH	QPSK	RB1#0	22.77	-0.9	21.87	0.154	1.00	Pass	
			RB6#0	22.62	-0.9	21.72	0.149	1.00	Pass	
		16-QAM	RB1#0	21.93	-0.9	21.03	0.127	1.00	Pass	
			RB5#0	22.71	-0.9	21.81	0.152	1.00	Pass	
	15 MHz	LCH	QPSK	RB1#0	21.88	-0.9	20.98	0.125	1.00	Pass
				RB6#0	22.38	-0.9	21.48	0.141	1.00	Pass
16-QAM			RB1#0	22.44	-0.9	21.54	0.143	1.00	Pass	
			RB5#0	22.54	-0.9	21.64	0.146	1.00	Pass	
MCH		QPSK	RB1#0	21.80	-0.9	20.90	0.123	1.00	Pass	
			RB6#0	21.82	-0.9	20.92	0.124	1.00	Pass	
		16-QAM	RB1#0	21.93	-0.9	21.03	0.127	1.00	Pass	
			RB5#0	22.19	-0.9	21.29	0.135	1.00	Pass	
HCH		QPSK	RB1#0	22.54	-0.9	21.64	0.146	1.00	Pass	
			RB6#0	22.61	-0.9	21.71	0.148	1.00	Pass	
		16-QAM	RB1#0	21.99	-0.9	21.09	0.129	1.00	Pass	
			RB5#0	22.34	-0.9	21.44	0.139	1.00	Pass	
20 MHz	LCH	QPSK	RB1#0	22.10	-0.9	21.20	0.132	1.00	Pass	
			RB6#0	22.67	-0.9	21.77	0.150	1.00	Pass	
		16-QAM	RB1#0	22.70	-0.9	21.80	0.151	1.00	Pass	
			RB5#0	22.10	-0.9	21.20	0.132	1.00	Pass	
	MCH	QPSK	RB1#0	22.20	-0.9	21.30	0.135	1.00	Pass	
			RB6#0	21.88	-0.9	20.98	0.125	1.00	Pass	
		16-QAM	RB1#0	22.42	-0.9	21.52	0.142	1.00	Pass	
			RB5#0	22.49	-0.9	21.59	0.144	1.00	Pass	
	HCH	QPSK	RB1#0	22.16	-0.9	21.26	0.134	1.00	Pass	
			RB6#0	22.34	-0.9	21.44	0.139	1.00	Pass	
		16-QAM	RB1#0	22.47	-0.9	21.57	0.144	1.00	Pass	
			RB5#0	22.04	-0.9	21.14	0.130	1.00	Pass	

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE-M1 BAND5										
1.4 MHz	LCH	QPSK	RB1#0	22.58	-0.76	-2.91	19.67	0.093	7.00	Pass
			RB6#0	22.10	-0.76	-2.91	19.19	0.083	7.00	Pass
		16-QAM	RB1#0	22.24	-0.76	-2.91	19.33	0.086	7.00	Pass
			RB5#0	22.69	-0.76	-2.91	19.78	0.095	7.00	Pass
	MCH	QPSK	RB1#0	22.25	-0.76	-2.91	19.34	0.086	7.00	Pass
			RB6#0	22.67	-0.76	-2.91	19.76	0.095	7.00	Pass
		16-QAM	RB1#0	22.75	-0.76	-2.91	19.84	0.096	7.00	Pass
			RB5#0	22.12	-0.76	-2.91	19.21	0.083	7.00	Pass
	HCH	QPSK	RB1#0	22.20	-0.76	-2.91	19.29	0.085	7.00	Pass
			RB6#0	22.62	-0.76	-2.91	19.71	0.094	7.00	Pass
		16-QAM	RB1#0	22.03	-0.76	-2.91	19.12	0.082	7.00	Pass
			RB5#0	22.09	-0.76	-2.91	19.18	0.083	7.00	Pass
3 MHz	LCH	QPSK	RB1#0	22.19	-0.76	-2.91	19.28	0.085	7.00	Pass
			RB6#0	22.30	-0.76	-2.91	19.39	0.087	7.00	Pass
		16-QAM	RB1#0	22.34	-0.76	-2.91	19.43	0.088	7.00	Pass
			RB5#0	21.81	-0.76	-2.91	18.90	0.078	7.00	Pass
	MCH	QPSK	RB1#0	22.77	-0.76	-2.91	19.86	0.097	7.00	Pass
			RB6#0	22.43	-0.76	-2.91	19.52	0.090	7.00	Pass
		16-QAM	RB1#0	22.19	-0.76	-2.91	19.28	0.085	7.00	Pass
			RB5#0	22.47	-0.76	-2.91	19.56	0.090	7.00	Pass
	HCH	QPSK	RB1#0	21.82	-0.76	-2.91	18.91	0.078	7.00	Pass
			RB6#0	22.70	-0.76	-2.91	19.79	0.095	7.00	Pass
		16-QAM	RB1#0	21.89	-0.76	-2.91	18.98	0.079	7.00	Pass
			RB5#0	22.80	-0.76	-2.91	19.89	0.097	7.00	Pass
5 MHz	LCH	QPSK	RB1#0	21.83	-0.76	-2.91	18.92	0.078	7.00	Pass
			RB6#0	22.44	-0.76	-2.91	19.53	0.090	7.00	Pass
		16-QAM	RB1#0	22.20	-0.76	-2.91	19.29	0.085	7.00	Pass
			RB5#0	22.66	-0.76	-2.91	19.75	0.094	7.00	Pass
	MCH	QPSK	RB1#0	22.47	-0.76	-2.91	19.56	0.090	7.00	Pass
			RB6#0	21.98	-0.76	-2.91	19.07	0.081	7.00	Pass
		16-QAM	RB1#0	21.90	-0.76	-2.91	18.99	0.079	7.00	Pass
			RB5#0	22.72	-0.76	-2.91	19.81	0.096	7.00	Pass
	HCH	QPSK	RB1#0	22.37	-0.76	-2.91	19.46	0.088	7.00	Pass
			RB6#0	22.27	-0.76	-2.91	19.36	0.086	7.00	Pass
		16-QAM	RB1#0	22.56	-0.76	-2.91	19.65	0.092	7.00	Pass
			RB5#0	22.09	-0.76	-2.91	19.18	0.083	7.00	Pass
10 MHz	LCH	QPSK	RB1#0	22.33	-0.76	-2.91	19.42	0.087	7.00	Pass
			RB6#0	22.04	-0.76	-2.91	19.13	0.082	7.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE-M1 BAND5										
		16-QAM	RB1#0	22.06	-0.76	-2.91	19.15	0.082	7.00	Pass
			RB5#0	21.91	-0.76	-2.91	19.00	0.079	7.00	Pass
	MCH	QPSK	RB1#0	22.60	-0.76	-2.91	19.69	0.093	7.00	Pass
			RB6#0	22.68	-0.76	-2.91	19.77	0.095	7.00	Pass
		16-QAM	RB1#0	22.21	-0.76	-2.91	19.30	0.085	7.00	Pass
			RB5#0	22.45	-0.76	-2.91	19.54	0.090	7.00	Pass
	HCH	QPSK	RB1#0	22.21	-0.76	-2.91	19.30	0.085	7.00	Pass
			RB6#0	22.23	-0.76	-2.91	19.32	0.086	7.00	Pass
		16-QAM	RB1#0	22.06	-0.76	-2.91	19.15	0.082	7.00	Pass
			RB5#0	22.69	-0.76	-2.91	19.78	0.095	7.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE-M1 BAND12										
1.4 MHz	LCH	QPSK	RB1#0	21.97	-3.0	-5.15	16.82	0.048	3.00	Pass
			RB6#0	21.94	-3.0	-5.15	16.79	0.048	3.00	Pass
		16-QAM	RB1#0	22.39	-3.0	-5.15	17.24	0.053	3.00	Pass
			RB5#0	22.27	-3.0	-5.15	17.12	0.052	3.00	Pass
	MCH	QPSK	RB1#0	22.41	-3.0	-5.15	17.26	0.053	3.00	Pass
			RB6#0	22.03	-3.0	-5.15	16.88	0.049	3.00	Pass
		16-QAM	RB1#0	22.70	-3.0	-5.15	17.55	0.057	3.00	Pass
			RB5#0	22.67	-3.0	-5.15	17.52	0.056	3.00	Pass
	HCH	QPSK	RB1#0	22.68	-3.0	-5.15	17.53	0.057	3.00	Pass
			RB6#0	22.41	-3.0	-5.15	17.26	0.053	3.00	Pass
		16-QAM	RB1#0	22.76	-3.0	-5.15	17.61	0.058	3.00	Pass
			RB5#0	22.03	-3.0	-5.15	16.88	0.049	3.00	Pass
3 MHz	LCH	QPSK	RB1#0	22.79	-3.0	-5.15	17.64	0.058	3.00	Pass
			RB6#0	22.09	-3.0	-5.15	16.94	0.049	3.00	Pass
		16-QAM	RB1#0	22.25	-3.0	-5.15	17.10	0.051	3.00	Pass
			RB5#0	22.45	-3.0	-5.15	17.30	0.054	3.00	Pass
	MCH	QPSK	RB1#0	21.94	-3.0	-5.15	16.79	0.048	3.00	Pass
			RB6#0	22.46	-3.0	-5.15	17.31	0.054	3.00	Pass
		16-QAM	RB1#0	21.87	-3.0	-5.15	16.72	0.047	3.00	Pass
			RB5#0	22.24	-3.0	-5.15	17.09	0.051	3.00	Pass
	HCH	QPSK	RB1#0	22.62	-3.0	-5.15	17.47	0.056	3.00	Pass
			RB6#0	22.80	-3.0	-5.15	17.65	0.058	3.00	Pass
		16-QAM	RB1#0	21.92	-3.0	-5.15	16.77	0.048	3.00	Pass
			RB5#0	22.46	-3.0	-5.15	17.31	0.054	3.00	Pass
5 MHz	LCH	QPSK	RB1#0	22.54	-3.0	-5.15	17.39	0.055	3.00	Pass
			RB6#0	22.26	-3.0	-5.15	17.11	0.051	3.00	Pass
		16-QAM	RB1#0	21.81	-3.0	-5.15	16.66	0.046	3.00	Pass
			RB5#0	22.10	-3.0	-5.15	16.95	0.050	3.00	Pass
	MCH	QPSK	RB1#0	21.94	-3.0	-5.15	16.79	0.048	3.00	Pass
			RB6#0	22.45	-3.0	-5.15	17.30	0.054	3.00	Pass
		16-QAM	RB1#0	22.36	-3.0	-5.15	17.21	0.053	3.00	Pass
			RB5#0	22.52	-3.0	-5.15	17.37	0.055	3.00	Pass
	HCH	QPSK	RB1#0	21.84	-3.0	-5.15	16.69	0.047	3.00	Pass
			RB6#0	22.09	-3.0	-5.15	16.94	0.049	3.00	Pass
		16-QAM	RB1#0	21.96	-3.0	-5.15	16.81	0.048	3.00	Pass
			RB5#0	22.43	-3.0	-5.15	17.28	0.053	3.00	Pass
10 MHz	LCH	QPSK	RB1#0	22.52	-3.0	-5.15	17.37	0.055	3.00	Pass
			RB6#0	22.24	-3.0	-5.15	17.09	0.051	3.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE-M1 BAND12										
		16-QAM	RB1#0	22.51	-3.0	-5.15	17.36	0.054	3.00	Pass
			RB5#0	22.01	-3.0	-5.15	16.86	0.049	3.00	Pass
	MCH	QPSK	RB1#0	22.06	-3.0	-5.15	16.91	0.049	3.00	Pass
			RB6#0	22.60	-3.0	-5.15	17.45	0.056	3.00	Pass
		16-QAM	RB1#0	22.02	-3.0	-5.15	16.87	0.049	3.00	Pass
			RB5#0	21.98	-3.0	-5.15	16.83	0.048	3.00	Pass
	HCH	QPSK	RB1#0	22.48	-3.0	-5.15	17.33	0.054	3.00	Pass
			RB6#0	22.47	-3.0	-5.15	17.32	0.054	3.00	Pass
		16-QAM	RB1#0	22.19	-3.0	-5.15	17.04	0.051	3.00	Pass
			RB5#0	22.31	-3.0	-5.15	17.16	0.052	3.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE-M1 BAND13										
5 MHz	LCH	QPSK	RB1#0	22.10	-0.81	-2.96	19.14	0.082	3.00	Pass
			RB6#0	22.39	-0.81	-2.96	19.43	0.088	3.00	Pass
		16-QAM	RB1#0	22.54	-0.81	-2.96	19.58	0.091	3.00	Pass
			RB5#0	21.99	-0.81	-2.96	19.03	0.080	3.00	Pass
	MCH	QPSK	RB1#0	22.21	-0.81	-2.96	19.25	0.084	3.00	Pass
			RB6#0	22.08	-0.81	-2.96	19.12	0.082	3.00	Pass
		16-QAM	RB1#0	21.91	-0.81	-2.96	18.95	0.079	3.00	Pass
			RB5#0	22.66	-0.81	-2.96	19.70	0.093	3.00	Pass
	HCH	QPSK	RB1#0	22.12	-0.81	-2.96	19.16	0.082	3.00	Pass
			RB6#0	21.90	-0.81	-2.96	18.94	0.078	3.00	Pass
		16-QAM	RB1#0	22.11	-0.81	-2.96	19.15	0.080	3.00	Pass
			RB5#0	21.71	-0.81	-2.96	18.75	0.075	3.00	Pass
10 MHz	LCH	QPSK	RB1#0	21.77	-0.81	-2.96	18.81	0.076	3.00	Pass
			RB6#0	22.09	-0.81	-2.96	19.13	0.082	3.00	Pass
		16-QAM	RB1#0	22.12	-0.81	-2.96	19.16	0.082	3.00	Pass
			RB5#0	22.06	-0.81	-2.96	19.10	0.081	3.00	Pass
	MCH	QPSK	RB1#0	22.10	-0.81	-2.96	19.14	0.082	3.00	Pass
			RB6#0	22.39	-0.81	-2.96	19.43	0.088	3.00	Pass
		16-QAM	RB1#0	22.54	-0.81	-2.96	19.58	0.091	3.00	Pass
			RB5#0	21.99	-0.81	-2.96	19.03	0.080	3.00	Pass
	HCH	QPSK	RB1#0	22.21	-0.81	-2.96	19.25	0.084	3.00	Pass
			RB6#0	22.08	-0.81	-2.96	19.12	0.082	3.00	Pass
		16-QAM	RB1#0	21.91	-0.81	-2.96	18.95	0.079	3.00	Pass
			RB5#0	22.66	-0.81	-2.96	19.70	0.093	3.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE-M1 BAND25									
1.4 MHz	LCH	QPSK	RB1#0	22.26	-1.2	21.06	0.128	2.00	Pass
			RB6#0	21.67	-1.2	20.47	0.111	2.00	Pass
		16-QAM	RB1#0	21.77	-1.2	20.57	0.114	2.00	Pass
			RB5#0	22.31	-1.2	21.11	0.129	2.00	Pass
	MCH	QPSK	RB1#0	21.59	-1.2	20.39	0.109	2.00	Pass
			RB6#0	22.48	-1.2	21.28	0.134	2.00	Pass
		16-QAM	RB1#0	21.61	-1.2	20.41	0.110	2.00	Pass
			RB5#0	21.89	-1.2	20.69	0.117	2.00	Pass
	HCH	QPSK	RB1#0	21.58	-1.2	20.38	0.109	2.00	Pass
			RB6#0	22.49	-1.2	21.29	0.135	2.00	Pass
		16-QAM	RB1#0	21.95	-1.2	20.75	0.119	2.00	Pass
			RB5#0	21.69	-1.2	20.49	0.112	2.00	Pass
3 MHz	LCH	QPSK	RB1#0	22.07	-1.2	20.87	0.122	2.00	Pass
			RB6#0	21.93	-1.2	20.73	0.118	2.00	Pass
		16-QAM	RB1#0	21.55	-1.2	20.35	0.108	2.00	Pass
			RB5#0	22.33	-1.2	21.13	0.130	2.00	Pass
	MCH	QPSK	RB1#0	22.38	-1.2	21.18	0.131	2.00	Pass
			RB6#0	22.10	-1.2	20.90	0.123	2.00	Pass
		16-QAM	RB1#0	22.02	-1.2	20.82	0.121	2.00	Pass
			RB5#0	22.29	-1.2	21.09	0.129	2.00	Pass
	HCH	QPSK	RB1#0	21.87	-1.2	20.67	0.117	2.00	Pass
			RB6#0	22.11	-1.2	20.91	0.123	2.00	Pass
		16-QAM	RB1#0	21.75	-1.2	20.55	0.114	2.00	Pass
			RB5#0	22.10	-1.2	20.90	0.123	2.00	Pass
5 MHz	LCH	QPSK	RB1#0	22.44	-1.2	21.24	0.133	2.00	Pass
			RB6#0	22.16	-1.2	20.96	0.125	2.00	Pass
		16-QAM	RB1#0	21.70	-1.2	20.50	0.112	2.00	Pass
			RB5#0	21.66	-1.2	20.46	0.111	2.00	Pass
	MCH	QPSK	RB1#0	21.74	-1.2	20.54	0.113	2.00	Pass
			RB6#0	21.75	-1.2	20.55	0.114	2.00	Pass
		16-QAM	RB1#0	22.11	-1.2	20.91	0.123	2.00	Pass
			RB5#0	22.08	-1.2	20.88	0.122	2.00	Pass
	HCH	QPSK	RB1#0	21.54	-1.2	20.34	0.108	2.00	Pass
			RB6#0	22.31	-1.2	21.11	0.129	2.00	Pass
		16-QAM	RB1#0	22.28	-1.2	21.08	0.128	2.00	Pass
			RB5#0	21.61	-1.2	20.41	0.110	2.00	Pass
10 MHz	LCH	QPSK	RB1#0	21.71	-1.2	20.51	0.112	2.00	Pass
			RB6#0	21.59	-1.2	20.39	0.109	2.00	Pass
		16-QAM	RB1#0	21.60	-1.2	20.40	0.110	2.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict	
LTE-M1 BAND25										
	MCH	QPSK	RB5#0	21.66	-1.2	20.46	0.111	2.00	Pass	
			RB1#0	21.67	-1.2	20.47	0.111	2.00	Pass	
		16-QAM	RB6#0	21.52	-1.2	20.32	0.108	2.00	Pass	
			RB1#0	22.02	-1.2	20.82	0.121	2.00	Pass	
	HCH	QPSK	RB5#0	22.06	-1.2	20.86	0.122	2.00	Pass	
			RB1#0	21.98	-1.2	20.78	0.120	2.00	Pass	
		16-QAM	RB6#0	21.63	-1.2	20.43	0.110	2.00	Pass	
			RB1#0	21.70	-1.2	20.50	0.112	2.00	Pass	
	15 MHz	LCH	QPSK	RB5#0	22.36	-1.2	21.16	0.131	2.00	Pass
				RB1#0	21.76	-1.2	20.56	0.114	2.00	Pass
			16-QAM	RB6#0	22.18	-1.2	20.98	0.125	2.00	Pass
				RB1#0	21.99	-1.2	20.79	0.120	2.00	Pass
MCH		QPSK	RB5#0	21.66	-1.2	20.46	0.111	2.00	Pass	
			RB1#0	21.78	-1.2	20.58	0.114	2.00	Pass	
		16-QAM	RB6#0	21.8	-1.2	20.60	0.115	2.00	Pass	
			RB1#0	21.89	-1.2	20.69	0.117	2.00	Pass	
HCH		QPSK	RB5#0	21.65	-1.2	20.45	0.111	2.00	Pass	
			RB1#0	21.84	-1.2	20.64	0.116	2.00	Pass	
		16-QAM	RB6#0	22.50	-1.2	21.30	0.135	2.00	Pass	
			RB1#0	22.29	-1.2	21.09	0.129	2.00	Pass	
20 MHz	LCH	QPSK	RB5#0	22.45	-1.2	21.25	0.133	2.00	Pass	
			RB1#0	21.80	-1.2	20.60	0.115	2.00	Pass	
		16-QAM	RB6#0	22.31	-1.2	21.11	0.129	2.00	Pass	
			RB1#0	21.73	-1.2	20.53	0.113	2.00	Pass	
	MCH	QPSK	RB5#0	22.06	-1.2	20.86	0.122	2.00	Pass	
			RB1#0	22.14	-1.2	20.94	0.124	2.00	Pass	
		16-QAM	RB6#0	22.44	-1.2	21.24	0.133	2.00	Pass	
			RB1#0	21.91	-1.2	20.71	0.118	2.00	Pass	
	HCH	QPSK	RB5#0	22.44	-1.2	21.24	0.133	2.00	Pass	
			RB1#0	22.00	-1.2	20.80	0.120	2.00	Pass	
		16-QAM	RB6#0	21.56	-1.2	20.36	0.109	2.00	Pass	
			RB1#0	22.32	-1.2	21.12	0.129	2.00	Pass	
			RB5#0	21.97	-1.2	20.77	0.119	2.00	Pass	

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE-M1 BAND66									
1.4 MHz	LCH	QPSK	RB1#0	21.63	-0.9	20.73	0.118	1.00	Pass
			RB6#0	22.36	-0.9	21.46	0.140	1.00	Pass
		16-QAM	RB1#0	21.55	-0.9	20.65	0.116	1.00	Pass
			RB5#0	21.66	-0.9	20.76	0.119	1.00	Pass
	MCH	QPSK	RB1#0	22.03	-0.9	21.13	0.130	1.00	Pass
			RB6#0	22.02	-0.9	21.12	0.129	1.00	Pass
		16-QAM	RB1#0	22.48	-0.9	21.58	0.144	1.00	Pass
			RB5#0	21.52	-0.9	20.62	0.115	1.00	Pass
	HCH	QPSK	RB1#0	22.35	-0.9	21.45	0.140	1.00	Pass
			RB6#0	22.23	-0.9	21.33	0.136	1.00	Pass
		16-QAM	RB1#0	22.25	-0.9	21.35	0.136	1.00	Pass
			RB5#0	22.14	-0.9	21.24	0.133	1.00	Pass
3 MHz	LCH	QPSK	RB1#0	22.23	-0.9	21.33	0.136	1.00	Pass
			RB6#0	21.52	-0.9	20.62	0.115	1.00	Pass
		16-QAM	RB1#0	21.52	-0.9	20.62	0.115	1.00	Pass
			RB5#0	21.62	-0.9	20.72	0.118	1.00	Pass
	MCH	QPSK	RB1#0	22.18	-0.9	21.28	0.134	1.00	Pass
			RB6#0	21.79	-0.9	20.89	0.123	1.00	Pass
		16-QAM	RB1#0	21.76	-0.9	20.86	0.122	1.00	Pass
			RB5#0	22.36	-0.9	21.46	0.140	1.00	Pass
	HCH	QPSK	RB1#0	22.38	-0.9	21.48	0.141	1.00	Pass
			RB6#0	21.79	-0.9	20.89	0.123	1.00	Pass
		16-QAM	RB1#0	22.22	-0.9	21.32	0.136	1.00	Pass
			RB5#0	22.13	-0.9	21.23	0.133	1.00	Pass
5 MHz	LCH	QPSK	RB1#0	22.41	-0.9	21.51	0.142	1.00	Pass
			RB6#0	21.62	-0.9	20.72	0.118	1.00	Pass
		16-QAM	RB1#0	22.34	-0.9	21.44	0.139	1.00	Pass
			RB5#0	22.23	-0.9	21.33	0.136	1.00	Pass
	MCH	QPSK	RB1#0	21.98	-0.9	21.08	0.128	1.00	Pass
			RB6#0	22.19	-0.9	21.29	0.135	1.00	Pass
		16-QAM	RB1#0	21.57	-0.9	20.67	0.117	1.00	Pass
			RB5#0	21.50	-0.9	20.60	0.115	1.00	Pass
	HCH	QPSK	RB1#0	21.98	-0.9	21.08	0.128	1.00	Pass
			RB6#0	22.27	-0.9	21.37	0.137	1.00	Pass
		16-QAM	RB1#0	21.89	-0.9	20.99	0.126	1.00	Pass
			RB5#0	21.58	-0.9	20.68	0.117	1.00	Pass
10 MHz	LCH	QPSK	RB1#0	21.76	-0.9	20.86	0.122	1.00	Pass
			RB6#0	21.57	-0.9	20.67	0.117	1.00	Pass
		16-QAM	RB1#0	22.25	-0.9	21.35	0.136	1.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict	
LTE-M1 BAND66										
	MCH	QPSK	RB5#0	21.71	-0.9	20.81	0.121	1.00	Pass	
			RB1#0	22.44	-0.9	21.54	0.143	1.00	Pass	
		16-QAM	RB6#0	21.55	-0.9	20.65	0.116	1.00	Pass	
			RB1#0	21.92	-0.9	21.02	0.126	1.00	Pass	
	HCH	QPSK	RB5#0	21.50	-0.9	20.60	0.115	1.00	Pass	
			RB1#0	21.72	-0.9	20.82	0.121	1.00	Pass	
		16-QAM	RB6#0	22.09	-0.9	21.19	0.132	1.00	Pass	
			RB1#0	22.45	-0.9	21.55	0.143	1.00	Pass	
	15 MHz	LCH	QPSK	RB5#0	21.54	-0.9	20.64	0.116	1.00	Pass
				RB1#0	21.51	-0.9	20.61	0.115	1.00	Pass
			16-QAM	RB6#0	21.51	-0.9	20.61	0.115	1.00	Pass
				RB1#0	21.84	-0.9	20.94	0.124	1.00	Pass
MCH		QPSK	RB5#0	22.45	-0.9	21.55	0.143	1.00	Pass	
			RB1#0	22.01	-0.9	21.11	0.129	1.00	Pass	
		16-QAM	RB6#0	22.31	-0.9	21.41	0.138	1.00	Pass	
			RB1#0	22.26	-0.9	21.36	0.137	1.00	Pass	
HCH		QPSK	RB5#0	21.52	-0.9	20.62	0.115	1.00	Pass	
			RB1#0	22.07	-0.9	21.17	0.131	1.00	Pass	
		16-QAM	RB6#0	22.05	-0.9	21.15	0.130	1.00	Pass	
			RB1#0	22.00	-0.9	21.10	0.129	1.00	Pass	
20 MHz	LCH	QPSK	RB5#0	21.78	-0.9	20.88	0.122	1.00	Pass	
			RB1#0	22.43	-0.9	21.53	0.142	1.00	Pass	
		16-QAM	RB6#0	21.94	-0.9	21.04	0.127	1.00	Pass	
			RB1#0	22.42	-0.9	21.52	0.142	1.00	Pass	
	MCH	QPSK	RB5#0	22.14	-0.9	21.24	0.133	1.00	Pass	
			RB1#0	22.39	-0.9	21.49	0.141	1.00	Pass	
		16-QAM	RB6#0	21.51	-0.9	20.61	0.115	1.00	Pass	
			RB1#0	21.64	-0.9	20.74	0.119	1.00	Pass	
	HCH	QPSK	RB5#0	22.14	-0.9	21.24	0.133	1.00	Pass	
			RB1#0	21.78	-0.9	20.88	0.122	1.00	Pass	
		16-QAM	RB6#0	21.75	-0.9	20.85	0.122	1.00	Pass	
			RB1#0	22.26	-0.9	21.36	0.137	1.00	Pass	
			RB5#0	22.17	-0.9	21.27	0.134	1.00	Pass	

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE-M1 BAND85										
5 MHz	LCH	QPSK	RB1#0	22.19	-2.4	-4.55	17.64	0.058	3.00	Pass
			RB6#0	21.74	-2.4	-4.55	17.19	0.052	3.00	Pass
		16-QAM	RB1#0	22.39	-2.4	-4.55	17.84	0.061	3.00	Pass
			RB5#0	22.20	-2.4	-4.55	17.65	0.058	3.00	Pass
	MCH	QPSK	RB1#0	21.94	-2.4	-4.55	17.39	0.055	3.00	Pass
			RB6#0	22.24	-2.4	-4.55	17.69	0.059	3.00	Pass
		16-QAM	RB1#0	22.43	-2.4	-4.55	17.88	0.061	3.00	Pass
			RB5#0	22.49	-2.4	-4.55	17.94	0.062	3.00	Pass
	HCH	QPSK	RB1#0	22.09	-2.4	-4.55	17.54	0.057	3.00	Pass
			RB6#0	22.45	-2.4	-4.55	17.90	0.062	3.00	Pass
		16-QAM	RB1#0	21.58	-2.4	-4.55	17.03	0.050	3.00	Pass
			RB5#0	22.22	-2.4	-4.55	17.67	0.058	3.00	Pass
10 MHz	LCH	QPSK	RB1#0	21.55	-2.4	-4.55	17.00	0.050	3.00	Pass
			RB6#0	21.63	-2.4	-4.55	17.08	0.051	3.00	Pass
		16-QAM	RB1#0	21.80	-2.4	-4.55	17.25	0.053	3.00	Pass
			RB5#0	21.56	-2.4	-4.55	17.01	0.050	3.00	Pass
	MCH	QPSK	RB1#0	21.56	-2.4	-4.55	17.01	0.050	3.00	Pass
			RB6#0	21.79	-2.4	-4.55	17.24	0.053	3.00	Pass
		16-QAM	RB1#0	21.69	-2.4	-4.55	17.14	0.052	3.00	Pass
			RB5#0	21.96	-2.4	-4.55	17.41	0.055	3.00	Pass
	HCH	QPSK	RB1#0	22.01	-2.4	-4.55	17.46	0.056	3.00	Pass
			RB6#0	21.90	-2.4	-4.55	17.35	0.054	3.00	Pass
		16-QAM	RB1#0	22.46	-2.4	-4.55	17.91	0.062	3.00	Pass
			RB5#0	21.97	-2.4	-4.55	17.42	0.055	3.00	Pass

NB-IoT Mode Test Data

Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
NB-IoT BAND2									
3.75kHz	LCH	QPSK	RB1#0	21.58	-1.2	20.38	0.109	2.00	Pass
			RB1#47	22.29	-1.2	21.09	0.129	2.00	Pass
		BPSK	RB1#0	21.56	-1.2	20.36	0.109	2.00	Pass
			RB1#47	21.49	-1.2	20.29	0.107	2.00	Pass
	MCH	QPSK	RB1#0	21.99	-1.2	20.79	0.120	2.00	Pass
			RB1#47	22.18	-1.2	20.98	0.125	2.00	Pass
		BPSK	RB1#0	22.29	-1.2	21.09	0.129	2.00	Pass
			RB1#47	21.69	-1.2	20.49	0.112	2.00	Pass
	HCH	QPSK	RB1#0	22.39	-1.2	21.19	0.132	2.00	Pass
			RB1#47	22.40	-1.2	21.20	0.132	2.00	Pass
		BPSK	RB1#0	21.96	-1.2	20.76	0.119	2.00	Pass
			RB1#47	21.82	-1.2	20.62	0.115	2.00	Pass
15kHz	LCH	QPSK	RB1#0	21.46	-1.2	20.26	0.106	2.00	Pass
			RB1#11	22.34	-1.2	21.14	0.130	2.00	Pass
			RB12#0	20.76	-1.2	19.56	0.090	2.00	Pass
		BPSK	RB1#0	22.18	-1.2	20.98	0.125	2.00	Pass
	RB1#11		21.66	-1.2	20.46	0.111	2.00	Pass	
	MCH	QPSK	RB1#0	22.37	-1.2	21.17	0.131	2.00	Pass
			RB1#11	21.55	-1.2	20.35	0.108	2.00	Pass
			RB12#0	20.48	-1.2	19.28	0.085	2.00	Pass
		BPSK	RB1#0	21.49	-1.2	20.29	0.107	2.00	Pass
	RB1#11		22.35	-1.2	21.15	0.130	2.00	Pass	
	HCH	QPSK	RB1#0	21.75	-1.2	20.55	0.114	2.00	Pass
			RB1#11	21.67	-1.2	20.47	0.111	2.00	Pass
RB12#0			20.10	-1.2	18.90	0.078	2.00	Pass	
BPSK		RB1#0	21.88	-1.2	20.68	0.117	2.00	Pass	
	RB1#11	21.62	-1.2	20.42	0.110	2.00	Pass		

Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
NB-IoT BAND4									
3.75kHz	LCH	QPSK	RB1#0	22.39	-0.9	21.49	0.141	1.00	Pass
			RB1#47	21.97	-0.9	21.07	0.128	1.00	Pass
		BPSK	RB1#0	21.98	-0.9	21.08	0.128	1.00	Pass
			RB1#47	22.29	-0.9	21.39	0.138	1.00	Pass
	MCH	QPSK	RB1#0	22.27	-0.9	21.37	0.137	1.00	Pass
			RB1#47	21.90	-0.9	21.00	0.126	1.00	Pass
		BPSK	RB1#0	22.11	-0.9	21.21	0.132	1.00	Pass
			RB1#47	22.39	-0.9	21.49	0.141	1.00	Pass
	HCH	QPSK	RB1#0	21.89	-0.9	20.99	0.126	1.00	Pass
			RB1#47	22.01	-0.9	21.11	0.129	1.00	Pass
		BPSK	RB1#0	22.31	-0.9	21.41	0.138	1.00	Pass
			RB1#47	21.41	-0.9	20.51	0.112	1.00	Pass
15kHz	LCH	QPSK	RB1#0	21.67	-0.9	20.77	0.119	1.00	Pass
			RB1#11	22.16	-0.9	21.26	0.134	1.00	Pass
			RB12#0	20.50	-0.9	19.60	0.091	1.00	Pass
		BPSK	RB1#0	22.30	-0.9	21.40	0.138	1.00	Pass
	RB1#11		22.14	-0.9	21.24	0.133	1.00	Pass	
	MCH	QPSK	RB1#0	21.43	-0.9	20.53	0.113	1.00	Pass
			RB1#11	22.35	-0.9	21.45	0.140	1.00	Pass
			RB12#0	20.27	-0.9	19.37	0.086	1.00	Pass
		BPSK	RB1#0	21.98	-0.9	21.08	0.128	1.00	Pass
	RB1#11		21.42	-0.9	20.52	0.113	1.00	Pass	
	HCH	QPSK	RB1#0	22.15	-0.9	21.25	0.133	1.00	Pass
			RB1#11	21.75	-0.9	20.85	0.122	1.00	Pass
RB12#0			20.94	-0.9	20.04	0.101	1.00	Pass	
BPSK		RB1#0	21.78	-0.9	20.88	0.122	1.00	Pass	
	RB1#11	22.08	-0.9	21.18	0.131	1.00	Pass		

Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
NB-IoT BAND5										
3.75kHz	LCH	QPSK	RB1#0	21.82	-0.76	-2.91	18.91	0.078	7.00	Pass
			RB1#47	21.73	-0.76	-2.91	18.82	0.076	7.00	Pass
		BPSK	RB1#0	21.66	-0.76	-2.91	18.75	0.075	7.00	Pass
			RB1#47	21.79	-0.76	-2.91	18.88	0.077	7.00	Pass
	MCH	QPSK	RB1#0	21.97	-0.76	-2.91	19.06	0.081	7.00	Pass
			RB1#47	21.47	-0.76	-2.91	18.56	0.072	7.00	Pass
		BPSK	RB1#0	22.36	-0.76	-2.91	19.45	0.088	7.00	Pass
			RB1#47	21.55	-0.76	-2.91	18.64	0.073	7.00	Pass
	HCH	QPSK	RB1#0	22.40	-0.76	-2.91	19.49	0.089	7.00	Pass
			RB1#47	21.42	-0.76	-2.91	18.51	0.071	7.00	Pass
		BPSK	RB1#0	22.08	-0.76	-2.91	19.17	0.083	7.00	Pass
			RB1#47	21.93	-0.76	-2.91	19.02	0.080	7.00	Pass
15kHz	LCH	QPSK	RB1#0	22.34	-0.76	-2.91	19.43	0.088	7.00	Pass
			RB1#11	22.25	-0.76	-2.91	19.34	0.086	7.00	Pass
			RB12#0	20.47	-0.76	-2.91	17.56	0.057	7.00	Pass
		BPSK	RB1#0	22.20	-0.76	-2.91	19.29	0.085	7.00	Pass
			RB1#11	21.98	-0.76	-2.91	19.07	0.081	7.00	Pass
	MCH	QPSK	RB1#0	21.55	-0.76	-2.91	18.64	0.073	7.00	Pass
			RB1#11	21.41	-0.76	-2.91	18.50	0.071	7.00	Pass
			RB12#0	20.83	-0.76	-2.91	17.92	0.062	7.00	Pass
		BPSK	RB1#0	22.28	-0.76	-2.91	19.37	0.086	7.00	Pass
	RB1#11		21.59	-0.76	-2.91	18.68	0.074	7.00	Pass	
	HCH	QPSK	RB1#0	22.35	-0.76	-2.91	19.44	0.088	7.00	Pass
			RB1#11	22.37	-0.76	-2.91	19.46	0.088	7.00	Pass
RB12#0			20.52	-0.76	-2.91	17.61	0.058	7.00	Pass	
BPSK		RB1#0	22.27	-0.76	-2.91	19.36	0.086	7.00	Pass	
		RB1#11	21.66	-0.76	-2.91	18.75	0.075	7.00	Pass	

Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
NB-IoT BAND12										
3.75kHz	LCH	QPSK	RB1#0	21.76	-3	-5.15	16.61	0.046	3.00	Pass
			RB1#47	22.16	-3	-5.15	17.01	0.050	3.00	Pass
		BPSK	RB1#0	22.31	-3	-5.15	17.16	0.052	3.00	Pass
			RB1#47	21.51	-3	-5.15	16.36	0.043	3.00	Pass
	MCH	QPSK	RB1#0	22.12	-3	-5.15	16.97	0.050	3.00	Pass
			RB1#47	22.08	-3	-5.15	16.93	0.049	3.00	Pass
		BPSK	RB1#0	22.25	-3	-5.15	17.10	0.051	3.00	Pass
			RB1#47	21.74	-3	-5.15	16.59	0.046	3.00	Pass
	HCH	QPSK	RB1#0	21.49	-3	-5.15	16.34	0.043	3.00	Pass
			RB1#47	21.83	-3	-5.15	16.68	0.047	3.00	Pass
		BPSK	RB1#0	21.64	-3	-5.15	16.49	0.045	3.00	Pass
			RB1#47	22.20	-3	-5.15	17.05	0.051	3.00	Pass
15kHz	LCH	QPSK	RB1#0	21.76	-3	-5.15	16.61	0.046	3.00	Pass
			RB1#11	22.34	-3	-5.15	17.19	0.052	3.00	Pass
			RB12#0	20.16	-3	-5.15	15.01	0.032	3.00	Pass
		BPSK	RB1#0	21.56	-3	-5.15	16.41	0.044	3.00	Pass
			RB1#11	21.58	-3	-5.15	16.43	0.044	3.00	Pass
	MCH	QPSK	RB1#0	21.80	-3	-5.15	16.65	0.046	3.00	Pass
			RB1#11	22.04	-3	-5.15	16.89	0.049	3.00	Pass
			RB12#0	20.80	-3	-5.15	15.65	0.037	3.00	Pass
		BPSK	RB1#0	22.27	-3	-5.15	17.12	0.052	3.00	Pass
	RB1#11		22.01	-3	-5.15	16.86	0.049	3.00	Pass	
	HCH	QPSK	RB1#0	21.52	-3	-5.15	16.37	0.043	3.00	Pass
			RB1#11	21.77	-3	-5.15	16.62	0.046	3.00	Pass
RB12#0			20.17	-3	-5.15	15.02	0.032	3.00	Pass	
BPSK		RB1#0	21.88	-3	-5.15	16.73	0.047	3.00	Pass	
		RB1#11	21.48	-3	-5.15	16.33	0.043	3.00	Pass	

Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
NB-IoT BAND13										
3.75kHz	LCH	QPSK	RB1#0	21.88	-0.81	-2.96	18.92	0.078	3.00	Pass
			RB1#47	22.20	-0.81	-2.96	19.24	0.084	3.00	Pass
		BPSK	RB1#0	22.22	-0.81	-2.96	19.26	0.084	3.00	Pass
			RB1#47	21.81	-0.81	-2.96	18.85	0.077	3.00	Pass
	MCH	QPSK	RB1#0	21.44	-0.81	-2.96	18.48	0.070	3.00	Pass
			RB1#47	21.40	-0.81	-2.96	18.44	0.070	3.00	Pass
		BPSK	RB1#0	22.08	-0.81	-2.96	19.12	0.082	3.00	Pass
			RB1#47	21.47	-0.81	-2.96	18.51	0.071	3.00	Pass
	HCH	QPSK	RB1#0	21.99	-0.81	-2.96	19.03	0.080	3.00	Pass
			RB1#47	21.70	-0.81	-2.96	18.74	0.075	3.00	Pass
		BPSK	RB1#0	21.47	-0.81	-2.96	18.51	0.071	3.00	Pass
			RB1#47	22.27	-0.81	-2.96	19.31	0.085	3.00	Pass
15kHz	LCH	QPSK	RB1#0	21.86	-0.81	-2.96	18.90	0.078	3.00	Pass
			RB1#11	21.42	-0.81	-2.96	18.46	0.070	3.00	Pass
			RB12#0	20.96	-0.81	-2.96	18.00	0.063	3.00	Pass
		BPSK	RB1#0	22.10	-0.81	-2.96	19.14	0.082	3.00	Pass
			RB1#11	22.27	-0.81	-2.96	19.31	0.085	3.00	Pass
	MCH	QPSK	RB1#0	22.16	-0.81	-2.96	19.20	0.083	3.00	Pass
			RB1#11	22.31	-0.81	-2.96	19.35	0.086	3.00	Pass
			RB12#0	20.10	-0.81	-2.96	17.14	0.052	3.00	Pass
		BPSK	RB1#0	22.37	-0.81	-2.96	19.41	0.087	3.00	Pass
	RB1#11		22.08	-0.81	-2.96	19.12	0.082	3.00	Pass	
	HCH	QPSK	RB1#0	21.83	-0.81	-2.96	18.87	0.077	3.00	Pass
			RB1#11	22.13	-0.81	-2.96	19.17	0.083	3.00	Pass
RB12#0			20.64	-0.81	-2.96	17.68	0.059	3.00	Pass	
BPSK		RB1#0	22.03	-0.81	-2.96	19.07	0.081	3.00	Pass	
		RB1#11	21.77	-0.81	-2.96	18.81	0.076	3.00	Pass	

Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
NB-IoT BAND25									
3.75kHz	LCH	QPSK	RB1#0	22.21	-1.2	21.01	0.126	2.00	Pass
			RB1#47	21.40	-1.2	20.20	0.105	2.00	Pass
		BPSK	RB1#0	22.12	-1.2	20.92	0.124	2.00	Pass
			RB1#47	22.16	-1.2	20.96	0.125	2.00	Pass
	MCH	QPSK	RB1#0	21.92	-1.2	20.72	0.118	2.00	Pass
			RB1#47	21.83	-1.2	20.63	0.116	2.00	Pass
		BPSK	RB1#0	21.93	-1.2	20.73	0.118	2.00	Pass
			RB1#47	22.38	-1.2	21.18	0.131	2.00	Pass
	HCH	QPSK	RB1#0	21.65	-1.2	20.45	0.111	2.00	Pass
			RB1#47	21.68	-1.2	20.48	0.112	2.00	Pass
		BPSK	RB1#0	22.26	-1.2	21.06	0.128	2.00	Pass
			RB1#47	21.57	-1.2	20.37	0.109	2.00	Pass
15kHz	LCH	QPSK	RB1#0	21.90	-1.2	20.70	0.117	2.00	Pass
			RB1#11	21.73	-1.2	20.53	0.113	2.00	Pass
			RB12#0	20.20	-1.2	19.00	0.079	2.00	Pass
		BPSK	RB1#0	22.30	-1.2	21.10	0.129	2.00	Pass
			RB1#11	22.00	-1.2	20.80	0.12	2.00	Pass
	MCH	QPSK	RB1#0	21.82	-1.2	20.62	0.115	2.00	Pass
			RB1#11	21.89	-1.2	20.69	0.117	2.00	Pass
			RB12#0	20.40	-1.2	19.20	0.083	2.00	Pass
		BPSK	RB1#0	22.27	-1.2	21.07	0.128	2.00	Pass
			RB1#11	21.57	-1.2	20.37	0.109	2.00	Pass
	HCH	QPSK	RB1#0	21.47	-1.2	20.27	0.106	2.00	Pass
			RB1#11	21.79	-1.2	20.59	0.115	2.00	Pass
			RB12#0	20.87	-1.2	19.67	0.093	2.00	Pass
		BPSK	RB1#0	21.82	-1.2	20.62	0.115	2.00	Pass
			RB1#11	21.82	-1.2	20.62	0.115	2.00	Pass

Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
NB-IoT BAND66									
3.75kHz	LCH	QPSK	RB1#0	21.40	-0.9	20.50	0.112	1.00	Pass
			RB1#47	22.31	-0.9	21.41	0.138	1.00	Pass
		BPSK	RB1#0	21.61	-0.9	20.71	0.118	1.00	Pass
			RB1#47	21.71	-0.9	20.81	0.121	1.00	Pass
	MCH	QPSK	RB1#0	22.15	-0.9	21.25	0.133	1.00	Pass
			RB1#47	22.03	-0.9	21.13	0.130	1.00	Pass
		BPSK	RB1#0	21.49	-0.9	20.59	0.115	1.00	Pass
			RB1#47	21.79	-0.9	20.89	0.123	1.00	Pass
	HCH	QPSK	RB1#0	21.89	-0.9	20.99	0.126	1.00	Pass
			RB1#47	22.02	-0.9	21.12	0.129	1.00	Pass
		BPSK	RB1#0	21.92	-0.9	21.02	0.126	1.00	Pass
			RB1#47	21.95	-0.9	21.05	0.127	1.00	Pass
15kHz	LCH	QPSK	RB1#0	22.12	-0.9	21.22	0.132	1.00	Pass
			RB1#11	21.66	-0.9	20.76	0.119	1.00	Pass
			RB12#0	20.04	-0.9	19.14	0.082	1.00	Pass
		BPSK	RB1#0	21.60	-0.9	20.70	0.117	1.00	Pass
	RB1#11		22.04	-0.9	21.14	0.130	1.00	Pass	
	MCH	QPSK	RB1#0	21.98	-0.9	21.08	0.128	1.00	Pass
			RB1#11	22.26	-0.9	21.36	0.137	1.00	Pass
			RB12#0	20.98	-0.9	20.08	0.102	1.00	Pass
		BPSK	RB1#0	21.56	-0.9	20.66	0.116	1.00	Pass
	RB1#11		21.47	-0.9	20.57	0.114	1.00	Pass	
	HCH	QPSK	RB1#0	22.26	-0.9	21.36	0.137	1.00	Pass
			RB1#11	21.82	-0.9	20.92	0.124	1.00	Pass
RB12#0			20.13	-0.9	19.23	0.084	1.00	Pass	
BPSK		RB1#0	21.69	-0.9	20.79	0.120	1.00	Pass	
	RB1#11	21.59	-0.9	20.69	0.117	1.00	Pass		

Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
NB-IoT BAND71										
3.75kHz	LCH	QPSK	RB1#0	21.88	-4.1	-6.25	15.63	0.037	3.00	Pass
			RB1#47	21.06	-4.1	-6.25	14.81	0.030	3.00	Pass
		BPSK	RB1#0	21.09	-4.1	-6.25	14.84	0.030	3.00	Pass
			RB1#47	20.92	-4.1	-6.25	14.67	0.029	3.00	Pass
	MCH	QPSK	RB1#0	21.05	-4.1	-6.25	14.80	0.030	3.00	Pass
			RB1#47	21.27	-4.1	-6.25	15.02	0.032	3.00	Pass
		BPSK	RB1#0	21.12	-4.1	-6.25	14.87	0.031	3.00	Pass
			RB1#47	21.05	-4.1	-6.25	14.80	0.030	3.00	Pass
	HCH	QPSK	RB1#0	20.25	-4.1	-6.25	14.00	0.025	3.00	Pass
			RB1#47	20.20	-4.1	-6.25	13.95	0.025	3.00	Pass
		BPSK	RB1#0	20.07	-4.1	-6.25	13.82	0.024	3.00	Pass
			RB1#47	20.12	-4.1	-6.25	13.87	0.024	3.00	Pass
15kHz	LCH	QPSK	RB1#0	21.14	-4.1	-6.25	14.89	0.031	3.00	Pass
			RB1#11	21.00	-4.1	-6.25	14.75	0.030	3.00	Pass
			RB12#0	21.82	-4.1	-6.25	15.57	0.036	3.00	Pass
		BPSK	RB1#0	21.09	-4.1	-6.25	14.84	0.030	3.00	Pass
			RB1#11	21.06	-4.1	-6.25	14.81	0.030	3.00	Pass
	MCH	QPSK	RB1#0	21.05	-4.1	-6.25	14.80	0.030	3.00	Pass
			RB1#11	21.04	-4.1	-6.25	14.79	0.030	3.00	Pass
			RB12#0	21.12	-4.1	-6.25	14.87	0.031	3.00	Pass
		BPSK	RB1#0	21.01	-4.1	-6.25	14.76	0.030	3.00	Pass
	RB1#11		20.85	-4.1	-6.25	14.60	0.029	3.00	Pass	
	HCH	QPSK	RB1#0	20.23	-4.1	-6.25	13.98	0.025	3.00	Pass
			RB1#11	20.17	-4.1	-6.25	13.92	0.025	3.00	Pass
RB12#0			20.17	-4.1	-6.25	13.92	0.025	3.00	Pass	
BPSK		RB1#0	20.16	-4.1	-6.25	13.91	0.025	3.00	Pass	
		RB1#11	21.07	-4.1	-6.25	14.82	0.030	3.00	Pass	

Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
NB-IoT BAND85										
3.75kHz	LCH	QPSK	RB1#0	21.95	-2.4	-4.55	17.40	0.055	3.00	Pass
			RB1#47	21.77	-2.4	-4.55	17.22	0.053	3.00	Pass
		BPSK	RB1#0	22.03	-2.4	-4.55	17.48	0.056	3.00	Pass
			RB1#47	21.82	-2.4	-4.55	17.27	0.053	3.00	Pass
	MCH	QPSK	RB1#0	21.77	-2.4	-4.55	17.22	0.053	3.00	Pass
			RB1#47	21.72	-2.4	-4.55	17.17	0.052	3.00	Pass
		BPSK	RB1#0	21.76	-2.4	-4.55	17.21	0.053	3.00	Pass
			RB1#47	21.48	-2.4	-4.55	16.93	0.049	3.00	Pass
	HCH	QPSK	RB1#0	22.15	-2.4	-4.55	17.60	0.058	3.00	Pass
			RB1#47	22.20	-2.4	-4.55	17.65	0.058	3.00	Pass
		BPSK	RB1#0	21.73	-2.4	-4.55	17.18	0.052	3.00	Pass
			RB1#47	22.24	-2.4	-4.55	17.69	0.059	3.00	Pass
15kHz	LCH	QPSK	RB1#0	22.26	-2.4	-4.55	17.71	0.059	3.00	Pass
			RB1#11	22.29	-2.4	-4.55	17.74	0.059	3.00	Pass
			RB12#0	20.30	-2.4	-4.55	15.75	0.038	3.00	Pass
		BPSK	RB1#0	22.07	-2.4	-4.55	17.52	0.056	3.00	Pass
			RB1#11	21.45	-2.4	-4.55	16.90	0.049	3.00	Pass
	MCH	QPSK	RB1#0	22.04	-2.4	-4.55	17.49	0.056	3.00	Pass
			RB1#11	21.57	-2.4	-4.55	17.02	0.050	3.00	Pass
			RB12#0	20.17	-2.4	-4.55	15.62	0.036	3.00	Pass
		BPSK	RB1#0	22.11	-2.4	-4.55	17.56	0.057	3.00	Pass
	RB1#11		22.00	-2.4	-4.55	17.45	0.056	3.00	Pass	
	HCH	QPSK	RB1#0	21.86	-2.4	-4.55	17.31	0.054	3.00	Pass
			RB1#11	22.11	-2.4	-4.55	17.56	0.057	3.00	Pass
RB12#0			20.80	-2.4	-4.55	16.25	0.042	3.00	Pass	
BPSK		RB1#0	22.14	-2.4	-4.55	17.59	0.057	3.00	Pass	
		RB1#11	22.02	-2.4	-4.55	17.47	0.056	3.00	Pass	

A.2 Peak to Average Ratio

Note 1: For average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB. For GPRS and EGPRS, there are peak power to demonstrate compliance, PAR measurements are not required.

Note 2: Test plots please refer to the document "Annex No.:BL-EC2140498-501 Data Part 1.pdf".

LTE-M1 Mode Test Data

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Refer to Plot ^{Note2}	Verdict
LTE-M1 Band 2	20 MHz	LCH	QPSK	RB6#0	6.13	13	1.1	Pass
			16-QAM	RB5#0	5.48	13	1.2	Pass
		MCH	QPSK	RB6#0	6.60	13	1.3	Pass
			16-QAM	RB5#0	8.73	13	1.4	Pass
		HCH	QPSK	RB6#0	6.41	13	1.5	Pass
			16-QAM	RB5#0	6.11	13	1.6	Pass
LTE-M1 Band 4	20 MHz	LCH	QPSK	RB6#0	6.33	13	2.1	Pass
			16-QAM	RB5#0	7.03	13	2.2	Pass
		MCH	QPSK	RB6#0	5.64	13	2.3	Pass
			16-QAM	RB5#0	5.53	13	2.4	Pass
		HCH	QPSK	RB6#0	5.38	13	2.5	Pass
			16-QAM	RB5#0	5.64	13	2.6	Pass
LTE-M1 Band 5	10 MHz	LCH	QPSK	RB6#0	4.68	13	3.1	Pass
			16-QAM	RB5#0	4.47	13	3.2	Pass
		MCH	QPSK	RB6#0	4.98	13	3.3	Pass
			16-QAM	RB5#0	4.24	13	3.4	Pass
		HCH	QPSK	RB6#0	4.97	13	3.5	Pass
			16-QAM	RB5#0	4.24	13	3.6	Pass
LTE-M1 Band 12	10 MHz	LCH	QPSK	RB6#0	4.81	13	4.1	Pass
			16-QAM	RB5#0	4.63	13	4.2	Pass
		MCH	QPSK	RB6#0	4.67	13	4.3	Pass
			16-QAM	RB5#0	5.23	13	4.4	Pass
		HCH	QPSK	RB6#0	4.98	13	4.5	Pass
			16-QAM	RB5#0	4.68	13	4.6	Pass
LTE-M1 Band 13	10 MHz	MCH	QPSK	RB6#0	5.25	13	5.1	Pass
			16-QAM	RB5#0	4.97	13	5.2	Pass
LTE-M1 Band 25	20 MHz	LCH	QPSK	RB6#0	5.94	13	9.1	Pass
			16-QAM	RB5#0	5.72	13	9.2	Pass
		MCH	QPSK	RB6#0	6.19	13	9.3	Pass
			16-QAM	RB5#0	6.89	13	9.4	Pass
		HCH	QPSK	RB6#0	5.97	13	9.5	Pass
			16-QAM	RB5#0	5.99	13	9.6	Pass
LTE-M1	20 MHz	LCH	QPSK	RB6#0	6.96	13	11.1	Pass

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Refer to Plot ^{Note2}	Verdict
Band 66			16-QAM	RB5#0	6.43	13	11.2	Pass
		MCH	QPSK	RB6#0	5.62	13	11.3	Pass
			16-QAM	RB5#0	7.27	13	11.4	Pass
		HCH	QPSK	RB6#0	5.83	13	11.5	Pass
16-QAM	RB5#0		5.61	13	11.6	Pass		
LTE-M1 Band 85	10 MHz	LCH	QPSK	RB6#0	5.01	13	12.1	Pass
			16-QAM	RB5#0	4.52	13	12.2	Pass
		MCH	QPSK	RB6#0	7.15	13	12.3	Pass
			16-QAM	RB5#0	5.02	13	12.4	Pass
		HCH	QPSK	RB6#0	4.42	13	12.5	Pass
			16-QAM	RB5#0	5.45	13	12.6	Pass

NB-IoT Mode Test Data

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Refer to Plot ^{Note2}	Verdict
NB-IoT Band 2	3.75kHz	LCH	QPSK	RB1#0	3.06	13	13.1	Pass
			BPSK	RB1#0	2.18	13	13.2	Pass
		MCH	QPSK	RB1#0	2.88	13	13.3	Pass
			BPSK	RB1#0	2.66	13	13.4	Pass
		HCH	QPSK	RB1#0	2.81	13	13.5	Pass
			BPSK	RB1#0	2.76	13	13.6	Pass
	15kHz	LCH	QPSK	RB1#0	1.74	13	13.7	Pass
			BPSK	RB1#0	1.75	13	13.8	Pass
		MCH	QPSK	RB1#0	1.80	13	13.9	Pass
			BPSK	RB1#0	1.76	13	13.10	Pass
		HCH	QPSK	RB1#0	1.81	13	13.11	Pass
			BPSK	RB1#0	1.83	13	13.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Refer to Plot ^{Note2}	Verdict
NB-IoT Band 4	3.75kHz	LCH	QPSK	RB1#0	3.48	13	14.1	Pass
			BPSK	RB1#0	3.52	13	14.2	Pass
		MCH	QPSK	RB1#0	3.30	13	14.3	Pass
			BPSK	RB1#0	3.24	13	14.4	Pass
		HCH	QPSK	RB1#0	3.30	13	14.5	Pass
			BPSK	RB1#0	3.55	13	14.6	Pass
	15kHz	LCH	QPSK	RB1#0	2.38	13	14.7	Pass
			BPSK	RB1#0	2.39	13	14.8	Pass
		MCH	QPSK	RB1#0	2.33	13	14.9	Pass
			BPSK	RB1#0	2.31	13	14.10	Pass
		HCH	QPSK	RB1#0	2.24	13	14.11	Pass
			BPSK	RB1#0	2.27	13	14.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Refer to Plot ^{Note2}	Verdict
NB-IoT Band 5	3.75kHz	LCH	QPSK	RB1#0	2.51	13	15.1	Pass
			BPSK	RB1#0	2.55	13	15.2	Pass
		MCH	QPSK	RB1#0	2.64	13	15.3	Pass
			BPSK	RB1#0	2.70	13	15.4	Pass
		HCH	QPSK	RB1#0	2.51	13	15.5	Pass
			BPSK	RB1#0	2.98	13	15.6	Pass
	15kHz	LCH	QPSK	RB1#0	1.71	13	15.7	Pass
			BPSK	RB1#0	1.66	13	15.8	Pass
		MCH	QPSK	RB1#0	1.66	13	15.9	Pass
			BPSK	RB1#0	1.65	13	15.10	Pass
		HCH	QPSK	RB1#0	1.68	13	15.11	Pass
			BPSK	RB1#0	1.67	13	15.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Refer to Plot ^{Note2}	Verdict
NB-IoT Band 12	3.75kHz	LCH	QPSK	RB1#0	2.80	13	16.1	Pass
			BPSK	RB1#0	2.62	13	16.2	Pass
		MCH	QPSK	RB1#0	2.94	13	16.3	Pass
			BPSK	RB1#0	4.06	13	16.4	Pass
		HCH	QPSK	RB1#0	2.54	13	16.5	Pass
			BPSK	RB1#0	2.83	13	16.6	Pass
	15kHz	LCH	QPSK	RB1#0	1.79	13	16.7	Pass
			BPSK	RB1#0	1.78	13	16.8	Pass
		MCH	QPSK	RB1#0	1.77	13	16.9	Pass
			BPSK	RB1#0	1.79	13	16.10	Pass
		HCH	QPSK	RB1#0	1.81	13	16.11	Pass
			BPSK	RB1#0	1.79	13	16.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Refer to Plot ^{Note2}	Verdict
NB-IoT Band 13	3.75kHz	LCH	QPSK	RB1#0	3.05	13	17.1	Pass
			BPSK	RB1#0	2.78	13	17.2	Pass
		MCH	QPSK	RB1#0	2.09	13	17.3	Pass
			BPSK	RB1#0	3.19	13	17.4	Pass
		HCH	QPSK	RB1#0	2.66	13	17.5	Pass
			BPSK	RB1#0	2.67	13	17.6	Pass
	15kHz	LCH	QPSK	RB1#0	1.83	13	17.7	Pass
			BPSK	RB1#0	1.80	13	17.8	Pass
		MCH	QPSK	RB1#0	1.84	13	17.9	Pass
			BPSK	RB1#0	1.83	13	17.10	Pass
		HCH	QPSK	RB1#0	1.86	13	17.11	Pass
			BPSK	RB1#0	1.86	13	17.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Refer to Plot ^{Note2}	Verdict
NB-IoT Band 25	3.75kHz	LCH	QPSK	RB1#0	3.15	13	21.1	Pass
			BPSK	RB1#0	5.72	13	21.2	Pass
		MCH	QPSK	RB1#0	2.86	13	21.3	Pass
			BPSK	RB1#0	2.73	13	21.4	Pass
		HCH	QPSK	RB1#0	2.95	13	21.5	Pass
			BPSK	RB1#0	2.95	13	21.6	Pass
	15kHz	LCH	QPSK	RB1#0	1.99	13	21.7	Pass
			BPSK	RB1#0	1.76	13	21.8	Pass
		MCH	QPSK	RB1#0	1.76	13	21.9	Pass
			BPSK	RB1#0	1.73	13	21.10	Pass
		HCH	QPSK	RB1#0	1.86	13	21.11	Pass
			BPSK	RB1#0	1.84	13	21.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Refer to Plot ^{Note2}	Verdict
NB-IoT Band 66	3.75kHz	LCH	QPSK	RB1#0	3.30	13	22.1	Pass
			BPSK	RB1#0	3.92	13	22.2	Pass
		MCH	QPSK	RB1#0	3.42	13	22.3	Pass
			BPSK	RB1#0	3.48	13	22.4	Pass
		HCH	QPSK	RB1#0	3.10	13	22.5	Pass
			BPSK	RB1#0	3.07	13	22.6	Pass
	15kHz	LCH	QPSK	RB1#0	1.77	13	22.7	Pass
			BPSK	RB1#0	1.78	13	22.8	Pass
		MCH	QPSK	RB1#0	1.80	13	22.9	Pass
			BPSK	RB1#0	1.73	13	22.10	Pass
		HCH	QPSK	RB1#0	1.72	13	22.11	Pass
			BPSK	RB1#0	1.70	13	22.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Refer to Plot ^{Note2}	Verdict
NB-IoT Band 71	3.75kHz	LCH	QPSK	RB1#0	2.32	13	23.1	Pass
			BPSK	RB1#0	2.84	13	23.2	Pass
		MCH	QPSK	RB1#0	2.49	13	23.3	Pass
			BPSK	RB1#0	2.78	13	23.4	Pass
		HCH	QPSK	RB1#0	2.44	13	23.5	Pass
			BPSK	RB1#0	8.72	13	23.6	Pass
	15kHz	LCH	QPSK	RB1#0	1.51	13	23.7	Pass
			BPSK	RB1#0	2.57	13	23.8	Pass
		MCH	QPSK	RB1#0	1.49	13	23.9	Pass
			BPSK	RB1#0	2.56	13	23.10	Pass
		HCH	QPSK	RB1#0	1.44	13	23.11	Pass
			BPSK	RB1#0	2.49	13	23.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Refer to Plot ^{Note2}	Verdict
NB-IoT Band 85	3.75kHz	LCH	QPSK	RB1#0	3.02	13	24.1	Pass
			BPSK	RB1#0	5.81	13	24.2	Pass
		MCH	QPSK	RB1#0	2.91	13	24.3	Pass
			BPSK	RB1#0	3.29	13	24.4	Pass
		HCH	QPSK	RB1#0	1.77	13	24.5	Pass
			BPSK	RB1#0	2.57	13	24.6	Pass
	15kHz	LCH	QPSK	RB1#0	1.48	13	24.7	Pass
			BPSK	RB1#0	1.49	13	24.8	Pass
		MCH	QPSK	RB1#0	1.47	13	24.9	Pass
			BPSK	RB1#0	1.44	13	24.10	Pass
		HCH	QPSK	RB1#0	1.79	13	24.11	Pass
			BPSK	RB1#0	1.80	13	24.12	Pass

A.3 Occupied Bandwidth

Note 1: All modes were tested, but only the typical data were reported in this report.

Note 2: Test plots please refer to the document "Annex No.:BL-EC2140498-501 Data Part 2.pdf".

GSM Mode Test Data

Test Band	Test Channel	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note2}
GPRS850	LCH	0.24	0.31	1.1
	MCH	0.24	0.32	1.2
	HCH	0.24	0.31	1.3
GPRS1900	LCH	0.24	0.31	2.1
	MCH	0.24	0.31	2.2
	HCH	0.24	0.32	2.3
EGPRS 850	LCH	0.25	0.30	3.1
	MCH	0.24	0.30	3.2
	HCH	0.25	0.31	3.3
EGPRS 1900	LCH	0.25	0.31	4.1
	MCH	0.25	0.31	4.2
	HCH	0.24	0.30	4.3

LTE-M1 Mode Test Data

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note2}
LTE-M1 Band 2	1.4 MHz	LCH	QPSK	RB6#0	1.124170	1.451464	5.1
			16-QAM	RB5#0	0.963516	1.188928	5.2
		MCH	QPSK	RB6#0	1.112794	1.417311	5.3
			16-QAM	RB5#0	0.964548	1.185332	5.4
		HCH	QPSK	RB6#0	1.127122	1.518165	5.5
			16-QAM	RB5#0	0.966974	1.318403	5.6
	3 MHz	LCH	QPSK	RB6#0	1.132277	1.364429	5.7
			16-QAM	RB5#0	0.963660	1.200162	5.8
		MCH	QPSK	RB6#0	1.132586	1.438185	5.9
			16-QAM	RB5#0	0.962252	1.321434	5.10
		HCH	QPSK	RB6#0	1.127507	1.453322	5.11
			16-QAM	RB5#0	0.969040	1.320814	5.12
	5 MHz	LCH	QPSK	RB6#0	1.145105	1.506714	5.13
			16-QAM	RB5#0	0.966664	1.165412	5.14
		MCH	QPSK	RB6#0	1.146280	1.403037	5.15
			16-QAM	RB5#0	0.973183	1.319234	5.16
		HCH	QPSK	RB6#0	1.140472	1.524967	5.17
			16-QAM	RB5#0	0.975281	1.236891	5.18
	10 MHz	LCH	QPSK	RB6#0	1.121959	1.363456	5.19
			16-QAM	RB5#0	0.961590	1.197789	5.20
		MCH	QPSK	RB6#0	1.141152	1.447851	5.21
			16-QAM	RB5#0	0.959611	1.173602	5.22
		HCH	QPSK	RB6#0	1.129061	1.397054	5.23
			16-QAM	RB5#0	0.960982	1.322044	5.24
	15 MHz	LCH	QPSK	RB6#0	1.135426	1.422573	5.25
			16-QAM	RB5#0	0.953649	1.152383	5.26
		MCH	QPSK	RB6#0	1.127157	1.417734	5.27
			16-QAM	RB5#0	0.974495	1.341569	5.28
		HCH	QPSK	RB6#0	1.122232	1.345564	5.29
			16-QAM	RB5#0	0.968055	1.309665	5.30
	20 MHz	LCH	QPSK	RB6#0	1.134747	1.413568	5.31
			16-QAM	RB5#0	0.969009	1.221797	5.32
		MCH	QPSK	RB6#0	1.142307	1.347347	5.33
			16-QAM	RB5#0	0.972226	1.343310	5.34
		HCH	QPSK	RB6#0	1.138673	1.403795	5.35
			16-QAM	RB5#0	0.981972	1.262276	5.36

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note2}
LTE-M1 Band 4	1.4 MHz	LCH	QPSK	RB6#0	1.130142	1.465507	6.1
			16-QAM	RB5#0	0.965749	1.221766	6.2
		MCH	QPSK	RB6#0	1.131138	1.437729	6.3
			16-QAM	RB5#0	0.972591	1.387086	6.4
		HCH	QPSK	RB6#0	1.132034	1.465369	6.5
			16-QAM	RB5#0	0.973271	1.301485	6.6
	3 MHz	LCH	QPSK	RB6#0	1.132833	1.438898	6.7
			16-QAM	RB5#0	0.963154	1.383949	6.8
		MCH	QPSK	RB6#0	1.132032	1.555226	6.9
			16-QAM	RB5#0	0.960268	1.187013	6.10
		HCH	QPSK	RB6#0	1.131981	1.438964	6.11
			16-QAM	RB5#0	0.960680	1.325099	6.12
	5 MHz	LCH	QPSK	RB6#0	1.145768	1.568723	6.13
			16-QAM	RB5#0	0.974112	1.260223	6.14
		MCH	QPSK	RB6#0	1.134765	1.501224	6.15
			16-QAM	RB5#0	0.980365	1.337525	6.16
		HCH	QPSK	RB6#0	1.137620	1.399436	6.17
			16-QAM	RB5#0	0.977005	1.300523	6.18
	10 MHz	LCH	QPSK	RB6#0	1.118352	1.392751	6.19
			16-QAM	RB5#0	0.960166	1.171721	6.20
		MCH	QPSK	RB6#0	1.132115	1.527307	6.21
			16-QAM	RB5#0	0.965399	1.173156	6.22
		HCH	QPSK	RB6#0	1.119227	1.386728	6.23
			16-QAM	RB5#0	0.969470	1.350026	6.24
	15 MHz	LCH	QPSK	RB6#0	1.129094	1.434584	6.25
			16-QAM	RB5#0	0.961158	1.203050	6.26
		MCH	QPSK	RB6#0	1.134897	1.448468	6.27
			16-QAM	RB5#0	0.974471	1.347862	6.28
		HCH	QPSK	RB6#0	1.121525	1.391649	6.29
			16-QAM	RB5#0	0.960896	1.233156	6.30
	20 MHz	LCH	QPSK	RB6#0	1.133549	1.503056	6.31
			16-QAM	RB5#0	0.973647	1.185711	6.32
		MCH	QPSK	RB6#0	1.139886	1.390071	6.33
			16-QAM	RB5#0	0.973895	1.317478	6.34
		HCH	QPSK	RB6#0	1.145870	1.420731	6.35
			16-QAM	RB5#0	0.971593	1.268405	6.36

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note2}
LTE-M1 Band 5	1.4 MHz	LCH	QPSK	RB6#0	1.129286	1.471723	7.1
			16-QAM	RB5#0	0.960892	1.242818	7.2
		MCH	QPSK	RB6#0	1.133720	1.474895	7.3
			16-QAM	RB5#0	0.959767	1.252780	7.4
		HCH	QPSK	RB6#0	1.127694	1.430958	7.5
			16-QAM	RB5#0	0.963012	1.252530	7.6
	3 MHz	LCH	QPSK	RB6#0	1.126945	1.447945	7.7
			16-QAM	RB5#0	0.954196	1.195272	7.8
		MCH	QPSK	RB6#0	1.128605	1.497493	7.9
			16-QAM	RB5#0	0.963025	1.407252	7.10
		HCH	QPSK	RB6#0	1.128724	1.444797	7.11
			16-QAM	RB5#0	0.965556	1.384303	7.12
	5 MHz	LCH	QPSK	RB6#0	1.126713	1.399613	7.13
			16-QAM	RB5#0	0.964728	1.240181	7.14
		MCH	QPSK	RB6#0	1.132766	1.475396	7.15
			16-QAM	RB5#0	0.975845	1.401688	7.16
		HCH	QPSK	RB6#0	1.124736	1.495888	7.17
			16-QAM	RB5#0	0.976781	1.326585	7.18
	10 MHz	LCH	QPSK	RB6#0	1.119298	1.470442	7.19
			16-QAM	RB5#0	0.954705	1.240945	7.20
		MCH	QPSK	RB6#0	1.134764	1.474219	7.21
			16-QAM	RB5#0	0.959452	1.241617	7.22
		HCH	QPSK	RB6#0	1.122915	1.429875	7.23
			16-QAM	RB5#0	0.966704	1.407219	7.24

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note2}
LTE-M1 Band 12	1.4 MHz	LCH	QPSK	RB6#0	1.111817	1.389996	8.1
			16-QAM	RB5#0	0.962153	1.268611	8.2
		MCH	QPSK	RB6#0	1.131052	1.471458	8.3
			16-QAM	RB5#0	0.960144	1.260118	8.4
		HCH	QPSK	RB6#0	1.126103	1.465538	8.5
			16-QAM	RB5#0	0.960267	1.240606	8.6
	3 MHz	LCH	QPSK	RB6#0	1.129964	1.476447	8.7
			16-QAM	RB5#0	0.959865	1.228533	8.8
		MCH	QPSK	RB6#0	1.130400	1.495580	8.9
			16-QAM	RB5#0	0.957922	1.239583	8.10
		HCH	QPSK	RB6#0	1.128203	1.440845	8.11
			16-QAM	RB5#0	0.962221	1.397352	8.12
	5 MHz	LCH	QPSK	RB6#0	1.126828	1.467141	8.13
			16-QAM	RB5#0	0.960452	1.361563	8.14
		MCH	QPSK	RB6#0	1.119582	1.425407	8.15
			16-QAM	RB5#0	0.962418	1.363288	8.16
		HCH	QPSK	RB6#0	1.127259	1.402507	8.17
			16-QAM	RB5#0	0.955930	1.253999	8.18
	10 MHz	LCH	QPSK	RB6#0	1.116413	1.437475	8.19
			16-QAM	RB5#0	0.959091	1.263925	8.20
		MCH	QPSK	RB6#0	1.133927	1.456746	8.21
			16-QAM	RB5#0	0.963734	1.409331	8.22
		HCH	QPSK	RB6#0	1.123776	1.398175	8.23
			16-QAM	RB5#0	0.955643	1.274344	8.24

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note2}
LTE-M1 Band 13	5 MHz	LCH	QPSK	RB6#0	1.125496	1.453916	9.1
			16-QAM	RB5#0	0.952813	1.250848	9.2
		MCH	QPSK	RB6#0	1.125319	1.401620	9.3
			16-QAM	RB5#0	0.954466	1.267633	9.4
		HCH	QPSK	RB6#0	1.126090	1.549988	9.5
			16-QAM	RB5#0	0.962893	1.363687	9.6
	10 MHz	MCH	QPSK	RB6#0	1.121653	1.443592	9.7
			16-QAM	RB5#0	0.958718	1.240889	9.8

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note2}
LTE-M1 Band 25	1.4 MHz	LCH	QPSK	RB6#0	1.127911	1.502468	13.1
			16-QAM	RB5#0	0.964500	1.226760	13.2
		MCH	QPSK	RB6#0	1.125350	1.460753	13.3
			16-QAM	RB5#0	0.962347	1.192683	13.4
		HCH	QPSK	RB6#0	1.114500	1.441774	13.5
			16-QAM	RB5#0	0.962664	1.187630	13.6
	3 MHz	LCH	QPSK	RB6#0	1.132708	1.506031	13.7
			16-QAM	RB5#0	0.960675	1.177988	13.8
		MCH	QPSK	RB6#0	1.134522	1.471422	13.9
			16-QAM	RB5#0	0.963748	1.203295	13.10
		HCH	QPSK	RB6#0	1.131896	1.355887	13.11
			16-QAM	RB5#0	0.961255	1.320120	13.12
	5 MHz	LCH	QPSK	RB6#0	1.134084	1.471514	13.13
			16-QAM	RB5#0	0.964208	1.229453	13.14
		MCH	QPSK	RB6#0	1.132895	1.489950	13.15
			16-QAM	RB5#0	0.966533	1.324174	13.16
		HCH	QPSK	RB6#0	1.128142	1.467188	13.17
			16-QAM	RB5#0	0.967705	1.312693	13.18
	10 MHz	LCH	QPSK	RB6#0	1.123245	1.442337	13.19
			16-QAM	RB5#0	0.958188	1.166183	13.20
		MCH	QPSK	RB6#0	1.142916	1.457661	13.21
			16-QAM	RB5#0	0.961971	1.347962	13.22
		HCH	QPSK	RB6#0	1.130173	1.454469	13.23
			16-QAM	RB5#0	0.958387	1.183975	13.24
	15 MHz	LCH	QPSK	RB6#0	1.134128	1.447434	13.25
			16-QAM	RB5#0	0.958819	1.224204	13.26
		MCH	QPSK	RB6#0	1.132465	1.435336	13.27
			16-QAM	RB5#0	0.973753	1.307856	13.28
		HCH	QPSK	RB6#0	1.122895	1.424156	13.29
			16-QAM	RB5#0	0.965915	1.257366	13.30
	20 MHz	LCH	QPSK	RB6#0	1.121440	1.436441	13.31
			16-QAM	RB5#0	0.969084	1.267347	13.32
		MCH	QPSK	RB6#0	1.135443	1.341360	13.33
			16-QAM	RB5#0	0.977331	1.314033	13.34
		HCH	QPSK	RB6#0	1.132886	1.382060	13.35
			16-QAM	RB5#0	0.974329	1.286871	13.36

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note2}
LTE-M1 Band 66	1.4 MHz	LCH	QPSK	RB6#0	1.126430	1.596849	15.1
			16-QAM	RB5#0	0.965793	1.257373	15.2
		MCH	QPSK	RB6#0	1.126691	1.553441	15.3
			16-QAM	RB5#0	0.963513	1.180171	15.4
		HCH	QPSK	RB6#0	1.128330	1.522920	15.5
			16-QAM	RB5#0	0.971012	1.340553	15.6
	3 MHz	LCH	QPSK	RB6#0	1.130763	1.439198	15.7
			16-QAM	RB5#0	0.963975	1.211357	15.8
		MCH	QPSK	RB6#0	1.132396	1.474375	15.9
			16-QAM	RB5#0	0.964406	1.204768	15.10
		HCH	QPSK	RB6#0	1.132079	1.424855	15.11
			16-QAM	RB5#0	0.961495	1.325385	15.12
	5 MHz	LCH	QPSK	RB6#0	1.133021	1.548464	15.13
			16-QAM	RB5#0	0.965306	1.252045	15.14
		MCH	QPSK	RB6#0	1.135686	1.402119	15.15
			16-QAM	RB5#0	0.965834	1.332939	15.16
		HCH	QPSK	RB6#0	1.125974	1.550708	15.17
			16-QAM	RB5#0	0.960194	1.190929	15.18
	10 MHz	LCH	QPSK	RB6#0	1.119052	1.385865	15.19
			16-QAM	RB5#0	0.966772	1.208547	15.20
		MCH	QPSK	RB6#0	1.143012	1.441832	15.21
			16-QAM	RB5#0	0.961596	1.177948	15.22
		HCH	QPSK	RB6#0	1.133177	1.387088	15.23
			16-QAM	RB5#0	0.963086	1.371227	15.24
	15 MHz	LCH	QPSK	RB6#0	1.129096	1.438803	15.25
			16-QAM	RB5#0	0.974197	1.348132	15.26
		MCH	QPSK	RB6#0	1.125708	1.441043	15.27
			16-QAM	RB5#0	0.960963	1.233005	15.28
		HCH	QPSK	RB6#0	1.120360	1.397069	15.29
			16-QAM	RB5#0	0.971206	1.226799	15.30
	20 MHz	LCH	QPSK	RB6#0	1.138919	1.491882	15.31
			16-QAM	RB5#0	0.978327	1.216091	15.32
		MCH	QPSK	RB6#0	1.140545	1.386119	15.33
			16-QAM	RB5#0	0.976522	1.323870	15.34
		HCH	QPSK	RB6#0	1.141988	1.385297	15.35
			16-QAM	RB5#0	0.972912	1.280908	15.36

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note2}
LTE-M1 Band 85	5 MHz	LCH	QPSK	RB6#0	1.132881	1.361963	16.1
			16-QAM	RB5#0	0.964262	1.368612	16.2
		MCH	QPSK	RB6#0	1.109315	1.338923	16.3
			16-QAM	RB5#0	0.953616	1.265292	16.4
		HCH	QPSK	RB6#0	1.116567	1.345221	16.5
			16-QAM	RB5#0	0.960262	1.361424	16.6
	10 MHz	LCH	QPSK	RB6#0	1.112704	1.387922	16.7
			16-QAM	RB5#0	0.960369	1.275173	16.8
		MCH	QPSK	RB6#0	1.115128	1.388399	16.9
			16-QAM	RB5#0	0.953115	1.245240	16.10
		HCH	QPSK	RB6#0	1.125390	1.354156	16.11
			16-QAM	RB5#0	0.966485	1.421546	18.12

NB-IoT Mode Test Data

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note 2}
NB-IoT Band 2	3.75kHz	LCH	QPSK	RB1#0	0.062340	0.040592	17.1
			BPSK	RB1#0	0.060545	0.036978	17.2
		MCH	QPSK	RB1#0	0.068895	0.037823	17.3
			BPSK	RB1#0	0.060975	0.036900	17.4
		HCH	QPSK	RB1#0	0.066882	0.040967	17.5
			BPSK	RB1#0	0.060713	0.036779	17.6
	15kHz	LCH	QPSK	RB1#0	0.119411	0.114792	17.7
				RB12#0	0.186307	0.247149	17.13
			BPSK	RB1#0	0.127203	0.102903	17.8
				RB12#0	0.187213	0.246489	17.14
		MCH	QPSK	RB1#0	0.116436	0.116120	17.9
			BPSK	RB1#0	0.125894	0.105770	17.10
		HCH	QPSK	RB1#0	0.118622	0.115789	17.11
				RB12#0	0.189551	0.254694	17.15
			BPSK	RB1#0	0.125840	0.102269	17.12

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note 2}
NB-IoT Band 4	3.75kHz	LCH	QPSK	RB1#0	0.061069	0.038425	18.1
			BPSK	RB1#0	0.057502	0.036075	18.2
		MCH	QPSK	RB1#0	0.063530	0.038404	18.3
			BPSK	RB1#0	0.057611	0.035269	18.4
		HCH	QPSK	RB1#0	0.062785	0.041021	18.5
			BPSK	RB1#0	0.058824	0.034898	18.6
	15kHz	LCH	QPSK	RB1#0	0.117743	0.115349	18.7
				RB12#0	0.187954	0.247121	18.13
			BPSK	RB1#0	0.121681	0.104126	18.8
				RB12#0	0.190412	0.254759	18.14
		MCH	QPSK	RB1#0	0.119075	0.115452	18.9
			BPSK	RB1#0	0.126265	0.105811	18.10
		HCH	QPSK	RB1#0	0.117893	0.115444	18.11
				RB12#0	0.187101	0.255632	18.15
			BPSK	RB1#0	0.126152	0.112588	18.12

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note 2}
NB-IoT Band 5	3.75kHz	LCH	QPSK	RB1#0	0.060486	0.038523	19.1
			BPSK	RB1#0	0.057480	0.036667	19.2
		MCH	QPSK	RB1#0	0.067876	0.038610	19.3
			BPSK	RB1#0	0.059343	0.037142	19.4
		HCH	QPSK	RB1#0	0.062505	0.040733	19.5
			BPSK	RB1#0	0.058487	0.036668	19.6
	15kHz	LCH	QPSK	RB1#0	0.115954	0.114972	19.7
				RB12#0	0.186392	0.247237	19.13
			BPSK	RB1#0	0.122396	0.105240	19.8
		MCH	QPSK	RB1#0	0.130133	0.130261	19.9
				RB12#0	0.186722	0.247239	19.14
			BPSK	RB1#0	0.120690	0.101725	19.10
		HCH	QPSK	RB1#0	0.122286	0.116257	19.11
				RB12#0	0.186323	0.248357	19.15
BPSK	RB1#0	0.120749	0.102926	19.12			

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note 2}
NB-IoT Band 12	3.75kHz	LCH	QPSK	RB1#0	0.060119	0.037993	20.1
			BPSK	RB1#0	0.057836	0.036723	20.2
		MCH	QPSK	RB1#0	0.061481	0.037713	20.3
			BPSK	RB1#0	0.058226	0.036184	20.4
		HCH	QPSK	RB1#0	0.066708	0.037826	20.5
			BPSK	RB1#0	0.058279	0.037022	20.6
	15kHz	LCH	QPSK	RB1#0	0.119407	0.116180	20.7
				RB12#0	0.185813	0.257442	20.13
			BPSK	RB1#0	0.120714	0.103324	20.8
		MCH	QPSK	RB1#0	0.119651	0.115453	20.9
				RB12#0	0.185483	0.248515	20.14
			BPSK	RB1#0	0.119870	0.102274	20.10
		HCH	QPSK	RB1#0	0.116866	0.115537	20.11
				RB12#0	0.186350	0.248184	20.15
BPSK	RB1#0	0.121884	0.112400	20.12			

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note 2}
NB-IoT Band 13	3.75kHz	LCH	QPSK	RB1#0	0.062540	0.038514	21.1
			BPSK	RB1#0	0.058925	0.037330	21.2
		MCH	QPSK	RB1#0	0.063317	0.038529	21.3
			BPSK	RB1#0	0.057826	0.036527	21.4
		HCH	QPSK	RB1#0	0.061130	0.038409	21.5
			BPSK	RB1#0	0.057899	0.036942	21.6
	15kHz	LCH	QPSK	RB1#0	0.118680	0.115466	21.7
				RB12#0	0.186624	0.246499	21.13
			BPSK	RB1#0	0.121545	0.101024	21.8
		MCH	QPSK	RB1#0	0.118919	0.115760	21.9
				RB12#0	0.185845	0.257565	21.14
			BPSK	RB1#0	0.121343	0.105680	21.10
		HCH	QPSK	RB1#0	0.125086	0.115067	21.11
				RB12#0	0.185769	0.248119	21.15
BPSK	RB1#0		0.121293	0.104895	21.12		

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note 2}
NB-IoT Band 25	3.75kHz	LCH	QPSK	RB1#0	0.063873	0.041619	25.1
			BPSK	RB1#0	0.060914	0.036921	25.2
		MCH	QPSK	RB1#0	0.064982	0.038362	25.3
			BPSK	RB1#0	0.062120	0.037548	25.4
		HCH	QPSK	RB1#0	0.066805	0.038738	25.5
			BPSK	RB1#0	0.061363	0.036644	25.6
	15kHz	LCH	QPSK	RB1#0	0.117036	0.114123	25.7
				RB12#0	0.188105	0.247108	25.13
			BPSK	RB1#0	0.126165	0.112731	25.8
		MCH	QPSK	RB1#0	0.114383	0.102269	25.9
				RB12#0	0.186493	0.247420	25.14
			BPSK	RB1#0	0.126662	0.101749	25.10
		HCH	QPSK	RB1#0	0.118104	0.116112	25.11
				RB12#0	0.189247	0.247184	25.15
BPSK	RB1#0		0.129881	0.112278	25.12		

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note 2}
NB-IoT Band 66	3.75kHz	LCH	QPSK	RB1#0	0.064426	0.038478	26.1
			BPSK	RB1#0	0.061662	0.036128	26.2
		MCH	QPSK	RB1#0	0.064377	0.040776	26.3
			BPSK	RB1#0	0.059193	0.036110	26.4
		HCH	QPSK	RB1#0	0.064017	0.038736	26.5
			BPSK	RB1#0	0.059672	0.035712	26.6
	15kHz	LCH	QPSK	RB1#0	0.118092	0.116758	26.7
				RB12#0	0.190620	0.254781	26.13
			BPSK	RB1#0	0.125315	0.102483	26.8
		MCH	QPSK	RB1#0	0.117913	0.115411	26.9
				RB12#0	0.188728	0.254523	26.14
			BPSK	RB1#0	0.123088	0.102637	26.10
		HCH	QPSK	RB1#0	0.119126	0.116155	26.11
				RB12#0	0.187591	0.254671	26.15
BPSK	RB1#0		0.124488	0.100021	26.12		

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note 2}
NB-IoT Band 71	3.75kHz	LCH	QPSK	RB1#0	0.065484	0.038797	27.1
			BPSK	RB1#0	0.058087	0.036864	27.2
		MCH	QPSK	RB1#0	0.064685	0.038493	27.3
			BPSK	RB1#0	0.058546	0.036723	27.4
		HCH	QPSK	RB1#0	0.064256	0.041207	27.5
			BPSK	RB1#0	0.057238	0.036797	27.6
	15kHz	LCH	QPSK	RB1#0	0.118473	0.129878	27.7
				RB12#0	0.185560	0.249220	27.13
			BPSK	RB1#0	0.119710	0.102094	27.8
		MCH	QPSK	RB1#0	0.118841	0.116513	27.9
				RB12#0	0.186008	0.258174	27.14
			BPSK	RB1#0	0.123746	0.118917	27.10
		HCH	QPSK	RB1#0	0.119523	0.116185	27.11
				RB12#0	0.186030	0.247928	27.15
			BPSK	RB1#0	0.120189	0.101680	27.12

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Refer to Plot ^{Note 2}
NB-IoT Band 85	3.75kHz	LCH	QPSK	RB1#0	0.063314	0.038589	28.1
			BPSK	RB1#0	0.058906	0.037132	28.2
		MCH	QPSK	RB1#0	0.063433	0.038850	28.3
			BPSK	RB1#0	0.058366	0.036759	28.4
		HCH	QPSK	RB1#0	0.062201	0.037982	28.5
			BPSK	RB1#0	0.059203	0.036643	28.6
	15kHz	LCH	QPSK	RB1#0	0.118229	0.116087	28.7
				RB12#0	0.186858	0.248210	28.13
			BPSK	RB1#0	0.119794	0.103245	28.8
		MCH	QPSK	RB1#0	0.119020	0.116029	28.9
				RB12#0	0.185763	0.246536	28.14
			BPSK	RB1#0	0.122590	0.101715	28.10
		HCH	QPSK	RB1#0	0.119557	0.116023	28.11
				RB12#0	0.185309	0.246475	28.15
			BPSK	RB1#0	0.120000	0.102066	28.12

A.4 Frequency Stability

GPRS 850

Test Conditions		Frequency Deviation						Verdict
Power (V _{DC})	Temperature (°C)	LCH 824.2 MHz		MCH 836.6 MHz		HCH 848.8 MHz		
		Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	
3.8	-30	21.51	±2060.5	22.49	±2091.5	23.21	±2122	Pass
	-20	24.34		24.85		23.32		
	-10	23.73		24.28		23.74		
	0	20.66		23.56		24.93		
	+10	20.45		24.25		20.58		
	+20	21.09		21.48		21.85		
	+30	24.29		22.84		23.13		
	+40	24.83		24.54		24.46		
+50	21.51	21.98	23.86					
4.4	+25	20.81		21.02		22.93		
3.3	+25	21.41		21.96		24.97		

GPRS 1900

Test Conditions		Frequency Deviation						Verdict
Power (V _{DC})	Temperature (°C)	LCH 1850.2 MHz		MCH 1880 MHz		HCH 1909.8 MHz		
		Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	
3.8	-30	23.44	±4625.5	21.29	±4700.0	24.89	±4774.5	Pass
	-20	20.82		24.96		23.41		
	-10	22.69		21.89		23.01		
	0	20.91		22.47		23.62		
	+10	24.83		22.94		22.43		
	+20	24.22		24.49		22.96		
	+30	20.86		24.31		23.86		
	+40	21.83		21.44		23.34		
+50	21.08	22.66	23.28					
4.4	+25	22.01		22.08		20.28		
3.3	+25	24.19		22.93		21.79		

EGPRS 850

Test Conditions		Frequency Deviation						Verdict
Power (V _{DC})	Temperature (°C)	LCH 824.2 MHz		MCH 836.6 MHz		HCH 848.8 MHz		
		Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	
3.8	-30	23.73	±2060.5	22.94	±2091.5	21.38	±2122	Pass
	-20	24.08		21.43		22.81		
	-10	22.86		21.11		23.36		
	0	22.01		21.67		20.56		
	+10	24.84		20.52		21.52		
	+20	22.36		23.56		22.04		
	+30	23.93		20.11		22.62		
	+40	22.52		20.46		21.74		
	+50	23.96		20.67		20.13		
4.4	+25	21.53	20.67	21.92				
3.3	+25	23.19	24.91	24.28				

EGPRS 1900

Test Conditions		Frequency Deviation						Verdict
Power (V _{DC})	Temperature (°C)	LCH 1850.2 MHz		MCH 1880 MHz		HCH 1909.8 MHz		
		Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	
3.8	-30	21.23	±4625.5	23.27	±4700.0	22.84	±4774.5	Pass
	-20	22.32		21.46		22.52		
	-10	22.82		22.64		24.79		
	0	21.59		24.76		23.55		
	+10	24.46		22.51		21.54		
	+20	23.12		21.09		23.63		
	+30	21.16		24.38		22.47		
	+40	21.89		21.03		24.97		
	+50	23.54		20.51		24.87		
4.4	+25	24.73	23.54	24.21				
3.3	+25	22.52	22.92	23.32				

LTE-M1 Band 2 QPSK 20 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1880 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	20.72	±4700	Pass
	-20	24.52		
	-10	24.02		
	0	22.04		
	+10	20.34		
	+20	21.84		
	+30	20.29		
	+40	20.75		
	+50	20.88		
4.4	+25	22.15		
3.3	+25	21.85		

LTE-M1 Band 2 16QAM 20 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1880 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	21.27	±4700	Pass
	-20	24.22		
	-10	20.76		
	0	22.15		
	+10	22.29		
	+20	23.03		
	+30	22.16		
	+40	22.53		
	+50	22.86		
4.4	+25	22.41		
3.3	+25	23.75		

LTE-M1 Band 4 QPSK 20 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1732.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	25.47	±4331.25	Pass
	-20	26.16		
	-10	24.25		
	0	26.93		
	+10	26.92		
	+20	23.24		
	+30	24.69		
	+40	25.58		
	+50	26.98		
4.4	+25	23.13		
3.3	+25	26.63		

LTE-M1 Band 4 16QAM 20 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1732.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	25.36	±4331.25	Pass
	-20	24.43		
	-10	26.09		
	0	24.98		
	+10	23.67		
	+20	26.92		
	+30	27.24		
	+40	25.52		
	+50	26.41		
4.4	+25	24.96		
3.3	+25	23.93		

LTE-M1 Band 5 QPSK 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 836.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	20.66	±2091.25	Pass
	-20	22.62		
	-10	21.16		
	0	21.33		
	+10	21.28		
	+20	21.81		
	+30	21.53		
	+40	22.23		
+50	19.48			
4.4	+25	23.72		
3.3	+25	23.82		

LTE-M1 Band 5 16QAM 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 836.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	20.92	±2091.25	Pass
	-20	21.41		
	-10	23.46		
	0	19.59		
	+10	22.23		
	+20	23.96		
	+30	22.92		
	+40	21.37		
+50	23.71			
4.4	+25	23.59		
3.3	+25	23.82		

LTE-M1 Band 12 QPSK 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 707.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	24.22	±1768.75	Pass
	-20	21.27		
	-10	25.83		
	0	23.99		
	+10	25.22		
	+20	23.82		
	+30	24.31		
	+40	25.72		
	+50	24.65		
4.4	+25	22.29		
3.3	+25	22.92		

LTE-M1 Band 12 16QAM 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 707.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	23.32	±1768.75	Pass
	-20	24.94		
	-10	22.68		
	0	24.12		
	+10	24.88		
	+20	21.54		
	+30	23.48		
	+40	24.31		
	+50	22.12		
4.4	+25	23.23		
3.3	+25	21.21		

LTE-M1 Band 13 QPSK 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 782 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	22.74	±1955	Pass
	-20	22.27		
	-10	23.4		
	0	25.23		
	+10	25.71		
	+20	25.62		
	+30	24.07		
	+40	24.46		
	+50	21.92		
4.4	+25	22.71		
3.3	+25	25.92		

LTE-M1 Band 13 16QAM 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 782 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	22.39	±1955	Pass
	-20	22.48		
	-10	23.22		
	0	23.44		
	+10	24.31		
	+20	25.89		
	+30	23.22		
	+40	24.28		
	+50	21.07		
4.4	+25	24.63		
3.3	+25	23.36		

LTE-M1 Band 25 QPSK 20 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1882.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	26.23	±4706.25	Pass
	-20	23.85		
	-10	26.27		
	0	23.82		
	+10	24.27		
	+20	23.57		
	+30	25.92		
	+40	22.85		
	+50	24.04		
4.4	+25	26.46		
3.3	+25	26.78		

LTE-M1 Band 25 16QAM 20 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1882.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	26.65	±4706.25	Pass
	-20	25.81		
	-10	26.28		
	0	25.44		
	+10	24.43		
	+20	24.37		
	+30	26.62		
	+40	22.01		
	+50	22.89		
4.4	+25	23.66		
3.3	+25	23.33		

LTE-M1 Band 66 QPSK 20 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1745 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	23.13	±4362.5	Pass
	-20	24.51		
	-10	24.13		
	0	23.11		
	+10	23.75		
	+20	26.53		
	+30	22.21		
	+40	25.45		
	+50	23.62		
4.4	+25	24.39		
3.3	+25	24.95		

LTE-M1 Band 66 16QAM 20 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1745 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	26.11	±4362.5	Pass
	-20	22.28		
	-10	26.68		
	0	24.08		
	+10	24.43		
	+20	26.35		
	+30	25.52		
	+40	24.04		
	+50	23.12		
4.4	+25	24.53		
3.3	+25	25.74		

LTE-M1 Band 85 QPSK 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 707 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	20.05	±1767.5	Pass
	-20	19.69		
	-10	17.64		
	0	19.31		
	+10	20.69		
	+20	16.69		
	+30	18.82		
	+40	19.65		
	+50	18.46		
4.4	+25	19.27		
3.3	+25	19.24		

LTE-M1 Band 85 16QAM 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 707 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	16.87	±1767.5	Pass
	-20	17.39		
	-10	17.26		
	0	18.43		
	+10	16.53		
	+20	16.32		
	+30	20.99		
	+40	16.37		
	+50	16.24		
4.4	+25	17.76		
3.3	+25	18.73		

NB-IoT Band2 QPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1880 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	21.74	±4700	Pass
	-20	24.96		
	-10	23.22		
	0	21.14		
	+10	22.21		
	+20	25.43		
	+30	23.01		
	+40	21.68		
+50	23.18			
4.4	+25	22.73		
3.3	+25	21.83		

NB-IoT Band2 BPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1880 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	25.59	±4700	Pass
	-20	21.11		
	-10	24.74		
	0	23.85		
	+10	25.44		
	+20	21.84		
	+30	24.87		
	+40	23.77		
+50	22.13			
4.4	+25	24.66		
3.3	+25	21.12		

NB-IoT Band4 QPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1732.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	25.37	±4,331.25	Pass
	-20	21.31		
	-10	23.99		
	0	24.31		
	+10	25.81		
	+20	24.06		
	+30	22.92		
	+40	21.81		
	+50	23.17		
4.4	+25	22.54		
3.3	+25	25.32		

NB-IoT Band4 BPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1732.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	24.19	±4,331.25	Pass
	-20	22.77		
	-10	22.71		
	0	23.11		
	+10	23.81		
	+20	24.02		
	+30	25.82		
	+40	22.64		
	+50	23.81		
4.4	+25	22.03		
3.3	+25	25.69		

NB-IoT Band5 QPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1732.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	21.82	±4,331.25	Pass
	-20	21.74		
	-10	21.87		
	0	23.95		
	+10	21.77		
	+20	23.54		
	+30	24.69		
	+40	21.68		
	+50	23.48		
4.4	+25	25.55		
3.3	+25	23.47		

NB-IoT Band5 BPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1732.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	25.34	±4,331.25	Pass
	-20	23.75		
	-10	21.65		
	0	24.63		
	+10	23.55		
	+20	25.29		
	+30	25.39		
	+40	23.59		
	+50	23.85		
4.4	+25	22.85		
3.3	+25	25.89		

NB-IoT Band12 QPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 707.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	22.32	±1768.75	Pass
	-20	22.93		
	-10	21.32		
	0	25.39		
	+10	24.28		
	+20	24.41		
	+30	22.87		
	+40	22.53		
4.4	+25	22.52		
3.3	+25	23.95		

NB-IoT Band12 BPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 707.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	22.22	±1768.75	Pass
	-20	23.89		
	-10	24.82		
	0	24.43		
	+10	25.14		
	+20	23.77		
	+30	24.01		
	+40	23.16		
4.4	+25	25.44		
3.3	+25	24.53		

NB-IoT Band13 QPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 782 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	25.66	±1955	Pass
	-20	25.94		
	-10	23.34		
	0	22.87		
	+10	21.31		
	+20	22.86		
	+30	21.35		
	+40	25.62		
+50	25.22			
4.4	+25	21.76		
3.3	+25	22.87		

NB-IoT Band13 BPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 782 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	24.47	±1955	Pass
	-20	22.24		
	-10	21.88		
	0	22.86		
	+10	21.46		
	+20	23.33		
	+30	21.54		
	+40	23.73		
+50	23.79			
4.4	+25	25.71		
3.3	+25	23.31		

NB-IoT Band25 QPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1882.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	25.77	±4,706.25	Pass
	-20	22.63		
	-10	25.03		
	0	22.69		
	+10	23.25		
	+20	21.15		
	+30	24.99		
	+40	24.15		
	+50	21.84		
4.4	+25	23.25		
3.3	+25	23.41		

NB-IoT Band25 BPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1882.5 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	25.58	±4,706.25	Pass
	-20	24.83		
	-10	25.49		
	0	25.37		
	+10	25.05		
	+20	22.76		
	+30	21.39		
	+40	25.13		
	+50	25.71		
4.4	+25	25.69		
3.3	+25	22.55		

NB-IoT Band66 QPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1745 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	24.91	±4362.5	Pass
	-20	22.71		
	-10	24.56		
	0	22.6		
	+10	21.77		
	+20	21.78		
	+30	23.34		
	+40	21.52		
+50	25.53			
4.4	+25	23.46		
3.3	+25	24.73		

NB-IoT Band66 BPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 1745 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	24.41	±4362.5	Pass
	-20	24.55		
	-10	21.31		
	0	23.94		
	+10	22.94		
	+20	22.06		
	+30	24.11		
	+40	21.48		
+50	25.05			
4.4	+25	22.84		
3.3	+25	22.42		

NB-IoT Band71 QPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 683 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	21.29	±1707.5	Pass
	-20	25.94		
	-10	21.69		
	0	23.45		
	+10	21.69		
	+20	22.71		
	+30	23.04		
	+40	22.11		
+50	25.78			
4.4	+25	23.85		
3.3	+25	21.38		

NB-IoT Band71 BPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 683 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	21.05	±1707.5	Pass
	-20	23.41		
	-10	24.48		
	0	21.34		
	+10	25.36		
	+20	21.82		
	+30	25.41		
	+40	21.26		
+50	23.63			
4.4	+25	23.33		
3.3	+25	23.08		

NB-IoT Band85 QPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 707 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	23.25	±1767.5	Pass
	-20	22.86		
	-10	24.29		
	0	23.72		
	+10	24.67		
	+20	21.76		
	+30	22.22		
	+40	21.66		
+50	21.46			
4.4	+25	23.52		
3.3	+25	23.44		

NB-IoT Band85 BPSK 3.75kHz

Test Conditions		Frequency Deviation		Verdict
Power (V _{DC})	Temperature (°C)	MCH 707 MHz		
		Value (Hz)	Limits (Hz)	
3.8	-30	24.87	±1767.5	Pass
	-20	23.99		
	-10	21.58		
	0	25.28		
	+10	23.32		
	+20	25.76		
	+30	25.52		
	+40	21.16		
+50	24.72			
4.4	+25	22.41		
3.3	+25	23.42		

A.5 Spurious Emission at Antenna Terminals

Note 1: GSM and EGPRS modes have been verified, and only the worst data with different bandwidth for LTE are shown here.

Note 2: The frequencies of verdict which are marked by "N/A" should be ignored because they are UE carrier frequency.

Note 3: Test plots please refer to the document "Annex No.:BL-EC2140498-501 Data Part 3.pdf".

GSM Mode Test Verdict

Test Band	Test Channel	Refer to Plot ^{Note3}	Verdict
GPRS 850	LCH	1.1	Pass
	MCH	1.2	Pass
	HCH	1.3	Pass
GPRS 1900	LCH	2.1	Pass
	MCH	2.2	Pass
	HCH	2.3	Pass
EGPRS 850	LCH	3.1	Pass
	MCH	3.2	Pass
	HCH	3.3	Pass
EGPRS 1900	LCH	4.1	Pass
	MCH	4.2	Pass
	HCH	4.3	Pass

LTE-M1 Mode Test Data

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
LTE-M1 Band 2	1.4 MHz	LCH	QPSK	RB1#0	5.1	Pass
			16-QAM	RB1#0	6.1	Pass
		MCH	QPSK	RB1#0	5.2	Pass
			16-QAM	RB1#0	6.2	Pass
		HCH	QPSK	RB1#0	5.3	Pass
			16-QAM	RB1#0	6.3	Pass
	3 MHz	LCH	QPSK	RB1#0	5.4	Pass
			16-QAM	RB1#0	6.4	Pass
		MCH	QPSK	RB1#0	5.5	Pass
			16-QAM	RB1#0	6.5	Pass
		HCH	QPSK	RB1#0	5.6	Pass
			16-QAM	RB1#0	6.6	Pass
	5 MHz	LCH	QPSK	RB1#0	5.7	Pass
			16-QAM	RB1#0	6.7	Pass
		MCH	QPSK	RB1#0	5.8	Pass
			16-QAM	RB1#0	6.8	Pass
		HCH	QPSK	RB1#0	5.9	Pass
			16-QAM	RB1#0	6.9	Pass
	10 MHz	LCH	QPSK	RB1#0	5.10	Pass
			16-QAM	RB1#0	6.10	Pass
		MCH	QPSK	RB1#0	5.11	Pass
			16-QAM	RB1#0	6.11	Pass
		HCH	QPSK	RB1#0	5.12	Pass
			16-QAM	RB1#0	6.12	Pass
15 MHz	LCH	QPSK	RB1#0	5.13	Pass	
		16-QAM	RB1#0	6.13	Pass	
	MCH	QPSK	RB1#0	5.14	Pass	
		16-QAM	RB1#0	6.14	Pass	
	HCH	QPSK	RB1#0	5.15	Pass	
		16-QAM	RB1#0	6.15	Pass	
20 MHz	LCH	QPSK	RB1#0	5.16	Pass	
		16-QAM	RB1#0	6.16	Pass	
	MCH	QPSK	RB1#0	5.17	Pass	
		16-QAM	RB1#0	6.17	Pass	
	HCH	QPSK	RB1#0	5.18	Pass	
		16-QAM	RB1#0	6.18	Pass	

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
LTE-M1 Band 4	1.4 MHz	LCH	QPSK	RB1#0	7.1	Pass
			16-QAM	RB1#0	8.1	Pass
		MCH	QPSK	RB1#0	7.2	Pass
			16-QAM	RB1#0	8.2	Pass
		HCH	QPSK	RB1#0	7.3	Pass
			16-QAM	RB1#0	8.3	Pass
	3 MHz	LCH	QPSK	RB1#0	7.4	Pass
			16-QAM	RB1#0	8.4	Pass
		MCH	QPSK	RB1#0	7.5	Pass
			16-QAM	RB1#0	8.5	Pass
		HCH	QPSK	RB1#0	7.6	Pass
			16-QAM	RB1#0	8.6	Pass
	5 MHz	LCH	QPSK	RB1#0	7.7	Pass
			16-QAM	RB1#0	8.7	Pass
		MCH	QPSK	RB1#0	7.8	Pass
			16-QAM	RB1#0	8.8	Pass
		HCH	QPSK	RB1#0	7.9	Pass
			16-QAM	RB1#0	8.9	Pass
	10 MHz	LCH	QPSK	RB1#0	7.10	Pass
			16-QAM	RB1#0	8.10	Pass
		MCH	QPSK	RB1#0	7.11	Pass
			16-QAM	RB1#0	8.11	Pass
		HCH	QPSK	RB1#0	7.12	Pass
			16-QAM	RB1#0	8.12	Pass
15 MHz	LCH	QPSK	RB1#0	7.13	Pass	
		16-QAM	RB1#0	8.13	Pass	
	MCH	QPSK	RB1#0	7.14	Pass	
		16-QAM	RB1#0	8.14	Pass	
	HCH	QPSK	RB1#0	7.15	Pass	
		16-QAM	RB1#0	8.15	Pass	
20 MHz	LCH	QPSK	RB1#0	7.16	Pass	
		16-QAM	RB1#0	8.16	Pass	
	MCH	QPSK	RB1#0	7.17	Pass	
		16-QAM	RB1#0	8.17	Pass	
	HCH	QPSK	RB1#0	7.18	Pass	
		16-QAM	RB1#0	8.18	Pass	

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
LTE-M1 Band 5	1.4 MHz	LCH	QPSK	RB1#0	9.1	Pass
			16-QAM	RB1#0	10.1	Pass
		MCH	QPSK	RB1#0	9.2	Pass
			16-QAM	RB1#0	10.2	Pass
		HCH	QPSK	RB1#0	9.3	Pass
			16-QAM	RB1#0	10.3	Pass
	3 MHz	LCH	QPSK	RB1#0	9.4	Pass
			16-QAM	RB1#0	10.4	Pass
		MCH	QPSK	RB1#0	9.5	Pass
			16-QAM	RB1#0	10.5	Pass
		HCH	QPSK	RB1#0	9.6	Pass
			16-QAM	RB1#0	10.6	Pass
	5 MHz	LCH	QPSK	RB1#0	9.7	Pass
			16-QAM	RB1#0	10.7	Pass
		MCH	QPSK	RB1#0	9.8	Pass
			16-QAM	RB1#0	10.8	Pass
		HCH	QPSK	RB1#0	9.9	Pass
			16-QAM	RB1#0	10.9	Pass
	10 MHz	LCH	QPSK	RB1#0	9.10	Pass
			16-QAM	RB1#0	10.10	Pass
		MCH	QPSK	RB1#0	9.11	Pass
			16-QAM	RB1#0	10.11	Pass
		HCH	QPSK	RB1#0	9.12	Pass
			16-QAM	RB1#0	10.12	Pass

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
LTE-M1 Band 12	1.4 MHz	LCH	QPSK	RB1#0	11.1	Pass
			16-QAM	RB1#0	12.1	Pass
		MCH	QPSK	RB1#0	11.2	Pass
			16-QAM	RB1#0	12.2	Pass
		HCH	QPSK	RB1#0	11.3	Pass
			16-QAM	RB1#0	12.3	Pass
	3 MHz	LCH	QPSK	RB1#0	11.4	Pass
			16-QAM	RB1#0	12.4	Pass
		MCH	QPSK	RB1#0	11.5	Pass
			16-QAM	RB1#0	12.5	Pass
		HCH	QPSK	RB1#0	11.6	Pass
			16-QAM	RB1#0	12.6	Pass
	5 MHz	LCH	QPSK	RB1#0	11.7	Pass
			16-QAM	RB1#0	12.7	Pass
		MCH	QPSK	RB1#0	11.8	Pass
			16-QAM	RB1#0	12.8	Pass
		HCH	QPSK	RB1#0	11.9	Pass
			16-QAM	RB1#0	12.9	Pass
	10 MHz	LCH	QPSK	RB1#0	11.10	Pass
			16-QAM	RB1#0	12.10	Pass
		MCH	QPSK	RB1#0	11.11	Pass
			16-QAM	RB1#0	12.11	Pass
		HCH	QPSK	RB1#0	11.12	Pass
			16-QAM	RB1#0	12.12	Pass

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
LTE-M1 Band 13	5 MHz	LCH	QPSK	RB1#0	13.1	Pass
			16-QAM	RB1#0	14.1	Pass
		MCH	QPSK	RB1#0	13.2	Pass
			16-QAM	RB1#0	14.2	Pass
		HCH	QPSK	RB1#0	13.3	Pass
			16-QAM	RB1#0	14.3	Pass
	10 MHz	MCH	QPSK	RB1#0	13.4	Pass
			16-QAM	RB1#0	14.4	Pass

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
LTE-M1 Band 25	1.4 MHz	LCH	QPSK	RB1#0	21.1	Pass
			16-QAM	RB1#0	22.1	Pass
		MCH	QPSK	RB1#0	21.2	Pass
			16-QAM	RB1#0	22.2	Pass
		HCH	QPSK	RB1#0	21.3	Pass
			16-QAM	RB1#0	22.3	Pass
	3 MHz	LCH	QPSK	RB1#0	21.4	Pass
			16-QAM	RB1#0	22.4	Pass
		MCH	QPSK	RB1#0	21.5	Pass
			16-QAM	RB1#0	22.5	Pass
		HCH	QPSK	RB1#0	21.6	Pass
			16-QAM	RB1#0	22.6	Pass
	5 MHz	LCH	QPSK	RB1#0	21.7	Pass
			16-QAM	RB1#0	22.7	Pass
		MCH	QPSK	RB1#0	21.8	Pass
			16-QAM	RB1#0	22.8	Pass
		HCH	QPSK	RB1#0	21.9	Pass
			16-QAM	RB1#0	22.9	Pass
	10 MHz	LCH	QPSK	RB1#0	21.10	Pass
			16-QAM	RB1#0	22.10	Pass
		MCH	QPSK	RB1#0	21.11	Pass
			16-QAM	RB1#0	22.11	Pass
		HCH	QPSK	RB1#0	21.12	Pass
			16-QAM	RB1#0	22.12	Pass
15 MHz	LCH	QPSK	RB1#0	21.13	Pass	
		16-QAM	RB1#0	22.13	Pass	
	MCH	QPSK	RB1#0	21.14	Pass	
		16-QAM	RB1#0	22.14	Pass	
	HCH	QPSK	RB1#0	21.15	Pass	
		16-QAM	RB1#0	22.15	Pass	
20 MHz	LCH	QPSK	RB1#0	21.16	Pass	
		16-QAM	RB1#0	22.16	Pass	
	MCH	QPSK	RB1#0	21.17	Pass	
		16-QAM	RB1#0	22.17	Pass	
	HCH	QPSK	RB1#0	21.18	Pass	
		16-QAM	RB1#0	22.18	Pass	

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
LTE-M1 Band 66	1.4 MHz	LCH	QPSK	RB1#0	25.1	Pass
			16-QAM	RB1#0	26.1	Pass
		MCH	QPSK	RB1#0	25.2	Pass
			16-QAM	RB1#0	26.2	Pass
		HCH	QPSK	RB1#0	25.3	Pass
			16-QAM	RB1#0	26.3	Pass
	3 MHz	LCH	QPSK	RB1#0	25.4	Pass
			16-QAM	RB1#0	26.4	Pass
		MCH	QPSK	RB1#0	25.5	Pass
			16-QAM	RB1#0	26.5	Pass
		HCH	QPSK	RB1#0	25.6	Pass
			16-QAM	RB1#0	26.6	Pass
	5 MHz	LCH	QPSK	RB1#0	25.7	Pass
			16-QAM	RB1#0	26.7	Pass
		MCH	QPSK	RB1#0	25.8	Pass
			16-QAM	RB1#0	26.8	Pass
		HCH	QPSK	RB1#0	25.9	Pass
			16-QAM	RB1#0	26.9	Pass
	10 MHz	LCH	QPSK	RB1#0	25.10	Pass
			16-QAM	RB1#0	26.10	Pass
		MCH	QPSK	RB1#0	25.11	Pass
			16-QAM	RB1#0	26.11	Pass
		HCH	QPSK	RB1#0	25.12	Pass
			16-QAM	RB1#0	26.12	Pass
	15 MHz	LCH	QPSK	RB1#0	25.13	Pass
			16-QAM	RB1#0	26.13	Pass
		MCH	QPSK	RB1#0	25.14	Pass
			16-QAM	RB1#0	26.14	Pass
		HCH	QPSK	RB1#0	25.15	Pass
			16-QAM	RB1#0	26.15	Pass
	20 MHz	LCH	QPSK	RB1#0	25.16	Pass
			16-QAM	RB1#0	26.16	Pass
		MCH	QPSK	RB1#0	25.17	Pass
			16-QAM	RB1#0	26.17	Pass
		HCH	QPSK	RB1#0	25.18	Pass
			16-QAM	RB1#0	26.18	Pass

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
LTE-M1 Band 85	5 MHz	LCH	QPSK	RB1#0	27.1	Pass
			16-QAM	RB1#0	28.1	Pass
		MCH	QPSK	RB1#0	27.2	Pass
			16-QAM	RB1#0	28.2	Pass
		HCH	QPSK	RB1#0	27.3	Pass
			16-QAM	RB1#0	28.3	Pass
	10 MHz	LCH	QPSK	RB1#0	27.4	Pass
			16-QAM	RB1#0	28.4	Pass
		MCH	QPSK	RB1#0	27.5	Pass
			16-QAM	RB1#0	28.5	Pass
		HCH	QPSK	RB1#0	27.6	Pass
			16-QAM	RB1#0	28.6	Pass

NB-IoT Mode Test Data

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
NB-IoT Band 2	3.75kHz	LCH	QPSK	RB1#0	29.1	Pass
			BPSK	RB1#0	29.2	Pass
		MCH	QPSK	RB1#0	29.3	Pass
			BPSK	RB1#0	29.4	Pass
		HCH	QPSK	RB1#0	29.5	Pass
			BPSK	RB1#0	29.6	Pass
	15kHz	LCH	QPSK	RB1#0	29.7	Pass
			BPSK	RB1#0	29.8	Pass
		MCH	QPSK	RB1#0	29.9	Pass
			BPSK	RB1#0	29.10	Pass
		HCH	QPSK	RB1#0	29.11	Pass
			BPSK	RB1#0	29.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
NB-IoT Band 4	3.75kHz	LCH	QPSK	RB1#0	30.1	Pass
			BPSK	RB1#0	30.2	Pass
		MCH	QPSK	RB1#0	30.3	Pass
			BPSK	RB1#0	30.4	Pass
		HCH	QPSK	RB1#0	30.5	Pass
			BPSK	RB1#0	30.6	Pass
	15kHz	LCH	QPSK	RB1#0	30.7	Pass
			BPSK	RB1#0	30.8	Pass
		MCH	QPSK	RB1#0	30.9	Pass
			BPSK	RB1#0	30.10	Pass
		HCH	QPSK	RB1#0	30.11	Pass
			BPSK	RB1#0	30.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
NB-IoT Band 5	3.75kHz	LCH	QPSK	RB1#0	31.1	Pass
			BPSK	RB1#0	31.2	Pass
		MCH	QPSK	RB1#0	31.3	Pass
			BPSK	RB1#0	31.4	Pass
		HCH	QPSK	RB1#0	31.5	Pass
			BPSK	RB1#0	31.6	Pass
	15kHz	LCH	QPSK	RB1#0	31.7	Pass
			BPSK	RB1#0	31.8	Pass
		MCH	QPSK	RB1#0	31.9	Pass
			BPSK	RB1#0	31.10	Pass
		HCH	QPSK	RB1#0	31.11	Pass
			BPSK	RB1#0	31.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
NB-IoT Band 12	3.75kHz	LCH	QPSK	RB1#0	32.1	Pass
			BPSK	RB1#0	32.2	Pass
		MCH	QPSK	RB1#0	32.3	Pass
			BPSK	RB1#0	32.4	Pass
		HCH	QPSK	RB1#0	32.5	Pass
			BPSK	RB1#0	32.6	Pass
	15kHz	LCH	QPSK	RB1#0	32.7	Pass
			BPSK	RB1#0	32.8	Pass
		MCH	QPSK	RB1#0	32.9	Pass
			BPSK	RB1#0	32.10	Pass
		HCH	QPSK	RB1#0	32.11	Pass
			BPSK	RB1#0	32.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
NB-IoT Band 13	3.75kHz	LCH	QPSK	RB1#0	33.1	Pass
			BPSK	RB1#0	33.2	Pass
		MCH	QPSK	RB1#0	33.3	Pass
			BPSK	RB1#0	33.4	Pass
		HCH	QPSK	RB1#0	33.5	Pass
			BPSK	RB1#0	33.6	Pass
	15kHz	LCH	QPSK	RB1#0	33.7	Pass
			BPSK	RB1#0	33.8	Pass
		MCH	QPSK	RB1#0	33.9	Pass
			BPSK	RB1#0	33.10	Pass
		HCH	QPSK	RB1#0	33.11	Pass
			BPSK	RB1#0	33.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
NB-IoT Band 25	3.75kHz	LCH	QPSK	RB1#0	37.1	Pass
			BPSK	RB1#0	37.2	Pass
		MCH	QPSK	RB1#0	37.3	Pass
			BPSK	RB1#0	37.4	Pass
		HCH	QPSK	RB1#0	37.5	Pass
			BPSK	RB1#0	37.6	Pass
	15kHz	LCH	QPSK	RB1#0	37.7	Pass
			BPSK	RB1#0	37.8	Pass
		MCH	QPSK	RB1#0	37.9	Pass
			BPSK	RB1#0	37.10	Pass
		HCH	QPSK	RB1#0	37.11	Pass
			BPSK	RB1#0	37.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
NB-IoT Band 66	3.75kHz	LCH	QPSK	RB1#0	38.1	Pass
			BPSK	RB1#0	38.2	Pass
		MCH	QPSK	RB1#0	38.3	Pass
			BPSK	RB1#0	38.4	Pass
		HCH	QPSK	RB1#0	38.5	Pass
			BPSK	RB1#0	38.6	Pass
	15kHz	LCH	QPSK	RB1#0	38.7	Pass
			BPSK	RB1#0	38.8	Pass
		MCH	QPSK	RB1#0	38.9	Pass
			BPSK	RB1#0	38.10	Pass
		HCH	QPSK	RB1#0	38.11	Pass
			BPSK	RB1#0	38.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
NB-IoT Band 71	3.75kHz	LCH	QPSK	RB1#0	39.1	Pass
			BPSK	RB1#0	39.2	Pass
		MCH	QPSK	RB1#0	39.3	Pass
			BPSK	RB1#0	39.4	Pass
		HCH	QPSK	RB1#0	39.5	Pass
			BPSK	RB1#0	39.6	Pass
	15kHz	LCH	QPSK	RB1#0	39.7	Pass
			BPSK	RB1#0	39.8	Pass
		MCH	QPSK	RB1#0	39.9	Pass
			BPSK	RB1#0	39.10	Pass
		HCH	QPSK	RB1#0	39.11	Pass
			BPSK	RB1#0	39.12	Pass

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
NB-IoT Band 85	3.75kHz	LCH	QPSK	RB1#0	40.1	Pass
			BPSK	RB1#0	40.2	Pass
		MCH	QPSK	RB1#0	40.3	Pass
			BPSK	RB1#0	40.4	Pass
		HCH	QPSK	RB1#0	40.5	Pass
			BPSK	RB1#0	40.6	Pass
	15kHz	LCH	QPSK	RB1#0	40.7	Pass
			BPSK	RB1#0	40.8	Pass
		MCH	QPSK	RB1#0	40.9	Pass
			BPSK	RB1#0	40.10	Pass
		HCH	QPSK	RB1#0	40.11	Pass
			BPSK	RB1#0	40.12	Pass

A.6 Band Edge

Note 1: Test plots please refer to the document "Annex No.:BL-EC2140498-501 Data Part 4.pdf".

GSM Mode Test Verdict

Test Band	Test Channel	Refer to Plot ^{Note1}	Verdict
GPRS 850	LCH	1.1	Pass
	HCH	1.2	Pass
GPRS 1900	LCH	2.1	Pass
	HCH	2.2	Pass
EGPRS 850	LCH	3.1	Pass
	HCH	3.2	Pass
EGPRS 1900	LCH	4.1	Pass
	HCH	4.2	Pass

LTE-M1 Mode Test Data

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
LTE-M1 BAND 2	1.4 MHz	LCH	QPSK	RB1#0	5.1	Pass
				RB6#0	5.3	Pass
			16-QAM	RB1#0	5.2	Pass
				RB5#0	5.4	Pass
		HCH	QPSK	RB1#5	6.1	Pass
				RB6#0	6.3	Pass
			16-QAM	RB1#5	6.2	Pass
				RB5#1	6.4	Pass
	3 MHz	LCH	QPSK	RB1#0	5.5	Pass
				RB6#0	5.7	Pass
			16-QAM	RB1#0	5.6	Pass
				RB5#0	5.8	Pass
		HCH	QPSK	RB1#5	6.5	Pass
				RB6#0	6.7	Pass
			16-QAM	RB1#5	6.6	Pass
				RB5#1	6.8	Pass
	5 MHz	LCH	QPSK	RB1#0	5.9	Pass
				RB6#0	5.11	Pass
			16-QAM	RB1#0	5.10	Pass
				RB5#0	5.12	Pass
		HCH	QPSK	RB1#5	6.9	Pass
				RB6#0	6.11	Pass
			16-QAM	RB1#5	6.10	Pass
				RB5#1	6.12	Pass
	10 MHz	LCH	QPSK	RB1#0	5.13	Pass
				RB6#0	5.15	Pass
			16-QAM	RB1#0	5.14	Pass
				RB5#0	5.16	Pass
		HCH	QPSK	RB1#5	6.13	Pass
				RB6#0	6.15	Pass
			16-QAM	RB1#5	6.14	Pass
				RB5#1	6.16	Pass
15 MHz	LCH	QPSK	RB1#0	5.17	Pass	
			RB6#0	5.19	Pass	
		16-QAM	RB1#0	5.18	Pass	
			RB5#0	5.20	Pass	
	HCH	QPSK	RB1#5	6.17	Pass	
			RB6#0	6.19	Pass	
		16-QAM	RB1#5	6.18	Pass	
			RB5#1	6.20	Pass	
20 MHz	LCH	QPSK	RB1#0	5.21	Pass	

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
			16-QAM	RB6#0	5.23	Pass
				RB1#0	5.22	Pass
				RB5#0	5.24	Pass
		HCH	QPSK	RB1#5	6.21	Pass
				RB6#0	6.23	Pass
			16-QAM	RB1#5	6.22	Pass
				RB5#1	6.24	Pass

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
LTE-M1 BAND 4	1.4 MHz	LCH	QPSK	RB1#0	7.1	Pass
				RB6#0	7.3	Pass
			16-QAM	RB1#0	7.2	Pass
				RB5#0	7.4	Pass
		HCH	QPSK	RB1#5	8.1	Pass
				RB6#0	8.3	Pass
			16-QAM	RB1#5	8.2	Pass
				RB5#1	8.4	Pass
	3 MHz	LCH	QPSK	RB1#0	7.5	Pass
				RB6#0	7.7	Pass
			16-QAM	RB1#0	7.6	Pass
				RB5#0	7.8	Pass
		HCH	QPSK	RB1#5	8.5	Pass
				RB6#0	8.7	Pass
			16-QAM	RB1#5	8.6	Pass
				RB5#1	8.8	Pass
	5 MHz	LCH	QPSK	RB1#0	7.9	Pass
				RB6#0	7.11	Pass
			16-QAM	RB1#0	7.10	Pass
				RB5#0	7.12	Pass
		HCH	QPSK	RB1#5	8.9	Pass
				RB6#0	8.11	Pass
			16-QAM	RB1#5	8.10	Pass
				RB5#1	8.12	Pass
	10 MHz	LCH	QPSK	RB1#0	7.13	Pass
				RB6#0	7.15	Pass
			16-QAM	RB1#0	7.14	Pass
				RB5#0	7.16	Pass
		HCH	QPSK	RB1#5	8.13	Pass
				RB6#0	8.15	Pass
			16-QAM	RB1#5	8.14	Pass
				RB5#1	8.16	Pass
15 MHz	LCH	QPSK	RB1#0	7.17	Pass	
			RB6#0	7.19	Pass	
		16-QAM	RB1#0	7.18	Pass	
			RB5#0	7.20	Pass	
	HCH	QPSK	RB1#5	8.17	Pass	
			RB6#0	8.19	Pass	
		16-QAM	RB1#5	8.18	Pass	
			RB5#1	8.20	Pass	
20 MHz	LCH	QPSK	RB1#0	7.21	Pass	
			RB6#0	7.23	Pass	

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
			16-QAM	RB1#0	7.22	Pass
				RB5#0	7.24	Pass
		HCH	QPSK	RB1#5	8.21	Pass
				RB6#0	8.23	Pass
			16-QAM	RB1#5	8.22	Pass
				RB5#1	8.24	Pass

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
LTE-M1 BAND 5	1.4 MHz	LCH	QPSK	RB1#0	9.1	Pass
				RB6#0	9.3	Pass
			16-QAM	RB1#0	9.2	Pass
				RB5#0	9.4	Pass
		HCH	QPSK	RB1#5	10.1	Pass
				RB6#0	10.3	Pass
			16-QAM	RB1#5	10.2	Pass
				RB5#1	10.4	Pass
	3 MHz	LCH	QPSK	RB1#0	9.5	Pass
				RB6#0	9.7	Pass
			16-QAM	RB1#0	9.6	Pass
				RB5#0	9.8	Pass
		HCH	QPSK	RB1#5	10.5	Pass
				RB6#0	10.7	Pass
			16-QAM	RB1#5	10.6	Pass
				RB5#1	10.8	Pass
	5 MHz	LCH	QPSK	RB1#0	9.9	Pass
				RB6#0	9.11	Pass
			16-QAM	RB1#0	9.10	Pass
				RB5#0	9.12	Pass
		HCH	QPSK	RB1#5	10.9	Pass
				RB6#0	10.11	Pass
			16-QAM	RB1#5	10.10	Pass
				RB5#1	10.12	Pass
	10 MHz	LCH	QPSK	RB1#0	9.13	Pass
				RB6#0	9.15	Pass
			16-QAM	RB1#0	9.14	Pass
				RB5#0	9.16	Pass
HCH		QPSK	RB1#5	10.13	Pass	
			RB6#0	10.15	Pass	
		16-QAM	RB1#5	10.14	Pass	
			RB5#1	10.16	Pass	

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
LTE-M1 BAND 12	1.4 MHz	LCH	QPSK	RB1#0	11.1	Pass
				RB6#0	11.3	Pass
			16-QAM	RB1#0	11.2	Pass
				RB5#0	11.4	Pass
		HCH	QPSK	RB1#5	12.1	Pass
				RB6#0	12.3	Pass
			16-QAM	RB1#5	12.2	Pass
				RB5#1	12.4	Pass
	3 MHz	LCH	QPSK	RB1#0	11.5	Pass
				RB6#0	11.7	Pass
			16-QAM	RB1#0	11.6	Pass
				RB5#0	11.8	Pass
		HCH	QPSK	RB1#5	12.5	Pass
				RB6#0	12.7	Pass
			16-QAM	RB1#5	12.6	Pass
				RB5#1	12.8	Pass
	5 MHz	LCH	QPSK	RB1#0	11.9	Pass
				RB6#0	11.11	Pass
			16-QAM	RB1#0	11.10	Pass
				RB5#0	11.12	Pass
		HCH	QPSK	RB1#5	12.9	Pass
				RB6#0	12.11	Pass
			16-QAM	RB1#5	12.10	Pass
				RB5#1	12.12	Pass
	10 MHz	LCH	QPSK	RB1#0	11.13	Pass
				RB6#0	11.15	Pass
			16-QAM	RB1#0	11.14	Pass
				RB5#0	11.16	Pass
HCH		QPSK	RB1#5	12.13	Pass	
			RB6#0	12.15	Pass	
		16-QAM	RB1#5	12.14	Pass	
			RB5#1	12.16	Pass	

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}		Verdict
					In-band		
LTE-M1 BAND 13	5 MHz	LCH	QPSK	RB1#0	13.1	Pass	
				RB6#0	13.3	Pass	
			16-QAM	RB1#0	13.2	Pass	
				RB5#0	13.4	Pass	
		HCH	QPSK	RB1#5	14.1	Pass	
				RB6#0	14.3	Pass	
			16-QAM	RB1#5	14.2	Pass	
				RB5#1	14.4	Pass	
	10 MHz	LCH	QPSK	RB1#0	13.5	Pass	
				RB6#0	13.7	Pass	
			16-QAM	RB1#0	13.6	Pass	
				RB5#0	13.8	Pass	
		HCH	QPSK	RB1#5	14.5	Pass	
				RB6#0	14.7	Pass	
			16-QAM	RB1#5	14.6	Pass	
				RB5#1	14.8	Pass	

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}			Verdict
					Out-band(MHz)			
					763-775	793-805	1559-1610	
LTE-M1 BAND 13	5 MHz	LCH	QPSK	RB1#0	15.1	15.5	15.9	Pass
			16-QAM	RB1#0	16.1	16.5	16.9	Pass
		MCH	QPSK	RB1#0	15.2	15.6	15.10	Pass
			16-QAM	RB1#0	16.2	16.6	16.10	Pass
		HCH	QPSK	RB1#0	15.3	15.7	15.11	Pass
			16-QAM	RB1#0	16.3	16.7	16.11	Pass
	10 MHz	MCH	QPSK	RB1#0	15.4	15.8	15.12	Pass
			16-QAM	RB1#0	16.4	16.8	16.12	Pass

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
LTE-M1 BAND 25	1.4 MHz	LCH	QPSK	RB1#0	23.1	Pass
				RB6#0	23.3	Pass
			16-QAM	RB1#0	23.2	Pass
				RB5#0	23.4	Pass
		HCH	QPSK	RB1#5	24.1	Pass
				RB6#0	24.3	Pass
			16-QAM	RB1#5	24.2	Pass
				RB5#1	24.4	Pass
	3 MHz	LCH	QPSK	RB1#0	23.5	Pass
				RB6#0	23.7	Pass
			16-QAM	RB1#0	23.6	Pass
				RB5#0	23.8	Pass
		HCH	QPSK	RB1#5	24.5	Pass
				RB6#0	24.7	Pass
			16-QAM	RB1#5	24.6	Pass
				RB5#1	24.8	Pass
	5 MHz	LCH	QPSK	RB1#0	23.9	Pass
				RB6#0	23.11	Pass
			16-QAM	RB1#0	23.10	Pass
				RB5#0	23.12	Pass
		HCH	QPSK	RB1#5	24.9	Pass
				RB6#0	24.11	Pass
			16-QAM	RB1#5	24.10	Pass
				RB5#1	24.12	Pass
	10 MHz	LCH	QPSK	RB1#0	23.13	Pass
				RB6#0	23.15	Pass
			16-QAM	RB1#0	23.14	Pass
				RB5#0	23.16	Pass
		HCH	QPSK	RB1#5	24.13	Pass
				RB6#0	24.15	Pass
			16-QAM	RB1#5	24.14	Pass
				RB5#1	24.16	Pass
	15 MHz	LCH	QPSK	RB1#0	23.17	Pass
				RB6#0	23.19	Pass
			16-QAM	RB1#0	23.18	Pass
				RB5#0	23.20	Pass
HCH		QPSK	RB1#5	24.17	Pass	
			RB6#0	24.19	Pass	
		16-QAM	RB1#5	24.18	Pass	
			RB5#1	24.20	Pass	
20 MHz	LCH	QPSK	RB1#0	23.21	Pass	
			RB6#0	23.23	Pass	

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
			16-QAM	RB1#0	23.22	Pass
				RB5#0	23.24	Pass
		HCH	QPSK	RB1#5	24.21	Pass
				RB6#0	24.23	Pass
			16-QAM	RB1#5	24.22	Pass
				RB5#1	24.24	Pass

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
LTE-M1 BAND 66	1.4 MHz	LCH	QPSK	RB1#0	27.1	Pass
				RB6#0	27.3	Pass
			16-QAM	RB1#0	27.2	Pass
				RB5#0	27.4	Pass
		HCH	QPSK	RB1#5	28.1	Pass
				RB6#0	28.3	Pass
			16-QAM	RB1#5	28.2	Pass
				RB5#1	28.4	Pass
	3 MHz	LCH	QPSK	RB1#0	27.5	Pass
				RB6#0	27.7	Pass
			16-QAM	RB1#0	27.6	Pass
				RB5#0	27.8	Pass
		HCH	QPSK	RB1#5	28.5	Pass
				RB6#0	28.7	Pass
			16-QAM	RB1#5	28.6	Pass
				RB5#1	28.8	Pass
	5 MHz	LCH	QPSK	RB1#0	27.9	Pass
				RB6#0	27.11	Pass
			16-QAM	RB1#0	27.10	Pass
				RB5#0	27.12	Pass
		HCH	QPSK	RB1#5	28.9	Pass
				RB6#0	28.11	Pass
			16-QAM	RB1#5	28.10	Pass
				RB5#1	28.12	Pass
	10 MHz	LCH	QPSK	RB1#0	27.13	Pass
				RB6#0	27.15	Pass
			16-QAM	RB1#0	27.14	Pass
				RB5#0	27.16	Pass
		HCH	QPSK	RB1#5	28.13	Pass
				RB6#0	28.15	Pass
			16-QAM	RB1#5	28.14	Pass
				RB5#1	28.16	Pass
15 MHz	LCH	QPSK	RB1#0	27.17	Pass	
			RB6#0	27.19	Pass	
		16-QAM	RB1#0	27.18	Pass	
			RB5#0	27.20	Pass	
	HCH	QPSK	RB1#5	28.17	Pass	
			RB6#0	28.19	Pass	
		16-QAM	RB1#5	28.18	Pass	
			RB5#1	28.20	Pass	
20 MHz	LCH	QPSK	RB1#0	27.21	Pass	
			RB6#0	27.23	Pass	

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
			16-QAM	RB1#0	27.22	Pass
				RB5#0	27.24	Pass
		HCH	QPSK	RB1#5	28.21	Pass
				RB6#0	28.23	Pass
			16-QAM	RB1#5	28.22	Pass
				RB5#1	28.24	Pass

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
LTE-M1 BAND 85	5 MHz	LCH	QPSK	RB1#0	29.1	Pass
				RB6#0	29.3	Pass
			16-QAM	RB1#0	29.2	Pass
				RB5#0	29.4	Pass
		HCH	QPSK	RB1#5	30.1	Pass
				RB6#0	30.3	Pass
			16-QAM	RB1#5	30.2	Pass
				RB5#1	30.4	Pass
	10 MHz	LCH	QPSK	RB1#0	29.5	Pass
				RB6#0	29.7	Pass
			16-QAM	RB1#0	29.6	Pass
				RB5#0	29.8	Pass
		HCH	QPSK	RB1#5	30.5	Pass
				RB6#0	30.7	Pass
			16-QAM	RB1#5	30.6	Pass
				RB5#1	30.8	Pass

NB-IoT Mode Test Data

	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
NB-IoT Band 2	3.75kHz	LCH	QPSK	RB1#0	31.1	Pass
			BPSK	RB1#0	31.2	Pass
		HCH	QPSK	RB1#47	32.1	Pass
			BPSK	RB1#47	32.2	Pass
	15kHz	LCH	QPSK	RB1#0	31.3	Pass
				RB12#0	31.5	Pass
			BPSK	RB1#0	31.4	Pass
		HCH	QPSK	RB1#11	32.3	Pass
				RB12#0	32.5	Pass
			BPSK	RB1#11	32.4	Pass

	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
NB-IoT Band 4	3.75kHz	LCH	QPSK	RB1#0	33.1	Pass
			BPSK	RB1#0	33.2	Pass
		HCH	QPSK	RB1#47	34.1	Pass
			BPSK	RB1#47	34.2	Pass
	15kHz	LCH	QPSK	RB1#0	33.3	Pass
				RB12#0	33.5	Pass
			BPSK	RB1#0	33.4	Pass
		HCH	QPSK	RB1#11	34.3	Pass
				RB12#0	34.5	Pass
			BPSK	RB1#11	34.4	Pass

	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
NB-IoT Band 5	3.75kHz	LCH	QPSK	RB1#0	35.1	Pass
			BPSK	RB1#0	35.2	Pass
		HCH	QPSK	RB1#47	36.1	Pass
			BPSK	RB1#47	36.2	Pass
	15kHz	LCH	QPSK	RB1#0	35.3	Pass
				RB12#0	35.5	Pass
			BPSK	RB1#0	35.4	Pass
		HCH	QPSK	RB1#11	36.3	Pass
				RB12#0	36.5	Pass
			BPSK	RB1#11	36.4	Pass

	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
NB-IoT Band 12	3.75kHz	LCH	QPSK	RB1#0	37.1	Pass
			BPSK	RB1#0	37.2	Pass
		HCH	QPSK	RB1#47	38.1	Pass
			BPSK	RB1#47	38.2	Pass
	15kHz	LCH	QPSK	RB1#0	37.3	Pass
				RB12#0	37.5	Pass
			BPSK	RB1#0	37.4	Pass
		HCH	QPSK	RB1#11	38.3	Pass
				RB12#0	38.5	Pass
			BPSK	RB1#11	38.4	Pass

	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
NB-IoT Band 13	3.75kHz	LCH	QPSK	RB1#0	39.1	Pass
			BPSK	RB1#0	39.2	Pass
		HCH	QPSK	RB1#47	40.1	Pass
			BPSK	RB1#47	40.2	Pass
	15kHz	LCH	QPSK	RB1#0	39.3	Pass
				RB12#0	39.5	Pass
			BPSK	RB1#0	39.4	Pass
		HCH	QPSK	RB1#11	40.3	Pass
				RB12#0	40.5	Pass
			BPSK	RB1#11	40.4	Pass

	Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1} Out-band(MHz)			Verdict
					763-775	793-805	1559-1610	
NB-IoT Band 13	3.75kHz	LCH	QPSK	RB1#0	41.1	41.13	41.25	Pass
			BPSK	RB1#0	41.2	41.14	41.26	Pass
		MCH	QPSK	RB1#0	41.3	41.15	41.27	Pass
			BPSK	RB1#0	41.4	41.16	41.28	Pass
		HCH	QPSK	RB1#0	41.5	41.17	41.29	Pass
			BPSK	RB1#0	41.6	41.18	41.30	Pass
	15kHz	LCH	QPSK	RB1#0	41.7	41.19	41.31	Pass
			BPSK	RB1#0	41.8	41.20	41.32	Pass
		MCH	QPSK	RB1#0	41.9	41.21	41.33	Pass
			BPSK	RB1#0	41.10	41.22	41.34	Pass
		HCH	QPSK	RB1#0	41.11	41.23	41.35	Pass
			BPSK	RB1#0	41.12	41.24	41.36	Pass

	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
NB-IoT Band 25	3.75kHz	LCH	QPSK	RB1#0	48.1	Pass
			BPSK	RB1#0	48.2	Pass
		HCH	QPSK	RB1#47	49.1	Pass
			BPSK	RB1#47	49.2	Pass
	15kHz	LCH	QPSK	RB1#0	48.3	Pass
				RB12#0	48.5	Pass
			BPSK	RB1#0	48.4	Pass
		HCH	QPSK	RB1#11	49.3	Pass
				RB12#0	49.5	Pass
			BPSK	RB1#11	49.4	Pass

	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
NB-IoT Band 66	3.75kHz	LCH	QPSK	RB1#0	50.1	Pass
			BPSK	RB1#0	50.2	Pass
		HCH	QPSK	RB1#47	51.1	Pass
			BPSK	RB1#47	51.2	Pass
	15kHz	LCH	QPSK	RB1#0	50.3	Pass
				RB12#0	50.5	Pass
			BPSK	RB1#0	50.4	Pass
		HCH	QPSK	RB1#11	51.3	Pass
				RB12#0	51.5	Pass
			BPSK	RB1#11	51.4	Pass

	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
NB-IoT Band 71	3.75kHz	LCH	QPSK	RB1#0	52.1	Pass
			BPSK	RB1#0	52.2	Pass
		HCH	QPSK	RB1#47	53.1	Pass
			BPSK	RB1#47	53.2	Pass
	15kHz	LCH	QPSK	RB1#0	52.3	Pass
				RB12#0	52.5	Pass
			BPSK	RB1#0	52.4	Pass
		HCH	QPSK	RB1#11	53.3	Pass
				RB12#0	53.5	Pass
			BPSK	RB1#11	53.4	Pass

	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note1}	Verdict
NB-IoT Band 85	3.75kHz	LCH	QPSK	RB1#0	54.1	Pass
			BPSK	RB1#0	54.2	Pass
		HCH	QPSK	RB1#47	55.1	Pass
			BPSK	RB1#47	55.2	Pass
	15kHz	LCH	QPSK	RB1#0	54.3	Pass
				RB12#0	54.5	Pass
			BPSK	RB1#0	54.4	Pass
		HCH	QPSK	RB1#11	55.3	Pass
				RB12#0	55.5	Pass
			BPSK	RB1#11	55.4	Pass

A.7 Field Strength of Spurious Radiation

Note 1: GSM and EGPRS modes have been verified, only the worst data with different transmit bandwidth for LTE are shown here.

Note 2: The frequencies of verdict which are marked by "N/A" should be ignored because they are UE carrier frequency.

Note 3: Test plots please refer to the document "Annex No.:BL-EC2140498-501 Data Part 5.pdf".

GSM Mode Test Verdict

Test Band	Test Channel	Refer to Plot ^{Note3}	Verdict
GPRS 850	LCH	1.1	Pass
	MCH	1.2	Pass
	HCH	1.3	Pass
GPRS 1900	LCH	2.1	Pass
	MCH	2.2	Pass
	HCH	2.3	Pass
EGPRS 850	LCH	3.1	Pass
	MCH	3.2	Pass
	HCH	3.3	Pass
EGPRS 1900	LCH	4.1	Pass
	MCH	4.2	Pass
	HCH	4.3	Pass

LTE-M1 Mode Test Data

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
LTE-M1 Band 2	1.4 MHz	MCH	QPSK	RB1#0	5.1	Pass
	3 MHz	MCH	QPSK	RB1#0	5.2	Pass
	5 MHz	MCH	QPSK	RB1#0	5.3	Pass
	10 MHz	MCH	QPSK	RB1#0	5.4	Pass
	15 MHz	MCH	QPSK	RB1#0	5.5	Pass
	20 MHz	MCH	QPSK	RB1#0	5.6	Pass
LTE-M1 Band 4	1.4 MHz	MCH	QPSK	RB1#0	6.1	Pass
	3 MHz	MCH	QPSK	RB1#0	6.2	Pass
	5 MHz	MCH	QPSK	RB1#0	6.3	Pass
	10 MHz	MCH	QPSK	RB1#0	6.4	Pass
	15 MHz	MCH	QPSK	RB1#0	6.5	Pass
	20 MHz	MCH	QPSK	RB1#0	6.6	Pass
LTE-M1 Band 5	1.4 MHz	MCH	QPSK	RB1#0	7.1	Pass
	3 MHz	MCH	QPSK	RB1#0	7.2	Pass
	5 MHz	MCH	QPSK	RB1#0	7.3	Pass
	10 MHz	MCH	QPSK	RB1#0	7.4	Pass
LTE-M1 Band 12	1.4 MHz	MCH	QPSK	RB1#0	8.1	Pass
	3 MHz	MCH	QPSK	RB1#0	8.2	Pass
	5 MHz	MCH	QPSK	RB1#0	8.3	Pass
	10 MHz	MCH	QPSK	RB1#0	8.4	Pass
LTE-M1 Band 13	5 MHz	MCH	QPSK	RB1#0	9.1	Pass
	10 MHz	MCH	QPSK	RB1#0	9.2	Pass
LTE-M1 Band 25	1.4 MHz	MCH	QPSK	RB1#0	13.1	Pass
	3 MHz	MCH	QPSK	RB1#0	13.2	Pass
	5 MHz	MCH	QPSK	RB1#0	13.3	Pass
	10 MHz	MCH	QPSK	RB1#0	13.4	Pass
	15 MHz	MCH	QPSK	RB1#0	13.5	Pass
	20 MHz	MCH	QPSK	RB1#0	13.6	Pass
LTE-M1 Band 66	1.4 MHz	MCH	QPSK	RB1#0	15.1	Pass
	3 MHz	MCH	QPSK	RB1#0	15.2	Pass
	5 MHz	MCH	QPSK	RB1#0	15.3	Pass
	10 MHz	MCH	QPSK	RB1#0	15.4	Pass
	15 MHz	MCH	QPSK	RB1#0	15.5	Pass
	20 MHz	MCH	QPSK	RB1#0	15.6	Pass
LTE-M1 Band 85	5 MHz	MCH	QPSK	RB1#0	16.1	Pass
	10 MHz	MCH	QPSK	RB1#0	16.2	Pass

NB-IoT Mode Test Data

Test Band	Test Sub-carrier spacing	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot ^{Note3}	Verdict
NB-IoT Band 2	3.75kHz	MCH	QPSK	RB1#0	17.1	Pass
			BPSK	RB1#0	17.2	Pass
	15kHz	MCH	QPSK	RB1#0	17.3	Pass
			BPSK	RB1#0	17.4	Pass
NB-IoT Band 4	3.75kHz	MCH	QPSK	RB1#0	18.1	Pass
			BPSK	RB1#0	18.2	Pass
	15kHz	MCH	QPSK	RB1#0	18.3	Pass
			BPSK	RB1#0	18.4	Pass
NB-IoT Band 5	3.75kHz	MCH	QPSK	RB1#0	19.1	Pass
			BPSK	RB1#0	19.2	Pass
	15kHz	MCH	QPSK	RB1#0	19.3	Pass
			BPSK	RB1#0	19.4	Pass
NB-IoT Band 12	3.75kHz	MCH	QPSK	RB1#0	20.1	Pass
			BPSK	RB1#0	20.2	Pass
	15kHz	MCH	QPSK	RB1#0	20.3	Pass
			BPSK	RB1#0	20.4	Pass
NB-IoT Band 13	3.75kHz	MCH	QPSK	RB1#0	21.1	Pass
			BPSK	RB1#0	21.2	Pass
	15kHz	MCH	QPSK	RB1#0	21.3	Pass
			BPSK	RB1#0	21.4	Pass
NB-IoT Band 25	3.75kHz	MCH	QPSK	RB1#0	25.1	Pass
			BPSK	RB1#0	25.2	Pass
	15kHz	MCH	QPSK	RB1#0	25.3	Pass
			BPSK	RB1#0	25.4	Pass
NB-IoT Band 66	3.75kHz	MCH	QPSK	RB1#0	26.1	Pass
			BPSK	RB1#0	26.2	Pass
	15kHz	MCH	QPSK	RB1#0	26.3	Pass
			BPSK	RB1#0	26.4	Pass
NB-IoT Band 71	3.75kHz	MCH	QPSK	RB1#0	27.1	Pass
			BPSK	RB1#0	27.2	Pass
	15kHz	MCH	QPSK	RB1#0	27.3	Pass
			BPSK	RB1#0	27.4	Pass
NB-IoT Band 85	3.75kHz	MCH	QPSK	RB1#0	28.1	Pass
			BPSK	RB1#0	28.2	Pass
	15kHz	MCH	QPSK	RB1#0	28.3	Pass
			BPSK	RB1#0	28.4	Pass

ANNEX B TEST SETUP PHOTOS

Please refer to the document "BL-EC2140498-AR.PDF".

ANNEX C EUT EXTERNAL PHOTOS

Please refer to the document "BL-EC2140498-AW.PDF".

ANNEX D EUT INTERNAL PHOTOS

Please refer to the document "BL-EC2140498-AI.PDF".

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