

FCC Test Report (Part 22: FR1 n5A)

Report No.: RF191031C08-8

FCC ID: PY319400469

Test Model: MR5100

Received Date: Nov. 04, 2019

Test Date: Jan. 17, 2020

Issued Date: Feb. 01, 2020

Applicant: Netgear, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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FCC Registration / 788550 / TW0003

Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
RF191031C08-8	Original release	Feb. 01, 2020

1 Certificate of Conformity

Product: 5G MHS Travel Router

Brand: NETGEAR

Test Model: MR5100

Sample Status: ENGINEERING SAMPLE

Applicant: Netgear, Inc.

Test Date: Jan. 17, 2020

Standards: FCC Part 22, Subpart H

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

Prepared by : Pettie Chen, **Date:** Feb. 01, 2020
Pettie Chen / Senior Specialist

Approved by : Bruce Chen, **Date:** Feb. 01, 2020
Bruce Chen / Senior Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 22 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 22.913 (a)	Effective radiated power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement
22.913 (d)	Peak To Average Ratio	Pass	Meet the requirement of limit.
2.1055 22.355	Frequency Stability	Pass	Meet the requirement of limit.
2.1049	Occupied Bandwidth	Pass	Meet the requirement of limit.
22.917	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 22.917	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 22.917	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -17.3dB at 35.82MHz.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

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

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	May 30, 2019	May 29, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100040	Sep. 23, 2019	Sep. 22, 2020
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Nov. 11, 2019	Nov. 10, 2020
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-1170	Nov. 24, 2019	Nov. 23, 2020
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 24, 2019	Nov. 23, 2020
Preamplifier Agilent (Below 1GHz)	8447D	2944A10631	Jul. 11, 2019	Jul. 10, 2020
Preamplifier KEYSIGHT (Above 1GHz)	83017A	MY53270295	Jun. 11, 2019	Jun. 10, 2020
RF Coaxial Cable WORKEN With 5dB PAD	8D-FB	Cable-CH4-01	Aug. 20, 2019	Aug. 19, 2020
RF Coaxial Cable EMCI	EMC102-KM-KM-3000	150929	Aug. 20, 2019	Aug. 19, 2020
RF Coaxial Cable EMCI	EMC102-KM-KM-600	150928	Aug. 20, 2019	Aug. 19, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	MY 13380+295012/04	Jul. 11, 2019	Jul. 10, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	Cable-CH4-03 (250724)	Jul. 11, 2019	Jul. 10, 2020
Software BV ADT	ADT_Radiated_V7.6.15.9.5	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller BV ADT	AT100	AT93021703	NA	NA
Turn Table BV ADT	TT100	TT93021703	NA	NA
Turn Table Controller BV ADT	SC100	SC93021703	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 03, 2019	Jun. 02, 2020
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	May 21, 2019	May 20, 2020

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 4.

3 General Information

3.1 General Description of EUT

Product	5G MHS Travel Router			
Brand	NETGEAR			
Test Model	MR5100			
Sample Status	Engineering Sample			
Power Supply Rating	5 or 9Vdc (adapter) 5Vdc (host equipment) 3.85Vdc (battery)			
Modulation Type	QPSK, 16QAM, 64QAM			
Operating Frequency	NR Band 5 (Channel Bandwidth 5MHz)	826.5~846.5MHz		
	NR Band 5 (Channel Bandwidth 10MHz)	829.0~844.0MHz		
	NR Band 5 (Channel Bandwidth 15MHz)	831.5~841.5MHz		
	NR Band 5 (Channel Bandwidth 20MHz)	834.0~839.0MHz		
Max. ERP Power	1RB	QPSK	16QAM	64QAM
	NR Band 5 (Channel Bandwidth 5MHz)	147.911mW (21.7dBm)	131.826mW (21.2dBm)	104.713mW (20.2dBm)
	NR Band 5 (Channel Bandwidth 10MHz)	128.825mW (21.1dBm)	114.815mW (20.6dBm)	100.000mW (20.0dBm)
	NR Band 5 (Channel Bandwidth 15MHz)	138.038mW (21.4dBm)	120.226mW (20.8dBm)	93.325mW (19.7dBm)
	NR Band 5 (Channel Bandwidth 20MHz)	141.254mW (21.5dBm)	125.893mW (21.0dBm)	100.000mW (20.0dBm)
	Full RB	QPSK	16QAM	64QAM
	NR Band 5 (Channel Bandwidth 5MHz)	117.490mW (20.7dBm)	104.713mW (20.2dBm)	83.176mW (19.2dBm)
	NR Band 5 (Channel Bandwidth 10MHz)	112.202mW (20.5dBm)	100.000mW (20.0dBm)	79.433mW (19.0dBm)
	NR Band 5 (Channel Bandwidth 15MHz)	109.648mW (20.4dBm)	97.724mW (19.9dBm)	75.858mW (18.8dBm)
	NR Band 5 (Channel Bandwidth 20MHz)	112.202mW (20.5dBm)	102.329mW (20.1dBm)	77.625mW (18.9dBm)
Emission Designator		QPSK	16QAM	64QAM
	NR Band 5 (Channel Bandwidth 5MHz)	4M49G7D	4M49D7W	4M49D7W
	NR Band 5 (Channel Bandwidth 10MHz)	8M96G7D	8M96D7W	8M95D7W
	NR Band 5 (Channel Bandwidth 15MHz)	13M5G7D	13M5D7W	13M5D7W
	NR Band 5 (Channel Bandwidth 20MHz)	17M9G7D	17M9D7W	17M9D7W
Antenna Type	Refer to note			
Antenna Connector	Refer to note			
Accessory Device	Adapter x1, battery x1			
Cable Supplied	1m shielded USB cable without core (Brand: NIENYI, model: NYS2371-1)			

Note:

1. The following antennas were provided to the EUT.

Antenna Type	monopole	
Antenna Connector	NA	
Antenna Gain (dBi)	NR Band 5	-0.2

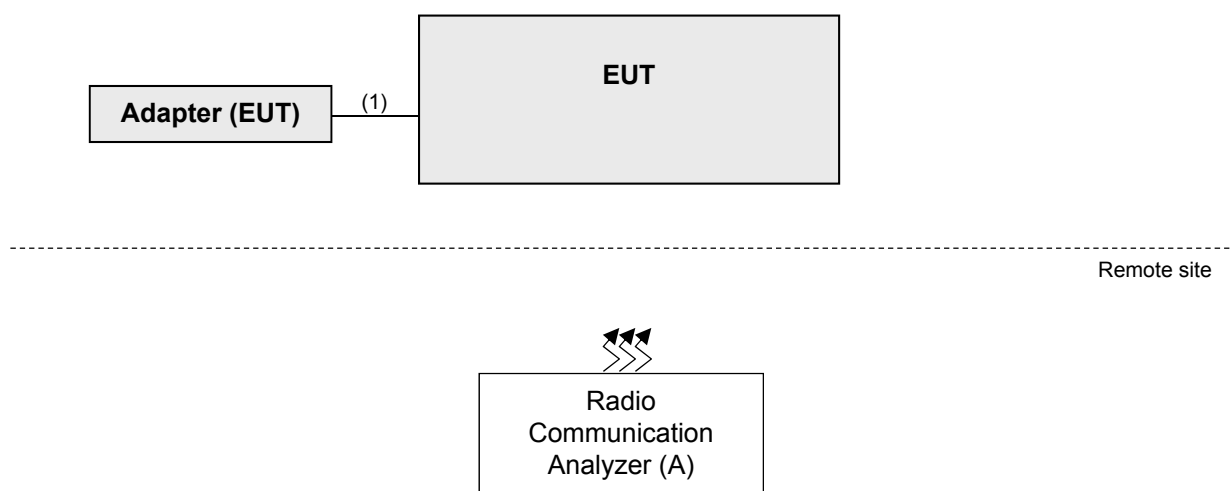
2. The EUT must be supplied with a power adapter or battery as following table:

Items	Brand	Model No.	Spec.
Adapter	NETGEAR	AD2122F20	Input: 100-240Vac~50/60Hz, 0.5A Output: 5Vdc / 2.0A or 9Vdc /1.8A
Battery	NETGEAR	W-20	3.85Vdc, 19.40Wh

3. The EUT support Bandwidth information

Band	SCS (kHz)	Channel Bandwidth (MHz)			
		5	10	15	20
n2	15	Support	Support	Support	Support
n5	15	Support	Support	Support	Support
n66	15	Support	Support	Support	Support

3.2 Configuration of System under Test



3.2.1 Description of Support Units

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

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	Radio Communication Analyzer	Keysight	E7515B	MY58300759	NA	-

Note:

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

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	USB cable	1	1	Y	0	Accessory of EUT

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.

NR Band 5

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	ERP	165300 to 169300	165300(826.5MHz), 167300(836.5MHz), 169300(846.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
		165800 to 168800	165800(829.0MHz), 167300(836.5MHz), 168800(844.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
		166300 to 168300	166300(831.5MHz), 167300(836.5MHz), 168300(841.5MHz)	15MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
		166800 to 167800	166800(834.0MHz), 167300(836.5MHz), 167800(839.0MHz)	20MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
-	Modulation characteristics	166800 to 167800	167300(836.5MHz)	20MHz	QPSK / 16QAM / 64QAM	106 RB / 0 RB Offset
-	Frequency Stability	165300 to 169300	165300(826.5MHz), 169300(846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		165800 to 168800	165800(829.0MHz), 168800(844.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		166300 to 168300	166300(831.5MHz), 168300(841.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		166800 to 167800	166800(834.0MHz), 167800(839.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Occupied Bandwidth	165300 to 169300	165300(826.5MHz), 167300(836.5MHz), 169300(846.5MHz)	5MHz	QPSK / 16QAM / 64QAM	25 RB / 0RB Offset
		165800 to 168800	165800(829.0MHz), 167300(836.5MHz), 168800(844.0MHz)	10MHz	QPSK / 16QAM / 64QAM	52 RB / 0RB Offset
		166300 to 168300	166300(831.5MHz), 167300(836.5MHz), 168300(841.5MHz)	15MHz	QPSK / 16QAM / 64QAM	79 RB / 0 RB Offset
		166800 to 167800	166800(834.0MHz), 167300(836.5MHz), 167800(839.0MHz)	20MHz	QPSK / 16QAM / 64QAM	106 RB / 0RB Offset

EUT Configure Mode	Test item	Available channel	Tested channel	Channel Bandwidth	Modulation	Mode
-	Band Edge	165300 to 169300	165300(826.5MHz), 169300(846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
		165800 to 168800	165800(829.0MHz), 168800(844.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 51 RB Offset 52 RB / 0 RB Offset
		166300 to 168300	166300(831.5MHz), 168300(841.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 78 RB Offset 79 RB / 0 RB Offset
		166800 to 167800	166800(834.0MHz), 167800(839.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 105 RB Offset 106 RB / 0 RB Offset
-	Peak to Average Ratio	165300 to 169300	165300(826.5MHz), 167300(836.5MHz), 169300(846.5MHz)	5MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
		165800 to 168800	165800(829.0MHz), 167300(836.5MHz), 168800(844.0MHz)	10MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
		166300 to 168300	166300(831.5MHz), 167300(836.5MHz), 168300(841.5MHz)	15MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
		166800 to 167800	166800(834.0MHz), 167300(836.5MHz), 167800(839.0MHz)	20MHz	QPSK / 16QAM / 64QAM	1 RB / 0 RB Offset
-	Conducted Emission	165300 to 169300	165300(826.5MHz), 167300(836.5MHz), 169300(846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		165800 to 168800	165800(829.0MHz), 167300(836.5MHz), 168800(844.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		166300 to 168300	166300(831.5MHz), 167300(836.5MHz), 168300(841.5MHz)	15MHz	QPSK	1 RB / 0 RB Offset
		166800 to 167800	166800(834.0MHz), 167300(836.5MHz), 167800(839.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Below 1GHz	165300 to 169300	165300(826.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		165800 to 168800	165800(829.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		166800 to 167800	166800(834.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset
-	Radiated Emission Above 1GHz	165300 to 169300	165300(826.5MHz), 167300(836.5MHz), 169300(846.5MHz)	5MHz	QPSK	1 RB / 0 RB Offset
		165800 to 168800	165800(829.0MHz), 167300(836.5MHz), 168800(844.0MHz)	10MHz	QPSK	1 RB / 0 RB Offset
		166800 to 167800	166800(834.0MHz), 167300(836.5MHz), 167800(839.0MHz)	20MHz	QPSK	1 RB / 0 RB Offset

Note:

1. For radiated emission below 1GHz, low, mid and high channels were pre-tested in chamber with 5, 10, 20MHz mode. Low channel was found to be the worst case and therefore had been chosen for all final tests.
2. For radiated emission above 1GHz, according to 3GPP 36.521 Section 6.6.3.1.4, choose the lowest, 5MHz & highest channel bandwidth for final test.
3. The conducted output power for QPSK, 16QAM and 64QAM, measured value of QPSK is higher than 16QAM and 64QAM mode. Therefore, only Modulation characteristics, occupied bandwidth and Peak to average ratio items had been tested under QPSK, 16QAM and 64QAM modes, the other test items were performed under QPSK mode only.

Test Condition:

Test Item	Environmental Conditions	Input Power (system)	Tested By
ERP	25deg. C, 70%RH	120Vac, 60Hz	Luis Lee
Modulation Characteristics	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Frequency Stability	24deg. C, 64%RH	3.85Vdc	James Yang
Occupied Bandwidth	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Band Edge	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Peak To Average Ratio	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Conducted Emission	24deg. C, 64%RH	120Vac, 60Hz	James Yang
Radiated Emission	25deg. C, 70%RH	120Vac, 60Hz	Noah Chang Luis Lee

3.4 EUT Operating Conditions

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

3.5 General Description of Applied Standards

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

FCC 47 CFR Part 2

FCC 47 CFR Part 22

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-E 2016

ANSI 63.26-2015

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 7 watts e.r.p.

4.1.2 Test Procedures

EIRP / ERP Measurement:

- All measurements were done at low, middle and high operational frequency range. RBW and VBW is 10MHz for NR mode.
- Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m(below or equal 1GHz) and/or 1.5m(above 1GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G
- EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15dBi.

Where:

$$\text{ERP/EIRP} = P_{\text{Meas}} + G_T - L_C$$

P_{Meas} : Measure transmitter output power.

G_T : Gain of the transmitting antenna.

L_C : signal attenuation in the connecting cable between the transmitter and antenna.

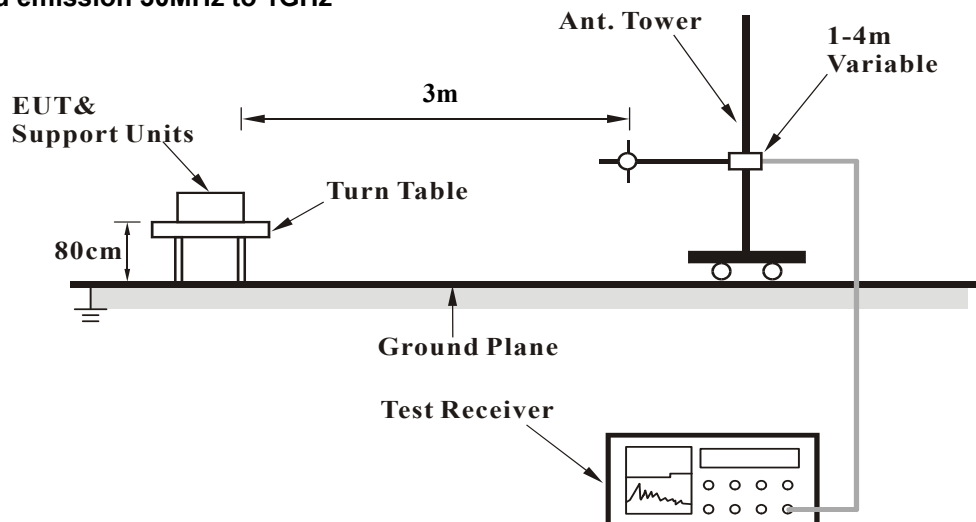
Conducted Power Measurement:

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

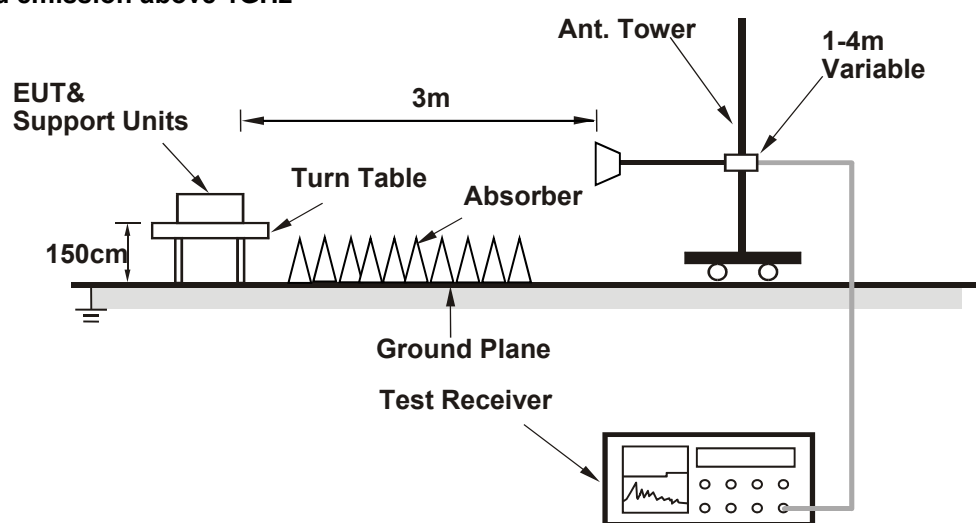
4.1.3 Test Setup

EIRP / ERP Measurement:

For radiated emission 30MHz to 1GHz

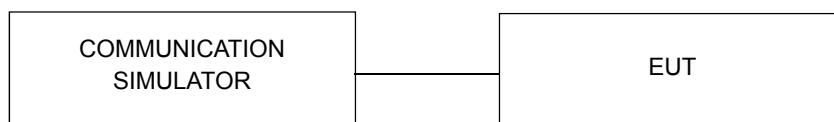


For radiated emission above 1GHz



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

Conducted Power Measurement:



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

4.1.4 Test Results

Conducted Output Power (dBm)

NR Band 5							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		165300	167300	169300	
		Frequency (MHz)		826.5	836.5	846.5	
5M	DFT-S_QPSK	1	0	19.86	19.89	19.83	0
		1	12	19.79	19.82	19.83	0
		1	24	19.63	19.66	19.76	0
		12	0	19.84	19.87	19.60	0
		12	6	19.70	19.73	19.81	0
		12	13	19.72	19.75	19.67	0
		25	0	19.81	19.84	19.69	0
	DFT-S_16QAM	1	0	19.85	19.88	19.78	0
		1	12	19.79	19.82	19.82	0
		1	24	19.62	19.65	19.76	0
		12	0	19.84	19.87	19.59	0
		12	6	19.81	19.84	19.81	0
		12	13	19.76	19.79	19.78	0
		25	0	19.81	19.84	19.73	0
	DFT-S_64QAM	1	0	19.83	19.86	19.78	0
		1	12	19.65	19.68	19.80	0
		1	24	19.53	19.56	19.62	0
		12	0	19.77	19.80	19.50	0
		12	6	19.82	19.85	19.74	0
		12	13	19.79	19.82	19.79	0
		25	0	19.81	19.84	19.76	0

NR Band 5							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		165300	167300	169300	
		Frequency (MHz)		826.5	836.5	846.5	
5M	CP_QPSK	1	0	19.85	19.88	19.78	0
		1	12	19.84	19.87	19.82	0
		1	24	19.61	19.64	19.81	0
		12	0	19.79	19.82	19.58	0
		12	6	19.71	19.74	19.76	0
		12	13	19.66	19.69	19.68	0
		25	0	19.73	19.76	19.63	0
	CP_16QAM	1	0	19.85	19.88	19.70	0
		1	12	19.80	19.83	19.82	0
		1	24	19.84	19.87	19.77	0
		12	0	19.83	19.86	19.81	0
		12	6	19.79	19.82	19.80	0
		12	13	19.71	19.74	19.76	0
		25	0	19.79	19.82	19.68	0
	CP_64QAM	1	0	19.61	19.64	19.76	0
		1	12	19.48	19.51	19.58	0
		1	24	19.27	19.30	19.45	0
		12	0	19.65	19.68	19.24	0
		12	6	19.57	19.60	19.62	0
		12	13	19.58	19.61	19.54	0
		25	0	19.62	19.65	19.55	0

NR Band 5							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		165800	167300	168800	
		Frequency (MHz)		829	836.5	844	
10M	DFT-S_QPSK	1	0	19.89	19.92	19.86	0
		1	26	19.82	19.85	19.86	0
		1	51	19.66	19.69	19.79	0
		26	0	19.87	19.90	19.63	0
		26	13	19.73	19.76	19.84	0
		26	26	19.75	19.78	19.70	0
		52	0	19.84	19.87	19.72	0
	DFT-S_16QAM	1	0	19.88	19.91	19.81	0
		1	26	19.82	19.85	19.85	0
		1	51	19.65	19.68	19.79	0
		26	0	19.87	19.90	19.62	0
		26	13	19.84	19.87	19.84	0
		26	26	19.79	19.82	19.81	0
		52	0	19.84	19.87	19.76	0
	DFT-S_64QAM	1	0	19.86	19.89	19.81	0
		1	26	19.68	19.71	19.83	0
		1	51	19.56	19.59	19.65	0
		26	0	19.80	19.83	19.53	0
		26	13	19.85	19.88	19.77	0
		26	26	19.82	19.85	19.82	0
		52	0	19.84	19.87	19.79	0

NR Band 5							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		165800	167300	168800	
		Frequency (MHz)		829	836.5	844	
10M	CP_QPSK	1	0	19.88	19.91	19.81	0
		1	26	19.87	19.90	19.85	0
		1	51	19.64	19.67	19.84	0
		26	0	19.82	19.85	19.61	0
		26	13	19.74	19.77	19.79	0
		26	26	19.69	19.72	19.71	0
		52	0	19.76	19.79	19.66	0
	CP_16QAM	1	0	19.88	19.91	19.73	0
		1	26	19.83	19.86	19.85	0
		1	51	19.87	19.90	19.80	0
		26	0	19.86	19.89	19.84	0
		26	13	19.82	19.85	19.83	0
		26	26	19.74	19.77	19.79	0
		52	0	19.82	19.85	19.71	0
	CP_64QAM	1	0	19.64	19.67	19.79	0
		1	26	19.51	19.54	19.61	0
		1	51	19.30	19.33	19.48	0
		26	0	19.68	19.71	19.27	0
		26	13	19.60	19.63	19.65	0
		26	26	19.61	19.64	19.57	0
		52	0	19.65	19.68	19.58	0

NR Band 5							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		166300	167300	168300	
		Frequency (MHz)		831.5	836.5	841.5	
15M	DFT-S_QPSK	1	0	19.91	19.94	19.88	0
		1	39	19.84	19.87	19.88	0
		1	78	19.68	19.71	19.81	0
		39	0	19.89	19.92	19.65	0
		39	19	19.75	19.78	19.86	0
		39	40	19.77	19.80	19.72	0
		79	0	19.86	19.89	19.74	0
	DFT-S_16QAM	1	0	19.90	19.93	19.83	0
		1	39	19.84	19.87	19.87	0
		1	78	19.67	19.70	19.81	0
		39	0	19.89	19.92	19.64	0
		39	19	19.86	19.89	19.86	0
		39	40	19.81	19.84	19.83	0
		79	0	19.86	19.89	19.78	0
	DFT-S_64QAM	1	0	19.88	19.91	19.83	0
		1	39	19.70	19.73	19.85	0
		1	78	19.58	19.61	19.67	0
		39	0	19.82	19.85	19.55	0
		39	19	19.87	19.90	19.79	0
		39	40	19.84	19.87	19.84	0
		79	0	19.86	19.89	19.81	0

NR Band 5							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		166300	167300	168300	
		Frequency (MHz)		831.5	836.5	841.5	
15M	CP_QPSK	1	0	19.90	19.93	19.83	0
		1	39	19.89	19.92	19.87	0
		1	78	19.66	19.69	19.86	0
		39	0	19.84	19.87	19.63	0
		39	19	19.76	19.79	19.81	0
		39	40	19.71	19.74	19.73	0
		79	0	19.78	19.81	19.68	0
	CP_16QAM	1	0	19.90	19.93	19.75	0
		1	39	19.85	19.88	19.87	0
		1	78	19.89	19.92	19.82	0
		39	0	19.88	19.91	19.86	0
		39	19	19.84	19.87	19.85	0
		39	40	19.76	19.79	19.81	0
		79	0	19.84	19.87	19.73	0
	CP_64QAM	1	0	19.66	19.69	19.81	0
		1	39	19.53	19.56	19.63	0
		1	78	19.32	19.35	19.50	0
		39	0	19.70	19.73	19.29	0
		39	19	19.62	19.65	19.67	0
		39	40	19.63	19.66	19.59	0
		79	0	19.67	19.70	19.60	0

NR Band 5							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		166800	167300	167800	
		Frequency (MHz)		834	836.5	839	
20M	DFT-S_QPSK	1	0	19.95	19.98	19.92	0
		1	53	19.88	19.91	19.92	0
		1	105	19.72	19.75	19.85	0
		50	0	19.93	19.96	19.69	0
		50	25	19.79	19.82	19.90	0
		50	50	19.81	19.84	19.76	0
		100	0	19.90	19.93	19.78	0
	DFT-S_16QAM	1	0	19.94	19.97	19.87	0
		1	53	19.88	19.91	19.91	0
		1	105	19.71	19.74	19.85	0
		50	0	19.93	19.96	19.68	0
		50	25	19.90	19.93	19.90	0
		50	50	19.85	19.88	19.87	0
		100	0	19.90	19.93	19.82	0
	DFT-S_64QAM	1	0	19.92	19.95	19.87	0
		1	53	19.74	19.77	19.89	0
		1	105	19.62	19.65	19.71	0
		50	0	19.86	19.89	19.59	0
		50	25	19.91	19.94	19.83	0
		50	50	19.88	19.91	19.88	0
		100	0	19.90	19.93	19.85	0

NR Band 5							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		166800	167300	167800	
		Frequency (MHz)		834	836.5	839	
20M	CP_QPSK	1	0	19.94	19.97	19.87	0
		1	53	19.93	19.96	19.91	0
		1	105	19.70	19.73	19.90	0
		50	0	19.88	19.91	19.67	0
		53	26	19.80	19.83	19.85	0
		50	50	19.75	19.78	19.77	0
		106	0	19.82	19.85	19.72	0
	CP_16QAM	1	0	19.94	19.97	19.79	0
		1	53	19.89	19.92	19.91	0
		1	105	19.93	19.96	19.86	0
		50	0	19.92	19.95	19.90	0
		53	26	19.88	19.91	19.89	0
		50	50	19.80	19.83	19.85	0
		106	0	19.88	19.91	19.77	0
	CP_64QAM	1	0	19.70	19.73	19.85	0
		1	53	19.57	19.60	19.67	0
		1	105	19.36	19.39	19.54	0
		50	0	19.74	19.77	19.33	0
		53	26	19.66	19.69	19.71	0
		50	50	19.67	19.70	19.63	0
		106	0	19.71	19.74	19.64	0

ERP Power

1RB

Modulation Type: QPSK

NR Band 5, Channel Bandwidth: 5MHz

Mode		TX channel 165300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-10.3	20.8	0.0	20.8	38.5	-17.7
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-15.2	16.6	0.0	16.6	38.5	-21.9

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-9.7	21.5	0.2	21.7	38.5	-16.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-14.6	17.2	0.2	17.4	38.5	-21.1

Mode		TX channel 169300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-10.9	19.6	0.4	20.0	38.5	-18.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-15.5	15.7	0.4	16.1	38.5	-22.4

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

NR Band 5, Channel Bandwidth: 10MHz

Mode		TX channel 165800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-10.5	20.5	0.1	20.6	38.5	-17.9
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-15.2	16.5	0.1	16.6	38.5	-21.9

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-10.2	20.9	0.2	21.1	38.5	-17.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-14.8	17.0	0.2	17.2	38.5	-21.3

Mode		TX channel 168800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-10.9	19.7	0.4	20.1	38.5	-18.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-15.7	15.8	0.4	16.2	38.5	-22.3

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

NR Band 5, Channel Bandwidth: 15MHz

Mode		TX channel 166300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-10.4	20.6	0.1	20.7	38.5	-17.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-15.4	16.3	0.1	16.4	38.5	-22.1

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-10.0	21.2	0.2	21.4	38.5	-17.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-15.0	16.8	0.2	17.0	38.5	-21.5

Mode		TX channel 168300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-11.4	19.4	0.3	19.7	38.5	-18.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-15.7	15.9	0.3	16.2	38.5	-22.3

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

NR Band 5, Channel Bandwidth: 20MHz

Mode		TX channel 166800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-10.4	20.6	0.2	20.8	38.5	-17.7
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-15.2	16.4	0.2	16.6	38.5	-21.9

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-9.9	21.3	0.2	21.5	38.5	-17.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-14.8	17.0	0.2	17.2	38.5	-21.3

Mode		TX channel 167800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-11.0	19.5	0.5	20.0	38.5	-18.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-15.5	15.9	0.5	16.4	38.5	-22.1

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

Modulation Type: 16QAM

NR Band 5, Channel Bandwidth: 5MHz

Mode		TX channel 165300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-10.8	20.3	0.0	20.3	38.5	-18.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-15.7	16.2	0.0	16.2	38.5	-22.3

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-10.2	21.0	0.2	21.2	38.5	-17.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-15.1	16.7	0.2	16.9	38.5	-21.6

Mode		TX channel 169300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-11.4	19.1	0.4	19.5	38.5	-19.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-16.0	15.2	0.4	15.6	38.5	-22.9

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

NR Band 5, Channel Bandwidth: 10MHz

Mode		TX channel 165800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-10.9	20.1	0.1	20.2	38.5	-18.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-15.8	16.0	0.1	16.1	38.5	-22.4

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-10.8	20.4	0.2	20.6	38.5	-17.9
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-15.3	16.5	0.2	16.7	38.5	-21.8

Mode		TX channel 168800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-11.5	19.1	0.4	19.5	38.5	-19.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-16.1	15.4	0.4	15.8	38.5	-22.7

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

NR Band 5, Channel Bandwidth: 15MHz

Mode		TX channel 166300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-11.1	19.9	0.1	20.0	38.5	-18.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-15.8	15.8	0.1	15.9	38.5	-22.6

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-10.6	20.6	0.2	20.8	38.5	-17.7
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-15.4	16.4	0.2	16.6	38.5	-21.9

Mode		TX channel 168300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-11.9	18.9	0.3	19.2	38.5	-19.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-16.4	15.2	0.3	15.5	38.5	-23.0

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

NR Band 5, Channel Bandwidth: 20MHz

Mode		TX channel 166800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-11.1	20.0	0.2	20.2	38.5	-18.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-15.9	15.8	0.2	16.0	38.5	-22.5

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-10.4	20.8	0.2	21.0	38.5	-17.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-15.3	16.5	0.2	16.7	38.5	-21.8

Mode		TX channel 167800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-11.9	19.1	0.3	19.4	38.5	-19.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-16.3	15.4	0.3	15.7	38.5	-22.8

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

Modulation Type: 64QAM

NR Band 5, Channel Bandwidth: 5MHz

Mode		TX channel 165300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-11.8	19.3	0.0	19.3	38.5	-19.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-16.7	15.2	0.0	15.2	38.5	-23.3

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-11.2	20.0	0.2	20.2	38.5	-18.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-16.1	15.7	0.2	15.9	38.5	-22.6

Mode		TX channel 169300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-12.4	18.1	0.4	18.5	38.5	-20.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-17.0	14.2	0.4	14.6	38.5	-23.9

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

NR Band 5, Channel Bandwidth: 10MHz

Mode		TX channel 165800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-11.9	19.1	0.1	19.2	38.5	-19.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-16.8	15.0	0.1	15.1	38.5	-23.4

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-11.4	19.8	0.2	20.0	38.5	-18.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-16.3	15.5	0.2	15.7	38.5	-22.8

Mode		TX channel 168800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-12.6	18.0	0.4	18.4	38.5	-20.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-17.2	14.2	0.4	14.6	38.5	-23.9

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

NR Band 5, Channel Bandwidth: 15MHz

Mode		TX channel 166300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-12.1	18.9	0.1	19.0	38.5	-19.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-16.8	14.9	0.1	15.0	38.5	-23.5

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-11.7	19.5	0.2	19.7	38.5	-18.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-16.5	15.3	0.2	15.5	38.5	-23.0

Mode		TX channel 168300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-12.9	17.9	0.3	18.2	38.5	-20.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-17.2	14.4	0.3	14.7	38.5	-23.8

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

NR Band 5, Channel Bandwidth: 20MHz

Mode		TX channel 166800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-12.1	19.0	0.2	19.2	38.5	-19.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-16.8	14.9	0.2	15.1	38.5	-23.4

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-11.4	19.8	0.2	20.0	38.5	-18.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-16.3	15.5	0.2	15.7	38.5	-22.8

Mode		TX channel 167800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-12.9	18.1	0.3	18.4	38.5	-20.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-17.2	14.5	0.3	14.8	38.5	-23.7

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

Full RB

Modulation Type: QPSK

NR Band 5, Channel Bandwidth: 5MHz

Mode		TX channel 165300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-11.3	19.8	0.0	19.8	38.5	-18.7
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-16.2	15.7	0.0	15.7	38.5	-22.8

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-10.7	20.5	0.2	20.7	38.5	-17.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-15.6	16.2	0.2	16.4	38.5	-22.1

Mode		TX channel 169300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-11.9	18.6	0.4	19.0	38.5	-19.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-16.5	14.7	0.4	15.1	38.5	-23.4

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

NR Band 5, Channel Bandwidth: 10MHz

Mode		TX channel 165800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-11.5	19.5	0.1	19.6	38.5	-18.9
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-16.2	15.5	0.1	15.6	38.5	-22.9

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-10.9	20.3	0.2	20.5	38.5	-18.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-15.8	16.0	0.2	16.2	38.5	-22.3

Mode		TX channel 168800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-11.9	18.7	0.4	19.1	38.5	-19.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-16.7	14.8	0.4	15.2	38.5	-23.3

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

NR Band 5, Channel Bandwidth: 15MHz

Mode		TX channel 166300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-11.6	19.4	0.1	19.5	38.5	-19.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-16.4	15.3	0.1	15.4	38.5	-23.1

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-11.0	20.2	0.2	20.4	38.5	-18.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-15.9	15.9	0.2	16.1	38.5	-22.4

Mode		TX channel 168300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-11.9	18.9	0.3	19.2	38.5	-19.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-16.8	14.8	0.3	15.1	38.5	-23.4

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

NR Band 5, Channel Bandwidth: 20MHz

Mode		TX channel 166800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-11.4	19.6	0.2	19.8	38.5	-18.7
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-16.4	15.3	0.2	15.5	38.5	-23.0

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-10.9	20.3	0.2	20.5	38.5	-18.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-15.7	16.1	0.2	16.3	38.5	-22.2

Mode		TX channel 167800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-11.9	19.0	0.3	19.3	38.5	-19.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-16.7	15.0	0.3	15.3	38.5	-23.2

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

Modulation Type: 16QAM

NR Band 5, Channel Bandwidth: 5MHz

Mode		TX channel 165300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-11.8	19.3	0.0	19.3	38.5	-19.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-16.7	15.2	0.0	15.2	38.5	-23.3

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-11.2	20.0	0.2	20.2	38.5	-18.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-16.1	15.7	0.2	15.9	38.5	-22.6

Mode		TX channel 169300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-12.4	18.1	0.4	18.5	38.5	-20.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-17.0	14.2	0.4	14.6	38.5	-23.9

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

NR Band 5, Channel Bandwidth: 10MHz

Mode		TX channel 165800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-11.9	19.1	0.1	19.2	38.5	-19.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-16.9	14.9	0.1	15.0	38.5	-23.5

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-11.4	19.8	0.2	20.0	38.5	-18.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-16.4	15.4	0.2	15.6	38.5	-22.9

Mode		TX channel 168800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-12.6	18.0	0.4	18.4	38.5	-20.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-17.2	14.3	0.4	14.7	38.5	-23.8

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

NR Band 5, Channel Bandwidth: 15MHz

Mode		TX channel 166300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-12.1	18.9	0.1	19.0	38.5	-19.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-16.9	14.8	0.1	14.9	38.5	-23.6

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-11.5	19.7	0.2	19.9	38.5	-18.6
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-16.4	15.4	0.2	15.6	38.5	-22.9

Mode		TX channel 168300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-12.7	18.1	0.3	18.4	38.5	-20.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-17.5	14.1	0.3	14.4	38.5	-24.1

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

NR Band 5, Channel Bandwidth: 20MHz

Mode		TX channel 166800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-12.1	19.0	0.2	19.2	38.5	-19.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-16.8	14.9	0.2	15.1	38.5	-23.4

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-11.2	19.9	0.2	20.1	38.5	-18.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-16.3	15.5	0.2	15.7	38.5	-22.8

Mode		TX channel 167800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-12.8	18.2	0.3	18.5	38.5	-20.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-17.5	14.2	0.3	14.5	38.5	-24.0

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

Modulation Type: 64QAM

NR Band 5, Channel Bandwidth: 5MHz

Mode		TX channel 165300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-12.8	18.3	0.0	18.3	38.5	-20.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	826.50	-17.7	14.2	0.0	14.2	38.5	-24.3

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-12.2	19.0	0.2	19.2	38.5	-19.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-17.1	14.7	0.2	14.9	38.5	-23.6

Mode		TX channel 169300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-13.4	17.1	0.4	17.5	38.5	-21.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.50	-18.0	13.2	0.4	13.6	38.5	-24.9

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

NR Band 5, Channel Bandwidth: 10MHz

Mode		TX channel 165800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-12.9	18.1	0.1	18.2	38.5	-20.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	829.00	-17.8	14.0	0.1	14.1	38.5	-24.4

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-12.4	18.8	0.2	19.0	38.5	-19.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-17.3	14.5	0.2	14.7	38.5	-23.8

Mode		TX channel 168800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-13.0	17.6	0.4	18.0	38.5	-20.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	844.00	-18.2	13.3	0.4	13.7	38.5	-24.8

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

NR Band 5, Channel Bandwidth: 15MHz

Mode		TX channel 166300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-13.1	17.9	0.1	18.0	38.5	-20.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	831.50	-17.9	13.8	0.1	13.9	38.5	-24.6

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-12.6	18.6	0.2	18.8	38.5	-19.7
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-17.6	14.2	0.2	14.4	38.5	-24.1

Mode		TX channel 168300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-13.9	16.9	0.3	17.2	38.5	-21.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	841.50	-18.2	13.3	0.3	13.6	38.5	-24.9

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

NR Band 5, Channel Bandwidth: 20MHz

Mode		TX channel 166800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-13.1	18.0	0.2	18.2	38.5	-20.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	834.00	-17.9	13.8	0.2	14.0	38.5	-24.5

Mode		TX channel 167300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-12.5	18.7	0.2	18.9	38.5	-19.6
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	836.50	-17.4	14.4	0.2	14.6	38.5	-23.9

Mode		TX channel 167800					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-13.9	17.1	0.3	17.4	38.5	-21.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	839.00	-18.3	13.4	0.3	13.7	38.5	-24.8

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

4.2 Modulation Characteristics Measurement

4.2.1 Limits of Modulation Characteristics

N/A

4.2.2 Test Procedure

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

4.2.3 Test Setup



4.2.4 Test Results



4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

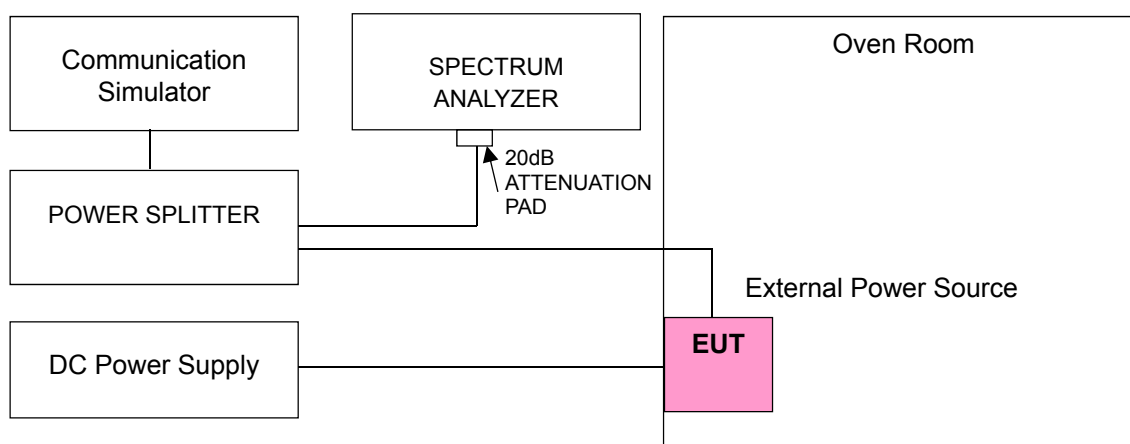
1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.3.2 Test Procedure

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

4.3.3 Test Setup



4.3.4 Test Results

Frequency Error vs. Voltage

Voltage (Volts)	NR Band 5			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.4	826.500004	0.004	846.500002	0.002
3.85	826.500003	0.003	846.500002	0.003
4.4	826.500003	0.003	846.500001	0.001

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 5			
	Channel Bandwidth: 5 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	826.500002	0.002	846.500004	0.004
-20	826.500001	0.001	846.500003	0.003
-10	826.500004	0.004	846.500003	0.003
0	826.500001	0.001	846.500002	0.003
10	826.500003	0.003	846.500001	0.002
20	826.499996	-0.005	846.499996	-0.004
30	826.499996	-0.005	846.499999	-0.002
40	826.499997	-0.004	846.499996	-0.004
50	826.499996	-0.004	846.499998	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	NR Band 5			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.4	829.000003	0.003	844.000003	0.003
3.85	829.000003	0.003	844.000002	0.002
4.4	829.000001	0.001	844.000001	0.001

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 5			
	Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	829.000002	0.002	844.000004	0.004
-20	829.000003	0.003	844.000003	0.003
-10	829.000004	0.004	844.000002	0.002
0	829.000002	0.002	844.000004	0.005
10	829.000004	0.005	844.000003	0.003
20	828.999998	-0.002	843.999998	-0.002
30	828.999999	-0.002	843.999997	-0.003
40	828.999996	-0.005	843.999998	-0.002
50	828.999997	-0.004	843.999997	-0.004

Frequency Error vs. Voltage

Voltage (Volts)	NR Band 5			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.4	831.500003	0.003	841.500003	0.004
3.85	831.500002	0.002	841.500001	0.001
4.4	831.500003	0.003	841.500002	0.002

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.4Vdc.

Frequency Error vs. Temperature

Temp. (°C)	NR Band 5			
	Channel Bandwidth: 15 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	831.500001	0.001	841.500002	0.002
-20	831.500002	0.002	841.500004	0.004
-10	831.500003	0.004	841.500003	0.004
0	831.500002	0.002	841.500002	0.003
10	831.500003	0.003	841.500002	0.002
20	831.499998	-0.003	841.499998	-0.003
30	831.499997	-0.004	841.499997	-0.003
40	831.499999	-0.001	841.499998	-0.002
50	831.499999	-0.001	841.499998	-0.002

Frequency Error vs. Voltage

Voltage (Volts)	NR Band 5			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
3.4	834.000003	0.004	839.000002	0.002
3.85	834.000003	0.004	839.000003	0.003
4.4	834.000001	0.001	839.000003	0.003

Note: The applicant defined the normal working voltage is from 3.4Vdc to 4.4Vdc.

Frequency Error vs. Temperature

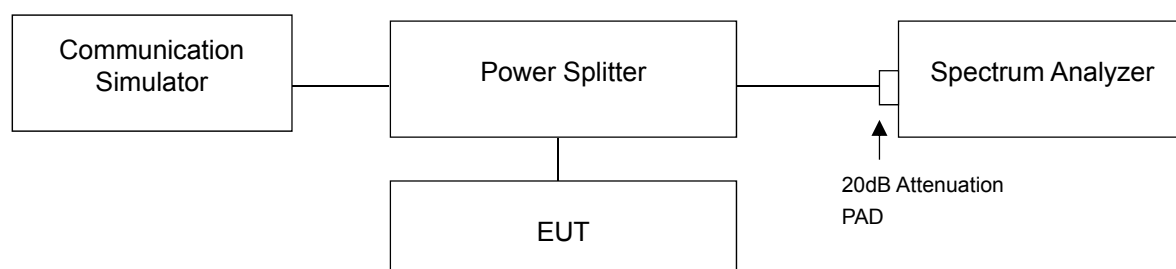
Temp. (°C)	NR Band 5			
	Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-30	834.000002	0.002	839.000003	0.003
-20	834.000001	0.001	839.000002	0.002
-10	834.000003	0.004	839.000003	0.004
0	834.000003	0.004	839.000002	0.003
10	834.000002	0.003	839.000002	0.002
20	833.999997	-0.003	838.999998	-0.002
30	833.999997	-0.004	838.999998	-0.002
40	833.999998	-0.003	838.999999	-0.001
50	833.999996	-0.005	838.999996	-0.005

4.4 Occupied Bandwidth Measurement

4.4.1 Test Procedure

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

4.4.2 Test Setup



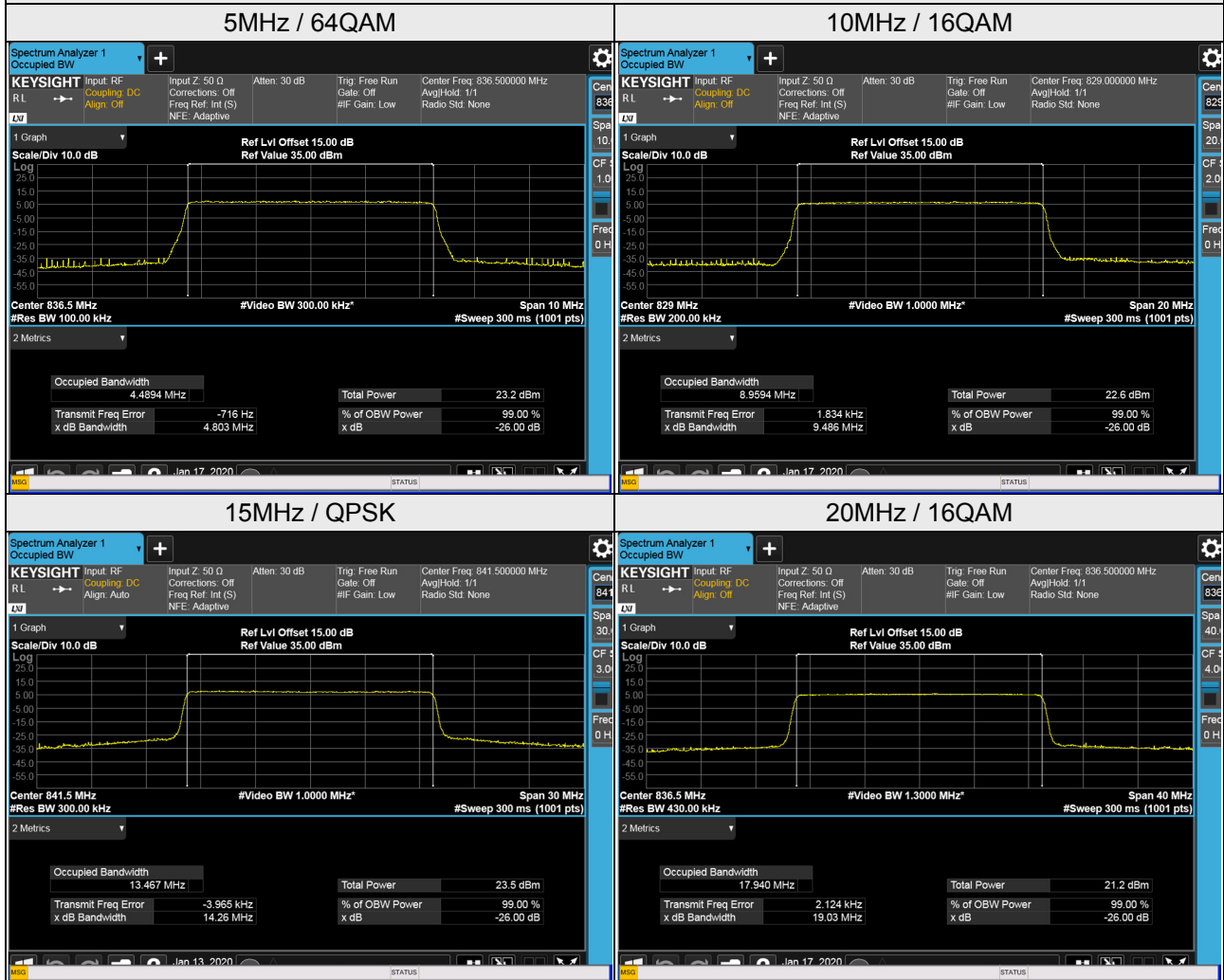
4.4.3 Test Result

Occupied Bandwidth

NR Band 5

NR Band 5, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
165300	826.5	4.4876	4.4888	4.4890
167300	836.5	4.4880	4.4867	4.4894
169300	846.5	4.4875	4.4877	4.4885
NR Band 5, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
165800	829	8.9567	8.9594	8.9512
167300	836.5	8.9540	8.9583	8.9532
168800	844	8.9496	8.9533	8.9461
NR Band 5, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
166800	831.5	13.460	13.444	13.438
167300	836.5	13.465	13.459	13.453
167800	841.5	13.467	13.460	13.453
NR Band 5, Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)		
		QPSK	16QAM	64QAM
166800	834	17.914	17.933	17.932
167300	836.5	17.920	17.940	17.937
167800	839	17.914	17.926	17.925

Spectrum Plot of Worst Value

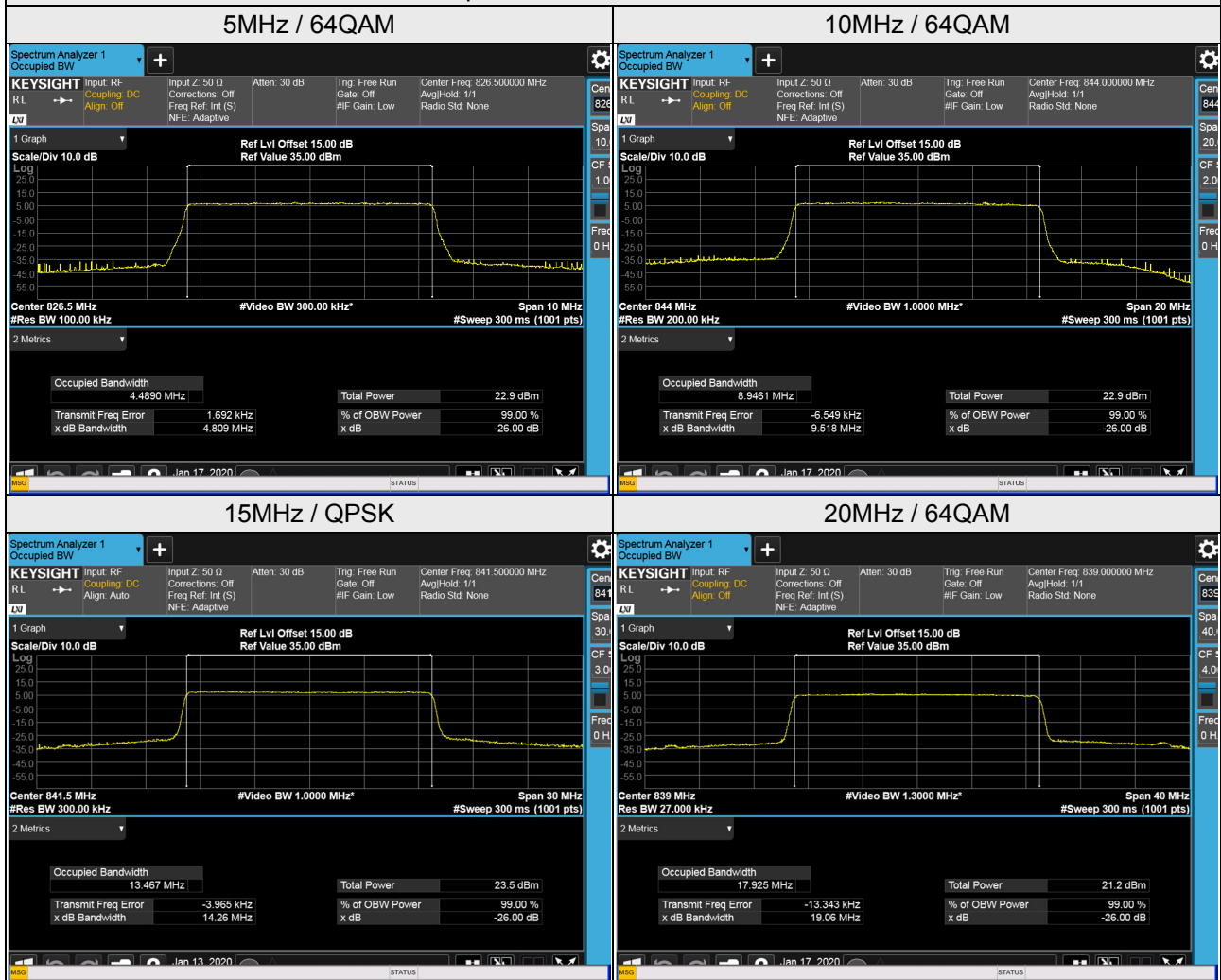


26dB Bandwidth

NR Band 5

NR Band 5, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
165300	826.5	4.806	4.798	4.809
167300	836.5	4.775	4.807	4.803
169300	846.5	4.807	4.812	4.808
NR Band 5, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
165800	829	9.510	9.486	9.499
167300	836.5	9.490	9.512	9.504
168800	844	9.477	9.496	9.518
NR Band 5, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
166800	831.5	14.26	14.26	14.22
167300	836.5	14.25	14.25	14.25
167800	841.5	14.26	14.25	14.26
NR Band 5, Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		
		QPSK	16QAM	64QAM
166800	834	19.03	19.04	19.04
167300	836.5	19.01	19.03	19.02
167800	839	19.01	19.02	19.06

Spectrum Plot of Worst Value

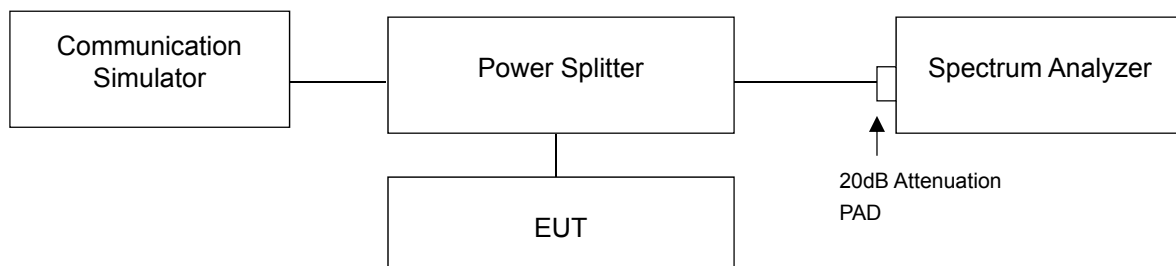


4.5 Band Edge Measurement

4.5.1 Limits of Band Edge Measurement

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.5.2 Test Setup

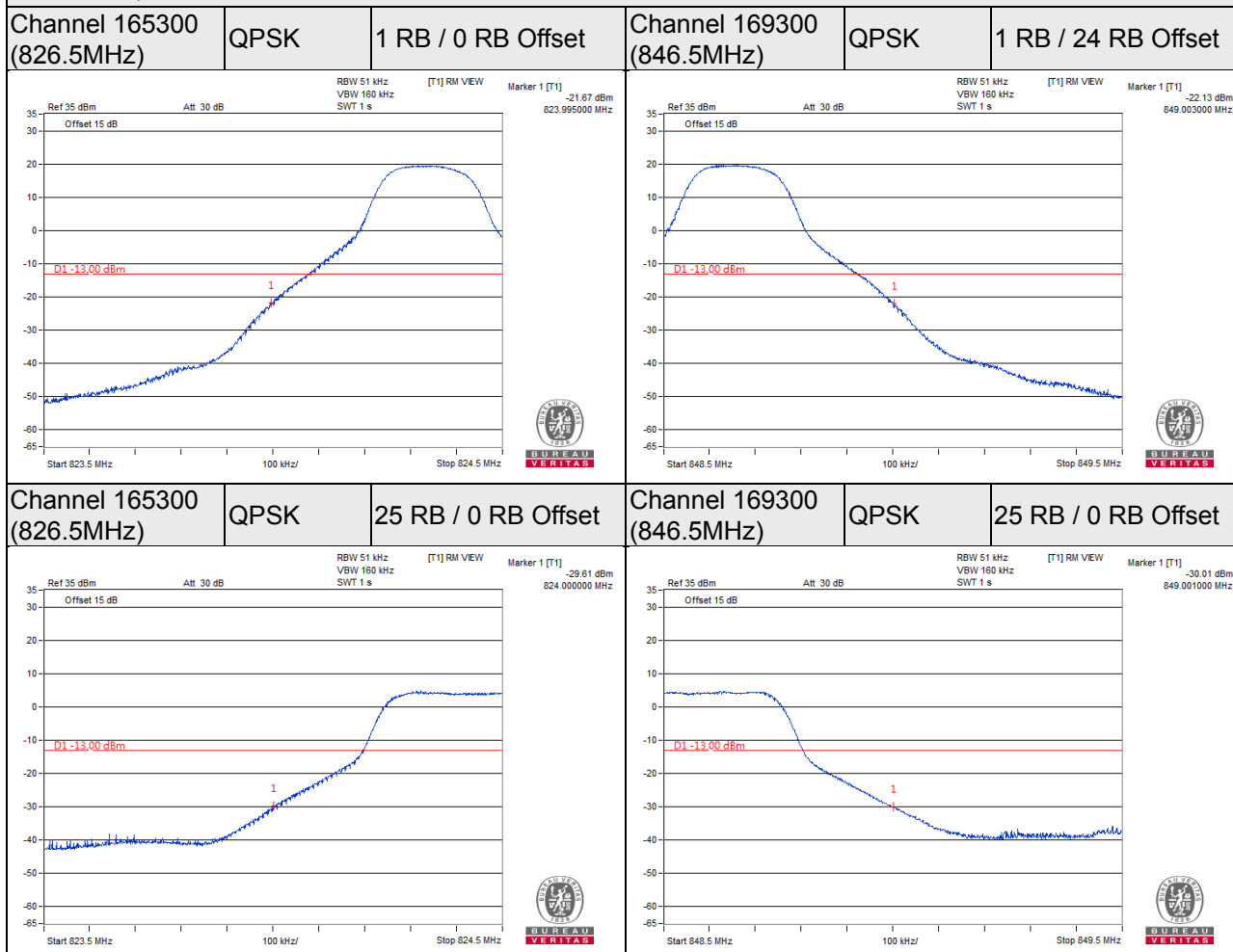


4.5.3 Test Procedures

- All measurements were done at low and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 51kHz and VB of the spectrum is 160kHz (NR Channel Bandwidth 5MHz).
- The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (NR Channel Bandwidth 10MHz).
- The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 150kHz and VB of the spectrum is 470kHz (NR Channel Bandwidth 15MHz).
- The center frequency of spectrum is the band edge frequency and span is 1MHz. RB of the spectrum is 200kHz and VB of the spectrum is 1MHz (NR Channel Bandwidth 20MHz).
- Record the max trace plot into the test report.

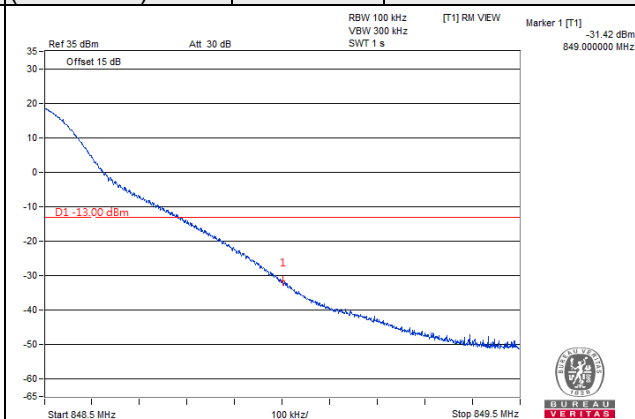
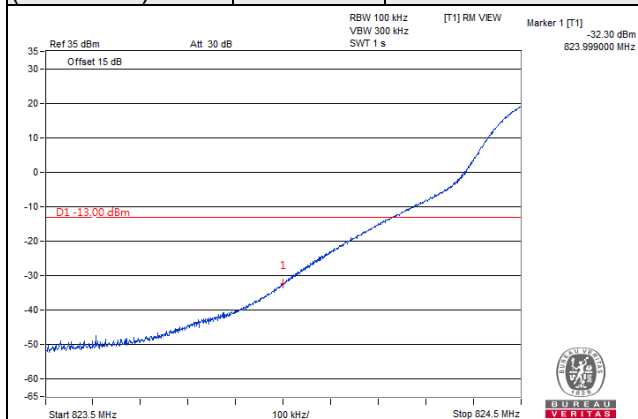
4.5.4 Test Results

NR Band 5, Channel Bandwidth 5MHz

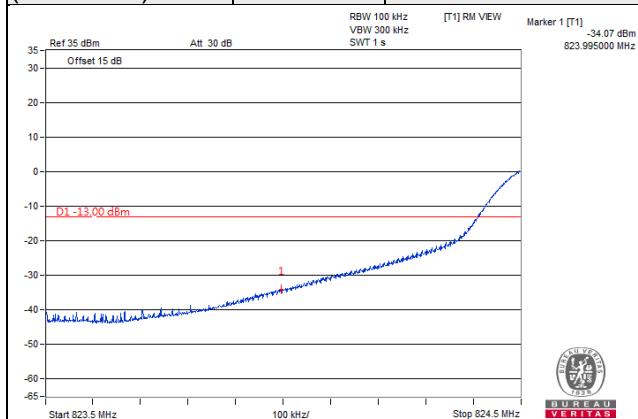


NR Band 5, Channel Bandwidth 10MHz

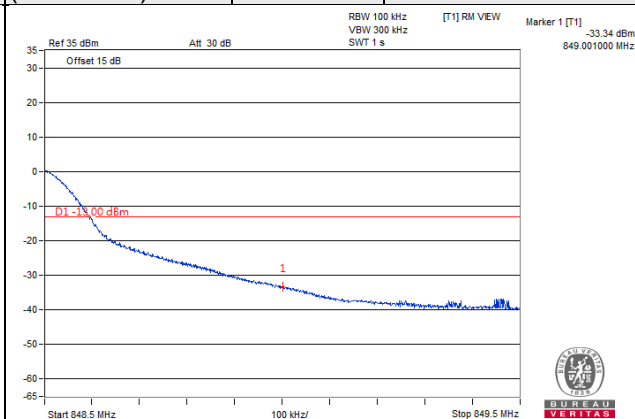
Channel 165800 (829.0MHz)	QPSK	1 RB / 0 RB Offset	Channel 168800 (844.0MHz)	QPSK	1 RB / 51 RB Offset
------------------------------	------	--------------------	------------------------------	------	---------------------



Channel 165800 (829.0MHz)	QPSK	52 RB / 0 RB Offset
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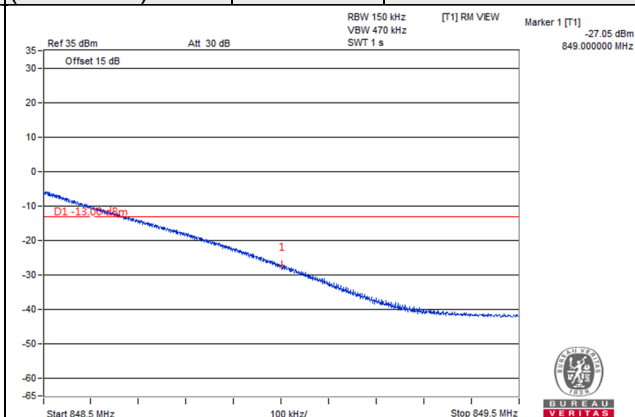
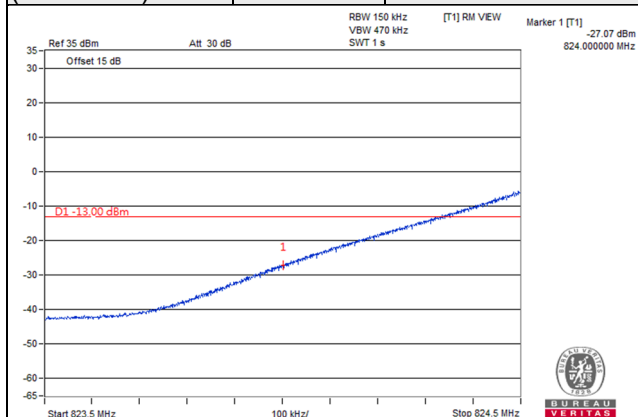


Channel 168800 (844.0MHz)	QPSK	52 RB / 0 RB Offset
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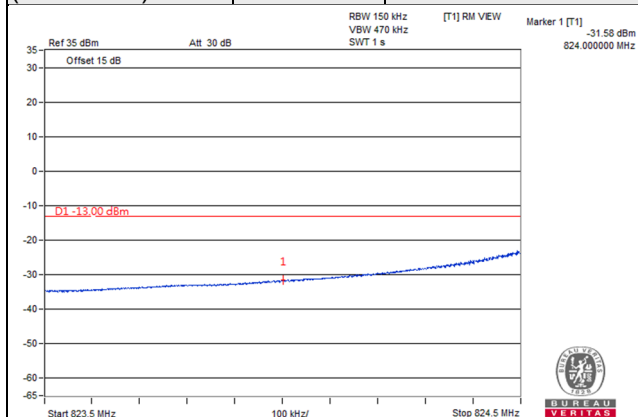


NR Band 5, Channel Bandwidth 15MHz

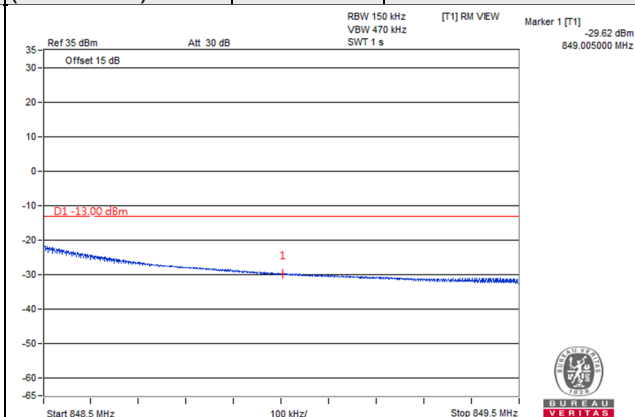
Channel 166300 (831.5MHz)	QPSK	1 RB / 0 RB Offset	Channel 168300 (841.5MHz)	QPSK	1 RB / 78 RB Offset
------------------------------	------	--------------------	------------------------------	------	---------------------



Channel 166300 (831.5MHz)	QPSK	79 RB / 0 RB Offset
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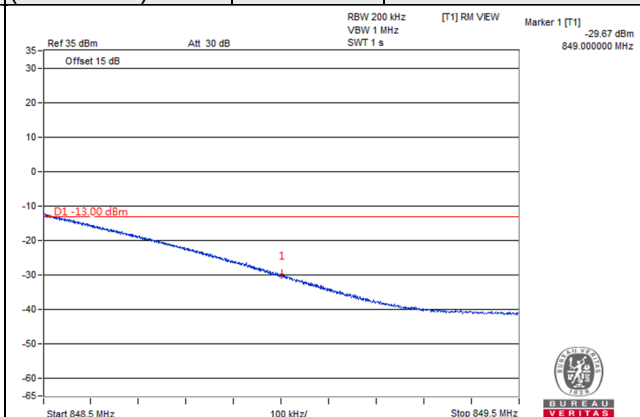
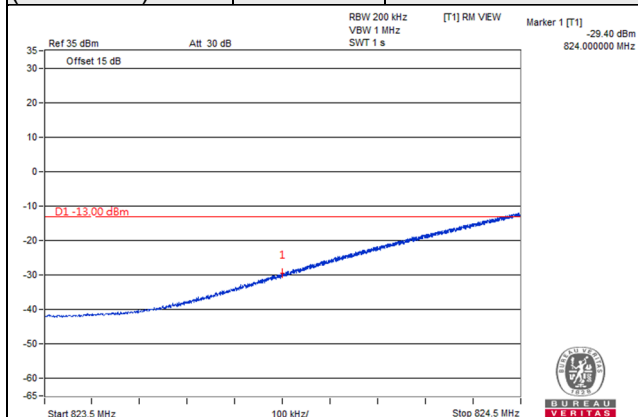


Channel 168300 (841.5MHz)	QPSK	79 RB / 0 RB Offset
------------------------------	------	---------------------

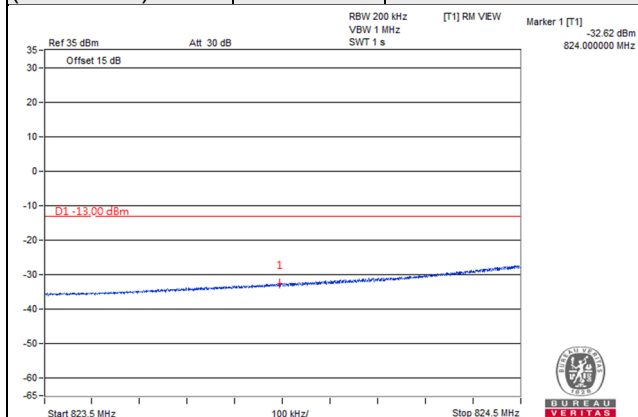


NR Band 5, Channel Bandwidth 20MHz

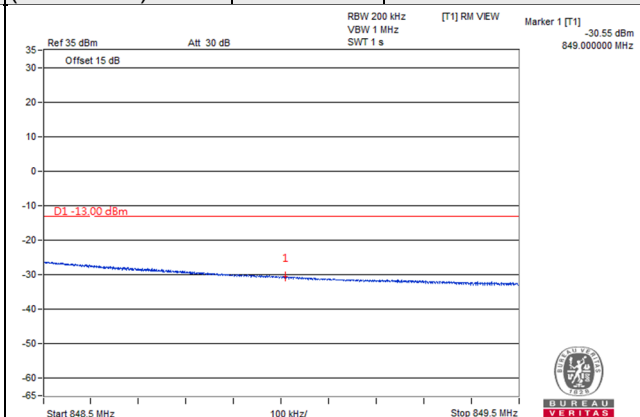
Channel 166800 (834.0MHz)	QPSK	1 RB / 0 RB Offset	Channel 167800 (839.0MHz)	QPSK	1 RB / 105 RB Offset
------------------------------	------	--------------------	------------------------------	------	----------------------



Channel 166800 (834.0MHz)	QPSK	106 RB / 0 RB Offset
------------------------------	------	----------------------



Channel 167800 (839.0MHz)	QPSK	106 RB / 0 RB Offset
------------------------------	------	----------------------

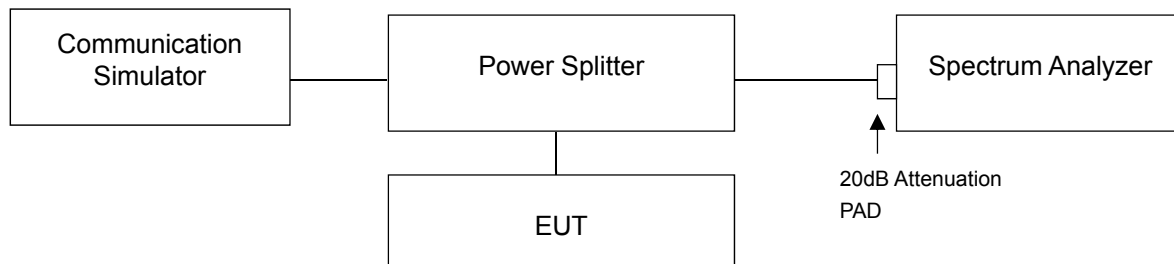


4.6 Peak to Average Ratio

4.6.1 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

4.6.2 Test Setup



4.6.3 Test Procedures

- Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
- Set the number of counts to a value that stabilizes the measured CCDF curve;
- Record the maximum PAPR level associated with a probability of 0.1%.

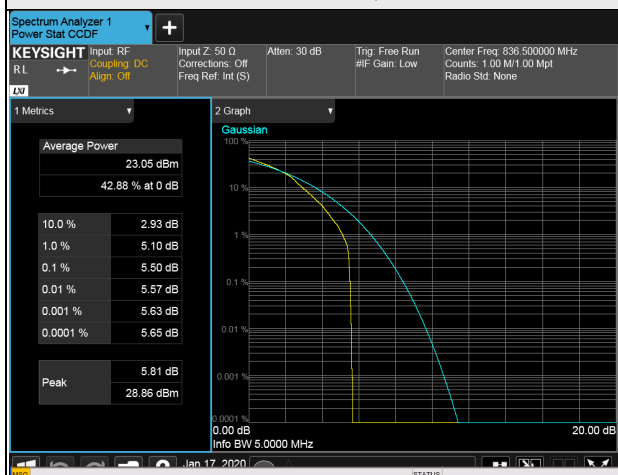
4.6.4 Test Results

NR Band 5

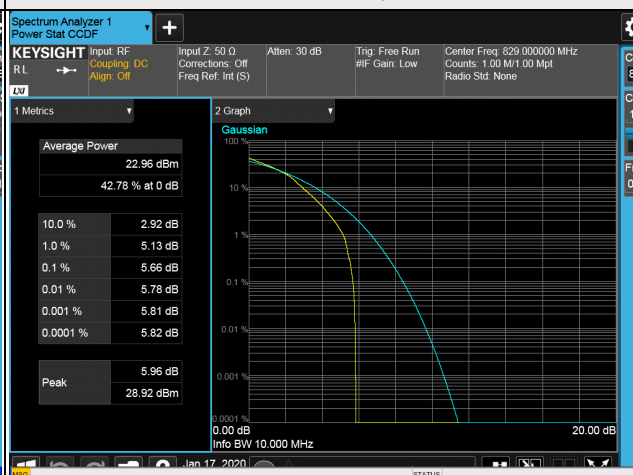
NR Band 5, Channel Bandwidth 5MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
165300	826.5	3.75	5.33	5.48
167300	836.5	3.66	5.38	5.50
169300	846.5	3.64	4.92	4.97
NR Band 5, Channel Bandwidth 10MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
165800	829	3.66	5.48	5.66
167300	836.5	3.74	5.35	5.61
168800	844	3.73	5.40	5.51
NR Band 5, Channel Bandwidth 15MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
166300	831.5	3.64	5.35	5.28
167300	836.5	3.59	5.28	5.41
168300	841.5	3.67	5.24	5.31
NR Band 5, Channel Bandwidth 20MHz				
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		
		QPSK	16QAM	64QAM
166800	834	3.81	5.71	5.70
167300	836.5	3.83	5.73	5.63
167800	839	3.75	5.44	5.55

Spectrum Plot of Worst Value

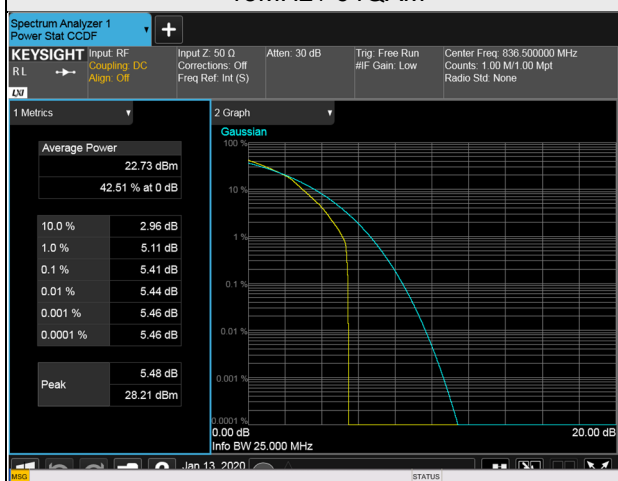
5MHz / 64QAM



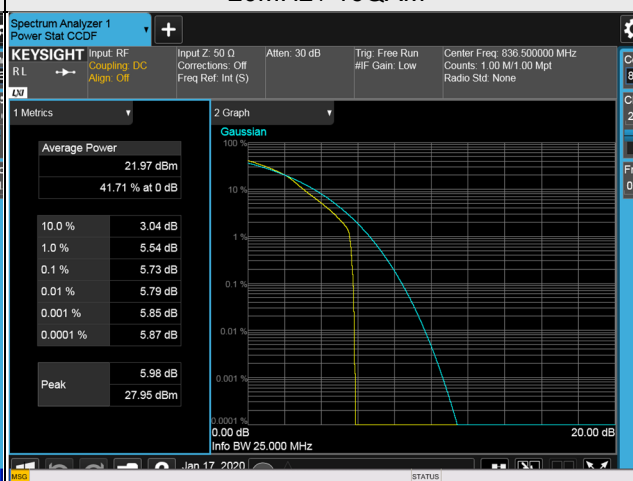
10MHz / 64QAM



15MHz / 64QAM



20MHz / 16QAM

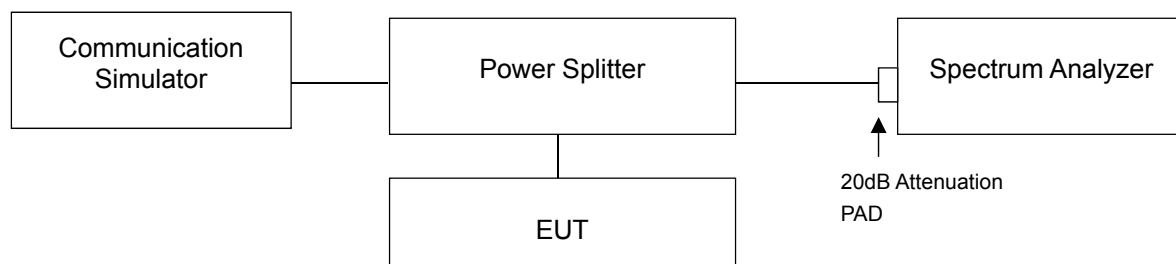


4.7 Conducted Spurious Emissions

4.7.1 Limits of Conducted Spurious Emissions Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm .

4.7.2 Test Setup



4.7.3 Test Procedure

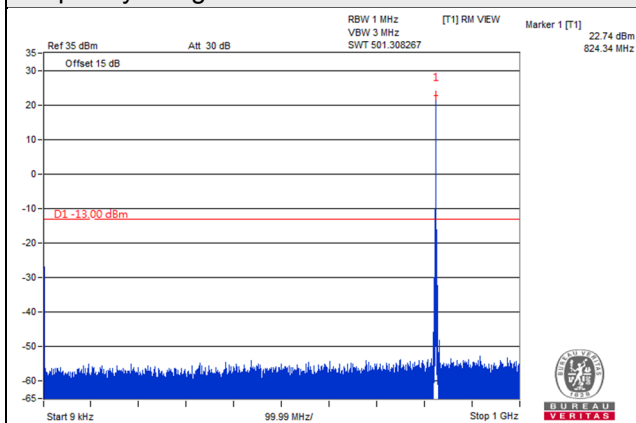
- The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- Measuring frequency range is from 9kHz to 9GHz or 10GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

4.7.4 Test Results

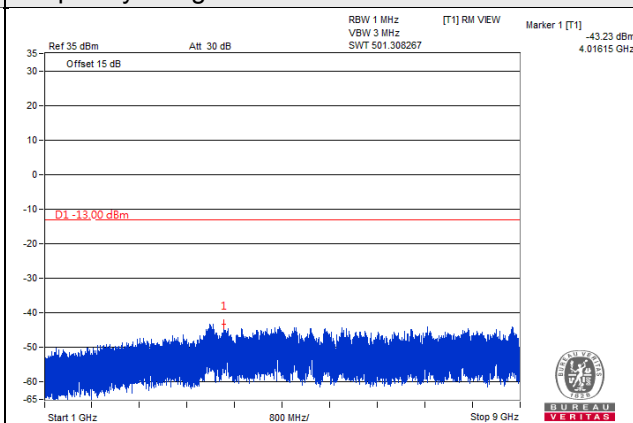
NR Band 5, Channel Bandwidth 5MHz

Channel 165300(826.5MHz)

Frequency Range : 9kHz~1GHz

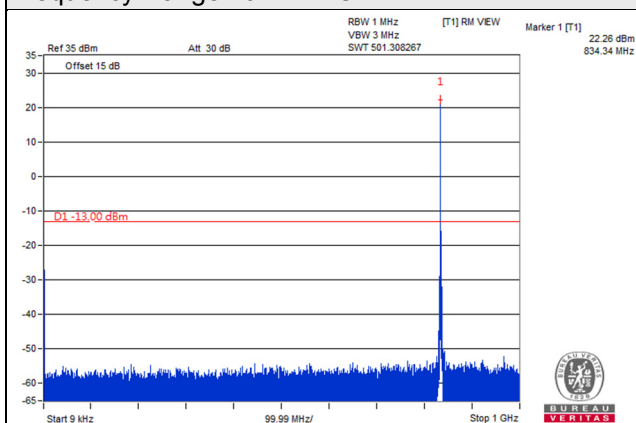


Frequency Range : 1GHz~9GHz

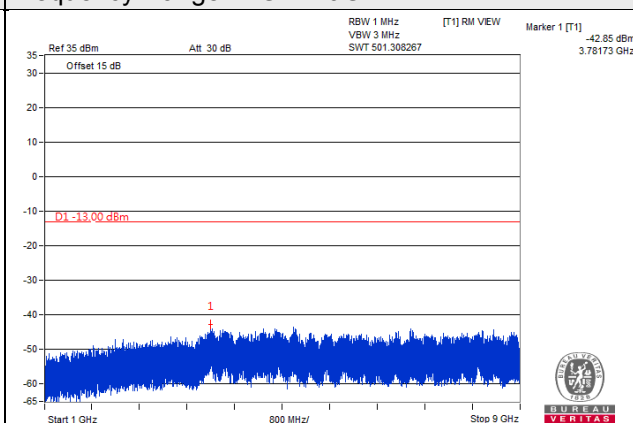


Channel 167300 (836.5MHz)

Frequency Range : 9kHz~1GHz

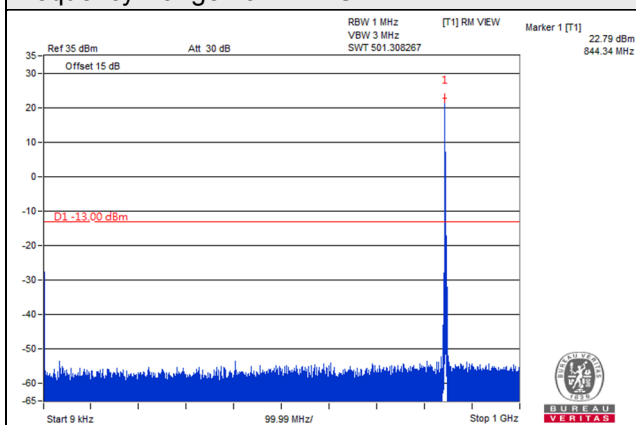


Frequency Range : 1GHz~9GHz

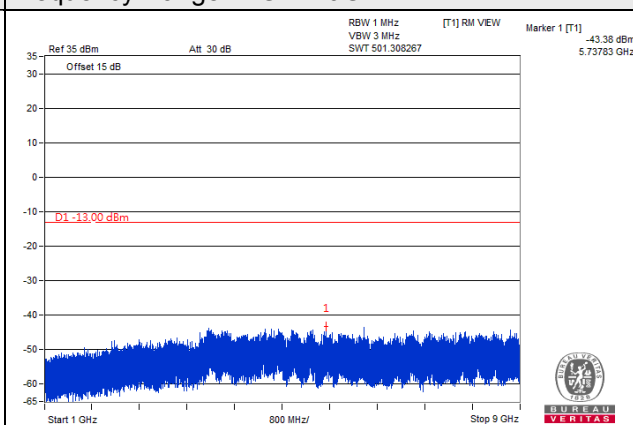


Channel 169300 (846.5MHz)

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~9GHz

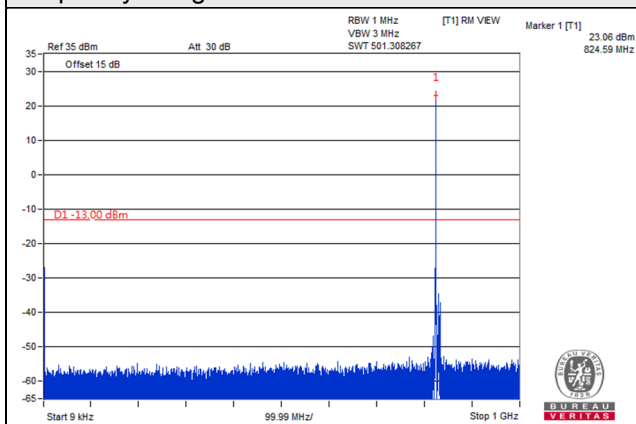


*The 9kHz signal over the limit is from Spectrum.

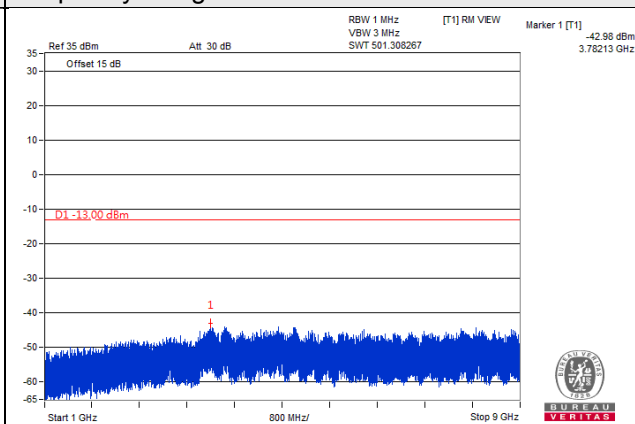
NR Band 5, Channel Bandwidth 10MHz

Channel 165800 (829.0MHz)

Frequency Range : 9kHz~1GHz

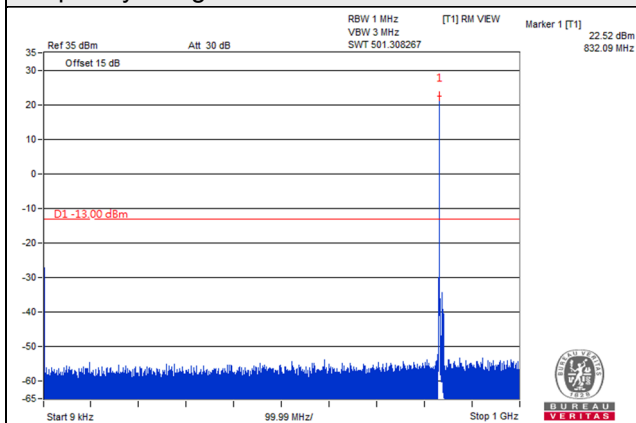


Frequency Range : 1GHz~9GHz

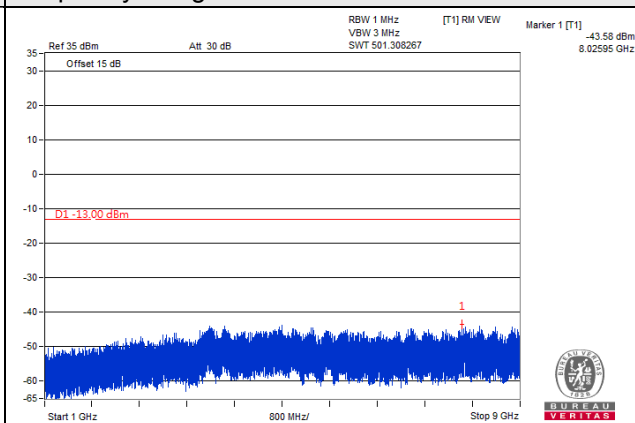


Channel 167300 (836.5MHz)

Frequency Range : 9kHz~1GHz

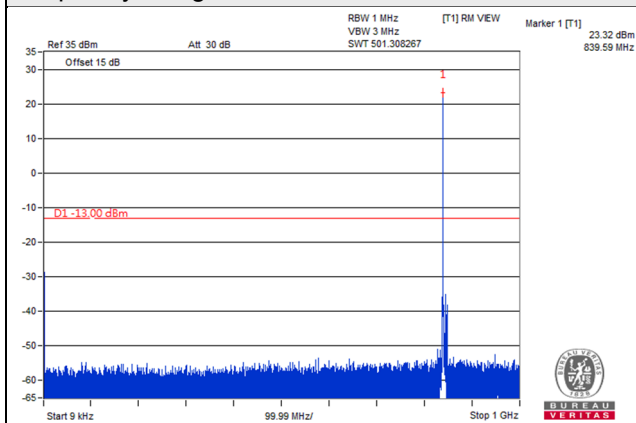


Frequency Range : 1GHz~9GHz

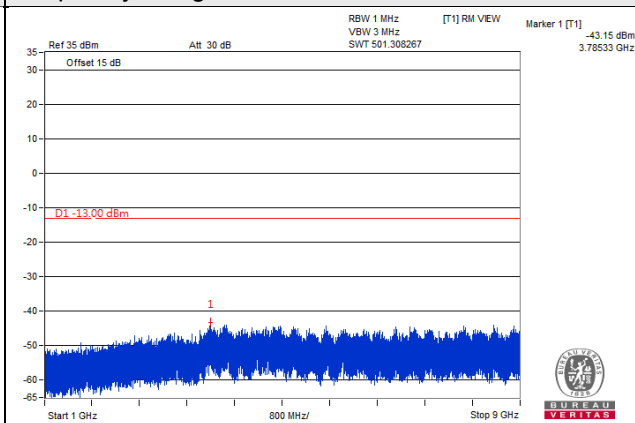


Channel 168800 (844.0MHz)

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~9GHz

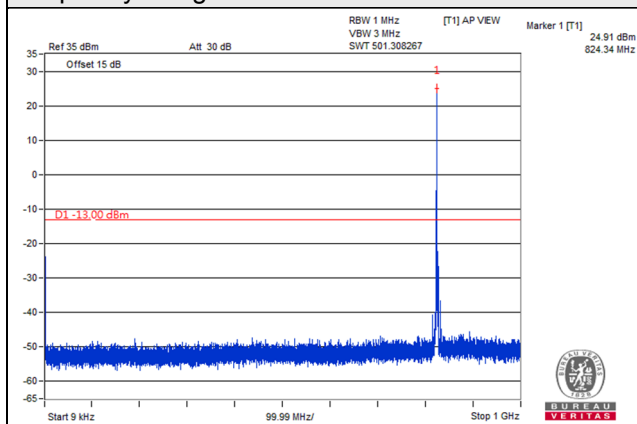


*The 9kHz signal over the limit is from Spectrum.

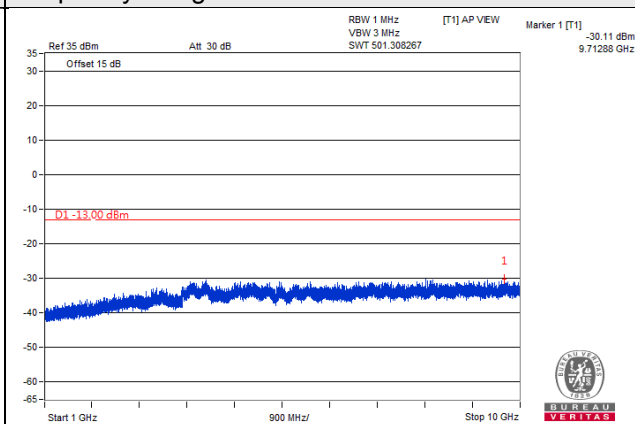
NR Band 5, Channel Bandwidth 15MHz

Channel 166300(831.5MHz)

Frequency Range : 9kHz~1GHz

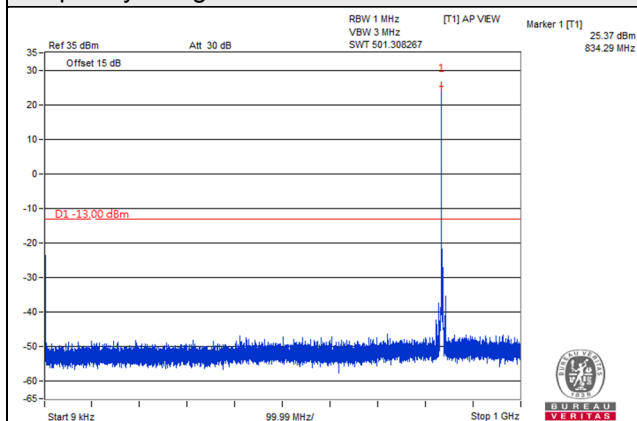


Frequency Range : 1GHz~10GHz

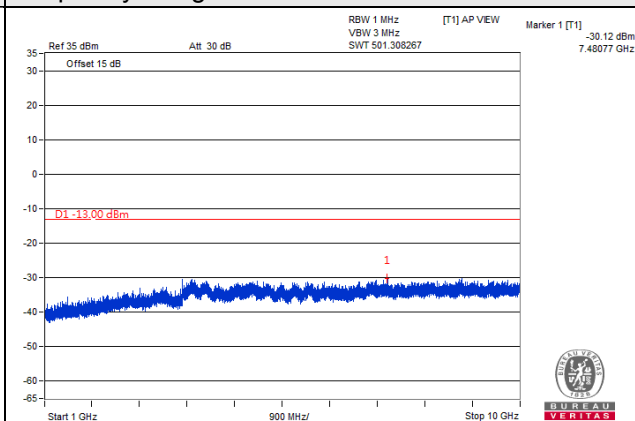


Channel 167300(836.5MHz)

Frequency Range : 9kHz~1GHz

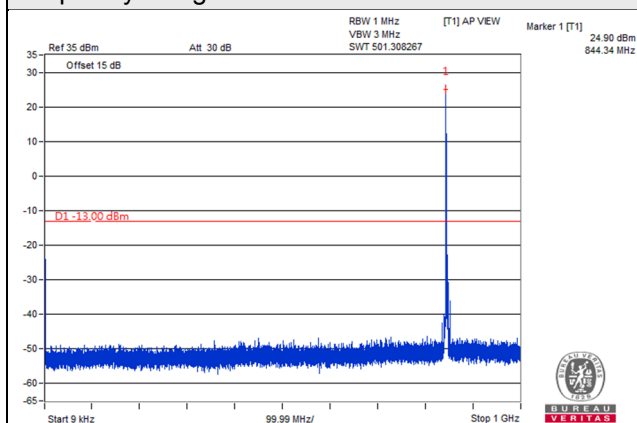


Frequency Range : 1GHz~10GHz

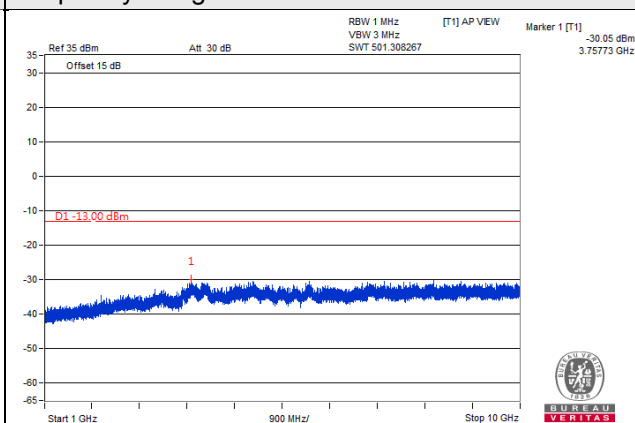


Channel 168300(841.5MHz)

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz

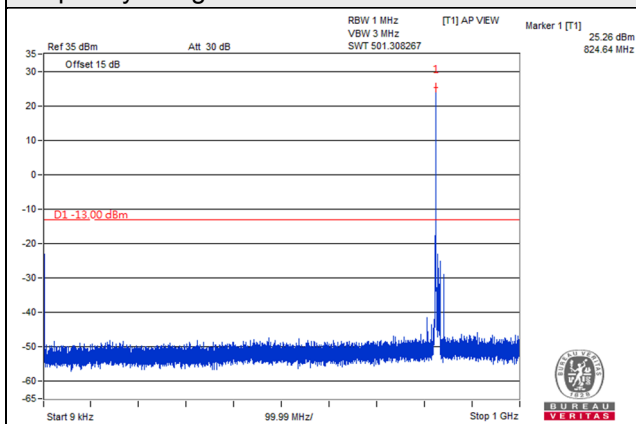


*The 9kHz signal over the limit is from Spectrum.

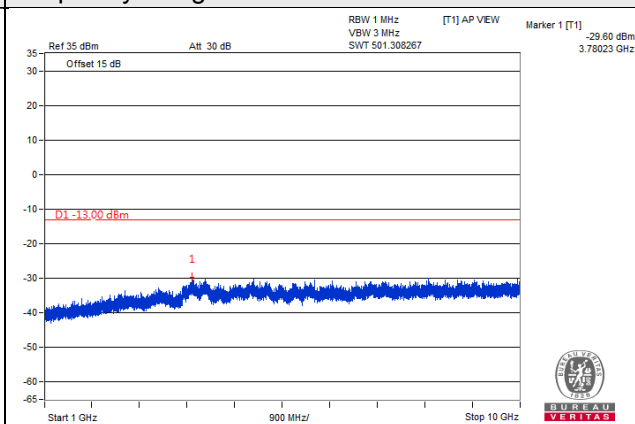
NR Band 5, Channel Bandwidth 20MHz

Channel 166800 (834.0MHz)

Frequency Range : 9kHz~1GHz

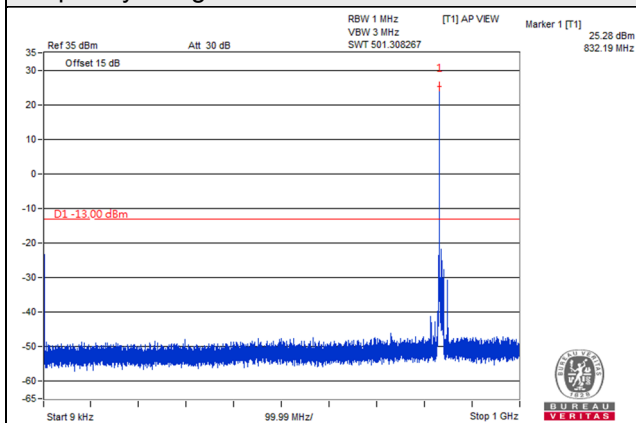


Frequency Range : 1GHz~10GHz

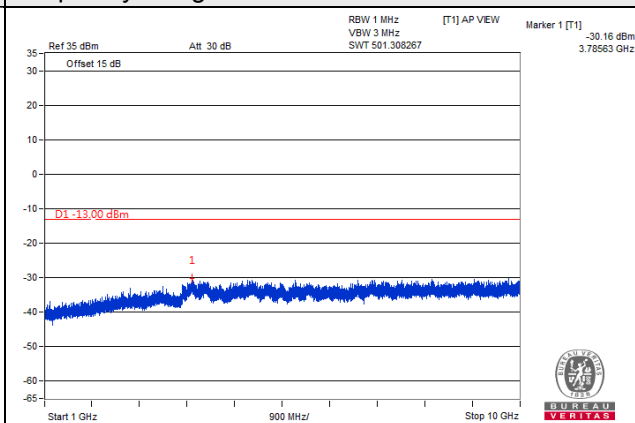


Channel 167300 (836.5MHz)

Frequency Range : 9kHz~1GHz

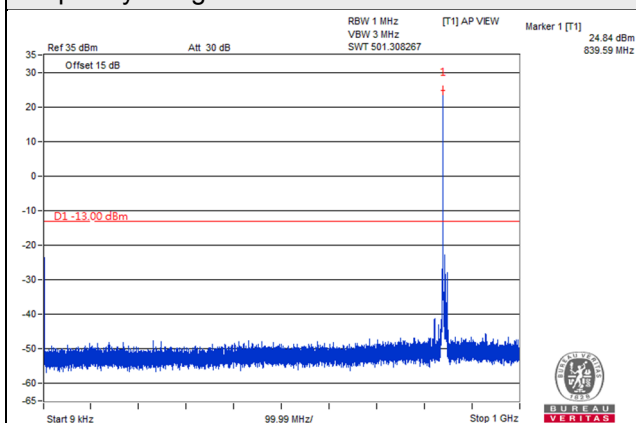


Frequency Range : 1GHz~10GHz

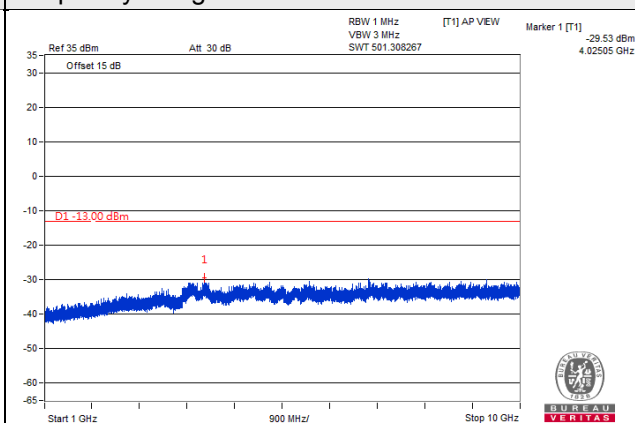


Channel 167800 (839.0MHz)

Frequency Range : 9kHz~1GHz



Frequency Range : 1GHz~10GHz



*The 9kHz signal over the limit is from Spectrum.

4.8 Radiated Emission Measurement

4.8.1 Limits of Radiated Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm .

4.8.2 Test Procedure

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G
- c. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $\text{E.R.P power} = \text{E.I.R.P power} - 2.15\text{dBi}$.

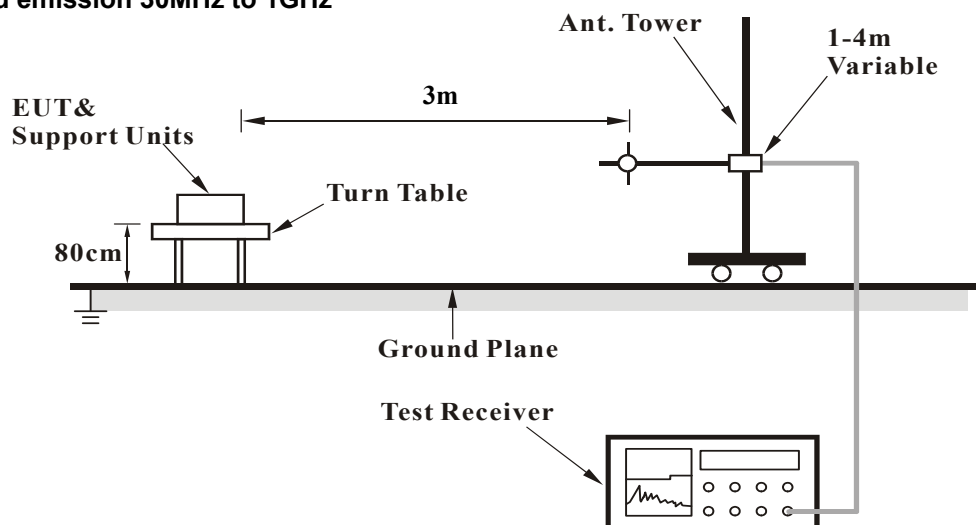
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.8.3 Deviation from Test Standard

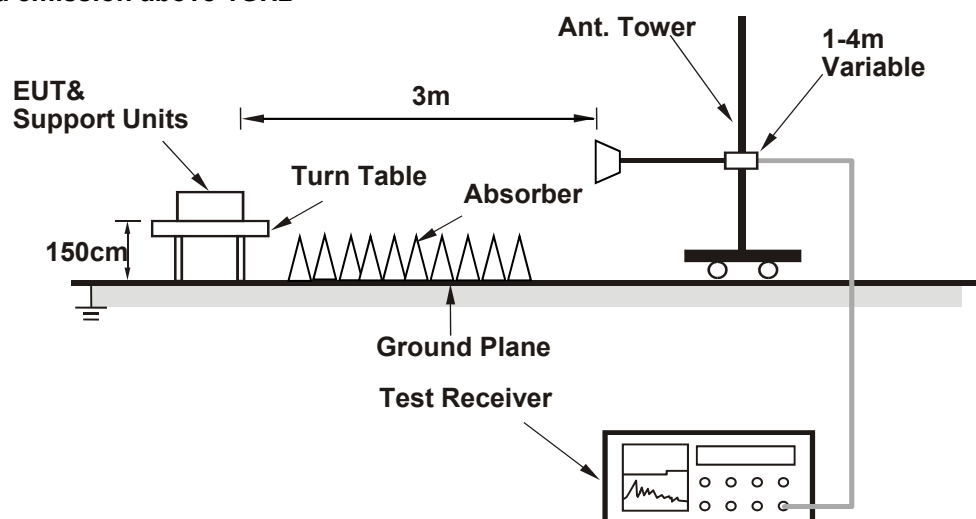
No deviation.

4.8.4 Test Setup

For radiated emission 30MHz to 1GHz



For radiated emission above 1GHz



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

4.8.5 Test Results

Below 1GHz

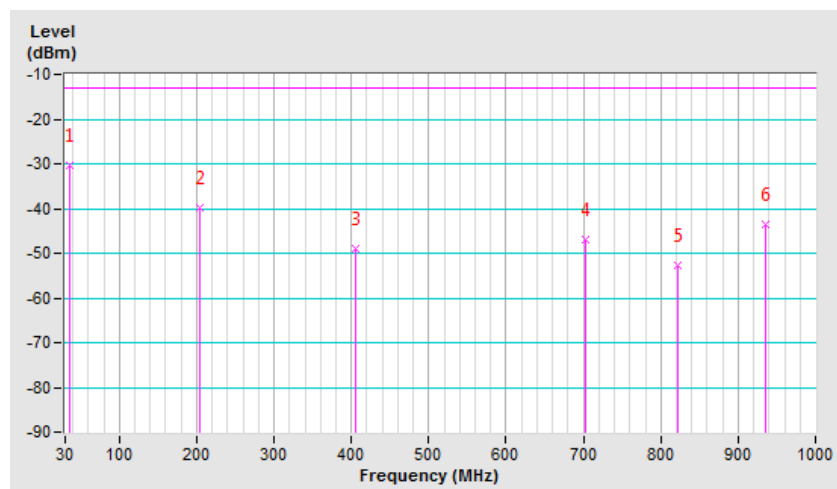
NR Band 5, Channel Bandwidth: 5MHz

Mode	TX channel 165300 (826.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	35.82	-31.4	-18.9	-11.4	-30.3	-13.0	-17.3
2	204.60	-28.9	-45.3	5.4	-39.9	-13.0	-26.9
3	406.36	-46.0	-54.3	5.2	-49.1	-13.0	-36.1
4	703.18	-46.8	-52.1	5.2	-46.9	-13.0	-33.9
5	821.52	-56.4	-56.8	4.0	-52.8	-13.0	-39.8
6	935.98	-48.4	-47.4	3.9	-43.5	-13.0	-30.5

Remarks:

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

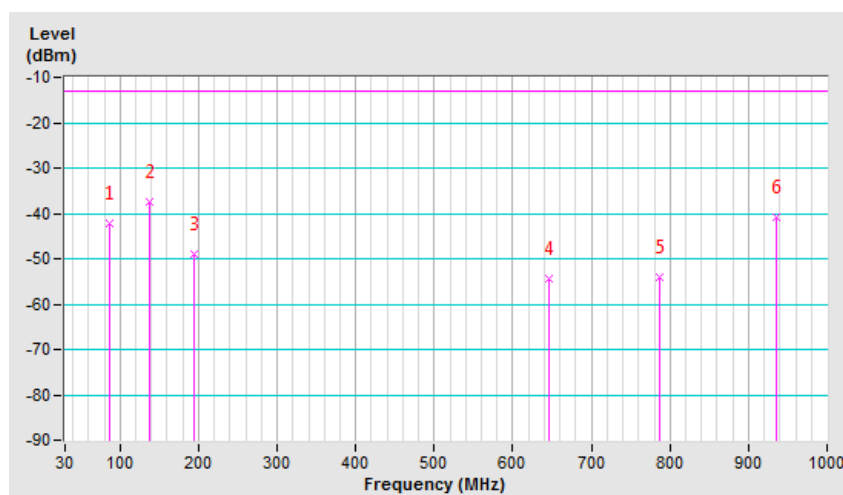


Mode	TX channel 165300 (826.5MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	86.26	-35.5	-42.2	0.1	-42.1	-13.0	-29.1
2	136.70	-31.0	-37.1	-0.3	-37.4	-13.0	-24.4
3	194.90	-43.1	-54.0	4.9	-49.1	-13.0	-36.1
4	646.92	-57.0	-59.3	4.8	-54.5	-13.0	-41.5
5	786.60	-58.2	-58.4	4.2	-54.2	-13.0	-41.2
6	935.98	-47.5	-44.9	3.9	-41.0	-13.0	-28.0

Remarks:

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



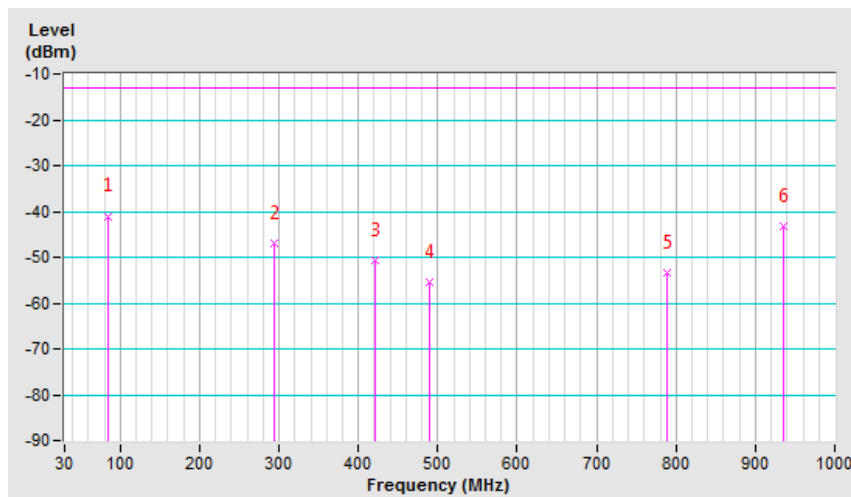
NR Band 5, Channel Bandwidth: 10MHz

Mode	TX channel 165800 (829.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	84.32	-32.5	-40.5	-0.5	-41.0	-13.0	-28.0
2	293.84	-41.4	-52.2	5.1	-47.1	-13.0	-34.1
3	421.88	-47.0	-55.8	5.2	-50.6	-13.0	-37.6
4	489.78	-52.0	-60.5	5.0	-55.5	-13.0	-42.5
5	788.54	-56.8	-57.6	4.1	-53.5	-13.0	-40.5
6	935.98	-48.0	-47.0	3.9	-43.1	-13.0	-30.1

Remarks:

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

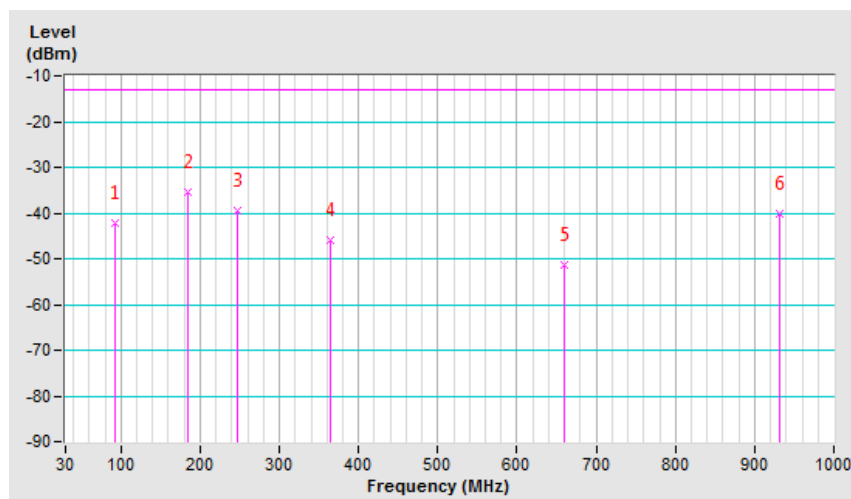


Mode	TX channel 165800 (829.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	92.08	-34.8	-43.3	1.1	-42.2	-13.0	-29.2
2	185.20	-31.2	-38.9	3.6	-35.3	-13.0	-22.3
3	247.28	-37.8	-45.0	5.4	-39.6	-13.0	-26.6
4	363.68	-42.3	-51.0	5.2	-45.8	-13.0	-32.8
5	660.50	-54.0	-56.4	4.9	-51.5	-13.0	-38.5
6	932.10	-46.4	-43.9	3.9	-40.0	-13.0	-27.0

Remarks:

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



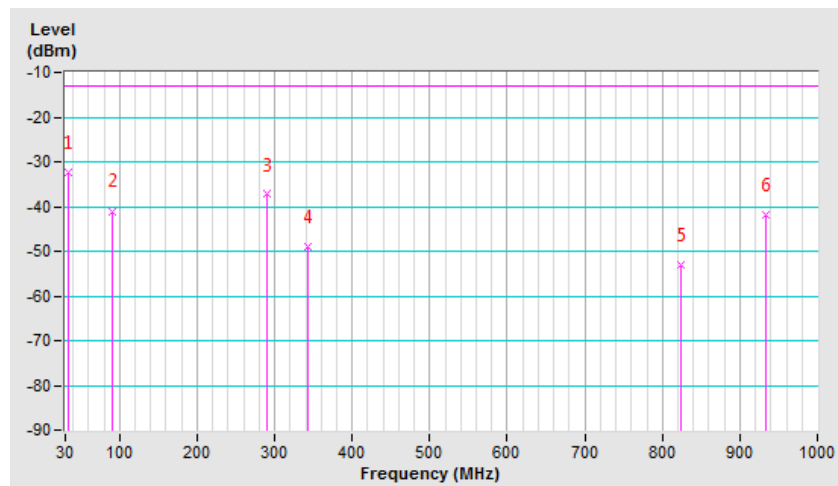
NR Band 5, Channel Bandwidth: 20MHz

Mode	TX channel 166800 (834.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	33.88	-32.9	-20.6	-11.7	-32.3	-13.0	-19.3
2	90.14	-31.4	-42.1	1.1	-41.0	-13.0	-28.0
3	289.96	-31.9	-42.5	5.2	-37.3	-13.0	-24.3
4	342.34	-43.2	-54.0	5.1	-48.9	-13.0	-35.9
5	823.46	-56.5	-56.9	4.0	-52.9	-13.0	-39.9
6	934.04	-46.8	-45.8	3.9	-41.9	-13.0	-28.9

Remarks:

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

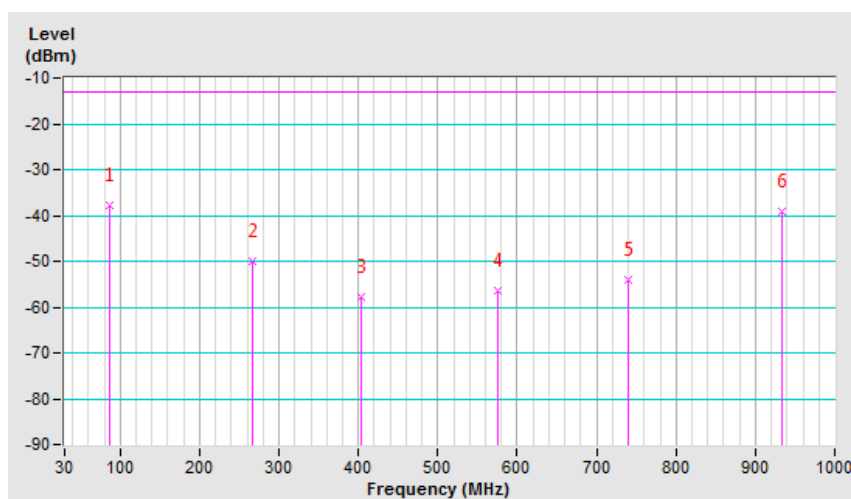


Mode	TX channel 166800 (834.0MHz)	Frequency Range	Below 1000 MHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Noah Chang		

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	86.26	-31.2	-38.0	0.1	-37.9	-13.0	-24.9
2	266.68	-50.9	-55.3	5.3	-50.0	-13.0	-37.0
3	404.42	-54.6	-63.0	5.2	-57.8	-13.0	-44.8
4	575.14	-56.6	-61.0	4.5	-56.5	-13.0	-43.5
5	740.04	-57.6	-58.9	4.8	-54.1	-13.0	-41.1
6	934.04	-45.6	-43.0	3.9	-39.1	-13.0	-26.1

Remarks:

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



Above 1GHz

NR Band 5, Channel Bandwidth: 5MHz

Mode	TX channel 165300 (826.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1653.00	-64.5	-65.6	5.5	-60.1	-13.0	-47.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1653.00	-68.0	-60.7	0.9	-59.8	-13.0	-46.8

Remarks:

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

Mode	TX channel 167300 (836.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-68.0	-60.4	0.8	-59.6	-13.0	-46.6
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-67.5	-60.2	0.8	-59.4	-13.0	-46.4

Remarks:

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

Mode	TX channel 169300 (846.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1693.00	-68.2	-60.6	0.7	-59.9	-13.0	-46.9
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1693.00	-68.0	-60.6	0.7	-59.9	-13.0	-46.9

Remarks:

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

NR Band 5, Channel Bandwidth: 10MHz

Mode	TX channel 165800 (829.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1658.00	-68.8	-61.1	0.9	-60.2	-13.0	-47.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1658.00	-68.0	-60.7	0.9	-59.8	-13.0	-46.8

Remarks:

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

Mode	TX channel 167300 (836.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-68.3	-60.7	0.8	-59.9	-13.0	-46.9
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-66.4	-65.0	5.5	-59.5	-13.0	-46.5

Remarks:

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

Mode	TX channel 168800 (844.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1688.00	-68.5	-60.8	0.7	-60.1	-13.0	-47.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1688.00	-68.2	-60.8	0.7	-60.1	-13.0	-47.1

Remarks:

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

NR Band 5, Channel Bandwidth: 20MHz

Mode	TX channel 166800 (834.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1668.00	-68.5	-60.8	0.8	-60.0	-13.0	-47.0
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1668.00	-68.0	-60.6	0.8	-59.8	-13.0	-46.8

Remarks:

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

Mode	TX channel 167300 (836.5MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-68.2	-60.6	0.8	-59.8	-13.0	-46.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1673.00	-67.5	-60.1	0.8	-59.3	-13.0	-46.3

Remarks:

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

Mode	TX channel 167800 (839.0MHz)	Frequency Range	1GHz ~ 18GHz
Environmental Conditions	25deg. C, 70%RH	Input Power	120Vac, 60Hz
Tested By	Luis Lee		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1678.00	-68.2	-60.6	0.8	-59.8	-13.0	-46.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1678.00	-68.2	-60.9	0.8	-60.1	-13.0	-47.1

Remarks:

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

5 Pictures of Test Arrangements

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

Appendix – Information of the Testing Laboratories

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

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Web Site: www.bureauveritas-adt.com

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

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