

TEST REPORT

Product : 4G LTE smartphone
Trade mark : iTree
Model/Type reference : S988
Serial Number : N/A
Report Number : EED32N80998106
FCC ID : 2A3BAITREES988
Date of Issue : Dec. 22, 2021
47 CFR Part 2
Test Standards : 47 CFR Part 22 subpart H
47 CFR Part 24 subpart E
Test result : PASS

Prepared for:

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Compiled by:



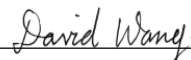
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Date:

Dec. 22, 2021

Check No.: 1731111021



2 Version

Version No.	Date	Description
00	Dec. 22, 2021	Original

3 Test Summary

GSM 850, WCDMA(Band V)			
Test Item	Test Requirement	Test method	Result
Conducted output power	Part 2.1046(a)/Part 22.913(a)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Effective Radiated Power of Transmitter(ERP)	Part 2.1046(a)/Part 22.913(a)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
99%&26dB Occupied Bandwidth	Part 2.1049(h)	Part 22.917(b) &KDB 971168 D01v03r01	PASS
Band Edge at antenna terminals	Part 2.1051/Part 22.917	Part 22.917(b) &KDB 971168 D01v03r01	PASS
Spurious emissions at antenna terminals	Part 2.1051/ Part 2.1057/ Part 22.917(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Field strength of spurious radiation	Part 2.1053/ Part 2.1057/ Part 22.917(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Frequency stability	Part 2.1055/ Part 22.355	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
GSM 1900,WCDMA(Band II)			
Test Item	Test Requirement	Test method	Result
Conducted output power	Part 2.1046(a) /Part 24.232(c)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Effective Radiated Power of Transmitter(EIRP)	Part 2.1046(a) / Part 24.232(c)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
peak-to-average ratio	Part 2.1046 /Part 24.232(d)	KDB 971168 D01v03r01	PASS
99% &26dBOccupied Bandwidth	Part 2.1049(h)	Part 24.238(b) &KDB 971168 D01v03r01	PASS
Band Edge at antenna terminals	Part 2.1051/ Part 24.238(a)	Part 24.238(b) &KDB 971168 D01v03r01	PASS
Spurious emissions at antenna terminals	Part 2.1051/ Part 2.1057/ Part 24.238(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Field strength of spurious radiation	Part 2.1053 /Part 2.1057 / Part 24.238(a)(b)	TIA-603-E-2016&KDB 971168 D01v03r01	PASS
Frequency stability	Part 2.1055/Part 24.235	TIA-603-E-2016&KDB 971168 D01v03r01	PASS

Remark:

Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

CH: In this whole report CH means channel.

Volt: In this whole report Volt means Voltage.

Temp: In this whole report Temp means Temperature.

Humid: In this whole report Humid means humidity.

Press: In this whole report Press means Pressure.

N/A: In this whole report not application

4 Content

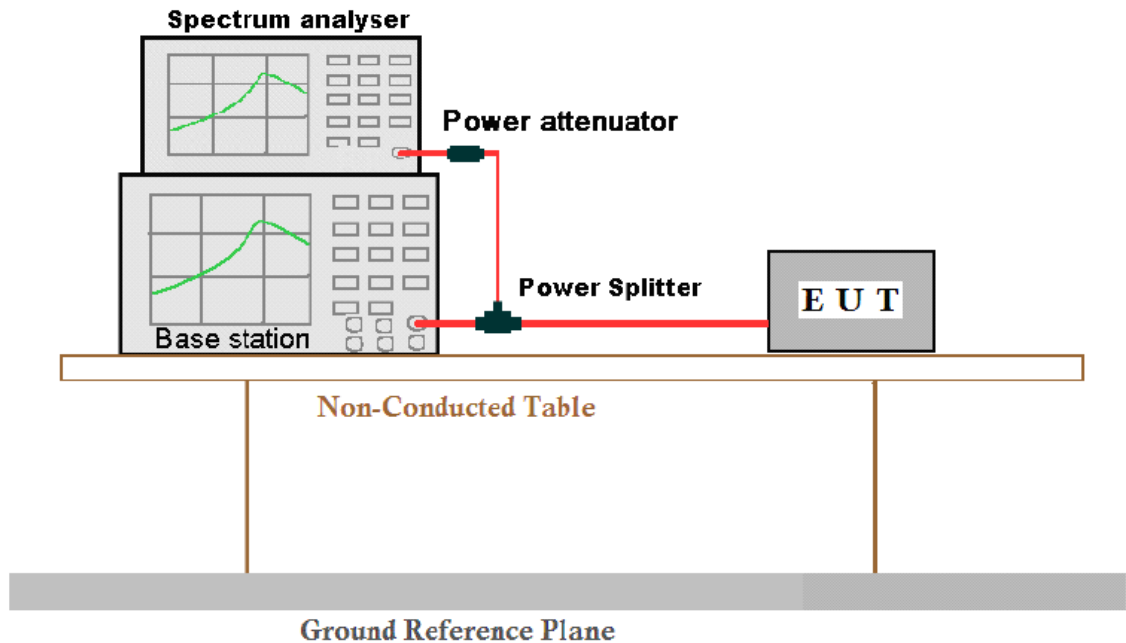
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5 Test Requirement

5.1 Test setup

5.1.1 For Radiated Emissions test setup

Test setup 1:



Radiated Emissions setup:

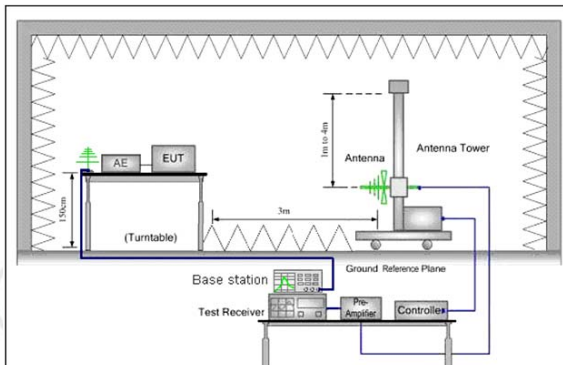


Figure 1. 30MHz to 1GHz

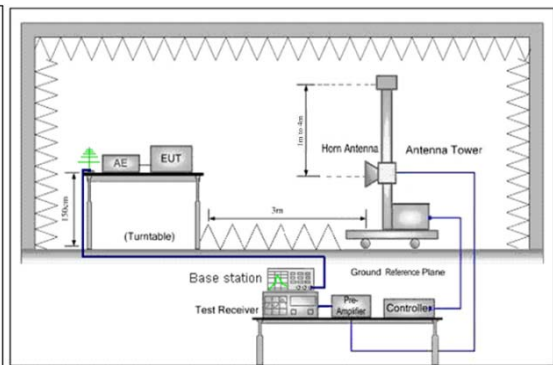


Figure 2. above 1GHz

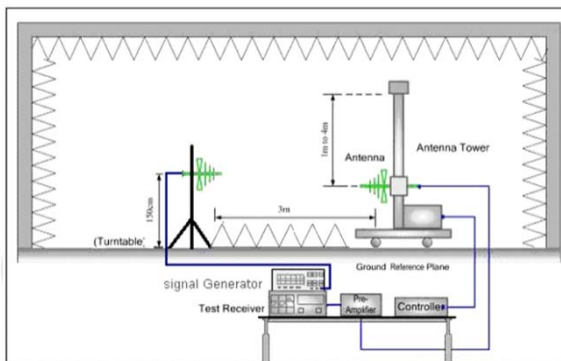


Figure 1. 30MHz to 1GHz

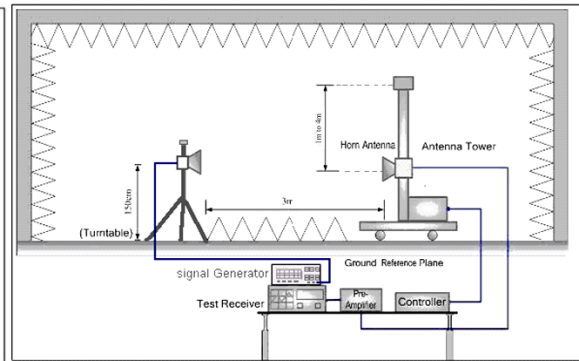


Figure 2. above 1GHz

5.2 Test Environment

Operating Environment:		
Radiated Spurious Emissions:		
Temperature:	22~25.0 °C	
Humidity:	50~56 % RH	
Atmospheric Pressure:	1010mbar	
RF Conducted:		
Humidity:	50~55 % RH	
Atmospheric Pressure:	1010mbar	
Temperature:	NT (Normal Temperature)	22~25.0 °C
	LT (Low Temperature)	0 °C
	HT (High Temperature)	40.0 °C
Working Voltage of the EUT:	NV (Normal Voltage)	DC 3.8V
	LV (Low Voltage)	DC 4.35V
	HV (High Voltage)	DC 3.4V

5.3 Test Condition

Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
GSM/GPRS/ EDGE850	Tx (824 MHz ~849 MHz)	Channel 128	Channel 190	Channel 251
		824.2MHz	836.6 MHz	848.8 MHz
	Rx (869 MHz ~894 MHz)	Channel 128	Channel 190	Channel 251
		869.2 MHz	881.6 MHz	893.8 MHz
WCDMA Band V	Tx (824 MHz ~849 MHz)	Channel 4132	Channel 4182	Channel 4233
		826.4 MHz	836.4 MHz	846.6 MHz
	Rx (869 MHz ~894 MHz)	Channel 4357	Channel 4407	Channel 4458
		871.4 MHz	881.4 MHz	891.6 MHz
WCDMA Band II	Tx (1850 MHz ~1910 MHz)	Channel 9262	Channel 9400	Channel 9538
		1852.4 MHz	1880.0 MHz	1907.6 MHz
	Rx (1930 MHz ~1990 MHz)	Channel 9662	Channel 9800	Channel 9938
		1932.4 MHz	1960.0 MHz	1987.6 MHz
GSM/GPRS/ EDGE1900	Tx (1850 MHz ~1910 MHz)	Channel 512	Channel 661	Channel 810
		1850.2MHz	1880.0 MHz	1909.8 MHz
	Rx (1930 MHz ~1990 MHz)	Channel 512	Channel 661	Channel 810
		1930.2 MHz	1960.0 MHz	1989.8 MHz

Test mode:

band	Radiated	Conducted
GSM/GPRS/EDGE 850	1)GSM Link 2)GPRS 8 Link 3)EDGE 8 Link	1)GSM Link 2)GPRS 8 Link 3)EDGE 8 Link
GSM/GPRS/EDGE 1900	1)GSM Link 2)GPRS 8 Link 3)EDGE 8 Link	1)GSM Link 2)GPRS 8 Link 3)EDGE 8 Link
WCDMA Band V	1)RMC 12.2Kbps Link	1)RMC 12.2Kbps Link
WCDMA Band II	1)RMC 12.2Kbps Link	1)RMC 12.2Kbps Link

Test mode:

Test Mode	Test Modes description
GSM/TM1	GSM system, GSM, GMSK modulation
GSM/TM2	GSM system, GPRS, GMSK modulation
GSM/TM3	GSM system, EDGE, 8PSK modulation
Test Mode	Test Modes description
UMTS/TM1	WCDMA system, QPSK modulation
UMTS/TM2	HSDPA system, QPSK modulation
UMTS/TM3	HSUPA system, QPSK modulation

6 General Information

6.1 Client Information

Applicant:	FAR WIDE Telecommunications CO.,LTD.
Address of Applicant:	10F, No.127,Anxing Rd, Xindian Dist., New Taipei City 231 Taiwan
Manufacturer:	SHENZHEN TOPWELL TECHNOLOGY CO., LTD.
Address of Manufacturer:	15/F, Building A1, Qiaode Science & Technology Park, No.7 Road, Hi-Tech Industry Park, Guangming new district, Shenzhen, China.
Factory:	SHENZHEN TOPWELL TECHNOLOGY CO., LTD.
Address of Factory:	15/F, Building A1, Qiaode Science & Technology Park, No.7 Road, Hi-Tech Industry Park, Guangming new district, Shenzhen, China.

6.2 General Description of EUT

Product Name:	4G LTE smartphone	
Model No.(EUT):	S988	
Trade mark:	iTree	
EUT Supports Radios application:	Bluetooth 4.2 dual mode: 2402-2480MHz WiFi: IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz U-NII-1: 5180-5240MHz U-NII-3: 5745-5825MHz GPS: L1:1559MHz to 1610MHz NFC:13.56MHz GSM/GPRS/EGPRS 850: Tx: 824-849MHz, Rx: 869-894MHz GSM/GPRS/EGPRS 1900: Tx: 1850-1910MHz, Rx: 1930-1990MHz WCDMA Band 2: Tx: 1850-1910MHz, Rx: 1930-1990MHz WCDMA Band 5: Tx: 824- 849MHz, Rx: 869 -894MHz LTE Band 2: Tx: 1850-1910MHz, Rx: 1930-1990MHz LTE Band 4: Tx: 1710-1755 MHz, Rx: 2110-2155 MHz LTE Band 5: Tx: 824-849 MHz, Rx: 869-894MHz LTE Band 7: TX:2500-2570 MHz, Rx: 2620-2690 MHz LTE Band 12: Tx: 699-716 MHz, Rx: 729-746 MHz LTE Band 41: Tx: 2555-2655 MHz, Rx: 2555 -2655 MHz	
Power Supply:	AC/DC ADAPTER	Model: TPA-23A050200UU01 Input: 100-240V~ 50/60Hz, 0.3A OUTPUT: 5.0V---2000mA
	Battery:	Model:B35 DC 3.8V, 3500mAh, 13.3Wh
Sample Received Date:	Oct. 12, 2021	
Sample tested Date:	Oct. 12, 2021 to Dec. 22, 2021	

6.3 Product Specification subjective to this standard

Frequency Band:	GSM/GPRS/EGPRS 850: Tx: 824-849MHz, Rx: 869-894MHz GSM/GPRS/EGPRS 1900: Tx: 1850-1910MHz, Rx: 1930-1990MHz WCDMA Band 2: Tx: 1850-1910MHz, Rx: 1930-1990MHz WCDMA Band 5: Tx: 824- 849MHz, Rx: 869 -894MHz
Modulation Type:	GMSK (GSM/GPRS), GMSK/8PSK (EGPRS) QPSK for WCDMA, QPSK for HSDPA, QPSK for HSUPA
Antenna Type:	PIFA Antenna
Antenna Gain:	850MHz: -0.51dBi; 1900MHz: 0.81dBi; WCDMA Band 2: 0.81dBi; WCDMA Band 5:-0.51dBi;
Test Voltage:	DC 3.8V

6.4 Description of Support Units

The EUT has been tested independently.

6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

6.6 Deviation from Standards

None.

6.7 Abnormalities from Standard Conditions

None.

6.8 Other Information Requested by the Customer

None.

6.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.3dB (30MHz-1GHz)
		4.5dB (1GHz-12.75GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

7 Equipment List

Communication RF test system					
Equipment	Manufacturer	Model No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Spectrum Analyzer	Keysight	N9010A	MY54510339	12-28-2020	12-27-2021
Spectrum Analyzer	R&S	FSV40	101200	08-26-2021	08-25-2022
Signal Generator	Agilent	E4438C	MY45095744	12-28-2020	12-27-2021
Signal Generator	Keysight	E8257D	MY53401106	12-28-2020	12-27-2021
Communication test set	R&S	CMW200	111935	12-28-2020	12-27-2021
Communication test set	R&S	CMW500	152394	12-28-2020	12-27-2021
DC Power	Keysight	E3642A	MY56376035	12-28-2020	12-27-2021
RF control unit	JS Tonscend	JS0806-1	158060004	12-28-2020	12-27-2021
DC power Box	JS Tonscend	JS0806-4	158060007	---	---
high-low temperature test chamber	Dong Guang Qin Zhuo	LK-80GA	QZ20150611879	12-28-2020	12-27-2021
Temperature/ Humidity Indicator	biaozhi	HM10	1804186	06-23-2021	06-22-2022
Automatic test software	JS Tonscend	JS1120	2.6.9.0518	---	---
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	---	---
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	---	---
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	---	---
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	---	---
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	---	---
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	---	---

3M Semi/full-anechoic Chamber					
Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
RSE Automatic test software	JS Tonscend	JS36-RSE	10166	---	---
Receiver	Keysight	N9038A	MY57290136	03-04-2021	03-03-2022
Spectrum Analyzer	Keysight	N9020B	MY57111112	03-04-2021	03-03-2022
Spectrum Analyzer	Keysight	N9030B	MY57140871	03-04-2021	03-03-2022
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-28-2021	04-27-2024
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-15-2021	04-14-2024
Horn Antenna	ETS-LINDGREN	3117	57407	07-04-2021	07-03-2024
Preamplifier	EMCI	EMC184055 SE	980597	05-20-2021	05-19-2022
Preamplifier	EMCI	EMC001330	980563	04-15-2021	04-14-2022
Preamplifier	JS Tonscend	980380	EMC051845 SE	12-31-2020	12-30-2021
Communication test set	R&S	CMW500	102898	12-31-2020	12-30-2021
Temperature/ Humidity Indicator	biaozhi	GM1360	EE1186631	04-16-2021	04-15-2022
Fully Anechoic Chamber	TDK	FAC-3	---	01-09-2021	01-08-2024
Cable line	Times	SFT205-NMSM-2.50M	394812-0001	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	---	---
Cable line	Times	SFT205-NMSM-2.50M	393495-0001	---	---
Cable line	Times	EMC104-NMNM-1000	SN160710	---	---
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	---	---
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	---	---
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	---	---
Cable line	Times	HF160-KMKM-3.00M	393493-0001	---	---

8 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	PART 22	PART 22 – PUBLIC MOBILE SERVICES Subpart H – Cellular Radiotelephone Service
2	PART 24	PART 24 – PERSONAL COMMUNICATIONS SERVICES Subpart E – Broadband PCS
3	PART 2	Frequency allocations and radio treaty matters; general rules and regulations
4	TIA-603-E-2016	Land Mobile FM or PM -Communications Equipment -Measurement and Performance Standards
5	KDB971168 D01	KDB971168 D01 Power Meas License Digital Systems v03r01

Test Results List:

Test Requirement	Test method	Test item	Verdict	Note
Part 2.1046(a)/Part 22.913(a)/ Part 24.232(c)	TIA-603-E-2016& KDB 971168 D01v03r01	Conducted output power	PASS	Appendix A
Part 24.232(d)	KDB 971168 D01v03r01	peak-to-average ratio	PASS	Appendix A
Part 2.1049(h)	Part 22.917(b)/ Part 24.238(b)/ Part 27.53(h) &KDB 971168 D01v03r01	99% &26dB Occupied Bandwidth	PASS	Appendix A
Part 2.1051/Part 22.917(a)/ Part 24.238(a)	Part 22.917(b)/ Part 24.238(b)/ Part 27.53(h) &KDB 971168 D01v03r01	Band Edge at antenna terminals	PASS	Appendix A
Part 2.1051/ Part 2.1057/ Part 22.917(a)(b)/ Part 24.238(a)(b)	TIA-603-E-2016& KDB 971168 D01v03r01	Spurious emissions at antenna terminals	PASS	Appendix A
Part 2.1055/ Part 22.355/ Part 24.235	TIA-603-E-2016& KDB 971168 D01v03r01	Frequency stability	PASS	Appendix A
Part 2.1053/ Part 2.1057/ Part 22.917(a)(b)/ Part 24.238(a)(b)	TIA-603-E-2016& KDB 971168 D01v03r01	Field strength of spurious radiation	PASS	Refer to section 8.8 for details
Part 2.1046(a)/Part 22.913(a)/ Part 24.232(c)	TIA-603-E-2016& KDB 971168 D01v03r01	Effective Radiated Power of Transmitter(ERP)	PASS	Appendix A

8.1 Conducted output power

Test Requirement:	Part 2.1046(a)		
Test Method:	TIA-603-E-2016 Clause 2.2.1		
Test Setup:	Refer to section 5 for details		
Limit:	Mode	GSM/GPRS/EDGE/ WCDMA 850	GSM/GPRS/EDGE/ WCDMA 1900
	Frequency	824 – 849MHz	1850 – 1910MHz
	Limit	38.45dBm (ERP)	33.01dBm (EIRP)
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and power meter, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The power output at the transmitter antenna port was determined by adding the value of the cable insertion loss to the power reading. The tests were performed at three frequencies (low channel, middle channel and high channel) and on the highest power levels, which can be setup on the transmitters.		
Instruments Used:	Refer to section 7 for details		
Test Results:	Refer to Appendix A		

8.2 Peak-to-Average Ratio

Test Requirement:	Part 24.232(d)/Part 27.50(d)
Test Method:	KDB 971168 D01v03r01
Test Setup:	Refer to section 5 for details
Limit:	13dB
Measurement Procedure:	Use one of the procedures to measure the total peak power and record as PPK. Use one of the applicable procedures to measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from: $PAPR\ (dB) = PPK\ (dBm) - PAvg\ (dBm)$.
Instruments Used:	Refer to section 7 for details
Test Results:	Refer to Appendix A

8.3 99%&26dB Occupied Bandwidth

Test Requirement:	Part 2.1049(h)
Test Method:	Part 22.917(b)/Part 24.238(b)/Part 27.53(h)
Test Setup:	Refer to section 5 for details
Limit:	N/A
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel, middle channel and high channel).the resolution bandwidth of the analyser is set to 100kHz or 1% of the emission bandwidth, the EUT emission bandwidth is measured as the width of the signal between two points, outside of which all emission are attenuated at least 26dB below the transmitter power. The video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to peak or peak hold power.
Instruments Used:	Refer to section 7 for details
Test Results:	Refer to Appendix A

8.4 Band Edges Compliance

Test Requirement:	Part 2.1051		
Test Method:	Part 22.917(b)/Part 24.238(b)/ Part 27.53(h)		
Test Setup:	Refer to section 5 for details		
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel).in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of 100kHz or 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed. The EUT emission bandwidth is measured as the width of the signal between two points, outside of which all emission are attenuated at least 26dB below the transmitter power. The video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to peak or peak hold power.		
Limit:	Operation Band	Frequency Range (MHz)	Limit
	GSM/GPRS/EDGE/ WCDMA 850	Below 824 and above 849	Attenuated at least $43+10\log(P)$
	GSM/GPRS/EDGE/ WCDMA 1900	Below 1850 and above 1910	Attenuated at least $43+10\log(P)$
Instruments Used:	Refer to section 7 for details		
Test Results:	Refer to Appendix A		

8.5 Spurious Emission at Antenna Terminal

Test Requirement:	Part 2.1051/Part 2.1057
Test Method:	TIA-603-E-2016 Clause 2.2.13
Test Setup:	Refer to section 5 for details
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyzer, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel).the equipment operates below 10GHz: to the tenth harmonic of the highest fundamental frequency or to 40GHz.whichever is lower, the resolution bandwidth of the spectrum analyzer was set at 100kHz for spurious emissions below 1 GHz, and 1 MHz for spurious emissions above 1GHz.the video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to mean or average power.
Instruments Used:	Refer to section 7 for details
Limit:	Attenuated at least $43+10\log(P)$
Test Results:	Refer to Appendix A

8.6 Frequency Stability

Test Requirement:	Part 2.1055	
Test Method:	TIA-603-E-2016 Clause 2.2.2	
Test Setup:	Refer to section 5 for details	
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable and a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel).The EUT was place in the temperature chamber, the DC leads and RF output cable exited the chamber though an opening made for that purpose. After Operate the equipment in standby conditions for 15 minutes before proceeding. The temperature was varied from -30°C to +55°C at intervals of not more than 10°C The frequency stability was read from the base station.Since the EUT is hand carried,battery powered equipment,at 25°C the input voltage was reduced from 3.8V(primary supply voltage) to 3.5V(end point voltage), the frequency stability and input voltage was record.	
Instruments Used:	Refer to section 7 for details	
Limit:	Operation Band	Frequency stability Limit(ppm)
	GSM/GPRS/EDGE/WCDMA 850	±2.5ppm
	GSM/GPRS/EDGE/WCDMA 1900	---
Test Results:	Refer to Appendix A	

8.7 Effective Radiated Power of Transmitter (ERP/EIRP)

Test Requirement:	Part 2.1046(a)/Part 22.913(a)/Part 24.232(c)		
Test Method:	TIA-603-E-2016 Clause 2.2.1/ KDB 971168 D01v03r01		
Test Setup:	Refer to section 5 for details		
Limit:	Mode	GSM/GPRS/EDGE/ WCDMA 850	GSM/GPRS/EDGE/ WCDMA 1900
	Frequency	824 – 849MHz	1850 – 1910MHz
	Limit	38.45dBm (ERP)	33.01dBm (EIRP)
Measurement Procedure:	Calculate power in dBm by the following formula: $ERP(dBm) = \text{Conducted output power}(dBm) + \text{antenna gain (dBd)}$ $EIRP(dBm) = \text{Conducted output power}(dBm) + \text{antenna gain (dBi)}$ $EIRP = ERP + 2.15dB$		
Instruments Used:	Refer to section 7 for details		
Test Results:	Refer to Appendix A		

8.8 Field strength of spurious radiation

Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-30MHz	Peak	10kHz	30kHz	Peak
	30MHz-1GHz	Peak	120kHz	300kHz	Peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
Measurement Procedure:	1. Scan up to 10th harmonic, find the maximum radiation frequency to measure. 2. The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP/EIRP emission levels of the EUT. Test procedure as below: The EUT was powered ON and placed on a 1.5m high table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test. The EUT was set 3 meters(above 18GHz the distance is 1 meter) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made. Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization. The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter. A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 3) is obtained for this set of conditions. The output power into the substitution antenna was then measured. Steps 6) and 7) were repeated with both antennas polarized. Calculate power in dBm by the following formula: $\text{ERP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBd)}$ $\text{EIRP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}$ $\text{EIRP} = \text{ERP} + 2.15\text{dB}$ where: Pg is the generator output power into the substitution antenna. Test the EUT in the lowest channel, the middle channel the Highest channel The radiation measurements are performed in X, Y, Z axis positioning for EUT operation mode, And found the X axis positioning which it is worse case. Repeat above procedures until all frequencies measured was complete.				
Limit:	Attenuated at least 43+10log(P)				

Measurement Data

Remark: Only the worst case was recorded in the report.

Mode:		GSM Traffic						
Band:		850			Channel:		128	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	39.7019	150	101	-74.97	-13.00	61.97	Pass	Horizontal
2	62.4045	150	101	-75.70	-13.00	62.70	Pass	Horizontal
3	120.0340	150	40	-75.15	-13.00	62.15	Pass	Horizontal
4	184.2609	150	280	-74.68	-13.00	61.68	Pass	Horizontal
5	270.0260	150	49	-72.71	-13.00	59.71	Pass	Horizontal
6	375.0010	150	346	-77.64	-13.00	64.64	Pass	Horizontal
7	1648.4648	150	357	-49.92	-13.00	36.92	Pass	Horizontal
8	2472.5473	150	357	-39.30	-13.00	26.30	Pass	Horizontal
9	3296.2648	150	111	-39.62	-13.00	26.62	Pass	Horizontal
10	4121.3061	150	111	-44.72	-13.00	31.72	Pass	Horizontal
11	4944.8472	150	111	-47.91	-13.00	34.91	Pass	Horizontal
12	7417.7209	150	163	-40.14	-13.00	27.14	Pass	Horizontal

Mode:		GSM Traffic						
Band:		850			Channel:		128	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	41.8364	150	203	-66.28	-13.00	53.28	Pass	Vertical
2	62.4045	150	94	-70.14	-13.00	57.14	Pass	Vertical
3	137.1094	150	280	-74.95	-13.00	61.95	Pass	Vertical
4	208.9038	150	322	-68.84	-13.00	55.84	Pass	Vertical
5	284.9670	150	357	-72.01	-13.00	59.01	Pass	Vertical
6	420.2120	150	175	-72.04	-13.00	59.04	Pass	Vertical
7	1648.2648	150	357	-57.70	-13.00	44.70	Pass	Vertical
8	2472.5473	150	313	-42.73	-13.00	29.73	Pass	Vertical
9	3297.0149	150	143	-45.53	-13.00	32.53	Pass	Vertical
10	4945.5973	150	45	-45.39	-13.00	32.39	Pass	Vertical
11	7418.4709	150	175	-34.63	-13.00	21.63	Pass	Vertical
12	8241.2621	150	163	-41.70	-13.00	28.70	Pass	Vertical

Mode:		GSM Traffic						
Band:		850			Channel:		190	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.0900	150	3	-74.19	-13.00	61.19	Pass	Horizontal
2	62.4045	150	76	-74.35	-13.00	61.35	Pass	Horizontal
3	109.9440	150	284	-74.94	-13.00	61.94	Pass	Horizontal
4	137.1094	150	357	-76.39	-13.00	63.39	Pass	Horizontal
5	166.0212	150	92	-75.95	-13.00	62.95	Pass	Horizontal
6	270.0260	150	52	-71.72	-13.00	58.72	Pass	Horizontal
7	1673.2673	150	357	-51.38	-13.00	38.38	Pass	Horizontal
8	2510.1510	150	314	-39.38	-13.00	26.38	Pass	Horizontal
9	3346.5173	150	360	-49.65	-13.00	36.65	Pass	Horizontal
10	4182.8091	150	360	-51.29	-13.00	38.29	Pass	Horizontal
11	5019.1010	150	3	-51.27	-13.00	38.27	Pass	Horizontal
12	6693.1847	150	330	-50.21	-13.00	37.21	Pass	Horizontal

Mode:		GSM Traffic						
Band:		850			Channel:		190	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	41.8364	150	80	-67.14	-13.00	54.14	Pass	Vertical
2	62.4045	150	212	-69.62	-13.00	56.62	Pass	Vertical
3	170.0960	150	357	-72.74	-13.00	59.74	Pass	Vertical
4	208.9038	150	322	-69.27	-13.00	56.27	Pass	Vertical
5	284.9670	150	357	-71.85	-13.00	58.85	Pass	Vertical
6	411.4803	150	183	-72.86	-13.00	59.86	Pass	Vertical
7	1673.2673	150	301	-58.77	-13.00	45.77	Pass	Vertical
8	2509.5510	150	301	-47.63	-13.00	34.63	Pass	Vertical
9	3346.5173	150	3	-55.00	-13.00	42.00	Pass	Vertical
10	4182.8091	150	235	-48.56	-13.00	35.56	Pass	Vertical
11	7530.2265	150	182	-43.10	-13.00	30.10	Pass	Vertical
12	8366.5183	150	277	-42.89	-13.00	29.89	Pass	Vertical

Mode:		GSM Traffic						
Band:		850			Channel:		251	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.0900	150	173	-74.89	-13.00	61.89	Pass	Horizontal
2	62.5985	150	51	-77.33	-13.00	64.33	Pass	Horizontal
3	109.9440	150	305	-74.84	-13.00	61.84	Pass	Horizontal
4	176.3053	150	269	-74.61	-13.00	61.61	Pass	Horizontal
5	270.0260	150	208	-72.94	-13.00	59.94	Pass	Horizontal
6	375.0010	150	92	-75.12	-13.00	62.12	Pass	Horizontal
7	1697.4697	150	346	-48.34	-13.00	35.34	Pass	Horizontal
8	2546.1546	150	0	-39.08	-13.00	26.08	Pass	Horizontal
9	3395.2698	150	342	-55.67	-13.00	42.67	Pass	Horizontal
10	4243.5622	150	27	-52.60	-13.00	39.60	Pass	Horizontal
11	7638.9819	150	110	-48.08	-13.00	35.08	Pass	Horizontal
12	14410.3205	150	140	-44.05	-13.00	31.05	Pass	Horizontal

Mode:		GSM Traffic						
Band:		850			Channel:		251	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	41.8364	150	264	-66.70	-13.00	53.70	Pass	Vertical
2	62.4045	150	58	-69.28	-13.00	56.28	Pass	Vertical
3	80.0620	150	357	-70.68	-13.00	57.68	Pass	Vertical
4	208.9038	150	329	-70.11	-13.00	57.11	Pass	Vertical
5	284.9670	150	23	-71.42	-13.00	58.42	Pass	Vertical
6	411.4803	150	357	-71.70	-13.00	58.70	Pass	Vertical
7	1697.4697	150	357	-53.76	-13.00	40.76	Pass	Vertical
8	2546.5547	150	7	-49.69	-13.00	36.69	Pass	Vertical
9	4243.5622	150	204	-50.70	-13.00	37.70	Pass	Vertical
10	7639.7320	150	128	-49.47	-13.00	36.47	Pass	Vertical
11	8488.0244	150	182	-48.41	-13.00	35.41	Pass	Vertical
12	9728.5864	150	235	-47.89	-13.00	34.89	Pass	Vertical

Mode:		GSM Traffic						
Band:		1900			Channel:		512	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.0900	150	253	-72.71	-13.00	59.71	Pass	Horizontal
2	109.9440	150	77	-75.45	-13.00	62.45	Pass	Horizontal
3	160.0060	150	357	-75.70	-13.00	62.70	Pass	Horizontal
4	270.0260	150	234	-72.62	-13.00	59.62	Pass	Horizontal
5	375.0010	150	77	-76.40	-13.00	63.40	Pass	Horizontal
6	749.4959	150	357	-73.17	-13.00	60.17	Pass	Horizontal
7	1283.4283	150	322	-46.12	-13.00	33.12	Pass	Horizontal
8	3700.5350	150	186	-37.28	-13.00	24.28	Pass	Horizontal
9	5550.8775	150	121	-51.57	-13.00	38.57	Pass	Horizontal
10	7401.2201	150	282	-42.05	-13.00	29.05	Pass	Horizontal
11	11904.4452	150	240	-47.61	-13.00	34.61	Pass	Horizontal
12	21609.3444	150	234	-52.89	-13.00	39.89	Pass	Horizontal

Mode:		GSM Traffic						
Band:		1900			Channel:		512	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	42.0304	150	146	-65.10	-13.00	52.10	Pass	Vertical
2	62.5985	150	289	-68.93	-13.00	55.93	Pass	Vertical
3	137.1094	150	111	-74.08	-13.00	61.08	Pass	Vertical
4	208.9038	150	306	-69.77	-13.00	56.77	Pass	Vertical
5	411.4803	150	357	-72.28	-13.00	59.28	Pass	Vertical
6	734.3609	150	357	-51.20	-13.00	38.20	Pass	Vertical
7	1317.8318	150	216	-45.92	-13.00	32.92	Pass	Vertical
8	3700.5350	150	124	-43.08	-13.00	30.08	Pass	Vertical
9	5550.1275	150	124	-48.66	-13.00	35.66	Pass	Vertical
10	7400.4700	150	309	-37.77	-13.00	24.77	Pass	Vertical
11	9250.8125	150	286	-46.43	-13.00	33.43	Pass	Vertical
12	21591.9837	150	324	-54.17	-13.00	41.17	Pass	Vertical

Mode:		GSM Traffic						
Band:		1900			Channel:		661	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.2841	150	174	-73.18	-13.00	60.18	Pass	Horizontal
2	62.4045	150	19	-74.76	-13.00	61.76	Pass	Horizontal
3	120.0340	150	278	-75.62	-13.00	62.62	Pass	Horizontal
4	208.9038	150	260	-74.72	-13.00	61.72	Pass	Horizontal
5	270.0260	150	226	-72.13	-13.00	59.13	Pass	Horizontal
6	824.2008	150	357	-66.58	-13.00	53.58	Pass	Horizontal
7	1306.4306	150	140	-46.20	-13.00	33.20	Pass	Horizontal
8	3759.7880	150	193	-34.38	-13.00	21.38	Pass	Horizontal
9	5640.1320	150	173	-49.88	-13.00	36.88	Pass	Horizontal
10	7519.7260	150	129	-34.15	-13.00	21.15	Pass	Horizontal
11	12569.7285	150	97	-47.29	-13.00	34.29	Pass	Horizontal
12	21135.0054	150	260	-52.33	-13.00	39.33	Pass	Horizontal

Mode:		GSM Traffic						
Band:		1900			Channel:		661	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.2841	150	182	-65.48	-13.00	52.48	Pass	Vertical
2	62.5985	150	0	-69.78	-13.00	56.78	Pass	Vertical
3	208.9038	150	357	-70.78	-13.00	57.78	Pass	Vertical
4	284.9670	150	25	-71.57	-13.00	58.57	Pass	Vertical
5	411.4803	150	357	-71.86	-13.00	58.86	Pass	Vertical
6	750.0780	150	211	-69.72	-13.00	56.72	Pass	Vertical
7	1249.2249	150	75	-46.13	-13.00	33.13	Pass	Vertical
8	3759.7880	150	204	-33.58	-13.00	20.58	Pass	Vertical
9	5640.1320	150	309	-52.03	-13.00	39.03	Pass	Vertical
10	7520.4760	150	182	-31.15	-13.00	18.15	Pass	Vertical
11	13706.7853	150	319	-45.50	-13.00	32.50	Pass	Vertical
12	21388.6955	150	75	-53.92	-13.00	40.92	Pass	Vertical

Mode:		GSM Traffic						
Band:		1900			Channel:		810	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.0900	150	305	-72.69	-13.00	59.69	Pass	Horizontal
2	62.4045	150	50	-75.05	-13.00	62.05	Pass	Horizontal
3	89.9580	150	281	-76.53	-13.00	63.53	Pass	Horizontal
4	137.1094	150	357	-75.66	-13.00	62.66	Pass	Horizontal
5	270.0260	150	265	-72.60	-13.00	59.60	Pass	Horizontal
6	750.0780	150	357	-73.36	-13.00	60.36	Pass	Horizontal
7	1300.6301	150	169	-45.52	-13.00	32.52	Pass	Horizontal
8	3819.7910	150	267	-37.20	-13.00	24.20	Pass	Horizontal
9	5729.3865	150	245	-50.36	-13.00	37.36	Pass	Horizontal
10	7639.7320	150	235	-42.66	-13.00	29.66	Pass	Horizontal
11	9549.3275	150	23	-46.33	-13.00	33.33	Pass	Horizontal
12	22204.3682	150	281	-52.30	-13.00	39.30	Pass	Horizontal

Mode:		GSM Traffic						
Band:		1900			Channel:		810	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.0900	150	49	-65.87	-13.00	52.87	Pass	Vertical
2	62.5985	150	294	-68.73	-13.00	55.73	Pass	Vertical
3	208.9038	150	278	-70.71	-13.00	57.71	Pass	Vertical
4	284.9670	150	6	-71.81	-13.00	58.81	Pass	Vertical
5	411.4803	150	69	-73.01	-13.00	60.01	Pass	Vertical
6	734.3609	150	357	-52.23	-13.00	39.23	Pass	Vertical
7	1281.2281	150	214	-46.37	-13.00	33.37	Pass	Vertical
8	3819.7910	150	3	-35.80	-13.00	22.80	Pass	Vertical
9	5729.3865	150	352	-48.66	-13.00	35.66	Pass	Vertical
10	7639.7320	150	278	-39.27	-13.00	26.27	Pass	Vertical
11	13736.0368	150	33	-45.85	-13.00	32.85	Pass	Vertical
12	21553.3421	150	344	-53.67	-13.00	40.67	Pass	Vertical

Mode:		WCDMA Traffic						
Band:		II		Channel:			9263	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.2841	150	72	-72.75	-13.00	59.75	Pass	Horizontal
2	80.0620	150	357	-76.24	-13.00	63.24	Pass	Horizontal
3	109.9440	150	295	-74.92	-13.00	61.92	Pass	Horizontal
4	166.0212	150	82	-75.21	-13.00	62.21	Pass	Horizontal
5	270.0260	150	136	-72.84	-13.00	59.84	Pass	Horizontal
6	721.9424	150	357	-72.17	-13.00	59.17	Pass	Horizontal
7	1308.0308	150	167	-46.09	-13.00	33.09	Pass	Horizontal
8	5013.1007	150	360	-54.26	-13.00	41.26	Pass	Horizontal
9	7333.7167	150	177	-52.04	-13.00	39.04	Pass	Horizontal
10	11809.9405	150	73	-47.21	-13.00	34.21	Pass	Horizontal
11	14357.8179	150	107	-43.71	-13.00	30.71	Pass	Horizontal
12	22235.0494	150	231	-52.57	-13.00	39.57	Pass	Horizontal

Mode:		WCDMA Traffic						
Band:		II		Channel:			9263	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	41.8364	150	263	-64.45	-13.00	51.45	Pass	Vertical
2	62.4045	150	186	-68.61	-13.00	55.61	Pass	Vertical
3	169.9020	150	357	-72.61	-13.00	59.61	Pass	Vertical
4	208.9038	150	305	-69.34	-13.00	56.34	Pass	Vertical
5	411.4803	150	11	-72.67	-13.00	59.67	Pass	Vertical
6	733.3907	150	357	-49.48	-13.00	36.48	Pass	Vertical
7	1332.2332	150	231	-45.19	-13.00	32.19	Pass	Vertical
8	4992.0996	150	332	-53.77	-13.00	40.77	Pass	Vertical
9	7812.2406	150	56	-51.51	-13.00	38.51	Pass	Vertical
10	13290.5145	150	189	-46.11	-13.00	33.11	Pass	Vertical
11	14966.0983	150	296	-44.19	-13.00	31.19	Pass	Vertical
12	24488.5795	150	45	-53.25	-13.00	40.25	Pass	Vertical

Mode:		WCDMA Traffic						
Band:		II		Channel:		9400		
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.2841	150	259	-73.30	-13.00	60.30	Pass	Horizontal
2	96.9434	150	278	-75.63	-13.00	62.63	Pass	Horizontal
3	184.2609	150	259	-75.00	-13.00	62.00	Pass	Horizontal
4	270.0260	150	19	-73.01	-13.00	60.01	Pass	Horizontal
5	375.0010	150	87	-75.67	-13.00	62.67	Pass	Horizontal
6	730.2861	150	357	-66.74	-13.00	53.74	Pass	Horizontal
7	1308.4308	150	122	-47.44	-13.00	34.44	Pass	Horizontal
8	4345.5673	150	64	-57.45	-13.00	44.45	Pass	Horizontal
9	6399.9200	150	257	-53.23	-13.00	40.23	Pass	Horizontal
10	9787.0894	150	140	-48.05	-13.00	35.05	Pass	Horizontal
11	14390.8195	150	225	-44.34	-13.00	31.34	Pass	Horizontal
12	21453.9382	150	294	-53.13	-13.00	40.13	Pass	Horizontal

Mode:		WCDMA Traffic						
Band:		II		Channel:		9400		
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	41.8364	150	260	-64.58	-13.00	51.58	Pass	Vertical
2	62.5985	150	344	-68.88	-13.00	55.88	Pass	Vertical
3	137.1094	150	328	-74.55	-13.00	61.55	Pass	Vertical
4	208.9038	150	294	-69.39	-13.00	56.39	Pass	Vertical
5	284.9670	150	357	-71.31	-13.00	58.31	Pass	Vertical
6	714.9570	150	357	-65.11	-13.00	52.11	Pass	Vertical
7	1315.2315	150	278	-46.97	-13.00	33.97	Pass	Vertical
8	5010.1005	150	54	-54.70	-13.00	41.70	Pass	Vertical
9	6969.9485	150	54	-52.52	-13.00	39.52	Pass	Vertical
10	9163.8082	150	77	-49.43	-13.00	36.43	Pass	Vertical
11	14401.3201	150	109	-43.85	-13.00	30.85	Pass	Vertical
12	21393.7357	150	0	-53.63	-13.00	40.63	Pass	Vertical

Mode:		WCDMA Traffic						
Band:		II		Channel:		9537		
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	39.7019	150	4	-76.42	-13.00	63.42	Pass	Horizontal
2	62.5985	150	182	-76.48	-13.00	63.48	Pass	Horizontal
3	109.9440	150	74	-74.12	-13.00	61.12	Pass	Horizontal
4	176.1112	150	227	-73.90	-13.00	60.90	Pass	Horizontal
5	270.0260	150	217	-72.75	-13.00	59.75	Pass	Horizontal
6	539.5459	150	357	-68.33	-13.00	55.33	Pass	Horizontal
7	1282.6283	150	55	-46.02	-13.00	33.02	Pass	Horizontal
8	3759.0380	150	109	-56.11	-13.00	43.11	Pass	Horizontal
9	5016.1008	150	20	-54.47	-13.00	41.47	Pass	Horizontal
10	8182.7591	150	11	-51.78	-13.00	38.78	Pass	Horizontal
11	11857.1929	150	47	-47.81	-13.00	34.81	Pass	Horizontal
12	16574.9287	150	320	-43.46	-13.00	30.46	Pass	Horizontal

Mode:		WCDMA Traffic						
Band:		II		Channel:		9537		
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.2841	150	192	-66.41	-13.00	53.41	Pass	Vertical
2	62.4045	150	357	-69.22	-13.00	56.22	Pass	Vertical
3	184.2609	150	108	-71.12	-13.00	58.12	Pass	Vertical
4	284.9670	150	348	-71.58	-13.00	58.58	Pass	Vertical
5	411.4803	150	0	-72.30	-13.00	59.30	Pass	Vertical
6	720.1960	150	357	-63.38	-13.00	50.38	Pass	Vertical
7	1221.4221	150	163	-45.72	-13.00	32.72	Pass	Vertical
8	2418.7419	150	357	-43.75	-13.00	30.75	Pass	Vertical
9	4482.0741	150	145	-56.55	-13.00	43.55	Pass	Vertical
10	6974.4487	150	296	-52.07	-13.00	39.07	Pass	Vertical
11	11788.9394	150	62	-47.25	-13.00	34.25	Pass	Vertical
12	16505.9253	150	89	-44.22	-13.00	31.22	Pass	Vertical

Mode:		WCDMA Traffic						
Band:		V		Channel:		4133		
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.0900	150	97	-74.59	-13.00	61.59	Pass	Horizontal
2	62.5985	150	150	-77.02	-13.00	64.02	Pass	Horizontal
3	102.7646	150	150	-75.77	-13.00	62.77	Pass	Horizontal
4	166.6033	150	97	-75.48	-13.00	62.48	Pass	Horizontal
5	270.0260	150	53	-73.27	-13.00	60.27	Pass	Horizontal
6	450.0940	150	338	-76.96	-13.00	63.96	Pass	Horizontal
7	1520.2520	150	357	-60.63	-13.00	47.63	Pass	Horizontal
8	3189.0095	150	3	-56.35	-13.00	43.35	Pass	Horizontal
9	5009.3505	150	164	-53.40	-13.00	40.40	Pass	Horizontal
10	7446.9723	150	164	-51.76	-13.00	38.76	Pass	Horizontal
11	11241.4121	150	272	-47.04	-13.00	34.04	Pass	Horizontal
12	17063.9532	150	348	-43.51	-13.00	30.51	Pass	Horizontal

Mode:		WCDMA Traffic						
Band:		V		Channel:		4133		
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.4781	150	199	-66.00	-13.00	53.00	Pass	Vertical
2	62.5985	150	357	-70.05	-13.00	57.05	Pass	Vertical
3	80.0620	150	357	-71.14	-13.00	58.14	Pass	Vertical
4	137.1094	150	7	-72.65	-13.00	59.65	Pass	Vertical
5	208.9038	150	322	-70.43	-13.00	57.43	Pass	Vertical
6	411.4803	150	65	-71.52	-13.00	58.52	Pass	Vertical
7	1330.0330	150	357	-57.57	-13.00	44.57	Pass	Vertical
8	2258.1258	150	73	-58.35	-13.00	45.35	Pass	Vertical
9	3072.7536	150	23	-57.50	-13.00	44.50	Pass	Vertical
10	5029.6015	150	356	-54.51	-13.00	41.51	Pass	Vertical
11	8183.5092	150	263	-51.56	-13.00	38.56	Pass	Vertical
12	11842.9421	150	130	-47.08	-13.00	34.08	Pass	Vertical

Mode:		WCDMA Traffic						
Band:		V		Channel:		4175		
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.0900	150	137	-72.13	-13.00	59.13	Pass	Horizontal
2	62.5985	150	301	-75.32	-13.00	62.32	Pass	Horizontal
3	109.9440	150	301	-75.30	-13.00	62.30	Pass	Horizontal
4	137.1094	150	357	-76.92	-13.00	63.92	Pass	Horizontal
5	270.0260	150	212	-72.52	-13.00	59.52	Pass	Horizontal
6	457.8556	150	301	-76.68	-13.00	63.68	Pass	Horizontal
7	1555.4555	150	317	-60.69	-13.00	47.69	Pass	Horizontal
8	2703.3703	150	63	-57.93	-13.00	44.93	Pass	Horizontal
9	5004.8502	150	177	-54.18	-13.00	41.18	Pass	Horizontal
10	7617.2309	150	360	-51.03	-13.00	38.03	Pass	Horizontal
11	11879.6940	150	141	-47.28	-13.00	34.28	Pass	Horizontal
12	21646.5459	150	32	-53.37	-13.00	40.37	Pass	Horizontal

Mode:		WCDMA Traffic						
Band:		V		Channel:		4175		
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	40.2841	150	79	-64.50	-13.00	51.50	Pass	Vertical
2	62.5985	150	227	-68.74	-13.00	55.74	Pass	Vertical
3	137.1094	150	331	-73.17	-13.00	60.17	Pass	Vertical
4	184.2609	150	93	-71.13	-13.00	58.13	Pass	Vertical
5	284.9670	150	6	-71.53	-13.00	58.53	Pass	Vertical
6	411.4803	150	257	-72.63	-13.00	59.63	Pass	Vertical
7	1341.8342	150	357	-59.43	-13.00	46.43	Pass	Vertical
8	2167.3167	150	317	-58.57	-13.00	45.57	Pass	Vertical
9	3071.2536	150	186	-56.81	-13.00	43.81	Pass	Vertical
10	4489.5745	150	95	-56.43	-13.00	43.43	Pass	Vertical
11	7617.2309	150	324	-51.75	-13.00	38.75	Pass	Vertical
12	24630.6652	150	6	-52.58	-13.00	39.58	Pass	Vertical

Mode:		WCDMA Traffic						
Band:		V			Channel:		4232	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	39.8960	150	188	-74.12	-13.00	61.12	Pass	Horizontal
2	80.0620	150	357	-73.77	-13.00	60.77	Pass	Horizontal
3	109.9440	150	282	-74.21	-13.00	61.21	Pass	Horizontal
4	176.1112	150	232	-73.04	-13.00	60.04	Pass	Horizontal
5	270.0260	150	232	-72.67	-13.00	59.67	Pass	Horizontal
6	451.4523	150	206	-77.08	-13.00	64.08	Pass	Horizontal
7	1266.8267	150	170	-58.14	-13.00	45.14	Pass	Horizontal
8	2108.9109	150	357	-58.88	-13.00	45.88	Pass	Horizontal
9	3196.5098	150	151	-56.85	-13.00	43.85	Pass	Horizontal
10	6036.9018	150	30	-54.71	-13.00	41.71	Pass	Horizontal
11	10219.8610	150	170	-48.04	-13.00	35.04	Pass	Horizontal
12	14406.5703	150	3	-44.29	-13.00	31.29	Pass	Horizontal

Mode:		WCDMA Traffic						
Band:		V			Channel:		4232	
NO.	Freq. [MHz]	Height [cm]	Azimuth [deg]	Level [dBm]	Limit [dBm]	Margin [dB]	Result	Polarity
1	42.2244	150	280	-66.18	-13.00	53.18	Pass	Vertical
2	62.4045	150	280	-68.02	-13.00	55.02	Pass	Vertical
3	137.1094	150	349	-73.40	-13.00	60.40	Pass	Vertical
4	208.9038	150	280	-69.72	-13.00	56.72	Pass	Vertical
5	411.4803	150	148	-71.63	-13.00	58.63	Pass	Vertical
6	727.3755	150	280	-68.34	-13.00	55.34	Pass	Vertical
7	1278.2278	150	7	-59.16	-13.00	46.16	Pass	Vertical
8	1891.2891	150	309	-60.52	-13.00	47.52	Pass	Vertical
9	2703.3703	150	263	-58.36	-13.00	45.36	Pass	Vertical
10	4377.0689	150	54	-56.87	-13.00	43.87	Pass	Vertical
11	7552.7276	150	339	-51.41	-13.00	38.41	Pass	Vertical
12	14393.8197	150	194	-43.39	-13.00	30.39	Pass	Vertical

Note:

Scan from 9kHz to 25GHz, the disturbance above 18GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

9 Appendix A

Refer to Appendix: GSM& WCDMA of EED32N80998106.

Note: We measured all modes and only recorded the worst case.