Partial FCC Test Report

(PART 27)

Report No.:	RFBFLF-WTW-P21123600A-2
Test Model:	B2402CB/B2402CBA/P2452CB/PX460CB/BW460CB/B2402FB/ B2402FBA/P2452FB/PX460FB/BW460FB (refer to item 3.1 for more details)
Received Date:	Dec. 20, 2021
Test Date:	Jun. 28 ~ Jul. 01, 2022
Issued Date:	Jul. 06, 2022
Applicant:	ASUSTeK COMPUTER INC.
Address:	1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan
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
RFBFLF-WTW-P21123600A-2	Original Release	Jul. 06, 2022

1 Certificate of Conformity

Product:	Notebook PC/ExpertBook
Brand:	ASUS
Test Model:	B2402CB/B2402CBA/P2452CB/PX460CB/BW460CB/B2402FB/ B2402FBA/P2452FB/PX460FB/BW460FB (refer to item 3.1 for more details)
Sample Status:	Engineering Sample
Applicant:	ASUSTeK COMPUTER INC.
Test Date:	Jun. 28 ~ Jul. 01, 2022
Standards:	FCC Part 27, Subpart C, D, F, H, L, M, N, O

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:** Jul. 06, 2022

Polly Chien / Specialist

Approved by : Jeremy Lin , **Date:** Jul. 06, 2022

Jeremy Lin / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2										
FCC Clause								Test Item	Result	Remarks
WCDMA B4 / LTE B4	LTE B12 / LTE B71 / NR B71	LTE B13	LTE B17	LTE B7 / LTE B38 / LTE B41 / NR B7 / NR B38 / NR B41	LTE B30 / NR B30	LTE B66 / NR B66	n77 / n78			
2.1046 27.50 (d)(4)	2.1046 27.50 (c)	2.1046 27.50 (b)	2.1046 27.50 (c)	2.1046 27.50 (h)(2)	2.1046 27.50 (a)(3)	2.1046 27.50 (d)(4)	2.1046 27.50 (j)	Equivalent Isotropically Radiated Power / Equivalent Radiated Power	N/A	Refer to Note
2.1047	2.1047	2.1047	2.1047	2.1047	2.1047	2.1047	2.1047	Modulation Characteristics	N/A	Refer to Note
27.50 (d)(5)	----	----	----	----	----	27.50 (d)(5)	----	Peak To Average Ratio	N/A	Refer to Note
2.1055 27.54	2.1055 27.54	2.1055 27.54	2.1055 27.54	2.1055 27.54	2.1055 27.54	2.1055 27.54	2.1055 27.54	Frequency Stability Stay with the authorized bands of operation	N/A	Refer to Note
2.1049	2.1049	2.1049	2.1049	2.1049	2.1049	2.1049	2.1049	Occupied Bandwidth	N/A	Refer to Note
2.1051 27.53 (h)	2.1051 27.53 (g)	2.1051 27.53 (c)	2.1051 27.53 (g)	2.1051 27.53 (m)(4)(6)	2.1051 27.53 (a)(4)	2.1051 27.53 (h)	2.1051 27.53(l)	Band Edge / Out of Band Emissions Measurements	N/A	Refer to Note
2.1051 27.53 (h)	2.1051 27.53 (g)	2.1051 27.53 (c)(f)	2.1051 27.53 (g)	2.1051 27.53 (m)(4)(6)	2.1051 27.53 (a)(4)	2.1051 27.53 (h)	2.1051 27.53(l)	Conducted Spurious Emissions	N/A	Refer to Note
2.1053 27.53 (h)	2.1053 27.53 (g)	2.1053 27.53 (c)(f)	2.1053 27.53 (g)	2.1053 27.53 (m)(4)(6)	2.1053 27.53 (a)(4)	2.1053 27.53 (h)	2.1053 27.53(l)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -1.42 dB at 4620.00 MHz.

Note:

1. This report is a partial report, only test items of Radiated Spurious Emissions tests was performed for this report. Other testing data please refer to Sporton report no.: FG051802A_R01, FG051802B_R01, FG051802C_R01, FG051802E_R01, FG051802G_R01, FG051802H_R01, FG051802I_R01, FG051802J_R01, for module (Brand: Fibocom, Model: FM350-GL).
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.	Date of Calibration	Due Date of Calibration
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 27, 2022	Apr. 26, 2023
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 15, 2021	Sep. 14, 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
Loop Antenna TESEQ	HLA 6121	45745	Jul. 21, 2021	Jul. 20, 2022
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	May 14, 2022	May 13, 2023
Preamplifier Agilent (Above 1GHz)	8449B	3008A01962	Oct. 05, 2021	Oct. 04, 2022
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 15, 2022	Jan. 14, 2023
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Jan. 15, 2022	Jan. 14, 2023
RF signal cable Woken	8D-FB	Cable-CH9-01	May 14, 2022	May 13, 2023
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
Standard Temperature And Humidity Chamber GIANT FORCE	GTH-120-40-CP-AR	MAA1306-019	Sep. 10, 2021	Sep. 09, 2022
Radio Communication Test Station Anritsu	MT8000A	6262135011	Nov. 18, 2021	Nov. 17, 2022
Radio Communication Test Station Anritsu	MT8821C	6261806803	Feb. 16, 2022	Feb. 15, 2023

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	Notebook PC/ExpertBook	
Brand	ASUS	
Test Model	B2402CB/B2402CBA/P2452CB/PX460CB/BW460CB/B2402FB/B2402FBA/ P2452FB/PX460FB/BW460FB	
Model Difference	Refer to Note as below	
Status of EUT	Engineering Sample	
Power Supply Rating	11.4 Vdc (Battery) 5V/9V/15V/20V Vdc (Adapter)	
Modulation Type	WCDMA	QPSK
	LTE	QPSK, 16QAM, 64QAM, 256QAM
	5GNR	π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM
Frequency Range	WCDMA	1712.4 ~ 1752.6 MHz
	LTE Band 4 (Channel Bandwidth: 1.4 MHz)	1710.7 ~ 1754.3 MHz
	LTE Band 4 (Channel Bandwidth: 3 MHz)	1711.5 ~ 1753.5 MHz
	LTE Band 4 (Channel Bandwidth: 5 MHz)	1712.5 ~ 1752.5 MHz
	LTE Band 4 (Channel Bandwidth: 10 MHz)	1715.0 ~ 1750.0 MHz
	LTE Band 4 (Channel Bandwidth: 15 MHz)	1717.5 ~ 1747.5 MHz
	LTE Band 4 (Channel Bandwidth: 20 MHz)	1720.0 ~ 1745.0 MHz
	LTE Band 7 (Channel Bandwidth: 5 MHz)	2502.5 ~ 2567.5 MHz
	LTE Band 7 (Channel Bandwidth: 10 MHz)	2505 ~ 2565 MHz
	LTE Band 7 (Channel Bandwidth: 15 MHz)	2507.5 ~ 2562.5 MHz
	LTE Band 7 (Channel Bandwidth: 20 MHz)	2510 ~ 2560 MHz
	LTE Band 12 (Channel Bandwidth: 1.4 MHz)	699.7 ~ 715.3 MHz
	LTE Band 12 (Channel Bandwidth: 3 MHz)	700.5 ~ 714.5 MHz
	LTE Band 12 (Channel Bandwidth: 5 MHz)	701.5 ~ 713.5 MHz
	LTE Band 12 (Channel Bandwidth: 10 MHz)	704.0 ~ 711.0 MHz
	LTE Band 13 (Channel Bandwidth: 5 MHz)	779.5 ~ 784.5 MHz
	LTE Band 13 (Channel Bandwidth: 10 MHz)	782.0 MHz

Frequency Range	LTE Band 17 (Channel Bandwidth: 5 MHz)	706.5 ~ 713.5 MHz
	LTE Band 17 (Channel Bandwidth: 10 MHz)	709.0 ~ 711.0 MHz
	LTE Band 30 (Channel Bandwidth: 5 MHz)	2307.5 ~ 2312.5 MHz
	LTE Band 30 (Channel Bandwidth: 10 MHz)	2310 MHz
	LTE Band 38 (Channel Bandwidth: 5 MHz)	2572.5 ~ 2617.5 MHz
	LTE Band 38 (Channel Bandwidth: 10 MHz)	2575.0 ~ 2615.0 MHz
	LTE Band 38 (Channel Bandwidth: 15 MHz)	2577.5 ~ 2612.5 MHz
	LTE Band 38 (Channel Bandwidth: 20 MHz)	2580.0 ~ 2610.0 MHz
	LTE Band 41 (Channel Bandwidth: 5 MHz)	2498.5 ~ 2687.5 MHz
	LTE Band 41 (Channel Bandwidth: 10 MHz)	2501.0 ~ 2685.0 MHz
	LTE Band 41 (Channel Bandwidth: 15 MHz)	2503.5 ~ 2682.5 MHz
	LTE Band 41 (Channel Bandwidth: 20 MHz)	2506.0 ~ 2680.0 MHz
	LTE Band 66 (Channel Bandwidth: 1.4 MHz)	1710.7 ~ 1779.3 MHz
	LTE Band 66 (Channel Bandwidth: 3 MHz)	1711.5 ~ 1778.5 MHz
	LTE Band 66 (Channel Bandwidth: 5 MHz)	1712.5 ~ 1777.5 MHz
	LTE Band 66 (Channel Bandwidth: 10 MHz)	1715.0 ~ 1775.0 MHz
	LTE Band 66 (Channel Bandwidth: 15 MHz)	1717.5 ~ 1772.5 MHz
	LTE Band 66 (Channel Bandwidth: 20 MHz)	1720.0 ~ 1770.0 MHz
	LTE Band 71 (Channel Bandwidth: 5 MHz)	665.5 ~ 695.5 MHz
	LTE Band 71 (Channel Bandwidth: 10 MHz)	668.0 ~ 693.0 MHz
	LTE Band 71 (Channel Bandwidth: 15 MHz)	670.5 ~ 690.5 MHz
	LTE Band 71 (Channel Bandwidth: 20 MHz)	673.0 ~ 688.0 MHz
	n7 (Channel Bandwidth 5MHz)	2502.5MHz ~ 2567.5MHz
	n7 (Channel Bandwidth 10MHz)	2505.0MHz ~ 2565.0MHz
	n7 (Channel Bandwidth 15MHz)	2507.5MHz ~ 2562.5MHz
	n7 (Channel Bandwidth 20MHz)	2510.0MHz ~ 2560.0MHz
	n30 (Channel Bandwidth 5MHz)	2307.5MHz ~ 2312.5MHz
	n30 (Channel Bandwidth 10MHz)	2310.0MHz
	n38 (Channel Bandwidth 5MHz)	2572.5MHz ~ 2617.5MHz
	n38 (Channel Bandwidth 10MHz)	2575.0MHz ~ 2615.0MHz
	n38 (Channel Bandwidth 15MHz)	2577.5MHz ~ 2612.5MHz
	n38 (Channel Bandwidth 20MHz)	2580.0MHz ~ 2610.0MHz
	n41 (Channel Bandwidth 10MHz)	2501.01MHz ~ 2685.0MHz
	n41 (Channel Bandwidth 15MHz)	2503.5MHz ~ 2682.48MHz
	n41 (Channel Bandwidth 30MHz)	2511.00MHz ~ 2674.98MHz
	n41 (Channel Bandwidth 40MHz)	2516.01MHz ~ 2670.00MHz
	n41 (Channel Bandwidth 50MHz)	2521.02MHz ~ 2664.99MHz
	n41 (Channel Bandwidth 80MHz)	2536.02MHz ~ 2649.99MHz
	n66 (Channel Bandwidth 5MHz)	1712.5MHz ~ 1777.5MHz
	n66 (Channel Bandwidth 10MHz)	1715.0MHz ~ 1775.0MHz
	n66 (Channel Bandwidth 15MHz)	1717.5MHz ~ 1772.5MHz
	n66 (Channel Bandwidth 20MHz)	1720.0MHz ~ 1770.0MHz
	n66 (Channel Bandwidth 40MHz)	1730.0MHz ~ 1760.0MHz

Frequency Range	n71 (Channel Bandwidth 5MHz)	665.5MHz ~ 695.5MHz
	n71 (Channel Bandwidth 10MHz)	668.0MHz ~ 693.0MHz
	n71 (Channel Bandwidth 15MHz)	670.5MHz ~ 690.5MHz
	n71 (Channel Bandwidth 20MHz)	673.0MHz ~ 688.0MHz
	n77 (Channel Bandwidth 10MHz)	3705.0MHz ~ 3975.0MHz
	n77 (Channel Bandwidth 15MHz)	3707.52MHz ~ 3972.48MHz
	n77 (Channel Bandwidth 20MHz)	3710.01MHz ~ 3969.99MHz
	n77 (Channel Bandwidth 40MHz)	3720.00MHz ~ 3960.00MHz
	n77 (Channel Bandwidth 50MHz)	3725.01MHz ~ 3954.99MHz
	n77 (Channel Bandwidth 60MHz)	3730.02MHz ~ 3949.98MHz
	n77 (Channel Bandwidth 80MHz)	3740.01MHz ~ 3939.99MHz
	n77 (Channel Bandwidth 100MHz)	3750.00MHz ~ 3930.00MHz
	n78 (Channel Bandwidth 10MHz)	3705.0MHz ~ 3975.0MHz
	n78 (Channel Bandwidth 15MHz)	3707.52MHz ~ 3972.48MHz
	n78 (Channel Bandwidth 20MHz)	3710.01MHz ~ 3789.99MHz
	n78 (Channel Bandwidth 40MHz)	3720.00MHz ~ 3780.00MHz
	n78 (Channel Bandwidth 50MHz)	3725.01MHz ~ 3774.99MHz
	n78 (Channel Bandwidth 60MHz)	3730.02MHz ~ 3769.98MHz
	n78 (Channel Bandwidth 80MHz)	3740.01MHz ~ 3759.99MHz
	n78 (Channel Bandwidth 100MHz)	3750.00MHz
Antenna Type	Refer to Note as below	
Antenna Gain	Refer to Note as below	
Accessory Device	Refer to Note as below	
Data Cable Supplied	Refer to Note as below	
Tx / Rx Function	1Tx / 4Rx	

Note:

1. All models are listed as below.

Brand	Model	Difference
ASUS	B2402CB	For marketing purpose
	B2402CBA	
	P2452CB	
	PX460CB	
	BW460CB	
	B2402FB	
	B2402FBA	
	P2452FB	
	PX460FB	
	BW460FB	

2. The EUT contains the following accessories.

Accessories information		
Main Board	Brand	ASUS
	Model	B2402FBA MB
LCD Panel 1	Brand	INNOLUX
	Model	N140BGA-EA4
	spec	14" HD TN
LCD Panel 2	Brand	AUO
	Model	B140XTN07.2
	spec	14" HD TN
LCD Panel 3	Brand	INNOLUX
	Model	N140HGA-EA1
	spec	14" FHD TN
LCD Panel 4	Brand	BOE
	Model	NT140FHM-N44
	spec	14" FHD TN
LCD Panel 5	Brand	INNOLUX
	Model	N140HCA-EAC
	spec	14" FHD value IPS
LCD Panel 6	Brand	AUO
	Model	B140HAN04.0
	spec	14" FHD value IPS
LCD Panel 7	Brand	INNOLUX
	Model	N140HCE-EN2
	spec	14"FHD IPS, 400nits
Camera 1	Brand	AZWAVE
	Model	AM-9BF56EB-D
	spec	CAMERA HD RGB/IR ARRAY MIC CR
Camera 2	Brand	SUPREME
	Model	AHDFN050
	spec	CAMERA HD FIX 3.3V ARRAYMIC CL
Camera 3	Brand	AZWAVE
	Model	AM-6SF56A2-J
	spec	CAMERA HD FIX 3.3V ARRAYMIC CL
Camera 4	Brand	SUPREME
	Model	AHDFN171
	spec	CAMERA HD FIX 3.3V ARRAYMIC CL
CPU 1	Brand	Intel/BGA1744
	Model	I7-1260P 12C
	spec	2.1G
CPU 2	Brand	Intel/BGA1744
	Model	I5-1240P 12C
	spec	1.7G
CPU 3	Brand	Intel/BGA1744
	Model	I3-1215U 6C
	spec	1.2GHz
V-Pro CPU 1	Brand	Intel/BGA1744
	Model	I5-1250P
	spec	1.7GHz
V-Pro CPU 2	Brand	Intel/BGA1744
	Model	I7-1270P
	spec	2.2GHz
M.2 SSD 1	Brand	WD
	Model	SDBPNPZ-256G-1002
	spec	256GB M2 2280 NVME
M.2 SSD 2	Brand	KST
	Model	OM8PDP3256B-AB1
	spec	256GB M2 2280 NVME
M.2 SSD 3	Brand	INT
	Model	SSDPEKNU512GZ
	spec	512GB M2 2280 NVME

Accessories information		
M.2 SSD 4	Brand	MICRON
	Model	MTFDHBA512QFD
	spec	512G M2 2280 NVME
M.2 SSD 5	Brand	INT
	Model	SSDPEKNU010TZ
	spec	1TB M2 2280 NVME
M.2 SSD 6	Brand	MICRON
	Model	MTFDHBA1T0QFD
	spec	1TB M2 2280 NVME
M.2 SSD 7	Brand	SAMSUNG
	Model	MZVL2512HCJQ
	spec	512GB M2 2280 NVME
M.2 SSD 8	Brand	MICRON
	Model	MTFDKBA512TFH
	spec	512GB M2 2280 NVME
M.2 SSD 9	Brand	SAMSUNG
	Model	MZVL21T0HCLR
	spec	1TB M2 2280 NVME
M.2 SSD 10	Brand	MICRON
	Model	MTFDKBA1T0TFH
	spec	1TB M2 2280 NVME
M.2 SSD 11	Brand	SAMSUNG
	Model	MZVL22T0HBLB
	spec	2TB M2 2280 NVME
M.2 SSD 12	Brand	MICRON
	Model	MTFDKBA2T0TFH
	spec	2TB M2 2280 NVME
HDD 1	Brand	TOSHIBA
	Model	MQ04ABF100
	spec	1 TB-5400rpm
HDD 2	Brand	SEAGATE
	Model	ST1000LM035
	spec	1 TB-5400rpm
HDD 3	Brand	SEAGATE
	Model	ST1000LM049
	spec	1 TB-7200rpm
HDD 4	Brand	SEAGATE
	Model	ST2000LM007
	spec	2 TB-5400rpm
BT/WLAN Module	Brand	INTEL
	Model	AX201D2W
Battery 1	Brand	ASUS
	Model	B31N1909
	Power Rating	CPT/GLP606080R/3S1P/11.4V/48WH
	Manufacturer	CPT
SO-DIMM	SPEC	DDR4, 3200 MHz (4G/8G/16G/32G)
AC Adapter 1	Brand	ASUS
	Model	AD10380
	AC Input	100 - 240 Vac; 50 - 60 Hz; 1.5 A
	DC Output	5Vdc; 3A / 9Vdc; 3A / 15Vdc; 3A / 20Vdc; 3.25A
	DC Output Cable	1.5m / 0 core shielding
	Manufacturer	PI
AC Adapter 2	Brand	ASUS
	Model	A19-065N3A
	AC Input	100 - 240 Vac; 50 - 60 Hz; 1.5 A
	DC Output	5Vdc; 3A / 9Vdc; 3A / 15Vdc; 3A / 20Vdc; 3.25A
	DC Output Cable	1.5m / 0 core shielding
	Manufacturer	CHICONY
AC power cable	Signal Line	0.8 meter / no shielding / 0 core

Accessories information		
AC Adapter 3	Brand	ASUS
	Model	ADP-65TW A
	AC Input	100 - 240 Vac; 50 - 60 Hz; 1.5 A
	DC Output	5Vdc; 3A / 9Vdc; 3A / 15Vdc; 3A / 20Vdc; 3.25A
	Manufacturer	DELTA
Type C to Type C USB Cable 1	Brand	MECIMEX
	Model	USB2.0 TYPE C TO C CABLE
	Signal Line	1.5 meter
Stylus Pen	Brand	Shenzhen qianfenyi intelligent technology co., LTD.
	Model	Active Stylus SA201H
	Manufacturer	MAXEYE

**After pretesting, Adapter 1 was the worst case and chosen for final test.

3. The antenna information is listed as below.

Ant. Type	Brand	Model
PIFA	PULSE	Ant. 0: TZ21101 (1415-090R0A9) Ant. 1: TZ21104 (1415-08YX0A9) Ant. 2: TZ21108 (1415-08YW0A9) Ant. 3: TZ21109 (1415-090U0A9)

Band			WCDMA			LTE															
			II	IV	V	2	4	5	7	12	13	14	17	25	26	30	38	41	48	66	71
Peak Gain (dBi)	NB	Ant. 0	3.1	2.9	-1.32	3.1	2.9	-1.32	1.7	3.29	1.59	1.07	3.24	3.1	-0.49	1.79	2.42	2.68	1.85	2.9	3.36
		Ant. 1	1.92	1.9	-0.59	1.92	1.9	-0.59	2.72	-	-0.21	-0.86	-	1.92	-0.54	3.36	3.13	3.22	5.38	1.9	-
		Ant. 2	3.07	-	-	3.07	-	-	4.24	-	-	-	-	3.07	-	3.64	3.59	4.93	5.52	-	-
		Ant. 3	2.27	2.58	-	2.27	2.58	-	2.31	-	-	-	-	2.27	-	2.62	1.93	2.31	2.26	2.58	-
	TB	Ant. 0	0	0.18	-2.59	0	0.18	-2.59	0.73	-3.98	-2.38	-2.1	-3.98	0	-2.05	0.98	0.98	2.18	5.83	0.18	-4.53
		Ant. 1	1.35	0.65	-1.55	1.35	0.65	-1.55	3.92	-	-1.93	-1.62	-	1.35	-1.55	0.93	3.92	3.96	4.23	2.33	-
		Ant. 2	0.62	-	-	0.62	-	-	2.36	-	-	-	-	0.62	-	1.82	2.25	2.86	5.5	-	-
		Ant. 3	0.93	-1.39	-	0.93	-1.39	-	0.18	-	-	-	-	0.93	-	1.95	-0.64	0.28	2.35	-0.27	-

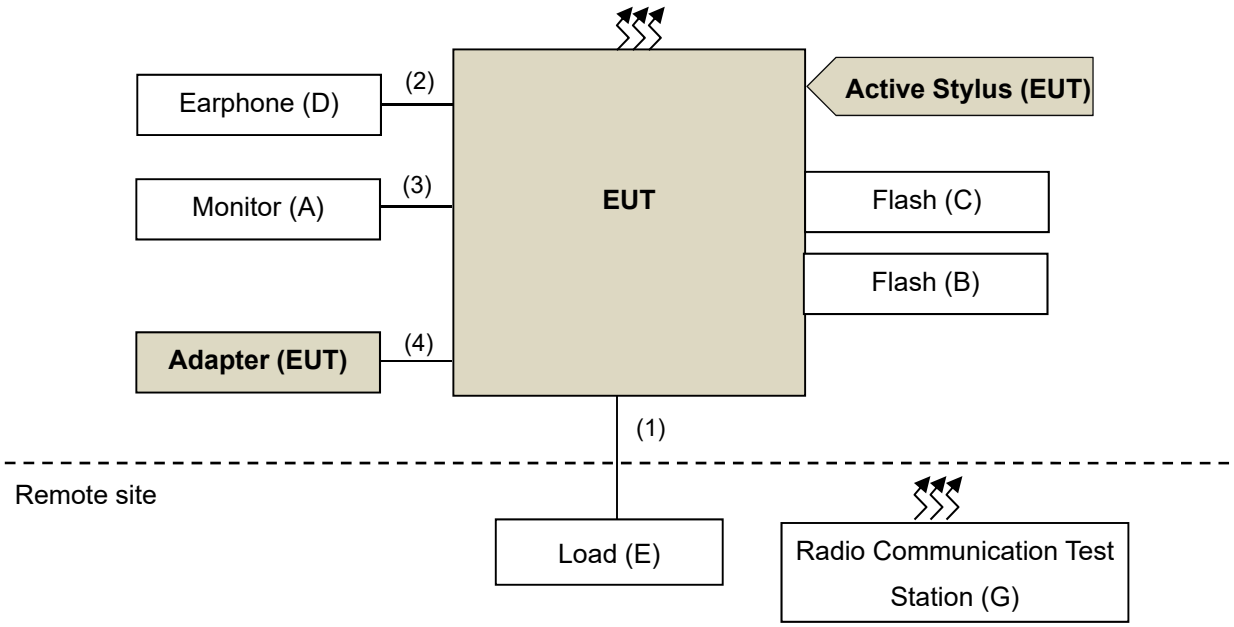
Band			5GNR										
			2	5	7	25	30	38	41	66	71	77	78
Peak Gain (dBi)	NB	Ant. 0	3.1	-1.32	1.7	3.1	1.79	2.42	2.68	2.9	3.36	1.3	1.3
		Ant. 1	1.92	-0.59	2.72	1.92	3.36	3.13	3.22	1.9	-	4.11	4.11
		Ant. 2	3.07	-	4.24	3.07	3.64	3.59	4.93	-	-	5.51	5.51
		Ant. 3	2.27	-	2.31	2.27	2.62	1.93	2.31	2.58	-	2.74	2.74
	TB	Ant. 0	0	-2.59	0.73	0	0.98	0.98	2.18	0.18	-4.53	5.83	5.83
		Ant. 1	1.35	-1.55	3.92	1.35	0.93	3.92	3.96	2.33	-	4.66	4.66
		Ant. 2	0.62	-	2.36	0.62	1.82	2.25	2.86	-	-	4.4	4.4
		Ant. 3	0.93	-	0.18	0.93	1.95	-0.64	0.28	-0.27	-	3.38	3.38

4. The above Antenna information refers to the manufacturer's antenna specifications, the laboratory shall not be held responsible.
5. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.
6. The EUT contains certified WWAN module with FCC ID: MSQFM350GL.

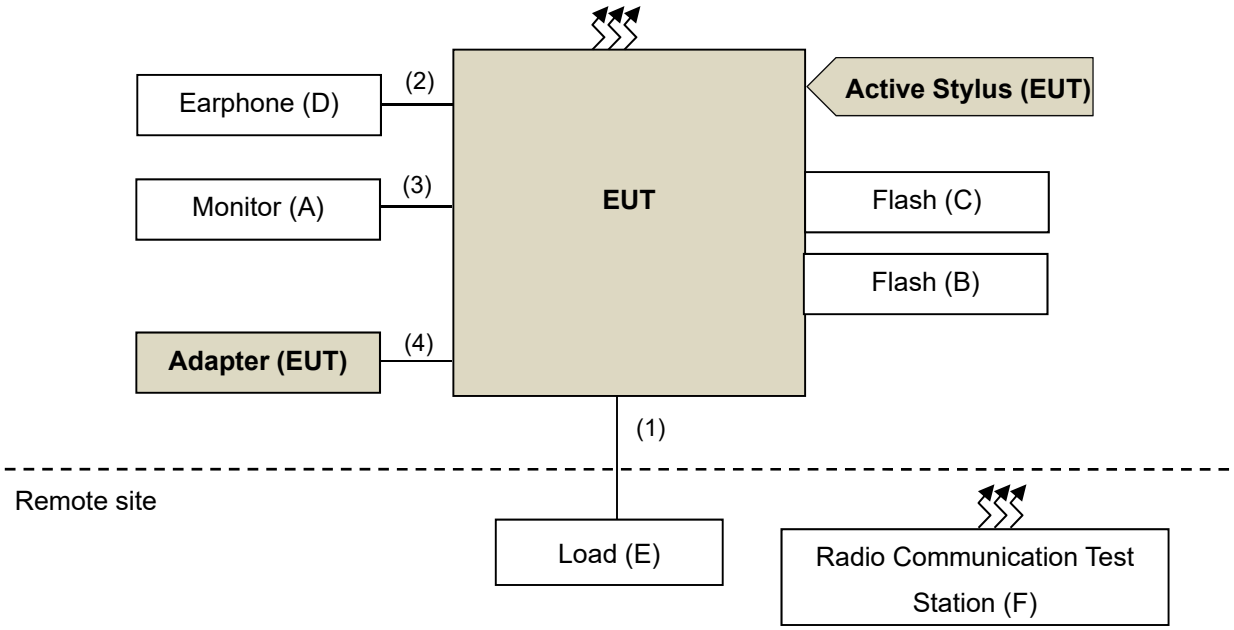
3.2 Configuration of System under Test

<Radiated Emission Test>

WCDMA & LTE



5GNR



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	Monitor	DELL	U2410	CN-0J257M-72872-0A6-02NL	FCC DoC Approved	-
B	Flash	SanDisk	SDDDC3-032G	NA	NA	Type-C
C	Flash	SanDisk	SDDDC3-032G	NA	NA	Type-C
D	Earphone	APPLE	MB770FEB	NA	NA	-
E	Load	NA	NA	NA	NA	-
F	Radio Communication Test Station	Anritsu	MT8000A	6262135011	NA	-
G	Radio Communication Test Station	Anritsu	MT8821C	6261806803	NA	-

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	LAN cable	1	1.5	N	0	RJ45, Cat.5e
2.	Audio cable	1	1.2	N	0	-
3.	HDMI cable	1	2.0	Y	0	Provided by Lab. (Brand: Amber, Model: HDMI-AA120)
4.	DC cable	1	1.55	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:

WCDMA

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	Radiated Emission	1312 to 1513	1312	WCDMA

LTE Band 4

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	20050 to 20300	20050	20 MHz	QPSK	1 RB / 0 RB Offset

LTE Band 7

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	20850 to 21350	21350	20 MHz	QPSK	1 RB / 0 RB Offset

LTE Band 12

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	23060 to 23130	23130	10 MHz	QPSK	1 RB / 0 RB Offset

LTE Band 13

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	23230	23230	10 MHz	QPSK	1 RB / 0 RB Offset

LTE Band 17

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	23780 to 23800	23790	10 MHz	QPSK	1 RB / 0 RB Offset

LTE Band 30

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	27710	27710	10 MHz	QPSK	1 RB / 0 RB Offset

LTE Band 38

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	37850 to 38150	37850	20 MHz	QPSK	1 RB / 0 RB Offset

LTE Band 41

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	39750 to 41490	40620	20 MHz	QPSK	1 RB / 0 RB Offset

LTE Band 66

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	132072 to 132572	132322	20 MHz	QPSK	1 RB / 0 RB Offset

LTE Band 71

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	133222 to 133372	133297	20 MHz	QPSK	1 RB / 0 RB Offset

NR Band 7

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	505000 to 509000	507000	20MHz	QPSK	1 RB / 1 RB Offset

NR Band 30

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	462000	462000	10MHz	QPSK	1 RB / 1 RB Offset

NR Band 38

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	516000 to 523000	519000	20MHz	QPSK	1 RB / 1 RB Offset

NR Band 41

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	509202 to 528000	518598	80MHz	QPSK	1 RB / 1 RB Offset

NR Band 66

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	346000 to 352000	349000	40MHz	QPSK	1 RB / 1 RB Offset

NR Band 71

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	134600 to 137600	136100	20MHz	QPSK	1 RB / 1 RB Offset

NR Band 77

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	650000 to 662000	656000	100MHz	QPSK	1 RB / 1 RB Offset

NR Band 78

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	620000 to 653333	650000	100MHz	QPSK	1 RB / 1 RB Offset

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
Radiated Emission	22 deg. C, 69 % RH	120 Vac, 60 Hz	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 27
ANSI 63.26-2015

Note: 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
ANSI/TIA/EIA-603-E 2016

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

4 Test Types and Results

4.1 Radiated Emission Measurement

4.1.1 Limits of Radiated Emission Measurement

For LTE Band 7, 38, 41 and 5G NR n7, n38, n41:
According to FCC 27.53(m)(4),on any frequency outside a licensee’s frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least 55 + 10 log (P) dB. The emission limit equal to –25dBm.

For LTE Band 12, 17, 71 and 5G NR n71:
According to FCC 27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. The limit of emissions is equal to -13 dBm.

For LTE Band 13:
According to FCC 27.53(c)(2), for on any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB. The limit of emissions is equal to -13 dBm.

According to FCC 27.53(f), for operations in the 775-788 MHz, emissions in the band 1559-1610MHz shall be limited to -70 dBW/MHz (EIRP). The limit of emissions is equal to -40 dBm.

For LTE Band 30 and 5G NR n30:
According to FCC 27.53(a)(4)(ii)(iii), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 70 +10 log (P) dB. The limit of emission is equal to -40 dBm.

For WCDMA band 4, LTE Band 4, 66 and 5G NR n66:
According to FCC 27.53(h), for operations in the 1695-1710MHz, 1710-1755MHz, 1755-1780 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log (P) dB.

For 5G NR n77, n78:
According to FCC 27.53(l), for operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz.

4.1.2 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.

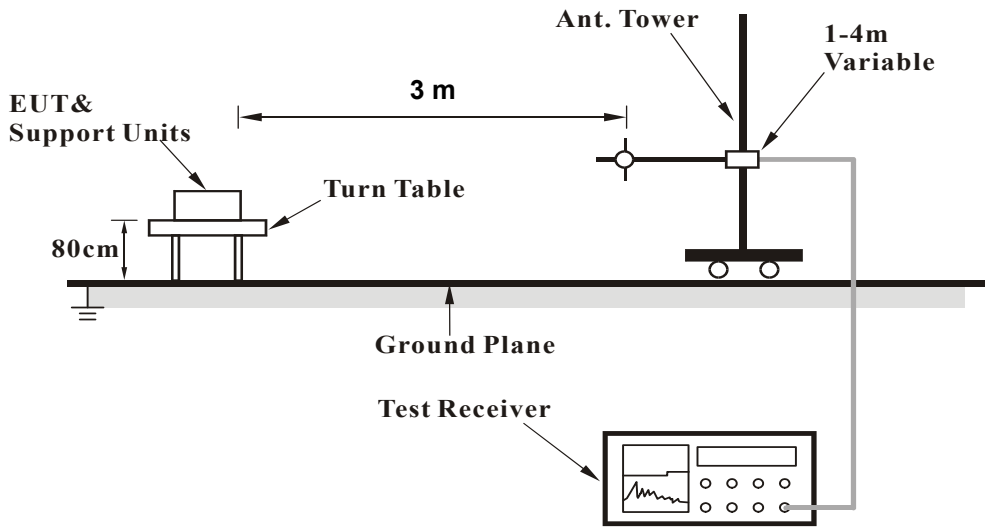
Note: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

4.1.3 Deviation from Test Standard

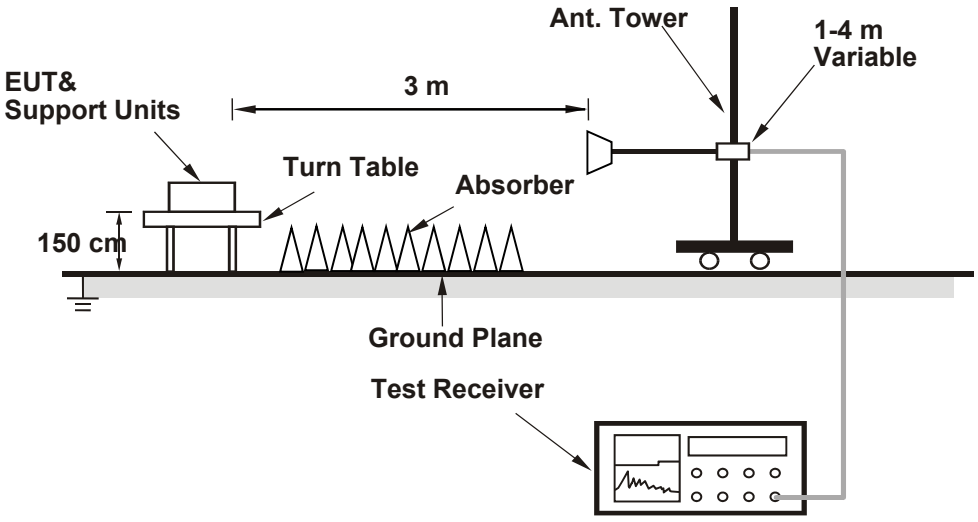
No deviation.

4.1.4 Test Setup

<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



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

4.1.5 Test Results

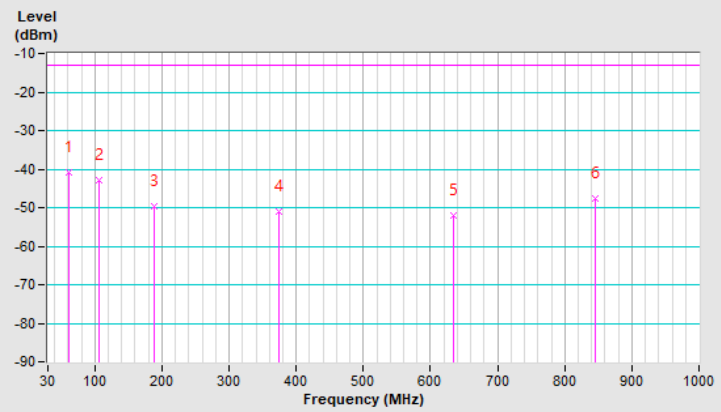
Below 1GHz
WCDMA Band 4

Mode	TX channel 1312 (1712.4MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	61.04	-40.88	-13.00	-27.88	1.50 H	172	63.74	-104.62
2	105.66	-42.94	-13.00	-29.94	1.25 H	205	64.87	-107.81
3	189.08	-49.67	-13.00	-36.67	1.25 H	6	56.80	-106.47
4	373.38	-50.94	-13.00	-37.94	1.00 H	155	50.65	-101.59
5	633.34	-51.98	-13.00	-38.98	1.00 H	225	44.31	-96.29
6	844.80	-47.57	-13.00	-34.57	1.25 H	8	44.25	-91.82

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

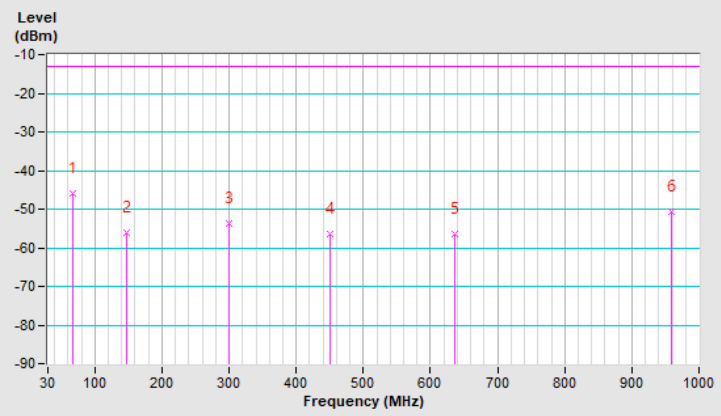


Mode	TX channel 1312 (1712.4MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	66.86	-46.09	-13.00	-33.09	1.00 V	203	59.14	-105.23
2	146.40	-56.13	-13.00	-43.13	1.50 V	251	47.98	-104.11
3	299.66	-53.85	-13.00	-40.85	1.25 V	264	48.91	-102.76
4	450.98	-56.41	-13.00	-43.41	1.00 V	204	43.48	-99.89
5	637.22	-56.38	-13.00	-43.38	1.00 V	270	39.86	-96.24
6	959.26	-50.72	-13.00	-37.72	1.25 V	56	38.59	-89.31

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



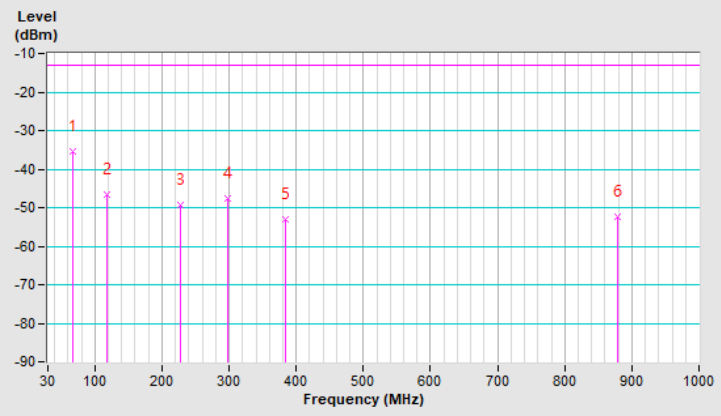
LTE Band 4, Channel Bandwidth: 20MHz

Mode	TX channel 20050 (1720.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	66.86	-35.42	-13.00	-22.42	1.00 H	29	69.81	-105.23
2	117.30	-46.46	-13.00	-33.46	1.25 H	305	60.14	-106.60
3	227.88	-49.47	-13.00	-36.47	1.00 H	178	57.19	-106.66
4	297.72	-47.62	-13.00	-34.62	1.50 H	163	55.24	-102.86
5	383.08	-53.17	-13.00	-40.17	1.50 H	357	48.28	-101.45
6	879.72	-52.48	-13.00	-39.48	1.00 H	220	38.76	-91.24

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

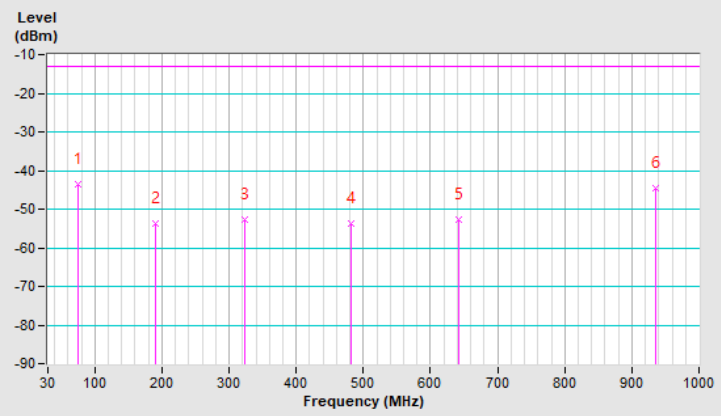


Mode	TX channel 20050 (1720.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	74.62	-43.44	-13.00	-30.44	1.25 V	176	63.30	-106.74
2	191.02	-53.77	-13.00	-40.77	1.00 V	309	52.84	-106.61
3	322.94	-52.85	-13.00	-39.85	1.50 V	117	49.42	-102.27
4	482.02	-53.71	-13.00	-40.71	1.25 V	167	45.93	-99.64
5	643.04	-52.86	-13.00	-39.86	1.00 V	104	43.25	-96.11
6	935.98	-44.63	-13.00	-31.63	1.25 V	291	45.24	-89.87

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



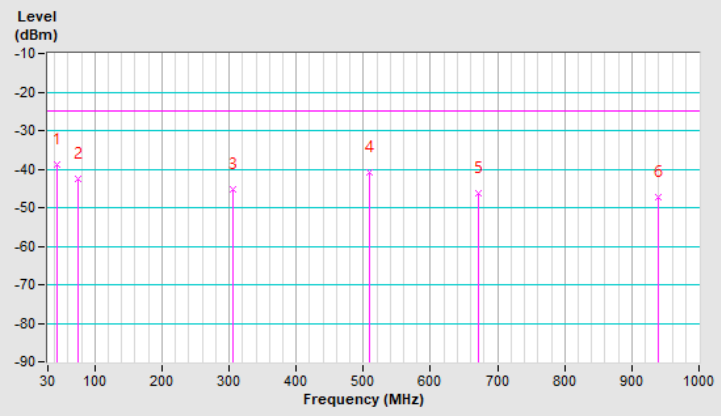
LTE Band 7, Channel Bandwidth: 20MHz

Mode	TX channel 21350 (2560.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	43.58	-38.65	-25.00	-13.65	1.00 H	22	65.58	-104.23
2	74.62	-42.65	-25.00	-17.65	1.50 H	230	64.09	-106.74
3	305.48	-45.38	-25.00	-20.38	1.00 H	228	57.27	-102.65
4	509.18	-40.97	-25.00	-15.97	1.25 H	225	58.05	-99.02
5	672.14	-46.39	-25.00	-21.39	1.00 H	228	49.50	-95.89
6	939.86	-47.18	-25.00	-22.18	1.50 H	329	42.43	-89.61

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

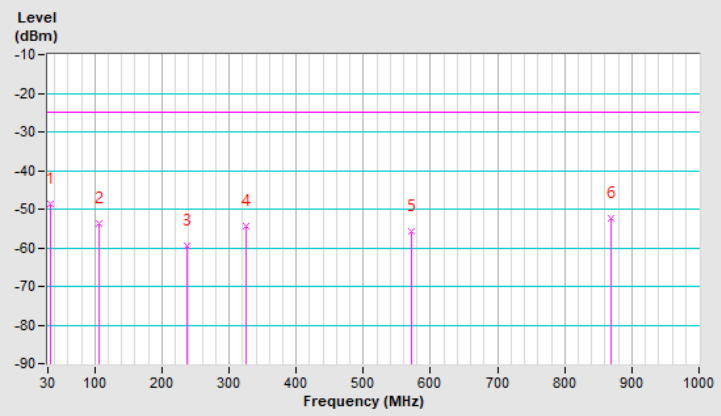


Mode	TX channel 21350 (2560.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.88	-48.50	-25.00	-23.50	1.50 V	182	56.90	-105.40
2	105.66	-53.61	-25.00	-28.61	1.25 V	122	54.20	-107.81
3	237.58	-59.65	-25.00	-34.65	1.00 V	273	45.82	-105.47
4	324.88	-54.27	-25.00	-29.27	1.25 V	56	47.92	-102.19
5	571.26	-55.87	-25.00	-30.87	1.00 V	12	42.38	-98.25
6	868.08	-52.51	-25.00	-27.51	1.00 V	181	38.84	-91.35

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



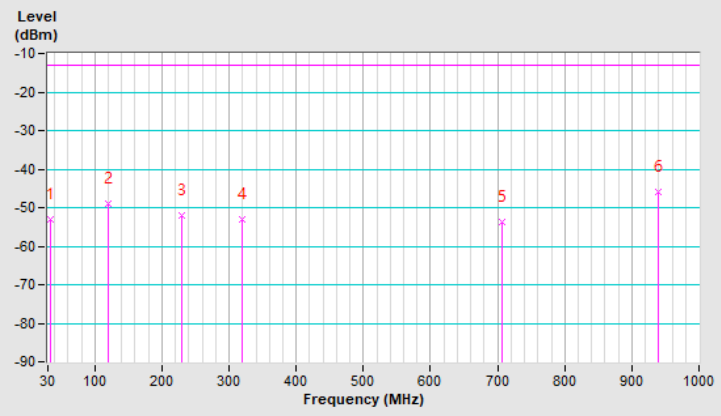
LTE Band 12, Channel Bandwidth: 10MHz

Mode	TX channel 23130 (711.0 MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.88	-53.14	-13.00	-40.14	1.00 H	340	54.41	-107.55
2	119.24	-48.82	-13.00	-35.82	1.50 H	59	59.79	-108.61
3	229.82	-52.11	-13.00	-39.11	1.25 H	178	56.61	-108.72
4	319.06	-53.06	-13.00	-40.06	1.00 H	156	51.49	-104.55
5	707.06	-53.58	-13.00	-40.58	1.00 H	22	43.90	-97.48
6	939.86	-45.80	-13.00	-32.80	1.50 H	103	45.96	-91.76

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

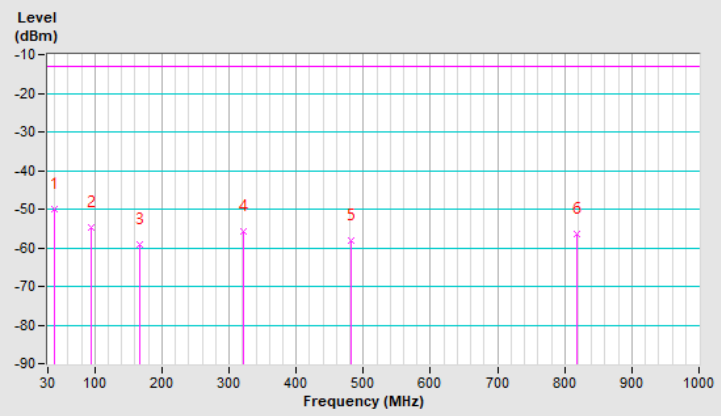


Mode	TX channel 23130 (711.0 MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	39.70	-50.10	-13.00	-37.10	1.00 V	99	56.79	-106.89
2	94.02	-54.78	-13.00	-41.78	1.25 V	229	56.75	-111.53
3	167.74	-59.17	-13.00	-46.17	1.50 V	102	47.24	-106.41
4	321.00	-55.92	-13.00	-42.92	1.50 V	229	48.57	-104.49
5	482.02	-58.22	-13.00	-45.22	1.25 V	153	43.57	-101.79
6	817.64	-56.45	-13.00	-43.45	1.00 V	181	37.87	-94.32

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.



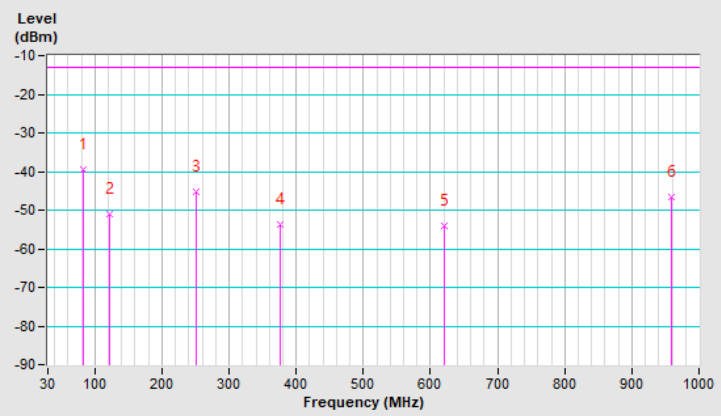
LTE Band 13, Channel Bandwidth: 10MHz

Mode	TX channel 23230 (782.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	82.38	-39.51	-13.00	-26.51	1.00 H	136	71.58	-111.09
2	121.18	-50.86	-13.00	-37.86	1.00 H	6	57.53	-108.39
3	251.16	-45.38	-13.00	-32.38	1.25 H	336	61.41	-106.79
4	375.32	-53.85	-13.00	-40.85	1.00 H	150	49.87	-103.72
5	619.76	-54.23	-13.00	-41.23	1.00 H	311	44.46	-98.69
6	959.26	-46.53	-13.00	-33.53	1.50 H	22	44.93	-91.46

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

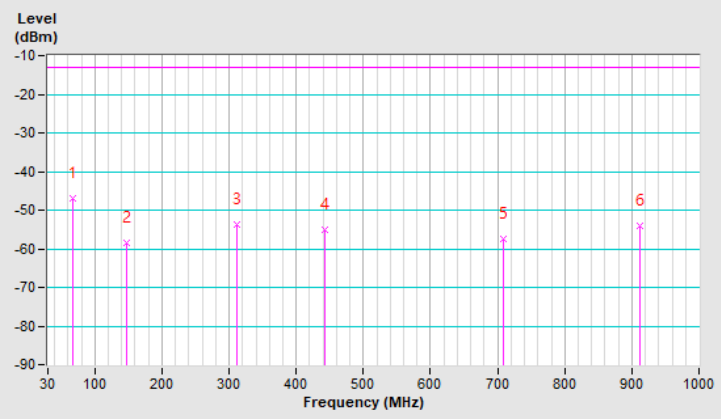


Mode	TX channel 23230 (782.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	66.86	-46.83	-13.00	-33.83	1.25 V	220	60.55	-107.38
2	146.40	-58.61	-13.00	-45.61	1.00 V	250	47.65	-106.26
3	311.30	-53.73	-13.00	-40.73	1.50 V	309	51.00	-104.73
4	443.22	-55.02	-13.00	-42.02	1.25 V	6	47.27	-102.29
5	709.00	-57.43	-13.00	-44.43	1.00 V	80	39.97	-97.40
6	912.70	-54.18	-13.00	-41.18	1.50 V	64	38.45	-92.63

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.



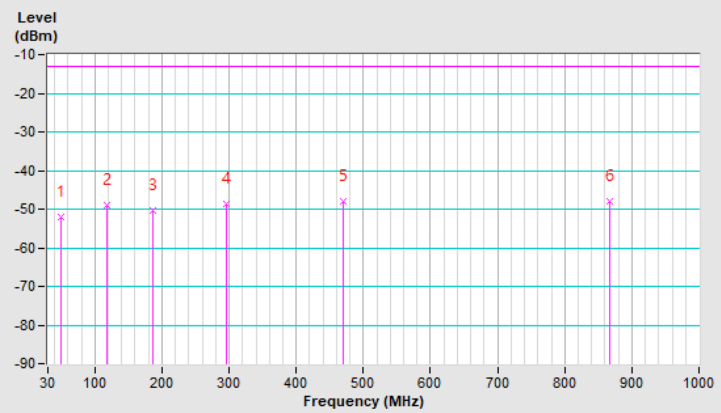
LTE Band 17, Channel Bandwidth: 10MHz

Mode	TX channel 23790 (710.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	49.40	-52.01	-13.00	-39.01	1.25 H	280	53.94	-105.95
2	117.30	-49.07	-13.00	-36.07	1.50 H	309	59.68	-108.75
3	187.14	-50.50	-13.00	-37.50	1.25 H	62	57.92	-108.42
4	295.78	-48.56	-13.00	-35.56	1.00 H	168	56.54	-105.10
5	470.38	-48.07	-13.00	-35.07	1.50 H	162	53.85	-101.92
6	866.14	-48.11	-13.00	-35.11	1.50 H	154	45.45	-93.56

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

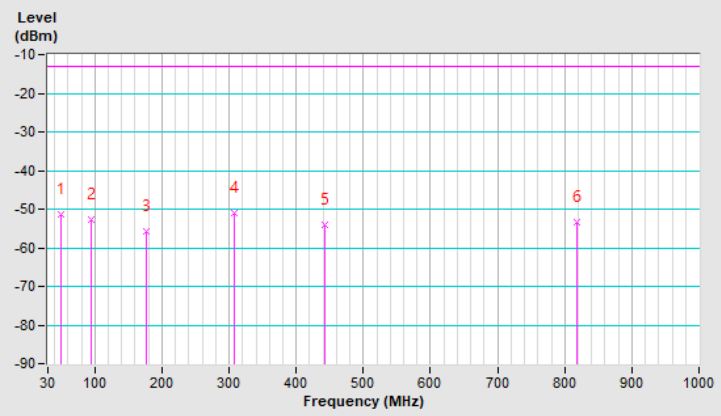


Mode	TX channel 23790 (710.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	49.40	-51.51	-13.00	-38.51	1.00 V	223	54.44	-105.95
2	94.02	-52.70	-13.00	-39.70	1.25 V	149	58.83	-111.53
3	177.44	-55.76	-13.00	-42.76	1.00 V	264	51.63	-107.39
4	307.42	-51.02	-13.00	-38.02	1.50 V	68	53.77	-104.79
5	443.22	-54.22	-13.00	-41.22	1.25 V	323	48.07	-102.29
6	817.64	-53.34	-13.00	-40.34	1.25 V	267	40.98	-94.32

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.



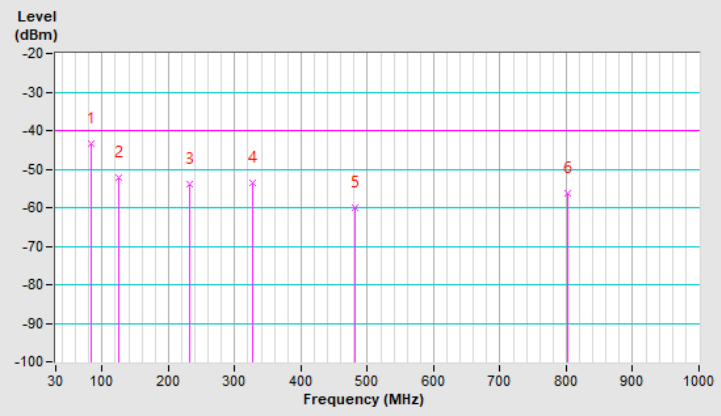
LTE Band 30, Channel Bandwidth: 10MHz

Mode	TX channel 27710 (2310.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	84.32	-43.27	-40.00	-3.27	1.25 H	6	66.01	-109.28
2	125.06	-52.06	-40.00	-12.06	1.50 H	235	53.89	-105.95
3	231.76	-53.82	-40.00	-13.82	1.25 H	178	52.45	-106.27
4	326.82	-53.48	-40.00	-13.48	1.00 H	164	48.65	-102.13
5	482.02	-60.03	-40.00	-20.03	1.50 H	74	39.61	-99.64
6	802.12	-56.36	-40.00	-16.36	1.50 H	33	36.26	-92.62

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

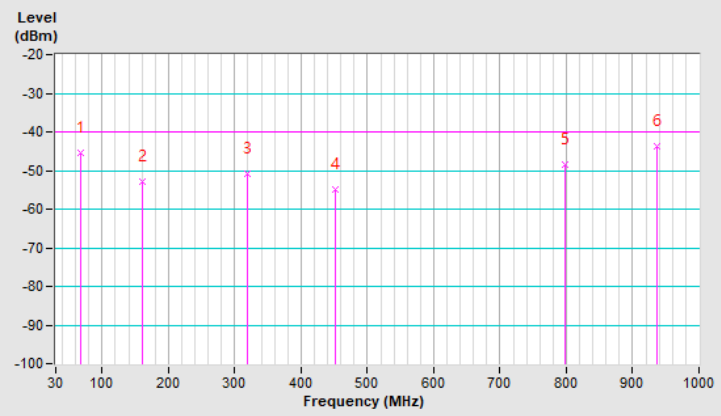


Mode	TX channel 27710 (2310.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	66.86	-45.30	-40.00	-5.30	1.00 V	77	59.93	-105.23
2	159.98	-52.94	-40.00	-12.94	1.00 V	99	50.95	-103.89
3	319.06	-50.71	-40.00	-10.71	1.25 V	99	51.69	-102.40
4	450.98	-54.86	-40.00	-14.86	1.50 V	162	45.03	-99.89
5	798.24	-48.41	-40.00	-8.41	1.00 V	2	44.42	-92.83
6	935.98	-43.58	-40.00	-3.58	1.25 V	225	46.29	-89.87

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



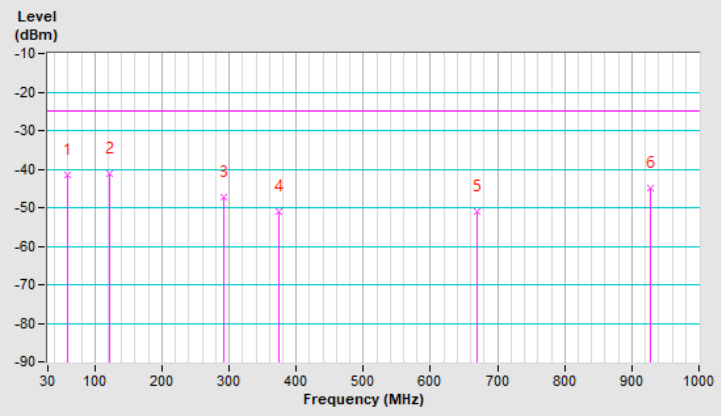
LTE Band 38, Channel Bandwidth: 20MHz

Mode	TX channel 37850 (2580.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	59.10	-41.51	-25.00	-16.51	1.25 H	280	62.71	-104.22
2	121.18	-41.13	-25.00	-16.13	1.50 H	229	65.11	-106.24
3	291.90	-47.43	-25.00	-22.43	1.00 H	156	55.61	-103.04
4	373.38	-50.99	-25.00	-25.99	1.50 H	159	50.60	-101.59
5	670.20	-50.93	-25.00	-25.93	1.25 H	340	45.01	-95.94
6	928.22	-44.78	-25.00	-19.78	1.00 H	73	45.38	-90.16

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

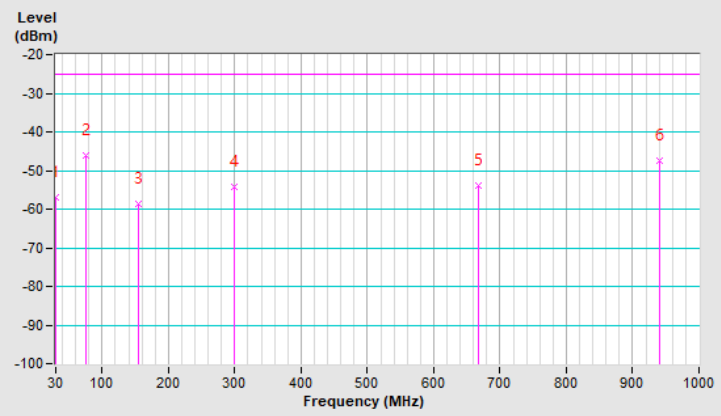


Mode	TX channel 37850 (2580.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
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	-56.87	-25.00	-31.87	1.00 V	193	48.59	-105.46
2	74.62	-46.06	-25.00	-21.06	1.25 V	228	60.68	-106.74
3	154.16	-58.75	-25.00	-33.75	1.50 V	339	45.18	-103.93
4	299.66	-54.39	-25.00	-29.39	1.25 V	234	48.37	-102.76
5	668.26	-53.96	-25.00	-28.96	1.00 V	262	41.98	-95.94
6	939.86	-47.51	-25.00	-22.51	1.50 V	190	42.10	-89.61

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



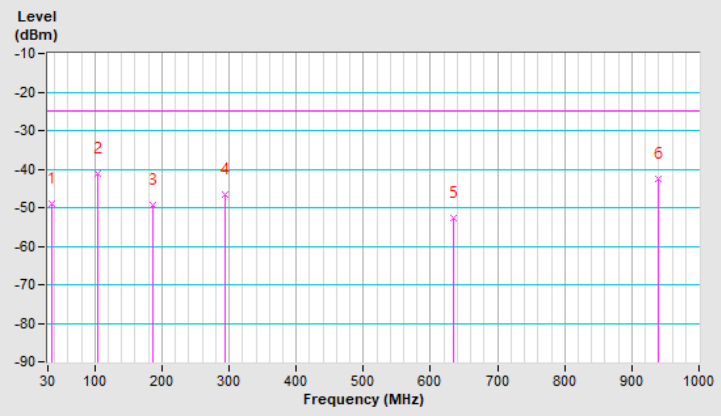
LTE Band 41, Channel Bandwidth: 20MHz

Mode	TX channel 40620 (2593.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	35.82	-48.86	-25.00	-23.86	1.25 H	4	56.40	-105.26
2	103.72	-41.13	-25.00	-16.13	1.00 H	105	66.89	-108.02
3	187.14	-49.29	-25.00	-24.29	1.50 H	10	56.98	-106.27
4	293.84	-46.70	-25.00	-21.70	1.25 H	171	56.31	-103.01
5	633.34	-52.74	-25.00	-27.74	1.00 H	355	43.55	-96.29
6	939.86	-42.45	-25.00	-17.45	1.25 H	270	47.16	-89.61

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

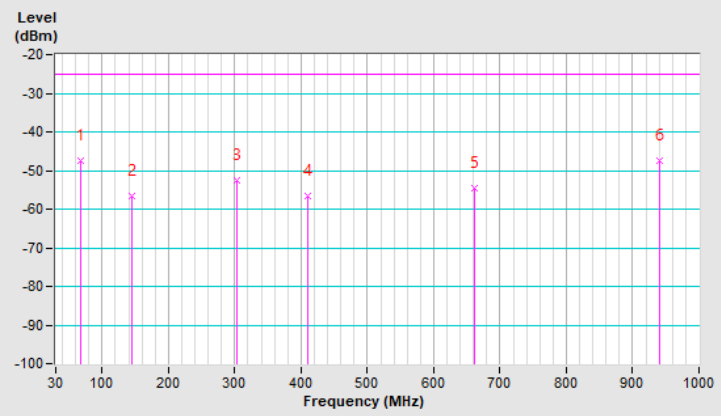


Mode	TX channel 40620 (2593.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	66.86	-47.57	-25.00	-22.57	1.50 V	38	57.66	-105.23
2	144.46	-56.47	-25.00	-31.47	1.00 V	233	47.77	-104.24
3	303.54	-52.66	-25.00	-27.66	1.25 V	243	50.03	-102.69
4	410.24	-56.66	-25.00	-31.66	1.50 V	144	44.41	-101.07
5	660.50	-54.50	-25.00	-29.50	1.50 V	87	41.48	-95.98
6	939.86	-47.51	-25.00	-22.51	1.00 V	190	42.10	-89.61

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



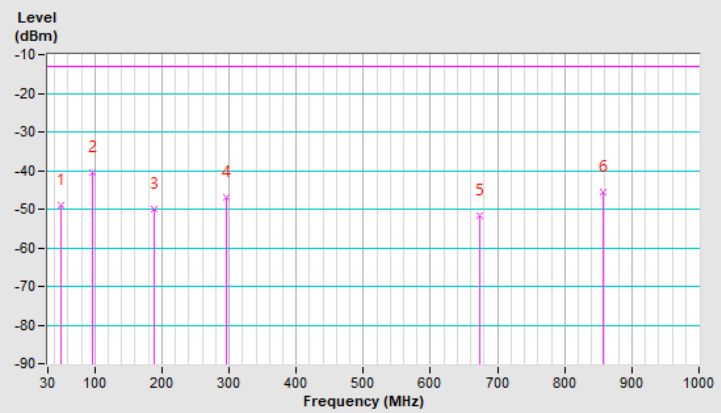
LTE Band 66, Channel Bandwidth: 20MHz

Mode	TX channel 132322 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	49.40	-48.93	-13.00	-35.93	1.00 H	312	54.87	-103.80
2	95.96	-40.63	-13.00	-27.63	1.25 H	85	68.84	-109.47
3	189.08	-50.14	-13.00	-37.14	1.50 H	77	56.33	-106.47
4	295.78	-46.95	-13.00	-33.95	1.50 H	178	56.00	-102.95
5	674.08	-51.85	-13.00	-38.85	1.00 H	2	44.01	-95.86
6	856.44	-45.49	-13.00	-32.49	1.50 H	100	46.05	-91.54

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

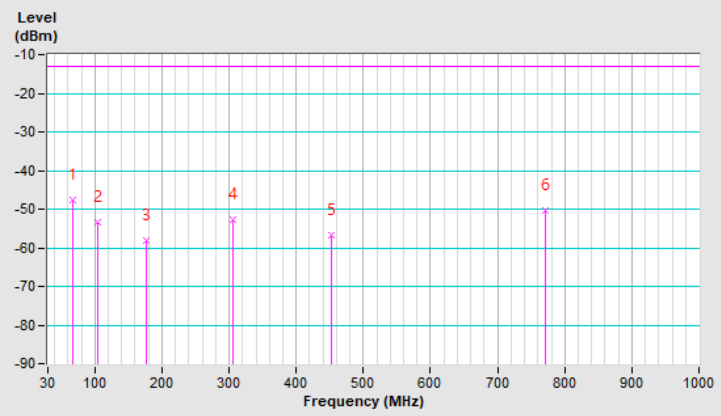


Mode	TX channel 132322 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	66.86	-47.78	-13.00	-34.78	1.00 V	10	57.45	-105.23
2	103.72	-53.33	-13.00	-40.33	1.50 V	109	54.69	-108.02
3	177.44	-58.28	-13.00	-45.28	1.25 V	16	46.96	-105.24
4	305.48	-52.57	-13.00	-39.57	1.00 V	217	50.08	-102.65
5	452.92	-56.83	-13.00	-43.83	1.00 V	250	43.05	-99.88
6	771.08	-50.39	-13.00	-37.39	1.50 V	129	42.79	-93.18

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



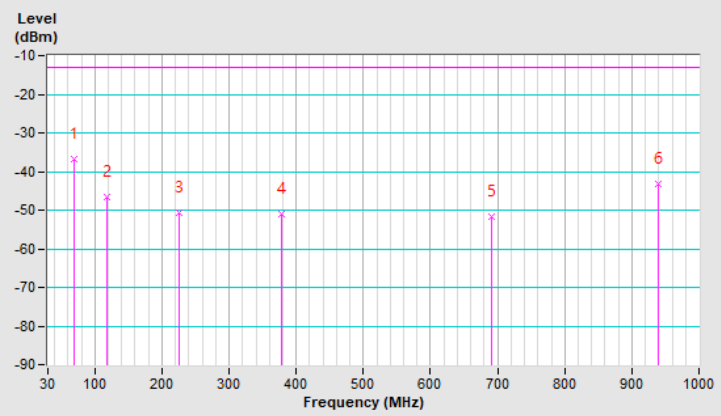
LTE Band 71, Channel Bandwidth: 20MHz

Mode	TX channel 133297 (680.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	68.80	-36.94	-13.00	-23.94	1.25 H	188	71.10	-108.04
2	117.30	-46.70	-13.00	-33.70	1.00 H	263	62.05	-108.75
3	225.94	-50.69	-13.00	-37.69	1.50 H	182	58.22	-108.91
4	377.26	-51.11	-13.00	-38.11	1.00 H	158	52.61	-103.72
5	691.54	-51.54	-13.00	-38.54	1.50 H	50	46.25	-97.79
6	939.86	-43.09	-13.00	-30.09	1.00 H	79	48.67	-91.76

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

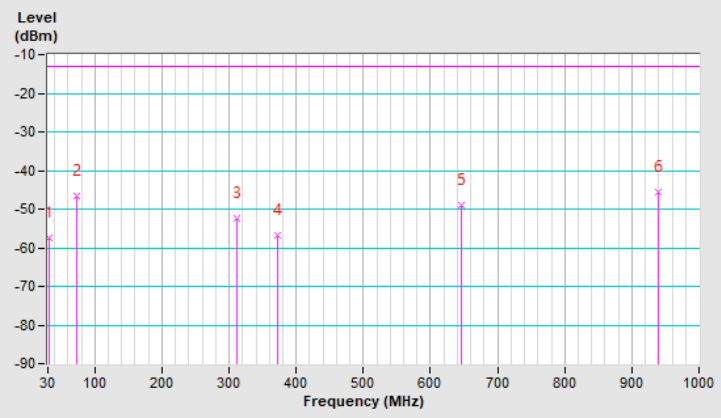


Mode	TX channel 133297 (680.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance: Vertical at 3 M								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	31.94	-57.33	-13.00	-44.33	1.25 V	6	50.36	-107.69
2	72.68	-46.68	-13.00	-33.68	1.00 V	24	61.94	-108.62
3	311.30	-52.49	-13.00	-39.49	1.50 V	292	52.24	-104.73
4	371.44	-56.73	-13.00	-43.73	1.25 V	6	47.02	-103.75
5	646.92	-48.97	-13.00	-35.97	1.00 V	334	49.25	-98.22
6	939.86	-45.65	-13.00	-32.65	1.00 V	351	46.11	-91.76

Remarks:

1. ERP(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 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.



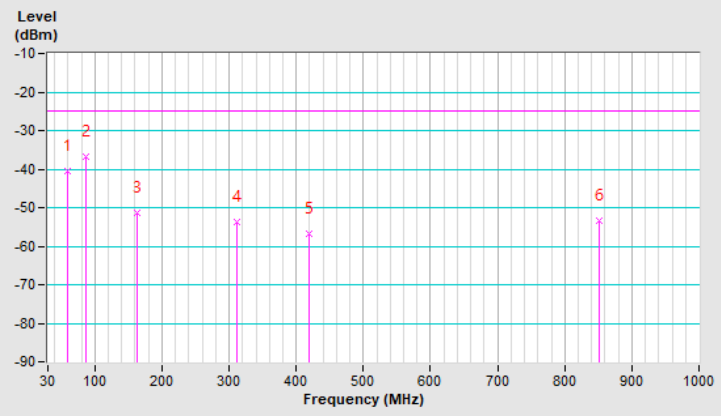
n7, Channel Bandwidth: 20MHz

Mode	TX channel 507000 (2535.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	59.10	-40.57	-25.00	-15.57	1.50 H	145	63.65	-104.22
2	86.26	-36.64	-25.00	-11.64	1.00 H	37	72.92	-109.56
3	163.86	-51.50	-25.00	-26.50	1.25 H	71	52.64	-104.14
4	311.30	-53.88	-25.00	-28.88	1.00 H	259	48.70	-102.58
5	419.94	-56.81	-25.00	-31.81	1.00 H	6	43.88	-100.69
6	850.62	-53.31	-25.00	-28.31	1.25 H	288	38.38	-91.69

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

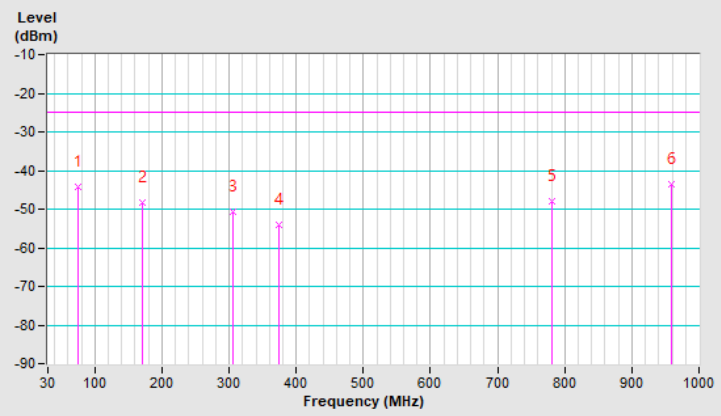


Mode	TX channel 507000 (2535.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	74.62	-44.10	-25.00	-19.10	1.00 V	294	62.64	-106.74
2	171.62	-48.46	-25.00	-23.46	1.00 V	346	56.09	-104.55
3	305.48	-50.82	-25.00	-25.82	1.25 V	177	51.83	-102.65
4	373.38	-54.21	-25.00	-29.21	1.50 V	330	47.38	-101.59
5	780.78	-48.08	-25.00	-23.08	1.00 V	55	44.72	-92.80
6	959.26	-43.68	-25.00	-18.68	1.25 V	352	45.63	-89.31

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



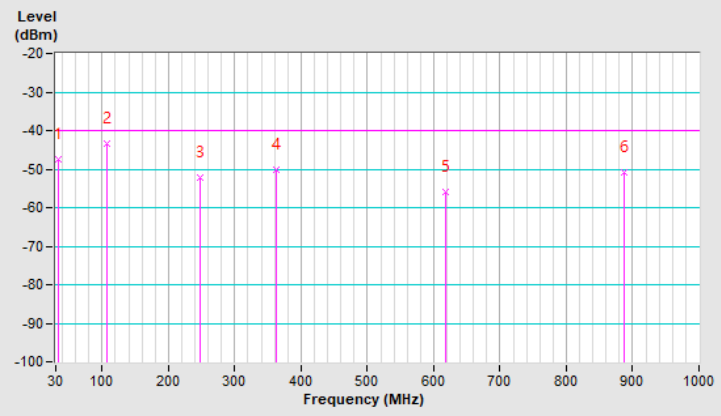
n30, Channel Bandwidth: 10MHz

Mode	TX channel 462000 (2310.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	33.88	-47.42	-40.00	-7.42	1.25 H	63	57.98	-105.40
2	107.60	-43.39	-40.00	-3.39	1.00 H	324	64.10	-107.49
3	247.28	-52.16	-40.00	-12.16	1.50 H	6	52.64	-104.80
4	361.74	-50.20	-40.00	-10.20	1.25 H	6	51.59	-101.79
5	617.82	-55.90	-40.00	-15.90	1.00 H	13	40.69	-96.59
6	887.48	-50.78	-40.00	-10.78	1.25 H	202	40.36	-91.14

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

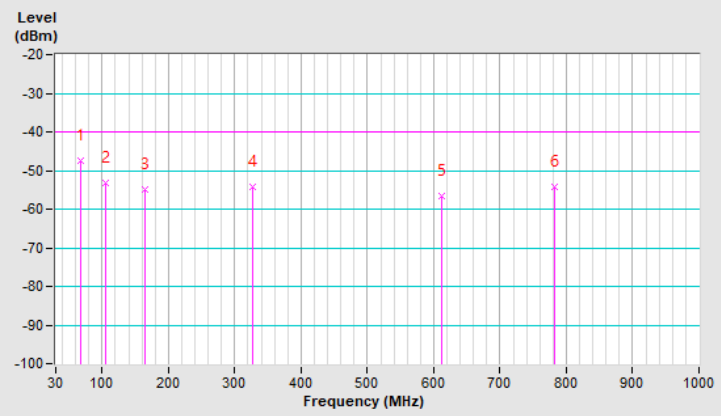


Mode	TX channel 462000 (2310.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	66.86	-47.36	-40.00	-7.36	1.25 V	171	57.87	-105.23
2	105.66	-53.20	-40.00	-13.20	1.00 V	256	54.61	-107.81
3	163.86	-54.98	-40.00	-14.98	1.00 V	225	49.16	-104.14
4	326.82	-54.38	-40.00	-14.38	1.50 V	60	47.75	-102.13
5	612.00	-56.61	-40.00	-16.61	1.25 V	1	40.13	-96.74
6	782.72	-54.13	-40.00	-14.13	1.00 V	138	38.69	-92.82

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



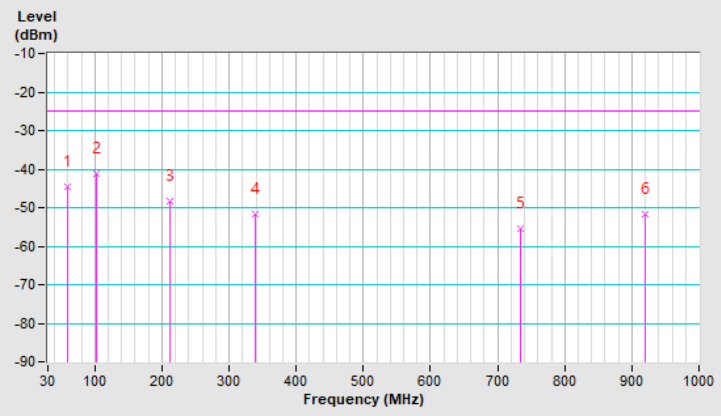
n38, Channel Bandwidth: 20MHz

Mode	TX channel 519000 (2595.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	59.10	-44.62	-25.00	-19.62	1.25 H	273	59.60	-104.22
2	101.78	-41.04	-25.00	-16.04	1.00 H	182	67.31	-108.35
3	212.36	-48.42	-25.00	-23.42	1.50 H	351	58.38	-106.80
4	338.46	-51.85	-25.00	-26.85	1.00 H	9	50.28	-102.13
5	734.22	-55.48	-25.00	-30.48	1.25 H	334	38.90	-94.38
6	920.46	-51.71	-25.00	-26.71	1.00 H	0	38.61	-90.32

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

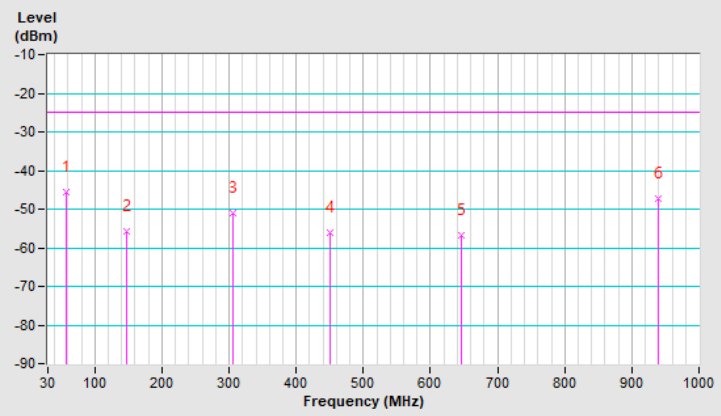


Mode	TX channel 519000 (2595.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	57.16	-45.44	-25.00	-20.44	1.00 V	351	58.88	-104.32
2	146.40	-55.72	-25.00	-30.72	1.00 V	220	48.39	-104.11
3	305.48	-51.18	-25.00	-26.18	1.25 V	253	51.47	-102.65
4	450.98	-56.07	-25.00	-31.07	1.50 V	164	43.82	-99.89
5	646.92	-56.77	-25.00	-31.77	1.00 V	340	39.30	-96.07
6	939.86	-47.22	-25.00	-22.22	1.50 V	144	42.39	-89.61

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



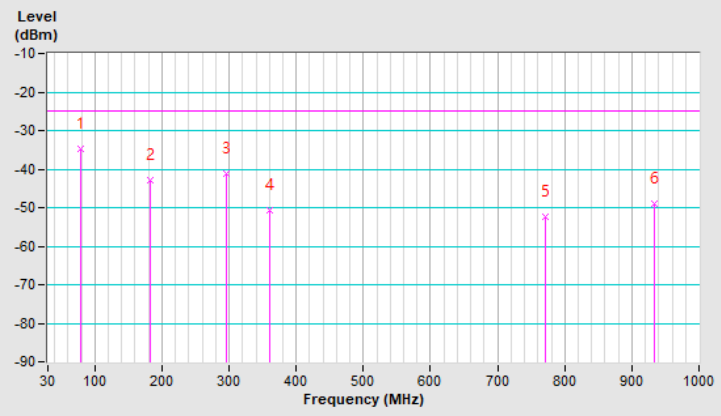
n41, Channel Bandwidth: 80MHz

Mode	TX channel 518598 (2592.99MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	78.50	-34.61	-25.00	-9.61	1.25 H	19	73.31	-107.92
2	183.26	-42.81	-25.00	-17.81	1.00 H	104	63.09	-105.90
3	295.78	-41.32	-25.00	-16.32	1.50 H	85	61.63	-102.95
4	359.80	-50.79	-25.00	-25.79	1.25 H	29	51.04	-101.83
5	771.08	-52.32	-25.00	-27.32	1.00 H	120	40.86	-93.18
6	934.04	-48.97	-25.00	-23.97	1.25 H	293	41.02	-89.99

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

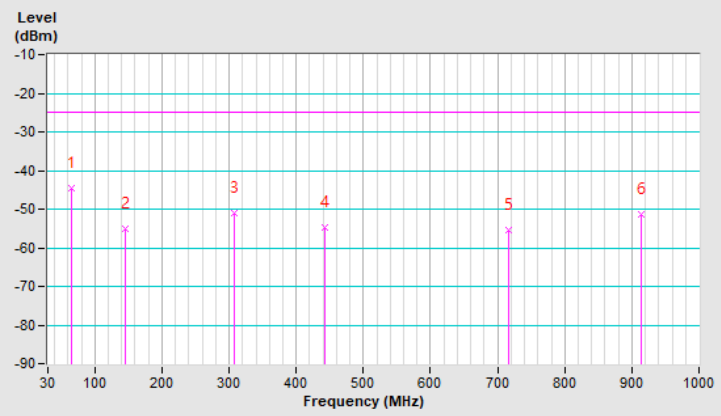


Mode	TX channel 518598 (2592.99MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	64.92	-44.69	-25.00	-19.69	1.00 V	121	60.62	-105.31
2	144.46	-55.18	-25.00	-30.18	1.25 V	230	49.06	-104.24
3	307.42	-50.93	-25.00	-25.93	1.00 V	317	51.71	-102.64
4	443.22	-54.59	-25.00	-29.59	1.50 V	328	45.55	-100.14
5	716.76	-55.58	-25.00	-30.58	1.00 V	297	39.47	-95.05
6	914.64	-51.48	-25.00	-26.48	1.25 V	102	38.96	-90.44

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



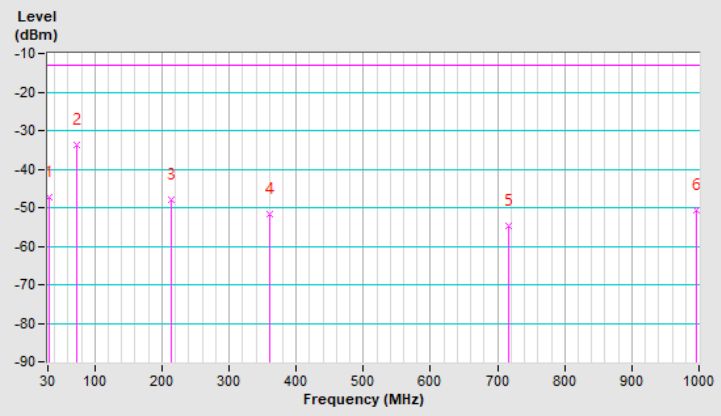
n66, Channel Bandwidth: 40MHz

Mode	TX channel 349000 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	31.94	-47.13	-13.00	-34.13	1.00 H	130	58.41	-105.54
2	72.68	-33.77	-13.00	-20.77	1.50 H	100	72.70	-106.47
3	214.30	-48.10	-13.00	-35.10	1.25 H	343	58.63	-106.73
4	359.80	-51.78	-13.00	-38.78	1.00 H	3	50.05	-101.83
5	716.76	-54.67	-13.00	-41.67	1.00 H	127	40.38	-95.05
6	996.12	-50.84	-13.00	-37.84	1.25 H	267	37.86	-88.70

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

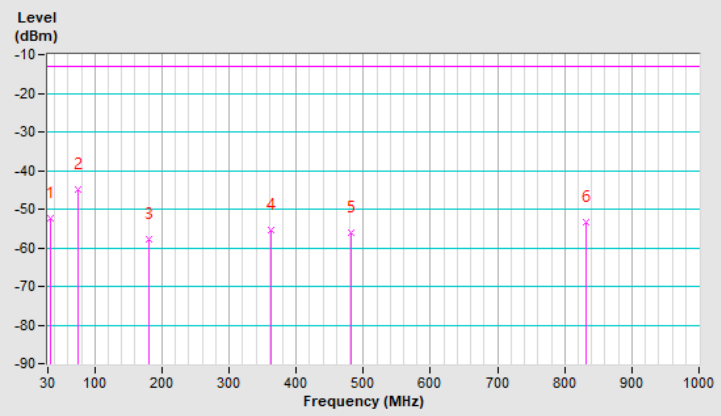


Mode	TX channel 349000 (1745.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.88	-52.46	-13.00	-39.46	1.25 V	18	52.94	-105.40
2	74.62	-44.99	-13.00	-31.99	1.50 V	174	61.75	-106.74
3	181.32	-57.83	-13.00	-44.83	1.00 V	18	47.89	-105.72
4	361.74	-55.33	-13.00	-42.33	1.50 V	153	46.46	-101.79
5	482.02	-56.15	-13.00	-43.15	1.00 V	195	43.49	-99.64
6	831.22	-53.51	-13.00	-40.51	1.25 V	103	38.59	-92.10

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



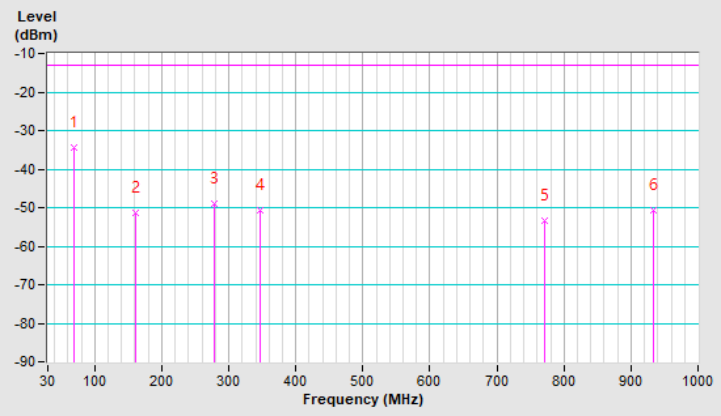
n71, Channel Bandwidth: 20MHz

Mode	TX channel 136100 (680.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	68.80	-34.42	-13.00	-21.42	1.25 H	258	73.62	-108.04
2	161.92	-51.34	-13.00	-38.34	1.00 H	270	54.79	-106.13
3	278.32	-48.92	-13.00	-35.92	1.00 H	309	56.56	-105.48
4	346.22	-50.68	-13.00	-37.68	1.50 H	12	53.60	-104.28
5	771.08	-53.34	-13.00	-40.34	1.25 H	174	41.99	-95.33
6	934.04	-50.79	-13.00	-37.79	1.25 H	73	41.35	-92.14

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

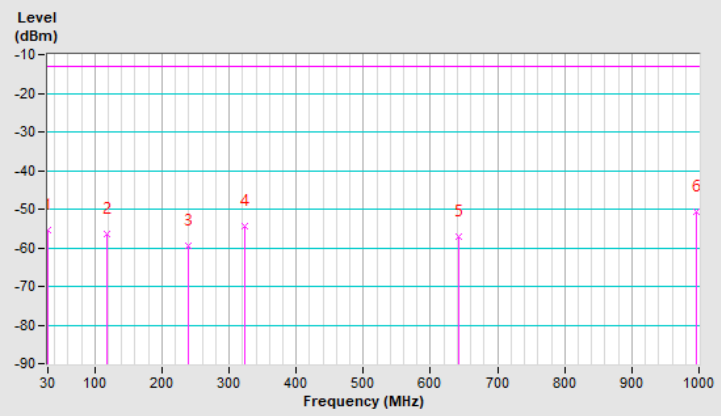


Mode	TX channel 136100 (680.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	30.00	-55.46	-13.00	-42.46	1.00 V	76	52.15	-107.61
2	117.30	-56.50	-13.00	-43.50	1.00 V	246	52.25	-108.75
3	239.52	-59.47	-13.00	-46.47	1.50 V	343	47.96	-107.43
4	322.94	-54.24	-13.00	-41.24	1.25 V	116	50.18	-104.42
5	643.04	-57.19	-13.00	-44.19	1.00 V	173	41.07	-98.26
6	996.12	-50.52	-13.00	-37.52	1.00 V	173	40.33	-90.85

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 – 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.



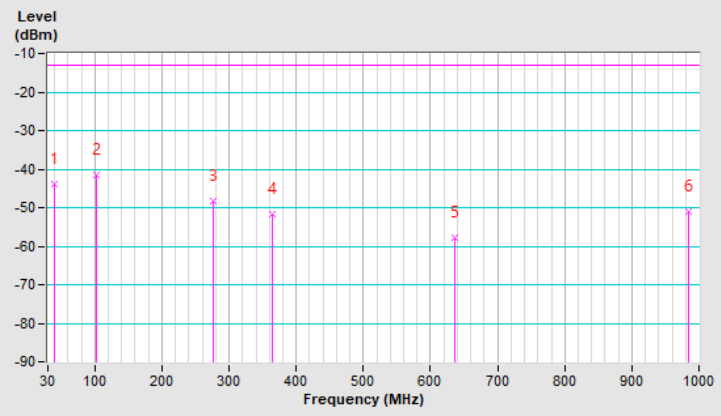
n77, Channel Bandwidth: 100MHz

Mode	TX channel 656000 (3840.00MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	39.70	-43.79	-13.00	-30.79	1.00 H	130	60.95	-104.74
2	101.78	-41.60	-13.00	-28.60	1.25 H	6	66.75	-108.35
3	276.38	-48.26	-13.00	-35.26	1.50 H	6	55.14	-103.40
4	363.68	-51.85	-13.00	-38.85	1.00 H	33	49.90	-101.75
5	635.28	-57.66	-13.00	-44.66	1.00 H	16	38.61	-96.27
6	984.48	-51.08	-13.00	-38.08	1.25 H	77	38.09	-89.17

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

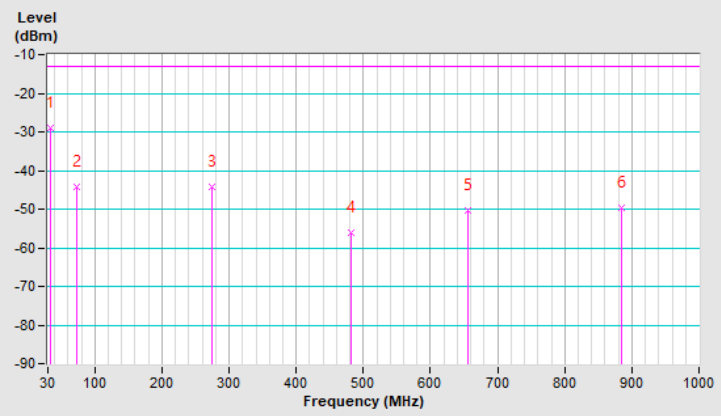


Mode	TX channel 656000 (3840.00MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	33.88	-29.13	-13.00	-16.13	1.00 V	128	76.27	-105.40
2	72.68	-44.39	-13.00	-31.39	1.50 V	296	62.08	-106.47
3	274.44	-44.28	-13.00	-31.28	1.50 V	127	59.17	-103.45
4	482.02	-56.07	-13.00	-43.07	1.00 V	184	43.57	-99.64
5	656.62	-50.19	-13.00	-37.19	1.25 V	284	45.85	-96.04
6	885.54	-49.80	-13.00	-36.80	1.00 V	11	41.36	-91.16

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.



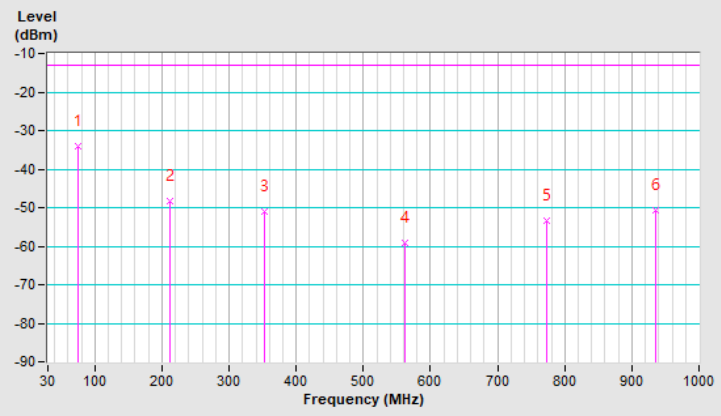
n78, Channel Bandwidth: 100MHz

Mode	TX channel 650000 (3750.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%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	74.62	-34.20	-13.00	-21.20	1.25 H	4	72.54	-106.74
2	212.36	-48.26	-13.00	-35.26	1.00 H	351	58.54	-106.80
3	352.04	-51.06	-13.00	-38.06	1.50 H	36	50.93	-101.99
4	561.56	-59.12	-13.00	-46.12	1.25 H	175	39.34	-98.46
5	773.02	-53.24	-13.00	-40.24	1.00 H	185	39.89	-93.13
6	935.98	-50.82	-13.00	-37.82	1.00 H	264	39.05	-89.87

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

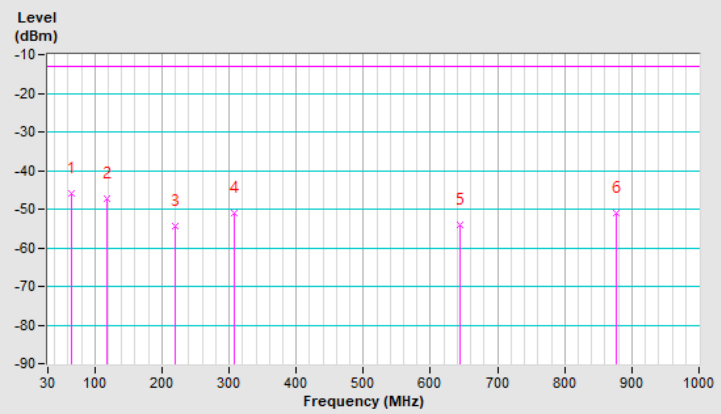


Mode	TX channel 650000 (3750.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	64.92	-45.96	-13.00	-32.96	1.50 V	233	59.35	-105.31
2	117.30	-47.26	-13.00	-34.26	1.00 V	346	59.34	-106.60
3	220.12	-54.28	-13.00	-41.28	1.25 V	127	52.38	-106.66
4	307.42	-50.92	-13.00	-37.92	1.25 V	345	51.72	-102.64
5	644.98	-54.15	-13.00	-41.15	1.00 V	127	41.90	-96.05
6	875.84	-51.13	-13.00	-38.13	1.00 V	125	40.10	-91.23

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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
WCDMA Band 4

Mode	TX channel 1312 (1712.4MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 69%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	3424.80	-40.48	-13.00	-27.48	2.56 H	121	48.19	-88.67
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3424.80	-40.96	-13.00	-27.96	2.70 V	324	47.71	-88.67

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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 4, Channel Bandwidth 20MHz

Mode	TX channel 20050 (1720.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 69%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	3440.00	-41.48	-13.00	-28.48	2.96 H	117	47.12	-88.60
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3440.00	-41.96	-13.00	-28.96	2.73 V	36	46.64	-88.60

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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 7, Channel Bandwidth 20MHz

Mode	TX channel 21350 (2560.0MHz)	Frequency Range	1GHz ~ 27GHz
Environmental Conditions	22deg. C, 69%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	5120.00	-35.60	-25.00	-10.60	2.96 H	107	46.65	-82.25
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5120.00	-36.28	-25.00	-11.28	2.73 V	34	45.97	-82.25

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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 12, Channel Bandwidth 10MHz

Mode	TX channel 23130 (711.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1422.00	-53.47	-13.00	-40.47	3.07 H	121	46.53	-100.00
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1422.00	-54.04	-13.00	-41.04	2.67 V	35	45.96	-100.00

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

LTE Band 13, Channel Bandwidth 10MHz

Mode	TX channel 23230 (782.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 69%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	1564.00	-50.75	-40.00	-10.75	2.87 H	52	46.69	-97.44
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1564.00	-51.37	-40.00	-11.37	3.12 V	121	46.07	-97.44

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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 17, Channel Bandwidth 10MHz

Mode	TX channel 23790 (710.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1420.00	-53.31	-13.00	-40.31	2.97 H	116	46.69	-100.00
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1420.00	-54.11	-13.00	-41.11	2.77 V	41	45.89	-100.00

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

LTE Band 30, Channel Bandwidth 10MHz

Mode	TX channel 27710 (2310.0MHz)	Frequency Range	1GHz ~ 27GHz
Environmental Conditions	22deg. C, 69%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	**4620.00**	**-41.42**	**-40.00**	**-1.42**	**2.83 H**	**105**	**42.63**	**-84.05**
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4620.00	-42.01	-40.00	-2.01	2.56 V	52	42.04	-84.05

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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 38, Channel Bandwidth 20MHz

Mode	TX channel 37850 (2580.0MHz)	Frequency Range	1GHz ~ 27GHz
Environmental Conditions	22deg. C, 69%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	5160.00	-36.49	-25.00	-11.49	3.17 H	123	45.96	-82.45
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5160.00	-37.24	-25.00	-12.24	2.67 V	38	45.21	-82.45

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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 41, Channel Bandwidth 20MHz

Mode	TX channel 40620 (2593.0MHz)	Frequency Range	1GHz ~ 27GHz
Environmental Conditions	22deg. C, 69%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	5186.00	-35.94	-25.00	-10.94	2.91 H	129	46.68	-82.62
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5186.00	-36.50	-25.00	-11.50	2.57 V	39	46.12	-82.62

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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 66, Channel Bandwidth 20MHz

Mode	TX channel 132322 (1745.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 69%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	3490.00	-41.53	-13.00	-28.53	3.03 H	114	46.72	-88.25
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3490.00	-42.17	-13.00	-29.17	2.71 V	28	46.08	-88.25

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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 71, Channel Bandwidth 20MHz

Mode	TX channel 133297 (680.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1361.00	-54.61	-13.00	-41.61	3.08 H	109	45.82	-100.43
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1361.00	-55.29	-13.00	-42.29	2.53 V	35	45.14	-100.43

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

n7, Channel Bandwidth 20MHz

Mode	TX channel 507000 (2535.0MHz)	Frequency Range	1GHz ~ 27GHz
Environmental Conditions	22deg. C, 69%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	5070.00	-39.52	-25.00	-14.52	2.79 H	158	42.86	-82.38
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5070.00	-40.44	-25.00	-15.44	2.93 V	351	41.94	-82.38

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

n30, Channel Bandwidth 10MHz

Mode	TX channel 462000 (2310.0MHz)	Frequency Range	1GHz ~ 27GHz
Environmental Conditions	22deg. C, 69%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	4620.00	-41.67	-40.00	-1.67	2.87 H	154	42.38	-84.05
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	4620.00	-42.52	-40.00	-2.52	3.07 V	353	41.53	-84.05

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

n38, Channel Bandwidth 20MHz

Mode	TX channel 519000 (2595.0MHz)	Frequency Range	1GHz ~ 27GHz
Environmental Conditions	22deg. C, 69%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	5190.00	-37.82	-25.00	-12.82	2.47 H	146	44.82	-82.64
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5190.00	-38.97	-25.00	-13.97	3.12 V	339	43.67	-82.64

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

n41, Channel Bandwidth 80MHz

Mode	TX channel 518598 (2592.99MHz)	Frequency Range	1GHz ~ 27GHz
Environmental Conditions	22deg. C, 69%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	5185.98	-39.00	-25.00	-14.00	2.38 H	152	43.62	-82.62
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	5185.98	-39.78	-25.00	-14.78	3.08 V	334	42.84	-82.62

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

n66, Channel Bandwidth 40MHz

Mode	TX channel 349000 (1745.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 69%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	3490.00	-42.92	-13.00	-29.92	2.52 H	147	45.33	-88.25
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	3490.00	-43.79	-13.00	-30.79	3.01 V	348	44.46	-88.25

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

n71, Channel Bandwidth 20MHz

Mode	TX channel 136100 (680.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	22deg. C, 69%RH	Input Power	120Vac, 60Hz
Tested By	Greg Lin		

Antenna Polarity & Test Distance : Horizontal at 3 m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1361.00	-52.17	-13.00	-39.17	2.52 H	149	48.26	-100.43
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1361.00	-53.05	-13.00	-40.05	2.94 V	337	47.38	-100.43

Remarks:

1. ERP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8 - 2.15
3. Margin value = ERP – Limit value
4. The other ERP levels were very low against the limit.

n77, Channel Bandwidth 100MHz

Mode	TX channel 656000 (3840.00MHz)	Frequency Range	1GHz ~ 40GHz
Environmental Conditions	22deg. C, 69%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	7590.00	-31.37	-13.00	-18.37	2.71 H	143	45.64	-77.01
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	7590.00	-32.23	-13.00	-19.23	3.03 V	341	44.78	-77.01

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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.

n78, Channel Bandwidth 100MHz

Mode	TX channel 650000 (3750.0MHz)	Frequency Range	1GHz ~ 40GHz
Environmental Conditions	22deg. C, 69%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	7500.00	-31.86	-13.00	-18.86	2.67 H	151	45.27	-77.13
Antenna Polarity & Test Distance : Vertical at 3m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	7500.00	-32.61	-13.00	-19.61	2.87 V	332	44.52	-77.13

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + 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 according to ISO/IEC 17025.

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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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