



BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04



Certificate #6613.01

# IC TEST REPORT

## (RSS- 132)

Applicant:	Particle Industries, Inc
Address:	325 9th Street, San Francisco, CA 94103, United States Of America

Manufacturer or Supplier:	Particle Industries, Inc
Address:	325 9th Street, San Francisco, CA 94103, United States Of America
Product:	B SoM
Brand Name:	Particle
Model Name:	B504e
IC:	20127-B504
Date of tests:	Mar. 31, 2025 ~ Apr. 18, 2025

The tests have been carried out according to the requirements of the following standard:

- RSS-132 Issue 4, January 31, 2023
- RSS-Gen Issue 5, Amendment 2, February 2021
- ANSI C63.26-2015

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Hanwen Xu Engineer / Mobile Department	Approved by Peibo Sun Manager / Mobile Department
Date: Apr. 18, 2025	Date: Apr. 18, 2025

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSU2503280115RI04	Original release	Apr. 18, 2025



## 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: IC RSS-132, RSS-Gen		
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT
RSS-Gen		
6.7	Occupied Bandwidth	Compliance
6.8	Transmit antenna	Compliance
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT
RSS-132		
5.3	Frequency Stability AFC Freq. Error vs. Voltage AFC Freq. Error vs. Temperature	Compliance
5.4	Maximum Peak Output Power	Compliance
5.4	peak-to-average power ratio	Compliance
5.5	Band Edge Measurements	Compliance
5.5	Conducted Spurious Emissions	Compliance
5.5	Radiated Spurious Emissions	Compliance

### \*Test Lab Information Reference

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

#### Lab Address:

Tower N, Innovation Centre 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province, P.R.C.

#### Accredited Test Lab Cert 6613.01

The IC Company Number is 28371; The CAB Identifier No. is CN0131.

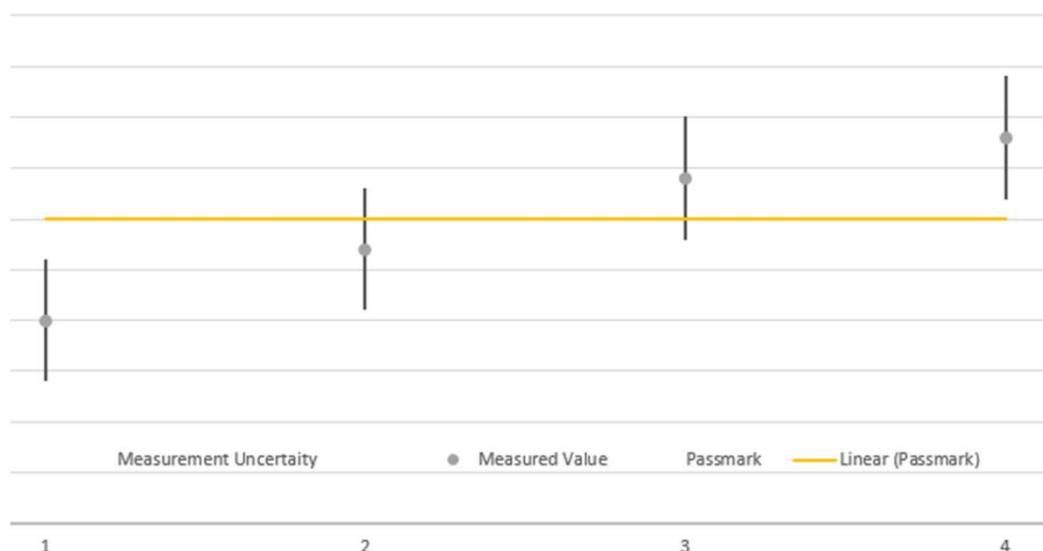


## 1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in ETSI TR 100 028-1 V1.4.1(2001-12):

MEASUREMENT	UNCERTAINTY
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions (9KHz~30MHz)	$\pm 2.68\text{dB}$
Radiated emissions & Radiated Power (30MHz~1GHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (1GHz ~6GHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GHz ~18GHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GHz ~40GHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Band Edge Measurements	$\pm 4.70\text{dB}$
Peak to average ratio	$\pm 0.76\text{dB}$

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



The verdicts in this test report are given according the above diagram:

Case	Measured Value	Uncertainty Range	Verdict
1	below pass mark	below pass mark	Passed
2	below pass mark	within pass mark	Passed
3	above pass mark	within pass mark	Failed
4	above pass mark	above pass mark	Failed

That means, the laboratory applies, as decision rule (see ISO/IEC 17025:2017), the so-called shared risk principle.



## 1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.30,23	Aug.29,25
Pre-Amplifier	R&S	SCU08F1	101028	Jan.22,24	Jan.21,26
Vector Signal Generator	R&S	SMBV100B	102176	Mar.29,24	Mar.28,26
Signal Generator	R&S	SMB100A	182185	Mar.29,24	Mar.28,26
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ -EMC- 01Chamber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ -EMC- 02Chamber	Nov.25,22	Nov.24,25
EMI TEST Receiver	R&S	ESR26	101734	Mar.28,24	Mar.27,26
EMI TEST Receiver	R&S	ESW44	101973	Mar.28,24	Mar.27,26
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Dec.26,23	Dec.25,25
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.22,23	Aug.21,25
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Jul.15,24	Jul.14,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.22,23	Aug.21,25
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.23,23	Feb.22,25
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.19,24	Jun.18,26
Test Software	EMC32	EMC32	N/A	N/A	N/A
6DB attenuator	Tonscend Technology Co., Ltd	N/A	23062787	N/A	N/A
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	N/A	N/A
DC Source	HYELEC	HY3010B	551016	Aug.31,23	Aug.30,25
Hygrothermograph	DELI	20210528	SZ014	Sep.06,23	Sep.05,25
PC	LENOVO	E14	HRSW0024	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-7.00M	N/A	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-4.00M	N/A	N/A	N/A
CABLE	R&S	W13.02	N/A	Apr.27,24	Apr.26,25
CABLE	R&S	W12.14	N/A	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.27,24	Apr.26,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.27,24	Apr.26,25
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26

- NOTE:**
1. The calibration interval of the above test instruments is 12 months or 24 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRT/CHINA and NIM/CHINA.
  2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
  3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
  4. The IC Company Number is 28371; The CAB Identifier No. is CN0131.



## 2 GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	B SoM	
BRAND NAME	Particle	
MODEL NAME	B504e	
NOMINAL VOLTAGE	VCC: 3.8V. 3V3:3.3V	
MODULATION TYPE	WCDMA	BPSK, QPSK
	LTE	QPSK, 16QAM
FREQUENCY RANGE	WCDMA	826.4MHz ~ 846.6MHz
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 5 (Channel Bandwidth: 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 5 (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 5 (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	824.7MHz ~ 848.3MHz
	LTE Band 26 (Channel Bandwidth: 3MHz)	825.5MHz ~ 847.5MHz
	LTE Band 26 (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE Band 26 (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
	LTE Band 26 (Channel Bandwidth: 15MHz)	831.5MHz ~ 841.5MHz
MAX. ERP POWER	WCDMA	187.5mW
	LTE Band 5 (Channel Bandwidth: 1.4MHz)	207.49mW
	LTE Band 5 (Channel Bandwidth: 3MHz)	206.54mW
	LTE Band 5 (Channel Bandwidth: 5MHz)	207.01mW
	LTE Band 5 (Channel Bandwidth: 10MHz)	208.45mW
	LTE Band 26 (Channel Bandwidth: 1.4MHz)	246.04mW
	LTE Band 26 (Channel Bandwidth: 3MHz)	242.66mW
	LTE Band 26 (Channel Bandwidth: 5MHz)	246.6mW
	LTE Band 26 (Channel Bandwidth: 10MHz)	244.91mW



	<b>LTE Band 26</b> <b>(Channel Bandwidth: 15MHz)</b>	248.89mW
<b>EMISSION DESIGNATOR</b> ORGOGN	<b>WCDMA</b>	4M15F9W
	<b>LTE Band 26</b> <b>(Channel Bandwidth: 1.4MHz)</b>	QPSK: 1M10G7D 16QAM: 1M09W7D
	<b>LTE Band 26</b> <b>(Channel Bandwidth: 3MHz)</b>	QPSK: 2M70G7D 16QAM: 2M69W7D
	<b>LTE Band 26</b> <b>(Channel Bandwidth: 5MHz)</b>	QPSK: 4M50G7D 16QAM: 4M50W7D
	<b>LTE Band 26</b> <b>(Channel Bandwidth: 10MHz)</b>	QPSK: 8M96G7D 16QAM: 4M85W7D
	<b>LTE Band 26</b> <b>(Channel Bandwidth: 15MHz)</b>	QPSK: 13M5G7D 16QAM: 4M86W7D
<b>ANTENNA TYPE</b>	FPC Antenna with 1.78dBi gain for WCDMA V/LTE B5 FPC Antenna with 2.61dBi gain for LTE B26	
<b>HW VERSION</b>	R1.0	
<b>SW VERSION</b>	EG91NAXGAR07A03M1G	
<b>I/O PORTS</b>	Refer to user's manual	
<b>CABLE SUPPLIED</b>	N/A	
<b>EXTREME TEMPERATURE</b>	-35-75 °C	
<b>EXTREME VOLTAGE</b>	VCC: 3.3V. 3V3:3.0V - VCC: 4.3V. 3V3:3.6V	

**NOTE:**

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver.

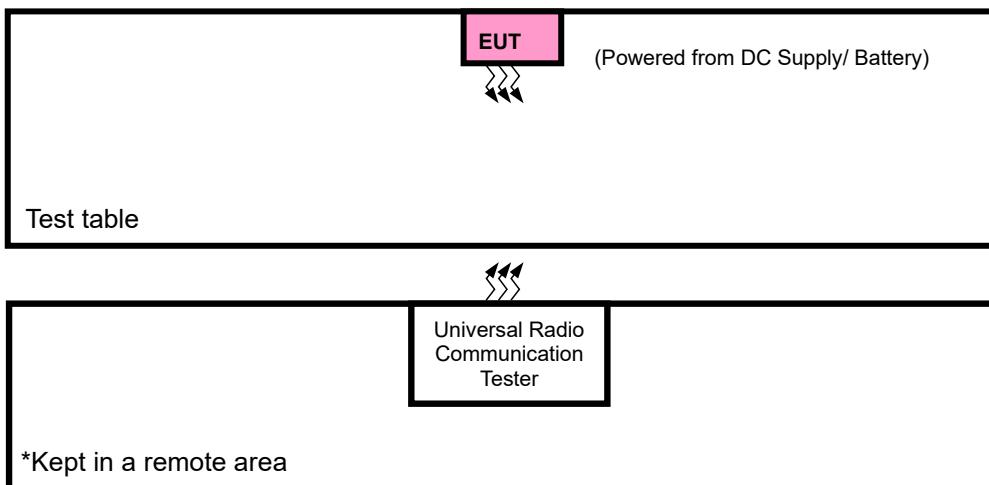
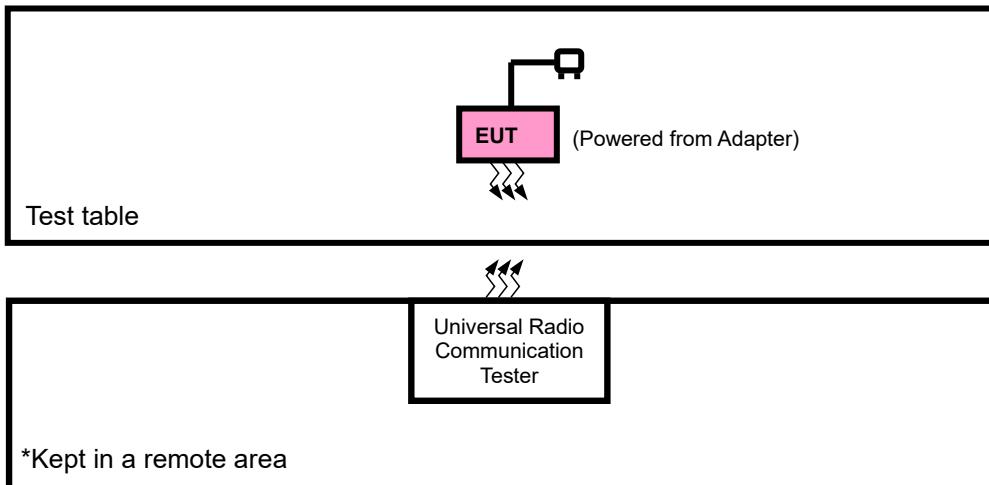
MODULATION MODE	TX FUNCTION
WCDMA	1TX/1RX
LTE	1TX/1RX

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
4. Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.



## 2.2 CONFIGURATION OF SYSTEM UNDER TEST

### FOR RADIATION EMISSION





## 2.3 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.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	DC Source	HYELEC	HY3010B	551016	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	DC Line: Unshielded, Detachable, 1.0m;

## 2.4 TEST ITEM AND TEST CONFIGURATION

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 in ERP and radiated emission was found when positioned on X-plane for GSM/WCDMA/LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter with LTE link
B	EUT + Supply/ Battery with GSM or WCDMA or LTE link



**WCDMA MODE**

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	ERP	4132 to 4233	4132, 4182, 4233	WCDMA
B	FREQUENCY STABILITY	4132 to 4233	4132, 4182, 4233	WCDMA
A	OCCUPIED BANDWIDTH	4132 to 4233	4132, 4182, 4233	WCDMA
A	BAND EDGE	4132 to 4233	4132, 4233	WCDMA
A	CONDUCDETED EMISSION	4132 to 4233	4132, 4182, 4233	WCDMA
A	RADIATED EMISSION	4132 to 4233	4132, 4182, 4233	WCDMA
A	PEAK TO AVERAGE RATIO	4132 to 4233	4132, 4182, 4233	WCDMA



## LTE BAND 5 MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
A	ERP	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20415 to 20635	20415, 20525, 20635	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20425 to 20625	20425, 20525, 20625	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20450 to 20600	20450, 20525, 20600	10MHz	QPSK,16QAM	1 RB / 0 RB Offset

**Note:** 1. This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

2. LTE Band 5 are covered by LTE Band 26, Because it is a subset of LTE Band 26 with the same output power and supported bandwidths, So the test data please refer to LTE Band 26

## LTE BAND 26 MODE

EUT CONFIGURE MODE	TEST ITEM	Available Channel	Tested Channel	Channel bandwidth	modulation	mode
A	ERP	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
A	PEAK TO AVERAGE RATIO	26865 to 26965	26865, 26915, 26965	15MHz	QPSK,16QAM	1 RB / 0 RB Offset 75 RB / 0 RB Offset
A	BAND EDGE	26797 to 27033	26797	1.4 MHz	QPSK,16QAM	1 RB / 0 RB Offset
		26797 to 27033	27033	1.4 MHz	QPSK,16QAM	6 RB / 0 RB Offset
		26805 to 27025	26805	3 MHz	QPSK,16QAM	1 RB / 5 RB Offset
		26805 to 27025	26805	3 MHz	QPSK,16QAM	6 RB / 0 RB Offset



						15 RB / 0 RB Offset
		26805 to 27025	27025	3 MHz	QPSK,16QAM	1 RB / 14 RB Offset
						15 RB / 0 RB Offset
		26815 to 27015	26815	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
						25 RB / 0 RB Offset
		26815 to 27015	27015	5MHz	QPSK,16QAM	1 RB / 24 RB Offset
						25 RB / 0 RB Offset
		26840 to 26990	26840	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
		26840 to 26990	26990	10MHz	QPSK,16QAM	1 RB / 49 RB Offset
						50 RB / 0 RB Offset
		26865 to 26965	26865	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
						75 RB / 0 RB Offset
		26865 to 26965	26965	15MHz	QPSK,16QAM	1 RB / 74 RB Offset
						75 RB / 0 RB Offset
A	CONDCUDETED EMISSION	26797 to 27033	26797, 26915, 27033	1.4MHz	QPSK	1 RB / 0 RB Offset
		26805 to 27025	26805, 26915, 27025	3MHz	QPSK	1 RB / 0 RB Offset
		26815 to 27015	26815, 26915, 27015	5MHz	QPSK	1 RB / 0 RB Offset
		26840 to 26990	26840, 26915, 26990	10MHz	QPSK	1 RB / 0 RB Offset
		26865 to 26965	26865, 26915, 26965	15MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	26797 to 27033	26915	1.4MHz	QPSK	1 RB / 0 RB Offset
		26805 to 27025	26915	3MHz	QPSK	1 RB / 0 RB Offset
		26815 to 27015	26915	5MHz	QPSK	1 RB / 0 RB Offset
		26840 to 26990	26840,26915,26990	10MHz	QPSK	1 RB / 0 RB Offset
		26865 to 26965	26915	15MHz	QPSK	1 RB / 0 RB Offset

**Note:** This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.



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VERITAS Test Report No.: PSU-QSU2503280115RI04

**TEST CONDITION:**

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	23deg. C, 70%RH	AC 120V/60HZ	Hanwen Xu
FREQUENCY STABILITY	23deg. C, 70%RH	AC 120V/60HZ	Hanwen Xu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	AC 120V/60HZ	Hanwen Xu
BAND EDGE	23deg. C, 70%RH	AC 120V/60HZ	Hanwen Xu
CONDUCED EMISSION	23deg. C, 70%RH	AC 120V/60HZ	Hanwen Xu
RADIATED EMISSION	23deg. C, 70%RH	AC 120V/60HZ	Hanwen Xu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	AC 120V/60HZ	Hanwen Xu



## 2.5 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.

## 2.6 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:

**Canada RSS-132, Issue 4, January 31, 2023**

**Canada RSS-Gen, Issue 5, Amendment 2, February 2021**

**ANSI C63.26 - 2015**

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

## 2.7 TRANSMIT ANTENNA

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

Antenna Type	FPC antenna
Antenna Gain	FPC Antenna with 1.78dBi gain for WCDMA V/LTE B5 FPC Antenna with 2.61dBi gain for LTE B26
Impedance	50 Ω



### 3 TEST TYPES AND RESULTS

#### 3.1 OUTPUT POWER MEASUREMENT

##### 3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Portable station are limited to 3 watts E.R.P.

##### 3.1.2 TEST PROCEDURES

###### ERP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determining the ERP from the conducted RF output power measured using the guidance provided above is:

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

Where:

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

(expressed in the same units as  $P_{\text{Meas}}$ , typically dBW or dBm);

$P_{\text{Meas}}$  = measured transmitter output power or PSD, in dBm or dBW;

$G_T$  = gain of the transmitting antenna, in dBd (ERP);

$L_c$  = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

###### CONDUCTED POWER MEASUREMENT:

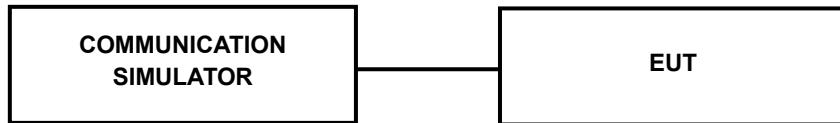
The EUT was set up for the maximum power with WCDMA link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



### 3.1.3 TEST SETUP

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

#### CONDUCTED POWER MEASUREMENT:



### 3.1.4 TEST RESULTS

#### CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA V		
TX Channel	4132	4182	4233
Rx Channel	4357	4407	4458
Frequency (MHz)	826.4	836.4	846.6
RMC 12.2K	22.99	22.97	23.10
HSDPA Subtest-1	22.10	22.26	22.27
HSDPA Subtest-2	22.09	22.23	22.24
HSDPA Subtest-3	21.68	21.77	21.80
HSDPA Subtest-4	21.59	21.65	21.70
DC-HSDPA Subtest-1	22.15	22.11	22.21
DC-HSDPA Subtest-2	22.03	22.26	22.26
DC-HSDPA Subtest-3	21.63	21.58	21.66
DC-HSDPA Subtest-4	21.56	21.61	21.70
HSUPA Subtest-1	22.12	22.22	22.27
HSUPA Subtest-2	20.14	20.28	20.36
HSUPA Subtest-3	21.13	21.25	21.30
HSUPA Subtest-4	20.20	20.18	20.24
HSUPA Subtest-5	22.13	22.19	22.19



## LTE Band 5

### BW: 1.4M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20407	20525	20643
		Frequency (MHz)		824.70	836.50	848.30
1.4M	QPSK	1	0	23.43	23.52	23.27
		1	2	23.46	23.54	23.18
		1	5	23.36	23.44	23.12
		3	0	23.10	23.08	23.06
		3	1	23.29	23.37	23.26
		3	3	23.27	23.31	23.11
		6	0	22.30	22.28	22.05
	16QAM	1	0	22.13	22.24	22.00
		1	2	22.08	22.01	21.90
		1	5	21.90	22.10	21.92
		3	0	22.07	22.20	21.94
		3	1	22.21	22.42	22.18
		3	3	22.05	22.08	21.88
		6	0	21.28	21.11	21.10

### BW: 3M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20415	20525	20635
		Frequency (MHz)		825.50	836.50	847.50
3M	QPSK	1	0	23.34	23.52	23.24
		1	7	23.39	23.40	23.26
		1	14	23.45	23.36	23.11
		8	0	22.13	22.12	22.04
		8	3	22.33	22.29	22.24
		8	7	22.24	22.30	22.06
		15	0	22.29	22.19	22.03
	16QAM	1	0	22.16	22.15	22.00
		1	7	22.03	22.08	21.81
		1	14	21.93	22.01	21.91
		8	0	21.07	21.11	20.95
		8	3	21.23	21.37	21.24
		8	7	21.03	21.09	20.91
		15	0	21.23	21.18	21.02



Test Report No.: PSU-QSU2503280115RI04

BW: 5M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20425	20525	20625
		Frequency (MHz)		826.50	836.50	846.50
5M	QPSK	1	0	23.30	23.53	23.22
		1	12	23.43	23.52	23.23
		1	24	23.46	23.35	23.13
		12	0	22.16	22.10	22.07
		12	6	22.35	22.26	22.19
		12	13	22.25	22.24	22.10
		25	0	22.27	22.25	22.06
	16QAM	1	0	22.23	22.21	21.96
		1	12	22.09	22.07	21.84
		1	24	21.93	22.00	21.89
		12	0	21.06	21.19	20.91
		12	6	21.20	21.28	21.20
		12	13	21.05	21.12	20.86
		25	0	21.27	21.13	21.03

BW: 10M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20450	20525	20600
		Frequency (MHz)		829	836.50	844
10M	QPSK	1	0	23.44	23.56	23.29
		1	24	23.49	23.55	23.29
		1	49	23.48	23.47	23.24
		25	0	22.24	22.22	22.08
		25	12	22.44	22.40	22.27
		25	25	22.32	22.32	22.13
		50	0	22.33	22.33	22.16
	16QAM	1	0	22.28	22.25	22.05
		1	24	22.14	22.10	21.95
		1	49	22.01	22.13	21.96
		12	0	22.13	22.23	22.01
		12	17	22.35	22.43	22.25
		12	36	22.12	22.13	21.93
		27	0	21.29	21.26	21.12

**LTE Band 26****BW: 1.4M**

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		26797	26915	27033
		Frequency (MHz)		824.70	836.50	848.30
1.4M	QPSK	1	0	23.11	23.35	23.40
		1	2	23.29	23.32	23.45
		1	5	23.13	23.36	23.25
		3	0	22.85	23.16	23.08
		3	1	22.99	23.15	22.99
		3	3	23.07	23.25	23.25
		6	0	22.11	22.25	22.26
	16QAM	1	0	21.87	21.91	21.92
		1	2	21.96	21.99	21.97
		1	5	21.90	21.96	22.02
		3	0	21.79	21.93	21.78
		3	1	21.95	22.27	22.34
		3	3	22.07	22.25	22.15
		6	0	20.91	21.02	21.09

**BW: 3M**

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		26805	26915	27025
		Frequency (MHz)		825.50	836.50	847.50
3M	QPSK	1	0	23.18	23.35	23.27
		1	7	23.19	23.39	23.35
		1	14	23.22	23.39	23.37
		8	0	21.80	22.15	22.02
		8	3	21.86	22.24	22.04
		8	7	22.06	22.15	22.27
		15	0	22.18	22.21	22.29
	16QAM	1	0	21.90	21.98	22.01
		1	7	21.84	22.02	21.98
		1	14	21.91	22.04	21.95
		8	0	20.73	20.88	20.82
		8	3	21.09	21.30	21.24
		8	7	20.99	21.20	21.09
		15	0	20.91	20.96	20.98



Test Report No.: PSU-QSU2503280115RI04

BW: 5M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		26815	26915	27015
		Frequency (MHz)		826.50	836.50	846.50
5M	QPSK	1	0	23.09	23.46	23.38
		1	12	23.24	23.46	23.41
		1	24	23.09	23.41	23.35
		12	0	21.83	22.08	22.16
		12	6	21.90	22.25	22.01
		12	13	22.09	22.23	22.28
		25	0	22.10	22.29	22.27
	16QAM	1	0	21.81	21.89	21.92
		1	12	21.84	22.04	21.98
		1	24	21.85	22.10	21.89
		12	0	20.71	20.87	20.78
		12	6	20.97	21.37	21.22
		12	13	21.10	21.20	21.19
		27	0	20.79	21.01	21.09

BW: 10M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		26840	26915	26990
		Frequency (MHz)		829	836.50	844
10M	QPSK	1	0	23.21	23.38	23.32
		1	24	23.23	23.34	23.43
		1	49	23.15	23.42	23.29
		25	0	21.82	22.10	22.08
		25	12	21.96	22.18	21.95
		25	25	22.04	22.18	22.18
		50	0	22.18	22.24	22.23
	16QAM	1	0	21.89	21.92	21.90
		1	24	21.89	22.03	22.04
		1	49	21.80	22.01	22.03
		12	0	21.73	21.93	21.81
		12	17	22.02	22.31	22.34
		12	36	22.10	22.16	22.20
		27	0	20.82	20.94	21.07



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VERITAS Test Report No.: PSU-QSU2503280115RI04

**BW: 15M**

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		26865	26915	26965
		Frequency (MHz)		831.50	836.50	841.50
15M	QPSK	1	0	23.24	23.49	23.42
		1	37	23.32	23.47	23.50
		1	74	23.23	23.49	23.39
		36	0	21.95	22.22	22.17
		36	19	22.00	22.26	22.10
		36	39	22.13	22.27	22.30
		75	0	22.19	22.31	22.30
	16QAM	1	0	21.94	22.04	22.04
	16QAM	1	37	21.98	22.09	22.10
	16QAM	1	74	21.93	22.11	22.04
	16QAM	12	0	21.82	21.94	21.87
	16QAM	12	30	22.10	22.41	22.35
	16QAM	12	61	22.11	22.31	22.22
	16QAM	27	0	20.92	21.09	21.13

**ERP POWER (dBm)**

WCDMA V for IC						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
4132	826.4	22.99	1.78	22.62	182.81	3
4182	836.4	22.97	1.78	22.6	181.97	3
4233	846.6	23.1	1.78	22.73	187.5	3

LTE B5 1.4M QPSK for IC						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20407	824.7	23.46	1.78	23.09	203.7	3
20525	836.5	23.54	1.78	23.17	207.49	3
20643	848.3	23.27	1.78	22.9	194.98	3

LTE B5 1.4M 16QAM for IC						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20407	824.7	22.21	1.78	21.84	152.76	3
20525	836.5	22.42	1.78	22.05	160.32	3
20643	848.3	22.18	1.78	21.81	151.71	3

LTE B5 3M QPSK for IC						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20415	825.5	23.45	1.78	23.08	203.24	3
20525	836.5	23.52	1.78	23.15	206.54	3
20635	847.5	23.26	1.78	22.89	194.54	3

LTE B5 3M QPSK 16QAM for IC						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20415	825.5	22.16	1.78	21.79	151.01	3
20525	836.5	22.15	1.78	21.78	150.66	3
20635	847.5	22	1.78	21.63	145.55	3

LTE B5 5M QPSK for IC						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20425	826.5	23.46	1.78	23.09	203.7	3
20525	836.5	23.53	1.78	23.16	207.01	3
20625	846.5	23.23	1.78	22.86	193.2	3



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LTE B5 5M 16QAM for IC						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20425	826.5	22.23	1.78	21.86	153.46	3
20525	836.5	22.21	1.78	21.84	152.76	3
20625	846.5	21.96	1.78	21.59	144.21	3

LTE B5 10M QPSK for IC						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20450	829	23.49	1.78	23.12	205.12	3
20525	836.5	23.56	1.78	23.19	208.45	3
20600	844	23.29	1.78	22.92	195.88	3

LTE B5 10M 16QAM for IC						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
20450	829	22.35	1.78	21.98	157.76	3
20525	836.5	22.43	1.78	22.06	160.69	3
20600	844	22.25	1.78	21.88	154.17	3

LTE B26 1.4M QPSK (IC)						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26797	824.7	23.29	2.61	23.75	237.14	3
26915	836.5	23.36	2.61	23.82	240.99	3
27033	848.3	23.45	2.61	23.91	246.04	3

LTE B26 1.4M 16QAM (IC)						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26797	824.7	22.07	2.61	22.53	179.06	3
26915	836.5	22.27	2.61	22.73	187.5	3
27033	848.3	22.34	2.61	22.8	190.55	3

LTE B26 3M QPSK (IC)						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26805	825.5	23.22	2.61	23.68	233.35	3
26915	836.5	23.39	2.61	23.85	242.66	3
27025	847.5	23.37	2.61	23.83	241.55	3



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LTE B26 3M 16QAM (IC)						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26805	825.5	21.91	2.61	22.37	172.58	3
26915	836.5	22.04	2.61	22.5	177.83	3
27025	847.5	22.01	2.61	22.47	176.6	3

LTE B26 5M QPSK (IC)						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26815	826.5	23.24	2.61	23.7	234.42	3
26915	836.5	23.46	2.61	23.92	246.6	3
27015	846.5	23.41	2.61	23.87	243.78	3

LTE B26 5M 16QAM (IC)						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26815	826.5	21.85	2.61	22.31	170.22	3
26915	836.5	22.1	2.61	22.56	180.3	3
27015	846.5	21.98	2.61	22.44	175.39	3

LTE B26 10M QPSK (IC)						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26840	829	23.23	2.61	23.69	233.88	3
26915	836.5	23.42	2.61	23.88	244.34	3
26990	844	23.43	2.61	23.89	244.91	3

LTE B26 10M 16QAM (IC)						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26840	829	22.1	2.61	22.56	180.3	3
26915	836.5	22.31	2.61	22.77	189.23	3
26990	844	22.34	2.61	22.8	190.55	3

LTE B26 15M QPSK (IC)						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26865	831.5	23.32	2.61	23.78	238.78	3
26915	836.5	23.49	2.61	23.95	248.31	3
26965	841.5	23.5	2.61	23.96	248.89	3



BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

LTE B26 15M 16QAM (IC)						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	ERP (dBm)	ERP (mW)	Lmit (W)
26865	831.5	22.11	2.61	22.57	180.72	3
26915	836.5	22.41	2.61	22.87	193.64	3
26965	841.5	22.35	2.61	22.81	190.99	3

**REMARKS:** ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).



### 3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

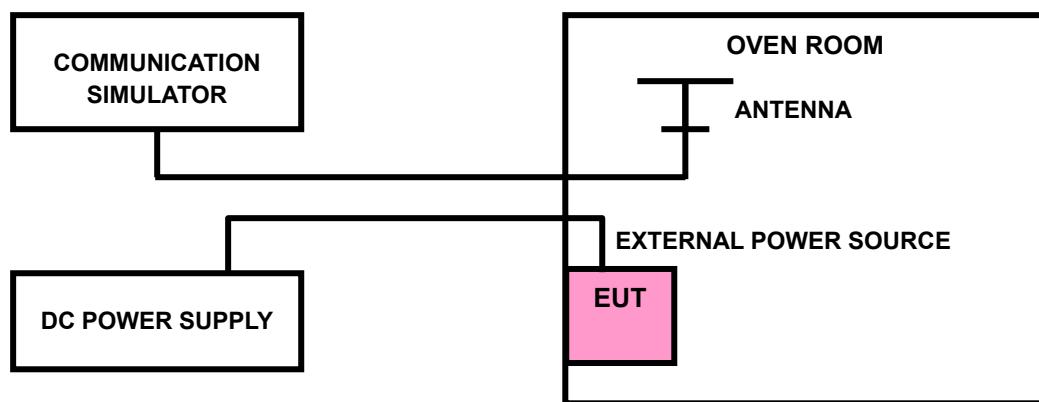
The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within each of the sub-bands when tested at the temperature and supply voltage variations specified in RSS-Gen..

### 3.2.2 TEST PROCEDURE

- a. 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.
- b. 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.
- c. 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 stability shall be sufficient to ensure that the occupied bandwidth stays within each of the sub-bands when tested at the temperature and supply voltage variations specified in RSS-Gen.

### 3.2.3 TEST SETUP





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VERITAS** Test Report No.: PSU-QSU2503280115RI04

### 3.2.4 TEST RESULTS

Please Refer to Appendix Of this test report.

Note: 1. VL = Low voltage(3.6V); VN/NV = Normal voltage(3.87V); VH = High voltage(4.45V);

NT = Normal temperature (25°C)

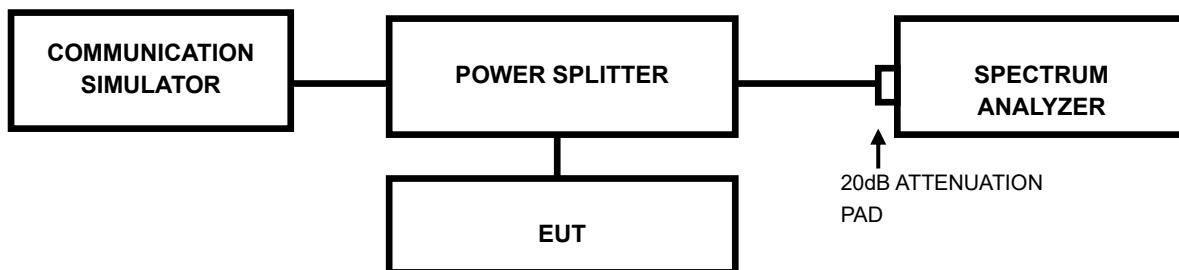
2. The frequency fundamental emissions stay within the authorized frequency block.



### 3.3.1 TEST PROCEDURES

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.

### 3.3.2 TEST SETUP





**BUREAU  
VERITAS** Test Report No.: PSU-QSU2503280115RI04

### 3.3.3 TEST RESULTS

Please Refer to Appendix Of this test report.

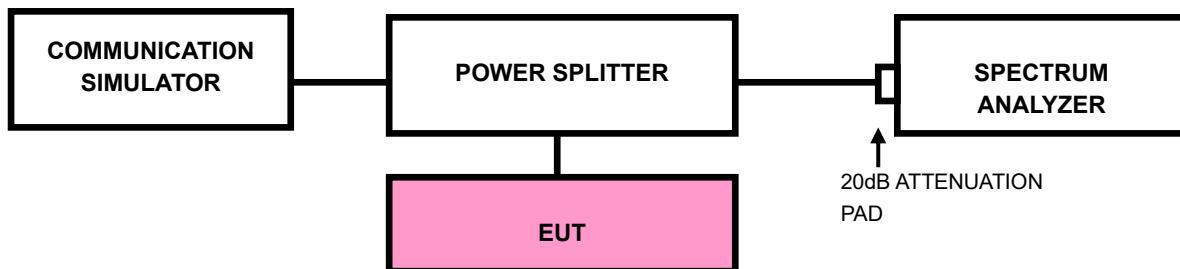


### 3.4 BAND EDGE MEASUREMENT

#### 3.4.1 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.

#### 3.4.2 TEST SETUP





### 3.4.3 TEST PROCEDURES

- a) All measurements were done at low and high operational frequency range
- b) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
- c) Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW)
- d) Set the resolution bandwidth (RBW)  $\geq 1\%$  EBW in the 1MHz band immediately outside and adjacent to the band edge.
- e) Beyond the 1MHz band from the band edge, RBW=1MHz was used.
- f) Set the video bandwidth (VBW) to  $\geq 3 \times$  RBW.
- g) Select the average power (RMS) display detector.
- h) Set the number of measurement points to  $\geq 1001$ .
- i) Use auto-coupled sweep time.
- j) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.
- k) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.
- l) Record the max trace plot into the test report.



**BUREAU  
VERITAS** Test Report No.: PSU-QSU2503280115RI04

### 3.4.4 TEST RESULTS

Please Refer to Appendix Of this test report.



### 3.5 CONDUCTED SPURIOUS EMISSIONS

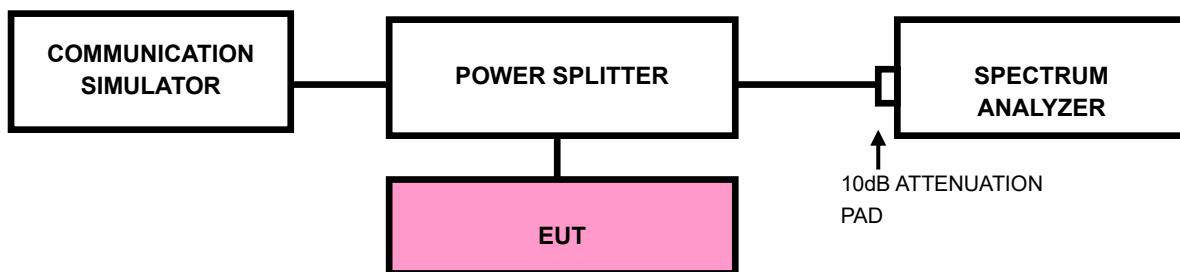
#### 3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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  $-13\text{dBm}$ .

#### 3.5.2 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- b. Measuring frequency range is from 9kHz up to a frequency including its 10<sup>th</sup> harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

#### 3.5.3 TEST SETUP





**BUREAU  
VERITAS** Test Report No.: PSU-QSU2503280115RI04

### 3.5.4 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

Please Refer to Appendix Of this test report.



### 3.6 RADIATED EMISSION MEASUREMENT

#### 3.6.1 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  $-13\text{dBm}$ .

#### 3.6.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m/1.5m 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.  $\text{ERP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}$ .

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

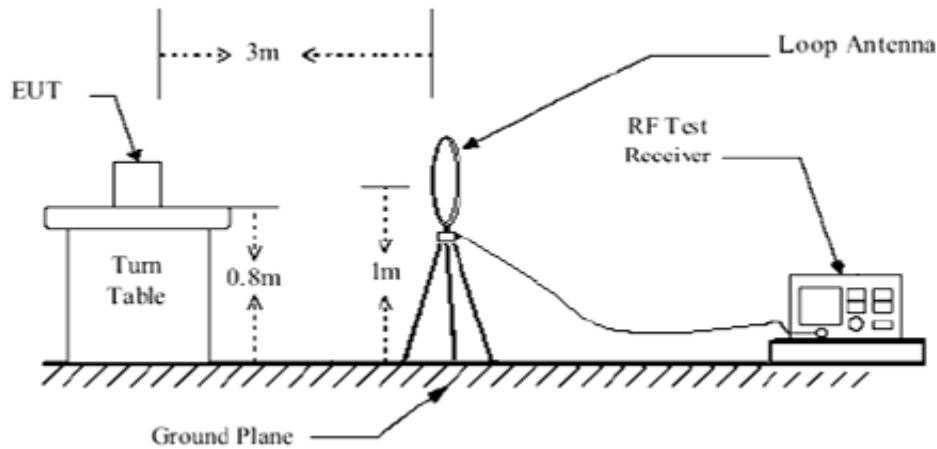
#### 3.6.3 DEVIATION FROM TEST STANDARD

No deviation

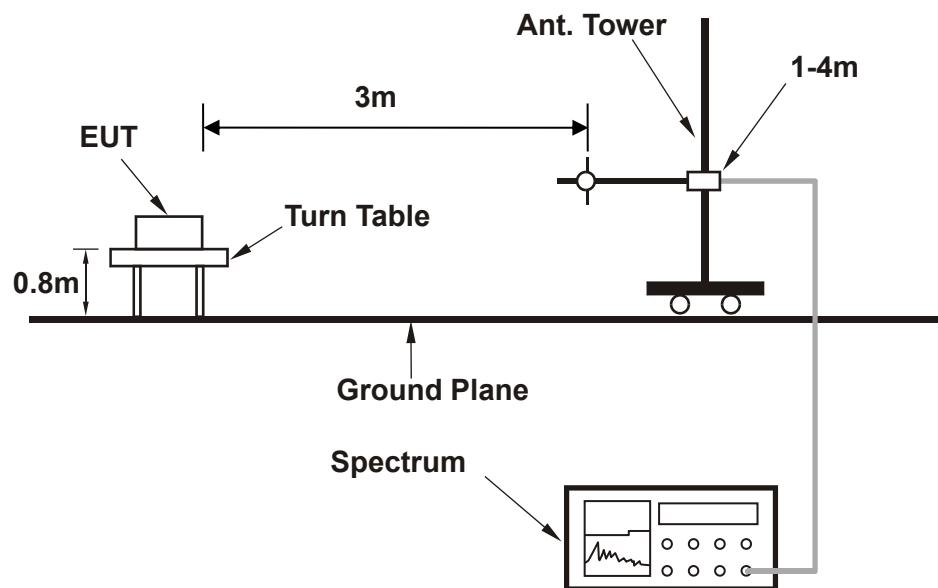


### 3.6.4 TEST SETUP

#### < Frequency Range below 30MHz >



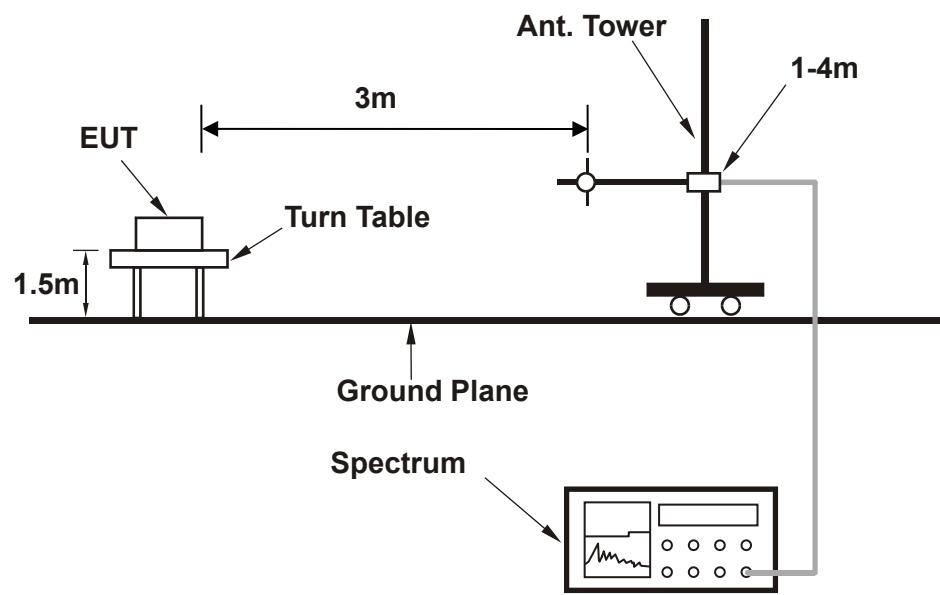
#### < Frequency Range 30MHz~1GHz >





BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

< Frequency Range above 1GHz >



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



## 3.6.5 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

## BELOW 1GHz WORST-CASE DATA

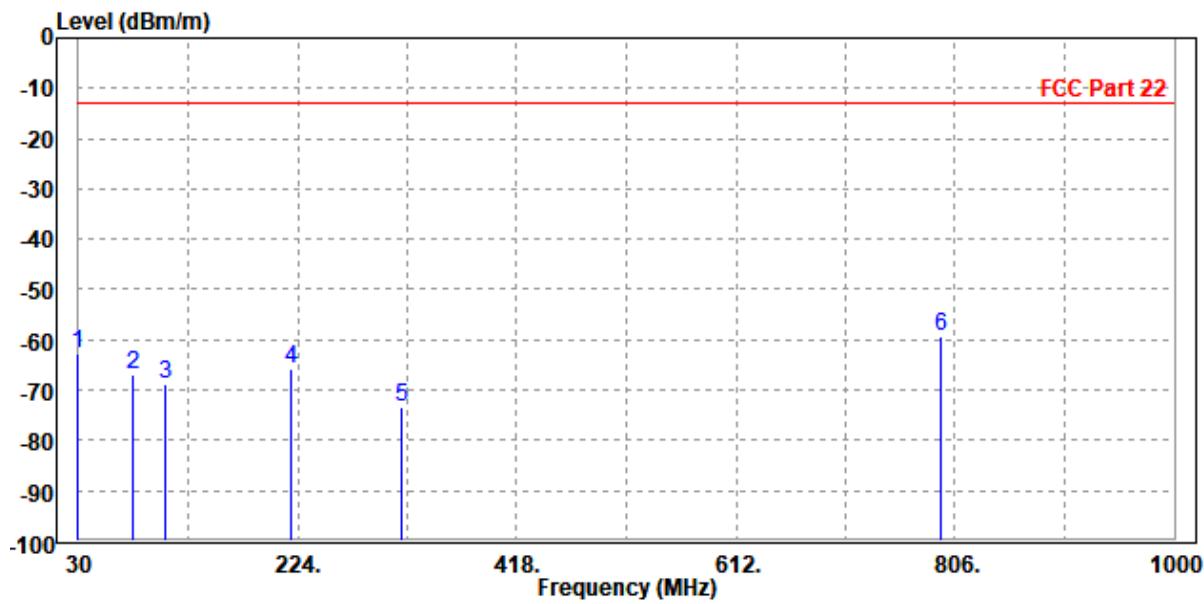
30 MHz – 1GHz data:

WCDMA V:

CHANNEL BANDWIDTH: 4132 ~ 4233

MODE	TX channel 4183	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Freq	Level	Read	Limit	Over	Remark	Pol/Phase
		Level	Line	Limit Factor		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	30.000	-62.78	-60.80	-13.00	-49.78	-1.98 Peak Horizontal
2	77.530	-66.91	-54.32	-13.00	-53.91	-12.59 Peak Horizontal
3	107.600	-68.97	-54.95	-13.00	-55.97	-14.02 Peak Horizontal
4	218.180	-65.93	-52.09	-13.00	-52.93	-13.84 Peak Horizontal
5	315.180	-73.51	-64.99	-13.00	-60.51	-8.52 Peak Horizontal
6 PP	793.390	-59.21	-64.37	-13.00	-46.21	5.16 Peak Horizontal

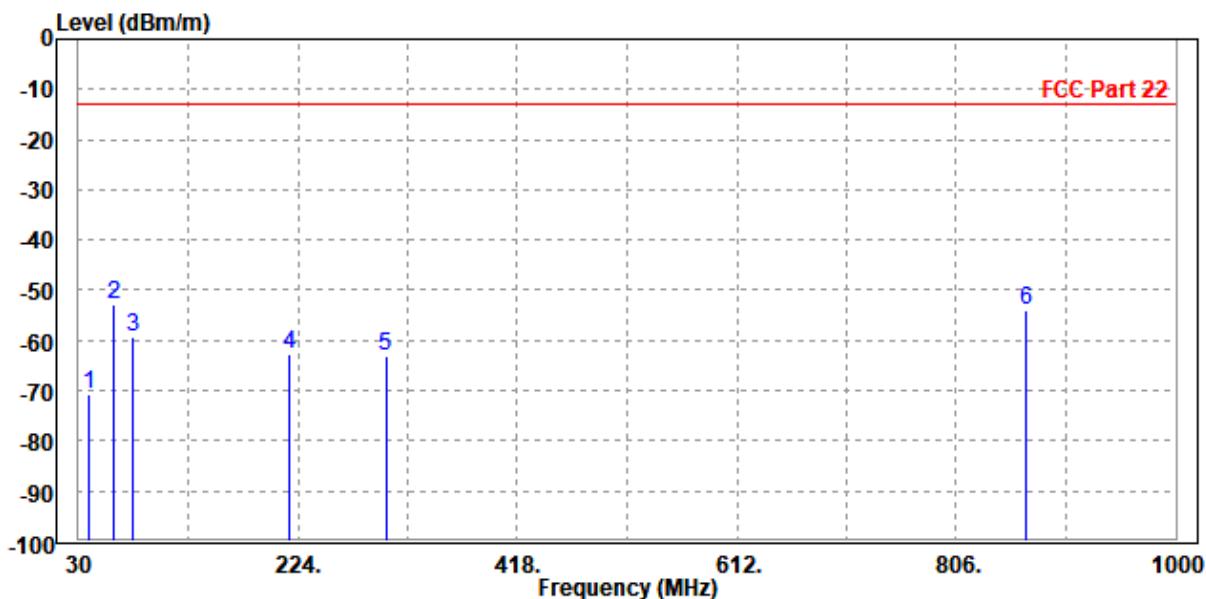




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

MODE	TX channel 4183	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Freq	Level	Read	Limit	Over	Factor	Remark	Pol/Phase
		Level	Line	Limit			
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	38.730	-70.67	-50.29	-13.00	-57.67	-20.38	Peak Vertical
2 PP	61.040	-52.82	-34.33	-13.00	-39.82	-18.49	Peak Vertical
3	78.500	-59.29	-40.08	-13.00	-46.29	-19.21	Peak Vertical
4	216.240	-62.72	-55.31	-13.00	-49.72	-7.41	Peak Vertical
5	301.600	-62.97	-59.55	-13.00	-49.97	-3.42	Peak Vertical
6	868.080	-54.15	-64.01	-13.00	-41.15	9.86	Peak Vertical





BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

## ABOVE 1GHz DATA

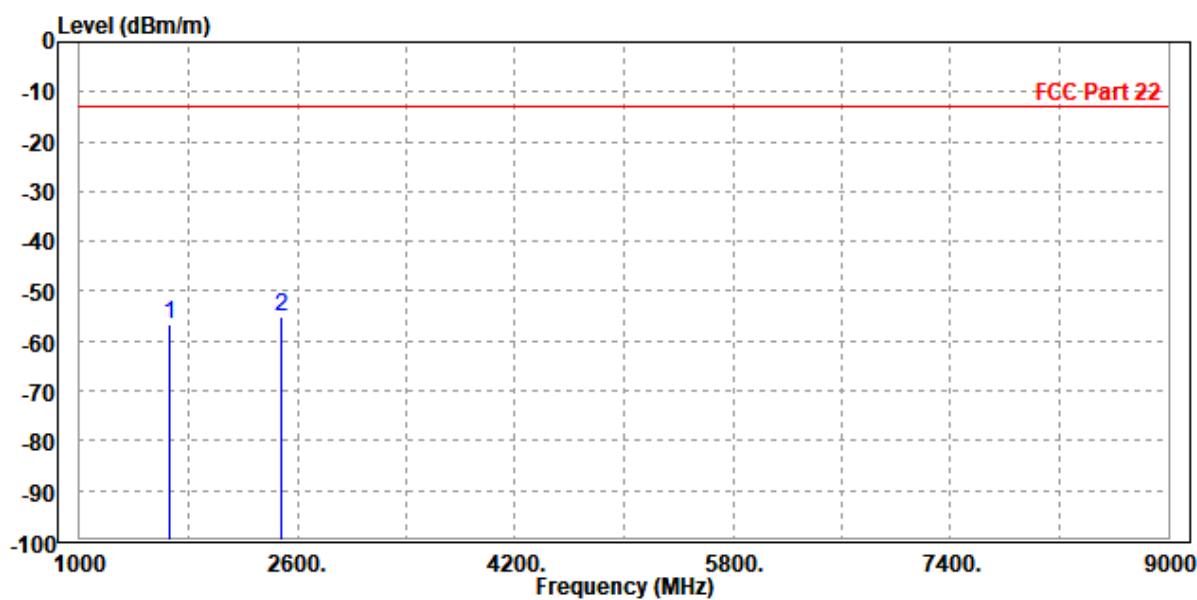
Note: For higher frequency, the emission is too low to be detected.

### WCDMA Band V:

#### CH 4132:

MODE	TX channel 4132	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Freq	Level	Read	Limit	Over	Factor	Remark	Pol/Phase
		Level	Line	Limit			
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1656.000	-56.49	-60.17	-13.00	-43.49	3.68	Peak Horizontal
2	PP 2479.200	-55.21	-61.25	-13.00	-42.21	6.04	Peak Horizontal

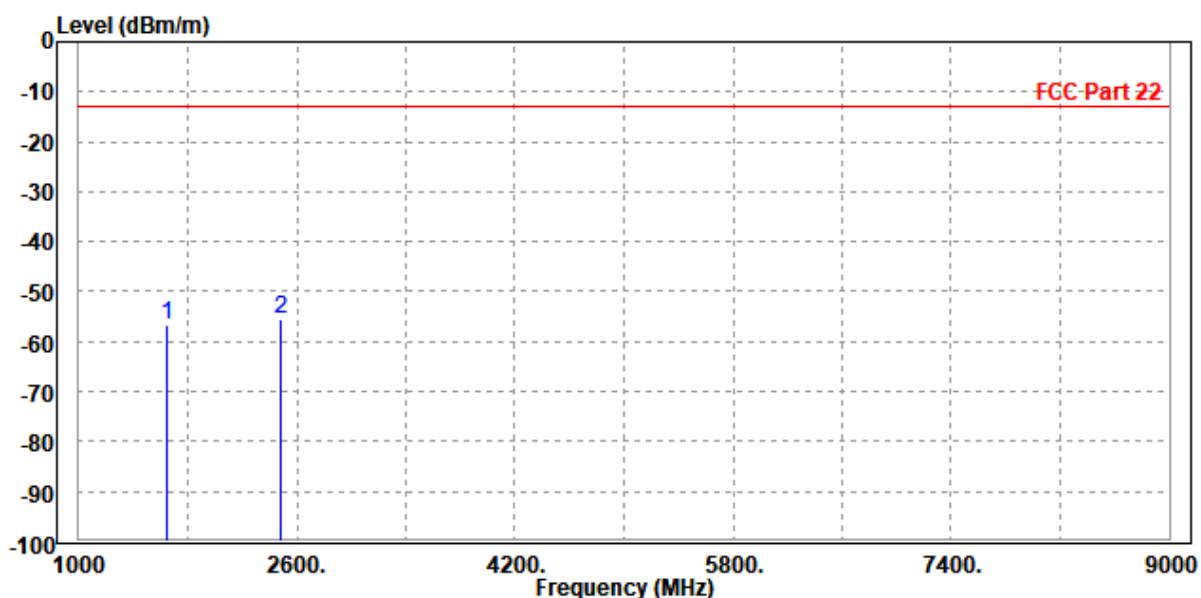




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

MODE	TX channel 4132	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Freq MHz	Level dBm/m	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		dBm	dBm/m	dB			
1 1652.800	-56.78	-60.18	-13.00	-43.78	3.40	Peak	Vertical
2 PP 2480.000	-55.50	-61.21	-13.00	-42.50	5.71	Peak	Vertical

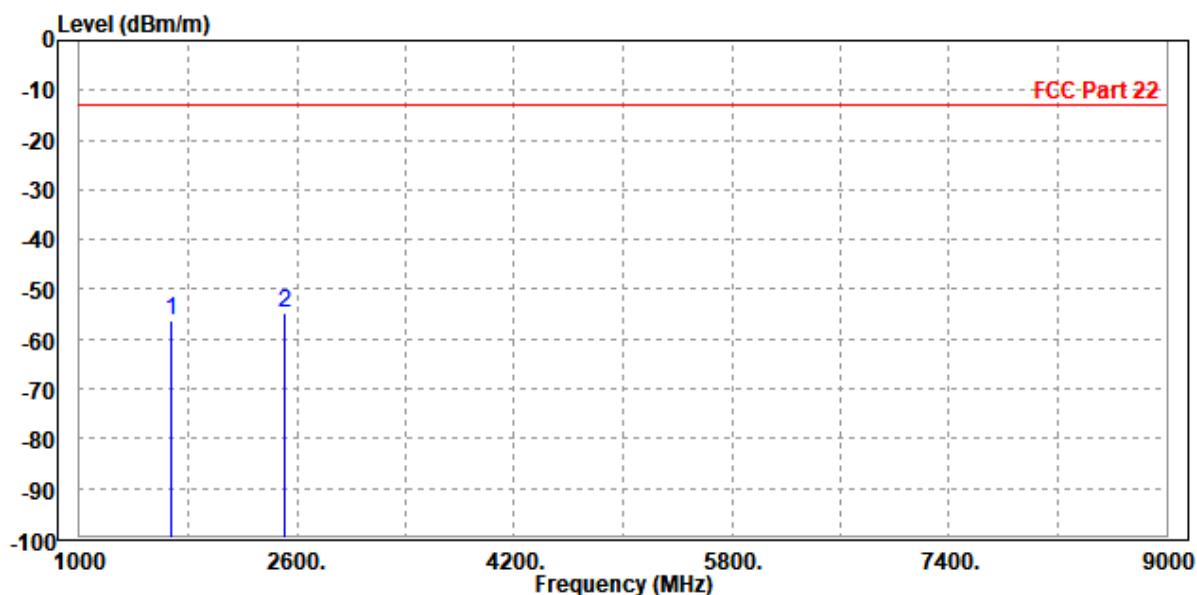


BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

CH 4183:

MODE	TX channel 4183	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Freq	Level	Read	Limit	Over	Factor	Remark	Pol/Phase
		Level	Line	Limit			
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.800	-56.39	-60.13	-13.00	-43.39	3.74 Peak	Horizontal
2 PP	2512.000	-54.81	-60.96	-13.00	-41.81	6.15 Peak	Horizontal



MODE	TX channel 4183	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ

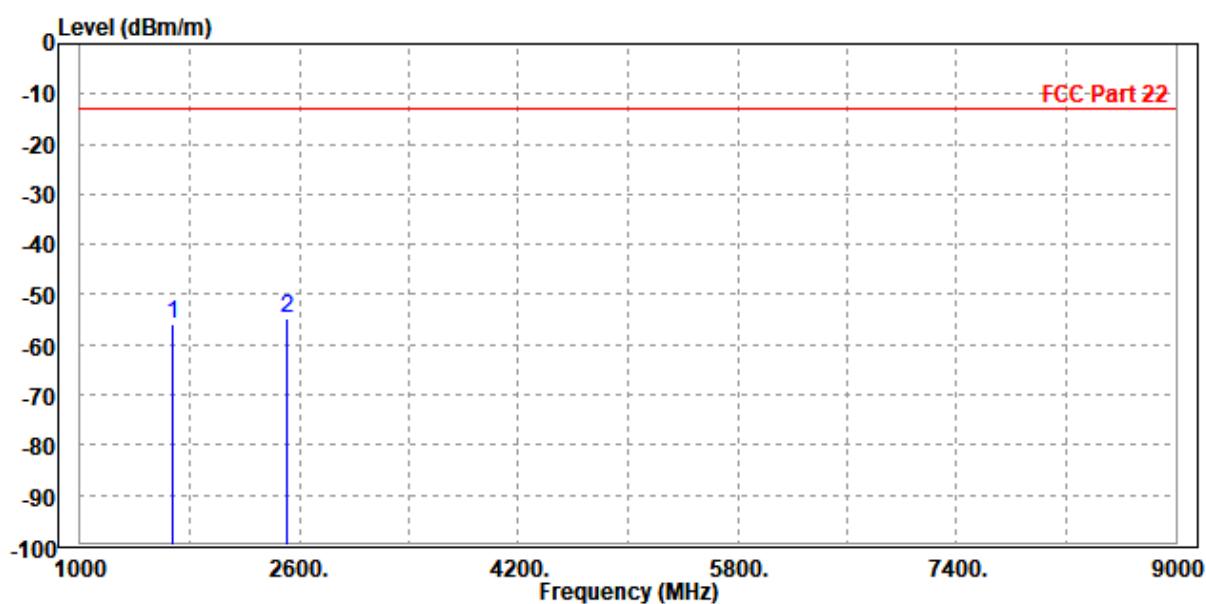


TESTED BY

Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

Freq	Level	Read	Limit	Over	Remark	Pol/Phase
		Level	Line	Limit Factor		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1672.000	-55.75	-59.18	-13.00	-42.75	3.43 Peak Vertical
2 PP	2509.200	-54.79	-60.63	-13.00	-41.79	5.84 Peak Vertical

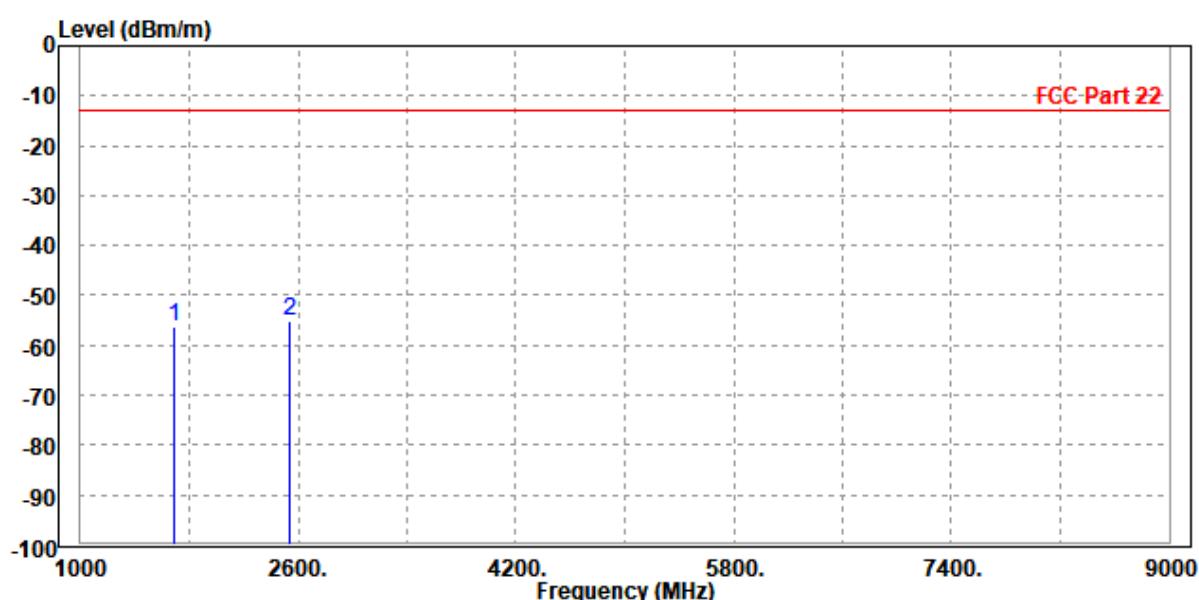


BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

CH 4233:

MODE	TX channel 4233	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Read Level	Limit Level	Over Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1693.200	-56.38	-60.18	-13.00	-43.38	3.80	Peak	Horizontal
2	PP 2536.000	-54.99	-61.24	-13.00	-41.99	6.25	Peak	Horizontal



MODE	TX channel 4233	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ



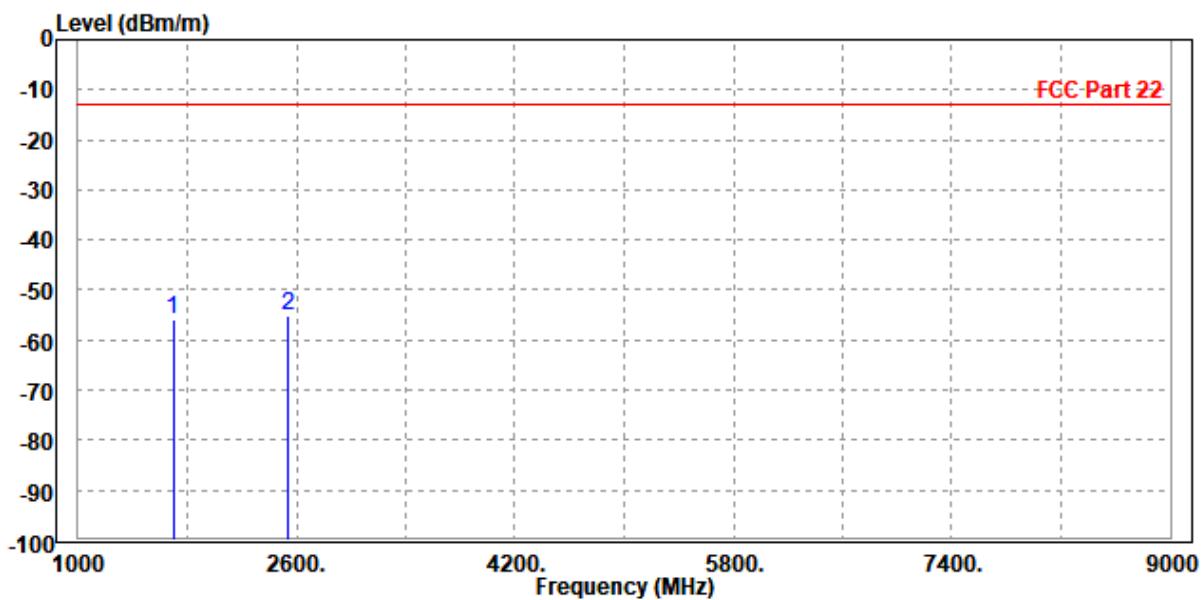
BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

TESTED BY

Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

	Freq	Read Level	Limit Level	Over Line	Limit Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	1696.000	-55.86	-59.33	-13.00	-42.86	3.47 Peak	Vertical
2	PP 2539.800	-55.14	-61.16	-13.00	-42.14	6.02 Peak	Vertical





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VERITAS Test Report No.: PSU-QSU2503280115RI04

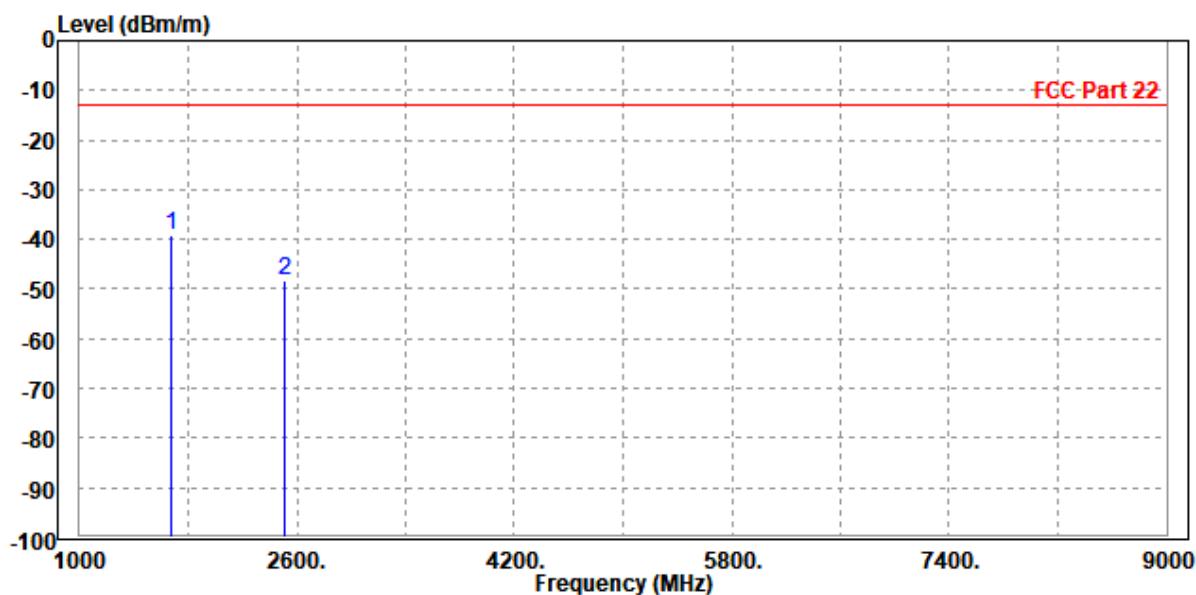
LTE Band 26

CHANNEL BANDWIDTH: 1.4MHz / QPSK

CH26915

MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Freq MHz	Level dBm/m	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		dBm	dBm/m	dB			
1 PP 1672.000	-39.02	-42.75	-13.00	-26.02	3.73	Peak	Horizontal
2 2508.000	-48.29	-54.42	-13.00	-35.29	6.13	Peak	Horizontal



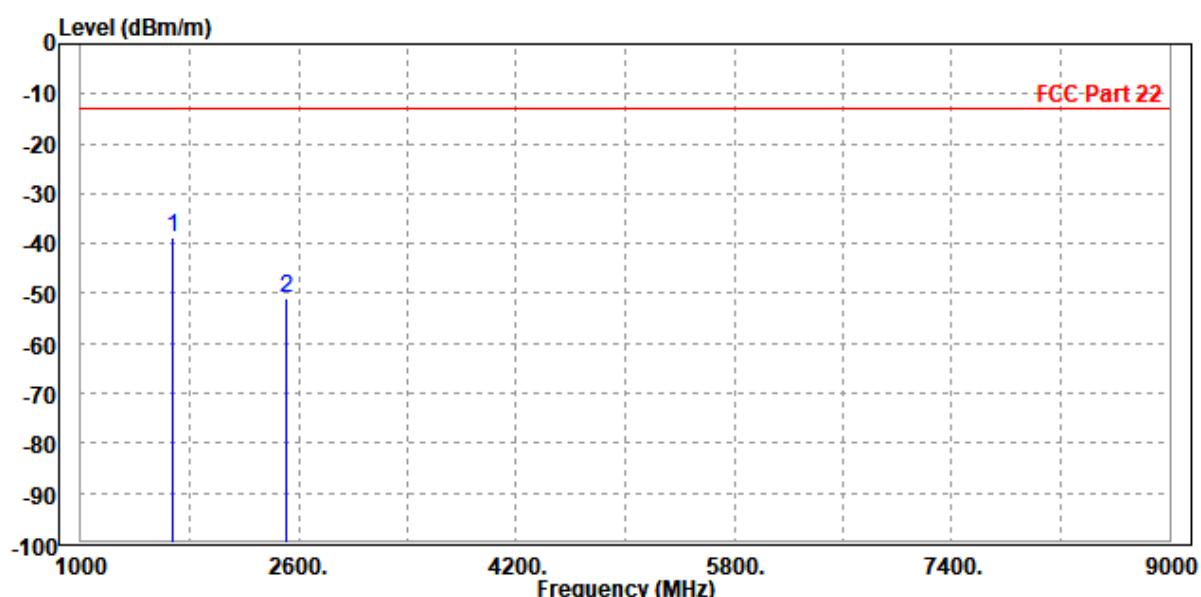
MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
Huarui 7layers High Technology (Suzhou) Co., Ltd.	Tower N, Innovation Centre 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province, P.R.C.	Tel: +86 (0557) 368 1008	



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VERITAS Test Report No.: PSU-QSU2503280115RI04

ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Freq	Level	Read	Limit	Over	Factor	Remark	Pol/Phase
		Level	Line	Limit			
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	PP 1672.000	-38.72	-42.15	-13.00	-25.72	3.43	Peak Vertical
2	2504.000	-51.00	-56.80	-13.00	-38.00	5.80	Peak Vertical



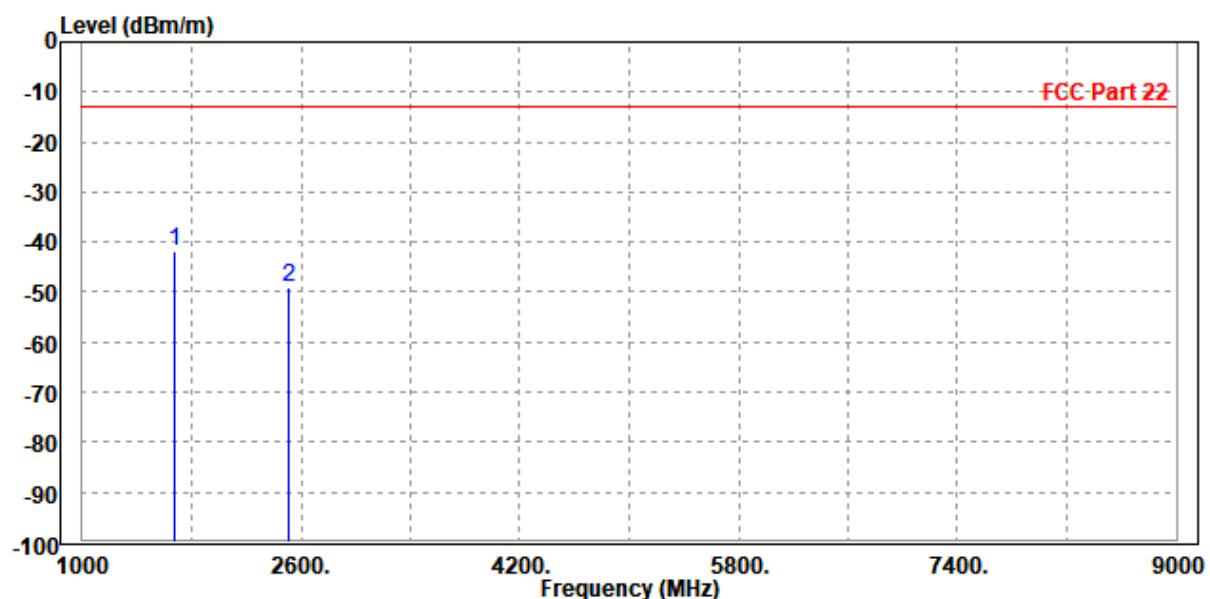


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VERITAS Test Report No.: PSU-QSU2503280115RI04

CHANNEL BANDWIDTH: 3MHz / QPSK

MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

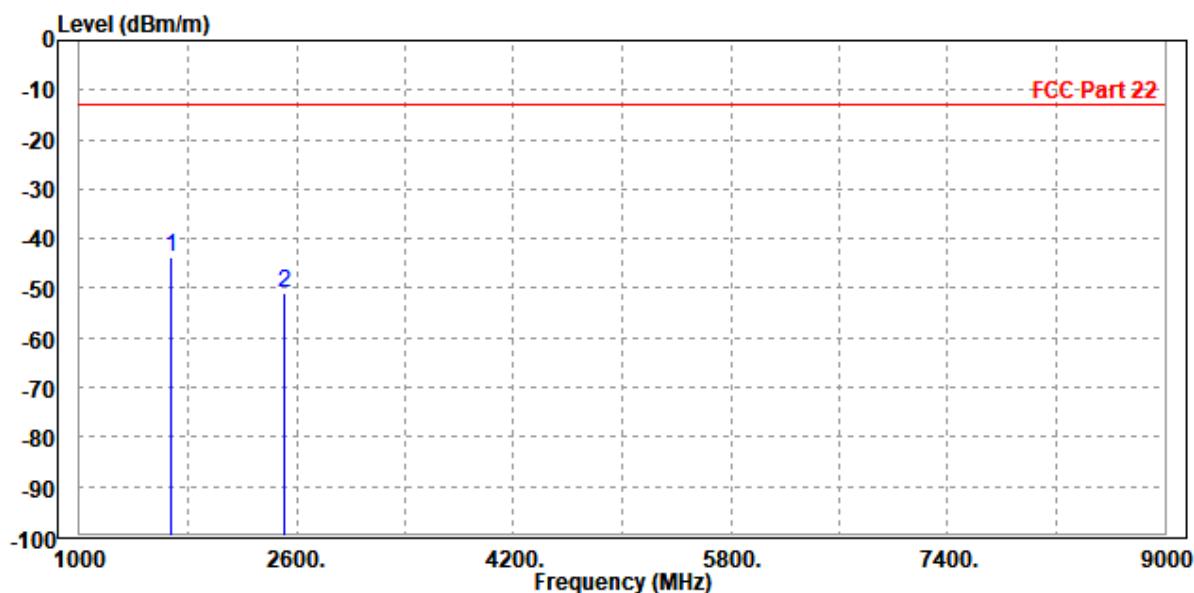
Freq	Level	Read	Limit	Over	Remark	Pol/Phase
		Line	Limit	Factor		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 PP 1672.000	-41.73	-45.46	-13.00	-28.73	3.73 Peak	Horizontal
2 2504.000	-49.03	-55.15	-13.00	-36.03	6.12 Peak	Horizontal





MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Freq	Level	Read	Limit	Over	Factor	Remark	Pol/Phase
		Line	Limit	Factor			
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1672.000	-43.79	-47.22	-13.00	-30.79	3.43 Peak	Vertical
2	2508.000	-50.95	-56.78	-13.00	-37.95	5.83 Peak	Vertical

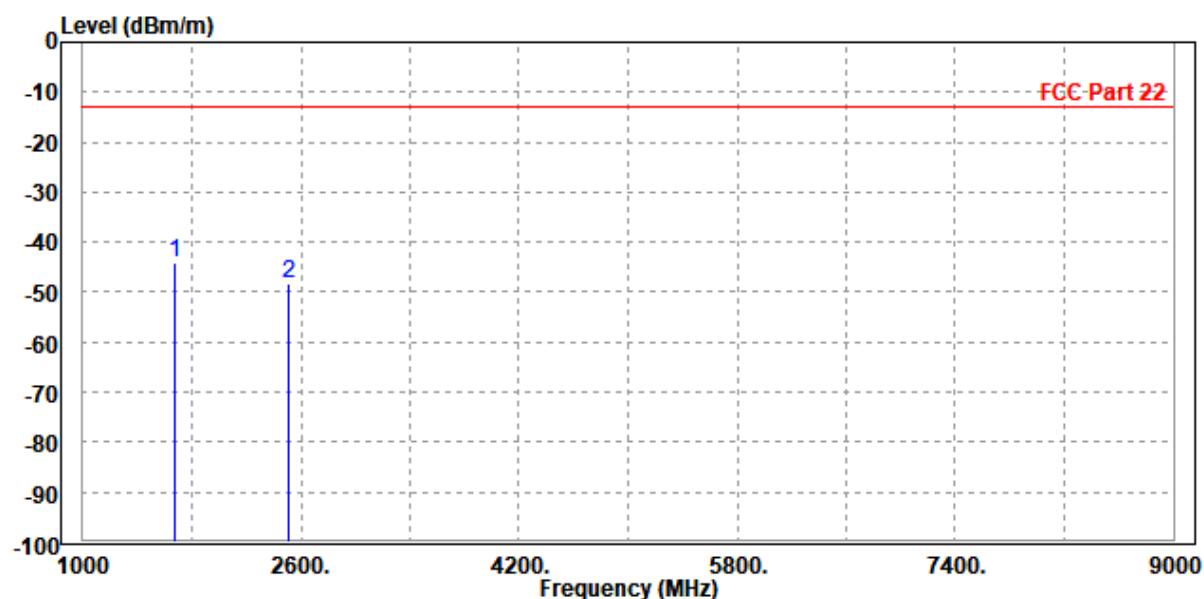




CHANNEL BANDWIDTH: 5MHz / QPSK

MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Freq	Level	Read	Limit	Over	Factor	Remark	Pol/Phase
		Level	Line	Limit			
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1672.000	-44.06	-47.79	-13.00	-31.06	3.73 Peak	Horizontal
2	2508.000	-48.24	-54.37	-13.00	-35.24	6.13 Peak	Horizontal

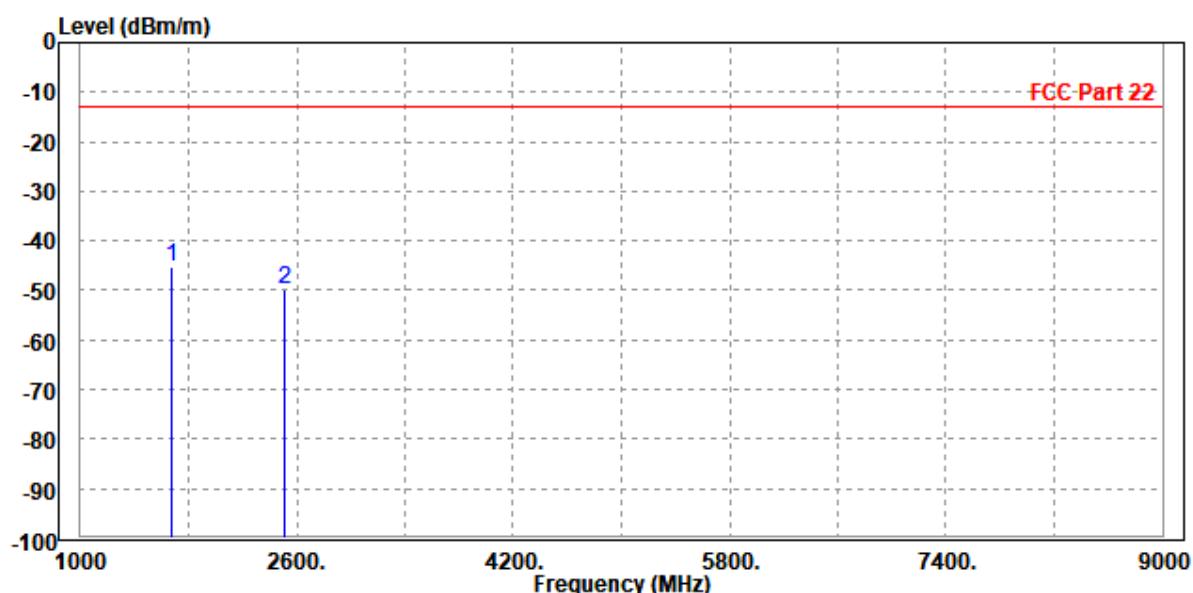




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Freq	Level	Read	Limit	Over	Remark	Pol/Phase
		Level	Line	Limit Factor		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 PP	1672.000	-45.27	-48.70	-13.00	-32.27	3.43 Peak Vertical
2	2504.000	-49.94	-55.74	-13.00	-36.94	5.80 Peak Vertical



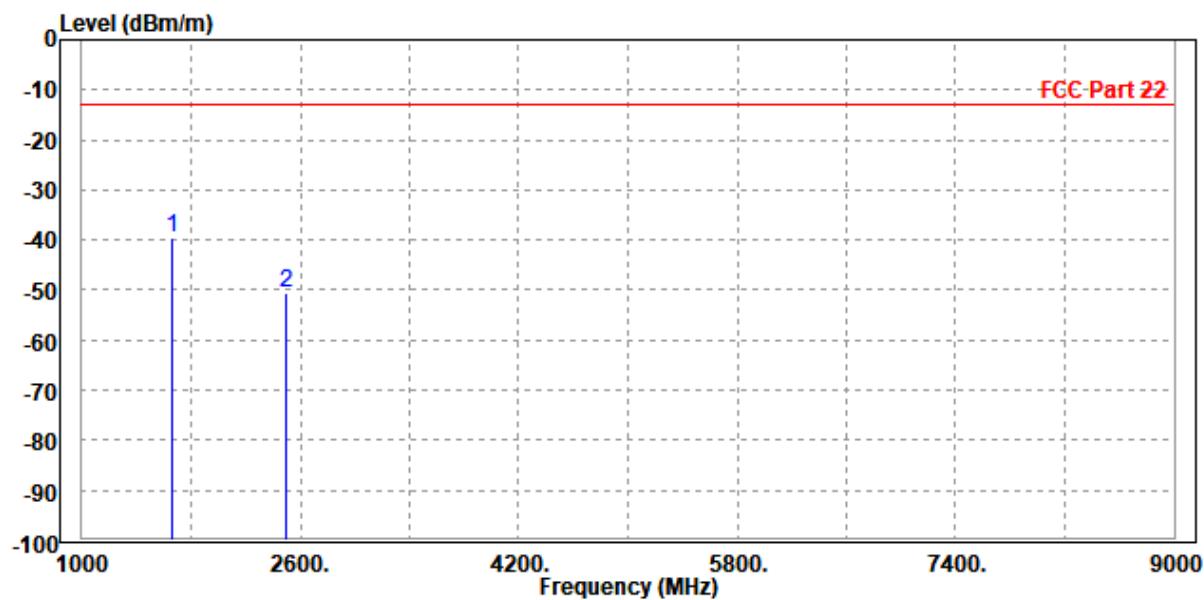


CHANNEL BANDWIDTH: 10MHz / QPSK

CH 26840

MODE	TX channel 26840	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Freq	Level	Read	Limit	Over	Remark	Pol/Phase
		Level	Line	Limit Factor		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 PP 1656.000	-39.36	-43.04	-13.00	-26.36	3.68 Peak	Horizontal
2 2496.000	-50.47	-56.56	-13.00	-37.47	6.09 Peak	Horizontal

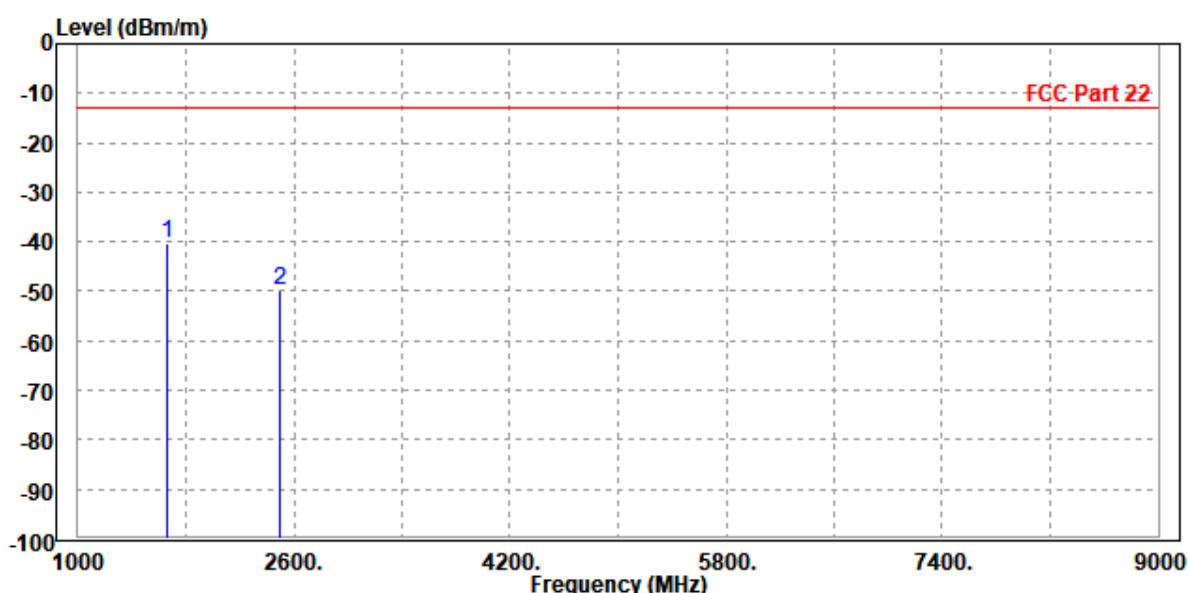




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

MODE	TX channel 26840	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Read Level	Limit Level	Over Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1656.000	-40.46	-43.86	-13.00	-27.46	3.40	Peak	Vertical
2	2493.000	-49.86	-55.62	-13.00	-36.86	5.76	Peak	Vertical

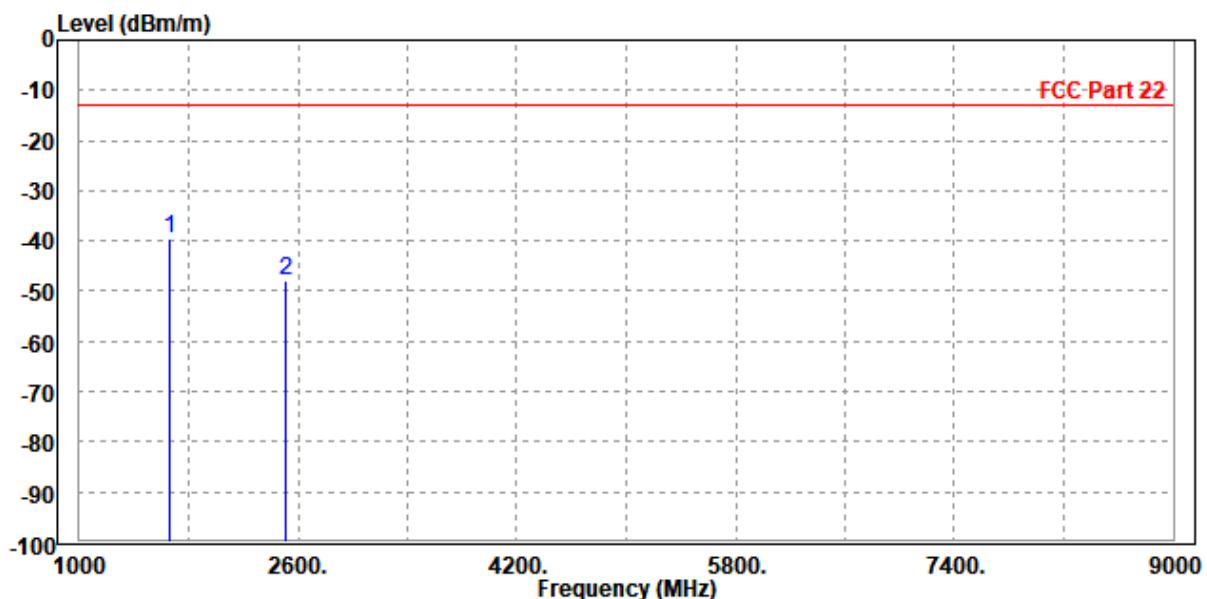




CH 26915

MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Freq	Level	Read	Limit	Over	Factor	Remark	Pol/Phase
		Line	Limit	Factor			
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	PP	1664.000	-39.39	-43.10	-13.00	-26.39	3.71 Peak Horizontal
2		2504.000	-48.03	-54.15	-13.00	-35.03	6.12 Peak Horizontal

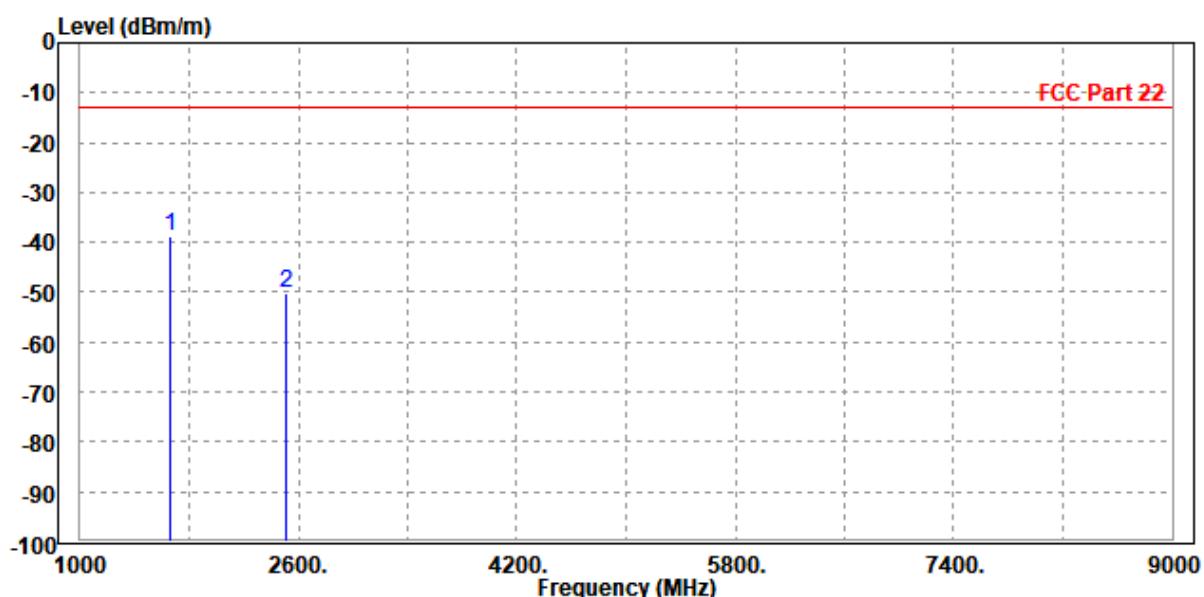




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Freq	Level	Read	Limit	Over	Remark	Pol/Phase
		Line	Limit Factor	Factor		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 PP	1664.000	-38.67	-42.09	-13.00	-25.67	3.42 Peak Vertical
2	2508.000	-50.17	-56.00	-13.00	-37.17	5.83 Peak Vertical



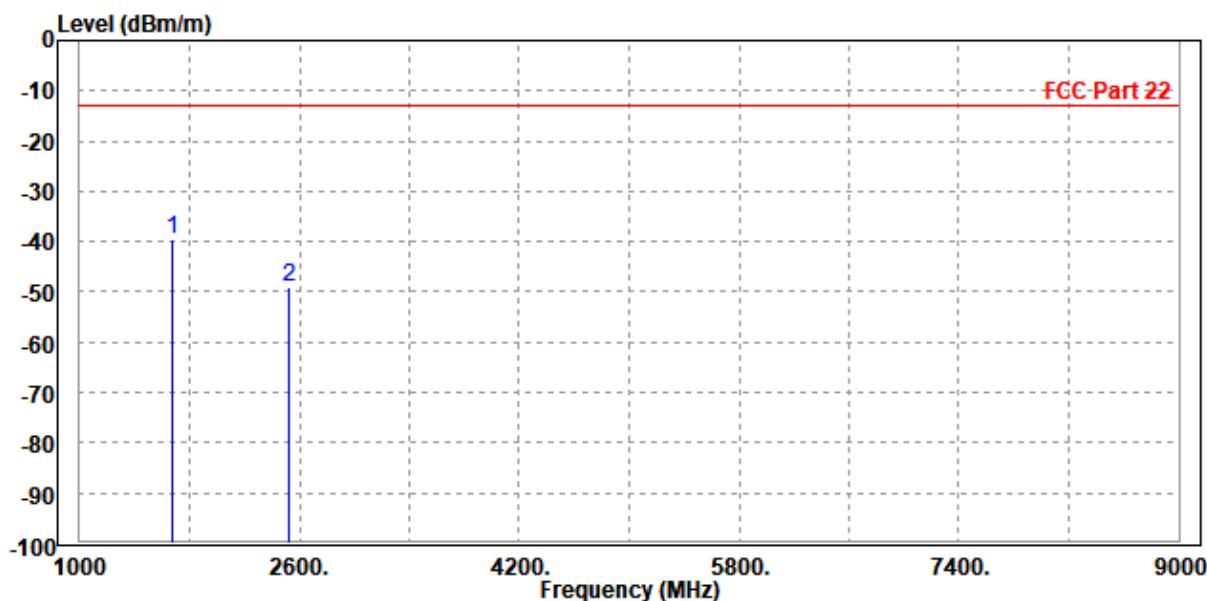


BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

CH 26990

MODE	TX channel 26990	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

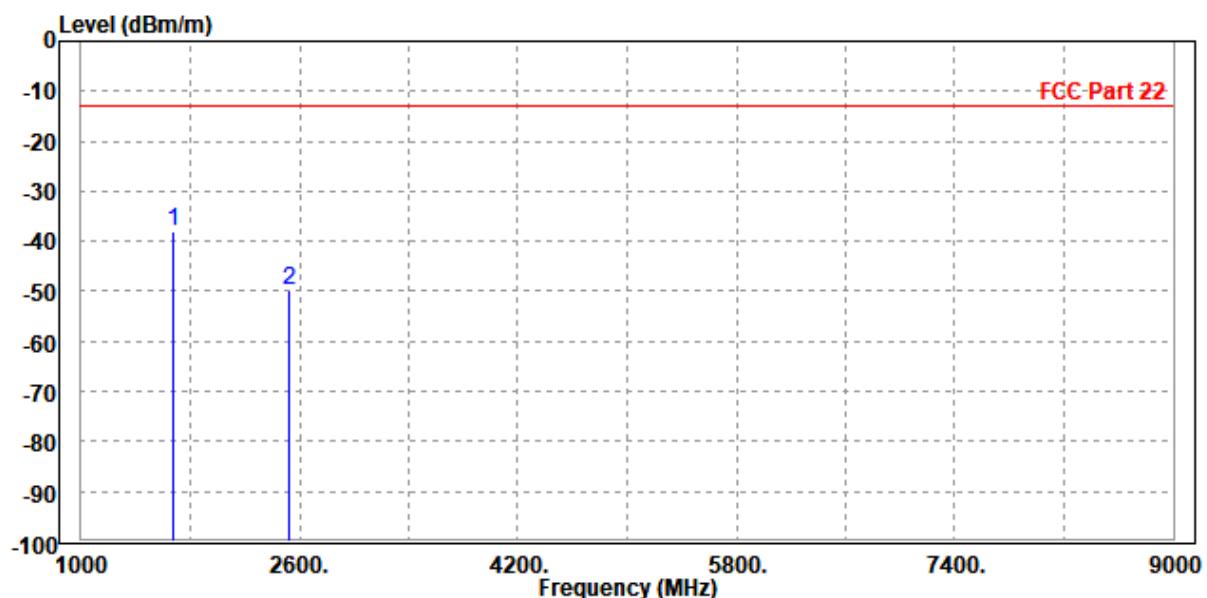
Freq	Level	Read	Limit	Over	Factor	Remark	Pol/Phase
		Line	Line	Limit			
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1672.000	-39.72	-43.45	-13.00	-26.72	3.73 Peak	Horizontal
2	2520.000	-49.12	-55.31	-13.00	-36.12	6.19 Peak	Horizontal





MODE	TX channel 26990	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Freq	Level	Read	Limit	Over	Remark	Pol/Phase
		Level	Line	Limit Factor		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 PP 1672.000	-37.84	-41.27	-13.00	-24.84	3.43 Peak	Vertical
2 2523.000	-49.87	-55.79	-13.00	-36.87	5.92 Peak	Vertical



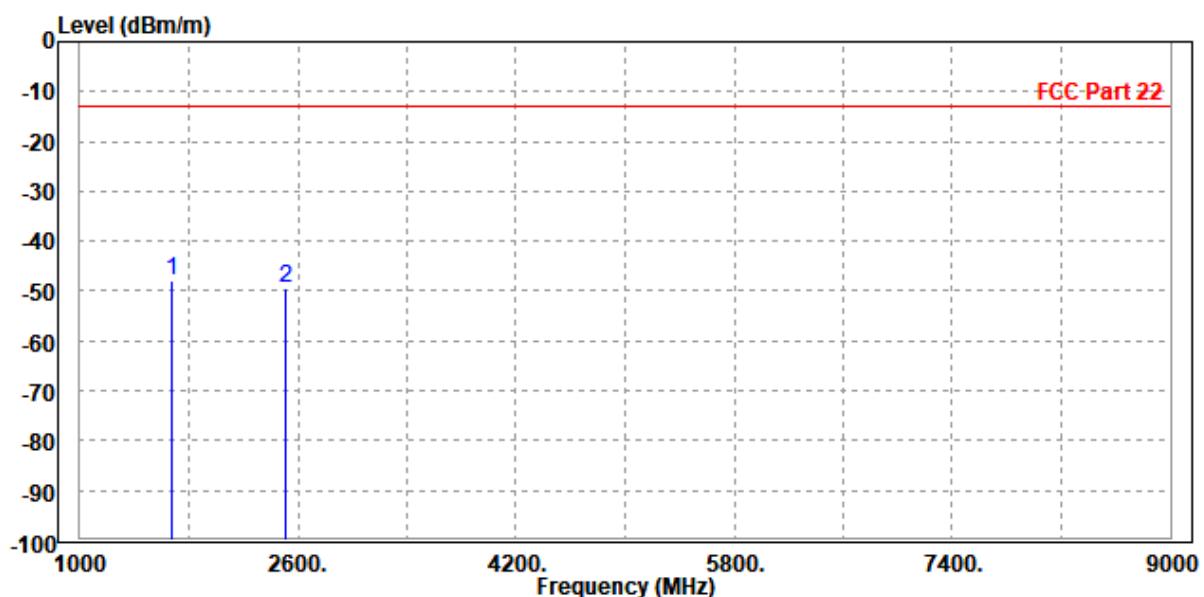


BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI04

CHANNEL BANDWIDTH: 15MHz / QPSK

MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

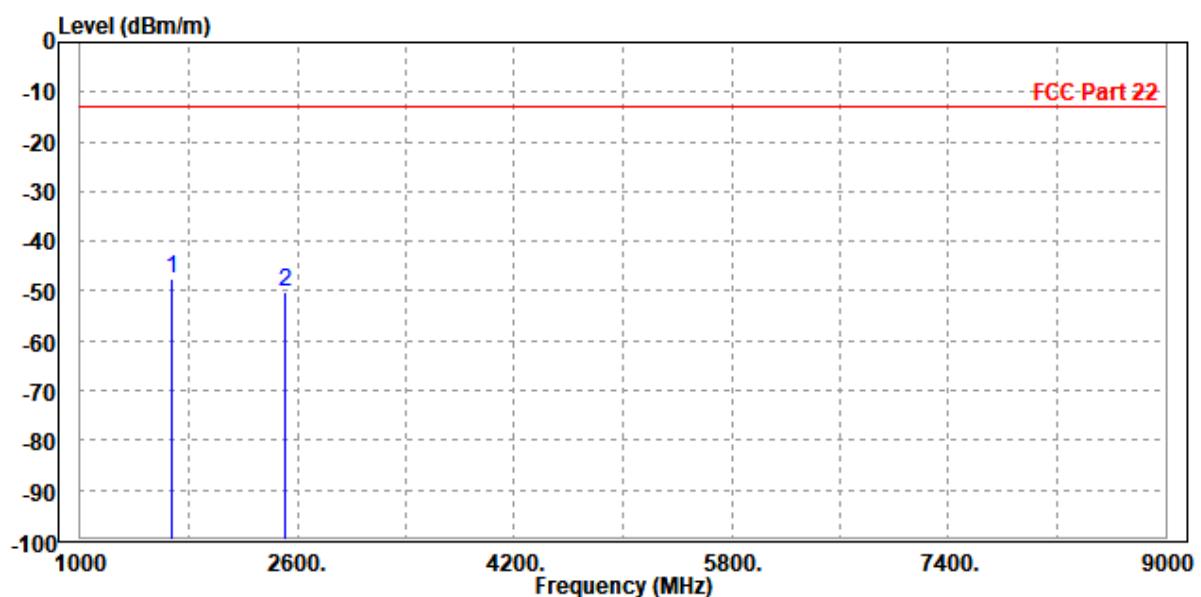
Freq	Level	Read	Limit	Over	Factor	Remark	Pol/Phase
		Level	Line	Limit			
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1672.000	-47.76	-51.49	-13.00	-34.76	3.73 Peak	Horizontal
2	2508.000	-49.56	-55.69	-13.00	-36.56	6.13 Peak	Horizontal





MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

Freq MHz	Level dBm/m	Read Level	Limit Line	Over Limit	Over Factor	Remark	Pol/Phase
		dBm	dBm/m	dB	dB/m		
1 PP 1672.000	-47.60	-51.03	-13.00	-34.60	3.43	Peak	Vertical
2 2504.000	-50.15	-55.95	-13.00	-37.15	5.80	Peak	Vertical



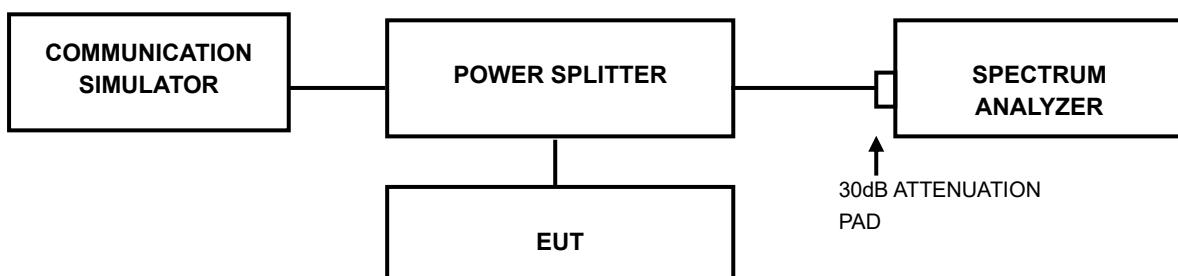


### 3.7 PEAK TO AVERAGE RATIO

#### 3.7.1 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

#### 3.7.2 TEST SETUP



#### 3.7.3 TEST PROCEDURES

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



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### 3.7.4 TEST RESULTS

Please Refer to Appendix Of this test report.



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## 4 INFORMATION ON THE TESTING LABORATORIES

We, Huarui 7layers High Technology (Suzhou) Co., Ltd. ,were founded in 2020 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Centre 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province, P.R.C.  
Accredited Test Lab Cert 6613.01

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

**Suzhou EMC/RF Lab:**

Tel: +86 (0557) 368 1008

Huarui 7layers High Technology  
(Suzhou) Co., Ltd.

Tower N, Innovation Centre 88 Zuyi Road, High-tech  
District, Suzhou City, Anhui Province, P.R.C.

Tel: +86 (0557) 368 1008



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## 5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.



## 6 Appendix :

### WCMDA BAND5

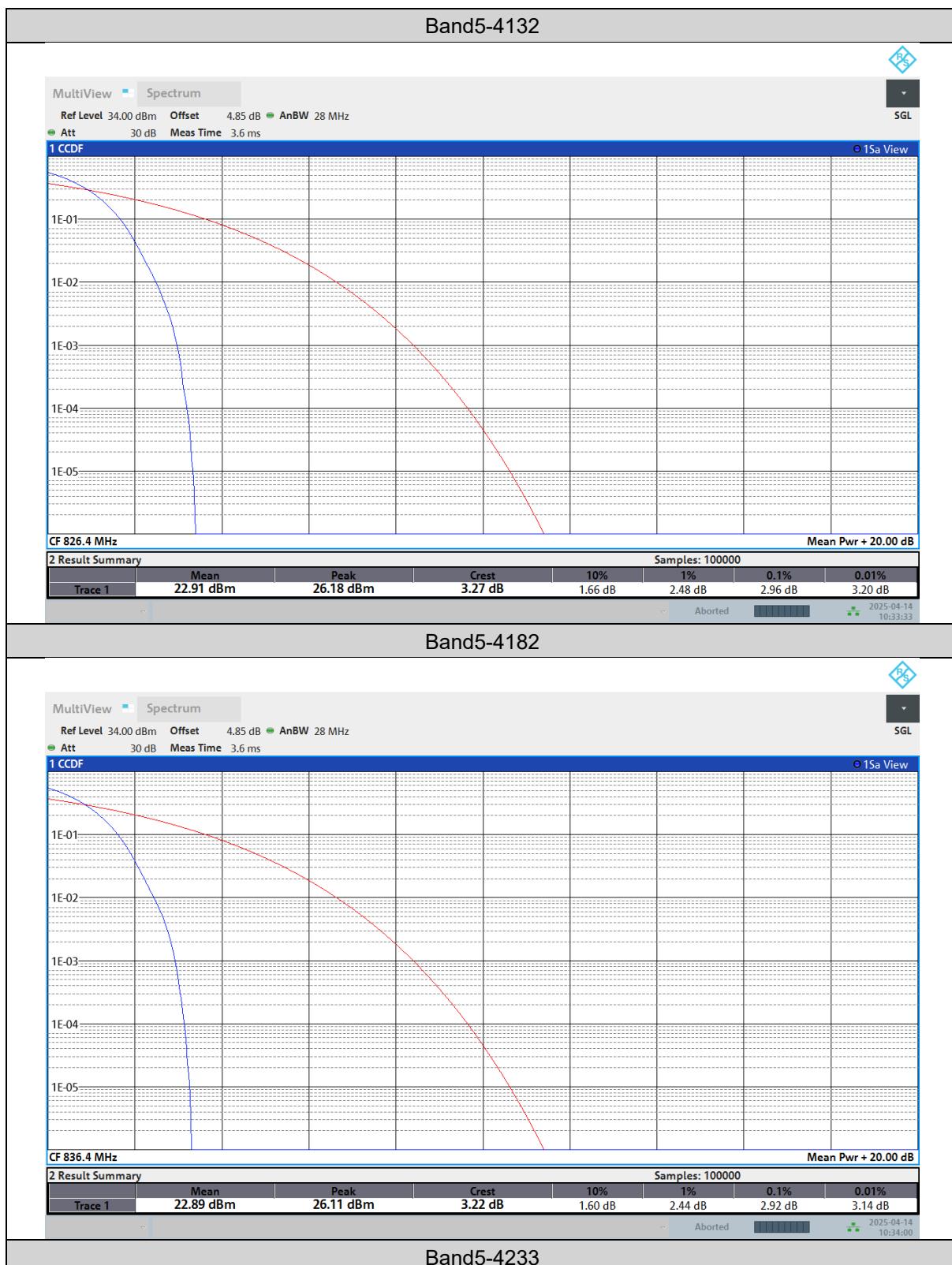
#### PEAK-TO-AVERAGE RATIO

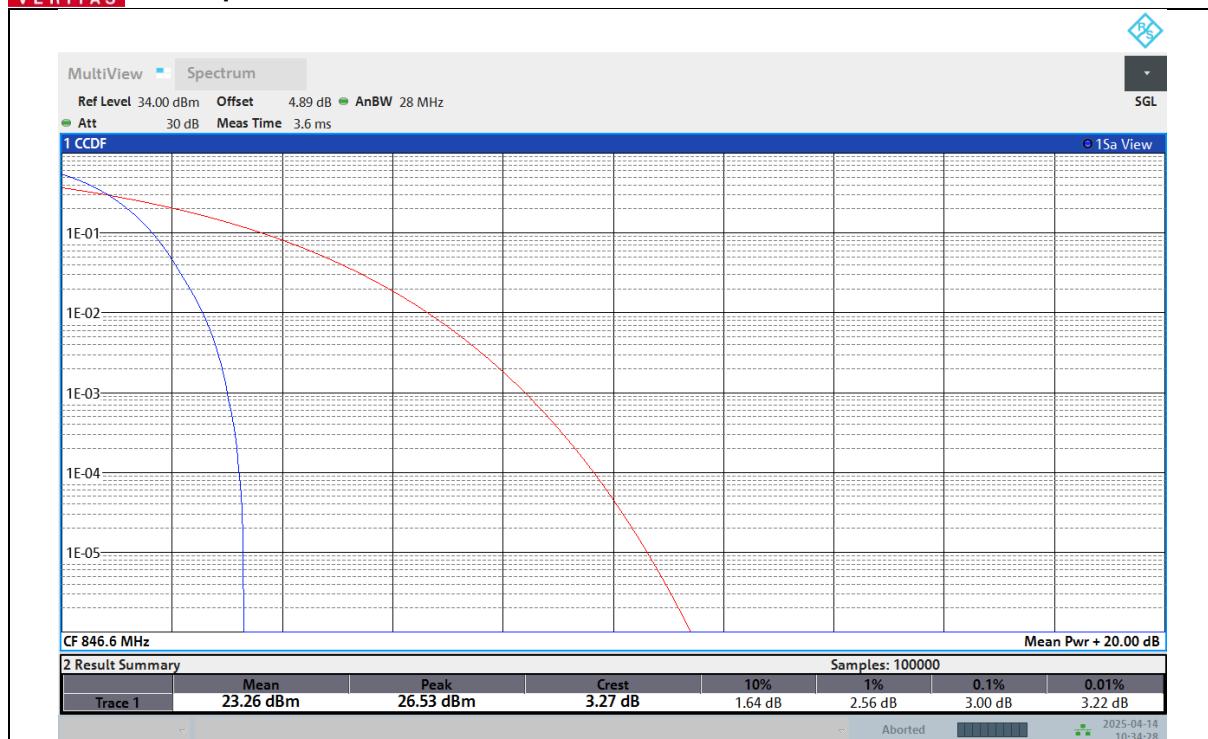
##### Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band5	4132	2.96	13	PASS
Band5	4182	2.92	13	PASS
Band5	4233	3.00	13	PASS



## Test Graphs







## 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

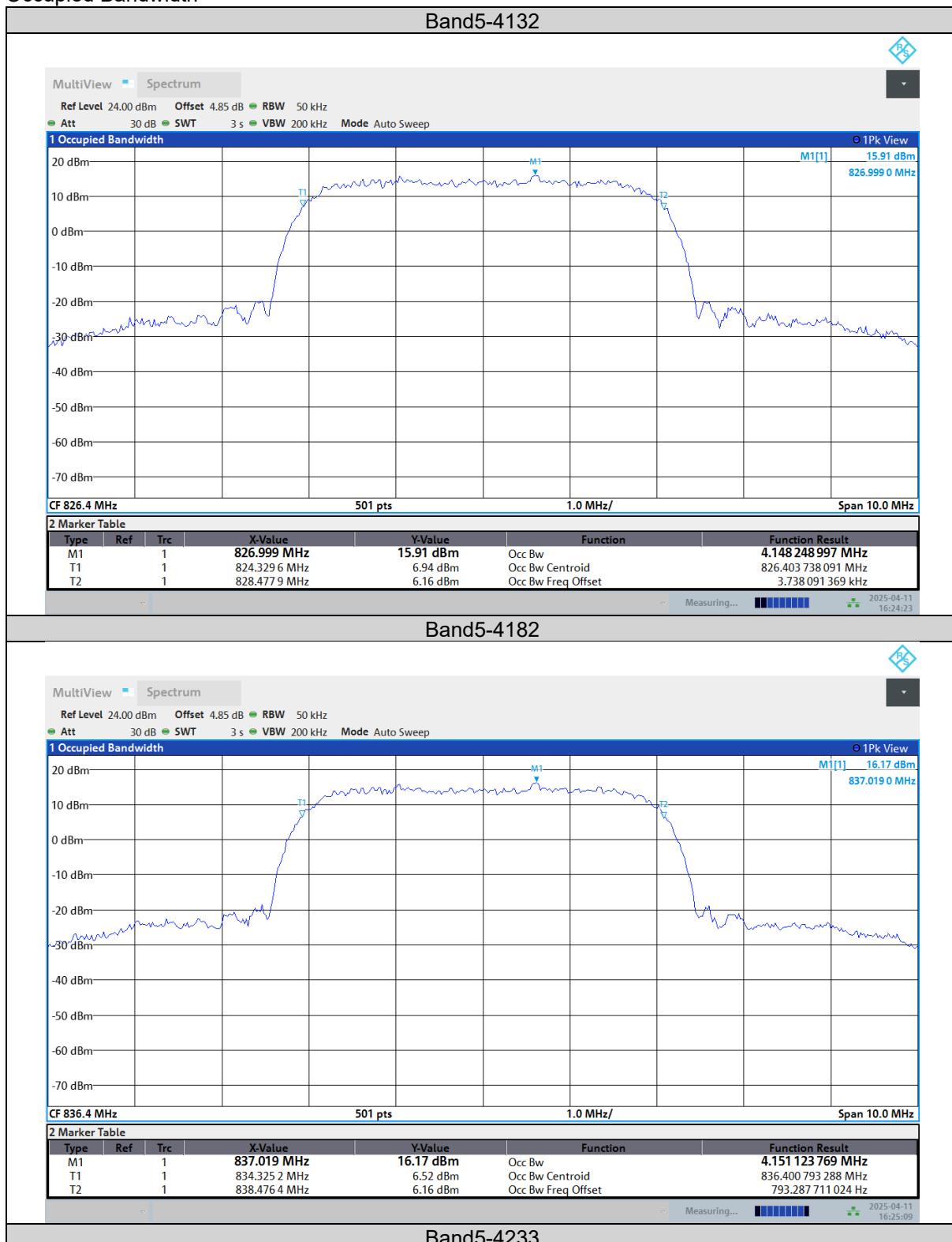
### Test Result

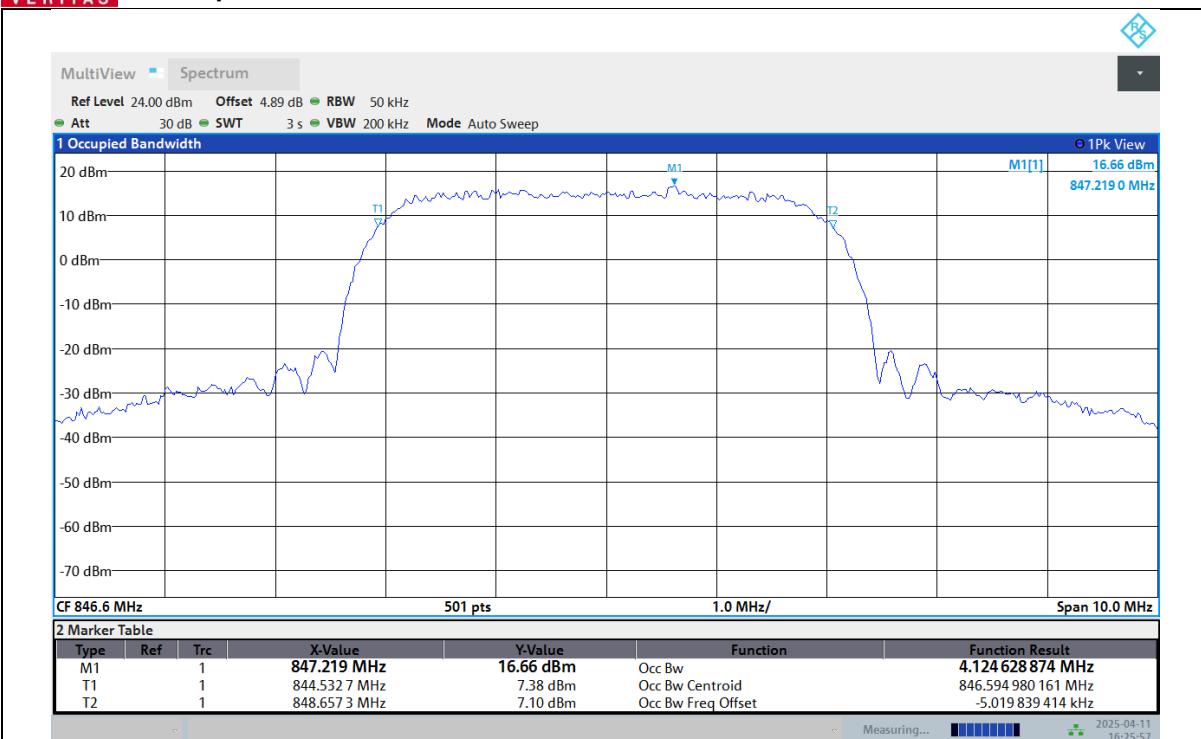
Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band5	4132	4.148	4.68	PASS
Band5	4182	4.151	4.68	PASS
Band5	4233	4.125	4.67	PASS



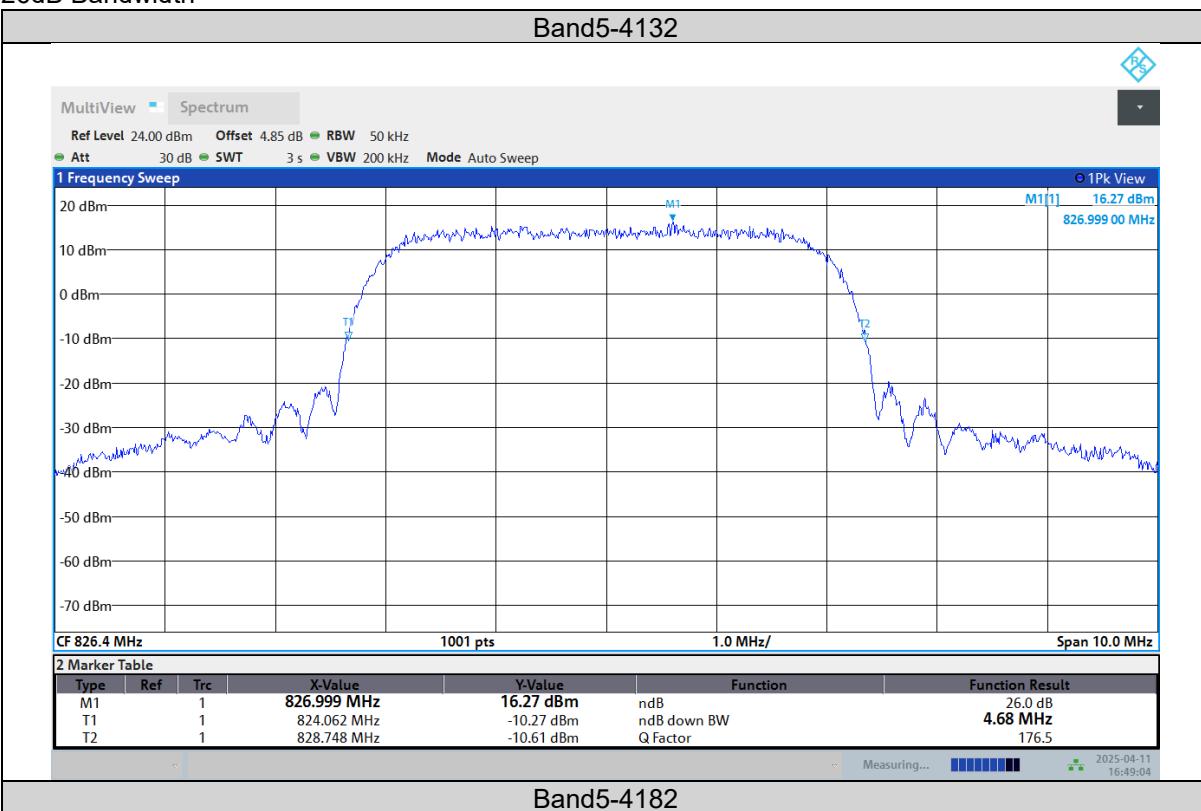
## Test Graphs

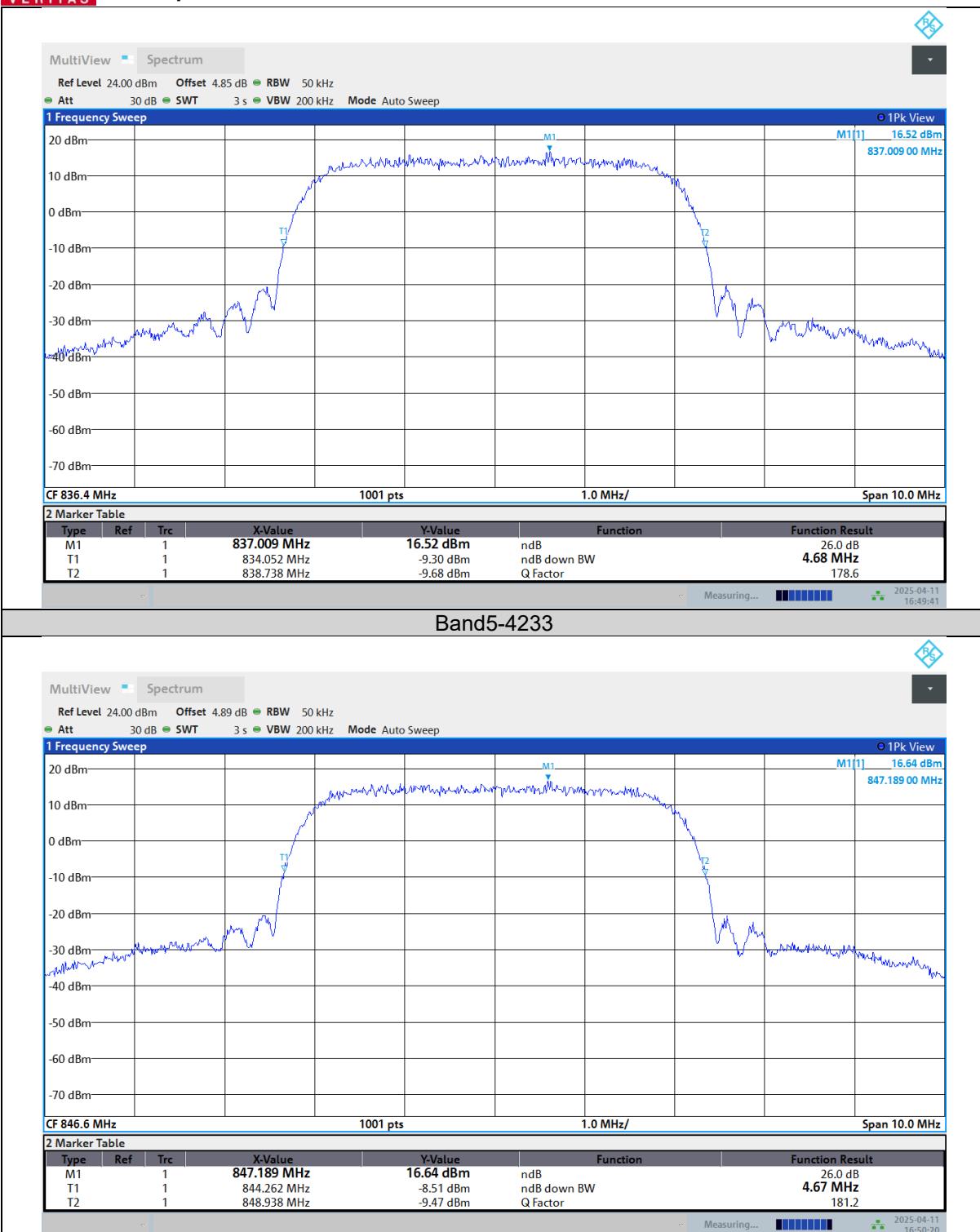
### Occupied Bandwidth





## 26dB Bandwidth







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## BAND EDGE

### Test Result

Band	Channel	Result (dBm)	Limit(dBm)	Verdict
Band5	4132	See Graph	-13	PASS
Band5	4233	See Graph	-13	PASS



## Test Graphs





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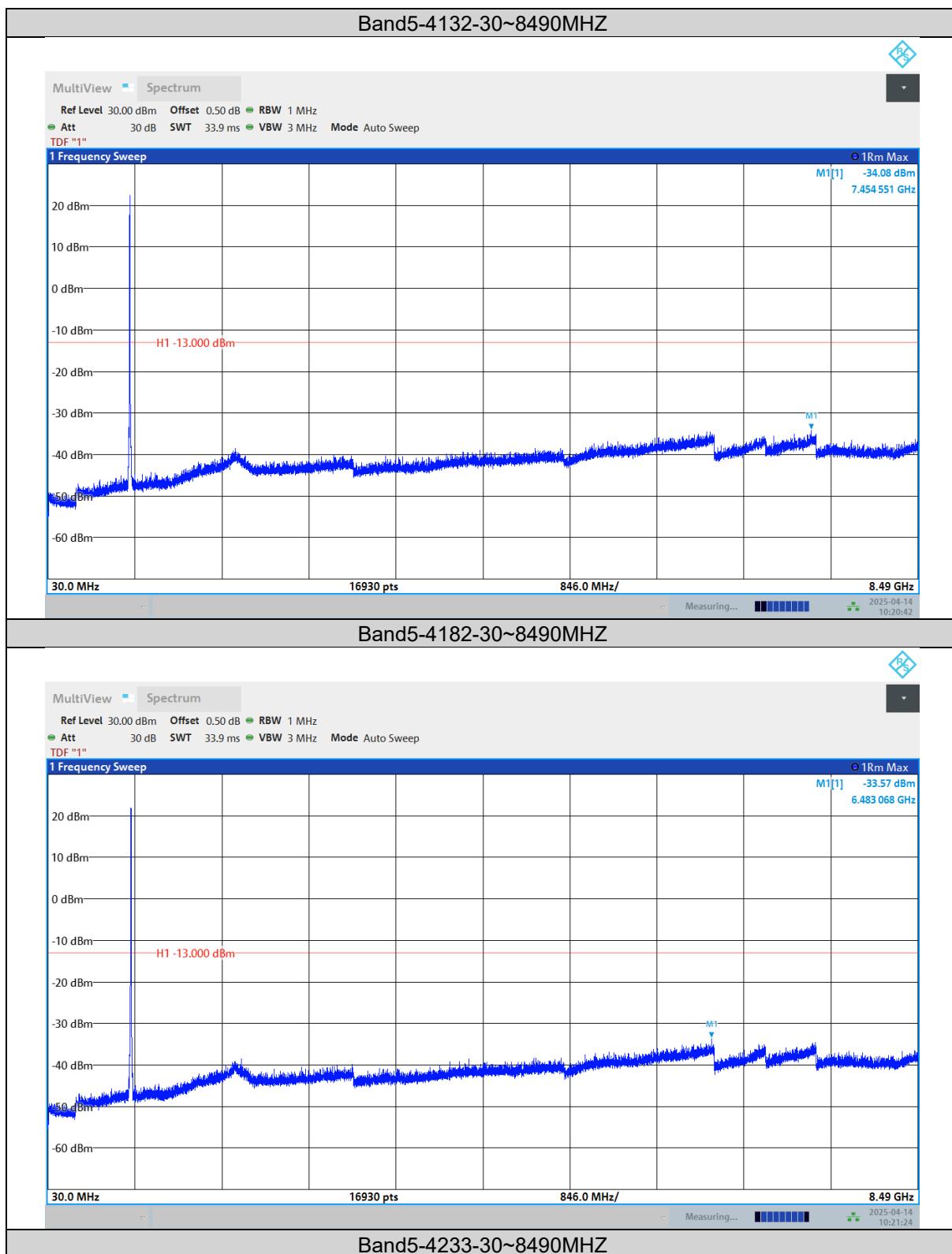
## CONDUCTED SPURIOUS EMISSION

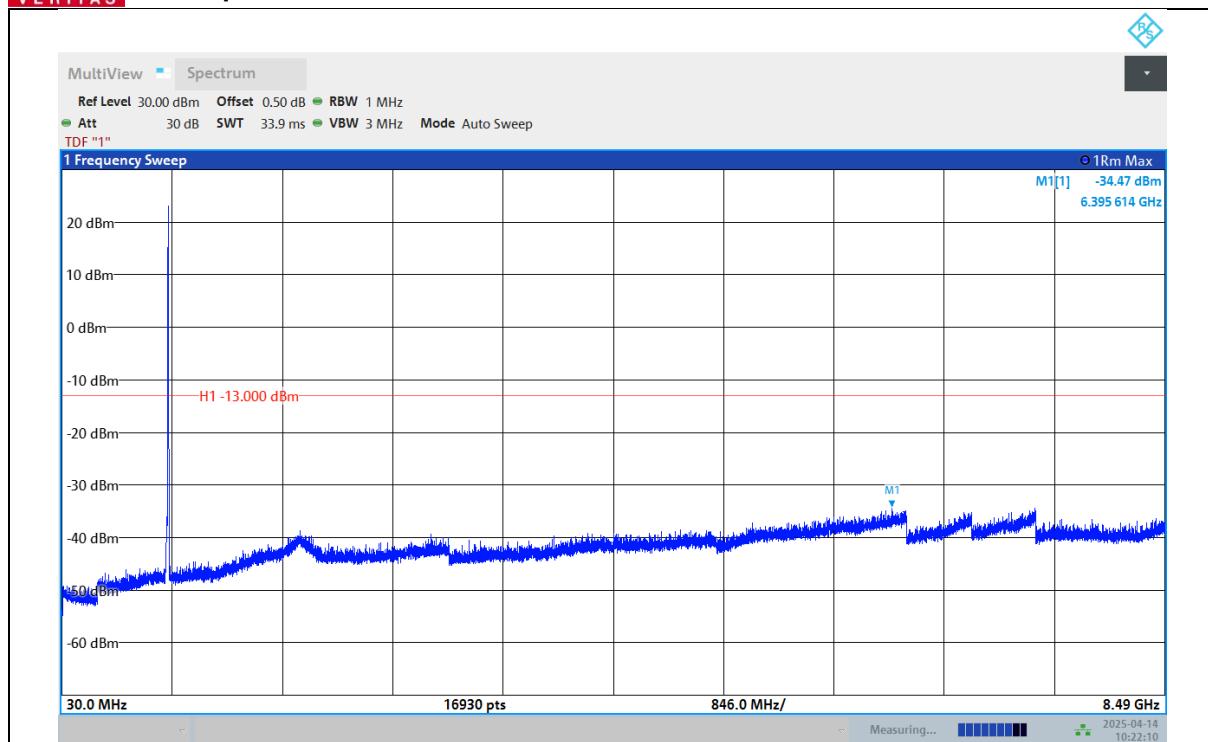
### Test Result

Band	Channel	Frequency Range (Mhz)	Result (dBm)	Limit (dBm)	Verdict
Band5	4132	30~8490MHZ	See Graph	-13	PASS
Band5	4182	30~8490MHZ	See Graph	-13	PASS
Band5	4233	30~8490MHZ	See Graph	-13	PASS



## Test Graphs







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## FREQUENCY STABILITY

### Test Result

Temperature						
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band5	4132	VL	NT	-38.63	-0.0467	PASS
Band5	4132	VN	NT	-3.01	-0.0036	PASS
Band5	4132	VH	NT	-47.88	-0.0579	PASS
Band5	4182	VL	NT	-14.49	-0.0173	PASS
Band5	4182	VN	NT	-13.12	-0.0157	PASS
Band5	4182	VH	NT	-41.70	-0.0498	PASS
Band5	4233	VL	NT	-29.28	-0.0346	PASS
Band5	4233	VN	NT	-38.29	-0.0452	PASS
Band5	4233	VH	NT	-30.45	-0.0360	PASS

Temperature						
Band	Channel	Voltage (Vdc)	Temperatur e (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band5	4132	NV	-30	-27.14	-0.0328	PASS
Band5	4132	NV	-20	-8.60	-0.0104	PASS
Band5	4132	NV	-10	-1.55	-0.0019	PASS
Band5	4132	NV	0	-41.40	-0.0501	PASS
Band5	4132	NV	10	-7.45	-0.0090	PASS
Band5	4132	NV	20	-19.65	-0.0238	PASS
Band5	4132	NV	30	-4.94	-0.0060	PASS
Band5	4132	NV	40	4.66	0.0056	PASS
Band5	4132	NV	50	-36.61	-0.0438	PASS
Band5	4182	NV	-30	8.67	0.0104	PASS
Band5	4182	NV	-20	-42.39	-0.0507	PASS
Band5	4182	NV	-10	-44.46	-0.0531	PASS
Band5	4182	NV	0	-1.20	-0.0014	PASS
Band5	4182	NV	10	-17.00	-0.0203	PASS
Band5	4182	NV	20	5.71	0.0068	PASS
Band5	4182	NV	30	6.98	0.0083	PASS
Band5	4182	NV	40	-48.70	-0.0582	PASS
Band5	4182	NV	50	-48.70	-0.0582	PASS
Band5	4233	NV	-30	-46.79	-0.0553	PASS
Band5	4233	NV	-20	-15.12	-0.0179	PASS
Band5	4233	NV	-10	-47.11	-0.0556	PASS
Band5	4233	NV	0	-3.99	-0.0047	PASS
Band5	4233	NV	10	4.04	0.0048	PASS
Band5	4233	NV	20	8.70	0.0103	PASS
Band5	4233	NV	30	-1.13	-0.0013	PASS
Band5	4233	NV	40	-15.34	-0.0181	PASS



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Band5	4233	NV	50	-16.45	-0.0194	PASS
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### MAX Deviation calculation

Frequency Stability	Frequency (MHz)	Limit Line(MHz)	Result
fL- MAX( $\Delta f$ )	824.3260	$\geq 824$	PASS
fH+ MAX( $\Delta f$ )	848.6625	$\leq 849$	

- Note:
1.  $|\text{MAX}(\Delta f)|$  = Max Deviation
  2.  $f_L$  = Occ low channel  $f_l(-13\text{dBm}/\text{MHz})$
  3.  $f_H$  = Occ High channel  $f_H(-13\text{dBm}/\text{MHz})$
  4.  $|\text{MAX}(\Delta f)| = 48.70 \text{ Hz}$ .

**LTE BAND26(INCLUDING LTE B5)****PEAK-TO-AVERAGE RATIO(CCDF)****Test Result**

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band26	1.4MHz	QPSK	26797	1RB#0	4.74	13	PASS
Band26	1.4MHz	QPSK	26797	6RB#0	5.16	13	PASS
Band26	1.4MHz	QPSK	26915	1RB#0	4.70	13	PASS
Band26	1.4MHz	QPSK	26915	6RB#0	5.14	13	PASS
Band26	1.4MHz	QPSK	27033	1RB#0	4.48	13	PASS
Band26	1.4MHz	QPSK	27033	6RB#0	4.88	13	PASS
Band26	1.4MHz	16QAM	26797	1RB#0	5.54	13	PASS
Band26	1.4MHz	16QAM	26797	6RB#0	6.02	13	PASS
Band26	1.4MHz	16QAM	26915	1RB#0	5.68	13	PASS
Band26	1.4MHz	16QAM	26915	6RB#0	5.94	13	PASS
Band26	1.4MHz	16QAM	27033	1RB#0	5.28	13	PASS
Band26	1.4MHz	16QAM	27033	6RB#0	5.78	13	PASS
Band26	3MHz	QPSK	26805	1RB#0	4.70	13	PASS
Band26	3MHz	QPSK	26805	15RB#0	5.26	13	PASS
Band26	3MHz	QPSK	26915	1RB#0	4.60	13	PASS
Band26	3MHz	QPSK	26915	15RB#0	5.14	13	PASS
Band26	3MHz	QPSK	27025	1RB#0	4.42	13	PASS
Band26	3MHz	QPSK	27025	15RB#0	5.00	13	PASS
Band26	3MHz	16QAM	26805	1RB#0	5.46	13	PASS
Band26	3MHz	16QAM	26805	15RB#0	6.04	13	PASS
Band26	3MHz	16QAM	26915	1RB#0	5.56	13	PASS
Band26	3MHz	16QAM	26915	15RB#0	6.02	13	PASS
Band26	3MHz	16QAM	27025	1RB#0	5.32	13	PASS
Band26	3MHz	16QAM	27025	15RB#0	5.78	13	PASS
Band26	5MHz	QPSK	26815	1RB#0	4.60	13	PASS
Band26	5MHz	QPSK	26815	25RB#0	5.22	13	PASS
Band26	5MHz	QPSK	26915	1RB#0	4.50	13	PASS
Band26	5MHz	QPSK	26915	25RB#0	5.20	13	PASS
Band26	5MHz	QPSK	27015	1RB#0	4.42	13	PASS
Band26	5MHz	QPSK	27015	25RB#0	5.00	13	PASS
Band26	5MHz	16QAM	26815	1RB#0	5.38	13	PASS
Band26	5MHz	16QAM	26815	25RB#0	6.02	13	PASS
Band26	5MHz	16QAM	26915	1RB#0	5.30	13	PASS
Band26	5MHz	16QAM	26915	25RB#0	6.04	13	PASS
Band26	5MHz	16QAM	27015	1RB#0	5.26	13	PASS
Band26	5MHz	16QAM	27015	25RB#0	5.78	13	PASS
Band26	10MHz	QPSK	26840	1RB#0	4.60	13	PASS
Band26	10MHz	QPSK	26840	50RB#0	5.20	13	PASS
Band26	10MHz	QPSK	26915	1RB#0	4.58	13	PASS
Band26	10MHz	QPSK	26915	50RB#0	5.20	13	PASS
Band26	10MHz	QPSK	26990	1RB#0	4.58	13	PASS
Band26	10MHz	QPSK	26990	50RB#0	5.22	13	PASS
Band26	10MHz	16QAM	26840	1RB#0	5.16	13	PASS



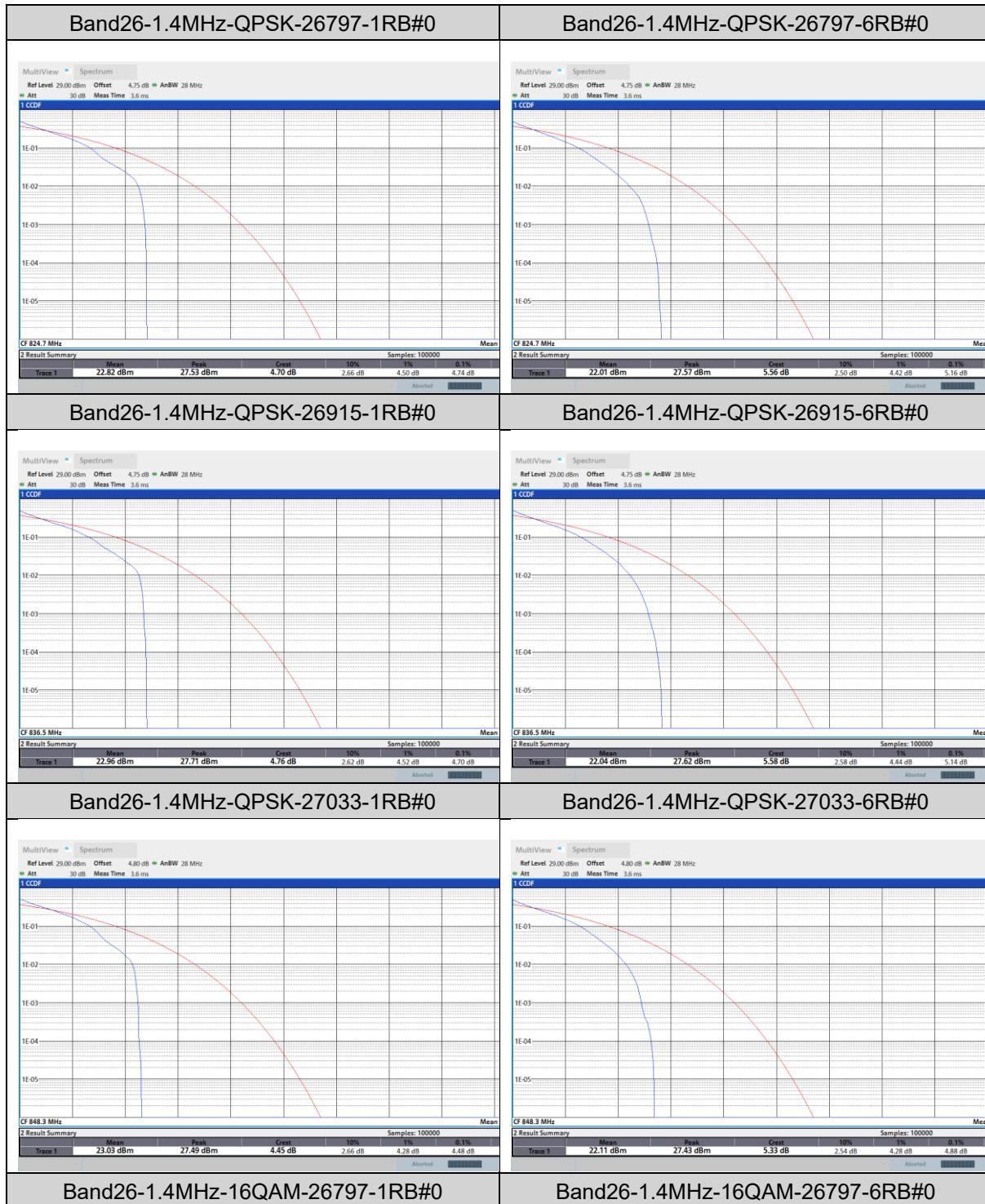
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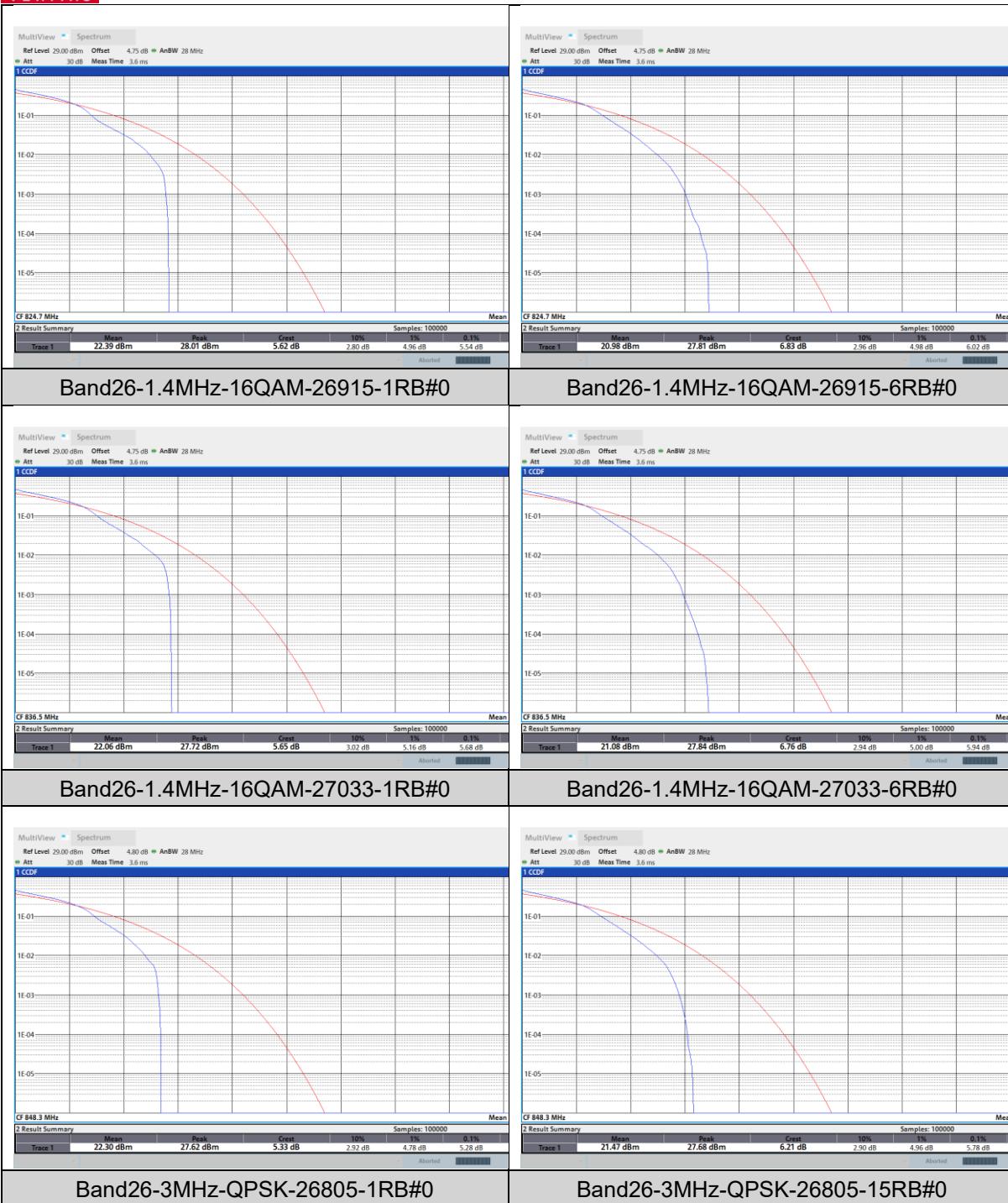
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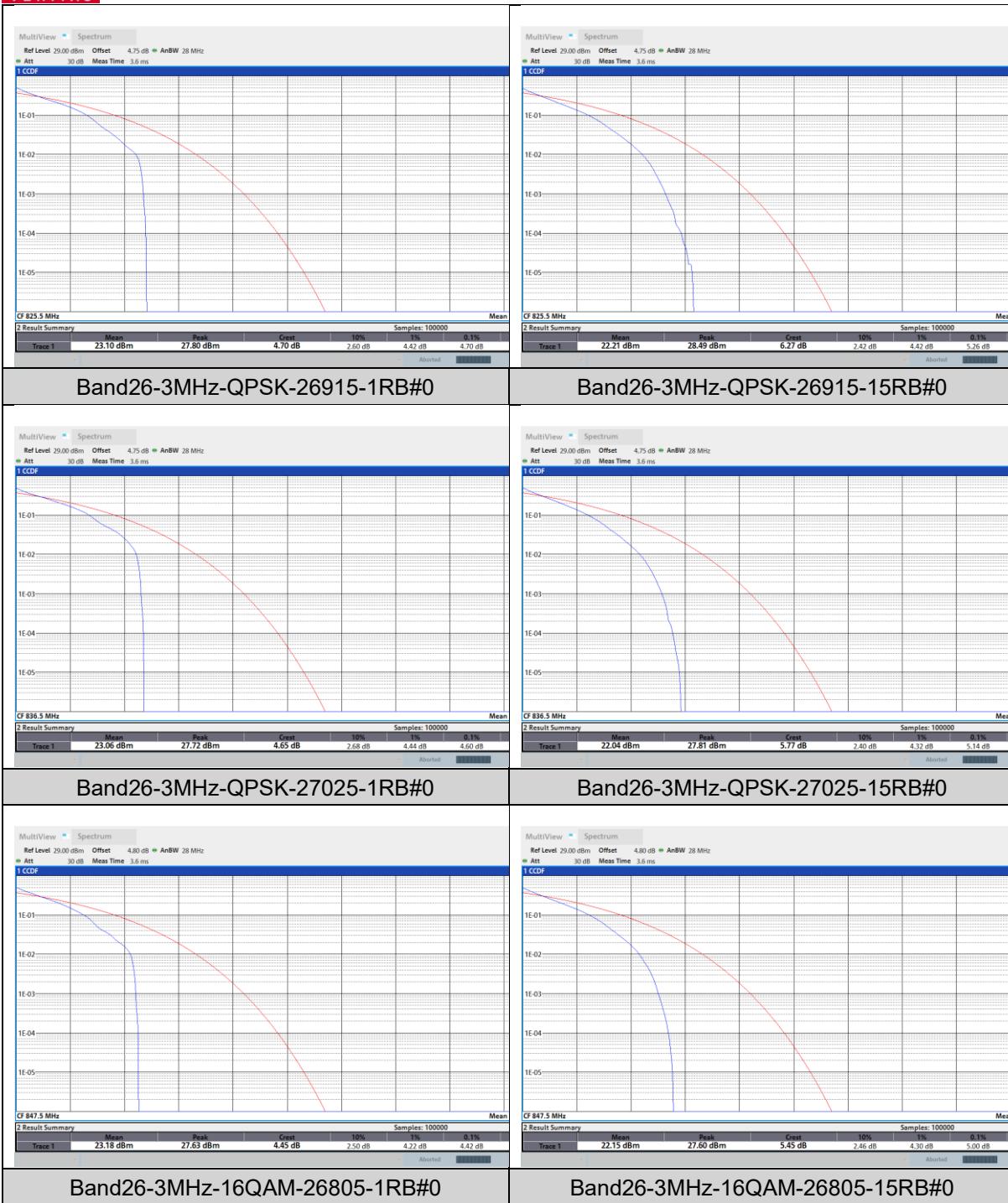
Band26	10MHz	16QAM	26840	27RB#0	5.72	13	PASS
Band26	10MHz	16QAM	26915	1RB#0	5.52	13	PASS
Band26	10MHz	16QAM	26915	27RB#0	5.80	13	PASS
Band26	10MHz	16QAM	26990	1RB#0	5.36	13	PASS
Band26	10MHz	16QAM	26990	27RB#0	5.66	13	PASS
Band26	15MHz	QPSK	26865	1RB#0	4.46	13	PASS
Band26	15MHz	QPSK	26865	75RB#0	5.40	13	PASS
Band26	15MHz	QPSK	26915	1RB#0	4.42	13	PASS
Band26	15MHz	QPSK	26915	75RB#0	5.34	13	PASS
Band26	15MHz	QPSK	26965	1RB#0	4.42	13	PASS
Band26	15MHz	QPSK	26965	75RB#0	5.26	13	PASS
Band26	15MHz	16QAM	26865	1RB#0	5.24	13	PASS
Band26	15MHz	16QAM	26865	27RB#0	5.70	13	PASS
Band26	15MHz	16QAM	26915	1RB#0	5.40	13	PASS
Band26	15MHz	16QAM	26915	27RB#0	5.68	13	PASS
Band26	15MHz	16QAM	26965	1RB#0	5.38	13	PASS
Band26	15MHz	16QAM	26965	27RB#0	5.60	13	PASS

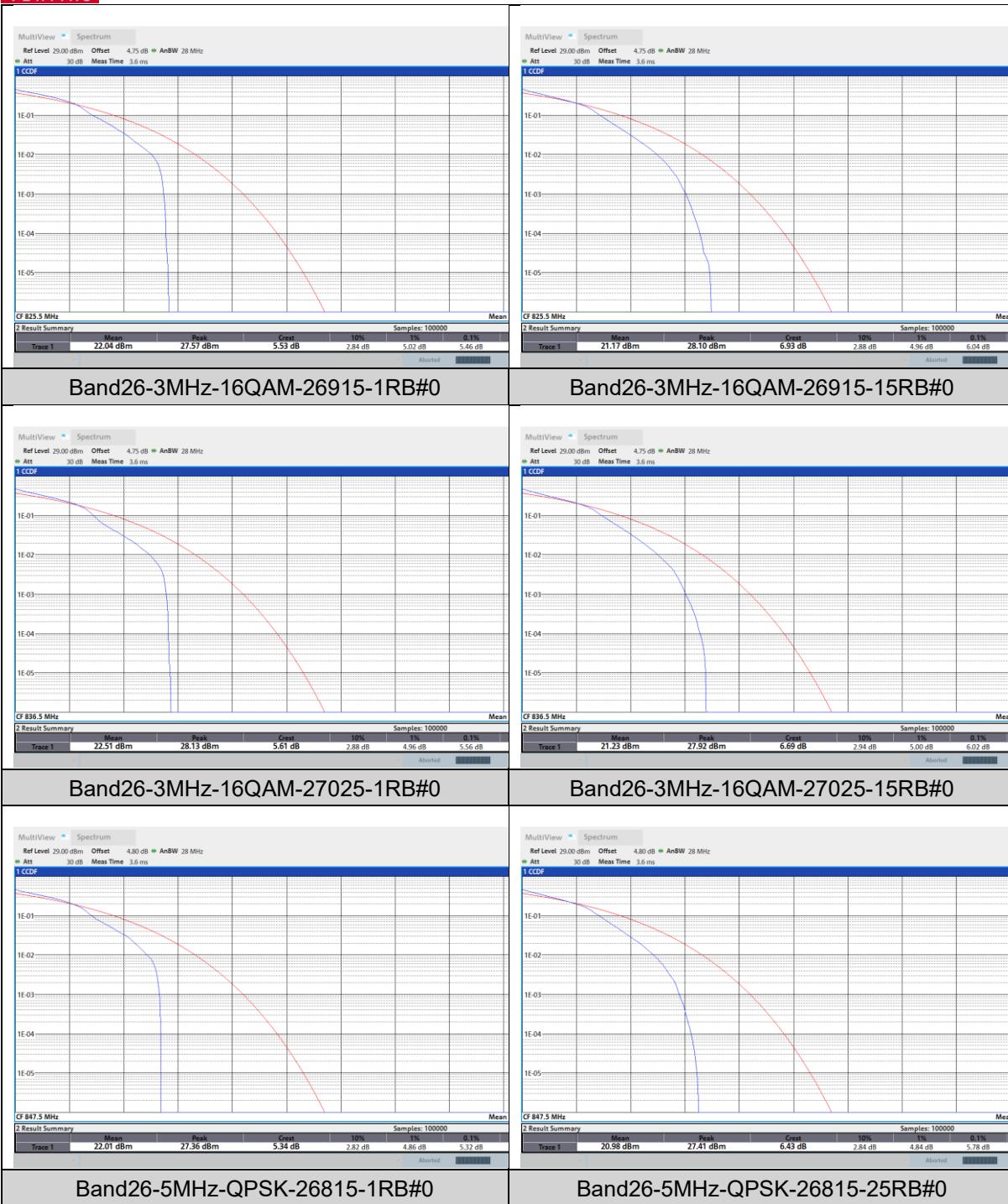


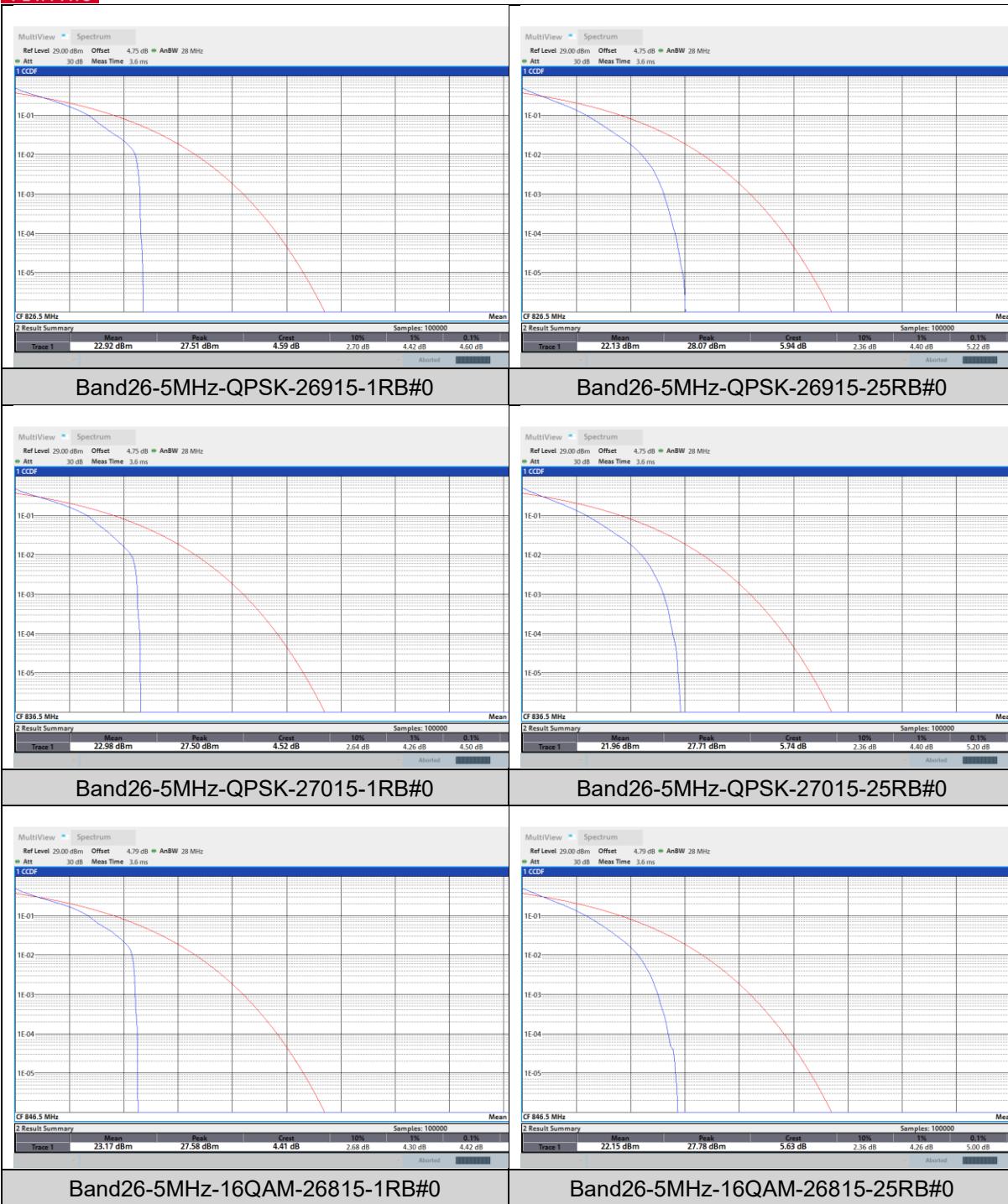
## Test Graphs

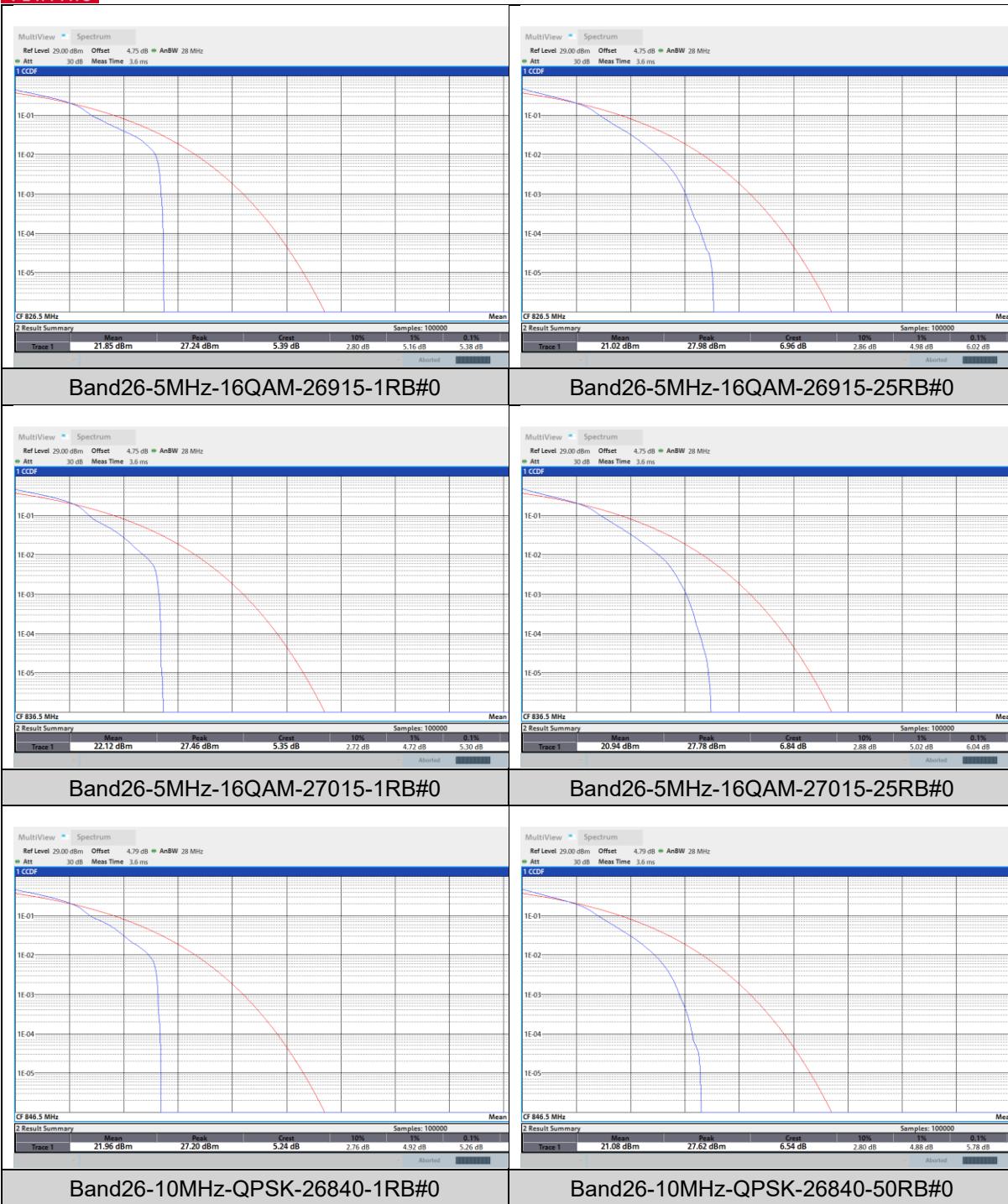


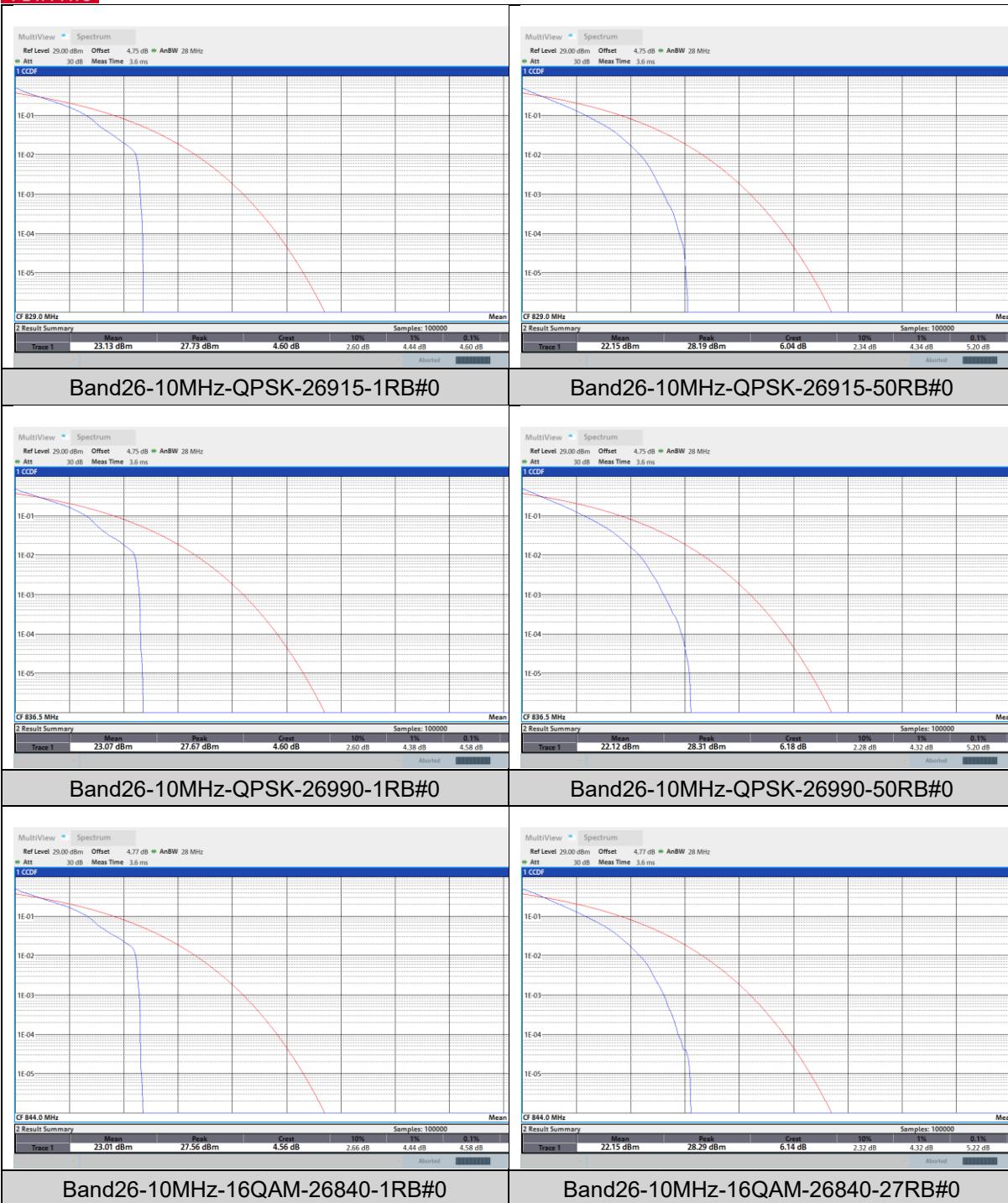


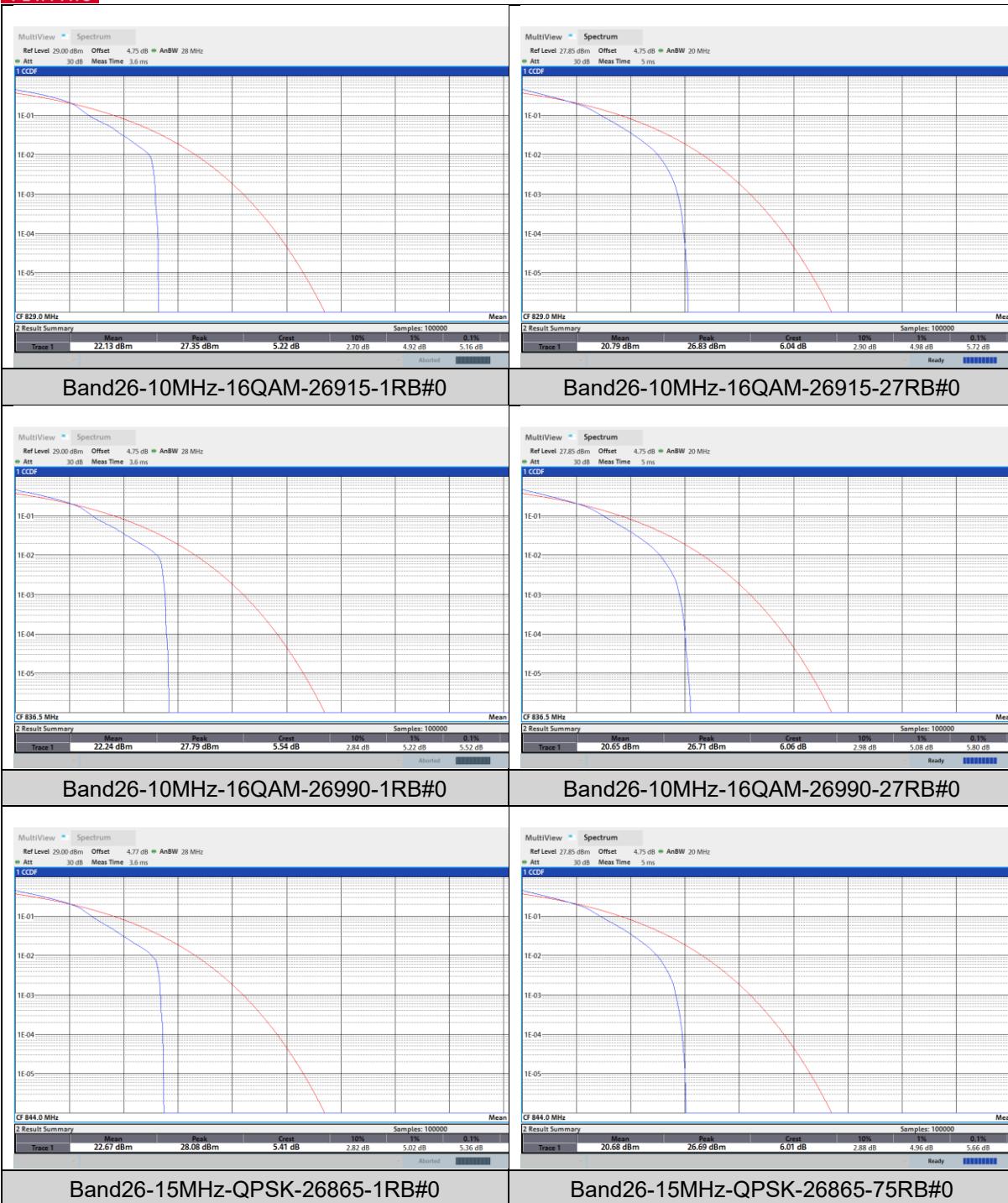


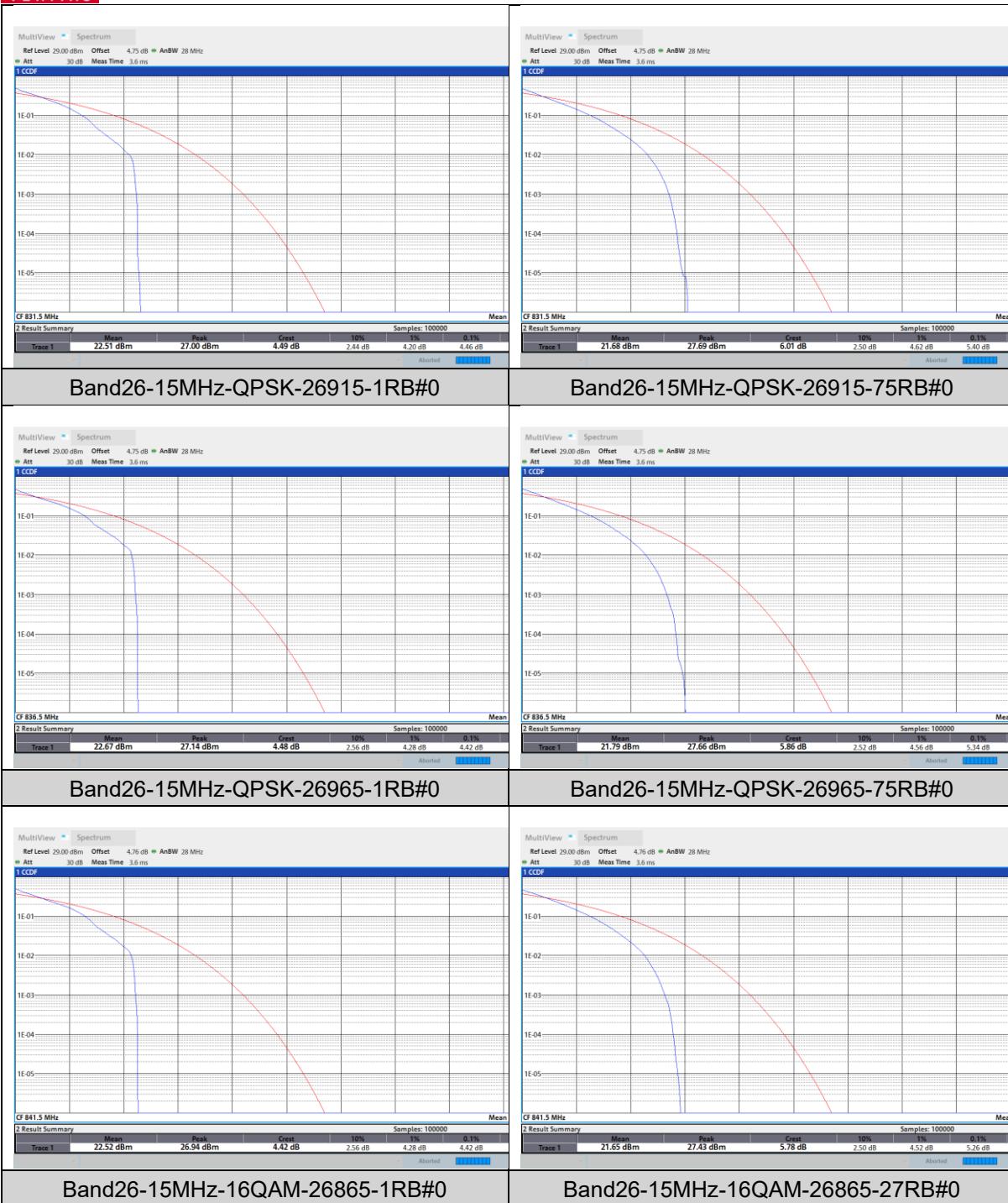






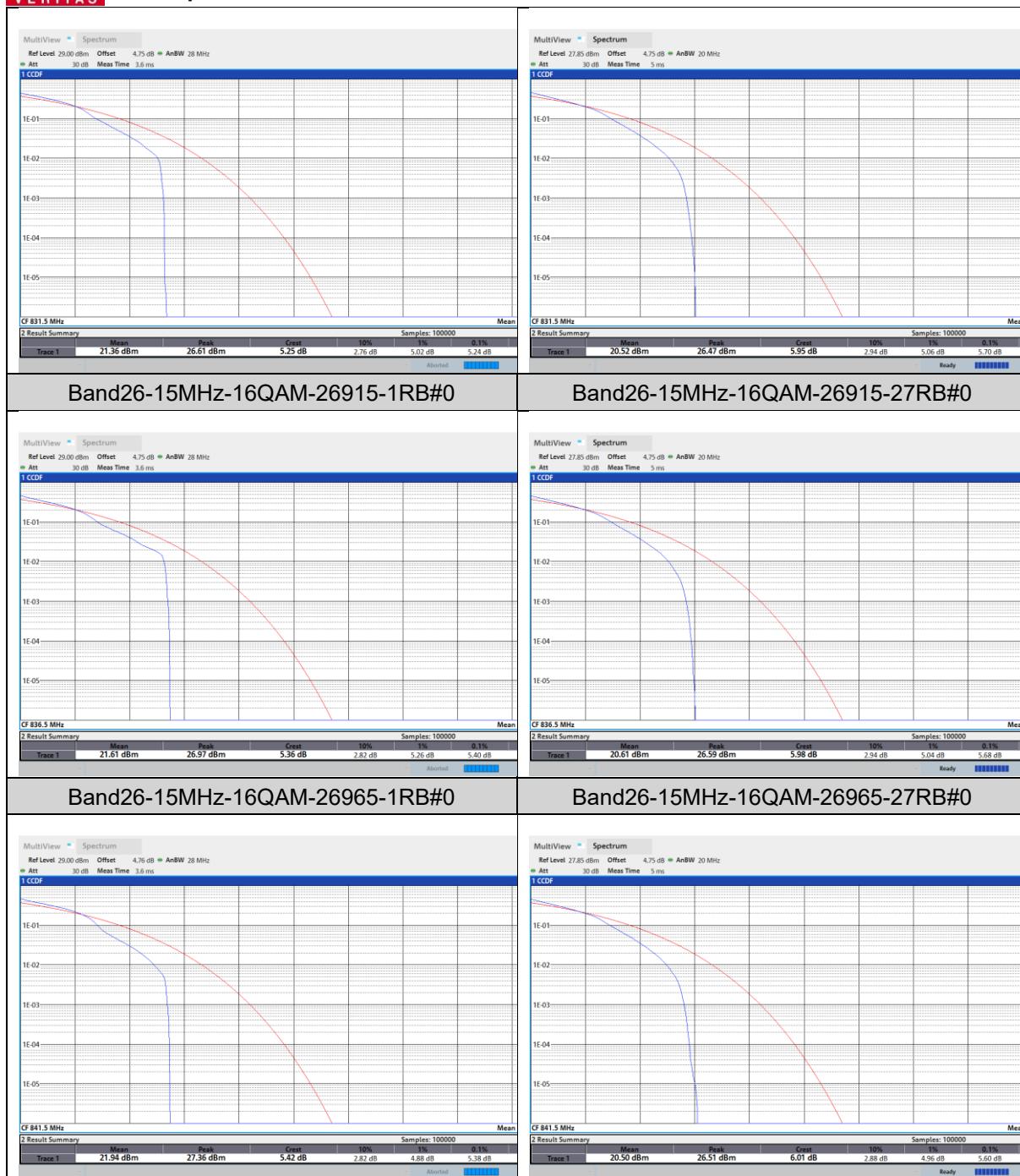








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## 26dB BANDWIDTH AND OCCUPIED BANDWIDTH

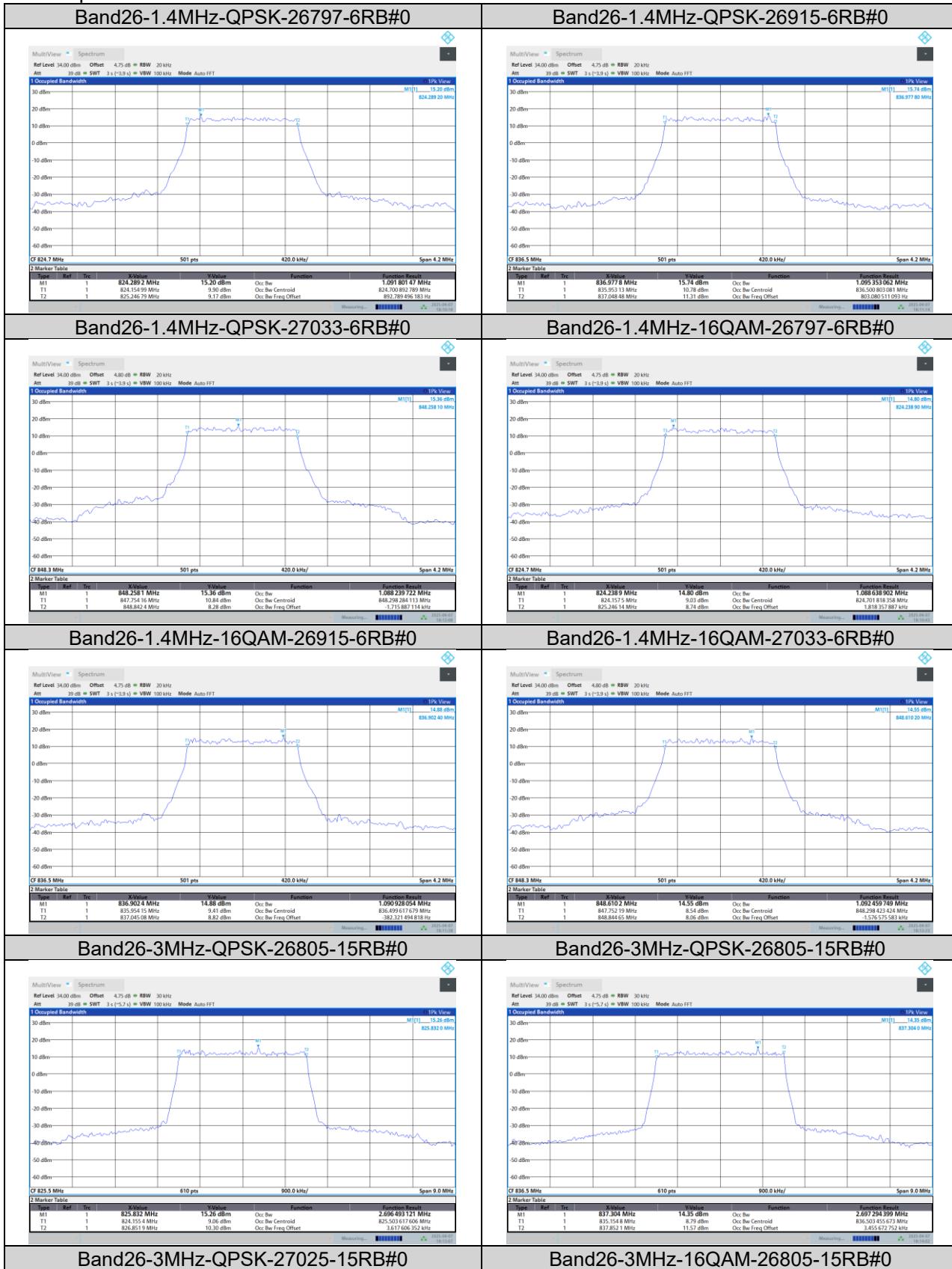
### Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band26	1.4MHz	QPSK	26797	6RB#0	1.092	1.29	PASS
Band26	1.4MHz	QPSK	26915	6RB#0	1.095	1.27	PASS
Band26	1.4MHz	QPSK	27033	6RB#0	1.088	1.28	PASS
Band26	1.4MHz	16QAM	26797	6RB#0	1.089	1.26	PASS
Band26	1.4MHz	16QAM	26915	6RB#0	1.091	1.27	PASS
Band26	1.4MHz	16QAM	27033	6RB#0	1.092	1.29	PASS
Band26	3MHz	QPSK	26805	15RB#0	2.696	2.93	PASS
Band26	3MHz	QPSK	26915	15RB#0	2.697	2.93	PASS
Band26	3MHz	QPSK	27025	15RB#0	2.695	2.95	PASS
Band26	3MHz	16QAM	26805	15RB#0	2.693	2.96	PASS
Band26	3MHz	16QAM	26915	15RB#0	2.691	2.95	PASS
Band26	3MHz	16QAM	27025	15RB#0	2.689	2.95	PASS
Band26	5MHz	QPSK	26815	25RB#0	4.500	4.93	PASS
Band26	5MHz	QPSK	26915	25RB#0	4.491	4.93	PASS
Band26	5MHz	QPSK	27015	25RB#0	4.479	4.88	PASS
Band26	5MHz	16QAM	26815	25RB#0	4.487	4.88	PASS
Band26	5MHz	16QAM	26915	25RB#0	4.496	4.90	PASS
Band26	5MHz	16QAM	27015	25RB#0	4.486	4.93	PASS
Band26	10MHz	QPSK	26840	50RB#0	8.957	9.83	PASS
Band26	10MHz	QPSK	26915	50RB#0	8.939	9.62	PASS
Band26	10MHz	QPSK	26990	50RB#0	8.941	9.65	PASS
Band26	10MHz	16QAM	26840	27RB#0	4.848	5.44	PASS
Band26	10MHz	16QAM	26915	27RB#0	4.850	5.46	PASS
Band26	10MHz	16QAM	26990	27RB#0	4.843	5.41	PASS
Band26	15MHz	QPSK	26865	75RB#0	13.474	14.61	PASS
Band26	15MHz	QPSK	26915	75RB#0	13.476	14.65	PASS
Band26	15MHz	QPSK	26965	75RB#0	13.410	14.52	PASS
Band26	15MHz	16QAM	26865	27RB#0	4.857	5.47	PASS
Band26	15MHz	16QAM	26915	27RB#0	4.860	5.50	PASS
Band26	15MHz	16QAM	26965	27RB#0	4.858	5.46	PASS



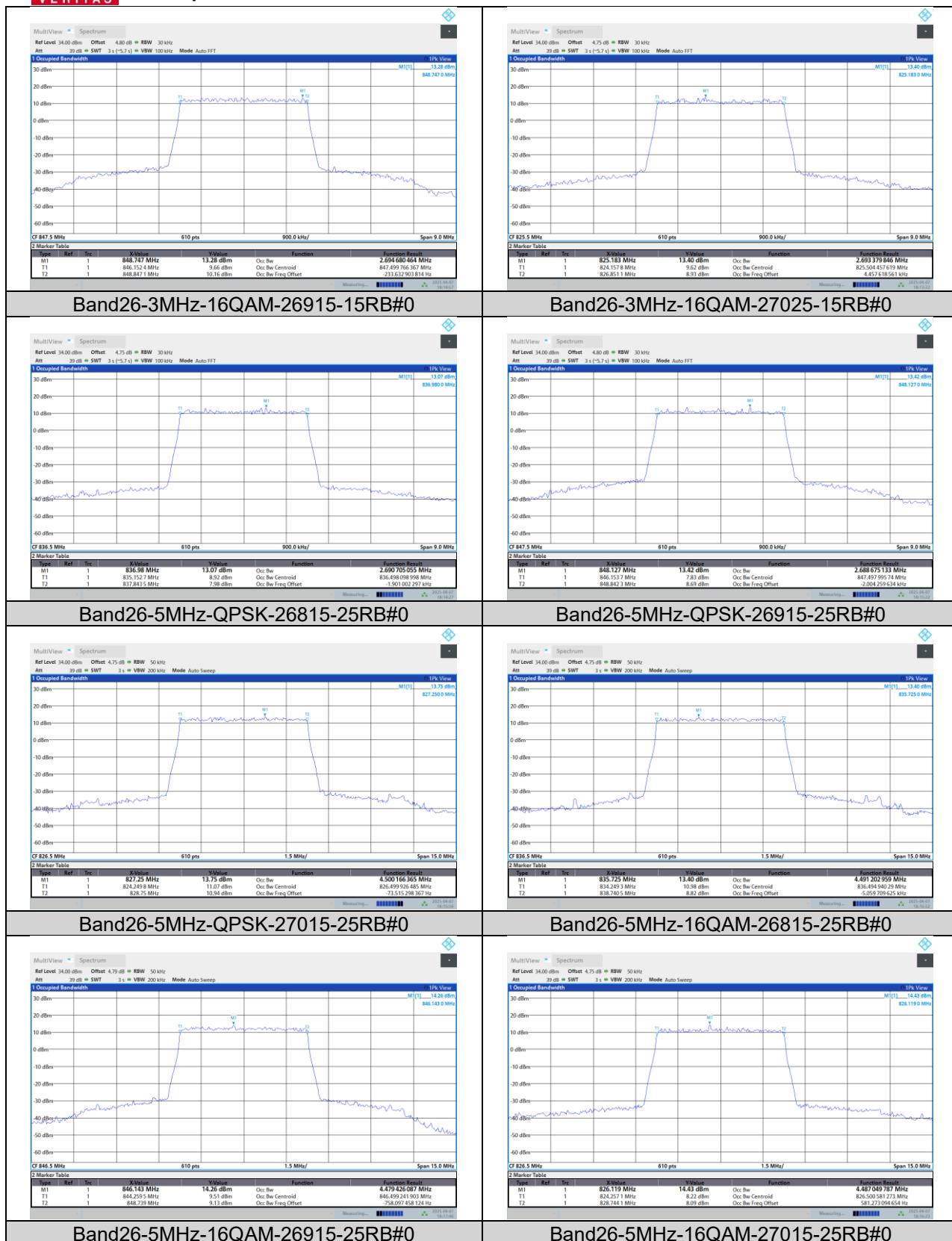
## Test Graphs

### Occupied Bandwidth



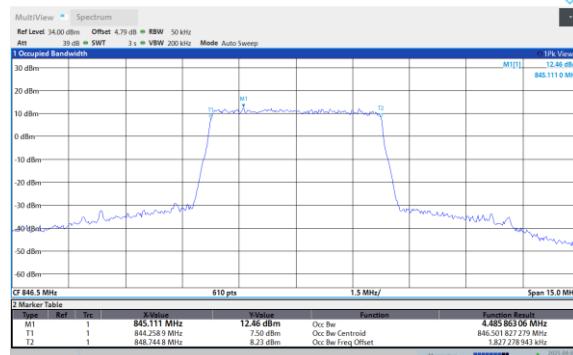
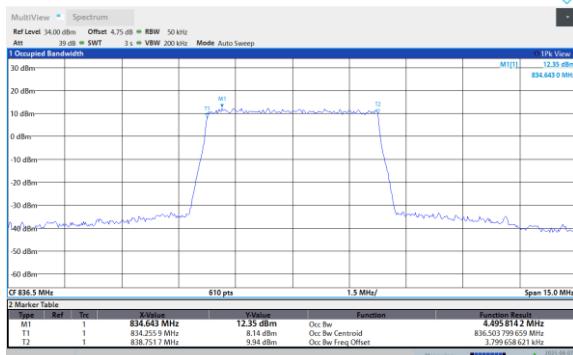
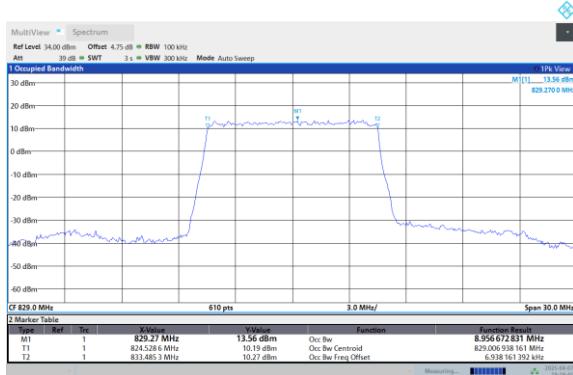
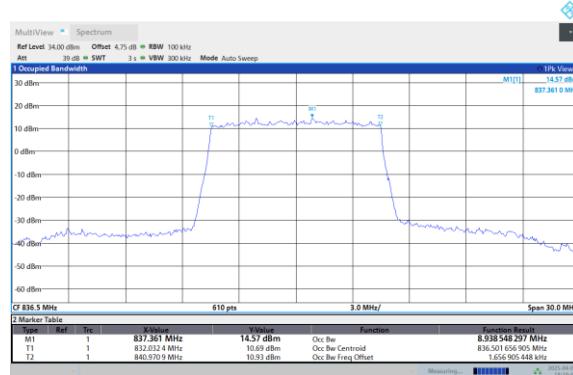
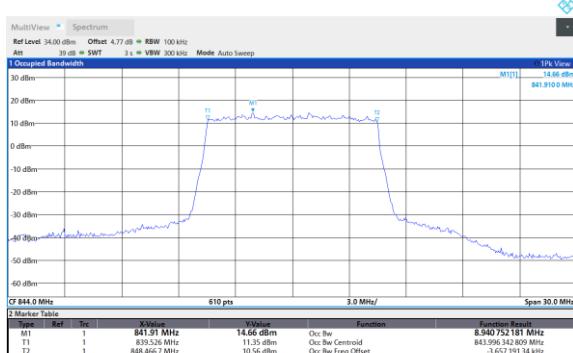
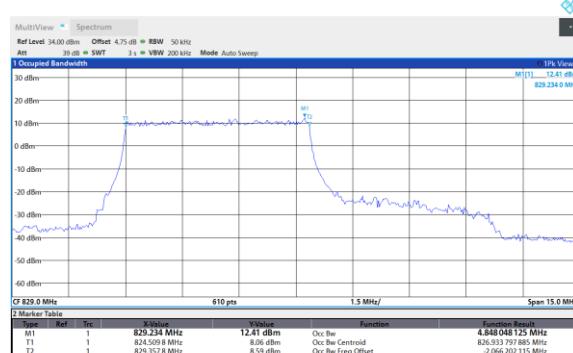
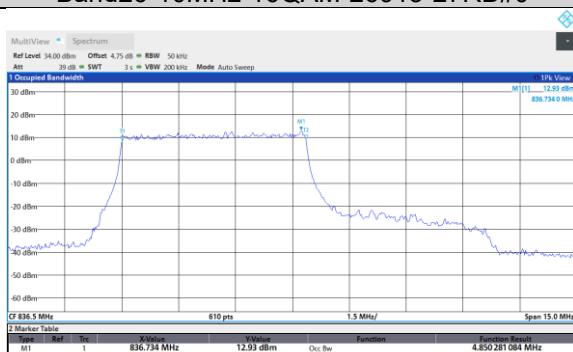
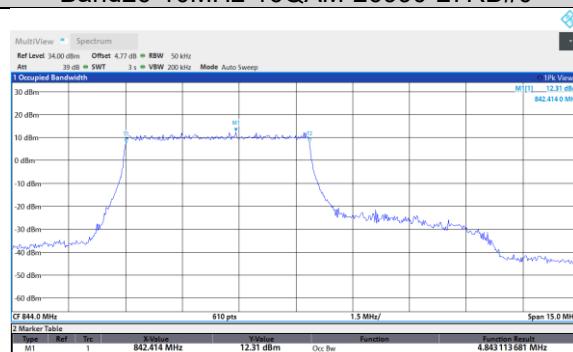
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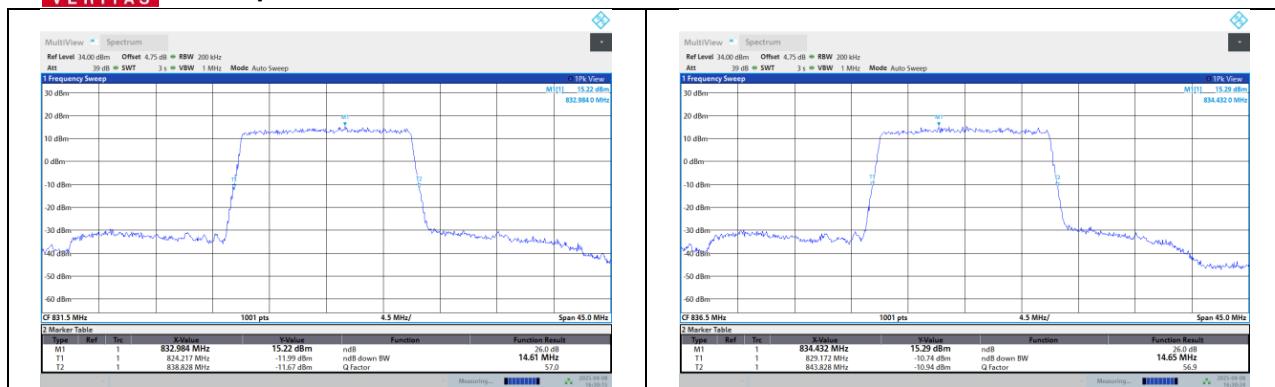
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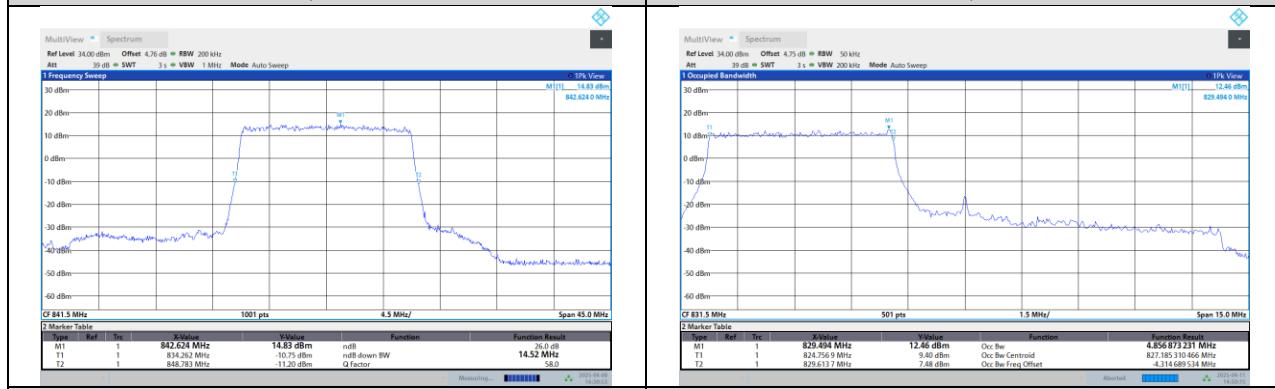
**Band26-10MHz-QPSK-26840-50RB#0****Band26-10MHz-QPSK-26915-50RB#0****Band26-10MHz-QPSK-26915-50RB#0****Band26-10MHz-16QAM-26840-27RB#0****Band26-10MHz-16QAM-26915-27RB#0****Band26-10MHz-16QAM-26990-27RB#0****Band26-15MHz-QPSK-26865-75RB#0****Band26-15MHz-QPSK-26915-75RB#0**



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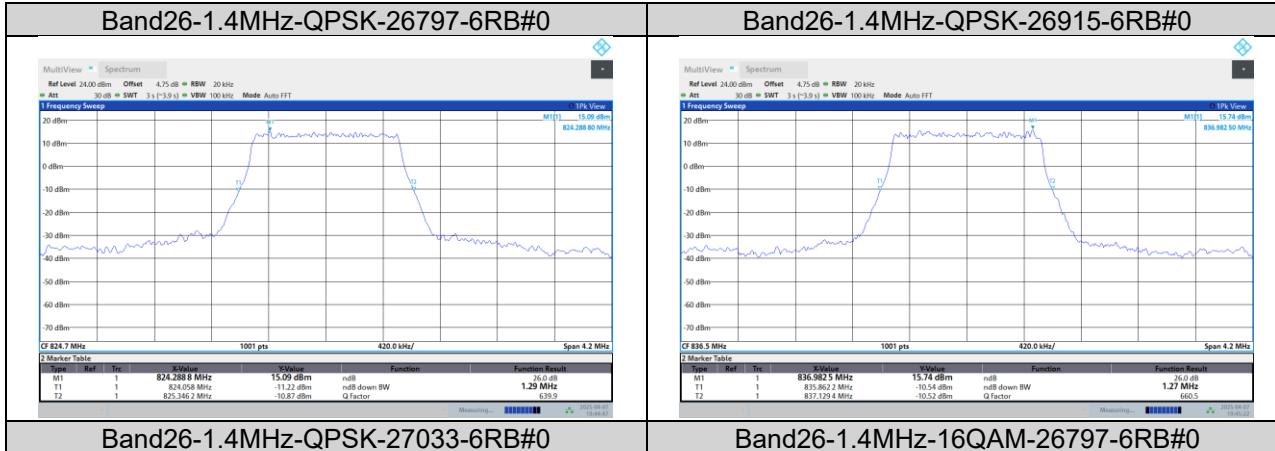
Band26-15MHz-QPSK-26915-75RB#0



Band26-15MHz-16QAM-26915-27RB#0



## 26dB Bandwidth



Band26-1.4MHz-QPSK-27033-6RB#0

Band26-1.4MHz-16QAM-26797-6RB#0

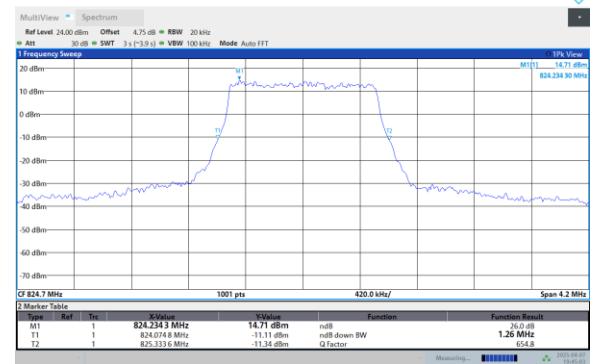
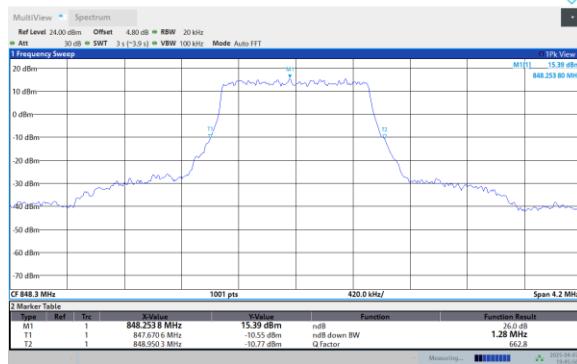
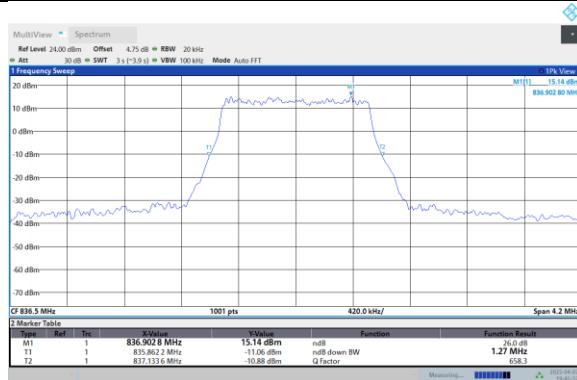
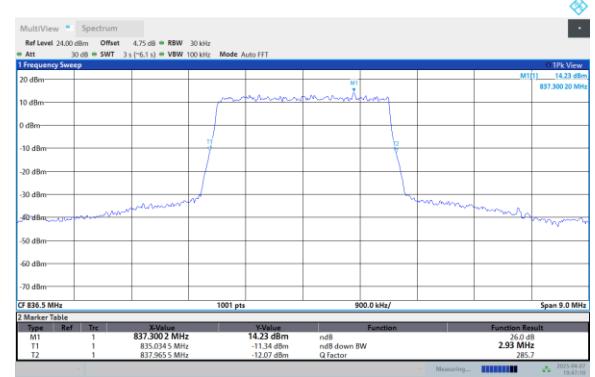
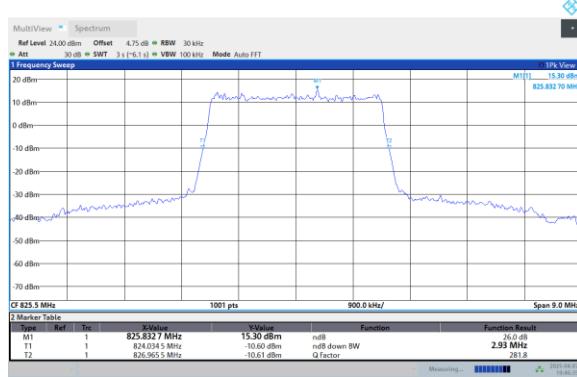
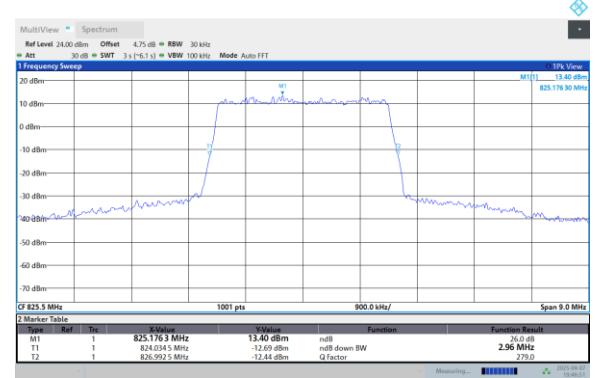
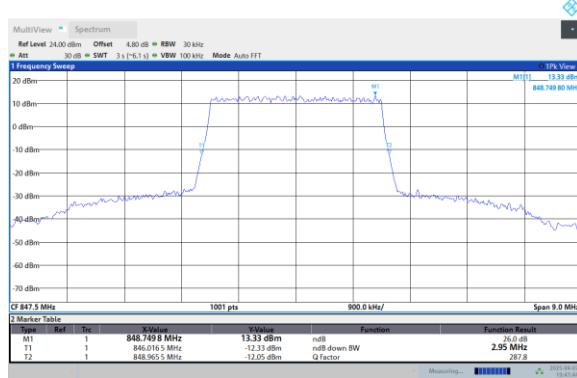
Huarui 7layers High Technology  
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Tower N, Innovation Centre 88 Zuyi Road, High-tech  
District, Suzhou City, Anhui Province, P.R.C.

Tel: +86 (0557) 368 1008

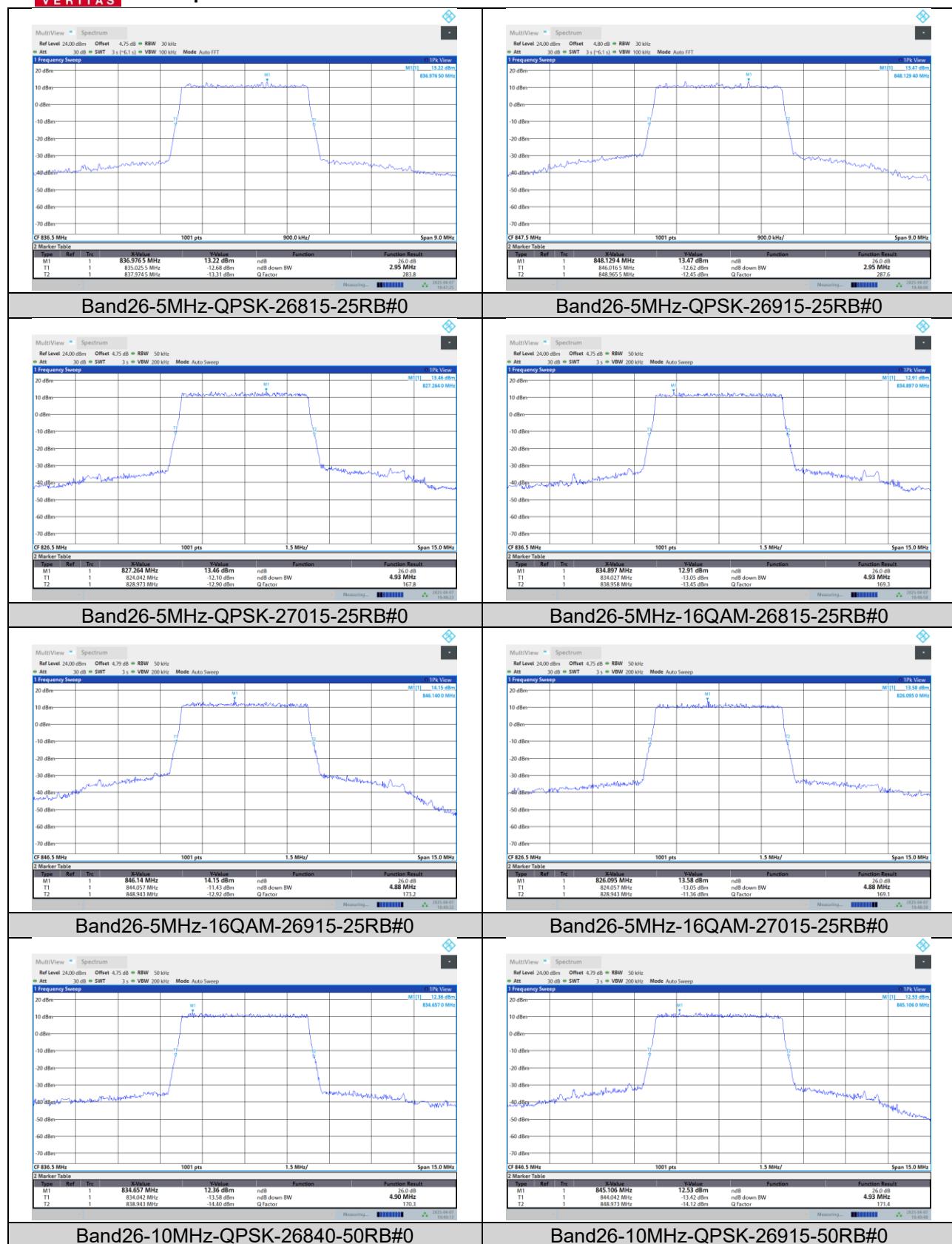
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Test Report No.: PSU-QSU2503280115RI04

**Band26-1.4MHz-16QAM-26915-6RB#0****Band26-3MHz-QPSK-26805-15RB#****Band26-3MHz-QPSK-27025-15RB#0****Band26-3MHz-16QAM-26915-15RB#0****Band26-3MHz-16QAM-27025-15RB#0**

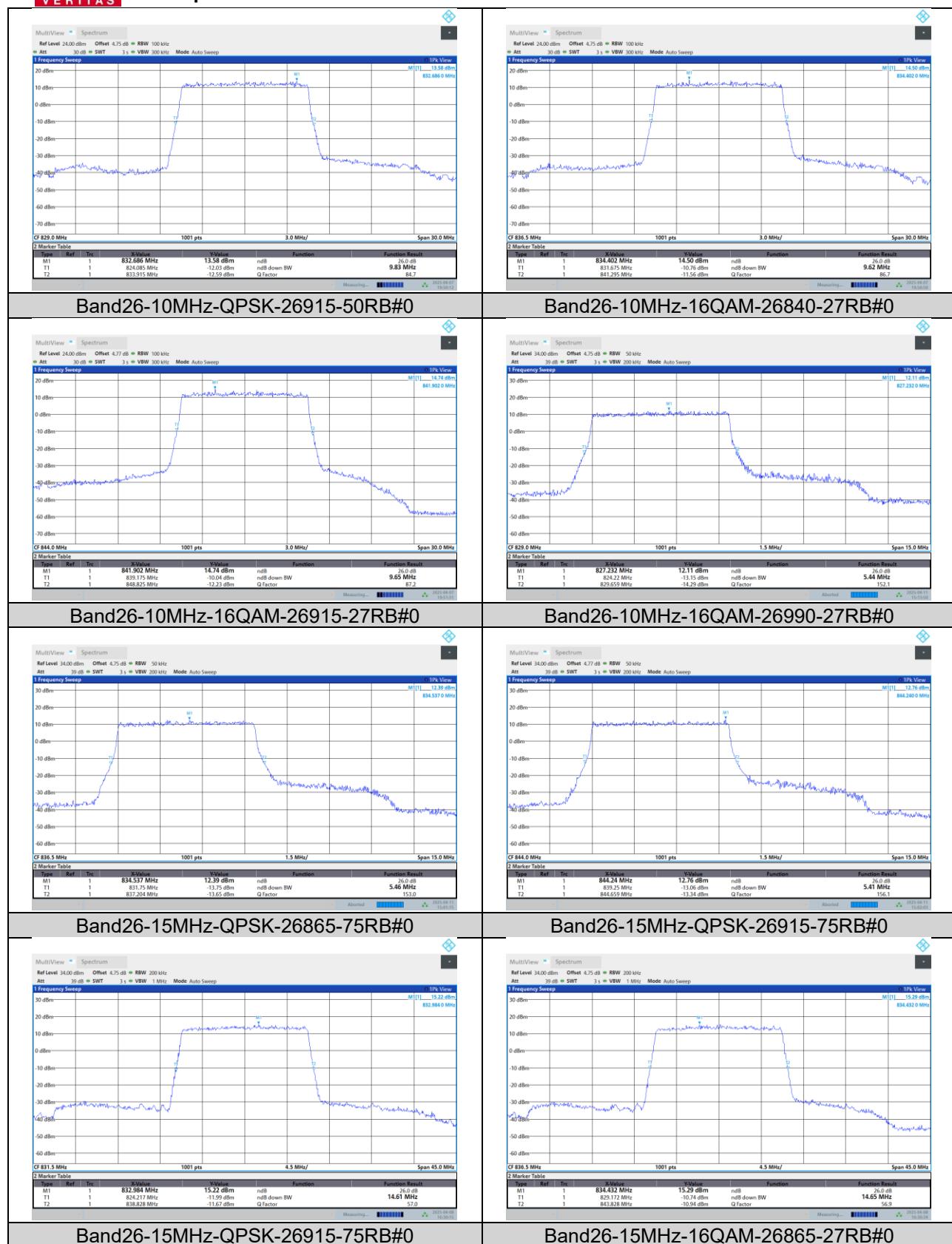
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VERITAS

Test Report No.: PSU-QSU2503280115RI04



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Test Report No.: PSU-QSU2503280115RI04



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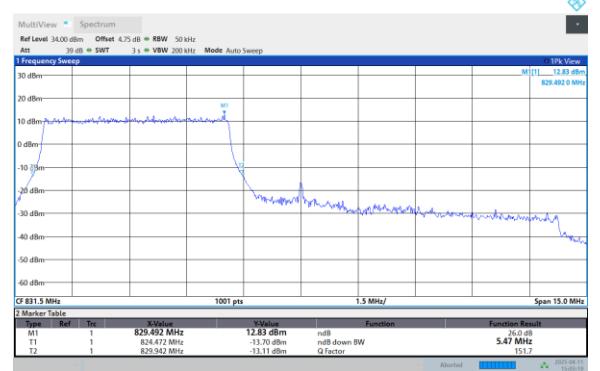
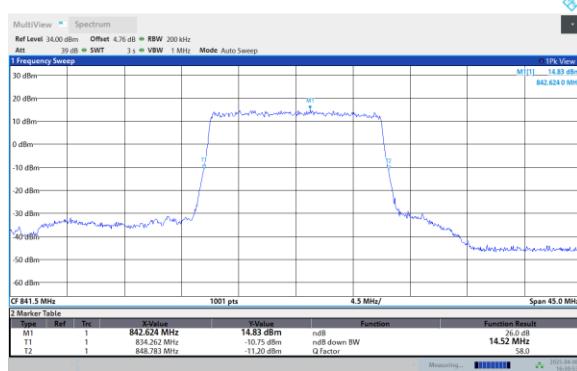
Tower N, Innovation Centre 88 Zuyi Road, High-tech  
District, Suzhou City, Anhui Province, P.R.C.

Tel: +86 (0557) 368 1008



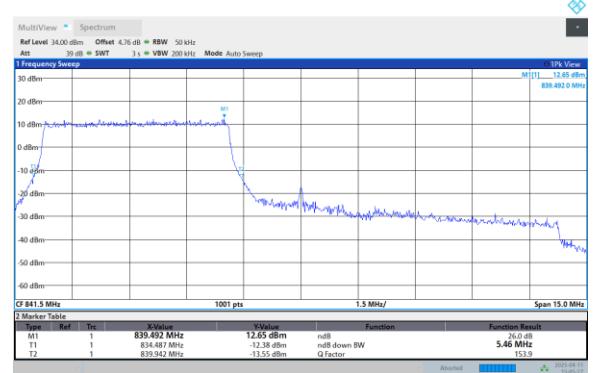
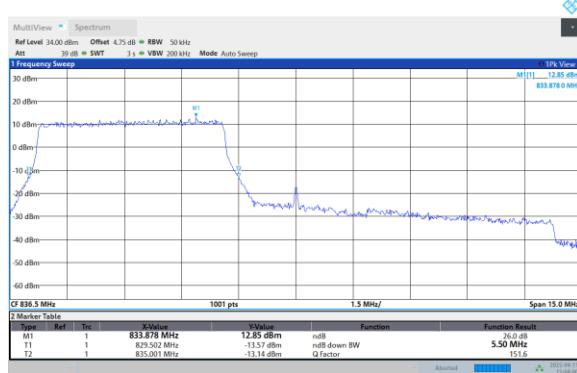
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Test Report No.: PSU-QSU2503280115RI04



Band26-15MHz-16QAM-26915-27RB#0

Band26-15MHz-16QAM-26965-27RB#0



**BAND EDGE****Test Result**

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band26	1.4MHz	QPSK	26797	1RB#0	See Graph	PASS
Band26	1.4MHz	QPSK	26797	6RB#0	See Graph	PASS
Band26	1.4MHz	QPSK	27033	1RB#5	See Graph	PASS
Band26	1.4MHz	QPSK	27033	6RB#0	See Graph	PASS
Band26	1.4MHz	16QAM	26797	1RB#0	See Graph	PASS
Band26	1.4MHz	16QAM	26797	6RB#0	See Graph	PASS
Band26	1.4MHz	16QAM	27033	1RB#5	See Graph	PASS
Band26	1.4MHz	16QAM	27033	6RB#0	See Graph	PASS
Band26	3MHz	QPSK	26805	1RB#0	See Graph	PASS
Band26	3MHz	QPSK	26805	15RB#0	See Graph	PASS
Band26	3MHz	QPSK	27025	1RB#14	See Graph	PASS
Band26	3MHz	QPSK	27025	15RB#0	See Graph	PASS
Band26	3MHz	16QAM	26805	1RB#0	See Graph	PASS
Band26	3MHz	16QAM	26805	15RB#0	See Graph	PASS
Band26	3MHz	16QAM	27025	1RB#14	See Graph	PASS
Band26	3MHz	16QAM	27025	15RB#0	See Graph	PASS
Band26	5MHz	QPSK	26815	1RB#0	See Graph	PASS
Band26	5MHz	QPSK	26815	25RB#0	See Graph	PASS
Band26	5MHz	QPSK	27015	1RB#24	See Graph	PASS
Band26	5MHz	QPSK	27015	25RB#0	See Graph	PASS
Band26	5MHz	16QAM	26815	1RB#0	See Graph	PASS
Band26	5MHz	16QAM	26815	25RB#0	See Graph	PASS
Band26	5MHz	16QAM	27015	1RB#24	See Graph	PASS
Band26	5MHz	16QAM	27015	25RB#0	See Graph	PASS
Band26	10MHz	QPSK	26840	1RB#0	See Graph	PASS
Band26	10MHz	QPSK	26840	50RB#0	See Graph	PASS
Band26	10MHz	QPSK	26990	1RB#49	See Graph	PASS
Band26	10MHz	QPSK	26990	50RB#0	See Graph	PASS
Band26	10MHz	16QAM	26840	1RB#0	See Graph	PASS
Band26	10MHz	16QAM	26840	27RB#0	See Graph	PASS
Band26	10MHz	16QAM	26990	1RB#49	See Graph	PASS
Band26	10MHz	16QAM	26990	27RB#23	See Graph	PASS
Band26	15MHz	QPSK	26865	1RB#0	See Graph	PASS
Band26	15MHz	QPSK	26865	75RB#0	See Graph	PASS
Band26	15MHz	QPSK	26965	1RB#74	See Graph	PASS
Band26	15MHz	QPSK	26965	75RB#0	See Graph	PASS
Band26	15MHz	16QAM	26865	1RB#0	See Graph	PASS
Band26	15MHz	16QAM	26865	27RB#0	See Graph	PASS
Band26	15MHz	16QAM	26965	1RB#74	See Graph	PASS
Band26	15MHz	16QAM	26965	27RB#48	See Graph	PASS

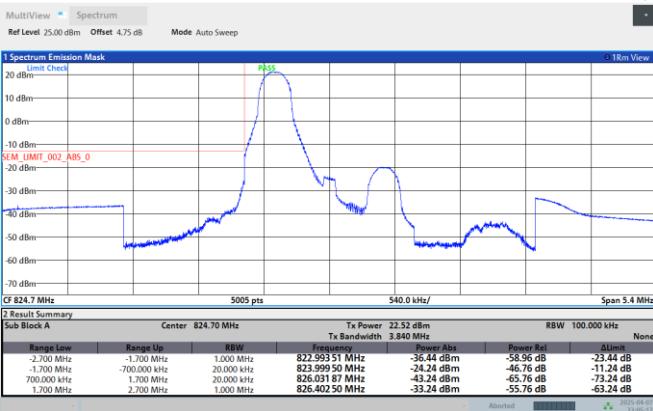


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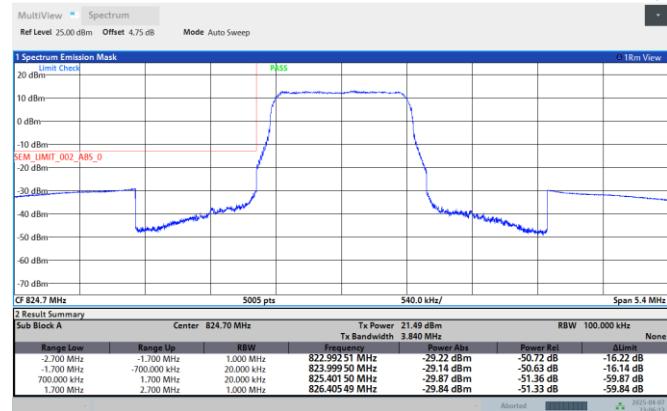
Test Report No.: PSU-QSU2503280115RI04

## Test Graphs

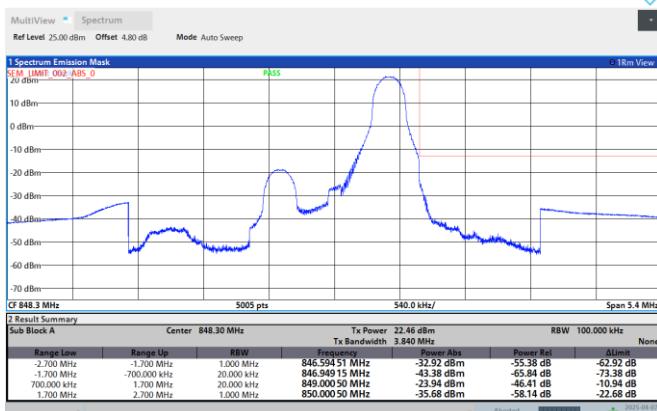
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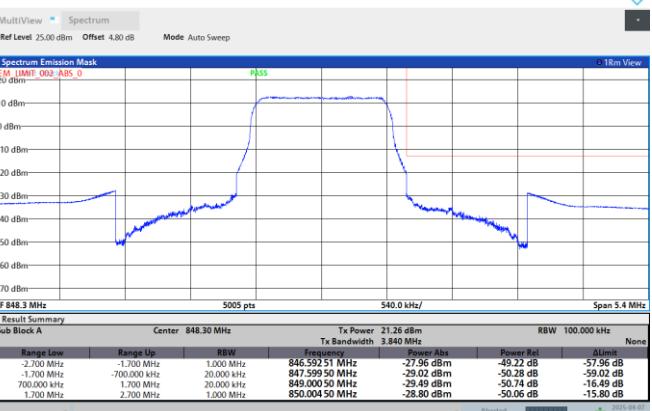
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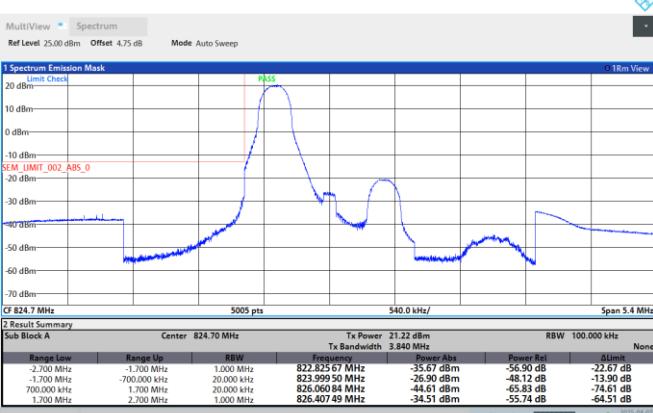
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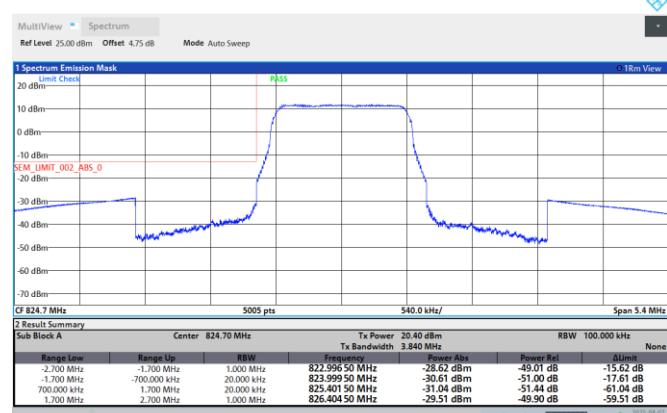
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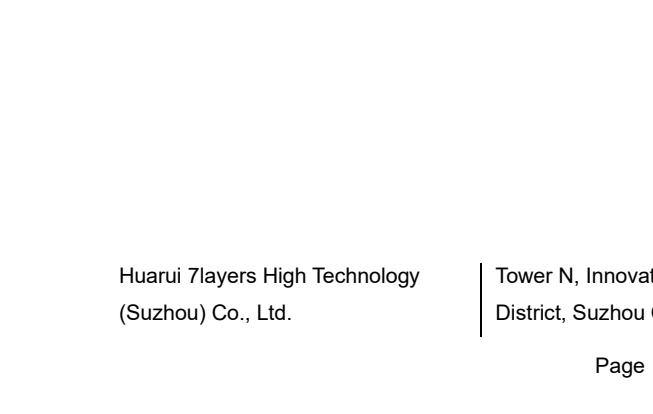
### Band26-1.4MHz-16QAM-26797-1RB#0



### Band26-1.4MHz-16QAM-26797-6RB#0



### Band26-1.4MHz-16QAM-27033-1RB#5

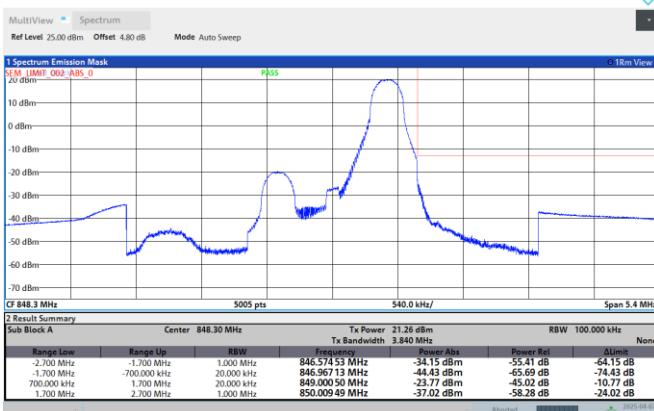


### Band26-1.4MHz-16QAM-27033-6RB#0



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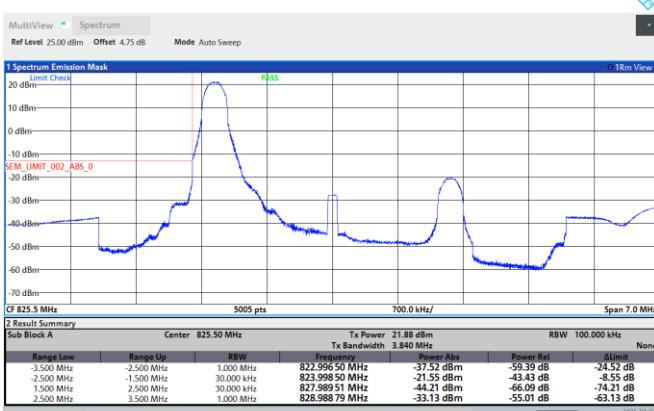
Test Report No.: PSU-QSU2503280115RI04



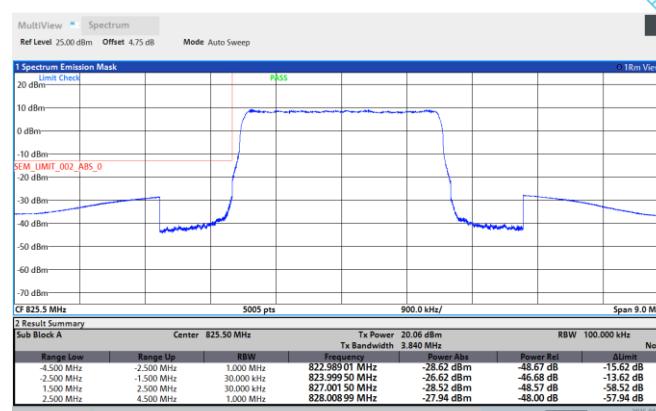
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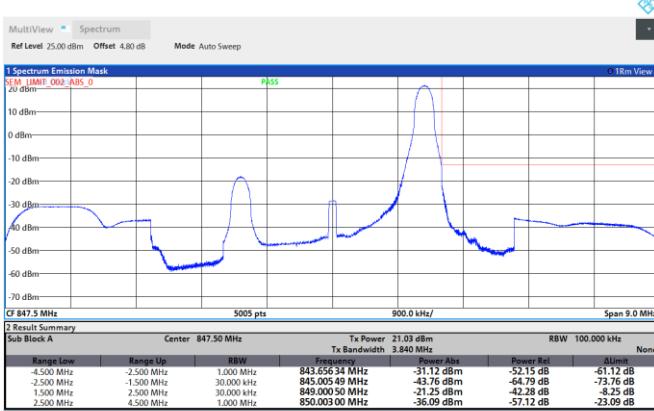
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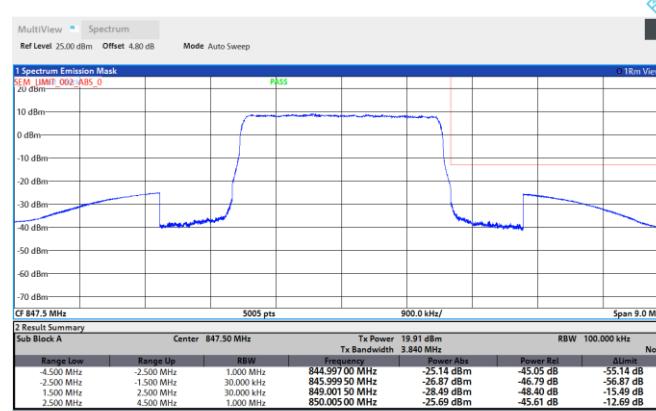
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## Band26-3MHz-QPSK-27025-15RB#0



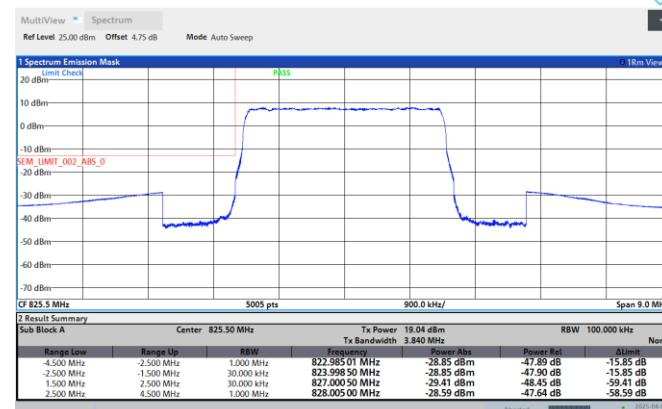
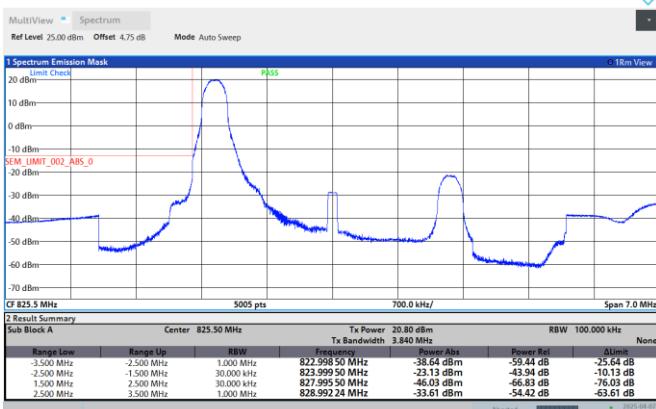
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## Band26-3MHz-16QAM-26805-15RB#0

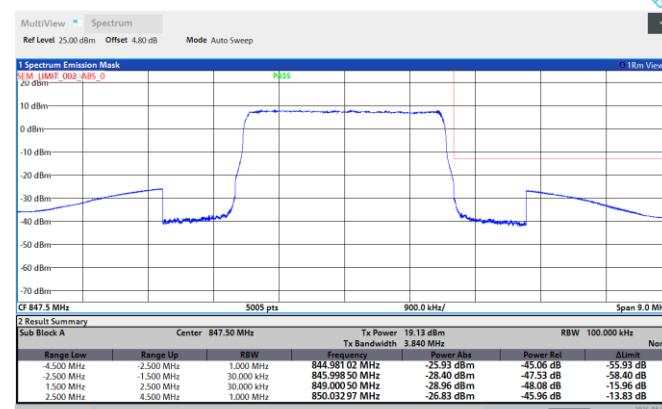
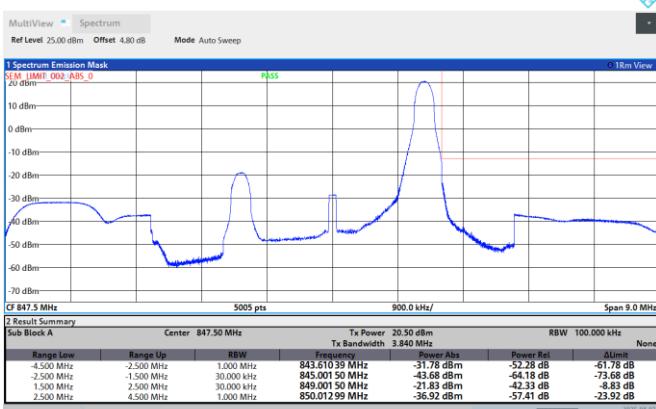
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Test Report No.: PSU-QSU2503280115RI04



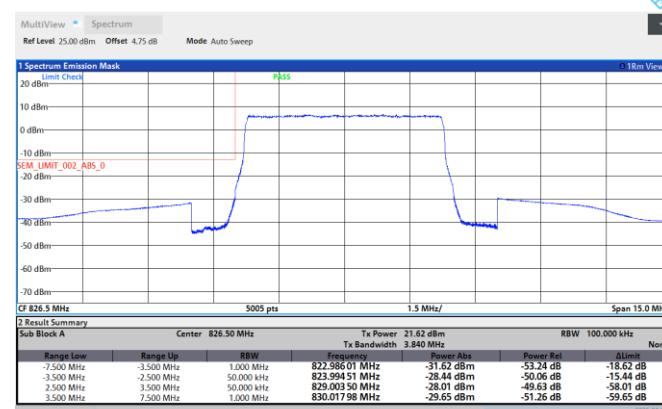
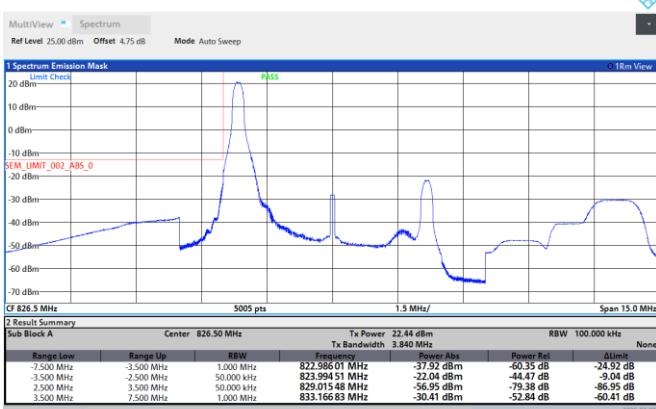
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## Band26-5MHz-QPSK-26815-25RB#0

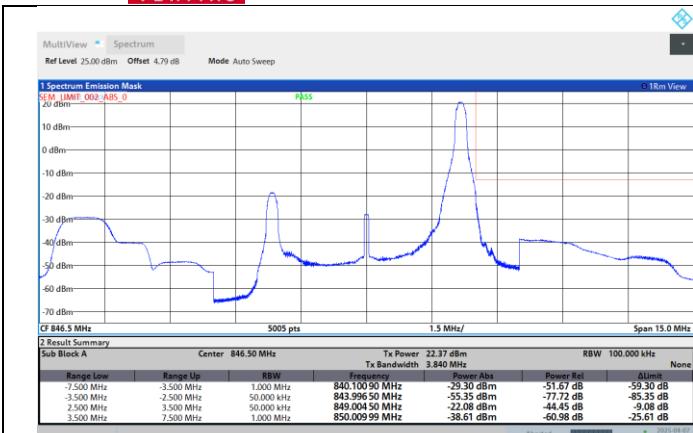


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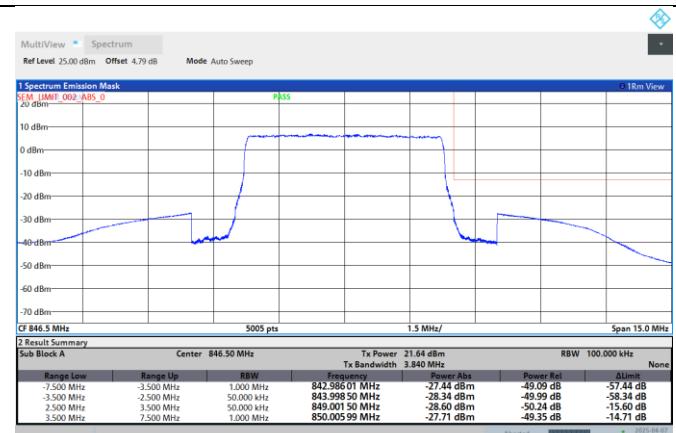
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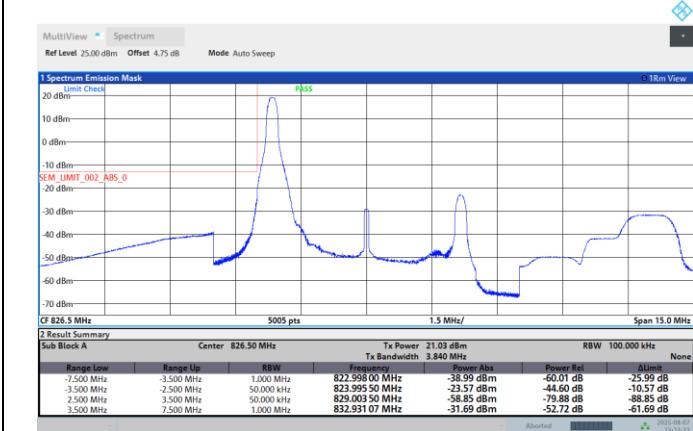
Test Report No.: PSU-QSU2503280115RI04



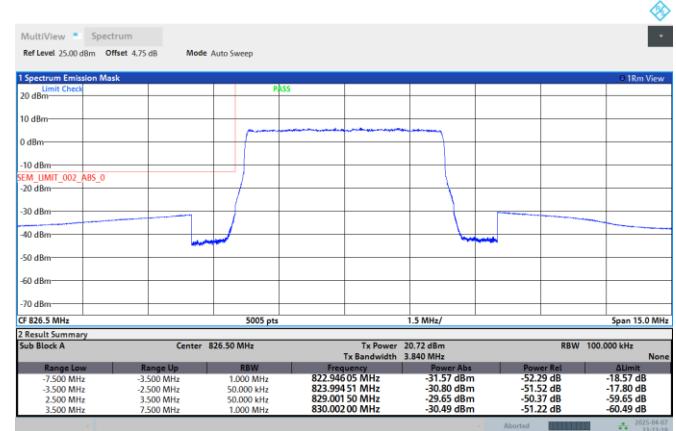
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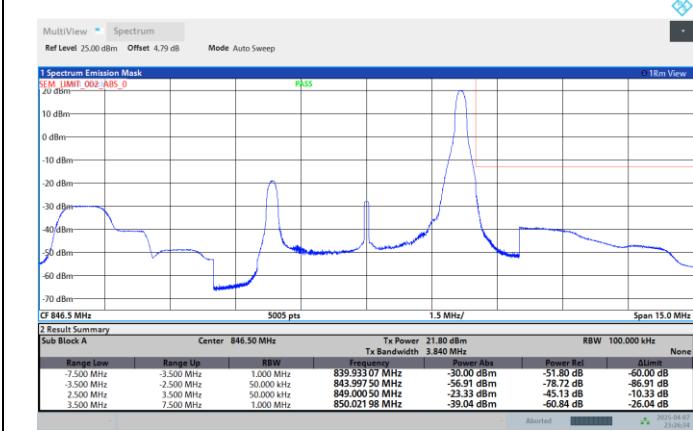
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## Band26-5MHz-16QAM-27015-1RB#24



## Band26-5MHz-16QAM-27015-25RB#0



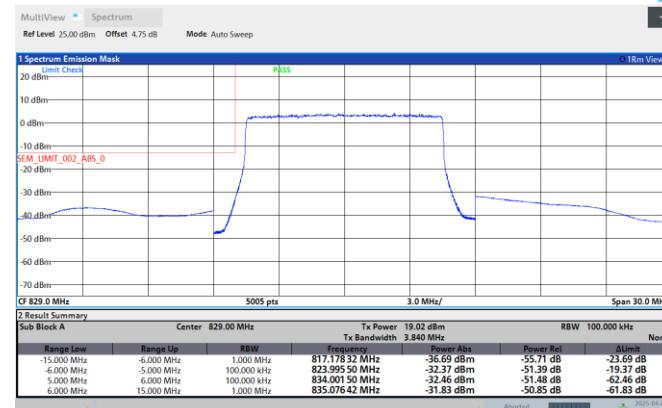
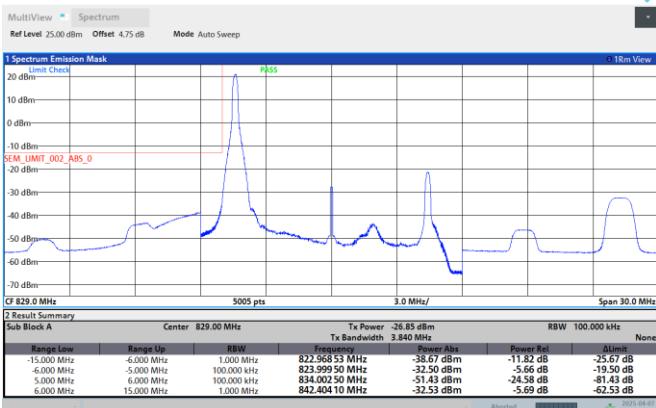
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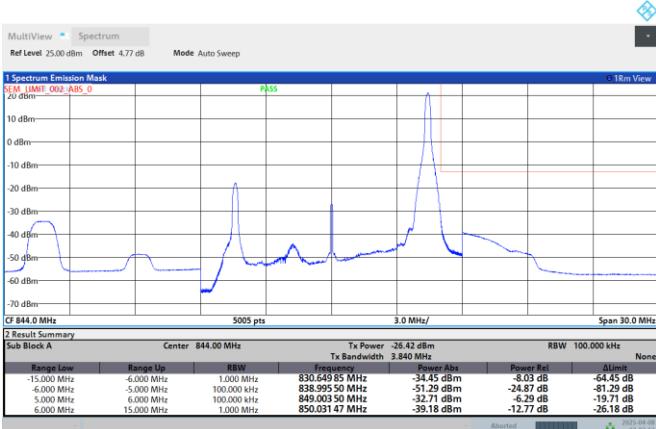
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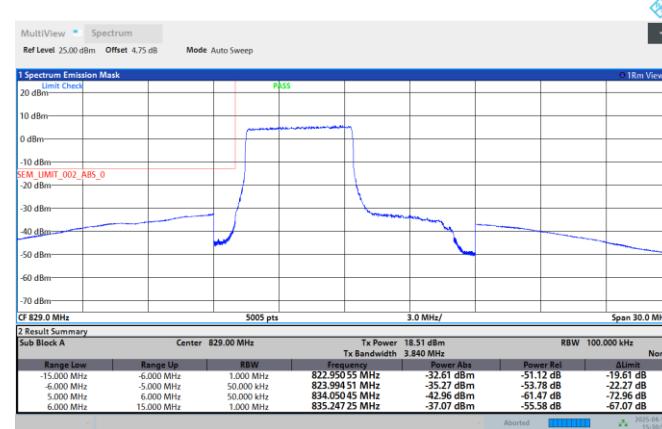
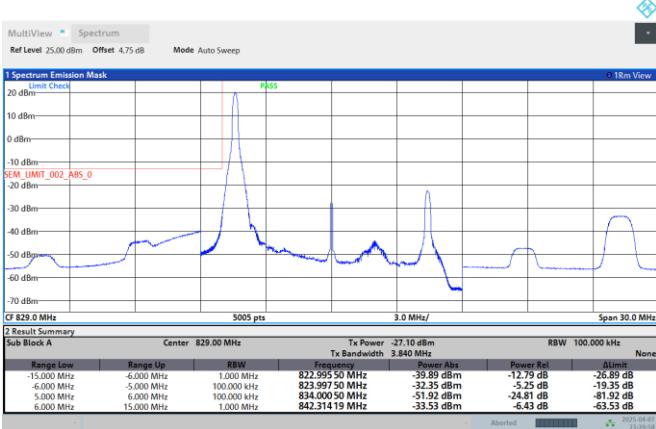
Test Report No.: PSU-QSU2503280115RI04



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## Band26-10MHz-16QAM-26840-1RB#0

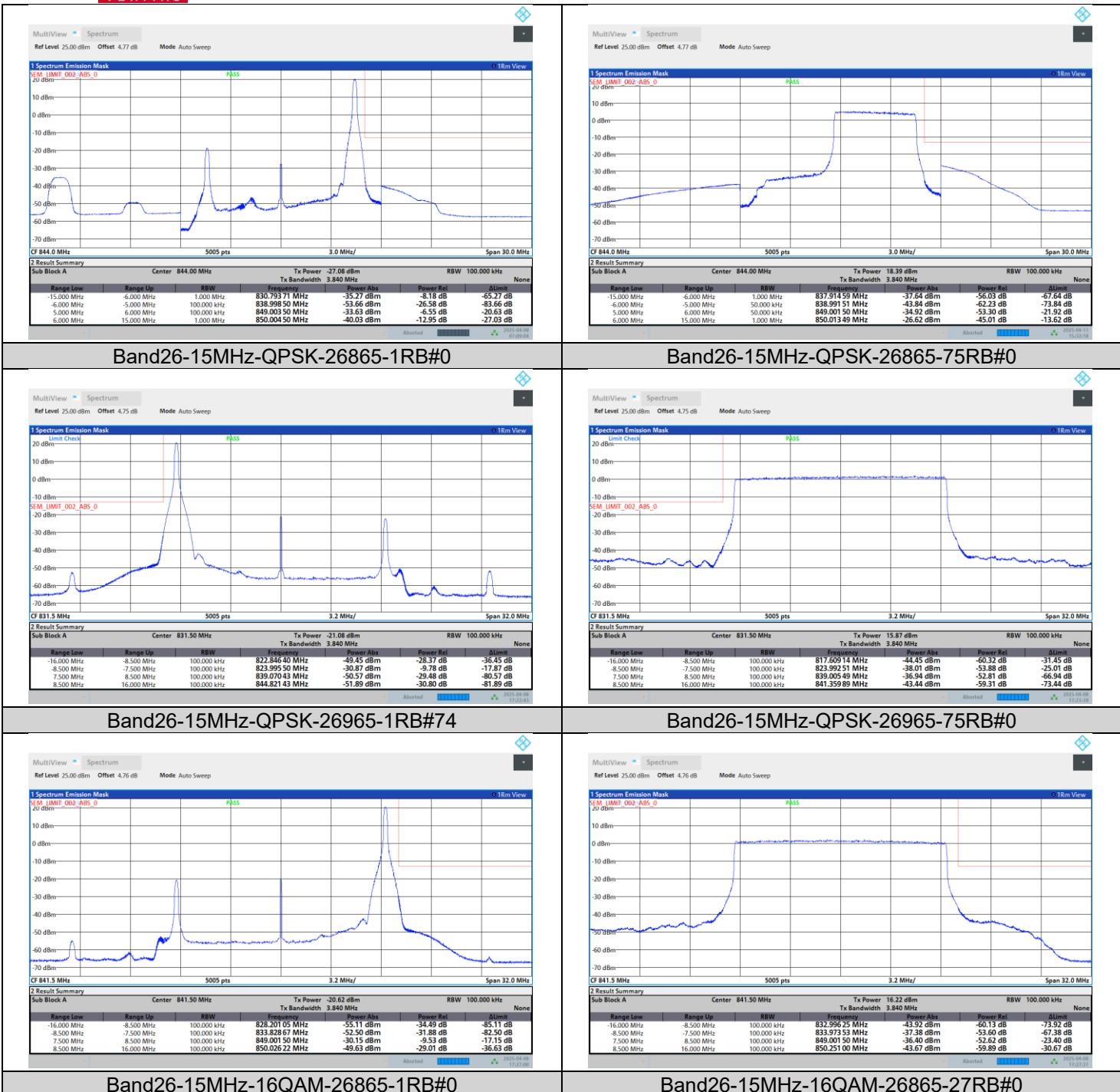


## Band26-10MHz-16QAM-26990-1RB#49

## Band26-10MHz-16QAM-26840-27RB#0

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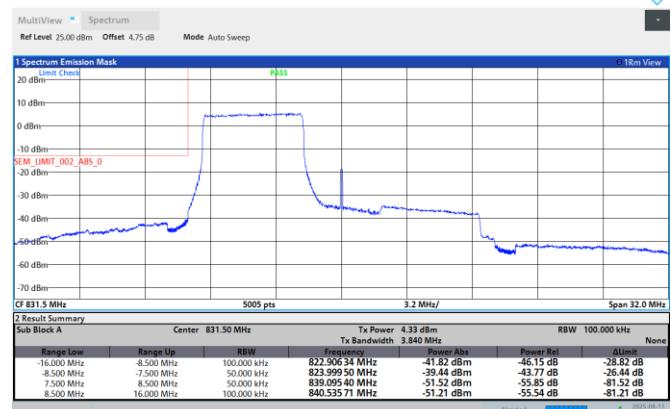
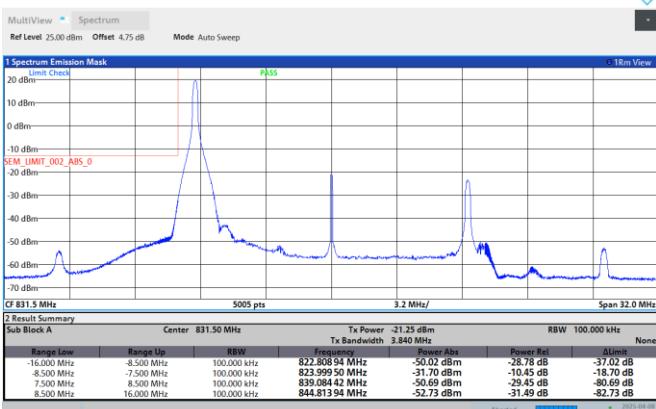
Test Report No.: PSU-QSU2503280115RI04



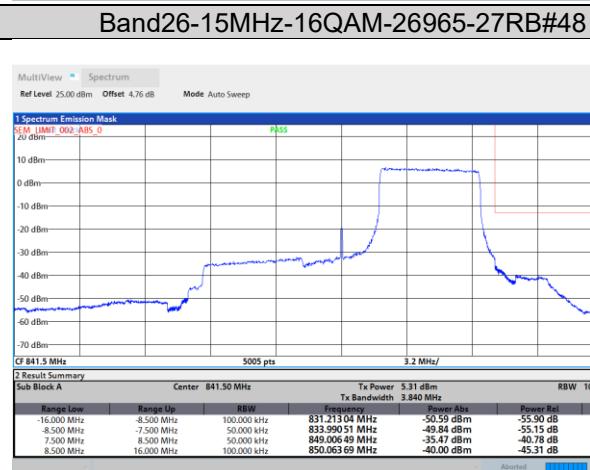
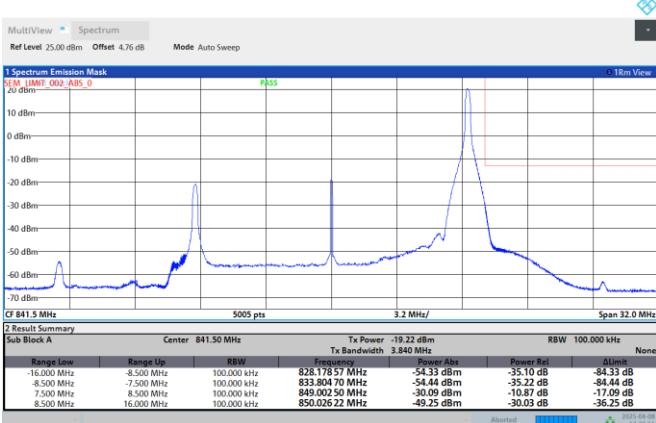


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Band26-15MHz-16QAM-26965-1RB#74



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VERITAS Test Report No.: PSU-QSU2503280115RI04

## CONDUCTED SPURIOUS EMISSION

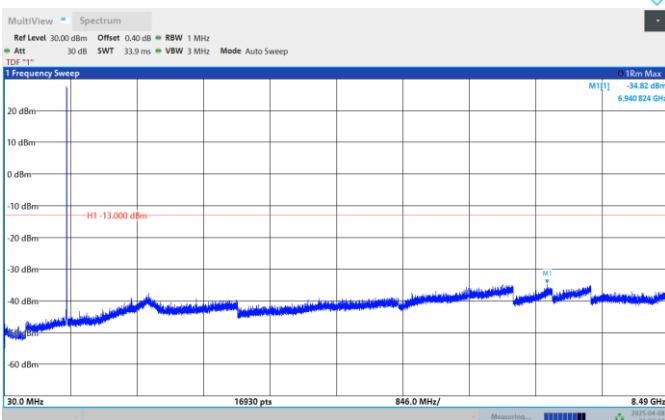
### Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band26	1.4MHz	QPSK	26797	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	1.4MHz	QPSK	26915	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	1.4MHz	QPSK	27033	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	3MHz	QPSK	26805	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	3MHz	QPSK	26915	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	3MHz	QPSK	27025	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	5MHz	QPSK	26815	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	5MHz	QPSK	26915	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	5MHz	QPSK	27015	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	10MHz	QPSK	26840	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	10MHz	QPSK	26915	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	10MHz	QPSK	26990	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	15MHz	QPSK	26865	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	15MHz	QPSK	26915	1RB#0	Range:30~8490MHz	See Graph	PASS
Band26	15MHz	QPSK	26965	1RB#0	Range:30~8490MHz	See Graph	PASS

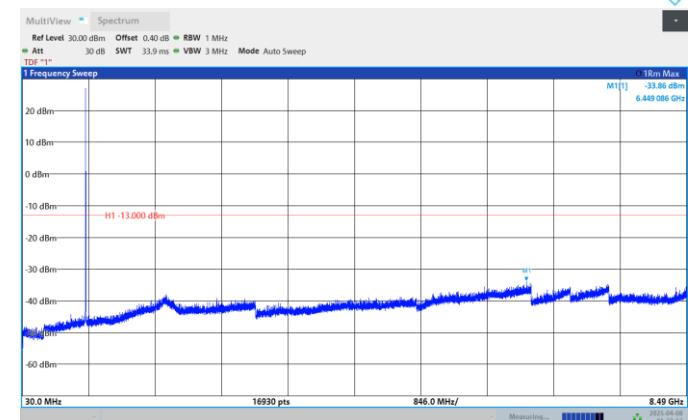


## Test Graphs

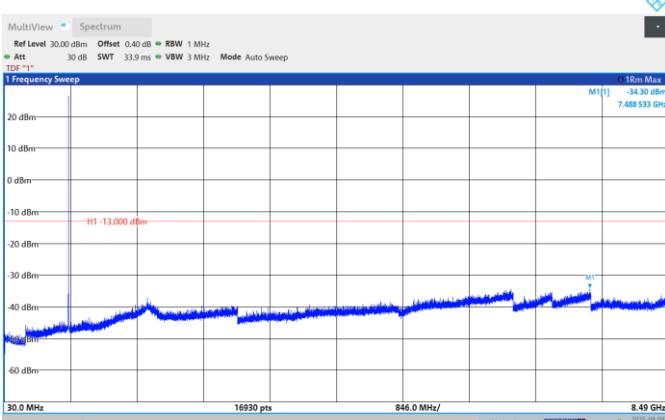
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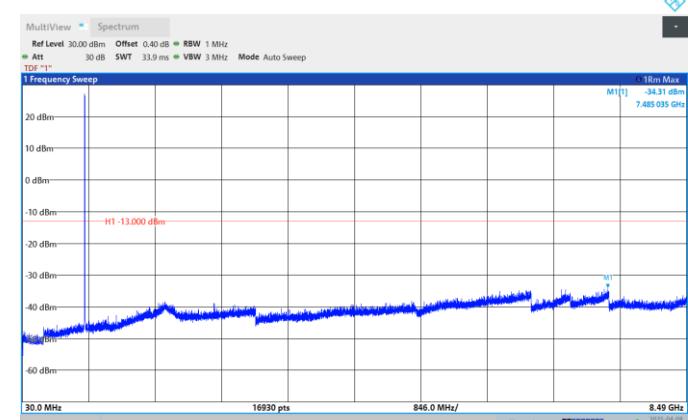
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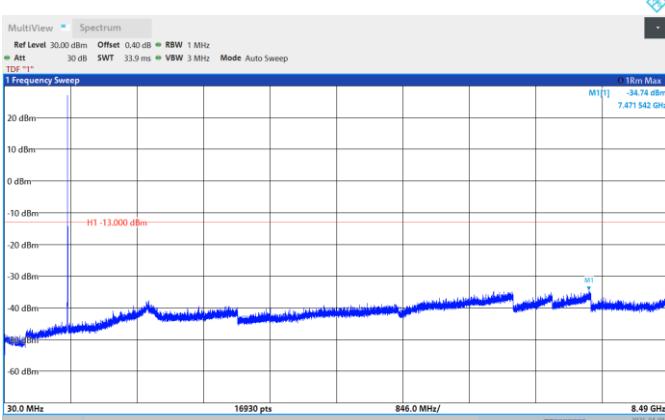
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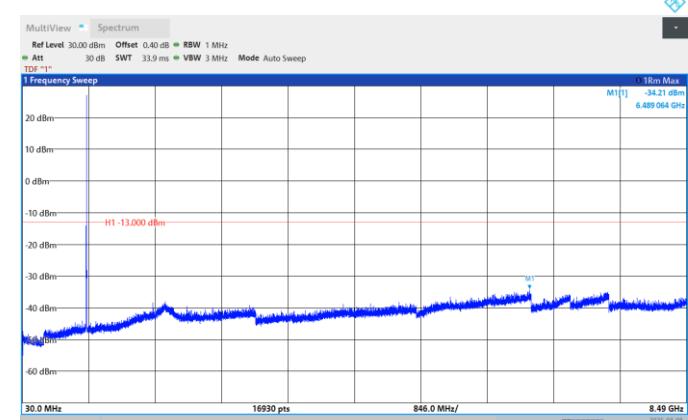
Band26-3MHz-QPSK-26805-1RB#0-Range:30~8490MHz



Band26-3MHz-QPSK-26915-1RB#0-Range:30~8490MHz



Band26-3MHz-QPSK-27025-1RB#0-Range:30~8490MHz



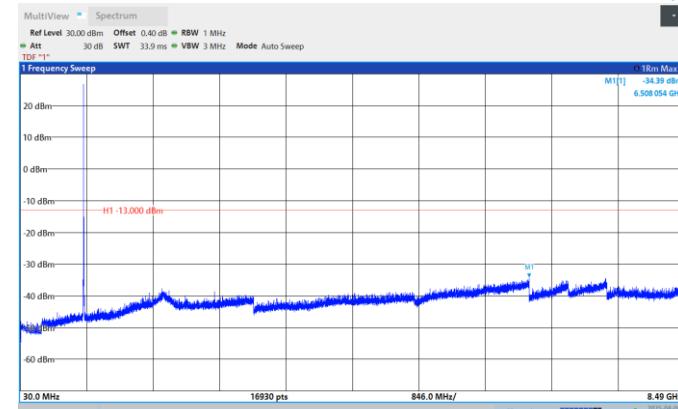
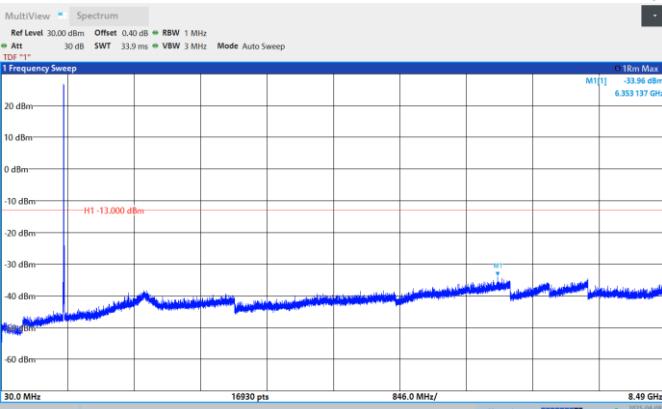
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Band26-5MHz-QPSK-26915-1RB#0-Range:30~8490MHz



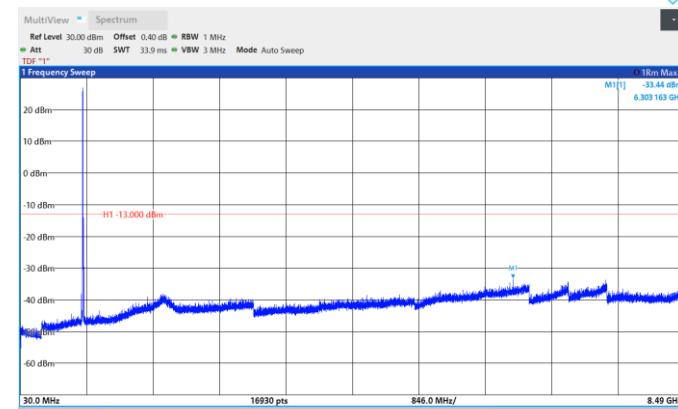
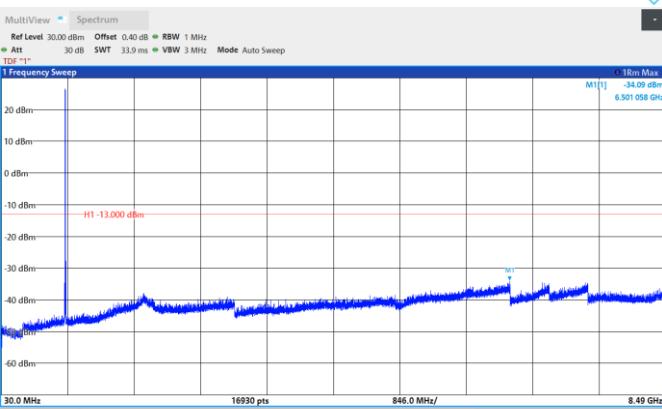
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Test Report No.: PSU-QSU2503280115RI04



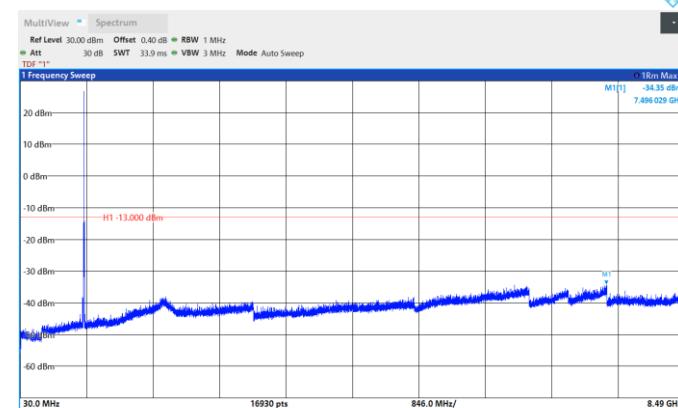
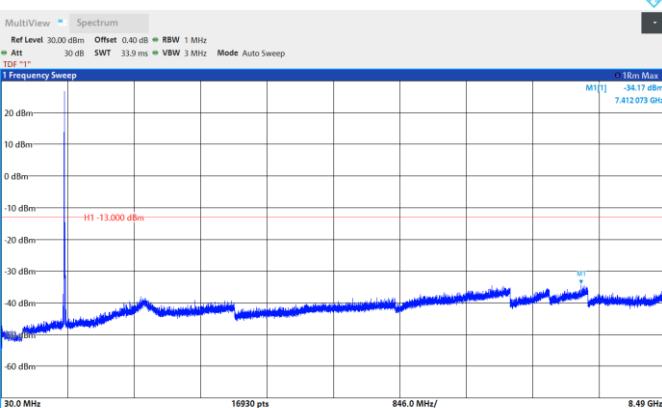
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Band26-10MHz-QPSK-26840-1RB#0-Range:30~8490MHz



Band26-10MHz-QPSK-26915-1RB#0-Range:30~8490MHz

Band26-10MHz-QPSK-26990-1RB#0-Range:30~8490MHz



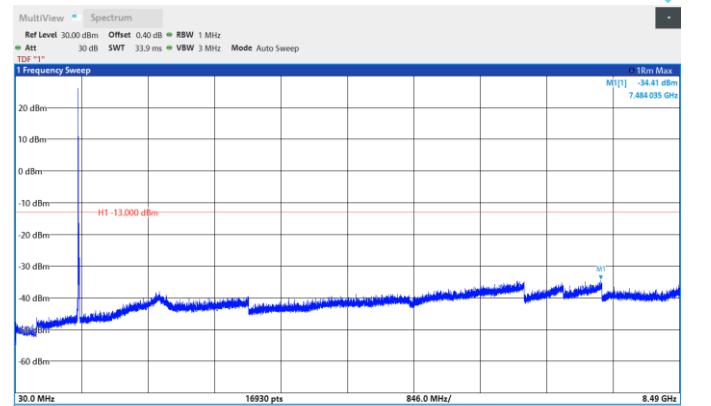
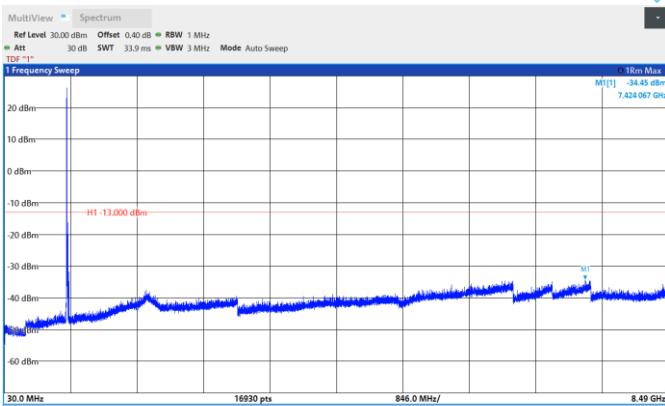
Band26-15MHz-QPSK-26865-1RB#0-Range:30~8490MHz

Band26-15MHz-QPSK-26915-1RB#0-Range:30~8490MHz

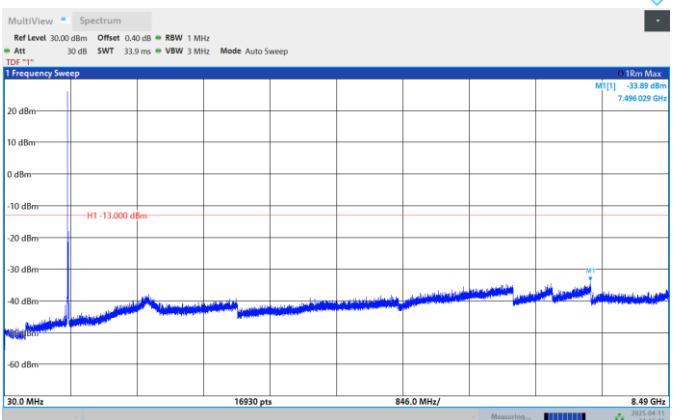


BUREAU  
VERITAS

Test Report No.: PSU-QSU2503280115RI04



### Band26-15MHz-QPSK-26965-1RB#0-R-Range:30~8490MHz



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VERITAS Test Report No.: PSU-QSU2503280115RI04

## FREQUENCY STABILITY

### Test Result

Voltage									
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band26	15MHz	QPSK	26865	75RB#0	LV	NT	21.85	0.0263	PASS
Band26	15MHz	QPSK	26865	75RB#0	NV	NT	13.53	0.0163	PASS
Band26	15MHz	QPSK	26865	75RB#0	HV	NT	-2.15	-0.0026	PASS
Band26	15MHz	QPSK	26915	75RB#0	LV	NT	-13.99	-0.0167	PASS
Band26	15MHz	QPSK	26915	75RB#0	NV	NT	11.52	0.0138	PASS
Band26	15MHz	QPSK	26915	75RB#0	HV	NT	-15.33	-0.0183	PASS
Band26	15MHz	QPSK	26965	75RB#0	LV	NT	-7.25	-0.0086	PASS
Band26	15MHz	QPSK	26965	75RB#0	NV	NT	22.90	0.0272	PASS
Band26	15MHz	QPSK	26965	75RB#0	HV	NT	12.31	0.0146	PASS

Temperature									
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band26	15MHz	QPSK	26865	75RB#0	NV	-30	-18.69	-0.0225	PASS
Band26	15MHz	QPSK	26865	75RB#0	NV	-20	-23.75	-0.0286	PASS
Band26	15MHz	QPSK	26865	75RB#0	NV	-10	-8.25	-0.0099	PASS
Band26	15MHz	QPSK	26865	75RB#0	NV	0	-3.30	-0.0040	PASS
Band26	15MHz	QPSK	26865	75RB#0	NV	10	-5.13	-0.0062	PASS
Band26	15MHz	QPSK	26865	75RB#0	NV	20	3.45	0.0041	PASS
Band26	15MHz	QPSK	26865	75RB#0	NV	30	-24.97	-0.0300	PASS
Band26	15MHz	QPSK	26865	75RB#0	NV	40	-8.98	-0.0108	PASS
Band26	15MHz	QPSK	26865	75RB#0	NV	50	5.07	0.0061	PASS
Band26	15MHz	QPSK	26915	75RB#0	NV	-30	-15.32	-0.0183	PASS
Band26	15MHz	QPSK	26915	75RB#0	NV	-20	-1.41	-0.0017	PASS
Band26	15MHz	QPSK	26915	75RB#0	NV	-10	21.76	0.0260	PASS
Band26	15MHz	QPSK	26915	75RB#0	NV	0	14.18	0.0170	PASS
Band26	15MHz	QPSK	26915	75RB#0	NV	10	5.35	0.0064	PASS
Band26	15MHz	QPSK	26915	75RB#0	NV	20	-21.27	-0.0254	PASS
Band26	15MHz	QPSK	26915	75RB#0	NV	30	-20.38	-0.0244	PASS
Band26	15MHz	QPSK	26915	75RB#0	NV	40	11.20	0.0134	PASS
Band26	15MHz	QPSK	26915	75RB#0	NV	50	9.55	0.0114	PASS
Band26	15MHz	QPSK	26965	75RB#0	NV	-30	-15.05	-0.0179	PASS
Band26	15MHz	QPSK	26965	75RB#0	NV	-20	20.35	0.0242	PASS
Band26	15MHz	QPSK	26965	75RB#0	NV	-10	10.08	0.0120	PASS
Band26	15MHz	QPSK	26965	75RB#0	NV	0	-24.43	-0.0290	PASS
Band26	15MHz	QPSK	26965	75RB#0	NV	10	8.25	0.0098	PASS
Band26	15MHz	QPSK	26965	75RB#0	NV	20	-7.30	-0.0087	PASS
Band26	15MHz	QPSK	26965	75RB#0	NV	30	11.31	0.0134	PASS
Band26	15MHz	QPSK	26965	75RB#0	NV	40	7.94	0.0094	PASS
Band26	15MHz	QPSK	26965	75RB#0	NV	50	-21.65	-0.0257	PASS



### MAX Deviation calculation

Frequency Stability	Frequency (MHz)	Limit Line(MHz)	Result
$f_L -  \text{MAX}(\Delta f) $	824.7630	$\geq 824$	PASS
$f_H +  \text{MAX}(\Delta f) $	848.2050	$\leq 849$	

Note:

1.  $|\text{MAX}(\Delta f)|$  = Max Deviation
2.  $f_L$  = Occ low channel  $f_l(-13\text{dBm}/\text{MHz})$
3.  $f_H$  = Occ High channel  $f_H(-13\text{dBm}/\text{MHz})$
4.  $|\text{MAX}(\Delta f)| = 24.97\text{Hz}$ .

--END--