



# IC TEST REPORT

## (RSS-139)

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-139 Issue 4, September 29, 2022
- 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

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BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-QSU2503280115RI01	Original release	Apr. 18, 2025



## 1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: IC RSS-139, 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-139		
5.4	Frequency Stability AFC Freq. Error vs. Voltage AFC Freq. Error vs. Temperature	Compliance
5.5	Maximum Peak Output Power	Compliance
5.5	peak-to-average power ratio	Compliance
5.6	Band Edge Measurements	Compliance
5.6	Conducted Spurious Emissions	Compliance
5.6	Radiated Spurious Emissions	Compliance
5.7	Transmitter Power Control	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.

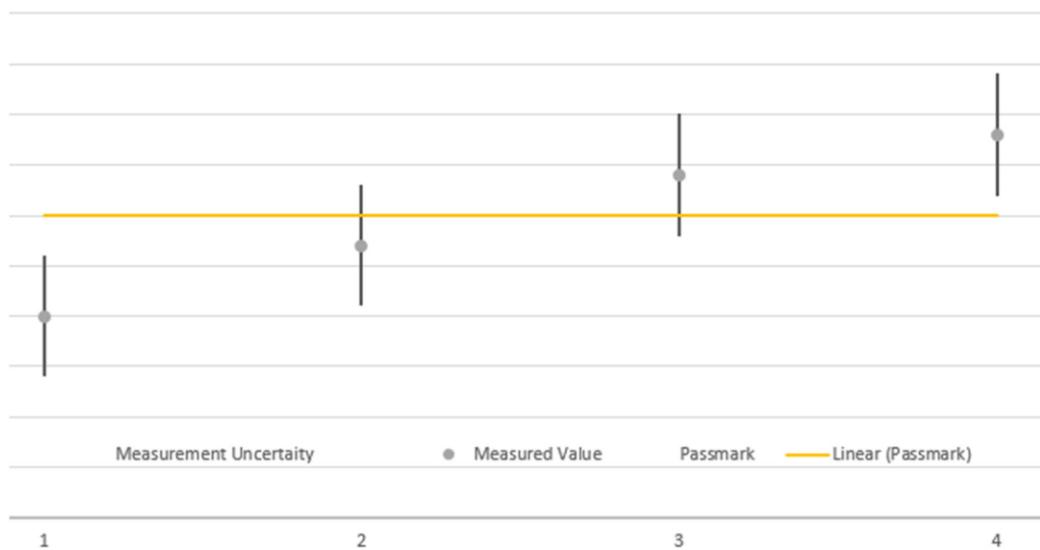


## 1.1 MEASUREMENT UNCERTAINTY

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, GRRG/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 TECHNOLOGY	WCDMA IV	BPSK, QPSK
	LTE	QPSK, 16QAM
FREQUENCY RANGE	WCDMA IV	1712.4MHz ~ 1752.6MHz
	LTE Band 4 Channel Bandwidth: 1.4MHz	1710.7MHz ~ 1754.3MHz
	LTE Band 4 Channel Bandwidth: 3MHz	1711.5MHz ~ 1753.5MHz
	LTE Band 4 Channel Bandwidth: 5MHz	1712.5MHz ~ 1752.5MHz
	LTE Band 4 Channel Bandwidth: 10MHz	1715MHz ~ 1750MHz
	LTE Band 4 Channel Bandwidth: 15MHz	1717.5MHz ~ 1747.5 MHz
	LTE Band 4 Channel Bandwidth: 20MHz	1720MHz ~ 1745MHz
MAX. EIRP/ERP POWER	WCDMA IV	502.34mW
	LTE Band 4 Channel Bandwidth: 1.4MHz	526.02mW
	LTE Band 4 Channel Bandwidth: 3MHz	527.23mW
	LTE Band 4 Channel Bandwidth: 5MHz	529.6mW
	LTE Band 4 Channel Bandwidth: 10MHz	539.51mW
	LTE Band 4 Channel Bandwidth: 15MHz	538.27mW
EMISSION DESIGNATOR	LTE Band 4 Channel Bandwidth: 20MHz	542mW
	WCDMA IV	4M14F9W
	LTE Band 4 Channel Bandwidth: 1.4MHz	QPSK: 1M10G7D
		16QAM: 1M09W7D
EMISSION DESIGNATOR	LTE Band 4 Channel Bandwidth: 3MHz	QPSK: 2M70G7D
		16QAM: 2M69W7D
EMISSION DESIGNATOR	LTE Band 4	QPSK: 4M50G7D

BUREAU  
VERITAS

Test Report No.: PSU-QSU2503280115RI01

	<b>Channel Bandwidth: 5MHz</b>	16QAM: 4M50W7D
	<b>LTE Band 4</b>	QPSK: 8M95G7D
	<b>Channel Bandwidth: 10MHz</b>	16QAM: 4M86W7D
	<b>LTE Band 4</b>	QPSK: 13M5G7D
	<b>Channel Bandwidth: 15MHz</b>	16QAM: 4M85W7D
	<b>LTE Band 4</b>	QPSK: 17M9G7D
	<b>Channel Bandwidth: 20MHz</b>	16QAM: 4M85W7D
<b>ANTENNA TYPE</b>	FPC Antenna with 3.74dBi gain for WCDMA IV /LTE B4	
<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.

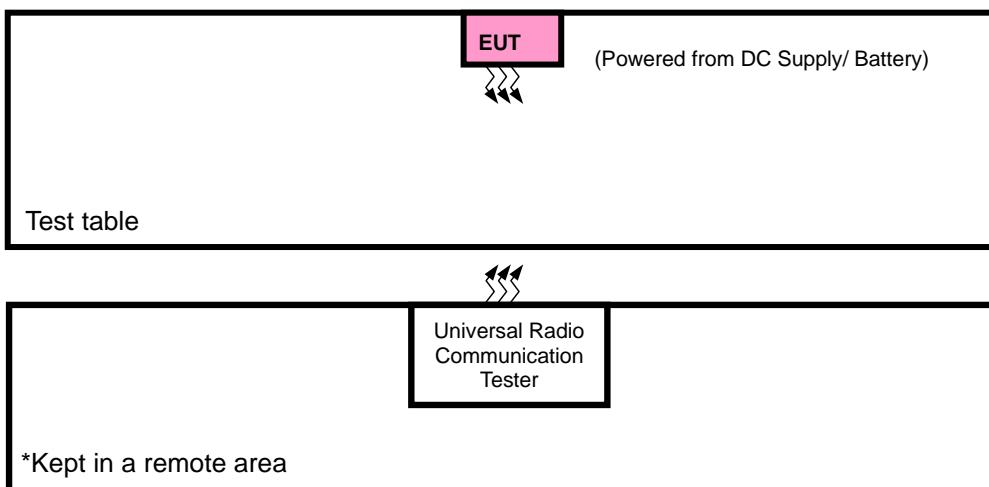
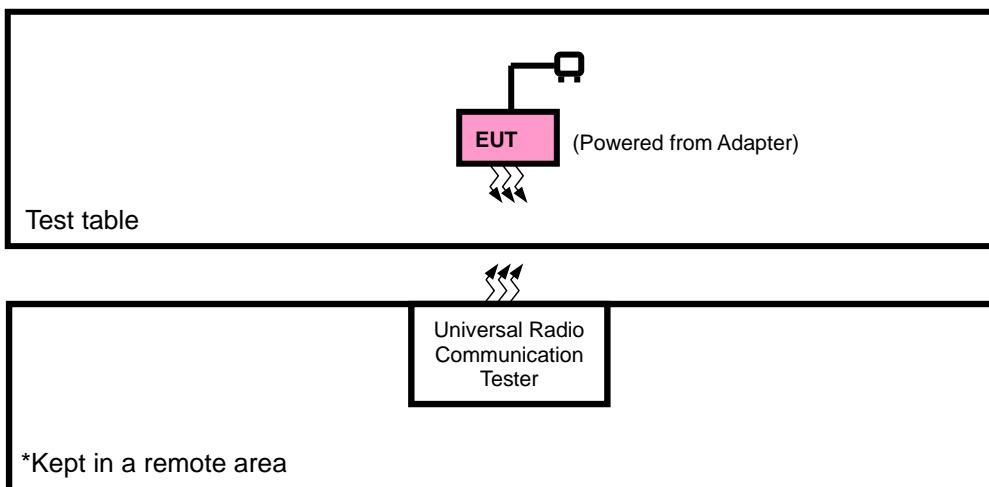
MODULATION MODE	TX FUNCTION
WCDMA	1TX/1RX
LTE	1TX/1RX

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 TEST





## 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 DESCRIPTION OF TEST MODES

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found when positioned on X-plane for EIRP and X-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

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

### WCDMA MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
A	EIRP	1312 to 1513	1312, 1413, 1513	WCDMA
B	FREQUENCY STABILITY	1312 to 1513	1312, 1413, 1513	WCDMA
A	OCCUPIED BANDWIDTH	1312 to 1513	1312, 1413, 1513	WCDMA
A	BAND EDGE	1312 to 1513	1312, 1513	WCDMA
A	PEAK TO AVERAGE RATIO	1312 to 1513	1312, 1413, 1513	WCDMA
A	CONDUCDETED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA
A	RADIATED EMISSION	1312 to 1513	1312, 1413, 1513	WCDMA



LTE BAND 4 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK,16QAM	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK,16QAM	1 RB / 0 RB Offset
B	FREQUENCY STABILITY	20050 to 20300	20050, 20175, 20300	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
A	OCCUPIED BANDWIDTH	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK,16QAM	15 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK,16QAM	50 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK,16QAM	75 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK,16QAM	100 RB / 0 RB Offset
A	BAND EDGE	19957 to 20393	19957	1.4MHz	QPSK,16QAM	1 RB / 0 RB Offset
			20393	1.4MHz	QPSK,16QAM	6 RB / 0 RB Offset
		19965 to 20385	19965	3MHz	QPSK,16QAM	1 RB / 5 RB Offset
			20385	3MHz	QPSK,16QAM	6 RB / 0 RB Offset
		19975 to 20375	19975	5MHz	QPSK,16QAM	1 RB / 0 RB Offset
			20375	5MHz	QPSK,16QAM	25 RB / 0 RB Offset
		20000 to 20350	20000	10MHz	QPSK,16QAM	1 RB / 24 RB Offset
			20350	10MHz	QPSK,16QAM	25 RB / 0 RB Offset
		20025 to 20325	20025	15MHz	QPSK,16QAM	1 RB / 0 RB Offset
						50 RB / 0 RB Offset
						1 RB / 49 RB Offset
						50 RB / 0 RB Offset
						1 RB / 0 RB Offset



						75 RB / 0 RB Offset
		20325	15MHz	QPSK,16QAM		1 RB / 74 RB Offset
						75 RB / 0 RB Offset
		20050	20MHz	QPSK,16QAM		1 RB / 0 RB Offset
		20050 to 20300				100 RB / 0 RB Offset
		20300	20MHz	QPSK,16QAM		1 RB / 99 RB Offset
						100 RB / 0 RB Offset
A	CONDUCTED EMISSION	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	19965, 20175, 20385	3MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	19975, 20175, 20375	5MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20000, 20175, 20350	10MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20025, 20175, 20325	15MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20050, 20175, 20300	20MHz	QPSK	1 RB / 0 RB Offset
A	RADIATED EMISSION	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 0 RB Offset
		19965 to 20385	19965,20175,20385	3MHz	QPSK	1 RB / 0 RB Offset
		19975 to 20375	20175	5MHz	QPSK	1 RB / 0 RB Offset
		20000 to 20350	20175	10MHz	QPSK	1 RB / 0 RB Offset
		20025 to 20325	20175	15MHz	QPSK	1 RB / 0 RB Offset
		20050 to 20300	20175	20MHz	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.



**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 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-139, Issue 4, September 29, 2022**

**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.

## 2.6 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	3.74dBi gain for WCDMA IV/ LTE B4
Impedance	50 Ω



### 3 TEST TYPES AND RESULTS

#### 3.1 OUTPUT POWER MEASUREMENT AND POWER CONTROL

##### 3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

##### 3.1.2 TEST PROCEDURES

###### EIRP / 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 or EIRP from the conducted RF output power measured using the guidance provided above is:

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

Where:

ERP or EIRP = 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) or dBi (EIRP);

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

$$\text{ERP}=\text{EIRP}-2.15$$

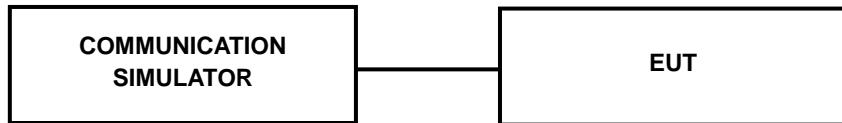
###### CONDUCTED POWER MEASUREMENT:

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



### 3.1.3 TEST SETUP

#### CONDUCTED POWER MEASUREMENT:





### 3.1.4 TEST RESULTS

#### CONDUCTED OUTPUT POWER (dBm)

Band	WCDMA IV		
TX Channel	1312	1413	1513
Rx Channel	1537	1638	1738
Frequency (MHz)	1712.4	1732.6	1752.6
RMC 12.2K	23.27	23.19	23.27
HSDPA Subtest-1	22.30	22.14	22.40
HSDPA Subtest-2	22.26	22.17	22.33
HSDPA Subtest-3	21.72	21.70	21.91
HSDPA Subtest-4	21.78	21.72	21.89
DC-HSDPA Subtest-1	22.16	22.20	22.36
DC-HSDPA Subtest-2	22.21	22.17	22.31
DC-HSDPA Subtest-3	21.75	21.76	21.82
DC-HSDPA Subtest-4	21.69	21.64	21.82
HSUPA Subtest-1	22.19	22.14	22.40
HSUPA Subtest-2	20.25	20.31	20.46
HSUPA Subtest-3	21.21	21.23	21.35
HSUPA Subtest-4	20.28	20.30	20.33
HSUPA Subtest-5	22.23	22.16	22.33



## LTE Band 4

### BW: 1.4M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		19957	20175	20393
		Frequency (MHz)		1710.70	1732.50	1754.30
1.4M	QPSK	1	0	23.12	23.17	23.47
		1	2	22.74	22.95	23.11
		1	5	22.72	23.00	23.21
		3	0	22.81	23.03	23.29
		3	1	22.72	22.72	23.17
		3	3	22.60	22.71	23.07
		6	0	21.78	21.98	22.23
	16QAM	1	0	22.41	22.41	22.86
		1	2	22.26	22.28	22.59
		1	5	22.05	22.19	22.44
		3	0	21.85	21.86	22.31
		3	1	21.81	21.66	22.00
		3	3	21.74	21.61	21.99
		6	0	20.82	20.83	21.24

### BW: 3M

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		19965	20175	20385
		Frequency (MHz)		1711.50	1732.50	1753.50
3M	QPSK	1	0	23.10	23.16	23.48
		1	7	22.75	22.86	23.22
		1	14	22.82	23.00	23.18
		8	0	21.80	21.98	22.24
		8	3	21.80	21.73	22.09
		8	7	21.60	21.66	22.01
		15	0	21.78	21.96	22.22
	16QAM	1	0	22.34	22.47	22.88
		1	7	22.23	22.24	22.58
		1	14	22.07	22.20	22.53
		8	0	20.85	20.98	21.25
		8	3	20.76	20.63	20.97
		8	7	20.65	20.68	20.98
		15	0	20.76	20.89	21.17

**BW: 5M**

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		19975	20175	20375
		Frequency (MHz)		1712.50	1732.50	1752.50
5M	QPSK	1	0	23.13	23.12	23.50
		1	12	22.69	22.87	23.16
		1	24	22.71	22.92	23.24
		12	0	21.69	22.03	22.22
		12	6	21.70	21.80	22.12
		12	13	21.74	21.65	22.07
		25	0	21.78	21.96	22.29
	16QAM	1	0	22.27	22.42	22.80
		1	12	22.26	22.22	22.45
		1	24	22.13	22.26	22.49
		12	0	20.76	20.92	21.21
		12	6	20.77	20.64	21.03
		12	13	20.72	20.58	20.98
		25	0	20.82	20.85	21.15

**BW: 10M**

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20000	20175	20350
		Frequency (MHz)		1715	1732.50	1750
10M	QPSK	1	0	23.08	23.14	23.58
		1	24	22.69	22.93	23.13
		1	49	22.70	22.92	23.23
		25	0	21.74	22.03	22.25
		25	12	21.67	21.79	22.15
		25	25	21.63	21.67	21.98
		50	0	21.78	21.92	22.18
	16QAM	1	0	22.38	22.43	22.87
		1	24	22.26	22.26	22.46
		1	49	22.09	22.22	22.47
		12	0	21.80	21.86	22.31
		12	17	21.75	21.61	22.02
		12	36	21.74	21.56	21.99
		27	0	20.83	20.77	21.22

**BW: 15M**

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20025	20175	20325
		Frequency (MHz)		1717.50	1732.50	1747.50
15M	QPSK	1	0	23.09	23.08	23.57
		1	37	22.66	22.98	23.12
		1	74	22.82	22.98	23.18
		36	0	21.80	22.04	22.32
		36	19	21.73	21.71	22.15
		36	39	21.70	21.67	22.04
		75	0	21.78	21.86	22.23
	16QAM	1	0	22.32	22.46	22.86
		1	37	22.15	22.18	22.55
		1	74	22.13	22.19	22.55
		12	0	21.75	21.95	22.33
		12	30	21.81	21.64	22.05
		12	61	21.76	21.67	22.00
		27	0	20.75	20.80	21.14

**BW: 20M**

BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel		20050	20175	20300
		Frequency (MHz)		1720	1732.50	1745
20M	QPSK	1	0	23.18	23.23	23.60
		1	50	22.80	22.99	23.24
		1	99	22.84	23.05	23.30
		50	0	21.82	22.05	22.34
		50	25	21.81	21.83	22.18
		50	50	21.75	21.78	22.13
		100	0	21.87	22.00	22.32
	16QAM	1	0	22.42	22.54	22.92
		1	50	22.27	22.30	22.60
		1	99	22.16	22.33	22.56
		12	0	21.90	22.01	22.35
		12	42	21.83	21.74	22.08
		12	86	21.78	21.69	22.10
		27	0	20.84	20.92	21.25

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EIRP

## WCDMA IV

WCDMA IV						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
1312	1712.4	23.27	3.74	27.01	502.34	30
1413	1732.6	23.19	3.74	26.93	493.17	30
1513	1752.6	23.27	3.74	27.01	502.34	30

## LTE BAND 4

LTE B4 1.4M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
19957	1710.7	23.12	3.74	26.86	485.29	30
20175	1732.5	23.17	3.74	26.91	490.91	30
20393	1754.3	23.47	3.74	27.21	526.02	30

## LTE B4 1.4M 16QAM

LTE B4 1.4M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
19957	1710.7	22.41	3.74	26.15	412.1	30
20175	1732.5	22.41	3.74	26.15	412.1	30
20393	1754.3	22.86	3.74	26.6	457.09	30

## LTE B4 3M QPSK

LTE B4 3M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
19965	1711.5	23.1	3.74	26.84	483.06	30
20175	1732.5	23.16	3.74	26.9	489.78	30
20385	1753.5	23.48	3.74	27.22	527.23	30

## LTE B4 3M 16QAM

LTE B4 3M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
19965	1711.5	22.34	3.74	26.08	405.51	30
20175	1732.5	22.23	3.74	25.97	395.37	30
20385	1753.5	22.07	3.74	25.81	381.07	30

## LTE B4 5M QPSK

LTE B4 5M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
19975	1712.5	23.13	3.74	26.87	486.41	30
20175	1732.5	23.12	3.74	26.86	485.29	30
20375	1752.5	23.5	3.74	27.24	529.66	30

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LTE B4 5M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
19975	1712.5	22.27	3.74	26.01	399.02	30
20175	1732.5	22.42	3.74	26.16	413.05	30
20375	1752.5	22.8	3.74	26.54	450.82	30

LTE B4 10M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
20000	1715	23.08	3.74	26.82	480.84	30
20175	1732.5	23.14	3.74	26.88	487.53	30
20350	1750	23.58	3.74	27.32	539.51	30

LTE B4 10M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
20000	1715	22.38	3.74	26.12	409.26	30
20175	1732.5	22.43	3.74	26.17	414	30
20350	1750	22.87	3.74	26.61	458.14	30

LTE B4 15M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
20025	1717.5	23.09	3.74	26.83	481.95	30
20175	1732.5	23.08	3.74	26.82	480.84	30
20325	1747.5	23.57	3.74	27.31	538.27	30

LTE B4 15M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
20025	1717.5	22.32	3.74	26.06	403.65	30
20175	1732.5	22.46	3.74	26.2	416.87	30
20325	1747.5	22.86	3.74	26.6	457.09	30

LTE B4 20M QPSK						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
20050	1720	23.18	3.74	26.92	492.04	30
20175	1732.5	23.23	3.74	26.97	497.74	30
20300	1745	23.6	3.74	27.34	542	30



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VERITAS

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LTE B4 20M 16QAM						
Channel	Frequency (MHz)	Conducted Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Lmit (dBm)
20050	1720	22.42	3.74	26.16	413.05	30
20175	1732.5	22.54	3.74	26.28	424.62	30
20300	1745	22.92	3.74	26.66	463.45	30

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



### 3.2 FREQUENCY STABILITY MEASUREMENT

#### 3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

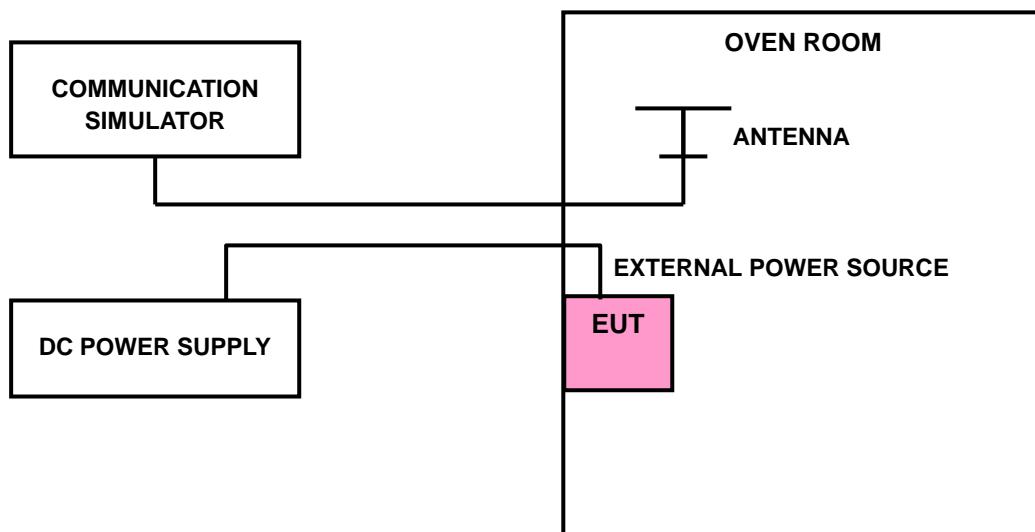
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

#### 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 error was recorded frequency error from the communication simulator.

#### 3.2.3 TEST SETUP





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### 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.

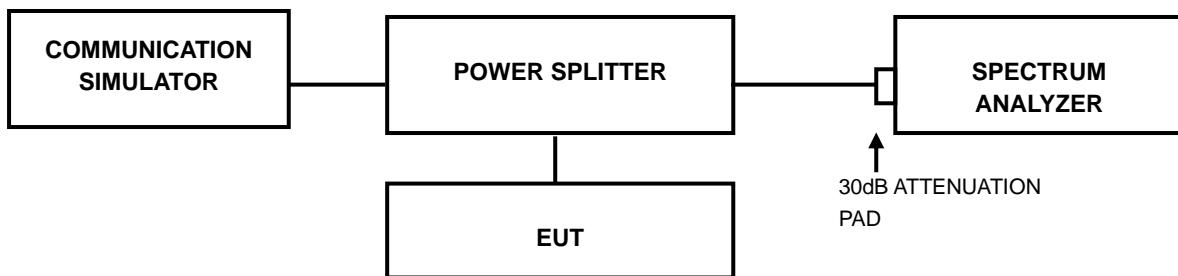


### 3.3 OCCUPIED BANDWIDTH MEASUREMENT

#### 3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

#### 3.3.2 TEST SETUP



#### 3.3.3 TEST PROCEDURES

- a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.



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### 3.3.4 TEST RESULTS

Please Refer to Appendix Of this test report.

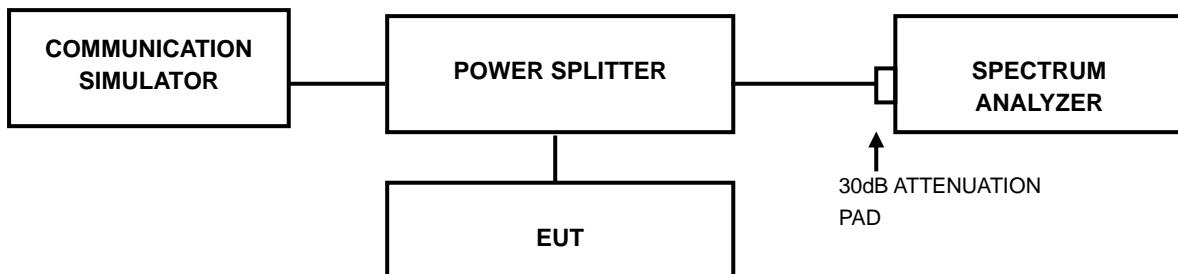


### 3.4 PEAK TO AVERAGE RATIO

#### 3.4.1 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

#### 3.4.2 TEST SETUP



#### 3.4.3 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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### 3.4.4 TEST RESULTS

Please Refer to Appendix Of this test report.



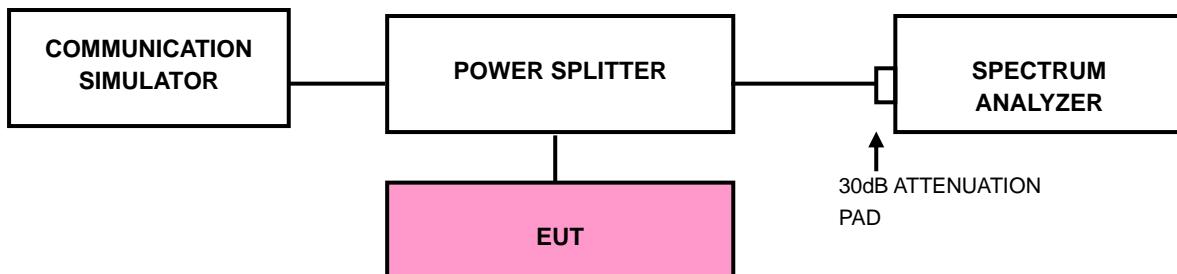
### 3.5 BAND EDGE MEASUREMENT

#### 3.5.1 LIMITS OF BAND EDGE MEASUREMENT

The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log (P)$  dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.

However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

#### 3.5.2 TEST SETUP





### 3.5.3 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.



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### 3.5.4 TEST RESULTS

Please Refer to Appendix Of this test report.



### 3.6 CONDUCTED SPURIOUS EMISSIONS

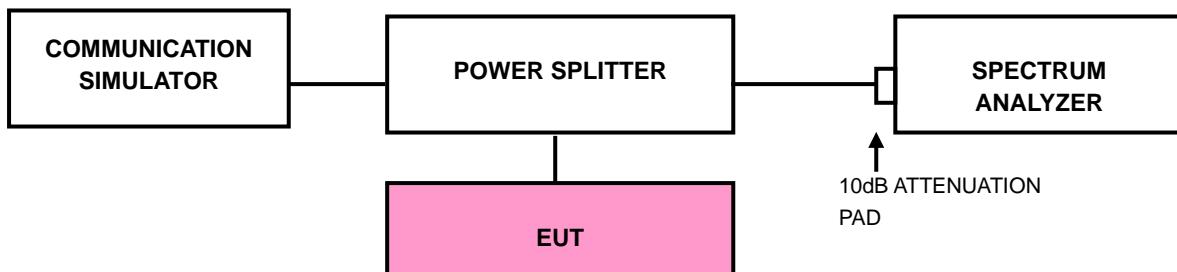
#### 3.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission equal to  $-13\text{dBm}$ .

#### 3.6.2 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. All measurements were done at middle 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 are used for conducted emission measurement.

#### 3.6.3 TEST SETUP





### 3.6.4 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.



### 3.7 RADIATED EMISSION MEASUREMENT

#### 3.7.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log_{10}(P)$  dB. The limit of emission equal to  $-13\text{dBm}$

#### 3.7.2 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. EIRP = Output power level of S.G - TX cable loss + 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, E.R.P power = E.I.P.R power - 2.15dBi.

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

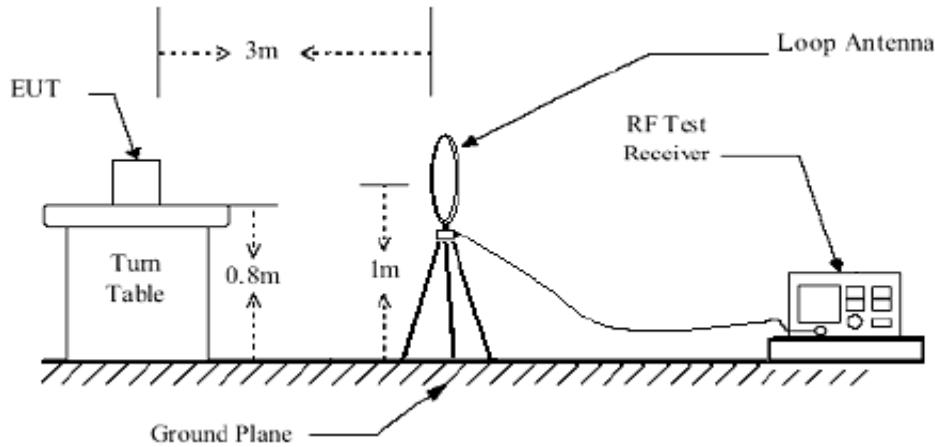
#### 3.7.3 DEVIATION FROM TEST STANDARD

No deviation

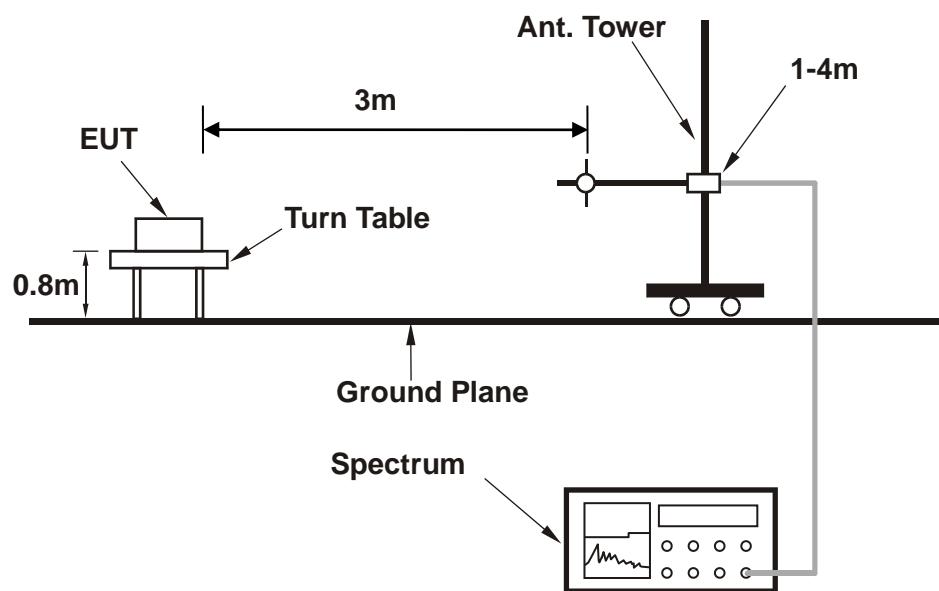


### 3.7.4 TEST SETUP

#### < Frequency Range below 30MHz >

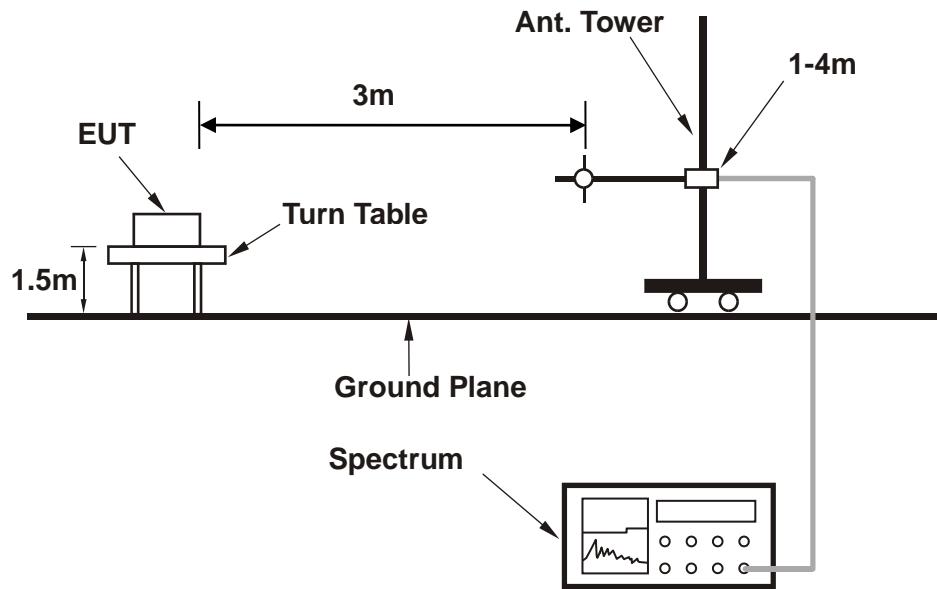


#### < Frequency Range 30MHz~1GHz >





< Frequency Range above 1GHz >



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



### 3.7.5 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.

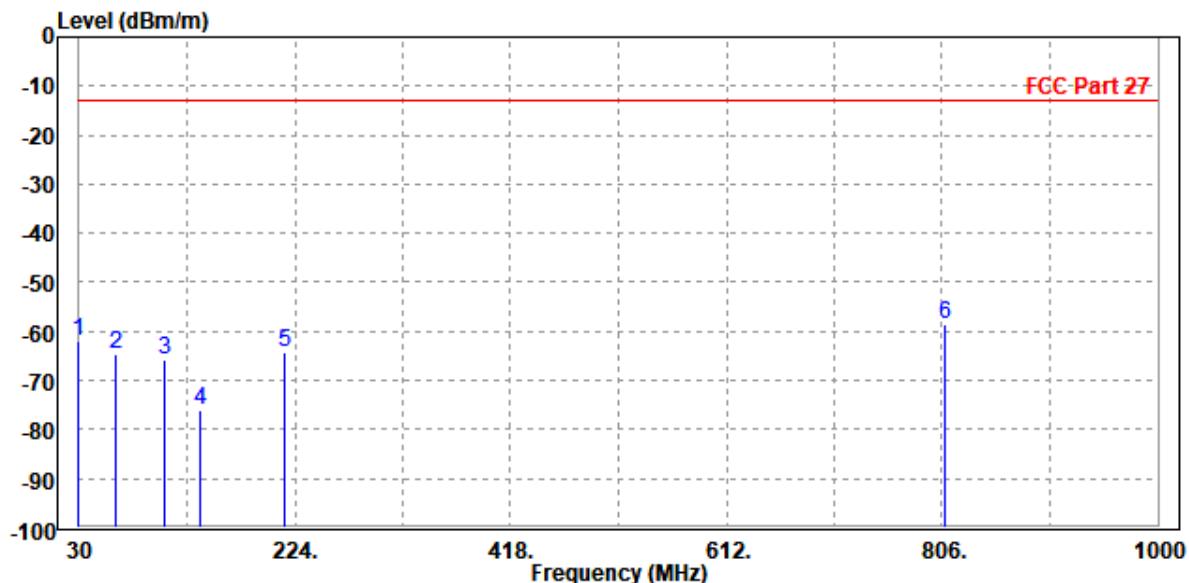
#### BELOW 1GHz WORST-CASE DATA

LTE Band 4

CHANNEL BANDWIDTH: 3MHz / QPSK

MODE	TX channel 20175	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			

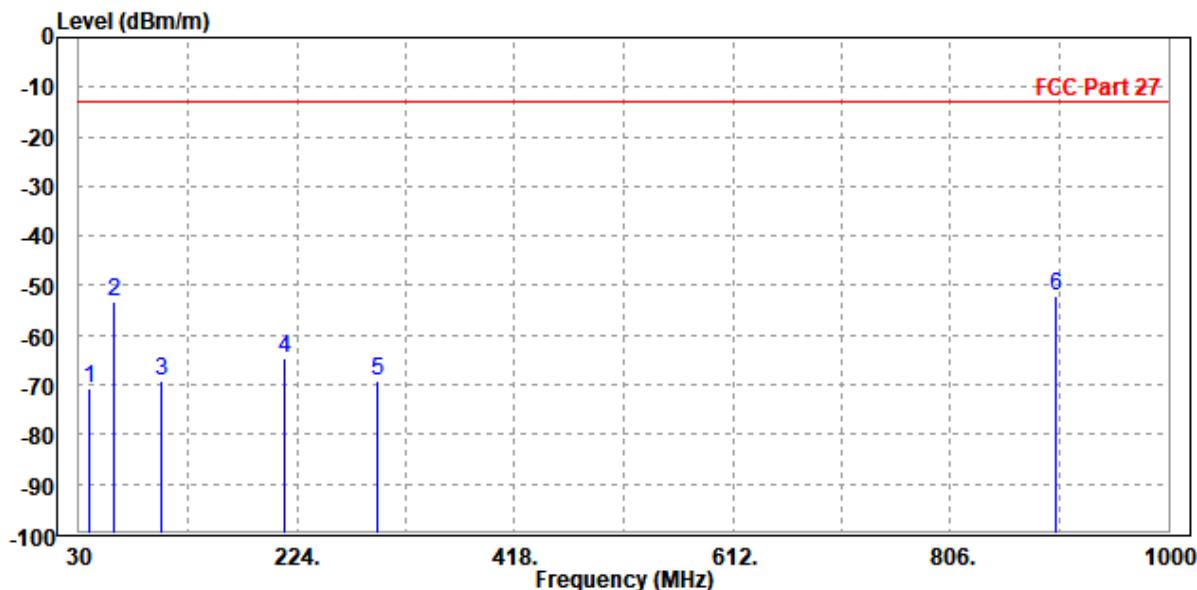
Freq	Level	Read	Limit	Over	Factor	Remark	Pol/Phase
		Level	Line	Limit			
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	30.000	-61.82	-59.84	-13.00	-48.82	-1.98 Peak	Horizontal
2	62.980	-64.70	-52.32	-13.00	-51.70	-12.38 Peak	Horizontal
3	107.600	-65.82	-51.80	-13.00	-52.82	-14.02 Peak	Horizontal
4	139.610	-75.97	-60.95	-13.00	-62.97	-15.02 Peak	Horizontal
5	215.270	-64.38	-50.29	-13.00	-51.38	-14.09 Peak	Horizontal
6 PP	808.910	-58.70	-63.51	-13.00	-45.70	4.81 Peak	Horizontal





MODE	TX channel 20175	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	Read Level	Limit Level	Over Line	Over Factor	Over Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	38.730	-70.84	-50.46	-13.00	-57.84	-20.38	Peak Vertical
2	61.040	-53.08	-34.59	-13.00	-40.08	-18.49	Peak Vertical
3	103.720	-69.22	-52.70	-13.00	-56.22	-16.52	Peak Vertical
4	212.360	-64.66	-56.83	-13.00	-51.66	-7.83	Peak Vertical
5	295.780	-69.24	-65.80	-13.00	-56.24	-3.44	Peak Vertical
6 PP	900.090	-52.03	-64.15	-13.00	-39.03	12.12	Peak Vertical





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**ABOVE 1GHz**

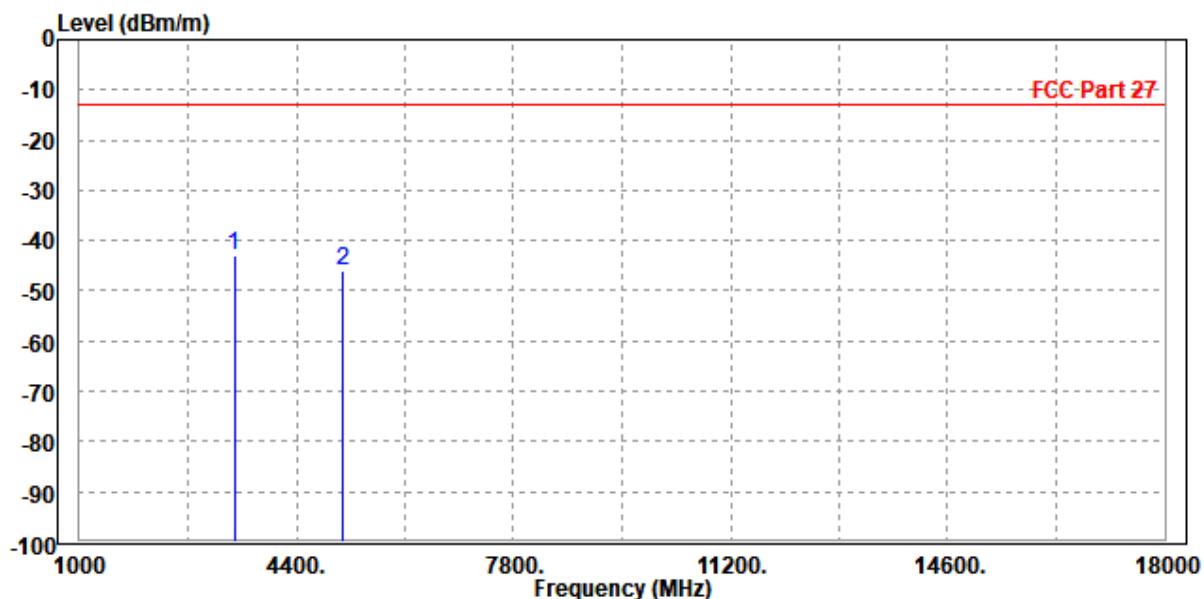
**Note:** For higher frequency, the emission is too low to be detected.

**WCDMA Band IV:**

**CH 1312**

<b>MODE</b>	TX channel 1312	<b>FREQUENCY RANGE</b>	Above 1000MHz
<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH	<b>INPUT POWER</b>	AC 120V/60HZ
<b>TESTED BY</b>	Hanwen Xu		
<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>			

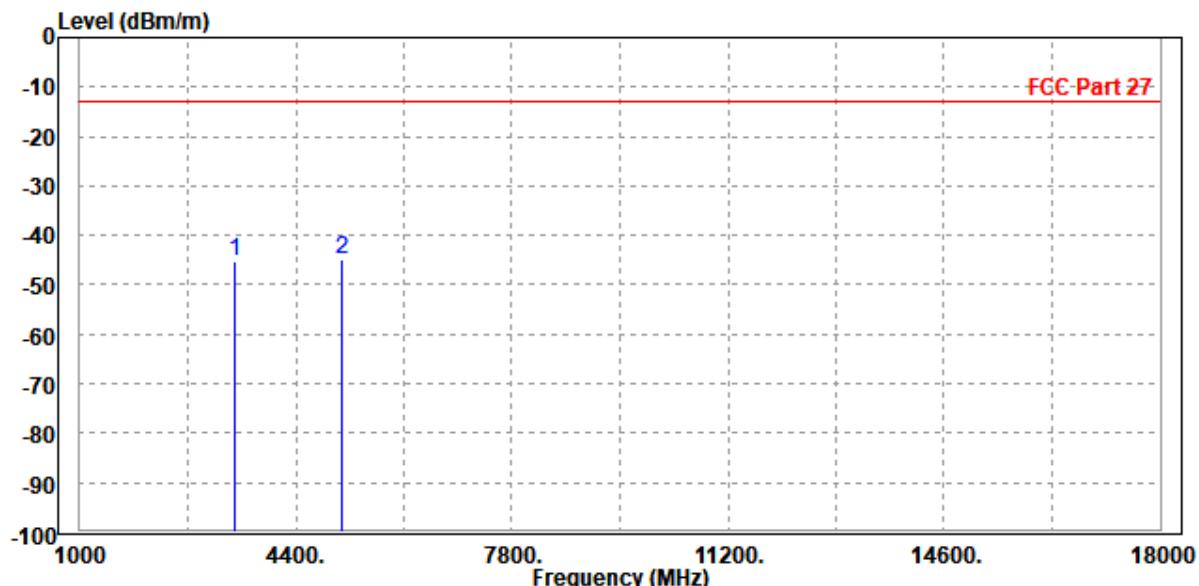
Freq	Level	Read	Limit	Over	Factor	Remark	Pol/Phase
		Level	Line	Limit			
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP 3424.800	-43.00	-51.51	-13.00	-30.00	8.51	Peak	Horizontal
2 5131.000	-46.04	-57.29	-13.00	-33.04	11.25	Peak	Horizontal





MODE	TX channel 1312	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
		Level	Line	Limit			
MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	3431.000	-45.38	-54.05	-13.00	-32.38	8.67 Peak	Vertical
2	PP 5137.200	-44.89	-56.53	-13.00	-31.89	11.64 Peak	Vertical

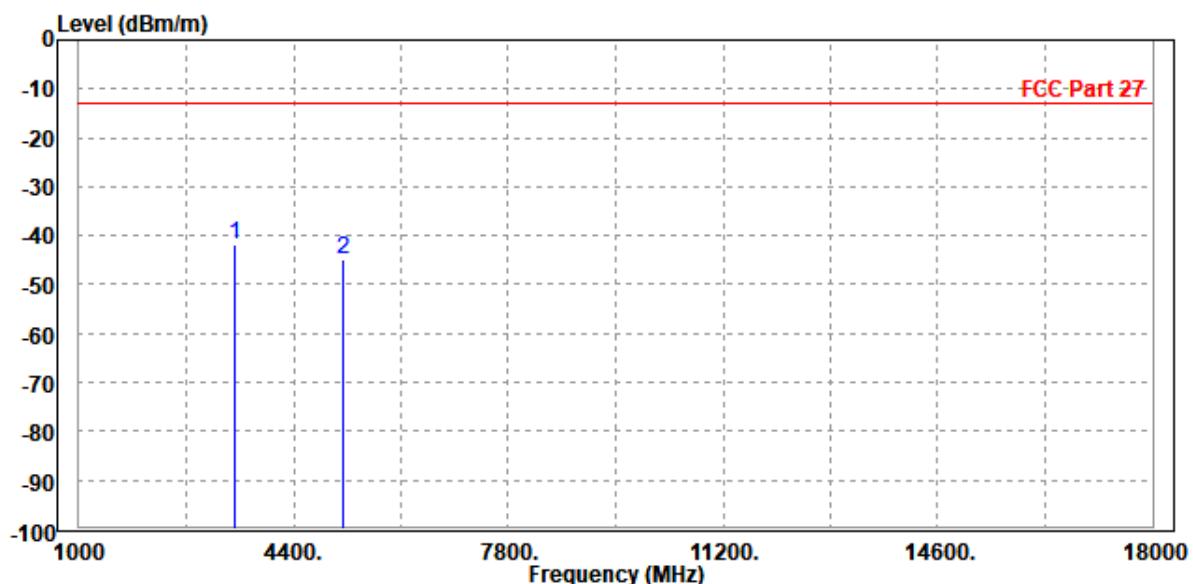




CH 1413

MODE	TX channel 1413	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			

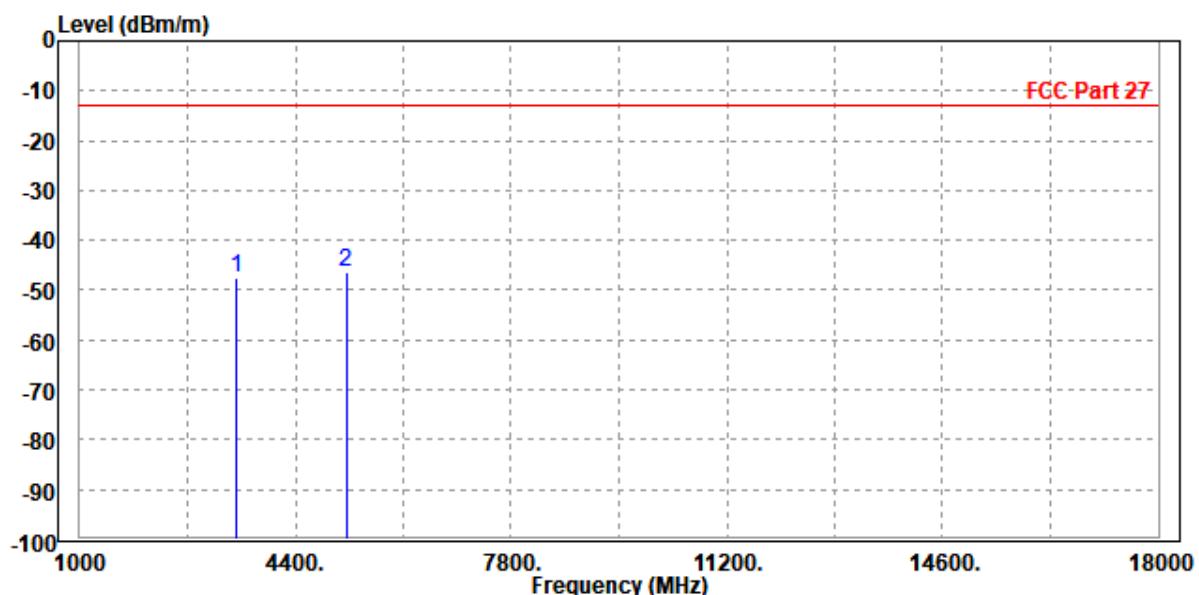
Freq	Level	Read	Limit	Over	Remark	Pol/Phase
		Level	Line	Limit Factor		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 PP 3465.000	-41.71	-50.25	-13.00	-28.71	8.54 Peak	Horizontal
2 5197.800	-44.78	-56.13	-13.00	-31.78	11.35 Peak	Horizontal





MODE	TX channel 1413	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	3465.200	-47.48	-56.13	-13.00	-34.48	8.65 Peak
2 PP	5199.000	-46.28	-58.04	-13.00	-33.28	11.76 Peak



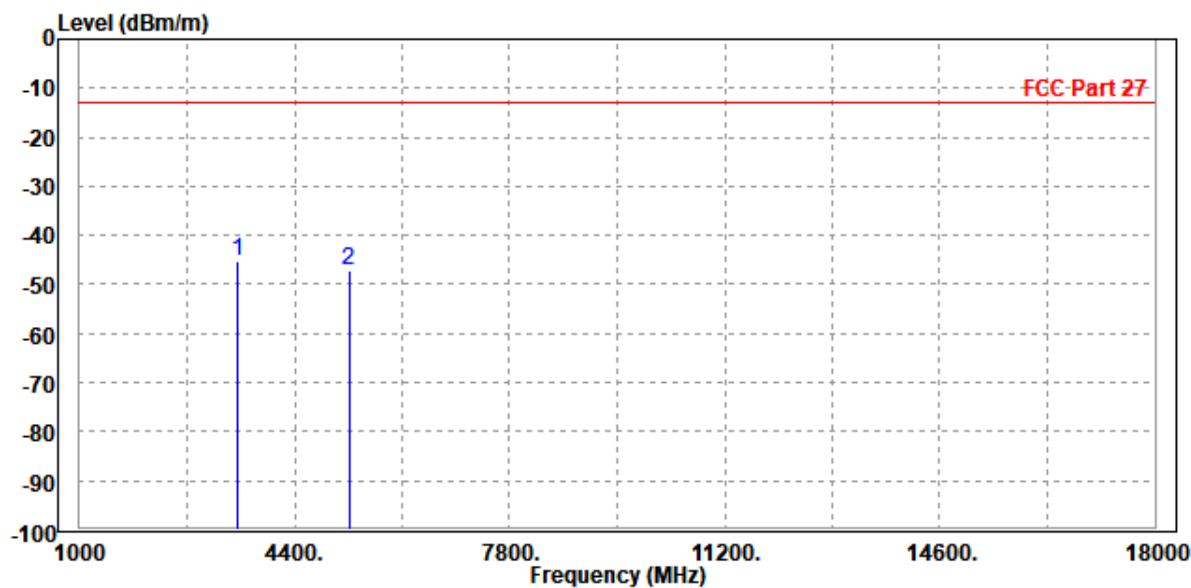


BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

CH 1513

MODE	TX channel 1513	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 3499.000	-45.15	-53.71	-13.00	-32.15	8.56	Peak	Horizontal
2 5257.800	-47.20	-58.64	-13.00	-34.20	11.44	Peak	Horizontal

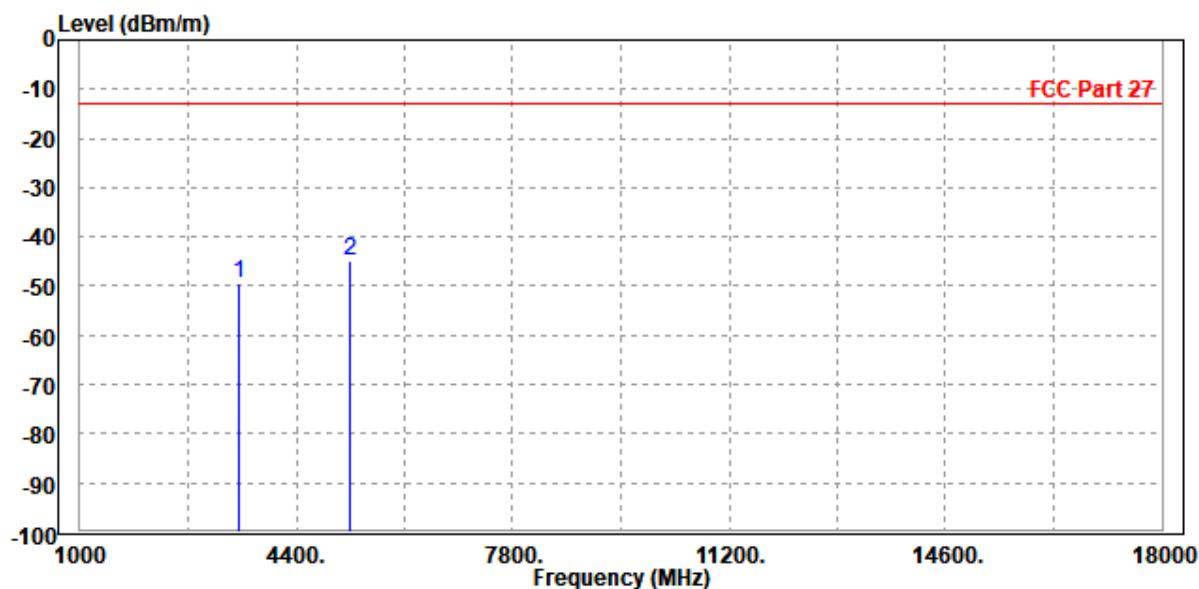




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

MODE	TX channel 1513	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	3505.200	-49.25	-57.89	-13.00	-36.25	8.64 Peak Vertical
2 PP	5250.000	-44.69	-56.54	-13.00	-31.69	11.85 Peak Vertical





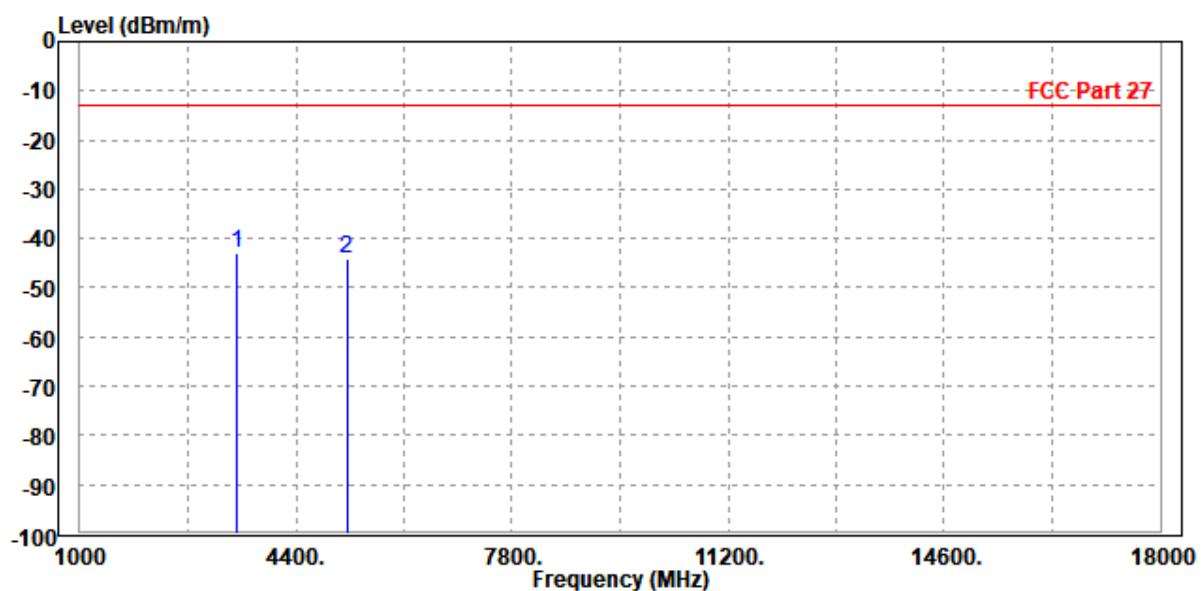
BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

LTE BAND 4

CHANNEL BANDWIDTH: 1.4MHz / QPSK

MODE	TX channel 20175	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 3465.000	-42.90	-51.44	-13.00	-29.90	8.54 Peak	Horizontal
2 5199.000	-44.07	-55.42	-13.00	-31.07	11.35 Peak	Horizontal

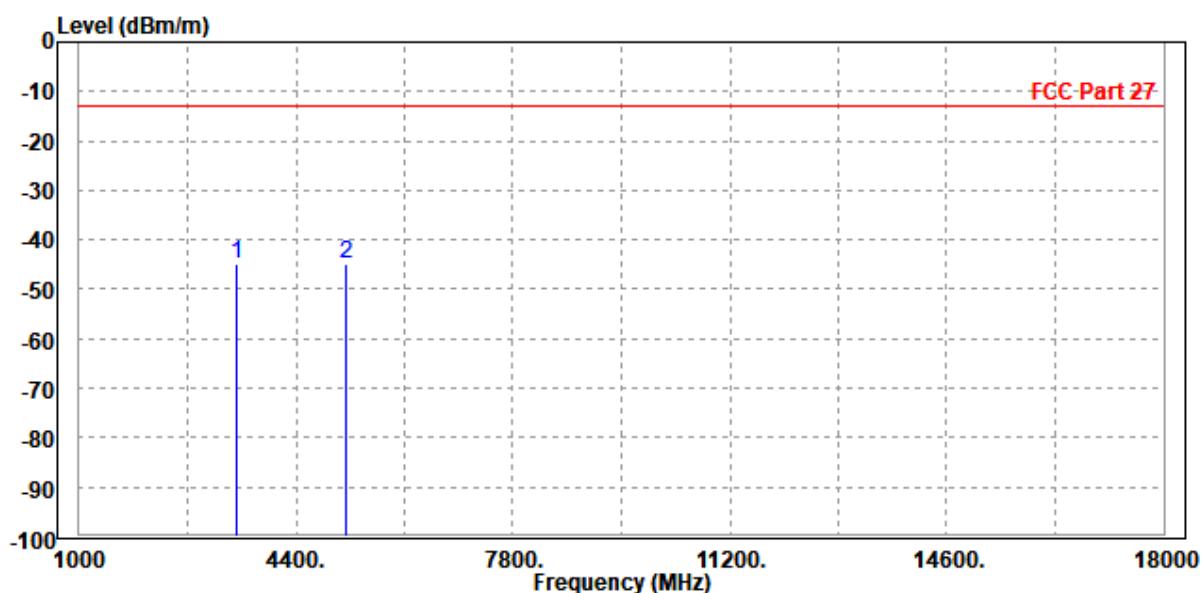




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

MODE	TX channel 20175	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	dBm	dBm/m		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3465.000	-45.06	-53.71	-13.00	-32.06	8.65 Peak Vertical
2	PP 5197.500	-45.01	-56.76	-13.00	-32.01	11.75 Peak Vertical



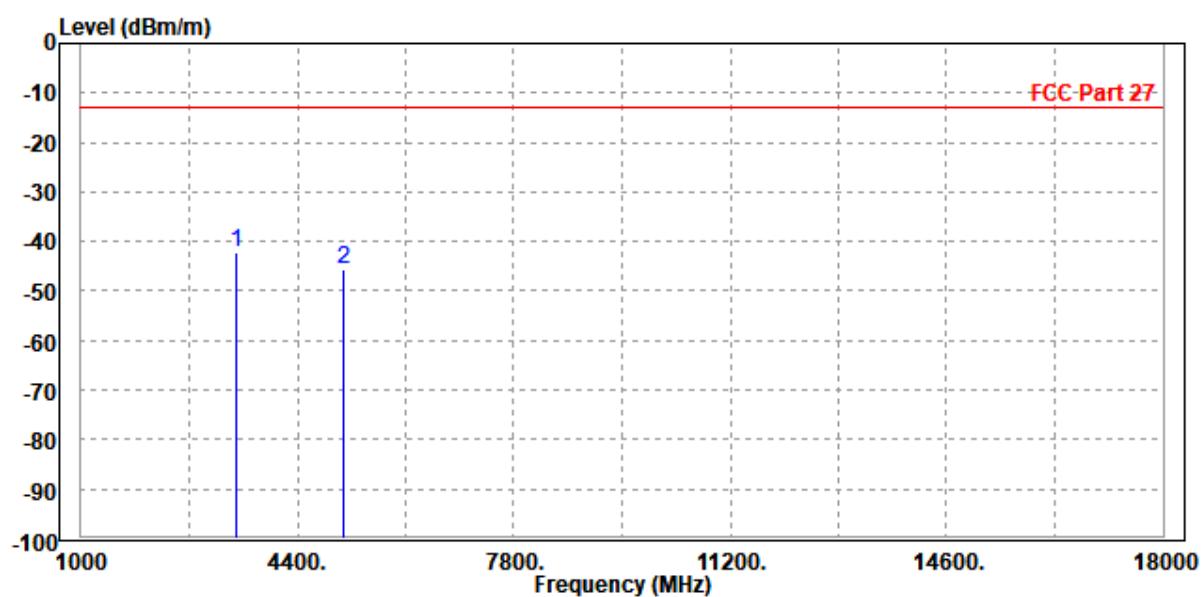


CHANNEL BANDWIDTH: 3MHz / QPSK

CH 19965

MODE	TX channel 19965	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 3431.000	-42.30	-50.82	-13.00	-29.30	8.52 Peak	Horizontal
2 5134.500	-45.59	-56.85	-13.00	-32.59	11.26 Peak	Horizontal

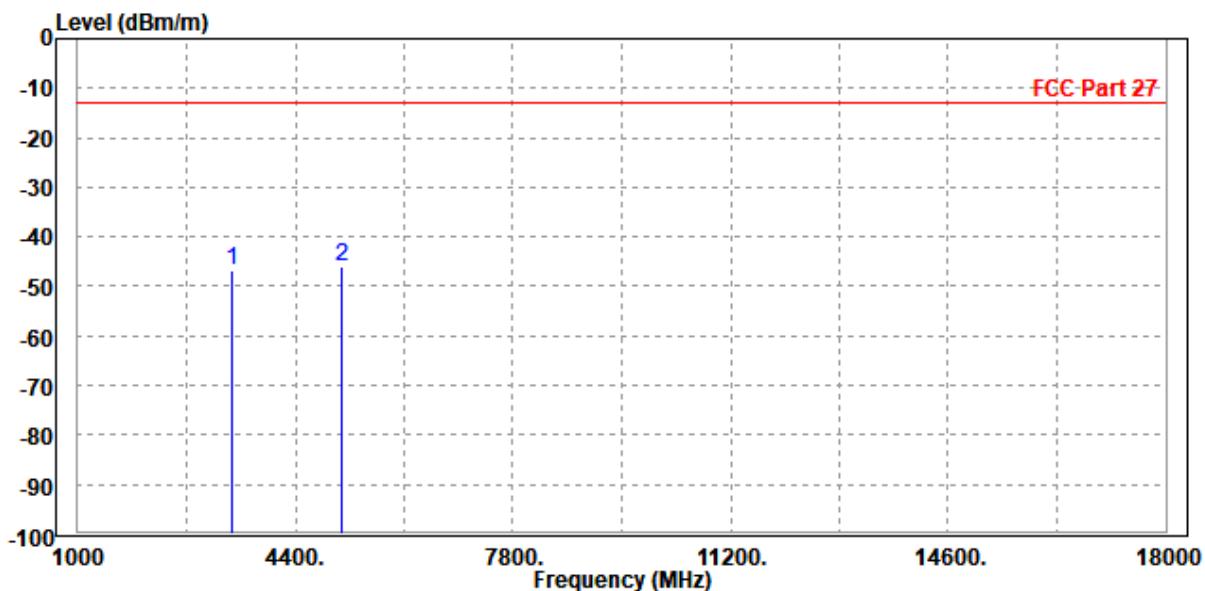




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

MODE	TX channel 19965	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	dBm/m	dB		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3423.000	-46.93	-55.60	-13.00	-33.93	8.67 Peak Vertical
2 PP	5131.000	-46.03	-57.65	-13.00	-33.03	11.62 Peak Vertical



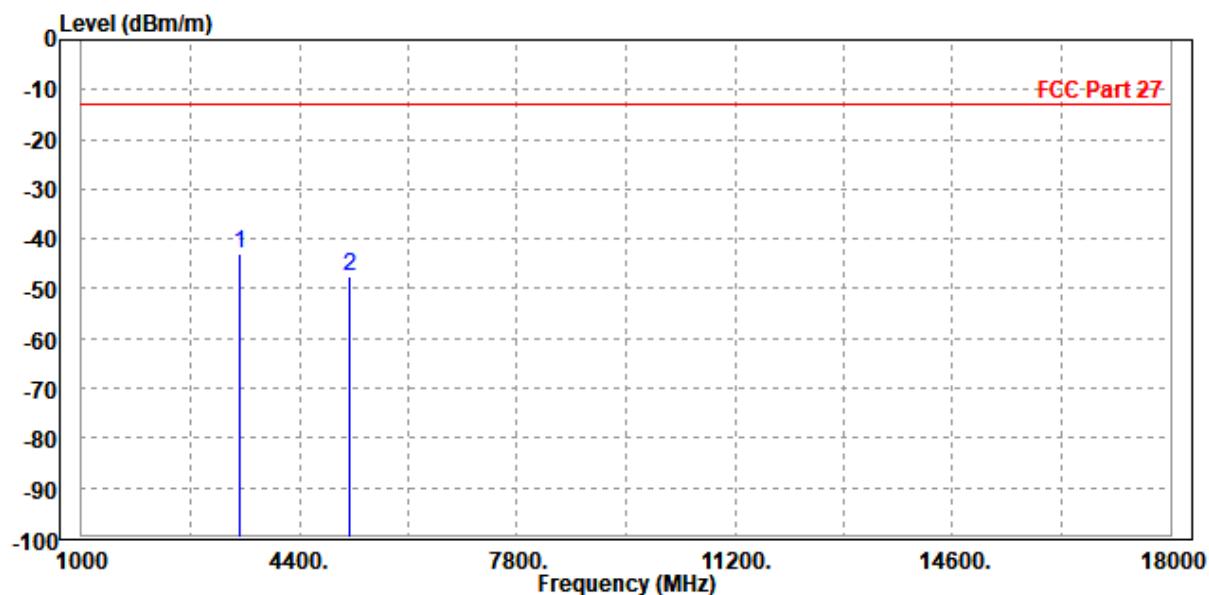


BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

CH 20175

MODE	TX channel 20175	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	Limit	Over Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 3465.000	-42.88	-51.42	-13.00	-29.88	8.54	Peak	Horizontal
2	5197.500	-47.42	-58.77	-13.00	-34.42	11.35	Peak	Horizontal

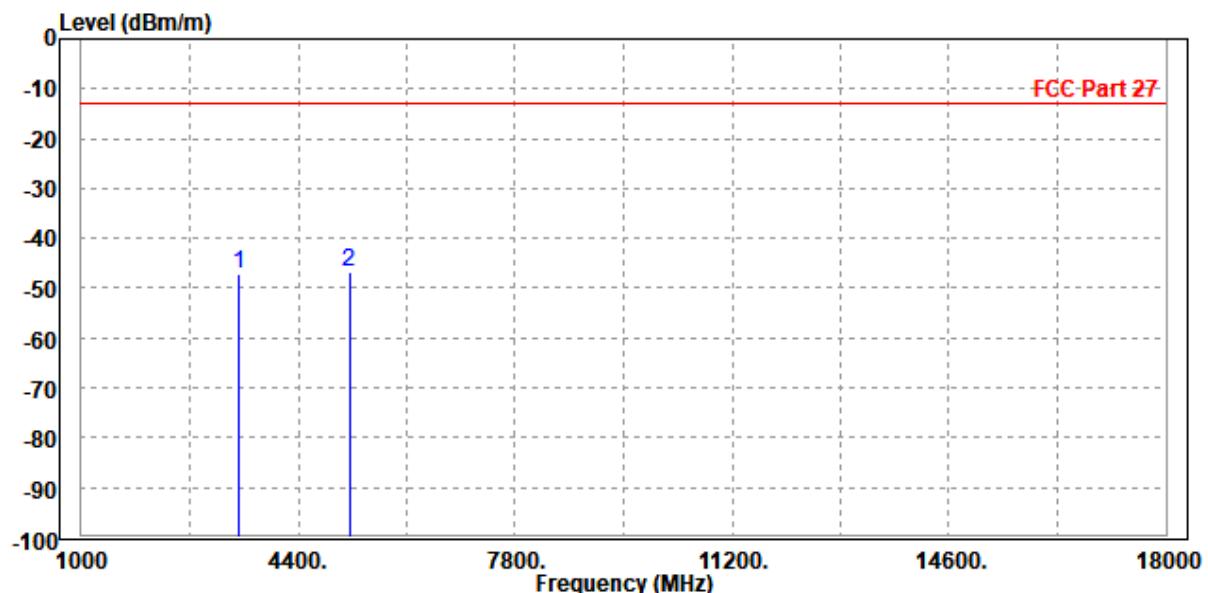




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

MODE	TX channel 20175	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	3465.000	-47.25	-55.90	-13.00	-34.25	8.65 Peak Vertical
2 PP	5199.000	-46.77	-58.53	-13.00	-33.77	11.76 Peak Vertical

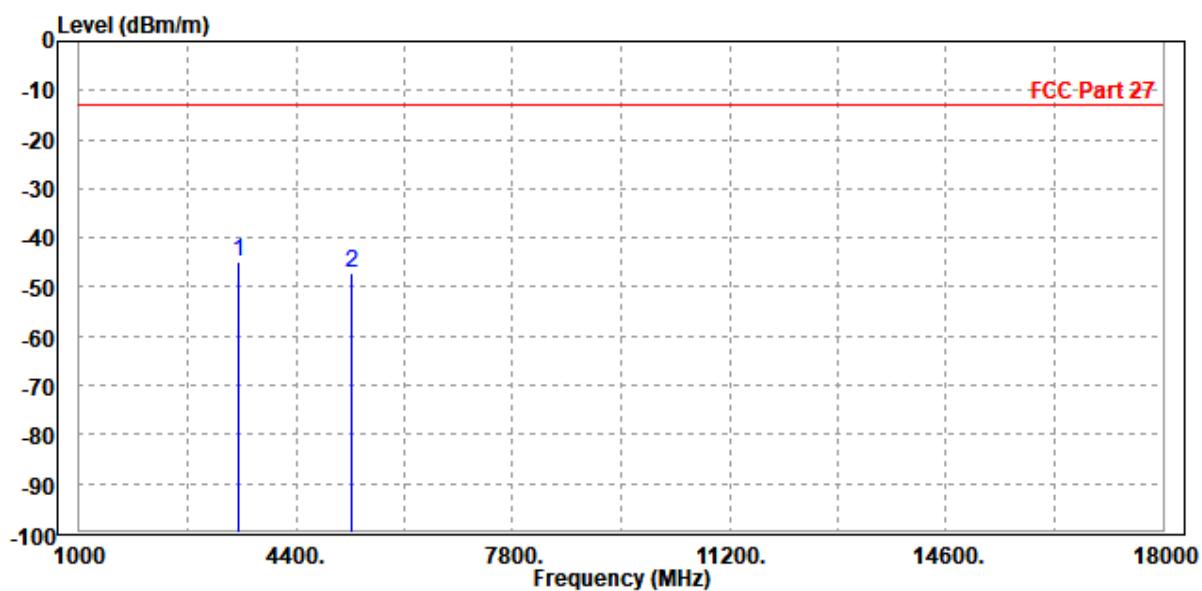




CH 20385

MODE	TX channel 20385	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	Read Level dBm/m	Limit Level dBm	Over Line dBm/m	Over Limit dB	Factor	Remark	Pol/Phase
1 PP 3507.000	-44.83	-53.38	-13.00	-31.83	8.55	Peak	Horizontal
2 5267.000	-47.19	-58.65	-13.00	-34.19	11.46	Peak	Horizontal

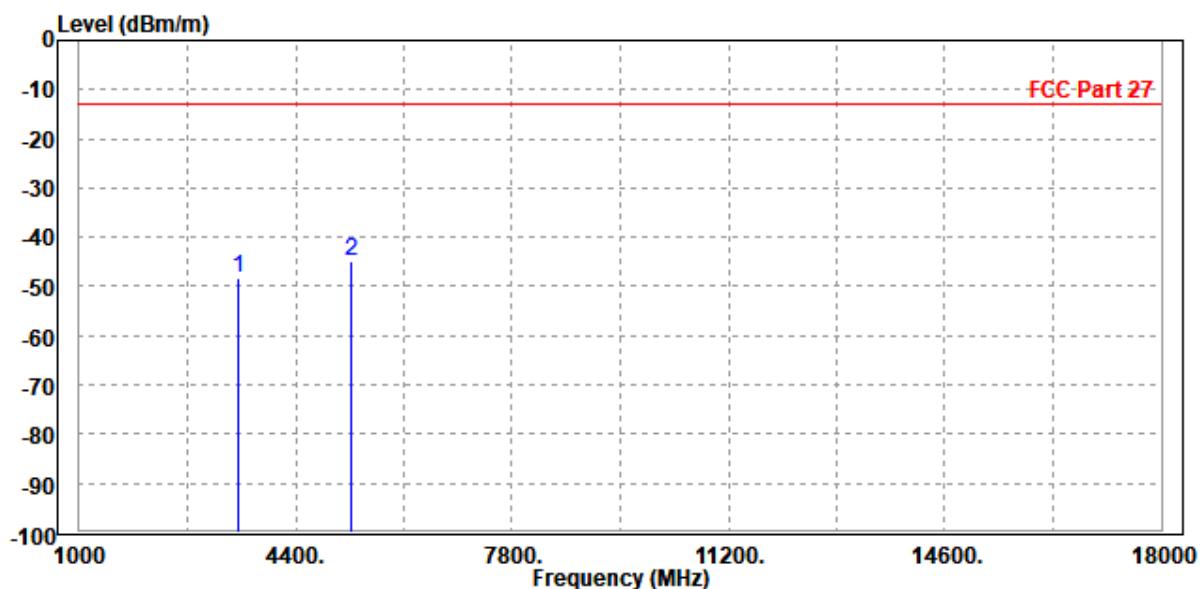




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

MODE	TX channel 20385	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	dBm	dBm/m		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3499.000	-48.48	-57.12	-13.00	-35.48	8.64 Peak Vertical
2	PP 5260.500	-44.74	-56.62	-13.00	-31.74	11.88 Peak Vertical



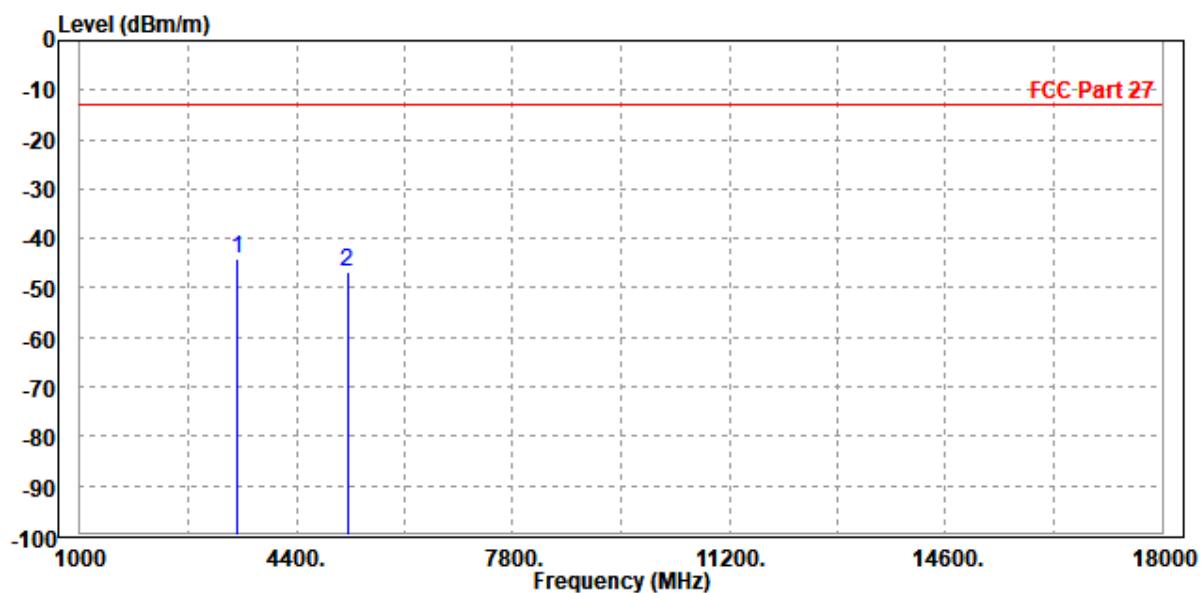


BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

CHANNEL BANDWIDTH: 5MHz / QPSK

MODE	TX channel 20175	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 3465.000	-44.10	-52.64	-13.00	-31.10	8.54	Peak	Horizontal
2 5199.000	-46.93	-58.28	-13.00	-33.93	11.35	Peak	Horizontal

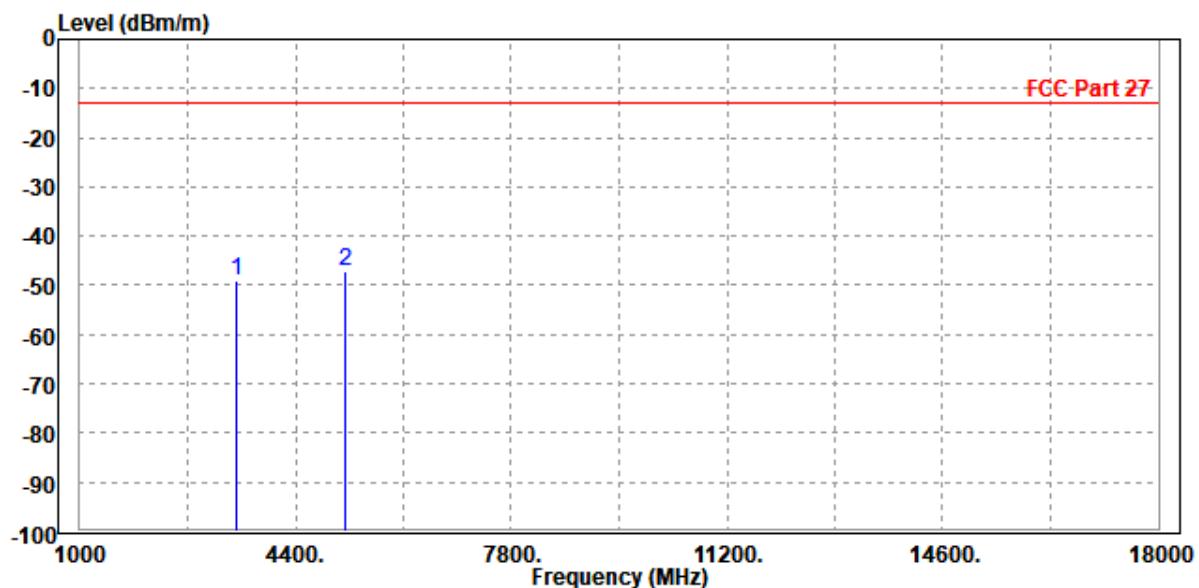




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

MODE	TX channel 20175	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	dBm/m	dB		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3465.000	-49.15	-57.80	-13.00	-36.15	8.65 Peak Vertical
2	PP 5197.500	-47.20	-58.95	-13.00	-34.20	11.75 Peak Vertical



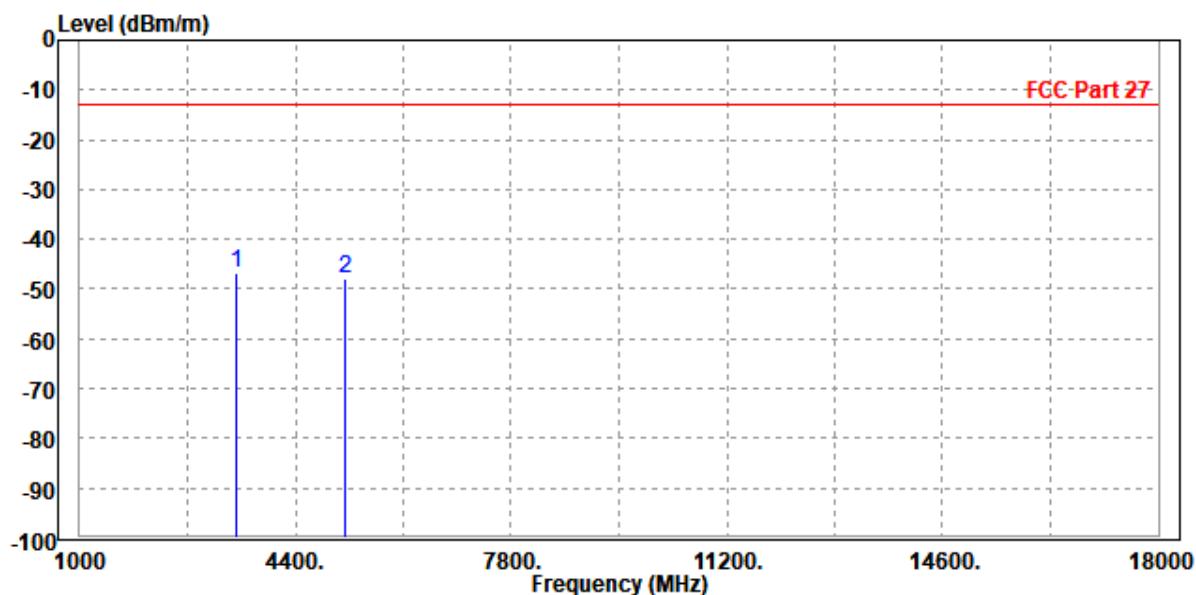


BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

CHANNEL BANDWIDTH: 10MHz / QPSK

MODE	TX channel 20175	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			

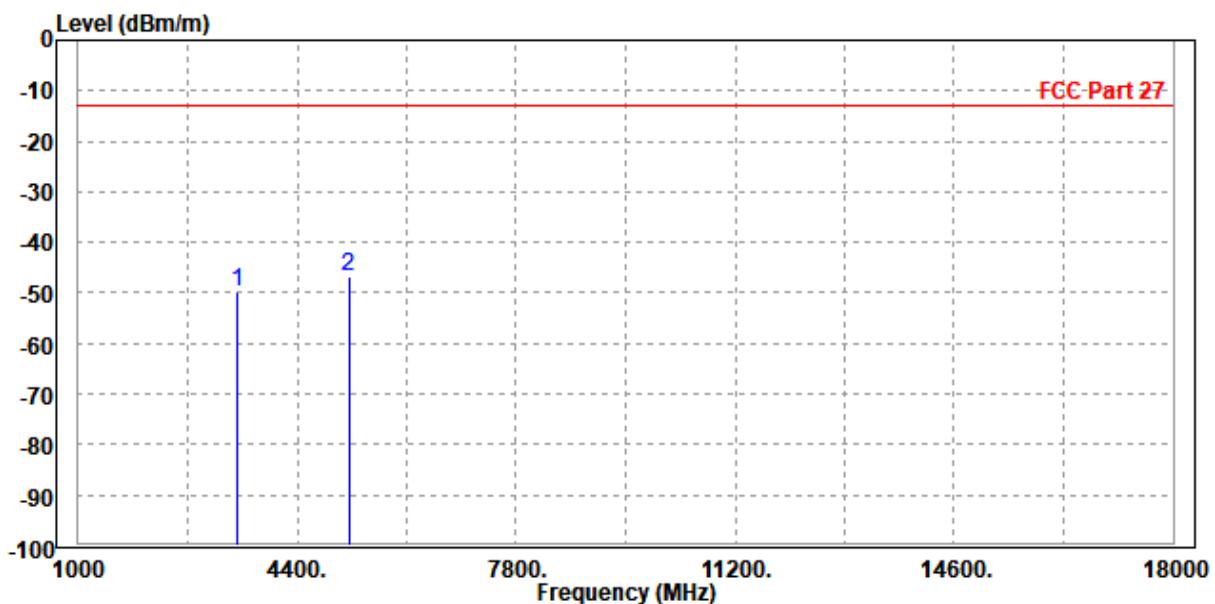
Freq	Level	Read	Limit	Over	Remark	Pol/Phase
		Line	dBm	dBm/m		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 PP 3465.000	-46.63	-55.17	-13.00	-33.63	8.54 Peak	Horizontal
2 5197.500	-48.10	-59.45	-13.00	-35.10	11.35 Peak	Horizontal





MODE	TX channel 20175	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		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	3465.000	-49.76	-58.41	-13.00	-36.76	8.65 Peak Vertical
2 PP	5199.000	-46.90	-58.66	-13.00	-33.90	11.76 Peak Vertical



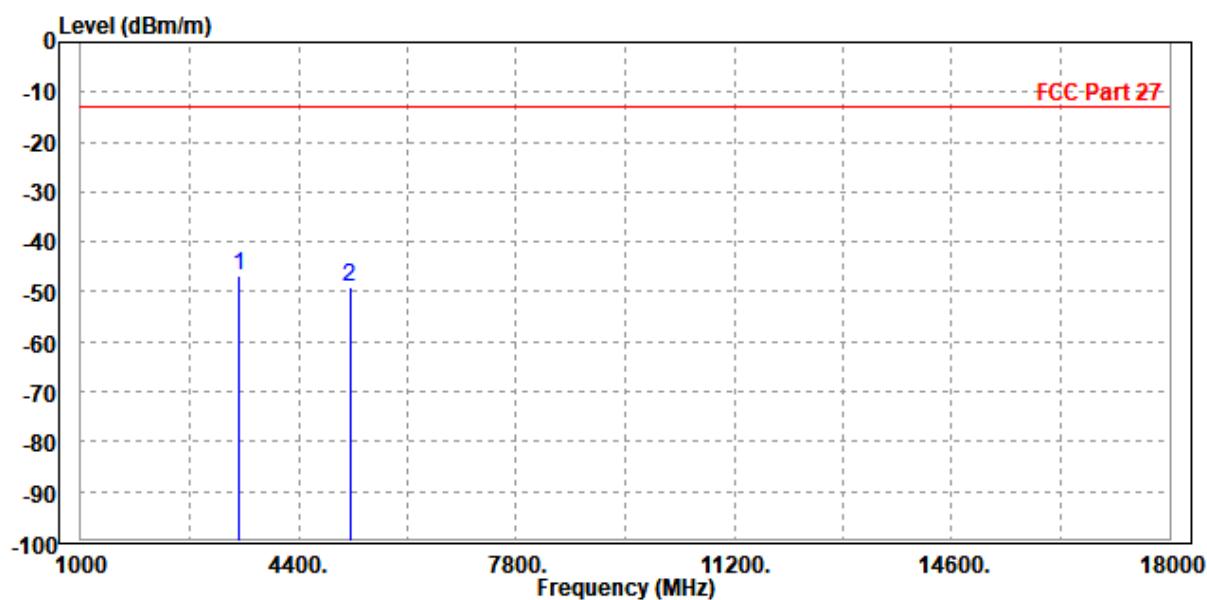


BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

CHANNEL BANDWIDTH: 15MHz / QPSK

MODE	TX channel 20175	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 3465.000	-46.89	-55.43	-13.00	-33.89	8.54	Peak	Horizontal
2 5199.000	-48.90	-60.25	-13.00	-35.90	11.35	Peak	Horizontal

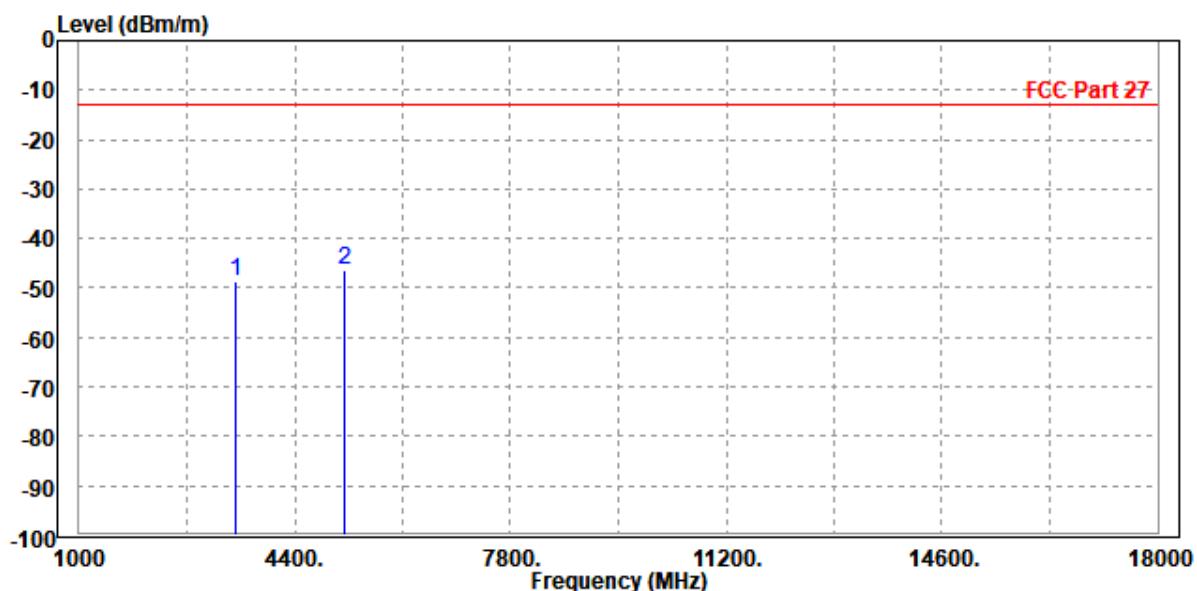




BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01

MODE	TX channel 20175	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	Read Level dBm/m	Limit Line dBm	Over Limit dB	Factor	Remark	Pol/Phase
	dBm/m	dBm	dBm/m	dB	dB/m	
1 3465.000	-48.84	-57.49	-13.00	-35.84	8.65 Peak	Vertical
2 PP 5197.500	-46.40	-58.15	-13.00	-33.40	11.75 Peak	Vertical

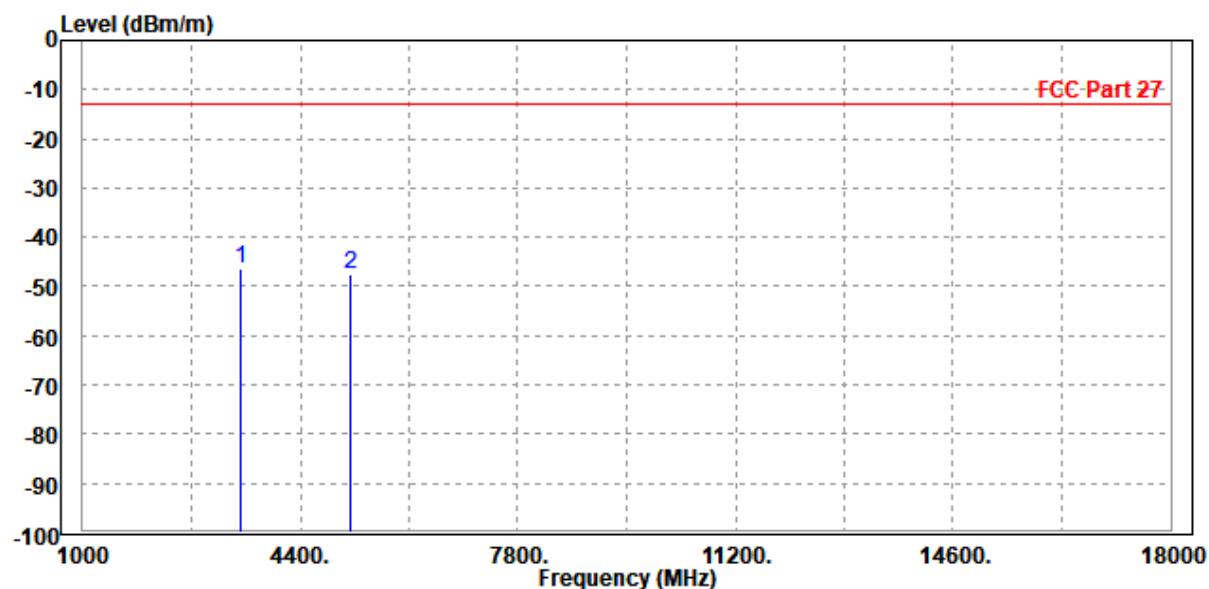




CHANNEL BANDWIDTH: 20MHz / QPSK

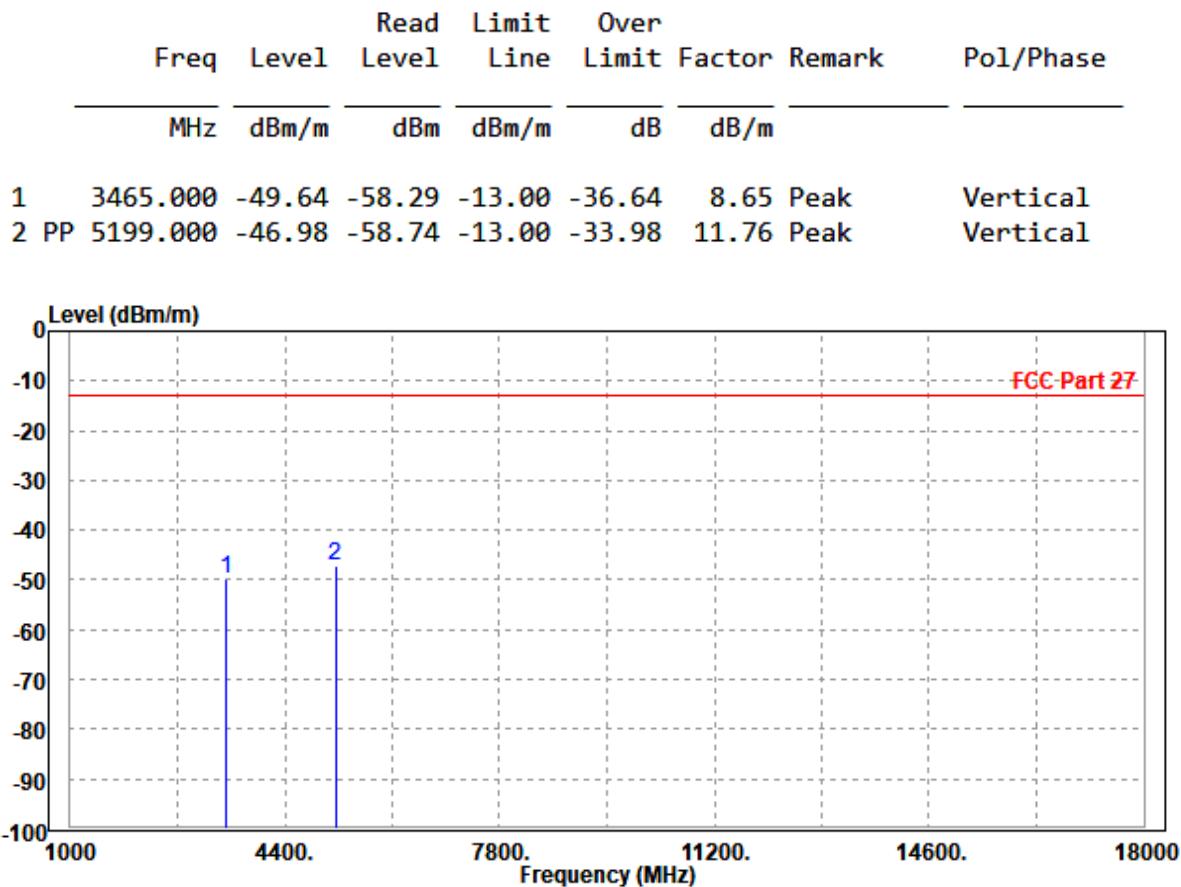
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Hanwen Xu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

Freq	Level	Read	Limit	Over	Remark	Pol/Phase
		Level	Line	Limit Factor		
MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 PP 3465.000	-46.51	-55.05	-13.00	-33.51	8.54 Peak	Horizontal
2 5197.500	-47.60	-58.95	-13.00	-34.60	11.35 Peak	Horizontal





MODE	TX channel 20175	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			





## 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



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VERITAS Test Report No.: PSU-QSU2503280115RI01

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

No modifications were made to the EUT by the lab during the test.



## 6 Appendix

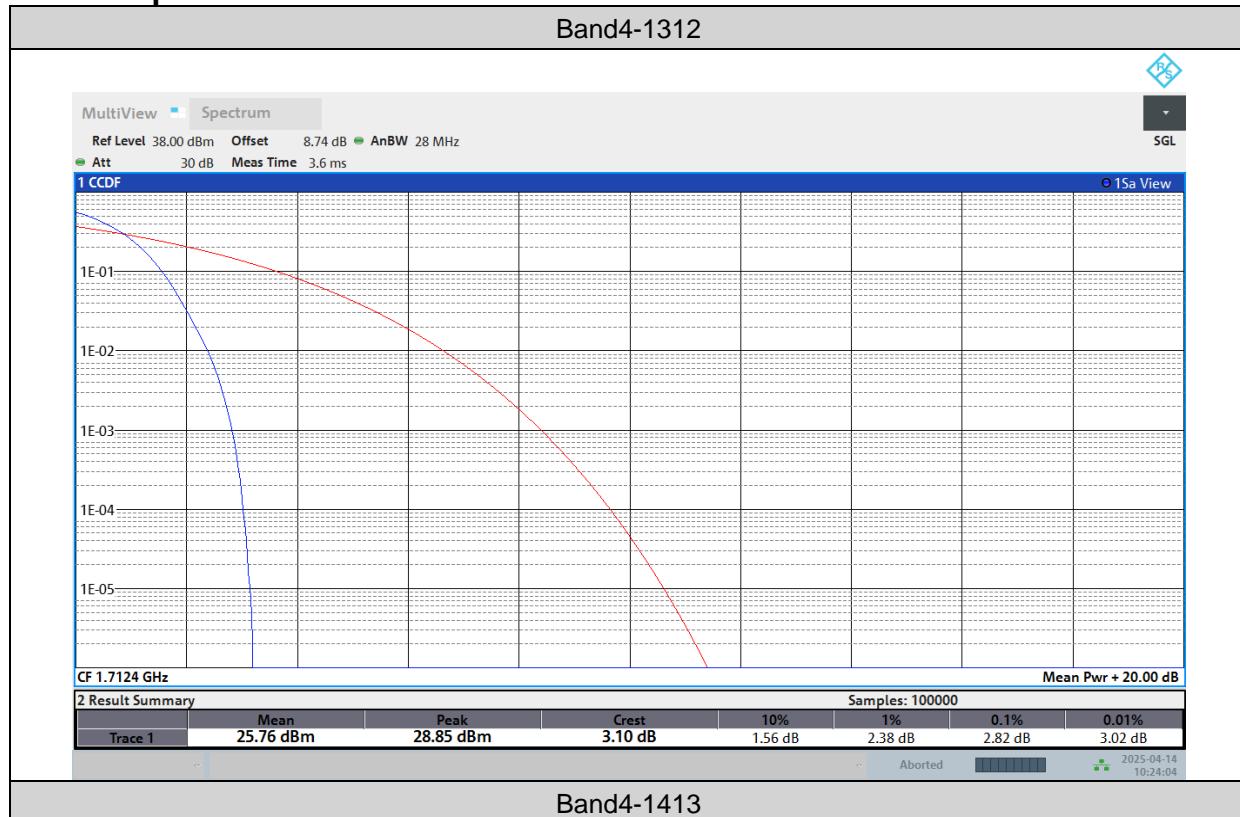
### WCDMA B4

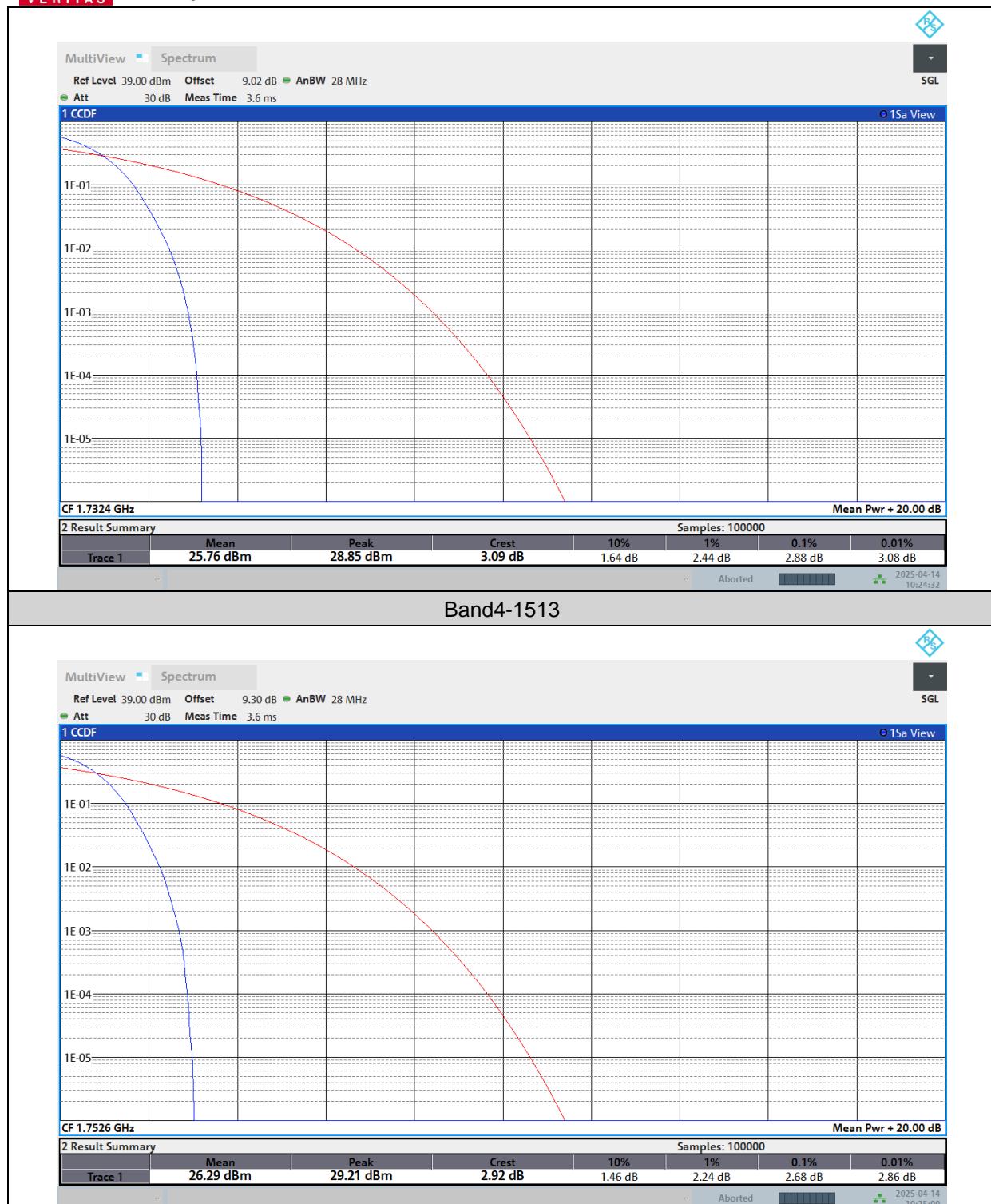
#### PEAK-TO-AVERAGE RATIO

##### Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band4	1312	2.82	13	PASS
Band4	1413	2.88	13	PASS
Band4	1513	2.68	13	PASS

##### Test Graphs







## 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

### Test Result

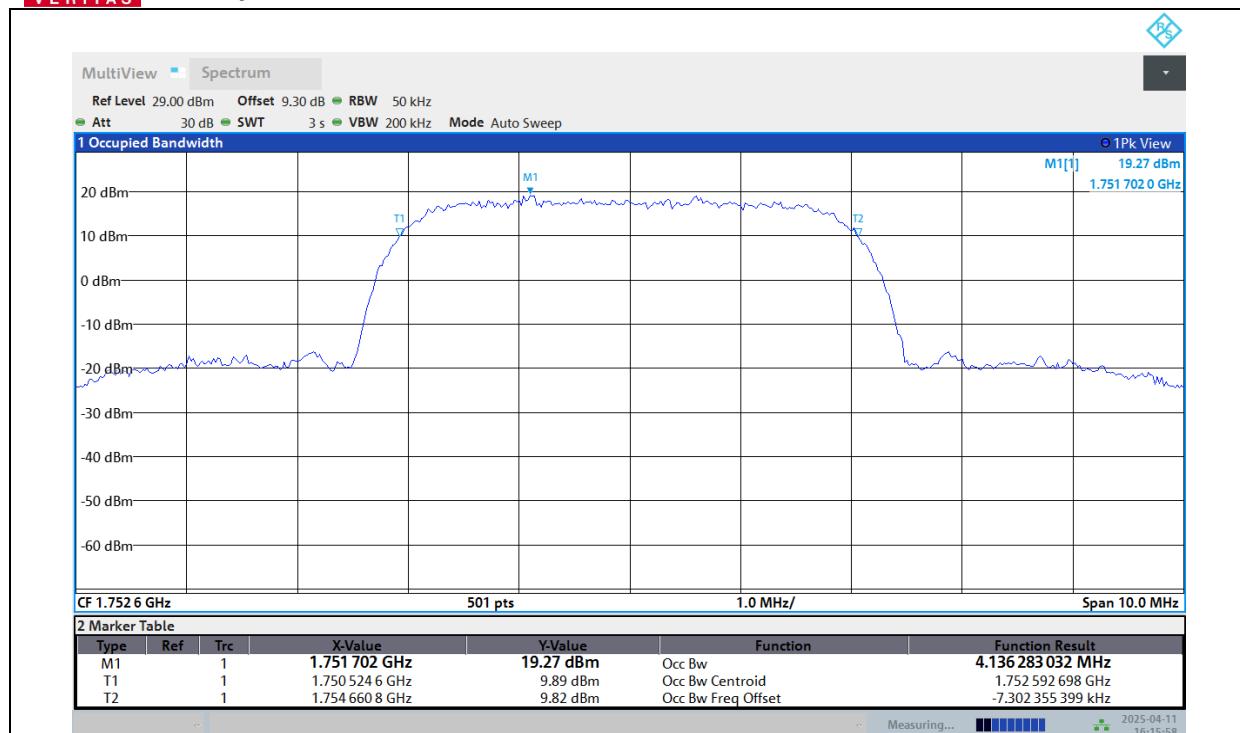
Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band4	1312	4.127	4.70	PASS
Band4	1413	4.120	4.68	PASS
Band4	1513	4.136	4.71	PASS



## Test Graphs

### Occupied Bandwidth



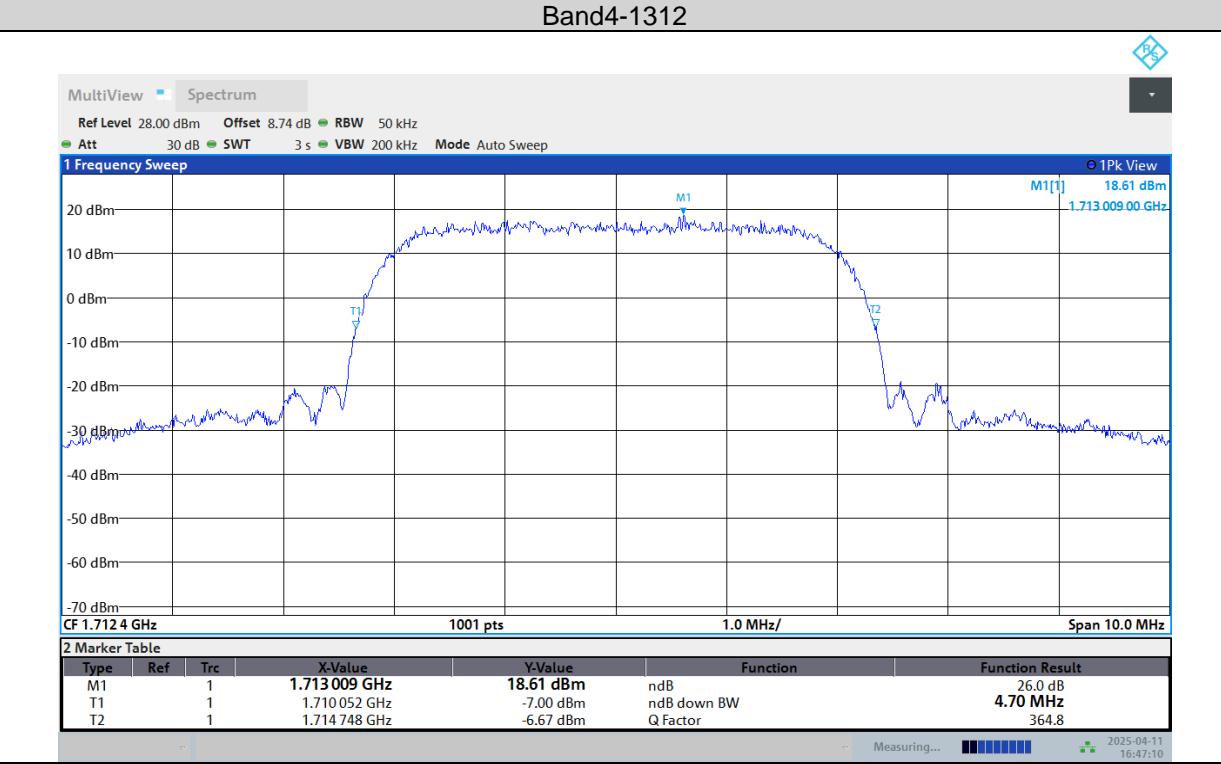




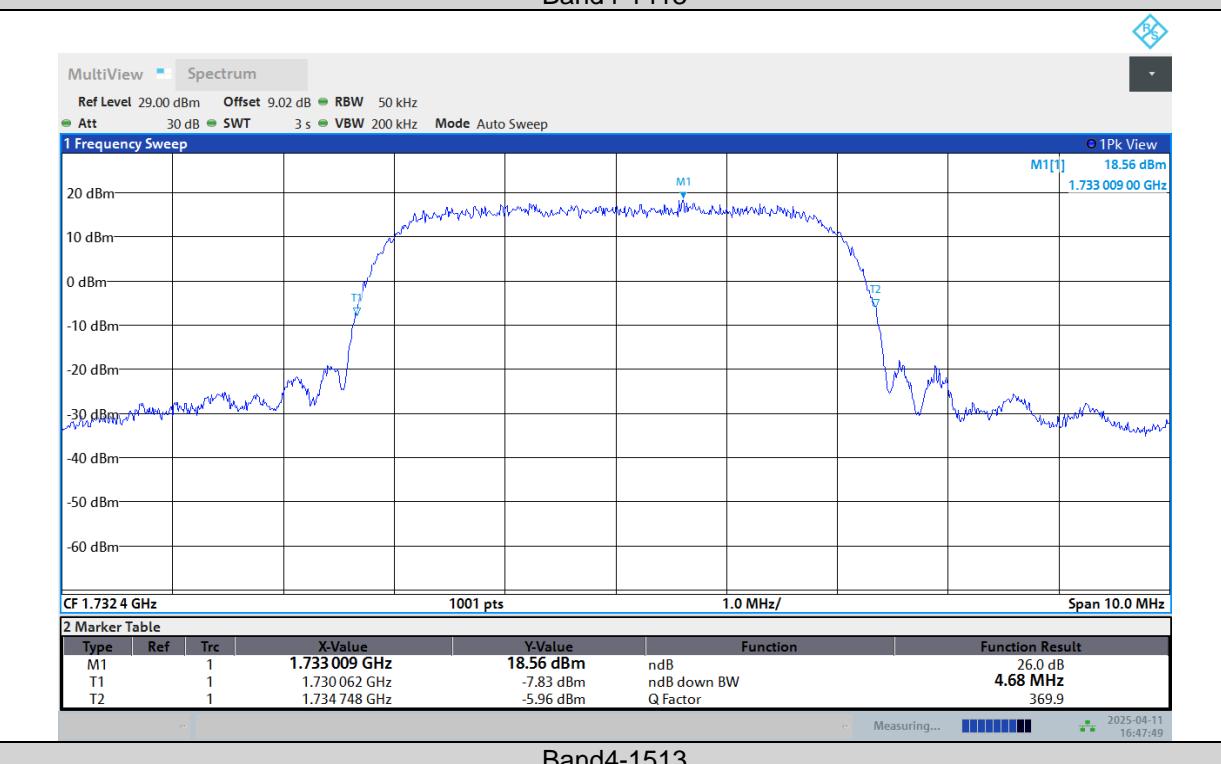
## BUREAU VERITAS Test Report No.: PSU-QSU2503280115RI01

26dB Bandwidth

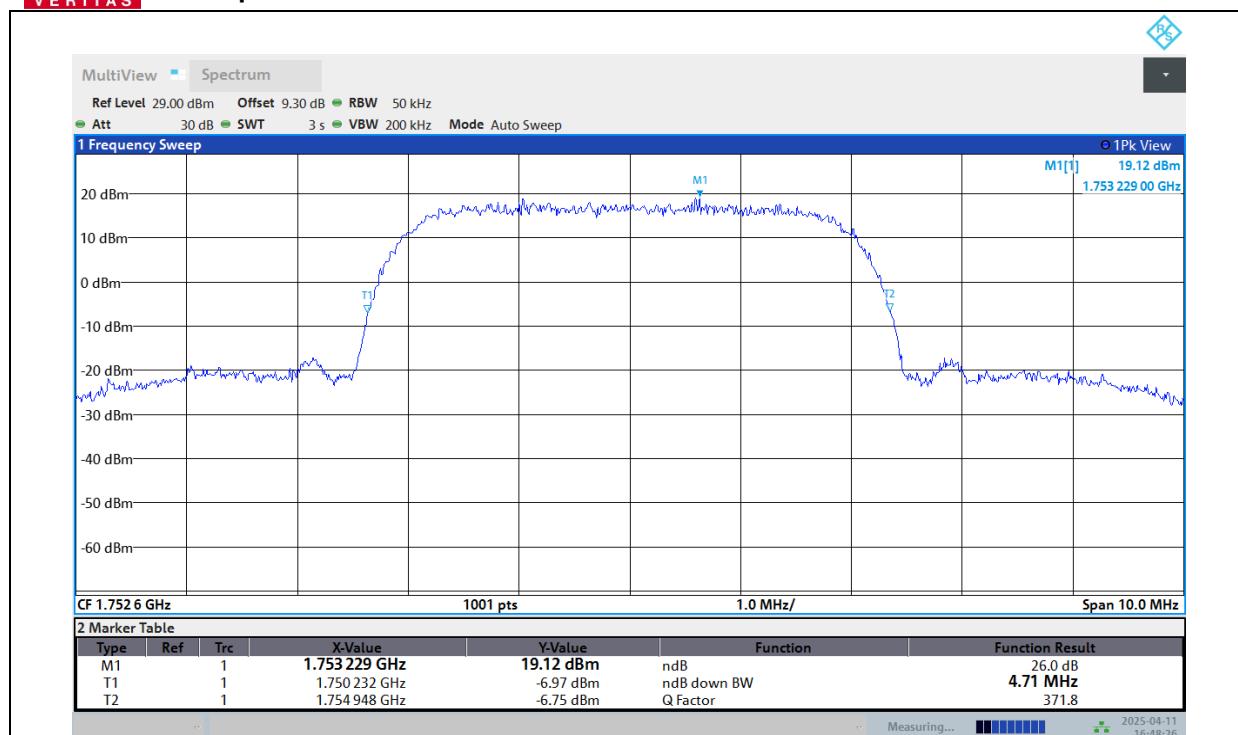
### Band4-1312



### Band4-1413



### Band4-1513





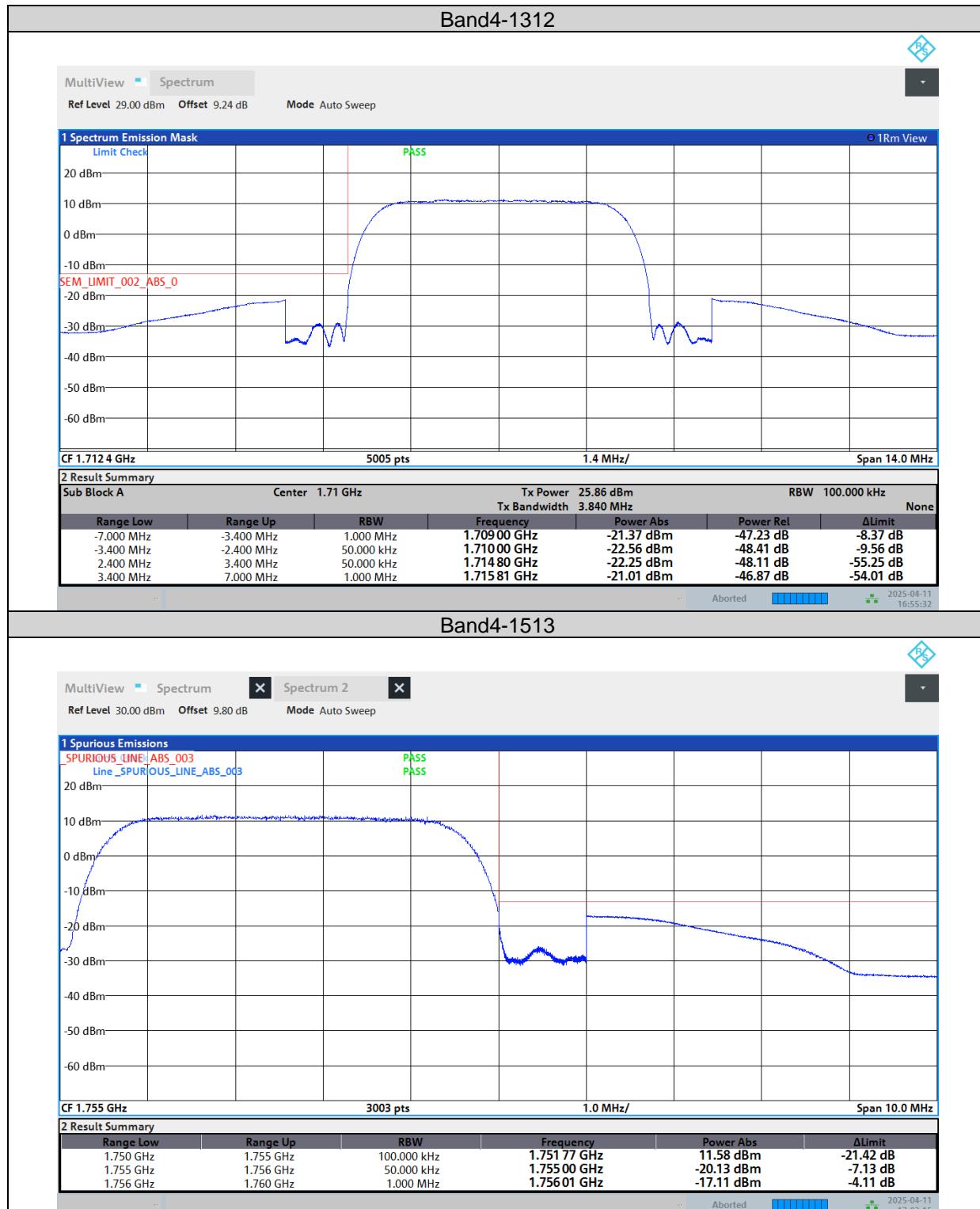
## BAND EDGE

### Test Result

Band	Channel	Result (dBm)	Limit(dBm)	Verdict
Band4	1312	See Graph	-13	PASS
Band4	1513	See Graph	-13	PASS



## Test Graphs





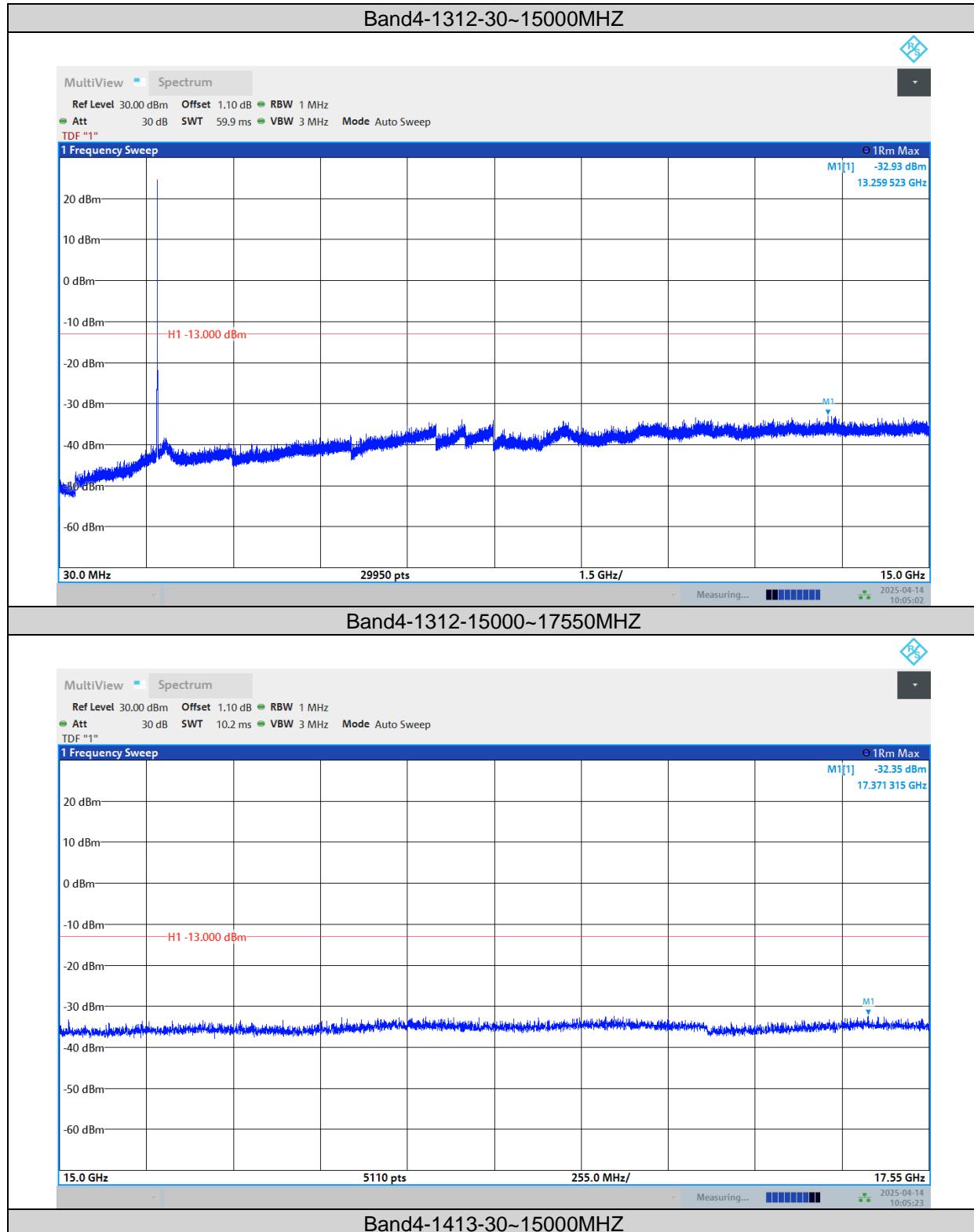
## CONDUCTED SPURIOUS EMISSION

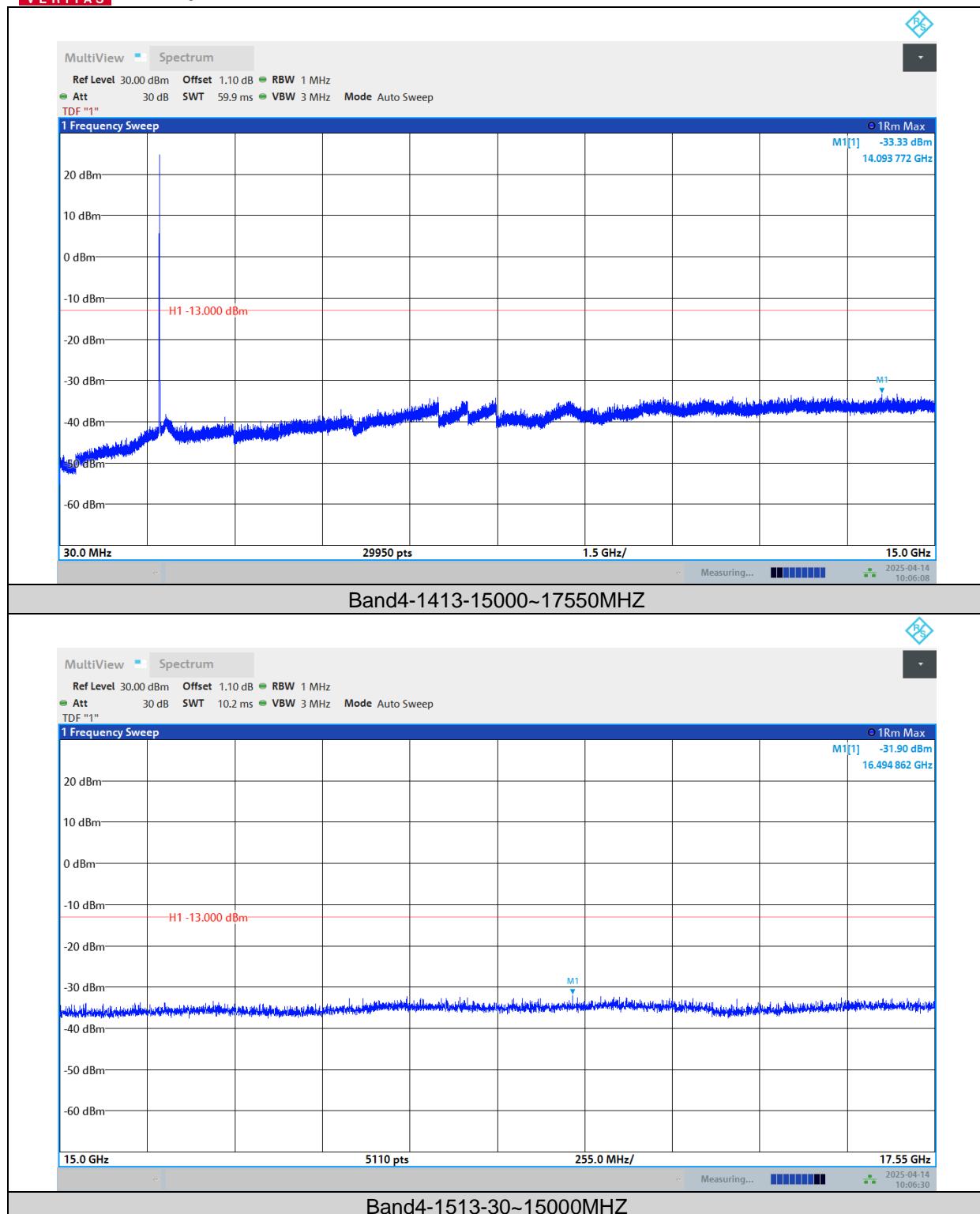
### Test Result

Band	Channel	Frequency Range (Mhz)	Result (dBm)	Limit (dBm)	Verdict
Band4	1312	30~15000MHZ	See Graph	-13	PASS
Band4	1312	15000~17550MHZ	See Graph	-13	PASS
Band4	1413	30~15000MHZ	See Graph	-13	PASS
Band4	1312	15000~17550MHZ	See Graph	-13	PASS
Band4	1513	30~15000MHZ	See Graph	-13	PASS
Band4	1312	15000~17550MHZ	See Graph	-13	PASS



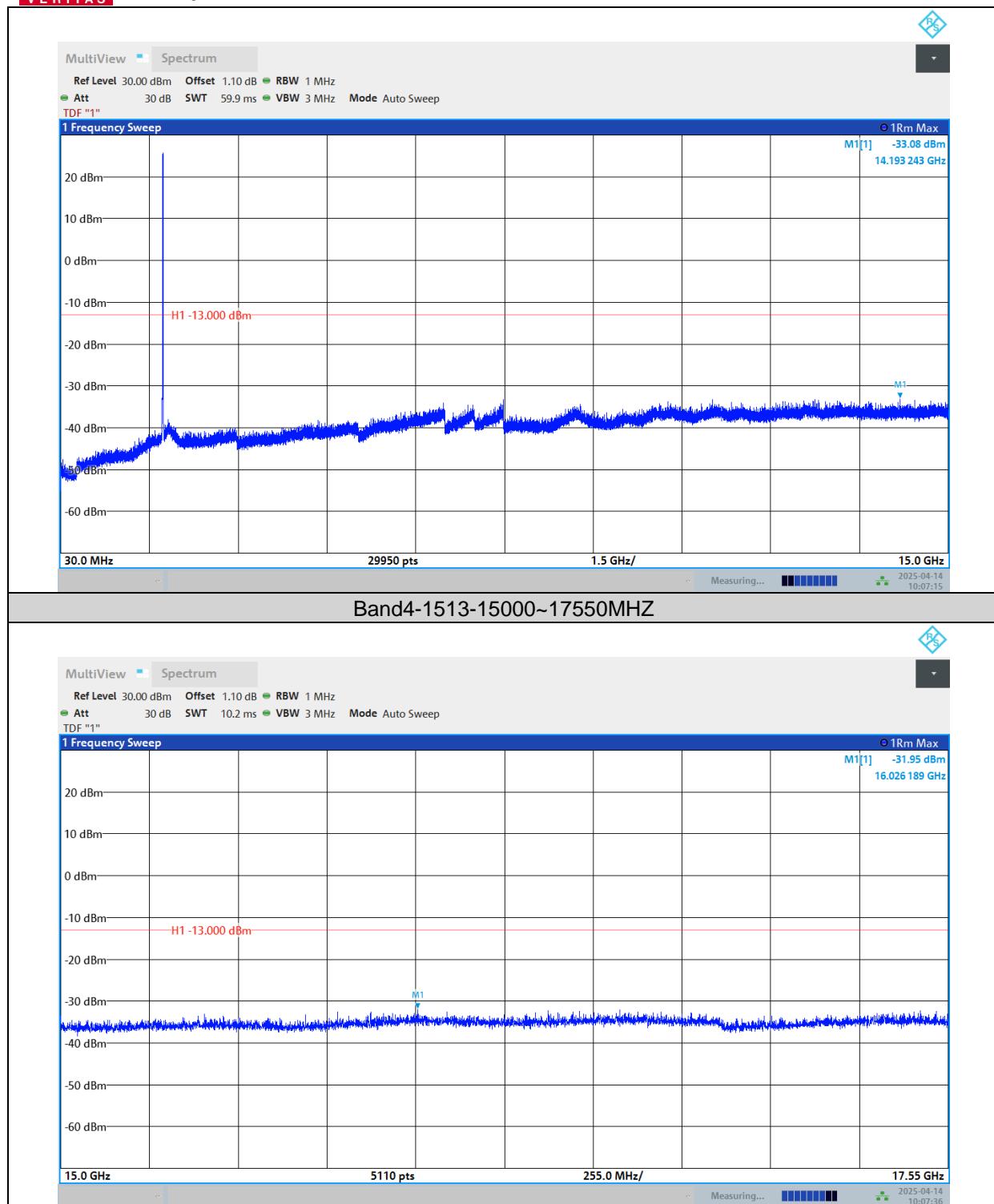
## Test Graphs







BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01



BUREAU  
VERITAS Test Report No.: PSU-QSU2503280115RI01**FREQUENCY STABILITY****Test Result**

Voltage						
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band4	1312	VL	NT	-6.55	-0.0038	PASS
Band4	1312	VN	NT	-3.40	-0.0020	PASS
Band4	1312	VH	NT	-9.93	-0.0058	PASS
Band4	1413	VL	NT	-6.65	-0.0038	PASS
Band4	1413	VN	NT	-3.22	-0.0018	PASS
Band4	1413	VH	NT	-2.46	-0.0014	PASS
Band4	1513	VL	NT	0.71	0.0004	PASS
Band4	1513	VN	NT	8.22	0.0046	PASS
Band4	1513	VH	NT	3.21	0.0018	PASS

Temperature						
Band	Channel	Voltage (Vdc)	Temperatur e (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band4	1312	NV	-30	-1.54	-0.0009	PASS
Band4	1312	NV	-20	9.25	0.0054	PASS
Band4	1312	NV	0	1.71	0.0010	PASS
Band4	1312	NV	-10	0.49	0.0003	PASS
Band4	1312	NV	10	-4.61	-0.0027	PASS
Band4	1312	NV	20	8.46	0.0049	PASS
Band4	1312	NV	30	-5.41	-0.0032	PASS
Band4	1312	NV	40	9.64	0.0056	PASS
Band4	1312	NV	50	-9.35	-0.0055	PASS
Band4	1413	NV	-30	-1.38	-0.0008	PASS
Band4	1413	NV	-20	0.21	0.0001	PASS
Band4	1413	NV	-10	-5.67	-0.0032	PASS
Band4	1413	NV	0	4.46	0.0026	PASS
Band4	1413	NV	10	7.78	0.0045	PASS
Band4	1413	NV	20	4.28	0.0024	PASS
Band4	1413	NV	30	-7.13	-0.0041	PASS
Band4	1413	NV	40	-7.06	-0.0040	PASS
Band4	1413	NV	50	-2.36	-0.0014	PASS
Band4	1513	NV	-30	8.62	0.0048	PASS
Band4	1513	NV	-20	-6.01	-0.0034	PASS
Band4	1513	NV	-10	4.15	0.0023	PASS
Band4	1513	NV	0	1.73	0.0010	PASS
Band4	1513	NV	10	-5.09	-0.0029	PASS
Band4	1513	NV	20	-7.54	-0.0042	PASS
Band4	1513	NV	30	-0.06	0.0000	PASS
Band4	1513	NV	40	1.73	0.0010	PASS
Band4	1513	NV	50	6.23	0.0035	PASS



### MAX Deviation calculation

Frequency Stability	Frequency (MHz)	Limit Line(MHz)	Result
$f_L -  \text{MAX}(\Delta f) $	1710.336490	$\geq 1710$	PASS
$f_H +  \text{MAX}(\Delta f) $	1754.668010	$\leq 1755$	

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.  $|\text{MAX}(\Delta f)| = 9.93 \text{ Hz}$ .

**LTE BAND4****PEAK-TO-AVERAGE RATIO(CCDF)****Test Result**

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band4	1.4MHz	QPSK	19957	1RB#0	4.32	13	PASS
Band4	1.4MHz	QPSK	19957	6RB#0	4.64	13	PASS
Band4	1.4MHz	QPSK	20175	1RB#0	4.38	13	PASS
Band4	1.4MHz	QPSK	20175	6RB#0	4.64	13	PASS
Band4	1.4MHz	QPSK	20393	1RB#0	4.10	13	PASS
Band4	1.4MHz	QPSK	20393	6RB#0	4.50	13	PASS
Band4	1.4MHz	16QAM	19957	1RB#0	4.98	13	PASS
Band4	1.4MHz	16QAM	19957	6RB#0	5.50	13	PASS
Band4	1.4MHz	16QAM	20175	1RB#0	5.02	13	PASS
Band4	1.4MHz	16QAM	20175	6RB#0	5.58	13	PASS
Band4	1.4MHz	16QAM	20393	1RB#0	4.88	13	PASS
Band4	1.4MHz	16QAM	20393	6RB#0	5.40	13	PASS
Band4	3MHz	QPSK	19965	1RB#0	4.30	13	PASS
Band4	3MHz	QPSK	19965	15RB#0	4.74	13	PASS
Band4	3MHz	QPSK	20175	1RB#0	4.32	13	PASS
Band4	3MHz	QPSK	20175	15RB#0	4.74	13	PASS
Band4	3MHz	QPSK	20385	1RB#0	4.10	13	PASS
Band4	3MHz	QPSK	20385	15RB#0	4.62	13	PASS
Band4	3MHz	16QAM	19965	1RB#0	4.92	13	PASS
Band4	3MHz	16QAM	19965	15RB#0	5.66	13	PASS
Band4	3MHz	16QAM	20175	1RB#0	5.14	13	PASS
Band4	3MHz	16QAM	20175	15RB#0	5.54	13	PASS
Band4	3MHz	16QAM	20385	1RB#0	4.94	13	PASS
Band4	3MHz	16QAM	20385	15RB#0	5.36	13	PASS
Band4	5MHz	QPSK	19975	1RB#0	4.30	13	PASS
Band4	5MHz	QPSK	19975	25RB#0	4.82	13	PASS
Band4	5MHz	QPSK	20175	1RB#0	4.42	13	PASS
Band4	5MHz	QPSK	20175	25RB#0	4.82	13	PASS
Band4	5MHz	QPSK	20375	1RB#0	4.04	13	PASS
Band4	5MHz	QPSK	20375	25RB#0	4.54	13	PASS
Band4	5MHz	16QAM	19975	1RB#0	4.96	13	PASS
Band4	5MHz	16QAM	19975	25RB#0	5.56	13	PASS
Band4	5MHz	16QAM	20175	1RB#0	4.94	13	PASS
Band4	5MHz	16QAM	20175	25RB#0	5.68	13	PASS
Band4	5MHz	16QAM	20375	1RB#0	4.56	13	PASS
Band4	5MHz	16QAM	20375	25RB#0	5.32	13	PASS
Band4	10MHz	QPSK	20000	1RB#0	4.24	13	PASS
Band4	10MHz	QPSK	20000	50RB#0	4.82	13	PASS
Band4	10MHz	QPSK	20175	1RB#0	4.42	13	PASS
Band4	10MHz	QPSK	20175	50RB#0	4.70	13	PASS
Band4	10MHz	QPSK	20350	1RB#0	3.84	13	PASS
Band4	10MHz	QPSK	20350	50RB#0	4.40	13	PASS
Band4	10MHz	16QAM	20000	1RB#0	5.12	13	PASS
Band4	10MHz	16QAM	20000	27RB#0	5.54	13	PASS

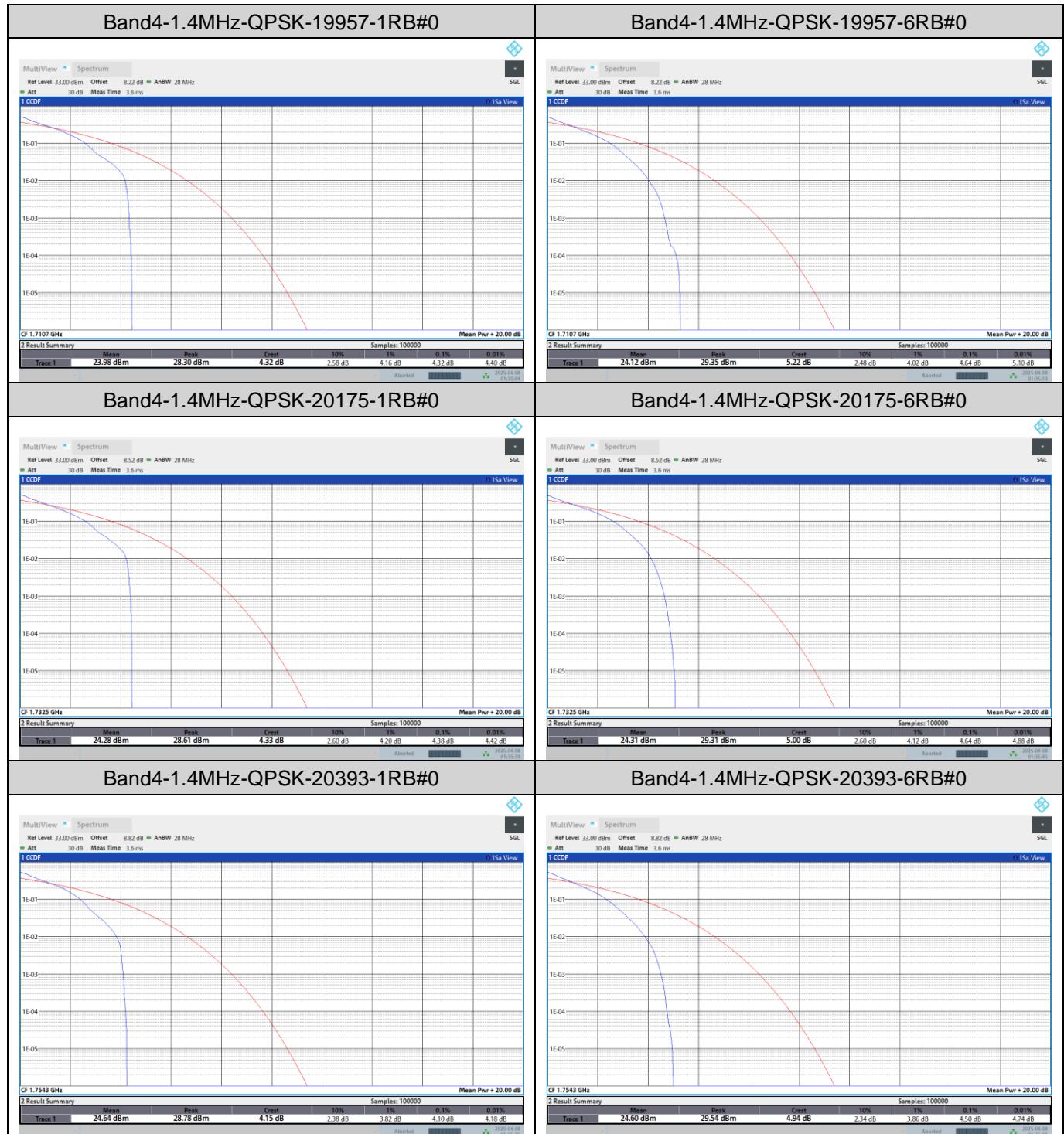
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VERITAS

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Band4	10MHz	16QAM	20175	1RB#0	5.24	13	PASS
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Band4	10MHz	16QAM	20350	1RB#0	4.60	13	PASS
Band4	10MHz	16QAM	20350	27RB#0	5.08	13	PASS
Band4	15MHz	QPSK	20025	1RB#0	4.28	13	PASS
Band4	15MHz	QPSK	20025	75RB#0	5.76	13	PASS
Band4	15MHz	QPSK	20175	1RB#0	5.00	13	PASS
Band4	15MHz	QPSK	20175	75RB#0	4.94	13	PASS
Band4	15MHz	QPSK	20325	1RB#0	3.94	13	PASS
Band4	15MHz	QPSK	20325	75RB#0	4.48	13	PASS
Band4	15MHz	16QAM	20025	1RB#0	5.06	13	PASS
Band4	15MHz	16QAM	20025	27RB#0	5.42	13	PASS
Band4	15MHz	16QAM	20175	1RB#0	5.42	13	PASS
Band4	15MHz	16QAM	20175	27RB#0	5.54	13	PASS
Band4	15MHz	16QAM	20325	1RB#0	4.50	13	PASS
Band4	15MHz	16QAM	20325	27RB#0	5.06	13	PASS
Band4	20MHz	QPSK	20050	1RB#0	4.24	13	PASS
Band4	20MHz	QPSK	20050	100RB#0	4.94	13	PASS
Band4	20MHz	QPSK	20175	1RB#0	5.04	13	PASS
Band4	20MHz	QPSK	20175	100RB#0	5.32	13	PASS
Band4	20MHz	QPSK	20300	1RB#0	4.10	13	PASS
Band4	20MHz	QPSK	20300	100RB#0	4.52	13	PASS
Band4	20MHz	16QAM	20050	1RB#0	4.96	13	PASS
Band4	20MHz	16QAM	20050	27RB#0	6.16	13	PASS
Band4	20MHz	16QAM	20175	1RB#0	5.18	13	PASS
Band4	20MHz	16QAM	20175	27RB#0	5.56	13	PASS
Band4	20MHz	16QAM	20300	1RB#0	4.72	13	PASS
Band4	20MHz	16QAM	20300	27RB#0	5.26	13	PASS



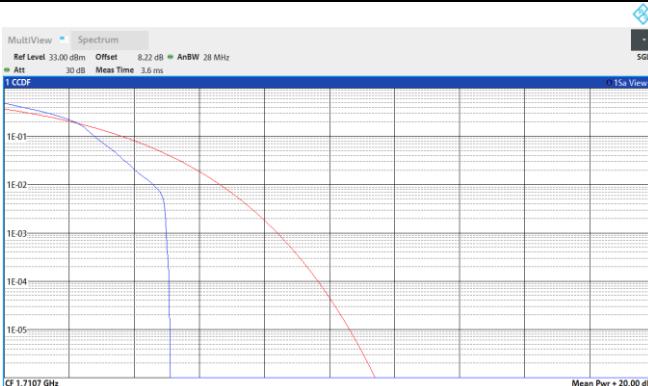
## Test Graphs



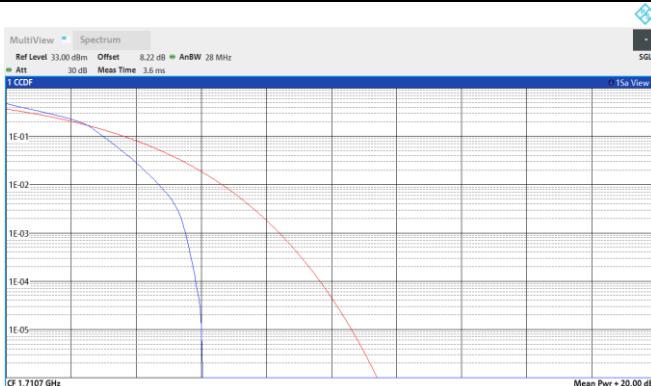
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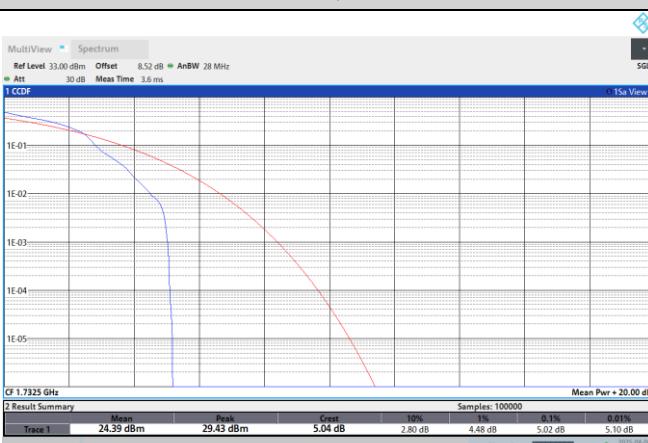
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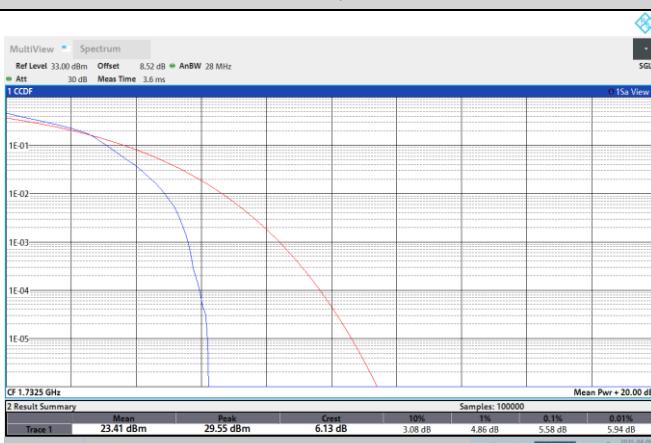
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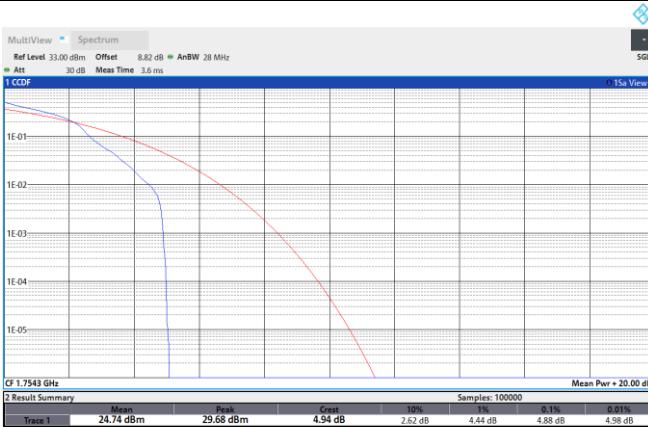
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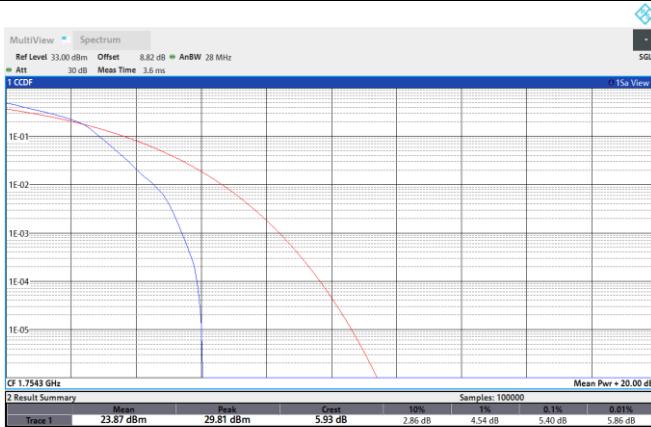
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## Band4-1.4MHz-16QAM-20393-1RB#0



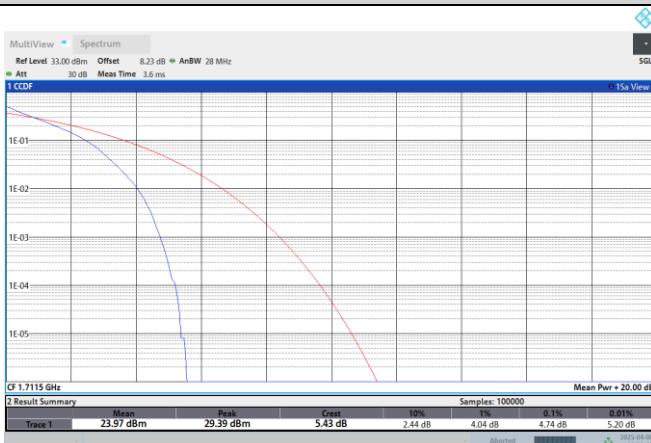
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## Band4-3MHz-QPSK-19965-1RB#0



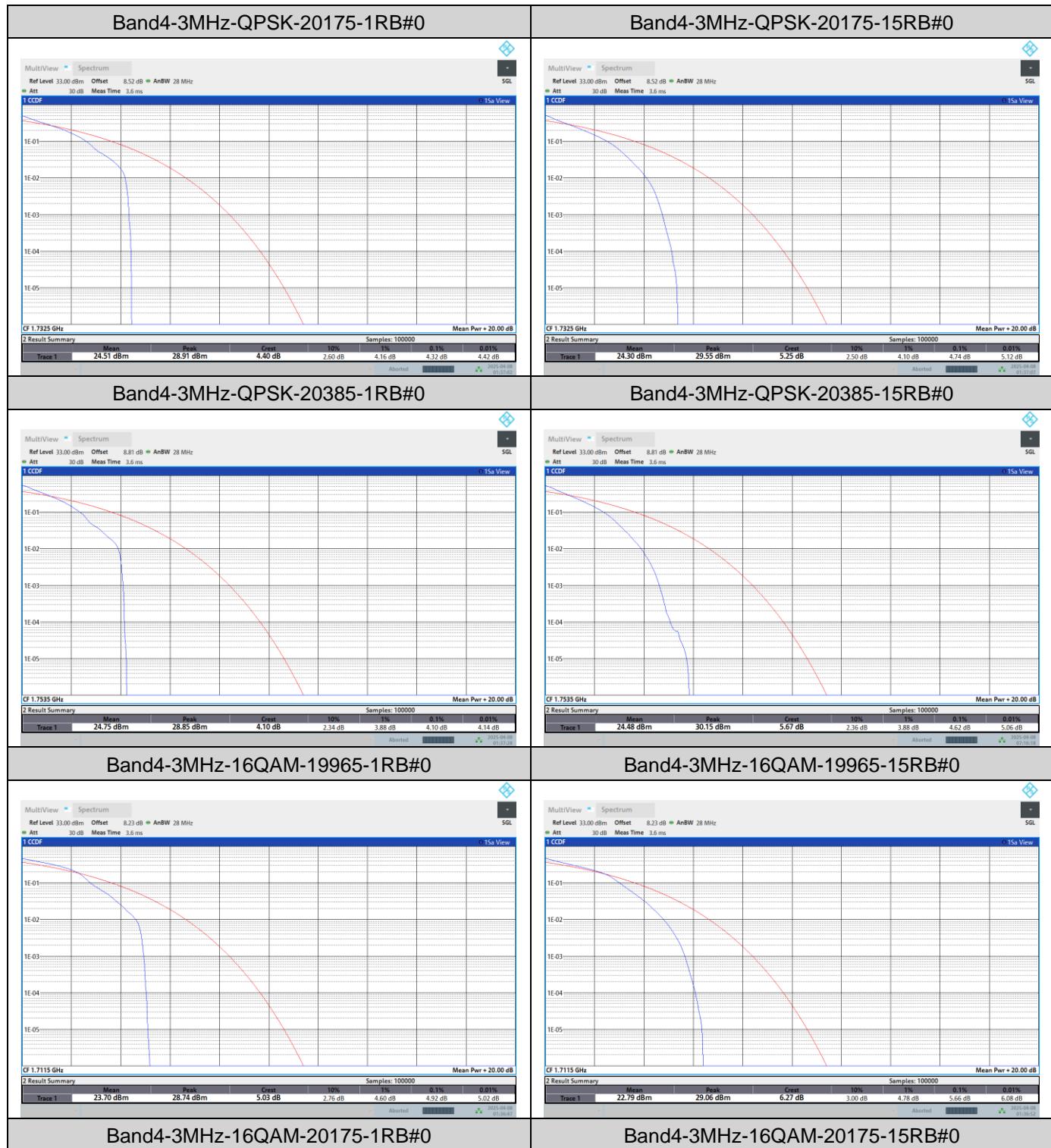
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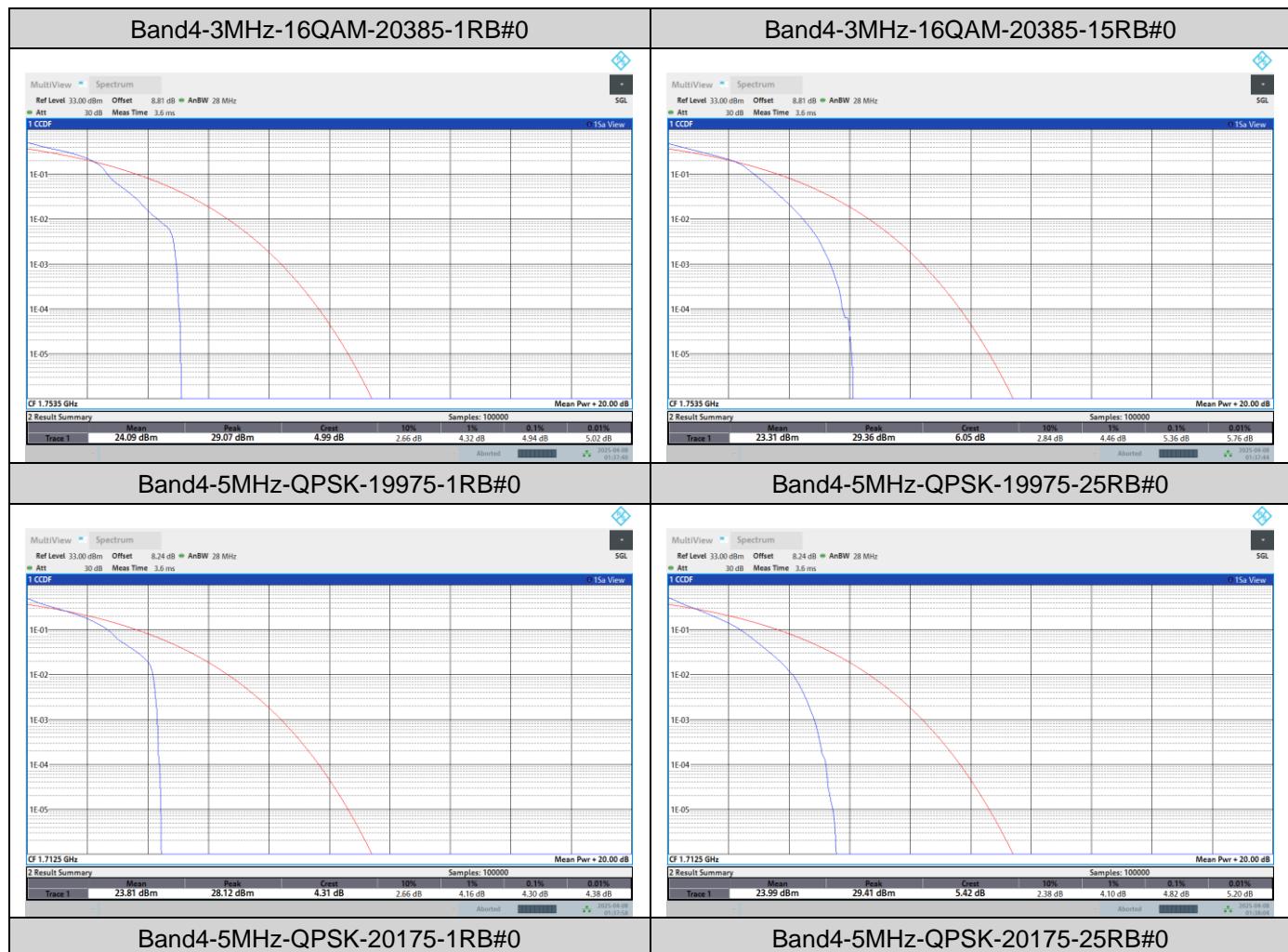
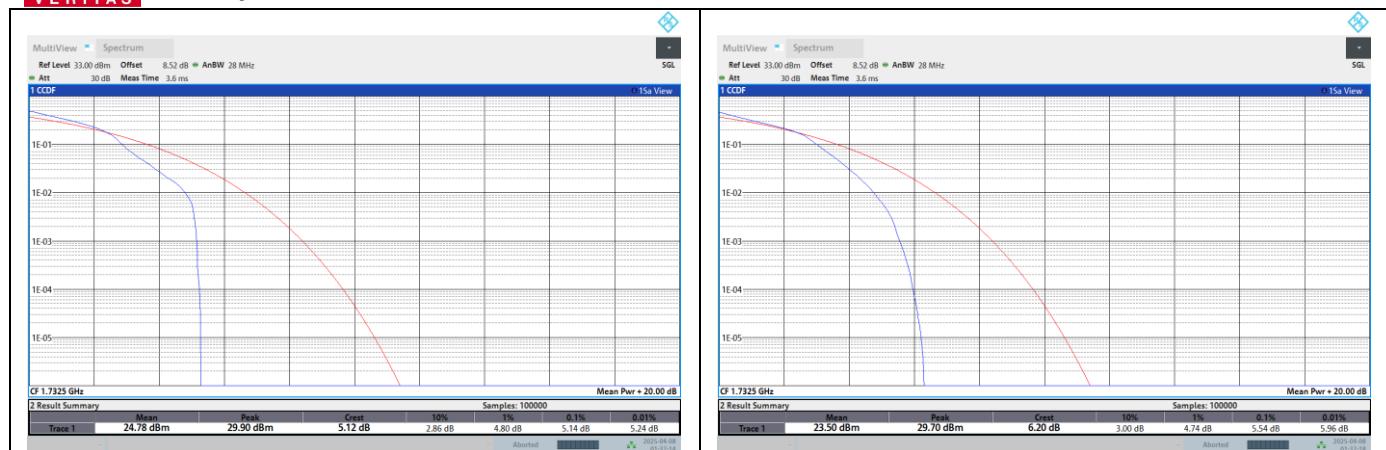


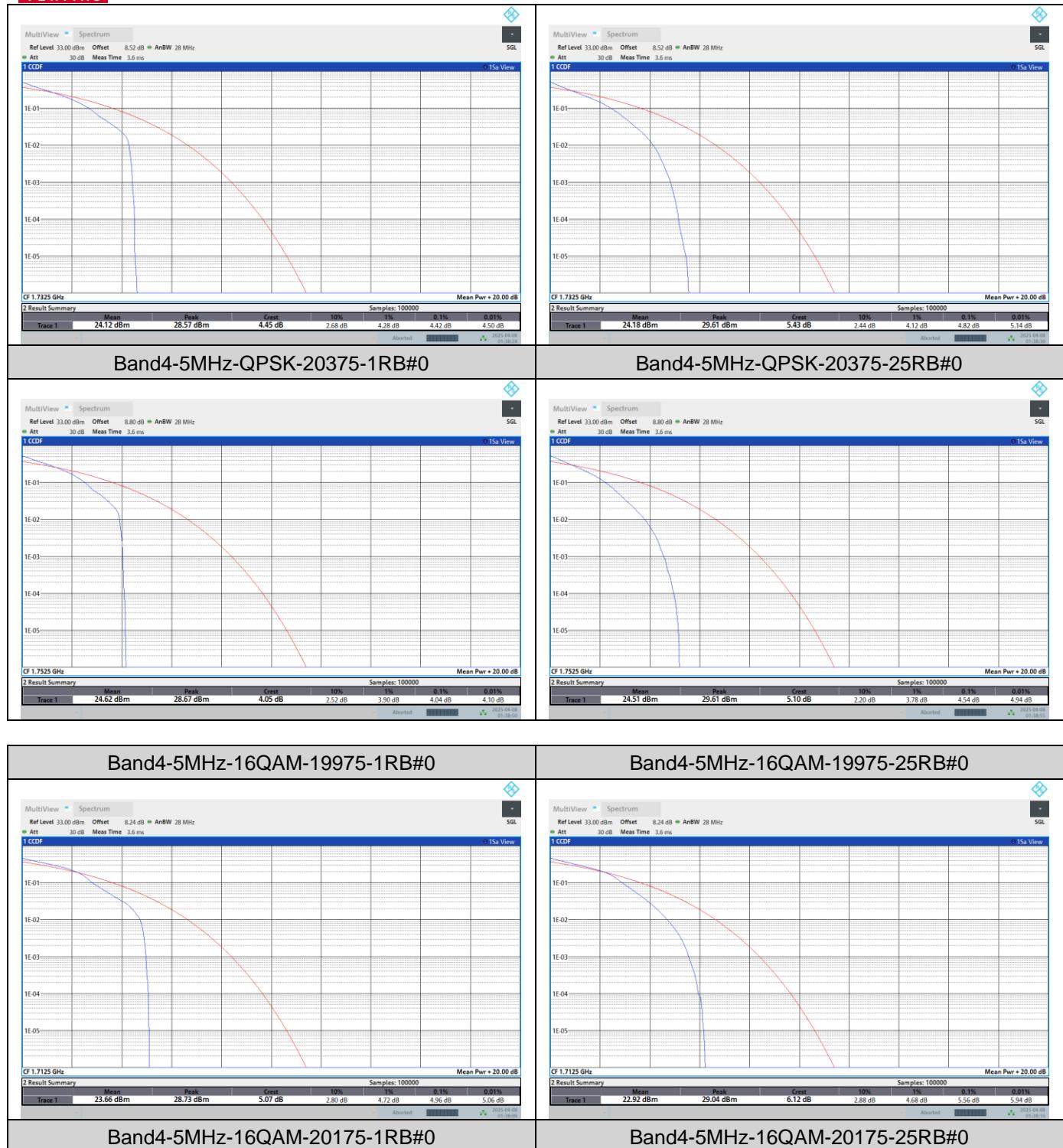


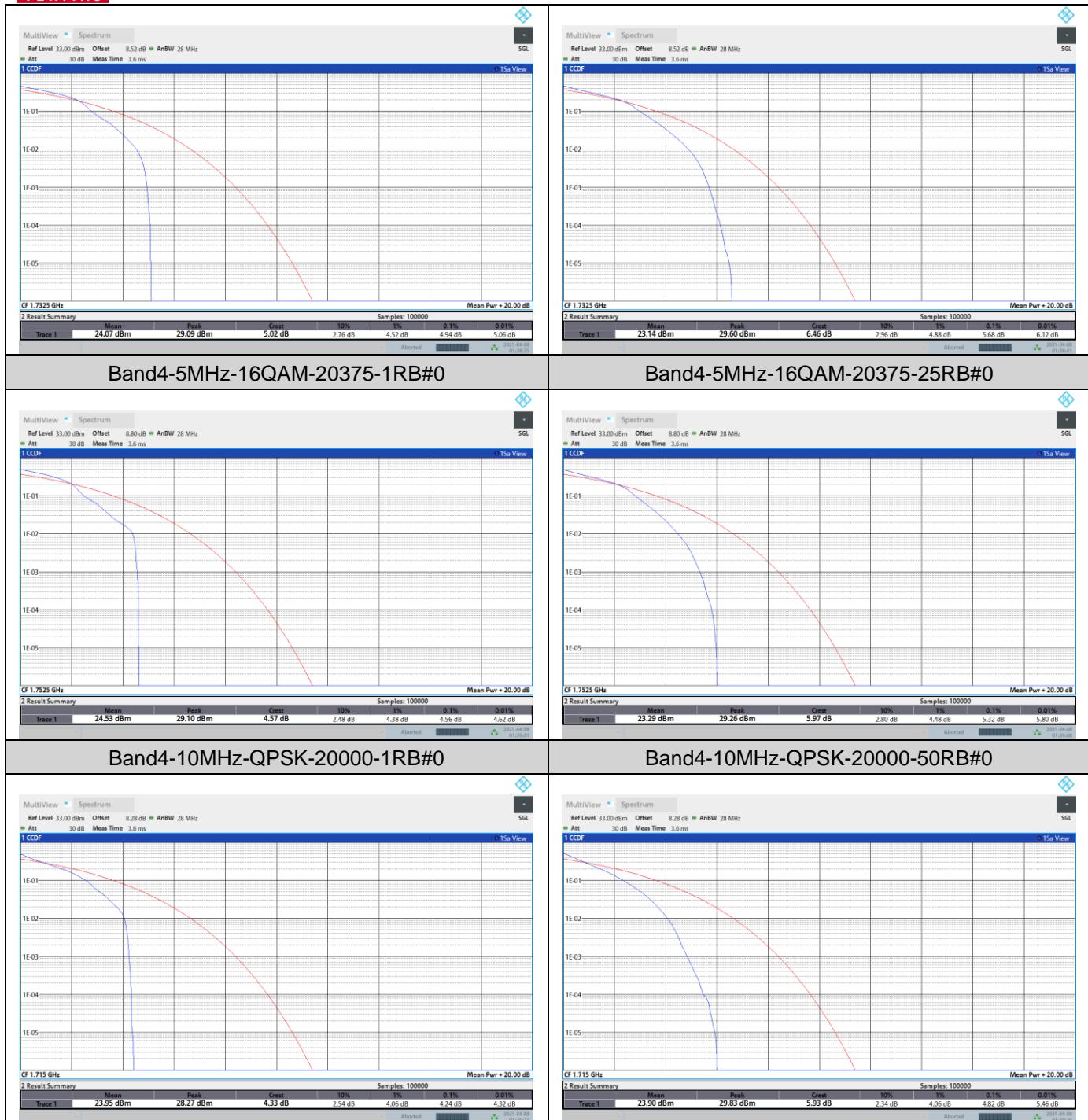
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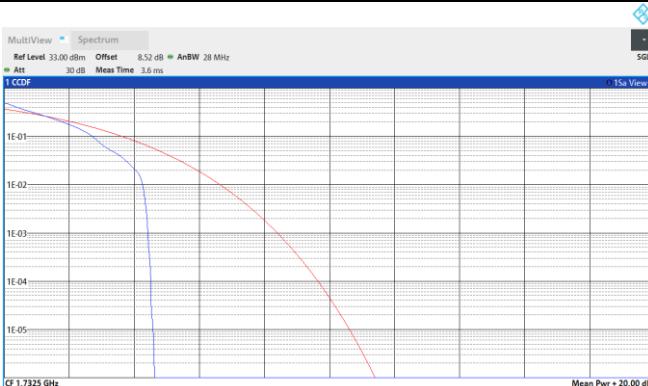




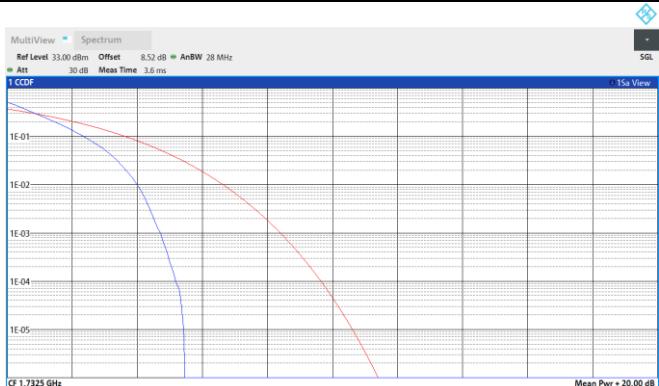
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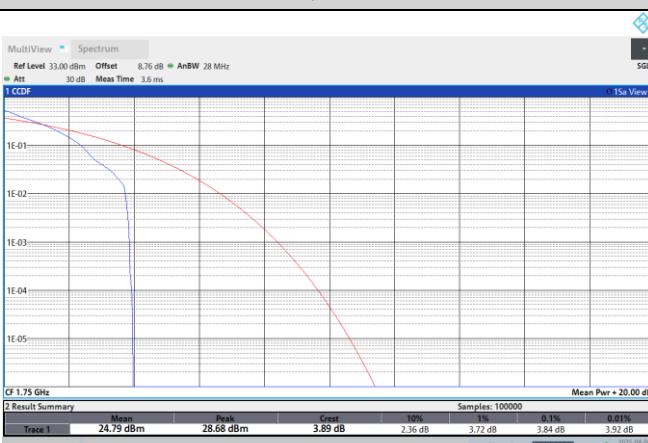
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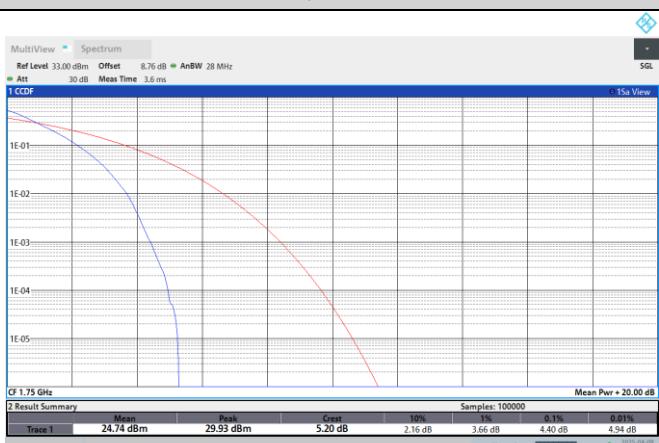
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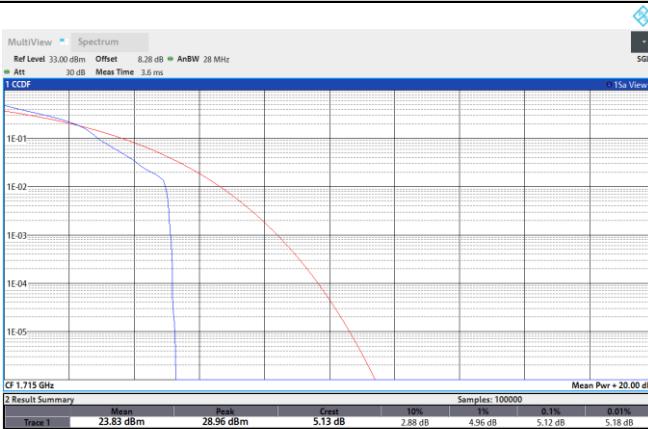
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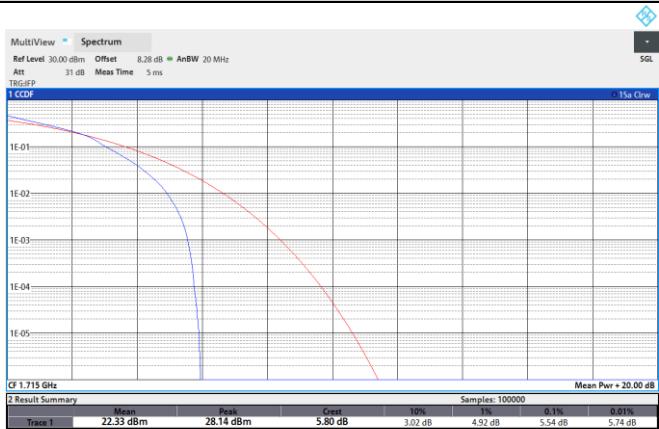
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## Band4-10MHz-16QAM-20000-1RB#0

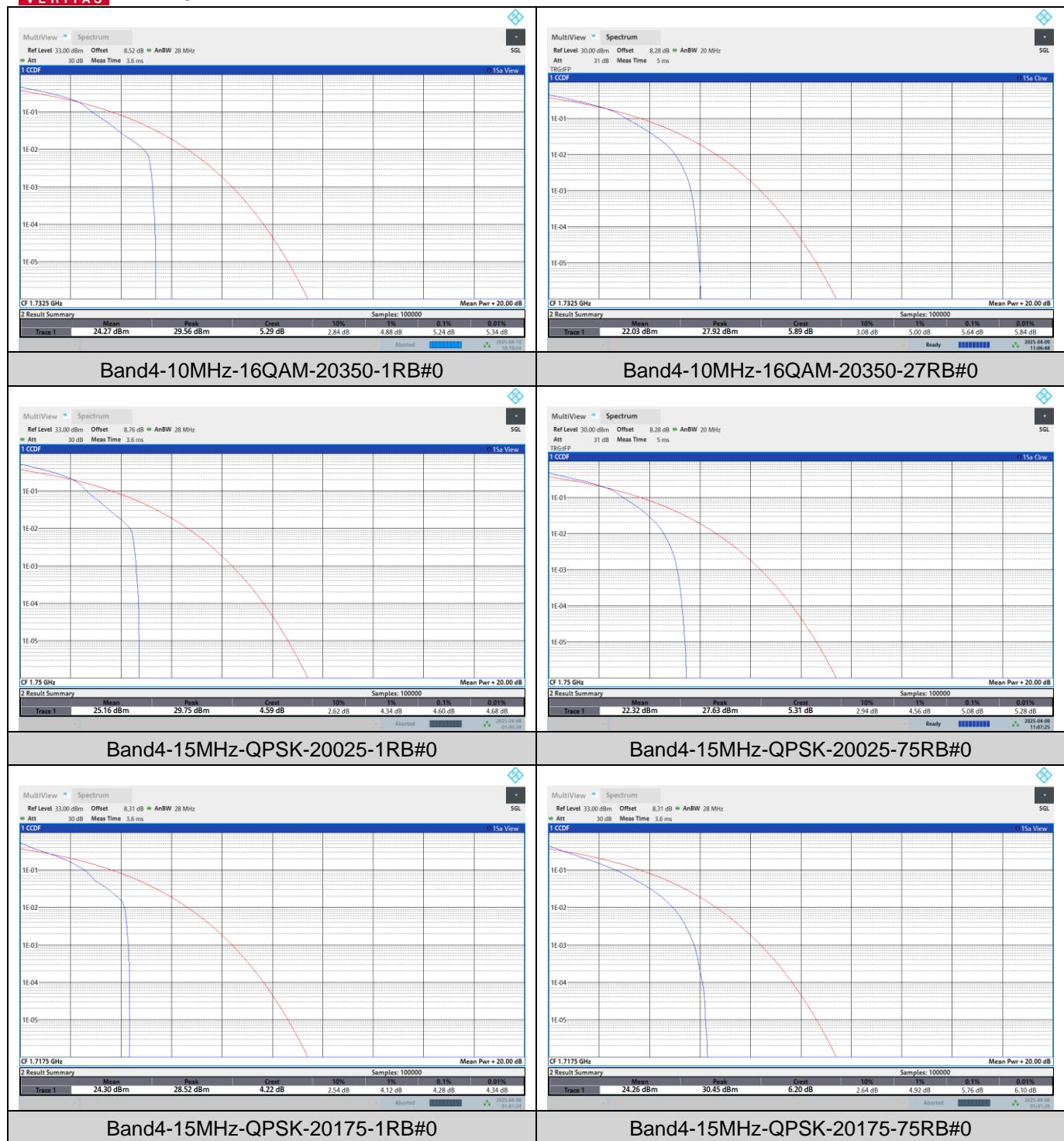


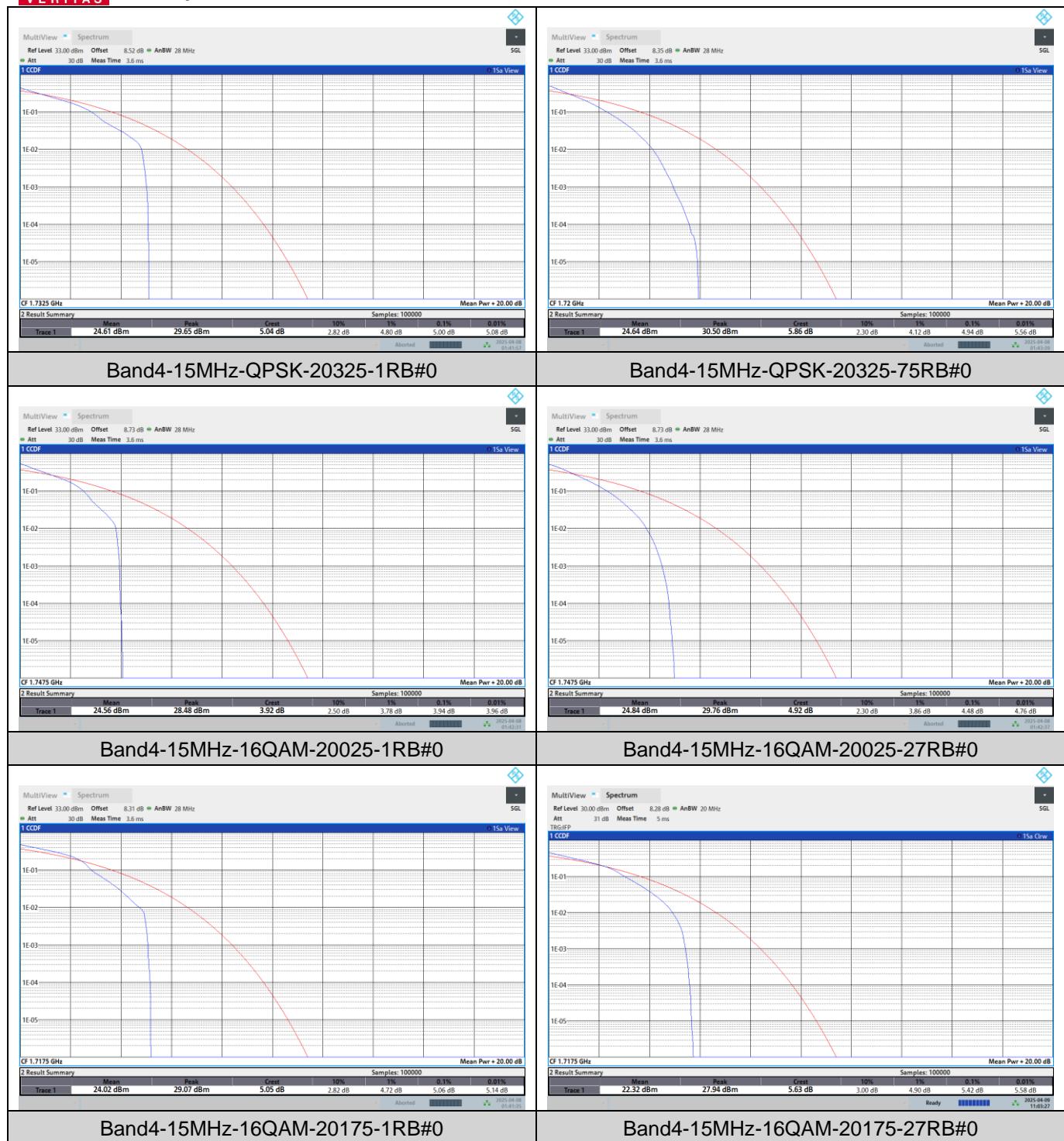
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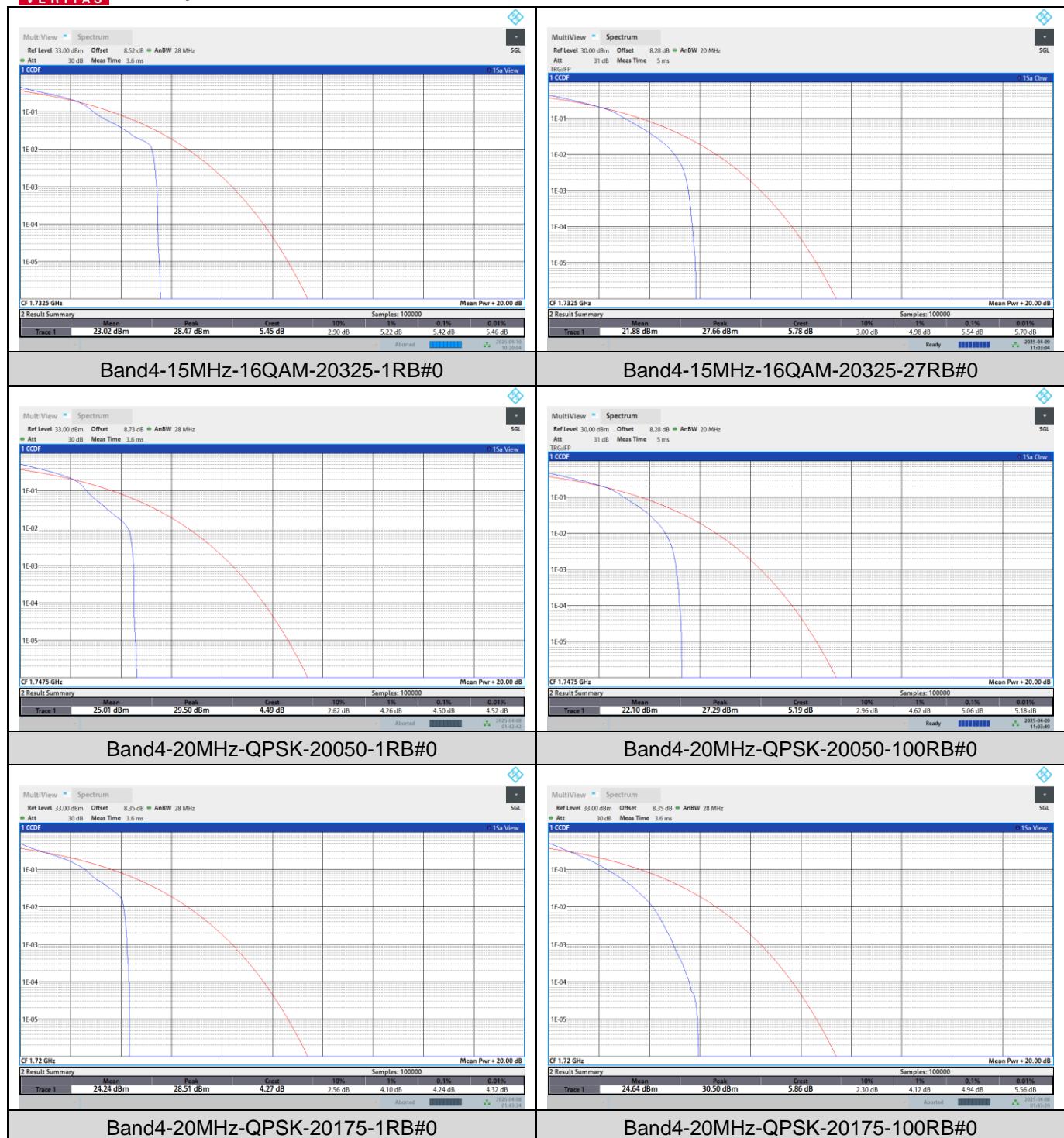


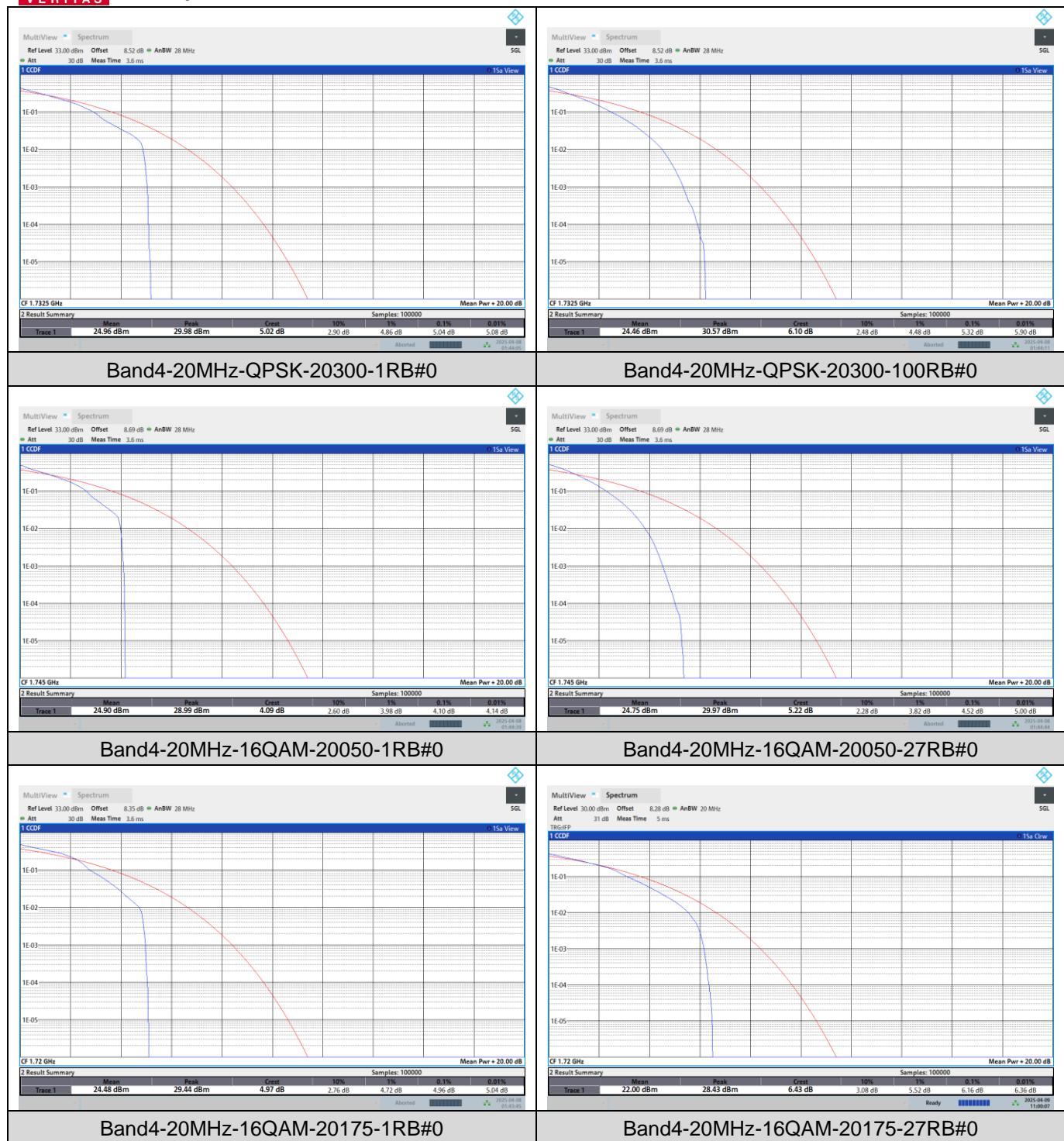
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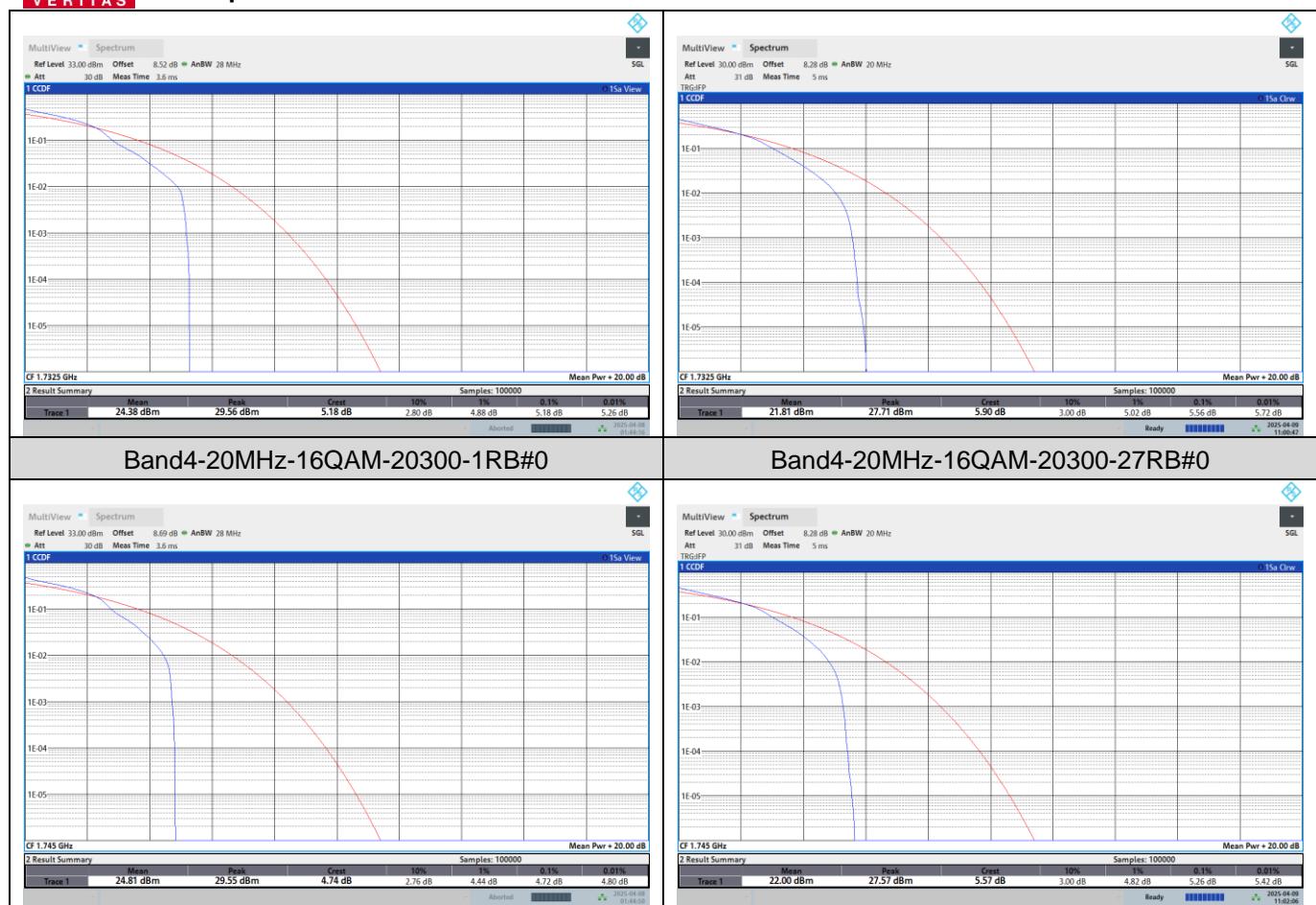
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## 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

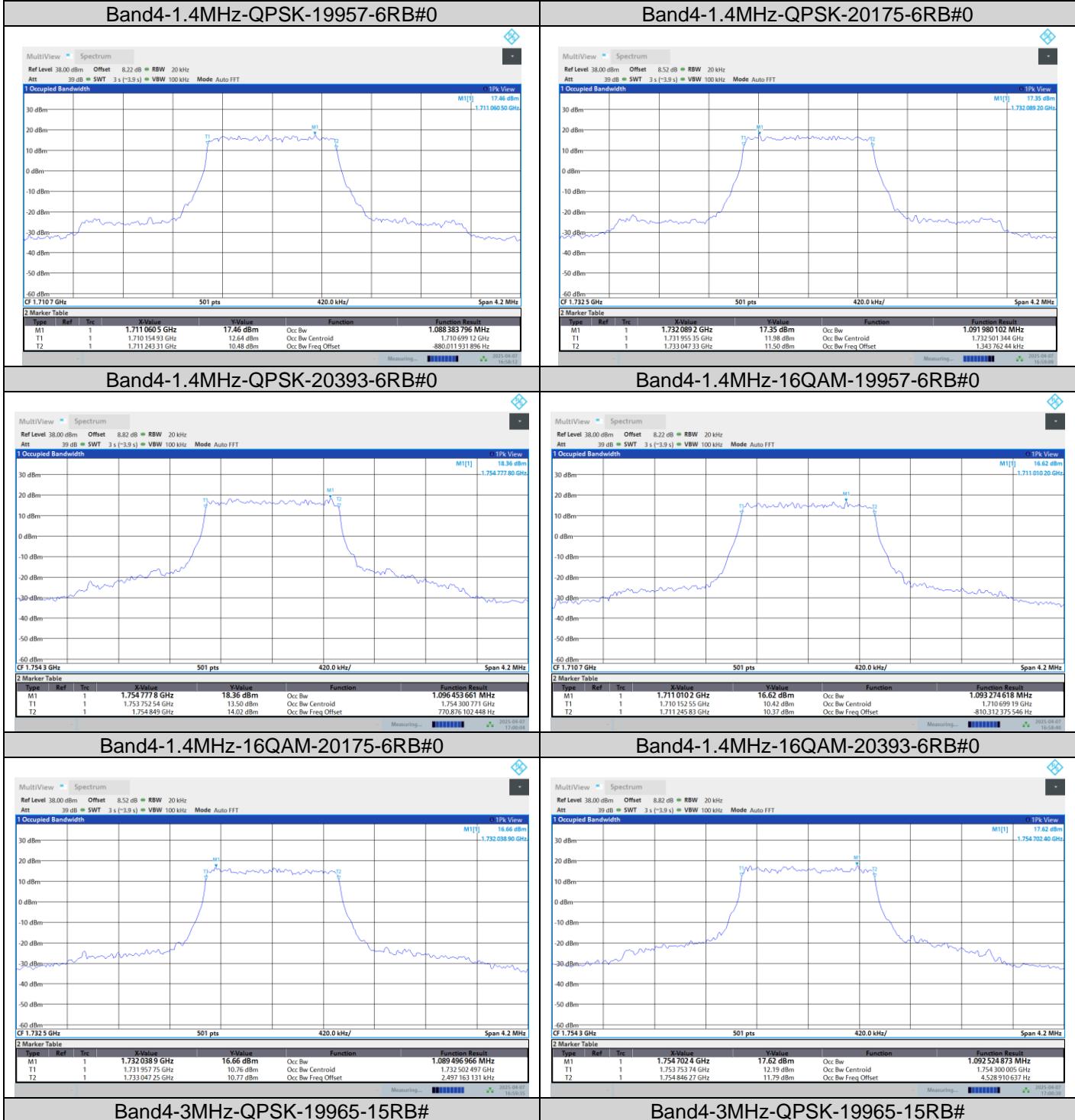
### Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band4	1.4MHz	QPSK	19957	6RB#0	1.088	1.26	PASS
Band4	1.4MHz	QPSK	20175	6RB#0	1.092	1.28	PASS
Band4	1.4MHz	QPSK	20393	6RB#0	1.096	1.29	PASS
Band4	1.4MHz	16QAM	19957	6RB#0	1.093	1.27	PASS
Band4	1.4MHz	16QAM	20175	6RB#0	1.089	1.29	PASS
Band4	1.4MHz	16QAM	20393	6RB#0	1.093	1.26	PASS
Band4	3MHz	QPSK	19965	15RB#0	2.697	2.94	PASS
Band4	3MHz	QPSK	20175	15RB#0	2.699	2.93	PASS
Band4	3MHz	QPSK	20385	15RB#0	2.696	2.96	PASS
Band4	3MHz	16QAM	19965	15RB#0	2.694	2.96	PASS
Band4	3MHz	16QAM	20175	15RB#0	2.693	2.95	PASS
Band4	3MHz	16QAM	20385	15RB#0	2.691	2.94	PASS
Band4	5MHz	QPSK	19975	25RB#0	4.497	4.96	PASS
Band4	5MHz	QPSK	20175	25RB#0	4.494	4.93	PASS
Band4	5MHz	QPSK	20375	25RB#0	4.484	4.88	PASS
Band4	5MHz	16QAM	19975	25RB#0	4.485	4.88	PASS
Band4	5MHz	16QAM	20175	25RB#0	4.497	4.93	PASS
Band4	5MHz	16QAM	20375	25RB#0	4.493	4.96	PASS
Band4	10MHz	QPSK	20000	50RB#0	8.954	9.74	PASS
Band4	10MHz	QPSK	20175	50RB#0	8.935	9.65	PASS
Band4	10MHz	QPSK	20350	50RB#0	8.932	9.65	PASS
Band4	10MHz	16QAM	20000	27RB#0	4.502	5.13	PASS
Band4	10MHz	16QAM	20175	27RB#0	4.502	5.07	PASS
Band4	10MHz	16QAM	20350	27RB#0	4.856	5.47	PASS
Band4	15MHz	QPSK	20025	75RB#0	13.454	14.61	PASS
Band4	15MHz	QPSK	20175	75RB#0	13.416	14.52	PASS
Band4	15MHz	QPSK	20325	75RB#0	13.420	14.52	PASS
Band4	15MHz	16QAM	20025	27RB#0	4.847	5.49	PASS
Band4	15MHz	16QAM	20175	27RB#0	4.840	5.39	PASS
Band4	15MHz	16QAM	20325	27RB#0	4.837	5.50	PASS
Band4	20MHz	QPSK	20050	100RB#0	17.922	19.30	PASS
Band4	20MHz	QPSK	20175	100RB#0	17.834	19.12	PASS
Band4	20MHz	QPSK	20300	100RB#0	17.855	19.06	PASS
Band4	20MHz	16QAM	20050	27RB#0	4.839	5.51	PASS
Band4	20MHz	16QAM	20175	27RB#0	4.850	5.55	PASS
Band4	20MHz	16QAM	20300	27RB#0	4.839	5.57	PASS



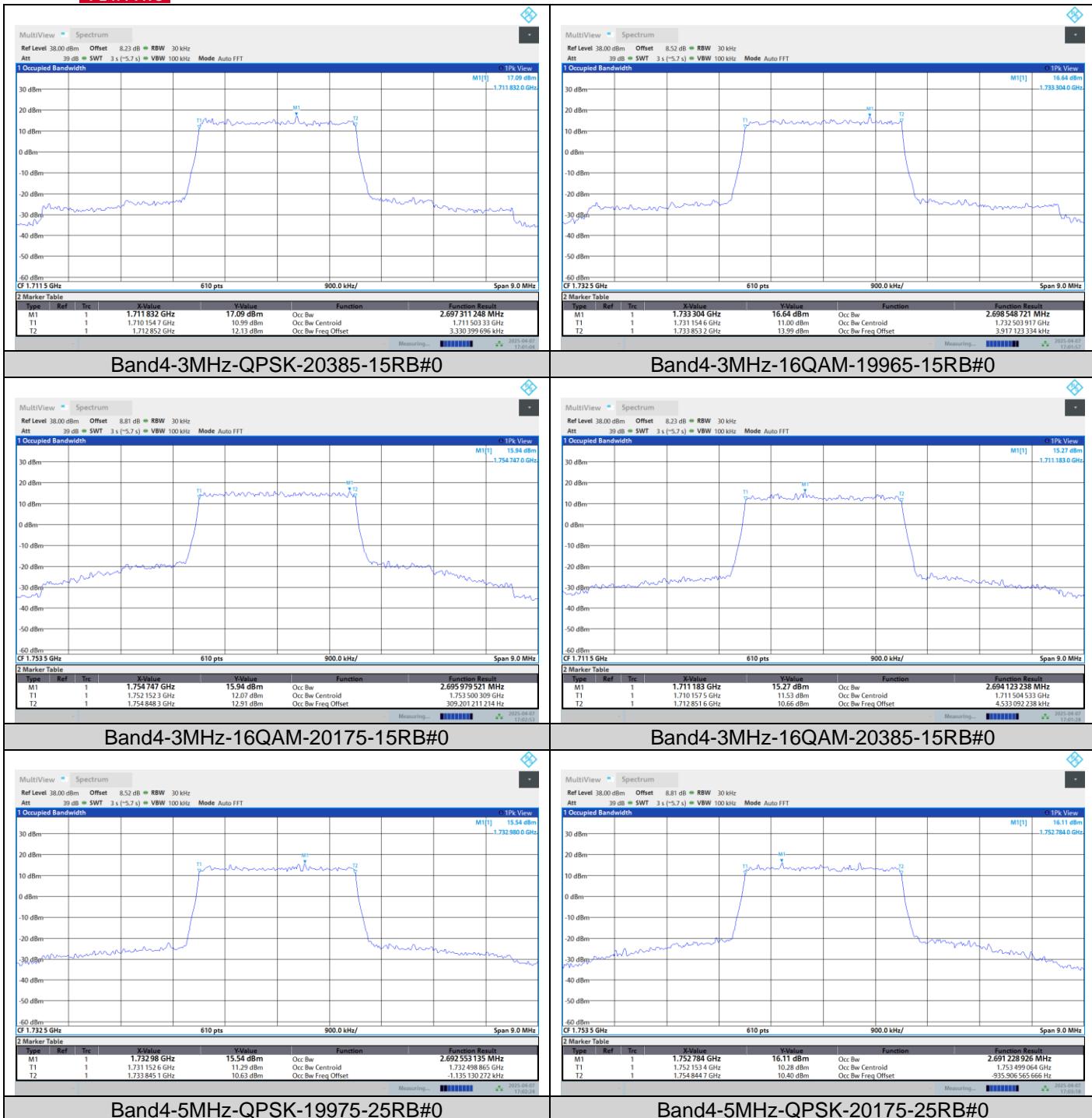
## Test Graphs

### Occupied Bandwidth



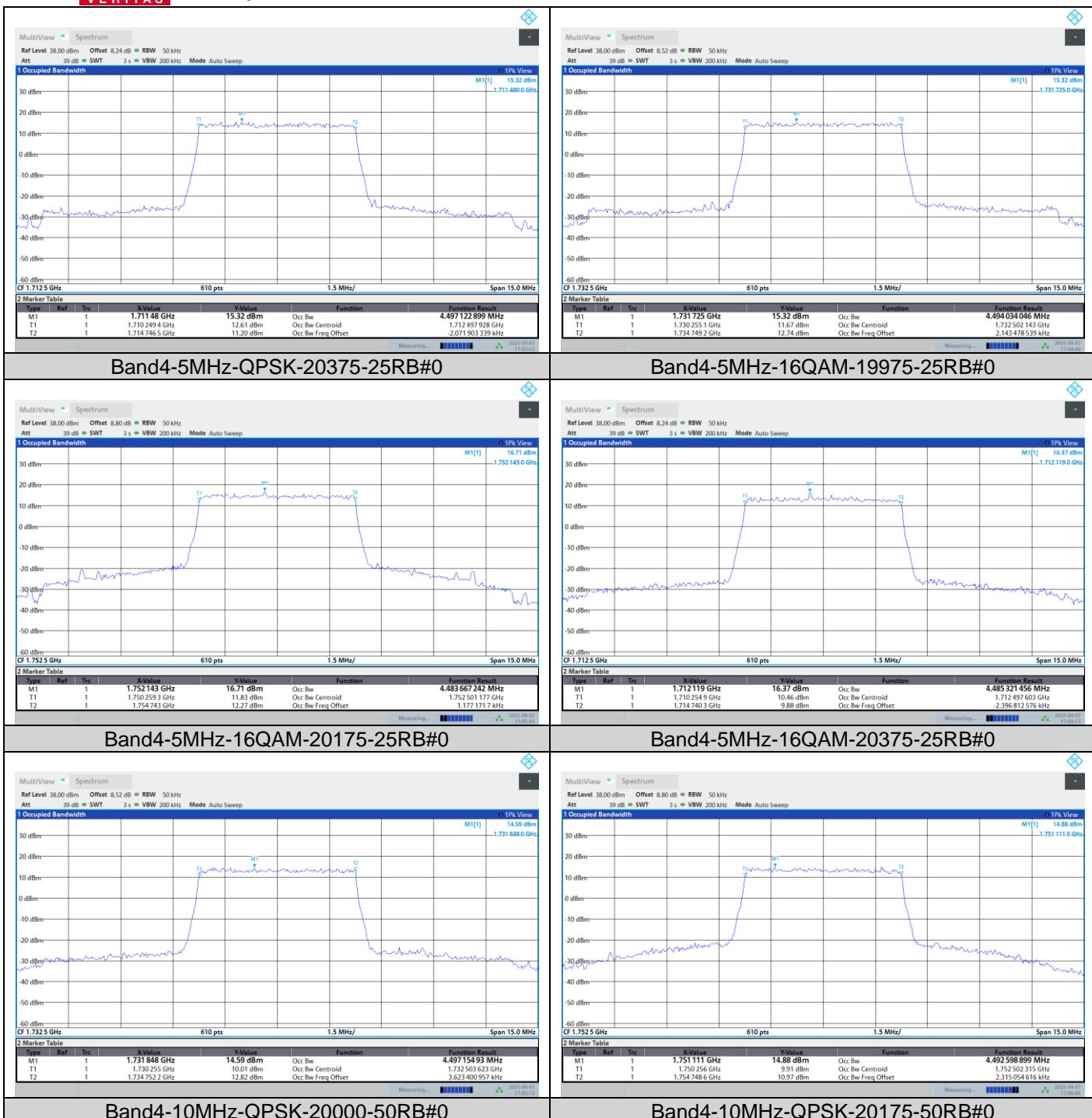
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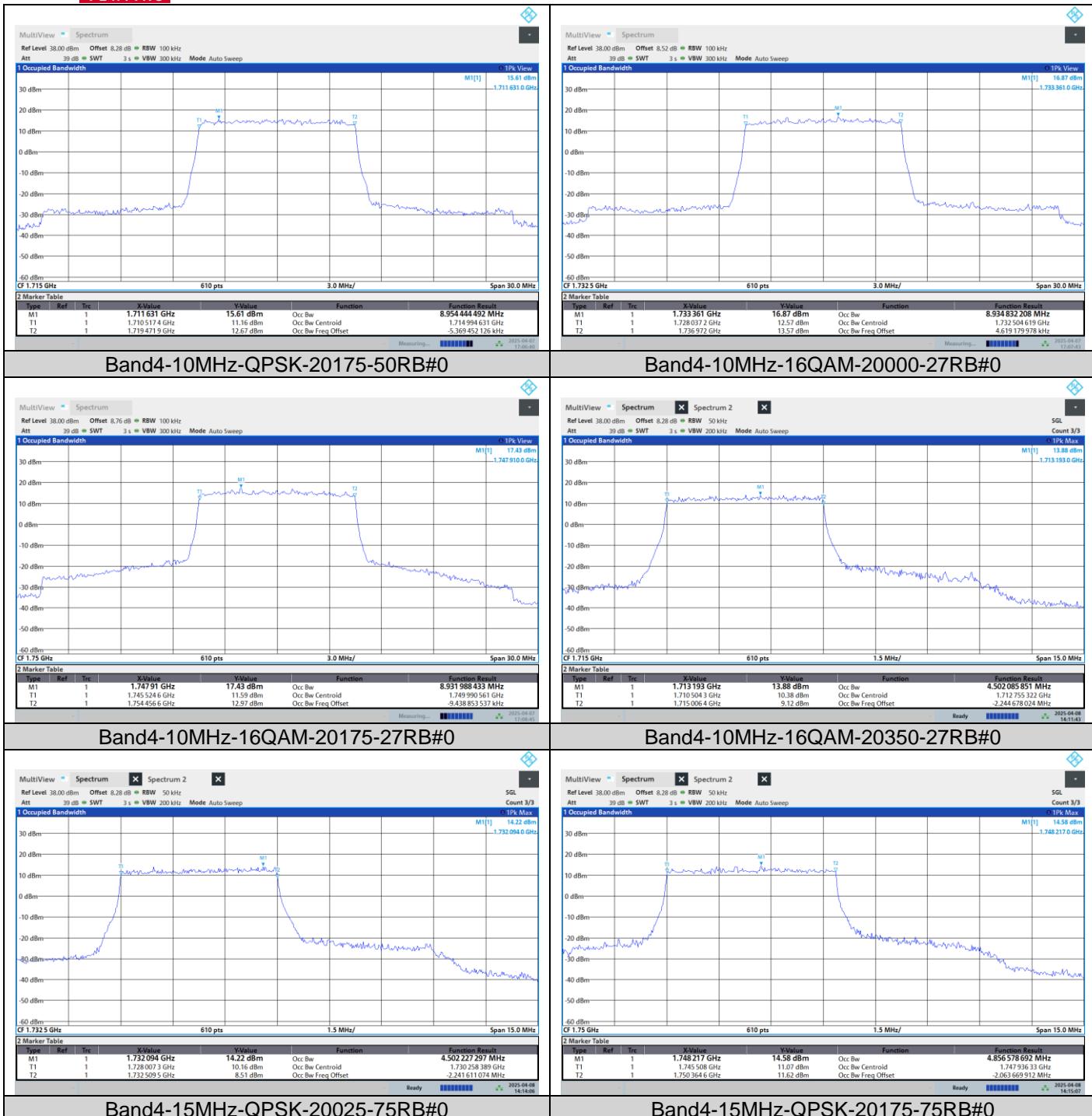
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VERITAS

Test Report No.: PSU-QSU2503280115RI01



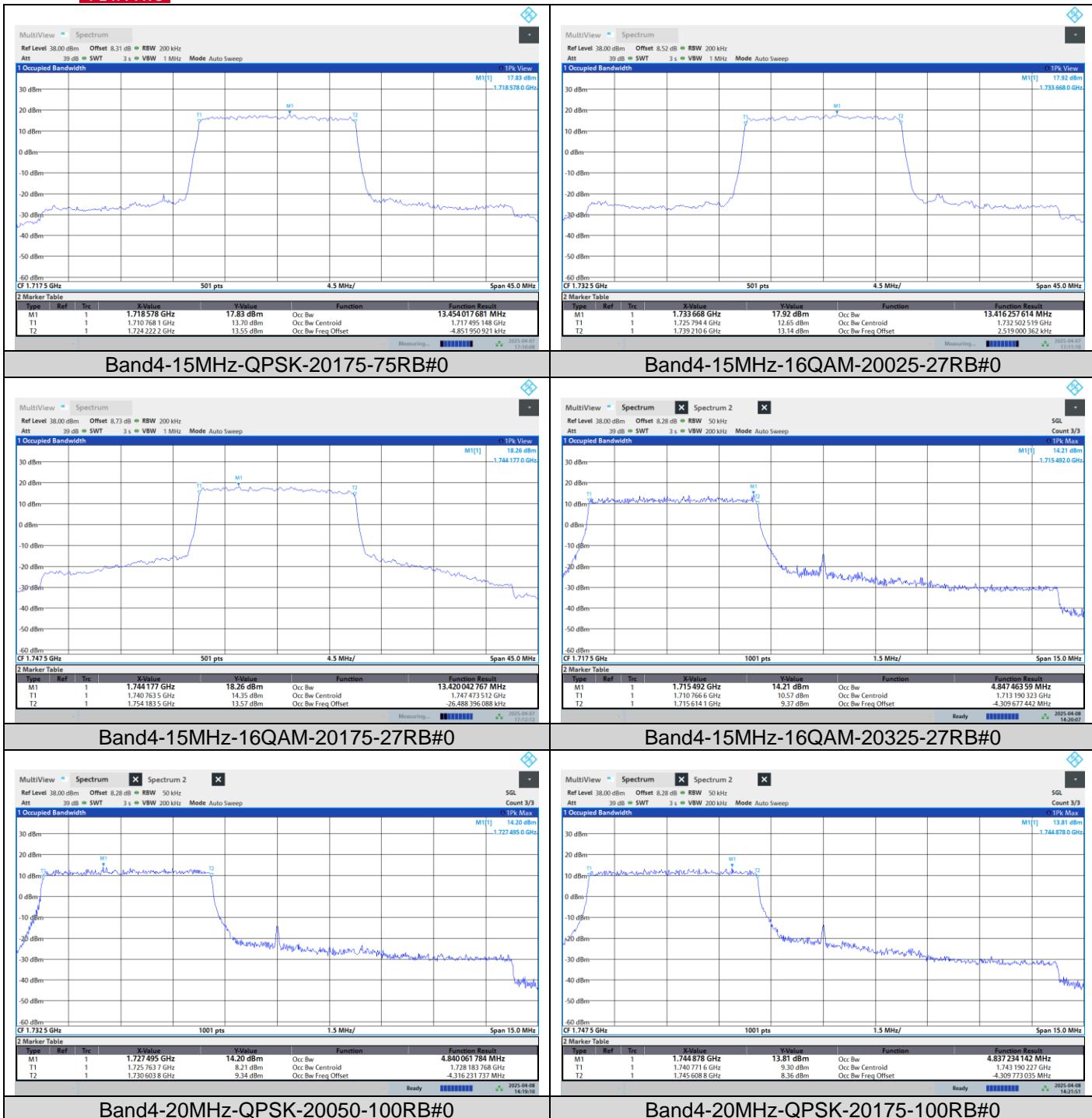
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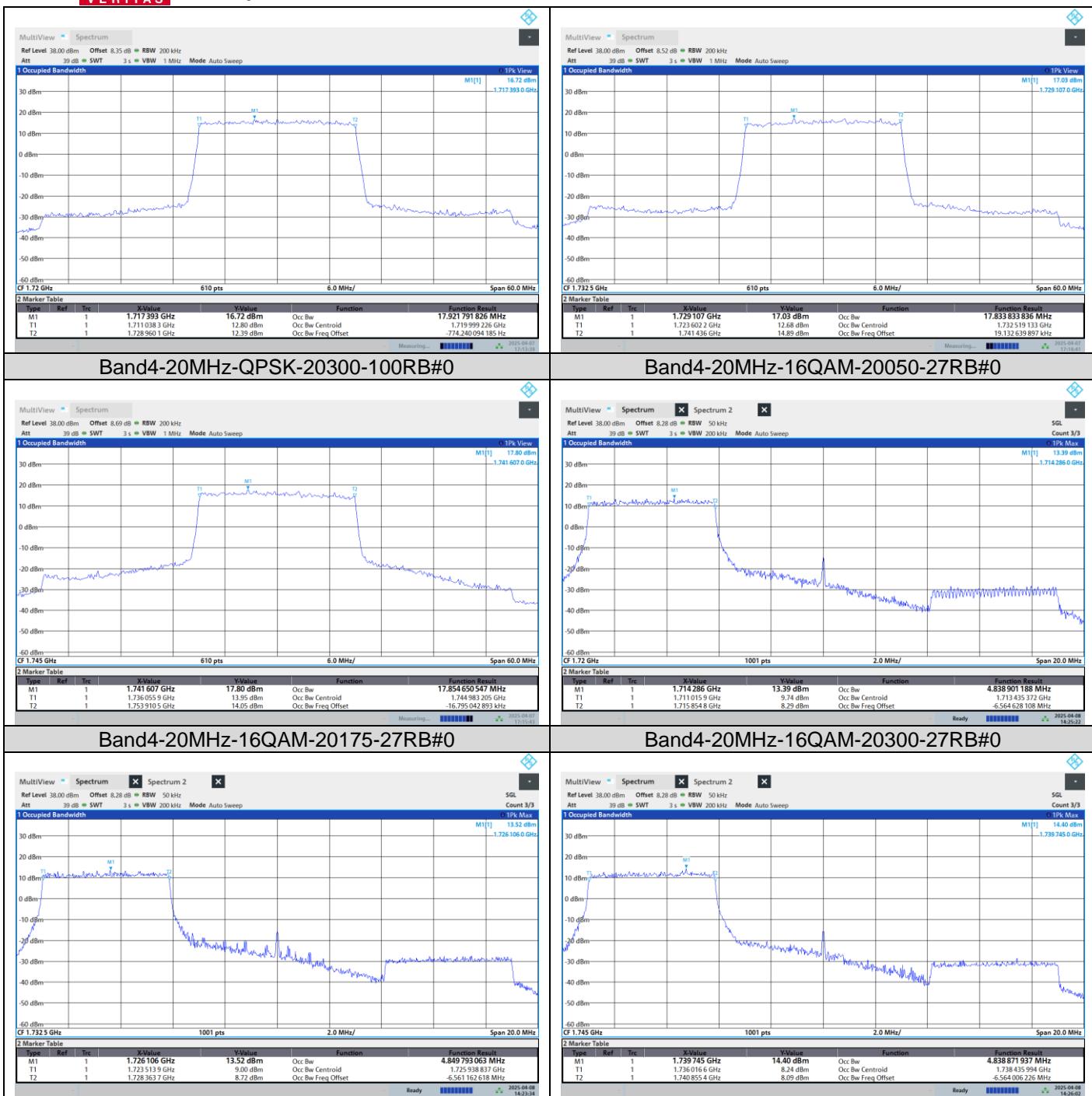
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## 26dB Bandwidth

Band4-1.4MHz-QPSK-19957-6RB#0

Band4-1.4MHz-QPSK-20175-6RB#0

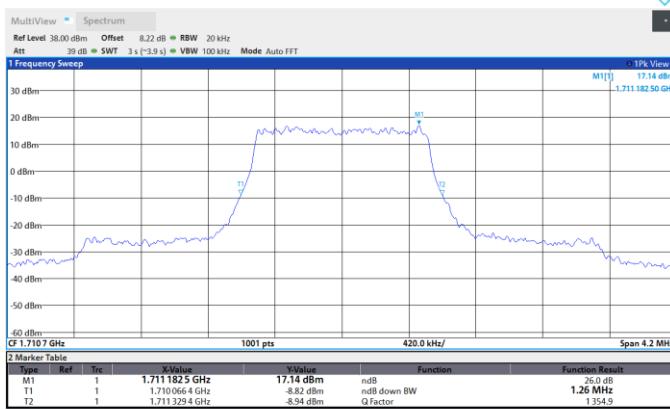
Huarui 7layers High Technology  
(Suzhou) Co., Ltd.

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

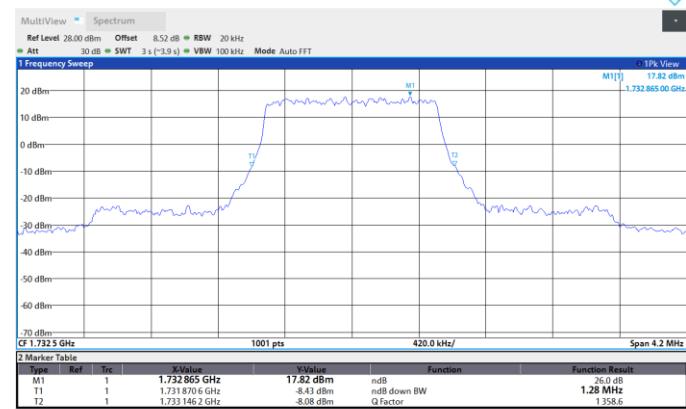
Tel: +86 (0557) 368 1008

BUREAU  
VERITAS

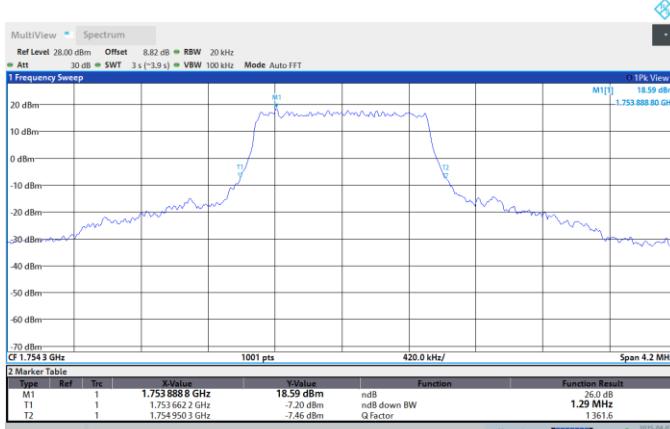
Test Report No.: PSU-QSU2503280115RI01



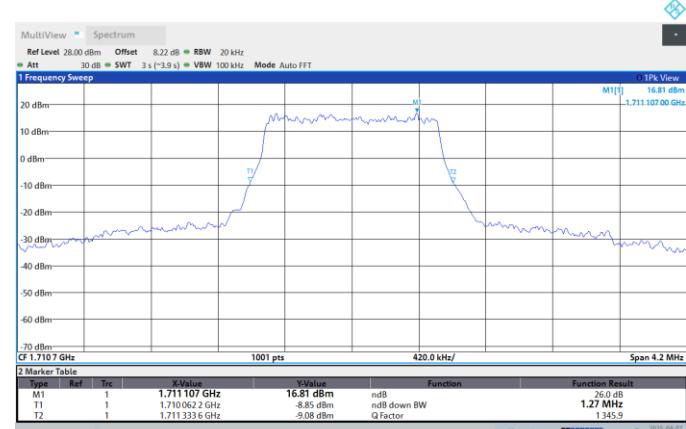
## Band4-1.4MHz-QPSK-20393-6RB#0



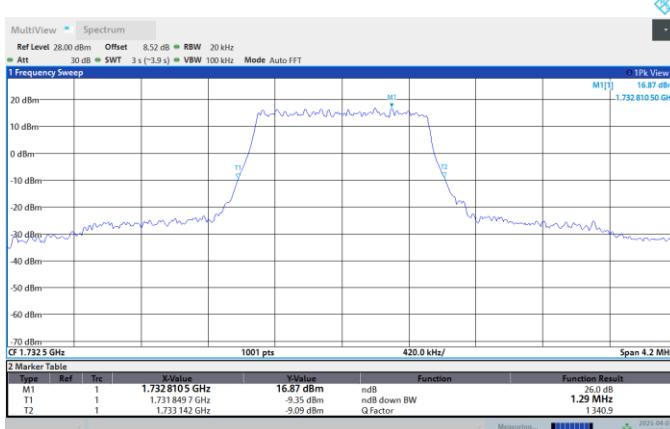
## Band4-1.4MHz-16QAM-19957-6RB#0



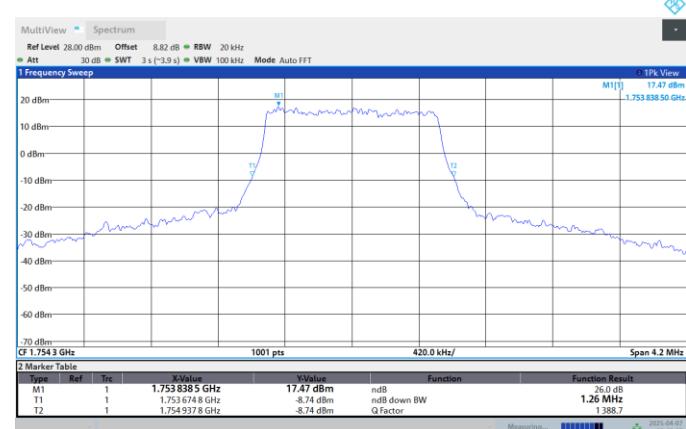
## Band4-1.4MHz-16QAM-20175-6RB#0



## Band4-1.4MHz-16QAM-20393-6RB#0



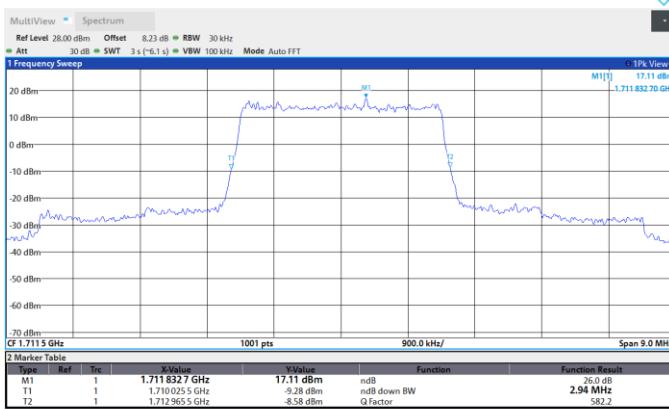
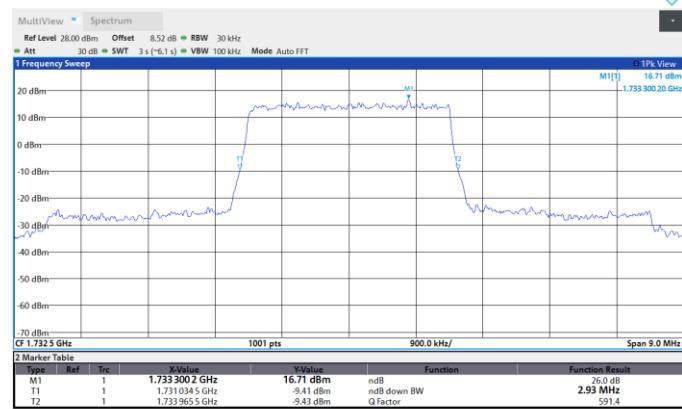
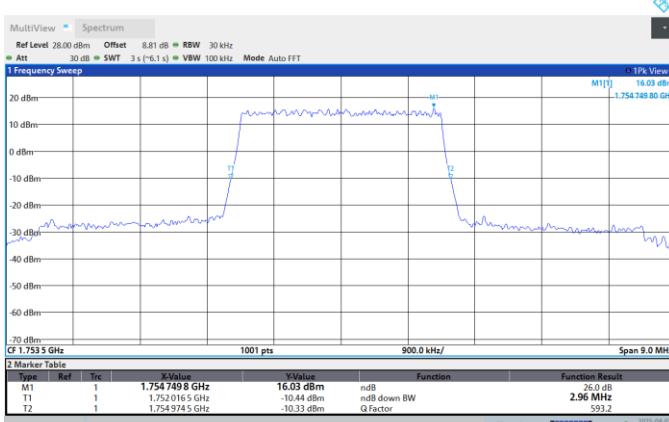
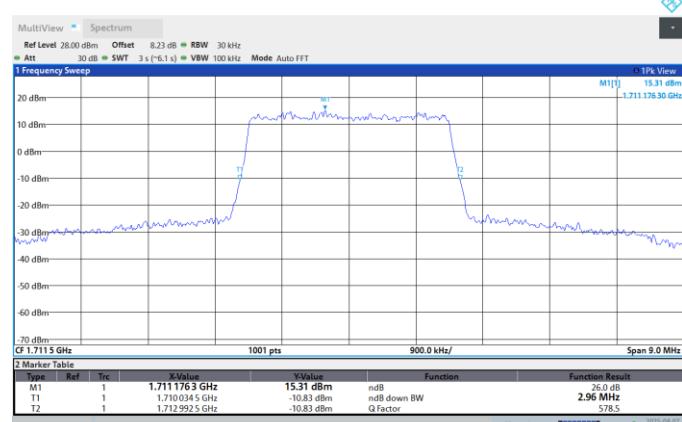
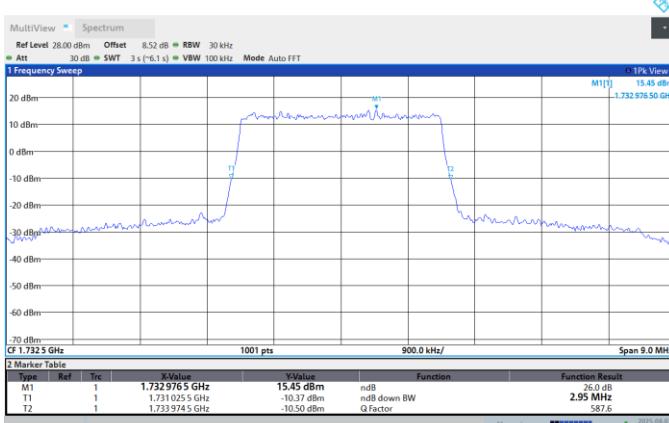
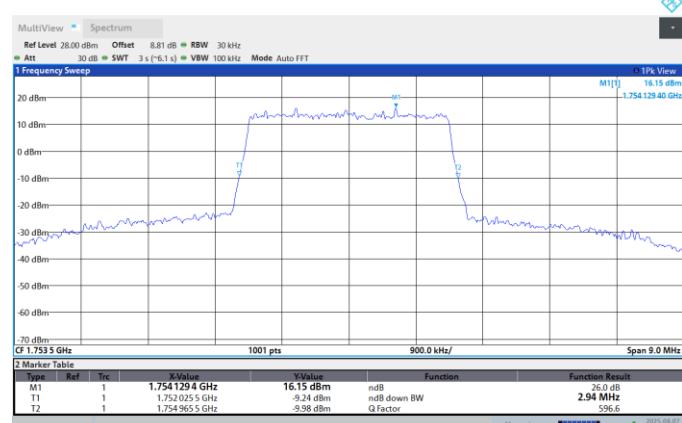
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## Band4-3MHz-QPSK-19965-15RB#

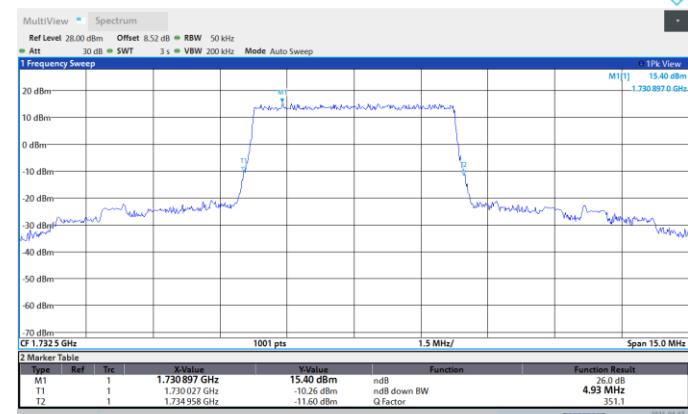
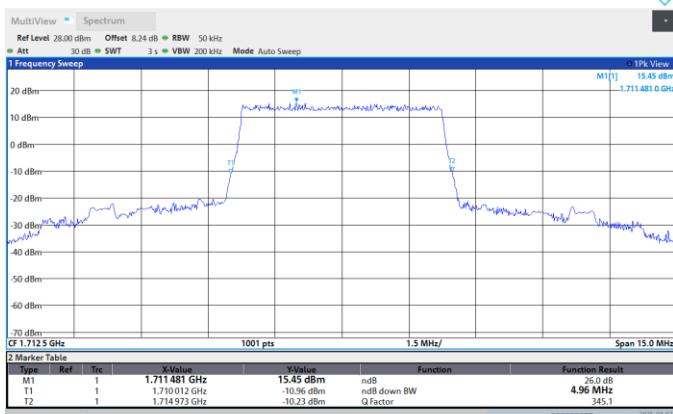
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Test Report No.: PSU-QSU2503280115RI01

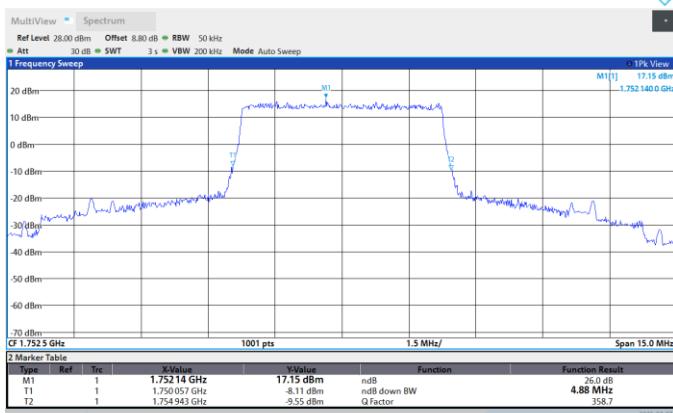
**Band4-3MHz-QPSK-20385-15RB#0****Band4-3MHz-16QAM-19965-15RB#0****Band4-3MHz-16QAM-20175-15RB#0****Band4-3MHz-16QAM-20385-15RB#0****Band4-5MHz-QPSK-19975-25RB#0****Band4-5MHz-QPSK-20175-25RB#0**

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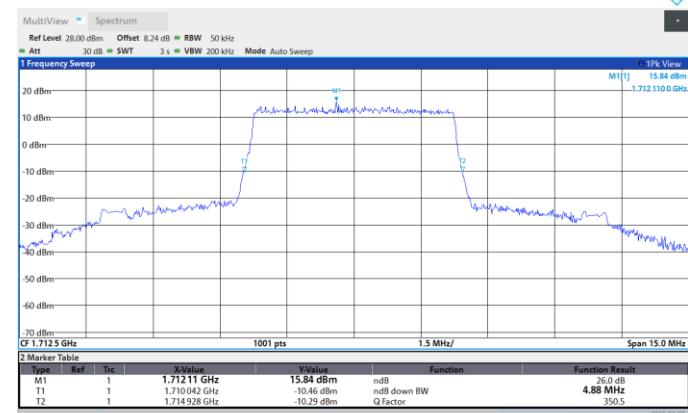
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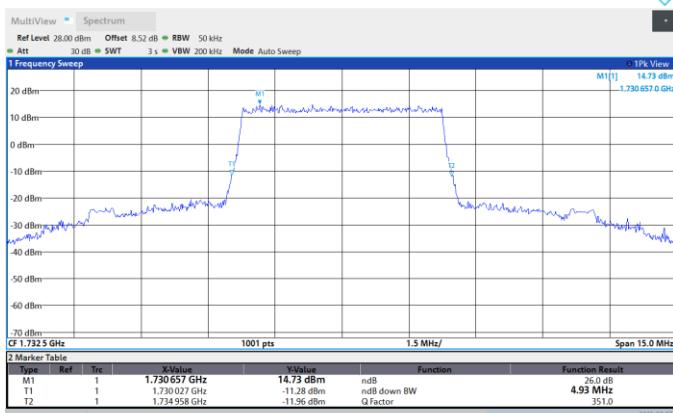
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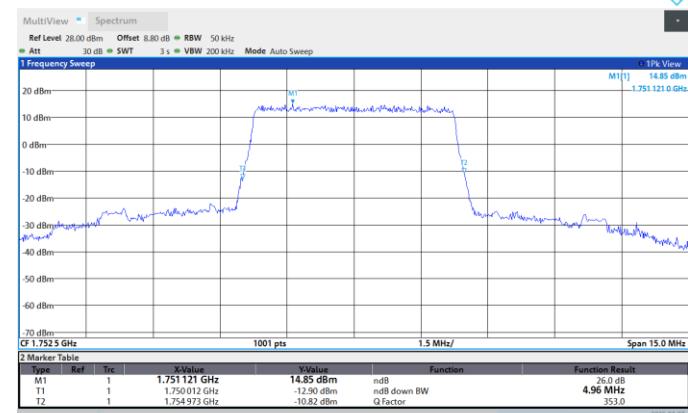
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## Band4-5MHz-16QAM-20175-25RB#0



## Band4-5MHz-16QAM-20375-25RB#0

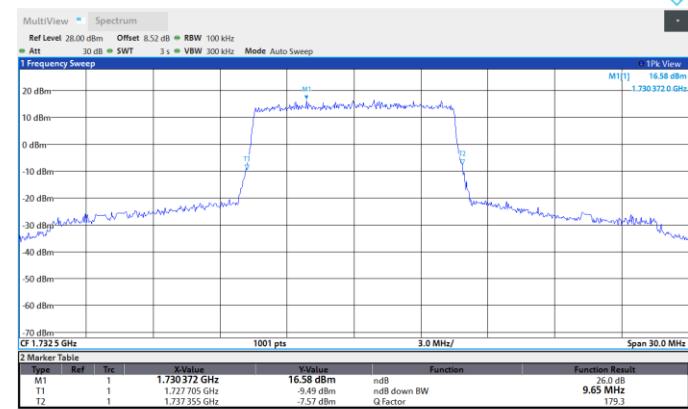
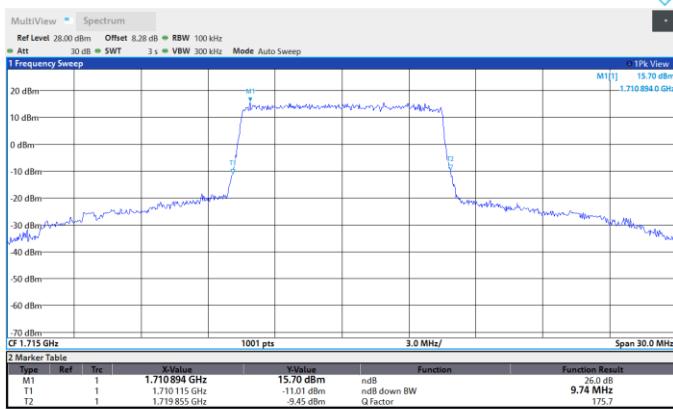


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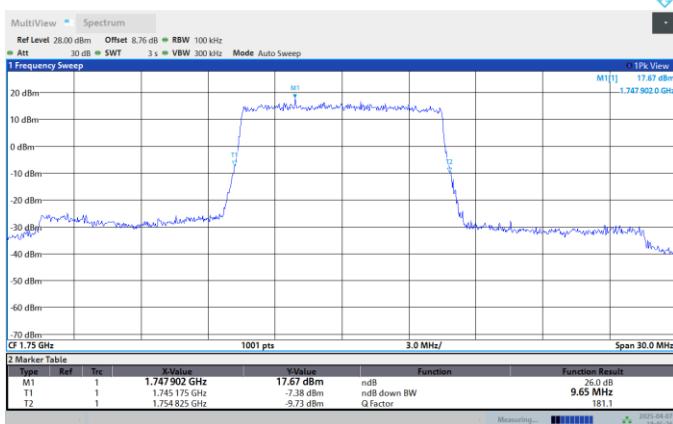
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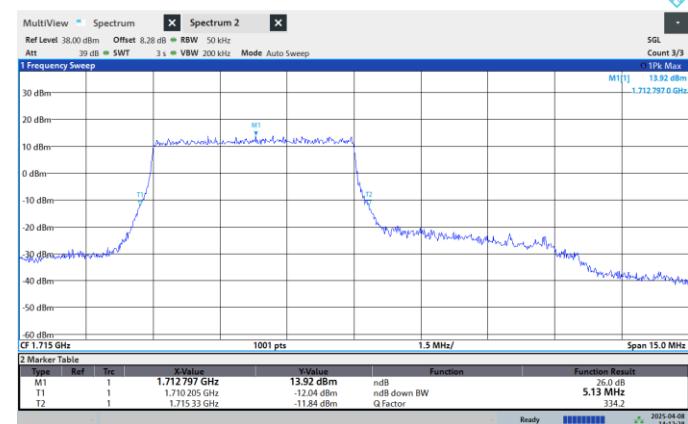
Test Report No.: PSU-QSU2503280115RI01



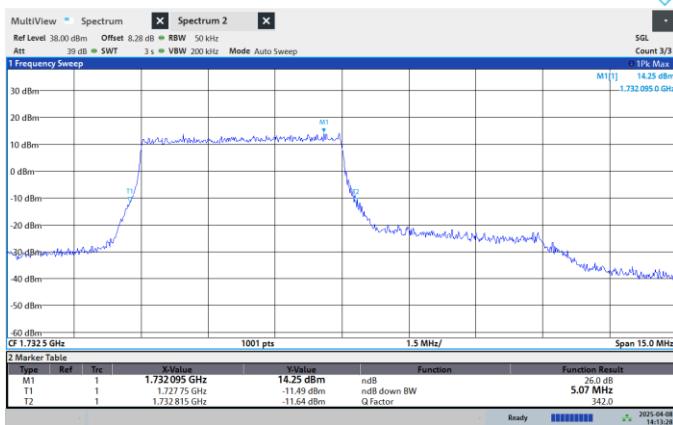
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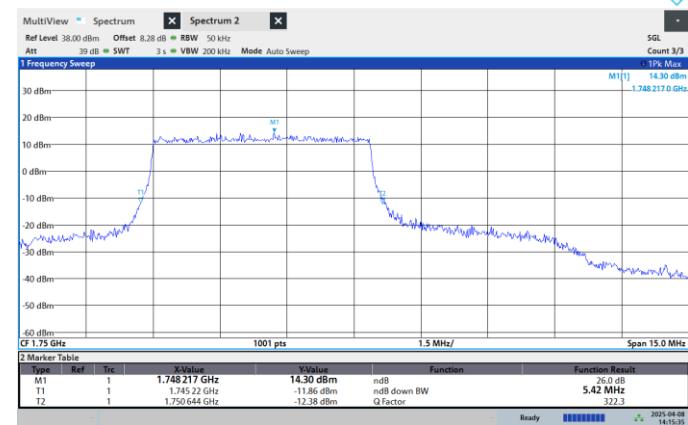
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## Band4-10MHz-16QAM-20175-27RB#0



## Band4-10MHz-16QAM-20350-27RB#0

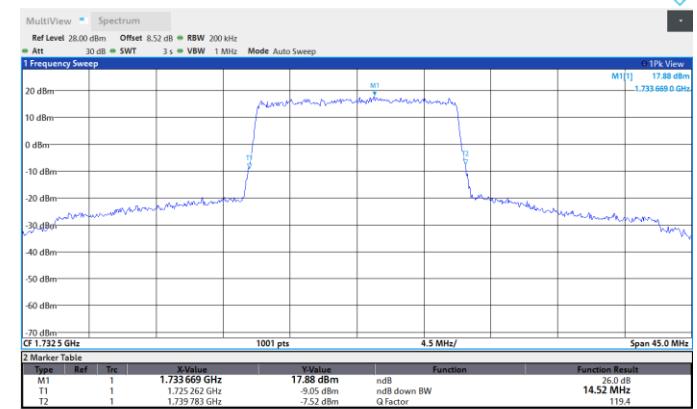
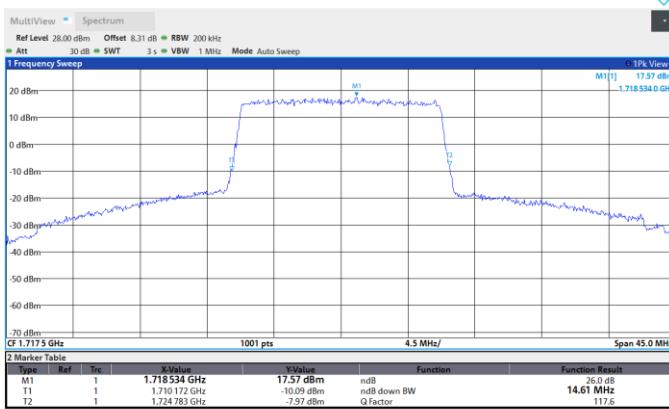


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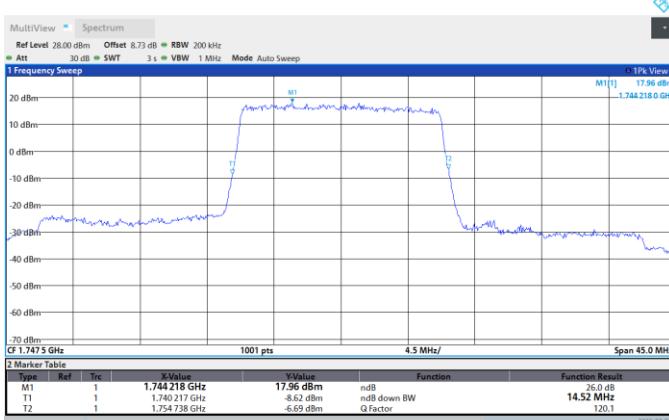
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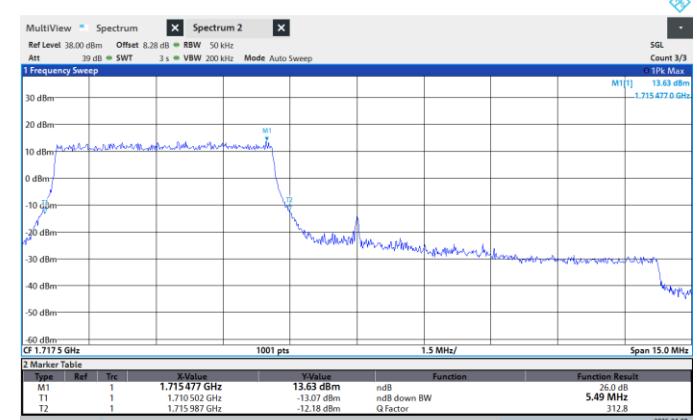
Test Report No.: PSU-QSU2503280115RI01



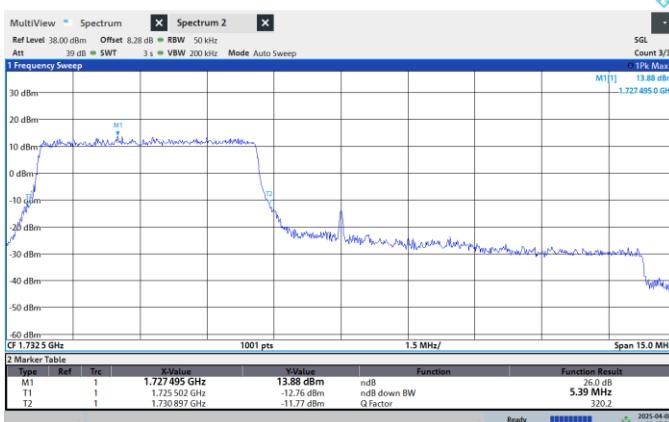
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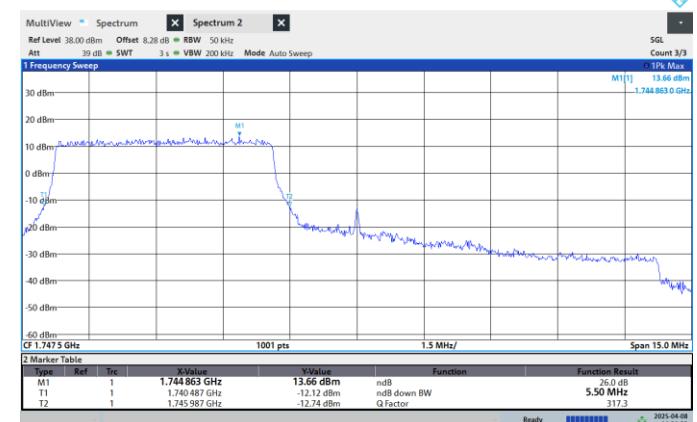
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## Band4-15MHz-16QAM-20175-27RB#0



## Band4-15MHz-16QAM-20325-27RB#0

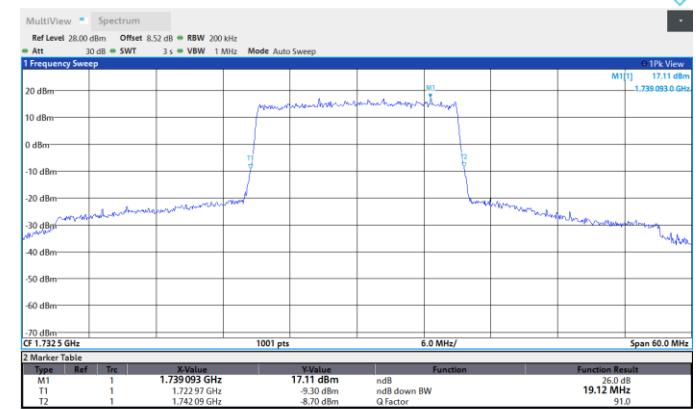
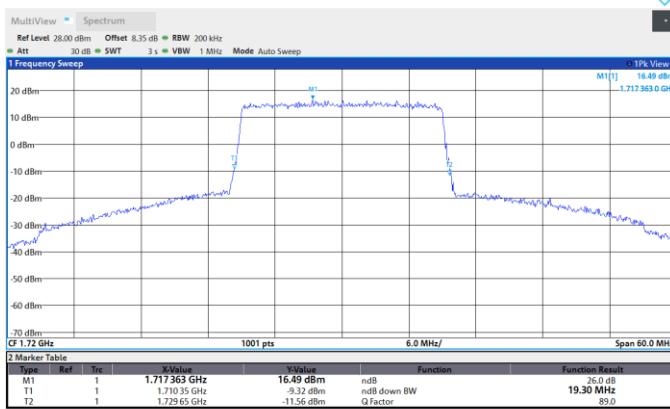


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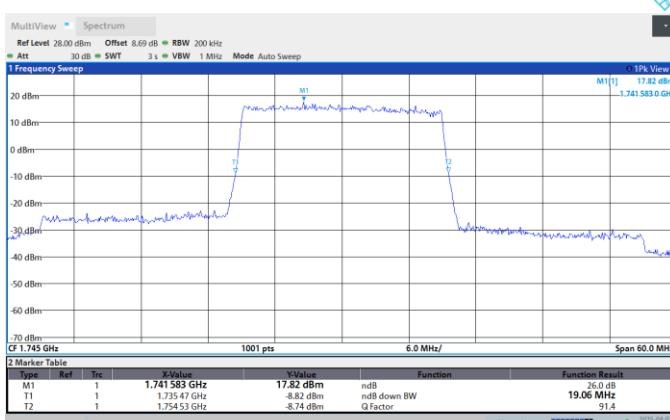
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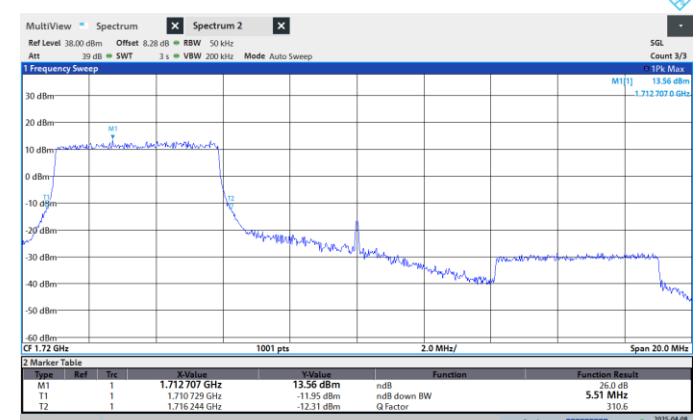
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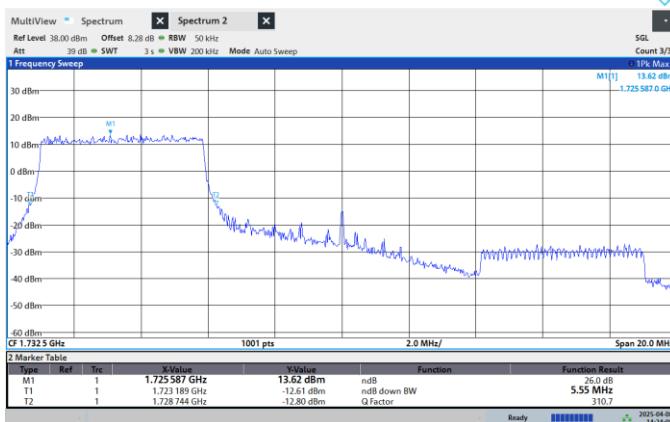
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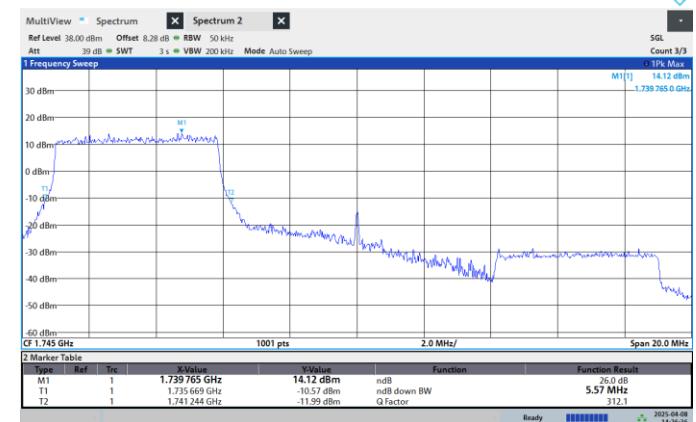
## Band4-20MHz-16QAM-20050-27RB#0



## Band4-20MHz-16QAM-20175-27RB#0



## Band4-20MHz-16QAM-20300-27RB#0





## BAND EDGE

### Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
Band4	1.4MHz	QPSK	19957	1RB#0	See Graph	PASS
Band4	1.4MHz	QPSK	19957	6RB#0	See Graph	PASS
Band4	1.4MHz	QPSK	20393	1RB#5	See Graph	PASS
Band4	1.4MHz	QPSK	20393	6RB#0	See Graph	PASS
Band4	1.4MHz	16QAM	19957	1RB#0	See Graph	PASS
Band4	1.4MHz	16QAM	19957	6RB#0	See Graph	PASS
Band4	1.4MHz	16QAM	20393	1RB#5	See Graph	PASS
Band4	1.4MHz	16QAM	20393	6RB#0	See Graph	PASS
Band4	3MHz	QPSK	19965	1RB#0	See Graph	PASS
Band4	3MHz	QPSK	19965	15RB#0	See Graph	PASS
Band4	3MHz	QPSK	20385	1RB#14	See Graph	PASS
Band4	3MHz	QPSK	20385	15RB#0	See Graph	PASS
Band4	3MHz	16QAM	19965	1RB#0	See Graph	PASS
Band4	3MHz	16QAM	19965	15RB#0	See Graph	PASS
Band4	3MHz	16QAM	20385	1RB#14	See Graph	PASS
Band4	3MHz	16QAM	20385	15RB#0	See Graph	PASS
Band4	5MHz	QPSK	19975	1RB#0	See Graph	PASS
Band4	5MHz	QPSK	19975	25RB#0	See Graph	PASS
Band4	5MHz	QPSK	20375	1RB#24	See Graph	PASS
Band4	5MHz	QPSK	20375	25RB#0	See Graph	PASS
Band4	5MHz	16QAM	19975	1RB#0	See Graph	PASS
Band4	5MHz	16QAM	19975	25RB#0	See Graph	PASS
Band4	5MHz	16QAM	20375	1RB#24	See Graph	PASS
Band4	5MHz	16QAM	20375	25RB#0	See Graph	PASS
Band4	10MHz	QPSK	20000	1RB#0	See Graph	PASS
Band4	10MHz	QPSK	20000	50RB#0	See Graph	PASS
Band4	10MHz	QPSK	20350	1RB#49	See Graph	PASS
Band4	10MHz	QPSK	20350	50RB#0	See Graph	PASS
Band4	10MHz	16QAM	20000	1RB#0	See Graph	PASS
Band4	10MHz	16QAM	20000	27RB#0	See Graph	PASS
Band4	10MHz	16QAM	20350	1RB#49	See Graph	PASS
Band4	10MHz	16QAM	20350	27RB#23	See Graph	PASS
Band4	15MHz	QPSK	20025	1RB#0	See Graph	PASS
Band4	15MHz	QPSK	20025	75RB#0	See Graph	PASS
Band4	15MHz	QPSK	20325	1RB#74	See Graph	PASS
Band4	15MHz	QPSK	20325	75RB#0	See Graph	PASS
Band4	15MHz	16QAM	20025	1RB#0	See Graph	PASS
Band4	15MHz	16QAM	20025	27RB#0	See Graph	PASS
Band4	15MHz	16QAM	20325	1RB#74	See Graph	PASS
Band4	15MHz	16QAM	20325	27RB#48	See Graph	PASS
Band4	20MHz	QPSK	20050	1RB#0	See Graph	PASS
Band4	20MHz	QPSK	20050	100RB#0	See Graph	PASS
Band4	20MHz	QPSK	20300	1RB#99	See Graph	PASS
Band4	20MHz	QPSK	20300	100RB#0	See Graph	PASS
Band4	20MHz	16QAM	20050	1RB#0	See Graph	PASS



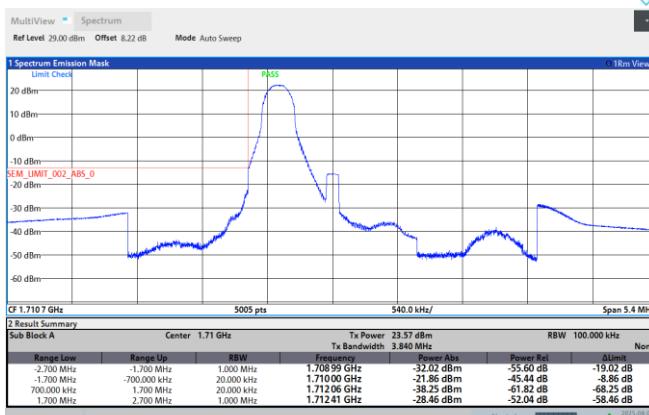
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VERITAS Test Report No.: PSU-QSU2503280115RI01**

Band4	20MHz	16QAM	20050	27RB#0	See Graph	PASS
Band4	20MHz	16QAM	20300	1RB#99	See Graph	PASS
Band4	20MHz	16QAM	20300	27RB#73	See Graph	PASS

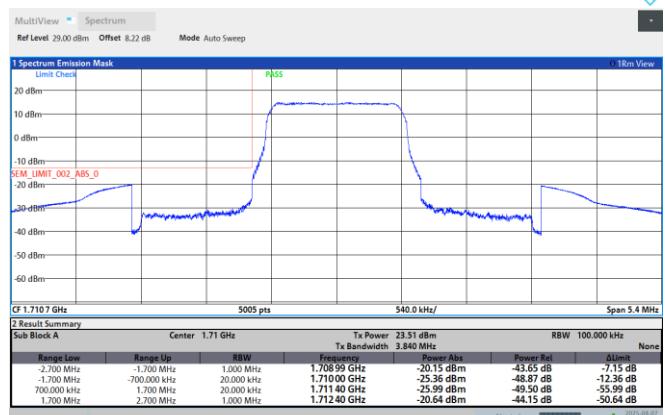


## Test Graphs

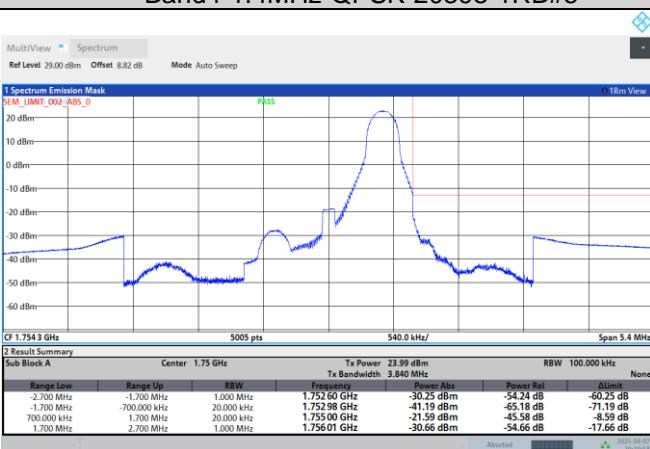
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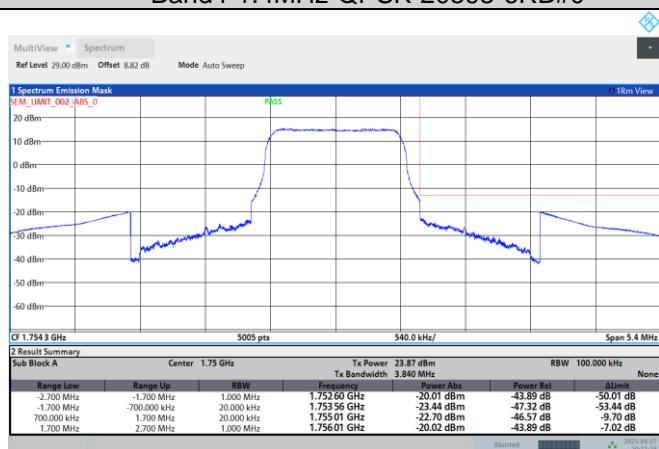
Band4-1.4MHz-QPSK-19957-6RB#0



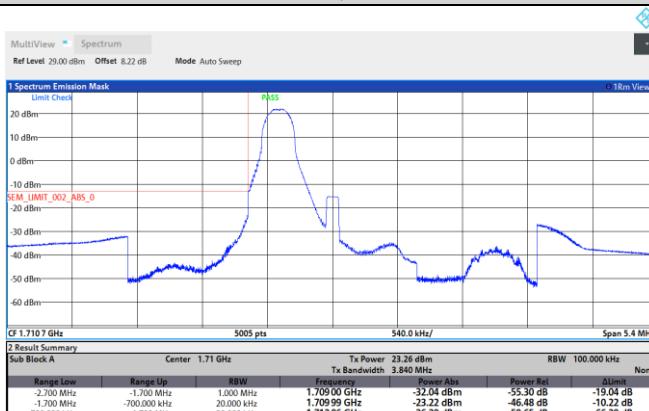
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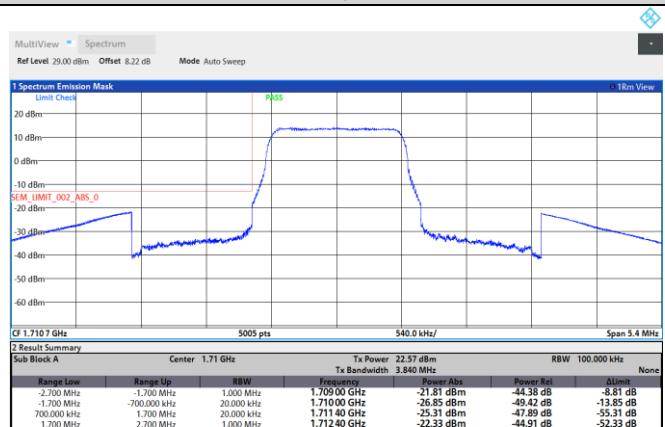
Band4-1.4MHz-QPSK-20393-6RB#0



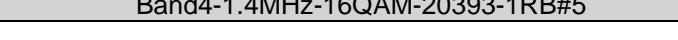
Band4-1.4MHz-16QAM-19957-1RB#0



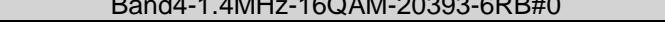
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Band4-1.4MHz-16QAM-20393-1RB#5

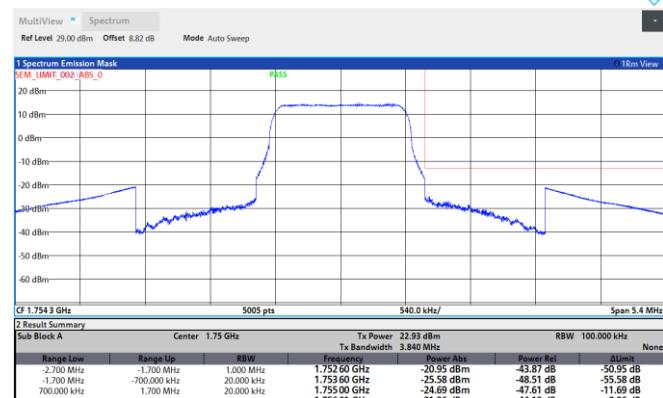
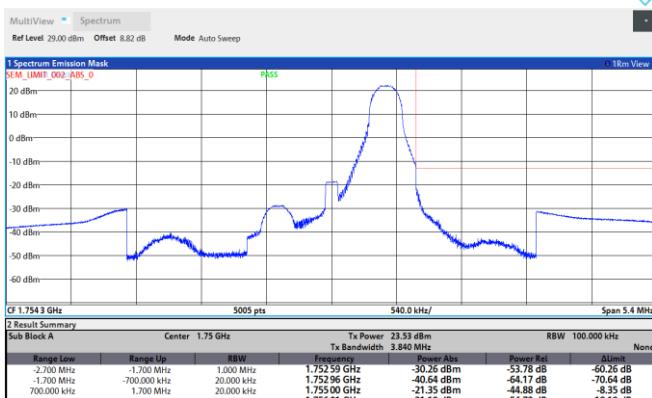


Band4-1.4MHz-16QAM-20393-6RB#0



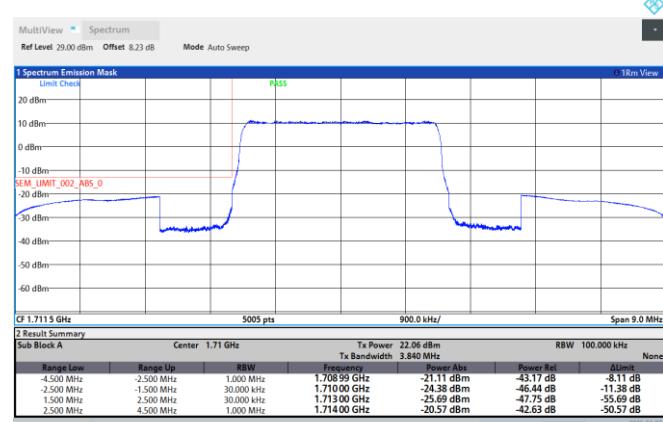
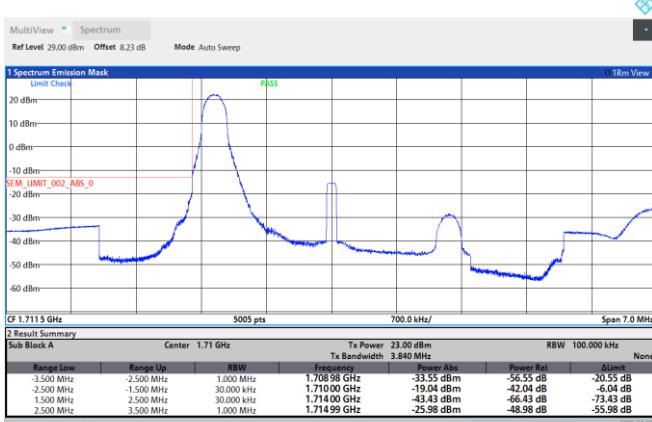


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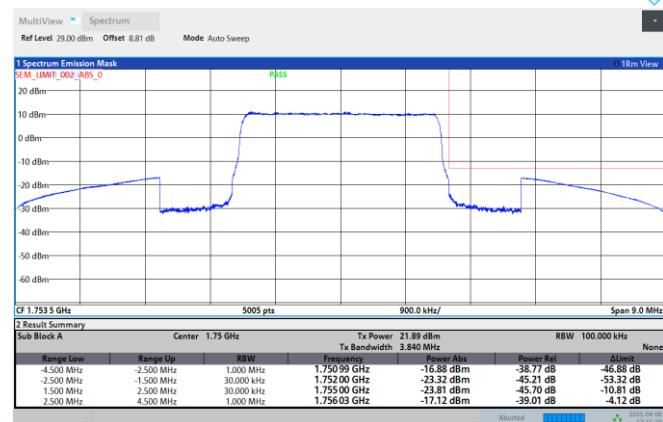
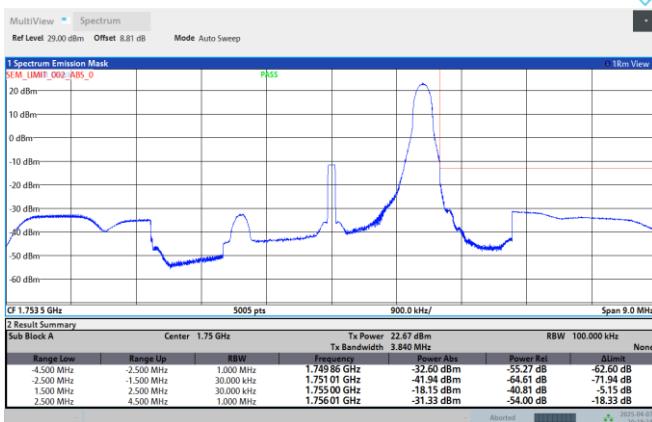
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### Band4-3MHz-QPSK-19965-15RB#0



### Band4-3MHz-QPSK-20385-1RB#14

### Band4-3MHz-QPSK-20385-15RB#0

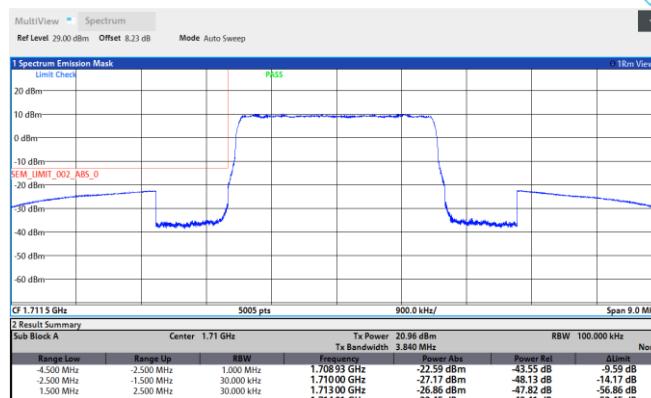
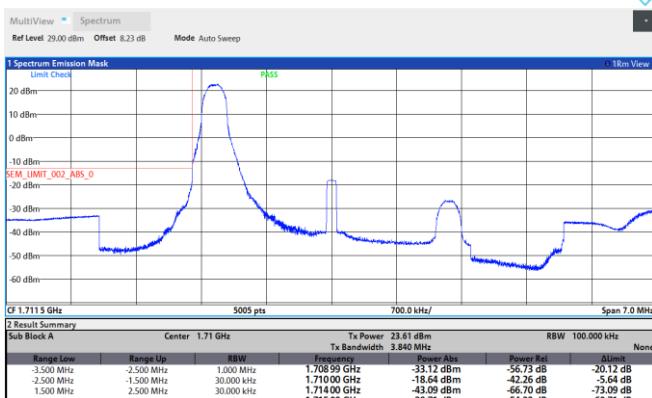


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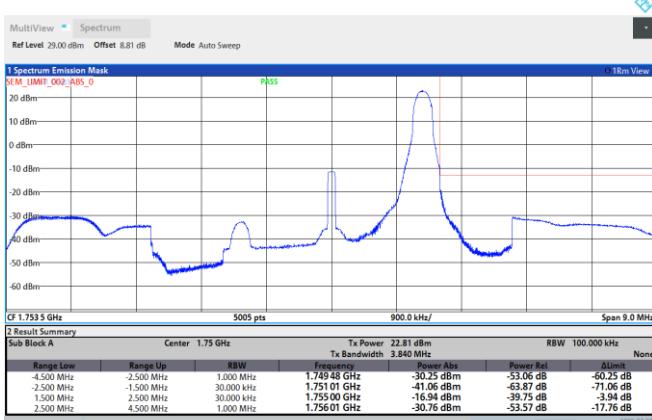
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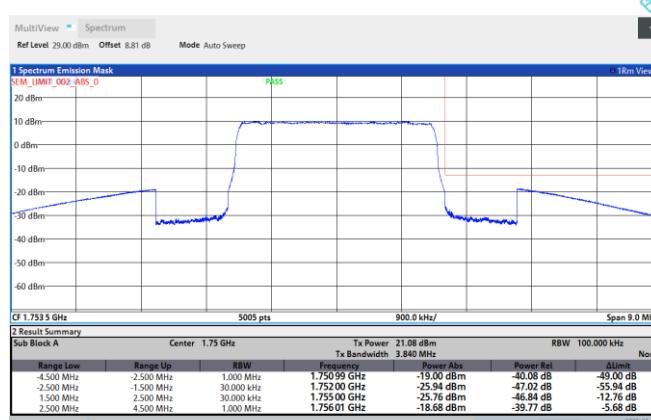
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VERITAS Test Report No.: PSU-QSU2503280115RI01



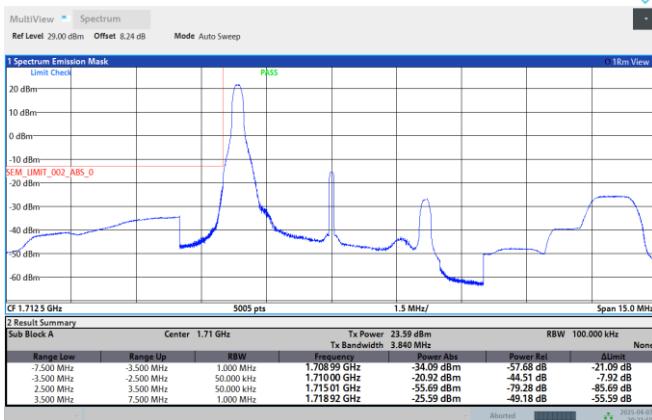
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### Band4-3MHz-16QAM-20385-15RB#0



### Band4-5MHz-QPSK-19975-1RB#0



### Band4-5MHz-QPSK-19975-25RB#0

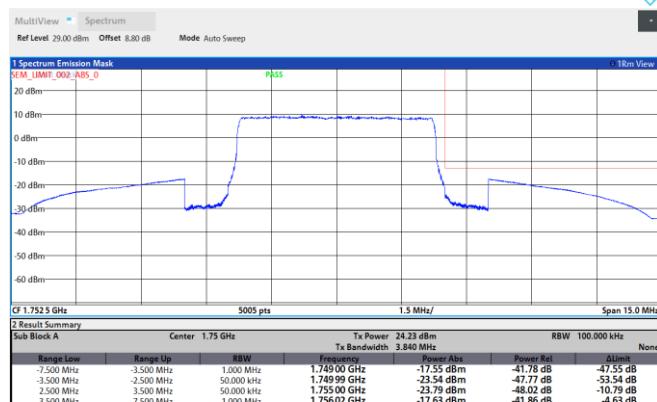
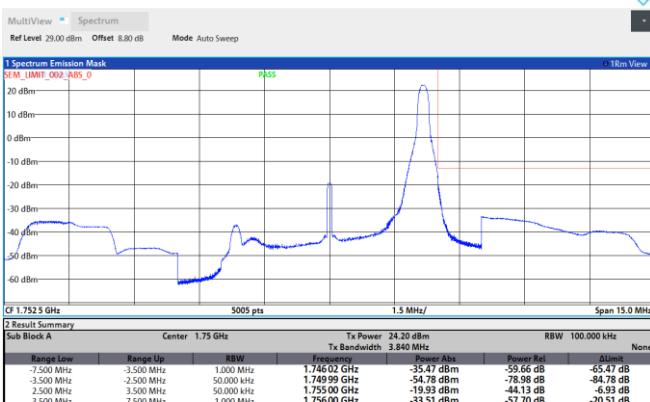
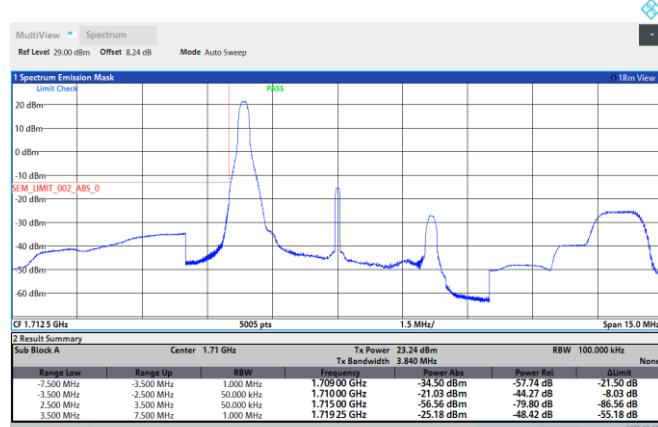
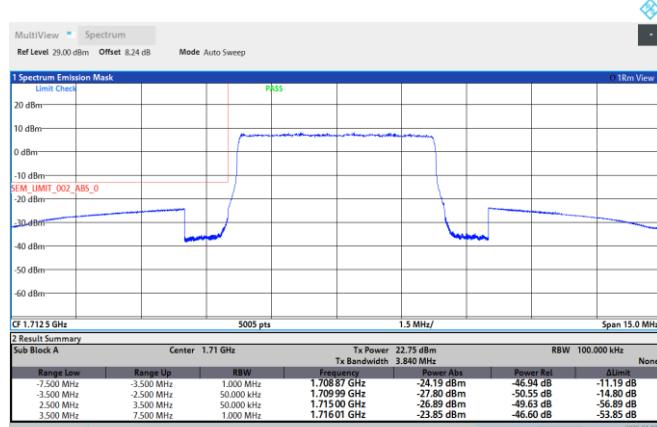
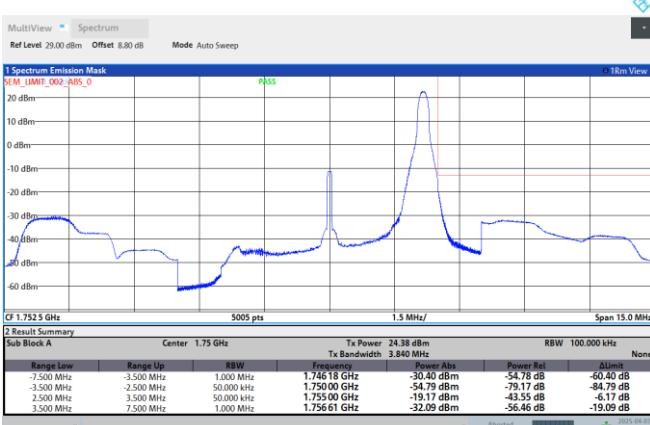
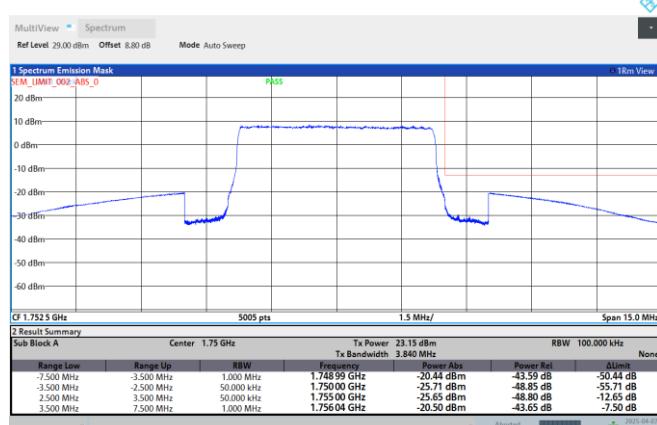


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### Band4-5MHz-QPSK-20375-25RB#0

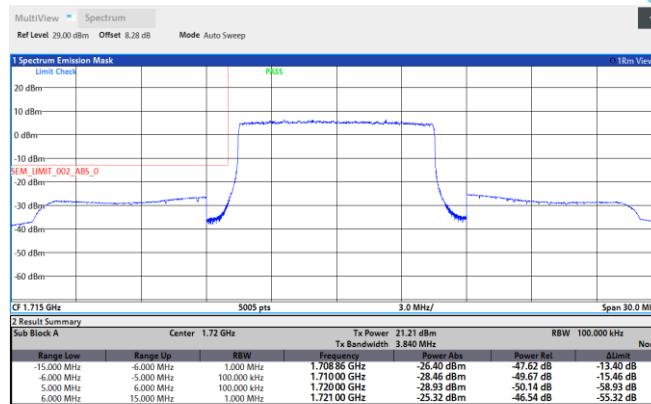
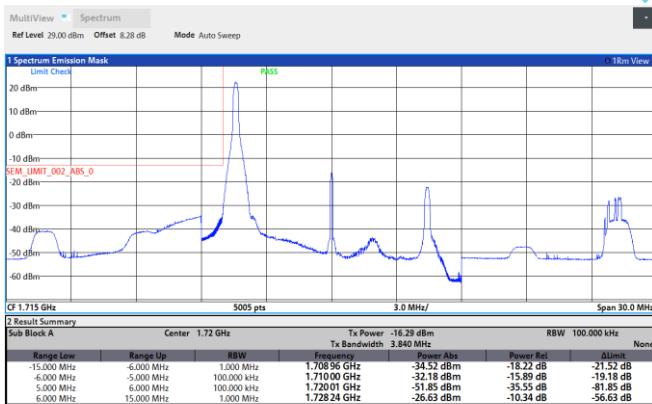
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Test Report No.: PSU-QSU2503280115RI01

**Band4-5MHz-16QAM-19975-1RB#0****Band4-5MHz-16QAM-19975-25RB#0****Band4-5MHz-16QAM-20375-1RB#24****Band4-5MHz-16QAM-20375-25RB#0****Band4-10MHz-QPSK-20000-1RB#0****Band4-10MHz-QPSK-20000-50RB#0**

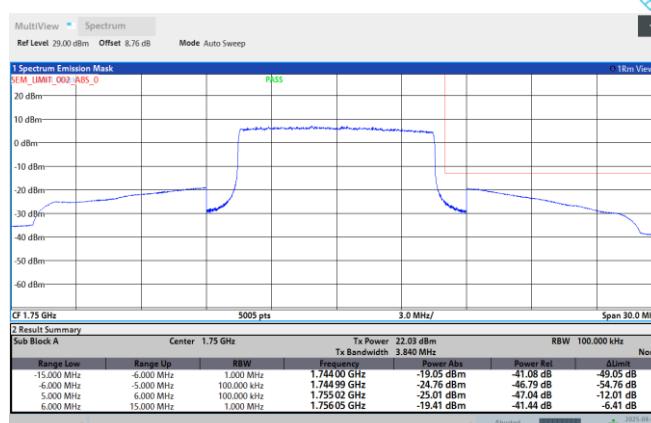
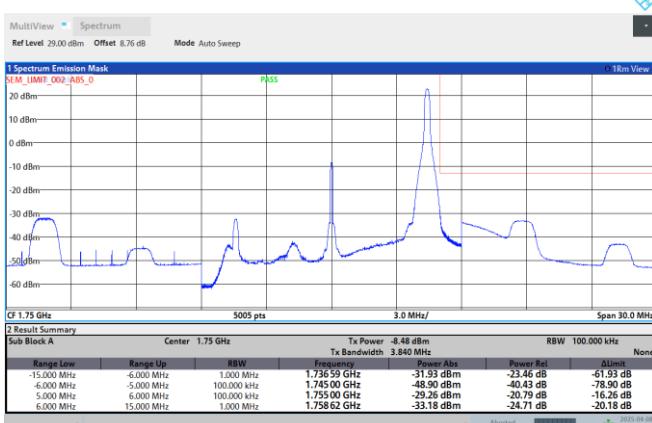


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VERITAS Test Report No.: PSU-QSU2503280115RI01



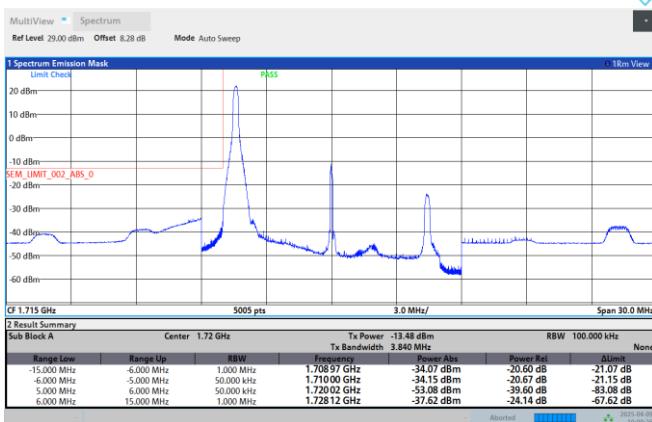
Band4-10MHz-QPSK-20350-1RB#49

Band4-10MHz-QPSK-20350-50RB#0



Band4-10MHz-16QAM-20000-1RB#0

Band4-10MHz-16QAM-20000-27RB#0

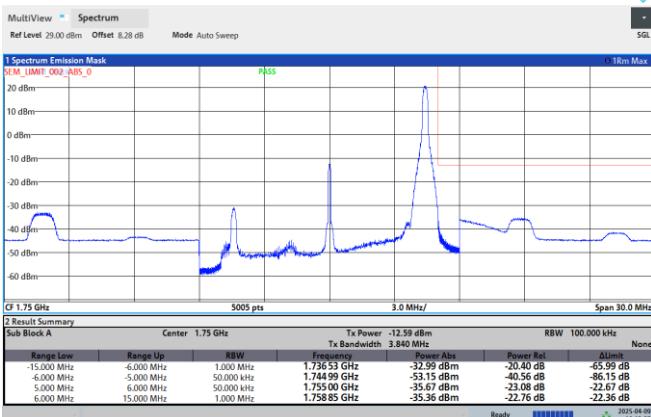


Band4-10MHz-16QAM-20350-1RB#49

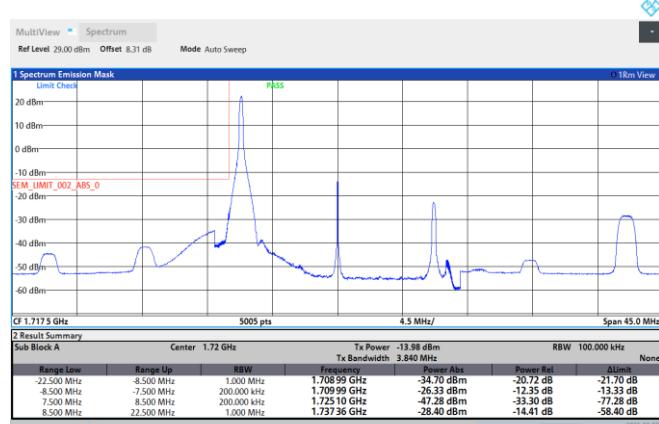
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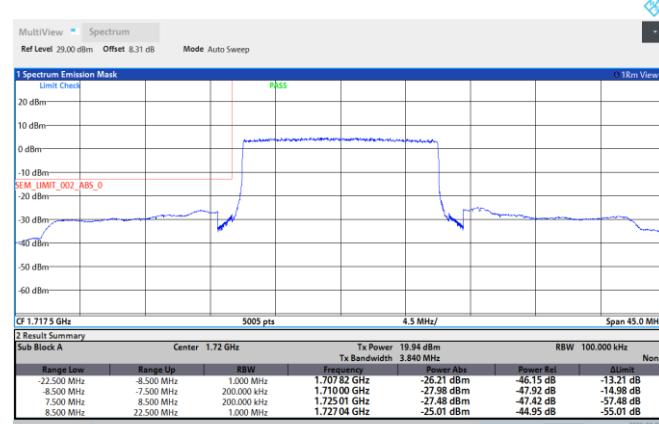
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VERITAS Test Report No.: PSU-QSU2503280115RI01



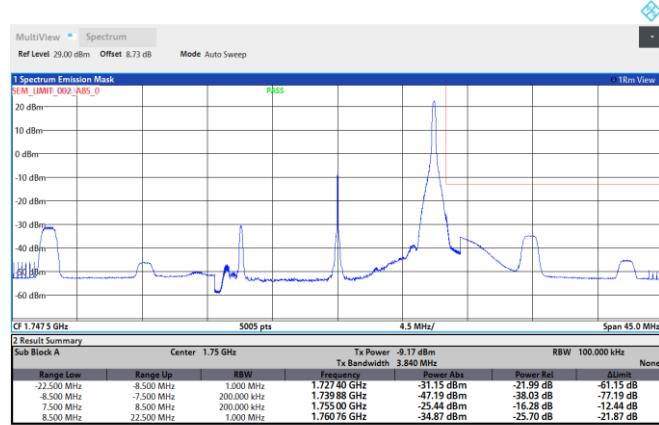
Band4-15MHz-QPSK-20025-1RB#0



Band4-15MHz-QPSK-20025-75RB#0

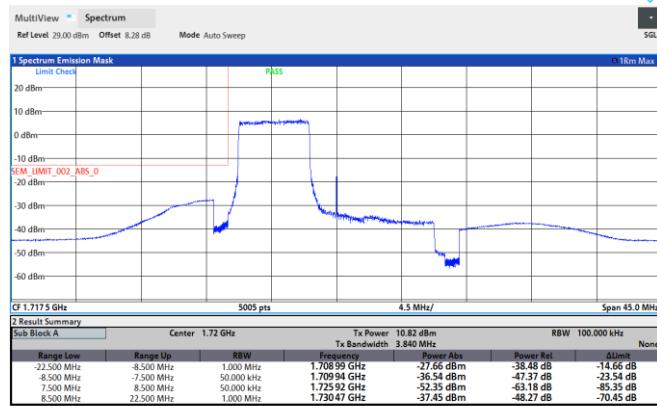
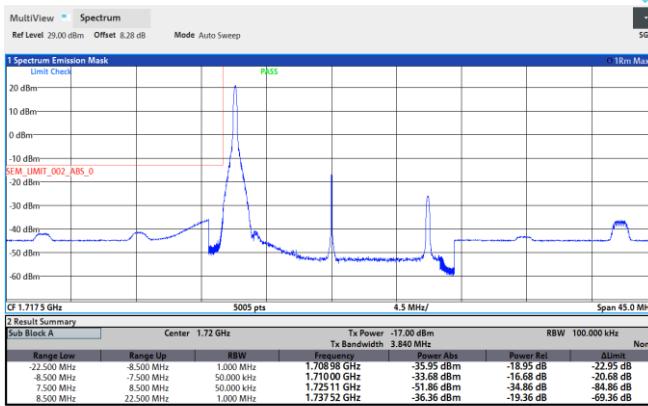


Band4-15MHz-QPSK-20325-1RB#74



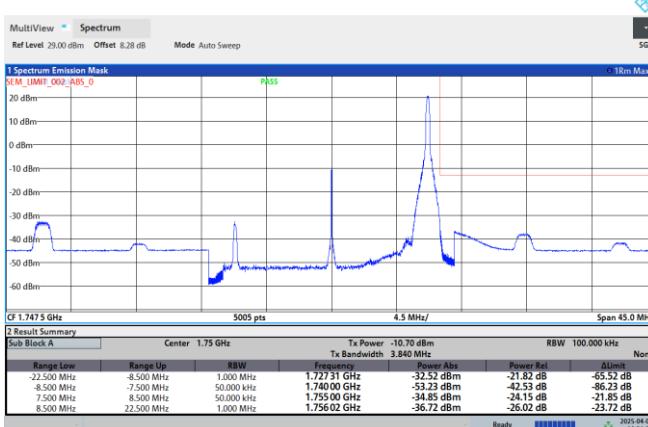
Band4-15MHz-16QAM-20025-1RB#0

Band4-15MHz-16QAM-20025-75RB#0



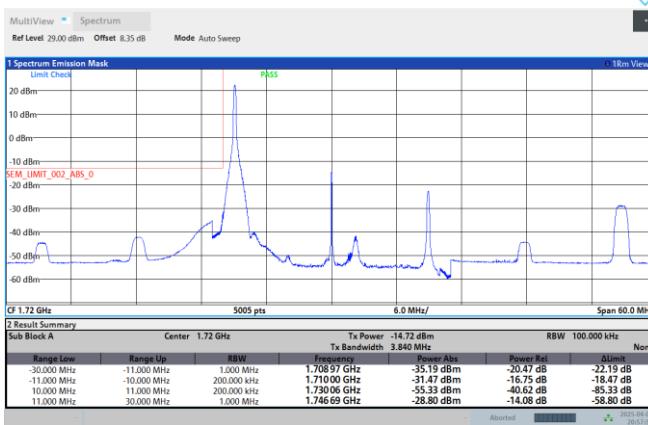
### Band4-15MHz-16QAM-20325-1RB#74

### Band4-15MHz-16QAM-20325-27RB#48



### Band4-20MHz-QPSK-20050-1RB#0

### Band4-20MHz-QPSK-20050-100RB#0

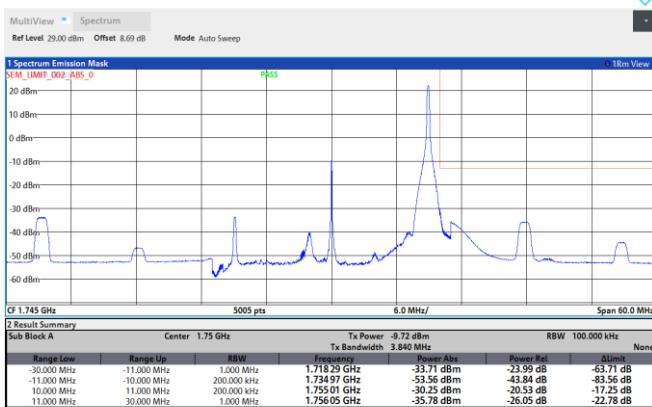


### Band4-20MHz-QPSK-20300-1RB#99

### Band4-20MHz-QPSK-20300-100RB#0

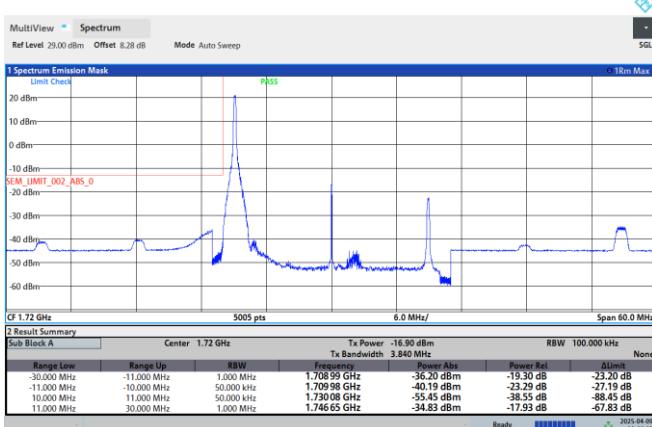


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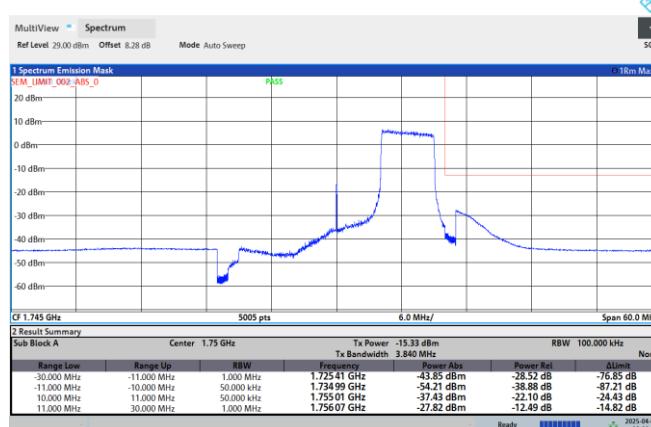
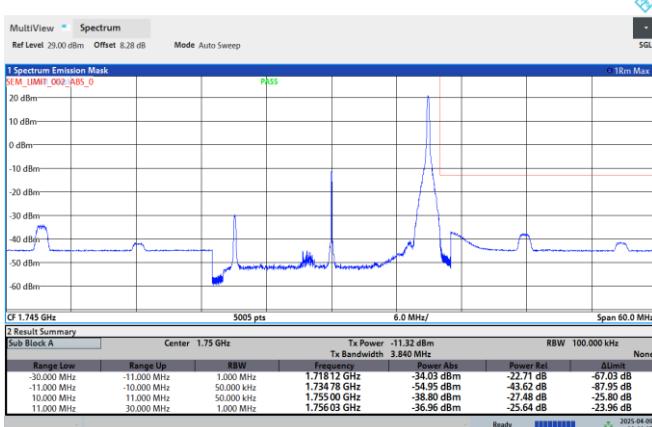
Band4-20MHz-16QAM-20050-1RB#0

Band4-20MHz-16QAM-20050-27RB#0



Band4-20MHz-16QAM-20300-1RB#99

Band4-20MHz-16QAM-20300-27RB#73



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## CONDUCTED SPURIOUS EMISSION

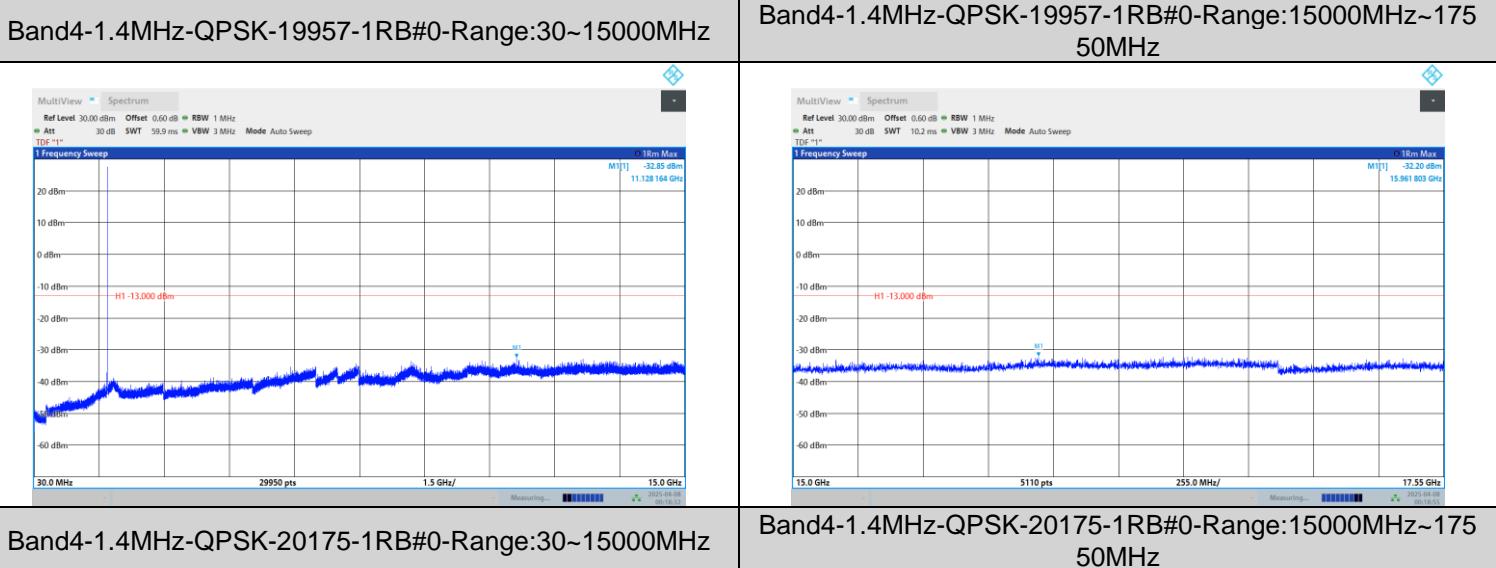
### Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
Band4	1.4MHz	QPSK	19957	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	1.4MHz	QPSK	19957	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	1.4MHz	QPSK	20175	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	1.4MHz	QPSK	20393	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	1.4MHz	QPSK	20393	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	1.4MHz	QPSK	20393	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	3MHz	QPSK	19965	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	3MHz	QPSK	19965	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	3MHz	QPSK	20175	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	3MHz	QPSK	20175	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	3MHz	QPSK	20385	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	3MHz	QPSK	20385	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	5MHz	QPSK	19975	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	5MHz	QPSK	19975	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	5MHz	QPSK	20175	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	5MHz	QPSK	20175	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	5MHz	QPSK	20375	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	5MHz	QPSK	20375	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	10MHz	QPSK	20000	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	10MHz	QPSK	20000	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	10MHz	QPSK	20175	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	10MHz	QPSK	20175	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	10MHz	QPSK	20350	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	10MHz	QPSK	20350	1RB#0	Range:15000~17550MHz	See Graph	PASS



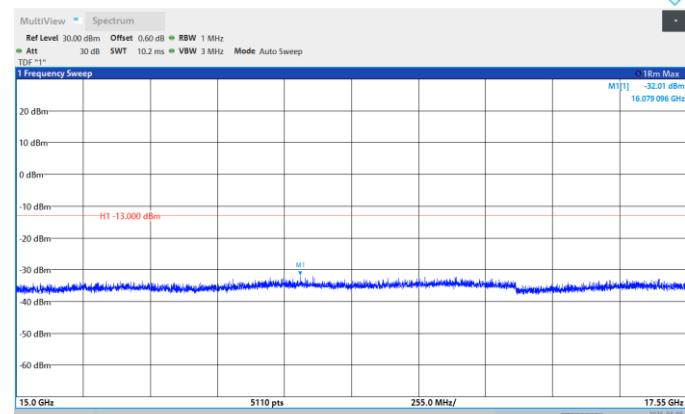
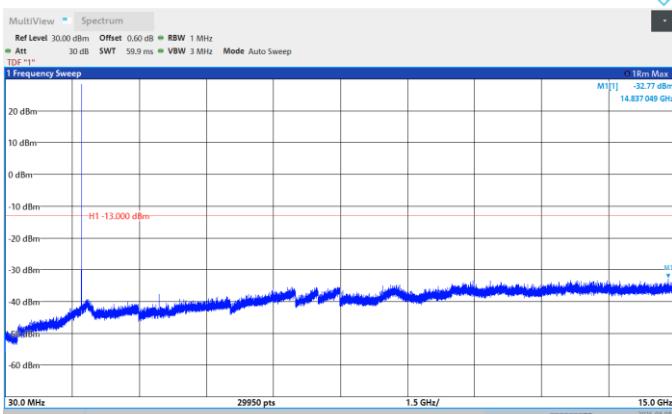
Band4	15MHz	QPSK	20025	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	15MHz	QPSK	20025	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	15MHz	QPSK	20175	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	15MHz	QPSK	20175	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	15MHz	QPSK	20325	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	15MHz	QPSK	20325	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	20MHz	QPSK	20050	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	20MHz	QPSK	20050	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	20MHz	QPSK	20175	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	20MHz	QPSK	20175	1RB#0	Range:15000~17550MHz	See Graph	PASS
Band4	20MHz	QPSK	20300	1RB#0	Range:30~15000MHz	See Graph	PASS
Band4	20MHz	QPSK	20300	1RB#0	Range:15000~17550MHz	See Graph	PASS

## Test Graphs



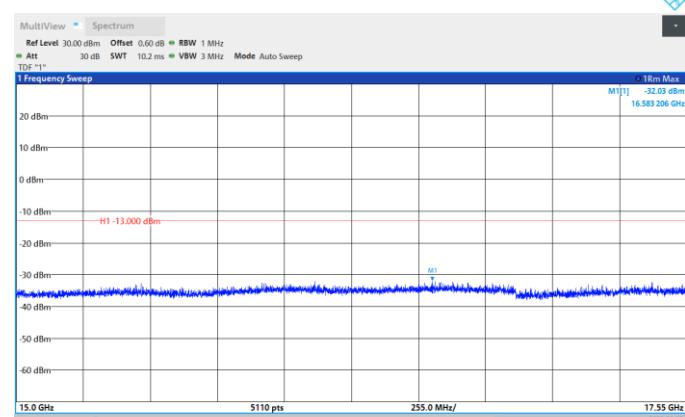
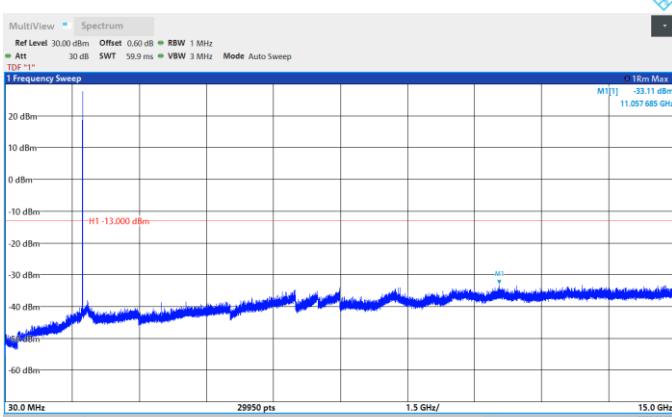
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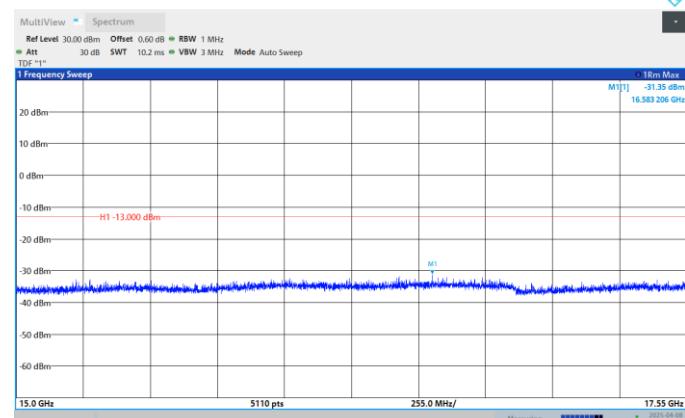
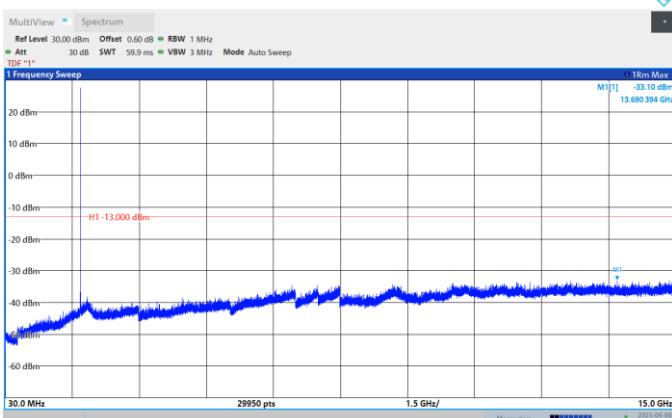
Band4-1.4MHz-QPSK-20393-1RB#0-Range:30~15000MHz

Band4-1.4MHz-QPSK-20393-1RB#0-Range:15000MHz~1750MHz



Band4-3MHz-QPSK-19965-1RB#0-Range:30~15000MHz

Band4-3MHz-QPSK-19965-1RB#0-Range:15000MHz~17550MHz

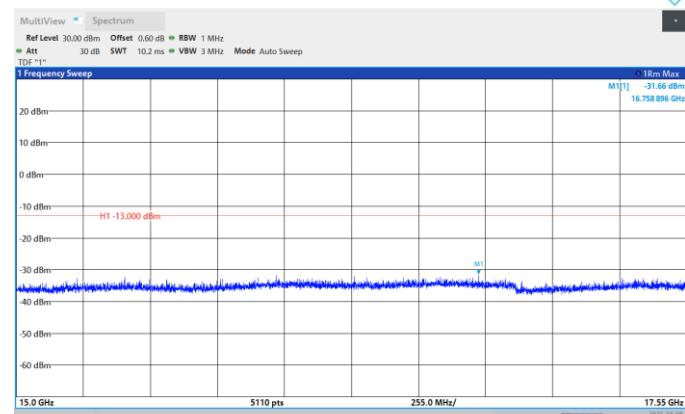
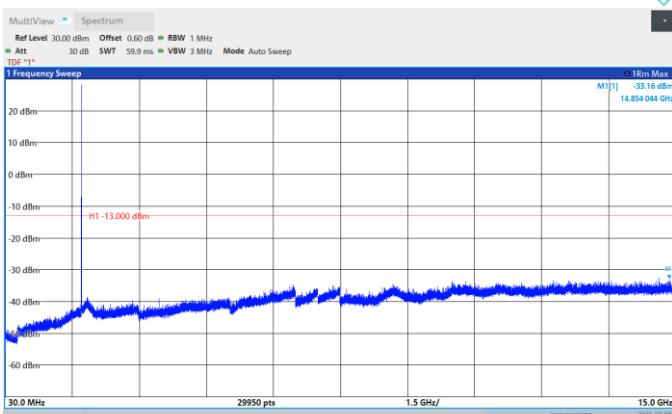


Band4-3MHz-QPSK-20175-1RB#0-Range:30~15000MHz

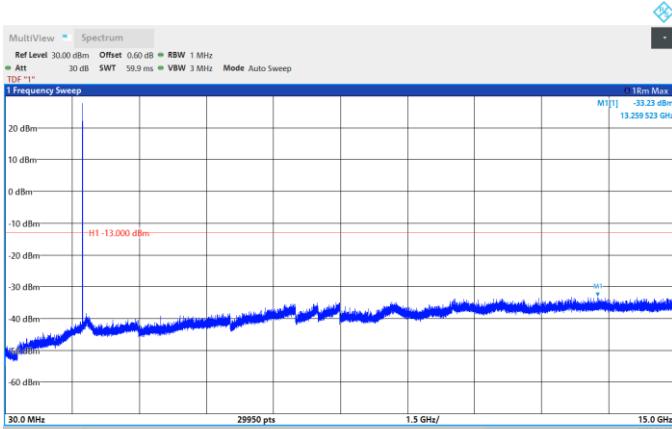
Band4-3MHz-QPSK-20175-1RB#0-Range:15000MHz~17550MHz

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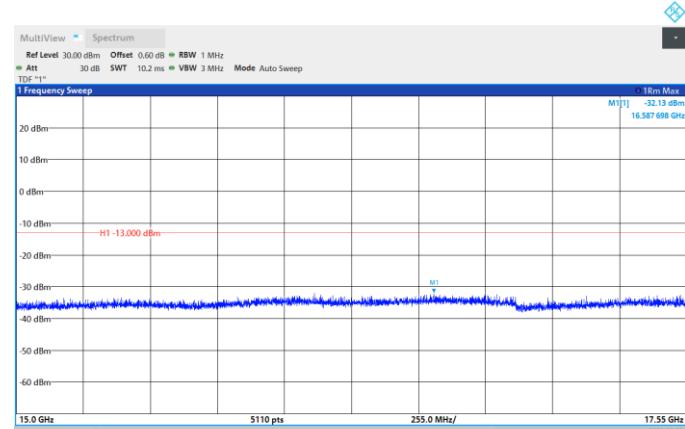
Test Report No.: PSU-QSU2503280115RI01



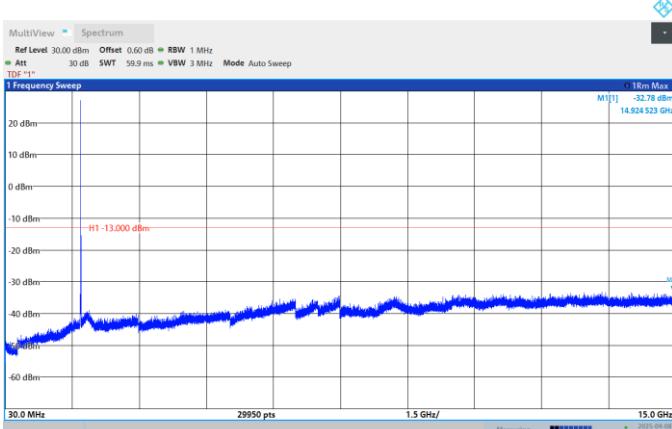
### Band4-3MHz-QPSK-20385-1RB#0-Range:30~15000MHz



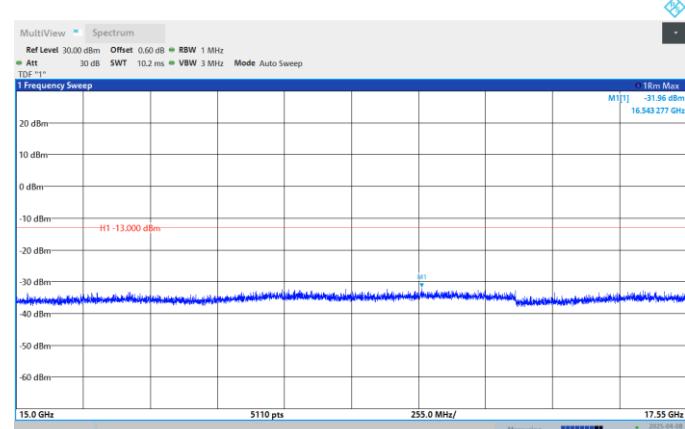
### Band4-3MHz-QPSK-20385-1RB#0-Range:15000MHz~17550 MHz



### Band4-5MHz-QPSK-19975-1RB#0-Range:30~15000MHz



### Band4-5MHz-QPSK-19975-1RB#0-Range:15000MHz~17550 MHz

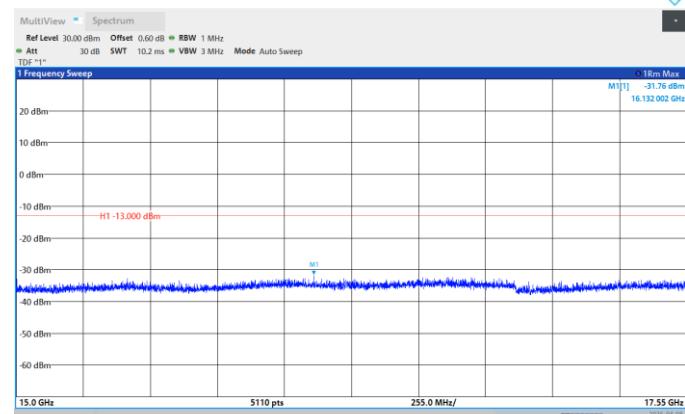
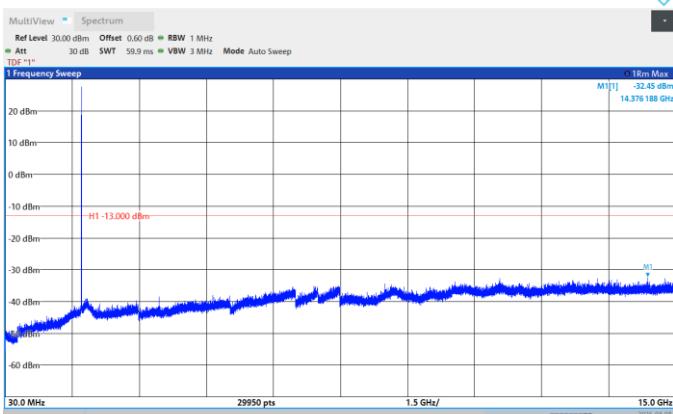


### Band4-5MHz-QPSK-20175-1RB#0-Range:30~15000MHz

### Band4-5MHz-QPSK-20175-1RB#0-Range:15000MHz~17550 MHz

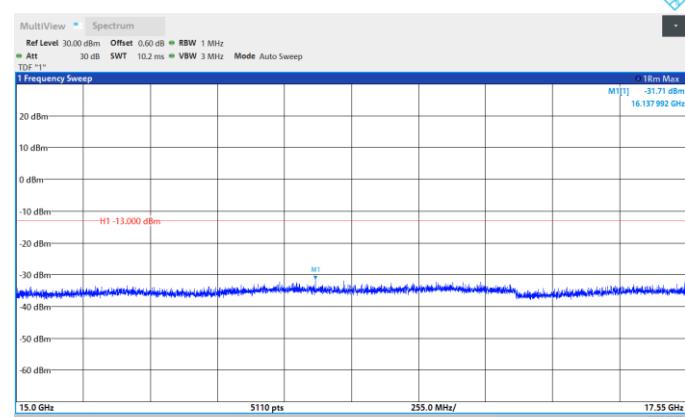
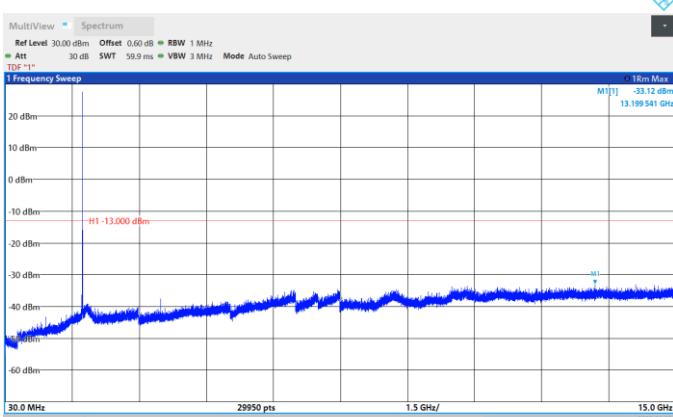
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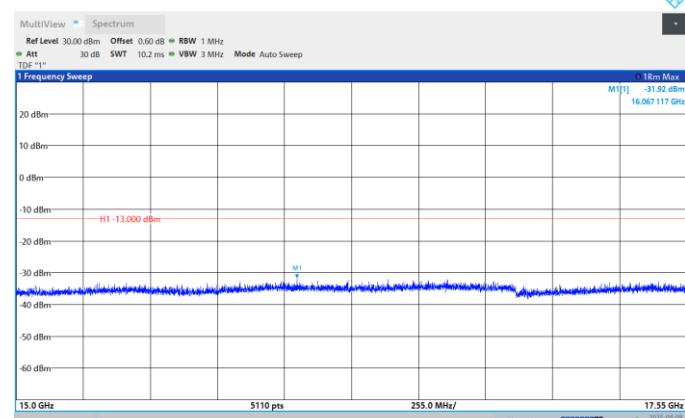
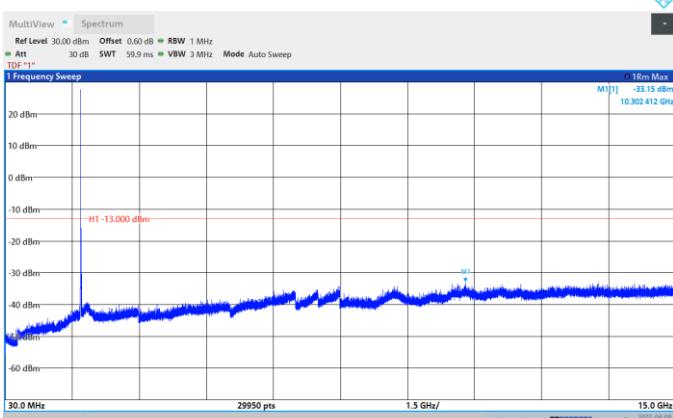
Band4-5MHz-QPSK-20375-1RB#0-Range:30~15000MHz

Band4-5MHz-QPSK-20375-1RB#0-Range:15000MHz~17550 MHz



Band4-10MHz-QPSK-20000-1RB#0-Range:30~15000MHz

Band4-10MHz-QPSK-20000-1RB#0-Range:15000MHz~17550 MHz

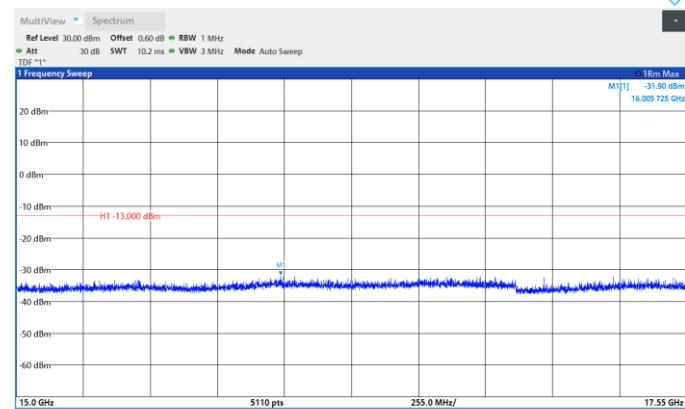
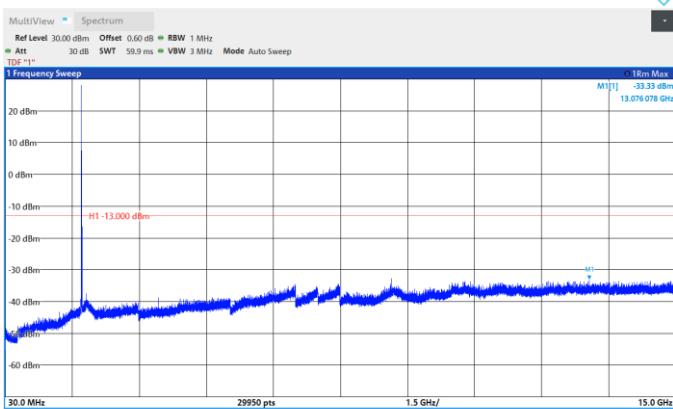


Band4-10MHz-QPSK-20175-1RB#0-Range:30~15000MHz

Band4-10MHz-QPSK-20175-1RB#0-Range:15000MHz~17550 MHz

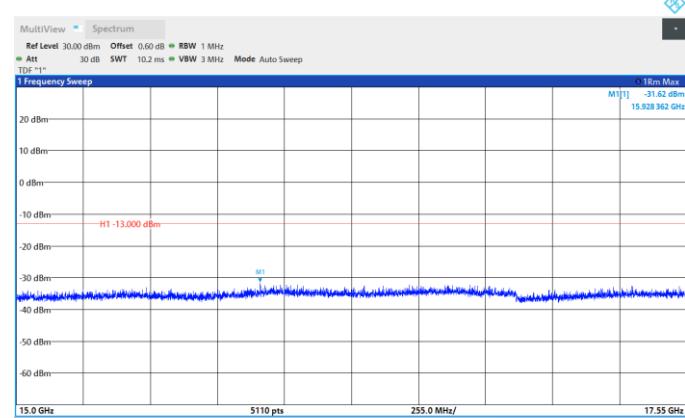
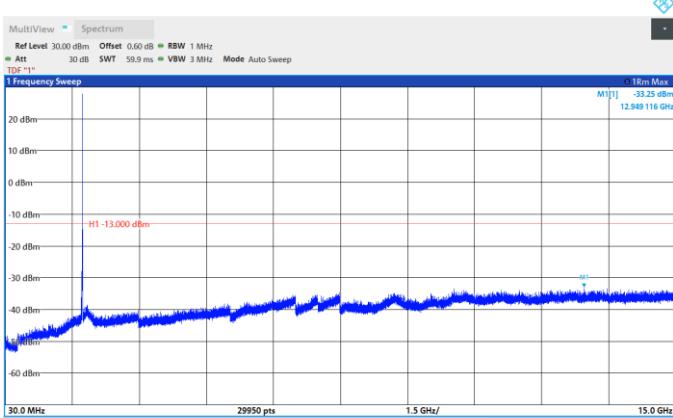
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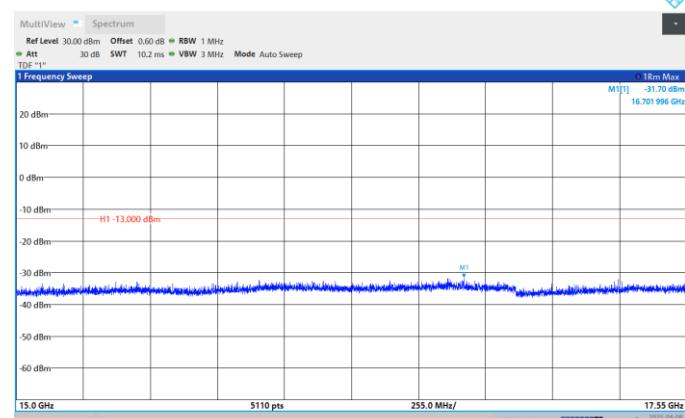
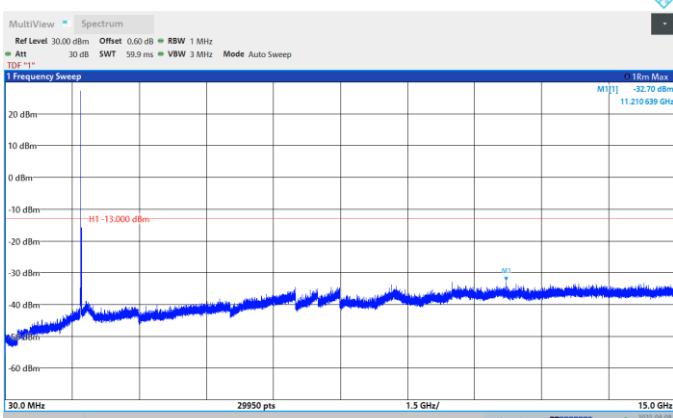
Band4-10MHz-QPSK-20350-1RB#0-Range:30~15000MHz

Band4-10MHz-QPSK-20350-1RB#0-Range:15000MHz~1755 0MHz



Band4-15MHz-QPSK-20025-1RB#0-Range:30~15000MHz

Band4-15MHz-QPSK-20025-1RB#0-Range:15000MHz~1755 0MHz

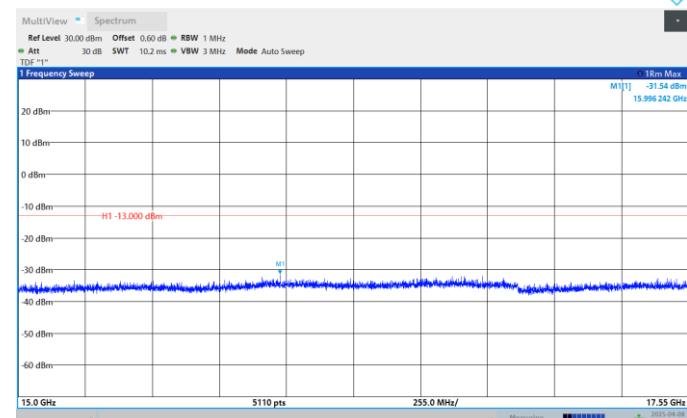
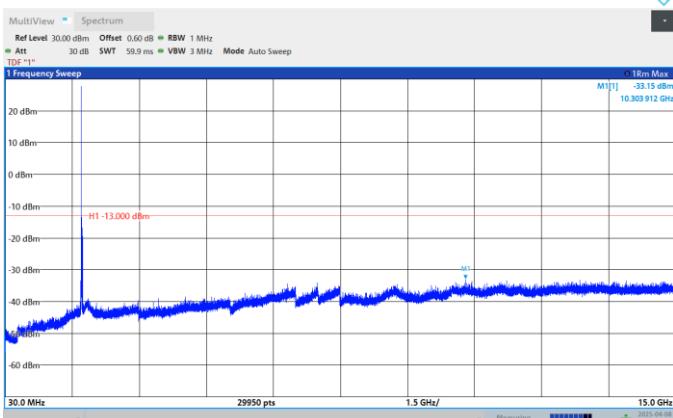


Band4-15MHz-QPSK-20175-1RB#0-Range:30~15000MHz

Band4-15MHz-QPSK-20175-1RB#0-Range:15000MHz~1755 0MHz

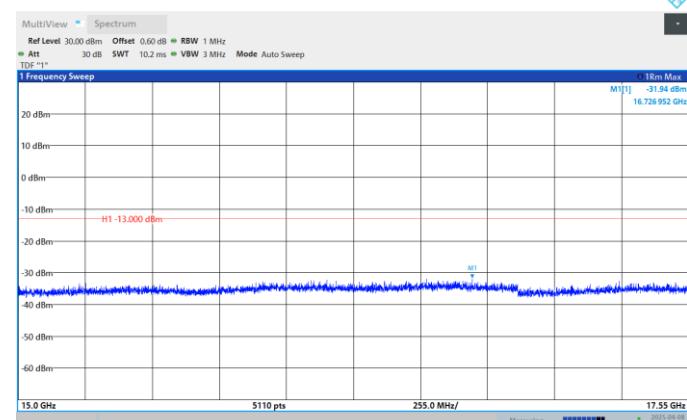
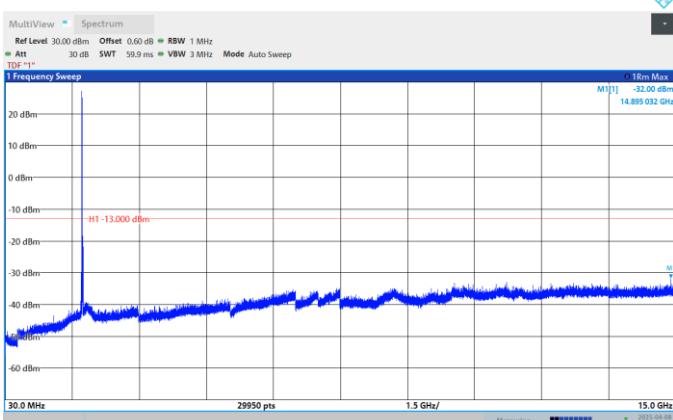
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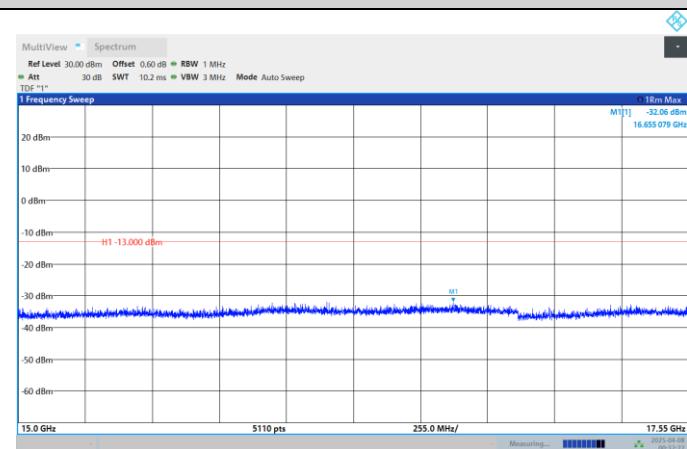
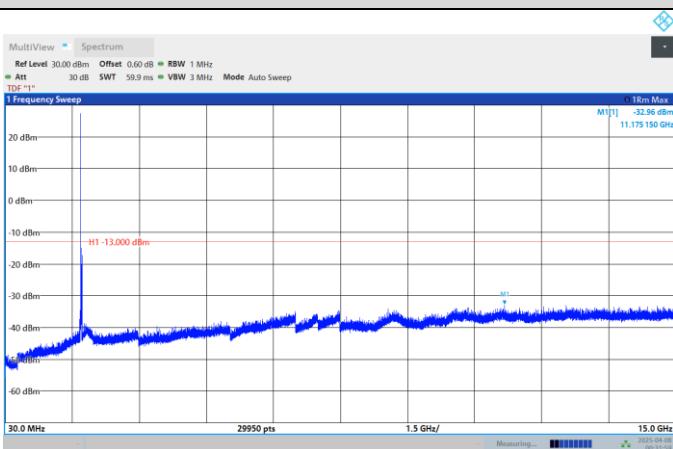
Band4-15MHz-QPSK-20325-1RB#0-Range:30~15000MHz

Band4-15MHz-QPSK-20325-1RB#0-Range:15000MHz~1755 0MHz



Band4-20MHz-QPSK-20050-1RB#0-Range:30~15000MHz

Band4-20MHz-QPSK-20050-1RB#0-Range:15000MHz~1755 0MHz



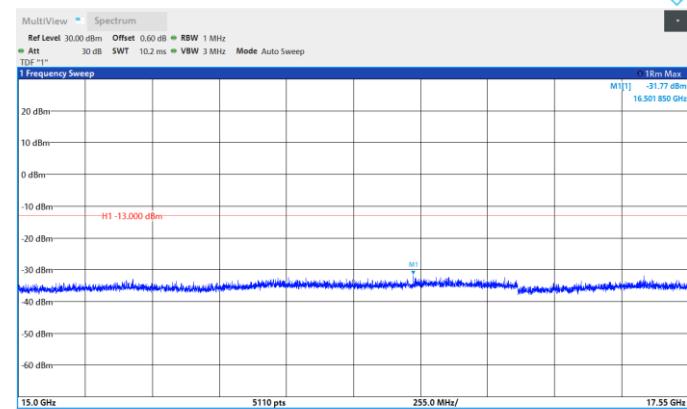
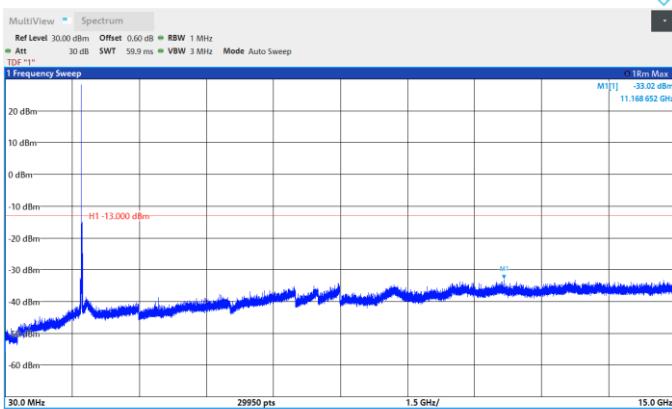
Band4-20MHz-QPSK-20175-1RB#0-Range:30~15000MHz

Band4-20MHz-QPSK-20175-1RB#0-Range:15000MHz~1755 0MHz



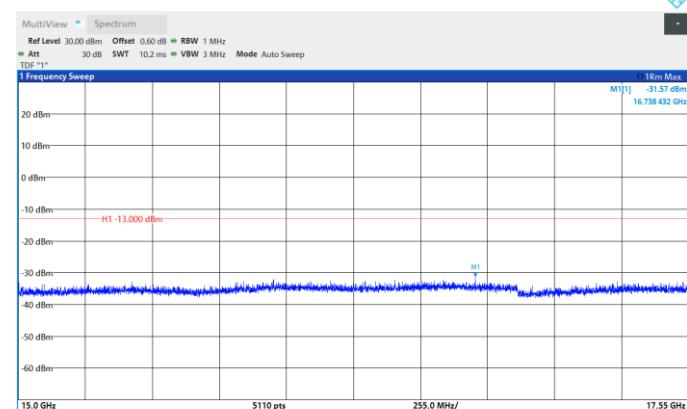
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VERITAS

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Band4-20MHz-QPSK-20300-1RB#0-Range:30~15000MHz

Band4-20MHz-QPSK-20300-1RB#0-Range:15000MHz~1755 0MHz



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## FREQUENCY STABILITY

### Test Result

Voltage									
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band4	20MHz	QPSK	20050	100RB#0	LV	NT	-33.42	-0.0194	PASS
Band4	20MHz	QPSK	20050	100RB#0	NV	NT	-16.53	-0.0096	PASS
Band4	20MHz	QPSK	20050	100RB#0	HV	NT	-8.32	-0.0048	PASS
Band4	20MHz	QPSK	20175	100RB#0	LV	NT	-27.01	-0.0156	PASS
Band4	20MHz	QPSK	20175	100RB#0	NV	NT	27.45	0.0158	PASS
Band4	20MHz	QPSK	20175	100RB#0	HV	NT	8.81	0.0051	PASS
Band4	20MHz	QPSK	20300	100RB#0	LV	NT	26.83	0.0154	PASS
Band4	20MHz	QPSK	20300	100RB#0	NV	NT	-16.35	-0.0094	PASS
Band4	20MHz	QPSK	20300	100RB#0	HV	NT	16.41	0.0094	PASS

Temperature									
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Verdict
Band4	20MHz	QPSK	20050	100RB#0	NV	-30	-33.94	-0.0197	PASS
Band4	20MHz	QPSK	20050	100RB#0	NV	-20	9.16	0.0053	PASS
Band4	20MHz	QPSK	20050	100RB#0	NV	-10	-22.83	-0.0133	PASS
Band4	20MHz	QPSK	20050	100RB#0	NV	0	-22.02	-0.0128	PASS
Band4	20MHz	QPSK	20050	100RB#0	NV	10	1.71	0.0010	PASS
Band4	20MHz	QPSK	20050	100RB#0	NV	20	15.35	0.0089	PASS
Band4	20MHz	QPSK	20050	100RB#0	NV	30	-23.57	-0.0137	PASS
Band4	20MHz	QPSK	20050	100RB#0	NV	40	34.68	0.0202	PASS
Band4	20MHz	QPSK	20050	100RB#0	NV	50	24.97	0.0145	PASS
Band4	20MHz	QPSK	20175	100RB#0	NV	-30	8.62	0.0050	PASS
Band4	20MHz	QPSK	20175	100RB#0	NV	-20	-29.09	-0.0168	PASS
Band4	20MHz	QPSK	20175	100RB#0	NV	-10	-19.84	-0.0115	PASS
Band4	20MHz	QPSK	20175	100RB#0	NV	0	-0.19	-0.0001	PASS
Band4	20MHz	QPSK	20175	100RB#0	NV	10	10.30	0.0059	PASS
Band4	20MHz	QPSK	20175	100RB#0	NV	20	5.46	0.0032	PASS
Band4	20MHz	QPSK	20175	100RB#0	NV	30	-3.58	-0.0021	PASS
Band4	20MHz	QPSK	20175	100RB#0	NV	40	-14.58	-0.0084	PASS
Band4	20MHz	QPSK	20175	100RB#0	NV	50	-19.76	-0.0114	PASS
Band4	20MHz	QPSK	20300	100RB#0	NV	-30	5.56	0.0032	PASS
Band4	20MHz	QPSK	20300	100RB#0	NV	-20	10.78	0.0062	PASS
Band4	20MHz	QPSK	20300	100RB#0	NV	-10	-3.41	-0.0020	PASS
Band4	20MHz	QPSK	20300	100RB#0	NV	0	17.90	0.0103	PASS
Band4	20MHz	QPSK	20300	100RB#0	NV	10	-13.35	-0.0077	PASS
Band4	20MHz	QPSK	20300	100RB#0	NV	20	-34.70	-0.0199	PASS



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Band4	20MHz	QPSK	20300	100RB#0	NV	30	-15.36	-0.0088	PASS
Band4	20MHz	QPSK	20300	100RB#0	NV	40	1.57	0.0009	PASS
Band4	20MHz	QPSK	20300	100RB#0	NV	50	-34.07	-0.0195	PASS

### MAX Deviation calculation

Frequency Stability	Frequency (MHz)	Limit Line(MHz)	Result
$f_L -  \text{MAX}(\Delta f) $	1711.0390	$\geq 1710$	PASS
$f_H +  \text{MAX}(\Delta f) $	1753.9275	$\leq 1755$	

- 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.  $|\text{MAX}(\Delta f)| = 34.70 \text{ Hz}$ .

--END--