



FCC Test Report

FCC ID: 2BLHH-AT0003

IC: 33113-AT0003

Applicant: AUTHOR-ALARM d.o.o.

Address: Koroska ulica 26, 1000 Ljubljana, Slovenia

Manufacturer: SHENZHEN SUNTA ELECTRONICS CO., LIMITED

Address: Room 409, 12th Building, 2nd Unit, Majinghua, Xiyueli, Longgang street, Longgang District, Shenzhen City

EUT: TELE Compass 2 4G

Trade Mark: AUTHOR

Model Number: At-0003e, LBC_4g v.2.3.2, AT-0002, AT-0002e, LBC 2G v2.3.3, AT-0004e, AT-0005e, AT-0007e, AT-0013e, AT-0015e, AT-0017e

Date of Receipt: Jul. 26, 2024

Test Date: Jul. 26, 2024 - Oct. 22, 2024

Date of Report: Oct. 22, 2024

Prepared By: Shenzhen DL Testing Technology Co., Ltd.

Address: 101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong Industrial Zone, Baolong Street, Longgang District, Shenzhen, Guangdong, China

Applicable Standards: FCC Part 2 Subpart J, Part 22 Subpart H, Part 24 Subpart E, Part 27

Test Result: Pass

Report Number: DL-240726021ER

Prepared (Test Engineer): Randy Xie

Reviewer (Supervisor): Jack Bu

Approved (Manager): Jade Yang



This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.

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**1. TEST SUMMARY**

Test Items	FCC Test Requirement	IC Test Requirement	Result
Peak to Average Radio	§22.913 §24.232	RSS-132 Issue 4 5.4 RSS-133 Issue 7 5.5 RSS-139 Issue 4 5.5	PASS
Conducted Output Power	§2.1046	RSS-Gen Issue 5 6.12	PASS
99% & -26 dB Occupied Bandwidth	§2.1049	RSS-Gen Issue 5 6.7	PASS
Frequency Stability	§2.1055 §22.355 §24.235 §27.54	RSS-Gen Issue 5 6.11 RSS-132 Issue 4 5.3 RSS-133 Issue 7 5.4 RSS-139 Issue 4 5.4	PASS
Conducted Out of Band Emissions	§22.917 §24.238 §27.53 §27.53 §27.53	RSS-132 Issue 4 5.5 RSS-133 Issue 7 5.6 RSS-139 Issue 4 5.6	PASS
Band Edge	§22.917 §24.238 §27.53	RSS-132 Issue 4 5.5 RSS-133 Issue 7 5.6 RSS-139 Issue 4 5.6	PASS
Transmitter Radiated Power (EIPR/ERP)	§2.1046 §22.913 §24.232 §27.50	RSS-132 Issue 4 5.4 RSS-133 Issue 7 5.5 RSS-139 Issue 4 5.5	PASS
Radiated Out of Band Emissions	§22.917 §24.238 §27.53	RSS-132 Issue 4 5.5 RSS-133 Issue 7 5.6 RSS-139 Issue 4 5.6	PASS



2. GENERAL PRODUCT INFORMATION

2.1. Description of Device (EUT)

Product Name:	TELE Compass 2 4G
Trademark	AUTHOR
Model No.:	At-0003 At-0003e, LBC_4g v.2.3.2, AT-0002, AT-0002e, LBC 2G v2.3.3, AT-0004e, AT-0005e, AT-0007e, AT-0013e, AT-0015e, AT-0017e
Test Model:	At-0003
S/N:	2024070001
Model Difference	The product's different for model number.
Operation Frequency:	GSM 850: Tx: 824.20 - 848.80MHz; Rx: 869.20 - 893.80MHz GSM1900: Tx: 1850.20 - 1909.80MHz; Rx: 1930.20 - 1989.80MHz WCDMA Band 2: Tx: 1850.00 - 1910.00MHz; Rx: 1930.00 - 1990.00MHz WCDMA Band 4: Tx: 1712.40 - 1752.60MHz; Rx: 2110.00 - 2115.00MHz WCDMA Band 5: Tx: 824.00 - 849.00MHz; Rx: 869.00 - 894.00MHz LTE Band 2: Tx: 1850.00 - 1910.00MHz; Rx: 1930.00 - 1990.00MHz LTE Band 4: Tx: 1710.00 - 1755.00MHz; Rx: 2110.00 - 2155.00MHz LTE Band 5: Tx: 824.00 - 849.00MHz; Rx: 869.00 - 894.00MHz LTE Band 25: Tx: 1850.00 - 1915.00MHz; Rx: 1930.00 - 1995.00MHz LTE Band 66: Tx: 1710.00 - 1780.00MHz; Rx: 2110.00 - 2180.00MHz
Modulation technology:	GSM/GPRS Mode with GMSK, EDGE Mode with 8PSK Modulation WCDMA Mode with BPSK Modulation HSDPA Mode with QPSK, 16QAM Modulation HSUPA Mode with QPSK, 16QAM Modulation LTE Mode with QPSK, 16QAM
Antenna Type:	PCB Antenna
Antenna gain:	GSM850: 0.2dBi, GSM1900: 3.8dBi, WCDMA Band 2: 3.8dBi WCDMA Band 4: 3.8dBi, WCDMA Band 5: 0.2dBi LTE Band 2: 3.8dBi, LTE Band 4: 3.8dBi, LTE Band 5: 0.2dBi, LTE Band 25: 3.8dBi, LTE Band 66: 3.8dBi
Power supply:	DC 12V
LTE Category	1
Hardware Version	HV01
Software Version	SV01

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. The EUT's all information provided by client.

2.2. Product Function

Refer to Technical Construction Form and User Manual.



2.3. Independent Operation Modes

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

Test modes		
Band	Radiated	Conducted
GSM	GSM/GPRS/EGPRS	GSM/GPRS/EGPRS
WCDMA	RMC/HSDPA/ HSUPA	RMC/HSDPA/ HSUPA
LTE Band 2	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%
LTE Band 4	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%
LTE Band 5	Bandwidth:(MHz)1.4/3/5/10MHz Modulation: QPSK/16QAM RB:1/50%/100%	Bandwidth:(MHz)1.4/3/5/10MHz Modulation: QPSK/16QAM RB:1/50%/100%
LTE Band 25	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%
LTE Band66	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%	Bandwidth:(MHz)1.4/3/5/10/15/20MHz Modulation: QPSK/16QAM RB:1/50%/100%

Note1: for LTE mode, if the bandwidth is different, the test frequency is changed.

2: we pretest all voltage, only the DC 12V was worst mode, and the data show in the report.



3. TEST SITES

3.1. Test Facilities

Site Description

Name of Firm : Shenzhen DL Testing Technology Co., Ltd.

101-201, Building C, Shuanghuan, No.8, Baoqing Road, Baolong

Site Location : Industrial Zone, Baolong Street, Longgang District, Shenzhen,
Guangdong, China

FCC Test Firm Registration Number: 854456

Designation Number: CN1307

IC Registered No.: 27485

CAB ID.: CN0118

3.2. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission Test	$\pm 1.38\text{dB}$
2	RF power,conducted	$\pm 0.16\text{dB}$
3	Spurious emissions,conducted	$\pm 0.21\text{dB}$
4	All emissions,radiated(<1G)	$\pm 4.68\text{dB}$
5	All emissions,radiated(>1G)	$\pm 4.89\text{dB}$
6	Temperature	$\pm 0.5^{\circ}\text{C}$
7	Humidity	$\pm 2\%$
8	Bandwidth	$\pm 0.2\text{MHz}$
9	Frequency Stability	$\pm 0.02\text{MHz}$



3.3. List of Test and Measurement Instruments

3.3.1. For conducted emission at the mains terminals test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
843 Shielded Room	YIHENG	843 Room	843	Nov. 05, 2023	Nov. 04, 2026
EMI Receiver	R&S	ESR	101421	Nov. 05, 2023	Nov. 04, 2024
LISN	R&S	ENV216	102417	Nov. 05, 2023	Nov. 04, 2024
843 Cable 1#	ChengYu	CE Cable	001	Nov. 05, 2023	Nov. 04, 2024
843 Cable 1#	FUJIKURA	843C1#	001	Nov. 05, 2023	Nov. 04, 2024

3.3.2. For radiated test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Nov. 05, 2023	Nov. 04, 2024
Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 05, 2023	Nov. 04, 2024
Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00311	Nov. 05, 2023	Nov. 04, 2024
Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 05, 2023	Nov. 04, 2024
Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 05, 2023	Nov. 04, 2024
Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02133	Nov. 05, 2023	Nov. 04, 2024
Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 05, 2023	Nov. 04, 2024
Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	585	Nov. 05, 2023	Nov. 04, 2024
Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 05, 2023	Nov. 04, 2024
Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 05, 2023	Nov. 04, 2024
Amplifier(18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 05, 2023	Nov. 04, 2024
Loop Antenna(9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 05, 2023	Nov. 04, 2024
RF cables1 (9kHz-1GHz)	ChengYu	966	004	Nov. 05, 2023	Nov. 04, 2024
RF cables2 (1GHz-40GHz)	ChengYu	966	003	Nov. 05, 2023	Nov. 04, 2024
Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 05, 2023	Nov. 04, 2024
Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 05, 2023	Nov. 04, 2024
Signal Analyzer	Agilent	N9020A	MY55370280	Nov. 05, 2023	Nov. 04, 2024
Test Receiver	R&S	ESU 40	100376	Nov. 05, 2023	Nov. 04, 2024
D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 05, 2023	Nov. 04, 2024
Signal Amplifier	DAZE	ZN3380B	11235	Nov. 05, 2023	Nov. 04, 2024
High Pass filter	KANGMAI	WHKX1.0/1.5G-10SS	40	Nov. 05, 2023	Nov. 04, 2024
Filter	COM-MW	ZBSF-C836.5-25-X	BCTC042	Nov. 05, 2023	Nov. 04, 2024
Filter	COM-MW	ZBSF-C1747.5-75-X2	BCTC045	Nov. 05, 2023	Nov. 04, 2024
Filter	COM-MW	ZBSF-C1880-60-X2	BCTC047	Nov. 05, 2023	Nov. 04, 2024
Splitter	Agilent	11435B	1125162	Nov. 05, 2023	Nov. 04, 2024
RF CONDUCTED TEST					
System Simulator	Agilent	E5515C	GB43130252	Nov. 05, 2023	Nov. 04, 2024
Spectrum Analyzer	Agilent	N9020A	MY45108040	Nov. 05, 2023	Nov. 04, 2024



DC Power Supply	LongWei	PS-305D	010965682	Nov. 05, 2023	Nov. 04, 2024
Constant temperature and humidity box	GF	GTH-800-40-2P	MAA9906-012	Nov. 05, 2023	Nov. 04, 2024
Universal radio communication tester	R&S	CMW500	115295	Nov. 05, 2023	Nov. 04, 2024

4. TEST SET-UP

4.1. Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

4.2. Block Diagram of Test Set-up

System Diagram of Connections between EUT and Simulators

EUT

4.3. Test Environment:

Ambient conditions in the test laboratory:

Items	Actual
Temperature (°C)	21~23
Humidity (%RH)	50~65



5. EMISSION TEST RESULTS

5.1. Conducted RF Output Power

5.1.1. Limit

CFR 47, Section FCC §2.1046 and IC RSS-Gen Issue 5 6.12.

5.1.2. Test Setup

The EUT, which is powered by the adapter, 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 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power.

5.1.3. Test Result

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT.



The conducted power tables are as follows:

Average Conducted Power(dBm)						
Band	GSM850			PCS1900		
Channel	128	190	251	512	661	810
Frequency	824.20	836.60	848.80	1850.20	1880.00	1909.80
GSM	30.43	30.59	30.76	27.26	27.20	27.84
GPRS (GMSK, 1 TX slot)	30.42	30.56	30.73	27.27	27.21	27.83
GPRS (GMSK, 2 TX slot)	30.52	30.66	30.81	27.46	27.41	27.03
GPRS (GMSK, 3 TX slot)	29.51	29.65	29.83	27.61	27.61	27.26
GPRS (GMSK, 4 TX slot)	29.34	29.48	29.66	27.50	27.54	27.20
EGPRS(8PSK, 1 TX slot)	30.20	30.31	30.80	27.26	27.81	27.36
EGPRS(8PSK, 2 TX slot)	30.18	30.63	30.65	27.70	27.69	27.85
EGPRS(8PSK, 3 TX slot)	29.42	29.66	29.08	27.39	27.70	27.45
EGPRS(8PSK, 4 TX slot)	29.25	29.47	29.64	27.93	27.12	27.51

Average Conducted Power(dBm)									
Band	WCDMA Band 2			WCDMA Band 4			WCDMA Band 5		
Frequency	1852.4	1880.0	1907.6	1752.4	1732.6	1752.6	826.4	836.6	846.6
RMC 12.2Kbps	22.28	22.83	22.52	22.02	22.31	22.16	22.06	22.40	22.31
HSDPA Subtest-1	22.19	22.54	22.15	22.98	22.33	22.14	22.87	22.01	22.12
HSDPA Subtest-2	22.07	22.28	22.94	22.77	22.16	22.92	22.49	22.92	22.03
HSDPA Subtest-3	22.31	22.34	22.96	22.80	22.20	22.01	22.34	22.20	22.97
HSDPA Subtest-4	22.28	22.56	22.94	22.89	22.15	22.03	22.92	22.65	22.71
HSUPA Subtest-1	22.64	22.19	22.49	22.32	22.54	22.35	22.15	22.45	22.42
HSUPA Subtest-2	22.43	22.75	22.35	22.15	22.22	22.01	22.40	22.21	22.12
HSUPA Subtest-3	21.98	21.12	21.89	21.85	21.51	21.71	21.98	21.45	21.60
HSUPA Subtest-4	21.39	21.82	21.34	21.27	21.34	21.16	21.58	21.20	21.29
HSUPA Subtest-5	21.44	21.19	21.74	21.30	21.65	21.56	21.99	21.52	21.54



Average Conducted Power						
Band	LTE Band 2			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	18607/1850.7	18900/1880	19193/1909.3
1.4MHz	QPSK	1	0.00	22.86	22.81	22.90
		1	3.00	22.09	22.38	22.39
		1	5.00	22.13	22.46	22.37
		3	0.00	22.07	22.41	22.37
		3	2.00	22.08	22.43	22.34
		3	3.00	22.08	22.46	22.31
		6	0.00	21.09	21.43	21.43
	16QAM	1	0.00	22.88	22.86	22.96
		1	3.00	22.06	22.53	22.79
		1	5.00	22.16	22.51	22.75
		3	0.00	22.19	22.47	22.65
		3	2.00	22.23	22.49	22.62
		3	3.00	22.22	22.48	22.57
		6	0.00	21.28	21.78	21.49
Bandwidth	Modulation	RB size	RB offset	18615/1851.5	18900/1880	19185/1908.5
3MHz	QPSK	1	0.00	22.26	22.41	22.40
		1	7.00	22.29	22.60	22.53
		1	14.00	22.21	22.53	22.28
		8	0.00	22.34	22.52	22.48
		8	4.00	22.31	22.57	22.52
		8	7.00	22.30	22.59	22.47
		15	0.00	21.26	21.53	21.52
	16QAM	1	0.00	22.56	22.44	22.63
		1	7.00	22.66	22.62	22.79
		1	14.00	22.60	22.57	22.57
		8	0.00	22.39	22.62	22.49
		8	4.00	22.46	22.68	22.55
		8	7.00	22.47	22.62	22.50
		15	0.00	21.24	21.71	21.42
Bandwidth	Modulation	RB size	RB offset	18625/1852.5	18900/1880	19175/1907.5
5MHz	QPSK	1	0.00	22.38	22.37	22.42
		1	12.00	22.43	22.61	22.51
		1	24.00	22.23	22.66	22.43
		12	0.00	22.28	22.37	22.28
		12	6.00	22.34	22.54	22.43
		12	13.00	22.23	22.50	22.42
		25	0.00	21.21	21.44	21.33
	16QAM	1	0.00	22.72	22.60	22.47
		1	12.00	22.72	22.73	22.65
		1	24.00	22.60	22.81	22.59
		12	0.00	22.20	22.58	22.48
		12	6.00	22.33	22.76	22.55
		12	13.00	22.17	22.70	22.54
		25	0.00	21.33	21.51	21.34



Average Conducted Power						
Band	LTE Band 2			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	18650/1855	18900/1880	19150/1905
10MHz	QPSK	1	0.00	22.24	22.06	22.74
		1	24.00	22.06	22.41	22.20
		1	49.00	22.67	22.46	22.29
		25	0.00	22.97	22.03	22.66
		25	12.00	22.26	22.32	22.11
		25	25.00	22.71	22.27	22.08
		50	0.00	21.79	21.09	21.90
	16QAM	1	0.00	22.42	22.17	22.05
		1	24.00	22.31	22.47	22.52
		1	49.00	22.97	22.55	22.56
Bandwidth	Modulation	RB size	RB offset	18675/1857.5	18900/1880	19125/1902.5
15MHz	QPSK	1	0.00	22.18	22.04	22.82
		1	37.00	22.57	22.62	22.15
		1	74.00	22.52	22.63	22.41
		36	0.00	22.09	22.23	22.80
		36	18.00	21.92	22.52	22.53
		36	38.00	22.65	22.58	22.21
		75	0.00	21.72	21.31	21.85
	16QAM	1	0.00	22.44	22.21	22.24
		1	38.00	22.14	22.78	22.26
		1	74.00	22.79	22.83	22.62
Bandwidth	Modulation	RB size	RB offset	18700/1860	18900/1880	19100/1900
20MHz	QPSK	1	0.00	22.23	22.69	22.57
		1	49.00	22.63	22.54	22.01
		1	99.00	22.53	22.28	22.28
		50	0.00	22.62	22.54	22.61
		50	25.00	22.80	22.34	22.60
		50	50.00	22.39	22.38	22.03
		100	0.00	21.73	21.04	21.70
	16QAM	1	0.00	22.24	22.84	22.38
		1	49.00	22.66	22.65	22.67
		1	99.00	22.62	22.58	22.32

Note: Measurement Uncertainty: ± 2.6 dB.



Average Conducted Power						
Band	LTE Band 4			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	19957/1710.7	20175/1732.5	20393/1754.3
1.4MHz	QPSK	1	0.00	22.93	22.94	22.88
		1	3.00	22.59	22.44	22.29
		1	5.00	22.43	22.34	22.22
		3	0.00	22.52	22.15	22.23
		3	2.00	22.56	22.09	22.26
		3	3.00	22.62	22.12	22.21
	16QAM	6	0.00	21.79	21.08	21.44
		1	0.00	22.52	22.18	22.58
		1	2.00	22.71	22.23	22.01
		1	5.00	22.62	22.99	22.69
		3	0.00	22.64	22.89	22.16
		3	1.00	22.59	22.92	22.30
		3	3.00	22.51	22.87	22.24
		6	0.00	21.78	21.20	21.45
Bandwidth	Modulation	RB size	RB offset	19965/1711.5	20175/1732.5	20385/1753.5
3MHz	QPSK	1	0.00	22.76	22.73	22.07
		1	7.00	22.63	22.67	22.47
		1	14.00	22.60	22.50	22.51
		8	0.00	22.57	22.02	22.15
		8	4.00	22.61	22.03	22.18
		8	7.00	22.51	22.11	22.26
		15	0.00	21.51	21.99	21.26
	16QAM	1	0.00	22.42	22.63	22.04
		1	7.00	22.34	22.80	22.34
		1	14.00	22.32	22.74	22.17
		8	0.00	22.50	22.74	22.55
		8	4.00	22.47	22.75	22.39
		8	7.00	22.36	22.90	22.07
		15	0.00	21.44	21.82	21.24
Bandwidth	Modulation	RB size	RB offset	19975/1712.5	20175/1732.5	20375/1752.5
5MHz	QPSK	1	0.00	22.50	22.53	22.86
		1	12.00	22.71	22.68	22.03
		1	24.00	22.53	22.60	22.08
		12	0.00	22.49	22.61	22.12
		12	6.00	22.49	22.59	22.18
		12	13.00	22.50	22.68	22.24
		25	0.00	21.46	21.56	21.14
	16QAM	1	0.00	22.39	22.58	22.54
		1	12.00	22.53	22.76	22.81
		1	24.00	22.35	22.67	22.80
		12	0.00	22.36	22.85	22.96
		12	6.00	22.30	22.79	22.04
		12	13.00	22.28	22.68	22.09
		25	0.00	21.36	21.87	21.06



Average Conducted Power						
Band	LTE Band 4			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	20000/1715	20175/1732.5	20350/1750
10MHz	QPSK	1	0.00	22.61	22.60	21.12
		1	24.00	22.59	22.77	21.28
		1	49.00	22.53	22.65	21.25
		25	0.00	22.35	22.52	22.55
		25	12.00	22.51	22.81	22.46
		25	25.00	22.55	22.85	22.49
		50	0.00	22.37	22.96	22.53
	16QAM	1	0.00	22.39	22.47	22.25
		1	24.00	22.32	22.71	22.22
		1	49.00	22.37	22.65	22.11
Bandwidth	Modulation	RB size	RB offset	20025/1717.5	20175/1732.5	20325/1747.5
15MHz	QPSK	1	0.00	22.50	22.55	22.43
		1	37.00	22.74	22.18	22.43
		1	74.00	22.00	22.14	22.42
		36	0.00	22.35	22.50	22.40
		36	18.00	22.42	22.56	22.35
		36	38.00	22.62	22.60	22.27
		75	0.00	22.36	22.44	22.37
	16QAM	1	0.00	22.27	22.52	22.23
		1	37.00	22.09	22.74	22.03
		1	74.00	22.53	22.76	22.18
Bandwidth	Modulation	RB size	RB offset	20050/1720	20175/1732.5	20300/1745
20MHz	QPSK	1	0.00	22.62	22.67	22.74
		1	49.00	22.71	22.12	22.75
		1	99.00	22.65	22.74	22.77
		50	0.00	22.12	22.12	22.14
		50	25.00	22.08	22.07	22.11
		50	50.00	22.51	22.54	22.00
		100	0.00	22.46	22.46	22.01
	16QAM	1	0.00	22.50	22.57	22.48
		1	49.00	22.08	22.11	22.12
		1	99.00	22.47	22.65	22.79

Note: Measurement Uncertainty: ± 2.6 dB.



Average Conducted Power						
Band	LTE Band 5			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	20407/824.7	20525/836.5	20643/848.3
1.4MHz	QPSK	1	0.00	22.96	22.86	22.89
		1	3.00	22.72	22.04	22.75
		1	5.00	22.50	22.57	22.62
		3	0.00	22.54	22.75	22.54
		3	2.00	22.64	22.80	22.59
		3	3.00	22.73	22.71	22.66
		6	0.00	22.81	22.80	22.50
	16QAM	1	0.00	22.80	22.50	22.87
		1	2.00	22.70	22.54	22.42
		1	5.00	22.56	22.36	22.70
		3	0.00	22.75	22.58	22.39
		3	1.00	22.67	22.73	22.66
		3	3.00	22.68	22.63	22.75
		6	0.00	22.01	22.57	22.58
Bandwidth	Modulation	RB size	RB offset	20415/825.5	20525/836.5	20635/847.5
3MHz	QPSK	1	0.00	22.10	22.78	22.24
		1	7.00	22.50	22.42	22.24
		1	14.00	22.13	22.55	22.48
		8	0.00	22.82	22.38	22.00
		8	4.00	22.50	22.33	22.51
		8	7.00	22.19	22.49	22.46
		15	0.00	22.53	22.50	22.83
	16QAM	1	0.00	22.71	22.72	22.26
		1	8.00	22.18	22.09	22.34
		1	14.00	22.87	22.71	22.81
		8	0.00	22.71	22.82	22.70
		8	4.00	22.39	22.75	22.50
		8	7.00	22.22	22.66	22.67
		15	0.00	22.57	22.57	22.43
Bandwidth	Modulation	RB size	RB offset	20425/826.5	20525/836.5	20625/846.5
5MHz	QPSK	1	0.00	22.00	22.44	22.49
		1	12.00	22.29	22.39	22.12
		1	24.00	22.67	22.61	22.75
		12	0.00	22.55	22.00	22.35
		12	6.00	22.12	22.02	22.22
		12	13.00	22.46	22.76	22.48
		25	0.00	22.26	22.76	22.09
	16QAM	1	0.00	22.61	22.67	22.17
		1	12.00	22.04	22.36	22.39
		1	24.00	22.62	22.55	22.13
		12	0.00	22.55	22.69	22.18
		12	6.00	22.38	22.81	22.32
		12	13.00	22.61	22.58	22.08
		25	0.00	22.35	22.70	22.22



Average Conducted Power						
Band	LTE Band 5			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	20450/829	20525/836.5	20600/844
10MHz	QPSK	1	0.00	22.79	22.29	22.76
		1	24.00	22.30	22.42	22.50
		1	49.00	22.80	22.37	22.60
		25	0.00	22.29	22.22	22.18
		25	12.00	22.46	22.00	22.64
		25	25.00	22.59	22.61	22.18
		50	0.00	22.13	22.81	22.38
	16QAM	1	0.00	22.02	22.17	22.68
		1	24.00	22.70	22.63	22.67
		1	49.00	22.12	22.38	22.47

Note: Measurement Uncertainty: ± 2.6 dB.



Average Conducted Power						
Band	LTE Band 25			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	26047/1850.7	26365/1882.5	26683/1914.3
1.4MHz	QPSK	1	0.00	22.91	22.93	22.87
		1	3.00	22.87	22.25	22.73
		1	5.00	22.47	22.03	22.60
		3	0.00	22.65	22.31	22.48
		3	2.00	22.66	22.32	22.32
		3	3.00	22.50	22.28	22.67
		6	0.00	22.70	22.25	22.39
	16QAM	1	0.00	22.31	22.03	22.22
		1	2.00	22.35	22.49	22.01
		1	5.00	22.22	22.77	22.53
		3	0.00	22.48	22.40	22.02
		3	2.00	22.52	22.34	22.06
		3	3.00	22.45	22.34	22.69
		6	0.00	22.74	22.26	22.04
Bandwidth	Modulation	RB size	RB offset	26055/1851.5	26365/1882.5	26675/1913.5
3MHz	QPSK	1	0.00	22.62	22.05	22.15
		1	7.00	22.51	22.14	22.43
		1	14.00	22.54	22.33	22.69
		8	0.00	22.46	22.13	22.35
		8	4.00	22.50	22.12	22.39
		8	7.00	22.53	22.22	22.29
		15	0.00	22.47	22.06	22.33
	16QAM	1	0.00	22.41	22.76	22.30
		1	7.00	22.44	22.79	22.22
		1	14.00	22.50	22.69	22.56
		8	0.00	22.48	22.06	22.08
		8	4.00	22.44	22.04	22.30
		8	7.00	22.36	22.38	22.54
		15	0.00	22.27	22.37	22.48
Bandwidth	Modulation	RB size	RB offset	26065/1852.5	26365/1882.5	26665/1912.5
5MHz	QPSK	1	0.00	22.36	22.39	22.03
		1	12.00	22.68	22.35	22.19
		1	24.00	22.26	22.48	22.49
		12	0.00	22.43	22.09	22.19
		12	6.00	22.51	22.22	22.02
		12	13.00	22.48	22.01	22.46
		25	0.00	22.38	22.02	22.04
	16QAM	1	0.00	22.34	22.30	22.65
		1	12.00	22.40	22.38	22.12
		1	24.00	22.19	22.40	22.81
		12	0.00	22.02	22.06	22.11
		12	6.00	22.45	22.12	22.05
		12	13.00	22.38	22.28	22.75
		25	0.00	22.36	22.07	22.00



Average Conducted Power						
Band	LTE Band 25			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	26090/1855	26365/1882.5	26640/1910
10MHz	QPSK	1	0.00	22.60	22.22	22.14
		1	24.00	22.15	22.12	22.66
		1	49.00	22.37	22.01	22.77
		25	0.00	22.51	22.22	22.07
		25	12.00	22.42	22.28	22.12
		25	25.00	22.32	22.10	22.02
		50	0.00	22.24	22.12	22.92
	16QAM	1	0.00	22.81	22.24	22.40
		1	24.00	22.60	22.54	22.52
		1	49.00	22.11	22.61	22.08
Bandwidth	Modulation	RB size	RB offset	26115/1857.5	26365/1882.5	26615/1907.5
15MHz	QPSK	1	0.00	22.40	22.69	22.52
		1	37.00	22.62	22.31	22.34
		1	74.00	22.25	22.28	22.94
		36	0.00	22.38	22.34	22.01
		36	18.00	22.27	22.22	22.20
		36	38.00	22.01	22.11	22.28
		75	0.00	22.01	22.08	22.06
	16QAM	1	0.00	22.62	22.39	22.39
		1	37.00	22.02	22.37	22.26
		1	74.00	22.66	22.72	22.66
Bandwidth	Modulation	RB size	RB offset	26140/1860	26365/1882.5	26590/1905
20MHz	QPSK	1	0.00	22.66	22.58	22.69
		1	49.00	22.14	22.47	22.48
		1	99.00	22.13	22.42	22.30
		50	0.00	22.52	22.40	22.07
		50	25.00	22.42	22.22	22.35
		50	50.00	22.37	22.05	22.36
		100	0.00	22.32	22.22	22.47
	16QAM	1	0.00	22.31	22.21	22.30
		1	49.00	22.32	22.75	22.63
		1	99.00	22.01	22.36	22.36

Note: Measurement Uncertainty: $\pm 2.6\text{dB}$.



Average Conducted Power						
Band	LTE Band 66			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	131979/1710.7	132322/1745	132665/1779.3
1.4MHz	QPSK	1	0.00	22.84	22.95	22.91
		1	3.00	22.39	22.11	22.31
		1	5.00	22.36	22.00	22.80
		3	0.00	22.29	22.05	22.34
		3	2.00	22.30	22.09	22.34
		3	3.00	22.25	22.03	22.80
		6	0.00	22.24	22.02	22.78
	16QAM	1	0.00	22.24	22.23	22.24
		1	2.00	22.32	22.28	22.24
		1	5.00	22.25	22.16	22.14
		3	0.00	22.39	22.24	22.13
		3	2.00	22.42	22.28	22.13
		3	3.00	22.37	22.22	22.06
		6	0.00	22.46	22.34	22.37
Bandwidth	Modulation	RB size	RB offset	131987/1711.5	132322/1745	132657/1778.5
3MHz	QPSK	1	0.00	22.25	22.04	22.22
		1	7.00	22.31	22.07	22.29
		1	14.00	22.28	22.32	22.80
		8	0.00	22.20	22.06	22.00
		8	4.00	22.24	22.05	22.20
		8	7.00	22.23	22.39	22.78
		15	0.00	22.21	22.23	22.39
	16QAM	1	0.00	22.46	22.21	22.52
		1	7.00	22.56	22.28	22.33
		1	14.00	22.53	22.12	22.10
		8	0.00	22.34	22.23	22.11
		8	4.00	22.38	22.25	22.03
		8	7.00	22.37	22.39	22.27
		15	0.00	22.26	22.76	22.11
Bandwidth	Modulation	RB size	RB offset	131997/1712.5	132322/1745	132647/1777.5
5MHz	QPSK	1	0.00	22.22	22.01	22.50
		1	12.00	22.30	22.01	22.22
		1	24.00	22.32	22.36	22.74
		12	0.00	22.21	22.06	22.29
		12	6.00	22.26	22.04	22.10
		12	13.00	22.27	22.24	22.81
		25	0.00	22.23	22.28	22.04
	16QAM	1	0.00	22.52	22.23	22.66
		1	12.00	22.68	22.31	22.36
		1	24.00	22.65	22.10	22.30
		12	0.00	22.28	22.02	22.48
		12	6.00	22.36	22.61	22.22
		12	13.00	22.35	22.62	22.37
		25	0.00	22.35	22.74	22.11



Average Conducted Power						
Band	LTE Band 66			Channel/Frequency (MHz)		
Bandwidth	Modulation	RB size	RB offset	132022/1715	132322/1745	132622/1775
10MHz	QPSK	1	0.00	22.48	22.38	22.16
		1	24.00	22.42	22.05	22.63
		1	49.00	22.29	22.16	22.13
		25	0.00	22.03	22.87	22.46
		25	12.00	22.29	22.34	22.28
		25	25.00	22.21	22.69	22.29
		50	0.00	22.11	22.77	22.22
	16QAM	1	0.00	22.68	22.56	22.49
		1	24.00	22.67	22.24	22.25
		1	49.00	22.21	22.32	22.41
Bandwidth	Modulation	RB size	RB offset	132047/1717.5	132322/1745	132597/1772.5
15MHz	QPSK	1	0.00	22.38	22.22	22.27
		1	37.00	22.47	22.76	22.59
		1	74.00	22.16	22.71	22.33
		36	0.00	22.01	22.74	22.54
		36	18.00	22.45	22.67	22.15
		36	38.00	22.48	22.65	22.06
		75	0.00	22.24	22.70	22.16
	16QAM	1	0.00	22.63	22.40	22.27
		1	37.00	22.75	22.78	22.07
		1	74.00	22.37	22.29	22.50
Bandwidth	Modulation	RB size	RB offset	132072/1720	132322/1745	132572/1770
20MHz	QPSK	1	0.00	22.27	22.36	22.23
		1	49.00	22.08	22.54	22.58
		1	99.00	22.11	22.73	22.38
		50	0.00	22.22	22.05	22.34
		50	25.00	22.36	22.37	22.24
		50	50.00	22.52	22.47	22.32
		100	0.00	22.37	22.44	22.14
	16QAM	1	0.00	22.21	22.52	22.28
		1	49.00	22.62	22.37	22.72
		1	99.00	22.14	22.90	22.59

Note: Measurement Uncertainty: ± 2.6 dB.



5.2. -26dB and 99% Occupied Bandwidth

5.2.1. Limit

CFR 47, Section FCC §2.1049 and IC RSS-Gen Issue 5 6.7.

5.2.2. Test Setup

The EUT, which is powered by the adapter, 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 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power.

5.2.3. Test Result

Pass, the table and plot please see annex.



5.3. Peak to Average Ratio

5.3.1. Limit

FCC

-§22.913(d) Measurement of the ERP of Cellular base transmitters and repeaters must be made using an average power measurement technique. The peak-to-average ratio (PAR) of the transmission must not exceed 13 dB.

-§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 paragraph

(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.

- §27.50(d)(5), 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 paragraph (d)(6) of this section. 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.

IC

- RSS-130 Issue 2

4.6.1, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1 % of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

-RSS-132 Issue 4

5.4, 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.

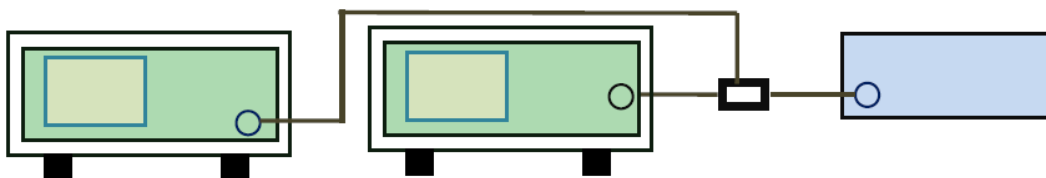
-RSS-133 Issue 7

6.4, the transmitter's peak-to-average power ratio (PAPR) 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.

-RSS-139 Issue 4

5.5, the peak to average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1 % of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission.

5.3.2. Test Setup



5.3.3. Test Procedure

The test follows section 5.2.3.4 of ANSI C63.26-2015.

See instrumentation-specific application literature for further guidance regarding use of the CCDF capability.

The following guidelines are offered for performing a CCDF measurement.

a. Set resolution/measurement bandwidth $\geq$ OBW or specified reference bandwidth.

b. Set the number of counts to a value that stabilizes the measured CCDF curve.

c. Set the measurement interval as follows:

1) For continuous transmissions, set to greater of $[10 \times (\text{number of points in sweep}) \times (\text{transmission symbol period})]$ or 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. Set the measurement interval to a time that is less than or equal to the burst duration.

3) If there are several carriers in a single antenna port, the peak power shall be determined for each individual carrier (by disabling the other carriers while measuring the required carrier) and the total peak power calculated from the sum of the individual carrier peak powers.

d. Record the maximum PAPR level associated with a probability of 0.1 %.



e. The peak power level is calculated from the sum of the PAPR value from step d) to the measured average power.

5.3.4. Test Result

Pass, the table and plot please see annex.



5.4. Frequency Stability

5.4.1. Limit

FCC

-§ 2.1055 (a), § 2.1055 (d) & following:

-§22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table of this section.

For Mobile devices operating in the 824 to 849 MHz band at a power level less than or equal to 3 Watts, the limit specified in Table C-1 is +/- 2.5 ppm.

-§24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

-§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

-§90.213, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table.

For Mobile devices operating in the 809 to 824 MHz band at a power level 2 Watts or less, the limit specified in Table is +/- 2.5 ppm.

IC

- RSS-Gen Issue 5

6.11, for licensed devices, the following measurement conditions apply:

a. at the temperatures of -30°C (-22°F), +20°C (+68°F) and +50°C (+122°F), and at the manufacturer's rated supply voltage

- RSS-130 Issue 2

4.5, the transmitter frequency stability limit shall be determined as follows:

For equipment that is capable of transmitting numerous channels simultaneously for different applications (e.g. LTE and narrowband – internet of things (IoT)), the occupied bandwidth shall be the bandwidth representing the sum of the occupied bandwidths of these channels.

The frequency stability shall be sufficient to ensure that the occupied bandwidth remains within each frequency block range when tested at the temperature and supply voltage variations specified in RSS-Gen.

-RSS-132 Issue 4

5.3, the frequency stability shall be sufficient to ensure that the occupied bandwidth stays within each of the sub-bands when tested at the temperature and supply voltage variations specified in RSS-Gen.

-RSS-133 Issue 7

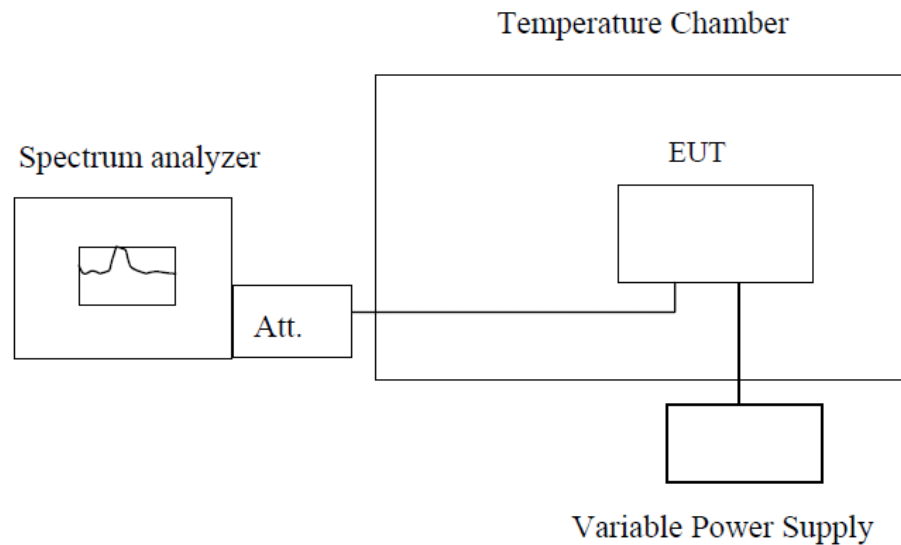
6.3, the carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and ±1.0 ppm for base stations.

-RSS-139 Issue 4

5.4, the frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block or frequency block group when tested to the temperature and supply voltage variations specified in RSS-Gen.



5.4.2. Test Setup

**Note :** Measurement setup for testing on Antenna connector

The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber.

The EUT is commanded by the System Simulator (SS) to operate at the maximum output power

5.4.3. Test Result

The nominal, highest and lowest extreme voltages are separately 12VDC, 13.2VDC and 10.8VDC

which are specified by the applicant; the normal temperature here used is 25°C. The frequency

deviation limit of 850MHz band is $\pm 2.5\text{ppm}$, and 1900MHz is $\pm 1\text{ppm}$

For LTE mode, only test the max bandwidth.

The table and plot please see next page.



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit ppm	
GSM850 Middle channel 836.0MHz	12	-40	42	0.0502	±2.5	PASS
	12	-30	56	0.0669		
	12	-20	67	0.0801		
	12	-10	34	0.0406		
	12	0	112	0.1339		
	12	10	23	0.0275		
	12	20	45	0.0538		
	12	30	66	0.0789		
	12	40	54	0.0646		
	12	50	21	0.0251		
	12	60	34	0.0406		
	12	70	43	0.0514		
	12	80	78	0.0932		
	13.2	25	126	0.1506		
	12	25	32	0.0383		
	10.8	25	76	0.0909		
EGPRS850 Middle channel 836.0MHz	12	-40	65	0.0777	±2.5	PASS
	12	-30	32	0.0383		
	12	-20	76	0.0909		
	12	-10	89	0.1064		
	12	0	23	0.0275		
	12	10	46	0.0550		
	12	20	75	0.0897		
	12	30	22	0.0263		
	12	40	78	0.0932		
	12	50	32	0.0383		
	12	60	78	0.0932		
	12	70	21	0.0251		
	12	80	89	0.1064		
	13.2	25	119	0.1423		
	12	25	32	0.0383		
	10.8	25	98	0.1172		



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit ppm	
GSM1900 Middle channel 1880.0MHz	12	-40	67	0.0356	±2.5	PASS
	12	-30	56	0.0298		
	12	-20	65	0.0346		
	12	-10	78	0.0415		
	12	0	98	0.0521		
	12	10	86	0.0457		
	12	20	66	0.0351		
	12	30	82	0.0436		
	12	40	69	0.0367		
	12	50	73	0.0388		
	12	60	77	0.0410		
	12	70	89	0.0473		
	12	80	112	0.0596		
	13.2	25	121	0.0644		
	12	25	77	0.0410		
	10.8	25	89	0.0473		
EGPRS1900 Middle channel 1880.0MHz	12	-40	56	0.0298	±2.5	PASS
	12	-30	78	0.0415		
	12	-20	23	0.0122		
	12	-10	87	0.0463		
	12	0	32	0.0170		
	12	10	51	0.0271		
	12	20	43	0.0229		
	12	30	57	0.0303		
	12	40	88	0.0468		
	12	50	54	0.0287		
	12	60	63	0.0335		
	12	70	57	0.0303		
	12	80	34	0.0181		
	13.2	25	132	0.0702		
	12	25	78	0.0415		
	10.8	25	99	0.0527		



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit ppm	
WCDMA Band 2 Middle channel 1880MHz	12	-40	32	0.0170	±2.5	PASS
	12	-30	45	0.0239		
	12	-20	21	0.0112		
	12	-10	56	0.0298		
	12	0	67	0.0356		
	12	10	65	0.0346		
	12	20	34	0.0181		
	12	30	23	0.0122		
	12	40	76	0.0404		
	12	50	75	0.0399		
	12	60	75	0.0399		
	12	70	78	0.0415		
	12	80	76	0.0404		
	13.2	25	124	0.0660		
	12	25	78	0.0415		
	10.8	25	89	0.0473		
WCDMA Band 4 Middle channel 1732.6MHz	12	-40	87	0.0502	±2.5	PASS
	12	-30	98	0.0566		
	12	-20	67	0.0387		
	12	-10	84	0.0485		
	12	0	77	0.0444		
	12	10	93	0.0537		
	12	20	109	0.0629		
	12	30	78	0.0450		
	12	40	176	0.1016		
	12	50	56	0.0323		
	12	60	99	0.0571		
	12	70	67	0.0387		
	12	80	98	0.0566		
	13.2	25	187	0.1079		
	12	25	165	0.0952		
	10.8	25	99	0.0571		
WCDMA Band 5 Middle channel 836.6MHz	12	-40	75	0.0896	±2.5	PASS
	12	-30	88	0.1052		
	12	-20	32	0.0383		
	12	-10	76	0.0908		
	12	0	56	0.0669		
	12	10	78	0.0932		
	12	20	78	0.0932		
	12	30	54	0.0645		
	12	40	123	0.1470		
	12	50	32	0.0383		
	12	60	87	0.1040		
	12	70	45	0.0538		
	12	80	76	0.0908		
	13.2	25	165	0.1972		
	12	25	78	0.0932		
	10.8	25	97	0.1159		



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit ppm	
LTE Band 2 Bandwidth 20MHz QPSK Middle channel 1880MHz	12	-40	64	0.0340	±1	PASS
	12	-30	35	0.0186		
	12	-20	78	0.0415		
	12	-10	66	0.0351		
	12	0	65	0.0346		
	12	10	46	0.0245		
	12	20	67	0.0356		
	12	30	98	0.0521		
	12	40	73	0.0388		
	12	50	67	0.0356		
	12	60	54	0.0287		
	12	70	56	0.0298		
	12	80	79	0.0420		
	13.2	25	54	0.0287		
	12	25	66	0.0351		
	10.8	25	178	0.0947		
LTE Band 2 Bandwidth 20MHz 16QAM Middle channel 1880MHz	12	-40	67	0.0356	±1	PASS
	12	-30	83	0.0441		
	12	-20	72	0.0383		
	12	-10	73	0.0388		
	12	0	43	0.0229		
	12	10	67	0.0356		
	12	20	82	0.0436		
	12	30	36	0.0191		
	12	40	55	0.0293		
	12	50	39	0.0207		
	12	60	54	0.0287		
	12	70	53	0.0282		
	12	80	21	0.0112		
	13.2	25	67	0.0356		
	12	25	21	0.0112		
	10.8	25	98	0.0521		



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit ppm	
LTE Band 4 Bandwidth 20MHz QPSK Middle channel 1732.5MHz	12	-40	65	0.0375	±1	PASS
	12	-30	56	0.0323		
	12	-20	34	0.0196		
	12	-10	52	0.0300		
	12	0	42	0.0242		
	12	10	23	0.0133		
	12	20	63	0.0364		
	12	30	34	0.0196		
	12	40	21	0.0121		
	12	50	64	0.0369		
	12	60	25	0.0144		
	12	70	45	0.0260		
	12	80	65	0.0375		
	13.2	25	67	0.0387		
	12	25	53	0.0306		
	10.8	25	24	0.0139		
LTE Band 4 Bandwidth 20MHz 16QAM Middle channel 1732.5MHz	12	-40	65	0.0375	±1	PASS
	12	-30	64	0.0369		
	12	-20	52	0.0300		
	12	-10	87	0.0502		
	12	0	34	0.0196		
	12	10	63	0.0364		
	12	20	78	0.0450		
	12	30	57	0.0329		
	12	40	42	0.0242		
	12	50	87	0.0502		
	12	60	24	0.0139		
	12	70	86	0.0496		
	12	80	46	0.0266		
	13.2	25	86	0.0496		
	12	25	33	0.0190		
	10.8	25	56	0.0323		

Note: Measurement Uncertainty: ±20Hz.



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit ppm	
LTE Band 5 Bandwidth 10MHz QPSK Middle channel 836.5MHz	12	-40	65	0.0777	±2.5	PASS
	12	-30	43	0.0514		
	12	-20	45	0.0538		
	12	-10	32	0.0383		
	12	0	67	0.0801		
	12	10	75	0.0897		
	12	20	35	0.0418		
	12	30	68	0.0813		
	12	40	32	0.0383		
	12	50	56	0.0669		
	12	60	78	0.0932		
	12	70	46	0.0550		
	12	80	87	0.1040		
	13.2	25	35	0.0418		
	12	25	87	0.1040		
	10.8	25	43	0.0514		
LTE Band 5 Bandwidth 10MHz 16QAM Middle channel 836.5MHz	12	-40	34	0.0406	±2.5	PASS
	12	-30	65	0.0777		
	12	-20	67	0.0801		
	12	-10	67	0.0801		
	12	0	87	0.1040		
	12	10	54	0.0646		
	12	20	21	0.0251		
	12	30	67	0.0801		
	12	40	43	0.0514		
	12	50	89	0.1064		
	12	60	54	0.0646		
	12	70	78	0.0932		
	12	80	45	0.0538		
	13.2	25	89	0.1064		
	12	25	46	0.0550		
	10.8	25	89	0.1064		

Note: Measurement Uncertainty: ±20Hz.



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit ppm	
LTE Band 25 Bandwidth 20MHz QPSK Middle channel 1880MHz	12	-40	67	0.0384	±2.5	PASS
	12	-30	54	0.0309		
	12	-20	57	0.0327		
	12	-10	75	0.0430		
	12	0	78	0.0447		
	12	10	43	0.0246		
	12	20	75	0.0430		
	12	30	34	0.0195		
	12	40	75	0.0430		
	12	50	67	0.0384		
	12	60	66	0.0378		
	12	70	76	0.0436		
	12	80	54	0.0309		
	13.2	25	46	0.0264		
	12	25	68	0.0390		
	10.8	25	65	0.0372		
LTE Band 25 Bandwidth 20MHz 16QAM Middle channel 1880MHz	12	-40	43	0.0246	±2.5	PASS
	12	-30	78	0.0447		
	12	-20	78	0.0447		
	12	-10	97	0.0556		
	12	0	33	0.0189		
	12	10	65	0.0372		
	12	20	66	0.0378		
	12	30	76	0.0436		
	12	40	47	0.0269		
	12	50	87	0.0499		
	12	60	54	0.0309		
	12	70	65	0.0372		
	12	80	34	0.0195		
	13.2	25	54	0.0309		
	12	25	65	0.0372		
	10.8	25	51	0.0292		

Note: Measurement Uncertainty: ±20Hz.



Test Conditions			Frequency Deviation			Result
Band	Power(Vdc)	Temperature(°C)	Frequency Error(Hz)	ppm	Limit ppm	
LTE Band 66 Bandwidth 20MHz QPSK Middle channel 1745MHz	12	-40	67	0.0384	±1	PASS
	12	-30	54	0.0309		
	12	-20	57	0.0327		
	12	-10	75	0.0430		
	12	0	78	0.0447		
	12	10	43	0.0246		
	12	20	75	0.0430		
	12	30	34	0.0195		
	12	40	75	0.0430		
	12	50	67	0.0384		
	12	60	66	0.0378		
	12	70	76	0.0436		
	12	80	54	0.0309		
	13.2	25	46	0.0264		
	12	25	68	0.0390		
	10.8	25	65	0.0372		
LTE Band 66 Bandwidth 20MHz 16QAM Middle channel 1745MHz	12	-40	43	0.0246	±1	PASS
	12	-30	78	0.0447		
	12	-20	78	0.0447		
	12	-10	97	0.0556		
	12	0	33	0.0189		
	12	10	65	0.0372		
	12	20	66	0.0378		
	12	30	76	0.0436		
	12	40	47	0.0269		
	12	50	87	0.0499		
	12	60	54	0.0309		
	12	70	65	0.0372		
	12	80	34	0.0195		
	13.2	25	54	0.0309		
	12	25	65	0.0372		
	10.8	25	51	0.0292		

Note: Measurement Uncertainty: ±20Hz.



5.5. Conducted Spurious Emissions

5.5.1. Limit

FCC

- §22.917(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.
- §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.
- §27.53(c)(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.
- §27.53(g), 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.
- §27.53(h)(1), for operations in the 1 695-1 710 MHz, 1 710-1 755 MHz, 1 755-1 780 MHz, 1 915-1 920 MHz, 1 995-2 000 MHz, 2 000-2 020 MHz, 2 110-2 155 MHz, 2 155-2 180 MHz, and 2 180-2 200 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.
- §27.53(m)(4), for mobile digital stations, the attenuation factor shall be not less than $40 + 10\log_{10}(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10\log_{10}(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10\log_{10}(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10\log_{10}(P)$ dB on all frequencies between 2 490.5 MHz and 2 496 MHz and $55 + 10\log_{10}(P)$ dB at or below 2 490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2 495 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.
- §90.691(a), out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:
 - (1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f / 6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
 - (2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

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- 4.7.1, the unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dB W), by at least $43 + 10\log_{10} p$ (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.
- 4.7.2, In addition to the limit outlined in section 4.7.1 above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:
 - a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dB W), by at least:
 - (i) $76 + 10\log_{10} p$ (watts), dB, for base and fixed equipment, and
 - (ii) $65 + 10\log_{10} p$ (watts), dB, for mobile and portable equipment.
 - b) The e.i.r.p. in the band 1 559-1 610 MHz shall not exceed -70 dB W/MHz for wideband signal and -80 dB W for discrete emission with bandwidth less than 700 Hz.

- RSS-132 Issue 4

5.5, Equipment shall meet the unwanted emission limits specified below.

- (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1 % of the occupied bandwidth shall be attenuated below the transmitter output power P (dB W) by at least $43 + 10\log(p)$ dB.



(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated below the transmitter output power P (dB W) by at least

$43 + 10 \log(p)$ dB. If the measurement is performed using 1 % of the occupied bandwidth, power integration over 100 kHz is required.

- RSS-133 Issue 7

6.5, Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1 % of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p$ (watts).

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1 % of the emission bandwidth, power integration over 1.0 MHz is required.

- RSS-139 Issue 4

5.6, Unwanted emissions shall be measured in terms of average values.

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table 6.

Table 6: Unwanted emission limits

Offset from the edge of the frequency block or frequency block group	Unwanted emission limit
≤ 1 MHz	-13 dB m/(1% of OB)*
> 1 MHz	-13 dB m

* OB is the occupied bandwidth

Table 4: Unwanted emission limits for fixed station, base station and fixed subscriber equipment

Offset from the edge of the frequency block or frequency block group (MHz)	Unwanted emission limit
≤ 1	-13 dB m/(1% of OB*)
> 1	-13 dB m/MHz

* OB is the occupied bandwidth

Table 5: Unwanted emission limits for subscriber equipment other than fixed subscriber equipment

Offset from the edge of the frequency block or frequency block group (MHz)	Unwanted emission limit
0-1	-10 dB m/(2% of OB*)
1-5	-10 dB m/MHz
5-X**	-13 dB m/MHz
$\geq X$	-25 dB m/MHz

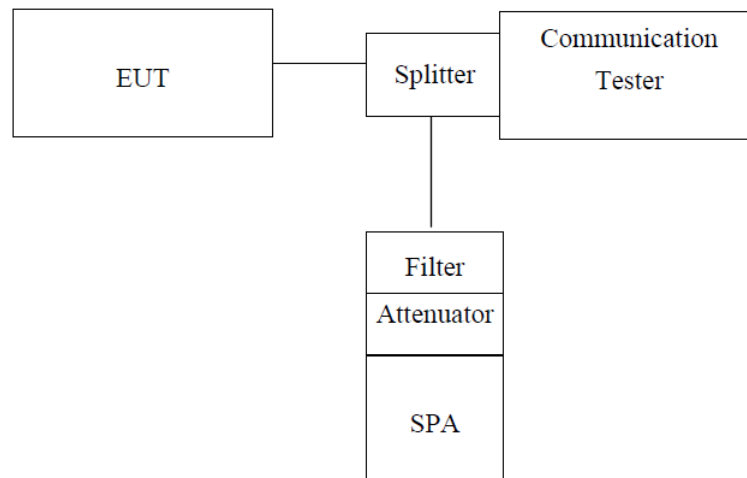
* OB is the occupied bandwidth

** X is 6 MHz or the equipment occupied bandwidth, whichever is greater

In addition to complying with the limits in table 5, subscriber equipment other than fixed subscriber equipment shall not exceed -13 dB m/MHz on all frequencies between 2 490.5 MHz and 2 496 MHz, and -25 dB m/MHz at or below 2 490.5 MHz.



5.5.2. Test Setup



Note: Measurement setup for testing on Antenna connector

5.5.3. Measurement Procedure

The test follows section 5.7 of ANSI C63.26-2015.

1. Start frequency was set to 9 kHz and stop frequency was set to at least 10* the fundamental frequency.
2. Detector = RMS.
3. Trace mode = Max hold.
4. Sweep time = Auto couple.
5. The trace was allowed to stabilize.
6. Please see notes below for RBW and VBW settings.
7. For plots showing conducted spurious emissions from 9 kHz to 26 GHz, all path loss of wide frequency range was investigated and compensated to spectrum analyzer as TDF function.

5.5.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

For LTE mode, the plot only show the min and max bandwidth's data.

Pass, the table and plot please see annex.



5.6. Conducted Out of Band Emissions

5.6.1. Limit

FCC

- §22.917(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.
- §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.
- §27.53(c)(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.
- §27.53(c)(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;
- §27.53(g), 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.
- §27.53(h)(1), for operations in the 1 695-1 710 MHz, 1 710-1 755 MHz, 1 755-1 780 MHz, 1 915-1 920 MHz, 1 995-2 000 MHz, 2 000-2 020 MHz, 2 110-2 155 MHz, 2 155-2 180 MHz, and 2 180-2 200 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.
- §27.53(m)(4), for mobile digital stations, the attenuation factor shall be not less than $40 + 10\log_{10}(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10\log_{10}(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10\log_{10}(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10\log_{10}(P)$ dB on all frequencies between 2 490.5 MHz and 2 496 MHz and $55 + 10\log_{10}(P)$ dB at or below 2 490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2 495 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.
- §90.691(a), out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:
 - (1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f / 6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
 - (2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

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- 4.7.1, the unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dB W), by at least $43 + 10\log_{10} p$ (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.
- 4.7.2, In addition to the limit outlined in section 4.7.1 above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:
 - a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dB W), by at least:
 - (i) $76 + 10\log_{10} p$ (watts), dB, for base and fixed equipment, and
 - (ii) $65 + 10\log_{10} p$ (watts), dB, for mobile and portable equipment.
 -) The e.i.r.p. in the band 1 559-1 610 MHz shall not exceed -70 dB W/MHz for wideband signal and -80 dB W for discrete emission with bandwidth less than 700 Hz.

- RSS-132 Issue 4

5.5, Equipment shall meet the unwanted emission limits specified below.



- (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1 % of the occupied bandwidth shall be attenuated below the transmitter output power P (dB W) by at least $43 + 10 \log(p)$ dB.
- (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated below the transmitter output power P (dB W) by at least $43 + 10 \log(p)$ dB. If the measurement is performed using 1 % of the occupied bandwidth, power integration over 100 kHz is required.

- RSS-133 Issue 7

6.5, Equipment shall comply with the limits in (i) and (ii) below.

- (i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1 % of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p(\text{watts})$.
- (ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p(\text{watts})$. If the measurement is performed using 1 % of the emission bandwidth, power integration over 1.0 MHz is required.

- RSS-139 Issue 4

5.6, Unwanted emissions shall be measured in terms of average values.

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table 6.

Offset from the edge of the frequency block or frequency block group	Unwanted emission limits
≤ 1 MHz	-13 dBm/(1% of OB*)
> 1 MHz	-13 dBm/MHz

*OB is the occupied bandwidth.

Table 4: Unwanted emission limits for fixed station, base station and fixed subscriber equipment

Offset from the edge of the frequency block or frequency block group (MHz)	Unwanted emission limit
≤ 1	-13 dB m/(1% of OB')
> 1	-13 dB m/MHz

* OB is the occupied bandwidth

Table 5: Unwanted emission limits for subscriber equipment other than fixed subscriber equipment

Offset from the edge of the frequency block or frequency block group (MHz)	Unwanted emission limit
0-1	-10 dB m/(2% of OB')
1-5	-10 dB m/MHz
5-X**	-13 dB m/MHz
$\geq X$	-25 dB m/MHz

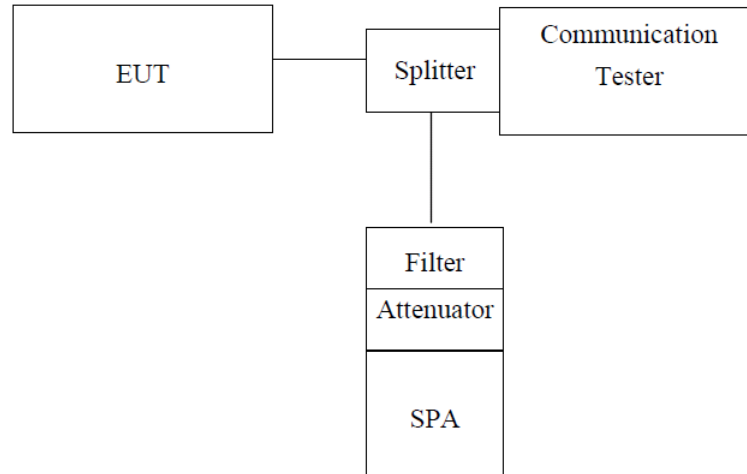
* OB is the occupied bandwidth

** X is 6 MHz or the equipment occupied bandwidth, whichever is greater

In addition to complying with the limits in table 5, subscriber equipment other than fixed subscriber equipment shall not exceed -13 dB m/MHz on all frequencies between 2 490.5 MHz and 2 496 MHz, and -25 dB m/MHz at or below 2 490.5 MHz.



5.6.2. Test Setup



Note: Measurement setup for testing on Antenna connector

5.6.3. Measurement Procedure

The test follows section 5.7 of ANSI C63.26-2015.

- Span was set large enough so as to capture all out of band emissions near the band edge.
- $RBW \geq 1\%$ of OBW
- $VBW \geq 3 \times RBW$.
- Detector = RMS.
- Trace mode = Average.
- Sweep time = Auto.
- The trace was allowed to stabilize.
- All path loss of frequency range was investigated and compensated to spectrum analyzer as TDF function.

5.6.4. Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

Pass, the table and plot please see annex.



5.7. Transmitter Power (EIRP/ERP)

5.7.1. Limit

FCC

-§22.913(a)(5), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

-§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.

-§27.50(b)(9), control stations and mobile stations transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands and fixed stations transmitting in the 787-788 MHz and 805-806 MHz bands are limited to 30 watts ERP.

-§27.50(c)(9), control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP.

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

-§27.50(d)(4), fixed, mobile, and portable (hand-held) stations operating in the 1 710-1 755 MHz band and mobile and portable stations operating in the 1 695-1 710 MHz and 1 755-1 780 MHz bands are limited to 1 watt EIRP.

-§27.50(h)(2), 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.

-§90.635(b), the maximum output power of the transmitter for mobile stations is 100 watts (20 dB W).

IC

- RSS-130 Issue 2

4.6.3, the e.r.p. shall not exceed 30 watts for mobile equipment and outdoor fixed subscriber equipment. The e.r.p. shall not exceed 3 watts for portable equipment and indoor fixed subscriber equipment.

For base and fixed equipment other than fixed subscriber equipment, refer to SRSP-518 for the e.i.r.p. limits.

-RSS-132 Issue 4

5.4, the transmitter output power shall be measured in terms of average power. The equivalent radiated power (e.r.p.) shall not exceed 7 watts for mobile equipment and 3 watts for portable equipment.

The effective isotropic radiated power (e.i.r.p.) shall not exceed the limits specified in SRSP-503 for base station equipment.

-RSS-133 Issue 7

6.4, the equivalent isotropically radiated power (e.i.r.p.) for transmitters shall not exceed the limits given in SRSP-510. Mobile stations and hand-held portables are limited to 2 watts maximum e.i.r.p. The equipment shall employ means to limit the power to the minimum necessary for successful communication.

-RSS-139 Issue 4

5.5, The maximum output power of the equipment shall comply with the limits specified below. In the tables, maximum power refers to the equivalent isotropically radiated power (e.i.r.p.) or total radiated power (TRP), measured in terms of average values.

Table 3: Maximum power of equipment in the band 1 710-1 780 MHz

Equipment type	Maximum power
Fixed station and base station	30 dBm e.i.r.p./ channel bandwidth
Subscriber equipment	30 dBm e.i.r.p./ channel bandwidth

5.7.2. Test Setup

Refer to 5.1.2



5.7.3. Measurement Procedure

ERP in frequency band 824.2 –848.80.8MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:

EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - 2.15$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)}$$

5.7.4. Test Result

Pass,



ERP Power dBm					
Band	GSM850				
Frequency	824.20	836.60	848.80	Limit	Result
GSM	28.48	28.64	28.81	38.45	Pass
GPRS (GMSK, 1 TX slot)	28.47	28.61	28.78	38.45	Pass
GPRS (GMSK, 2 TX slot)	28.57	28.71	28.86	38.45	Pass
GPRS (GMSK, 3 TX slot)	27.56	27.70	27.88	38.45	Pass
GPRS (GMSK, 4 TX slot)	27.39	27.53	27.71	38.45	Pass
EGPRS(8PSK, 1 TX slot)	28.25	28.36	28.85	38.45	Pass
EGPRS(8PSK, 2 TX slot)	28.23	28.68	28.70	38.45	Pass
EGPRS(8PSK, 3 TX slot)	27.47	27.71	27.13	38.45	Pass
EGPRS(8PSK, 4 TX slot)	27.30	27.52	27.69	38.45	Pass

EIRP Power dBm					
Band	PCS1900				
Frequency	1850.20	1850.20	1850.20	Limit	Result
GSM	31.06	31.00	31.64	33.00	Pass
GPRS (GMSK, 1 TX slot)	31.07	31.01	31.63	33.00	Pass
GPRS (GMSK, 2 TX slot)	31.26	31.21	30.83	33.00	Pass
GPRS (GMSK, 3 TX slot)	31.41	31.41	31.06	33.00	Pass
GPRS (GMSK, 4 TX slot)	31.30	31.34	31.00	33.00	Pass
EGPRS(8PSK, 1 TX slot)	31.06	31.61	31.16	33.00	Pass
EGPRS(8PSK, 2 TX slot)	31.50	31.49	31.65	33.00	Pass
EGPRS(8PSK, 3 TX slot)	31.19	31.50	31.25	33.00	Pass
EGPRS(8PSK, 4 TX slot)	31.73	30.92	31.31	33.00	Pass

EIRP Power dBm					
Band	WCDMA Band 2				
Frequency	1852.4	1880.0	1907.6	Limit	Result
RMC 12.2Kbps	26.08	26.63	26.32	33.00	Pass
HSDPA Subtest-1	25.99	26.34	25.95	33.00	Pass
HSDPA Subtest-2	25.87	26.08	26.74	33.00	Pass
HSDPA Subtest-3	26.11	26.14	26.76	33.00	Pass
HSDPA Subtest-4	26.08	26.36	26.74	33.00	Pass
HSUPA Subtest-1	26.44	25.99	26.29	33.00	Pass
HSUPA Subtest-2	26.23	26.55	26.15	33.00	Pass
HSUPA Subtest-3	25.78	24.92	25.69	33.00	Pass
HSUPA Subtest-4	25.19	25.62	25.14	33.00	Pass
HSUPA Subtest-5	25.24	24.99	25.54	33.00	Pass



EIRP Power dBm					
Band	WCDMA Band 4				
Frequency	1752.4	1732.6	1752.6	Limit	Result
RMC 12.2Kbps	25.82	26.11	25.96	30.00	Pass
HSDPA Subtest-1	26.78	26.13	25.94	30.00	Pass
HSDPA Subtest-2	26.57	25.96	26.72	30.00	Pass
HSDPA Subtest-3	26.60	26.00	25.81	30.00	Pass
HSDPA Subtest-4	26.69	25.95	25.83	30.00	Pass
HSUPA Subtest-1	26.12	26.34	26.15	30.00	Pass
HSUPA Subtest-2	25.95	26.02	25.81	30.00	Pass
HSUPA Subtest-3	25.65	25.31	25.51	30.00	Pass
HSUPA Subtest-4	25.07	25.14	24.96	30.00	Pass
HSUPA Subtest-5	25.10	25.45	25.36	30.00	Pass

ERP Power dBm					
Band	WCDMA Band 5				
Frequency	826.4	836.6	846.6	Limit	Result
RMC 12.2Kbps	20.11	20.45	20.36	30.00	Pass
HSDPA Subtest-1	20.92	20.06	20.17	30.00	Pass
HSDPA Subtest-2	20.54	20.97	20.08	30.00	Pass
HSDPA Subtest-3	20.39	20.25	21.02	30.00	Pass
HSDPA Subtest-4	20.97	20.70	20.76	30.00	Pass
HSUPA Subtest-1	20.20	20.50	20.47	30.00	Pass
HSUPA Subtest-2	20.45	20.26	20.17	30.00	Pass
HSUPA Subtest-3	20.03	19.50	19.65	30.00	Pass
HSUPA Subtest-4	19.63	19.25	19.34	30.00	Pass
HSUPA Subtest-5	20.04	19.57	19.59	30.00	Pass



EIRP Power dBm								
Band	LTE Band 2			Channel/Frequency (MHz)				
Bandwidth	Modulation	RB size	RB offset	18607/1850.7	18900/1880	19193/1909.3	Limit	Result
1.4MHz	QPSK	1	0.00	26.66	26.61	26.70	33.00	Pass
		1	3.00	25.89	26.18	26.19	33.00	Pass
		1	5.00	25.93	26.26	26.17	33.00	Pass
		3	0.00	25.87	26.21	26.17	33.00	Pass
		3	2.00	25.88	26.23	26.14	33.00	Pass
		3	3.00	25.88	26.26	26.11	33.00	Pass
		6	0.00	24.89	25.23	25.23	33.00	Pass
	16QAM	1	0.00	26.68	26.66	26.76	33.00	Pass
		1	3.00	25.86	26.33	26.59	33.00	Pass
		1	5.00	25.96	26.31	26.55	33.00	Pass
		3	0.00	25.99	26.27	26.45	33.00	Pass
		3	2.00	26.03	26.29	26.42	33.00	Pass
		3	3.00	26.02	26.28	26.37	33.00	Pass
		6	0.00	25.08	25.58	25.29	33.00	Pass
Bandwidth	Modulation	RB size	RB offset	18615/1851.5	18900/1880	19185/1908.5	Limit	Result
3MHz	QPSK	1	0.00	26.06	26.21	26.20	33.00	Pass
		1	7.00	26.09	26.40	26.33	33.00	Pass
		1	14.00	26.01	26.33	26.08	33.00	Pass
		8	0.00	26.14	26.32	26.28	33.00	Pass
		8	4.00	26.11	26.37	26.32	33.00	Pass
		8	7.00	26.10	26.39	26.27	33.00	Pass
		15	0.00	25.06	25.33	25.32	33.00	Pass
	16QAM	1	0.00	26.36	26.24	26.43	33.00	Pass
		1	7.00	26.46	26.42	26.59	33.00	Pass
		1	14.00	26.40	26.37	26.37	33.00	Pass
		8	0.00	26.19	26.42	26.29	33.00	Pass
		8	4.00	26.26	26.48	26.35	33.00	Pass
		8	7.00	26.27	26.42	26.30	33.00	Pass
		15	0.00	25.04	25.51	25.22	33.00	Pass
Bandwidth	Modulation	RB size	RB offset	18625/1852.5	18900/1880	19175/1907.5	Limit	Result
5MHz	QPSK	1	0.00	26.18	26.17	26.22	33.00	Pass
		1	12.00	26.23	26.41	26.31	33.00	Pass
		1	24.00	26.03	26.46	26.23	33.00	Pass
		12	0.00	26.08	26.17	26.08	33.00	Pass
		12	6.00	26.14	26.34	26.23	33.00	Pass
		12	13.00	26.03	26.30	26.22	33.00	Pass
		25	0.00	25.01	25.24	25.13	33.00	Pass
	16QAM	1	0.00	26.52	26.40	26.27	33.00	Pass
		1	12.00	26.52	26.53	26.45	33.00	Pass
		1	24.00	26.40	26.61	26.39	33.00	Pass
		12	0.00	26.00	26.38	26.28	33.00	Pass
		12	6.00	26.13	26.56	26.35	33.00	Pass
		12	13.00	25.97	26.50	26.34	33.00	Pass
		25	0.00	25.13	25.31	25.14	33.00	Pass



EIRP Power dBm								
Band	LTE Band 2			Channel/Frequency (MHz)				
Bandwidth	Modulation	RB size	RB offset	18650/1855	18900/1880	19150/1905	Limit	Result
10MHz	QPSK	1	0.00	26.04	25.86	26.54	33.00	Pass
		1	24.00	25.86	26.21	26.00	33.00	Pass
		1	49.00	26.47	26.26	26.09	33.00	Pass
		25	0.00	26.77	25.83	26.46	33.00	Pass
		25	12.00	26.06	26.12	25.91	33.00	Pass
		25	25.00	26.51	26.07	25.88	33.00	Pass
		50	0.00	25.59	24.89	25.70	33.00	Pass
	16QAM	1	0.00	26.22	25.97	25.85	33.00	Pass
		1	24.00	26.11	26.27	26.32	33.00	Pass
		1	49.00	26.77	26.35	26.36	33.00	Pass
Bandwidth	Modulation	RB size	RB offset	18675/1857.5	18900/1880	19125/1902.5	Limit	Result
15MHz	QPSK	1	0.00	25.98	25.84	26.62	33.00	Pass
		1	37.00	26.37	26.42	25.95	33.00	Pass
		1	74.00	26.32	26.43	26.21	33.00	Pass
		36	0.00	25.89	26.03	26.60	33.00	Pass
		36	18.00	25.72	26.32	26.33	33.00	Pass
		36	38.00	26.45	26.38	26.01	33.00	Pass
		75	0.00	25.52	25.11	25.65	33.00	Pass
	16QAM	1	0.00	26.24	26.01	26.04	33.00	Pass
		1	38.00	25.94	26.58	26.06	33.00	Pass
		1	74.00	26.59	26.63	26.42	33.00	Pass
Bandwidth	Modulation	RB size	RB offset	18700/1860	18900/1880	19100/1900	Limit	Result
20MHz	QPSK	1	0.00	26.03	26.49	26.37	33.00	Pass
		1	49.00	26.43	26.34	25.81	33.00	Pass
		1	99.00	26.33	26.08	26.08	33.00	Pass
		50	0.00	26.42	26.34	26.41	33.00	Pass
		50	25.00	26.60	26.14	26.40	33.00	Pass
		50	50.00	26.19	26.18	25.83	33.00	Pass
		100	0.00	25.53	24.84	25.50	33.00	Pass
	16QAM	1	0.00	26.04	26.64	26.18	33.00	Pass
		1	49.00	26.46	26.45	26.47	33.00	Pass
		1	99.00	26.42	26.38	26.12	33.00	Pass

Note: Measurement Uncertainty: ± 2.6 dB.



EIRP Power dBm								
Band	LTE Band 4			Channel/Frequency (MHz)				
Bandwidth	Modulation	RB size	RB offset	19957/1710.7	20175/1732.5	20393/1754.3	Limit	Result
1.4MHz	QPSK	1	0.00	26.73	26.74	26.68	30.00	Pass
		1	3.00	26.39	26.24	26.09	30.00	Pass
		1	5.00	26.23	26.14	26.02	30.00	Pass
		3	0.00	26.32	25.95	26.03	30.00	Pass
		3	2.00	26.36	25.89	26.06	30.00	Pass
		3	3.00	26.42	25.92	26.01	30.00	Pass
		6	0.00	25.59	24.88	25.24	30.00	Pass
	16QAM	1	0.00	26.32	25.98	26.38	30.00	Pass
		1	2.00	26.51	26.03	25.81	30.00	Pass
		1	5.00	26.42	26.79	26.49	30.00	Pass
		3	0.00	26.44	26.69	25.96	30.00	Pass
		3	1.00	26.39	26.72	26.10	30.00	Pass
		3	3.00	26.31	26.67	26.04	30.00	Pass
		6	0.00	25.58	25.00	25.25	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	19965/1711.5	20175/1732.5	20385/1753.5	Limit	Result
3MHz	QPSK	1	0.00	26.56	26.53	25.87	30.00	Pass
		1	7.00	26.43	26.47	26.27	30.00	Pass
		1	14.00	26.40	26.30	26.31	30.00	Pass
		8	0.00	26.37	25.82	25.95	30.00	Pass
		8	4.00	26.41	25.83	25.98	30.00	Pass
		8	7.00	26.31	25.91	26.06	30.00	Pass
		15	0.00	25.31	25.79	25.06	30.00	Pass
	16QAM	1	0.00	26.22	26.43	25.84	30.00	Pass
		1	7.00	26.14	26.60	26.14	30.00	Pass
		1	14.00	26.12	26.54	25.97	30.00	Pass
		8	0.00	26.30	26.54	26.35	30.00	Pass
		8	4.00	26.27	26.55	26.19	30.00	Pass
		8	7.00	26.16	26.70	25.87	30.00	Pass
		15	0.00	25.24	25.62	25.04	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	19975/1712.5	20175/1732.5	20375/1752.5	Limit	Result
5MHz	QPSK	1	0.00	26.30	26.33	26.66	30.00	Pass
		1	12.00	26.51	26.48	25.83	30.00	Pass
		1	24.00	26.33	26.40	25.88	30.00	Pass
		12	0.00	26.29	26.41	25.92	30.00	Pass
		12	6.00	26.29	26.39	25.98	30.00	Pass
		12	13.00	26.30	26.48	26.04	30.00	Pass
		25	0.00	25.26	25.36	24.94	30.00	Pass
	16QAM	1	0.00	26.19	26.38	26.34	30.00	Pass
		1	12.00	26.33	26.56	26.61	30.00	Pass
		1	24.00	26.15	26.47	26.60	30.00	Pass
		12	0.00	26.16	26.65	26.76	30.00	Pass
		12	6.00	26.10	26.59	25.84	30.00	Pass
		12	13.00	26.08	26.48	25.89	30.00	Pass
		25	0.00	25.16	25.67	24.86	30.00	Pass



EIRP Power dBm								
Band	LTE Band 4			Channel/Frequency (MHz)				
Bandwidth	Modulation	RB size	RB offset	20000/1715	20175/1732.5	20350/1750	Limit	Result
10MHz	QPSK	1	0.00	26.41	26.40	24.92	30.00	Pass
		1	24.00	26.39	26.57	25.08	30.00	Pass
		1	49.00	26.33	26.45	25.05	30.00	Pass
		25	0.00	26.15	26.32	26.35	30.00	Pass
		25	12.00	26.31	26.61	26.26	30.00	Pass
		25	25.00	26.35	26.65	26.29	30.00	Pass
		50	0.00	26.17	26.76	26.33	30.00	Pass
	16QAM	1	0.00	26.19	26.27	26.05	30.00	Pass
		1	24.00	26.12	26.51	26.02	30.00	Pass
		1	49.00	26.17	26.45	25.91	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	20025/1717.5	20175/1732.5	20325/1747.5	Limit	Result
15MHz	QPSK	1	0.00	26.30	26.35	26.23	30.00	Pass
		1	37.00	26.54	25.98	26.23	30.00	Pass
		1	74.00	25.80	25.94	26.22	30.00	Pass
		36	0.00	26.15	26.30	26.20	30.00	Pass
		36	18.00	26.22	26.36	26.15	30.00	Pass
		36	38.00	26.42	26.40	26.07	30.00	Pass
		75	0.00	26.16	26.24	26.17	30.00	Pass
	16QAM	1	0.00	26.07	26.32	26.03	30.00	Pass
		1	37.00	25.89	26.54	25.83	30.00	Pass
		1	74.00	26.33	26.56	25.98	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	20050/1720	20175/1732.5	20300/1745	Limit	Result
20MHz	QPSK	1	0.00	26.42	26.47	26.54	30.00	Pass
		1	49.00	26.51	25.92	26.55	30.00	Pass
		1	99.00	26.45	26.54	26.57	30.00	Pass
		50	0.00	25.92	25.92	25.94	30.00	Pass
		50	25.00	25.88	25.87	25.91	30.00	Pass
		50	50.00	26.31	26.34	25.80	30.00	Pass
		100	0.00	26.26	26.26	25.81	30.00	Pass
	16QAM	1	0.00	26.30	26.37	26.28	30.00	Pass
		1	49.00	25.88	25.91	25.92	30.00	Pass
		1	99.00	26.27	26.45	26.59	30.00	Pass

Note: Measurement Uncertainty: ± 2.6 dB.



ERP Power dBm								
Band	LTE Band 5			Channel/Frequency (MHz)				
Bandwidth	Modulation	RB size	RB offset	20407/824.7	20525/836.5	20643/848.3	Limit	Result
1.4MHz	QPSK	1	0.00	21.01	20.91	20.94	38.45	Pass
		1	3.00	20.77	20.09	20.80	38.45	Pass
		1	5.00	20.55	20.62	20.67	38.45	Pass
		3	0.00	20.59	20.80	20.59	38.45	Pass
		3	2.00	20.69	20.85	20.64	38.45	Pass
		3	3.00	20.78	20.76	20.71	38.45	Pass
		6	0.00	20.86	20.85	20.55	38.45	Pass
	16QAM	1	0.00	20.85	20.55	20.92	38.45	Pass
		1	2.00	20.75	20.59	20.47	38.45	Pass
		1	5.00	20.61	20.41	20.75	38.45	Pass
		3	0.00	20.80	20.63	20.44	38.45	Pass
		3	1.00	20.72	20.78	20.71	38.45	Pass
		3	3.00	20.73	20.68	20.80	38.45	Pass
		6	0.00	20.06	20.62	20.63	38.45	Pass
Bandwidth	Modulation	RB size	RB offset	20415/825.5	20525/836.5	20635/847.5	Limit	Result
3MHz	QPSK	1	0.00	20.15	20.83	20.29	38.45	Pass
		1	7.00	20.55	20.47	20.29	38.45	Pass
		1	14.00	20.18	20.60	20.53	38.45	Pass
		8	0.00	20.87	20.43	20.05	38.45	Pass
		8	4.00	20.55	20.38	20.56	38.45	Pass
		8	7.00	20.24	20.54	20.51	38.45	Pass
		15	0.00	20.58	20.55	20.88	38.45	Pass
	16QAM	1	0.00	20.76	20.77	20.31	38.45	Pass
		1	8.00	20.23	20.14	20.39	38.45	Pass
		1	14.00	20.92	20.76	20.86	38.45	Pass
		8	0.00	20.76	20.87	20.75	38.45	Pass
		8	4.00	20.44	20.80	20.55	38.45	Pass
		8	7.00	20.27	20.71	20.72	38.45	Pass
		15	0.00	20.62	20.62	20.48	38.45	Pass
Bandwidth	Modulation	RB size	RB offset	20425/826.5	20525/836.5	20625/846.5	Limit	Result
5MHz	QPSK	1	0.00	20.05	20.49	20.54	20.35	Pass
		1	12.00	20.34	20.44	20.17	20.64	Pass
		1	24.00	20.72	20.66	20.80	21.02	Pass
		12	0.00	20.60	20.05	20.40	20.90	Pass
		12	6.00	20.17	20.07	20.27	20.47	Pass
		12	13.00	20.51	20.81	20.53	20.81	Pass
		25	0.00	20.31	20.81	20.14	20.61	Pass
	16QAM	1	0.00	20.66	20.72	20.22	20.96	Pass
		1	12.00	20.09	20.41	20.44	20.39	Pass
		1	24.00	20.67	20.60	20.18	20.97	Pass
		12	0.00	20.60	20.74	20.23	20.90	Pass
		12	6.00	20.43	20.86	20.37	20.73	Pass
		12	13.00	20.66	20.63	20.13	20.96	Pass
		25	0.00	20.40	20.75	20.27	20.70	Pass



ERP Power dBm								
Band	LTE Band 5			Channel/Frequency (MHz)				
Bandwidth	Modulation	RB size	RB offset	20450/829	20525/836.5	20600/844	Limit	Result
10MHz	QPSK	1	0.00	20.84	20.34	20.81	38.45	Pass
		1	24.00	20.35	20.47	20.55	38.45	Pass
		1	49.00	20.85	20.42	20.65	38.45	Pass
		25	0.00	20.34	20.27	20.23	38.45	Pass
		25	12.00	20.51	20.05	20.69	38.45	Pass
		25	25.00	20.64	20.66	20.23	38.45	Pass
		50	0.00	20.18	20.86	20.43	38.45	Pass
	16QAM	1	0.00	20.07	20.22	20.73	38.45	Pass
		1	24.00	20.75	20.68	20.72	38.45	Pass
		1	49.00	20.17	20.43	20.52	38.45	Pass

Note: Measurement Uncertainty: ± 2.6 dB.



EIRP Power dBm								
Band	LTE Band 25			Channel/Frequency (MHz)				
Bandwidth	Modulation	RB size	RB offset	26047/1850.7	26365/1882.5	26683/1914.3	Limit	Result
1.4MHz	QPSK	1	0.00	26.71	26.73	26.67	30.00	Pass
		1	3.00	26.67	26.05	26.53	30.00	Pass
		1	5.00	26.27	25.83	26.40	30.00	Pass
		3	0.00	26.45	26.11	26.28	30.00	Pass
		3	2.00	26.46	26.12	26.12	30.00	Pass
		3	3.00	26.30	26.08	26.47	30.00	Pass
		6	0.00	26.50	26.05	26.19	30.00	Pass
	16QAM	1	0.00	26.11	25.83	26.02	30.00	Pass
		1	2.00	26.15	26.29	25.81	30.00	Pass
		1	5.00	26.02	26.57	26.33	30.00	Pass
		3	0.00	26.28	26.20	25.82	30.00	Pass
		3	2.00	26.32	26.14	25.86	30.00	Pass
		3	3.00	26.25	26.14	26.49	30.00	Pass
		6	0.00	26.54	26.06	25.84	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	26055/1851.5	26365/1882.5	26675/1913.5	Limit	Result
3MHz	QPSK	1	0.00	26.42	25.85	25.95	30.00	Pass
		1	7.00	26.31	25.94	26.23	30.00	Pass
		1	14.00	26.34	26.13	26.49	30.00	Pass
		8	0.00	26.26	25.93	26.15	30.00	Pass
		8	4.00	26.30	25.92	26.19	30.00	Pass
		8	7.00	26.33	26.02	26.09	30.00	Pass
		15	0.00	26.27	25.86	26.13	30.00	Pass
	16QAM	1	0.00	26.21	26.56	26.10	30.00	Pass
		1	7.00	26.24	26.59	26.02	30.00	Pass
		1	14.00	26.30	26.49	26.36	30.00	Pass
		8	0.00	26.28	25.86	25.88	30.00	Pass
		8	4.00	26.24	25.84	26.10	30.00	Pass
		8	7.00	26.16	26.18	26.34	30.00	Pass
		15	0.00	26.07	26.17	26.28	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	26065/1852.5	26365/1882.5	26665/1912.5	Limit	Result
5MHz	QPSK	1	0.00	26.16	26.19	25.83	30.00	Pass
		1	12.00	26.48	26.15	25.99	30.00	Pass
		1	24.00	26.06	26.28	26.29	30.00	Pass
		12	0.00	26.23	25.89	25.99	30.00	Pass
		12	6.00	26.31	26.02	25.82	30.00	Pass
		12	13.00	26.28	25.81	26.26	30.00	Pass
		25	0.00	26.18	25.82	25.84	30.00	Pass
	16QAM	1	0.00	26.14	26.10	26.45	30.00	Pass
		1	12.00	26.20	26.18	25.92	30.00	Pass
		1	24.00	25.99	26.20	26.61	30.00	Pass
		12	0.00	25.82	25.86	25.91	30.00	Pass
		12	6.00	26.25	25.92	25.85	30.00	Pass
		12	13.00	26.18	26.08	26.55	30.00	Pass
		25	0.00	26.16	25.87	25.80	30.00	Pass



EIRP Power dBm								
Band	LTE Band 25			Channel/Frequency (MHz)				
Bandwidth	Modulation	RB size	RB offset	26090/1855	26365/1882 .5	26640/1910	Limit	Result
10MHz	QPSK	1	0.00	26.40	26.02	25.94	30.00	Pass
		1	24.00	25.95	25.92	26.46	30.00	Pass
		1	49.00	26.17	25.81	26.57	30.00	Pass
		25	0.00	26.31	26.02	25.87	30.00	Pass
		25	12.00	26.22	26.08	25.92	30.00	Pass
		25	25.00	26.12	25.90	25.82	30.00	Pass
		50	0.00	26.04	25.92	26.72	30.00	Pass
	16QAM	1	0.00	26.61	26.04	26.20	30.00	Pass
		1	24.00	26.40	26.34	26.32	30.00	Pass
		1	49.00	25.91	26.41	25.88	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	26115/1857 .5	26365/1882 .5	26615/1907. 5	Limit	Result
15MHz	QPSK	1	0.00	26.20	26.49	26.32	30.00	Pass
		1	37.00	26.42	26.11	26.14	30.00	Pass
		1	74.00	26.05	26.08	26.74	30.00	Pass
		36	0.00	26.18	26.14	25.81	30.00	Pass
		36	18.00	26.07	26.02	26.00	30.00	Pass
		36	38.00	25.81	25.91	26.08	30.00	Pass
		75	0.00	25.81	25.88	25.86	30.00	Pass
	16QAM	1	0.00	26.42	26.19	26.19	30.00	Pass
		1	37.00	25.82	26.17	26.06	30.00	Pass
		1	74.00	26.46	26.52	26.46	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	26140/1860	26365/1882 .5	26590/1905	Limit	Result
20MHz	QPSK	1	0.00	26.46	26.38	26.49	30.00	Pass
		1	49.00	25.94	26.27	26.28	30.00	Pass
		1	99.00	25.93	26.22	26.10	30.00	Pass
		50	0.00	26.32	26.20	25.87	30.00	Pass
		50	25.00	26.22	26.02	26.15	30.00	Pass
		50	50.00	26.17	25.85	26.16	30.00	Pass
		100	0.00	26.12	26.02	26.27	30.00	Pass
	16QAM	1	0.00	26.11	26.01	26.10	30.00	Pass
		1	49.00	26.12	26.55	26.43	30.00	Pass
		1	99.00	25.81	26.16	26.16	30.00	Pass

Note: Measurement Uncertainty: $\pm 2.6\text{dB}$.



EIRP Power dBm								
Band	LTE Band 66			Channel/Frequency (MHz)				
Bandwidth	Modulation	RB size	RB offset	131979/1710.7	132322/1745	132665/1779.3	Limit	Result
1.4MHz	QPSK	1	0.00	26.64	26.75	26.71	30.00	Pass
		1	3.00	26.19	25.91	26.11	30.00	Pass
		1	5.00	26.16	25.80	26.60	30.00	Pass
		3	0.00	26.09	25.85	26.14	30.00	Pass
		3	2.00	26.10	25.89	26.14	30.00	Pass
		3	3.00	26.05	25.83	26.60	30.00	Pass
		6	0.00	26.04	25.82	26.58	30.00	Pass
	16QAM	1	0.00	26.04	26.03	26.04	30.00	Pass
		1	2.00	26.12	26.08	26.04	30.00	Pass
		1	5.00	26.05	25.96	25.94	30.00	Pass
		3	0.00	26.19	26.04	25.93	30.00	Pass
		3	2.00	26.22	26.08	25.93	30.00	Pass
		3	3.00	26.17	26.02	25.86	30.00	Pass
		6	0.00	26.26	26.14	26.17	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	131987/1711.5	132322/1745	132657/1778.5	Limit	Result
3MHz	QPSK	1	0.00	26.05	25.84	26.02	30.00	Pass
		1	7.00	26.11	25.87	26.09	30.00	Pass
		1	14.00	26.08	26.12	26.60	30.00	Pass
		8	0.00	26.00	25.86	25.80	30.00	Pass
		8	4.00	26.04	25.85	26.00	30.00	Pass
		8	7.00	26.03	26.19	26.58	30.00	Pass
		15	0.00	26.01	26.03	26.19	30.00	Pass
	16QAM	1	0.00	26.26	26.01	26.32	30.00	Pass
		1	7.00	26.36	26.08	26.13	30.00	Pass
		1	14.00	26.33	25.92	25.90	30.00	Pass
		8	0.00	26.14	26.03	25.91	30.00	Pass
		8	4.00	26.18	26.05	25.83	30.00	Pass
		8	7.00	26.17	26.19	26.07	30.00	Pass
		15	0.00	26.06	26.56	25.91	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	131997/1712.5	132322/1745	132647/1777.5	Limit	Result
5MHz	QPSK	1	0.00	26.02	25.81	26.30	30.00	Pass
		1	12.00	26.10	25.81	26.02	30.00	Pass
		1	24.00	26.12	26.16	26.54	30.00	Pass
		12	0.00	26.01	25.86	26.09	30.00	Pass
		12	6.00	26.06	25.84	25.90	30.00	Pass
		12	13.00	26.07	26.04	26.61	30.00	Pass
		25	0.00	26.03	26.08	25.84	30.00	Pass
	16QAM	1	0.00	26.32	26.03	26.46	30.00	Pass
		1	12.00	26.48	26.11	26.16	30.00	Pass
		1	24.00	26.45	25.90	26.10	30.00	Pass
		12	0.00	26.08	25.82	26.28	30.00	Pass
		12	6.00	26.16	26.41	26.02	30.00	Pass
		12	13.00	26.15	26.42	26.17	30.00	Pass
		25	0.00	26.15	26.54	25.91	30.00	Pass



EIRP Power dBm								
Band	LTE Band 66			Channel/Frequency (MHz)				
Bandwidth	Modulation	RB size	RB offset	132022/1715	132322/1745	132622/1775	Limit	Result
10MHz	QPSK	1	0.00	26.28	26.18	25.96	30.00	Pass
		1	24.00	26.22	25.85	26.43	30.00	Pass
		1	49.00	26.09	25.96	25.93	30.00	Pass
		25	0.00	25.83	26.67	26.26	30.00	Pass
		25	12.00	26.09	26.14	26.08	30.00	Pass
		25	25.00	26.01	26.49	26.09	30.00	Pass
		50	0.00	25.91	26.57	26.02	30.00	Pass
	16QAM	1	0.00	26.48	26.36	26.29	30.00	Pass
		1	24.00	26.47	26.04	26.05	30.00	Pass
		1	49.00	26.01	26.12	26.21	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	132047/1717.5	132322/1745	132597/1772.5	Limit	Result
15MHz	QPSK	1	0.00	26.18	26.02	26.07	30.00	Pass
		1	37.00	26.27	26.56	26.39	30.00	Pass
		1	74.00	25.96	26.51	26.13	30.00	Pass
		36	0.00	25.81	26.54	26.34	30.00	Pass
		36	18.00	26.25	26.47	25.95	30.00	Pass
		36	38.00	26.28	26.45	25.86	30.00	Pass
		75	0.00	26.04	26.50	25.96	30.00	Pass
	16QAM	1	0.00	26.43	26.20	26.07	30.00	Pass
		1	37.00	26.55	26.58	25.87	30.00	Pass
		1	74.00	26.17	26.09	26.30	30.00	Pass
Bandwidth	Modulation	RB size	RB offset	132072/1720	132322/1745	132572/1770	Limit	Result
20MHz	QPSK	1	0.00	26.07	26.16	26.03	30.00	Pass
		1	49.00	25.88	26.34	26.38	30.00	Pass
		1	99.00	25.91	26.53	26.18	30.00	Pass
		50	0.00	26.02	25.85	26.14	30.00	Pass
		50	25.00	26.16	26.17	26.04	30.00	Pass
		50	50.00	26.32	26.27	26.12	30.00	Pass
		100	0.00	26.17	26.24	25.94	30.00	Pass
		1	0.00	26.01	26.32	26.08	30.00	Pass
	16QAM	1	49.00	26.42	26.17	26.52	30.00	Pass
		1	99.00	25.94	26.70	26.39	30.00	Pass

Note: Measurement Uncertainty: $\pm 2.6\text{dB}$.



5.8. Radiated Out of Band Emissions

5.8.1. Limit

FCC

-§22.917(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.

-§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.

-§27.53(c)(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.

-§27.53(f), For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band

1 559-1 610 MHz shall be limited to -70 dB W/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dB W 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.

-§27.53(g), 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.

-§27.53(h)(1), for operations in the 1 695-1 710 MHz, 1 710-1 755 MHz, 1 755-1 780 MHz, 1 915-1 920 MHz, 1 995-2 000 MHz, 2 000-2 020 MHz, 2 110-2 155 MHz, 2 155-2 180 MHz, and 2 180-2 200 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.

-§27.53(m)(4), for mobile digital stations, the attenuation factor shall be not less than $40 + 10\log_{10}(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10\log_{10}(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10\log_{10}(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10\log_{10}(P)$ dB on all frequencies between 2 490.5 MHz and 2 496 MHz and $55 + 10\log_{10}(P)$ dB at or below 2 490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2 495 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. §90.691(a), out-of-band emission requirement shall apply only to the "outer" channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116\log_{10}(f/6.1)$ decibels or $50 + 10\log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10\log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

IC

- RSS-130 Issue 2

4.7.1, the unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dB W), by at least $43 + 10\log_{10} p$ (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.

4.7.2, In addition to the limit outlined in section 4.7.1 above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:

a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dB W), by at least:

(i) $76 + 10\log_{10} p$ (watts), dB, for base and fixed equipment, and

(ii) $65 + 10\log_{10} p$ (watts), dB, for mobile and portable equipment.



b) The e.i.r.p. in the band 1 559-1 610 MHz shall not exceed -70 dB W/MHz for wideband signal and -80 dB W for discrete emission with bandwidth less than 700 Hz.

- RSS-132 Issue 4

5.5, Equipment shall meet the unwanted emission limits specified below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1 % of the occupied bandwidth shall be attenuated below the transmitter output power P (dB W) by at least $43 + 10 \log(p)$ dB.

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated below the transmitter output power P (dB W) by at least

$43 + 10 \log(p)$ dB. If the measurement is performed using 1 % of the occupied bandwidth, power integration over 100 kHz is required.

- RSS-133 Issue 7

6.5, Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1 % of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p(\text{watts})$.

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p(\text{watts})$. If the measurement is performed using 1 % of the emission bandwidth, power integration over 1.0 MHz is required.

- RSS-139 Issue 4

5.6, Unwanted emissions shall be measured in terms of average values.

For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table 6.

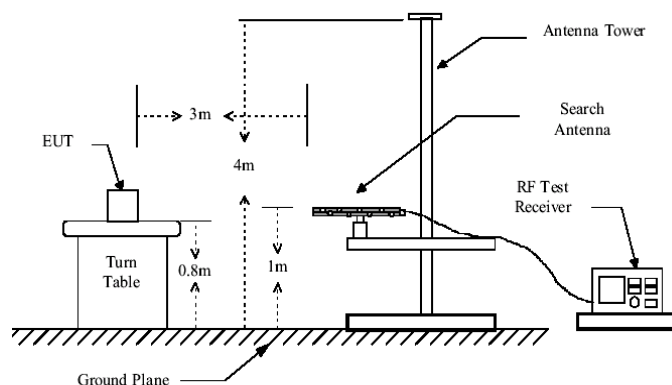
Table 6: Unwanted emission limits

Offset from the edge of the frequency block or frequency block group	Unwanted emission limit
≤ 1 MHz	-13 dB m/(1% of OB)*
> 1 MHz	-13 dB m

* OB is the occupied bandwidth

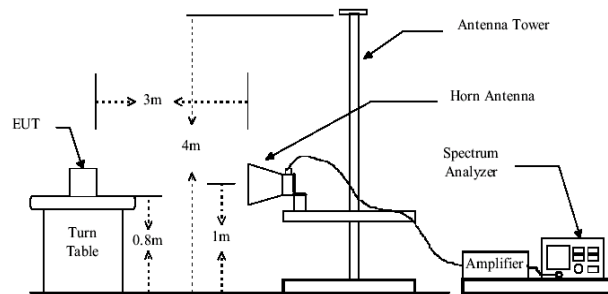
5.8.2. Test Setup

Below 1GHz

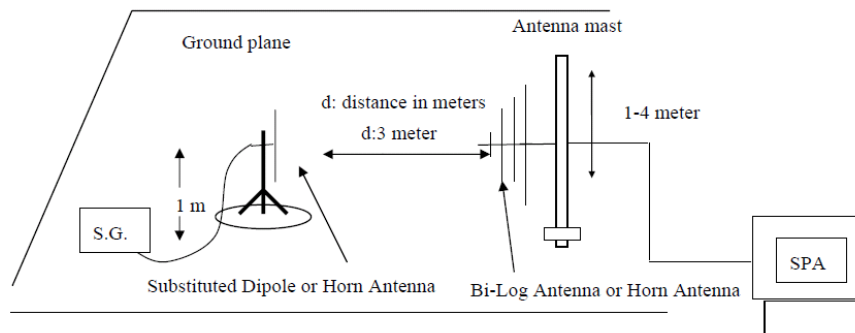




Above 1GHz



Substituted method:





5.8.3. Measurement Procedure

The EUT was placed on a non-conductive, The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. all test in Full-Anechoic Chamber.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

$EIRP \text{ (Level)} = S.G. \text{ output (dBm)} + \text{Antenna Gain(dBi)} - \text{Cable Loss (dB)}$

Note: Measurement Uncertainty: $\pm 3.6 \text{ dB}$.

The data show only the worst results, and the other results are very low and not shown in the report.

5.8.4. Test Result



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
GSM850 Lowest	87.53	Vertical	-75.62	3.35	0.38	-72.65	-13	PASS
	1648.40	Vertical	-46.29	7.76	3.75	-42.28		
	2472.60	Vertical	-47.40	9.84	4.94	-42.50		
	3296.80	Vertical	-39.82	10.21	5.32	-34.93		
	4121.00	Vertical	-43.20	11.36	6.02	-37.86		
	4945.20	Vertical	-44.74	14.52	6.68	-36.90		
GSM850 Middle	88.46	Vertical	-75.62	3.35	0.38	-72.65	-13	PASS
	1673.20	Vertical	-47.61	7.76	3.75	-43.60		
	2509.80	Vertical	-47.20	9.84	4.94	-42.30		
	3346.40	Vertical	-42.81	10.21	5.32	-37.92		
	4183.00	Vertical	-42.22	11.36	6.02	-36.88		
	5019.60	Vertical	-46.19	14.52	6.68	-38.35		
GSM850 Highest	88.65	Vertical	-75.58	3.35	0.38	-72.61	-13	PASS
	1697.60	Vertical	-47.20	7.79	3.53	-42.94		
	2546.40	Vertical	-41.66	9.88	5.02	-36.80		
	3395.20	Vertical	-37.85	10.25	5.54	-33.14		
	4244.00	Vertical	-44.71	11.38	6.16	-39.49		
	5092.80	Vertical	-47.15	14.56	6.72	-39.31		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
GSM1900 Lowest	87.54	Vertical	-75.19	3.35	0.38	-72.22	-13	PASS
	3700.40	Vertical	-46.02	7.76	3.75	-42.01		
	5550.60	Vertical	-47.13	9.84	4.94	-42.23		
	7400.80	Vertical	-39.59	10.21	5.32	-34.70		
	9251.00	Vertical	-42.96	11.36	6.02	-37.62		
	11101.20	Vertical	-44.49	14.52	6.68	-36.65		
GSM1900 Middle	88.70	Vertical	-75.19	3.35	0.38	-72.22	-13	PASS
	3760.00	Vertical	-47.34	7.76	3.75	-43.33		
	5640.00	Vertical	-46.94	9.84	4.94	-42.04		
	7520.00	Vertical	-42.57	10.21	5.32	-37.68		
	9400.00	Vertical	-41.98	11.36	6.02	-36.64		
	11280.00	Vertical	-45.92	14.52	6.68	-38.08		
GSM1900 Highest	88.76	Vertical	-75.15	3.35	0.38	-72.18	-13	PASS
	3819.60	Vertical	-46.94	7.79	3.53	-42.68		
	5729.40	Vertical	-41.41	9.88	5.02	-36.55		
	7639.20	Vertical	-37.62	10.25	5.54	-32.91		
	9549.00	Vertical	-44.46	11.38	6.16	-39.24		
	11458.80	Vertical	-46.89	14.56	6.72	-39.05		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
WCDMA BAND 2 Lowest	87.15	Vertical	-74.74	3.35	0.38	-71.77	-13	PASS
	3704.80	Vertical	-45.74	7.76	3.75	-41.73		
	5557.20	Vertical	-46.85	9.84	4.94	-41.95		
	7409.60	Vertical	-39.35	10.21	5.32	-34.46		
	9262.00	Vertical	-42.71	11.36	6.02	-37.37		
	11114.40	Vertical	-44.23	14.52	6.68	-36.39		
WCDMA BAND 2 Middle	88.27	Vertical	-74.74	3.35	0.38	-71.77	-13	PASS
	3760.00	Vertical	-47.06	7.76	3.75	-43.05		
	5640.00	Vertical	-46.66	9.84	4.94	-41.76		
	7520.00	Vertical	-42.32	10.21	5.32	-37.43		
	9400.00	Vertical	-41.73	11.36	6.02	-36.39		
	11280.00	Vertical	-45.64	14.52	6.68	-37.80		
WCDMA BAND 2 Highest	88.21	Vertical	-74.70	3.35	0.38	-71.73	-13	PASS
	3815.20	Vertical	-46.66	7.79	3.53	-42.40		
	5722.80	Vertical	-41.17	9.88	5.02	-36.31		
	7630.40	Vertical	-37.40	10.25	5.54	-32.69		
	9538.00	Vertical	-44.20	11.38	6.16	-38.98		
	11445.60	Vertical	-46.60	14.56	6.72	-38.76		
WCDMA BAND 4 Lowest	87.33	Vertical	-74.59	3.35	0.38	-71.62	-13	PASS
	3424.80	Vertical	-45.64	7.76	3.75	-41.63		
	5137.20	Vertical	-46.44	9.84	4.94	-41.54		
	6849.60	Vertical	-39.01	10.21	5.32	-34.12		
	8562.00	Vertical	-42.33	11.36	6.02	-36.99		
	10274.40	Vertical	-43.84	14.52	6.68	-36.00		
WCDMA BAND 4 Middle	88.32	Vertical	-74.18	3.35	0.38	-71.21	-13	PASS
	3760.00	Vertical	-46.70	7.76	3.75	-42.69		
	5640.00	Vertical	-46.30	9.84	4.94	-41.40		
	7520.00	Vertical	-42.00	10.21	5.32	-37.11		
	9400.00	Vertical	-41.42	11.36	6.02	-36.08		
	11280.00	Vertical	-45.30	14.52	6.68	-37.46		
WCDMA BAND 4 Highest	88.45	Vertical	-74.14	3.35	0.38	-71.17	-13	PASS
	3505.20	Vertical	-46.30	7.79	3.53	-42.04		
	5257.80	Vertical	-40.86	9.88	5.02	-36.00		
	7010.40	Vertical	-37.12	10.25	5.54	-32.41		
	8763.00	Vertical	-43.86	11.38	6.16	-38.64		
	10515.60	Vertical	-46.25	14.56	6.72	-38.41		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
WCDMA BAND 5 Lowest	87.15	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	1652.80	Vertical	-45.79	7.76	3.75	-41.78		
	2479.20	Vertical	-46.90	9.84	4.94	-42.00		
	3305.60	Vertical	-39.39	10.21	5.32	-34.50		
	4132.00	Vertical	-42.75	11.36	6.02	-37.41		
	4958.40	Vertical	-44.28	14.52	6.68	-36.44		
WCDMA BAND 5 Middle	88.27	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	1673.20	Vertical	-47.11	7.76	3.75	-43.10		
	2509.80	Vertical	-46.71	9.84	4.94	-41.81		
	3346.40	Vertical	-42.37	10.21	5.32	-37.48		
	4183.00	Vertical	-41.78	11.36	6.02	-36.44		
	5019.60	Vertical	-45.69	14.52	6.68	-37.85		
WCDMA BAND 5 Highest	88.21	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	1693.20	Vertical	-46.71	7.79	3.53	-42.45		
	2539.80	Vertical	-41.21	9.88	5.02	-36.35		
	3386.40	Vertical	-37.44	10.25	5.54	-32.73		
	4233.00	Vertical	-44.25	11.38	6.16	-39.03		
	5079.60	Vertical	-46.65	14.56	6.72	-38.81		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 2 1.4MHz Lowest	87.15	Vertical	-75.24	3.35	0.38	-72.27	-13	PASS
	3701.40	Vertical	-46.04	7.76	3.75	-42.03		
	5552.10	Vertical	-47.16	9.84	4.94	-42.26		
	7402.80	Vertical	-39.61	10.21	5.32	-34.72		
	9253.50	Vertical	-42.99	11.36	6.02	-37.65		
	11104.20	Vertical	-44.52	14.52	6.68	-36.68		
LTE BAND 2 1.4MHz Middle	88.27	Vertical	-75.24	3.35	0.38	-72.27	-13	PASS
	3760.00	Vertical	-47.37	7.76	3.75	-43.36		
	5640.00	Vertical	-46.97	9.84	4.94	-42.07		
	7520.00	Vertical	-42.60	10.21	5.32	-37.71		
	9400.00	Vertical	-42.01	11.36	6.02	-36.67		
	11280.00	Vertical	-45.94	14.52	6.68	-38.10		
LTE BAND 2 1.4MHz Highest	88.21	Vertical	-75.20	3.35	0.38	-72.23	-13	PASS
	3819.60	Vertical	-46.97	7.79	3.53	-42.71		
	5729.40	Vertical	-41.44	9.88	5.02	-36.58		
	7639.20	Vertical	-37.65	10.25	5.54	-32.94		
	9549.00	Vertical	-44.49	11.38	6.16	-39.27		
	11458.80	Vertical	-46.91	14.56	6.72	-39.07		
LTE BAND 2 3MHz Lowest	87.33	Vertical	-75.24	3.35	0.38	-72.27	-13	PASS
	3700.40	Vertical	-46.04	7.76	3.75	-42.03		
	5550.60	Vertical	-46.84	9.84	4.94	-41.94		
	7400.80	Vertical	-39.35	10.21	5.32	-34.46		
	9251.00	Vertical	-42.70	11.36	6.02	-37.36		
	11101.20	Vertical	-44.22	14.52	6.68	-36.38		
LTE BAND 2 3MHz Middle	88.32	Vertical	-74.82	3.35	0.38	-71.85	-13	PASS
	3760.00	Vertical	-47.11	7.76	3.75	-43.10		
	5640.00	Vertical	-46.70	9.84	4.94	-41.80		
	7520.00	Vertical	-42.36	10.21	5.32	-37.47		
	9400.00	Vertical	-41.78	11.36	6.02	-36.44		
	11280.00	Vertical	-45.69	14.52	6.68	-37.85		
LTE BAND 2 3MHz Highest	88.45	Vertical	-74.78	3.35	0.38	-71.81	-13	PASS
	3819.60	Vertical	-46.70	7.79	3.53	-42.44		
	5729.40	Vertical	-41.21	9.88	5.02	-36.35		
	7639.20	Vertical	-37.44	10.25	5.54	-32.73		
	9549.00	Vertical	-44.24	11.38	6.16	-39.02		
	11458.80	Vertical	-46.65	14.56	6.72	-38.81		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 2 5MHz Lowest	87.54	Vertical	-74.86	3.35	0.38	-71.89	-13	PASS
	3700.40	Vertical	-45.82	7.76	3.75	-41.81		
	5550.60	Vertical	-46.92	9.84	4.94	-42.02		
	7400.80	Vertical	-39.42	10.21	5.32	-34.53		
	9251.00	Vertical	-42.77	11.36	6.02	-37.43		
	11101.20	Vertical	-44.29	14.52	6.68	-36.45		
LTE BAND 2 5MHz Middle	88.76	Vertical	-74.86	3.35	0.38	-71.89	-13	PASS
	3760.00	Vertical	-47.13	7.76	3.75	-43.12		
	5640.00	Vertical	-46.73	9.84	4.94	-41.83		
	7520.00	Vertical	-42.38	10.21	5.32	-37.49		
	9400.00	Vertical	-41.80	11.36	6.02	-36.46		
	11280.00	Vertical	-45.72	14.52	6.68	-37.88		
LTE BAND 2 5MHz Highest	88.56	Vertical	-74.82	3.35	0.38	-71.85	-13	PASS
	3819.60	Vertical	-46.73	7.79	3.53	-42.47		
	5729.40	Vertical	-41.23	9.88	5.02	-36.37		
	7639.20	Vertical	-37.46	10.25	5.54	-32.75		
	9549.00	Vertical	-44.26	11.38	6.16	-39.04		
	11458.80	Vertical	-46.68	14.56	6.72	-38.84		
LTE BAND 2 10MHz Lowest	87.23	Vertical	-74.86	3.35	0.38	-71.89	-13	PASS
	3700.40	Vertical	-46.07	7.76	3.75	-42.06		
	5550.60	Vertical	-46.87	9.84	4.94	-41.97		
	7400.80	Vertical	-39.37	10.21	5.32	-34.48		
	9251.00	Vertical	-42.72	11.36	6.02	-37.38		
	11101.20	Vertical	-44.24	14.52	6.68	-36.40		
LTE BAND 2 10MHz Middle	88.56	Vertical	-74.91	3.35	0.38	-71.94	-13	PASS
	3760.00	Vertical	-47.16	7.76	3.75	-43.15		
	5640.00	Vertical	-46.76	9.84	4.94	-41.86		
	7520.00	Vertical	-42.41	10.21	5.32	-37.52		
	9400.00	Vertical	-41.82	11.36	6.02	-36.48		
	11280.00	Vertical	-45.75	14.52	6.68	-37.91		
LTE BAND 2 10MHz Highest	88.54	Vertical	-74.87	3.35	0.38	-71.90	-13	PASS
	3819.60	Vertical	-46.76	7.79	3.53	-42.50		
	5729.40	Vertical	-41.26	9.88	5.02	-36.40		
	7639.20	Vertical	-37.48	10.25	5.54	-32.77		
	9549.00	Vertical	-44.29	11.38	6.16	-39.07		
	11458.80	Vertical	-46.71	14.56	6.72	-38.87		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 2 15MHz Lowest	87.41	Vertical	-74.68	3.35	0.38	-71.71	-13	PASS
	3700.40	Vertical	-45.75	7.76	3.75	-41.74		
	5550.60	Vertical	-46.85	9.84	4.94	-41.95		
	7400.80	Vertical	-39.36	10.21	5.32	-34.47		
	9251.00	Vertical	-42.71	11.36	6.02	-37.37		
	11101.20	Vertical	-44.22	14.52	6.68	-36.38		
LTE BAND 2 15MHz Middle	88.14	Vertical	-74.75	3.35	0.38	-71.78	-13	PASS
	3760.00	Vertical	-47.06	7.76	3.75	-43.05		
	5640.00	Vertical	-46.66	9.84	4.94	-41.76		
	7520.00	Vertical	-42.32	10.21	5.32	-37.43		
	9400.00	Vertical	-41.74	11.36	6.02	-36.40		
	11280.00	Vertical	-45.65	14.52	6.68	-37.81		
LTE BAND 2 15MHz Highest	88.62	Vertical	-74.71	3.35	0.38	-71.74	-13	PASS
	3819.60	Vertical	-46.66	7.79	3.53	-42.40		
	5729.40	Vertical	-41.17	9.88	5.02	-36.31		
	7639.20	Vertical	-37.40	10.25	5.54	-32.69		
	9549.00	Vertical	-44.19	11.38	6.16	-38.97		
	11458.80	Vertical	-46.61	14.56	6.72	-38.77		
LTE BAND 2 20MHz Lowest	87.53	Vertical	-74.72	3.35	0.38	-71.75	-13	PASS
	3700.40	Vertical	-45.73	7.76	3.75	-41.72		
	5550.60	Vertical	-46.83	9.84	4.94	-41.93		
	7400.80	Vertical	-39.35	10.21	5.32	-34.46		
	9251.00	Vertical	-42.69	11.36	6.02	-37.35		
	11101.20	Vertical	-44.21	14.52	6.68	-36.37		
LTE BAND 2 20MHz Middle	88.65	Vertical	-74.72	3.35	0.38	-71.75	-13	PASS
	3760.00	Vertical	-47.04	7.76	3.75	-43.03		
	5640.00	Vertical	-46.64	9.84	4.94	-41.74		
	7520.00	Vertical	-42.30	10.21	5.32	-37.41		
	9400.00	Vertical	-41.72	11.36	6.02	-36.38		
	11280.00	Vertical	-45.63	14.52	6.68	-37.79		
LTE BAND 2 20MHz Highest	88.34	Vertical	-74.68	3.35	0.38	-71.71	-13	PASS
	3819.60	Vertical	-46.64	7.79	3.53	-42.38		
	5729.40	Vertical	-41.15	9.88	5.02	-36.29		
	7639.20	Vertical	-37.38	10.25	5.54	-32.67		
	9549.00	Vertical	-44.17	11.38	6.16	-38.95		
	11458.80	Vertical	-46.59	14.56	6.72	-38.75		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 4 1.4MHz Lowest	87.28	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	3421.40	Vertical	-45.79	7.76	3.75	-41.78		
	5132.10	Vertical	-46.90	9.84	4.94	-42.00		
	6842.80	Vertical	-39.40	10.21	5.32	-34.51		
	8553.50	Vertical	-42.75	11.36	6.02	-37.41		
	10264.20	Vertical	-44.28	14.52	6.68	-36.44		
LTE BAND 4 1.4MHz Middle	88.21	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	3465.00	Vertical	-47.10	7.76	3.75	-43.09		
	5197.50	Vertical	-46.71	9.84	4.94	-41.81		
	6930.00	Vertical	-42.36	10.21	5.32	-37.47		
	8662.50	Vertical	-41.77	11.36	6.02	-36.43		
	10395.00	Vertical	-45.70	14.52	6.68	-37.86		
LTE BAND 4 1.4MHz Highest	88.43	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	3508.60	Vertical	-46.71	7.79	3.53	-42.45		
	5262.90	Vertical	-41.21	9.88	5.02	-36.35		
	7017.20	Vertical	-37.44	10.25	5.54	-32.73		
	8771.50	Vertical	-44.25	11.38	6.16	-39.03		
	10525.80	Vertical	-46.66	14.56	6.72	-38.82		
LTE BAND 4 3MHz Lowest	87.45	Vertical	-74.86	3.35	0.38	-71.89	-13	PASS
	3423.00	Vertical	-45.81	7.76	3.75	-41.80		
	5134.50	Vertical	-46.92	9.84	4.94	-42.02		
	6846.00	Vertical	-39.41	10.21	5.32	-34.52		
	8557.50	Vertical	-42.77	11.36	6.02	-37.43		
	10269.00	Vertical	-44.29	14.52	6.68	-36.45		
LTE BAND 4 3MHz Middle	88.21	Vertical	-74.88	3.35	0.38	-71.91	-13	PASS
	3508.60	Vertical	-47.12	7.76	3.75	-43.11		
	5262.90	Vertical	-46.73	9.84	4.94	-41.83		
	7017.20	Vertical	-42.38	10.21	5.32	-37.49		
	8771.50	Vertical	-41.79	11.36	6.02	-36.45		
	10525.80	Vertical	-45.72	14.52	6.68	-37.88		
LTE BAND 4 3MHz Highest	88.33	Vertical	-74.82	3.35	0.38	-71.85	-13	PASS
	3507.00	Vertical	-46.73	7.79	3.53	-42.47		
	5260.50	Vertical	-41.23	9.88	5.02	-36.37		
	7014.00	Vertical	-37.46	10.25	5.54	-32.75		
	8767.50	Vertical	-44.26	11.38	6.16	-39.04		
	10521.00	Vertical	-46.68	14.56	6.72	-38.84		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 4 5MHz Lowest	87.34	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	3425.00	Vertical	-45.80	7.76	3.75	-41.79		
	5137.50	Vertical	-46.90	9.84	4.94	-42.00		
	6850.00	Vertical	-39.40	10.21	5.32	-34.51		
	8562.50	Vertical	-42.75	11.36	6.02	-37.41		
	10275.00	Vertical	-44.27	14.52	6.68	-36.43		
LTE BAND 4 5MHz Middle	88.24	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	3423.00	Vertical	-47.11	7.76	3.75	-43.10		
	5134.50	Vertical	-46.71	9.84	4.94	-41.81		
	6846.00	Vertical	-42.37	10.21	5.32	-37.48		
	8557.50	Vertical	-41.78	11.36	6.02	-36.44		
	10269.00	Vertical	-45.70	14.52	6.68	-37.86		
LTE BAND 4 5MHz Highest	88.34	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	3505.00	Vertical	-46.71	7.79	3.53	-42.45		
	5257.50	Vertical	-41.22	9.88	5.02	-36.36		
	7010.00	Vertical	-37.45	10.25	5.54	-32.74		
	8762.50	Vertical	-44.24	11.38	6.16	-39.02		
	10515.00	Vertical	-46.66	14.56	6.72	-38.82		
LTE BAND 4 10MHz Lowest	87.21	Vertical	-74.77	3.35	0.38	-71.80	-13	PASS
	3430.00	Vertical	-45.76	7.76	3.75	-41.75		
	5145.00	Vertical	-46.87	9.84	4.94	-41.97		
	6860.00	Vertical	-39.38	10.21	5.32	-34.49		
	8575.00	Vertical	-42.72	11.36	6.02	-37.38		
	10290.00	Vertical	-44.24	14.52	6.68	-36.40		
LTE BAND 4 10MHz Middle	88.41	Vertical	-74.72	3.35	0.38	-71.75	-13	PASS
	3505.00	Vertical	-47.08	7.76	3.75	-43.07		
	5257.50	Vertical	-46.68	9.84	4.94	-41.78		
	7010.00	Vertical	-42.34	10.21	5.32	-37.45		
	8762.50	Vertical	-41.75	11.36	6.02	-36.41		
	10515.00	Vertical	-45.66	14.52	6.68	-37.82		
LTE BAND 4 10MHz Highest	88.34	Vertical	-74.73	3.35	0.38	-71.76	-13	PASS
	3500.00	Vertical	-46.68	7.79	3.53	-42.42		
	5250.00	Vertical	-41.19	9.88	5.02	-36.33		
	7000.00	Vertical	-37.42	10.25	5.54	-32.71		
	8750.00	Vertical	-44.21	11.38	6.16	-38.99		
	10500.00	Vertical	-46.63	14.56	6.72	-38.79		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 4 15MHz Lowest	87.32	Vertical	-74.73	3.35	0.38	-71.76	-13	PASS
	3435.00	Vertical	-45.73	7.76	3.75	-41.72		
	5152.50	Vertical	-46.84	9.84	4.94	-41.94		
	6870.00	Vertical	-39.36	10.21	5.32	-34.47		
	8587.50	Vertical	-42.70	11.36	6.02	-37.36		
	10305.00	Vertical	-44.22	14.52	6.68	-36.38		
LTE BAND 4 15MHz Middle	88.32	Vertical	-74.73	3.35	0.38	-71.76	-13	PASS
	3505.00	Vertical	-47.05	7.76	3.75	-43.04		
	5257.50	Vertical	-46.66	9.84	4.94	-41.76		
	7010.00	Vertical	-42.31	10.21	5.32	-37.42		
	8762.50	Vertical	-41.73	11.36	6.02	-36.39		
	10515.00	Vertical	-45.63	14.52	6.68	-37.79		
LTE BAND 4 15MHz Highest	88.32	Vertical	-74.69	3.35	0.38	-71.72	-13	PASS
	3495.00	Vertical	-46.66	7.79	3.53	-42.40		
	5242.50	Vertical	-41.16	9.88	5.02	-36.30		
	6990.00	Vertical	-37.39	10.25	5.54	-32.68		
	8737.50	Vertical	-44.19	11.38	6.16	-38.97		
	10485.00	Vertical	-46.61	14.56	6.72	-38.77		
LTE BAND 4 20MHz Lowest	87.34	Vertical	-74.77	3.35	0.38	-71.80	-13	PASS
	3440.00	Vertical	-45.76	7.76	3.75	-41.75		
	5160.00	Vertical	-46.86	9.84	4.94	-41.96		
	6880.00	Vertical	-39.37	10.21	5.32	-34.48		
	8600.00	Vertical	-42.72	11.36	6.02	-37.38		
	10320.00	Vertical	-44.24	14.52	6.68	-36.40		
LTE BAND 4 20MHz Middle	88.45	Vertical	-74.82	3.35	0.38	-71.85	-13	PASS
	3505.00	Vertical	-47.07	7.76	3.75	-43.06		
	5257.50	Vertical	-46.68	9.84	4.94	-41.78		
	7010.00	Vertical	-42.33	10.21	5.32	-37.44		
	8762.50	Vertical	-41.75	11.36	6.02	-36.41		
	10515.00	Vertical	-45.66	14.52	6.68	-37.82		
LTE BAND 4 20MHz Highest	88.56	Vertical	-74.73	3.35	0.38	-71.76	-13	PASS
	3490.00	Vertical	-46.68	7.79	3.53	-42.42		
	5235.00	Vertical	-41.18	9.88	5.02	-36.32		
	6980.00	Vertical	-37.41	10.25	5.54	-32.70		
	8725.00	Vertical	-44.21	11.38	6.16	-38.99		
	10470.00	Vertical	-46.63	14.56	6.72	-38.79		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 5 1.4MHz Lowest	87.45	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	3700.40	Vertical	-45.78	7.76	3.75	-41.77		
	5550.60	Vertical	-46.88	9.84	4.94	-41.98		
	7400.80	Vertical	-39.38	10.21	5.32	-34.49		
	9251.00	Vertical	-42.73	11.36	6.02	-37.39		
	11101.20	Vertical	-44.25	14.52	6.68	-36.41		
LTE BAND 5 1.4MHz Middle	88.21	Vertical	-74.79	3.35	0.38	-71.82	-13	PASS
	3760.00	Vertical	-47.09	7.76	3.75	-43.08		
	5640.00	Vertical	-46.69	9.84	4.94	-41.79		
	7520.00	Vertical	-42.34	10.21	5.32	-37.45		
	9400.00	Vertical	-41.76	11.36	6.02	-36.42		
	11280.00	Vertical	-45.68	14.52	6.68	-37.84		
LTE BAND 5 1.4MHz Highest	88.77	Vertical	-74.75	3.35	0.38	-71.78	-13	PASS
	3819.60	Vertical	-46.69	7.79	3.53	-42.43		
	5729.40	Vertical	-41.19	9.88	5.02	-36.33		
	7639.20	Vertical	-37.42	10.25	5.54	-32.71		
	9549.00	Vertical	-44.22	11.38	6.16	-39.00		
	11458.80	Vertical	-46.64	14.56	6.72	-38.80		
LTE BAND 5 3MHz Lowest	87.98	Vertical	-74.74	3.35	0.38	-71.77	-13	PASS
	3700.40	Vertical	-45.74	7.76	3.75	-41.73		
	5550.60	Vertical	-46.85	9.84	4.94	-41.95		
	7400.80	Vertical	-39.36	10.21	5.32	-34.47		
	9251.00	Vertical	-42.70	11.36	6.02	-37.36		
	11101.20	Vertical	-44.22	14.52	6.68	-36.38		
LTE BAND 5 3MHz Middle	88.78	Vertical	-74.87	3.35	0.38	-71.90	-13	PASS
	3760.00	Vertical	-47.14	7.76	3.75	-43.13		
	5640.00	Vertical	-46.74	9.84	4.94	-41.84		
	7520.00	Vertical	-42.39	10.21	5.32	-37.50		
	9400.00	Vertical	-41.80	11.36	6.02	-36.46		
	11280.00	Vertical	-45.72	14.52	6.68	-37.88		
LTE BAND 5 3MHz Highest	88.67	Vertical	-74.83	3.35	0.38	-71.86	-13	PASS
	3819.60	Vertical	-46.74	7.79	3.53	-42.48		
	5729.40	Vertical	-41.23	9.88	5.02	-36.37		
	7639.20	Vertical	-37.46	10.25	5.54	-32.75		
	9549.00	Vertical	-44.27	11.38	6.16	-39.05		
	11458.80	Vertical	-46.69	14.56	6.72	-38.85		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 5 5MHz Lowest	87.66	Vertical	-74.35	3.35	0.38	-71.38	-13	PASS
	3700.40	Vertical	-45.50	7.76	3.75	-41.49		
	5550.60	Vertical	-46.60	9.84	4.94	-41.70		
	7400.80	Vertical	-39.15	10.21	5.32	-34.26		
	9251.00	Vertical	-42.48	11.36	6.02	-37.14		
	11101.20	Vertical	-43.99	14.52	6.68	-36.15		
LTE BAND 5 5MHz Middle	88.32	Vertical	-74.35	3.35	0.38	-71.38	-13	PASS
	3760.00	Vertical	-46.81	7.76	3.75	-42.80		
	5640.00	Vertical	-46.42	9.84	4.94	-41.52		
	7520.00	Vertical	-42.09	10.21	5.32	-37.20		
	9400.00	Vertical	-41.51	11.36	6.02	-36.17		
	11280.00	Vertical	-45.40	14.52	6.68	-37.56		
LTE BAND 5 5MHz Highest	88.32	Vertical	-74.31	3.35	0.38	-71.34	-13	PASS
	3819.60	Vertical	-46.42	7.79	3.53	-42.16		
	5729.40	Vertical	-40.95	9.88	5.02	-36.09		
	7639.20	Vertical	-37.20	10.25	5.54	-32.49		
	9549.00	Vertical	-43.96	11.38	6.16	-38.74		
	11458.80	Vertical	-46.37	14.56	6.72	-38.53		
LTE BAND 5 10MHz Lowest	87.23	Vertical	-74.38	3.35	0.38	-71.41	-13	PASS
	3700.40	Vertical	-45.52	7.76	3.75	-41.51		
	5550.60	Vertical	-46.61	9.84	4.94	-41.71		
	7400.80	Vertical	-39.16	10.21	5.32	-34.27		
	9251.00	Vertical	-42.50	11.36	6.02	-37.16		
	11101.20	Vertical	-44.01	14.52	6.68	-36.17		
LTE BAND 5 10MHz Middle	88.21	Vertical	-74.45	3.35	0.38	-71.48	-13	PASS
	3760.00	Vertical	-46.87	7.76	3.75	-42.86		
	5640.00	Vertical	-46.47	9.84	4.94	-41.57		
	7520.00	Vertical	-42.16	10.21	5.32	-37.27		
	9400.00	Vertical	-41.57	11.36	6.02	-36.23		
	11280.00	Vertical	-45.46	14.52	6.68	-37.62		
LTE BAND 5 10MHz Highest	88.15	Vertical	-74.41	3.35	0.38	-71.44	-13	PASS
	3819.60	Vertical	-46.47	7.79	3.53	-42.21		
	5729.40	Vertical	-41.01	9.88	5.02	-36.15		
	7639.20	Vertical	-37.26	10.25	5.54	-32.55		
	9549.00	Vertical	-44.02	11.38	6.16	-38.80		
	11458.80	Vertical	-46.42	14.56	6.72	-38.58		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 25 1.4MHz Lowest	88.78	Vertical	-75.44	3.35	0.38	-72.47	-13	PASS
	3701.40	Vertical	-46.16	7.76	3.75	-42.15		
	5552.10	Vertical	-47.28	9.84	4.94	-42.38		
	7402.80	Vertical	-39.71	10.21	5.32	-34.82		
	9253.50	Vertical	-43.10	11.36	6.02	-37.76		
	11104.20	Vertical	-44.64	14.52	6.68	-36.80		
LTE BAND 25 1.4MHz Middle	89.76	Vertical	-75.44	3.35	0.38	-72.47	-13	PASS
	3760.00	Vertical	-47.49	7.76	3.75	-43.48		
	5640.00	Vertical	-47.09	9.84	4.94	-42.19		
	7520.00	Vertical	-42.71	10.21	5.32	-37.82		
	9400.00	Vertical	-42.12	11.36	6.02	-36.78		
	11280.00	Vertical	-46.06	14.52	6.68	-38.22		
LTE BAND 25 1.4MHz Highest	88.85	Vertical	-75.40	3.35	0.38	-72.43	-13	PASS
	3819.60	Vertical	-47.09	7.79	3.53	-42.83		
	5729.40	Vertical	-41.55	9.88	5.02	-36.69		
	7639.20	Vertical	-37.75	10.25	5.54	-33.04		
	9549.00	Vertical	-44.61	11.38	6.16	-39.39		
	11458.80	Vertical	-47.03	14.56	6.72	-39.19		
LTE BAND 25 3MHz Lowest	87.43	Vertical	-75.44	3.35	0.38	-72.47	-13	PASS
	3700.40	Vertical	-46.16	7.76	3.75	-42.15		
	5550.60	Vertical	-46.96	9.84	4.94	-42.06		
	7400.80	Vertical	-39.45	10.21	5.32	-34.56		
	9251.00	Vertical	-42.81	11.36	6.02	-37.47		
	11101.20	Vertical	-44.33	14.52	6.68	-36.49		
LTE BAND 25 3MHz Middle	88.78	Vertical	-75.01	3.35	0.38	-72.04	-13	PASS
	3760.00	Vertical	-47.23	7.76	3.75	-43.22		
	5640.00	Vertical	-46.82	9.84	4.94	-41.92		
	7520.00	Vertical	-42.47	10.21	5.32	-37.58		
	9400.00	Vertical	-41.89	11.36	6.02	-36.55		
	11280.00	Vertical	-45.81	14.52	6.68	-37.97		
LTE BAND 25 3MHz Highest	88.77	Vertical	-74.97	3.35	0.38	-72.00	-13	PASS
	3819.60	Vertical	-46.82	7.79	3.53	-42.56		
	5729.40	Vertical	-41.32	9.88	5.02	-36.46		
	7639.20	Vertical	-37.54	10.25	5.54	-32.83		
	9549.00	Vertical	-44.36	11.38	6.16	-39.14		
	11458.80	Vertical	-46.77	14.56	6.72	-38.93		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 25 5MHz Lowest	87.25	Vertical	-75.05	3.35	0.38	-72.08	-13	PASS
	3700.40	Vertical	-45.94	7.76	3.75	-41.93		
	5550.60	Vertical	-47.04	9.84	4.94	-42.14		
	7400.80	Vertical	-39.52	10.21	5.32	-34.63		
	9251.00	Vertical	-42.88	11.36	6.02	-37.54		
	11101.20	Vertical	-44.41	14.52	6.68	-36.57		
LTE BAND 25 5MHz Middle	88.37	Vertical	-75.05	3.35	0.38	-72.08	-13	PASS
	3760.00	Vertical	-47.25	7.76	3.75	-43.24		
	5640.00	Vertical	-46.85	9.84	4.94	-41.95		
	7520.00	Vertical	-42.49	10.21	5.32	-37.60		
	9400.00	Vertical	-41.91	11.36	6.02	-36.57		
	11280.00	Vertical	-45.84	14.52	6.68	-38.00		
LTE BAND 25 5MHz Highest	88.54	Vertical	-75.01	3.35	0.38	-72.04	-13	PASS
	3819.60	Vertical	-46.85	7.79	3.53	-42.59		
	5729.40	Vertical	-41.34	9.88	5.02	-36.48		
	7639.20	Vertical	-37.56	10.25	5.54	-32.85		
	9549.00	Vertical	-44.38	11.38	6.16	-39.16		
	11458.80	Vertical	-46.80	14.56	6.72	-38.96		
LTE BAND 25 10MHz Lowest	87.42	Vertical	-75.05	3.35	0.38	-72.08	-13	PASS
	3700.40	Vertical	-46.19	7.76	3.75	-42.18		
	5550.60	Vertical	-46.99	9.84	4.94	-42.09		
	7400.80	Vertical	-39.47	10.21	5.32	-34.58		
	9251.00	Vertical	-42.83	11.36	6.02	-37.49		
	11101.20	Vertical	-44.36	14.52	6.68	-36.52		
LTE BAND 25 10MHz Middle	88.43	Vertical	-75.10	3.35	0.38	-72.13	-13	PASS
	3760.00	Vertical	-47.28	7.76	3.75	-43.27		
	5640.00	Vertical	-46.88	9.84	4.94	-41.98		
	7520.00	Vertical	-42.52	10.21	5.32	-37.63		
	9400.00	Vertical	-41.93	11.36	6.02	-36.59		
	11280.00	Vertical	-45.87	14.52	6.68	-38.03		
LTE BAND 25 10MHz Highest	88.42	Vertical	-75.06	3.35	0.38	-72.09	-13	PASS
	3819.60	Vertical	-46.88	7.79	3.53	-42.62		
	5729.40	Vertical	-41.37	9.88	5.02	-36.51		
	7639.20	Vertical	-37.58	10.25	5.54	-32.87		
	9549.00	Vertical	-44.41	11.38	6.16	-39.19		
	11458.80	Vertical	-46.83	14.56	6.72	-38.99		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 25 15MHz Lowest	87.54	Vertical	-74.87	3.35	0.38	-71.90	-13	PASS
	3700.40	Vertical	-45.87	7.76	3.75	-41.86		
	5550.60	Vertical	-46.97	9.84	4.94	-42.07		
	7400.80	Vertical	-39.46	10.21	5.32	-34.57		
	9251.00	Vertical	-42.82	11.36	6.02	-37.48		
	11101.20	Vertical	-44.33	14.52	6.68	-36.49		
LTE BAND 25 15MHz Middle	88.54	Vertical	-74.94	3.35	0.38	-71.97	-13	PASS
	3760.00	Vertical	-47.18	7.76	3.75	-43.17		
	5640.00	Vertical	-46.78	9.84	4.94	-41.88		
	7520.00	Vertical	-42.43	10.21	5.32	-37.54		
	9400.00	Vertical	-41.85	11.36	6.02	-36.51		
	11280.00	Vertical	-45.77	14.52	6.68	-37.93		
LTE BAND 25 15MHz Highest	88.54	Vertical	-74.90	3.35	0.38	-71.93	-13	PASS
	3819.60	Vertical	-46.78	7.79	3.53	-42.52		
	5729.40	Vertical	-41.28	9.88	5.02	-36.42		
	7639.20	Vertical	-37.50	10.25	5.54	-32.79		
	9549.00	Vertical	-44.30	11.38	6.16	-39.08		
	11458.80	Vertical	-46.73	14.56	6.72	-38.89		
LTE BAND 25 20MHz Lowest	87.65	Vertical	-74.91	3.35	0.38	-71.94	-13	PASS
	3700.40	Vertical	-45.85	7.76	3.75	-41.84		
	5550.60	Vertical	-46.95	9.84	4.94	-42.05		
	7400.80	Vertical	-39.45	10.21	5.32	-34.56		
	9251.00	Vertical	-42.80	11.36	6.02	-37.46		
	11101.20	Vertical	-44.32	14.52	6.68	-36.48		
LTE BAND 25 20MHz Middle	88.76	Vertical	-74.91	3.35	0.38	-71.94	-13	PASS
	3760.00	Vertical	-47.16	7.76	3.75	-43.15		
	5640.00	Vertical	-46.76	9.84	4.94	-41.86		
	7520.00	Vertical	-42.41	10.21	5.32	-37.52		
	9400.00	Vertical	-41.83	11.36	6.02	-36.49		
	11280.00	Vertical	-45.75	14.52	6.68	-37.91		
LTE BAND 25 20MHz Highest	88.58	Vertical	-74.87	3.35	0.38	-71.90	-13	PASS
	3819.60	Vertical	-46.76	7.79	3.53	-42.50		
	5729.40	Vertical	-41.26	9.88	5.02	-36.40		
	7639.20	Vertical	-37.48	10.25	5.54	-32.77		
	9549.00	Vertical	-44.28	11.38	6.16	-39.06		
	11458.80	Vertical	-46.71	14.56	6.72	-38.87		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 66 1.4MHz Lowest	87.18	Vertical	-74.58	3.35	0.38	-71.61	-13	PASS
	3421.40	Vertical	-45.64	7.76	3.75	-41.63		
	5132.10	Vertical	-46.74	9.84	4.94	-41.84		
	6842.80	Vertical	-39.27	10.21	5.32	-34.38		
	8553.50	Vertical	-42.61	11.36	6.02	-37.27		
	10264.20	Vertical	-44.13	14.52	6.68	-36.29		
LTE BAND 66 1.4MHz Middle	88.32	Vertical	-74.58	3.35	0.38	-71.61	-13	PASS
	3490.00	Vertical	-46.96	7.76	3.75	-42.95		
	5235.00	Vertical	-46.55	9.84	4.94	-41.65		
	6980.00	Vertical	-42.23	10.21	5.32	-37.34		
	8725.00	Vertical	-41.64	11.36	6.02	-36.30		
	10470.00	Vertical	-45.54	14.52	6.68	-37.70		
LTE BAND 66 1.4MHz Highest	88.11	Vertical	-74.54	3.35	0.38	-71.57	-13	PASS
	3558.60	Vertical	-46.55	7.79	3.53	-42.29		
	5337.90	Vertical	-41.08	9.88	5.02	-36.22		
	7117.20	Vertical	-37.32	10.25	5.54	-32.61		
	8896.50	Vertical	-44.10	11.38	6.16	-38.88		
	10675.80	Vertical	-46.50	14.56	6.72	-38.66		
LTE BAND 66 3MHz Lowest	87.32	Vertical	-74.60	3.35	0.38	-71.63	-13	PASS
	3423.00	Vertical	-45.66	7.76	3.75	-41.65		
	5134.50	Vertical	-46.76	9.84	4.94	-41.86		
	6846.00	Vertical	-39.28	10.21	5.32	-34.39		
	8557.50	Vertical	-42.62	11.36	6.02	-37.28		
	10269.00	Vertical	-44.14	14.52	6.68	-36.30		
LTE BAND 66 3MHz Middle	88.21	Vertical	-74.62	3.35	0.38	-71.65	-13	PASS
	3490.00	Vertical	-46.98	7.76	3.75	-42.97		
	5235.00	Vertical	-46.59	9.84	4.94	-41.69		
	6980.00	Vertical	-42.25	10.21	5.32	-37.36		
	8725.00	Vertical	-41.67	11.36	6.02	-36.33		
	10470.00	Vertical	-45.58	14.52	6.68	-37.74		
LTE BAND 66 3MHz Highest	88.76	Vertical	-74.59	3.35	0.38	-71.62	-13	PASS
	3557.00	Vertical	-46.59	7.79	3.53	-42.33		
	5335.50	Vertical	-41.10	9.88	5.02	-36.24		
	7114.00	Vertical	-37.34	10.25	5.54	-32.63		
	8892.50	Vertical	-44.12	11.38	6.16	-38.90		
	10671.00	Vertical	-46.54	14.56	6.72	-38.70		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 66 5MHz Lowest	87.45	Vertical	-74.47	3.35	0.38	-71.50	-13	PASS
	3425.00	Vertical	-45.58	7.76	3.75	-41.57		
	5137.50	Vertical	-46.68	9.84	4.94	-41.78		
	6850.00	Vertical	-39.21	10.21	5.32	-34.32		
	8562.50	Vertical	-42.55	11.36	6.02	-37.21		
	10275.00	Vertical	-44.06	14.52	6.68	-36.22		
LTE BAND 66 5MHz Middle	88.65	Vertical	-74.47	3.35	0.38	-71.50	-13	PASS
	3490.00	Vertical	-46.88	7.76	3.75	-42.87		
	5235.00	Vertical	-46.49	9.84	4.94	-41.59		
	6980.00	Vertical	-42.16	10.21	5.32	-37.27		
	8725.00	Vertical	-41.58	11.36	6.02	-36.24		
	10470.00	Vertical	-45.48	14.52	6.68	-37.64		
LTE BAND 66 5MHz Highest	88.36	Vertical	-74.43	3.35	0.38	-71.46	-13	PASS
	3555.00	Vertical	-46.49	7.79	3.53	-42.23		
	5332.50	Vertical	-41.02	9.88	5.02	-36.16		
	7110.00	Vertical	-37.26	10.25	5.54	-32.55		
	8887.50	Vertical	-44.03	11.38	6.16	-38.81		
	10665.00	Vertical	-46.44	14.56	6.72	-38.60		
LTE BAND 66 10MHz Lowest	87.11	Vertical	-74.49	3.35	0.38	-71.52	-13	PASS
	3430.00	Vertical	-45.59	7.76	3.75	-41.58		
	5145.00	Vertical	-46.69	9.84	4.94	-41.79		
	6860.00	Vertical	-39.22	10.21	5.32	-34.33		
	8575.00	Vertical	-42.63	11.36	6.02	-37.29		
	10290.00	Vertical	-44.15	14.52	6.68	-36.31		
LTE BAND 66 10MHz Middle	88.21	Vertical	-74.51	3.35	0.38	-71.54	-13	PASS
	3490.00	Vertical	-46.91	7.76	3.75	-42.90		
	5235.00	Vertical	-46.51	9.84	4.94	-41.61		
	6980.00	Vertical	-42.18	10.21	5.32	-37.29		
	8725.00	Vertical	-41.60	11.36	6.02	-36.26		
	10470.00	Vertical	-45.50	14.52	6.68	-37.66		
LTE BAND 66 10MHz Highest	88.54	Vertical	-74.47	3.35	0.38	-71.50	-13	PASS
	3550.00	Vertical	-46.51	7.79	3.53	-42.25		
	5325.00	Vertical	-41.04	9.88	5.02	-36.18		
	7100.00	Vertical	-37.28	10.25	5.54	-32.57		
	8875.00	Vertical	-44.05	11.38	6.16	-38.83		
	10650.00	Vertical	-46.46	14.56	6.72	-38.62		



Band	Frequency (MHz)	Spurious Emission					Limit (dBm)	Result
		Polarization	S.G. output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	Level (dBm)		
LTE BAND 66 20MHz Lowest	87.18	Vertical	-73.55	3.35	0.38	-70.58	-13	PASS
	3440.00	Vertical	-45.01	7.76	3.75	-41.00		
	5160.00	Vertical	-46.11	9.84	4.94	-41.21		
	6880.00	Vertical	-38.73	10.21	5.32	-33.84		
	8600.00	Vertical	-42.03	11.36	6.02	-36.69		
	10320.00	Vertical	-43.52	14.52	6.68	-35.68		
LTE BAND 66 20MHz Middle	88.43	Vertical	-73.55	3.35	0.38	-70.58	-13	PASS
	3490.00	Vertical	-46.31	7.76	3.75	-42.30		
	5235.00	Vertical	-45.92	9.84	4.94	-41.02		
	6980.00	Vertical	-41.64	10.21	5.32	-36.75		
	8725.00	Vertical	-41.07	11.36	6.02	-35.73		
	10470.00	Vertical	-44.91	14.52	6.68	-37.07		
LTE BAND 66 20MHz Highest	88.12	Vertical	-73.51	3.35	0.38	-70.54	-13	PASS
	3540.00	Vertical	-45.92	7.79	3.53	-41.66		
	5310.00	Vertical	-40.51	9.88	5.02	-35.65		
	7080.00	Vertical	-36.81	10.25	5.54	-32.10		
	8850.00	Vertical	-43.49	11.38	6.16	-38.27		
	10620.00	Vertical	-45.87	14.56	6.72	-38.03		



6. PHOTOGRAPHS OF TEST SET-UP

Please see setup photo.

7. PHOTOGRAPHS OF THE EUT

Please see external photo and internal photo.

***** END OF REPORT *****