Partial FCC Test Report
(Part 24)

Report No.:	RFBBGM-WTW-P21120093-1
FCC ID:	WIYSLM500QA
Test Model:	SLM500
Received Date:	Dec. 24, 2021
Test Date:	Jan. 13 ~ Mar. 02, 2022
Issued Date:	Mar. 17, 2022
Applicant:	CASTLES TECHNOLOGY CO., LTD.
Address:	6F, NO. 207-5, SEC. 3, BEIXIN RD., XINDIAN DISTRICT, NEW TAIPEI CITY 23143, TAIWAN (R. O. C.)
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Lin Kou Laboratories
Lab Address:	No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan
Test Location:	No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, Taiwan
FCC Registration / Designation Number:	788550 / TW0003

Testing Laboratory
2021

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Release Control Record

Issue No.	Description	Date Issued
RFBBGM-WTW-P21120093-1	Original release	Mar. 17, 2022

1 Certificate of Conformity

Product:	Smart module
Brand:	CASTLES TECHNOLOGY
Test Model:	SLM500
Sample Status:	Identical Prototype
Applicant:	CASTLES TECHNOLOGY CO., LTD.
Test Date:	Jan. 13 ~ Mar. 02, 2022
Standards:	FCC Part 24, Subpart E

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen , **Date:** Mar. 17, 2022

Pettie Chen / Senior Specialist

Approved by : Jeremy Lin , **Date:** Mar. 17, 2022

Jeremy Lin / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 24 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 24.232	Equivalent Isotropic Radiated Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	N/A	Refer to Note
24.232(d)	Peak to Average Ratio	N/A	Refer to Note
2.1055 24.235	Frequency Stability	N/A	Refer to Note
2.1049	Occupied Bandwidth	N/A	Refer to Note
24.238	Band Edge Measurements	N/A	Refer to Note
2.1051 24.238	Conducted Spurious Emissions	N/A	Refer to Note
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -17.14dB at 30.97MHz.

Note:

1. This report is a partial report. Therefore, only test item of Equivalent Isotropic Radiated Power and Radiated Spurious Emissions tests were performed for this report. Other testing data please refer to SGS report no.: SZCR210300003005 & SZCR210300003006 & SZCR210300003007 (Smart module, Brand: Meig Link, Model: SLM500, FCC ID: 2APJ4-SLM500).
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 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	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.00 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 09, 2021	Apr. 08, 2022
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Jun. 10, 2021	Jun. 09, 2022
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Oct. 28, 2021	Oct. 27, 2022
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 14, 2021	Nov. 13, 2022
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Oct. 26, 2021	Oct. 25, 2022
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Jun. 05, 2021	Jun. 04, 2022
Preamplifier Agilent (Above 1GHz)	8449B	3008A01963	Jul. 24, 2021	Jul. 23, 2022
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 16, 2021	Jan. 15, 2022
			Jan. 15, 2022	Jan. 14, 2023
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Jan. 16, 2021	Jan. 15, 2022
			Jan. 15, 2022	Jan. 14, 2023
RF signal cable Woken	8D-FB	Cable-CH9-01	Jun. 05, 2021	Jun. 04, 2022
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower &Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55190004/MY55190007/MY55210005	Jul. 12, 2021	Jul. 11, 2022
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 01, 2021	May 31, 2022
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	Jun. 02, 2021	Jun. 01, 2022

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.

3 General Information

3.1 General Description of EUT

Product	Smart module	
Brand	CASTLES TECHNOLOGY	
Test Model	SLM500	
Sample Status	Identical Prototype	
Power Supply Rating	5.0 Vdc (host equipment) 3.65 or 3.7 Vdc	
Modulation Type	GSM, GPRS: GMSK EDGE: 8PSK WCDMA: BPSK, QPSK HSDPA: BPSK HSUPA: QPSK LTE: QPSK, 16QAM	
Operating Frequency	GSM/GPRS/EDGE	1850.2~1909.8MHz
	WCDMA Band 2	1852.4~1907.6MHz
	LTE Band 2 (Channel Bandwidth 1.4MHz)	1850.7~1909.3MHz
	LTE Band 2 (Channel Bandwidth 3MHz)	1851.5~1908.5MHz
	LTE Band 2 (Channel Bandwidth 5MHz)	1852.5~1907.5MHz
	LTE Band 2 (Channel Bandwidth 10MHz)	1855.0~1905.0MHz
	LTE Band 2 (Channel Bandwidth 15MHz)	1857.5~1902.5MHz
	LTE Band 2 (Channel Bandwidth 20MHz)	1860.0~1900.0MHz
	LTE Band 25 (Channel Bandwidth 1.4MHz)	1850.7~1914.3MHz
	LTE Band 25 (Channel Bandwidth 3MHz)	1851.5~1913.5MHz
	LTE Band 25 (Channel Bandwidth 5MHz)	1852.5~1912.5MHz
	LTE Band 25 (Channel Bandwidth 10MHz)	1855.0~1910.0MHz
	LTE Band 25 (Channel Bandwidth 15MHz)	1857.5~1907.5MHz
	LTE Band 25 (Channel Bandwidth 20MHz)	1860.0~1905.0MHz

Max. EIRP Power	GSM	442.588mW (26.46dBm)	
	WCDMA Band 2	73.282mW (18.65dBm)	
		QPSK	16QAM
	LTE Band 2 (Channel Bandwidth 1.4MHz)	76.560mW (18.84dBm)	55.847mW (17.47dBm)
	LTE Band 2 (Channel Bandwidth 3MHz)	77.268mW (18.88dBm)	55.847mW (17.47dBm)
	LTE Band 2 (Channel Bandwidth 5MHz)	78.163mW (18.93dBm)	55.847mW (17.47dBm)
	LTE Band 2 (Channel Bandwidth 10MHz)	77.268mW (18.88dBm)	56.494mW (17.52dBm)
	LTE Band 2 (Channel Bandwidth 15MHz)	76.560mW (18.84dBm)	56.234mW (17.50dBm)
	LTE Band 2 (Channel Bandwidth 20MHz)	78.343mW (18.94dBm)	56.624mW (17.53dBm)
	LTE Band 25 (Channel Bandwidth 1.4MHz)	92.045mW (19.64dBm)	70.632mW (18.49dBm)
	LTE Band 25 (Channel Bandwidth 3MHz)	94.189mW (19.74dBm)	68.865mW (18.38dBm)
	LTE Band 25 (Channel Bandwidth 5MHz)	94.189mW (19.74dBm)	68.549mW (18.36dBm)
	LTE Band 25 (Channel Bandwidth 10MHz)	95.280mW (19.79dBm)	68.549mW (18.36dBm)
	LTE Band 25 (Channel Bandwidth 15MHz)	93.325mW (19.70dBm)	69.502mW (18.42dBm)
	LTE Band 25 (Channel Bandwidth 20MHz)	95.499mW (19.80dBm)	69.663mW (18.43dBm)
Antenna Type	Refer to Note		
Accessory Device	NA		
Cable Supplied	NA		

Note:

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report of SGS report no.: SZCR210300003005, SZCR210300003006, SZCR210300003007. The differences from the original report are adding an End-product (POS Terminal (Brand: CASTLES TECHNOLOGY, Model: SATURN1000)). Only Equivalent Isotropic Radiated Power and Radiated Spurious Emissions tests were verified and recorded in this report. Other testing data please refer to the original SGS report no.: SZCR210300003005, SZCR210300003006, SZCR210300003007.
2. The EUT was installed in POS Terminal (Brand: CASTLES TECHNOLOGY, Model: SATURN1000).
3. The antenna information of POS Terminal is listed as below.

Antenna 1			
Antenna Type	Dipole	Brand	ARISTOTLE
Antenna Connector	ipex(MHF)	Model	RFA-LTE-JP169-70-130
Antenna Gain (dBi)	GSM 1900	-0.39	
	WCDMA Band 2	-0.39	
	LTE Band 2	-0.39	
	LTE Band 25	-0.39	

Antenna 2 (RX only)			
Antenna Type	PIFA	Brand	INPAQ
Antenna Connector	NA	Model	WAG-F-LTE12-00-062
Antenna Gain (dBi)	GSM 1900	4.7	
	WCDMA Band 2	4.7	
	LTE Band 2	4.7	
	LTE Band 25	4.7	

*The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

4. The battery and adapter information of POS Terminal is listed as below.

Battery 1 (Support unit)	
Brand	CASTLES TECHNOLOGY
Model	SATURN1000
Rating	3.65Vdc, 5840mAh

Battery 2 (Support unit)	
Brand	CASTLES TECHNOLOGY
Model	SATURN1000
Rating	3.7Vdc, 5840mAh

*Battery 2 was the worst for the final tests.

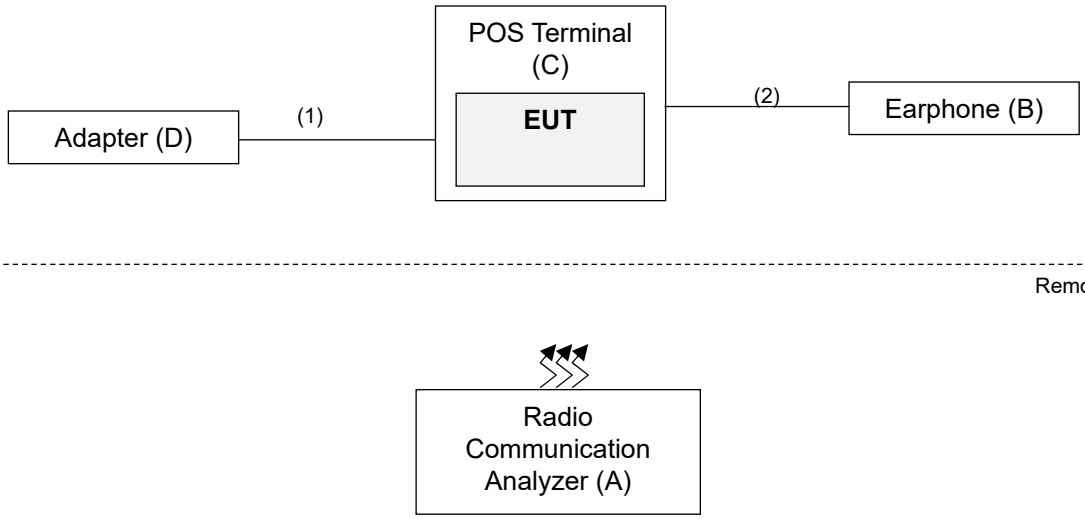
Adapter 1 (Support unit)	
Brand	LUCENT TRANS
Model	1A52-UB52A
Input Power	100-240 Vac; 50/60 Hz; 0.3 A
Output Power	5Vdc; 2A

Adapter 2 (Support unit)	
Brand	LUCENT TRANS
Model	1A52-SR52A
Input Power	100-240 Vac; 50/60 Hz; 0.3 A
Output Power	5Vdc; 2A
Power Cord	1.5m

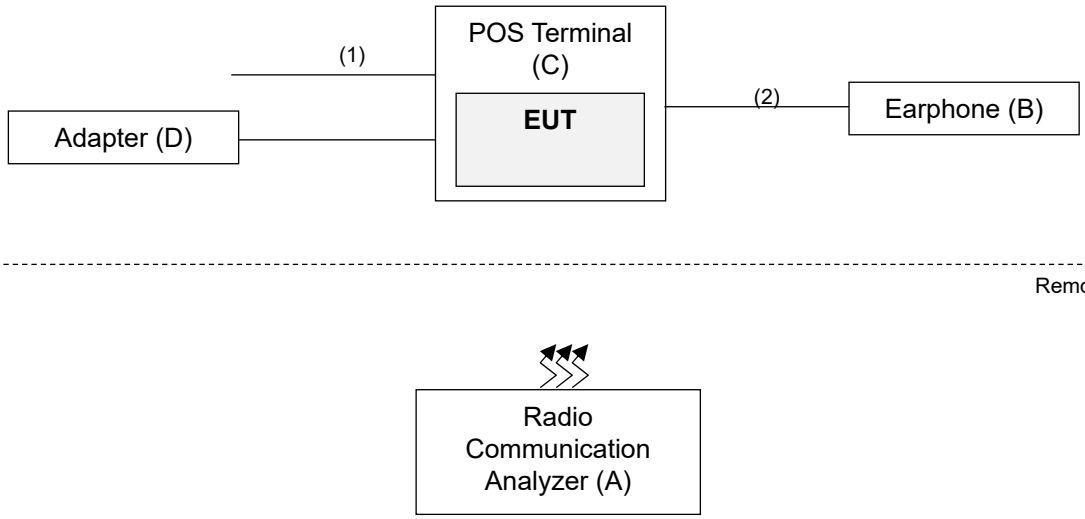
5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Configuration of System under Test

Test Mode A



Test Mode B



3.2.1 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.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Radio Communication Analyzer	Anritsu	MT8821C	6261806803	NA	-
B.	Earphone	APPLE	MB77PFEB	NA	NA	-
C.	POS Terminal	CASTLES TECHNOLOGY	SATURN1000	NA	NA	-
D.	Adapter	LUCENT TRANS	1A52-UB52A	NA	NA	For Test Mode A
			1A52-SR52A	NA	NA	For Test Mode B

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Item A acted as a communication partner to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	0.95	Y	0	Provided by client
2.	Audio cable	1	1.5	Y	0	-

3.3 Test Mode Applicability and Tested Channel Detail

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 was found when positioned on X-plane. Following channel(s) was (were) selected for the final test as listed below:

Test results are presented in the report as below.

Test Mode	Test Condition
A	EUT with adapter 1
B	EUT with adapter 2

GSM Mode

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
A	EIRP	512 to 810	512 (1850.2MHz), 661 (1880.0MHz), 810 (1909.8MHz)	GSM, GPRS, EDGE
A, B	Radiated Emission Below 1GHz	512 to 810	810 (1909.8MHz)	GSM
A	Radiated Emission Above 1GHz	512 to 810	810 (1909.8MHz)	GSM

WCDMA Band 2

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
A	EIRP	9262 to 9538	9262 (1852.4MHz), 9400 (1880.0MHz), 9538 (1907.6MHz)	WCDMA, HSDPA, HSUPA
A, B	Radiated Emission Below 1GHz	9262 to 9538	9538 (1907.6MHz)	WCDMA
A	Radiated Emission Above 1GHz	9262 to 9538	9538 (1907.6MHz)	WCDMA

LTE Band 2

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
A	EIRP	18607 to 19193	18607 (1850.70MHz), 18900 (1880.00MHz), 19193 (1909.30MHz)	1.4MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		18615 to 19185	18615 (1851.50MHz), 18900 (1880.00MHz), 19185 (1908.50MHz)	3MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		18625 to 19175	18625 (1852.50MHz), 18900 (1880.00MHz), 19175 (1907.50MHz)	5MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		18650 to 19150	18650 (1855.00MHz), 18900 (1880.00MHz), 19150 (1905.00MHz)	10MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		18675 to 19125	18675 (1857.50MHz), 18900 (1880.00MHz), 19125 (1902.50MHz)	15MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		18700 to 19100	18700 (1860.00MHz), 18900 (1880.00MHz), 19100 (1900.00MHz)	20MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset

LTE Band 25

EUT Configure Mode	Test item	Available channel	Tested Channel	Channel Bandwidth	Modulation	Mode
A	EIRP	26047 to 26683	26047 (1850.7MHz), 26365 (1882.5MHz), 26683 (1914.3MHz)	1.4MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 2 RB Offset 1 RB / 5 RB Offset 3 RB / 0 RB Offset 3 RB / 1 RB Offset 3 RB / 3 RB Offset 6 RB / 0 RB Offset
		26055 to 26675	26055 (1851.5MHz), 26365 (1882.5MHz), 26675 (1913.5MHz)	3MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 7 RB Offset 1 RB / 14 RB Offset 8 RB / 0 RB Offset 8 RB / 3 RB Offset 8 RB / 7 RB Offset 15 RB / 0 RB Offset
		26065 to 26665	26065 (1852.5MHz), 26365 (1882.5MHz), 26665 (1912.5MHz)	5MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 12 RB Offset 1 RB / 24 RB Offset 12 RB / 0 RB Offset 12 RB / 6 RB Offset 12 RB / 13 RB Offset 25 RB / 0 RB Offset
		26090 to 26640	26090 (1855.0MHz), 26365 (1882.5MHz), 26640 (1910.0MHz)	10MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 1 RB / 49 RB Offset 25 RB / 0 RB Offset 25 RB / 12 RB Offset 25 RB / 25 RB Offset 50 RB / 0 RB Offset
		26115 to 26615	26115 (1857.5MHz), 26365 (1882.5MHz), 26615 (1907.5MHz)	15MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 37 RB Offset 1 RB / 74 RB Offset 36 RB / 0 RB Offset 36 RB / 19 RB Offset 36 RB / 39 RB Offset 75 RB / 0 RB Offset
		26140 to 26590	26140 (1860.0MHz), 26365 (1882.5MHz), 26590 (1905.0MHz)	20MHz	QPSK / 16QAM	1 RB / 0 RB Offset 1 RB / 50 RB Offset 1 RB / 99 RB Offset 50 RB / 0 RB Offset 50 RB / 25 RB Offset 50 RB / 50 RB Offset 100 RB / 0 RB Offset
A, B	Radiated Emission Below 1GHz	26115 to 26615	26615 (1907.5MHz)	15MHz	QPSK	1 RB / 37 RB Offset
A	Radiated Emission Above 1GHz	26115 to 26615	26615 (1907.5MHz)	15MHz	QPSK	1 RB / 37 RB Offset

Test Condition:

Test Item	Environmental Conditions	Input Power (system)	Tested By
EIRP / ERP	21deg. C, 67%RH	120Vac, 60Hz	Rex Wang
Radiated Emission	21deg. C, 67%RH	120Vac, 60Hz	Rex Wang, Greg Lin

3.4 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

3.5 General Description of Applied Standards and References

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

Test Standard:

FCC 47 CFR Part 2
FCC 47 CFR Part 24
ANSI/TIA/EIA-603-E 2016
ANSI 63.26-2015

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

References Test Guidance:

KDB 971168 D01 Power Meas License Digital Systems v03r01

All test items have been performed as a reference to the above KDB test guidance.

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 2 watts e.r.p.

4.1.2 Test Procedures

Conducted Power Measurement:

The EUT was set up for the maximum power with GSM, WCDMA, LTE 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.

EIRP / ERP Measurement:

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$EIRP = P_{Meas} + G_T$

$ERP = P_{Meas} + G_T - 2.15$

where

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

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)

4.1.3 Test Setup

Conducted Power Measurement:

4.1.4 Test Results

Conducted Output Power (dBm)

Band	GSM1900		
Channel	128	189	251
Frequency	824.2	836.4	848.8
GSM	26.58	26.55	26.85
GPRS 1Tx Slot	26.44	26.42	26.70
GPRS 2Tx Slot	26.40	26.35	26.71
GPRS 3Tx Slot	26.29	26.27	26.73
GPRS 4Tx Slot	26.13	26.18	26.62
EDGE 1Tx Slot (MCS9)	22.32	22.57	22.53
EDGE 2Tx Slot (MCS9)	22.37	22.51	22.52
EDGE 3Tx Slot (MCS9)	22.16	22.42	22.37
EDGE 4Tx Slot (MCS9)	23.11	23.32	23.27

Band	WCDMA Band 2		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1888	1907.6
RMC 12.2K	18.86	19.04	18.91
HSDPA Subtest-1	18.28	18.42	18.39
HSDPA Subtest-2	18.33	18.47	18.45
HSDPA Subtest-3	17.79	17.96	17.93
HSDPA Subtest-4	17.75	17.91	17.86
DC-HSDPA Subtest-1	18.24	18.33	18.31
DC-HSDPA Subtest-2	18.26	18.40	18.37
DC-HSDPA Subtest-3	17.72	17.87	17.86
DC-HSDPA Subtest-4	17.68	18.81	17.78
HSUPA Subtest-1	17.90	18.46	18.80
HSUPA Subtest-2	17.28	17.19	16.80
HSUPA Subtest-3	17.27	17.44	17.80
HSUPA Subtest-4	17.48	17.28	16.80
HSUPA Subtest-5	18.20	18.40	18.80

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	19.03	**19.33**	19.11
		1	50	18.94	19.24	19.02
		1	99	18.86	19.16	18.94
		50	0	18.02	18.32	18.10
		50	25	17.91	18.21	17.99
		50	50	17.88	18.18	17.96
		100	0	17.82	18.12	17.90
20M	16QAM	1	0	17.82	17.92	17.90
		1	50	17.71	17.71	17.69
		1	99	17.55	17.65	17.53
		50	0	17.09	17.39	17.17
		50	25	16.86	17.16	16.94
		50	50	16.89	17.19	16.97
		100	0	16.91	17.21	16.99

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18675	18900	19125
		Frequency (MHz)		1857.5	1880	1902.5
15M	QPSK	1	0	18.99	19.23	19.08
		1	37	18.87	19.22	18.95
		1	74	18.76	19.12	18.94
		36	0	17.97	18.22	18.00
		36	19	17.91	18.17	17.98
		36	39	17.81	18.15	17.87
		75	0	17.77	18.04	17.82
15M	16QAM	1	0	17.77	17.89	17.86
		1	37	17.68	17.70	17.63
		1	74	17.59	17.55	17.53
		36	0	17.09	17.34	17.16
		36	19	16.77	17.08	16.93
		36	39	16.79	17.15	16.94
		75	0	16.85	17.21	16.97

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	19.00	19.27	19.10
		1	24	18.91	19.16	19.01
		1	49	18.84	19.15	18.86
		25	0	17.95	18.25	18.08
		25	12	17.89	18.19	17.98
		25	25	17.84	18.11	17.94
		50	0	17.72	18.05	17.88
10M	16QAM	1	0	17.78	17.91	17.85
		1	24	17.63	17.68	17.66
		1	49	17.51	17.63	17.54
		25	0	17.04	17.33	17.16
		25	12	16.84	17.13	16.89
		25	25	16.87	17.19	16.95
		50	0	16.85	17.13	16.89

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18625	18900	19175
		Frequency (MHz)		1852.5	1880	1907.5
5M	QPSK	1	0	19.02	19.32	19.03
		1	12	18.90	19.18	18.98
		1	24	18.81	19.09	18.87
		12	0	17.92	18.24	18.01
		12	6	17.81	18.20	17.97
		12	13	17.79	18.12	17.89
		25	0	17.73	18.09	17.86
5M	16QAM	1	0	17.77	17.86	17.86
		1	12	17.70	17.71	17.62
		1	24	17.57	17.57	17.53
		12	0	17.05	17.29	17.15
		12	6	16.78	17.15	16.90
		12	13	16.83	17.09	16.87
		25	0	16.85	17.11	16.97

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18615	18900	19185
		Frequency (MHz)		1851.5	1880	1908.5
3M	QPSK	1	0	18.97	19.27	19.05
		1	7	18.91	19.17	19.00
		1	14	18.80	19.08	18.85
		8	0	17.92	18.28	18.02
		8	3	17.85	18.13	17.90
		8	7	17.87	18.09	17.95
		15	0	17.76	18.04	17.86
3M	16QAM	1	0	17.81	17.84	17.86
		1	7	17.71	17.65	17.63
		1	14	17.56	17.59	17.57
		8	0	17.00	17.38	17.11
		8	3	16.82	17.10	16.89
		8	7	16.85	17.12	16.91
		15	0	16.83	17.18	16.96

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	18.95	19.23	19.02
		1	2	18.92	19.20	18.94
		1	5	18.78	19.11	18.85
		3	0	17.98	18.28	18.05
		3	1	17.87	18.19	17.94
		3	3	17.78	18.17	17.91
		6	0	17.82	18.06	17.80
1.4M	16QAM	1	0	17.74	17.83	17.86
		1	2	17.70	17.64	17.63
		1	5	17.54	17.59	17.55
		3	0	16.99	17.30	17.09
		3	1	16.79	17.15	16.86
		3	3	16.84	17.14	16.92
		6	0	16.85	17.16	16.93

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26140	26365	26590
		Frequency (MHz)		1860	1882.5	1905
20M	QPSK	1	0	19.65	20.19	19.78
		1	50	19.51	19.81	19.71
		1	99	19.51	19.77	19.67
		50	0	18.75	19.05	18.95
		50	25	18.66	18.96	18.86
		50	50	18.51	18.80	18.70
		100	0	18.71	19.01	18.91
20M	16QAM	1	0	18.52	18.82	18.72
		1	50	18.51	18.58	18.55
		1	99	18.51	18.51	18.51
		50	0	17.66	17.96	17.86
		50	25	17.65	17.95	17.85
		50	50	17.64	17.94	17.84
		100	0	17.80	18.10	18.00

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26115	26365	26615
		Frequency (MHz)		1857.5	1882.5	1907.5
15M	QPSK	1	0	19.55	20.09	19.71
		1	37	19.51	19.72	19.66
		1	74	19.51	19.73	19.60
		36	0	18.68	19.01	18.90
		36	19	18.66	18.96	18.85
		36	39	18.55	18.71	18.69
		75	0	18.68	18.96	18.86
15M	16QAM	1	0	18.66	18.81	18.67
		1	37	18.65	18.52	18.51
		1	74	18.51	18.51	18.51
		36	0	17.65	17.89	17.80
		36	19	17.57	17.86	17.77
		36	39	17.61	17.92	17.75
		75	0	17.77	18.09	17.98

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26090	26365	26640
		Frequency (MHz)		1855	1882.5	1910
10M	QPSK	1	0	19.61	20.18	19.76
		1	24	19.59	19.76	19.67
		1	49	19.62	19.67	19.64
		25	0	18.75	18.96	18.95
		25	12	18.64	18.95	18.80
		25	25	18.63	18.75	18.67
		50	0	18.63	18.99	18.86
10M	16QAM	1	0	18.59	18.75	18.62
		1	24	18.55	18.56	18.55
		1	49	18.53	18.51	18.51
		25	0	17.64	17.95	17.83
		25	12	17.58	17.92	17.80
		25	25	17.55	17.88	17.78
		50	0	17.76	18.10	17.97

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26065	26365	26665
		Frequency (MHz)		1852.5	1882.5	1912.5
5M	QPSK	1	0	19.65	20.13	19.69
		1	12	19.62	19.78	19.66
		1	24	19.51	19.67	19.65
		12	0	18.74	18.96	18.93
		12	6	18.60	18.95	18.81
		12	13	18.63	18.78	18.65
		25	0	18.71	18.91	18.86
5M	16QAM	1	0	18.66	18.75	18.68
		1	12	18.63	18.54	18.51
		1	24	18.60	18.51	18.51
		12	0	17.63	17.94	17.79
		12	6	17.62	17.91	17.82
		12	13	17.55	17.86	17.77
		25	0	17.75	18.03	17.95

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26055	26365	26675
		Frequency (MHz)		1851.5	1882.5	1913.5
3M	QPSK	1	0	19.65	20.13	19.77
		1	7	19.62	19.75	19.63
		1	14	19.58	19.77	19.65
		8	0	18.66	19.00	18.89
		8	3	18.57	18.94	18.76
		8	7	18.63	18.75	18.67
		15	0	18.63	18.98	18.82
3M	16QAM	1	0	18.51	18.77	18.71
		1	7	18.51	18.52	18.52
		1	14	18.51	18.51	18.51
		8	0	17.56	17.93	17.80
		8	3	17.63	17.90	17.85
		8	7	17.54	17.88	17.78
		15	0	17.74	18.00	17.96

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26047	26365	26683
		Frequency (MHz)		1850.7	1882.5	1914.3
1.4M	QPSK	1	0	19.56	20.03	19.70
		1	2	19.54	19.73	19.55
		1	5	19.51	19.65	19.56
		3	0	19.62	19.87	19.77
		3	1	19.59	19.86	19.78
		3	3	19.55	19.67	19.56
		6	0	18.62	18.77	18.75
1.4M	16QAM	1	0	18.58	18.75	18.60
		1	2	18.57	18.63	18.59
		1	5	18.55	18.60	18.55
		3	0	18.59	18.88	18.72
		3	1	18.56	18.88	18.71
		3	3	18.52	18.76	18.69
		6	0	17.64	18.05	17.85

EIRP Power (dBm)

Band	GSM1900		
Channel	128	189	251
Frequency	824.2	836.4	848.8
GSM	26.19	26.16	26.46
GPRS 1Tx Slot	26.05	26.03	26.31
GPRS 2Tx Slot	26.01	25.96	26.32
GPRS 3Tx Slot	25.9	25.88	26.34
GPRS 4Tx Slot	25.74	25.79	26.23
EDGE 1Tx Slot (MCS9)	21.93	22.18	22.14
EDGE 2Tx Slot (MCS9)	21.98	22.12	22.13
EDGE 3Tx Slot (MCS9)	21.77	22.03	21.98
EDGE 4Tx Slot (MCS9)	22.72	22.93	22.88

*EIRP = Conducted + antenna gain (-0.39dBi)

Band	WCDMA Band 2		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1888	1907.6
RMC 12.2K	18.47	18.65	18.52
HSDPA Subtest-1	17.89	18.03	18
HSDPA Subtest-2	17.94	18.08	18.06
HSDPA Subtest-3	17.4	17.57	17.54
HSDPA Subtest-4	17.36	17.52	17.47
DC-HSDPA Subtest-1	17.85	17.94	17.92
DC-HSDPA Subtest-2	17.87	18.01	17.98
DC-HSDPA Subtest-3	17.33	17.48	17.47
DC-HSDPA Subtest-4	17.29	18.42	17.39
HSUPA Subtest-1	17.51	18.07	18.41
HSUPA Subtest-2	16.89	16.8	16.41
HSUPA Subtest-3	16.88	17.05	17.41
HSUPA Subtest-4	17.09	16.89	16.41
HSUPA Subtest-5	17.81	18.01	18.41

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18700	18900	19100
		Frequency (MHz)		1860	1880	1900
20M	QPSK	1	0	18.64	18.94	18.72
		1	50	18.55	18.85	18.63
		1	99	18.47	18.77	18.55
		50	0	17.63	17.93	17.71
		50	25	17.52	17.82	17.6
		50	50	17.49	17.79	17.57
		100	0	17.43	17.73	17.51
20M	16QAM	1	0	17.43	17.53	17.51
		1	50	17.32	17.32	17.3
		1	99	17.16	17.26	17.14
		50	0	16.7	17	16.78
		50	25	16.47	16.77	16.55
		50	50	16.5	16.8	16.58
		100	0	16.52	16.82	16.6

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18675	18900	19125
		Frequency (MHz)		1857.5	1880	1902.5
15M	QPSK	1	0	18.6	18.84	18.69
		1	37	18.48	18.83	18.56
		1	74	18.37	18.73	18.55
		36	0	17.58	17.83	17.61
		36	19	17.52	17.78	17.59
		36	39	17.42	17.76	17.48
		75	0	17.38	17.65	17.43
15M	16QAM	1	0	17.38	17.5	17.47
		1	37	17.29	17.31	17.24
		1	74	17.2	17.16	17.14
		36	0	16.7	16.95	16.77
		36	19	16.38	16.69	16.54
		36	39	16.4	16.76	16.55
		75	0	16.46	16.82	16.58

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18650	18900	19150
		Frequency (MHz)		1855	1880	1905
10M	QPSK	1	0	18.61	18.88	18.71
		1	24	18.52	18.77	18.62
		1	49	18.45	18.76	18.47
		25	0	17.56	17.86	17.69
		25	12	17.5	17.8	17.59
		25	25	17.45	17.72	17.55
		50	0	17.33	17.66	17.49
10M	16QAM	1	0	17.39	17.52	17.46
		1	24	17.24	17.29	17.27
		1	49	17.12	17.24	17.15
		25	0	16.65	16.94	16.77
		25	12	16.45	16.74	16.5
		25	25	16.48	16.8	16.56
		50	0	16.46	16.74	16.5

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18625	18900	19175
		Frequency (MHz)		1852.5	1880	1907.5
5M	QPSK	1	0	18.63	18.93	18.64
		1	12	18.51	18.79	18.59
		1	24	18.42	18.7	18.48
		12	0	17.53	17.85	17.62
		12	6	17.42	17.81	17.58
		12	13	17.4	17.73	17.5
		25	0	17.34	17.7	17.47
5M	16QAM	1	0	17.38	17.47	17.47
		1	12	17.31	17.32	17.23
		1	24	17.18	17.18	17.14
		12	0	16.66	16.9	16.76
		12	6	16.39	16.76	16.51
		12	13	16.44	16.7	16.48
		25	0	16.46	16.72	16.58

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18615	18900	19185
		Frequency (MHz)		1851.5	1880	1908.5
3M	QPSK	1	0	18.58	18.88	18.66
		1	7	18.52	18.78	18.61
		1	14	18.41	18.69	18.46
		8	0	17.53	17.89	17.63
		8	3	17.46	17.74	17.51
		8	7	17.48	17.7	17.56
		15	0	17.37	17.65	17.47
3M	16QAM	1	0	17.42	17.45	17.47
		1	7	17.32	17.26	17.24
		1	14	17.17	17.2	17.18
		8	0	16.61	16.99	16.72
		8	3	16.43	16.71	16.5
		8	7	16.46	16.73	16.52
		15	0	16.44	16.79	16.57

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 2						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		18607	18900	19193
		Frequency (MHz)		1850.7	1880	1909.3
1.4M	QPSK	1	0	18.56	18.84	18.63
		1	2	18.53	18.81	18.55
		1	5	18.39	18.72	18.46
		3	0	17.59	17.89	17.66
		3	1	17.48	17.8	17.55
		3	3	17.39	17.78	17.52
		6	0	17.43	17.67	17.41
1.4M	16QAM	1	0	17.35	17.44	17.47
		1	2	17.31	17.25	17.24
		1	5	17.15	17.2	17.16
		3	0	16.6	16.91	16.7
		3	1	16.4	16.76	16.47
		3	3	16.45	16.75	16.53
		6	0	16.46	16.77	16.54

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26140	26365	26590
		Frequency (MHz)		1860	1882.5	1905
20M	QPSK	1	0	19.26	19.8	19.39
		1	50	19.12	19.42	19.32
		1	99	19.12	19.38	19.28
		50	0	18.36	18.66	18.56
		50	25	18.27	18.57	18.47
		50	50	18.12	18.41	18.31
		100	0	18.32	18.62	18.52
20M	16QAM	1	0	18.13	18.43	18.33
		1	50	18.12	18.19	18.16
		1	99	18.12	18.12	18.12
		50	0	17.27	17.57	17.47
		50	25	17.26	17.56	17.46
		50	50	17.25	17.55	17.45
		100	0	17.41	17.71	17.61

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26115	26365	26615
		Frequency (MHz)		1857.5	1882.5	1907.5
15M	QPSK	1	0	19.16	19.7	19.32
		1	37	19.12	19.33	19.27
		1	74	19.12	19.34	19.21
		36	0	18.29	18.62	18.51
		36	19	18.27	18.57	18.46
		36	39	18.16	18.32	18.3
		75	0	18.29	18.57	18.47
15M	16QAM	1	0	18.27	18.42	18.28
		1	37	18.26	18.13	18.12
		1	74	18.12	18.12	18.12
		36	0	17.26	17.5	17.41
		36	19	17.18	17.47	17.38
		36	39	17.22	17.53	17.36
		75	0	17.38	17.7	17.59

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26090	26365	26640
		Frequency (MHz)		1855	1882.5	1910
10M	QPSK	1	0	19.22	19.79	19.37
		1	24	19.2	19.37	19.28
		1	49	19.23	19.28	19.25
		25	0	18.36	18.57	18.56
		25	12	18.25	18.56	18.41
		25	25	18.24	18.36	18.28
		50	0	18.24	18.6	18.47
10M	16QAM	1	0	18.2	18.36	18.23
		1	24	18.16	18.17	18.16
		1	49	18.14	18.12	18.12
		25	0	17.25	17.56	17.44
		25	12	17.19	17.53	17.41
		25	25	17.16	17.49	17.39
		50	0	17.37	17.71	17.58

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26065	26365	26665
		Frequency (MHz)		1852.5	1882.5	1912.5
5M	QPSK	1	0	19.26	19.74	19.3
		1	12	19.23	19.39	19.27
		1	24	19.12	19.28	19.26
		12	0	18.35	18.57	18.54
		12	6	18.21	18.56	18.42
		12	13	18.24	18.39	18.26
		25	0	18.32	18.52	18.47
5M	16QAM	1	0	18.27	18.36	18.29
		1	12	18.24	18.15	18.12
		1	24	18.21	18.12	18.12
		12	0	17.24	17.55	17.4
		12	6	17.23	17.52	17.43
		12	13	17.16	17.47	17.38
		25	0	17.36	17.64	17.56

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26055	26365	26675
		Frequency (MHz)		1851.5	1882.5	1913.5
3M	QPSK	1	0	19.26	19.74	19.38
		1	7	19.23	19.36	19.24
		1	14	19.19	19.38	19.26
		8	0	18.27	18.61	18.5
		8	3	18.18	18.55	18.37
		8	7	18.24	18.36	18.28
		15	0	18.24	18.59	18.43
3M	16QAM	1	0	18.12	18.38	18.32
		1	7	18.12	18.13	18.13
		1	14	18.12	18.12	18.12
		8	0	17.17	17.54	17.41
		8	3	17.24	17.51	17.46
		8	7	17.15	17.49	17.39
		15	0	17.35	17.61	17.57

*EIRP = Conducted + antenna gain (-0.39dBi)

LTE Band 25						
BW	MCS Index	RB Size	RB Offset	Low	Mid	High
		Channel		26047	26365	26683
		Frequency (MHz)		1850.7	1882.5	1914.3
1.4M	QPSK	1	0	19.17	19.64	19.31
		1	2	19.15	19.34	19.16
		1	5	19.12	19.26	19.17
		3	0	19.23	19.48	19.38
		3	1	19.2	19.47	19.39
		3	3	19.16	19.28	19.17
		6	0	18.23	18.38	18.36
1.4M	16QAM	1	0	18.19	18.36	18.21
		1	2	18.18	18.24	18.2
		1	5	18.16	18.21	18.16
		3	0	18.2	18.49	18.33
		3	1	18.17	18.49	18.32
		3	3	18.13	18.37	18.3
		6	0	17.25	17.66	17.46

*EIRP = Conducted + antenna gain (-0.39dBi)

4.2 Radiated Emission Measurement

4.2.1 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.

4.2.2 Test Procedure

a. In the semi-anechoic chamber, EUT placed on the 0.8m(below or equal 1GHz) and/or 1.5m(above 1GHz) 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 height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following C63.26 section 5.5 and 5.2.7.

EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

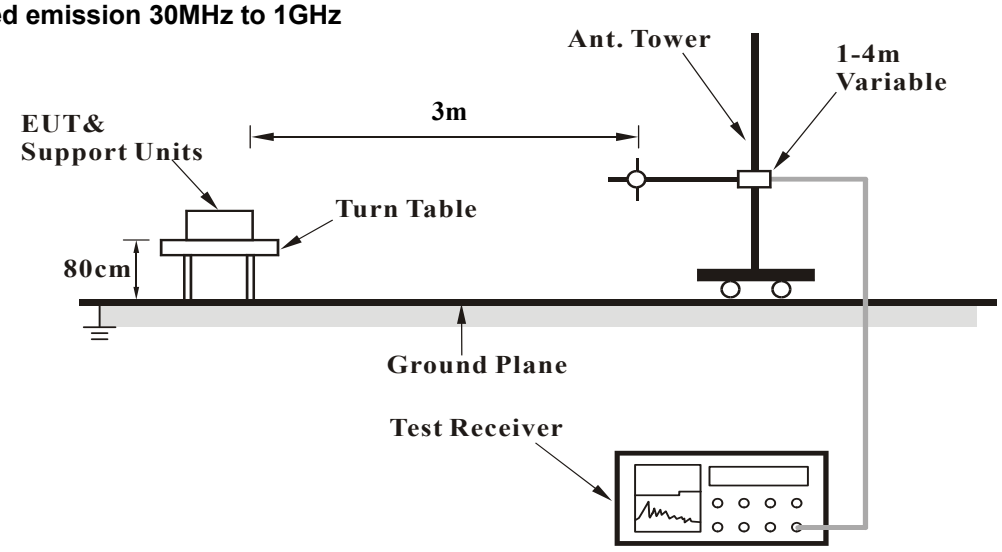
Note:
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
   The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

4.2.3 Deviation from Test Standard

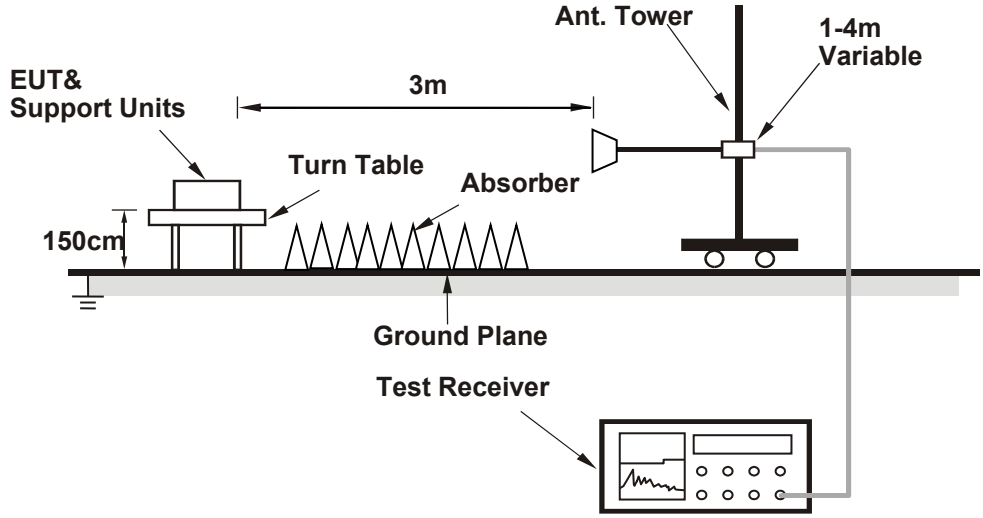
No deviation.

4.2.4 Test Setup

For radiated emission 30MHz to 1GHz



For radiated emission above 1GHz



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

4.2.5 Test Results

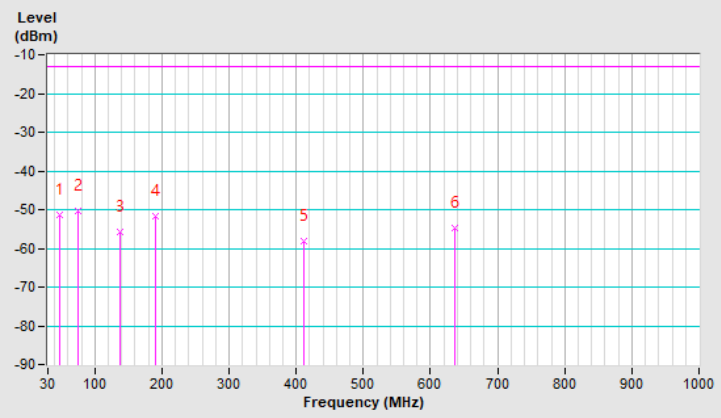
Below 1GHz
GSM 1900

Mode	TX channel 810 (1909.8MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Rex Wang	Test Mode	A

Antenna Polarity & Test Distance: Horizontal at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	48.43	-51.37	-13.00	-38.37	1.00 H	158	52.87	-104.24
2	75.59	-50.41	-13.00	-37.41	1.00 H	186	57.30	-107.71
3	137.67	-55.62	-13.00	-42.62	1.50 H	107	49.14	-104.76
4	191.02	-51.53	-13.00	-38.53	1.25 H	49	55.08	-106.61
5	411.21	-58.29	-13.00	-45.29	1.00 H	70	41.73	-100.02
6	635.28	-54.80	-13.00	-41.80	1.25 H	257	40.26	-95.06

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

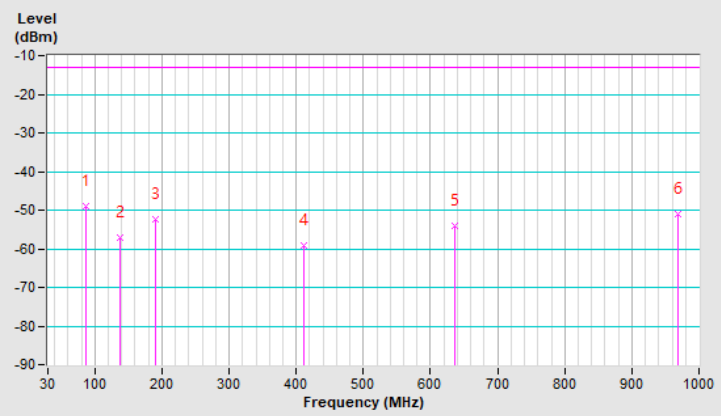


Mode	TX channel 810 (1909.8MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Rex Wang	Test Mode	A

Antenna Polarity & Test Distance: Vertical at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	86.26	-48.91	-13.00	-35.91	1.50 V	190	60.95	-109.86
2	137.67	-56.99	-13.00	-43.99	1.25 V	85	47.77	-104.76
3	190.05	-52.41	-13.00	-39.41	1.00 V	205	54.19	-106.60
4	411.21	-59.00	-13.00	-46.00	1.00 V	59	41.02	-100.02
5	635.28	-54.08	-13.00	-41.08	1.50 V	280	40.98	-95.06
6	968.96	-51.05	-13.00	-38.05	1.00 V	211	37.99	-89.04

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

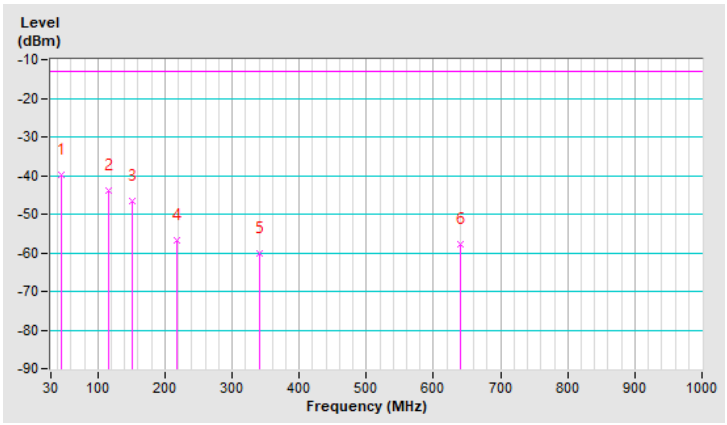


Mode	TX channel 810 (1909.8MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	B

Antenna Polarity & Test Distance: Horizontal at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	45.52	-39.93	-13.00	-26.93	1.25 H	40	64.41	-104.34
2	116.33	-43.81	-13.00	-30.81	1.00 H	40	63.06	-106.87
3	150.28	-46.65	-13.00	-33.65	1.00 H	51	57.41	-104.06
4	217.21	-56.69	-13.00	-43.69	1.50 H	18	49.69	-106.38
5	340.40	-60.24	-13.00	-47.24	1.25 H	16	41.10	-101.34
6	641.10	-57.70	-13.00	-44.70	1.00 H	203	37.27	-94.97

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

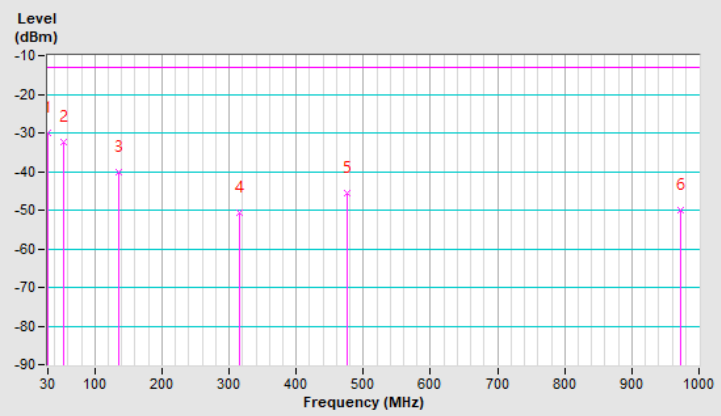


Mode	TX channel 810 (1909.8MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	B

Antenna Polarity & Test Distance: Vertical at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	**30.97**	**-30.14**	**-13.00**	**-17.14**	**1.50 V**	**48**	**75.70**	**-105.84**
2	53.28	-32.44	-13.00	-19.44	1.00 V	29	71.93	-104.37
3	134.76	-40.11	-13.00	-27.11	1.25 V	37	64.91	-105.02
4	316.15	-50.62	-13.00	-37.62	1.00 V	49	51.07	-101.69
5	476.20	-45.57	-13.00	-32.57	1.00 V	37	52.69	-98.26
6	972.84	-49.96	-13.00	-36.96	1.25 V	6	39.10	-89.06

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.



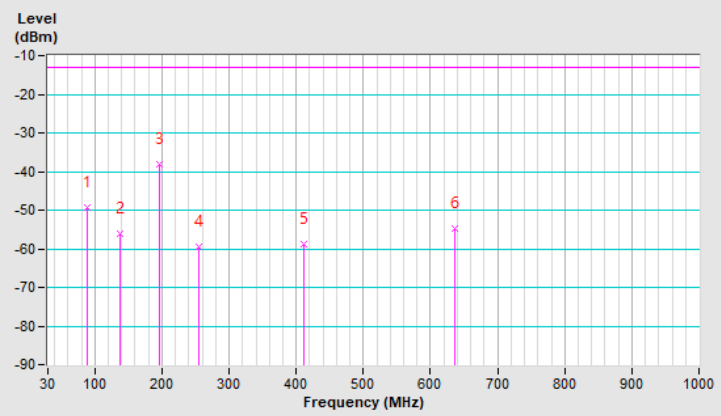
WCDMA Band 2

Mode	TX channel 9538 (1907.6MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Rex Wang	Test Mode	A

Antenna Polarity & Test Distance: Horizontal at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	88.20	-49.49	-13.00	-36.49	1.00 H	6	60.42	-109.91
2	137.67	-55.99	-13.00	-42.99	1.50 H	103	48.77	-104.76
3	195.87	-38.09	-13.00	-25.09	1.00 H	103	68.79	-106.88
4	255.04	-59.54	-13.00	-46.54	1.00 H	97	44.57	-104.11
5	411.21	-58.76	-13.00	-45.76	1.25 H	76	41.26	-100.02
6	635.28	-54.84	-13.00	-41.84	1.00 H	265	40.22	-95.06

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

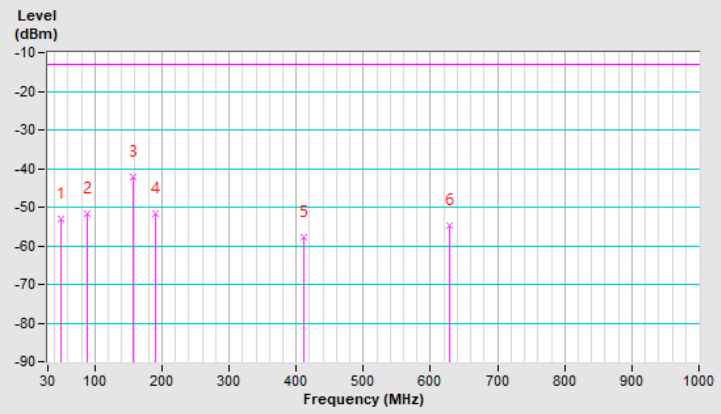


Mode	TX channel 9538 (1907.6MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Rex Wang	Test Mode	A

Antenna Polarity & Test Distance: Vertical at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	49.40	-53.12	-13.00	-40.12	1.00 V	162	51.13	-104.25
2	89.17	-51.59	-13.00	-38.59	1.50 V	1	58.40	-109.99
3	157.07	-42.21	-13.00	-29.21	1.00 V	100	61.75	-103.96
4	190.05	-51.65	-13.00	-38.65	1.25 V	219	54.95	-106.60
5	411.21	-57.68	-13.00	-44.68	1.00 V	65	42.34	-100.02
6	628.49	-54.76	-13.00	-41.76	1.50 V	279	40.40	-95.16

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

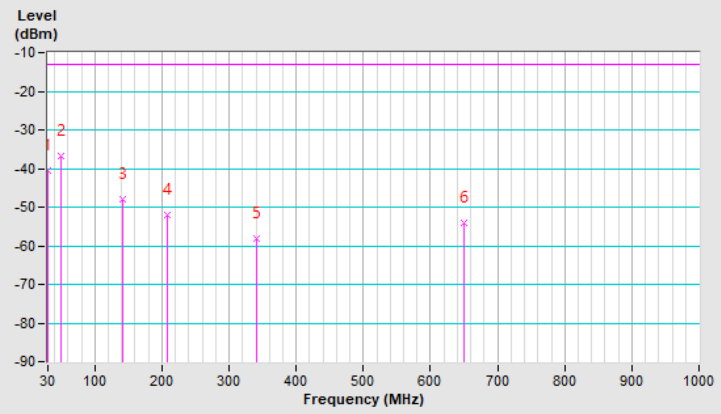


Mode	TX channel 9538 (1907.6MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	B

Antenna Polarity & Test Distance: Horizontal at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.00	-40.35	-13.00	-27.35	1.00 H	106	65.08	-105.43
2	49.40	-36.84	-13.00	-23.84	1.25 H	231	67.41	-104.25
3	140.58	-47.94	-13.00	-34.94	1.00 H	119	56.66	-104.60
4	208.48	-52.07	-13.00	-39.07	1.50 H	44	54.60	-106.67
5	341.37	-58.27	-13.00	-45.27	1.00 H	167	43.09	-101.36
6	649.83	-54.02	-13.00	-41.02	1.25 H	56	40.98	-95.00

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

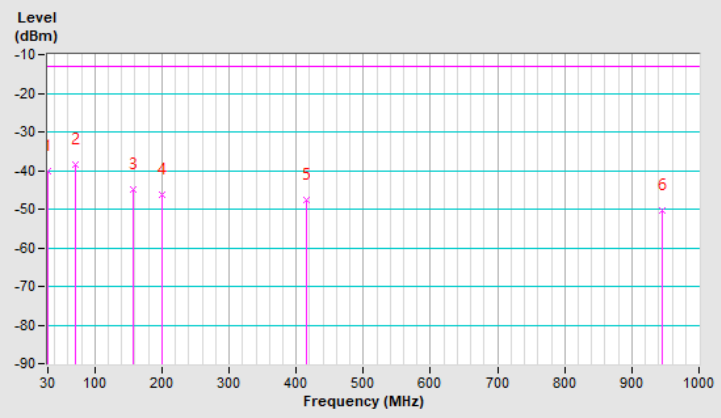


Mode	TX channel 9538 (1907.6MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	B

Antenna Polarity & Test Distance: Vertical at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.00	-40.30	-13.00	-27.30	1.25 V	48	65.13	-105.43
2	70.74	-38.54	-13.00	-25.54	1.25 V	39	67.96	-106.50
3	158.04	-44.96	-13.00	-31.96	1.00 V	29	58.92	-103.88
4	200.72	-46.16	-13.00	-33.16	1.50 V	39	60.67	-106.83
5	416.06	-47.62	-13.00	-34.62	1.25 V	29	52.22	-99.84
6	944.71	-50.35	-13.00	-37.35	1.00 V	25	38.78	-89.13

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.



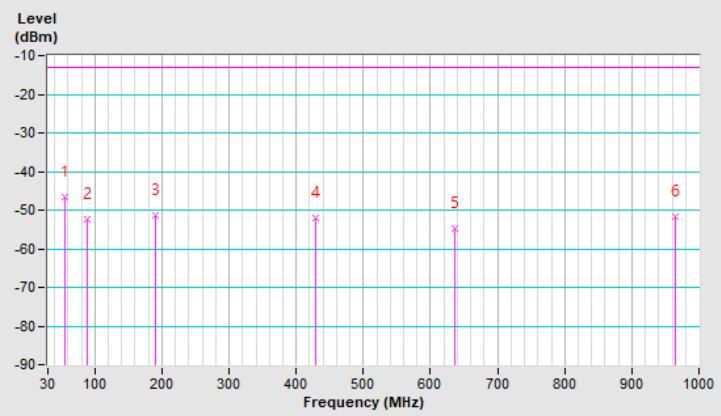
LTE Band 25, Channel Bandwidth: 15MHz

Mode	TX channel 26615 (1907.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Rex Wang	Test Mode	A

Antenna Polarity & Test Distance: Horizontal at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	56.19	-46.53	-13.00	-33.53	1.25 H	260	58.01	-104.54
2	88.20	-52.26	-13.00	-39.26	1.00 H	4	57.65	-109.91
3	191.02	-51.27	-13.00	-38.27	1.25 H	212	55.34	-106.61
4	429.64	-52.10	-13.00	-39.10	1.00 H	344	47.10	-99.20
5	636.25	-54.86	-13.00	-41.86	1.50 H	256	40.18	-95.04
6	965.08	-51.74	-13.00	-38.74	1.00 H	230	37.10	-88.84

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

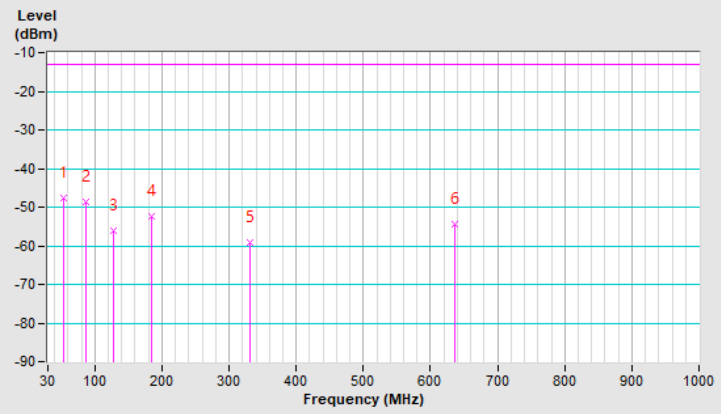


Mode	TX channel 26615 (1907.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Rex Wang	Test Mode	A

Antenna Polarity & Test Distance: Vertical at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	54.25	-47.61	-13.00	-34.61	1.25 V	118	56.87	-104.48
2	87.23	-48.63	-13.00	-35.63	1.50 V	218	61.28	-109.91
3	127.97	-55.99	-13.00	-42.99	1.00 V	234	49.69	-105.68
4	184.23	-52.27	-13.00	-39.27	1.50 V	83	53.68	-105.95
5	330.70	-59.18	-13.00	-46.18	1.00 V	46	42.12	-101.30
6	635.28	-54.38	-13.00	-41.38	1.00 V	181	40.68	-95.06

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

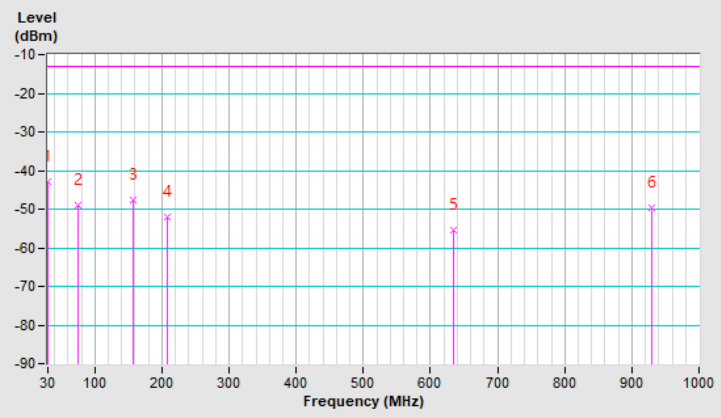


Mode	TX channel 26615 (1907.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	B

Antenna Polarity & Test Distance: Horizontal at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.00	-42.75	-13.00	-29.75	1.25 H	154	62.68	-105.43
2	75.59	-49.07	-13.00	-36.07	1.00 H	353	58.64	-107.71
3	158.04	-47.64	-13.00	-34.64	1.00 H	145	56.24	-103.88
4	208.48	-52.18	-13.00	-39.18	1.50 H	49	54.49	-106.67
5	634.31	-55.28	-13.00	-42.28	1.00 H	40	39.78	-95.06
6	929.19	-49.57	-13.00	-36.57	1.25 H	104	39.54	-89.11

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

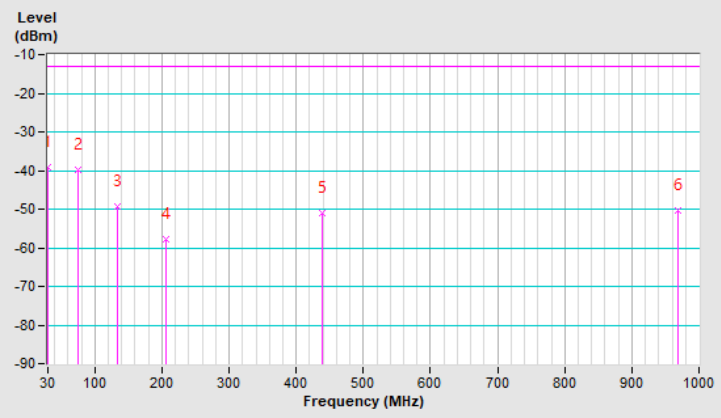


Mode	TX channel 26615 (1907.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	21deg. C, 67%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	B

Antenna Polarity & Test Distance: Vertical at 3 M								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.00	-39.11	-13.00	-26.11	1.25 V	184	66.32	-105.43
2	74.62	-39.75	-13.00	-26.75	1.00 V	145	67.65	-107.40
3	133.79	-49.21	-13.00	-36.21	1.50 V	175	55.85	-105.06
4	206.54	-57.67	-13.00	-44.67	1.25 V	45	49.07	-106.74
5	439.34	-51.14	-13.00	-38.14	1.00 V	202	47.80	-98.94
6	968.96	-50.41	-13.00	-37.41	1.00 V	13	38.63	-89.04

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.



Above 1GHz
GSM 1900

Mode	TX channel 810 (1909.8MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	23deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M								
No.	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3819.60	-38.61	-13.00	-25.61	2.06 H	224	52.37	-90.98
Antenna Polarity & Test Distance: Vertical at 3 M								
No.	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3819.60	-35.29	-13.00	-22.29	1.31 V	264	55.69	-90.98

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

WCDMA Band 2

Mode	TX channel 9538 (1907.6MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	23deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M								
No.	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3815.20	-45.01	-13.00	-32.01	1.97 H	234	45.98	-90.99
Antenna Polarity & Test Distance: Vertical at 3 M								
No.	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3815.20	-42.62	-13.00	-29.62	1.37 V	269	48.37	-90.99

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

LTE Band 25, Channel Bandwidth 15MHz

Mode	TX channel 26615 (1907.5MHz)	Frequency Range	1GHz ~ 20GHz
Environmental Conditions	23deg. C, 68%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M								
No.	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3815.00	-41.00	-13.00	-28.00	1.95 H	229	49.99	-90.99
Antenna Polarity & Test Distance: Vertical at 3 M								
No.	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3815.00	-39.56	-13.00	-26.56	1.29 V	262	51.43	-90.99

Remarks:

1. EIRP(dBm) = Raw Value(dBuV/m) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

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

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The address and road map of all our labs can be found in our web site also.

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