

TEST REPORT

Applicant: TENG INTERNACIONAL TRADING LIMITED
Address: 4f 299 QRC NOS 287 299 QUEENS RD CENTRAL,
HONG KONG
Equipment Type: Pos Terminal
Model Name: S8 (refer to section 2.3)
Brand Name: TENG INTERNACIONAL
FCC ID: 2BTGQ-S8
Test Standard: 47 CFR Part 2
(Others refer to chapter 3.1)
Sample Arrival Date: Mar. 06, 2026
Test Date: Mar. 09, 2026 - Mar. 12, 2026
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ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Guo Jianxin**Checked by:** Huang Jinsheng**Approved by:** Tolan Tu

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Revision History

Version	Issue Date	Revisions Content
<u>Rev. 01</u>	<u>May 08, 2026</u>	<u>Initial Issue</u>

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	601, Building 2, Intelligent Connected Vehicle Industrial Park, No.55, Xiangshan Road, Luotian Community, Yanluo Sub-district, Bao'an District, Shenzhen
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☐ Building 2, Intelligent Connected Vehicle Industrial Park, No.55, Xiangshan Road, Luotian Community, Yanluo Sub-district, Bao'an District, Shenzhen, Guangdong
	☒ 1/F., Building B, Ganghongji High-Tech Intelligent Industrial Park, No.1008, Songbai Road, Yangguang Community, Xili Subdistrict, Nanshan District, Shenzhen, Guangdong
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	TENG INTERNACIONAL TRADING LIMITED
Address	4f 299 QRC NOS 287 299 QUEENS RD CENTRAL, HONG KONG

2.2 Manufacturer Information

Manufacturer	TENG INTERNACIONAL TRADING LIMITED
Address	4f 299 QRC NOS 287 299 QUEENS RD CENTRAL, HONG KONG

2.3 General Description for Equipment under Test (EUT)

EUT Name	Pos Terminal
Model Name Under Test	S8
Series Model Name	S8s
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in magnetic head function and thickness. (this information provided by the applicant)
Hardware Version	V3
Software Version	SP7997B_V022_20251112_debug
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A
EUT ID	S07
IMEI Number	IMEI1: 869325026997545
	IMEI2: 869325026997552

2.4 Technical Information

All Network and Wireless connectivity for EUT	2G Network GPRS/EDGE 850/1900 MHz 3G Network WCDMA/HSDPA/HSUPA Band 2/5 4G Network LTE FDD Band 5/7 Bluetooth (BR+EDR+BLE) WIFI 802.11a, 802.11b, 802.11g, 802.11n and 802.11ac NFC
About the Product	The equipment is Pos Terminal, intended for used with information technology equipment.

The following is the technical information of the EUT tested frequency bands in this report.

Operating Bands			GPRS/EDGE 850/1900 MHz WCDMA/HSDPA/HSUPA Band 2/5 LTE FDD Band 5/7	
Modulation Type			GPRS	GMSK
			EGPRS	8PSK
			WCDMA	QPSK
			HSDPA /HSUPA	QPSK
				16QAM
			LTE	QPSK
16QAM				
Multislot Class			GPRS/EGPRS: 12	
Antenna Type			PIFA Antenna	
Antenna Gain			GPRS/EDGE 850: -2.98 dBi GPRS/EDGE 1900: -0.78 dBi WCDMA/HSDPA/HSUPA Band 2: -0.78 dBi WCDMA/HSDPA/HSUPA Band 5: -2.98 dBi FDD LTE Band 5: -2.98 dBi FDD LTE Band 7: 0.74 dBi	
The Max RF Output Power (EIRP/ERP)			GPRS/EDGE 850: 25.02 dBm GPRS/EDGE 1900: 28.37 dBm WCDMA/HSDPA/HSUPA Band 2: 22.17 dBm WCDMA/HSDPA/HSUPA Band 5: 17.67 dBm FDD LTE Band 5: 17.77 dBm FDD LTE Band 7: 23.22 dBm	
Band	Power Class		Tx Frequency Range	Rx Frequency Range
	GMSK	8PSK		
GSM850	4	E2	824 MHz ~ 849 MHz	869 MHz ~ 894 MHz
GSM1900	1	E2	1850 MHz ~ 1910 MHz	1930 MHz ~ 1990 MHz
WCDMA B2	3		1850 MHz ~ 1910 MHz	1930 MHz ~ 1990 MHz
WCDMA B5	3		824 MHz ~ 849 MHz	869 MHz ~ 894 MHz
LTE B5	3		824 MHz ~ 849 MHz	869 MHz ~ 894 MHz
LTE B7	3		2500 MHz ~ 2570 MHz	2620 MHz ~ 2690 MHz

Note: The EUT information provided by the applicant, except for The Max RF Conducted Power. For more detailed band specifications and features description, please refer to the manufacturer's specifications or user's manual.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 Subpart H	Cellular Radiotelephone Service
3	47 CFR Part 24 Subpart E	Broadband PCS
4	47 CFR Part 27	Miscellaneous Wireless Communications Services
5	ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
6	KDB 971168 D01 v03	Measurement Guidance for Certification of Licensed Digital Transmitters

3.2 Test Verdict

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

Note: The difference between the EUT (test samples in this report) and testing sample of report No.BL-SZ25B1343-501, which was issued by Shenzhen BALUN Technology Co., Ltd. on Jan. 26, 2026 is that:

1. Add magnetic head function
2. The top dimension has been reduced from a thickness of 61.4mm to 52.5mm
3. Add model name: S8s

And others hardware circuit and software were all the same. Therefore, only the test case Field Strength of Spurious Radiation was retested in this report, and other test cases originated from report No.BL-SZ25B1343-501, which was issued by Shenzhen BALUN Technology Co., Ltd. on Jan. 26, 2026.

3.3 Measurement Uncertainty

Test Case	Uncertainty
Conducted RF Output Power	0.68dB
Effective (Isotropic) Radiated Power	2.50dB
Peak to Average Ratio	0.015%
Occupied Bandwidth	1.4/3MHz: 30kHz 5/10MHz: 100kHz 15/20MHz: 300kHz
Frequency Stability	12Hz
Spurious Emission at Antenna Terminals	2.56dB
Band Edge	1.48dB
Field Strength of Spurious Radiation	4.55dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

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

Relative Humidity		20% to 75%
Atmospheric Pressure		98 kPa to 102 kPa
Test Voltage of the EUT	NV (Normal Voltage)	3.6V
	LV (Low Voltage)	3.3V
	HV (High Voltage)	4.2V
Test Temperature of the EUT	NT (Normal Temperature)	15 °C to 35 °C
	LT (Low Temperature)	-30 °C
	HT (High Temperature)	50 °C

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Version	Cal. Date	Cal. Due
Radiated Test System						
Radiated Test System Test Software	BALUN	BL410-E	N/A	V22.4	N/A	N/A
Wideband Radio Communication Tester	R&S	CMW 500	120598	V3.7.172	2025.08.13	2026.08.12
Test Antenna-Bi-Log (30 MHz-3 GHz)	Schwarzbeck	VULB 9163	01414	N/A	2023.11.03	2026.11.02
Test Antenna-Horn (1-18 GHz)	Schwarzbeck	BBHA 9120D	02459	N/A	2023.10.26	2026.10.25
Anechoic Chamber	YIHENG	C8-966	N/A	N/A	2024.05.15	2027.05.11
EMI Receiver	Keysight	N9038A	MY55330121	A.20.03	2025.04.16	2026.04.15

4.3 Test Configurations

Test Items	Test Mode	Test Channel		
		LCH	MCH	HCH
Effective (Isotropic) Radiated Power	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v
	WCDMA Band 2	v	v	v
	WCDMA Band 5	v	v	v
	HSDPA Band 2	v	v	v
	HSDPA Band 5	v	v	v
	HSUPA Band 2	v	v	v
	HSUPA Band 5	v	v	v
Peak to Average Ratio	WCDMA Band 2	v	v	v
	WCDMA Band 5	v	v	v
Occupied Bandwidth	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v
	WCDMA Band 2	v	v	v
	WCDMA Band 5	v	v	v
Frequency Stability	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v
	WCDMA Band 2	v	v	v
	WCDMA Band 5	v	v	v
Spurious Emission at Antenna Terminals	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v
	EGPRS 1900	v	v	v
	WCDMA Band 2	v	v	v
	WCDMA Band 5	v	v	v
Band Edge	GPRS 850	v	--	v
	GPRS 1900	v	--	v
	EGPRS 850	v	--	v
	EGPRS 1900	v	--	v
	WCDMA Band 2	v	--	v
	WCDMA Band 5	v	--	v
Field Strength of Spurious Radiation	GPRS 850	v	v	v
	GPRS 1900	v	v	v
	EGPRS 850	v	v	v

Test Items	Test Mode	Test Channel		
		LCH	MCH	HCH
	EGPRS 1900	v	v	v
	WCDMA Band 2	v	v	v
	WCDMA Band 5	v	v	v

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

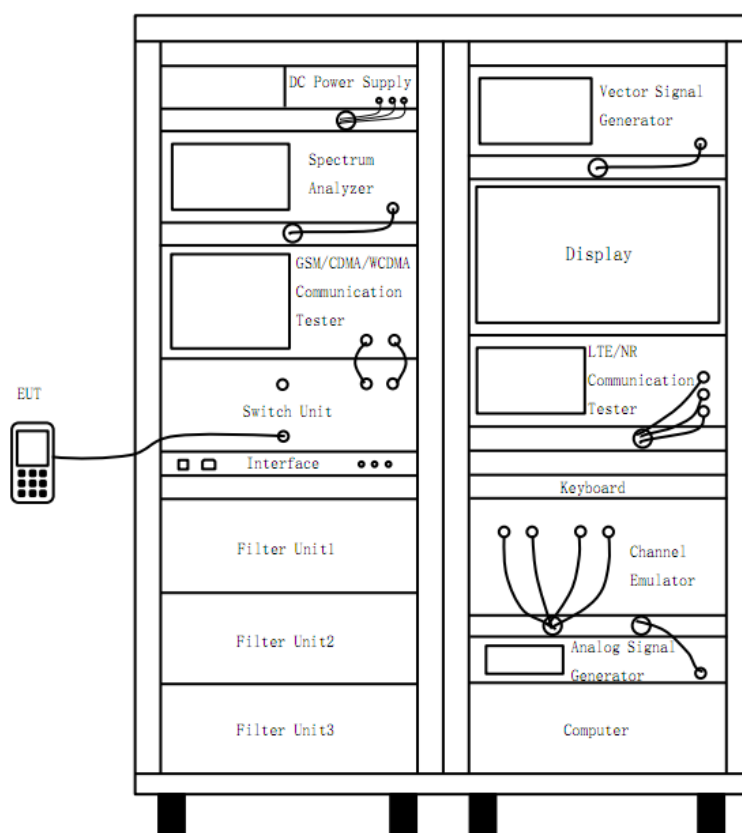
Test Mode	UL Channel	UL Channel No.	UL Frequency (MHz)
GPRS/EGPRS 850	Low Channel	128	824.2
	Middle Channel	190	836.6
	High Channel	251	848.8
GPRS/EGPRS 1900	Low Channel	512	1850.2
	Middle Channel	661	1880.0
	High Channel	810	1909.8
WCDMA Band 2	Low Channel	9262	1852.4
	Middle Channel	9400	1880.0
	High Channel	9538	1907.6
WCDMA Band 5	Low Channel	4132	826.4
	Middle Channel	4182	836.4
	High Channel	4233	846.6

LTE Band	Bandwidth (MHz)						Modulation Type		RB#			Test Channel		
	1.4	3	5	10	15	20	QPSK	16-QAM	1	Half	Full	LCH	MCH	HCH
Effective (Isotropic) Radiated Power														
5	v	v	v	v	n	n	v	v	v	v	v	v	v	v
7	n	n	v	v	v	v	v	v	v	v	v	v	v	v
Peak to Average Ratio														
5	--	--	--	v	n	n	v	v	v	--	v	v	v	v
7	n	n	--	--	--	v	v	v	v	--	v	v	v	v
Occupied Bandwidth														
5	v	v	v	v	n	n	v	v	--	--	v	v	v	v
7	n	n	v	v	v	v	v	v	--	--	v	v	v	v
Frequency Stability														
5	--	--	--	v	n	n	v	v	--	--	v	--	v	--
7	n	n	--	v	--	--	v	v	--	--	v	--	v	--
Spurious Emission at Antenna Terminals														
5	v	v	v	v	n	n	v	v	v	--	--	v	v	v
7	n	n	v	v	v	v	v	v	v	--	--	v	v	v
Band Edge														
5	v	v	v	v	n	n	v	v	v	--	v	v	--	v
7	n	n	v	v	v	v	v	v	v	--	v	v	--	v
Field Strength of Spurious Radiation														
5	Worst Case													
7	Worst Case													
Note 1: The mark “v” means that this configuration is chosen for testing.														
Note 2: The mark “n” means that this bandwidth is not supported.														

Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
LTE Band 5	Low Range	1.4	20407	824.7
		3	20415	825.5
		5	20425	826.5
		10	20450	829
	Middle Range	1.4/3/5/10	20525	836.5
	High Range	1.4	20643	848.3
		3	20635	847.5
		5	20625	846.5
		10	20600	844
LTE Band 7	Low Range	5	20775	2502.5
		10	20800	2505
		15	20825	2507.5
		20	20850	2510
	Middle Range	5/10/15/20	21100	2535
	High Range	5	21425	2567.5
		10	21400	2565
		15	21375	2562.5
		20	21350	2560

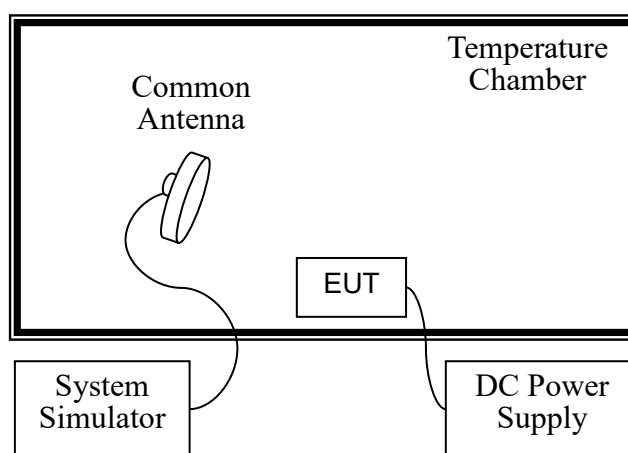
4.4 Test Setup

4.4.1 For Antenna Port Test



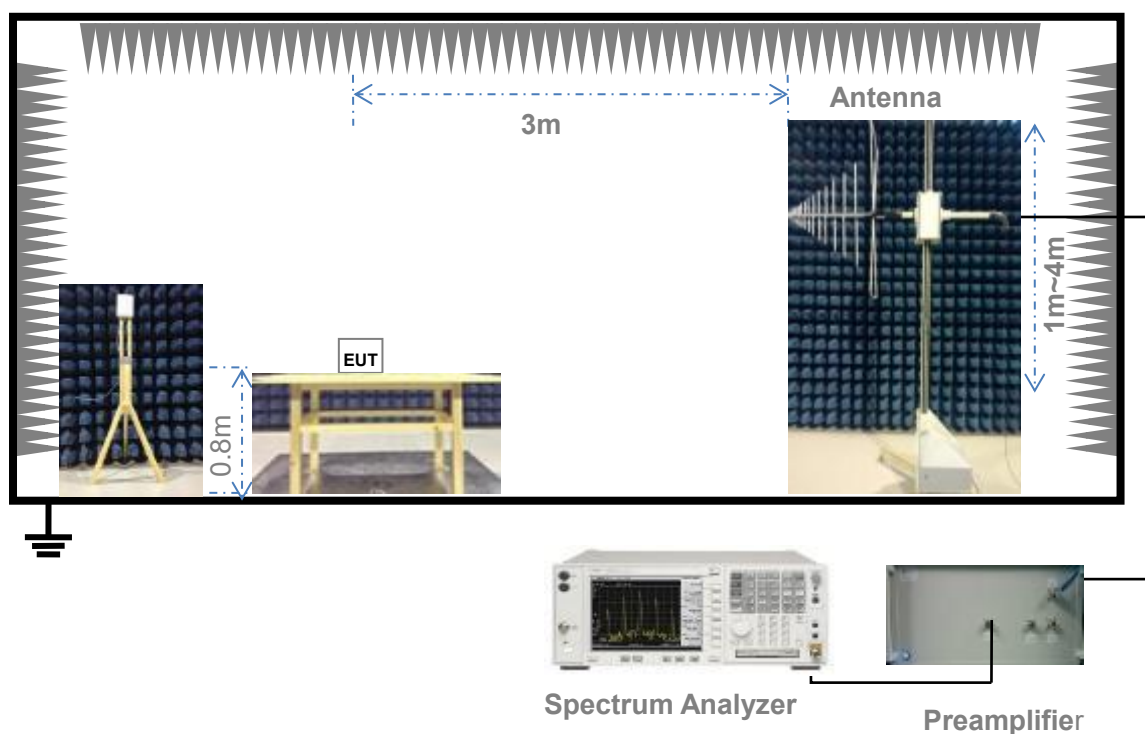
(Diagram 1)

4.4.2 For Frequency Stability Test



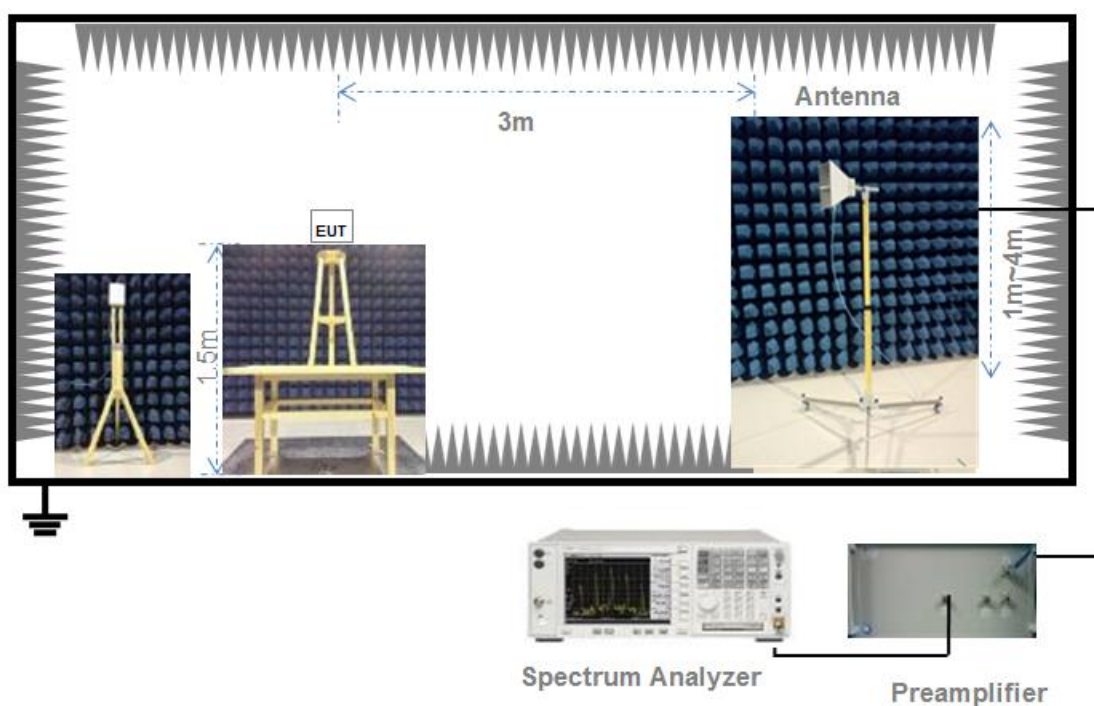
(Diagram 2)

4.4.3 For Radiated Test (30 MHz ~ 1 GHz)



(Diagram 3)

4.4.4 For Radiated Test (Above 1 GHz)



(Diagram 4)

5 TEST ITEMS

5.1 Transmitter Radiated Power (EIRP/ERP)

5.1.1 Limit

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

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

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

According to FCC section 27.50(a) (3), for mobile and portable stations transmitting in the 2305-2315MHz band or the 2350-2360MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands.

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

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

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

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

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

FCC section 27.50(j) (3), for mobile, and portable (hand-held) stations operating in the 3700-3980 MHz band are limited to 1 watt EIRP.

FCC section 27.50(k) (3), Mobile devices are limited to 1Watt (30 dBm) EIRP in the 3450-3550 MHz band.

5.1.2 Test Setup

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

5.1.3 Test Procedure

Description of the Conducted Output Power Measurement

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

The relevant equation for determining the conducted measured value is:

$$\text{Conducted Output Power Value (dBm)} = \text{Measured Value (dBm)} + \text{Path Loss (dB)}$$

where:

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

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

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

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

For example:

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

$$\text{Conducted Output Power Value (dBm)} = 24.7 \text{ dBm} + 8.5 \text{ dB} = 33.2 \text{ dBm}$$

Description of the Transmitter Radiated Power Measurement

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

the ERP, the transmit antenna gain is referenced to a dipole antenna (i.e., dBd) whereas when determining the EIRP, the transmit antenna gain is referenced to an isotropic antenna (dBi).

Final measurement calculation as below:

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

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

where:

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

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

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

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

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

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

For example:

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

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

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

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

where:

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

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

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

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

For example:

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

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

5.1.4 Test Result

Please refer to ANNEX A.1.

5.2 Peak to Average Ratio

5.2.1 Limit

FCC § 2.1046 & 24.232(d) & 27.50(d) & 27.50(j) & 27.50(k)

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

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

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

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

5.2.2 Test Setup

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

5.2.3 Test Procedure

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

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

- a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
- b) Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
- c) Set the number of counts to a value that stabilizes the measured CCDF curve;
- d) Set the measurement interval as follows:
 - 1) for continuous transmissions, set to 1 ms,

2) for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.

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

Alternate procedure for PAPR:

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

Determine the PAPR from:

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

5.2.4 Test Result

Please refer to ANNEX A.2.

5.3 Occupied Bandwidth

5.3.1 Limit

FCC § 2.1049

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

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

5.3.2 Test Setup

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

5.3.3 Test Procedure

The following procedure shall be used for measuring power bandwidth.

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

If the instrument does not have a 99 % power bandwidth function, the trace data points are to be recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is

recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99 % power bandwidth is the difference between these two frequencies.

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

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

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

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

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

5.3.4 Test Result

Please refer to ANNEX A.3.

5.4 Frequency Stability

5.4.1 Limit

FCC § 2.1055 & 22.355 & 24.235 & 27.54

FCC § 2.1055

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

- (1) The temperature is varied from -30°C to +50°C.
- (2) Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than 10°C through the range.

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

- (1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than carried battery equipment.
- (2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating and point which shall be specified by the manufacture.
- (3) The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

FCC § 22.355

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

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

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

FCC § 24.235

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

FCC § 27.54

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

5.4.2 Test Setup

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

5.4.3 Test Procedure

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

5.4.4 Test Result

Please refer to ANNEX A.4.

5.5 Spurious Emission at Antenna Terminals

5.5.1 Limit

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

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

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

FCC § 22.917(a) & 24.238(a)

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

FCC § 27.53(a) (4)

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

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

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

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

FCC § 27.53(c)

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

(1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the

band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the

band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

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

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

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

However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth

of at least 30 kHz may be employed;

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

FCC § 27.53(f)

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

FCC § 27.53(g)

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

FCC § 27.53(h) (1)

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

FCC § 27.53(l) (2)

For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the

licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

FCC § 27.53(m) (4)

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

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

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

FCC § 27.53(n) (2)

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

5.5.2 Test Setup

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

5.5.3 Test Procedure

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

1. The EUT is coupled to the system simulator and spectrum analyzer; the RF load attached to EUT antenna terminal is 50Ω; the path loss as the factor is calibrated to correct the reading.
2. Base Station is used to establish communication with the EUT, and its parameters are set to force the

EUT transmitting at maximum output power.

3. The RF output of the transmitter is connected to the input of the spectrum analyzer through sufficient attenuation.

4. Spurious emissions are tested with 0.001MHz RBW for frequency less than 150kHz, 0.01MHz RBW for frequency less than 30MHz, 0.1MHz RBW for frequency less than 1GHz, and 1MHz RBW for frequency above 1GHz. And sweep point number are at least 401, referring to following formula.

Sweep point number = Span/RBW

VBW=3*RBW

Detector Mode=mean or average power

5. Record the frequencies and levels of spurious emissions.

5.5.4 Test Result

Please refer to ANNEX A.5.

5.6 Band Edge

5.6.1 Limit

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

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

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

FCC § 22.917(a) & 24.238(a)

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

FCC § 27.53(a) (4)

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

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

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

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

FCC § 27.53(c)

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

(1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the

band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the

band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

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

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

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

However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth

of at least 30 kHz may be employed;

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

FCC § 27.53(f)

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

FCC § 27.53(g)

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

FCC § 27.53(h) (1)

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

FCC § 27.53(l) (2)

For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

FCC § 27.53(m) (4)

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

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

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

FCC § 27.53(n) (2)

For mobile operations in the 3450 - 3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

5.6.2 Test Setup

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

5.6.3 Test Procedure

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

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

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

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

6. Record the frequencies and levels of spurious emissions.

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

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

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

5.6.4 Test Result

Please refer to ANNEX A.6.

5.7 Field Strength of Spurious Radiation

5.7.1 Limit

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

FCC § 22.917(a) & 24.238(a)

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

FCC § 27.53(a) (4)

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

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

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

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

FCC § 27.53(c)

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

(1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the

band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the

band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

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

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

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

However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth

of at least 30 kHz may be employed;

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

FCC § 27.53(f)

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

FCC § 27.53(g)

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

FCC § 27.53(h) (1)

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

FCC § 27.53(l) (2)

For mobile operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

FCC § 27.53(m) (4)

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

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

In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between

2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

FCC § 27.53(n) (2)

For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.

5.7.2 Test Setup

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

5.7.3 Test Procedure

1. On a test site, the EUT shall be placed at 80cm height on a turn table, and in the position close to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. During the measurement of the EUT, the resolution bandwidth was to 1 MHz and the average bandwidth
was set to 1 MHz.
5. The transmitter shall be switched on; the measuring receiver shall be tuned to the frequency of the transmitter under test.
6. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.
7. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
8. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.
9. The maximum signal level detected by the measuring receiver shall be noted.
10. The EUT was replaced by half-wave dipole (824 ~ 849 MHz) or horn antenna (1 850 ~ 1 910 MHz) connected to a signal generator.

11. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase

the sensitivity of the measuring receiver.

12. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.

13. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.

14. The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

15. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.

Final measurement calculation as below:

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

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

where:

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

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

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

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

For example:

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

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

5.7.4 Test Result

Please refer to ANNEX A.7.

ANNEX A TEST RESULTS

A.1 Transmitter Radiated Power (EIRP/ERP)

GSM Mode Test Data

Test Band	Test Channel	Conducted Output Peak Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
GPRS 850	LCH	28.90	-2.98	-5.13	23.77	0.238	7.000	Pass
	MCH	28.79	-2.98	-5.13	23.66	0.232	7.000	Pass
	HCH	28.71	-2.98	-5.13	23.58	0.228	7.000	Pass
EGPRS 850	LCH	29.98	-2.98	-5.13	24.85	0.305	7.000	Pass
	MCH	30.10	-2.98	-5.13	24.97	0.314	7.000	Pass
	HCH	30.15	-2.98	-5.13	25.02	0.318	7.000	Pass

Test Band	Test Channel	Conducted Output Peak Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
GPRS 1900	LCH	25.50	-0.78	24.72	0.296	2.000	Pass
	MCH	24.75	-0.78	23.97	0.249	2.000	Pass
	HCH	25.34	-0.78	24.56	0.286	2.000	Pass
EGPRS 1900	LCH	29.11	-0.78	28.33	0.681	2.000	Pass
	MCH	29.15	-0.78	28.37	0.687	2.000	Pass
	HCH	29.14	-0.78	28.36	0.685	2.000	Pass

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

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

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

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

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

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

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

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

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

GPRS Conducted Output Power

Band	Channel	Conducted Output Peak Power							
		1 Slot (dBm)	1 Slot (W)	2 Slots (dBm)	2 Slots (W)	3 Slots (dBm)	3 Slots (W)	4 Slots (dBm)	4 Slots (W)
GPRS 850	LCH	28.90	0.78	28.12	0.65	26.32	0.43	25.26	0.34
	MCH	28.79	0.76	28.01	0.63	26.24	0.42	25.13	0.33
	HCH	28.71	0.74	27.96	0.62	26.21	0.42	25.09	0.32
GPRS 1900	LCH	25.50	0.35	24.76	0.30	23.03	0.20	21.96	0.16
	MCH	24.74	0.30	24.75	0.30	23.02	0.20	21.98	0.16
	HCH	25.34	0.34	24.64	0.29	22.98	0.20	21.94	0.16

EGPRS Conducted Output Power

Band	Channel	Conducted Output Peak Power							
		1 Slot (dBm)	1 Slot (W)	2 Slots (dBm)	2 Slots (W)	3 Slots (dBm)	3 Slots (W)	4 Slots (dBm)	4 Slots (W)
EGPRS 850	LCH	29.98	1.00	29.15	0.82	27.43	0.55	26.24	0.42
	MCH	30.10	1.02	29.28	0.85	27.47	0.56	26.37	0.43
	HCH	30.15	1.04	29.33	0.86	27.46	0.56	26.64	0.46
EGPRS 1900	LCH	29.11	0.81	28.26	0.67	26.50	0.45	25.02	0.32
	MCH	29.15	0.82	28.29	0.67	26.19	0.42	25.15	0.33
	HCH	29.14	0.82	28.25	0.67	26.39	0.44	25.14	0.33

WCDMA Mode Test Data

Test Band	Test Channel	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
WCDMA Band 2	LCH	22.89	-0.78	22.11	0.163	2.000	Pass
	MCH	22.95	-0.78	22.17	0.165	2.000	Pass
	HCH	22.88	-0.78	22.10	0.162	2.000	Pass
HSDPA Band 2	LCH	21.93	-0.78	21.15	0.130	2.000	Pass
	MCH	21.93	-0.78	21.15	0.130	2.000	Pass
	HCH	21.92	-0.78	21.14	0.130	2.000	Pass
HSUPA Band 2	LCH	20.96	-0.78	20.18	0.104	2.000	Pass
	MCH	20.96	-0.78	20.18	0.104	2.000	Pass
	HCH	20.91	-0.78	20.13	0.103	2.000	Pass

Test Band	Test Channel	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
WCDMA Band 5	LCH	22.77	-2.98	-5.13	17.64	0.058	7.00	Pass
	MCH	22.74	-2.98	-5.13	17.61	0.058	7.00	Pass
	HCH	22.80	-2.98	-5.13	17.67	0.058	7.00	Pass
HSDPA Band 5	LCH	21.79	-2.98	-5.13	16.66	0.046	7.00	Pass
	MCH	21.75	-2.98	-5.13	16.62	0.046	7.00	Pass
	HCH	21.84	-2.98	-5.13	16.71	0.047	7.00	Pass
HSUPA Band 5	LCH	20.78	-2.98	-5.13	15.65	0.037	7.00	Pass
	MCH	20.75	-2.98	-5.13	15.62	0.036	7.00	Pass
	HCH	20.82	-2.98	-5.13	15.69	0.037	7.00	Pass

Note 1: For the HSDPA and HSUPA mode, all subtests were tested and just the worst data were recorded in this table.

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

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

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

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

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

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

HSDPA Conducted Output Power

Conducted Output Power		EIRP (dBm)			EIRP (W)		
Band	Configuration	LCH	MCH	HCH	LCH	MCH	HCH
HSDPA Band 2	Subtest 1	21.93	21.93	21.92	0.156	0.156	0.156
	Subtest 2	21.89	21.93	21.87	0.155	0.156	0.154
	Subtest 3	21.39	21.42	21.37	0.138	0.139	0.137
	Subtest 4	21.38	21.38	21.35	0.137	0.137	0.136
Conducted Output Power		ERP (dBm)			ERP (W)		
Band	Configuration	LCH	MCH	HCH	LCH	MCH	HCH
HSDPA Band 5	Subtest 1	21.79	21.75	21.84	0.151	0.150	0.153
	Subtest 2	21.75	21.70	21.78	0.150	0.148	0.151
	Subtest 3	21.25	21.16	21.25	0.133	0.131	0.133
	Subtest 4	21.23	21.17	21.20	0.133	0.131	0.132

HSUPA Conducted Output Power

Conducted Output Power		EIRP (dBm)			EIRP (W)		
Band	Configuration	LCH	MCH	HCH	LCH	MCH	HCH
HSUPA Band 2	Subtest 1	19.98	19.99	19.94	0.100	0.100	0.099
	Subtest 2	20.00	19.98	19.92	0.100	0.100	0.098
	Subtest 3	20.96	20.96	20.91	0.125	0.125	0.123
	Subtest 4	19.52	19.55	19.48	0.090	0.090	0.089
	Subtest 5	20.92	20.95	20.89	0.124	0.124	0.123
Conducted Output Power		ERP (dBm)			ERP (W)		
Band	Configuration	LCH	MCH	HCH	LCH	MCH	HCH
HSUPA Band 5	Subtest 1	19.79	19.75	19.81	0.095	0.094	0.096
	Subtest 2	19.77	19.72	19.81	0.095	0.094	0.096
	Subtest 3	20.78	20.75	20.82	0.120	0.119	0.121
	Subtest 4	19.31	19.29	19.34	0.085	0.085	0.086
	Subtest 5	20.76	20.72	20.81	0.119	0.118	0.121

LTE Mode Test Data

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE Band 5										
1.4 MHz	LCH	QPSK	RB1#0	22.7	-2.98	-5.13	17.57	0.057	7.000	Pass
			RB1#3	22.84	-2.98	-5.13	17.71	0.059	7.000	Pass
			RB1#5	22.73	-2.98	-5.13	17.60	0.058	7.000	Pass
			RB3#0	22.9	-2.98	-5.13	17.77	0.060	7.000	Pass
			RB3#2	22.83	-2.98	-5.13	17.70	0.059	7.000	Pass
			RB3#3	22.81	-2.98	-5.13	17.68	0.059	7.000	Pass
			RB6#0	21.74	-2.98	-5.13	16.61	0.046	7.000	Pass
		16-QAM	RB1#0	21.85	-2.98	-5.13	16.72	0.047	7.000	Pass
			RB1#3	22.05	-2.98	-5.13	16.92	0.049	7.000	Pass
			RB1#5	21.88	-2.98	-5.13	16.75	0.047	7.000	Pass
			RB3#0	21.93	-2.98	-5.13	16.80	0.048	7.000	Pass
			RB3#2	21.87	-2.98	-5.13	16.74	0.047	7.000	Pass
			RB3#3	21.89	-2.98	-5.13	16.76	0.047	7.000	Pass
			RB6#0	20.92	-2.98	-5.13	15.79	0.038	7.000	Pass
	MCH	QPSK	RB1#0	22.64	-2.98	-5.13	17.51	0.056	7.000	Pass
			RB1#3	22.83	-2.98	-5.13	17.70	0.059	7.000	Pass
			RB1#5	22.68	-2.98	-5.13	17.55	0.057	7.000	Pass
			RB3#0	22.89	-2.98	-5.13	17.76	0.060	7.000	Pass
			RB3#2	22.82	-2.98	-5.13	17.69	0.059	7.000	Pass
			RB3#3	22.81	-2.98	-5.13	17.68	0.059	7.000	Pass
			RB6#0	21.73	-2.98	-5.13	16.60	0.046	7.000	Pass
		16-QAM	RB1#0	22.07	-2.98	-5.13	16.94	0.049	7.000	Pass
			RB1#3	22.18	-2.98	-5.13	17.05	0.051	7.000	Pass
			RB1#5	22.04	-2.98	-5.13	16.91	0.049	7.000	Pass
			RB3#0	22.01	-2.98	-5.13	16.88	0.049	7.000	Pass
			RB3#2	22.01	-2.98	-5.13	16.88	0.049	7.000	Pass
			RB3#3	22.03	-2.98	-5.13	16.90	0.049	7.000	Pass
			RB6#0	20.62	-2.98	-5.13	15.49	0.035	7.000	Pass
	HCH	QPSK	RB1#0	22.67	-2.98	-5.13	17.54	0.057	7.000	Pass
			RB1#3	22.81	-2.98	-5.13	17.68	0.059	7.000	Pass
			RB1#5	22.6	-2.98	-5.13	17.47	0.056	7.000	Pass
			RB3#0	22.82	-2.98	-5.13	17.69	0.059	7.000	Pass
			RB3#2	22.78	-2.98	-5.13	17.65	0.058	7.000	Pass
			RB3#3	22.83	-2.98	-5.13	17.70	0.059	7.000	Pass
			RB6#0	21.72	-2.98	-5.13	16.59	0.046	7.000	Pass
		16-QAM	RB1#0	21.78	-2.98	-5.13	16.65	0.046	7.000	Pass
			RB1#3	21.92	-2.98	-5.13	16.79	0.048	7.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Off set)	Conducted Output AV Power (dBm)	Antenn a Gain (dBi)	Antenn a Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE Band 5										
3 MHz			RB1#5	21.75	-2.98	-5.13	16.62	0.046	7.000	Pass
			RB3#0	22.01	-2.98	-5.13	16.88	0.049	7.000	Pass
			RB3#2	22.01	-2.98	-5.13	16.88	0.049	7.000	Pass
			RB3#3	21.97	-2.98	-5.13	16.84	0.048	7.000	Pass
			RB6#0	20.96	-2.98	-5.13	15.83	0.038	7.000	Pass
	LCH	QPSK	RB1#0	22.69	-2.98	-5.13	17.56	0.057	7.000	Pass
			RB1#7	22.7	-2.98	-5.13	17.57	0.057	7.000	Pass
			RB1#14	22.62	-2.98	-5.13	17.49	0.056	7.000	Pass
			RB8#0	21.74	-2.98	-5.13	16.61	0.046	7.000	Pass
			RB8#4	21.77	-2.98	-5.13	16.64	0.046	7.000	Pass
			RB8#7	21.72	-2.98	-5.13	16.59	0.046	7.000	Pass
			RB15#0	21.73	-2.98	-5.13	16.60	0.046	7.000	Pass
		16-QAM	RB1#0	21.69	-2.98	-5.13	16.56	0.045	7.000	Pass
			RB1#7	21.67	-2.98	-5.13	16.54	0.045	7.000	Pass
			RB1#14	21.66	-2.98	-5.13	16.53	0.045	7.000	Pass
			RB8#0	20.94	-2.98	-5.13	15.81	0.038	7.000	Pass
			RB8#4	20.91	-2.98	-5.13	15.78	0.038	7.000	Pass
			RB8#7	20.86	-2.98	-5.13	15.73	0.037	7.000	Pass
			RB15#0	20.82	-2.98	-5.13	15.69	0.037	7.000	Pass
	MCH	QPSK	RB1#0	22.72	-2.98	-5.13	17.59	0.057	7.000	Pass
			RB1#7	22.74	-2.98	-5.13	17.61	0.058	7.000	Pass
			RB1#14	22.67	-2.98	-5.13	17.54	0.057	7.000	Pass
			RB8#0	21.69	-2.98	-5.13	16.56	0.045	7.000	Pass
			RB8#4	21.75	-2.98	-5.13	16.62	0.046	7.000	Pass
			RB8#7	21.68	-2.98	-5.13	16.55	0.045	7.000	Pass
			RB15#0	21.69	-2.98	-5.13	16.56	0.045	7.000	Pass
		16-QAM	RB1#0	22.08	-2.98	-5.13	16.95	0.050	7.000	Pass
			RB1#7	22.11	-2.98	-5.13	16.98	0.050	7.000	Pass
			RB1#14	22.08	-2.98	-5.13	16.95	0.050	7.000	Pass
			RB8#0	20.86	-2.98	-5.13	15.73	0.037	7.000	Pass
			RB8#4	20.88	-2.98	-5.13	15.75	0.038	7.000	Pass
			RB8#7	20.83	-2.98	-5.13	15.70	0.037	7.000	Pass
			RB15#0	20.73	-2.98	-5.13	15.60	0.036	7.000	Pass
	HCH	QPSK	RB1#0	22.76	-2.98	-5.13	17.63	0.058	7.000	Pass
			RB1#7	22.72	-2.98	-5.13	17.59	0.057	7.000	Pass
			RB1#14	22.64	-2.98	-5.13	17.51	0.056	7.000	Pass
			RB8#0	21.73	-2.98	-5.13	16.60	0.046	7.000	Pass
			RB8#4	21.79	-2.98	-5.13	16.66	0.046	7.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Off set)	Conducted Output AV Power (dBm)	Antenn a Gain (dBi)	Antenn a Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE Band 5										
5 MHz	LCH	16-QAM	RB8#7	21.72	-2.98	-5.13	16.59	0.046	7.000	Pass
			RB15#0	21.73	-2.98	-5.13	16.60	0.046	7.000	Pass
			RB1#0	21.84	-2.98	-5.13	16.71	0.047	7.000	Pass
			RB1#7	21.77	-2.98	-5.13	16.64	0.046	7.000	Pass
			RB1#14	21.72	-2.98	-5.13	16.59	0.046	7.000	Pass
			RB8#0	20.81	-2.98	-5.13	15.68	0.037	7.000	Pass
			RB8#4	20.87	-2.98	-5.13	15.74	0.037	7.000	Pass
			RB8#7	20.8	-2.98	-5.13	15.67	0.037	7.000	Pass
			RB15#0	20.72	-2.98	-5.13	15.59	0.036	7.000	Pass
		QPSK	RB1#0	22.64	-2.98	-5.13	17.51	0.056	7.000	Pass
			RB1#13	22.76	-2.98	-5.13	17.63	0.058	7.000	Pass
			RB1#24	22.68	-2.98	-5.13	17.55	0.057	7.000	Pass
			RB12#0	21.72	-2.98	-5.13	16.59	0.046	7.000	Pass
			RB12#6	21.75	-2.98	-5.13	16.62	0.046	7.000	Pass
			RB12#13	21.73	-2.98	-5.13	16.60	0.046	7.000	Pass
			RB25#0	21.71	-2.98	-5.13	16.58	0.045	7.000	Pass
			RB25#0	21.71	-2.98	-5.13	16.58	0.045	7.000	Pass
	MCH	16-QAM	RB1#0	21.85	-2.98	-5.13	16.72	0.047	7.000	Pass
			RB1#13	21.95	-2.98	-5.13	16.82	0.048	7.000	Pass
			RB1#24	21.86	-2.98	-5.13	16.73	0.047	7.000	Pass
			RB12#0	20.81	-2.98	-5.13	15.68	0.037	7.000	Pass
			RB12#6	20.86	-2.98	-5.13	15.73	0.037	7.000	Pass
			RB12#13	20.82	-2.98	-5.13	15.69	0.037	7.000	Pass
			RB25#0	20.77	-2.98	-5.13	15.64	0.037	7.000	Pass
			RB25#0	20.77	-2.98	-5.13	15.64	0.037	7.000	Pass
		QPSK	RB1#0	22.66	-2.98	-5.13	17.53	0.057	7.000	Pass
			RB1#13	22.72	-2.98	-5.13	17.59	0.057	7.000	Pass
			RB1#24	22.61	-2.98	-5.13	17.48	0.056	7.000	Pass
			RB12#0	21.68	-2.98	-5.13	16.55	0.045	7.000	Pass
			RB12#6	21.74	-2.98	-5.13	16.61	0.046	7.000	Pass
			RB12#13	21.68	-2.98	-5.13	16.55	0.045	7.000	Pass
			RB25#0	21.71	-2.98	-5.13	16.58	0.045	7.000	Pass
			RB25#0	21.71	-2.98	-5.13	16.58	0.045	7.000	Pass
	HCH	QPSK	RB1#0	22.17	-2.98	-5.13	17.04	0.051	7.000	Pass
			RB1#13	22.25	-2.98	-5.13	17.12	0.052	7.000	Pass
			RB1#24	22.09	-2.98	-5.13	16.96	0.050	7.000	Pass
			RB12#0	20.84	-2.98	-5.13	15.71	0.037	7.000	Pass
			RB12#6	20.92	-2.98	-5.13	15.79	0.038	7.000	Pass
			RB12#13	20.84	-2.98	-5.13	15.71	0.037	7.000	Pass
			RB25#0	20.8	-2.98	-5.13	15.67	0.037	7.000	Pass
			RB25#0	20.8	-2.98	-5.13	15.67	0.037	7.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE Band 5										
			RB1#13	22.78	-2.98	-5.13	17.65	0.058	7.000	Pass
			RB1#24	22.59	-2.98	-5.13	17.46	0.056	7.000	Pass
			RB12#0	21.79	-2.98	-5.13	16.66	0.046	7.000	Pass
			RB12#6	21.79	-2.98	-5.13	16.66	0.046	7.000	Pass
			RB12#13	21.72	-2.98	-5.13	16.59	0.046	7.000	Pass
			RB25#0	21.77	-2.98	-5.13	16.64	0.046	7.000	Pass
		16-QAM	RB1#0	21.81	-2.98	-5.13	16.68	0.047	7.000	Pass
			RB1#13	21.93	-2.98	-5.13	16.80	0.048	7.000	Pass
			RB1#24	21.77	-2.98	-5.13	16.64	0.046	7.000	Pass
			RB12#0	20.83	-2.98	-5.13	15.70	0.037	7.000	Pass
			RB12#6	20.87	-2.98	-5.13	15.74	0.037	7.000	Pass
			RB12#13	20.77	-2.98	-5.13	15.64	0.037	7.000	Pass
			RB25#0	20.78	-2.98	-5.13	15.65	0.037	7.000	Pass
10 MHz	LCH	QPSK	RB1#0	22.63	-2.98	-5.13	17.50	0.056	7.000	Pass
			RB1#25	22.82	-2.98	-5.13	17.69	0.059	7.000	Pass
			RB1#49	22.6	-2.98	-5.13	17.47	0.056	7.000	Pass
			RB25#0	21.67	-2.98	-5.13	16.54	0.045	7.000	Pass
			RB25#13	21.72	-2.98	-5.13	16.59	0.046	7.000	Pass
			RB25#25	21.72	-2.98	-5.13	16.59	0.046	7.000	Pass
			RB50#0	21.71	-2.98	-5.13	16.58	0.045	7.000	Pass
		16-QAM	RB1#0	21.56	-2.98	-5.13	16.43	0.044	7.000	Pass
			RB1#25	21.79	-2.98	-5.13	16.66	0.046	7.000	Pass
			RB1#49	21.56	-2.98	-5.13	16.43	0.044	7.000	Pass
			RB25#0	20.75	-2.98	-5.13	15.62	0.036	7.000	Pass
			RB25#13	20.8	-2.98	-5.13	15.67	0.037	7.000	Pass
			RB25#25	20.82	-2.98	-5.13	15.69	0.037	7.000	Pass
			RB50#0	20.73	-2.98	-5.13	15.60	0.036	7.000	Pass
	MCH	QPSK	RB1#0	22.65	-2.98	-5.13	17.52	0.056	7.000	Pass
			RB1#25	22.85	-2.98	-5.13	17.72	0.059	7.000	Pass
			RB1#49	22.61	-2.98	-5.13	17.48	0.056	7.000	Pass
			RB25#0	21.72	-2.98	-5.13	16.59	0.046	7.000	Pass
			RB25#13	21.69	-2.98	-5.13	16.56	0.045	7.000	Pass
			RB25#25	21.71	-2.98	-5.13	16.58	0.045	7.000	Pass
			RB50#0	21.71	-2.98	-5.13	16.58	0.045	7.000	Pass
		16-QAM	RB1#0	22.04	-2.98	-5.13	16.91	0.049	7.000	Pass
			RB1#25	22.2	-2.98	-5.13	17.07	0.051	7.000	Pass
			RB1#49	21.98	-2.98	-5.13	16.85	0.048	7.000	Pass
			RB25#0	20.78	-2.98	-5.13	15.65	0.037	7.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE Band 5										
			RB25#13	20.78	-2.98	-5.13	15.65	0.037	7.000	Pass
			RB25#25	20.79	-2.98	-5.13	15.66	0.037	7.000	Pass
			RB50#0	20.75	-2.98	-5.13	15.62	0.036	7.000	Pass
	HCH	QPSK	RB1#0	22.6	-2.98	-5.13	17.47	0.056	7.000	Pass
			RB1#25	22.73	-2.98	-5.13	17.60	0.058	7.000	Pass
			RB1#49	22.55	-2.98	-5.13	17.42	0.055	7.000	Pass
			RB25#0	21.77	-2.98	-5.13	16.64	0.046	7.000	Pass
			RB25#13	21.72	-2.98	-5.13	16.59	0.046	7.000	Pass
			RB25#25	21.61	-2.98	-5.13	16.48	0.044	7.000	Pass
			RB50#0	21.71	-2.98	-5.13	16.58	0.045	7.000	Pass
		16-QAM	RB1#0	21.68	-2.98	-5.13	16.55	0.045	7.000	Pass
			RB1#25	21.88	-2.98	-5.13	16.75	0.047	7.000	Pass
			RB1#49	21.67	-2.98	-5.13	16.54	0.045	7.000	Pass
			RB25#0	20.89	-2.98	-5.13	15.76	0.038	7.000	Pass
			RB25#13	20.83	-2.98	-5.13	15.70	0.037	7.000	Pass
			RB25#25	20.78	-2.98	-5.13	15.65	0.037	7.000	Pass
			RB50#0	20.76	-2.98	-5.13	15.63	0.037	7.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Off set)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE Band 7									
5 MHz	LCH	QPSK	RB1#0	22	0.74	22.74	0.188	2.000	Pass
			RB1#13	22.13	0.74	22.87	0.194	2.000	Pass
			RB1#24	21.99	0.74	22.73	0.187	2.000	Pass
			RB12#0	21.13	0.74	21.87	0.154	2.000	Pass
			RB12#6	21.23	0.74	21.97	0.157	2.000	Pass
			RB12#13	21.16	0.74	21.90	0.155	2.000	Pass
			RB25#0	21.19	0.74	21.93	0.156	2.000	Pass
		16-QAM	RB1#0	21.51	0.74	22.25	0.168	2.000	Pass
			RB1#13	21.72	0.74	22.46	0.176	2.000	Pass
			RB1#24	21.54	0.74	22.28	0.169	2.000	Pass
			RB12#0	20.39	0.74	21.13	0.130	2.000	Pass
			RB12#6	20.47	0.74	21.21	0.132	2.000	Pass
			RB12#13	20.4	0.74	21.14	0.130	2.000	Pass
			RB25#0	20.22	0.74	20.96	0.125	2.000	Pass
	MCH	QPSK	RB1#0	22.17	0.74	22.91	0.195	2.000	Pass
			RB1#13	22.32	0.74	23.06	0.202	2.000	Pass
			RB1#24	22.14	0.74	22.88	0.194	2.000	Pass
			RB12#0	21.23	0.74	21.97	0.157	2.000	Pass
			RB12#6	21.28	0.74	22.02	0.159	2.000	Pass
			RB12#13	21.2	0.74	21.94	0.156	2.000	Pass
			RB25#0	21.22	0.74	21.96	0.157	2.000	Pass
		16-QAM	RB1#0	21.63	0.74	22.37	0.173	2.000	Pass
			RB1#13	21.89	0.74	22.63	0.183	2.000	Pass
			RB1#24	21.57	0.74	22.31	0.170	2.000	Pass
			RB12#0	20.36	0.74	21.10	0.129	2.000	Pass
			RB12#6	20.5	0.74	21.24	0.133	2.000	Pass
			RB12#13	20.33	0.74	21.07	0.128	2.000	Pass
			RB25#0	20.23	0.74	20.97	0.125	2.000	Pass
	HCH	QPSK	RB1#0	22.19	0.74	22.93	0.196	2.000	Pass
			RB1#13	22.39	0.74	23.13	0.206	2.000	Pass
			RB1#24	22.18	0.74	22.92	0.196	2.000	Pass
			RB12#0	21.37	0.74	22.11	0.163	2.000	Pass
			RB12#6	21.14	0.74	21.88	0.154	2.000	Pass
			RB12#13	20.87	0.74	21.61	0.145	2.000	Pass
			RB25#0	21.05	0.74	21.79	0.151	2.000	Pass
		16-QAM	RB1#0	20.91	0.74	21.65	0.146	2.000	Pass
			RB1#13	21.01	0.74	21.75	0.150	2.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Off set)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE Band 7									
10 MHz			RB1#24	20.88	0.74	21.62	0.145	2.000	Pass
			RB12#0	19.96	0.74	20.70	0.117	2.000	Pass
			RB12#6	20	0.74	20.74	0.119	2.000	Pass
			RB12#13	19.89	0.74	20.63	0.116	2.000	Pass
			RB25#0	19.84	0.74	20.58	0.114	2.000	Pass
	LCH	QPSK	RB1#0	22.13	0.74	22.87	0.194	2.000	Pass
			RB1#25	22.38	0.74	23.12	0.205	2.000	Pass
			RB1#49	22.05	0.74	22.79	0.190	2.000	Pass
			RB25#0	21.19	0.74	21.93	0.156	2.000	Pass
			RB25#13	21.24	0.74	21.98	0.158	2.000	Pass
			RB25#25	21.2	0.74	21.94	0.156	2.000	Pass
			RB50#0	21.2	0.74	21.94	0.156	2.000	Pass
		16-QAM	RB1#0	21.17	0.74	21.91	0.155	2.000	Pass
			RB1#25	21.09	0.74	21.83	0.152	2.000	Pass
			RB1#49	20.98	0.74	21.72	0.149	2.000	Pass
			RB25#0	20.16	0.74	20.90	0.123	2.000	Pass
			RB25#13	20.21	0.74	20.95	0.124	2.000	Pass
			RB25#25	20.12	0.74	20.86	0.122	2.000	Pass
			RB50#0	20.07	0.74	20.81	0.121	2.000	Pass
	MCH	QPSK	RB1#0	22.21	0.74	22.95	0.197	2.000	Pass
			RB1#25	22.4	0.74	23.14	0.206	2.000	Pass
			RB1#49	22.17	0.74	22.91	0.195	2.000	Pass
			RB25#0	21.22	0.74	21.96	0.157	2.000	Pass
			RB25#13	21.2	0.74	21.94	0.156	2.000	Pass
			RB25#25	21.22	0.74	21.96	0.157	2.000	Pass
			RB50#0	21.25	0.74	21.99	0.158	2.000	Pass
		16-QAM	RB1#0	21.17	0.74	21.91	0.155	2.000	Pass
			RB1#25	21.37	0.74	22.11	0.163	2.000	Pass
			RB1#49	21.12	0.74	21.86	0.153	2.000	Pass
			RB25#0	20.19	0.74	20.93	0.124	2.000	Pass
			RB25#13	20.2	0.74	20.94	0.124	2.000	Pass
			RB25#25	20.31	0.74	21.05	0.127	2.000	Pass
			RB50#0	19.99	0.74	20.73	0.118	2.000	Pass
	HCH	QPSK	RB1#0	22.23	0.74	22.97	0.198	2.000	Pass
			RB1#25	22.48	0.74	23.22	0.210	2.000	Pass
			RB1#49	22.13	0.74	22.87	0.194	2.000	Pass
			RB25#0	21.08	0.74	21.82	0.152	2.000	Pass
			RB25#13	20.88	0.74	21.62	0.145	2.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Off set)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE Band 7									
15 MHz	LCH		RB25#25	20.79	0.74	21.53	0.142	2.000	Pass
			RB50#0	20.87	0.74	21.61	0.145	2.000	Pass
		16-QAM	RB1#0	20.82	0.74	21.56	0.143	2.000	Pass
			RB1#25	21.04	0.74	21.78	0.151	2.000	Pass
			RB1#49	20.81	0.74	21.55	0.143	2.000	Pass
			RB25#0	20.07	0.74	20.81	0.121	2.000	Pass
			RB25#13	20.05	0.74	20.79	0.120	2.000	Pass
			RB25#25	20.01	0.74	20.75	0.119	2.000	Pass
			RB50#0	19.98	0.74	20.72	0.118	2.000	Pass
		QPSK	RB1#0	22.06	0.74	22.80	0.191	2.000	Pass
			RB1#38	22.19	0.74	22.93	0.196	2.000	Pass
			RB1#74	21.9	0.74	22.64	0.184	2.000	Pass
			RB36#0	21.04	0.74	21.78	0.151	2.000	Pass
			RB36#19	21.11	0.74	21.85	0.153	2.000	Pass
			RB36#39	21.12	0.74	21.86	0.153	2.000	Pass
			RB75#0	20.8	0.74	21.54	0.143	2.000	Pass
		16-QAM	RB1#0	20.77	0.74	21.51	0.142	2.000	Pass
			RB1#38	20.89	0.74	21.63	0.146	2.000	Pass
			RB1#74	20.64	0.74	21.38	0.137	2.000	Pass
			RB36#0	19.79	0.74	20.53	0.113	2.000	Pass
			RB36#19	20.03	0.74	20.77	0.119	2.000	Pass
			RB36#39	20.05	0.74	20.79	0.120	2.000	Pass
			RB75#0	19.89	0.74	20.63	0.116	2.000	Pass
15 MHz	MCH	QPSK	RB1#0	22.18	0.74	22.92	0.196	2.000	Pass
			RB1#38	22.29	0.74	23.03	0.201	2.000	Pass
			RB1#74	21.88	0.74	22.62	0.183	2.000	Pass
			RB36#0	21.02	0.74	21.76	0.150	2.000	Pass
			RB36#19	20.83	0.74	21.57	0.144	2.000	Pass
			RB36#39	21.15	0.74	21.89	0.155	2.000	Pass
			RB75#0	21.14	0.74	21.88	0.154	2.000	Pass
		16-QAM	RB1#0	21.1	0.74	21.84	0.153	2.000	Pass
			RB1#38	21.24	0.74	21.98	0.158	2.000	Pass
			RB1#74	20.92	0.74	21.66	0.147	2.000	Pass
			RB36#0	19.89	0.74	20.63	0.116	2.000	Pass
			RB36#19	19.88	0.74	20.62	0.115	2.000	Pass
			RB36#39	20.33	0.74	21.07	0.128	2.000	Pass
			RB75#0	20.11	0.74	20.85	0.122	2.000	Pass
	HCH	QPSK	RB1#0	22.17	0.74	22.91	0.195	2.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Off set)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE Band 7									
			RB1#38	22.22	0.74	22.96	0.198	2.000	Pass
			RB1#74	21.6	0.74	22.34	0.171	2.000	Pass
			RB36#0	20.82	0.74	21.56	0.143	2.000	Pass
			RB36#19	20.89	0.74	21.63	0.146	2.000	Pass
			RB36#39	20.8	0.74	21.54	0.143	2.000	Pass
			RB75#0	20.81	0.74	21.55	0.143	2.000	Pass
		16-QAM	RB1#0	21.21	0.74	21.95	0.157	2.000	Pass
			RB1#38	21.38	0.74	22.12	0.163	2.000	Pass
			RB1#74	21.05	0.74	21.79	0.151	2.000	Pass
			RB36#0	19.84	0.74	20.58	0.114	2.000	Pass
			RB36#19	19.88	0.74	20.62	0.115	2.000	Pass
			RB36#39	19.79	0.74	20.53	0.113	2.000	Pass
			RB75#0	19.81	0.74	20.55	0.114	2.000	Pass
20 MHz	LCH	QPSK	RB1#0	21.96	0.74	22.70	0.186	2.000	Pass
			RB1#50	22.36	0.74	23.10	0.204	2.000	Pass
			RB1#99	21.57	0.74	22.31	0.170	2.000	Pass
			RB50#0	20.67	0.74	21.41	0.138	2.000	Pass
			RB50#25	20.74	0.74	21.48	0.141	2.000	Pass
			RB50#50	20.58	0.74	21.32	0.136	2.000	Pass
			RB100#0	20.63	0.74	21.37	0.137	2.000	Pass
		16-QAM	RB1#0	21.05	0.74	21.79	0.151	2.000	Pass
			RB1#50	21.51	0.74	22.25	0.168	2.000	Pass
			RB1#99	20.91	0.74	21.65	0.146	2.000	Pass
			RB50#0	19.68	0.74	20.42	0.110	2.000	Pass
			RB50#25	19.76	0.74	20.50	0.112	2.000	Pass
			RB50#50	19.63	0.74	20.37	0.109	2.000	Pass
			RB100#0	19.65	0.74	20.39	0.109	2.000	Pass
	MCH	QPSK	RB1#0	21.89	0.74	22.63	0.183	2.000	Pass
			RB1#50	22.04	0.74	22.78	0.190	2.000	Pass
			RB1#99	21.38	0.74	22.12	0.163	2.000	Pass
			RB50#0	20.67	0.74	21.41	0.138	2.000	Pass
			RB50#25	20.75	0.74	21.49	0.141	2.000	Pass
			RB50#50	20.74	0.74	21.48	0.141	2.000	Pass
			RB100#0	20.7	0.74	21.44	0.139	2.000	Pass
		16-QAM	RB1#0	21.18	0.74	21.92	0.156	2.000	Pass
			RB1#50	21.54	0.74	22.28	0.169	2.000	Pass
			RB1#99	20.94	0.74	21.68	0.147	2.000	Pass
			RB50#0	19.74	0.74	20.48	0.112	2.000	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output AV Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE Band 7									
			RB50#25	19.86	0.74	20.60	0.115	2.000	Pass
			RB50#50	19.88	0.74	20.62	0.115	2.000	Pass
			RB100#0	19.78	0.74	20.52	0.113	2.000	Pass
	HCH	QPSK	RB1#0	21.85	0.74	22.59	0.182	2.000	Pass
			RB1#50	22	0.74	22.74	0.188	2.000	Pass
			RB1#99	21.4	0.74	22.14	0.164	2.000	Pass
			RB50#0	20.87	0.74	21.61	0.145	2.000	Pass
			RB50#25	20.85	0.74	21.59	0.144	2.000	Pass
			RB50#50	20.66	0.74	21.40	0.138	2.000	Pass
			RB100#0	20.79	0.74	21.53	0.142	2.000	Pass
		16-QAM	RB1#0	20.93	0.74	21.67	0.147	2.000	Pass
			RB1#50	21.36	0.74	22.10	0.162	2.000	Pass
			RB1#99	20.87	0.74	21.61	0.145	2.000	Pass
			RB50#0	19.88	0.74	20.62	0.115	2.000	Pass
			RB50#25	19.9	0.74	20.64	0.116	2.000	Pass
			RB50#50	19.7	0.74	20.44	0.111	2.000	Pass
			RB100#0	19.83	0.74	20.57	0.114	2.000	Pass

A.2 Peak to Average Ratio

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

Note 2: Test plots please refer to the document “Annex No.: Ti-EE26030132-501 Data Part 1.pdf”.

WCDMA Mode Test Data

Test Band	Test Channel	Peak to Average Ratio (dB)	Limit (dB)	Verdict
Band 2	LCH	3	13	Pass
	MCH	2.95	13	Pass
	HCH	2.95	13	Pass
Band 5	LCH	3.09	13	Pass
	MCH	3.09	13	Pass
	HCH	3.05	13	Pass

LTE Mode Test Data

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Peak to Average Ratio (dB)	Limit (dB)	Verdict
LTE Band 5	10 MHz	LCH	QPSK	RB1#0	5.39	13	Pass
				RB50#0	5.81	13	Pass
			16-QAM	RB1#0	6.23	13	Pass
				RB50#0	6.61	13	Pass
		MCH	QPSK	RB1#0	5.44	13	Pass
				RB50#0	5.81	13	Pass
			16-QAM	RB1#0	6.52	13	Pass
				RB50#0	6.61	13	Pass
		HCH	QPSK	RB1#0	5.39	13	Pass
				RB50#0	5.81	13	Pass
			16-QAM	RB1#0	6.09	13	Pass
				RB50#0	6.66	13	Pass
LTE Band 7	20 MHz	LCH	QPSK	RB1#0	5.2	13	Pass
				RB100#0	5.91	13	Pass
			16-QAM	RB1#0	5.95	13	Pass
				RB100#0	6.66	13	Pass
		MCH	QPSK	RB1#0	5.77	13	Pass
				RB100#0	5.86	13	Pass
			16-QAM	RB1#0	6.42	13	Pass
				RB100#0	6.66	13	Pass
		HCH	QPSK	RB1#0	5.62	13	Pass
				RB100#0	5.91	13	Pass
			16-QAM	RB1#0	6.66	13	Pass
				RB100#0	6.61	13	Pass

A.3 Occupied Bandwidth

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

Note 2: Test plots please refer to the document “Annex No.: Ti-EE26030132-501 Data Part 2.pdf”.

GSM and WCDMA Mode Test Data

Test Band	Test Channel	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Verdict
GPRS 850	LCH	0.246	0.318	Pass
	MCH	0.245	0.322	Pass
	HCH	0.246	0.316	Pass
GPRS 1900	LCH	0.244	0.316	Pass
	MCH	0.243	0.317	Pass
	HCH	0.245	0.313	Pass
EGPRS 850	LCH	0.254	0.319	Pass
	MCH	0.258	0.335	Pass
	HCH	0.255	0.318	Pass
EGPRS 1900	LCH	0.249	0.316	Pass
	MCH	0.252	0.313	Pass
	HCH	0.249	0.308	Pass
WCDMA Band 2	LCH	4.159	4.705	Pass
	MCH	4.161	4.712	Pass
	HCH	4.155	4.699	Pass
WCDMA Band 5	LCH	4.158	4.693	Pass
	MCH	4.151	4.688	Pass
	HCH	4.164	4.7	Pass

LTE Mode Test Data

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Verdict
Band 5	1.4 MHz	LCH	QPSK	RB6#0	1.085	1.267	Pass
			16-QAM	RB6#0	1.093	1.296	Pass
		MCH	QPSK	RB6#0	1.088	1.299	Pass
			16-QAM	RB6#0	1.09	1.291	Pass
		HCH	QPSK	RB6#0	1.091	1.273	Pass
			16-QAM	RB6#0	1.095	1.298	Pass
	3 MHz	LCH	QPSK	RB15#0	2.691	2.917	Pass
			16-QAM	RB15#0	2.689	2.921	Pass
		MCH	QPSK	RB15#0	2.687	2.924	Pass
			16-QAM	RB15#0	2.685	2.933	Pass
		HCH	QPSK	RB15#0	2.698	2.912	Pass
			16-QAM	RB15#0	2.684	2.925	Pass
	5 MHz	LCH	QPSK	RB25#0	4.497	4.956	Pass
			16-QAM	RB25#0	4.489	4.896	Pass
		MCH	QPSK	RB25#0	4.494	4.908	Pass
			16-QAM	RB25#0	4.49	4.916	Pass
		HCH	QPSK	RB25#0	4.492	4.894	Pass
			16-QAM	RB25#0	4.497	4.962	Pass
	10 MHz	LCH	QPSK	RB50#0	8.978	9.76	Pass
			16-QAM	RB50#0	8.983	9.706	Pass
		MCH	QPSK	RB50#0	8.956	9.705	Pass
			16-QAM	RB50#0	8.976	9.687	Pass
		HCH	QPSK	RB50#0	8.974	9.765	Pass
			16-QAM	RB50#0	8.969	9.738	Pass

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Measured 99% Occupied Bandwidth (MHz)	Measured -26 dB Occupied Bandwidth (MHz)	Verdict
Band 7	5 MHz	LCH	QPSK	RB25#0	4.505	4.928	Pass
			16-QAM	RB25#0	4.495	4.866	Pass
		MCH	QPSK	RB25#0	4.494	4.922	Pass
			16-QAM	RB25#0	4.498	4.912	Pass
		HCH	QPSK	RB25#0	4.493	4.871	Pass
			16-QAM	RB25#0	4.5	4.961	Pass
	10 MHz	LCH	QPSK	RB50#0	8.982	9.832	Pass
			16-QAM	RB50#0	8.979	9.809	Pass
		MCH	QPSK	RB50#0	8.966	9.809	Pass
			16-QAM	RB50#0	8.977	9.721	Pass
		HCH	QPSK	RB50#0	8.983	9.816	Pass
			16-QAM	RB50#0	8.978	9.832	Pass
	15 MHz	LCH	QPSK	RB75#0	13.459	14.744	Pass
			16-QAM	RB75#0	13.479	14.593	Pass
		MCH	QPSK	RB75#0	13.432	14.56	Pass
			16-QAM	RB75#0	13.46	14.617	Pass
		HCH	QPSK	RB75#0	13.456	14.669	Pass
			16-QAM	RB75#0	13.476	14.611	Pass
	20 MHz	LCH	QPSK	RB100#0	17.921	19.317	Pass
			16-QAM	RB100#0	17.97	19.393	Pass
		MCH	QPSK	RB100#0	17.898	19.313	Pass
			16-QAM	RB100#0	17.928	19.361	Pass
		HCH	QPSK	RB100#0	17.936	19.522	Pass
			16-QAM	RB100#0	17.926	19.418	Pass

A.4 Frequency Stability

GPRS 850

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	LCH 824.2 MHz		MCH 836.6 MHz		HCH 848.8 MHz		
		Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	
3.6	-30	-7.91	±2060.5	-12.79	±2091.5	-10.33	±2122	Pass
	-20	-7.26		-6.72		-6.52		
	-10	-4.46		-8.23		6.39		
	0	5.36		-6.04		6.65		
	+10	-5.49		-3.42		3.94		
	+20	5		-6.3		-7.3		
	+25	-8.59		3.75		4.55		
	+30	4.78		4.81		5.49		
	+40	5.46		-4.07		-3.62		
	+50	4.1		4.1		8.46		
4.2	+25	5.07		3.94		5.1		
3.3	+25	-5.33		6.1		6.07		

GPRS 1900

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	LCH 1850.2 MHz		MCH 1880 MHz		HCH 1909.8 MHz		
		Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	
3.6	-30	8.75	±4625.5	13.69	±4700.0	11.49	±4774.5	Pass
	-20	17.95		19.86		20.89		
	-10	16.27		18.37		16.37		
	0	14.24		17.72		17.85		
	+10	18.31		23.86		18.69		
	+20	21.37		19.24		18.4		
	+25	19.31		20.21		17.4		
	+30	21.83		17.05		19.63		
	+40	17.18		22.99		16.53		
	+50	24.15		20.18		19.86		
4.2	+25	17.08		21.66		19.89		
3.3	+25	16.37		15.53		23.18		

EGPRS 850

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	LCH 824.2 MHz		MCH 836.6 MHz		HCH 848.8 MHz		
		Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	
3.6	-30	-10.4	±2060.5	-23.12	±2091.5	-18.34	±2122	Pass
	-20	-17.21		-15.27		-16.5		
	-10	-15.98		-12.07		-18.34		
	0	-16.34		-13.37		-16.11		
	+10	-16.66		-16.66		-14.88		
	+20	-16.21		-14.04		-11.72		
	+25	-14.66		-16.01		-14.21		
	+30	-20.82		-17.6		-15.95		
	+40	-15.37		-11.4		-16.85		
	+50	-16.95		-17.14		-12.24		
4.2	+25	-14.37		-15.08		-11.62		
3.3	+25	-13.3		-15.95		-12.07		

EGPRS 1900

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	LCH 1850.2 MHz		MCH 1880 MHz		HCH 1909.8 MHz		
		Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	
3.6	-30	-15.72	±4625.5	-12.3	±4700.0	-8.75	±4774.5	Pass
	-20	-11.24		-8.36		-6.17		
	-10	-8.49		-8.3		9.78		
	0	6.04		7.36		-8.49		
	+10	-11.62		-6.3		24.6		
	+20	-14.98		-10.91		8.62		
	+25	16.89		16.5		-6.01		
	+30	-14.88		-6.65		7.3		
	+40	-12.62		8.68		16.01		
	+50	-12.88		11.36		18.6		
4.2	+25	19.82	±4625.5	-6.62	±4700.0	-6.33	±4774.5	Pass
3.3	+25	-7.75		6.88		-8.68		

WCDMA Band 2

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	LCH 1852.4 MHz		MCH 1880 MHz		HCH 1907.6 MHz		
		Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	
3.6	-30	-4.18	±4631	-14.63	±4700	-22.91	±4769	Pass
	-20	-9.62		-17.5		-20.88		
	-10	-9.72		-18.74		-22.7		
	0	-16.03		-19.32		-19.07		
	+10	-14.85		-22.18		-22.77		
	+20	-6.29		-18.29		-20.4		
	+25	-6.49		-21.31		-19.29		
	+30	-6.58		-16.97		-20.33		
	+40	-13.35		-20.29		-23.41		
	+50	-10.18		-16.68		-22.91		
4.2	+25	-11.83		-19.08		-24.73		
3.3	+25	-6.13		-19.34		-22.86		

WCDMA Band 5

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	LCH 826.4 MHz		MCH 836.4 MHz		HCH 846.6 MHz		
		Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	Value (Hz)	Limits (Hz)	
3.6	-30	-5.3	±2066	-17.96	±2091	-16.8	±2116.5	Pass
	-20	-6.25		-11.29		-16.3		
	-10	-10.62		-16.22		-13.92		
	0	-7.81		-18.4		-13.92		
	+10	-10.15		-16.39		-13.53		
	+20	-5		-17.38		-15.25		
	+25	-4.06		-12.32		-17.87		
	+30	-6.79		-16.9		-16.19		
	+40	-8.88		-13.31		-17.59		
	+50	-5.9		-12.45		-16.64		
4.2	+25	-11.56		-16.42		-13.93		
3.3	+25	-12.17		-17.4		-14.97		

LTE Band 5 QPSK 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (VDC)	Temperature (°C)	MCH 836.5 MHz		
		Value (Hz)	Limits (Hz)	
3.6	-30	0.69	±2091.25	Pass
	-20	-8.01		
	-10	-5.26		
	0	-3.91		
	+10	-3.6		
	+20	-4.25		
	+25	-6.71		
	+30	-6.81		
	+40	-11.76		
	+50	-5.15		
4.2	+25	-3.53		
3.3	+25	-6.25		

LTE Band 5 16QAM 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (VDC)	Temperature (°C)	MCH 836.5 MHz		
		Value (Hz)	Limits (Hz)	
3.6	-30	-4.56	±2091.25	Pass
	-20	-7.85		
	-10	-2.5		
	0	-4.51		
	+10	-6.14		
	+20	-5.36		
	+25	-2.17		
	+30	-3.62		
	+40	-4.85		
	+50	-8.08		
4.2	+25	-0.97		
3.3	+25	-7.5		

LTE Band 7 QPSK 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (VDC)	Temperature (°C)	MCH 2535 MHz		
		Value (Hz)	Limits (Hz)	
3.6	-30	-3.18	±6337.5	Pass
	-20	-3.19		
	-10	3.53		
	0	-11.63		
	+10	-12.42		
	+20	3.13		
	+25	-10.87		
	+30	-8.35		
	+40	-9.83		
	+50	-10.64		
4.2	+25	-0.54		
3.3	+25	-6.12		

LTE Band 7 16-QAM 10 MHz

Test Conditions		Frequency Deviation		Verdict
Power (VDC)	Temperature (°C)	MCH 2535 MHz		
		Value (Hz)	Limits (Hz)	
3.6	-30	-1.09	±6337.5	Pass
	-20	-7.77		
	-10	-0.97		
	0	-7.82		
	+10	-3.36		
	+20	-6.41		
	+25	0.16		
	+30	-5.09		
	+40	-4.35		
	+50	-6.04		
4.2	+25	-11.37		
3.3	+25	-6.08		

A.5 Spurious Emission at Antenna Terminals

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

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

Note 3: Test plots please refer to the document "Annex No.: Ti-EE26030132-501 Data Part 3.pdf".

Note 4: The disturbance above 26.5GHz was very low, and the above harmonics were the highest point could be found when testing, so only the worst case data displayed in this report.

GSM and WCDMA Mode Test Verdict

Test Band	Test Channel	Verdict
GPRS 850	LCH	Pass
	MCH	Pass
	HCH	Pass
GPRS 1900	LCH	Pass
	MCH	Pass
	HCH	Pass
EGPRS 850	LCH	Pass
	MCH	Pass
	HCH	Pass
EGPRS 1900	LCH	Pass
	MCH	Pass
	HCH	Pass
WCDMA Band 2	LCH	Pass
	MCH	Pass
	HCH	Pass
WCDMA Band 5	LCH	Pass
	MCH	Pass
	HCH	Pass

LTE Mode Test Verdict

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Verdict
Band 5	1.4 MHz	LCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		MCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		HCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
	3 MHz	LCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		MCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		HCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
	5 MHz	LCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		MCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		HCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
	10 MHz	LCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		MCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		HCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Verdict
Band 7	5 MHz	LCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		MCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		HCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
	10 MHz	LCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		MCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		HCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
	15 MHz	LCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		MCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		HCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
	20 MHz	LCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		MCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass
		HCH	QPSK	RB1#0	Pass
			16-QAM	RB1#0	Pass

A.6 Band Edge

Note 1: Test plots please refer to the document “Annex No.: Ti-EE26030132-501 Data Part 4.pdf”.

GSM and WCDMA Mode Test Verdict

Test Band	Test Channel	Verdict
GPRS 850	LCH	Pass
	HCH	Pass
GPRS 1900	LCH	Pass
	HCH	Pass
EGPRS 850	LCH	Pass
	HCH	Pass
EGPRS 1900	LCH	Pass
	HCH	Pass
WCDMA Band 2	LCH	Pass
	HCH	Pass
WCDMA Band 5	LCH	Pass
	HCH	Pass

LTE Mode Test Verdict

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Verdict
Band 5	1.4 MHz	LCH	QPSK	RB1#0	Pass
				RB6#0	Pass
			16-QAM	RB1#0	Pass
				RB6#0	Pass
		HCH	QPSK	RB1#5	Pass
				RB6#0	Pass
			16-QAM	RB1#5	Pass
				RB6#0	Pass
	3 MHz	LCH	QPSK	RB1#0	Pass
				RB15#0	Pass
			16-QAM	RB1#0	Pass
				RB15#0	Pass
		HCH	QPSK	RB1#14	Pass
				RB15#0	Pass
			16-QAM	RB1#14	Pass
				RB15#0	Pass
	5 MHz	LCH	QPSK	RB1#0	Pass
				RB25#0	Pass
			16-QAM	RB1#0	Pass
				RB25#0	Pass
		HCH	QPSK	RB1#24	Pass
				RB25#0	Pass
			16-QAM	RB1#24	Pass
				RB25#0	Pass
	10 MHz	LCH	QPSK	RB1#0	Pass
				RB50#0	Pass
			16-QAM	RB1#0	Pass
				RB50#0	Pass
		HCH	QPSK	RB1#49	Pass
				RB50#0	Pass
			16-QAM	RB1#49	Pass
				RB50#0	Pass

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Verdict
Band 7	5 MHz	LCH	QPSK	RB1#0	Pass
				RB25#0	Pass
			16-QAM	RB1#0	Pass
				RB25#0	Pass
		HCH	QPSK	RB1#24	Pass
				RB25#0	Pass
			16-QAM	RB1#24	Pass
				RB25#0	Pass
	10 MHz	LCH	QPSK	RB1#0	Pass
				RB50#0	Pass
			16-QAM	RB1#0	Pass
				RB50#0	Pass
		HCH	QPSK	RB1#49	Pass
				RB50#0	Pass
			16-QAM	RB1#49	Pass
				RB50#0	Pass
	15 MHz	LCH	QPSK	RB1#0	Pass
				RB75#0	Pass
			16-QAM	RB1#0	Pass
				RB75#0	Pass
		HCH	QPSK	RB1#74	Pass
				RB75#0	Pass
			16-QAM	RB1#74	Pass
				RB75#0	Pass
	20 MHz	LCH	QPSK	RB1#0	Pass
				RB100#0	Pass
			16-QAM	RB1#0	Pass
				RB100#0	Pass
		HCH	QPSK	RB1#99	Pass
				RB100#0	Pass
			16-QAM	RB1#99	Pass
				RB100#0	Pass

A.7 Field Strength of Spurious Radiation

Note 1: All modes have been tested, and only the worst case data are shown here.

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

Note 3: Test plots please refer to the document "Annex No.: Ti-EE26030132-501 Data Part 5.pdf".

Note 4: The disturbance above 26.5GHz was very low, and the above harmonics were the highest point could be found when testing, so only the worst case data displayed in this report.

GSM and WCDMA Mode Test Verdict

Test Band	Test Channel	Verdict
GPRS 850	LCH	Pass
	MCH	Pass
	HCH	Pass
GPRS 1900	LCH	Pass
	MCH	Pass
	HCH	Pass
EGPRS 850	LCH	Pass
	MCH	Pass
	HCH	Pass
EGPRS 1900	LCH	Pass
	MCH	Pass
	HCH	Pass
WCDMA Band 2	LCH	Pass
	MCH	Pass
	HCH	Pass
WCDMA Band 5	LCH	Pass
	MCH	Pass
	HCH	Pass

LTE Mode Test Verdict

Test Band	Test Channel	Test Bandwidth (MHz)	Modulation	RB Number	RB Position	Verdict
LTE Band 5	20525	10	QPSK	1	MID	Pass
LTE Band 7	21400	10	QPSK	1	MID	Pass

ANNEX B TEST SETUP PHOTOS

Please refer to the document “Ti-EE26030132-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer to the document “Ti-EE26030132-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer to the document “Ti-EE26030132-AI.PDF”.

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--END OF REPORT--