



TEST REPORT

Applicant Name : MAXWEST COMMUNICATION LIMITED
Address : ROOM 1802B FORTRESS TOWER 250 KING'S ROAD, NORTH
POINT HONG KONG
Report Number : DG1211222-66466E-00C
FCC ID: 2ASP8ASTRO5T

Test Standard (s)

FCC PART 27; FCC PART 22H; FCC PART 24E

Sample Description

Product: Phone
Tested Model: ASTRO 5T
Date Received: 2021-12-22
Date of Test: 2021-12-30 to 2022-01-07
Report Date: 2022-01-14

Test Result:	Pass*
--------------	-------

* In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Black Ding

Black Ding
EMC Engineer

Approved By:

Candy Li

Candy Li
EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk " * ".

Shenzhen Accurate Technology Co., Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk "*". Customer model name, addresses, names, trademarks etc. are not considered data.

This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Shenzhen Accurate Technology Co., Ltd.

1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

Tel: +86 755-26503290

Fax: +86 755-26503396

Web: www.atc-lab.com

Version 2: 2021-11-09

Page 1 of 45

FCC -2G,3G,4G

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE	3
TEST METHODOLOGY	4
MEASUREMENT UNCERTAINTY	4
TEST FACILITY	4
SYSTEM TEST CONFIGURATION.....	5
DESCRIPTION OF TEST CONFIGURATION	5
EQUIPMENT MODIFICATIONS	5
SUPPORT EQUIPMENT LIST AND DETAILS	6
SUPPORT CABLE DESCRIPTION	6
BLOCK DIAGRAM OF TEST SETUP	6
SUMMARY OF TEST RESULTS	7
TEST EQUIPMENT LIST	8
FCC §1.1307(B) & §2.1093 - RF EXPOSURE INFORMATION.....	10
FCC §2.1047 - MODULATION CHARACTERISTIC	11
FCC § 2.1046, § 22.913 (A) & § 24.232 (C); §27.50(A) (B) (C) (D) (H) - RF OUTPUT POWER.....	12
APPLICABLE STANDARD	12
TEST PROCEDURE	12
TEST DATA	13
FCC §2.1049, §22.917, §22.905 & §24.238 & §27.53 - OCCUPIED BANDWIDTH.....	29
APPLICABLE STANDARD	29
TEST PROCEDURE	29
TEST DATA	29
FCC §2.1051, §22.917(A) & §24.238(A) & §27.53 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS ..	30
APPLICABLE STANDARD	30
TEST PROCEDURE	30
TEST DATA	30
FCC § 2.1053; § 22.917 (A);§ 24.238 (A); §27.53 - SPURIOUS RADIATED EMISSIONS.....	31
APPLICABLE STANDARD	31
TEST PROCEDURE	31
TEST DATA	31
FCC § 22.917 (A);§ 24.238 (A); §27.53 (C)(H)(M) - BAND EDGES.....	35
APPLICABLE STANDARD	35
TEST PROCEDURE	35
TEST DATA	36
FCC § 2.1055; § 22.355; § 24.235; §27.54 - FREQUENCY STABILITY	37
APPLICABLE STANDARD	37
TEST PROCEDURE	37
TEST DATA	38

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX)
Maximum Output Power (Conducted power)	GSM 850: 33.62dBm(GMSK), 27.27dBm(8PSK) PCS 1900: 29.38dBm(GMSK), 27.75dBm (8PSK) WCDMA Band 2: 22.97dBm; WCDMA Band 5: 22.21dBm; LTE Band 2:23.96dBm; LTE Band 4:23.99dBm; LTE Band 5:23.49dBm; LTE Band 7:23.72dBm;
Modulation Technique	2G: GMSK/8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	Internal Antenna (provided by the applicant): GSM 850: 0.3dBi PCS 1900: 0.57dBi WCDMA Band 2: 0.57dBi WCDMA Band 5: 0.3dBi LTE Band 2: 0.57dBi LTE Band 4: 0.54dBi LTE Band 5: 0.3dBi LTE Band 7: 0.67dBi
Voltage Range	DC3.8V from battery or DC5V from Adapter
Sample serial number	DG1211222-66466E-RF-S1 (Assigned by ATC)
Sample/EUT Status	Good condition
Adapter information	Model: ASTRO 5T INPUT:100-240V~50/60Hz 0.2A OUTPUT: 5V 1A
Normal/Extreme Condition*	N.V.: Nominal Voltage: 3.8V _{DC} L.V.: Low Temperature 3.23V _{DC} H.V.: High Temperature 4.37V _{DC} (They are provided by the manufacturer)

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part 24-Subpart E, and Subpart 27 of the Federal Communication Commission's rules.

The objective is to determine the compliance of the EUT with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability and band edge.

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2-Subpart J as well as the following parts:

Part 22 Subpart H - Public Mobile Services
Part 24 Subpart E - Personal Communication Services
Part 27 - Miscellaneous Wireless Communications Services

ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF output power, conducted		0.73dB
Unwanted Emission, conducted		1.6dB
RF Frequency		0.082×10^{-7}
Emissions, Radiated	30MHz - 1GHz	4.28dB
	1GHz - 18GHz	4.98dB
	18GHz - 26.5GHz	5.06dB
Temperature		1°C
Humidity		6%
Supply voltages		0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 429 7.01.

Listed by Innovation, Science and Economic Development Canada (ISED), the Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The final qualification test was performed with the EUT operating at normal mode.

The test items were performed with the EUT operating at testing mode. Test was performed with channels as below table:

Band	Channel Bandwidth	Frequency
GSM 850	0.3 MHz	824.2MHz, 836.6MHz, 848.8MHz
PCS 1900	0.3 MHz	1850.2MHz, 1880.0MHz, 1909.8MHz;
WCDMA Band 2	4.2 MHz	1852.4MHz, 1880.0MHz, 1907.6MHz;
WCDMA Band 5	4.2 MHz	826.4MHz, 836.6MHz, 846.6MHz
LTE Band 2	1.4 MHz	1850.7MHz, 1880.0 MHz, 1909.3 MHz;
	3.0 MHz	1851.5MHz, 1880.0 MHz, 1908.5 MHz;
	5.0 MHz	1852.5MHz, 1880.0 MHz, 1907.5 MHz;
	10.0 MHz	1855MHz, 1880.0 MHz, 1905 MHz;
	15.0 MHz	1857.5MHz, 1880.0 MHz, 1902.5 MHz;
	20.0 MHz	1860MHz, 1880.0 MHz, 1900MHz;
LTE Band 4	1.4 MHz	1710.7MHz, 1732.5MHz, 1754.3MHz;
	3.0 MHz	1711.5MHz, 1732.5MHz, 1753.5MHz
	5.0 MHz	1712.5MHz, 1732.5MHz, 1752.5MHz
	10.0 MHz	1715MHz, 1732.5MHz, 1750MHz
	15.0 MHz	1717.5MHz, 1732.5MHz, 1747.5MHz
	20.0 MHz	1720MHz, 1732.5MHz, 1745MHz
LTE Band 5	1.4 MHz	824.7MHz, 836.5MHz, 848.3MHz
	3.0 MHz	825.5MHz, 836.5MHz, 847.5MHz
	5.0 MHz	826.5MHz, 836.5MHz, 846.5MHz
	10.0 MHz	829MHz, 836.5MHz, 844MHz
LTE Band 7	5.0 MHz	2502.5MHz, 2535.0MHz, 2567.5MHz
	10.0 MHz	2505MHz, 2535.0MHz, 2565MHz
	15.0 MHz	2507.5MHz, 2535.0MHz, 2562.5MHz
	20.0 MHz	2510MHz, 2535.0MHz, 2560MHz

Equipment Modifications

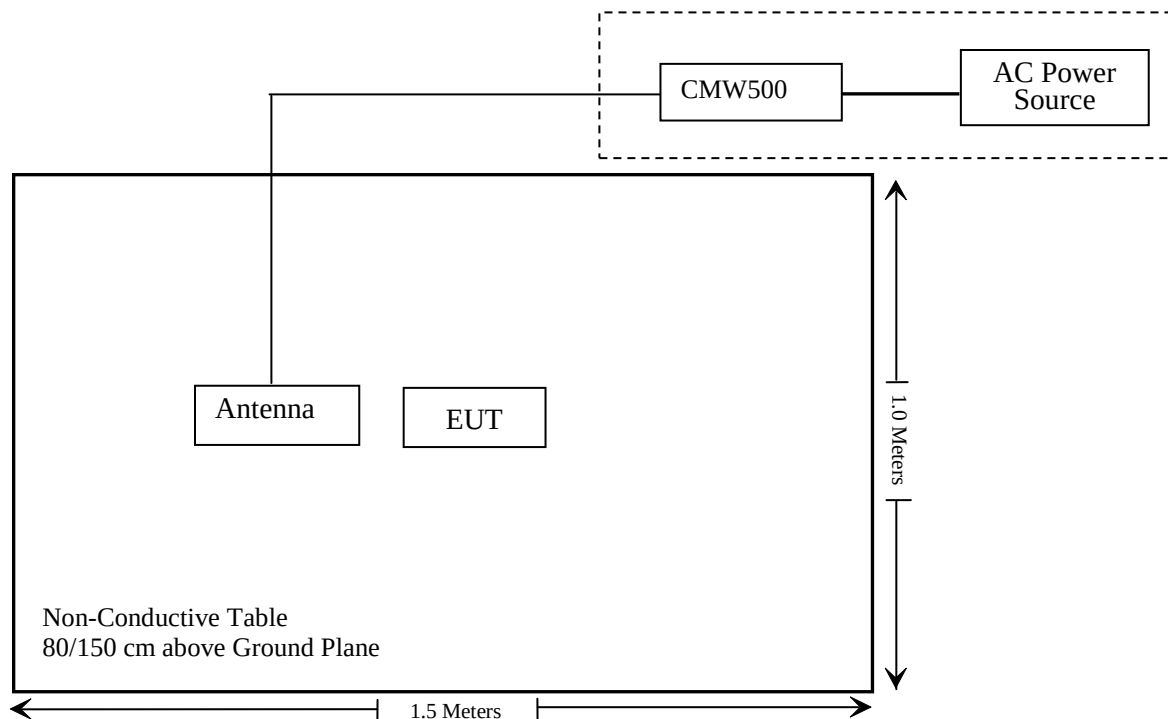
No modification was made to the EUT.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606

Support Cable Description

Cable Description	Length (m)	From / Port	To
Unshielded Detachable AC cable	1.2	AC Power Source	CMW500

Block Diagram of Test Setup

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 , §2.1093	RF Exposure (SAR)	Compliant*
§2.1046; § 22.913 (a); § 24.232 (c); §27.50 (a) (b) (c) (d) (h);	RF Output Power	Compliant
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53	Occupied Bandwidth	Compliant
§ 2.1051; § 22.917 (a); § 24.238 (a); §27.53;	Spurious Emissions at Antenna Terminal	Compliant
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53	Field Strength of Spurious Radiation	Compliant
§ 22.917 (a); § 24.238 (a); §27.53 (c) (h) (m)	Band Edge	Compliant
§ 2.1055; § 22.355; § 24.235; §27.54;	Frequency stability	Compliant

Compliant*: Please refer to SAR report number: DG1211222-66466E-SA.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101949	2021/12/13	2022/12/12
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2021/12/13	2022/12/12
Agilent	Signal Generator	N5183A	MY51040755	2021/12/13	2022/12/12
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2021/11/09	2022/11/08
Quinstar	Amplifier	QLW-184055 36-J0	15964001002	2021/11/11	2022/11/10
Rohde& Schwarz	Test Receiver	ESR	102725	2021/12/13	2022/12/12
SONOMA INSTRUMENT	Amplifier	310 N	186131	2021/11/09	2022/11/08
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2020/01/05	2023/01/04
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
PASTERNAK	Horn Antenna	PE9852/2F-20	1120	2020/01/05	2023/01/04
PASTERNAK	Horn Antenna	PE9852/2F-20	1120	2020/01/05	2023/01/04
Unknown	RF Coaxial Cable	No.10	N050	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.11	N1000	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.12	N040	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.13	N300	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.14	N800	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.15	N600	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.16	N650	2021/12/14	2022/12/13
Radiated Emission Test Software: e3 19821b(V9)					

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Unknown	Band Reject Filter	MSF1850-191 0MS-1148	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF1710-178 5MS-1150	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF824-862 MS-1147	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF2495-257 0MS-1152	201706003	2021/12/14	2022/12/13
Unknown	High Pass Filter	HPM-1.2/18G -60	110	2021/12/14	2022/12/13
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101495	2021/12/13	2022/12/12
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101948	2021/12/13	2022/12/12
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2021/12/13	2022/12/12
Fluke	Desktop Multi Meter	45	7664009	2021/12/13	2022/12/12
Mini-Circuits	Power Splitter	DC-18000MHz	SF10944151S	2021/12/13	2022/12/12
UNI-T	DC Power Supply	UTP8305B	10584	NCR	NCR
Gongwen	Temp. & Humid. Chamber	HSD-500	109	2021/12/13	2022/12/12
WEINSCHL	10dB Attenuator	5324	AU 3842	2021/12/14	2022/12/13

* Statement of Traceability: Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1307(b) & §2.1093 - RF EXPOSURE INFORMATION

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: DG1211222-66466E-SA

FCC §2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E & 27 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

**FCC § 2.1046, § 22.913 (a) & § 24.232 (c); §27.50(a) (b) (c) (d) (h) - RF
OUTPUT POWER**

Applicable Standard

According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §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.

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

According to §27.50(a), (3) Mobile and portable stations. (i) For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz 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. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

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

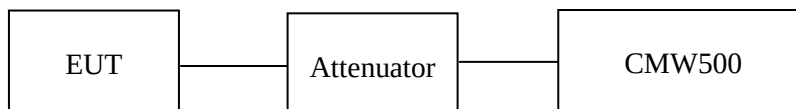
According to §27.50(c), Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP. And Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

According to §27.50(d), 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.

According to §27.50(h), the maximum EIRP must not exceed 2Watts (33dBm) for 2500-2570MHz.

Test Procedure*Conducted method:*

The RF output of the transmitter was connected to the CMW500 through sufficient attenuation.

*Radiated method:*

ANSI C63.26-2015 Section 5.5.

Test Data**Environmental Conditions**

Temperature:	24 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Key Pei on 2022-01-04.

Conducted Power**Cellular Band (Part 22H)**

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	33.62	31.57	38.45
	190	836.6	33.14	31.09	38.45
	251	848.8	33.15	31.10	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	32.85	31.60	29.71	28.55	30.80	29.55	27.66	26.50	38.45
	190	836.6	32.65	31.46	29.54	28.38	30.60	29.41	27.49	26.33	38.45
	251	848.8	32.58	31.40	29.26	28.30	30.53	29.35	27.21	26.25	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	27.27	25.00	24.97	23.82	25.22	22.95	22.92	21.77	38.45
	190	836.6	27.17	25.86	24.84	23.67	25.12	23.81	22.79	21.62	38.45
	251	848.8	27.00	25.72	24.69	23.55	24.95	23.67	22.64	21.50	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 5)	RMC12.2k		21.51	21.58	21.57	19.46	19.53	19.52
	HSDPA	1	22.04	22.08	22.12	19.99	20.03	20.07
		2	22.12	22.21	22.17	20.07	20.16	20.12
		3	21.84	21.91	22.07	19.79	19.86	20.02
		4	21.88	22.09	22.11	19.83	20.04	20.06
	HSUPA	1	21.65	21.70	21.76	19.60	19.65	19.71
		2	21.58	21.56	21.97	19.53	19.51	19.92
		3	21.68	21.54	21.60	19.63	19.49	19.55
		4	21.60	21.81	21.73	19.55	19.76	19.68
		5	21.65	21.67	21.97	19.60	19.62	19.92
	HSPA+	1	21.63	21.64	21.98	19.58	19.59	19.93

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
 For GSM850 / WCDMA Band5: Antenna Gain = 0.3dBi = -1.85dBd (0dBd=2.15dBi)
 Cable Loss=0.2dB* (provided by the applicant)
 Limit: ERP ≤ 38.45dBm

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	29.26	29.43	33
	661	1880.0	29.18	29.35	33
	810	1909.8	29.38	29.55	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	28.20	27.18	26.20	25.10	28.37	27.35	26.37	25.27	33
	661	1880.0	28.21	27.20	26.22	25.12	28.38	27.37	26.39	25.29	33
	810	1909.8	28.42	27.40	26.45	25.31	28.59	27.57	26.62	25.48	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	27.75	26.62	25.58	24.61	27.92	26.79	25.75	24.78	33
	661	1880.0	26.08	25.90	24.87	24.02	26.25	26.07	25.04	24.19	33
	810	1909.8	26.75	25.58	24.54	23.70	26.92	25.75	24.71	23.87	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		22.00	22.92	22.97	22.17	23.09	23.14
	HSDPA	1	22.64	22.25	22.37	22.81	22.42	22.54
		2	22.54	22.36	22.29	22.71	22.53	22.46
		3	22.52	22.22	22.27	22.69	22.39	22.44
		4	22.09	22.54	22.13	22.26	22.71	22.30
	HSUPA	1	21.96	21.85	21.71	22.13	22.02	21.88
		2	21.75	21.56	21.54	21.92	21.73	21.71
		3	21.88	21.71	21.63	22.05	21.88	21.80
		4	21.98	21.75	21.73	22.15	21.92	21.90
		5	21.86	21.67	21.61	22.03	21.84	21.78
	HSPA+	1	21.84	21.62	21.58	22.01	21.79	21.75

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)

For PCS1900 / WCDMA Band2: Antenna Gain = 0.57dBi

Cable Loss=0.4dB*(provided by the applicant)

Limit: EIRP≤33dBm

LTE Band 2

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.72	23.60	23.63	23.89	23.77	23.80
		RB1#2	23.74	23.63	23.69	23.91	23.80	23.86
		RB1#5	23.79	23.70	23.66	23.96	23.87	23.83
		RB3#0	23.83	23.49	23.83	24.00	23.66	24.00
		RB3#1	23.86	23.56	23.81	24.03	23.73	23.98
		RB3#2	22.82	22.48	22.78	22.99	22.65	22.95
		RB6#0	22.69	22.91	23.36	22.86	23.08	23.53
	16QAM	RB1#0	22.77	22.85	23.38	22.94	23.02	23.55
		RB1#2	22.73	22.87	23.40	22.90	23.04	23.57
		RB1#5	22.93	22.55	22.69	23.10	22.72	22.86
		RB3#0	22.89	22.55	22.67	23.06	22.72	22.84
		RB3#1	22.09	21.69	21.96	22.26	21.86	22.13
		RB3#2	23.72	23.60	23.63	23.89	23.77	23.80
		RB6#0	23.74	23.63	23.69	23.91	23.80	23.86
3.0	QPSK	RB1#0	23.68	23.40	23.69	23.85	23.57	23.86
		RB1#7	23.70	23.44	23.73	23.87	23.61	23.90
		RB1#14	23.65	23.37	23.69	23.82	23.54	23.86
		RB8#0	22.70	22.51	22.73	22.87	22.68	22.90
		RB8#4	22.56	22.46	22.71	22.73	22.63	22.88
		RB8#7	22.82	22.52	22.66	22.99	22.69	22.83
		RB15#0	23.68	23.40	23.69	23.85	23.57	23.86
	16QAM	RB1#0	23.11	23.04	22.64	23.28	23.21	22.81
		RB1#7	23.13	23.00	22.67	23.30	23.17	22.84
		RB1#14	22.99	23.00	22.63	23.16	23.17	22.80
		RB8#0	22.04	21.73	22.02	22.21	21.90	22.19
		RB8#4	21.90	21.69	22.06	22.07	21.86	22.23
		RB8#7	21.91	21.58	21.89	22.08	21.75	22.06
		RB15#0	23.11	23.04	22.64	23.28	23.21	22.81

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.71	23.57	23.65	23.88	23.74	23.82
		RB1#12	23.61	23.66	23.69	23.78	23.83	23.86
		RB1#24	23.64	23.68	23.45	23.81	23.85	23.62
		RB12#0	22.91	22.49	22.76	23.08	22.66	22.93
		RB12#6	22.73	22.54	22.76	22.90	22.71	22.93
		RB12#11	22.67	22.43	22.74	22.84	22.60	22.91
		RB25#0	22.22	22.74	22.39	22.39	22.91	22.56
	16QAM	RB1#0	22.06	22.66	22.45	22.23	22.83	22.62
		RB1#12	22.02	22.73	22.51	22.19	22.90	22.68
		RB1#24	22.02	21.49	21.83	22.19	21.66	22.00
		RB12#0	21.90	21.48	21.86	22.07	21.65	22.03
		RB12#6	21.92	21.59	21.72	22.09	21.76	21.89
		RB12#11	23.71	23.57	23.65	23.88	23.74	23.82
		RB25#0	23.61	23.66	23.69	23.78	23.83	23.86
10.0	QPSK	RB1#0	23.67	23.55	23.60	23.84	23.72	23.77
		RB1#24	23.61	23.45	23.66	23.78	23.62	23.83
		RB1#49	23.67	23.44	23.80	23.84	23.61	23.97
		RB25#0	22.70	22.53	22.65	22.87	22.70	22.82
		RB25#12	22.73	22.54	22.80	22.90	22.71	22.97
		RB25#24	22.76	22.48	22.68	22.93	22.65	22.85
		RB50#0	23.24	22.73	22.09	23.41	22.90	22.26
	16QAM	RB1#0	23.14	22.68	22.23	23.31	22.85	22.40
		RB1#24	23.13	22.68	22.30	23.30	22.85	22.47
		RB1#49	21.85	21.76	21.85	22.02	21.93	22.02
		RB25#0	21.90	21.76	21.95	22.07	21.93	22.12
		RB25#12	21.83	21.70	21.81	22.00	21.87	21.98
		RB25#24	23.67	23.55	23.60	23.84	23.72	23.77
		RB50#0	23.61	23.45	23.66	23.78	23.62	23.83

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	23.70	23.54	23.47	23.87	23.71	23.64
		RB1#37	23.62	23.43	23.57	23.79	23.60	23.74
		RB1#74	23.36	23.42	23.70	23.53	23.59	23.87
		RB36#0	22.72	22.50	22.59	22.89	22.67	22.76
		RB36#18	22.67	22.56	22.70	22.84	22.73	22.87
		RB36#37	22.76	22.55	22.65	22.93	22.72	22.82
		RB75#0	23.21	22.78	23.00	23.38	22.95	23.17
	16QAM	RB1#0	23.12	22.79	23.03	23.29	22.96	23.20
		RB1#37	23.04	22.80	23.13	23.21	22.97	23.30
		RB1#74	21.84	21.72	21.67	22.01	21.89	21.84
		RB36#0	21.77	21.68	21.84	21.94	21.85	22.01
		RB36#18	21.86	21.62	21.77	22.03	21.79	21.94
		RB36#37	23.70	23.54	23.47	23.87	23.71	23.64
		RB75#0	23.62	23.43	23.57	23.79	23.60	23.74
20.0	QPSK	RB1#0	23.96	23.63	23.66	24.13	23.80	23.83
		RB1#49	23.50	23.47	23.69	23.67	23.64	23.86
		RB1#99	23.77	23.51	23.93	23.94	23.68	24.10
		RB50#0	22.71	22.55	22.51	22.88	22.72	22.68
		RB50#24	22.59	22.65	22.71	22.76	22.82	22.88
		RB50#49	22.76	22.51	22.62	22.93	22.68	22.79
		RB100#0	22.98	22.65	23.22	23.15	22.82	23.39
	16QAM	RB1#0	22.75	22.53	23.31	22.92	22.70	23.48
		RB1#49	22.69	22.53	23.38	22.86	22.70	23.55
		RB1#99	21.90	21.75	21.65	22.07	21.92	21.82
		RB50#0	21.82	21.71	21.79	21.99	21.88	21.96
		RB50#24	21.88	21.67	21.76	22.05	21.84	21.93
		RB50#49	23.96	23.63	23.66	24.13	23.80	23.83
		RB100#0	23.50	23.47	23.69	23.67	23.64	23.86

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable Loss(dB)

For Band2: Antenna Gain = 0.57dBi

Cable Loss=0.4dB*(provided by the applicant)

Limit: EIRP ≤ 33dBm

LTE Band 4

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.68	23.59	23.89	23.82	23.73	24.03
		RB1#2	23.71	23.66	23.86	23.85	23.80	24.00
		RB1#5	23.68	23.61	23.88	23.82	23.75	24.02
		RB3#0	23.77	23.74	23.82	23.91	23.88	23.96
		RB3#1	23.79	23.74	23.79	23.93	23.88	23.93
		RB3#2	22.67	22.70	22.75	22.81	22.84	22.89
		RB6#0	23.29	22.54	23.65	23.43	22.68	23.79
	16QAM	RB1#0	23.34	22.65	23.75	23.48	22.79	23.89
		RB1#2	23.32	22.60	23.69	23.46	22.74	23.83
		RB1#5	22.80	22.82	23.00	22.94	22.96	23.14
		RB3#0	22.81	22.81	23.06	22.95	22.95	23.20
		RB3#1	21.92	21.96	21.87	22.06	22.10	22.01
		RB3#2	23.68	23.59	23.89	23.82	23.73	24.03
		RB6#0	23.71	23.66	23.86	23.85	23.80	24.00
3.0	QPSK	RB1#0	23.64	23.48	23.66	23.78	23.62	23.80
		RB1#7	23.68	23.48	23.66	23.82	23.62	23.80
		RB1#14	23.67	23.49	23.71	23.81	23.63	23.85
		RB8#0	22.69	22.61	22.87	22.83	22.75	23.01
		RB8#4	22.71	22.60	22.90	22.85	22.74	23.04
		RB8#7	22.65	22.61	22.75	22.79	22.75	22.89
		RB15#0	22.52	23.05	23.50	22.66	23.19	23.64
	16QAM	RB1#0	22.56	23.07	23.50	22.70	23.21	23.64
		RB1#7	22.57	23.04	23.53	22.71	23.18	23.67
		RB1#14	21.92	21.64	21.91	22.06	21.78	22.05
		RB8#0	22.01	21.64	21.90	22.15	21.78	22.04
		RB8#4	21.77	21.74	22.02	21.91	21.88	22.16
		RB8#7	23.64	23.48	23.66	23.78	23.62	23.80
		RB15#0	23.68	23.48	23.66	23.82	23.62	23.80

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.57	23.51	23.80	23.71	23.65	23.94
		RB1#12	23.55	23.51	23.83	23.69	23.65	23.97
		RB1#24	23.58	23.57	23.89	23.72	23.71	24.03
		RB12#0	22.67	22.62	22.77	22.81	22.76	22.91
		RB12#6	22.66	22.66	22.75	22.80	22.80	22.89
		RB12#11	22.57	22.57	22.72	22.71	22.71	22.86
		RB25#0	22.29	21.96	22.83	22.43	22.10	22.97
	16QAM	RB1#0	22.34	21.88	22.95	22.48	22.02	23.09
		RB1#12	22.39	21.96	22.98	22.53	22.10	23.12
		RB1#24	21.78	21.81	21.85	21.92	21.95	21.99
		RB12#0	21.76	21.75	21.86	21.90	21.89	22.00
		RB12#6	21.66	21.84	21.95	21.80	21.98	22.09
		RB12#11	23.57	23.51	23.80	23.71	23.65	23.94
		RB25#0	23.55	23.51	23.83	23.69	23.65	23.97
10.0	QPSK	RB1#0	23.60	23.61	23.92	23.74	23.75	24.06
		RB1#24	23.61	23.55	23.99	23.75	23.69	24.13
		RB1#49	23.59	23.61	23.96	23.73	23.75	24.10
		RB25#0	22.64	22.71	22.71	22.78	22.85	22.85
		RB25#12	22.63	22.58	22.92	22.77	22.72	23.06
		RB25#24	22.75	22.69	22.82	22.89	22.83	22.96
		RB50#0	22.95	22.75	22.37	23.09	22.89	22.51
	16QAM	RB1#0	22.92	22.79	22.47	23.06	22.93	22.61
		RB1#24	22.87	22.80	22.49	23.01	22.94	22.63
		RB1#49	21.80	21.84	22.07	21.94	21.98	22.21
		RB25#0	21.80	21.88	22.07	21.94	22.02	22.21
		RB25#12	21.77	21.84	22.02	21.91	21.98	22.16
		RB25#24	23.60	23.61	23.92	23.74	23.75	24.06
		RB50#0	23.61	23.55	23.99	23.75	23.69	24.13

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	23.60	23.59	23.84	23.74	23.73	23.98
		RB1#37	23.58	23.60	23.95	23.72	23.74	24.09
		RB1#74	23.60	23.69	23.94	23.74	23.83	24.08
		RB36#0	22.66	22.56	22.73	22.80	22.70	22.87
		RB36#18	22.59	22.72	22.69	22.73	22.86	22.83
		RB36#37	22.61	22.64	22.80	22.75	22.78	22.94
		RB75#0	22.94	22.77	23.09	23.08	22.91	23.23
	16QAM	RB1#0	22.93	22.79	23.21	23.07	22.93	23.35
		RB1#37	22.89	22.86	23.29	23.03	23.00	23.43
		RB1#74	21.85	21.77	21.88	21.99	21.91	22.02
		RB36#0	21.85	21.85	21.96	21.99	21.99	22.10
		RB36#18	21.80	21.81	21.97	21.94	21.95	22.11
		RB36#37	23.60	23.59	23.84	23.74	23.73	23.98
		RB75#0	23.58	23.60	23.95	23.72	23.74	24.09
20.0	QPSK	RB1#0	23.83	23.60	23.64	23.97	23.74	23.78
		RB1#49	23.78	23.53	23.78	23.92	23.67	23.92
		RB1#99	23.85	23.68	23.91	23.99	23.82	24.05
		RB50#0	22.75	22.73	22.85	22.89	22.87	22.99
		RB50#24	22.74	22.67	22.84	22.88	22.81	22.98
		RB50#49	22.68	22.67	22.69	22.82	22.81	22.83
		RB100#0	22.71	23.04	23.22	22.85	23.18	23.36
	16QAM	RB1#0	22.71	23.03	23.35	22.85	23.17	23.49
		RB1#49	22.69	23.16	23.49	22.83	23.30	23.63
		RB1#99	21.94	21.87	21.81	22.08	22.01	21.95
		RB50#0	21.87	21.88	22.05	22.01	22.02	22.19
		RB50#24	21.86	21.75	21.86	22.00	21.89	22.00
		RB50#49	23.83	23.60	23.64	23.97	23.74	23.78
		RB100#0	23.78	23.53	23.78	23.92	23.67	23.92

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable Loss(dB)

For Band4: Antenna Gain = 0.54dBi

Cable Loss=0.4dB*(provided by the applicant)

Limit: EIRP ≤ 30dBm

LTE Band 5

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.28	23.31	23.28	21.23	21.26	21.23
		RB1#2	23.29	23.33	23.29	21.24	21.28	21.24
		RB1#5	23.30	23.38	23.31	21.25	21.33	21.26
		RB3#0	23.38	23.35	23.32	21.33	21.30	21.27
		RB3#1	23.40	23.44	23.37	21.35	21.39	21.32
		RB3#2	22.25	22.27	22.35	20.20	20.22	20.30
		RB6#0	22.85	22.83	23.11	20.80	20.78	21.06
	16QAM	RB1#0	22.78	22.76	23.17	20.73	20.71	21.12
		RB1#2	22.80	22.82	23.11	20.75	20.77	21.06
		RB1#5	22.46	22.42	22.13	20.41	20.37	20.08
		RB3#0	22.47	22.44	22.17	20.42	20.39	20.12
		RB3#1	21.39	21.48	21.26	19.34	19.43	19.21
		RB3#2	23.28	23.31	23.28	21.23	21.26	21.23
		RB6#0	23.29	23.33	23.29	21.24	21.28	21.24
3.0	QPSK	RB1#0	23.21	23.21	23.47	21.16	21.16	21.42
		RB1#7	23.18	23.26	23.49	21.13	21.21	21.44
		RB1#14	23.22	23.29	23.48	21.17	21.24	21.43
		RB8#0	22.30	22.30	22.34	20.25	20.25	20.29
		RB8#4	22.22	22.28	22.35	20.17	20.23	20.30
		RB8#7	22.35	22.35	22.32	20.30	20.30	20.27
		RB15#0	22.53	23.06	22.02	20.48	21.01	19.97
	16QAM	RB1#0	22.43	22.98	22.01	20.38	20.93	19.96
		RB1#7	22.38	23.02	22.03	20.33	20.97	19.98
		RB1#14	21.46	21.32	21.53	19.41	19.27	19.48
		RB8#0	21.47	21.34	21.55	19.42	19.29	19.50
		RB8#4	21.35	21.33	21.41	19.30	19.28	19.36
		RB8#7	23.21	23.21	23.47	21.16	21.16	21.42
		RB15#0	23.18	23.26	23.49	21.13	21.21	21.44

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.21	23.34	23.26	21.16	21.29	21.21
		RB1#12	23.17	23.34	23.28	21.12	21.29	21.23
		RB1#24	23.21	23.39	23.32	21.16	21.34	21.27
		RB12#0	22.33	22.29	22.32	20.28	20.24	20.27
		RB12#6	22.24	22.30	22.24	20.19	20.25	20.19
		RB12#11	22.26	22.27	22.28	20.21	20.22	20.23
		RB25#0	21.61	22.43	21.91	19.56	20.38	19.86
	16QAM	RB1#0	21.53	22.39	21.94	19.48	20.34	19.89
		RB1#12	21.53	22.37	21.97	19.48	20.32	19.92
		RB1#24	21.30	21.13	21.38	19.25	19.08	19.33
		RB12#0	21.35	21.13	21.39	19.30	19.08	19.34
		RB12#6	21.40	21.21	21.18	19.35	19.16	19.13
		RB12#11	23.21	23.34	23.26	21.16	21.29	21.21
		RB25#0	23.17	23.34	23.28	21.12	21.29	21.23
10.0	QPSK	RB1#0	23.30	23.21	23.38	21.25	21.16	21.33
		RB1#24	23.33	23.21	23.33	21.28	21.16	21.28
		RB1#49	23.29	23.20	23.35	21.24	21.15	21.30
		RB25#0	22.24	22.35	22.29	20.19	20.30	20.24
		RB25#12	22.35	22.20	22.27	20.30	20.15	20.22
		RB25#24	22.36	22.32	22.29	20.31	20.27	20.24
		RB50#0	21.81	22.48	22.42	19.76	20.43	20.37
	16QAM	RB1#0	21.80	22.41	22.38	19.75	20.36	20.33
		RB1#24	21.77	22.43	22.42	19.72	20.38	20.37
		RB1#49	21.43	21.28	21.36	19.38	19.23	19.31
		RB25#0	21.45	21.27	21.36	19.40	19.22	19.31
		RB25#12	21.24	21.23	21.35	19.19	19.18	19.30
		RB25#24	23.30	23.21	23.38	21.25	21.16	21.33
		RB50#0	23.33	23.21	23.33	21.28	21.16	21.28

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)

For Band5: Antenna Gain = 0.3dBi = -1.85dBd (0dBd=2.15dBi)

Cable Loss=0.2dB* (provided by the applicant)

Limit: ERP ≤ 38.45dBm

LTE Band 7

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5	QPSK	RB1#12	23.15	23.28	23.51	23.42	23.55	23.78
		RB1#24	23.16	23.23	23.63	23.43	23.50	23.90
		RB12#0	23.22	23.24	23.62	23.49	23.51	23.89
		RB12#6	22.35	22.34	22.41	22.62	22.61	22.68
		RB12#11	22.28	22.26	22.61	22.55	22.53	22.88
		RB25#0	22.29	22.32	22.44	22.56	22.59	22.71
		RB1#0	22.30	22.32	22.45	22.57	22.59	22.72
	16QAM	RB1#12	22.73	22.63	22.77	23.00	22.90	23.04
		RB1#24	22.81	22.58	22.90	23.08	22.85	23.17
		RB12#0	22.98	22.53	22.97	23.25	22.80	23.24
		RB12#6	21.47	21.48	21.72	21.74	21.75	21.99
		RB12#11	21.53	21.51	21.68	21.80	21.78	21.95
		RB25#0	23.48	23.15	23.45	23.75	23.42	23.72
		RB1#12	22.34	22.39	22.39	22.61	22.66	22.66
10	QPSK	RB1#0	22.29	22.32	22.44	22.56	22.59	22.71
		RB1#24	22.30	22.32	22.45	22.57	22.59	22.72
		RB1#49	22.98	22.53	22.97	23.25	22.80	23.24
		RB25#0	21.48	21.56	21.58	21.75	21.83	21.85
		RB25#12	21.53	21.59	21.65	21.80	21.86	21.92
		RB25#24	21.56	21.44	21.65	21.83	21.71	21.92
		RB50#0	23.36	23.22	23.27	23.63	23.49	23.54
	16QAM	RB1#0	23.34	23.18	23.38	23.61	23.45	23.65
		RB1#24	23.40	23.39	23.47	23.67	23.66	23.74
		RB1#49	21.43	21.49	21.65	21.70	21.76	21.92
		RB25#0	21.47	21.48	21.72	21.74	21.75	21.99
		RB25#12	21.53	21.51	21.68	21.80	21.78	21.95
		RB25#24	23.15	23.28	23.51	23.42	23.55	23.78
		RB50#0	23.17	23.25	23.63	23.44	23.52	23.90

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
15	QPSK	RB1#0	23.36	23.22	23.27	23.63	23.49	23.54
		RB1#37	23.34	23.18	23.38	23.61	23.45	23.65
		RB1#74	23.48	23.15	23.45	23.75	23.42	23.72
		RB36#0	22.34	22.39	22.39	22.61	22.66	22.66
		RB36#18	22.29	22.32	22.44	22.56	22.59	22.71
		RB36#37	22.30	22.32	22.45	22.57	22.59	22.72
		RB75#0	22.73	22.63	22.77	23.00	22.90	23.04
	16QAM	RB1#0	22.81	22.58	22.90	23.08	22.85	23.17
		RB1#37	22.98	22.53	22.97	23.25	22.80	23.24
		RB1#74	21.48	21.56	21.58	21.75	21.83	21.85
		RB36#0	21.53	21.59	21.65	21.80	21.86	21.92
		RB36#18	21.56	21.44	21.65	21.83	21.71	21.92
		RB36#37	23.36	23.22	23.27	23.63	23.49	23.54
		RB75#0	23.34	23.18	23.38	23.61	23.45	23.65
20	QPSK	RB1#0	23.40	23.39	23.47	23.67	23.66	23.74
		RB1#49	23.42	23.38	23.56	23.69	23.65	23.83
		RB1#99	23.59	23.33	23.72	23.86	23.60	23.99
		RB50#0	22.34	22.41	22.35	22.61	22.68	22.62
		RB50#24	22.44	22.33	22.58	22.71	22.60	22.85
		RB50#49	22.27	22.36	22.45	22.54	22.63	22.72
		RB100#0	22.26	22.97	22.87	22.53	23.24	23.14
	16QAM	RB1#0	22.27	22.92	23.06	22.54	23.19	23.33
		RB1#49	22.50	22.96	23.14	22.77	23.23	23.41
		RB1#99	21.51	21.65	21.50	21.78	21.92	21.77
		RB50#0	21.61	21.61	21.70	21.88	21.88	21.97
		RB50#24	21.45	21.47	21.57	21.72	21.74	21.84
		RB50#49	23.40	23.39	23.47	23.67	23.66	23.74
		RB100#0	23.42	23.38	23.56	23.69	23.65	23.83

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable Loss(dB)

For Band12: Antenna Gain =0.67dBi

Cable Loss=0.4dB* (provided by the applicant)

Limit: ERP≤34.77dBm

Peak-to-average ratio (PAR)**Cellular Band**

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.15	13
	Middle	3.30	13
	High	3.45	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.18	13
	Middle	3.54	13
	High	3.22	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.18	13
	Middle	3.37	13
	High	3.28	13
HSDPA (16QAM)	Low	4.21	13
	Middle	3.99	13
	High	3.78	13
HSUPA (BPSK)	Low	3.45	13
	Middle	3.67	13
	High	3.61	13
HSPA+	Low	3.37	13
	Middle	3.19	13
	High	3.55	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.34	13
	Middle	3.21	13
	High	3.74	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.26	13
	Middle	3.16	13
	High	3.47	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.24	13
	Middle	3.28	13
	High	2.92	13
HSDPA (16QAM)	Low	3.67	13
	Middle	4.02	13
	High	4.47	13
HSUPA (BPSK)	Low	3.64	13
	Middle	3.74	13
	High	3.85	13
HSPA+	Low	3.33	13
	Middle	3.27	13
	High	3.69	13

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	2.64	3.83	4.26	13	Pass
QPSK (100RB Size)	4.46	3.94	4.14	13	Pass
16QAM (1RB Size)	3.91	4.93	5.33	13	Pass
16QAM (100RB Size)	5.36	4.84	5.07	13	Pass

LTE Band 4 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.30	3.88	3.54	13	Pass
QPSK (100RB Size)	4.46	4.29	4.26	13	Pass
16QAM (1RB Size)	4.29	4.81	4.32	13	Pass
16QAM (100RB Size)	5.42	5.28	5.16	13	Pass

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.86	4.38	4.61	13	Pass
QPSK (50RB Size)	4.84	5.07	4.99	13	Pass
16QAM (1RB Size)	4.96	5.33	5.71	13	Pass
16QAM (50RB Size)	5.65	6.03	5.94	13	Pass

LTE Band 7 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.14	4.49	3.83	13	Pass
QPSK (50RB Size)	4.58	4.99	4.55	13	Pass
16QAM (1RB Size)	4.99	5.16	4.67	13	Pass
16QAM (50RB Size)	5.57	5.86	5.51	13	Pass

FCC §2.1049, §22.917, §22.905 & §24.238 & §27.53 - OCCUPIED BANDWIDTH

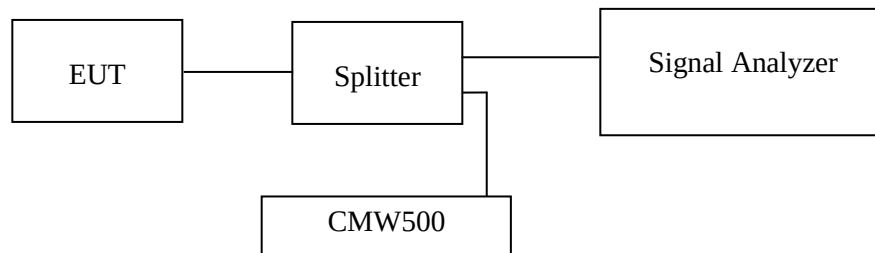
Applicable Standard

FCC 47 §2.1049, §22.917, §22.905, §24.238, and §27.53.

Test Procedure

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 1% to 5% of the anticipated emission bandwidth and the 26 dB & 99% bandwidth was recorded.



Test Data

Environmental Conditions

Temperature:	23.8-24 °C
Relative Humidity:	48-52 %
ATM Pressure:	100.8-101.0 kPa

The testing was performed by Key Pei from 2021-12-30 to 2022-01-04.

EUT operation mode: Transmitting

Test Result: Pass

Test plots refer to the Appendix A.

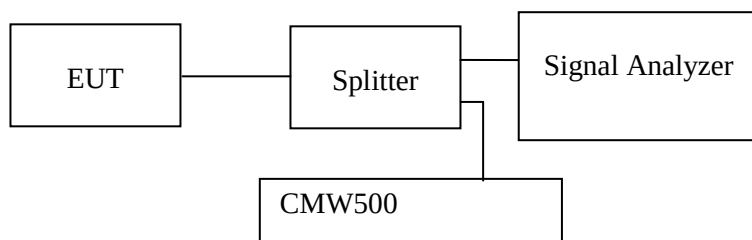
FCC §2.1051, §22.917(a) & §24.238(a) & §27.53 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS**Applicable Standard**

FCC §2.1051, §22.917(a) & §24.238(a) & §27.53.

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

**Test Data****Environmental Conditions**

Temperature:	23.8-24 °C
Relative Humidity:	48-52 %
ATM Pressure:	100.8-101.0 kPa

The testing was performed by Key Pei from 2021-12-30 to 2022-01-05.

EUT operation mode: Transmitting

Test result: Pass

Test plots refer to the Appendix B.

FCC § 2.1053; § 22.917 (a); § 24.238 (a); § 27.53 - SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, § 22.917(a) & § 24.238(a) & § 27.53.

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the receiving antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Test Data**Environmental Conditions**

Temperature:	21°C
Relative Humidity:	60 %
ATM Pressure:	101.3 kPa

The testing was performed by Chao Mo on 2022-01-07.

EUT operation mode: Transmitting (Worst case recorded in the report)

The worst case is as below:

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
	Reading (dBm)	PK/AV		Height (m)	Polar (H/V)				
GSM850, Low Channel									
840.28	-78.92	PK	115	1.2	H	13.79	-65.13	-13	-52.13
38.71	-71.21	PK	138	1.1	V	1.72	-69.49	-13	-56.49
1648.4	-40.91	PK	316	1.0	H	3.52	-37.39	-13	-24.39
1648.4	-44.39	PK	13	2.1	V	3.1	-41.29	-13	-28.29
GSM850, Middle Channel									
840.28	-78.77	PK	119	1.8	H	13.79	-64.98	-13	-51.98
38.71	-71.45	PK	129	1.4	V	1.72	-69.73	-13	-56.73
3346.4	-52.54	PK	157	2.2	H	6.58	-45.96	-13	-32.96
3346.4	-45.21	PK	126	1.4	V	5.42	-39.79	-13	-26.79
4183	-47.15	PK	20	1.2	H	9.33	-37.82	-13	-24.82
4183	-51.12	PK	115	1.8	V	8.8	-42.32	-13	-29.32
GSM850, High Channel									
840.28	-80.34	PK	352	1.4	H	13.79	-66.55	-13	-53.55
38.71	-70.95	PK	218	1.2	V	1.72	-69.23	-13	-56.23
1697.6	-50.11	PK	352	1.4	H	4.07	-46.04	-13	-33.04
1697.6	-42.02	PK	218	1.2	V	3.1	-38.92	-13	-25.92
4244	-46.59	PK	288	2.0	H	9.65	-36.94	-13	-23.94
4244	-49.01	PK	78	1.3	V	8.82	-40.19	-13	-27.19
PCS1900, Low Channel									
840.28	-79.20	PK	76	1.7	H	13.79	-65.41	-13	-52.41
38.71	-71.08	PK	139	1.3	V	1.72	-69.36	-13	-56.36
3700.4	-59.76	PK	76	1.7	H	8.1	-51.66	-13	-38.66
3700.4	-56.33	PK	139	1.3	V	7.6	-48.73	-13	-35.73
PCS1900, Middle Channel									
840.28	-78.20	PK	77	1.9	H	13.79	-64.41	-13	-51.41
38.71	-70.95	PK	189	2.0	V	1.72	-69.23	-13	-56.23
3760	-62.33	PK	238	1.7	H	8.84	-53.49	-13	-40.49
3760	-53.88	PK	160	2.1	V	7.96	-45.92	-13	-32.92
5640	-57.27	PK	77	1.9	H	10.16	-47.11	-13	-34.11
5640	-57.23	PK	189	2.0	V	9.44	-47.79	-13	-34.79
PCS1900, High Channel									
840.58	-78.93	PK	204	1.1	H	13.8	-65.13	-13	-52.13
38.71	-71.51	PK	38	1.9	V	1.72	-69.79	-13	-56.79
5729.4	-55.75	PK	132	1.6	H	10.64	-45.11	-13	-32.11
5729.4	-53.96	PK	153	1.8	V	10.2	-43.76	-13	-30.76
7639.2	-59.45	PK	254	1.3	H	21.2	-38.25	-13	-25.25
7639.2	-56.76	PK	200	1.2	V	20.56	-36.20	-13	-23.20
3G BAND2, Low Channel									
840.2	-78.99	PK	33	1.8	H	13.78	-65.21	-13	-52.21
38.71	-71.46	PK	11	1.3	V	1.72	-69.74	-13	-56.74
3704.8	-66.79	PK	98	2.1	H	8.1	-58.69	-13	-45.69

3704.8	-65.60	PK	233	2.1	V	7.64	-57.96	-13	-44.96
3G BAND2, Middle Channel									
840.28	-79.80	PK	165	1.0	H	13.79	-66.01	-13	-53.01
38.71	-70.83	PK	200	1.4	V	1.72	-69.11	-13	-56.11
3760	-65.27	PK	262	1.1	H	8.18	-57.09	-13	-44.09
3760	-65.79	PK	274	2.2	V	7.96	-57.83	-13	-44.83
3G BAND2, High Channel									
840.75	-78.96	PK	85	1.9	H	13.83	-65.13	-13	-52.13
39.1	-71.75	PK	149	2.0	V	1.74	-70.01	-13	-57.01
3815.2	-67.02	PK	276	1.8	H	8.66	-58.36	-13	-45.36
3815.2	-65.31	PK	233	1.6	V	7.92	-57.39	-13	-44.69
3G BAND5, Low Channel									
840.28	-80.26	PK	206	2.2	H	13.79	-66.47	-13	-53.47
38.71	-70.92	PK	69	1.6	V	1.72	-69.20	-13	-56.20
1652.8	-61.30	PK	179	1.5	H	3.53	-57.77	-13	-44.77
1652.8	-61.19	PK	121	2.0	V	3.1	-58.09	-13	-45.09
3G BAND5, Middle Channel									
840.28	-79.90	PK	239	1.9	H	13.79	-66.11	-13	-53.11
38.71	-71.21	PK	110	2.1	V	1.72	-69.49	-13	-56.49
1673.2	-61.61	PK	264	1.6	H	3.78	-57.83	-13	-44.83
1673.2	-61.23	PK	172	1.5	V	3.1	-58.13	-13	-45.13
3G BAND5, High Channel									
840.28	-78.93	PK	218	1.5	H	13.79	-65.14	-13	-52.14
38.71	-70.70	PK	215	1.8	V	1.72	-68.98	-13	-55.98
1693.2	-62.31	PK	238	1.2	H	4.02	-58.29	-13	-45.29
1693.2	-60.79	PK	237	1.3	V	3.1	-57.69	-13	-44.69
4G BAND2, 1.4MHz, Low Channel									
842.24	-78.89	PK	267	1.6	H	13.9	-64.99	-13	-51.99
38.71	-70.61	PK	348	1.2	V	1.72	-68.89	-13	-55.89
3701.4	-63.76	PK	215	1.8	H	8.12	-55.64	-13	-42.64
3701.4	-57.67	PK	27	1.8	V	7.61	-50.06	-13	-37.06
4G BAND2, 1.4MHz, Middle Channel									
840.28	-79.63	PK	195	1.7	H	13.79	-65.84	-13	-52.84
38.71	-71.46	PK	98	1.6	V	1.72	-69.74	-13	-56.74
3760	-61.02	PK	348	1.2	H	8.18	-52.84	-13	-39.84
3760	-60.80	PK	223	1.5	V	7.96	-52.84	-13	-39.84
4G BAND2, 1.4MHz, High Channel									
840.28	-79.46	PK	267	1.3	H	13.79	-65.67	-13	-52.67
38.71	-71.21	PK	198	1.1	V	1.72	-69.49	-13	-56.49
3818.6	-61.83	PK	98	1.6	H	8.67	-53.16	-13	-40.16
3818.6	-61.18	PK	153	1.3	V	7.95	-53.23	-13	-40.23
4G BAND4, 1.4MHz, Low Channel									
840.28	-80.28	PK	43	1.1	H	13.79	-66.49	-13	-53.49
38.71	-70.79	PK	113	1.5	V	1.72	-69.07	-13	-56.07
3421.4	-64.85	PK	198	1.1	H	6.38	-58.47	-13	-45.47
3421.4	-62.30	PK	314	1.3	V	5.71	-56.59	-13	-43.59
4G BAND4, 1.4MHz, Middle Channel									

840.28	-79.58	PK	165	1.7	H	13.79	-65.79	-13	-52.79
38.71	-71.06	PK	70	1.5	V	1.72	-69.34	-13	-56.34
3465	-63.84	PK	113	1.5	H	6.96	-56.88	-13	-43.88
3465	-61.61	PK	152	1.4	V	6.22	-55.39	-13	-42.39
4G BAND4, 1.4MHz, High Channel									
840.28	-79.65	PK	152	2.1	H	13.79	-65.86	-13	-52.86
38.71	-71.46	PK	246	2.1	V	1.72	-69.74	-13	-56.74
3508.6	-64.54	PK	70	1.5	H	7.78	-56.76	-13	-43.76
3508.6	-60.08	PK	76	1.4	V	6.57	-53.51	-13	-40.51
4G BAND5, 1.4MHz, Low Channel									
838.43	-78.87	PK	337	2.0	H	13.74	-65.13	-13	-52.13
35.79	-71.08	PK	137	1.9	V	1.64	-69.44	-13	-56.44
1649.4	-62.13	PK	246	2.1	H	3.5	-58.63	-13	-45.63
1649.4	-63.05	PK	157	2.2	V	3.1	-59.95	-13	-46.95
4G BAND5, 1.4MHz, Middle Channel									
838.43	-80.53	PK	63	2.2	H	13.74	-66.79	-13	-53.79
35.79	-71.71	PK	177	1.3	V	1.64	-70.07	-13	-57.07
1673	-61.47	PK	137	1.9	H	3.78	-57.69	-13	-44.69
1673	-62.92	PK	235	1.8	V	3.1	-59.82	-13	-46.82
4G BAND5, 1.4MHz, High Channel									
838.43	-79.52	PK	124	1.4	H	13.74	-65.78	-13	-52.78
35.79	-71.58	PK	166	1.8	V	1.64	-69.94	-13	-56.94
1696.6	-61.40	PK	177	1.3	H	4.02	-57.38	-13	-44.38
1696.6	-61.79	PK	171	1.7	V	3.1	-58.69	-13	-45.69
4G BAND7, 5MHz, Low Channel									
840.28	-78.59	PK	67	2.2	H	13.79	-64.80	-25	-39.80
38.71	-70.46	PK	215	2.2	V	1.72	-68.74	-25	-43.74
5005	-74.00	PK	166	1.8	H	10.83	-63.17	-25	-38.17
5005	-71.54	PK	206	1.8	V	10.16	-61.38	-25	-36.38
4G BAND7, 5MHz, Middle Channel									
840.28	-80.02	PK	311	1.2	H	13.79	-66.23	-25	-41.23
38.71	-71.13	PK	188	1.8	V	1.72	-69.41	-25	-44.41
5070	-75.63	PK	215	2.2	H	11.14	-64.49	-25	-39.49
5070	-73.22	PK	219	2.0	V	10.78	-62.44	-25	-37.44
4G BAND7, 5MHz, High Channel									
840.28	-79.26	PK	175	1.5	H	13.79	-65.47	-25	-40.47
38.71	-70.49	PK	71	1.6	V	1.72	-68.77	-25	-43.77
5135	-73.32	PK	188	1.8	H	11.34	-61.98	-25	-36.98
5135	-71.59	PK	287	1.6	V	10.76	-60.83	-25	-35.83

Note:

Absolute Level = Reading Level + Substituted Factor

Substituted Factor contains: SG Level - Cable loss + Antenna Gain

Margin = Absolute Level – Limit

FCC § 22.917 (a); § 24.238 (a); § 27.53 (c)(h)(m) - BAND EDGES

Applicable Standard

According to § 22.917(a), the power of any emissions 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.

According to § 24.238(a), the power of any emissions 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.

According to 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:

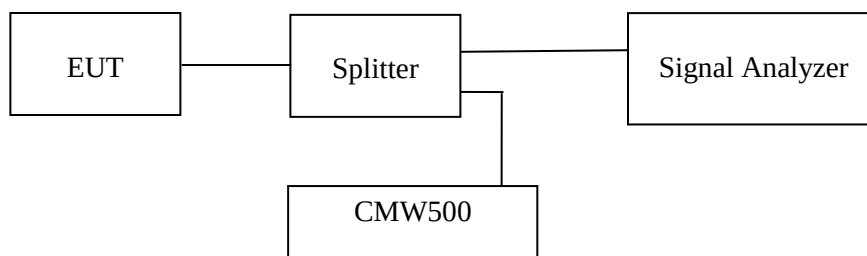
- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below 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;

According to FCC § 27.53 (h)(m), 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.

Test Procedure

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

The center of the spectrum analyzer was set to block edge frequency



Test Data**Environmental Conditions**

Temperature:	23.8-24 °C
Relative Humidity:	48-52 %
ATM Pressure:	100.8-101.0 kPa

The testing was performed by Key Pei from 2021-12-30 to 2022-01-05.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

Test plots refer to the Appendix C.

FCC § 2.1055; § 22.355; § 24.235; §27.54 - FREQUENCY STABILITY

Applicable Standard

FCC § 2.1055, §22.355, §24.235 & §27.54.

According to FCC §2.1055, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

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

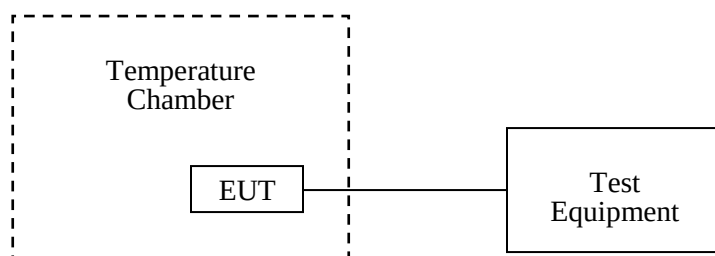
According to §24.235 & §27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external AC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The AC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: For hand carried, battery powered equipment; reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.



Test Data**Environmental Conditions**

Temperature:	24°C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Key Pei on 2022-01-04.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

Cellular Band (Part 22H)**GSM Mode**

Middle Channel, $f_o = 836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	3	0.0036	2.5
-20		2	0.0024	2.5
-10		0	0.0000	2.5
0		2	0.0024	2.5
10		3	0.0036	2.5
20		5	0.0060	2.5
30		6	0.0072	2.5
40		7	0.0084	2.5
50		3	0.0036	2.5
20	L.V.	2	0.0024	2.5
	H.V.	2	0.0024	2.5

EDGE Mode

Middle Channel, $f_0 = 836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	4	0.0048	2.5
-20		5	0.0060	2.5
-10		7	0.0084	2.5
0		4	0.0048	2.5
10		6	0.0072	2.5
20		5	0.0060	2.5
30		7	0.0084	2.5
40		6	0.0072	2.5
50		8	0.0096	2.5
20	L.V.	4	0.0048	2.5
	H.V.	6	0.0072	2.5

WCDMA Mode

Middle Channel, $f_0 = 836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-10	-0.0120	2.5
-20		9	0.0108	2.5
-10		8	0.0096	2.5
0		-5	-0.0060	2.5
10		-3	-0.0036	2.5
20		-7	-0.0084	2.5
30		4	0.0048	2.5
40		-5	-0.0060	2.5
50		-8	-0.0096	2.5
20	L.V.	5	0.0060	2.5
	H.V.	-6	-0.0072	2.5

PCS Band (Part 24E)**GSM Mode**

Middle Channel, $f_o = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-3	-0.0016	pass
-20		4	0.0021	pass
-10		3	0.0016	pass
0		2	0.0011	pass
10		-1	-0.0005	pass
20		-4	-0.0021	pass
30		-3	-0.0016	pass
40		-6	-0.0032	pass
50		-4	-0.0021	pass
20	L.V.	-3	-0.0016	pass
	H.V.	-2	-0.0011	pass

EDGE Mode

Middle Channel, $f_o = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-2	-0.0011	pass
-20		-6	-0.0032	pass
-10		-5	-0.0027	pass
0		-7	-0.0037	pass
10		-4	-0.0021	pass
20		-1	-0.0005	pass
30		-3	-0.0016	pass
40		-5	-0.0027	pass
50		-4	-0.0021	pass
20	L.V.	-3	-0.0016	pass
	H.V.	-6	-0.0032	pass

WCDMA Mode

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-11	-0.0059	pass
-20		19	0.0101	pass
-10		18	0.0096	pass
0		-15	-0.0080	pass
10		-13	-0.0069	pass
20		-17	-0.0090	pass
30		14	0.0074	pass
40		-17	-0.0090	pass
50		-10	-0.0053	pass
20	L.V.	15	0.0080	pass
	H.V.	-12	-0.0064	pass

LTE:
QPSK:
Band 2:

10.0 MHz Middle Channel, $f_0 = 1880$ MHz				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-14	-0.0074	pass
-20		-10	-0.0053	pass
-10		-6	-0.0032	pass
0		6	0.0032	pass
10		8	0.0043	pass
20		6	0.0032	pass
30		-7	-0.0037	pass
40		7	0.0037	pass
50		-10	-0.0053	pass
20	L.V.	-8	-0.0043	pass
	H.V.	-7	-0.0037	pass

Band 4:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1710.1169	1754.8715	1710	1755
-20		1710.1163	1754.8712	1710	1755
-10		1710.1119	1754.8762	1710	1755
0		1710.1119	1754.8754	1710	1755
10		1710.1126	1754.8742	1710	1755
20		1710.1173	1754.8737	1710	1755
30		1710.1108	1754.8733	1710	1755
40		1710.1141	1754.8767	1710	1755
50		1710.1176	1754.8751	1710	1755
20	L.V.	1710.1114	1754.8778	1710	1755
	H.V.	1710.1094	1754.8736	1710	1755

Band 5:

10.0 MHz Middle Channel, f _o =836.5MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-3	-0.0036	2.5
-20		-7	-0.0084	2.5
-10		-6	-0.0072	2.5
0		6	0.0072	2.5
10		10	0.0120	2.5
20		5	0.0060	2.5
30		-7	-0.0084	2.5
40		-9	-0.0108	2.5
50		-7	-0.0084	2.5
20	L.V.	9	0.0108	2.5
	H.V.	-7	-0.0084	2.5

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2500.0219	2569.9773	2500	2570
-20		2500.0211	2569.9756	2500	2570
-10		2500.0229	2569.9806	2500	2570
0		2500.0258	2569.9755	2500	2570
10		2500.0239	2569.9762	2500	2570
20		2500.0225	2569.9746	2500	2570
30		2500.0260	2569.9765	2500	2570
40		2500.0257	2569.9757	2500	2570
50		2500.0237	2569.9809	2500	2570
20	L.V.	2500.0271	2569.9706	2500	2570
	H.V.	2500.0222	2569.9771	2500	2570

16QAM:**Band 2:**

10.0 MHz Middle Channel, $f_o = 1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-9	-0.0048	pass
-20		-7	-0.0037	pass
-10		10	0.0053	pass
0		-8	-0.0043	pass
10		-10	-0.0053	pass
20		-10	-0.0053	pass
30		-7	-0.0037	pass
40		-9	-0.0048	pass
50		6	0.0032	pass
20	L.V.	6	0.0032	pass
	H.V.	8	0.0043	pass

Band 4:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1710.2694	1754.7557	1710	1755
-20		1710.2703	1754.7632	1710	1755
-10		1710.2679	1754.7598	1710	1755
0		1710.2653	1754.7569	1710	1755
10		1710.2657	1754.7584	1710	1755
20		1710.2638	1754.7629	1710	1755
30		1710.2650	1754.7606	1710	1755
40		1710.2670	1754.7597	1710	1755
50		1710.2678	1754.7613	1710	1755
20	L.V.	1710.2657	1754.7573	1710	1755
	H.V.	1710.2702	1754.7579	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_o = 836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-8	-0.0096	2.5
-20		8	0.0096	2.5
-10		-9	-0.0108	2.5
0		9	0.0108	2.5
10		-7	-0.0084	2.5
20		8	0.0096	2.5
30		6	0.0072	2.5
40		-6	-0.0072	2.5
50		-6	-0.0072	2.5
20	L.V.	6	0.0072	2.5
	H.V.	-7	-0.0084	2.5

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	2500.0315	2569.9215	2500	2570
-20		2500.0361	2569.9247	2500	2570
-10		2500.0356	2569.9242	2500	2570
0		2500.0362	2569.9272	2500	2570
10		2500.0314	2569.9230	2500	2570
20		2500.0334	2569.9246	2500	2570
30		2500.0339	2569.9215	2500	2570
40		2500.0313	2569.9240	2500	2570
50		2500.0299	2569.9248	2500	2570
20	L.V.	2500.0344	2569.9255	2500	2570
	H.V.	2500.0342	2569.9207	2500	2570

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