

TEST REPORT

CERTIFICATE OF CONFORMITY

Standard: 47 CFR FCC Part 96
47 CFR FCC Part 2

Report No.: RFCDVB-WTW-P25100257-1

FCC ID: QYLFN990G14

Product: 5G NR Module

Brand: Getac

Model No.: FN990A28G14

Received Date: 2025/9/16

Test Date: 2025/11/7 ~ 2025/11/23

Issued Date: 2025/12/11

Applicant: Getac Technology Corporation.

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FCC Registration / 788550 / TW0003 for Test Location(1)

Designation Number: 281270 / TW0032 for Test Location(2)

Approved by: Jeremy Lin, Date: 2025/12/11
Jeremy Lin / Project Engineer

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Prepared by : Celine Chou / Senior Specialist

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Release Control Record

Issue No.	Description	Date Issued
RFCDVB-WTW-P25100257-1	Original release.	2025/12/11

1 Certificate

Product: 5G NR Module

Brand: Getac

Test Model: FN990A28G14

Sample Status: Engineering sample

Applicant: Getac Technology Corporation.

Test Date: 2025/11/7 ~ 2025/11/23

Standard: 47 CFR FCC Part 96
47 CFR FCC Part 2

Measurement procedure: ANSI/TIA/EIA-603-E 2016
ANSI C63.26-2015

KDB 971168 D01 Power Meas License Digital Systems v03r01

KDB 940660 D01 Part 96 CBRS Eqpt v03

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.

2 Summary of Test Results

Standard / Clause	Test Item	Result	Remark
Part 2.1046 Part 96.41(b)	Maximum EIRP	Pass	Meet the requirement of limit.
Part 2.1047	Modulation Characteristics	N/A	Refer to Note 1
Part 2.1046 Part 96.41(b)	Maximum Power Spectral Density	N/A	This device is End User Device.
Part 96.41(g)	Peak to Average Ratio	N/A	Refer to Note 1
Part 2.1049	Bandwidth	N/A	Refer to Note 1
Part 2.1051 Part 96.41(e)	Conducted Spurious Emissions	N/A	Refer to Note 1
Part 2.1053 Part 96.41(e)	Radiated Spurious Emissions below 1GHz	Pass	Minimum passing margin is -9.26 dB at 543.13 MHz
Part 2.1053 Part 96.41(e)	Radiated Spurious Emissions above 1GHz	Pass	Minimum passing margin is -0.97 dB at 7250.00 MHz
Part 2.1055	Frequency Stability	N/A	Refer to Note 1

Note:

- Only test item of Maximum EIRP and Radiated Spurious Emissions were performed for this report. Other testing data please refer to WWAN module (FCC ID: RI7FN990A28) certified report.
- 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:

Parameter	Specification	Uncertainty (±)
Effective Radiated Power and Equivalent Isotropically Radiated Power	-	1.371 dB
Radiated Spurious Emissions below 1GHz	9 kHz ~ 30 MHz	3.00 dB
	30 MHz ~ 1 GHz	2.92 dB
Radiated Spurious Emissions above 1GHz	1 GHz ~ 18 GHz	1.76 dB
	18 GHz ~ 40 GHz	1.77 dB

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	5G NR Module
Brand	Getac
Test Model	FN990A28G14
Status of EUT	Engineering sample
Power Supply Rating	Refer to note
EUT Category	End User Device
Modulation Type	QPSK, 16QAM, 64QAM, 256QAM
LTE support SISO bands	B42, B43, B48
LTE support MIMO bands	-
LTE bands support CA mode	42C, 43C, 48C
PC3 for Power Class	B42, B43, B48
PC2 for Power Class	-
Band Covered Information	B48 cover B42 and B43 48C cover 42C and 43C

Note:

1. The EUT is authorized for use in specific End-product.

Product	Brand	Model	Difference
Tablet	Getac	G140	marketing purpose
		G140Y (Y = 10 Characters, Y can be 0 to 9, A to Z, a to z, "/", "\", "-", " _ " or blank for marketing purpose)	

2. The End-product uses following accessories.

Item	Brand	Model	Specification
Battery 1	Getac	BP2S1P4070P	Power Rating: 7.74 Vdc, 3800 mAh, 29.42 Wh 4070 mAh, 31.5 1Wh
Battery 2	Getac	BP3S1P4070P	Power Rating: 11.61 Vdc, 3800 mAh, 44.12 Wh 4070mAh, 47.26Wh
AC Adapter 1	FSP	FSP065-RBBN3	AC Input: 100-240 Vac, 50-60 Hz, 1.5 A DC Output: 19.0 Vdc, 3.42 A, 65.0 W DC Output Cable: 1.45m / 1 core
AC Adapter 2 (Option)	Getac	MTA190474W4	AC Input: 100-240 Vac, 50-60 Hz, 1.6 A DC Output: 19.0 Vdc, 4.74 A, 90.0 W
Digitizer Pen	EMRight	GT-090S	-

3. EUT Overview

LTE Band 48 (3.55 GHz ~ 3.7 GHz)

Bandwidth	TX Frequency Range (MHz)	Modulation	Max. EIRP (W)	Max. EIRP (dBm)
5 MHz	3552.5 ~ 3697.5	QPSK	0.180	22.56
		16QAM	0.168	22.26
		64QAM	0.133	21.24
		256QAM	0.067	18.26
10 MHz	3555 ~ 3695	QPSK	0.180	22.56
		16QAM	0.168	22.26
		64QAM	0.133	21.24
		256QAM	0.067	18.26
15 MHz (Full Power)	3557.5 ~ 3692.5	QPSK	0.184	22.65
		16QAM	0.169	22.29
		64QAM	0.134	21.28
		256QAM	0.068	18.30
15 MHz (dBm/10 MHz)		QPSK	0.179	22.53
		16QAM	0.167	22.22
		64QAM	0.133	21.23
		256QAM	0.067	18.28
20 MHz (Full Power)	3560 ~ 3690	QPSK	0.187	22.72
		16QAM	0.173	22.38
		64QAM	0.136	21.32
		256QAM	0.068	18.34
20 MHz (dBm/10 MHz)		QPSK	0.185	22.66
		16QAM	0.170	22.30
		64QAM	0.134	21.28
		256QAM	0.068	18.32

LTE Band 48C (3.55 GHz ~ 3.7 GHz)

Bandwidth	TX Frequency Range (MHz)	Modulation	Max. EIRP (W)	Max. EIRP (dBm)
20 MHz + 20 MHz (Full Power)	3560 ~ 3690	QPSK	0.011	10.44
		16QAM	0.009	9.51
		64QAM	0.007	8.48
		256QAM	0.004	6.37
20 MHz + 20 MHz (dBm/10 MHz)		QPSK	0.007	8.55
		16QAM	0.006	7.59
		64QAM	0.005	6.64
		256QAM	0.003	4.53
20 MHz + 15 MHz (Full Power)	3560 ~ 3692.2	QPSK	0.011	10.39
		16QAM	0.009	9.41
		64QAM	0.007	8.37
		256QAM	0.004	6.30
20 MHz + 15 MHz (dBm/10 MHz)		QPSK	0.007	8.54
		16QAM	0.006	7.56
		64QAM	0.004	6.47
		256QAM	0.003	4.47

Bandwidth	TX Frequency Range (MHz)	Modulation	Max. EIRP (W)	Max. EIRP (dBm)
15 MHz + 20 MHz (Full Power)	3557.8 ~ 3690	QPSK	0.011	10.43
		16QAM	0.009	9.41
		64QAM	0.007	8.39
		256QAM	0.004	6.24
15 MHz + 20 MHz (dBm/10 MHz)		QPSK	0.007	8.51
		16QAM	0.006	7.58
		64QAM	0.004	6.50
		256QAM	0.003	4.39
20 MHz + 10 MHz (Full Power)	3560 ~ 3694.5	QPSK	0.011	10.35
		16QAM	0.009	9.49
		64QAM	0.007	8.45
		256QAM	0.004	6.32
20 MHz + 10 MHz (dBm/10 MHz)		QPSK	0.007	8.51
		16QAM	0.006	7.61
		64QAM	0.005	6.56
		256QAM	0.003	4.46
10 MHz + 20 MHz (Full Power)	3555.5 ~ 3690	QPSK	0.011	10.39
		16QAM	0.009	9.42
		64QAM	0.007	8.42
		256QAM	0.004	6.31
10 MHz + 20 MHz (dBm/10 MHz)		QPSK	0.007	8.51
		16QAM	0.006	7.54
		64QAM	0.005	6.58
		256QAM	0.003	4.44
20 MHz + 5 MHz (Full Power)	3560 ~ 3696.7	QPSK	0.011	10.39
		16QAM	0.009	9.49
		64QAM	0.007	8.44
		256QAM	0.004	6.32
20 MHz + 5 MHz (dBm/10 MHz)		QPSK	0.007	8.50
		16QAM	0.006	7.68
		64QAM	0.005	6.62
		256QAM	0.003	4.46
5 MHz + 20 MHz (Full Power)	3553.3 ~ 3565	QPSK	0.011	10.40
		16QAM	0.009	9.41
		64QAM	0.007	8.38
		256QAM	0.004	6.35
5 MHz + 20 MHz (dBm/10 MHz)		QPSK	0.007	8.53
		16QAM	0.006	7.57
		64QAM	0.005	6.58
		256QAM	0.003	4.48

4. The EUT support the following CA Configuration.

Band Configuration
42C
43C
48C

5. E-UTRA CA configuration / Bandwidth combination set.

E-UTRA CA configuration / Bandwidth combination set		
E-UTRA CA Configuration	Component carriers in order of increasing carrier frequency Channel bandwidth for PCC and SCC [MHz]	Maximum aggregated bandwidth [MHz]
CA_42C (3550~3600)	20+5 / 5+20	25
	20+10 / 10+20	30
	20+15 / 15+20	35
	20+20	40
CA_43C (3600~3700)	5+20	25
	10+20	30
	15+20	35
	20+20	40
CA_48C	20+5 / 5+20	25
	20+10 / 10+20	30
	20+15 / 15+20	35
	20+20	40

* For CA mode configuration, please consult the manufacturer to declare the test mode.

* 42C, 43C and 48C is continuous CA and maximum combination is 20M+20M.

6. For detailed information about each WWAN bands frequency range, bandwidth mode of the product, please refer to section 3.3 of the report.

7. 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.

3.2 Antenna Description of EUT

1. The antenna information is listed as below.

Ant. 0		Ant. 1	
Antenna Type	PIFA	Antenna Type	PIFA
Brand	AWAN	Brand	AWAN
Model	422GC2400001	Model	422GC2400002
Ant. 2		Ant. 3	
Antenna Type	PIFA	Antenna Type	PIFA
Brand	AWAN	Brand	AWAN
Model	422GC2400003	Model	422GC2400004

Band		Freq. Range	Ant. 0 Gain (dBi)	Ant. 1 Gain (dBi)	Ant. 2 Gain (dBi)	Ant. 3 Gain (dBi)
WCDMA II	1TX (Ant. 0)	1850 ~ 1910	1.22	-2.18	2.79	1.50
WCDMA IV	1TX (Ant. 0)	1710 ~ 1755	1.73	-4.30	2.73	-0.10
WCDMA V	1TX (Ant. 0)	824 ~ 849	0.77	-2.65	-	-
LTE Band 2	1TX (Ant. 0)	1850 ~ 1910	1.22	-2.18	2.79	1.50
LTE Band 4	1TX (Ant. 0)	1710 ~ 1755	1.73	-4.30	2.73	-0.1
LTE Band 5	1TX (Ant. 0)	824 ~ 849	0.77	-2.65	-	-
LTE Band 7	1TX (Ant. 0)	2500 ~ 2570	2.03	1.32	2.16	1.43
LTE Band 12	1TX (Ant. 0)	698 ~ 716	-1.13	-6.04	-	-
LTE Band 13	1TX (Ant. 0)	777 ~ 787	-0.51	-4.52	-	-
LTE Band 14	1TX (Ant. 0)	788 ~ 798	-0.30	-4.61	-	-
LTE Band 17	1TX (Ant. 0)	704 ~ 716	-1.13	-6.04	-	-
LTE Band 25	1TX (Ant. 0)	1850 ~ 1915	1.22	-2.18	2.79	1.5
LTE Band 26	1TX (Ant. 0)	814 ~ 849	0.77	-2.65	-	-
LTE Band 38	1TX (Ant. 0)	2570 ~ 2620	0.64	1.44	2.12	1.22
LTE Band 41	1TX (Ant. 0)	2496 ~ 2690	2.03	1.46	2.16	1.43
LTE Band 42	1TX (Ant. 3)	3400 ~ 3600	1.33	1.64	4.62	1.70
LTE Band 43	1TX (Ant. 3)	3600 ~ 3800	3.35	3.12	4.62	1.49
LTE Band 48	1TX (Ant. 3)	3550 ~ 3700	1.99	3.12	4.62	1.49
LTE Band 66	1TX (Ant. 0)	1710 ~ 1780	1.73	-4.3	2.73	0.35
LTE Band 71	1TX (Ant. 0)	663 ~ 698	-1.32	-6.36	-	-

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

3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan:	1. The Battery has the following models: Battery 1/ Battery 2. Pre-scan these models of batteries and find the worst case as a representative test condition. 2. The AC Adapter has the following models: Adapter 1/ Adapter 2. Pre-scan these models of AC Adapters and find the worst case as a representative test condition. 3. The end-product can be used in the following ways: X-axis/ Y-axis/ Z-axis. Pre-scan these ways and find the worst case as a representative test condition.
Worst Case:	1. Battery Worst Condition: Battery 1. 2. AC Adapter Worst Condition: AC Adapter 1. 3. X-axis/ Y-axis/ Z-axis Worst Condition: Z-axis.

3.3.1 LTE Band 48 / LTE Band 48C (3.55 GHz ~ 3.7 GHz)

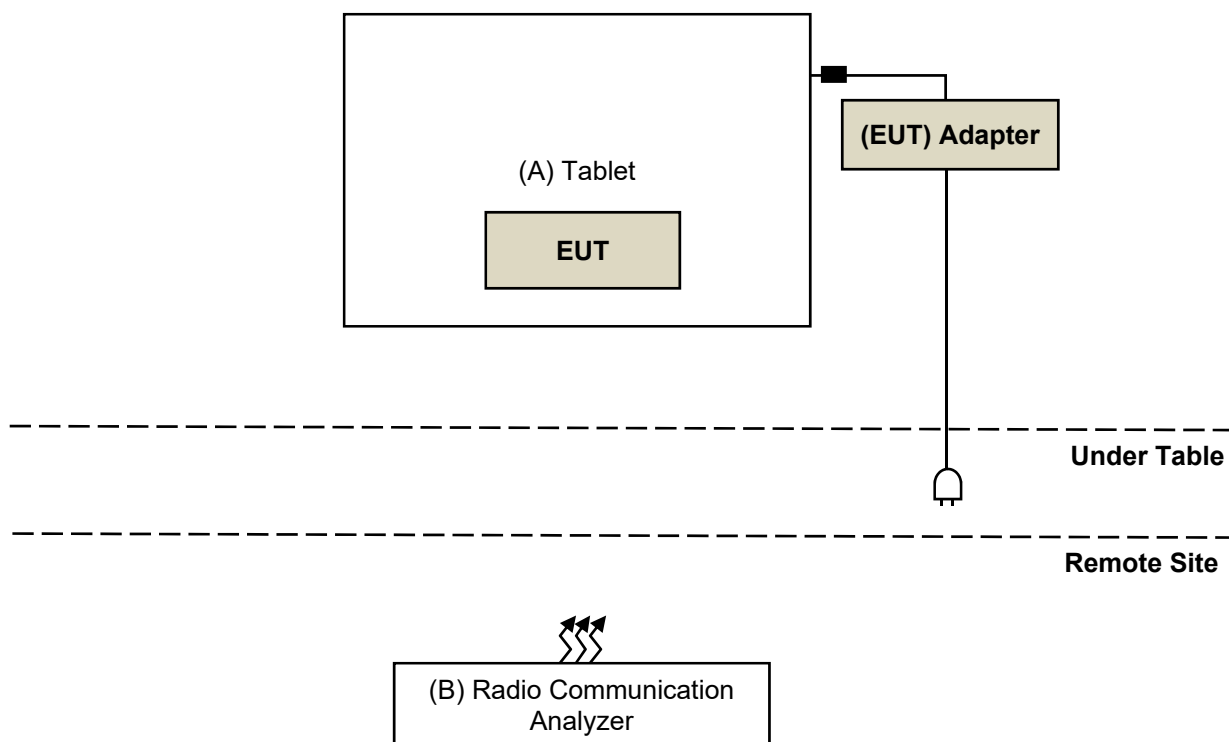
Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Maximum EIRP	55265(3552.50 MHz) 55990(3625.00 MHz) 56715(3697.50 MHz)	5 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	55290(3555.00 MHz) 55990(3625.00 MHz) 56690(3695.00 MHz)	10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	55315(3557.50 MHz) 55990(3625.00 MHz) 56665(3692.50 MHz)	15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	55340(3560.00 MHz) 55990(3625.00 MHz) 56640(3690.00 MHz)	20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	55340(3560.00 MHz) + 55538(3579.80 MHz) 55891(3615.10 MHz) + 56089(3634.90 MHz) 56442(3670.20 MHz) + 56640(3690.00 MHz)	20 MHz + 20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	55340(3560.00 MHz) + 55511(3577.10 MHz) 55916(3617.60 MHz) + 56087(3634.70 MHz) 56491(3675.10 MHz) + 56662(3692.20 MHz)	20 MHz + 15 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	55318(3557.80 MHz) + 55489(3574.90 MHz) 55893(3615.30 MHz) + 56064(3632.40 MHz) 56469(3672.90 MHz) + 56640(3690.00 MHz)	15 MHz + 20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	55340(3560.00 MHz) + 55484(3574.40 MHz) 55941(3620.10 MHz) + 56085(3634.50 MHz) 56541(3680.10 MHz) + 56685(3694.50 MHz)	20 MHz + 10 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	55295(3555.50 MHz) + 55439(3569.90 MHz) 55896(3615.60 MHz) + 56040(3630.00 MHz) 56496(3675.60 MHz) + 56640(3690.00 MHz)	10 MHz + 20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	55340(3560.00 MHz) + 55457(3571.70 MHz) 55965(3622.50 MHz) + 56082(3634.20 MHz) 56590(3685.00 MHz) + 56707(3696.70 MHz)	20 MHz + 5 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB
	55273(3553.30 MHz) + 55390(3565.00 MHz) 55898(3615.80 MHz) + 56015(3627.50 MHz) 56523(3678.30 MHz) + 56640(3690.00 MHz)	5 MHz + 20 MHz	QPSK / 16QAM / 64QAM / 256QAM	1 RB Half RB Full RB

Test Item	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions below 1GHz	55990(3625.00 MHz)	20 MHz	QPSK	1 RB
Radiated Spurious Emissions above 1GHz	55265(3552.50 MHz) 55990(3625.00 MHz) 56715(3697.50 MHz)	5 MHz	QPSK	1 RB
	55340(3560.00 MHz) 55990(3625.00 MHz) 56640(3690.00 MHz)	20 MHz	QPSK	1 RB
	55340(3560.00 MHz) + 55538(3579.80 MHz) 55891(3615.10 MHz) + 56089(3634.90 MHz) 56442(3670.20 MHz) + 56640(3690.00 MHz)	20 MHz + 20 MHz	QPSK	1 RB

3.4 Test Program Used and Operation Descriptions

There is no need to controlling software during the test, and the EUT can be paired with the Radio Communication Analyzer to test the connection when it is powered on.

3.5 Connection Diagram of EUT and Peripheral Devices



3.6 Configuration of Peripheral Devices and Cable Connections

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A	Tablet	Getac	G140	N/A	N/A	Supplied by applicant
B	Radio Communication Analyzer	Anritsu	MT8821C	6201462755	N/A	Provided by Lab

4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.1 Maximum EIRP

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Fixed Attenuator Woken	00800A1K01A-10	00800A1K01A-10-01	2025/5/23	2026/5/22
PXA Signal Analyzer Keysight	N9030B	MY57140938	2025/3/24	2026/3/23
Software BV	ADT_RF Test Software V7.6.5.4	N/A	N/A	N/A
UXM 5G Wireless Test Platform Keysight	E7515B	MY60102115	2025/5/26	2026/5/25

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2025/11/23

4.2 Radiated Spurious Emissions below 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower KaiTuo	N/A	N/A	N/A	N/A
Antenna Tower Controller KaiTuo	KT-2000	N/A	N/A	N/A
Bi_Log Antenna Schwarzbeck	VULB 9168	9168-995	2025/9/17	2026/9/16
Loop Antenna TESEQ	HLA 6121	45745	2025/9/1	2026/8/31
MXE EMI Receiver Agilent	N9038A	MY52260177	2025/10/3	2026/10/2
Preamplifier EMCI	EMC330N	980783	2025/1/14	2026/1/13
PXA Signal Analyzer Keysight	N9030B	MY57140488	2025/3/11	2026/3/10
RF Coaxial Cable EMCI	EMCCFD400-NM-NM-500	201245	2025/1/14	2026/1/13
	EMCCFD400-NM-NM-3000	201250	2025/1/14	2026/1/13
	EMCCFD400-NM-NM-9000	201252(with PAD)	2025/1/14	2026/1/13
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-151SS-0.5T	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208675	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 7.
2. Tested Date: 2025/11/22

4.3 Radiated Spurious Emissions above 1GHz

Description Manufacturer	Model No.	Serial No.	Calibrated Date	Calibrated Until
Antenna Tower KaiTuo	N/A	N/A	N/A	N/A
Antenna Tower Controller KaiTuo	KT-2000	N/A	N/A	N/A
Horn Antenna RFSPIN	DRH18-E	210104A18E	2024/11/10 2025/11/9	2025/11/9 2026/11/8
Horn Antenna Schwarzbeck	BBHA 9170	9170-1048	2024/11/10 2025/11/9	2025/11/9 2026/11/8
MXE EMI Receiver Agilent	N9038A	MY52260177	2025/10/3	2026/10/2
Preamplifier EMCI	EMC118A45SE	980810	2024/12/26	2025/12/25
	EMC184045SE	980787	2025/1/14	2026/1/13
PXA Signal Analyzer Keysight	N9030B	MY57140488	2025/3/11	2026/3/10
RF Coaxial Cable EMCI	EMC101G-KM-KM-2000	201254	2025/1/14	2026/1/13
	EMC101G-KM-KM-3000	201258	2025/1/14	2026/1/13
	EMC101G-KM-KM-5000	201261	2025/1/14	2026/1/13
	EMC104-SM-SM-1000	210101	2025/1/14	2026/1/13
	EMC104-SM-SM-3000	201242	2025/1/14	2026/1/13
	EMC104-SM-SM-9000	201230	2025/1/14	2026/1/13
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	N/A	N/A	N/A
Turn Table Max-Full	MFT-151SS-0.5T	N/A	N/A	N/A
Turn Table Controller Max-Full	MF-7802BS	MF780208675	N/A	N/A

Notes:

1. The test was performed in WM - 966 chamber 7.
2. Tested Date: 2025/11/7 ~ 2025/11/12

5 Limits of Test Items

5.1 Maximum EIRP

For LTE Band 48 / LTE Band 48C (3.55 GHz ~ 3.7 GHz):

Device Category	Maximum EIRP (dBm/10 MHz)
End User Device	23
Category A CBSD	30
Category B CBSD	47

5.2 Radiated Spurious Emissions below 1GHz

For LTE Band 48 / LTE Band 48C (3.55 GHz ~ 3.7 GHz):

The power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40 dBm/MHz.

5.3 Radiated Spurious Emissions above 1GHz

For LTE Band 48 / LTE Band 48C (3.55 GHz ~ 3.7 GHz):

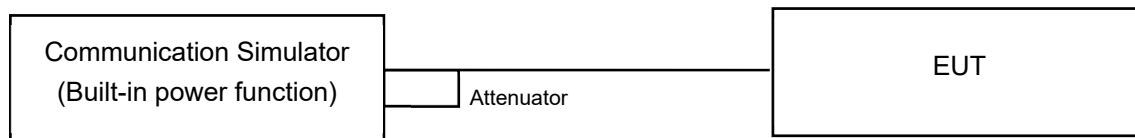
The power of any emissions below 3530 MHz or above 3720 MHz shall not exceed -40dBm/MHz.

6 Test Arrangements

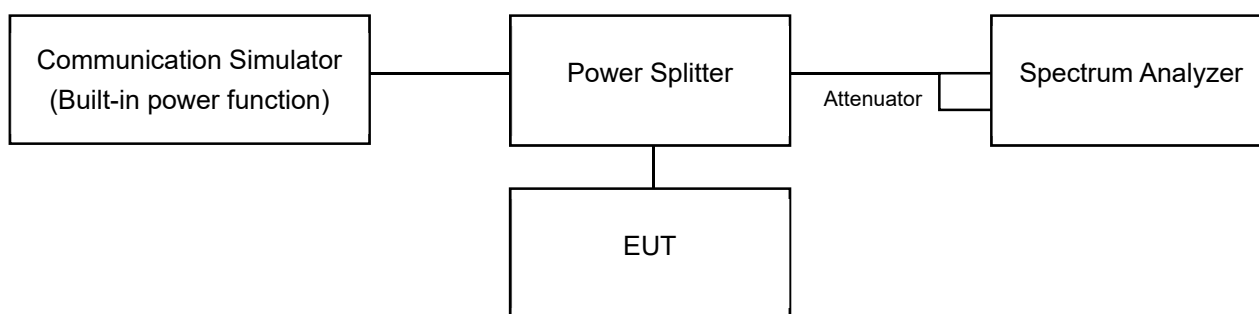
6.1 Maximum EIRP

6.1.1 Test Setup

Conducted Power Measurement:



For measuring output power using spectrum



6.1.2 Test Procedure

Conducted Power Measurement: (Full Channel Power)

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology. The average (rms) power measurement was performed on emulator and power value was measured from power function on emulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

For measuring output power using spectrum (dBm/10MHz)

Measurement method refers to ANSI C63.26 section 5.2.4.4.

- Set span to $2 \times$ to $3 \times$ the OBW.
- Set RBW = 1% to 5% of the OBW.
- Set VBW $\geq 3 \times$ RBW.
- Set number of measurement points in sweep $\geq 2 \times$ span / RBW.
- Set Sweep time = auto-couple.
- Detector = power averaging (rms).
- Set sweep trigger to "free run."
- Trace average at least 100 traces in power averaging (rms) mode.
- Use the Band/Channel Power function to determine the integrated power per 10 MHz bandwidth and full bandwidth, according to the 47 CFR FCC Part 96 standard.
- If Duty cycle $< 98\%$, Add $10 \log (1/\text{duty cycle})$ to the measured power level to compute the average power during continuous transmission.

Maximum EIRP / ERP

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

$$\text{EIRP} = P_{\text{Meas}} + G_T$$

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

where

ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as P_{Meas} , e.g., dBm or dBW)

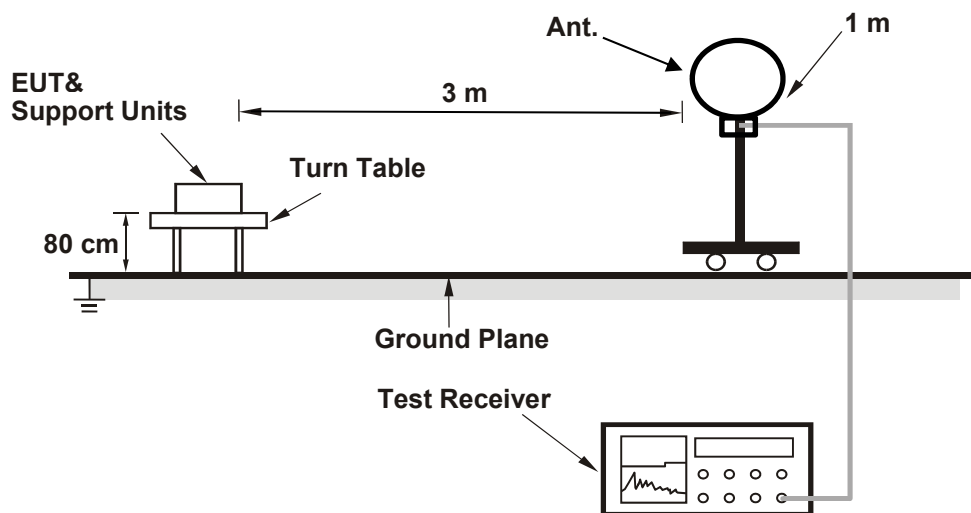
P_{Meas} measured transmitter output power or PSD, in dBm or dBW

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

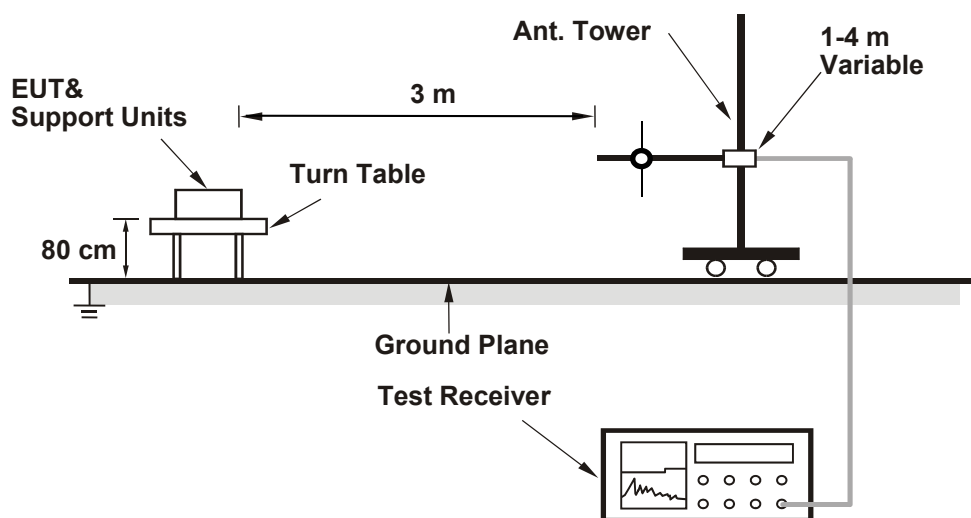
6.2 Radiated Spurious Emissions below 1GHz

6.2.1 Test Setup

For Radiated emission below 30 MHz



For Radiated emission above 30 MHz



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

6.2.2 Test Procedure

The EUT is configured to set data modulation and maximum power using WWAN technology.

- a. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) 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 1 m to 4 m 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 ANSI C63.26 section 5.5 and 5.2.7
- e. $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
- f. $ERP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.

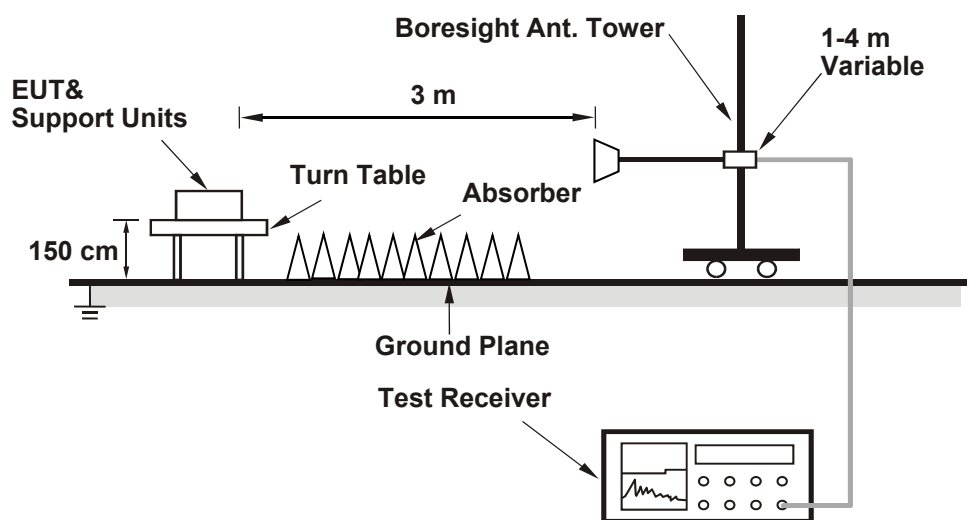
Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz. Set detector = average.
2. The amplitude of spurious emissions in the range 9 kHz to 30 MHz which are attenuated more than 20 dB below the permissible value need not be reported.

6.3 Radiated Spurious Emissions above 1GHz

6.3.1 Test Setup

For radiated emission above 1 GHz



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

6.3.2 Test Procedure

The EUT is configured to set data modulation and maximum power using WWAN technology.

- In the semi-anechoic chamber, EUT placed on the 1.5 m 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 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- 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.
- 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.
- Following ANSI C63.26 section 5.5 and 5.2.7
- $EIRP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8$; where D is the measurement distance (in the far field region) in m.
- $ERP (dBm) = E (dB\mu V/m) + 20\log(D) - 104.8 - 2.15$; where D is the measurement distance (in the far field region) in m.

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

7 Test Results of Test Item

7.1 Maximum EIRP

Environmental Conditions:	23°C, 62% RH	Tested By:	Charles Hsiao
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7.1.1 LTE Band 48 (3.55 GHz ~ 3.7 GHz)

LTE Band 48 (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 5 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 55265	CH 55990	CH 56715
			3552.5 MHz	3625 MHz	3697.5 MHz
QPSK	1	0	20.98	20.98	20.88
	1	12	20.88	21.02	20.83
	1	24	20.92	20.80	20.68
	12	0	20.21	20.07	20.20
	12	6	20.14	20.06	20.12
	12	13	20.10	20.09	20.13
	25	0	20.15	20.08	20.10
16QAM	1	0	20.69	20.61	20.66
	1	12	20.50	20.63	20.53
	1	24	20.59	20.64	20.61
	12	0	19.77	19.79	19.69
	12	6	19.52	19.58	19.47
	12	13	19.60	19.54	19.70
	25	0	19.57	19.53	19.68
64QAM	1	0	19.64	19.57	19.73
	1	12	19.52	19.54	19.52
	1	24	19.62	19.66	19.55
	12	0	18.50	18.85	18.50
	12	6	18.75	18.77	18.63
	12	13	18.58	18.46	18.50
	25	0	18.66	18.54	18.56
256QAM	1	0	16.72	16.64	16.51
	1	12	16.61	16.50	16.56
	1	24	16.63	16.46	16.59
	12	0	16.58	16.65	16.45
	12	6	16.41	16.61	16.48
	12	13	16.68	16.67	16.65
	25	0	16.58	16.43	16.52

Output Power

Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	20.11	21.07	21.6	22.56	23
16QAM	19.51	20.77	21	22.26	23
64QAM	18.54	19.75	20.03	21.24	23
256QAM	16.49	16.77	17.98	18.26	23

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 48 (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 10 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 55290	CH 55990	CH 56690
			3555 MHz	3625 MHz	3695 MHz
QPSK	1	0	21.03	21.07	20.94
	1	24	20.98	21.06	20.90
	1	49	21.00	20.94	20.78
	25	0	20.22	20.21	20.20
	25	12	20.14	20.19	20.16
	25	25	20.14	20.23	20.22
	50	0	20.22	20.11	20.12
16QAM	1	0	20.77	20.69	20.72
	1	24	20.56	20.67	20.56
	1	49	20.64	20.64	20.62
	25	0	19.82	19.85	19.74
	25	12	19.61	19.67	19.51
	25	25	19.66	19.63	19.70
	50	0	19.62	19.63	19.68
64QAM	1	0	19.72	19.69	19.73
	1	24	19.61	19.62	19.53
	1	49	19.71	19.75	19.65
	25	0	18.59	18.86	18.57
	25	12	18.81	18.82	18.73
	25	25	18.64	18.60	18.54
	50	0	18.71	18.62	18.59
256QAM	1	0	16.75	16.73	16.59
	1	24	16.64	16.60	16.62
	1	49	16.64	16.58	16.68
	25	0	16.60	16.69	16.51
	25	12	16.49	16.64	16.52
	25	25	16.77	16.70	16.68
	50	0	16.66	16.57	16.56

Output Power

Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	20.11	21.07	21.6	22.56	23
16QAM	19.51	20.77	21	22.26	23
64QAM	18.54	19.75	20.03	21.24	23
256QAM	16.49	16.77	17.98	18.26	23

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 48 (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 15 MHz, Output Power: Full Power

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 55315	CH 55990	CH 56665
			3557.5 MHz	3625 MHz	3692.5 MHz
QPSK	1	0	21.08	21.16	21.04
	1	37	21.07	21.14	20.99
	1	74	21.01	21.04	20.87
	36	0	20.23	20.3	20.3
	36	19	20.18	20.31	20.17
	36	39	20.21	20.36	20.26
	75	0	20.23	20.13	20.18
16QAM	1	0	20.77	20.76	20.75
	1	37	20.65	20.8	20.66
	1	74	20.71	20.76	20.64
	36	0	19.85	19.89	19.75
	36	19	19.71	19.73	19.6
	36	39	19.73	19.76	19.73
	75	0	19.65	19.73	19.72
64QAM	1	0	19.73	19.79	19.73
	1	37	19.65	19.65	19.58
	1	74	19.74	19.76	19.68
	36	0	18.66	18.88	18.65
	36	19	18.88	18.86	18.77
	36	39	18.69	18.75	18.6
	75	0	18.73	18.72	18.66
256QAM	1	0	16.76	16.77	16.69
	1	37	16.71	16.74	16.69
	1	74	16.67	16.71	16.72
	36	0	16.61	16.71	16.57
	36	19	16.59	16.74	16.59
	36	39	16.81	16.78	16.71
	75	0	16.71	16.62	16.58

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	20.13	21.16	21.62	22.65	23
16QAM	19.6	20.8	21.09	22.29	23
64QAM	18.6	19.79	20.09	21.28	23
256QAM	16.57	16.81	18.06	18.3	23

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 48 (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 20 MHz, Output Power: Full Power

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 55340	CH 55990	CH 56640
			3560 MHz	3625 MHz	3690 MHz
QPSK	1	0	21.15	21.21	21.09
	1	50	21.10	21.23	21.05
	1	99	21.05	21.15	20.96
	50	0	20.33	20.41	20.31
	50	25	20.28	20.35	20.22
	50	50	20.30	20.36	20.29
	100	0	20.25	20.26	20.18
16QAM	1	0	20.78	20.89	20.77
	1	50	20.71	20.85	20.69
	1	99	20.74	20.80	20.66
	50	0	19.88	19.89	19.83
	50	25	19.71	19.82	19.65
	50	50	19.77	19.78	19.74
	100	0	19.75	19.83	19.73
64QAM	1	0	19.82	19.83	19.76
	1	50	19.73	19.78	19.64
	1	99	19.74	19.80	19.68
	50	0	18.76	18.93	18.74
	50	25	18.93	18.92	18.86
	50	50	18.75	18.83	18.69
	100	0	18.73	18.76	18.70
256QAM	1	0	16.78	16.84	16.77
	1	50	16.78	16.78	16.73
	1	99	16.77	16.81	16.75
	50	0	16.67	16.72	16.62
	50	25	16.66	16.79	16.59
	50	50	16.81	16.85	16.74
	100	0	16.72	16.72	16.63

Output Power

Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	20.18	21.23	21.67	22.72	23
16QAM	19.65	20.89	21.14	22.38	23
64QAM	18.69	19.83	20.18	21.32	23
256QAM	16.59	16.85	18.08	18.34	23

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 48 (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 15 MHz, Output Power: dBm/10 MHz

Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 55315	CH 55990	CH 56665
			3557.5 MHz	3625 MHz	3692.5 MHz
QPSK	1	0	21.00	21.02	20.99
	1	37	21.00	21.04	20.90
	1	74	20.94	21.03	20.81
	36	0	20.13	20.20	20.27
	36	19	20.17	20.23	20.11
	36	39	20.14	20.35	20.18
	75	0	18.79	18.67	18.76
16QAM	1	0	20.70	20.72	20.70
	1	37	20.59	20.73	20.59
	1	74	20.69	20.67	20.61
	36	0	19.75	19.79	19.68
	36	19	19.68	19.65	19.50
	36	39	19.69	19.70	19.68
	75	0	18.18	18.24	18.24
64QAM	1	0	19.68	19.74	19.70
	1	37	19.63	19.56	19.50
	1	74	19.72	19.72	19.60
	36	0	18.63	18.78	18.57
	36	19	18.85	18.80	18.71
	36	39	18.60	18.67	18.57
	75	0	17.32	17.25	1.23
256QAM	1	0	16.75	16.75	16.68
	1	37	16.69	16.71	16.61
	1	74	16.61	16.66	16.70
	36	0	16.57	16.69	16.49
	36	19	16.50	16.65	16.54
	36	39	16.79	16.77	16.65
	75	0	15.30	15.17	15.15

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	18.67	21.04	20.16	22.53	23
16QAM	18.18	20.73	19.67	22.22	23
64QAM	1.23	19.74	2.72	21.23	23
256QAM	15.15	16.79	16.64	18.28	23

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 48 (3.55 GHz ~ 3.7 GHz), Channel Bandwidth: 20 MHz, Output Power: dBm/10 MHz

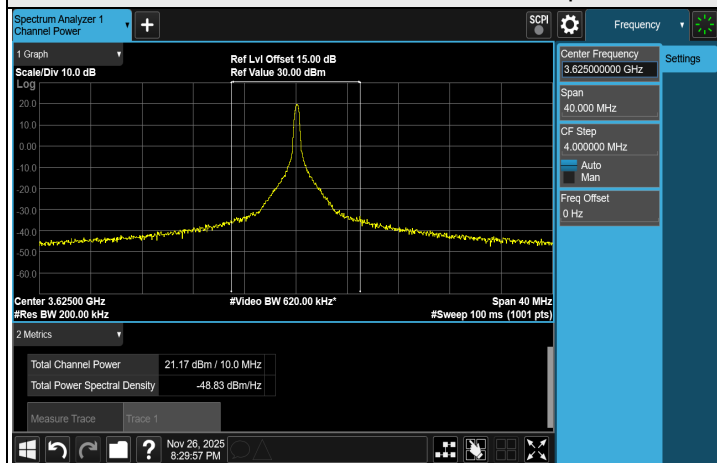
Modulation	RB Size	RB Offset	Measurement Conducted Power (dBm)		
			CH 55340	CH 55990	CH 56640
			3560 MHz	3625 MHz	3690 MHz
QPSK	1	0	21.09	21.12	21.08
	1	50	21.02	21.17	21.01
	1	99	21.03	21.11	20.87
	50	0	20.27	20.40	20.24
	50	25	20.22	20.29	20.14
	50	50	20.20	20.29	20.19
	100	0	17.77	17.85	17.77
16QAM	1	0	20.71	20.81	20.76
	1	50	20.61	20.75	20.61
	1	99	20.67	20.71	20.57
	50	0	19.83	19.82	19.76
	50	25	19.67	19.72	19.58
	50	50	19.76	19.75	19.69
	100	0	17.29	17.34	17.32
64QAM	1	0	19.77	19.79	19.68
	1	50	19.71	19.74	19.59
	1	99	19.67	19.75	19.63
	50	0	18.67	18.87	18.65
	50	25	18.89	18.83	18.82
	50	50	18.67	18.77	18.65
	100	0	16.26	16.27	16.23
256QAM	1	0	16.69	16.79	16.72
	1	50	16.68	16.72	16.65
	1	99	16.71	16.73	16.69
	50	0	16.57	16.66	16.55
	50	25	16.64	16.76	16.57
	50	50	16.75	16.83	16.71
	100	0	14.24	14.29	14.16

Output Power

Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	17.77	21.17	19.26	22.66	23
16QAM	17.29	20.81	18.78	22.3	23
64QAM	16.23	19.79	17.72	21.28	23
256QAM	14.16	16.83	15.65	18.32	23

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

Spectrum Plot of Worst Value



QPSK CH 55990 (3625 MHz)

Note: For the channel bandwidth is less than or equal to 10 MHz, the full power test data please refer to the power per 10 MHz corresponding to the channel bandwidth.

7.1.2 LTE Band 48C (3.55 GHz ~ 3.7 GHz)

LTE Band 48C (3.55 GHz ~ 3.7 GHz), Output Power: Full Power

Configure	Combination	PCC							SCC							Measurement Power Tx Power with UL-CA Active (dBm) Total
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	
Intra Band Contiguous	48C	48	20	QPSK20M	100	0	55340	3560	48	20	QPSK20M	100	0	55538	3579.8	10.41
		48	20	QPSK20M	100	0	55891	3615.1	48	20	QPSK20M	100	0	56089	3634.9	10.42
		48	20	QPSK20M	100	0	56442	3670.2	48	20	QPSK20M	100	0	56640	3690	10.44
	48C	48	20	QPSK20M	100	0	55340	3560	48	15	QPSK15M	75	0	55511	3577.1	10.28
		48	20	QPSK20M	100	0	55916	3617.6	48	15	QPSK15M	75	0	56087	3634.7	10.33
		48	20	QPSK20M	100	0	56491	3675.1	48	15	QPSK15M	75	0	56662	3692.2	10.39
	48C	48	15	QPSK15M	75	0	55318	3557.8	48	20	QPSK20M	100	0	55489	3574.9	10.31
		48	15	QPSK15M	75	0	55893	3615.3	48	20	QPSK20M	100	0	56064	3632.4	10.30
		48	15	QPSK15M	75	0	56469	3672.9	48	20	QPSK20M	100	0	56640	3690	10.43
	48C	48	20	QPSK20M	100	0	55340	3560	48	10	QPSK10M	50	0	55484	3574.4	10.30
		48	20	QPSK20M	100	0	55941	3620.1	48	10	QPSK10M	50	0	56085	3634.5	10.33
		48	20	QPSK20M	100	0	56541	3680.1	48	10	QPSK10M	50	0	56685	3694.5	10.35
	48C	48	10	QPSK10M	50	0	55295	3555.5	48	20	QPSK20M	100	0	55439	3569.9	10.33
		48	10	QPSK10M	50	0	55896	3615.6	48	20	QPSK20M	100	0	56040	3630	10.35
		48	10	QPSK10M	50	0	56496	3675.6	48	20	QPSK20M	100	0	56640	3690	10.39
	48C	48	20	QPSK20M	100	0	55340	3560	48	5	QPSK5M	25	0	55457	3571.7	10.37
		48	20	QPSK20M	100	0	55965	3622.5	48	5	QPSK5M	25	0	56082	3634.2	10.39
		48	20	QPSK20M	100	0	56590	3685	48	5	QPSK5M	25	0	56707	3696.7	10.36
	48C	48	5	QPSK5M	25	0	55273	3553.3	48	20	QPSK20M	100	0	55390	3565	10.29
		48	5	QPSK5M	25	0	55898	3615.8	48	20	QPSK20M	100	0	56015	3627.5	10.39
		48	5	QPSK5M	25	0	56523	3678.3	48	20	QPSK20M	100	0	56640	3690	10.40
	48C	48	20	16QAM20M	100	0	55340	3560	48	20	16QAM20M	100	0	55538	3579.8	9.44
		48	20	16QAM20M	100	0	55891	3615.1	48	20	16QAM20M	100	0	56089	3634.9	9.46
		48	20	16QAM20M	100	0	56442	3670.2	48	20	16QAM20M	100	0	56640	3690	9.51
	48C	48	20	16QAM20M	100	0	55340	3560	48	15	16QAM15M	75	0	55511	3577.1	9.38
		48	20	16QAM20M	100	0	55916	3617.6	48	15	16QAM15M	75	0	56087	3634.7	9.36
		48	20	16QAM20M	100	0	56491	3675.1	48	15	16QAM15M	75	0	56662	3692.2	9.41
	48C	48	15	16QAM15M	75	0	55318	3557.8	48	20	16QAM20M	100	0	55489	3574.9	9.36
		48	15	16QAM15M	75	0	55893	3615.3	48	20	16QAM20M	100	0	56064	3632.4	9.39
		48	15	16QAM15M	75	0	56469	3672.9	48	20	16QAM20M	100	0	56640	3690	9.41
	48C	48	20	16QAM20M	100	0	55340	3560	48	10	16QAM10M	50	0	55484	3574.4	9.34
		48	20	16QAM20M	100	0	55941	3620.1	48	10	16QAM10M	50	0	56085	3634.5	9.40
		48	20	16QAM20M	100	0	56541	3680.1	48	10	16QAM10M	50	0	56685	3694.5	9.49
	48C	48	10	16QAM10M	50	0	55295	3555.5	48	20	16QAM20M	100	0	55439	3569.9	9.33
		48	10	16QAM10M	50	0	55896	3615.6	48	20	16QAM20M	100	0	56040	3630	9.40
		48	10	16QAM10M	50	0	56496	3675.6	48	20	16QAM20M	100	0	56640	3690	9.42
	48C	48	20	16QAM20M	100	0	55340	3560	48	5	16QAM5M	25	0	55457	3571.7	9.41
		48	20	16QAM20M	100	0	55965	3622.5	48	5	16QAM5M	25	0	56082	3634.2	9.37
		48	20	16QAM20M	100	0	56590	3685	48	5	16QAM5M	25	0	56707	3696.7	9.49
	48C	48	5	16QAM5M	25	0	55273	3553.3	48	20	16QAM20M	100	0	55390	3565	9.36
		48	5	16QAM5M	25	0	55898	3615.8	48	20	16QAM20M	100	0	56015	3627.5	9.41
		48	5	16QAM5M	25	0	56523	3678.3	48	20	16QAM20M	100	0	56640	3690	9.40



Configure	Combination	PCC							SCC							Measurement Power
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Tx Power with UL-CA Active (dBm)
		Total														
Intra Band Contiguous	48C	48	20	64QAM20M	100	0	55340	3560	48	20	64QAM20M	100	0	55538	3579.8	8.32
		48	20	64QAM20M	100	0	55891	3615.1	48	20	64QAM20M	100	0	56089	3634.9	8.48
		48	20	64QAM20M	100	0	56442	3670.2	48	20	64QAM20M	100	0	56640	3690	8.43
	48C	48	20	64QAM20M	100	0	55340	3560	48	15	64QAM15M	75	0	55511	3577.1	8.30
		48	20	64QAM20M	100	0	55916	3617.6	48	15	64QAM15M	75	0	56087	3634.7	8.35
		48	20	64QAM20M	100	0	56491	3675.1	48	15	64QAM15M	75	0	56662	3692.2	8.37
	48C	48	15	64QAM15M	75	0	55318	3557.8	48	20	64QAM20M	100	0	55489	3574.9	8.24
		48	15	64QAM15M	75	0	55893	3615.3	48	20	64QAM20M	100	0	56064	3632.4	8.39
		48	15	64QAM15M	75	0	56469	3672.9	48	20	64QAM20M	100	0	56640	3690	8.33
	48C	48	20	64QAM20M	100	0	55340	3560	48	10	64QAM10M	50	0	55484	3574.4	8.29
		48	20	64QAM20M	100	0	55941	3620.1	48	10	64QAM10M	50	0	56085	3634.5	8.45
		48	20	64QAM20M	100	0	56541	3680.1	48	10	64QAM10M	50	0	56685	3694.5	8.39
	48C	48	10	64QAM10M	50	0	55295	3555.5	48	20	64QAM20M	100	0	55439	3569.9	8.24
		48	10	64QAM10M	50	0	55896	3615.6	48	20	64QAM20M	100	0	56040	3630	8.42
		48	10	64QAM10M	50	0	56496	3675.6	48	20	64QAM20M	100	0	56640	3690	8.42
	48C	48	20	64QAM20M	100	0	55340	3560	48	5	64QAM5M	25	0	55457	3571.7	8.23
		48	20	64QAM20M	100	0	55965	3622.5	48	5	64QAM5M	25	0	56082	3634.2	8.44
		48	20	64QAM20M	100	0	56590	3685	48	5	64QAM5M	25	0	56707	3696.7	8.37
	48C	48	5	64QAM5M	25	0	55273	3553.3	48	20	64QAM20M	100	0	55390	3565	8.21
		48	5	64QAM5M	25	0	55898	3615.8	48	20	64QAM20M	100	0	56015	3627.5	8.38
		48	5	64QAM5M	25	0	56523	3678.3	48	20	64QAM20M	100	0	56640	3690	8.38
	48C	48	20	256QAM20M	100	0	55340	3560	48	20	256QAM20M	100	0	55538	3579.8	6.37
		48	20	256QAM20M	100	0	55891	3615.1	48	20	256QAM20M	100	0	56089	3634.9	6.37
		48	20	256QAM20M	100	0	56442	3670.2	48	20	256QAM20M	100	0	56640	3690	6.30
	48C	48	20	256QAM20M	100	0	55340	3560	48	15	256QAM15M	75	0	55511	3577.1	6.29
		48	20	256QAM20M	100	0	55916	3617.6	48	15	256QAM15M	75	0	56087	3634.7	6.30
		48	20	256QAM20M	100	0	56491	3675.1	48	15	256QAM15M	75	0	56662	3692.2	6.19
	48C	48	15	256QAM15M	75	0	55318	3557.8	48	20	256QAM20M	100	0	55489	3574.9	6.24
		48	15	256QAM15M	75	0	55893	3615.3	48	20	256QAM20M	100	0	56064	3632.4	6.24
		48	15	256QAM15M	75	0	56469	3672.9	48	20	256QAM20M	100	0	56640	3690	6.24
	48C	48	20	256QAM20M	100	0	55340	3560	48	10	256QAM10M	50	0	55484	3574.4	6.32
		48	20	256QAM20M	100	0	55941	3620.1	48	10	256QAM10M	50	0	56085	3634.5	6.23
		48	20	256QAM20M	100	0	56541	3680.1	48	10	256QAM10M	50	0	56685	3694.5	6.25
	48C	48	10	256QAM10M	50	0	55295	3555.5	48	20	256QAM20M	100	0	55439	3569.9	6.31
		48	10	256QAM10M	50	0	55896	3615.6	48	20	256QAM20M	100	0	56040	3630	6.26
		48	10	256QAM10M	50	0	56496	3675.6	48	20	256QAM20M	100	0	56640	3690	6.21
	48C	48	20	256QAM20M	100	0	55340	3560	48	5	256QAM5M	25	0	55457	3571.7	6.28
		48	20	256QAM20M	100	0	55965	3622.5	48	5	256QAM5M	25	0	56082	3634.2	6.32
		48	20	256QAM20M	100	0	56590	3685	48	5	256QAM5M	25	0	56707	3696.7	6.22
	48C	48	5	256QAM5M	25	0	55273	3553.3	48	20	256QAM20M	100	0	55390	3565	6.35
		48	5	256QAM5M	25	0	55898	3615.8	48	20	256QAM20M	100	0	56015	3627.5	6.25
		48	5	256QAM5M	25	0	56523	3678.3	48	20	256QAM20M	100	0	56640	3690	6.26

Output Power					
Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	10.28	10.44	11.77	11.93	23
16QAM	9.33	9.51	10.82	11.00	23
64QAM	8.21	8.48	9.70	9.97	23
256QAM	6.19	6.37	7.68	7.86	23

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

LTE Band 48C (3.55 GHz ~ 3.7 GHz), Output Power: dBm/10 MHz

Configure	Combination	PCC							SCC							Measurement Power
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Tx Power with UL-CA Active (dBm)
																Total
Intra Band Contiguous	48C	48	20	QPSK20M	100	0	55340	3560	48	20	QPSK20M	100	0	55538	3579.8	8.52
		48	20	QPSK20M	100	0	55891	3615.1	48	20	QPSK20M	100	0	56089	3634.9	8.52
		48	20	QPSK20M	100	0	56442	3670.2	48	20	QPSK20M	100	0	56640	3690	8.55
	48C	48	20	QPSK20M	100	0	55340	3560	48	15	QPSK15M	75	0	55511	3577.1	8.39
		48	20	QPSK20M	100	0	55916	3617.6	48	15	QPSK15M	75	0	56087	3634.7	8.49
		48	20	QPSK20M	100	0	56491	3675.1	48	15	QPSK15M	75	0	56662	3692.2	8.54
	48C	48	15	QPSK15M	75	0	55318	3557.8	48	20	QPSK20M	100	0	55489	3574.9	8.48
		48	15	QPSK15M	75	0	55893	3615.3	48	20	QPSK20M	100	0	56064	3632.4	8.45
		48	15	QPSK15M	75	0	56469	3672.9	48	20	QPSK20M	100	0	56640	3690	8.51
	48C	48	20	QPSK20M	100	0	55340	3560	48	10	QPSK10M	50	0	55484	3574.4	8.43
		48	20	QPSK20M	100	0	55941	3620.1	48	10	QPSK10M	50	0	56085	3634.5	8.44
		48	20	QPSK20M	100	0	56541	3680.1	48	10	QPSK10M	50	0	56685	3694.5	8.51
	48C	48	10	QPSK10M	50	0	55295	3555.5	48	20	QPSK20M	100	0	55439	3569.9	8.45
		48	10	QPSK10M	50	0	55896	3615.6	48	20	QPSK20M	100	0	56040	3630	8.51
		48	10	QPSK10M	50	0	56496	3675.6	48	20	QPSK20M	100	0	56640	3690	8.49
	48C	48	20	QPSK20M	100	0	55340	3560	48	5	QPSK5M	25	0	55457	3571.7	8.50
		48	20	QPSK20M	100	0	55965	3622.5	48	5	QPSK5M	25	0	56082	3634.2	8.47
		48	20	QPSK20M	100	0	56590	3685	48	5	QPSK5M	25	0	56707	3696.7	8.46
	48C	48	5	QPSK5M	25	0	55273	3553.3	48	20	QPSK20M	100	0	55390	3565	8.41
		48	5	QPSK5M	25	0	55898	3615.8	48	20	QPSK20M	100	0	56015	3627.5	8.53
		48	5	QPSK5M	25	0	56523	3678.3	48	20	QPSK20M	100	0	56640	3690	8.45
	48C	48	20	16QAM20M	100	0	55340	3560	48	20	16QAM20M	100	0	55538	3579.8	7.53
		48	20	16QAM20M	100	0	55891	3615.1	48	20	16QAM20M	100	0	56089	3634.9	7.54
		48	20	16QAM20M	100	0	56442	3670.2	48	20	16QAM20M	100	0	56640	3690	7.59
	48C	48	20	16QAM20M	100	0	55340	3560	48	15	16QAM15M	75	0	55511	3577.1	7.53
		48	20	16QAM20M	100	0	55916	3617.6	48	15	16QAM15M	75	0	56087	3634.7	7.56
		48	20	16QAM20M	100	0	56491	3675.1	48	15	16QAM15M	75	0	56662	3692.2	7.56
	48C	48	15	16QAM15M	75	0	55318	3557.8	48	20	16QAM20M	100	0	55489	3574.9	7.46
		48	15	16QAM15M	75	0	55893	3615.3	48	20	16QAM20M	100	0	56064	3632.4	7.58
		48	15	16QAM15M	75	0	56469	3672.9	48	20	16QAM20M	100	0	56640	3690	7.51
	48C	48	20	16QAM20M	100	0	55340	3560	48	10	16QAM10M	50	0	55484	3574.4	7.42
		48	20	16QAM20M	100	0	55941	3620.1	48	10	16QAM10M	50	0	56085	3634.5	7.50
		48	20	16QAM20M	100	0	56541	3680.1	48	10	16QAM10M	50	0	56685	3694.5	7.61
	48C	48	10	16QAM10M	50	0	55295	3555.5	48	20	16QAM20M	100	0	55439	3569.9	7.47
		48	10	16QAM10M	50	0	55896	3615.6	48	20	16QAM20M	100	0	56040	3630	7.51
		48	10	16QAM10M	50	0	56496	3675.6	48	20	16QAM20M	100	0	56640	3690	7.54
	48C	48	20	16QAM20M	100	0	55340	3560	48	5	16QAM5M	25	0	55457	3571.7	7.53
		48	20	16QAM20M	100	0	55965	3622.5	48	5	16QAM5M	25	0	56082	3634.2	7.54
		48	20	16QAM20M	100	0	56590	3685	48	5	16QAM5M	25	0	56707	3696.7	7.68
	48C	48	5	16QAM5M	25	0	55273	3553.3	48	20	16QAM20M	100	0	55390	3565	7.49
		48	5	16QAM5M	25	0	55898	3615.8	48	20	16QAM20M	100	0	56015	3627.5	7.57
		48	5	16QAM5M	25	0	56523	3678.3	48	20	16QAM20M	100	0	56640	3690	7.51

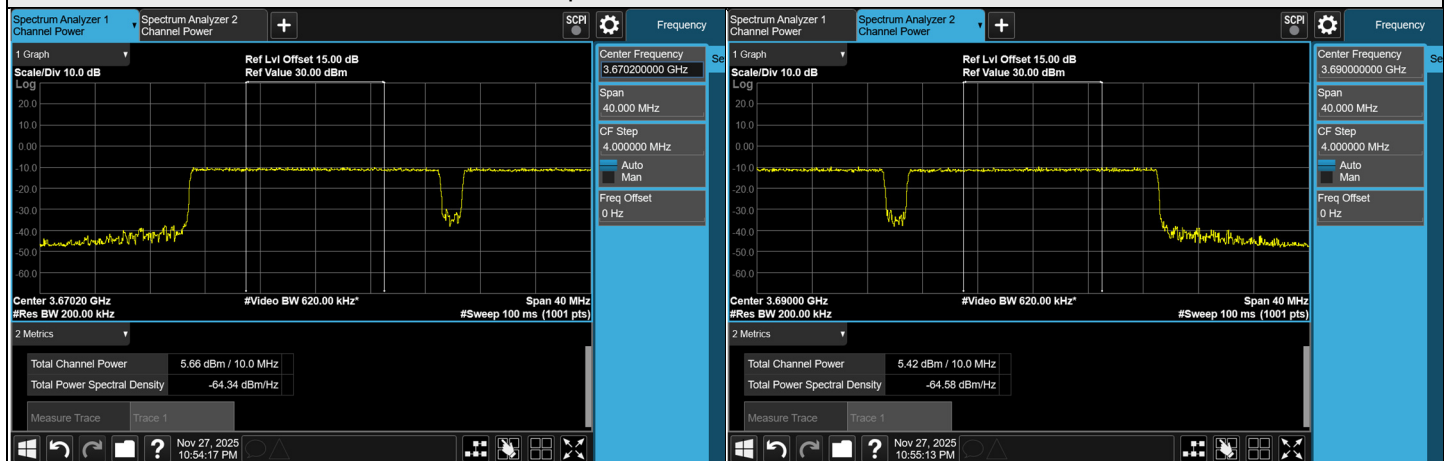
Configure	Combination	PCC							SCC							Measurement Power
		Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Band	BW (MHz)	Modulation	RB Size	RB Offset	UL Channel	UL Frequency (MHz)	Tx Power with UL-CA Active (dBm)
		Total														
Intra Band Contiguous	48C	48	20	64QAM20M	100	0	55340	3560	48	20	64QAM20M	100	0	55538	3579.8	6.48
		48	20	64QAM20M	100	0	55891	3615.1	48	20	64QAM20M	100	0	56089	3634.9	6.64
		48	20	64QAM20M	100	0	56442	3670.2	48	20	64QAM20M	100	0	56640	3690	6.56
	48C	48	20	64QAM20M	100	0	55340	3560	48	15	64QAM15M	75	0	55511	3577.1	6.41
		48	20	64QAM20M	100	0	55916	3617.6	48	15	64QAM15M	75	0	56087	3634.7	6.45
		48	20	64QAM20M	100	0	56491	3675.1	48	15	64QAM15M	75	0	56662	3692.2	6.47
	48C	48	15	64QAM15M	75	0	55318	3557.8	48	20	64QAM20M	100	0	55489	3574.9	6.38
		48	15	64QAM15M	75	0	55893	3615.3	48	20	64QAM20M	100	0	56064	3632.4	6.50
		48	15	64QAM15M	75	0	56469	3672.9	48	20	64QAM20M	100	0	56640	3690	6.45
	48C	48	20	64QAM20M	100	0	55340	3560	48	10	64QAM10M	50	0	55484	3574.4	6.44
		48	20	64QAM20M	100	0	55941	3620.1	48	10	64QAM10M	50	0	56085	3634.5	6.56
		48	20	64QAM20M	100	0	56541	3680.1	48	10	64QAM10M	50	0	56685	3694.5	6.56
	48C	48	10	64QAM10M	50	0	55295	3555.5	48	20	64QAM20M	100	0	55439	3569.9	6.36
		48	10	64QAM10M	50	0	55896	3615.6	48	20	64QAM20M	100	0	56040	3630	6.58
		48	10	64QAM10M	50	0	56496	3675.6	48	20	64QAM20M	100	0	56640	3690	6.58
	48C	48	20	64QAM20M	100	0	55340	3560	48	5	64QAM5M	25	0	55457	3571.7	6.30
		48	20	64QAM20M	100	0	55965	3622.5	48	5	64QAM5M	25	0	56082	3634.2	6.62
		48	20	64QAM20M	100	0	56590	3685	48	5	64QAM5M	25	0	56707	3696.7	6.49
	48C	48	5	64QAM5M	25	0	55273	3553.3	48	20	64QAM20M	100	0	55390	3565	6.41
		48	5	64QAM5M	25	0	55898	3615.8	48	20	64QAM20M	100	0	56015	3627.5	6.57
		48	5	64QAM5M	25	0	56523	3678.3	48	20	64QAM20M	100	0	56640	3690	6.58
	48C	48	20	256QAM20M	100	0	55340	3560	48	20	256QAM20M	100	0	55538	3579.8	4.53
		48	20	256QAM20M	100	0	55891	3615.1	48	20	256QAM20M	100	0	56089	3634.9	4.53
		48	20	256QAM20M	100	0	56442	3670.2	48	20	256QAM20M	100	0	56640	3690	4.43
	48C	48	20	256QAM20M	100	0	55340	3560	48	15	256QAM15M	75	0	55511	3577.1	4.43
		48	20	256QAM20M	100	0	55916	3617.6	48	15	256QAM15M	75	0	56087	3634.7	4.47
		48	20	256QAM20M	100	0	56491	3675.1	48	15	256QAM15M	75	0	56662	3692.2	4.34
	48C	48	15	256QAM15M	75	0	55318	3557.8	48	20	256QAM20M	100	0	55489	3574.9	4.34
		48	15	256QAM15M	75	0	55893	3615.3	48	20	256QAM20M	100	0	56064	3632.4	4.30
		48	15	256QAM15M	75	0	56469	3672.9	48	20	256QAM20M	100	0	56640	3690	4.39
	48C	48	20	256QAM20M	100	0	55340	3560	48	10	256QAM10M	50	0	55484	3574.4	4.46
		48	20	256QAM20M	100	0	55941	3620.1	48	10	256QAM10M	50	0	56085	3634.5	4.37
		48	20	256QAM20M	100	0	56541	3680.1	48	10	256QAM10M	50	0	56685	3694.5	4.32
	48C	48	10	256QAM10M	50	0	55295	3555.5	48	20	256QAM20M	100	0	55439	3569.9	4.44
		48	10	256QAM10M	50	0	55896	3615.6	48	20	256QAM20M	100	0	56040	3630	4.37
		48	10	256QAM10M	50	0	56496	3675.6	48	20	256QAM20M	100	0	56640	3690	4.40
	48C	48	20	256QAM20M	100	0	55340	3560	48	5	256QAM5M	25	0	55457	3571.7	4.36
		48	20	256QAM20M	100	0	55965	3622.5	48	5	256QAM5M	25	0	56082	3634.2	4.46
		48	20	256QAM20M	100	0	56590	3685	48	5	256QAM5M	25	0	56707	3696.7	4.42
	48C	48	5	256QAM5M	25	0	55273	3553.3	48	20	256QAM20M	100	0	55390	3565	4.48
		48	5	256QAM5M	25	0	55898	3615.8	48	20	256QAM20M	100	0	56015	3627.5	4.44
		48	5	256QAM5M	25	0	56523	3678.3	48	20	256QAM20M	100	0	56640	3690	4.38

Output Power

Modulation	Minimum Cond. Power (dBm)	Maximum Cond. Power (dBm)	Minimum EIRP (dBm)	Maximum EIRP (dBm)	EIRP Limit (dBm)
QPSK	8.39	8.55	9.88	10.04	23
16QAM	7.42	7.68	8.91	9.17	23
64QAM	6.30	6.64	7.79	8.13	23
256QAM	4.30	4.53	5.79	6.02	23

Note: EIRP (dBm) = Cond. Power (dBm) + Antenna Gain (dBi) + Array Gain (if applicable)

Spectrum Plot of Worst Value



QPSK CH 56442 (3670.2 MHz) + CH 56640 (3690 MHz)

Note: For the channel bandwidth is less than or equal to 10 MHz, the full power test data please refer to the power per 10 MHz corresponding to the channel bandwidth.

7.2 Radiated Spurious Emissions below 1GHz

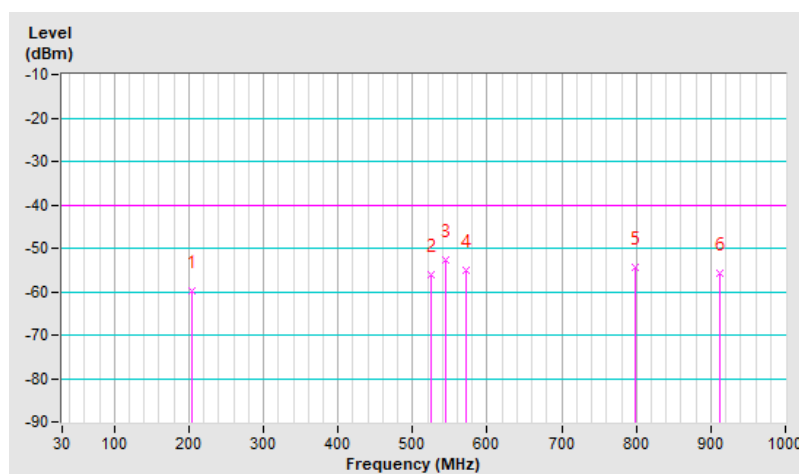
7.2.1 LTE Band 48 (3.55 GHz ~ 3.7 GHz)

RF Mode	LTE Band 48 (3.55 GHz ~ 3.7 GHz) Channel Bandwidth: 20MHz	Channel	CH 55990 : 3625 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 67% RH
Tested By	Wade Huang		

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	204.60	-59.96	-40.00	-19.96	1.00 H	331	51.62	-111.58
2	525.67	-56.08	-40.00	-16.08	1.99 H	2	46.28	-102.36
3	544.10	-52.56	-40.00	-12.56	1.50 H	349	49.49	-102.05
4	571.26	-55.02	-40.00	-15.02	1.50 H	181	46.26	-101.28
5	799.21	-54.38	-40.00	-14.38	1.50 H	215	42.94	-97.32
6	911.73	-55.63	-40.00	-15.63	1.00 H	356	40.08	-95.71

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3. $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

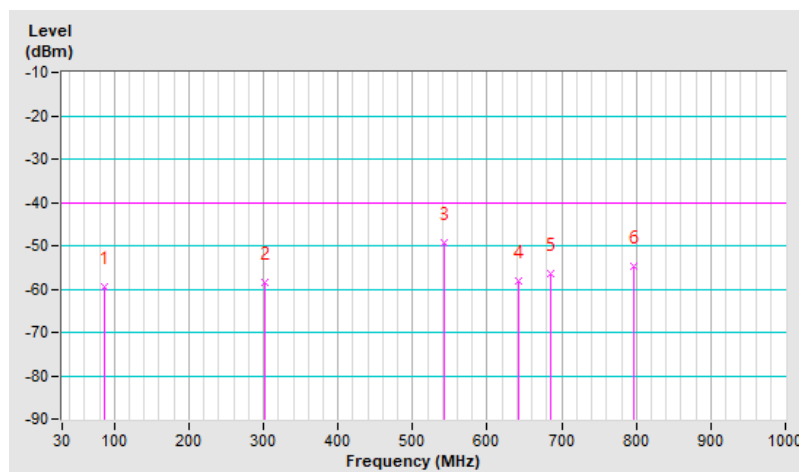


RF Mode	LTE Band 48 (3.55 GHz ~ 3.7 GHz) Channel Bandwidth: 20MHz	Channel	CH 55990 : 3625 MHz
Frequency Range	30 MHz ~ 1 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 67% RH
Tested By	Wade Huang		

Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	87.23	-59.60	-40.00	-19.60	1.00 V	249	54.59	-114.19
2	302.57	-58.61	-40.00	-18.61	1.49 V	280	48.86	-107.47
3	543.13	-49.26	-40.00	-9.26	1.00 V	276	52.81	-102.07
4	642.07	-58.26	-40.00	-18.26	1.00 V	151	41.45	-99.71
5	684.75	-56.39	-40.00	-16.39	1.49 V	163	42.59	-98.98
6	796.30	-54.64	-40.00	-14.64	1.00 V	174	42.73	-97.37

Remarks:

1. $EIRP(dBm) = Raw\ Value(dBuV) + Correction\ Factor(dB/m)$
2. $Correction\ Factor(dB/m) = Antenna\ Factor(dB/m) + Cable\ Factor(dB) - Pre-Amplifier\ Factor(dB) + 20\log(D) - 104.8$
3. $Margin\ value = EIRP - Limit\ value$
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9 kHz ~ 30 MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



7.3 Radiated Spurious Emissions above 1GHz

7.3.1 LTE Band 48 (3.55 GHz ~ 3.7 GHz)

RF Mode	LTE Band 48 (3.55 GHz ~ 3.7 GHz) Channel Bandwidth: 5MHz	Channel	CH 55265 : 3552.5 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 67% RH
Tested By	Wade Huang		

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	7105.00	-41.71	-40.00	-1.71	1.90 H	130	40.50	-82.21
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	7105.00	-41.91	-40.00	-1.91	1.41 V	44	40.30	-82.21

Remarks:

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

RF Mode	LTE Band 48 (3.55 GHz ~ 3.7 GHz) Channel Bandwidth: 5MHz	Channel	CH 55990 : 3625 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 67% RH
Tested By	Wade Huang		

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	7250.00	-41.73	-40.00	-1.73	1.92 H	133	40.16	-81.89
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	7250.00	-42.20	-40.00	-2.20	1.36 V	49	39.69	-81.89

Remarks:

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

RF Mode	LTE Band 48 (3.55 GHz ~ 3.7 GHz) Channel Bandwidth: 5MHz	Channel	CH 56715 : 3697.5 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 67% RH
Tested By	Wade Huang		

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	7395.00	-41.34	-40.00	-1.34	1.83 H	128	40.66	-82.00
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	7395.00	-41.77	-40.00	-1.77	1.40 V	48	40.23	-82.00

Remarks:

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

RF Mode	LTE Band 48 (3.55 GHz ~ 3.7 GHz) Channel Bandwidth: 20MHz	Channel	CH 55340 : 3560 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 67% RH
Tested By	Wade Huang		

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	7120.00	-42.16	-40.00	-2.16	1.88 H	131	40.06	-82.22
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	7120.00	-42.31	-40.00	-2.31	1.33 V	44	39.91	-82.22

Remarks:

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

RF Mode	LTE Band 48 (3.55 GHz ~ 3.7 GHz) Channel Bandwidth: 20MHz	Channel	CH 55990 : 3625 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 67% RH
Tested By	Wade Huang		

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	7250.00	-40.97	-40.00	-0.97	1.82 H	135	40.92	-81.89
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	7250.00	-41.42	-40.00	-1.42	1.34 V	46	40.47	-81.89

Remarks:

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

RF Mode	LTE Band 48 (3.55 GHz ~ 3.7 GHz) Channel Bandwidth: 20MHz	Channel	CH 56640 : 3690 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 67% RH
Tested By	Wade Huang		

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	7380.00	-41.63	-40.00	-1.63	1.90 H	132	40.36	-81.99
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	7380.00	-42.16	-40.00	-2.16	1.40 V	46	39.83	-81.99

Remarks:

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

7.3.2 LTE Band 48C (3.55 GHz ~ 3.7 GHz)

RF Mode	LTE Band 48C (3.55 GHz ~ 3.7 GHz) Channel Bandwidth: 20MHz + 20MHz	Channel	CH 55340 : 3560 MHz + CH 55538 : 3579.8 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 67% RH
Tested By	Wade Huang		

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	7120.00	-41.53	-40.00	-1.53	1.90 H	159	40.69	-82.22
2	7159.60	-41.70	-40.00	-1.70	1.38 H	205	40.53	-82.23
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	7120.00	-42.58	-40.00	-2.58	1.43 V	204	39.64	-82.22
2	7159.60	-42.71	-40.00	-2.71	1.41 V	203	39.52	-82.23

Remarks:

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

RF Mode	LTE Band 48C (3.55 GHz ~ 3.7 GHz) Channel Bandwidth: 20MHz + 20MHz	Channel	CH 55891 : 3615.1 MHz + CH 56089 : 3634.9 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 67% RH
Tested By	Wade Huang		

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	7230.20	-41.11	-40.00	-1.11	1.96 H	156	40.85	-81.96
2	7269.80	-41.20	-40.00	-1.20	1.94 H	161	40.77	-81.97
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	7230.20	-41.38	-40.00	-1.38	1.41 V	201	40.58	-81.96
2	7269.80	-41.48	-40.00	-1.48	1.35 V	202	40.49	-81.97

Remarks:

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

RF Mode	LTE Band 48C (3.55 GHz ~ 3.7 GHz) Channel Bandwidth: 20MHz + 20MHz	Channel	CH 56442 : 3670.2MHz + CH 56640 : 3690 MHz
Frequency Range	1 GHz ~ 40 GHz	Detector Function & Bandwidth	1 MHz/3 MHz (RMS)
Input Power	120 Vac, 60 Hz	Environmental Conditions	22 °C, 67% RH
Tested By	Wade Huang		

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	7230.20	-41.31	-40.00	-1.31	1.90 H	161	40.65	-81.96
2	7269.80	-41.91	-40.00	-1.91	1.90 H	155	40.06	-81.97
Antenna Polarity & Test Distance : Vertical at 3 m								
No	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	7230.20	-42.40	-40.00	-2.40	1.40 V	206	39.56	-81.96
2	7269.80	-42.33	-40.00	-2.33	1.43 V	202	39.64	-81.97

Remarks:

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

8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

9 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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