VARIANT FCC TEST REPORT

(PART 24)

Applicant:	Honeywell International Inc
Address:	9680 Old Bailes Road, Fort Mill, SC 29707 United States

Manufacturer or Supplier:	Honeywell International Inc
Address:	9680 Old Bailes Road, Fort Mill, SC 29707 United States
Product:	Mobile Computer
Brand Name:	Honeywell
Model Name:	CT45P-L1N-E
FCC ID	HD5-CT45PL1NE
Date of tests	Oct, 09, 2025 ~ Dec. 05, 2025

The tests have been carried out according to the requirements of the following standard:

☒ **FCC PART 24, Subpart E** ☒ **FCC PART 2** ☒ **ANSI/TIA/EIA-603-D**	☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Hanwen Xu Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
Xu Hanwen	Luke Lu
Date: Dec. 05, 2025	Date: Dec. 05, 2025

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/ and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

TABLE OF CONTENTS

RELEASE CONTROL RECORD **3**

1 SUMMARY OF TEST RESULTS **4**

1.1 MEASUREMENT UNCERTAINTY 5

1.2 TEST SITE AND INSTRUMENTS 6

2 GENERAL INFORMATION **8**

2.1 GENERAL DESCRIPTION OF EUT 8

2.2 CONFIGURATION OF SYSTEM UNDER TEST 12

2.3 DESCRIPTION OF SUPPORT UNITS 13

2.4 TEST ITEM AND TEST CONFIGURATION 13

2.5 EUT OPERATING CONDITIONS 18

2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS 18

3 TEST TYPES AND RESULTS **19**

3.1 RADIATED EMISSION MEASUREMENT 19

3.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT 19

3.1.2 TEST PROCEDURES 19

3.1.3 DEVIATION FROM TEST STANDARD 19

3.1.4 TEST SETUP 20

3.1.5 TEST RESULTS 22

4 INFORMATION ON THE TESTING LABORATORIES **26**

5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB **27**

6 APPENDIX: THE ORIGINAL REPORT **28**

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P21080006RF16	Original release	Sep. 01, 2021
W7L-P21080009RF16	Based on the original report W7L-P21080006RF16 Changing the SIM to 1 Nano SIM and 1 E-SIM	Sep. 09, 2021
PSU-NQN2509250314RF07	Based on the report W7L-P21080009RF16 (FCC ID: HD5-CT45PL1NE). The new product add alternate parts, the electrical specs of the alternate part is equivalent to the current part. This report update the SW version, verify power and RSE worst case. The verify results of conducted power are similar or lower. So this report only updates RSE worst case (LTE B25 10MHz_CH26640), other data please refer to the report W7L-P21040030RF16.	Dec. 05, 2025

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 24 & Part 2			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**Test lab***
§2.1046	Conducted Output Power	See note	--
§24.232(c)	Equivalent Isotropic Radiated Power	See note	--
§2.1055 §24.235	Frequency Stability	See note	--
§2.1049	Occupied Bandwidth	See note	--
§24.232(d)	Peak to average ratio*	See note	--
§24.238(a)(b)	Band Edge Measurements	See note	--
§2.1051 §24.238(a)(b)	Conducted Spurious Emissions	See note	--
§2.1053 §24.238(a)(b)	Radiated Spurious Emissions	Compliance	A

* Refer to KDB 971168 D01 Power Meas License Digital Systems v03r01.

NOTE : Please refer to report W7L-P21080009RF16 (FCC ID: HD5-CT45PL1NE).

***Test Lab Information Reference**

Lab A:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province, China

Accredited Test Lab Cert 6613.01

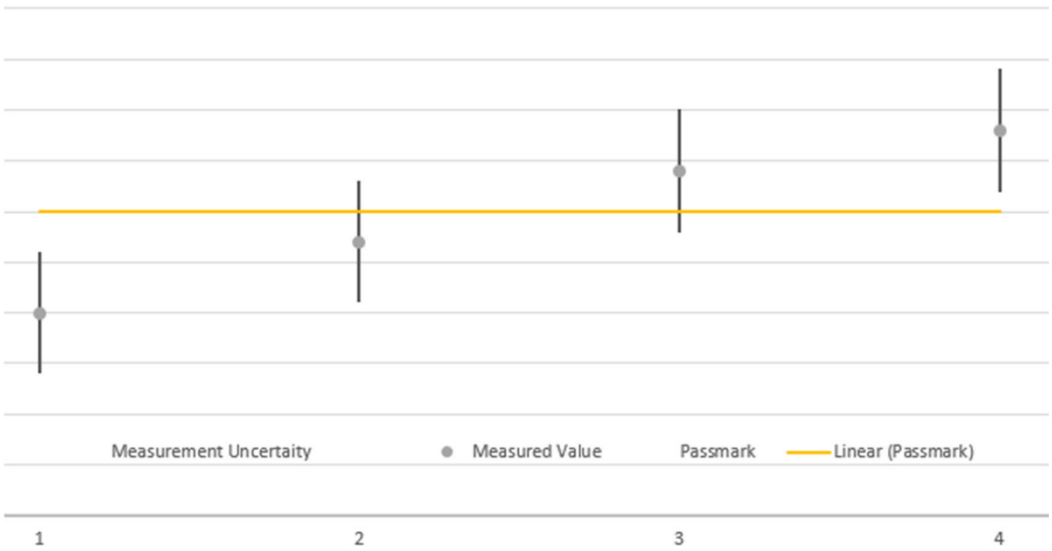
The FCC Site Registration No. is 434559; The Designation No. is CN1325.

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Frequency Stability	±76.97Hz
Radiated emissions (9KHz~30MHz)	±2.68dB
Radiated emissions & Radiated Power (30MHz~1GHz)	±4.98dB
Radiated emissions & Radiated Power (1GHz ~6GHz)	±4.70dB
Radiated emissions (6GHz ~18GHz)	±4.60dB
Radiated emissions (18GHz ~40GHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Band Edge Measurements	±4.70dB
Peak to average ratio	±0.76dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



The verdicts in this test report are given according the above diagram:

Case	Measured Value	Uncertainty Range	Verdict
1	below pass mark	below pass mark	Passed
2	below pass mark	within pass mark	Passed
3	above pass mark	within pass mark	Failed
4	above pass mark	above pass mark	Failed

That means, the laboratory applies, as decision rule (see ISO/IEC 17025:2017), the so-called shared risk principle.

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.29,25	Aug.28,27
Pre-Amplifier	R&S	SCU08F1	101028	Jan.22,24	Jan.21,26
Vector Signal Generator	R&S	SMBV100B	102176	Mar.29,24	Mar.28,26
Signal Generator	R&S	SMB100A	182185	Mar.29,24	Mar.28,26
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-01Chamber	Nov.24,22	Nov.23,25
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-01Chamber	Nov.23,25	Nov.22,28
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-02Chamber	Aug.20,25	Aug.19,28
EMI TEST Receiver	R&S	ESR26	101734	Mar.28,24	Mar.27,26
EMI TEST Receiver	R&S	ESW44	101973	Mar.28,24	Mar.27,26
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Jul.04,25	Jul.03,27
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.20,25	Aug.19,27
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Jul.15,24	Jul.14,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Mar.22,25	Mar.21,27
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.22,25	Feb.21,27
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.19,24	Jun.18,26
Test Software	EMC32	EMC32	N/A	N/A	N/A
6DB attenuator	Tonscend Technology Co., Ltd	N/A	23062787	N/A	N/A
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	N/A	N/A
DC Source	HYELEC	HY3010B	551016	Aug.30,25	Aug.29,27
Hygrothermograph	DELI	20210528	SZ014	Mar.18,25	Mar.17,27
PC	LENOVO	E14	HRSW0024	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-7.00M	N/A	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-4.00M	N/A	N/A	N/A
CABLE	R&S	W13.02	N/A	Apr.26,25	Apr.25,26
CABLE	R&S	W12.14	N/A	Apr.26,25	Apr.25,26
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.26,25	Apr.25,26
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.26,25	Apr.25,26
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26

NOTE:

1. The calibration interval of the above test instruments is 12/24/36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 434559; The Designation No. is CN1325.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT*	Mobile Computer	
BRAND NAME*	Honeywell	
MODEL NAME*	CT45P-L1N-E	
NOMINAL VOLTAGE*	5Vdc (adapter) 3.85Vdc (Lithium-ion cell, battery)	
MODULATION TYPE*	**GSM/GPRS:** GMSK **EDGE:** 8PSK **WCDMA:** BPSK,QPSK **LTE Band 2/25:** QPSK, 16QAM, 64QAM	
FREQUENCY RANGE	**GPRS, EDGE**	1850.2MHz ~ 1909.8MHz
	WCDMA	1852.4MHz ~ 1907.6MHz
	LTE Band 2 Channel Bandwidth: 1.4MHz	1850.7MHz ~ 1909.3MHz
	LTE Band 2 Channel Bandwidth: 3MHz	1851.5MHz ~ 1908.5MHz
	LTE Band 2 Channel Bandwidth: 5MHz	1852.5MHz ~ 1907.5MHz
	LTE Band 2 Channel Bandwidth: 10MHz	1855.0MHz ~ 1905.0MHz
	LTE Band 2 Channel Bandwidth: 15MHz	1857.5MHz ~ 1902.5MHz
	LTE Band 2 Channel Bandwidth: 20MHz	1860.0MHz ~ 1900.0MHz
	LTE Band 25 Channel Bandwidth: 1.4MHz	1850.7MHz ~ 1914.3MHz
	LTE Band 25 Channel Bandwidth: 3MHz	1851.5MHz ~ 1913.5MHz
	LTE Band 25 Channel Bandwidth: 5MHz	1852.5MHz ~ 1912.5MHz
	LTE Band 25 Channel Bandwidth: 10MHz	1855.0MHz ~ 1910.0MHz
	LTE Band 25 Channel Bandwidth: 15MHz	1857.5MHz ~ 1907.5MHz
	LTE Band 25 Channel Bandwidth: 20MHz	1860.0MHz ~ 1905.0MHz

MAX. EIRP POWER	GSM/GPRS	1592.21mW
	EDGE	703.07mW
	WCDMA	281.84mW
	LTE Band 2 Channel Bandwidth: 1.4MHz	238.23mW
	LTE Band 2 Channel Bandwidth: 3MHz	234.96mW
	LTE Band 2 Channel Bandwidth: 5MHz	235.50mW
	LTE Band 2 Channel Bandwidth: 10MHz	235.50mW
	LTE Band 2 Channel Bandwidth: 15MHz	233.88mW
	LTE Band 2 Channel Bandwidth: 20MHz	238.23mW
	LTE Band 25 Channel Bandwidth: 1.4MHz	245.47mW
	LTE Band 25 Channel Bandwidth: 3MHz	242.10mW
	LTE Band 25 Channel Bandwidth: 5MHz	239.33mW
	LTE Band 25 Channel Bandwidth: 10MHz	240.99mW
	LTE Band 25 Channel Bandwidth: 15MHz	240.99mW
	LTE Band 25 Channel Bandwidth: 20MHz	243.22mW
EMISSION DESIGNATOR	GPRS	240KGXW
	EDGE	240KG7W
	WCDMA	4M16F9W
	LTE Band 2 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D
		16QAM: 1M10W7D
		64QAM: 1M10W7D
	LTE Band 2 Channel Bandwidth: 3MHz	QPSK: 2M69G7D
		16QAM: 2M69W7D
		64QAM: 2M69W7D
	LTE Band 2 Channel Bandwidth: 5MHz	QPSK: 4M49G7D
		16QAM: 4M48W7D
		64QAM: 4M48W7D
	LTE Band 2 Channel Bandwidth: 10MHz	QPSK: 8M97G7D
		16QAM: 8M97W7D

		64QAM: 8M98W7D
	LTE Band 2 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
	LTE Band 2 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
		64QAM: 17M9W7D
	LTE Band 25 Channel Bandwidth: 1.4MHz	QPSK: 1M09G7D
		16QAM: 1M09W7D
		64QAM: 1M09W7D
	LTE Band 25 Channel Bandwidth: 3MHz	QPSK: 2M70G7D
		16QAM: 2M69W7D
		64QAM: 2M69W7D
	LTE Band 25 Channel Bandwidth: 5MHz	QPSK: 4M46G7D
		16QAM: 4M46W7D
		64QAM: 4M49W7D
	LTE Band 25 Channel Bandwidth: 10MHz	QPSK: 8M92G7D
		16QAM: 8M92W7D
		64QAM: 8M92W7D
	LTE Band 25 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M4W7D
		64QAM: 13M5W7D
	LTE Band 25 Channel Bandwidth: 20MHz	QPSK: 18M0G7D
		16QAM: 18M0W7D
		64QAM: 18M0W7D
ANTENNA GAIN*	☒Provided by client	
	GSM1900	2.67dBi
	WCDMA II	2.67dBi
	LTE B2	2.67dBi
	LTE B25	2.67dBi
ANTENNA TYPE*	PIFA Antenna	
HW VERSION*	V1.0	
SW VERSION*	OS.11.003-HON.11.003	
I/O PORTS*	Refer to user's manual	
CABLE SUPPLIED*	USB cable: shielded without ferrite, 1.25 meter Earphone cable: unshielded without ferrite, 1.27 meter	
EXTREME TEMPERATURE*	-10-55 ℃	
EXTREME VOLTAGE*	3.4V- 4.4V	

NOTE:

1. *Since the above data and/or information is provided by the client relevant results or conclusions of this report are only made for these data and/or information , Test Lab is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.
2. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
3. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

MODULATION MODE	TX FUNCTION
GSM/GPRS/EDGE	1TX/1RX
WCDMA	1TX/1RX
LTE	1TX/1RX

4. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

5. This product includes the following four SKU which hardware is exactly same, the difference is described as following, Sample 1 was full test, sample 2 verify the worst case,check worst case Radiated emission:

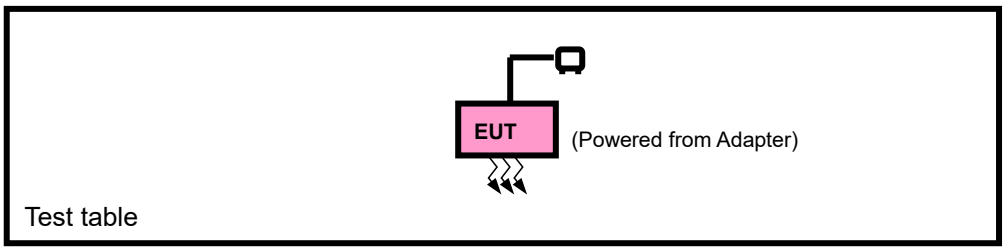
SAMPLE	EUT CONFIGURATION INFORMATION
1	SKU ID:CT45-L1N-37D1E0G ,Assembled Scanner Imager: 7-S0703
2	SKU ID:CT45-L1N-38D1E0G ,Assembled Scanner Imager: 8 – N6803/S0803
3	SKU ID: CT45-L1N-38D1E0T , Assembled Scanner Imager: 8 – N6803/S0803 for Turkey Only
4	SKU ID: CT45-L1N-37D1E0T , Assembled with Scanner: 7-S0703 for Turkey Only

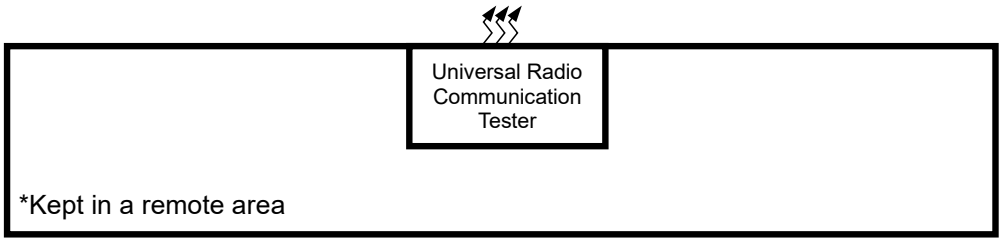
6. List of Accessory:

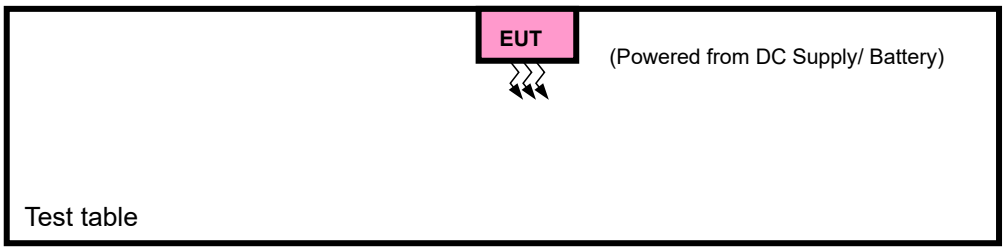
ACCESSORIES	BRAND	MODEL	SPECIFICATION
Battery	Honeywell	CT50-BTSC	Capacity：3.85vdc 4020mAh
AC Adapter	HONOR	ADS-12B-06 05010E	I/P:100-240Vac, 0.3A O/P: 5Vdc, 2A
USB Cable	Honeywell	CT40-SN	Shielded, 1.25meter
Earphone	VIVO	N/A	Shielded, 1.27meter
LCD Panel	CASIL	CTM10801920T01	5.0" FHD(1928*1080)

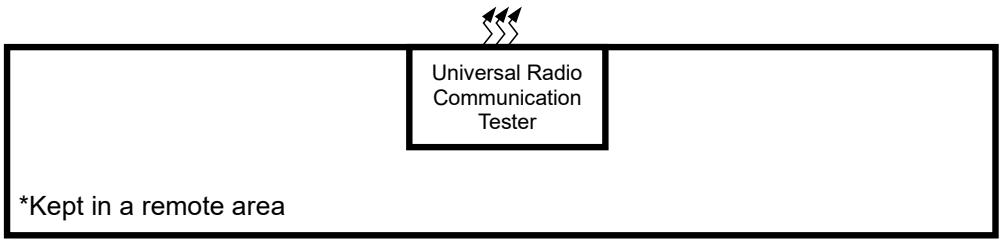
2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST









2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC Source	HYELEC	HY3010B	551016	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	USB Line: Shielded, Detachable 1.25m;
2	DC Line: Unshielded, Detachable 1.0m

2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports The worst case in EIRP and radiated emission was found when positioned on X-plane for GSM/EDGE/ LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter with GSM or WCDMA or LTE link
B	EUT + DC Supply with GSM or WCDMA or LTE link

GSM MODE				
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	EIRP	512 to 810	512, 661, 810	GSM,EDGE
B	FREQUENCY STABILITY	512 to 810	512, 661, 810	GSM,EDGE
A	OCCUPIED BANDWIDTH	512 to 810	512, 661, 810	GSM,EDGE
A	PEAK TO AVERAGE RATIO	512 to 810	512, 661, 810	GSM,EDGE
A	BAND EDGE	512 to 810	512, 810	GSM,EDGE
A	CONDCUDETED EMISSION	512 to 810	512, 661, 810	GSM,EDGE
A	RADIATED EMISSION	512 to 810	512, 661, 810	GSM,EDGE

WCDMA				
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
B	FREQUENCY STABILITY	9262 to 9538	9262, 9400, 9538	WCDMA
A	OCCUPIED BANDWIDTH	9262 to 9538	9262, 9400, 9538	WCDMA
A	PEAK TO AVERAGE RATIO	9262 to 9538	9262, 9400, 9538	WCDMA
A	BAND EDGE	9262 to 9538	9262, 9538	WCDMA
A	CONDCUDETED EMISSION	9262 to 9538	9262, 9400, 9538	WCDMA
A	RADIATED EMISSION	9262 to 9538	9262, 9400, 9538	WCDMA

LTE BAND 2 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM,64QAM	1 RB / 0 RB offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM,64QAM	1 RB / 0 RB offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM,64QAM	1 RB / 0 RB offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM,64QAM	1 RB / 0 RB offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM,64QAM	1 RB / 0 RB offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM,64QAM	1 RB / 0 RB offset
B	FREQUENCY STABILITY	18607 to 19193	18607, 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18615, 19185	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18625, 19175	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18650, 19150	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18675, 19125	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700, 19100	20MHz	QPSK	1 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM, 64QAM	6 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM, 64QAM	15 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM, 64QAM	25 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM, 64QAM	50 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM, 64QAM	75 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM, 64QAM	100 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset

		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
A	BAND EDGE	18607 to 19193	18607	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			19193	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		18615 to 19185	18615	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			19185	3MHz	QPSK,16QAM, 64QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		18625 to 19175	18625	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			19175	5MHz	QPSK,16QAM, 64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		18650 to 19150	18650	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			19150	10MHz	QPSK,16QAM, 64QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		18675 to 19125	18675	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			19125	15MHz	QPSK,16QAM, 64QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		18700 to 19100	18700	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			19100	20MHz	QPSK,16QAM, 64QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
A	CONDCUDETED EMISSION	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	18607 to 19193	18900	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18900	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18900	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18607, 18900, 19193	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18900	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18900	20MHz	QPSK	1 RB / 0 RB Offset

Note: 1.This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE BAND 25 MODE						
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
		26090 to 26640	26090, 26365 26640	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
B	FREQUENCY STABILITY	26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM, 64QAM	100 RB / 0 RB offset
A	OCCUPIED BANDWIDTH	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM, 64QAM	6 RB / 0 RB offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM, 64QAM	15 RB / 0 RB offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM, 64QAM	25 RB / 0 RB offset
		26090 to 26640	26090, 26365 26640	10MHz	QPSK,16QAM, 64QAM	50 RB / 0 RB offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM, 64QAM	75 RB / 0 RB offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM, 64QAM	100 RB / 0 RB offset
A	PEAK TO AVERAGE RATIO	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset 6 RB / 0 RB offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset 15 RB / 0 RB offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset 25 RB / 0 RB offset
		26090 to 26640	26090, 26365 26640	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset 50 RB / 0 RB offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset 75 RB / 0 RB offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset 100 RB / 0 RB offset
A	BAND EDGE	26047 to 26683	26047	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
						6 RB / 0 RB offset
			26683	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 5 RB offset
						6 RB / 0 RB offset
		26055 to 26675	26055	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
						15 RB / 0 RB offset
			26675	3MHz	QPSK,16QAM, 64QAM	1 RB / 14 RB offset
						15 RB / 0 RB offset
		26065 to 26665	26065	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
						25 RB / 0 RB offset
			26665	5MHz	QPSK,16QAM, 64QAM	1 RB / 24 RB offset
						25 RB / 0 RB offset
		26090 to 26640	26090	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
						50 RB / 0 RB offset
			26640	10MHz	QPSK,16QAM, 64QAM	1 RB / 49 RB offset
						50 RB / 0 RB offset

		26115 to 26615	26115	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
						75 RB / 0 RB offset
			26615	15MHz	QPSK,16QAM, 64QAM	1 RB / 74 RB offset
						75 RB / 0 RB offset
		26140 to 26590	26140	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
						100 RB / 0 RB offset
			26590	20MHz	QPSK,16QAM, 64QAM	1 RB / 99 RB offset
						100 RB / 0 RB offset
A	CONDCUDETED EMISSION	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
		26090 to 26640	26090, 26365 26640	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB offset
A	RADIATED EMISSION	26047 to 26683	26365	1.4MHz	QPSK	1 RB / 0 RB offset
		26055 to 26675	26365	3MHz	QPSK	1 RB / 0 RB offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK	1 RB / 0 RB offset
		26090 to 26640	26365	10MHz	QPSK	1 RB / 0 RB offset
		26115 to 26615	26365	15MHz	QPSK	1 RB / 0 RB offset
		26140 to 26590	26365	20MHz	QPSK	1 RB / 0 RB offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

TEST CONDITION			
TEST ITEM	**ENVIRONMENTAL CONDITIONS**	**INPUT POWER**	**TESTED BY**
RADIATED EMISSION	23deg. C, 70%RH	DC 5V By Adapter	Hanwen Xu

2.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 24

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

3 TEST TYPES AND RESULTS

3.1 RADIATED EMISSION MEASUREMENT

3.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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. The emission limit equal to –13dBm.

3.1.2 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

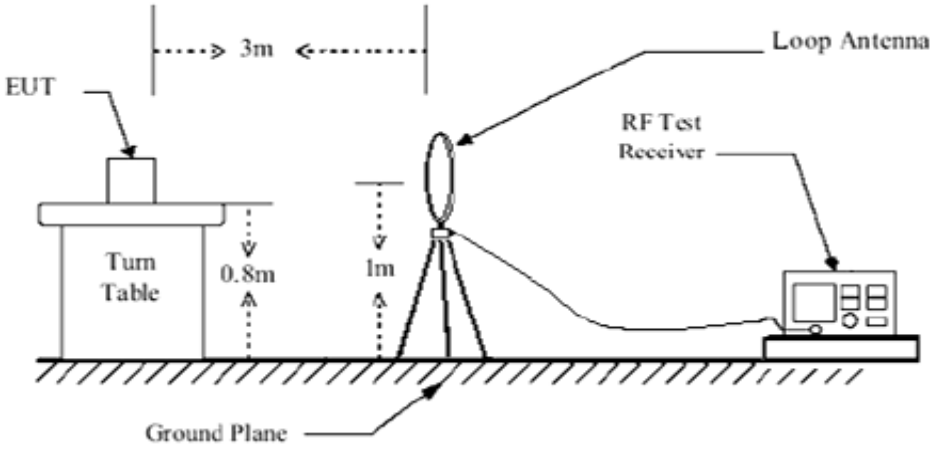
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.1.3 DEVIATION FROM TEST STANDARD

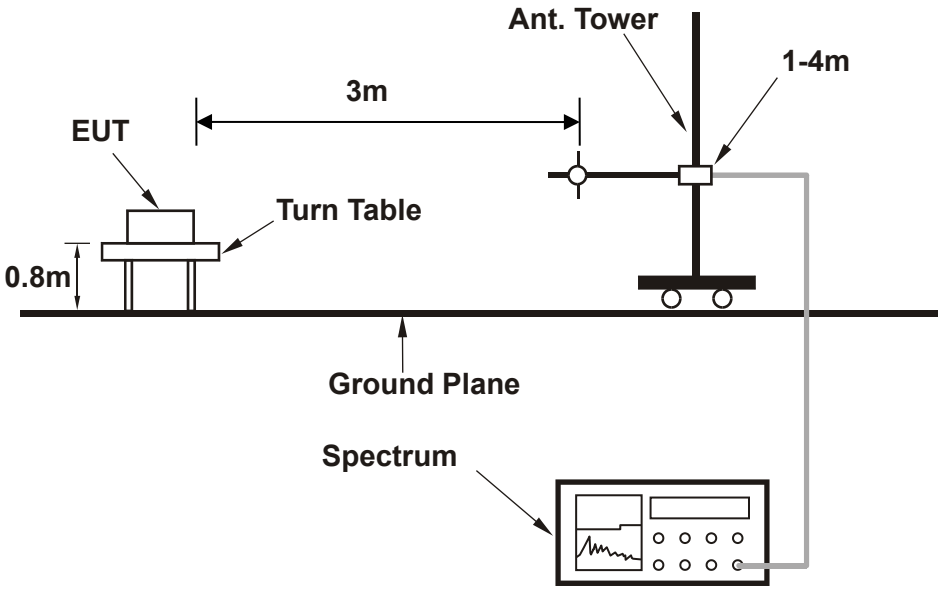
No deviation

3.1.4 TEST SETUP

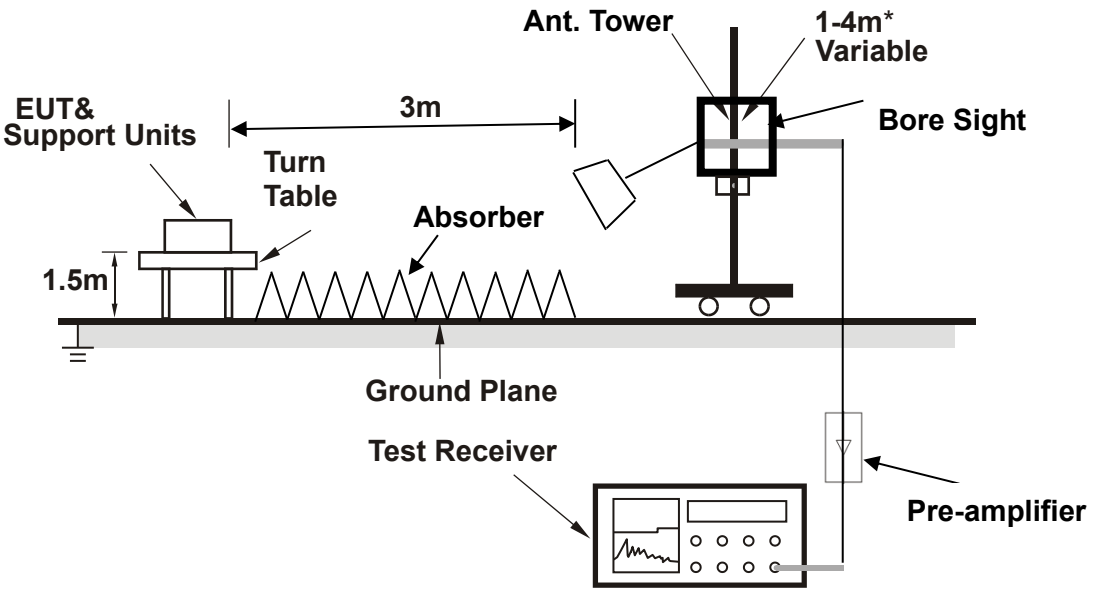
< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.1.5 TEST RESULTS

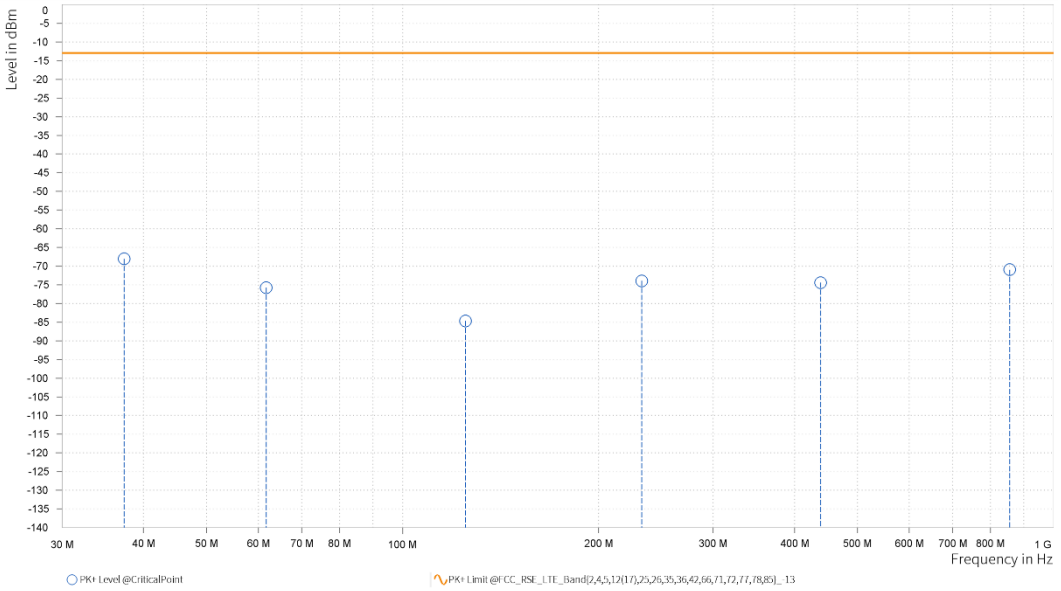
NOTE ：The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

BELOW 1GHz WORST-CASE DATA

LTE B25 CHANNEL BANDWIDTH:10MHz / QPSK			
MODE	TX channel 26640	**FREQUENCY RANGE**	30 MHz – 1GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	**INPUT POWER**	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

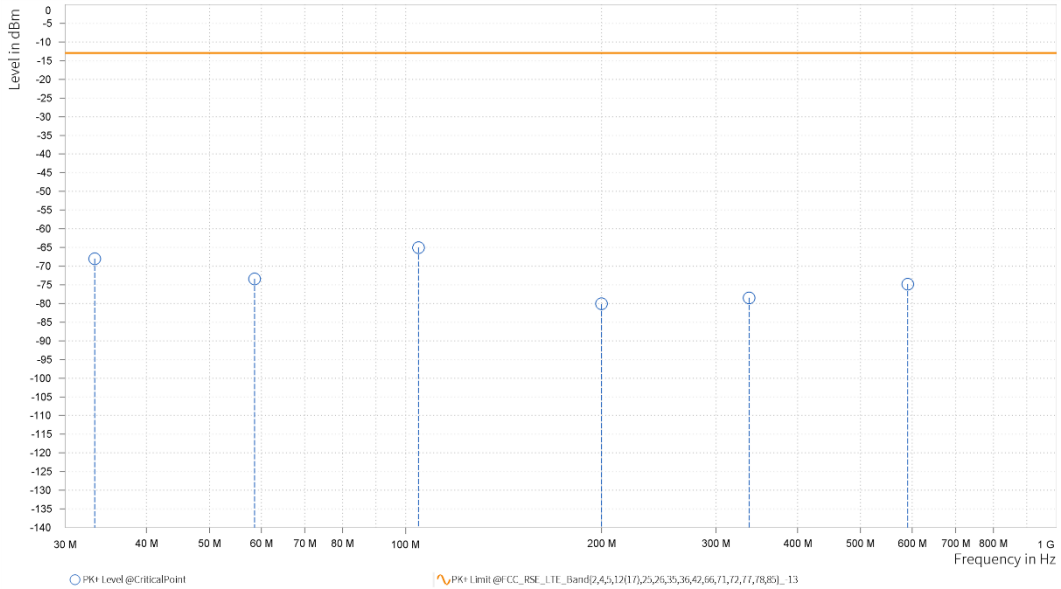
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	37.350	-68.06	-13.00	55.06	0.32	H	293.8	2.00
1	61.700	-75.75	-13.00	62.75	-7.49	H	259.2	2.00
1	124.950	-84.70	-13.00	71.70	-12.68	H	307.6	1.00
1	233.050	-73.97	-13.00	60.97	1.69	H	238.2	1.00
1	438.800	-74.44	-13.00	61.44	1.87	H	156.3	2.00
2	855.992	-70.96	-13.00	57.96	5.70	H	279.5	2.00



MODE	TX channel 26640	FREQUENCY RANGE	30 MHz – 1GHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	120Vac 60HZ
TESTED BY	Hanwen Xu		

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	33.300	-68.03	-13.00	55.03	-7.36	V	203.6	1.00
1	58.650	-73.44	-13.00	60.44	-3.68	V	357	1.00
1	104.650	-65.03	-13.00	52.03	3.76	V	239.4	1.00
1	200.000	-80.10	-13.00	67.10	-6.62	V	274.1	1.00
1	336.950	-78.50	-13.00	65.50	-0.20	V	0.9	2.00
2	590.754	-74.82	-13.00	61.82	1.19	V	359.1	1.00



ABOVE 1GHz DATA

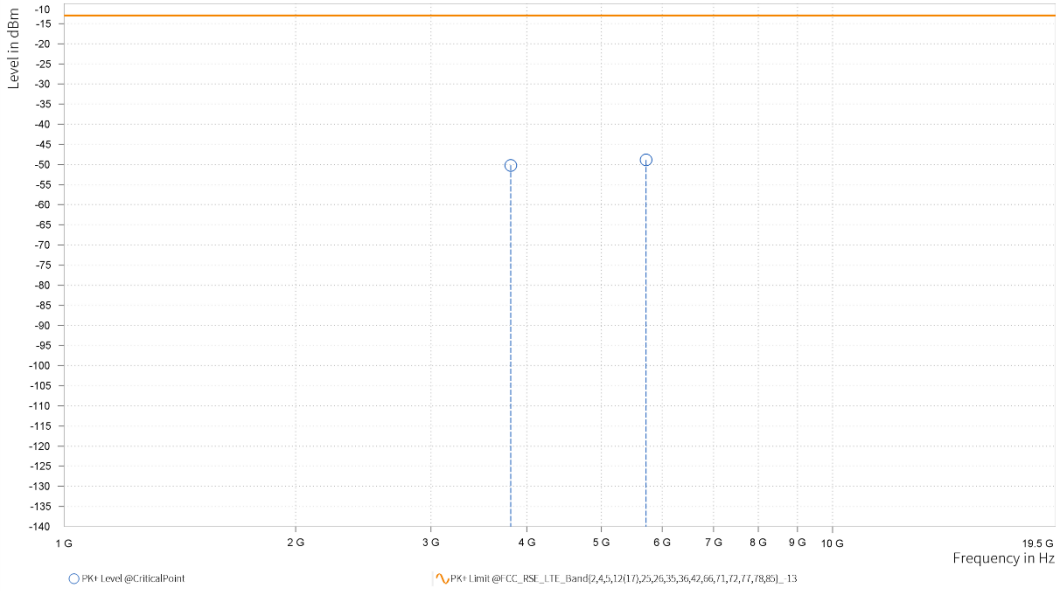
Note: For higher frequency, the emission is too low to be detected.

LTE Band 25

CHANNEL BANDWIDTH	10MHz / QPSK	**MODE**	TX channel 26640
FREQUENCY RANGE	Above 1000MHz	**ENVIRONMENTAL CONDITIONS**	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	**TESTED BY**	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

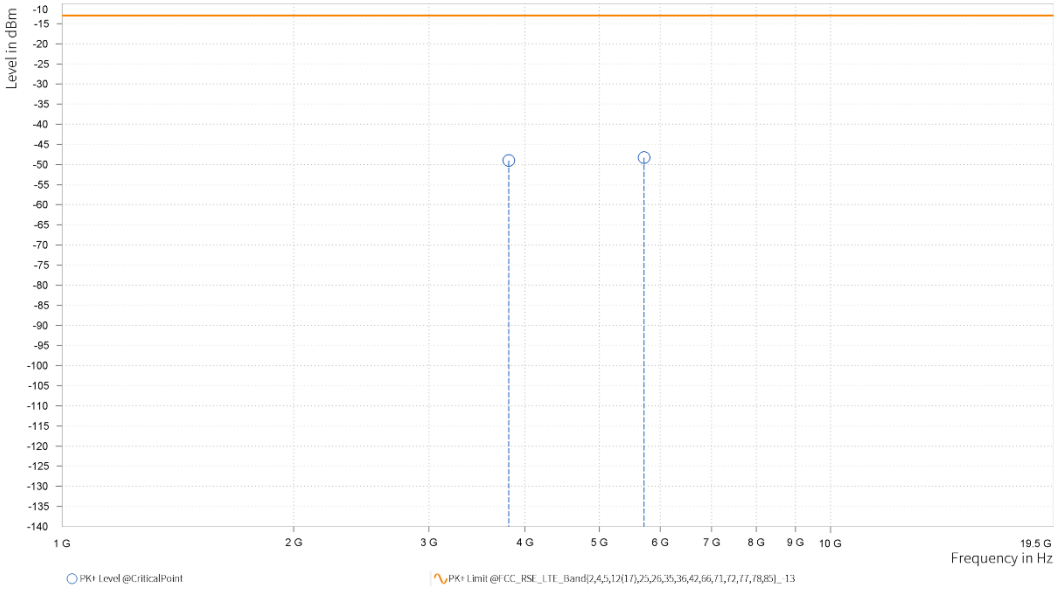
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,811.000	-50.20	-13.00	37.20	22.22	H	96.8	1.00
4	5,716.500	-48.89	-13.00	35.89	25.23	H	193	1.00



CHANNEL BANDWIDTH	10MHz / QPSK	**MODE**	TX channel 26640
FREQUENCY RANGE	Above 1000MHz	**ENVIRONMENTAL CONDITIONS**	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	**TESTED BY**	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,811.000	-49.02	-13.00	36.02	22.53	V	339.5	1.00
4	5,716.500	-48.30	-13.00	35.30	25.68	V	288.6	1.00



4 INFORMATION ON THE TESTING LABORATORIES

We, Huarui 7layers High Technology (Suzhou) Co., Ltd. ,were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Huarui 7Layers High Technology (Suzhou) Co., Ltd.
Lab Address:
Tower N, Innovation Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province, China
Accredited Test Lab Cert 6613.01

If you have any comments, please feel free to contact us at the following:

Suzhou EMC/RF Lab:
Tel: +86 (0557) 368 1008

5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

6 APPENDIX: THE ORIGINAL REPORT

ACCREDITED
Certificate # 3939.01

VARIANT FCC TEST REPORT

(PART 24)

Applicant:	Honeywell International Inc Honeywell Safety and Productivity Solutions
Address:	9680 Old Bailes Road, Fort Mill, SC 29707 United States

Manufacturer or Supplier:	Honeywell International Inc Honeywell Safety and Productivity Solutions
Address:	9680 Old Bailes Road, Fort Mill, SC 29707 United States
Product:	Mobile Computer
Brand Name:	Honeywell
Model Name:	CT45P-L1N-E
FCC ID:	HD5-CT45PL1NE
Date of tests:	May. 08, 2021 ~ Sep. 08, 2021

The tests have been carried out according to the requirements of the following standard:

☒ **FCC PART 24, Subpart E** ☒ **FCC PART 2**
☒ **ANSI/TIA/EIA-603-D** ☒ **ANSI/TIA/EIA-603-E** ☒ **ANSI C63.26-2015**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
Simon Date: Sep. 09, 2021	Luke Lu Date: Sep. 09, 2021

This report is governed by, and incorporates by reference, CPS Conditions of Service as posted at the date of issuance of this report at http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute you unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

BV 7Layers Communications Technology (Shenzhen) Co. Ltd
No.B102, Dazu Chuangxin Mansion, North of Beihuan Avenue, North Area, Hi-Tech Industrial Park, Nanshan District, Shenzhen, Guangdong, China
Tel: +86 755 8869 6566
Fax: +86 755 8869 6577
Email: customerservice.sw@bureauveritas.com

TABLE OF CONTENTS

RELEASE CONTROL RECORD 4

1 SUMMARY OF TEST RESULTS 5

1.1 MEASUREMENT UNCERTAINTY 5

1.2 TEST SITE AND INSTRUMENTS 6

2 GENERAL INFORMATION 7

2.1 GENERAL DESCRIPTION OF EUT 7

2.2 CONFIGURATION OF SYSTEM UNDER TEST 11

2.3 DESCRIPTION OF SUPPORT UNITS 12

2.4 TEST ITEM AND TEST CONFIGURATION 12

2.5 EUT OPERATING CONDITIONS 17

2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS 17

3 TEST TYPES AND RESULTS 18

3.1 OUTPUT POWER MEASUREMENT 18
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT 18
3.1.2 TEST PROCEDURES 18
3.1.3 TEST SETUP 19
3.1.4 TEST RESULTS 19

3.2 FREQUENCY STABILITY MEASUREMENT 45
3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT 45
3.2.2 TEST PROCEDURE 45
3.2.3 TEST SETUP 45
3.2.4 TEST RESULTS 46

3.3 OCCUPIED BANDWIDTH MEASUREMENT 61
3.3.1 TEST PROCEDURES 61
3.3.2 TEST SETUP 61
3.3.3 TEST RESULTS 62

3.4 BAND EDGE MEASUREMENTC 76
3.4.1 LIMITS OF BAND EDGE MEASUREMENT 76
3.4.2 TEST SETUP 76
3.4.3 TEST PROCEDURES 77
3.4.4 TEST RESULTS 78

3.5 CONDUCTED SPURIOUS EMISSIONS 115
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT 115
3.5.2 TEST PROCEDURE 115
3.5.3 TEST SETUP 115
3.5.4 TEST RESULTS 116

3.6 RADIATED EMISSION MEASUREMENT 131
3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT 131
3.6.2 TEST PROCEDURES 131
3.6.3 DEVIATION FROM TEST STANDARD 131

3.6.4 TEST SETUP 132
3.6.5 TEST RESULTS 133

3.7 PEAK TO AVERAGE RATIO 185
3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT 185
3.7.2 TEST SETUP 185
3.7.3 TEST PROCEDURES 185
3.7.4 TEST RESULTS 186

4 INFORMATION ON THE TESTING LABORATORIES 207

5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB 208

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-P21080006RF16	Original release	Sep. 01, 2021
W7L-P21080009RF16	Based on the original report W7L-P21080006RF16 Changing the SIM to 1 Nano SIM and 1 E-SIM	Sep. 09, 2021

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 24 & Part 2		
STANDARD SECTION	**1.1.1.1.1.1TEST TYPE**	**RESULT**
2.1046 24.232	Equivalent Isotropic Radiated Power	Compliance
2.1055 24.235	Frequency Stability	Compliance
2.1049 24.238(b)	Occupied Bandwidth	Compliance
24.232(d)	Peak to average ratio	Compliance
24.238(b)	Band Edge Measurements	Compliance
2.1051 24.238	Conducted Spurious Emissions	Compliance
2.1053 24.238	Radiated Spurious Emissions	Compliance

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Frequency Stability	±76.97Hz
Radiated emissions & Radiated Power (30MHz~1GMHz)	±4.98dB
Radiated emissions & Radiated Power (1GMHz ~6GMHz)	±4.70dB
Radiated emissions (6GMHz ~18GMHz)	±4.60dB
Radiated emissions (18GMHz ~40GMHz)	±4.12dB
Conducted emissions	±4.01dB
Occupied Channel Bandwidth	±43.58KHz
Conducted Output power	±2.06dB
Band Edge Measurements	±4.70dB
Peak to average ratio	±0.76dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Apr. 22,21	Apr. 21,22
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 04,20	Jun. 03,21
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	Jun. 03,21	Jun. 02,22
Bilog Antenna	ETS-LINDGREN	3143B	00161965	Mar. 05,21	Mar. 04,22
Horn Antenna	ETS-LINDGREN	3117	00168728	Apr. 02,21	Apr. 01,22
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 26, 20	Aug. 25, 21
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K-SG/QMS-00361	15433	Aug. 25, 21	Aug. 24, 22
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 25,21	Feb. 24,22
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 03,20	Jun. 02,21
Signal Pre-Amplifier	EMSI	EMC 9135	980249	Jun. 02,21	Jun. 01,22
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 04,20	Jun. 03,21
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	Jun. 03,21	Jun. 02,22
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Apr. 22,21	Apr. 21,22
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	Euroshieldpn-CT0001143-1216	May. 19,20	May. 18,23
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	ADT	ADT_Radiated_V 7.6.15.9.2	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 04,20	Jun. 03,21
10dB Attenuator	JFW/USA	50HF-010-SMA	1505	Jun. 03,21	Jun. 02,22
Power Meter	Anritsu	ML2495A	1506002	Apr. 07,21	Apr. 06,22
Power Sensor	Anritsu	MA2411B	1339352	May. 07,21	May. 06,22
Temperature Chamber	ESPEC	SH-242	93000855	Jun. 03,20	Jun. 02,21
Temperature Chamber	ESPEC	SH-242	93000855	Jun. 02,21	Jun. 01,22
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Mar. 05,21	Mar. 04,22
Power Divider	MCLI/USA	PS2-15	24880	N/A	N/A

NOTE: 1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.

3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Mobile Computer	
BRAND NAME	Honeywell	
MODEL NAME	CT45P-L1N-E	
NOMINAL VOLTAGE	3.85Vdc (Lithium-ion cell, battery)	
MODULATION TYPE	**GPRS:** GMSK **EDGE:** 8PSK **WCDMA:** BPSK,QPSK **LTE Band 2:** QPSK, 16QAM, 64QAM	
FREQUENCY RANGE	**GSM, GPRS, EDGE**	1850.2MHz ~ 1909.8MHz
	WCDMA	1852.4MHz ~ 1907.6MHz
	LTE Band 2 Channel Bandwidth: 1.4MHz	1850.7MHz ~ 1909.3MHz
	LTE Band 2 Channel Bandwidth: 3MHz	1851.5MHz ~ 1908.5MHz
	LTE Band 2 Channel Bandwidth: 5MHz	1852.5MHz ~ 1907.5MHz
	LTE Band 2 Channel Bandwidth: 10MHz	1855.0MHz ~ 1905.0MHz
	LTE Band 2 Channel Bandwidth: 15MHz	1857.5MHz ~ 1902.5MHz
	LTE Band 2 Channel Bandwidth: 20MHz	1860.0MHz ~ 1900.0MHz
	LTE Band 25 Channel Bandwidth: 1.4MHz	1850.7MHz ~ 1914.3MHz
	LTE Band 25 Channel Bandwidth: 3MHz	1851.5MHz ~ 1913.5MHz
	LTE Band 25 Channel Bandwidth: 5MHz	1852.5MHz ~ 1912.5MHz
	LTE Band 25 Channel Bandwidth: 10MHz	1855.0MHz ~ 1910.0MHz
	LTE Band 25 Channel Bandwidth: 15MHz	1857.5MHz ~ 1907.5MHz
	LTE Band 25 Channel Bandwidth: 20MHz	1860.0MHz ~ 1905.0MHz

MAX. EIRP POWER	GSM	1592.21mW
	EDGE	703.07mW
	WCDMA	281.84mW
	LTE Band 2 Channel Bandwidth: 1.4MHz	238.23mW
	LTE Band 2 Channel Bandwidth: 3MHz	234.96mW
	LTE Band 2 Channel Bandwidth: 5MHz	235.50mW
	LTE Band 2 Channel Bandwidth: 10MHz	235.50mW
	LTE Band 2 Channel Bandwidth: 15MHz	233.88mW
	LTE Band 2 Channel Bandwidth: 20MHz	238.23mW
	LTE Band 25 Channel Bandwidth: 1.4MHz	245.47mW
	LTE Band 25 Channel Bandwidth: 3MHz	242.10mW
	LTE Band 25 Channel Bandwidth: 5MHz	239.33mW
	LTE Band 25 Channel Bandwidth: 10MHz	240.99mW
	LTE Band 25 Channel Bandwidth: 15MHz	240.99mW
	LTE Band 25 Channel Bandwidth: 20MHz	243.22mW

EMISSION DESIGNATOR	GSM	240KGXW
	EDGE	240KG7W
	WCDMA	4M16F9W
	LTE Band 2 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D
		16QAM: 1M10W7D
		64QAM: 1M10W7D
	LTE Band 2 Channel Bandwidth: 3MHz	QPSK: 2M69G7D
		16QAM: 2M69W7D
		64QAM: 2M69W7D
	LTE Band 2 Channel Bandwidth: 5MHz	QPSK: 4M49G7D
		16QAM: 4M48W7D
		64QAM: 4M48W7D
	LTE Band 2 Channel Bandwidth: 10MHz	QPSK: 8M97G7D
		16QAM: 8M97W7D
		64QAM: 8M98W7D
	LTE Band 2 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M5W7D
		64QAM: 13M5W7D
	LTE Band 2 Channel Bandwidth: 20MHz	QPSK: 17M9G7D
		16QAM: 17M9W7D
		64QAM: 17M9W7D
	LTE Band 25 Channel Bandwidth: 1.4MHz	QPSK: 1M09G7D
		16QAM: 1M09W7D
		64QAM: 1M09W7D
	LTE Band 25 Channel Bandwidth: 3MHz	QPSK: 2M70G7D
		16QAM: 2M69W7D
		64QAM: 2M69W7D
	LTE Band 25 Channel Bandwidth: 5MHz	QPSK: 4M46G7D
		16QAM: 4M46W7D
		64QAM: 4M49W7D
	LTE Band 25 Channel Bandwidth: 10MHz	QPSK: 8M92G7D
		16QAM: 8M92W7D
		64QAM: 8M92W7D
	LTE Band 25 Channel Bandwidth: 15MHz	QPSK: 13M5G7D
		16QAM: 13M4W7D
		64QAM: 13M5W7D
	LTE Band 25 Channel Bandwidth: 20MHz	QPSK: 18M0G7D
		16QAM: 18M0W7D
		64QAM: 18M0W7D
ANTENNA TYPE	PIFA Antenna with 2.67dBi gain	
HW VERSION	V1.0	

SW VERSION	OS.11.002-HON.11.002
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	USB cable: unshielded without ferrite, 1.25 meter Earphone cable: unshielded without ferrite, 1.27 meter
EXTREME TEMPERATURE	-10-55 ℃
EXTREME VOLTAGE	3.4V- 4.4V

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. This product includes the following four SKU which hardware is exactly same, the difference is described as following, Sample 1 was full test, sample 2 verify the worst case,check worst case Radiated emission:

SAMPLE	EUT CONFIGURATION INFORMATION
1	SKU ID:CT45-L1N-37D1E0G ,Assembled Scanner Imager: 7-S0703
2	SKU ID:CT45-L1N-38D1E0G ,Assembled Scanner Imager: 8 – N6803/S0803
3	SKU ID: CT45-L1N-38D1E0T , Assembled Scanner Imager: 8 – N6803/S0803 for Turkey Only
4	SKU ID: CT45-L1N-37D1E0T , Assembled with Scanner: 7-S0703 for Turkey Only

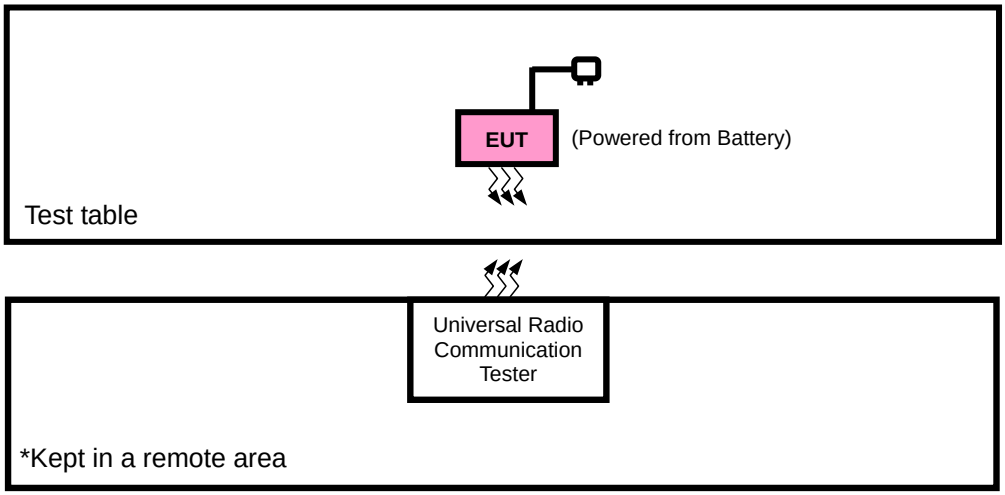
3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.

List of Accessory:

ACCESSORIES	BRAND	MODEL	SPECIFICATION
Battery	Honeywell	CT50-BTSC	Capacity：3.85vdc 4020mAh
AC Adapter	HONOR	ADS-12B-06 05010E	I/P:100-240Vac, 0.3A O/P: 5Vdc, 2A
USB Cable	Honeywell	CT40-SN	Shielded, 1.25meter
Earphone	VIVO	N/A	Shielded, 1.27meter
LCD Panel	CASIL	CTM10801920T01	5.0" FHD(1928*1080)

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC source	Kikusui/JP	PMX18-5A	0000001	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable 1.0m

2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports The worst case in EIRP and radiated emission was found when positioned on X-plane for GSM/EDGE/ LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	1.1.1.1.1.2DESCRIPTION
A	EUT + DC Source with GSM or WCDMA or LTE link

GSM MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
B	EIRP	512 to 810	512, 661, 810	GPRS, EDGE
B	FREQUENCY STABILITY	512 to 810	512, 810	GPRS, EDGE
B	OCCUPIED BANDWIDTH	512 to 810	512, 661, 810	GPRS, EDGE
B	PEAK TO AVERAGE RATIO	512 to 810	512, 661, 810	GPRS, EDGE
B	BAND EDGE	512 to 810	512, 810	GPRS, EDGE
B	CONDCUDETED EMISSION	512 to 810	512, 661, 810	GPRS, EDGE
A	RADIATED EMISSION	512 to 810	512, 661, 810	GPRS, EDGE

WCDMA

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
B	EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
B	FREQUENCY STABILITY	9262 to 9538	9262, 9538	WCDMA
B	OCCUPIED BANDWIDTH	9262 to 9538	9262, 9400, 9538	WCDMA
B	PEAK TO AVERAGE RATIO	9262 to 9538	9262, 9400, 9538	WCDMA
B	BAND EDGE	9262 to 9538	9262, 9538	WCDMA
B	CONDCUDETED EMISSION	9262 to 9538	9262, 9400, 9538	WCDMA
A	RADIATED EMISSION	9262 to 9538	9262, 9400, 9538	WCDMA

LTE BAND 2

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	EIRP	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	18607 to 19193	18607, 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18615, 19185	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18625, 19175	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18650, 19150	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18675, 19125	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700, 19100	20MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM, 64QAM	6 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM, 64QAM	15 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM, 64QAM	25 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM, 64QAM	50 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM, 64QAM	75 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM, 64QAM	100 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset

B	BAND EDGE	18607 to 19193	18607	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			19193	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		18615 to 19185	18615	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			19185	3MHz	QPSK,16QAM, 64QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		18625 to 19175	18625	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			19175	5MHz	QPSK,16QAM, 64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		18650 to 19150	18650	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			19150	10MHz	QPSK,16QAM, 64QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		18675 to 19125	18675	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			19125	15MHz	QPSK,16QAM, 64QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		18700 to 19100	18700	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			19100	20MHz	QPSK,16QAM, 64QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
B	CONDCUDETED EMISSION	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18615, 18900, 19185	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18625, 18900, 19175	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18650, 18900, 19150	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18675, 18900, 19125	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18700, 18900, 19100	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	18607 to 19193	18900	1.4MHz	QPSK	1 RB / 0 RB Offset
		18615 to 19185	18900	3MHz	QPSK	1 RB / 0 RB Offset
		18625 to 19175	18900	5MHz	QPSK	1 RB / 0 RB Offset
		18650 to 19150	18607, 18900, 19193	10MHz	QPSK	1 RB / 0 RB Offset
		18675 to 19125	18900	15MHz	QPSK	1 RB / 0 RB Offset
		18700 to 19100	18900	20MHz	QPSK	1 RB / 0 RB Offset

LTE BAND 25

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
B	EIRP	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		26090 to 26640	26090, 26365 26640	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	26047 to 26683	26047, 26683	1.4MHz	QPSK	1 RB / 0 RB Offset
		26055 to 26675	26055, 26675	3MHz	QPSK	1 RB / 0 RB Offset
		26065 to 26665	26065, 26665	5MHz	QPSK	1 RB / 0 RB Offset
		26090 to 26640	26090, 26640	10MHz	QPSK	1 RB / 0 RB Offset
		26115 to 26615	26115, 26615	15MHz	QPSK	1 RB / 0 RB Offset
		26140 to 26590	26140, 26590	20MHz	QPSK	1 RB / 0 RB Offset
B	OCCUPIED BANDWIDTH	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM, 64QAM	6 RB / 0 RB Offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM, 64QAM	15 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM, 64QAM	25 RB / 0 RB Offset
		26090 to 26640	26090, 26365 26640	10MHz	QPSK,16QAM, 64QAM	50 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM, 64QAM	75 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM, 64QAM	100 RB / 0 RB Offset
B	PEAK TO AVERAGE RATIO	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		26090 to 26640	26090, 26365 26640	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset

B	BAND EDGE	26047 to 26683	26047	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						6 RB / 0 RB Offset
			26683	1.4MHz	QPSK,16QAM, 64QAM	1 RB / 5 RB Offset
						6 RB / 0 RB Offset
		26055 to 26675	26055	3MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						15 RB / 0 RB Offset
			26675	3MHz	QPSK,16QAM, 64QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		26065 to 26665	26065	5MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
			26665	5MHz	QPSK,16QAM, 64QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		26090 to 26640	26090	10MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
			26640	10MHz	QPSK,16QAM, 64QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		26115 to 26615	26115	15MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
			26615	15MHz	QPSK,16QAM, 64QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		26140 to 26590	26140	20MHz	QPSK,16QAM, 64QAM	1 RB / 0 RB Offset
						100 RB / 0 RB Offset
			26590	20MHz	QPSK,16QAM, 64QAM	1 RB / 99 RB Offset
						100 RB / 0 RB Offset
B	CONDCUDETED EMISSION	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK	1 RB / 0 RB Offset
		26055 to 26675	26055, 26365, 26675	3MHz	QPSK	1 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK	1 RB / 0 RB Offset
		26090 to 26640	26090, 26365 26640	10MHz	QPSK	1 RB / 0 RB Offset
		26115 to 26615	26115, 26365, 26615	15MHz	QPSK	1 RB / 0 RB Offset
		26140 to 26590	26140, 26365, 26590	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	26047 to 26683	26365	1.4MHz	QPSK	1 RB / 0 RB Offset
		26055 to 26675	26365	3MHz	QPSK	1 RB / 0 RB Offset
		26065 to 26665	26065, 26365, 26665	5MHz	QPSK	1 RB / 0 RB Offset
		26090 to 26640	26365	10MHz	QPSK	1 RB / 0 RB Offset
		26115 to 26615	26365	15MHz	QPSK	1 RB / 0 RB Offset
		26140 to 26590	26365	20MHz	QPSK	1 RB / 0 RB Offset

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP	25deg. C, 57%RH	DC 3.85V By Battery	Jace Hu
FREQUENCY STABILITY	23deg. C, 61%RH	DC 3.85V By Battery	James Fu
OCCUPIED BANDWIDTH	23deg. C, 61%RH	DC 3.85V By Battery	James Fu
PEAK TO AVERAGE RATIO	23deg. C, 61%RH	DC 3.85V By Battery	James Fu
BAND EDGE	23deg. C, 61%RH	DC 3.85V By Battery	James Fu
CONDCUDETED EMISSION	23deg. C, 61%RH	DC 3.85V By Battery	James Fu
RADIATED EMISSION	23deg. C, 70%RH	DC 3.85V By Battery	Jace Hu

2.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

2.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 24

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile and portable stations are limited to 2 watts EIRP.

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determing the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

ERP or EIRP = $P_{Meas} + G_T - L_C$

Where:

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

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

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

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

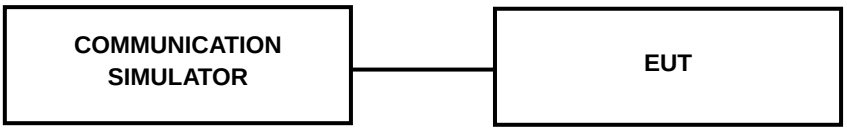
CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with WCDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

3.1.3 TEST SETUP

EIRP / ERP Measurement:

CONDUCTED POWER MEASUREMENT:



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	GSM1900			Max. Tune-up Power
Channel	512	661	810	
Frequency	1850.2	1880	1909.8	
GSM (GMSK, 1Tx-slot)	**29.35**	29.30	29.20	29.5
GPRS (GMSK, 1Tx-slot)	29.34	29.28	29.16	29.5
GPRS (GMSK, 2Tx-slot)	27.80	27.76	27.59	28.0
GPRS (GMSK, 3Tx-slot)	26.03	26.22	26.30	26.5
GPRS (GMSK, 4Tx-slot)	23.76	23.88	24.00	24.5
EDGE (8PSK, 1Tx-slot)	25.72	25.74	25.80	26.0
EDGE (8PSK, 2Tx-slot)	23.31	23.58	23.60	24.0
EDGE (8PSK, 3Tx-slot)	21.40	21.72	21.74	22.0
EDGE (8PSK, 4Tx-slot)	20.51	20.83	20.69	21.0

Band	WCDMA II			Max. Tune-up Power
Channel	9262	9400	9538	
Frequency	1852.4	1880	1907.6	
RMC 12.2K	21.81	21.63	21.83	22.0
HSDPA Subtest-1	20.84	20.65	20.88	21.0
HSDPA Subtest-2	20.85	20.64	20.86	21.0
HSDPA Subtest-3	20.33	20.14	20.33	20.5
HSDPA Subtest-4	20.25	20.03	20.36	20.5
DC-HSDPA Subtest-1	20.87	20.64	20.85	21.0
DC-HSDPA Subtest-2	20.86	20.63	20.82	21.0
DC-HSDPA Subtest-3	20.30	20.14	20.33	20.5
DC-HSDPA Subtest-4	20.30	20.09	20.32	20.5
HSUPA Subtest-1	20.92	20.68	20.94	21.0
HSUPA Subtest-2	18.88	18.75	19.00	19.0
HSUPA Subtest-3	20.05	19.78	20.06	20.0
HSUPA Subtest-4	18.99	18.79	18.97	19.0
HSUPA Subtest-5	20.90	20.74	20.90	21.0

LTE BAND 2

Band/BW	Modulation	RB Size	RB Offset	Low CH 18607	Mid CH 18900	High CH 19193	MPR
				Frequency 1850.7 MHz	Frequency 1880 MHz	Frequency 1909.3 MHz	
2/ 1.4	QPSK	1	0	20.65	20.90	21.05	0
		1	2	20.47	20.75	20.93	0
		1	5	20.12	20.38	20.54	0
		3	0	20.65	20.90	21.10	0
		3	1	20.51	20.95	20.89	0
		3	3	20.37	20.81	20.81	0
		6	0	19.57	19.83	19.93	1
	16QAM	1	0	19.96	20.23	20.43	1
		1	2	19.87	20.20	20.28	1
		1	5	19.33	19.71	19.88	1
		3	0	19.58	19.94	19.88	1
		3	1	19.48	19.96	20.02	1
		3	3	19.44	19.80	19.84	1
		6	0	18.53	18.78	18.89	2
	64QAM	1	0	18.66	19.07	19.20	2
		1	2	18.64	18.99	19.00	2
		1	5	18.22	18.59	18.61	2
		3	0	18.54	18.77	18.95	2
		3	1	18.51	18.92	18.92	2
		3	3	18.43	18.71	18.92	2
		6	0	17.54	17.90	17.84	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 18615	Mid CH 18900	High CH 19185	MPR
				Frequency 1851.5 MHz	Frequency 1880 MHz	Frequency 1908.5 MHz	
2/ 3	QPSK	1	0	20.67	20.92	21.04	0
		1	7	20.43	20.76	20.93	0
		1	14	20.08	20.38	20.54	0
		8	0	19.64	19.93	20.10	1
		8	3	19.44	19.95	19.91	1
		8	7	19.34	19.88	19.85	1
		15	0	19.54	19.84	19.87	1
	16QAM	1	0	19.93	20.29	20.46	1
		1	7	19.84	20.23	20.26	1
		1	14	19.36	19.71	19.88	1
		8	0	18.54	18.95	18.88	2
		8	3	18.53	18.91	19.05	2
		8	7	18.46	18.78	18.80	2
		15	0	18.53	18.72	18.92	2
	64QAM	1	0	18.72	19.10	19.14	2
		1	7	18.67	18.93	18.99	2
		1	14	18.23	18.61	18.61	2
		8	0	17.57	17.81	17.96	3
		8	3	17.55	17.86	17.97	3
		8	7	17.40	17.75	17.88	3
		15	0	17.56	17.87	17.88	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 18625	Mid CH 18900	High CH 19175	MPR
				Frequency 1852.5 MHz	Frequency 1880 MHz	Frequency 1907.5 MHz	
2/ 5	QPSK	1	0	20.68	20.87	21.05	0
		1	12	20.48	20.73	20.93	0
		1	24	20.09	20.37	20.58	0
		12	0	19.67	19.93	20.07	1
		12	6	19.44	19.96	19.92	1
		12	13	19.38	19.84	19.86	1
		25	0	19.52	19.87	19.90	1
	16QAM	1	0	19.94	20.25	20.46	1
		1	12	19.81	20.26	20.25	1
		1	24	19.36	19.71	19.87	1
		12	0	18.54	18.93	18.85	2
		12	6	18.50	18.95	19.01	2
		12	13	18.41	18.80	18.83	2
		25	0	18.53	18.73	18.89	2
	64QAM	1	0	18.66	19.07	19.20	2
		1	12	18.64	18.99	18.99	2
		1	24	18.16	18.66	18.61	2
		12	0	17.58	17.78	17.95	3
		12	6	17.49	17.93	17.96	3
		12	13	17.44	17.74	17.85	3
		25	0	17.52	17.93	17.86	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 18650	Mid CH 18900	High CH 19150	MPR
				Frequency 1855 MHz	Frequency 1880 MHz	Frequency 1905 MHz	
2/ 10	QPSK	1	0	20.65	20.90	21.05	0
		1	24	20.48	20.73	20.94	0
		1	49	20.06	20.41	20.54	0
		25	0	19.68	19.92	20.10	1
		25	12	19.50	19.90	19.92	1
		25	25	19.36	19.81	19.85	1
		50	0	19.57	19.87	19.87	1
	16QAM	1	0	19.94	20.22	20.42	1
		1	24	19.86	20.22	20.28	1
		1	49	19.36	19.72	19.84	1
		25	0	18.56	18.91	18.91	2
		25	12	18.54	18.89	19.06	2
		25	25	18.40	18.81	18.80	2
		50	0	18.57	18.72	18.93	2
	64QAM	1	0	18.65	19.08	19.17	2
		1	24	18.69	18.95	19.03	2
		1	49	18.22	18.60	18.58	2
		25	0	17.56	17.75	18.01	3
		25	12	17.56	17.92	17.90	3
		25	25	17.43	17.71	17.87	3
		50	0	17.57	17.89	17.87	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 18675	Mid CH 18900	High CH 19125	MPR
				Frequency 1857.5 MHz	Frequency 1880 MHz	Frequency 1902.5 MHz	
2/ 15	QPSK	1	0	20.72	20.90	21.02	0
		1	37	20.46	20.78	20.89	0
		1	74	20.12	20.44	20.55	0
		36	0	19.65	19.93	20.11	1
		36	19	19.51	19.95	19.92	1
		36	39	19.34	19.82	19.85	1
		75	0	19.57	19.85	19.92	1
	16QAM	1	0	19.98	20.29	20.42	1
		1	37	19.85	20.23	20.28	1
		1	74	19.32	19.77	19.86	1
		36	0	18.60	18.91	18.92	2
		36	19	18.48	18.93	19.02	2
		36	39	18.45	18.79	18.83	2
		75	0	18.58	18.75	18.86	2
	64QAM	1	0	18.67	19.09	19.18	2
		1	37	18.70	18.94	19.00	2
		1	74	18.18	18.59	18.61	2
		36	0	17.61	17.81	17.95	3
		36	19	17.50	17.86	17.92	3
		36	39	17.46	17.78	17.89	3
		75	0	17.56	17.87	17.88	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 18700	Mid CH 18900	High CH 19100	MPR
				Frequency 1860 MHz	Frequency 1880 MHz	Frequency 1900 MHz	
2/ 20	QPSK	1	0	20.73	20.94	21.10	0
		1	50	20.50	20.81	20.95	0
		1	99	20.14	20.45	20.59	0
		50	0	19.71	19.98	20.12	1
		50	25	19.52	19.97	19.97	1
		50	50	19.42	19.89	19.87	1
		100	0	19.58	19.89	19.95	1
	16QAM	1	0	20.01	20.30	20.48	1
		1	50	19.89	20.28	20.30	1
		1	99	19.38	19.79	19.89	1
		50	0	18.62	18.99	18.93	2
		50	25	18.56	18.97	19.07	2
		50	50	18.48	18.85	18.85	2
		100	0	18.59	18.80	18.94	2
	64QAM	1	0	18.73	19.12	19.22	2
		1	50	18.72	19.01	19.05	2
		1	99	18.24	18.67	18.63	2
		50	0	17.62	17.83	18.03	3
		50	25	17.57	17.94	17.98	3
		50	50	17.48	17.79	17.93	3
		100	0	17.58	17.95	17.89	3

LTE BAND 25

Band/BW	Modulation	RB Size	RB Offset	Low CH 26047	Mid CH 26365	High CH 26683	MPR
				Frequency 1850.7 MHz	Frequency 1882.5 MHz	Frequency 1914.3 MHz	
25/ 1.4	QPSK	1	0	20.64	21.15	21.09	0
		1	2	20.64	21.12	21.12	0
		1	5	20.15	20.61	20.59	0
		3	0	20.63	21.12	21.21	0
		3	1	20.65	21.23	21.03	0
		3	3	20.56	21.04	21.10	0
		6	0	19.82	20.24	20.28	1
	16QAM	1	0	19.85	20.35	20.31	1
		1	2	20.08	20.55	20.59	1
		1	5	19.60	20.11	20.16	1
		3	0	19.67	20.10	20.16	1
		3	1	19.53	20.14	20.08	1
		3	3	19.65	20.11	20.18	1
		6	0	18.50	19.00	18.93	2
	64QAM	1	0	18.81	19.36	19.37	2
		1	2	18.85	19.36	19.34	2
		1	5	18.82	19.24	19.35	2
		3	0	18.64	19.15	19.06	2
		3	1	18.42	18.95	18.92	2
		3	3	18.53	19.01	19.04	2
		6	0	17.55	17.98	18.04	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 26055	Mid CH 26365	High CH 26675	MPR
				Frequency 1851.5 MHz	Frequency 1882.5 MHz	Frequency 1913.5 MHz	
25/ 3	QPSK	1	0	20.66	21.17	21.08	0
		1	7	20.60	21.13	21.12	0
		1	14	20.11	20.61	20.59	0
		8	0	19.62	20.15	20.21	1
		8	3	19.58	20.23	20.05	1
		8	7	19.53	20.11	20.14	1
		15	0	19.79	20.25	20.22	1
	16QAM	1	0	19.82	20.41	20.34	1
		1	7	20.05	20.58	20.57	1
		1	14	19.63	20.11	20.16	1
		8	0	18.63	19.11	19.16	2
		8	3	18.58	19.09	19.11	2
		8	7	18.67	19.09	19.14	2
		15	0	18.50	18.94	18.96	2
	64QAM	1	0	18.87	19.39	19.31	2
		1	7	18.88	19.30	19.33	2
		1	14	18.83	19.26	19.35	2
		8	0	17.67	18.19	18.07	3
		8	3	17.46	17.89	17.97	3
		8	7	17.50	18.05	18.00	3
		15	0	17.57	17.95	18.08	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 26065	Mid CH 26365	High CH 26665	MPR
				Frequency 1852.5 MHz	Frequency 1882.5 MHz	Frequency 1912.5 MHz	
25/ 5	QPSK	1	0	20.67	21.12	21.09	0
		1	12	20.65	21.10	21.12	0
		1	24	20.12	20.60	20.63	0
		12	0	19.65	20.15	20.18	1
		12	6	19.58	20.24	20.06	1
		12	13	19.57	20.07	20.15	1
		25	0	19.77	20.28	20.25	1
	16QAM	1	0	19.83	20.37	20.34	1
		1	12	20.02	20.61	20.56	1
		1	24	19.63	20.11	20.15	1
		12	0	18.63	19.09	19.13	2
		12	6	18.55	19.13	19.07	2
		12	13	18.62	19.11	19.17	2
		25	0	18.50	18.95	18.93	2
	64QAM	1	0	18.81	19.36	19.37	2
		1	12	18.85	19.36	19.33	2
		1	24	18.76	19.31	19.35	2
		12	0	17.68	18.16	18.06	3
		12	6	17.40	17.96	17.96	3
		12	13	17.54	18.04	17.97	3
		25	0	17.53	18.01	18.06	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 26090	Mid CH 26365	High CH 26640	MPR
				Frequency 1855 MHz	Frequency 1882.5 MHz	Frequency 1910 MHz	
25/ 10	QPSK	1	0	20.64	21.15	21.09	0
		1	24	20.65	21.10	21.13	0
		1	49	20.09	20.64	20.59	0
		25	0	19.66	20.14	20.21	1
		25	12	19.64	20.18	20.06	1
		25	25	19.55	20.04	20.14	1
		50	0	19.82	20.28	20.22	1
	16QAM	1	0	19.83	20.34	20.30	1
		1	24	20.07	20.57	20.59	1
		1	49	19.63	20.12	20.12	1
		25	0	18.65	19.07	19.19	2
		25	12	18.59	19.07	19.12	2
		25	25	18.61	19.12	19.14	2
		50	0	18.54	18.94	18.97	2
	64QAM	1	0	18.80	19.37	19.34	2
		1	24	18.90	19.32	19.37	2
		1	49	18.82	19.25	19.32	2
		25	0	17.66	18.13	18.12	3
		25	12	17.47	17.95	17.90	3
		25	25	17.53	18.01	17.99	3
		50	0	17.58	17.97	18.07	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 26115	Mid CH 26365	High CH 26615	MPR
				Frequency 1857.5 MHz	Frequency 1882.5 MHz	Frequency 1907.5 MHz	
25/ 15	QPSK	1	0	20.71	21.15	21.06	0
		1	37	20.63	21.15	21.08	0
		1	74	20.15	20.67	20.60	0
		36	0	19.63	20.15	20.22	1
		36	19	19.65	20.23	20.06	1
		36	39	19.53	20.05	20.14	1
		75	0	19.82	20.26	20.27	1
	16QAM	1	0	19.87	20.41	20.30	1
		1	37	20.06	20.58	20.59	1
		1	74	19.59	20.17	20.14	1
		36	0	18.69	19.07	19.20	2
		36	19	18.53	19.11	19.08	2
		36	39	18.66	19.10	19.17	2
		75	0	18.55	18.97	18.90	2
	64QAM	1	0	18.82	19.38	19.35	2
		1	37	18.91	19.31	19.34	2
		1	74	18.78	19.24	19.35	2
		36	0	17.71	18.19	18.06	3
		36	19	17.41	17.89	17.92	3
		36	39	17.56	18.08	18.01	3
		75	0	17.57	17.95	18.08	3

Band/BW	Modulation	RB Size	RB Offset	Low CH 26140	Mid CH 26365	High CH 26590	MPR
				Frequency 1860 MHz	Frequency 1882.5 MHz	Frequency 1905 MHz	
25/ 20	QPSK	1	0	20.72	**21.19**	21.14	0
		1	50	20.67	21.18	21.14	0
		1	99	20.17	20.68	20.64	0
		50	0	19.69	20.20	20.23	1
		50	25	19.66	20.25	20.11	1
		50	50	19.61	20.12	20.16	1
		100	0	19.83	20.30	20.30	1
	16QAM	1	0	19.90	20.42	20.36	1
		1	50	20.10	20.63	20.61	1
		1	99	19.65	20.19	20.17	1
		50	0	18.71	19.15	19.21	2
		50	25	18.61	19.15	19.13	2
		50	50	18.69	19.16	19.19	2
		100	0	18.56	19.02	18.98	2
	64QAM	1	0	18.88	19.41	19.39	2
		1	50	18.93	19.38	19.39	2
		1	99	18.84	19.32	19.37	2
		50	0	17.72	18.21	18.14	3
		50	25	17.48	17.97	17.98	3
		50	50	17.58	18.09	18.05	3
		100	0	17.59	18.03	18.09	3

EIRP POWER (dBm)

GSM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
512	1850.2	29.35	2.67	32.02	**1592.21**	2
661	1880.0	29.3	2.67	31.97	1573.98	2
810	1909.8	29.2	2.67	31.87	1538.15	2

EDGE

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
512	1850.2	25.72	2.67	28.39	690.24	2
661	1880.0	25.74	2.67	28.41	693.43	2
810	1909.8	25.8	2.67	28.47	**703.07**	2

WCDMA

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
9662	1852.4	21.81	2.67	24.48	280.54	2
9800	1880	21.63	2.67	24.3	269.15	2
9938	1907.6	21.83	2.67	24.5	**281.84**	2

LTE BAND 2

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	20.65	2.67	23.32	214.78	2
18900	1880.0	20.95	2.67	23.62	230.14	2
19193	1908.3	21.1	2.67	23.77	**238.23**	2

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	19.96	2.67	22.63	183.23	2
18900	1880.0	20.23	2.67	22.9	194.98	2
19193	1908.3	20.43	2.67	23.1	204.17	2

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18607	1850.7	18.66	2.67	21.33	135.83	2
18900	1880.0	19.07	2.67	21.74	149.28	2
19193	1908.3	19.2	2.67	21.87	153.82	2

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	20.67	2.67	23.34	215.77	2
18900	1880.0	20.92	2.67	23.59	228.56	2
19185	1908.5	21.04	2.67	23.71	**234.96**	2

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	19.93	2.67	22.6	181.97	2
18900	1880.0	20.29	2.67	22.96	197.7	2
19185	1908.5	20.46	2.67	23.13	205.59	2

CHANNEL BANDWIDTH: 3MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18615	1851.5	18.72	2.67	21.39	137.72	2
18900	1880.0	19.1	2.67	21.77	150.31	2
19185	1908.5	19.14	2.67	21.81	151.71	2

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	20.68	2.67	23.35	216.27	2
18900	1880.0	20.87	2.67	23.54	225.94	2
19175	1907.5	21.05	2.67	23.72	**235.50**	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	19.94	2.67	22.61	182.39	2
18900	1880.0	20.26	2.67	22.93	196.34	2
19175	1907.5	20.46	2.67	23.13	205.59	2

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18625	1852.5	18.66	2.67	21.33	135.83	2
18900	1880.0	19.07	2.67	21.74	149.28	2
19175	1907.5	19.2	2.67	21.87	153.82	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855.0	20.65	2.67	23.32	214.78	2
18900	1880.0	20.9	2.67	23.57	227.51	2
19150	1905.0	21.05	2.67	23.72	**235.50**	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855.0	19.94	2.67	22.61	182.39	2
18900	1880.0	20.22	2.67	22.89	194.54	2
19150	1905.0	20.42	2.67	23.09	203.7	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18650	1855.0	18.69	2.67	21.36	136.77	2
18900	1880.0	19.08	2.67	21.75	149.62	2
19150	1905.0	19.17	2.67	21.84	152.76	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	20.72	2.67	23.39	218.27	2
18900	1880.0	20.9	2.67	23.57	227.51	2
19125	1902.5	21.02	2.67	23.69	**233.88**	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	19.98	2.67	22.65	184.08	2
18900	1880.0	20.29	2.67	22.96	197.7	2
19125	1902.5	20.42	2.67	23.09	203.7	2

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18675	1857.5	18.7	2.67	21.37	137.09	2
18900	1880.0	19.09	2.67	21.76	149.97	2
19125	1902.5	19.18	2.67	21.85	153.11	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18700	1860	20.73	2.67	23.4	218.78	2
18900	1880	20.94	2.67	23.61	229.61	2
19100	1900	21.1	2.67	23.77	**238.23**	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18700	1860	20.01	2.67	22.68	185.35	2
18900	1880	20.3	2.67	22.97	198.15	2
19100	1900	20.48	2.67	23.15	206.54	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
18700	1860	18.73	2.67	21.4	138.04	2
18900	1880	19.12	2.67	21.79	151.01	2
19100	1900	19.22	2.67	21.89	154.53	2

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 25

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26047	1850.7	20.65	2.67	23.32	214.78	2
26365	1882.5	21.23	2.67	23.9	**245.47**	2
26683	1914.3	21.21	2.67	23.88	244.34	2

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26047	1850.7	20.08	2.67	22.75	188.36	2
26365	1882.5	20.55	2.67	23.22	209.89	2
26683	1914.3	20.59	2.67	23.26	211.84	2

CHANNEL BANDWIDTH: 1.4MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26047	1850.7	18.85	2.67	21.52	141.91	2
26365	1882.5	19.36	2.67	22.03	159.59	2
26683	1914.3	19.37	2.67	22.04	159.96	2

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26055	1851.5	20.66	2.67	23.33	215.28	2
26365	1882.5	21.17	2.67	23.84	**242.10**	2
26675	1913.5	21.12	2.67	23.79	239.33	2

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26055	1851.5	20.05	2.67	22.72	187.07	2
26365	1882.5	20.58	2.67	23.25	211.35	2
26675	1913.5	20.57	2.67	23.24	210.86	2

CHANNEL BANDWIDTH: 3MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26047	1851.5	18.88	2.67	21.55	142.89	2
26365	1882.5	19.39	2.67	22.06	160.69	2
26683	1913.5	19.35	2.67	22.02	159.22	2

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26065	1852.5	20.67	2.67	23.34	215.77	2
26365	1882.5	21.12	2.67	23.79	239.33	2
26665	1912.5	21.12	2.67	23.79	**239.33**	2

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26065	1852.5	20.02	2.67	22.69	185.78	2
26365	1882.5	20.61	2.67	23.28	212.81	2
26665	1912.5	20.56	2.67	23.23	210.38	2

CHANNEL BANDWIDTH: 5MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26065	1852.5	18.85	2.67	21.52	141.91	2
26365	1882.5	19.36	2.67	22.03	159.59	2
26665	1912.5	19.37	2.67	22.04	159.96	2

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26090	1855	20.65	2.67	23.32	214.78	2
26365	1882.5	21.15	2.67	23.82	**240.99**	2
26640	1910	21.13	2.67	23.8	239.88	2

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26090	1855	20.07	2.67	22.74	187.93	2
26365	1882.5	20.57	2.67	23.24	210.86	2
26640	1910	20.59	2.67	23.26	211.84	2

CHANNEL BANDWIDTH: 10MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26090	1855	18.9	2.67	21.57	143.55	2
26365	1882.5	19.37	2.67	22.04	159.96	2
26640	1910	19.37	2.67	22.04	159.96	2

CHANNEL BANDWIDTH: 15MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26115	1857.5	20.71	2.67	23.38	217.77	2
26365	1882.5	21.15	2.67	23.82	**240.99**	2
26615	1907.5	21.08	2.67	23.75	237.14	2

CHANNEL BANDWIDTH: 15MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26115	1857.5	20.06	2.67	22.73	187.5	2
26365	1882.5	20.58	2.67	23.25	211.35	2
26615	1907.5	20.59	2.67	23.26	211.84	2

CHANNEL BANDWIDTH: 15MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26115	1857.5	18.91	2.67	21.58	143.88	2
26365	1882.5	19.38	2.67	22.05	160.32	2
26615	1907.5	19.35	2.67	22.02	159.22	2

CHANNEL BANDWIDTH: 20MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26140	1860	20.72	2.67	23.39	218.27	2
26365	1882.5	21.19	2.67	23.86	**243.22**	2
26590	1905	21.14	2.67	23.81	240.44	2

CHANNEL BANDWIDTH: 20MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26140	1860	20.1	2.67	22.77	189.23	2
26365	1882.5	20.63	2.67	23.3	213.8	2
26590	1905	20.61	2.67	23.28	212.81	2

CHANNEL BANDWIDTH: 20MHz 64QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G_T-L_C (dB)	EIRP (dBm)	EIRP (mW)	Limit (W)
26140	1860	18.93	2.67	21.6	144.54	2
26365	1882.5	19.41	2.67	22.08	161.44	2
26590	1905	19.39	2.67	22.06	160.69	2

3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

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

3.2.2 TEST PROCEDURE

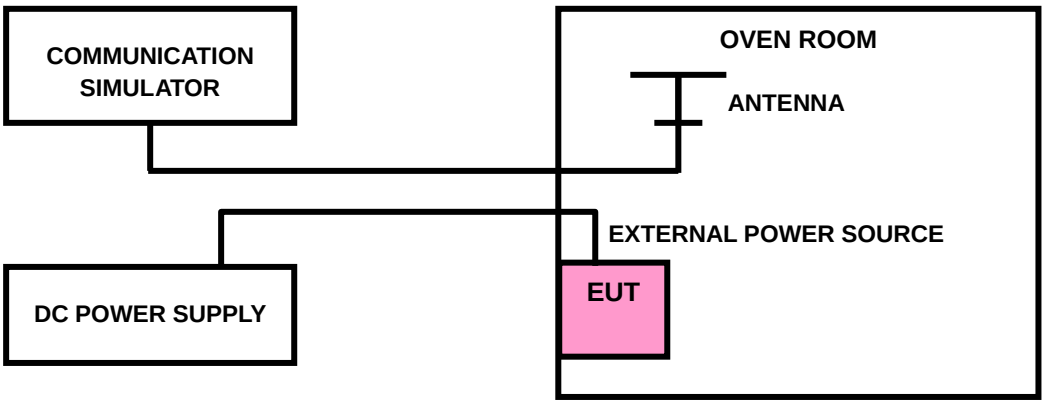
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

3.2.3 TEST SETUP



3.2.4 TEST RESULTS

GSM1900

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
V_{nor}	0.0002	0.0013	2.5
V_{min}	-0.0015	-0.0016	2.5
V_{max}	0.0010	0.0007	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0034	-0.0037	2.5
-20	-0.0031	-0.0035	2.5
-10	-0.0034	-0.0032	2.5
0	-0.0012	-0.0039	2.5
10	-0.0021	-0.0026	2.5
20	-0.0015	-0.0024	2.5
30	-0.0019	-0.0016	2.5
40	-0.0014	-0.0010	2.5
50	-0.0023	-0.0003	2.5

EDGE 1900

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
V_{nor}	0.0008	0.0011	2.5
V_{min}	-0.0014	-0.0013	2.5
V_{max}	0.0009	0.0009	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0034	-0.0037	2.5
-20	-0.0031	-0.0035	2.5
-10	-0.0034	-0.0032	2.5
0	-0.0012	-0.0039	2.5
10	-0.0021	-0.0026	2.5
20	-0.0015	-0.0024	2.5
30	-0.0019	-0.0016	2.5
40	-0.0014	-0.0010	2.5
50	-0.0023	-0.0003	2.5

WCDMA BAND II

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
V_{nor}	0.0014	0.0011	2.5
V_{min}	0.0007	0.0009	2.5
V_{max}	0.0028	0.0015	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	FREQUENCY ERROR (ppm)		LIMIT (ppm)
	Low Channel	High Channel	
-30	-0.0035	-0.0032	2.5
-20	-0.0037	-0.0034	2.5
-10	-0.0029	-0.0036	2.5
0	-0.0016	-0.0019	2.5
10	0.0004	0.0005	2.5
20	0.0012	0.0013	2.5
30	0.0027	0.0026	2.5
40	0.0018	0.0042	2.5
50	0.0022	0.0026	2.5

LTE BAND 2

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.002	0.0024	2.5
V_{min}	-0.0031	-0.003	2.5
V_{max}	0.0022	0.0021	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0084	-0.0081	2.5
-20	-0.0081	-0.0075	2.5
-10	-0.0074	-0.0078	2.5
0	-0.0074	-0.0076	2.5
10	-0.0046	-0.0053	2.5
20	-0.004	-0.0039	2.5
30	-0.0032	-0.0032	2.5
40	-0.0016	-0.0019	2.5
50	-0.0002	-0.0002	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0022	0.0021	2.5
V_{min}	-0.0021	-0.0025	2.5
V_{max}	0.0018	0.0018	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0082	-0.0084	2.5
-20	-0.0074	-0.0068	2.5
-10	-0.0070	-0.0083	2.5
0	-0.0078	-0.0073	2.5
10	-0.0054	-0.0045	2.5
20	-0.0044	-0.0043	2.5
30	-0.0033	-0.0041	2.5
40	-0.0022	-0.0018	2.5
50	-0.0002	-0.0005	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0022	0.0026	2.5
V_{min}	-0.0024	-0.003	2.5
V_{max}	0.0021	0.0021	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0085	-0.0081	2.5
-20	-0.0074	-0.0081	2.5
-10	-0.0082	-0.0082	2.5
0	-0.0075	-0.0076	2.5
10	-0.0045	-0.0051	2.5
20	-0.0044	-0.0038	2.5
30	-0.004	-0.0038	2.5
40	-0.0018	-0.0015	2.5
50	-0.0004	-0.0005	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0024	0.0025	2.5
V_{min}	-0.0031	-0.003	2.5
V_{max}	0.0025	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0085	-0.0082	2.5
-20	-0.0080	-0.0073	2.5
-10	-0.0081	-0.0072	2.5
0	-0.0074	-0.0074	2.5
10	-0.0045	-0.0047	2.5
20	-0.0044	-0.0037	2.5
30	-0.0026	-0.0037	2.5
40	-0.0019	-0.0014	2.5
50	-0.0002	-0.0005	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0026	0.0025	2.5
V_{min}	-0.0031	-0.003	2.5
V_{max}	0.0026	0.0025	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0084	-0.008	2.5
-20	-0.0069	-0.007	2.5
-10	-0.0083	-0.008	2.5
0	-0.0074	-0.0073	2.5
10	-0.0049	-0.0045	2.5
20	-0.0043	-0.0043	2.5
30	-0.0029	-0.0032	2.5
40	-0.0018	-0.0019	2.5
50	-0.0005	-0.0005	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0026	0.0026	2.5
V_{min}	-0.0031	-0.003	2.5
V_{max}	0.0024	0.0026	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0085	-0.0083	2.5
-20	-0.0071	-0.0080	2.5
-10	-0.0084	-0.0081	2.5
0	-0.0074	-0.0075	2.5
10	-0.0051	-0.0055	2.5
20	-0.0039	-0.004	2.5
30	-0.0031	-0.0032	2.5
40	-0.0018	-0.0022	2.5
50	-0.0003	-0.0005	2.5

LTE BAND 25

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0009	0.0011	2.5
V_{min}	-0.0014	-0.0013	2.5
V_{max}	0.001	0.0009	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	1.4MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0038	-0.0037	2.5
-20	-0.0033	-0.0031	2.5
-10	-0.0037	-0.0035	2.5
0	-0.0035	-0.0034	2.5
10	-0.0021	-0.0022	2.5
20	-0.0018	-0.0019	2.5
30	-0.0014	-0.0019	2.5
40	-0.0007	-0.0009	2.5
50	-0.0001	-0.0001	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.001	0.0009	2.5
V_{min}	-0.0009	-0.0011	2.5
V_{max}	0.0008	0.0008	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	3MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0037	-0.0036	2.5
-20	-0.0035	-0.0037	2.5
-10	-0.0034	-0.0030	2.5
0	-0.0035	-0.0033	2.5
10	-0.0021	-0.0023	2.5
20	-0.0019	-0.0019	2.5
30	-0.0015	-0.0011	2.5
40	-0.0008	-0.001	2.5
50	-0.0002	-0.0001	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.001	0.0011	2.5
V_{min}	-0.001	-0.0013	2.5
V_{max}	0.0009	0.0009	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	5MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0038	-0.0035	2.5
-20	-0.0029	-0.0036	2.5
-10	-0.0035	-0.0031	2.5
0	-0.0033	-0.0032	2.5
10	-0.0024	-0.0024	2.5
20	-0.002	-0.0017	2.5
30	-0.0017	-0.0012	2.5
40	-0.001	-0.001	2.5
50	-0.0002	-0.0002	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0011	0.001	2.5
V_{min}	-0.0014	-0.0013	2.5
V_{max}	0.0011	0.001	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	10MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0038	-0.0036	2.5
-20	-0.0039	-0.0035	2.5
-10	-0.0037	-0.0033	2.5
0	-0.0034	-0.0033	2.5
10	-0.0025	-0.0024	2.5
20	-0.0018	-0.0018	2.5
30	-0.0017	-0.0015	2.5
40	-0.0008	-0.0009	2.5
50	-0.0001	-0.0002	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0011	0.0011	2.5
V_{min}	-0.0014	-0.0013	2.5
V_{max}	0.0012	0.001	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

TEMP. (℃)	15MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0038	-0.0037	2.5
-20	-0.0035	-0.0033	2.5
-10	-0.0039	-0.0034	2.5
0	-0.0034	-0.0033	2.5
10	-0.0024	-0.002	2.5
20	-0.0018	-0.0017	2.5
30	-0.0012	-0.0017	2.5
40	-0.0009	-0.0007	2.5
50	-0.0001	-0.0001	2.5

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
V_{nor}	0.0011	0.0011	2.5
V_{min}	-0.0014	-0.0013	2.5
V_{max}	0.0012	0.0011	2.5

NOTE: The applicant defined the normal working voltage of the battery is from V_{min} to V_{max}.

FREQUENCY ERROR vs. TEMPERATURE.

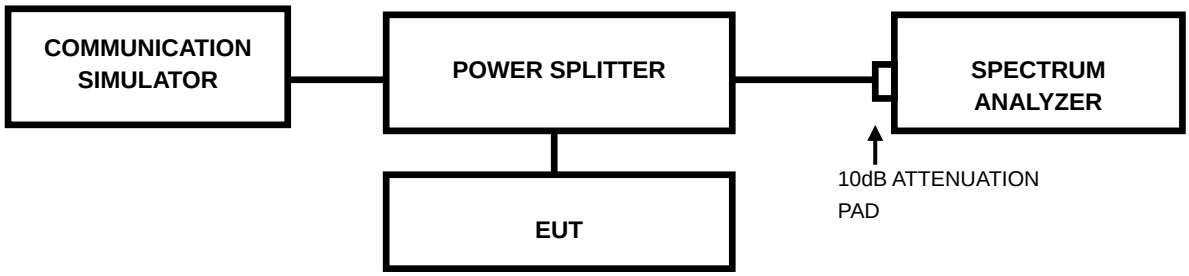
TEMP. (℃)	20MHz		LIMIT (ppm)
	FREQUENCY ERROR (ppm)		
	Low Channel	High Channel	
-30	-0.0038	-0.0036	2.5
-20	-0.0036	-0.0034	2.5
-10	-0.0032	-0.0037	2.5
0	-0.0034	-0.0032	2.5
10	-0.0022	-0.0024	2.5
20	-0.0017	-0.0017	2.5
30	-0.0016	-0.0013	2.5
40	-0.001	-0.001	2.5
50	-0.0001	-0.0001	2.5

3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

3.3.2 TEST SETUP

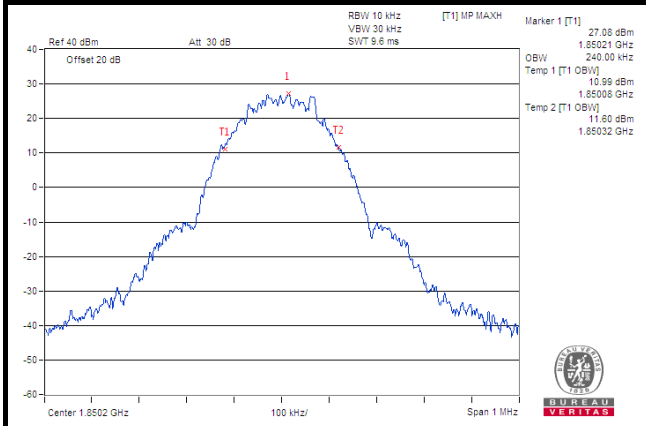


3.3.3 TEST RESULTS

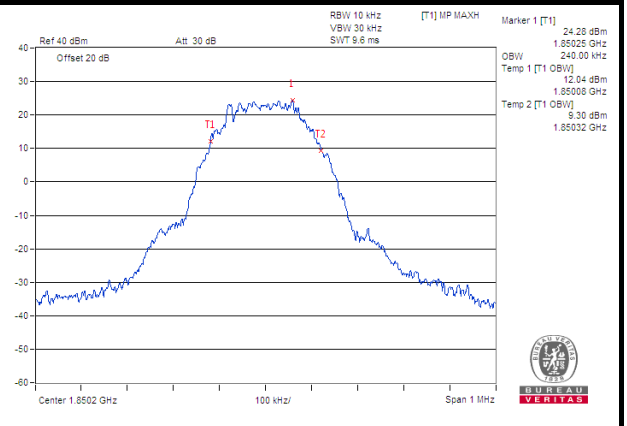
Channel	Frequency (MHz)	99% Occupied bandwidth (kHz)		Channel	Frequency (MHz)	99% Occupied bandwidth (kHz)
		GPRS	EDGE			WCAMA
512	1850.2	240.000	240.000	9262	1852.4	4.160
661	1880.0	240.000	240.000	9400	1880.0	4.160
810	1909.8	240.000	240.000	9538	1907.6	4.160

SPECTRUM PLOT OF WORST VALUE of 99% Occupied Bandwidth

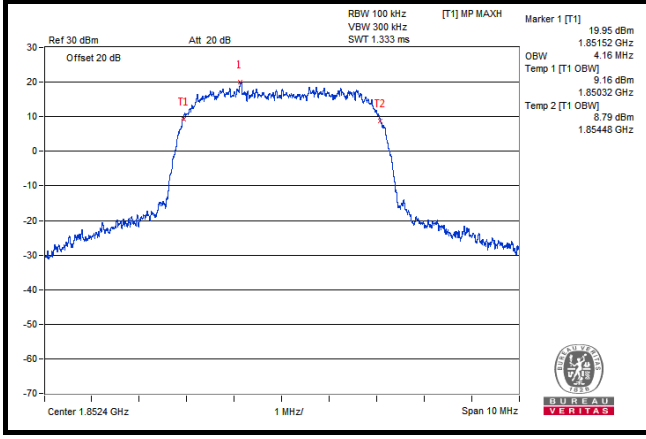
GPRS



EDGE



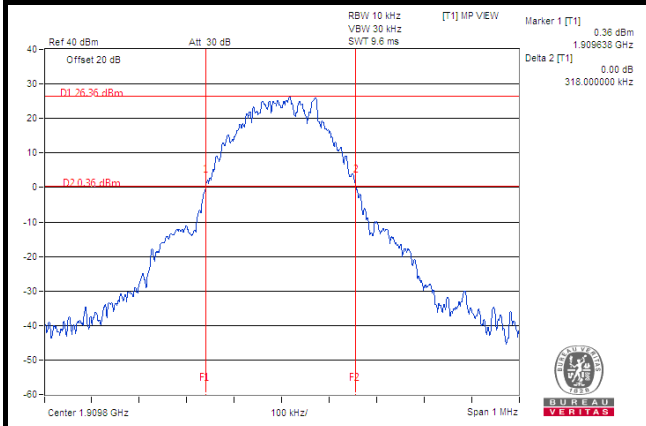
WCAMA



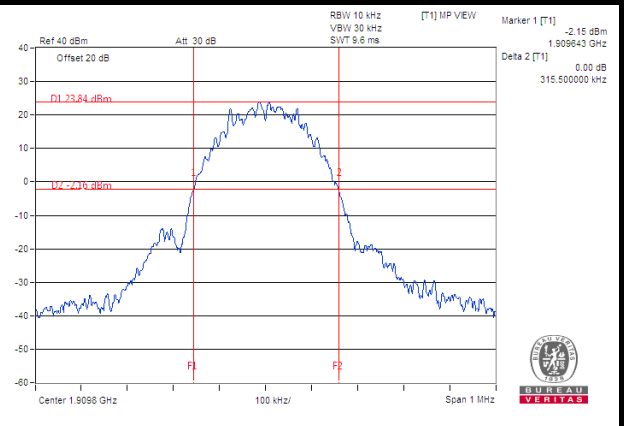
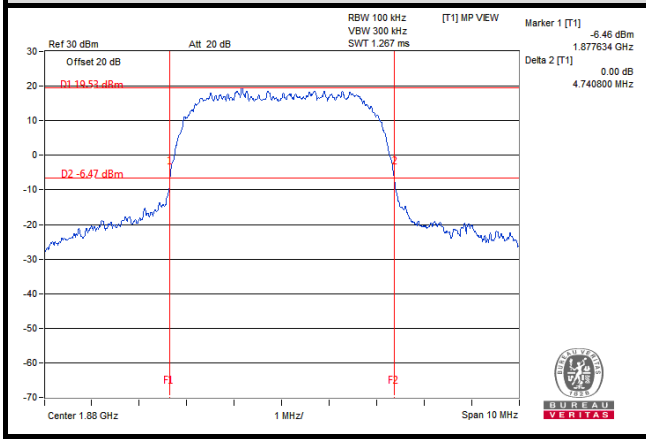
Channel	Frequency (MHz)	26dB bandwidth (MHz)		Channel	Frequency (MHz)	26dB bandwidth (MHz)
		GPRS	EDGE			WCAMA
512	1850.2	320.600	317.700	9262	1852.4	4.755
661	1880.0	326.000	316.300	9400	1880.0	4.741
810	1909.8	318.000	315.500	9538	1907.6	4.743

SPECTRUM PLOT OF WORST VALUE of 26 dB bandwidth

GSM



EDGE



WCAMA