

Partial FCC Test Report (Part 90R)

Report No.: RF190104C22-9

FCC ID: AZ489FT7119

Test Model: H55TGT9PW8AN

Received Date: Jan. 04, 2019

Test Date: Jan. 08 ~ Jan. 16, 2019

Issued Date: Feb. 11, 2019

Applicant: Motorola Solutions, Inc.

Address: 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

Lab Address: No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)

Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)

FCC Registration / Designation Number: 788550 / TW0003



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Release Control Record

Issue No.	Description	Date Issued
RF190104C22-9	Original release	Feb. 11, 2019

1 Certificate of Conformity

Product: Portable Radio

Brand: Motorola Solutions

Test Model: H55TGT9PW8AN

Sample Status: Engineering sample

Applicant: Motorola Solutions, Inc.

Test Date: Jan. 08 ~ Jan. 16, 2019

Standards: FCC Part 90, Subpart R

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 : Polly Chien , **Date:** Feb. 11, 2019
Polly Chien / Specialist

Approved by : Bruce Chen , **Date:** Feb. 11, 2019
Bruce Chen / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 90 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 90.542 (a)(7)	Effective Radiated Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1053 90.543 (e)(f)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -10.9dB at 1591.00MHz.

Note:

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) ($\pm$)
Radiated Emissions up to 1 GHz	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. 11, 2018	Apr. 10, 2019
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	May 29, 2018	May 28, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Nov. 21, 2018	Nov. 20, 2019
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 25, 2018	Nov. 24, 2019
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 25, 2018	Nov. 24, 2019
Loop Antenna EMCI	HLA 6121	45745	Jun. 14, 2018	Jun. 13, 2019
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Aug. 08, 2018	Aug. 07, 2019
Preamplifier Agilent (Above 1GHz)	8449B	3008A01638	Feb. 22, 2018	Feb. 21, 2019
RF signal cable HUBER+SUHNER	SUCOFLEX 104& EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 15, 2018	Jan. 14, 2019
			Jan. 19, 2019	Jan. 18, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Aug. 08, 2018	Aug. 07, 2019
RF signal cable Woken	8D-FB	Cable-CH9-01	Jul. 31, 2018	Jul. 30, 2019
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	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
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 04, 2018	Jun. 03, 2019
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Radio Communication Analyzer	MT8821C	6261786083	Dec. 21, 2018	Dec. 20, 2019

- 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. The FCC Designation Number is TW0003. The number will be varied with the Lab location and scope as attached.
 4. The IC Site Registration No. is 7450F-9.

3 General Information

3.1 General Description of EUT

Product	Portable Radio		
Brand	Motorola Solutions		
Test Model	H55TGT9PW8AN		
Status of EUT	Engineering sample		
Power Supply Rating	14.5Vdc (Single Unit Charger) 12Vdc (Multi-unit Charger) 5Vdc (host equipment) 7.4Vdc (Battery)		
Modulation Type	QPSK, 16QAM		
Operating Frequency	Channel Bandwidth 5MHz	790.50MHz ~ 795.5MHz	
	Channel Bandwidth 10MHz	793MHz	
Max. ERP Power		QPSK	16QAM
	Channel Bandwidth 5MHz	70.795mW (18.5dBm)	57.544mW (17.6dBm)
	Channel Bandwidth 10MHz	69.183mW (18.4dBm)	54.954mW (17.4dBm)
Antenna Type	Stamped metal antenna with -3.52dBi		
Antenna Connector	NA		
Accessory Device	Refer to Note		
Data Cable Supplied	Refer to Note		

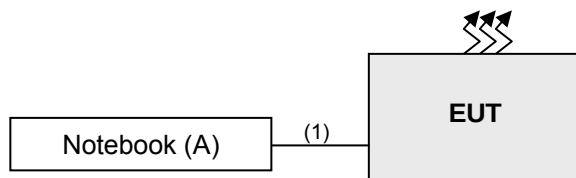
Note:

1. The EUT uses following devices.

Item	Brand	Model	Specification	Remark
Single Unit Charger	MOTOROLA	NNTN8845A (Charger Base) +PS000040A01 (Power Supply)	Input: 110-120Vac, ~60Hz, 1A Output: 14.5Vdc, 2.5A 1.5m DC cable with 1 core attached	Accessory
Standard Cap Battery	MOTOROLA	NNTN9087A	BATTERY PACK, IMPRES GEN2, LIION, IP68, 3800T Rating: 7.4Vdc	Accessory
Hi-Cap Battery	MOTOROLA	NNTN9089A	BATTERY PACK, IMPRES GEN2, LIION, IP68, 5650T Rating: 7.4Vdc	Accessory
Multi-unit Charger	MOTOROLA	NNTN9115A (Charger Base) + 3087791G01 (Linecord)	Input: 100-240Vac, 50/60Hz, 3A Output: 12Vdc, 3A 2.2m DC cable without core attached	Accessory

3.2 Configuration of System under Test

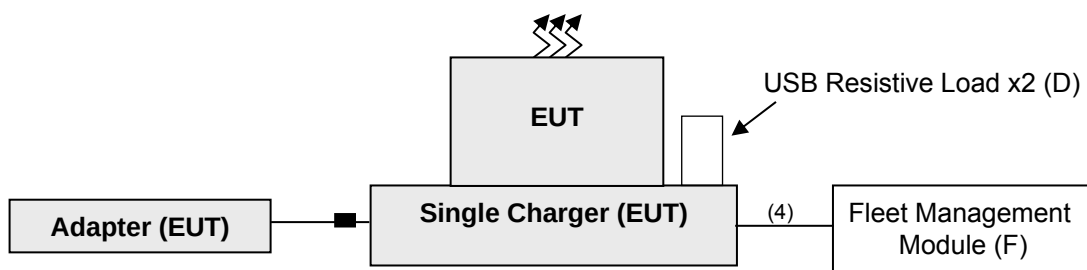
Mode A



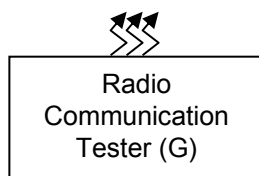
Remote site



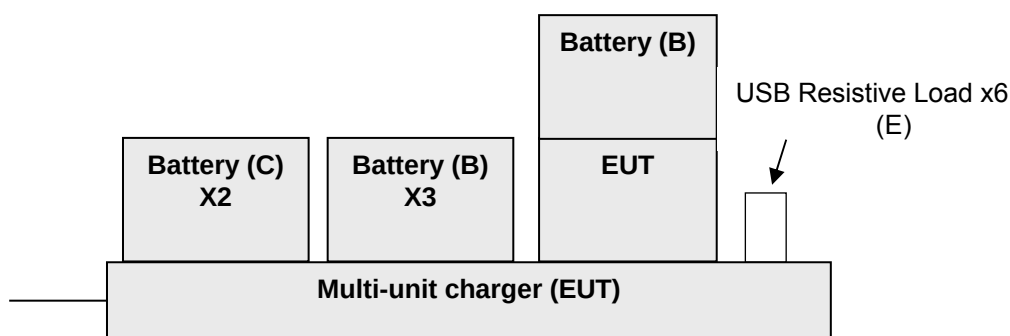
Mode B



Remote site



Mode C



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.	Notebook	DELL	E5420	BPQ7MQ1	FCC DoC Approved	-
B.	Battery	MOTOROLA	NNTN9087A	NA	NA	Accessory
C.	Battery	MOTOROLA	NNTN9089A	NA	NA	Accessory
D.	USB Resistive Load x2	NA	NA	NA	NA	Provided by client
E.	USB Resistive Load x6	NA	NA	NA	NA	Provided by client
F.	Fleet Management Module	NA	NA	NA	NA	Provided by client
G.	Radio Communication Tester	Anritsu	MT8820C	6201010284	NA	-

Note:

1. All power cords of the above support units are non-shielded (1.8m).
2. Items A, G acted as communication partners to transfer data.

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB Cable	1	1.5	Y	0	-
2.	USB Cable	2	1	Y	0	-
3.	Mini USB cable	1	1	Y	0	Provided by client
4.	Cable	1	0.3	N	0	Provided by client

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 Notebook
B	EUT with single unit charger
C	EUT with multi-unit charger

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
A	ERP	23305 to 23355	23305(790.5MHz), 23330(793.0MHz), 23355(795.5MHz)	5MHz	QPSK / 16QAM	1 RB / 0 RB Offset
		23330	23330(793.0MHz)	10MHz	QPSK / 16QAM	1 RB / 0 RB Offset
A	Modulation Characteristics	23305 to 23355	23330(793.0MHz)	10MHz	QPSK / 16QAM	1 RB / 0 RB Offset
A, B, C	Radiated Emission below 1GHz	23330	23330(793.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
A	Radiated Emission above 1GHz	23305 to 23355	23305(790.5MHz), 23330(793.0MHz), 23355(795.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		23330	23330(793.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset

Note: The conducted output power for QPSK and 16QAM, measured value of QPSK is higher than 16QAM a. Therefore, only occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM modes, the other test items were performed under QPSK mode only.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
ERP	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Modulation characteristics	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Radiated Emission	22deg. C, 66%RH	120Vac, 60Hz	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

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 90

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Portable stations (hand-held devices) transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 3 watts ERP.

4.1.2 Test Procedures

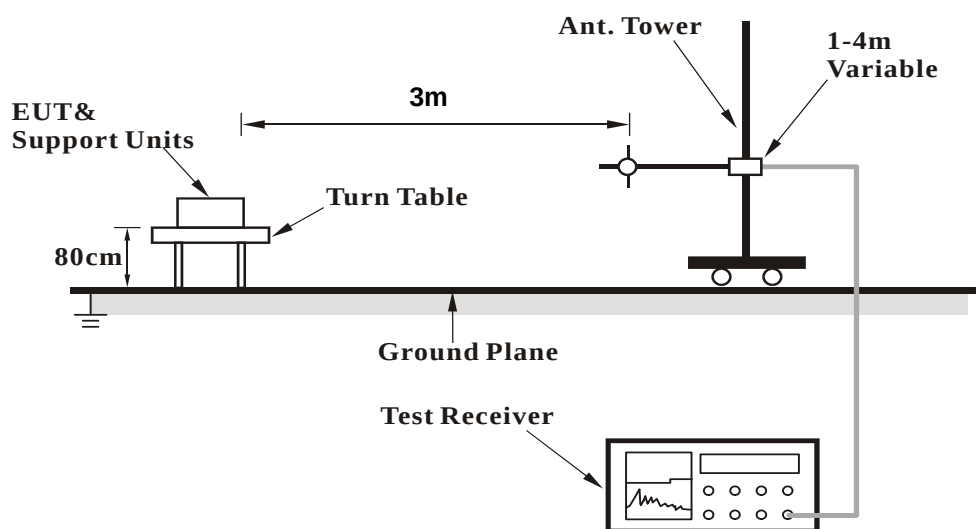
EIRP / ERP Measurement:

- a. The EUT was set up for the maximum power with LTE link data modulation. The power was measured with Agilent Spectrum Analyzer. All measurements were done at 1 channel. RWB is 1MHz and VBW is 3MHz.
- b. Substitution method is used for E.I.R.P measurement. 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.
- c. 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 b. Record the power level of S.G
- d. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$ E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.R.P \text{ power} - 2.15\text{dBi.}$

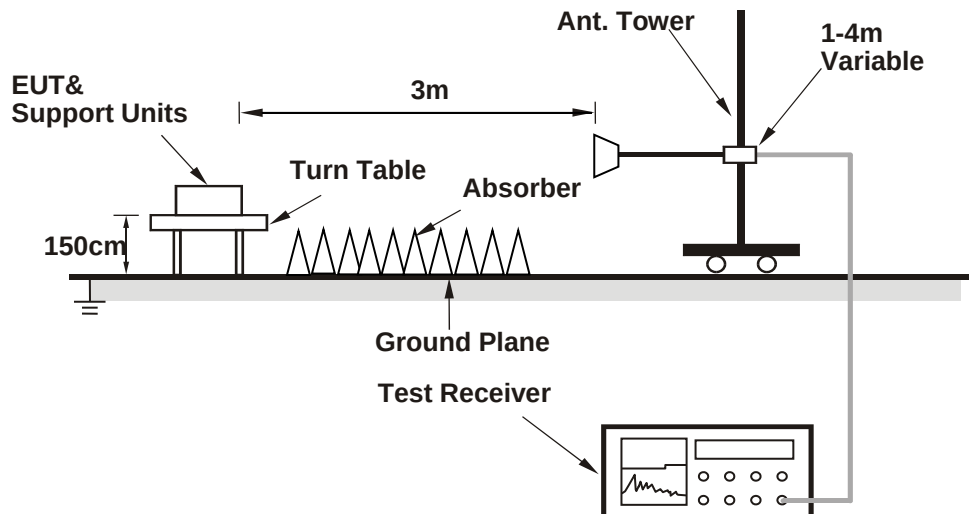
4.1.3 Test Setup

EIRP / ERP MEASUREMENT:

For Radiated Emission below or equal 1GHz



For Radiated Emission above 1GHz



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

4.1.4 Test Results

ERP Power (dBm)

Modulation Type: QPSK

Channel Bandwidth: 5MHz

MODE		TX channel 23305					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	790.50	-11.8	14.5	4.0	18.5	34.8	-16.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	790.50	-14.9	12.9	4.0	16.9	34.8	-17.9

MODE		TX channel 23330					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	793.00	-12.1	14.1	4.0	18.1	34.8	-16.7
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	793.00	-14.6	13.1	4.0	17.1	34.8	-17.7

MODE		TX channel 23355					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	795.50	-12.0	14.4	4.0	18.4	34.8	-16.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	795.50	-15.0	12.6	4.0	16.6	34.8	-18.2

Note: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Channel Bandwidth: 10MHz

MODE		TX channel 23330					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	793.00	-11.9	14.4	4.0	18.4	34.8	-16.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	793.00	-14.4	13.4	4.0	17.4	34.8	-17.4

Note: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Modulation Type: 16QAM

Channel Bandwidth: 5MHz

MODE		TX channel 23305					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	790.50	-12.6	13.6	4.0	17.6	34.8	-17.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	790.50	-15.9	11.8	4.0	15.8	34.8	-19.0

MODE		TX channel 23330					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	793.00	-13.1	13.2	4.0	17.2	34.8	-17.6
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	793.00	-15.6	12.1	4.0	16.1	34.8	-18.7

MODE		TX channel 23355					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	795.50	-12.9	13.5	4.0	17.5	34.8	-17.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	795.50	-16.1	11.5	4.0	15.5	34.8	-19.3

Note: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Channel Bandwidth: 10MHz

MODE		TX channel 23330					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	793.00	-12.9	13.4	4.0	17.4	34.8	-17.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	793.00	-15.4	12.4	4.0	16.4	34.8	-18.4

Note: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

4.2 Modulation Characteristics Measurement

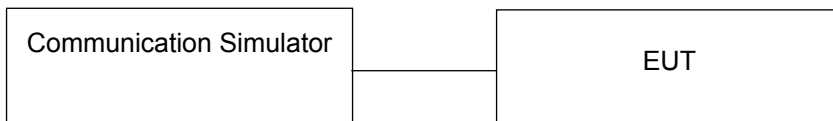
4.2.1 Limits of Modulation Characteristics

N/A

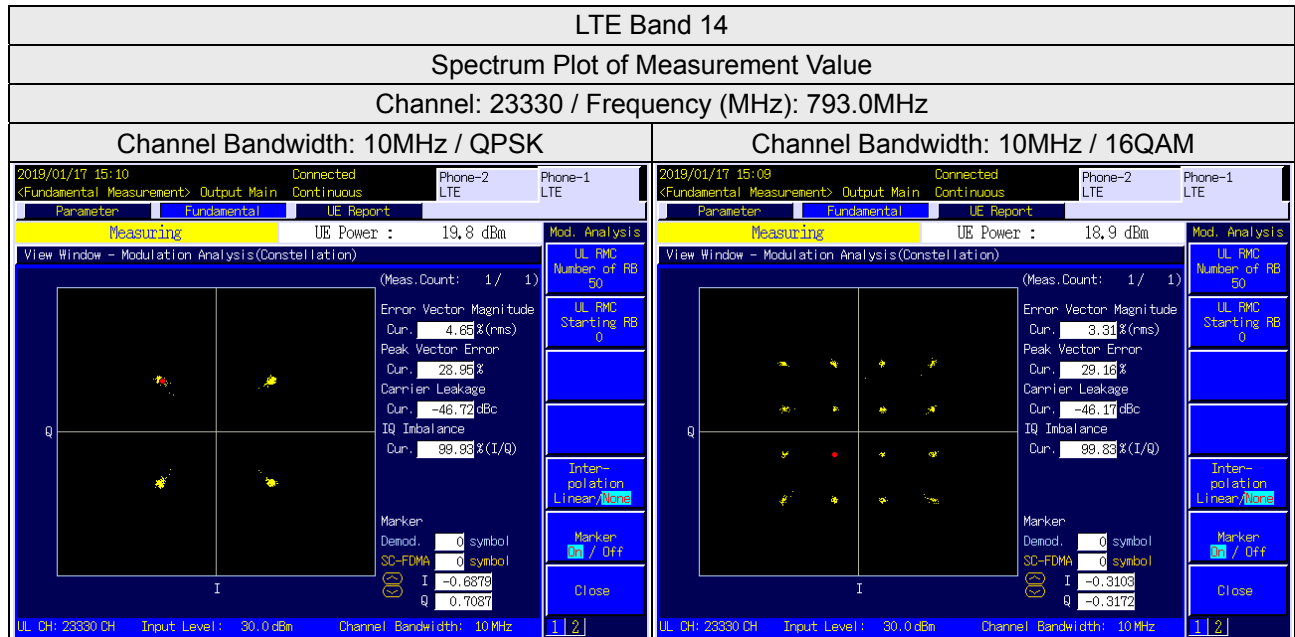
4.2.2 Test Procedure

Connect the EUT to Communication Simulator via the antenna connector, the frequency band is set as EUT supported Modulation and Channels, the EUT output is matched with 50 ohm load, the waveform quality and constellation of the EUT was tested.

4.2.3 Test Setup



4.2.4 Test Results



4.3 Radiated Emission Measurement

4.3.1 Limits of Radiated Emission Measurement

- (1) The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm
- (2) For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

4.3.2 Test Procedure

- 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. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $\text{E.R.P power} = \text{E.I.R.P power} - 2.15\text{dBi}.$

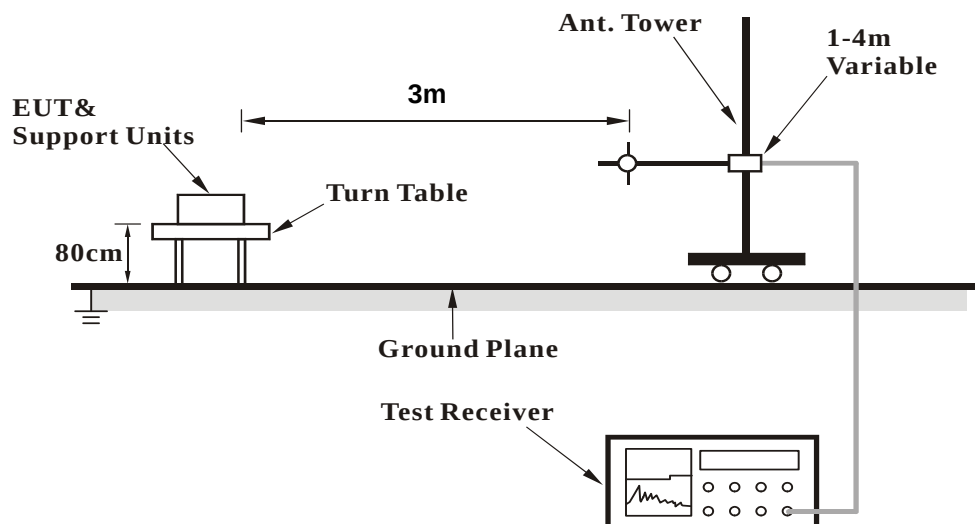
Note: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.3.3 Deviation from Test Standard

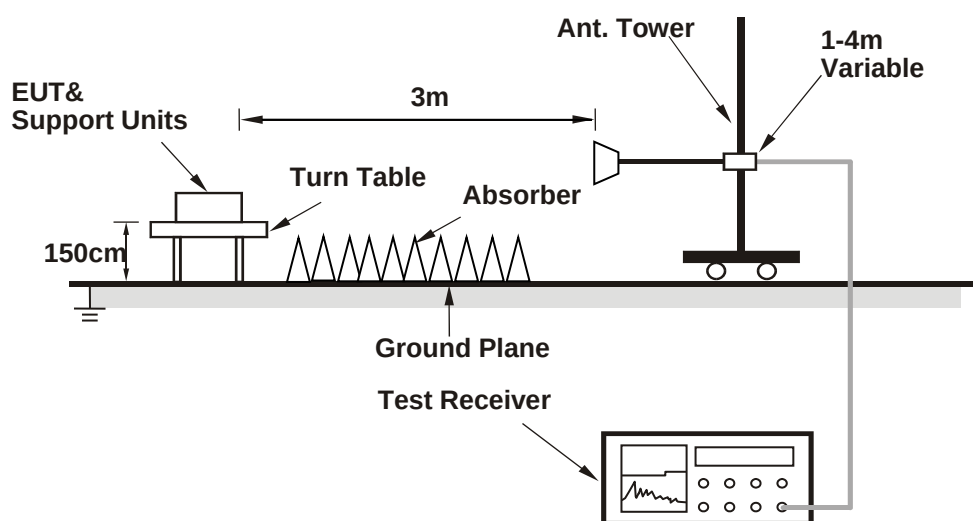
No deviation.

4.3.4 Test Setup

For Radiated Emission below or equal 1GHz



For Radiated Emission above 1GHz



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

4.3.5 Test Results

Below 1GHz

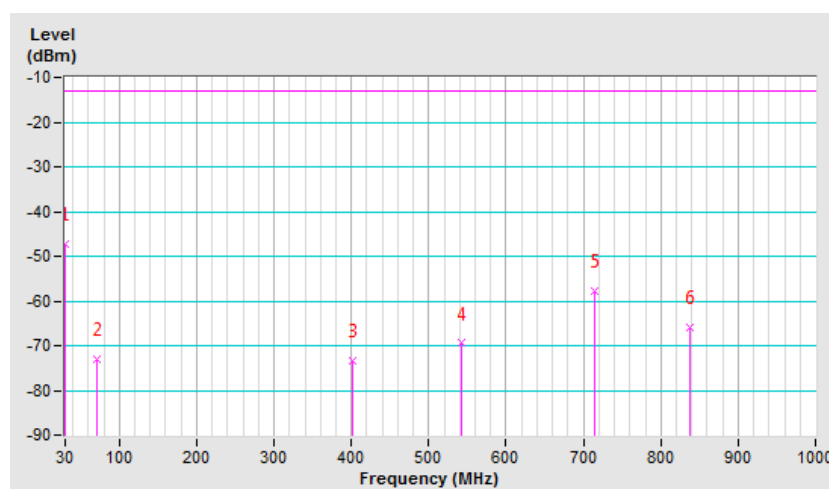
Channel Bandwidth: 10MHz

Mode	TX channel 23330 (793.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	A

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-49.2	-28.0	-19.4	-47.4	-13.0	-34.4
2	70.74	-64.8	-72.7	-0.4	-73.1	-13.0	-60.1
3	402.48	-70.5	-76.6	3.3	-73.3	-13.0	-60.3
4	543.13	-67.8	-73.4	3.9	-69.5	-13.0	-56.5
5	713.85	-58.9	-61.3	3.5	-57.8	-13.0	-44.8
6	838.01	-70.5	-69.8	3.8	-66.0	-13.0	-53.0

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

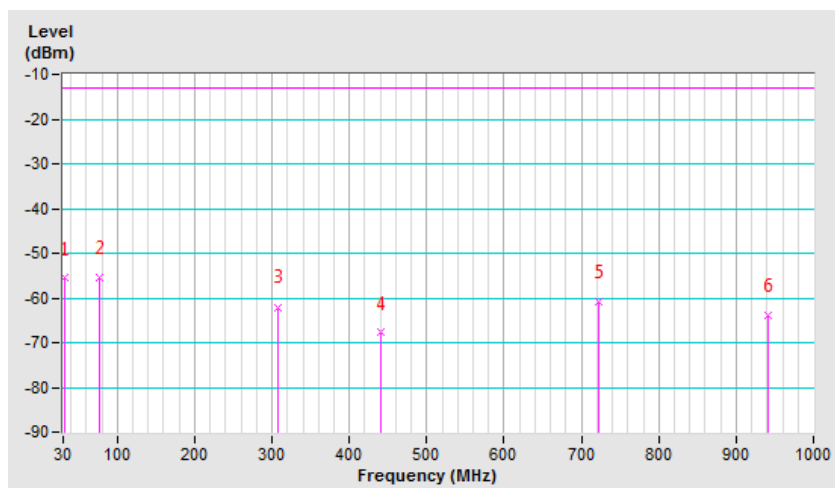


Mode	TX channel 23330 (793.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	A

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	32.91	-42.9	-37.9	-17.7	-55.6	-13.0	-42.6
2	76.56	-47.6	-55.8	0.3	-55.5	-13.0	-42.5
3	308.39	-60.0	-65.9	3.9	-62.0	-13.0	-49.0
4	441.28	-65.5	-71.3	3.5	-67.8	-13.0	-54.8
5	721.61	-65.0	-64.5	3.6	-60.9	-13.0	-47.9
6	941.80	-71.0	-67.8	3.8	-64.0	-13.0	-51.0

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

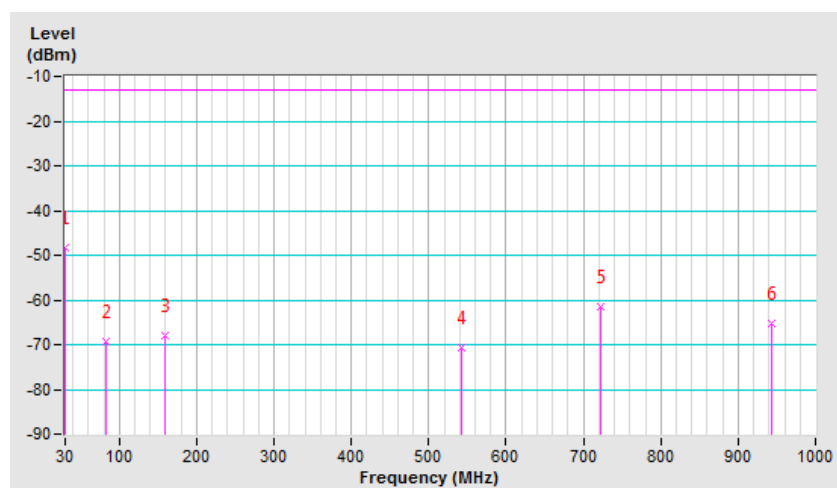


Mode	TX channel 23330 (793.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	B

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.97	-49.9	-29.6	-18.8	-48.4	-13.0	-35.4
2	83.35	-61.6	-69.9	0.5	-69.4	-13.0	-56.4
3	159.98	-60.3	-64.8	-3.0	-67.8	-13.0	-54.8
4	543.13	-69.0	-74.6	3.9	-70.7	-13.0	-57.7
5	721.61	-62.8	-65.1	3.6	-61.5	-13.0	-48.5
6	943.74	-71.5	-69.0	3.7	-65.3	-13.0	-52.3

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

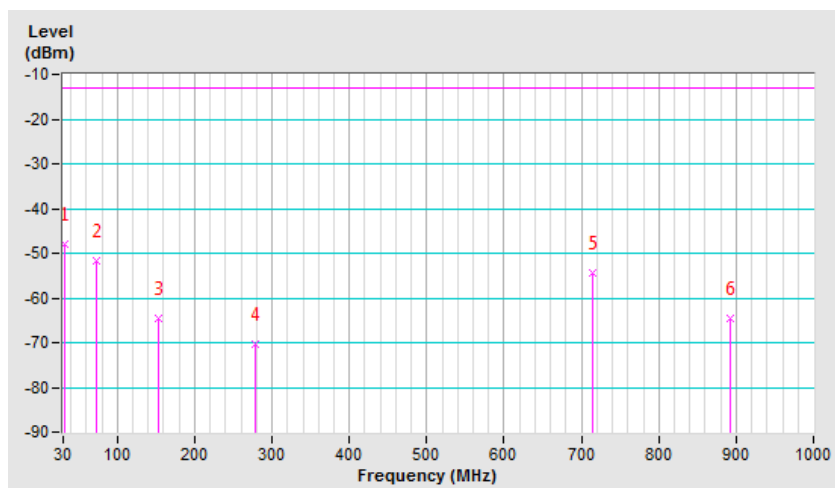


Mode	TX channel 23330 (793.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	B

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	32.91	-35.2	-30.3	-17.7	-48.0	-13.0	-35.0
2	72.68	-43.7	-51.5	-0.1	-51.6	-13.0	-38.6
3	153.19	-60.3	-61.7	-2.9	-64.6	-13.0	-51.6
4	278.32	-71.5	-68.7	-1.6	-70.3	-13.0	-57.3
5	713.85	-58.2	-57.8	3.5	-54.3	-13.0	-41.3
6	892.33	-70.9	-68.2	3.5	-64.7	-13.0	-51.7

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

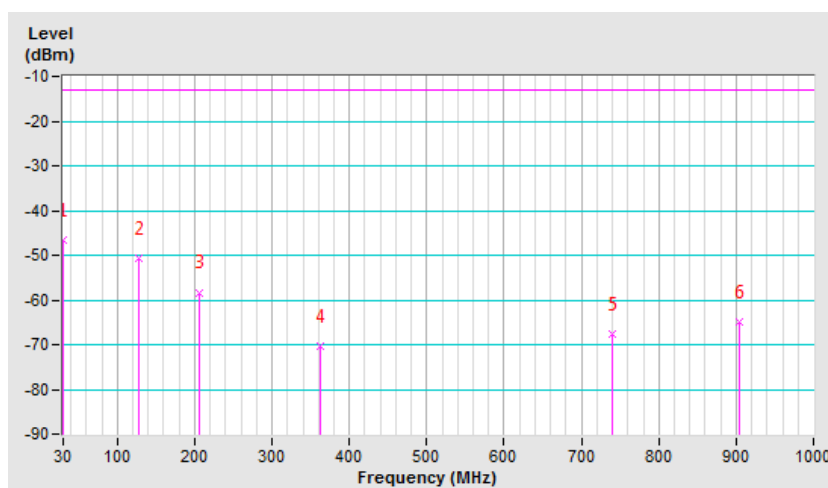


Mode	TX channel 23330 (793.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	C

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-48.4	-27.1	-19.4	-46.5	-13.0	-33.5
2	127.97	-42.4	-47.4	-3.2	-50.6	-13.0	-37.6
3	205.57	-48.0	-56.3	-2.0	-58.3	-13.0	-45.3
4	362.71	-65.7	-74.3	3.9	-70.4	-13.0	-57.4
5	739.07	-69.7	-71.4	3.7	-67.7	-13.0	-54.7
6	904.94	-70.5	-68.6	3.6	-65.0	-13.0	-52.0

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

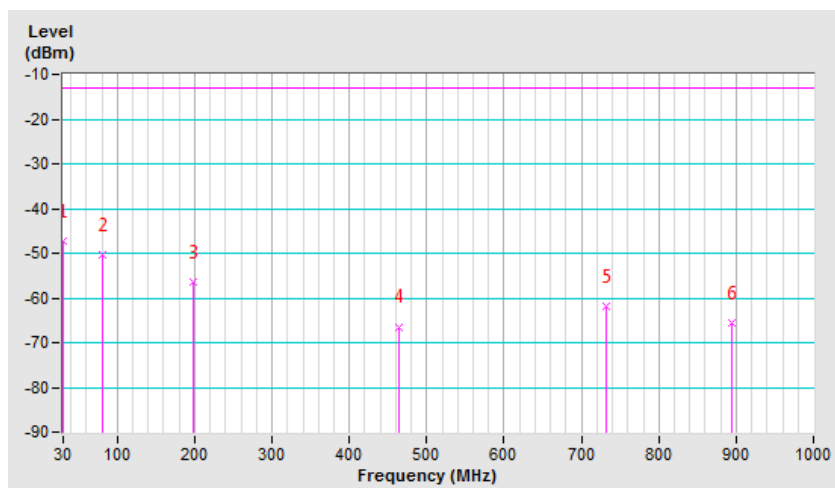


Mode	TX channel 23330 (793.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin	Test Mode	C

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-35.2	-27.9	-19.4	-47.3	-13.0	-34.3
2	81.41	-43.5	-50.7	0.5	-50.2	-13.0	-37.2
3	197.81	-53.4	-54.0	-2.4	-56.4	-13.0	-43.4
4	463.59	-64.2	-69.9	3.5	-66.4	-13.0	-53.4
5	731.31	-66.3	-65.5	3.6	-61.9	-13.0	-48.9
6	894.27	-71.8	-69.1	3.5	-65.6	-13.0	-52.6

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Above 1GHz

Channel Bandwidth: 5MHz

Mode	TX channel 23305 (790.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1581.00	-60.2	-52.4	1.2	-51.2	-40.0	-11.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1581.00	-61.8	-54.7	1.2	-53.5	-40.0	-13.5

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 23330 (793.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1586.00	-60.4	-52.5	1.1	-51.4	-40.0	-11.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1586.00	-62.1	-55.0	1.1	-53.9	-40.0	-13.9

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode	TX channel 23355 (795.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1591.00	-59.9	-52.0	1.1	-50.9	-40.0	-10.9
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1591.00	-61.5	-54.3	1.1	-53.2	-40.0	-13.2

Remarks:

1. $ERP (dBm) = S.G \text{ Value (dBm)} + \text{Correction Factor (dB)}$.
2. $\text{Correction Factor (dB)} = \text{Substitution Antenna Gain (dB)} + \text{Cable Loss (dB)}$.

Channel Bandwidth: 10MHz

Mode	TX channel 23330 (793.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 66%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1586.00	-60.3	-52.4	1.1	-51.3	-40.0	-11.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1586.00	-61.8	-54.6	1.1	-53.5	-40.0	-13.5

Remarks:

1. $ERP (dBm) = S.G \text{ Value (dBm)} + \text{Correction Factor (dB)}$.
2. $\text{Correction Factor (dB)} = \text{Substitution Antenna Gain (dB)} + \text{Cable Loss (dB)}$.

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.

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Web Site: www.bureauveritas-adt.com

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

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