

Product Name: Smart Phone PMN: Smart Phone	Report No: ITEZA2-202400339RF5
For FCC ID Model: Blade GT, Blade GT Ultra, Blade GT Play, Blade GT Pro, Blade GT Max, Blade10 Play, Blade10 Max 5G For ISED HVIN: Blade GT	Security Classification: Open
Version: V1.0	Total Page: 41

TIRT Testing Report

Prepared By:	Checked By:	Approved By:	
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RF TEST REPORT

FCC ID: 2AX4YBLADEGT

IC: 33167-BLADEGT

According to

FCC CFR Title 47 Part 2

FCC CFR Title 47 Part 22 Subpart H

FCC CFR Title 47 Part 24 Subpart E

FCC CFR Title 47 Part 27

RSS-132 Issue 4, RSS-133 Issue 6, RSS-Gen Issue 5

RSS-139 Issue 4, ANSI C63.26-2015

Applicant:	Shenzhen DOOGEE Hengtong Technology CO.,LTD
FCC ID Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Longhua New District, Shenzhen, China
IC Address	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Dafu Industrial Zone, Guanlan Aobei Community, Guanlan Street, Longhua New District, Shenzhen, Guangdong China
Manufacturer:	Shenzhen DOOGEE Hengtong Technology CO.,LTD
Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Longhua New District, Shenzhen, China
Sample No:	1000046260
Product Name	Smart Phone
PMN:	Smart Phone
Brand Name:	DOOGEE
For FCC ID Model:	Blade GT, Blade GT Ultra, Blade GT Play, Blade GT Pro, Blade GT Max, Blade10 Play, Blade10 Max 5G
For ISED HVIN:	Blade GT
Test No.:	Blade GT

Date of Receipt:	2024/09/11
Date of Test:	2024/09/11~2024/11/19
Issued Date:	2024/12/02
Testing Lab:	TIRT

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History of this test report

Original Report Issue Date: 2024.11.19

- No additional attachment
- Additional attachments were issued following record

Attachment No.	Issue Date	Description

1 Test Summary

Test Item	Section in CFR 47	Result
RF Exposure (SAR)	Part 1.1307, Part 2.1093 RSS-102 Issue 6	Pass* (Please refer to SAR Report)
RF Output Power	Part 2.1046 Part 22.913 (a)(2) Part 24.232 (c), Part 27.50(d) RSS-Gen Issue 5 §6.12 RSS-132 (5.4), RSS-133 (5.5) RSS-139 (5.5)	Pass
Peak-to-Average Ratio	Part 2.1046, Part 22.913(d) Part 24.232 (d), Part 27.50(d) RSS-132 (5.4), RSS-133 (5.5) RSS-139 (5.5)	Pass
Modulation Characteristics	Part 2.1047, Part 22.917 (a) Part 24.238 (a), Part 27.50(a) RSS-Gen Issue 5 §6.7 RSS-132 (5.2), RSS-133 (5.3) RSS-139 (5.3)	N/A
99% & -26 dB Occupied Bandwidth	Part 2.1049, Part 22.917 Part 24.238, Part 27.53(h) RSS-Gen Issue 5 §6.7	Pass
Spurious Emissions at Antenna Terminal Out of band emission, Band Edge	Part 2.1051, Part 22.917 (a) Part 24.238 (a), Part 27.53(g), Part 27.53(h) RSS-Gen Issue 5 §6.12 RSS-132 (5.5), RSS-133 (5.6) RSS-139 (5.6)	Pass
Field Strength of Spurious Radiation	Part 2.1053, Part 22.917 (a) Part 24.238 (a), Part 27.53(g) Part 27.53(h), RSS-Gen Issue 5 §6.12	Pass
Receiver Radiated Spurious Emission	RSS-133 Issue 6 (6.6) RSS-Gen Issue 5 (7.3)	Pass
Frequency stability	Part 2.1055(a)(1)(b), Part 2.1055(d)(1)(2) Part 27.54, RSS-132 (5.3) RSS-133 (5.4), RSS-Gen Issue 5 §6.11 RSS-139 (5.4)	Pass

Note: 1.Pass: The EUT complies with the essential requirements in the standard.

2. The conclusion of this test report is judged by actual test data without considering measurement uncertainty.

2 General Information

2.1 General Description of EUT

EUT Name	:	Smart Phone
PMN	:	Smart Phone
For FCC ID Model No.	:	Blade GT, Blade GT Ultra, Blade GT Play, Blade GT Pro, Blade GT Max, Blade10 Play, Blade10 Max 5G
For ISSED HVIN:	:	Blade GT
DIFF for. FCC ID Model No	:	There is no difference except the name of the model. All tests are made with the BLADE GT model.
Power supply	:	DC 3.87V from battery or DC 9V from adapter

Support Networks	:	GSM, GPRS, EGPRS, WCDMA
Support Bands	:	GSM850, PCS1900, WCDMA Band V, WCDMA Band IV, WCDMA Band II
TX Frequency	:	GSM850: 824.20MHz-848.80MHz PCS1900: 1850.20MHz-1909.80MHz WCDMA Band V: 826.40MHz -846.60MHz WCDMA Band II: 1852.40MHz -1907.60MHz WCDMA Band IV:1712.4MHz -1752.6MHz
GPRS Class	:	12
EGPRS Class	:	12
Modulation type	:	GSM/GPRS: GMSK EGPRS: GMSK/8PSK WCDMA Band II/IV/V: QPSK, 16QAM
Antenna type	:	PIFA antenna
Antenna gain	:	Maximum Gain is -3.64dBi for GSM 850 Maximum Gain is -0.6dBi for PCS1900 Maximum Gain is -3.64dBi for WCDMA Band V Maximum Gain is -1.15dBi for WCDMA Band IV Maximum Gain is -0.6Bi for WCDMA Band II Antenna information is provided by applicant. There is WWAN diversity antenna inside the product, which is only for receiving function.
Software version	:	DOOGEE-Blade_GT-EEA-Android14.0-20240830
Hardware version FVIN	:	M163-MUB-V2

Remark: 1.The worst-case simultaneous transmission configuration was evaluated with no non-compliance found. Results in this report are only for 2G and 3G function, and there is no other transmitter involved.

Operation Frequency List:

GSM 850		PCS1900		WCDMA Band V		WCDMA Band II	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
128	824.20	512	1850.20	4132	826.40	9262	1852.40
129	824.40	513	1850.40	4133	826.60	9263	1852.60
· ∴	· ∴	· ∴	· ∴	· ∴	· ∴	· ∴	· ∴
189	836.40	660	1879.80	4181	836.20	9399	1879.80
190	836.60	661	1880.00	4182	836.40	9400	1880.00
191	836.80	662	1880.20	4183	836.60	9401	1880.20
· ∴	· ∴	· ∴	· ∴	· ∴	· ∴	· ∴	· ∴
250	848.60	809	1909.60	4232	846.40	9537	1907.40
251	848.80	810	1909.80	4233	846.60	9538	1907.60
WCDMA Band IV							
Channel	Frequency (MHz)						
1312	1712.4						
· ∴	· ∴						
1413	1732.6						
· ∴	· ∴						
1513	1752.6						

Regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Final test channel:

GSM 850		PCS1900		WCDMA Band V		WCDMA Band II	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
128	824.20	512	1850.20	4132	826.40	9262	1852.40
190	836.60	661	1880.00	4183	836.60	9400	1880.00
251	848.80	810	1909.80	4233	846.60	9538	1907.60
WCDMA Band IV							
Channel		Frequency (MHz)					
1312		1712.4					
1413		1732.6					
1513		1752.6					

2.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is filing to comply with Section Part 2, Part 22 subpart H, Part 24 subpart E, Part 27 subpart C of the FCC CFR 47, RSS-Gen, RSS-132, RSS-133, RSS-139 Rules, KDB 971168 D01 v03r01 and ANSI C63.26.

2.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on TIA/EIA 603 ANSI C63.26 and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057

2.4 Test Facility

Company:	Beijing TIRT Technology Service Co.,Ltd Shenzhen
Address:	104 Building C, Xinmingsheng Industrial Park No.132, Zhangge Old Village East Zone, Zhangge Community, Fucheng Street, Longhua District, Shenzhen, Guangdong, P. R. China
CNAS Registration Number:	CNAS L14158
A2LA Registration Number:	6049.01
FCC Accredited Lab.Designation Number:	CN1366
FCC Test Firm Registration Number:	820690
CAB identifier	CN0159
Company Number	31418
Telephone:	+86-0755-27087573

2.5 Measurement Uncertainty

Uncertainty	
Parameter	Uncertainty
Occupied Channel Bandwidth	± 142.12 KHz
RF power conducted	± 0.74 dB
RF power radiated	± 3.25 dB
Spurious emissions, conducted	± 1.78 dB
Spurious emissions, radiated (9KHz~30MHz)	± 2.56 dB
Spurious emissions, radiated (30MHz~1GHz)	± 4.6 dB
Spurious emissions, radiated (Above 1GHz)	± 4.9 dB
Conduction Emissions(150kHz~30MHz)	± 3.1 dB
Humidity	$\pm 4.6\%$
Temperature	$\pm 0.7^{\circ}\text{C}$
Time	$\pm 1.25\%$

2.6 Accessories of Device (EUT)

Accessories : AC Adapter
 Manufacturer : Shenzhen Theone Electronic CO.,Ltd
 Model : TP182C-US

Input: AC100-240V~ 50/60Hz 0.5A Max

Ratings : Output USB-A: 5.0V=3.0A 15.0W; 9.0V=2.0A 18.0W,
 12.0V=1.5A 18.0W;
 Power:18.0W Max

3 Test Instruments list

Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI Receiver	Rohde&Schwarz	ESIB 40	YH-TIRT-SAC-966-20220911	2024/01/05	2025/01/04
Integral Antenna	Schwarzbeck	VULB 9163	01314	2022/12/11	2024/12/10
Integral Antenna	Rohde&Schwarz	HF907	RSM2991424	2022/12/11	2024/12/10
Preamplifier	Emtrace	RP01A	'02017	2024/01/05	2025/01/04
Preamplifier	Schwarzbeck	BBV9744	00143	2024/01/05	2025/01/04
Loop Antenna	ZHINAN	ZN30900A	12024	2024/01/05	2025/01/04
Exposure Level Tester	narda	ELT-400	N-0925	2024/01/05	2025/01/04
Horn Antenna	Schwarzbeck	BBHA9170	00956	2024/01/05	2025/01/04
RF Cable	/	LMR400UF-NMNM-7.0M	/	2024/01/05	2025/01/04
RF Cable	/	SFT2050PUR-NMNM-7.0M	/	2024/01/05	2025/01/04
EMI Receiver	Rohde&Schwarz	ESR7	1316.3003K07-102611-mk	2024/11/02	2025/11/01
LISN	Rohde&Schwarz	ENV216	3560.655.12-102915-Bp	2024/11/02	2025/11/01
ISN	Schwarzbeck	ENY81	1309.8510.03	2024/01/05	2025/01/04
ISN	Schwarzbeck	ENY81-CAT6	1309.8526.03-101976-kh	2024/01/05	2025/01/04
RF Cable	\	SFT2050PUR-NMNM-2.0M	\	2024/01/05	2025/01/04
CMW500	ROHDE&SCHWARZ	CMW500	120434	2024/01/05	2025/01/04
Spectrum analyzer	ROHDE&SCHWARZ	FSU26	200732	2024/01/05	2025/01/04

Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	101722	2024/01/05	2025/01/04
vector Signal Generator	KEYSIGHT	N5182B	MY56200458	2024/01/05	2025/01/04
vector Signal Generator	HEWLETT PACKARD	83752A	3610A02458	2024/01/05	2025/01/04
Filter	HEWLETT PACKARD	JS0806-F	19K8060209	2024/01/05	2025/01/04
Wireless comprehensive tester	ANRISTU	MT8821C	SN6262170409	2024/01/05	2025/01/04
Wireless comprehensive tester	ANRISTU	MT8000A	SN6262166782	2024/01/05	2025/01/04
ROB ANT	Hubei world for communication Co., LTD	SW-700/2700XP-4	/	/	/

4 System test configuration

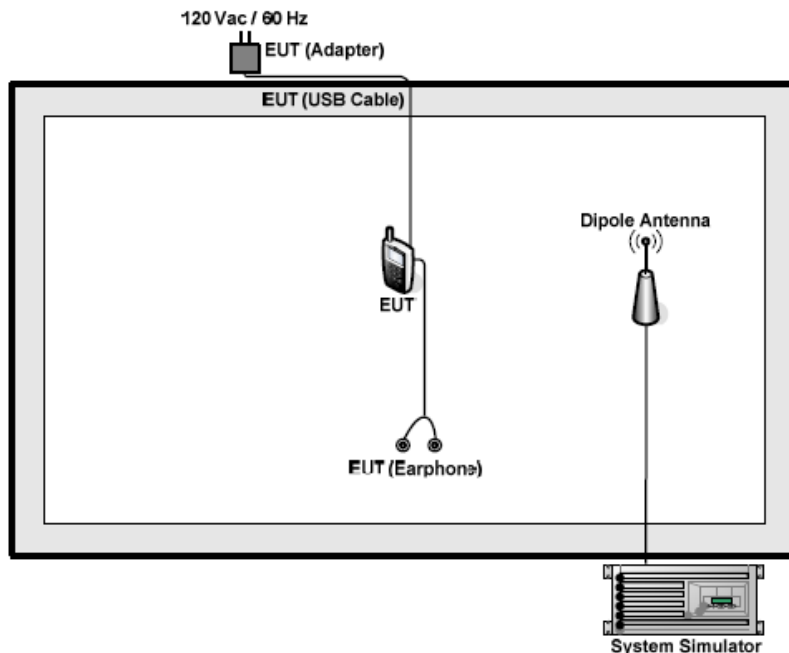
4.1 Test mode

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.

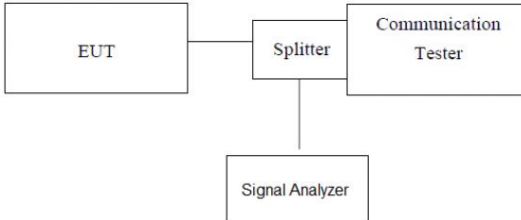
Test modes		
Band	Radiated	Conducted
GSM 850	■ GSM link ■ GPRS 1 link ■ EPRS 1 link	■ GSM link ■ GPRS 1 link ■ EGPRS 1 link
PCS 1900	■ GSM link ■ GPRS 1 link ■ EGPRS 1 link	■ GSM link ■ GPRS 1 link ■ EGPRS 1 link
WCDMA II	■ RMC 12.2Kbps link	■ RMC 12.2Kbps link
WCDMA Band IV	■ RMC 12.2Kbps link	■ RMC 12.2Kbps link
WCDMA Band V	■ RMC 12.2Kbps link	■ RMC 12.2Kbps link

Note: The maximum power levels are GSM mode for GMSK link, GPRS multi-slot class 8 mode for GMSK link, EGPRS multi-slot class 8 mode for 8PSK link, RMC12.2Kbps mode for WCDMA Band V/II/IV. Only these modes were used for all tests.

4.2 Configuration of Tested System



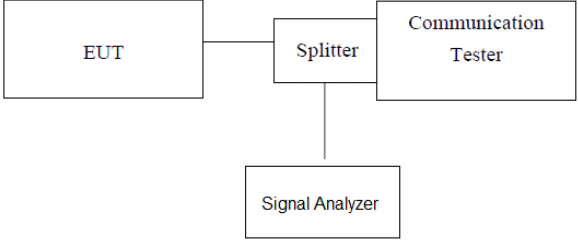
4.3 Conducted Output Power

Test Requirement:	Part 2.1046, Part 22.913 (a)(2), Part 24.232 (c), Part 27.50(d) RSS-Gen Issue 5 §6.12, RSS-132 (5.4), RSS-133 (5.5), RSS-139 (5.5)
Test Method:	FCC part2.1046
Limit:	GSM850, WCDMA Band V: 7W(38.45dbm) PCS1900, WCDMA Band II: 2W(33.01dbm) WCDMA Band IV: 1W(30.00dbm)
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	1. The transmitter output port was connected to base station. 2. The RF output of EUT was connected to the Signal Analyzer by RF cable and attenuator, the path loss was compensated to the results for each measurement. 3. Set EUT at maximum power through base station. 4. Select lowest, middle, and highest channels for each band and different modulation. 5. Measure the maximum burst average power.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

Measurement Data

Note: Please refer to Appendix 2G+3G of the test Data.

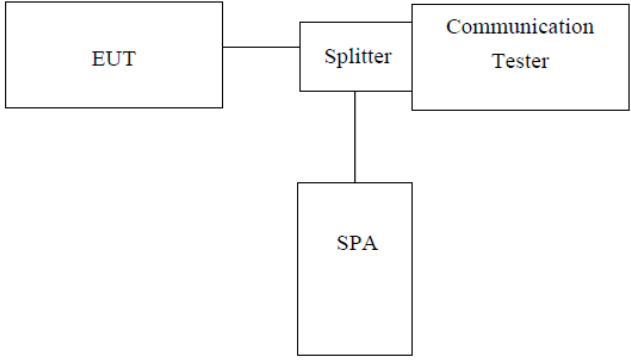
4.4 Peak-to-Average Ratio

Test Requirement:	Part 2.1046, Part 22.913(d), Part 24.232 (d), Part 27.50(d) RSS-132 (5.4), RSS-133 (5.5), RSS-139 (5.5)
Test Method:	FCC part2.1046
Limit:	13db
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	1. The transmitter output port was connected to base station. 2. The RF output of EUT was connected to the Signal Analyzer by RF cable and attenuator, the path loss was compensated to the results for each measurement. 3. Set EUT at maximum power through base station. 4. Select lowest, middle, and highest channels for each band and different modulation. 5. Measure the maximum burst average power. 6. Record the maximum peak-to-average ratio value.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

Measurement Data:

Note: Please refer to Appendix 2G+3G of the test Data.

4.5 Occupy Bandwidth

Test Requirement:	Part 2.1049, Part 22.917, Part 24.238, Part 27.53(h), RSS-Gen Issue 5 §6.7
Test Method:	FCC part2.1049
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer 2. RBW was set to about 1% of emission BW, VBW= 3 times RBW. 3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

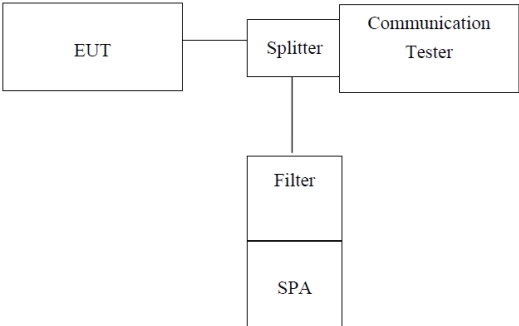
Measurement Data:

Note: Please refer to Appendix 2G+3G of the test Data.

4.6 MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E& Part 27, RSS-132 Issue 4, RSS-133 Issue 6, RSS-139 Issue 4, there are no specific requirement for digital modulation, therefore modulation characteristic is not presented.

4.7 Out of band emission at antenna terminals

Test Requirement:	Part 2.1051, Part 22.917 (a), Part 24.238 (a), Part 27.53(g), Part 27.53(h), RSS-Gen Issue 5 §6.12, RSS-132 (5.5), RSS-133 (5.6) RSS-139 (5.6)
Test Method:	FCC part2.1051
Limit:	-13dBm
Test setup:	 <i>Note: Measurement setup for testing on Antenna connector</i>
Test Procedure:	1 The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. 2 The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic. 3 For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10th harmonic. 4 Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

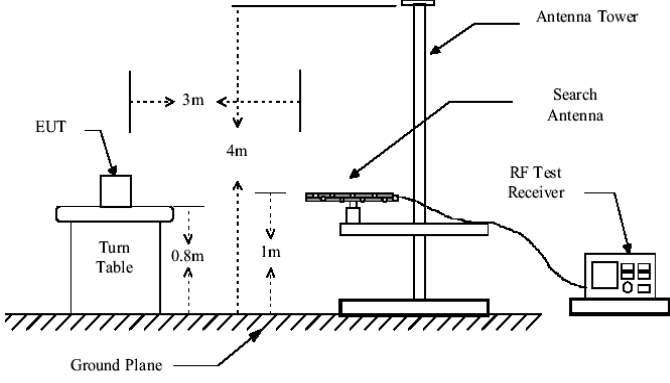
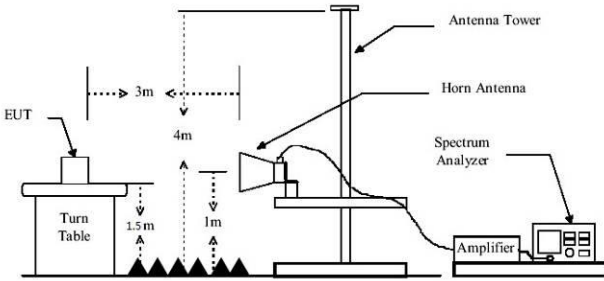
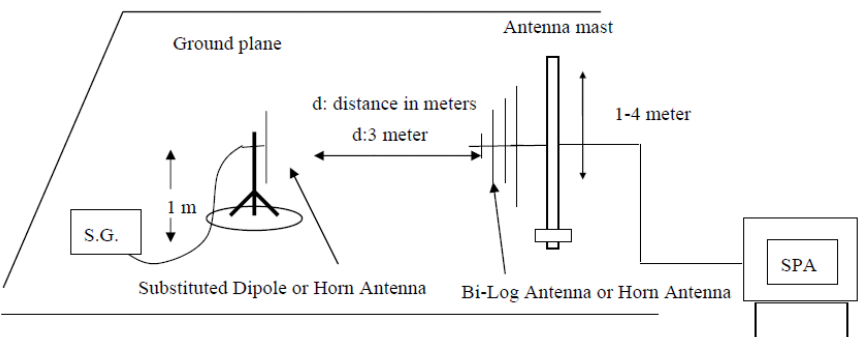
Test plot as follows:

Note: During the conducted spurious emission test, a band filter was used. The information of the filter is reported at section 6.0 (refer to item 24, 25).

Measurement Data:

Note: Please refer to Appendix 2G+3G of the test Data.

4.8 ERP, EIRP Measurement

Test Requirement:	Part 2.1046, Part 22.913 (a)(2), Part 24.232 (c), Part 27.50(d) RSS-Gen Issue 5 §6.12, RSS-132 (5.4), RSS-133 (5.5), RSS-139 (5.5)
Test Method:	FCC part2.1046
Limit:	GSM850, WCDMA Band V: 7W PCS1900, WCDMA Band II: 2W WCDMA Band IV: 1W
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 

Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated. 3. 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 asfollows: $\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$ 4. 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: $\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

Measurement Data

EUT mode	Channel	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
GSM850 (GSM link)	Lowest	H	V	33.01	38.45	Pass
			H	32.12		
		E1	V	32.94		
			H	30.86		
		E2	V	32.99		
			H	30.64		
	Middle	H	V	33.01	38.45	Pass
			H	32.74		
		E1	V	32.19		
			H	31.20		
		E2	V	32.24		
			H	31.36		
	Highest	H	V	30.36	38.45	Pass
			H	32.39		
		E1	V	31.75		
			H	32.47		
		E2	V	32.47		
			H	31.31		

EUT mode	Channel	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
GSM850 (GPRS 1 link)	Lowest	H	V	32.01	38.45	Pass
			H	32.20		
		E1	V	32.14		
			H	30.88		
		E2	V	31.19		
			H	30.39		
	Middle	H	V	29.10	38.45	Pass
			H	30.01		
		E1	V	31.99		
			H	31.53		
		E2	V	32.16		
			H	30.69		
	Highest	H	V	30.33	38.45	Pass
			H	32.58		
		E1	V	31.13		
			H	32.07		
		E2	V	32.58		
			H	29.79		

EUT mode	Channel	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
GSM850 (EGPRS 1 link)	Lowest	H	V	25.94	38.45	Pass
			H	23.15		
		E1	V	24.33		
			H	23.38		
		E2	V	24.83		
			H	21.61		
	Middle	H	V	24.73	38.45	Pass
			H	23.96		
		E1	V	25.15		
			H	22.13		
		E2	V	24.38		
			H	23.72		
	Highest	H	V	24.26	38.45	Pass
			H	23.69		
		E1	V	25.88		
			H	24.16		
		E2	V	23.32		
			H	24.74		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP (dBm)	Limit (dBm)	Result
PCS1900 (GSM link)	Lowest	H	V	29.63	33.01	Pass
			H	27.71		
		E1	V	27.02		
			H	26.66		
		E2	V	27.64		
			H	26.41		
	Middle	H	V	28.05	33.01	Pass
			H	27.66		
		E1	V	27.51		
			H	28.81		
		E2	V	27.56		
			H	26.51		
	Highest	H	V	27.70	33.01	Pass
			H	26.46		
		E1	V	25.76		
			H	27.06		
		E2	V	26.18		
			H	26.76		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP (dBm)	Limit (dBm)	Result
PCS1900 (GPRS 1 link)	Lowest	H	V	24.87	33.01	Pass
			H	25.43		
		E1	V	24.64		
			H	25.48		
		E2	V	24.87		
			H	23.29		
	Middle	H	V	28.11	33.01	Pass
			H	27.30		
		E1	V	25.00		
			H	26.84		
		E2	V	25.51		
			H	27.01		
	Highest	H	V	25.82	33.01	Pass
			H	27.36		
		E1	V	25.06		
			H	27.04		
		E2	V	26.46		
			H	27.34		

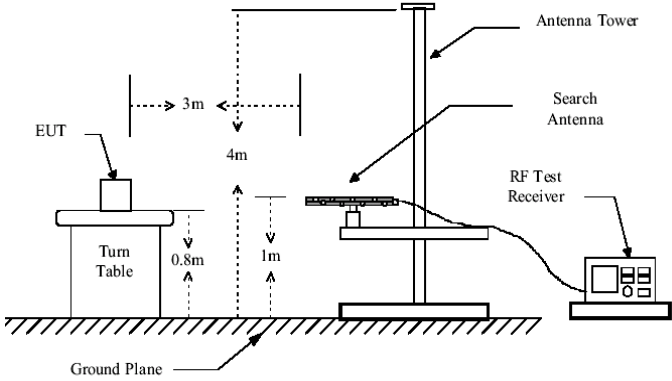
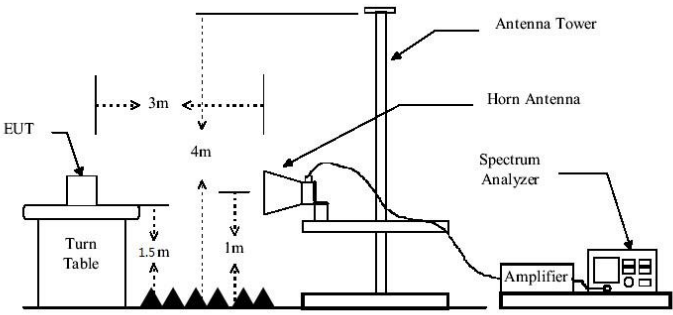
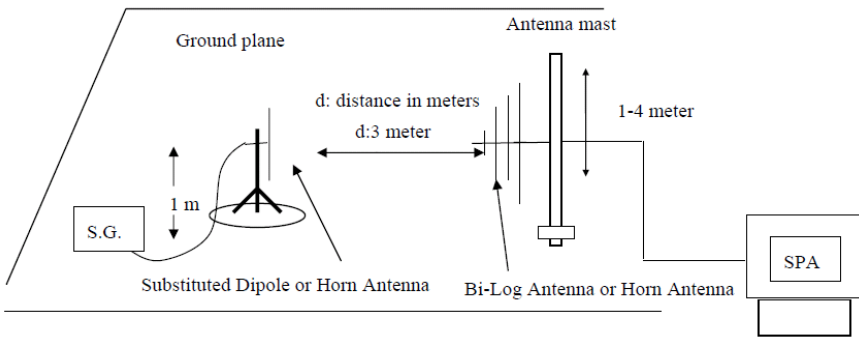
EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP (dBm)	Limit (dBm)	Result
PCS1900 (EGPRS 1 link)	Lowest	H	V	24.20	33.01	Pass
			H	23.81		
		E1	V	24.19		
			H	23.47		
		E2	V	20.16		
			H	24.40		
	Middle	H	V	23.25	33.01	Pass
			H	22.33		
		E1	V	21.43		
			H	23.98		
		E2	V	24.23		
			H	23.41		
	Highest	H	V	23.02	33.01	Pass
			H	22.47		
		E1	V	21.23		
			H	23.24		
		E2	V	22.34		
			H	21.76		

EUT mode	Channel	EUT Pol.	Antenna Pol.	ERP(dBm)	Limit (dBm)	Result
WCDMA Band V	Lowest	H	V	22.59	38.45	Pass
			H	21.98		
		E1	V	22.52		
			H	22.87		
		E2	V	21.48		
			H	23.29		
	Middle	H	V	22.36	38.45	Pass
			H	23.02		
		E1	V	21.23		
			H	22.97		
		E2	V	23.52		
			H	22.26		
	Highest	H	V	22.65	38.45	Pass
			H	21.83		
		E1	V	23.24		
			H	22.45		
		E2	V	21.54		
			H	22.57		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
WCDMA Band II	Lowest	H	V	20.65	33.01	Pass
			H	21.83		
		E1	V	21.27		
			H	21.32		
		E2	V	20.88		
			H	21.85		
	Middle	H	V	21.31	33.01	Pass
			H	22.64		
		E1	V	20.42		
			H	21.07		
		E2	V	20.43		
			H	20.66		
	Highest	H	V	21.65	33.01	Pass
			H	22.53		
		E1	V	21.14		
			H	22.59		
		E2	V	21.69		
			H	22.28		

EUT mode	Channel	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
WCDMA Band IV	Lowest	H	V	20.32	30.00	Pass
			H	19.81		
		E1	V	20.79		
			H	20.75		
		E2	V	19.24		
			H	20.23		
	Middle	H	V	20.25	30.00	Pass
			H	20.78		
		E1	V	19.23		
			H	20.12		
		E2	V	20.08		
			H	20.38		
	Highest	H	V	20.40	30.00	Pass
			H	20.55		
		E1	V	19.67		
			H	20.78		
		E2	V	19.57		
			H	20.06		

4.9 Field strength of spurious radiation measurement

Test Requirement:	Part 2.1053, Part 22.917 (a), Part 24.238 (a), Part 27.53(g) RSS-Gen Issue 5 §6.12
Test Method:	FCC part2.1053
Limit:	-13dBm
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 

Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. 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. 3. 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. 4. The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency. $\text{ERP / EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

Measurement Data

Test mode:	GSM850		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1661.62	Vertical	-31.24	-13.00	Pass
2504.18	V	-31.22		
3290.14	V	-30.60		
4165.95	V	-42.47		
4999.54	V	---		
1687.53	Horizontal	-32.60	-13.00	Pass
2453.14	H	-31.61		
3336.50	H	-37.16		
4158.05	H	-41.85		
4990.52	H	---		
Test mode:	GSM850		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1686.50	Vertical	-30.87	-13.00	Pass
2541.43	V	-30.85		
3339.02	V	-30.23		
4228.77	V	-42.10		
5072.62	V	---		
1696.57	Horizontal	-32.23	-13.00	Pass
2491.22	H	-31.24		
3395.12	H	-36.79		
4212.15	H	-41.48		
5062.49	H	---		
Test mode:	GSM850		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1711.23	Vertical	-30.36	-13.00	Pass
2579.18	V	-31.07		
3389.39	V	-32.53		
4287.47	V	-43.70		
5145.65	V	---		
1725.17	Horizontal	-32.22	-13.00	Pass
2528.11	H	-31.52		
3436.03	H	-39.08		
4281.15	H	-38.67		
5136.35	H	---		

Test mode:	PCS1900		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3713.50	Vertical	-31.38	-13.00	Pass
5582.12	V	-31.03		
7393.13	V	-34.91		
9295.83	V	-43.42		
11153.65	V	---		
3738.66	Horizontal	-32.04	-13.00	Pass
5531.21	H	-38.50		
7439.87	H	-37.39		
9279.21	H	-35.06		
11144.22	H	---		
Test mode:	PCS1900		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3761.49	Vertical	-32.38	-13.00	Pass
5672.40	V	-28.98		
7513.58	V	-33.52		
9444.54	V	-44.38		
11332.35	V	---		
3799.17	Horizontal	-31.32	-13.00	Pass
5621.25	H	-39.82		
7559.34	H	-36.56		
9428.65	H	-34.43		
11323.33	H	---		
Test mode:	PCS1900		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3874.90	Vertical	-32.92	-13.00	Pass
5762.72	V	-33.27		
7678.62	V	-33.62		
9575.94	V	-44.26		
11477.95	V	---		
3877.04	Horizontal	-31.52	-13.00	Pass
5757.11	H	-40.19		
7667.63	H	-36.05		
9579.32	H	-33.84		
11476.73	H	---		

Test mode:	WCDMA Band V		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1676.89	Vertical	-30.93	-13.00	Pass
2507.25	V	-29.10		
3318.42	V	-31.45		
4173.03	V	-44.16		
5000.95	V	---		
1671.01	Horizontal	-32.40	-13.00	Pass
2393.44	H	-38.70		
3374.87	H	-36.86		
4129.32	H	-36.88		
5018.72	H	---		
Test mode:	WCDMA Band V		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1666.89	Vertical	-31.42	-13.00	Pass
2544.38	V	-30.62		
3368.64	V	-34.95		
4220.02	V	-44.05		
5080.81	V	---		
1669.68	Horizontal	-32.59	-13.00	Pass
2491.48	H	-39.11		
3414.27	H	-37.43		
4129.11	H	-35.69		
5071.88	H	---		
Test mode:	WCDMA Band V		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1670.99	Vertical	-30.70	-13.00	Pass
2556.99	V	-29.04		
3368.62	V	-32.09		
4266.59	V	-43.81		
5132.69	V	---		
1714.04	Horizontal	-32.31	-13.00	Pass
2521.02	H	-38.47		
3421.33	H	-36.77		
4240.32	H	-37.52		
5123.33	H	---		

Test mode:	WCDMA Band II		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3725.89	Vertical	-30.82	-13.00	Pass
5557.48	V	-28.52		
7405.76	V	-31.32		
9283.03	V	-44.26		
11180.95	V	---		
3774.04	Horizontal	-32.21	-13.00	Pass
5508.81	H	-38.59		
7449.27	H	-36.67		
9289.62	H	-36.75		
11171.33	H	---		
Test mode:	WCDMA Band II		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3739.50	Vertical	-31.68	-13.00	Pass
5660.48	V	-30.63		
7528.75	V	-34.58		
9445.54	V	-43.52		
11305.36	V	---		
3767.17	Horizontal	-32.77	-13.00	Pass
5616.02	H	-38.21		
7577.56	H	-37.06		
9455.41	H	-35.16		
11281.82	H	---		
Test mode:	WCDMA Band II		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3839.69	Vertical	-31.05	-13.00	Pass
5744.65	V	-31.55		
7621.46	V	-33.22		
9572.43	V	-43.66		
11483.86	V	---		
3867.17	Horizontal	-32.12	-13.00	Pass
5702.72	H	-31.42		
7721.14	H	-37.97		
9540.54	H	-41.03		
11485.46	H	---		

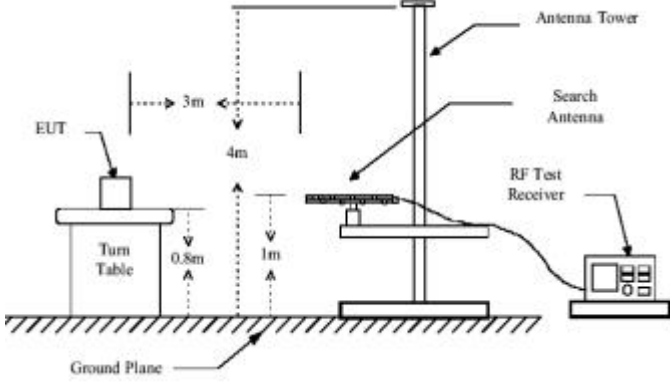
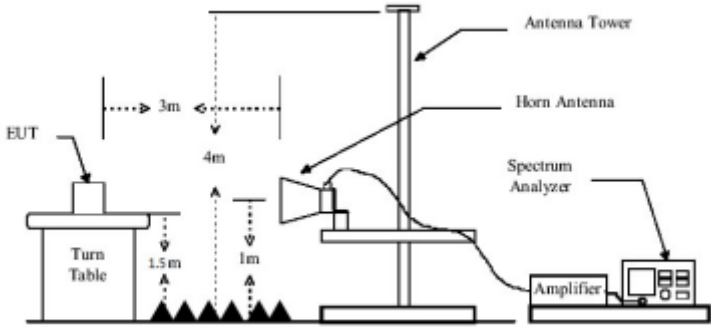
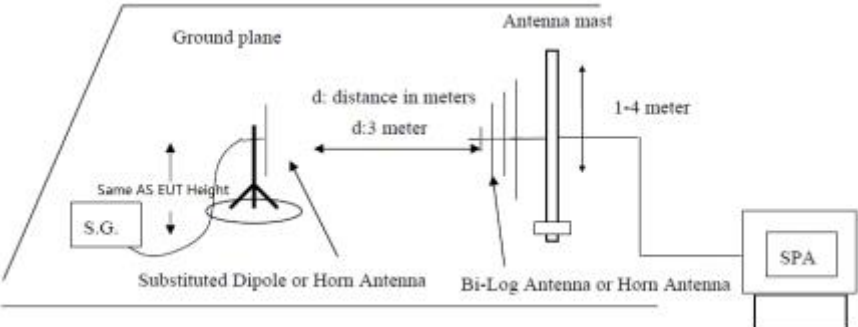
Test mode:	WCDMA Band IV		Test channel:	Lowest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3526.23	Vertical	-30.92	-13.00	Pass
5160.38	V	-31.63		
10229.52	V	-33.09		
15503.73	V	-44.26		
3137.96	V	---		
4094.88	Horizontal	-32.78	-13.00	Pass
5612.42	H	-32.08		
10274.29	H	-39.64		
15491.33	H	-39.23		
30888.52	H	---		
Test mode:	WCDMA Band IV		Test channel:	Middle
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3494.01	Vertical	-31.65	-13.00	Pass
5252.08	V	-32.15		
10433.84	V	-33.82		
15704.69	V	-44.26		
31372.46	V	---		
3518.71	Horizontal	-32.72	-13.00	Pass
5201.02	H	-32.02		
10479.85	H	-38.57		
15688.27	H	-41.63		
31363.33	H	---		
Test mode:	WCDMA Band IV		Test channel:	Highest
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3516.90	Vertical	-30.98	-13.00	Pass
5277.18	V	-31.21		
10518.13	V	-30.57		
15775.67	V	-43.48		
31590.64	V	---		
3541.17	Horizontal	-33.19	-13.00	Pass
5237.11	H	-38.07		
10549.30	H	-37.11		
15756.92	H	-36.91		
31546.33	H	---		

Remark:

1. The emission behaviour belongs to narrowband spurious emission.

2. Remark"---" means that the emission level is too low to be measured
3. The emission levels of below 1 GHz are very lower than the limit and not show in test report.

4.10 Receiver Radiated Spurious Emission

Test Requirement:	RSS-133 Issue 6 (6.6) RSS-Gen Issue 5 (7.3)		
Test Method:	ANSI C63.26:2015		
Limit:	Frequency	Limit (dBuV/m @3m)	Value
	30MHz-88MHz	40.00	Quasi-peak
	88MHz-216MHz	43.50	Quasi-peak
	216MHz-960MHz	46.00	Quasi-peak
	960MHz-1GHz	54.00	Quasi-peak
	Above 1GHz	74.00	Peak
	Above 1GHz	54.00	Average
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 		

Test Procedure:	1. The EUT was tested according to ANSI C63.4:2014. 2. The EUT is placed on a turn table which is 0.8 meter above ground. 3. The turn table is rotated 360 degrees to determine the position of the maximum emission level. 4. The EUT was positioned such that the distance from antenna to the EUT was 3 meters. 5. The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. 6. Use the following spectrum analyzer settings (1) Span shall be wide enough to fully capture the emission being measured; (2) Below 1GHz, RBW=120KHz, VBW=300KHz, Sweep=auto, Detector function=peak, Trace=max hold; If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported. (3) From 1GHz to 5th harmonic, RBW=1MHz, VBW=3MHz
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

Below 1GHz								
Test Mode:		GSM850 824.20MHz						
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
34.15	48.26	11.59	0.93	30.42	30.36	40	-9.64	Vertical
55.70	41.60	11.93	0.81	29.96	24.38	40	-15.62	Vertical
120.54	47.07	9.78	1.74	29.95	28.64	43.5	-14.86	Vertical
173.05	44.42	8.55	1.75	29.36	25.36	43.5	-18.14	Vertical
440.52	37.04	16.76	3.52	29.88	27.44	46	-18.56	Vertical
860.67	33.40	21.84	4.7	29.15	30.79	46	-15.21	Vertical
65.54	37.13	9.06	1.23	30.22	17.20	40	-22.80	Horizontal
100.10	34.35	12.09	1.55	30.06	17.93	43.5	-25.57	Horizontal
270.24	45.98	12.56	2.25	29.82	30.97	46	-15.03	Horizontal
351.61	37.27	14.6	2.72	29.83	24.76	46	-21.24	Horizontal
628.25	36.43	19.57	3.97	29.41	30.56	46	-15.44	Horizontal
955.87	41.09	22.91	5.43	29.47	39.96	46	-6.04	Horizontal
Test Results (Above 1GHz)								
Test Mode:		GSM850 824.20MHz						
Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Detector	
1378.71	73.00	-24.32	48.68	74.00	-25.32	H	Peak	
1826.96	71.93	-25.27	46.66	74.00	-27.34	H	Peak	
2052.23	76.68	-26.04	50.64	74.00	-23.36	H	Peak	
4038.29	72.56	-27.41	45.15	74.00	-28.85	H	Peak	
4536.98	69.82	-27.73	42.09	74.00	-31.91	H	Peak	
5113.50	78.04	-27.72	50.32	74.00	-23.68	H	Peak	
1378.68	58.34	-24.32	34.02	54.00	-19.98	H	AVG	
1827.22	64.22	-25.27	38.95	54.00	-15.05	H	AVG	
2052.20	62.91	-26.04	36.87	54.00	-17.13	H	AVG	
4038.13	64.18	-27.41	36.77	54.00	-17.23	H	AVG	
4536.94	61.58	-27.73	33.85	54.00	-20.15	H	AVG	
5113.99	62.54	-27.72	34.82	54.00	-19.18	H	AVG	
1699.78	77.42	-24.26	53.16	74.00	-20.84	V	Peak	
2058.23	72.49	-25.24	47.25	74.00	-26.75	V	Peak	
1965.35	76.97	-26.09	50.88	74.00	-23.12	V	Peak	
3800.89	70.06	-27.40	42.66	74.00	-31.34	V	Peak	
4433.11	73.48	-27.65	45.83	74.00	-28.17	V	Peak	
5078.16	76.52	-27.77	48.75	74.00	-25.25	V	Peak	
1699.77	61.96	-24.26	37.70	54.00	-16.30	V	AVG	
2057.77	63.33	-25.24	38.09	54.00	-15.91	V	AVG	
1964.86	60.36	-26.09	34.27	54.00	-19.73	V	AVG	
3801.10	64.42	-27.40	37.02	54.00	-16.98	V	AVG	

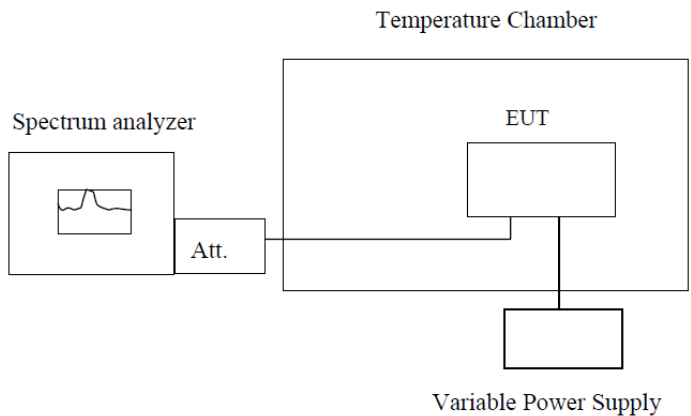
4432.89	64.36	-27.65	36.71	54.00	-17.24	V	AVG
5078.36	66.10	-27.77	38.33	54.00	-15.58	V	AVG
Level =Read Level + Factor; Over Limit=Level-Limit							

Remark:

The emission behaviour belongs to narrowband spurious emission, all modes investigated and only worst case is reported.

Remark"---" means that the emission level is too low (20dB lower than the limit) to be measured and not show in test report.

4.11 Frequency stability V.S. Temperature measurement

Test Requirement:	Part 2.1055(a)(1)(b), Part 2.1055(d)(1)(2), Part 27.54, RSS-132 (5.3) RSS-133 (5.4), RSS-Gen Issue 5 §6.11, RSS-139 (5.4)
Test Method:	ANSI C63.26:2015
Limit:	2.5ppm
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to –20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.
Test Instruments:	Refer to section 3 for details
Test mode:	Refer to section 4.1 for details
Test results:	Pass

Measurement Data:

Note: Please refer to Appendix 2G+3G of the test Data.

5 Test Setup Photo

Reference to the appendix II external photos and appendix III internal photos for details.

6 Photos of EUT

Reference to the appendix I Test Setup Photo for details.

-----END OF REPORT-----