RF TEST REPORT

Applicant	KAISSEN TECHNOLOGY LLC
FCC ID	SIT-KT570
Product	MOBILE POS DEVICE
Model	KT570
Report No.	R1912A0735-R2V2
Issue Date	June 24, 2020

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2019)/ FCC CFR 47 Part 24E (2019)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Performed by: Peng Tao	*Approved by: Kai Xu*

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Summary of measurement results

No.	Test Case	Clause in FCC rules	Verdict
1	RF power output and Effective Radiated Power	2.1046 24.232(c)	PASS
2	Occupied Bandwidth	2.1049	Refer to the Module report (Report No.: RTWK160705001-00)
3	Band Edge Compliance	2.1051 /24.238(a)	Refer to the Module report (Report No.: RTWK160705001-00)
4	Peak-to-Average Power Ratio	24.232/KDB 971168 D01(5.7)	Refer to the Module report (Report No.: RTWK160705001-00)
5	Frequency Stability	2.1055 / 24.235	Refer to the Module report (Report No.: RTWK160705001-00)
6	Spurious Emissions at Antenna Terminals	2.1051 / 24.238(a)	Refer to the Module report (Report No.: RTWK160705001-00)
7	Radiates Spurious Emission	2.1053 / 24.238(a)	PASS
Date of Testing: December 16, 2019 ~ December 30, 2019			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard. All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

Only Conducted Power, Radiated Spurious Emissions and Effective Radiated Power are tested for KT570 in this report. Other test items refer to the Module(FCC ID: XMR201605EC25A) report (Report No.: RTWK160705001-00).

Note: This revised report (Report No.: R1912A0735-R2V2) supersedes and replaces the previously issued report (Report No.: R1912A0735-R2V1). Please discard or destroy the previously issued report and dispose of it accordingly.

1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein .Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

1.3. Testing Location

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City:	Shanghai
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E-mail:	xukai@ta-shanghai.com

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	KAISSEN TECHNOLOGY LLC
Applicant address	7412 sw 48 st suite b MIAMI 33155, USA
Manufacturer	Asiatelco Technologies Co.
Manufacturer address	No. 68 Huatuo Road, Building-8, Zhangjiang Hi-Tech Park, Pudong, Shanghai 201203, China

2.2. General information

EUT Description			
Model	KT570		
SN	1#		
Hardware Version	725-0741-001-2		
Software Version	8.1.0		
Power Supply	AC adapter		
Antenna Type	Internal Antenna		
Antenna Gain	2 dBi		
Test Mode(s)	WCDMA Band II; LTE Band 2;		
Test Modulation	(WCDMA) BPSK, QPSK, 16QAM; (LTE) QPSK,16QAM		
HSDPA UE Category	14		
HSUPA UE Category	6		
DC-HSDPA UE Category	20		
HSPA+ UE Category	6		
LTE Category	4		
Maximum E.I.R.P	WCDMA Band II:	24.62 dBm	
	LTE Band 2:	25.09 dBm	
Rated Power Supply Voltage	5V		
Extreme Voltage	Minimum: 4.6V Maximum: 5.4V		
Extreme Temperature	Lowest: -10°C Highest: +55°C		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	WCDMA Band II	1850 ~ 1910	1930 ~ 1990
	LTE Band 2	1850 ~ 1910	1930 ~ 1990
EUT Accessory			
Adapter	Manufacturer: Aquilstar Precision Industry (Shenzhen) Co., Ltd. Model: ASSA55a-050200		
USB Extend Cable	Model: WT10200663 800mm±30 Cable, Shielded		
Note: The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.			

3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:
FCC CFR 47 Part 24E (2019)

ANSI C63.26 (2015)

Reference standard:

FCC CFR47 Part 2 (2019)

KDB 971168 D01 Power Meas License Digital Systems v03r01

4. Test Configuration

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (Z axis, horizontal polarization) and the worst case was recorded.

All mode and data rates and positions and RB size and modulations were investigated.
Subsequently, only the worst case emissions are reported.
The following testing in WCDMA/LTE is set based on the maximum RF Output Power.

Test modes are chosen to be reported as the worst case configuration below:

Test items	Modes/Modulation
	WCDMA Band II
RF power output and Effective Isotropic Radiated power	RMC HSDPA/HSUPA DC-HSDPA
Radiates Spurious Emission	RMC

Test modes are chosen to be reported as the worst case configuration below for LTE Band 2:

Test items	Bandwidth (MHz)						Modulation		RB			Test Channel		
	1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
RF power output and Effective Isotropic Radiated power	O	O	O	O	O	O	O	O	O	O	O	O	O	O
Radiates Spurious Emission	O	-	O	-	-	O	O	-	O	-	-	-	O	-
Note	1. The mark “O” means that this configuration is chosen for testing. 2. The mark “-” means that this configuration is not testing.													

5. Test Case Results

5.1. RF Power Output and Effective Radiated Power

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

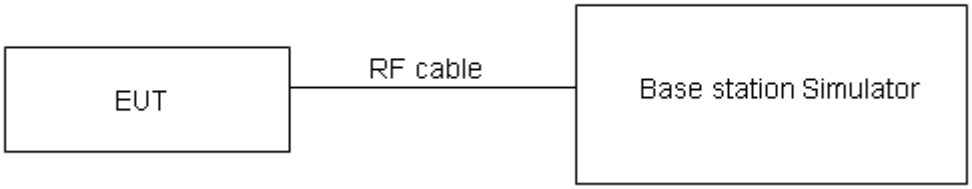
During the process of the testing, The EUT is controlled by the Base Station Simulator to ensure max power transmission and proper modulation.

The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI C63.26 (2015).

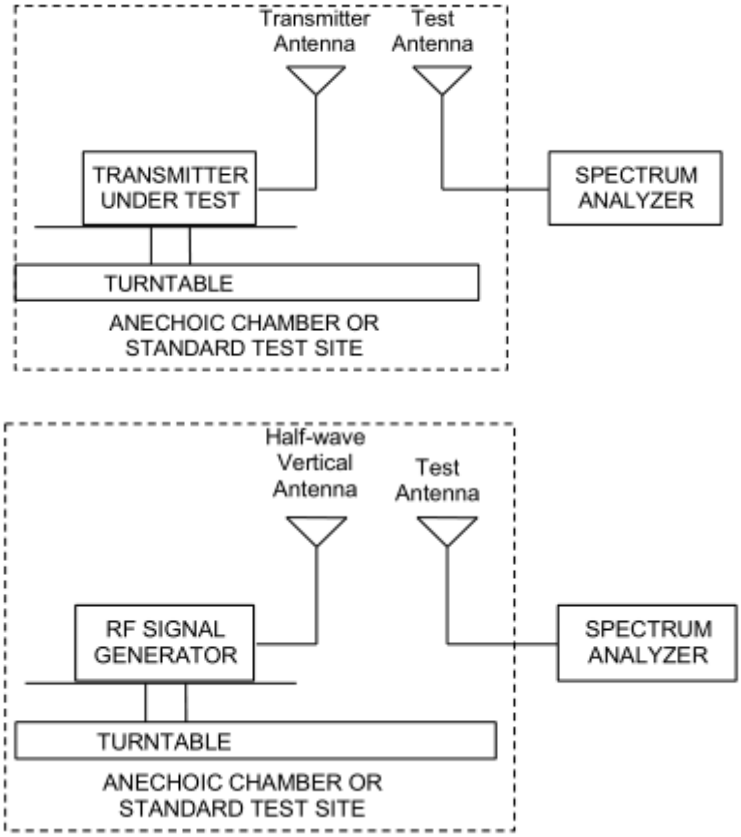
a) Connect the equipment as illustrated. Mount the equipment with the manufacturer specified antenna in a vertical orientation on a manufacturer specified mounting surface located on a non-conducting rotating platform of a RF anechoic chamber (preferred) or a standard radiation site.
b) Key the transmitter, then rotate the EUT 360° azimuthally and record spectrum analyzer power level (LVL) measurements at angular increments that are sufficiently small to permit resolution of all peaks. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading at each angular increment. (Note: several batteries may be needed to offset the effect of battery voltage droop, which should not exceed 5% of the manufactured specified battery voltage during transmission).
c) Replace the transmitter under test with a vertically polarized half-wave dipole (or an antenna whose gain is known relative to an ideal half-wave dipole). The center of the antenna should be at the same location as the center of the antenna under test.
d) Connect the antenna to a signal generator with a known output power and record the path loss (in dB) as LOSS. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading.LOSS = Generator Output Power (dBm) – Analyzer reading (dBm)
e) Determine the effective radiated output power at each angular position from the readings in steps b) and d) using the following equation:ERP (dBm) = LVL (dBm) + LOSS (dB)
f) The maximum ERP is the maximum value determined in the preceding step.
g) When calculating ERP, in addition to knowing the antenna radiation and matching characteristics, it is necessary to know the loss values of all elements (e.g.transmission line attenuation, mismatches, filters, combiners) interposed between the point where transmitter output power is measured, and the point where power is applied to the antenna. ERP can then be calculated as follows:
EIRP (dBm) = Output Power (dBm) - Losses (dB) + Antenna Gain (dBi)
where:dBd refers to gain relative to an ideal dipole.
EIRP (dBm) = ERP (dBm) + 2.15 (dB.)

The RB allocation refers to section 5.1, using the maximum output power configuration.

Test Setup



The loss between RF output port of the EUT and the input port of the tester has been taken into consideration.



Limits

No specific RF power output requirements in part 2.1046.

Rule Part 24.232(c) Mobile and portable stations are limited to 2 watts EIRP.
Rule Part 24.232(e) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

Limit	≤ 2 W (33 dBm)

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.4 dB for RF power output, k = 2, U= 1.19 dB for EIRP.

Test Results

WCDMA Band II		Conducted Power (dBm)			EIRP (dBm)		
		Channel 9262	Channel 9400	Channel 9538	Channel 9262	Channel 9400	Channel 9538
		1852.4 (MHz)	1880 (MHz)	1907.6 (MHz)	1852.4 (MHz)	1880 (MHz)	1907.6 (MHz)
RMC		22.62	22.51	22.41	24.62	24.51	24.41
HSDPA	Sub - Test 1	22.08	21.93	21.85	24.08	23.93	23.85
	Sub - Test 2	22.07	21.95	21.82	24.07	23.95	23.82
	Sub - Test 3	21.54	21.45	21.34	23.54	23.45	23.34
	Sub - Test 4	21.55	21.46	21.32	23.55	23.46	23.32
HSUPA	Sub - Test 1	22.04	21.92	21.80	24.04	23.92	23.80
	Sub - Test 2	21.03	20.90	20.79	23.03	22.90	22.79
	Sub - Test 3	21.50	21.38	21.28	23.50	23.38	23.28
	Sub - Test 4	20.96	20.87	20.76	22.96	22.87	22.76
	Sub - Test 5	21.97	21.85	21.74	23.97	23.85	23.74
DC-HSDPA	Sub - Test 1	21.96	21.87	21.75	23.96	23.87	23.75
	Sub - Test 2	21.95	21.86	21.74	23.95	23.86	23.74
	Sub - Test 3	21.53	21.35	21.25	23.53	23.35	23.25
	Sub - Test 4	21.52	21.34	21.24	23.52	23.34	23.24
HSPA+	16QAM	21.51	21.42	21.31	23.51	23.42	23.31

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP
LTE Band2	1.4	18607	1	#0	QPSK	22.75	24.75
LTE Band2	1.4	18607	1	#Mid	QPSK	22.75	24.75
LTE Band2	1.4	18607	1	#Max	QPSK	22.62	24.62
LTE Band2	1.4	18607	3	#0	QPSK	22.49	24.49
LTE Band2	1.4	18607	3	#Mid	QPSK	22.49	24.49
LTE Band2	1.4	18607	3	#Max	QPSK	22.46	24.46
LTE Band2	1.4	18607	6	#0	QPSK	21.49	23.49
LTE Band2	1.4	18607	1	#0	QAM16	21.60	23.60
LTE Band2	1.4	18607	1	#Mid	QAM16	21.84	23.84
LTE Band2	1.4	18607	1	#Max	QAM16	21.67	23.67
LTE Band2	1.4	18607	3	#0	QAM16	21.50	23.50
LTE Band2	1.4	18607	3	#Mid	QAM16	21.50	23.50
LTE Band2	1.4	18607	3	#Max	QAM16	21.23	23.23
LTE Band2	1.4	18607	6	#0	QAM16	20.30	22.30
LTE Band2	1.4	18900	1	#0	QPSK	22.76	24.76
LTE Band2	1.4	18900	1	#Mid	QPSK	22.90	24.90
LTE Band2	1.4	18900	1	#Max	QPSK	22.70	24.70
LTE Band2	1.4	18900	3	#0	QPSK	22.64	24.64
LTE Band2	1.4	18900	3	#Mid	QPSK	22.63	24.63
LTE Band2	1.4	18900	3	#Max	QPSK	22.58	24.58
LTE Band2	1.4	18900	6	#0	QPSK	21.72	23.72
LTE Band2	1.4	18900	1	#0	QAM16	22.09	24.09
LTE Band2	1.4	18900	1	#Mid	QAM16	22.24	24.24
LTE Band2	1.4	18900	1	#Max	QAM16	22.12	24.12
LTE Band2	1.4	18900	3	#0	QAM16	21.79	23.79
LTE Band2	1.4	18900	3	#Mid	QAM16	21.79	23.79
LTE Band2	1.4	18900	3	#Max	QAM16	21.77	23.77
LTE Band2	1.4	18900	6	#0	QAM16	20.63	22.63
LTE Band2	1.4	19193	1	#0	QPSK	22.47	24.47
LTE Band2	1.4	19193	1	#Mid	QPSK	22.68	24.68
LTE Band2	1.4	19193	1	#Max	QPSK	22.46	24.46
LTE Band2	1.4	19193	3	#0	QPSK	22.67	24.67
LTE Band2	1.4	19193	3	#Mid	QPSK	22.67	24.67
LTE Band2	1.4	19193	3	#Max	QPSK	22.45	24.45
LTE Band2	1.4	19193	6	#0	QPSK	21.55	23.55
LTE Band2	1.4	19193	1	#0	QAM16	21.45	23.45
LTE Band2	1.4	19193	1	#Mid	QAM16	21.92	23.92
LTE Band2	1.4	19193	1	#Max	QAM16	21.69	23.69
LTE Band2	1.4	19193	3	#0	QAM16	21.98	23.98
LTE Band2	1.4	19193	3	#Mid	QAM16	21.98	23.98

LTE Band2	1.4	19193	3	#Max	QAM16	21.87	23.87
LTE Band2	1.4	19193	6	#0	QAM16	20.68	22.68
LTE Band2	3	18615	1	#0	QPSK	22.56	24.56
LTE Band2	3	18615	1	#Mid	QPSK	22.62	24.62
LTE Band2	3	18615	1	#Max	QPSK	22.55	24.55
LTE Band2	3	18615	8	#0	QPSK	21.55	23.55
LTE Band2	3	18615	8	#Mid	QPSK	21.55	23.55
LTE Band2	3	18615	8	#Max	QPSK	21.61	23.61
LTE Band2	3	18615	15	#0	QPSK	21.61	23.61
LTE Band2	3	18615	1	#0	QAM16	21.15	23.15
LTE Band2	3	18615	1	#Mid	QAM16	21.07	23.07
LTE Band2	3	18615	1	#Max	QAM16	21.20	23.20
LTE Band2	3	18615	8	#0	QAM16	20.37	22.37
LTE Band2	3	18615	8	#Mid	QAM16	20.37	22.37
LTE Band2	3	18615	8	#Max	QAM16	20.34	22.34
LTE Band2	3	18615	15	#0	QAM16	20.59	22.59
LTE Band2	3	18900	1	#0	QPSK	22.75	24.75
LTE Band2	3	18900	1	#Mid	QPSK	22.61	24.61
LTE Band2	3	18900	1	#Max	QPSK	22.55	24.55
LTE Band2	3	18900	8	#0	QPSK	21.75	23.75
LTE Band2	3	18900	8	#Mid	QPSK	21.75	23.75
LTE Band2	3	18900	8	#Max	QPSK	21.70	23.70
LTE Band2	3	18900	15	#0	QPSK	21.72	23.72
LTE Band2	3	18900	1	#0	QAM16	21.64	23.64
LTE Band2	3	18900	1	#Mid	QAM16	21.59	23.59
LTE Band2	3	18900	1	#Max	QAM16	21.61	23.61
LTE Band2	3	18900	8	#0	QAM16	20.55	22.55
LTE Band2	3	18900	8	#Mid	QAM16	20.55	22.55
LTE Band2	3	18900	8	#Max	QAM16	20.50	22.50
LTE Band2	3	18900	15	#0	QAM16	20.74	22.74
LTE Band2	3	19185	1	#0	QPSK	22.56	24.56
LTE Band2	3	19185	1	#Mid	QPSK	22.62	24.62
LTE Band2	3	19185	1	#Max	QPSK	22.62	24.62
LTE Band2	3	19185	8	#0	QPSK	21.63	23.63
LTE Band2	3	19185	8	#Mid	QPSK	21.64	23.64
LTE Band2	3	19185	8	#Max	QPSK	21.64	23.64
LTE Band2	3	19185	15	#0	QPSK	21.57	23.57
LTE Band2	3	19185	1	#0	QAM16	21.51	23.51
LTE Band2	3	19185	1	#Mid	QAM16	21.45	23.45
LTE Band2	3	19185	1	#Max	QAM16	21.50	23.50
LTE Band2	3	19185	8	#0	QAM16	20.57	22.57
LTE Band2	3	19185	8	#Mid	QAM16	20.58	22.58
LTE Band2	3	19185	8	#Max	QAM16	20.54	22.54

LTE Band2	3	19185	15	#0	QAM16	20.64	22.64
LTE Band2	5	18625	1	#0	QPSK	22.42	24.42
LTE Band2	5	18625	1	#Mid	QPSK	22.49	24.49
LTE Band2	5	18625	1	#Max	QPSK	22.64	24.64
LTE Band2	5	18625	12	#0	QPSK	21.67	23.67
LTE Band2	5	18625	12	#Mid	QPSK	21.67	23.67
LTE Band2	5	18625	12	#Max	QPSK	21.70	23.70
LTE Band2	5	18625	25	#0	QPSK	21.63	23.63
LTE Band2	5	18625	1	#0	QAM16	21.31	23.31
LTE Band2	5	18625	1	#Mid	QAM16	21.19	23.19
LTE Band2	5	18625	1	#Max	QAM16	21.34	23.34
LTE Band2	5	18625	12	#0	QAM16	20.53	22.53
LTE Band2	5	18625	12	#Mid	QAM16	20.54	22.54
LTE Band2	5	18625	12	#Max	QAM16	20.52	22.52
LTE Band2	5	18625	25	#0	QAM16	20.67	22.67
LTE Band2	5	18900	1	#0	QPSK	22.85	24.85
LTE Band2	5	18900	1	#Mid	QPSK	22.74	24.74
LTE Band2	5	18900	1	#Max	QPSK	22.63	24.63
LTE Band2	5	18900	12	#0	QPSK	21.71	23.71
LTE Band2	5	18900	12	#Mid	QPSK	21.71	23.71
LTE Band2	5	18900	12	#Max	QPSK	21.64	23.64
LTE Band2	5	18900	25	#0	QPSK	21.77	23.77
LTE Band2	5	18900	1	#0	QAM16	21.96	23.96
LTE Band2	5	18900	1	#Mid	QAM16	21.79	23.79
LTE Band2	5	18900	1	#Max	QAM16	22.04	24.04
LTE Band2	5	18900	12	#0	QAM16	20.54	22.54
LTE Band2	5	18900	12	#Mid	QAM16	20.54	22.54
LTE Band2	5	18900	12	#Max	QAM16	20.55	22.55
LTE Band2	5	18900	25	#0	QAM16	20.67	22.67
LTE Band2	5	19175	1	#0	QPSK	22.62	24.62
LTE Band2	5	19175	1	#Mid	QPSK	22.48	24.48
LTE Band2	5	19175	1	#Max	QPSK	22.53	24.53
LTE Band2	5	19175	12	#0	QPSK	21.52	23.52
LTE Band2	5	19175	12	#Mid	QPSK	21.52	23.52
LTE Band2	5	19175	12	#Max	QPSK	21.57	23.57
LTE Band2	5	19175	25	#0	QPSK	21.54	23.54
LTE Band2	5	19175	1	#0	QAM16	21.53	23.53
LTE Band2	5	19175	1	#Mid	QAM16	21.58	23.58
LTE Band2	5	19175	1	#Max	QAM16	21.65	23.65
LTE Band2	5	19175	12	#0	QAM16	20.49	22.49
LTE Band2	5	19175	12	#Mid	QAM16	20.50	22.50
LTE Band2	5	19175	12	#Max	QAM16	20.59	22.59
LTE Band2	5	19175	25	#0	QAM16	20.49	22.49

LTE Band2	10	18650	1	#0	QPSK	22.98	24.98
LTE Band2	10	18650	1	#Mid	QPSK	23.01	25.01
LTE Band2	10	18650	1	#Max	QPSK	22.89	24.89
LTE Band2	10	18650	25	#0	QPSK	21.66	23.66
LTE Band2	10	18650	25	#Mid	QPSK	21.67	23.67
LTE Band2	10	18650	25	#Max	QPSK	21.77	23.77
LTE Band2	10	18650	50	#0	QPSK	21.68	23.68
LTE Band2	10	18650	1	#0	QAM16	21.29	23.29
LTE Band2	10	18650	1	#Mid	QAM16	21.49	23.49
LTE Band2	10	18650	1	#Max	QAM16	21.30	23.30
LTE Band2	10	18650	25	#0	QAM16	20.71	22.71
LTE Band2	10	18650	25	#Mid	QAM16	20.71	22.71
LTE Band2	10	18650	25	#Max	QAM16	20.79	22.79
LTE Band2	10	18650	50	#0	QAM16	20.61	22.61
LTE Band2	10	18900	1	#0	QPSK	22.79	24.79
LTE Band2	10	18900	1	#Mid	QPSK	22.94	24.94
LTE Band2	10	18900	1	#Max	QPSK	22.58	24.58
LTE Band2	10	18900	25	#0	QPSK	21.84	23.84
LTE Band2	10	18900	25	#Mid	QPSK	21.84	23.84
LTE Band2	10	18900	25	#Max	QPSK	21.78	23.78
LTE Band2	10	18900	50	#0	QPSK	21.77	23.77
LTE Band2	10	18900	1	#0	QAM16	21.38	23.38
LTE Band2	10	18900	1	#Mid	QAM16	21.47	23.47
LTE Band2	10	18900	1	#Max	QAM16	21.26	23.26
LTE Band2	10	18900	25	#0	QAM16	20.98	22.98
LTE Band2	10	18900	25	#Mid	QAM16	20.98	22.98
LTE Band2	10	18900	25	#Max	QAM16	20.93	22.93
LTE Band2	10	18900	50	#0	QAM16	20.62	22.62
LTE Band2	10	19150	1	#0	QPSK	22.46	24.46
LTE Band2	10	19150	1	#Mid	QPSK	22.78	24.78
LTE Band2	10	19150	1	#Max	QPSK	22.47	24.47
LTE Band2	10	19150	25	#0	QPSK	21.55	23.55
LTE Band2	10	19150	25	#Mid	QPSK	21.54	23.54
LTE Band2	10	19150	25	#Max	QPSK	21.64	23.64
LTE Band2	10	19150	50	#0	QPSK	21.47	23.47
LTE Band2	10	19150	1	#0	QAM16	21.54	23.54
LTE Band2	10	19150	1	#Mid	QAM16	21.99	23.99
LTE Band2	10	19150	1	#Max	QAM16	21.69	23.69
LTE Band2	10	19150	25	#0	QAM16	20.54	22.54
LTE Band2	10	19150	25	#Mid	QAM16	20.54	22.54
LTE Band2	10	19150	25	#Max	QAM16	20.66	22.66
LTE Band2	10	19150	50	#0	QAM16	20.51	22.51
LTE Band2	15	18675	1	#0	QPSK	22.46	24.46

LTE Band2	15	18675	1	#Mid	QPSK	22.63	24.63
LTE Band2	15	18675	1	#Max	QPSK	22.62	24.62
LTE Band2	15	18675	36	#0	QPSK	21.64	23.64
LTE Band2	15	18675	36	#Mid	QPSK	21.64	23.64
LTE Band2	15	18675	36	#Max	QPSK	21.75	23.75
LTE Band2	15	18675	75	#0	QPSK	21.66	23.66
LTE Band2	15	18675	1	#0	QAM16	21.76	23.76
LTE Band2	15	18675	1	#Mid	QAM16	22.44	24.44
LTE Band2	15	18675	1	#Max	QAM16	22.62	24.62
LTE Band2	15	18675	36	#0	QAM16	20.62	22.62
LTE Band2	15	18675	36	#Mid	QAM16	20.63	22.63
LTE Band2	15	18675	36	#Max	QAM16	20.71	22.71
LTE Band2	15	18675	75	#0	QAM16	20.62	22.62
LTE Band2	15	18900	1	#0	QPSK	22.65	24.65
LTE Band2	15	18900	1	#Mid	QPSK	22.82	24.82
LTE Band2	15	18900	1	#Max	QPSK	22.53	24.53
LTE Band2	15	18900	36	#0	QPSK	21.78	23.78
LTE Band2	15	18900	36	#Mid	QPSK	21.78	23.78
LTE Band2	15	18900	36	#Max	QPSK	21.72	23.72
LTE Band2	15	18900	75	#0	QPSK	21.78	23.78
LTE Band2	15	18900	1	#0	QAM16	21.56	23.56
LTE Band2	15	18900	1	#Mid	QAM16	21.43	23.43
LTE Band2	15	18900	1	#Max	QAM16	21.17	23.17
LTE Band2	15	18900	36	#0	QAM16	20.71	22.71
LTE Band2	15	18900	36	#Mid	QAM16	20.71	22.71
LTE Band2	15	18900	36	#Max	QAM16	20.69	22.69
LTE Band2	15	18900	75	#0	QAM16	20.83	22.83
LTE Band2	15	19125	1	#0	QPSK	22.51	24.51
LTE Band2	15	19125	1	#Mid	QPSK	22.53	24.53
LTE Band2	15	19125	1	#Max	QPSK	22.39	24.39
LTE Band2	15	19125	36	#0	QPSK	21.55	23.55
LTE Band2	15	19125	36	#Mid	QPSK	21.55	23.55
LTE Band2	15	19125	36	#Max	QPSK	21.51	23.51
LTE Band2	15	19125	75	#0	QPSK	21.52	23.52
LTE Band2	15	19125	1	#0	QAM16	21.60	23.60
LTE Band2	15	19125	1	#Mid	QAM16	21.71	23.71
LTE Band2	15	19125	1	#Max	QAM16	21.67	23.67
LTE Band2	15	19125	36	#0	QAM16	20.51	22.51
LTE Band2	15	19125	36	#Mid	QAM16	20.51	22.51
LTE Band2	15	19125	36	#Max	QAM16	20.58	22.58
LTE Band2	15	19125	75	#0	QAM16	20.54	22.54
LTE Band2	20	18700	1	#0	QPSK	22.69	24.69
LTE Band2	20	18700	1	#Mid	QPSK	22.99	24.99

LTE Band2	20	18700	1	#Max	QPSK	22.92	24.92
LTE Band2	20	18700	50	#0	QPSK	21.68	23.68
LTE Band2	20	18700	50	#Mid	QPSK	21.68	23.68
LTE Band2	20	18700	50	#Max	QPSK	21.78	23.78
LTE Band2	20	18700	100	#0	QPSK	21.65	23.65
LTE Band2	20	18700	1	#0	QAM16	21.98	23.98
LTE Band2	20	18700	1	#Mid	QAM16	22.44	24.44
LTE Band2	20	18700	1	#Max	QAM16	22.24	24.24
LTE Band2	20	18700	50	#0	QAM16	20.65	22.65
LTE Band2	20	18700	50	#Mid	QAM16	20.65	22.65
LTE Band2	20	18700	50	#Max	QAM16	20.79	22.79
LTE Band2	20	18700	100	#0	QAM16	20.59	22.59
LTE Band2	20	18900	1	#0	QPSK	22.98	24.98
LTE Band2	20	18900	1	#Mid	QPSK	23.09	25.09
LTE Band2	20	18900	1	#Max	QPSK	22.52	24.52
LTE Band2	20	18900	50	#0	QPSK	21.80	23.80
LTE Band2	20	18900	50	#Mid	QPSK	21.80	23.80
LTE Band2	20	18900	50	#Max	QPSK	21.70	23.70
LTE Band2	20	18900	100	#0	QPSK	21.77	23.77
LTE Band2	20	18900	1	#0	QAM16	21.59	23.59
LTE Band2	20	18900	1	#Mid	QAM16	21.65	23.65
LTE Band2	20	18900	1	#Max	QAM16	21.11	23.11
LTE Band2	20	18900	50	#0	QAM16	20.73	22.73
LTE Band2	20	18900	50	#Mid	QAM16	20.73	22.73
LTE Band2	20	18900	50	#Max	QAM16	20.64	22.64
LTE Band2	20	18900	100	#0	QAM16	20.74	22.74
LTE Band2	20	19100	1	#0	QPSK	22.36	24.36
LTE Band2	20	19100	1	#Mid	QPSK	22.57	24.57
LTE Band2	20	19100	1	#Max	QPSK	22.37	24.37
LTE Band2	20	19100	50	#0	QPSK	21.54	23.54
LTE Band2	20	19100	50	#Mid	QPSK	21.54	23.54
LTE Band2	20	19100	50	#Max	QPSK	21.49	23.49
LTE Band2	20	19100	100	#0	QPSK	21.48	23.48
LTE Band2	20	19100	1	#0	QAM16	21.51	23.51
LTE Band2	20	19100	1	#Mid	QAM16	21.59	23.59
LTE Band2	20	19100	1	#Max	QAM16	21.38	23.38
LTE Band2	20	19100	50	#0	QAM16	20.50	22.50
LTE Band2	20	19100	50	#Mid	QAM16	20.50	22.50
LTE Band2	20	19100	50	#Max	QAM16	20.46	22.46
LTE Band2	20	19100	100	#0	QAM16	20.49	22.49

5.2. Radiates Spurious Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

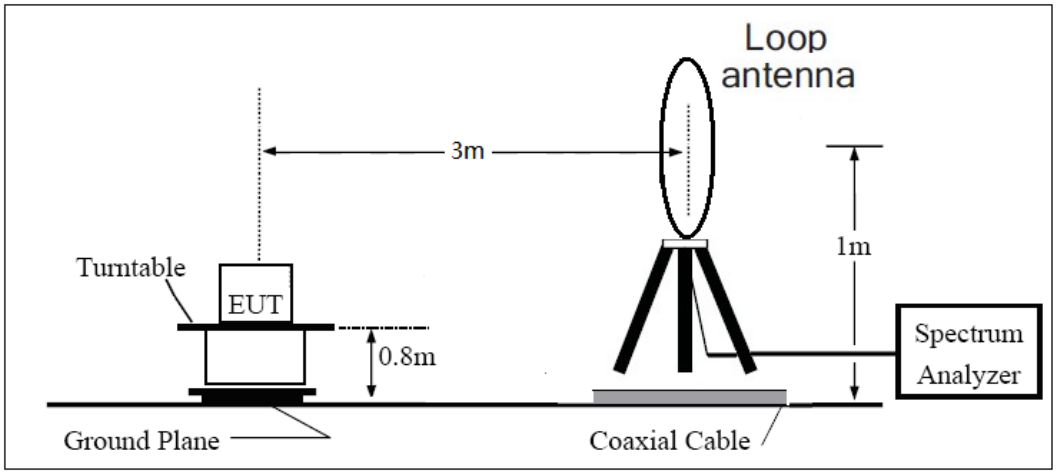
1. The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI C63.26 (2015).
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=200Hz,VBW=600Hz for 9kHz150kHz , RBW=10kHz, VBW=30kHz 150kHz-30MHz , RBW=100kHz,VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz, And the maximum value of the receiver should be recorded as (Pr).
5. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
7. The measurement results are obtained as described below:
Power(EIRP)=PMea- PAg - Pcl + Ga
The measurement results are amend as described below:
Power(EIRP)=PMea- Pcl + Ga
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi)

and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

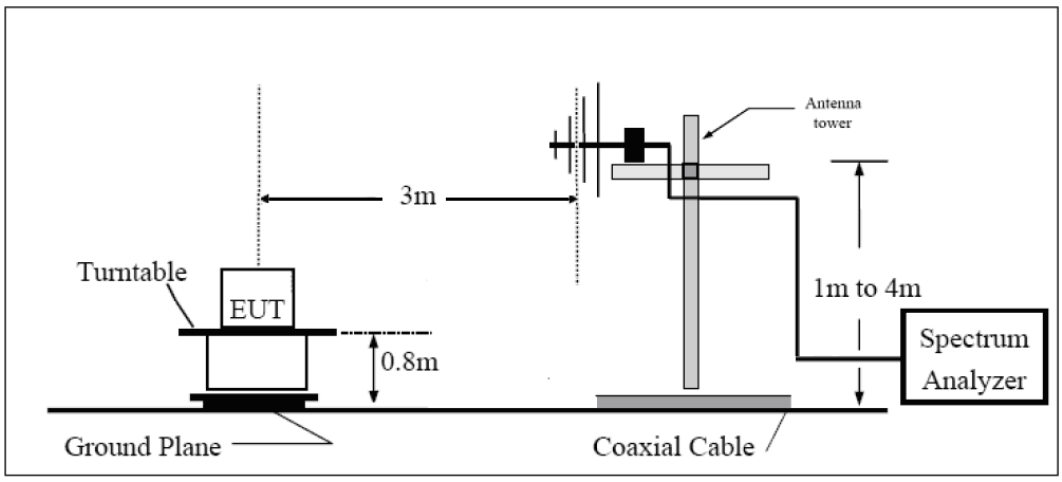
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

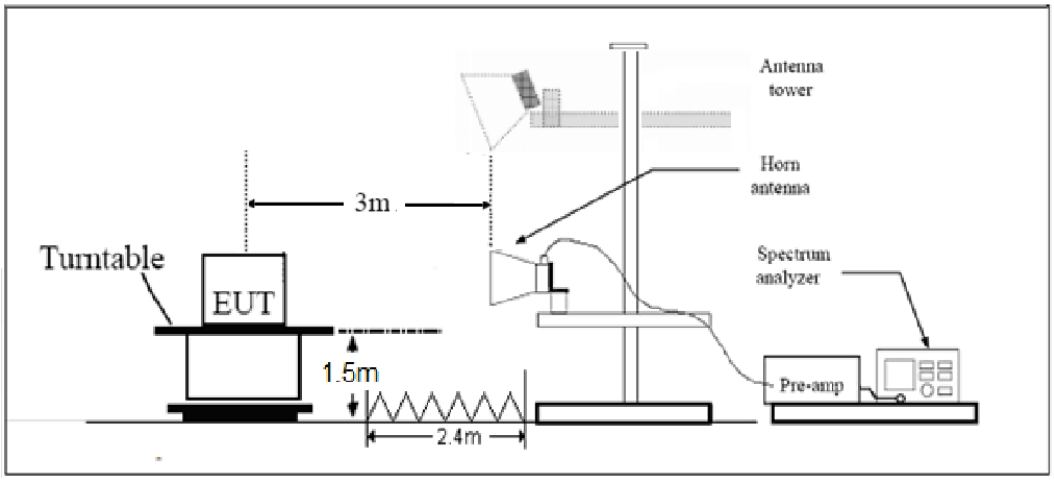
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side: 2.4mX3.6m

Limits

Rule Part 24.238(a) specifies that “on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB.”

Limit	-13 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95％ confidence level for the normal distribution is with the coverage factor k = 1.96, U= 3.55 dB.

Test Result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

WCDMA Band II CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.00	-57.74	5.10	11.05	Horizontal	-51.79	-13.00	38.79	45
3	5640.00	-53.26	5.42	12.65	Horizontal	-46.03	-13.00	33.03	225
4	7520.00	-56.97	6.70	13.85	Horizontal	-49.82	-13.00	36.82	315
5	9400.00	-56.27	7.01	14.75	Horizontal	-48.53	-13.00	35.53	90
6	11280.00	-53.92	7.48	15.95	Horizontal	-45.45	-13.00	32.45	135
7	13160.00	-50.59	7.51	16.55	Horizontal	-41.55	-13.00	28.55	270
8	15040.00	-49.28	8.24	15.35	Horizontal	-42.17	-13.00	29.17	0
9	16920.00	-47.37	8.41	14.95	Horizontal	-40.83	-13.00	27.83	135
10	18800.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3759.00	-59.58	5.10	11.05	Horizontal	-53.63	-13.00	40.63	45
3	5638.88	-52.92	5.42	12.65	Horizontal	-45.69	-13.00	32.69	180
4	7520.00	-57.28	6.70	13.85	Horizontal	-50.13	-13.00	37.13	0
5	9400.00	-56.30	7.01	14.75	Horizontal	-48.56	-13.00	35.56	225
6	11280.00	-54.66	7.48	15.95	Horizontal	-46.19	-13.00	33.19	315
7	13160.00	-53.12	7.51	16.55	Horizontal	-44.08	-13.00	31.08	270
8	15040.00	-49.92	8.24	15.35	Horizontal	-42.81	-13.00	29.81	135
9	16920.00	-47.22	8.41	14.95	Horizontal	-40.68	-13.00	27.68	90
10	18800.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3755.63	-57.12	5.10	11.05	Horizontal	-51.17	-13.00	38.17	45
3	5633.63	-53.10	5.42	12.65	Horizontal	-45.87	-13.00	32.87	180
4	7520.00	-57.53	6.70	13.85	Horizontal	-50.38	-13.00	37.38	0
5	9400.00	-55.60	7.01	14.75	Horizontal	-47.86	-13.00	34.86	315
6	11280.00	-54.80	7.48	15.95	Horizontal	-46.33	-13.00	33.33	90
7	13160.00	-53.14	7.51	16.55	Horizontal	-44.10	-13.00	31.10	270
8	15040.00	-50.30	8.24	15.35	Horizontal	-43.19	-13.00	30.19	135
9	16920.00	-47.72	8.41	14.95	Horizontal	-41.18	-13.00	28.18	225
10	18800.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

LTE Band 2 20MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3742.13	-57.56	5.10	11.05	Horizontal	-51.61	-13.00	38.61	270
3	5613.38	-51.14	5.42	12.65	Horizontal	-43.91	-13.00	30.91	315
4	7484.63	-58.20	6.70	13.85	Horizontal	-51.05	-13.00	38.05	180
5	9400.00	-54.95	7.01	14.75	Horizontal	-47.21	-13.00	34.21	45
6	11280.00	-53.97	7.48	15.95	Horizontal	-45.50	-13.00	32.50	225
7	13160.00	-53.21	7.51	16.55	Horizontal	-44.17	-13.00	31.17	90
8	15040.00	-51.69	8.24	15.35	Horizontal	-44.58	-13.00	31.58	0
9	16920.00	-45.45	8.41	14.95	Horizontal	-38.91	-13.00	25.91	135
10	18800.00	-	-	-	-	-	-	-	-
Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor. 2. The worst emission was found in the antenna is Horizontal position.									

6. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMU200	118133	2019-05-19	2020-05-18
Base Station Simulator	R&S	CMW500	113824	2019-05-19	2020-05-18
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2019-05-19	2020-05-18
Universal Radio Communication Tester	Key sight	E5515C	MY48367192	2019-05-19	2020-05-18
Signal Analyzer	R&S	FSV30	100815	2018-12-16	2020-12-15
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2017-09-26	2020-09-25
Trilog Antenna	SCHWARZBECK	VUBL 9163	9163-201	2017-11-18	2020-11-17
Horn Antenna	R&S	HF907	100126	2018-07-07	2020-07-06
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2020-06-19
Signal generator	R&S	SMB 100A	102594	2019-05-19	2020-05-18
Climatic Chamber	ESPEC	SU-242	93000506	2017-12-17	2020-12-16
Preampflier	R&S	SCU18	102327	2019-05-19	2020-05-18
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2019-05-19	2020-05-18
RF Cable	Agilent	SMA 15cm	0001	2019-12-13	2020-06-12
Software	R&S	EMC32	9.26.0	/	/

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