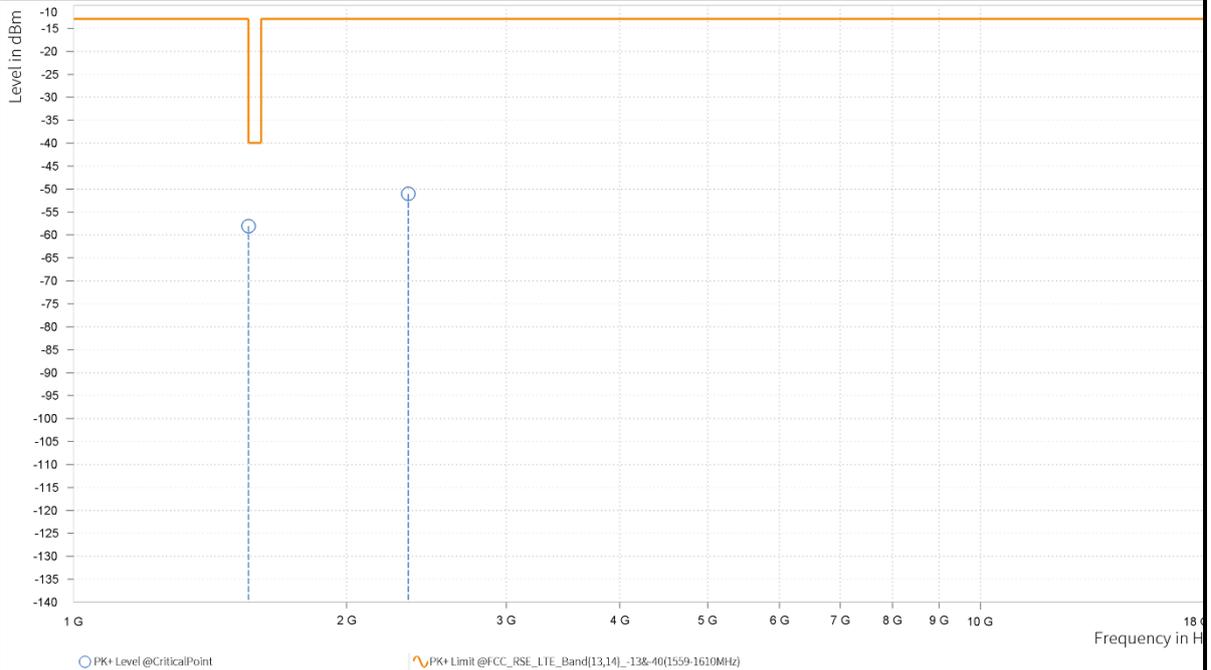




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 23230
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	120Vac 60HZ	<b>TESTED BY</b>	Hanwen Xu

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,559.500	-58.07	-40.00	18.07	12.73	H	0.9	2.00
3	2,339.250	-51.03	-13.00	38.03	19.58	H	1	1.00

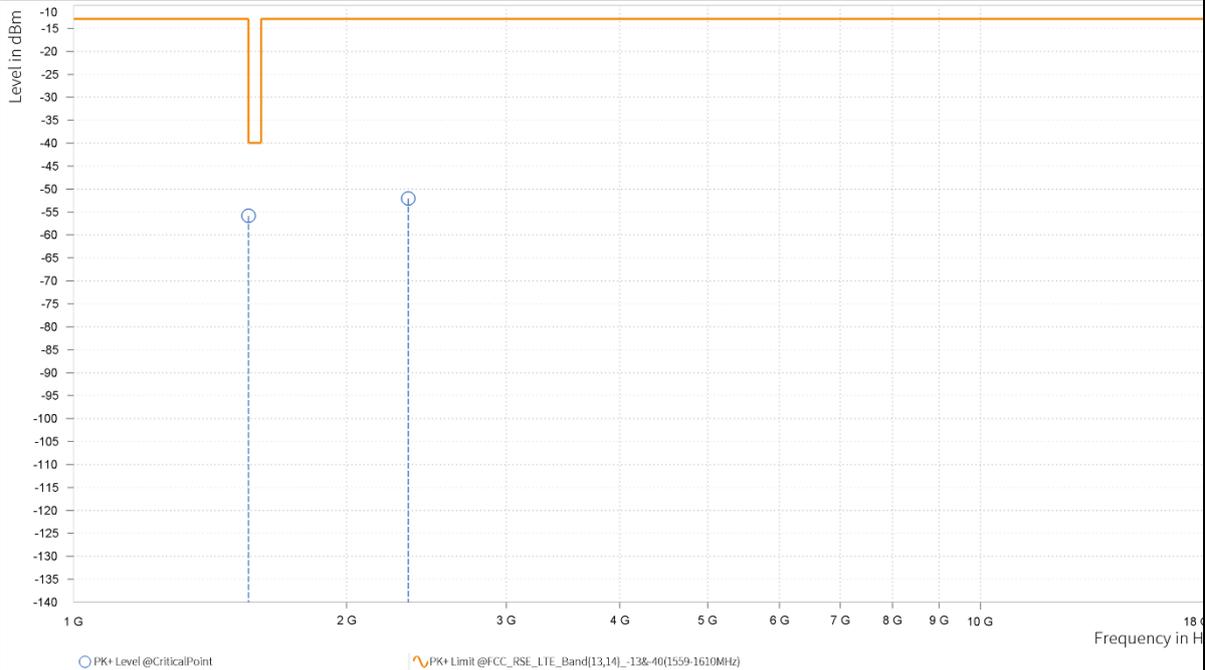




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 23230
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	120Vac 60HZ	<b>TESTED BY</b>	Hanwen Xu

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,559.500	-55.84	-40.00	15.84	14.12	V	118.8	2.00
3	2,339.250	-52.05	-13.00	39.05	19.98	V	172.6	2.00

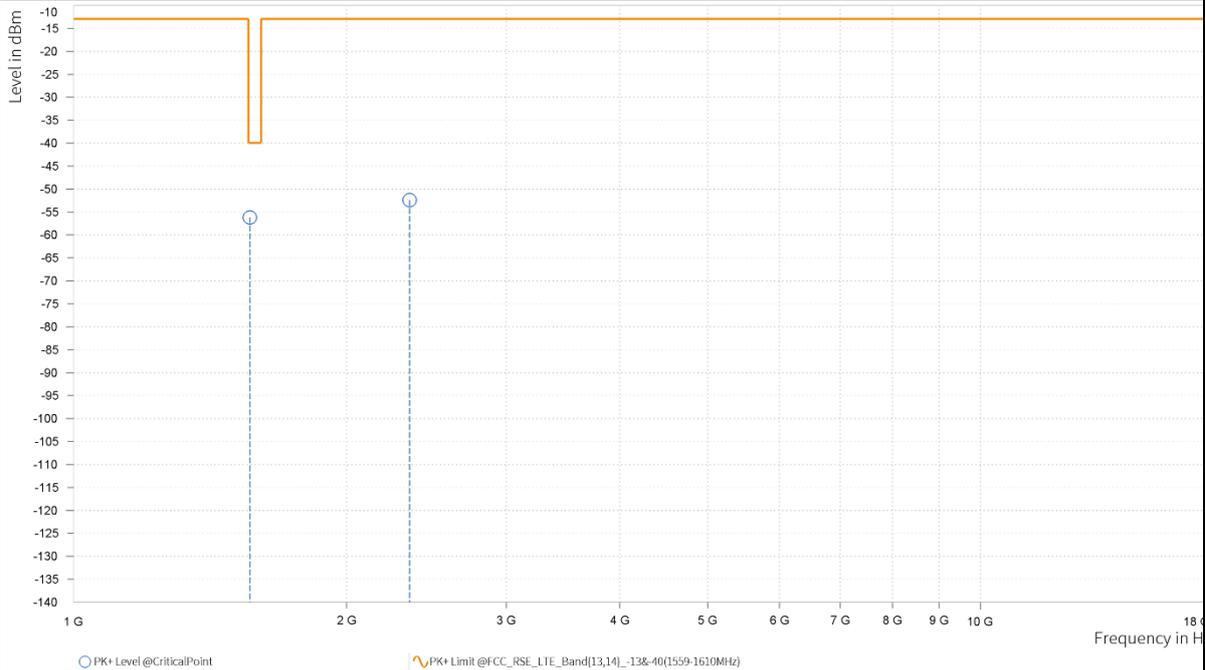




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 23255
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	120Vac 60HZ	<b>TESTED BY</b>	Hanwen Xu

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,564.500	-56.16	-40.00	16.16	12.68	H	1.8	2.00
3	2,346.750	-52.39	-13.00	39.39	19.81	H	256.1	1.00

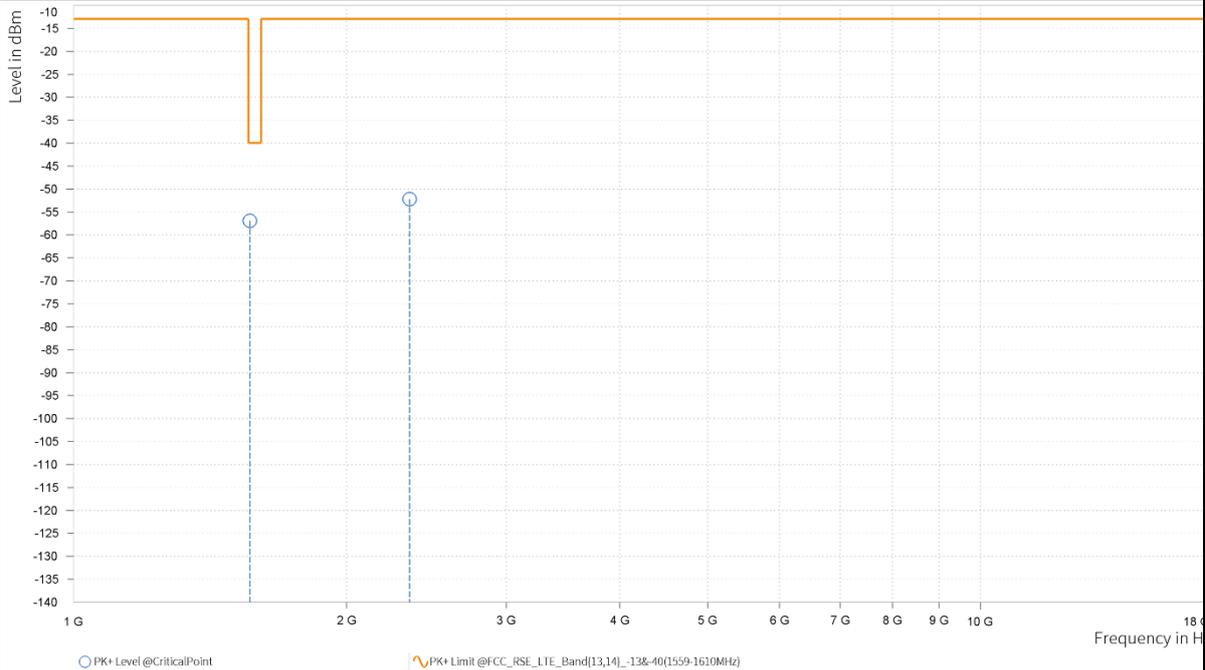




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 23255
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	120Vac 60HZ	<b>TESTED BY</b>	Hanwen Xu

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,564.500	-56.91	-40.00	16.91	14.10	V	326.2	2.00
3	2,346.750	-52.19	-13.00	39.19	20.01	V	1.3	2.00



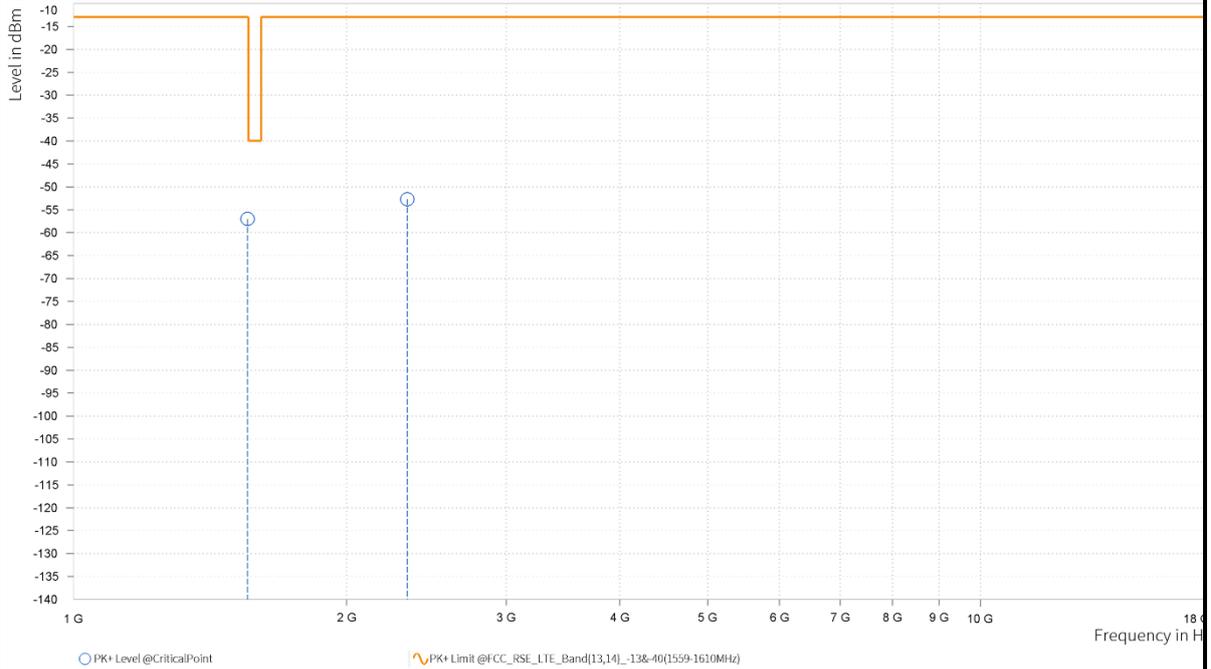


**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF03

<b>CHANNEL BANDWIDTH</b>	10MHz / QPSK	<b>MODE</b>	TX channel 23255
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	120Vac 60HZ	<b>TESTED BY</b>	Hanwen Xu

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-57.01	-13.00	44.01	12.79	H	118.2	2.00
3	2,332.500	-52.68	-13.00	39.68	19.37	H	312.6	1.00

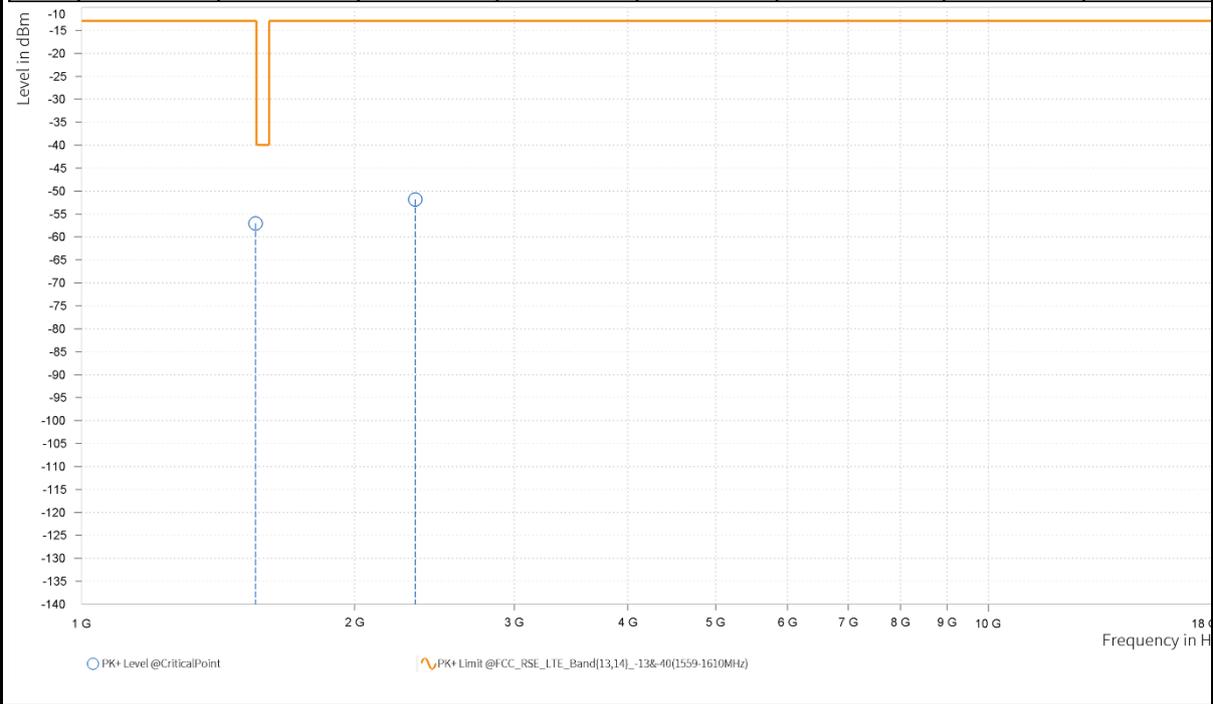




<b>CHANNEL BANDWIDTH</b>	10MHz / QPSK	<b>MODE</b>	TX channel 23255
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	120Vac 60HZ	<b>TESTED BY</b>	Hanwen Xu

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-57.04	-13.00	44.04	14.13	V	359	2.00
3	2,332.500	-51.81	-13.00	38.81	19.96	V	297.1	2.00

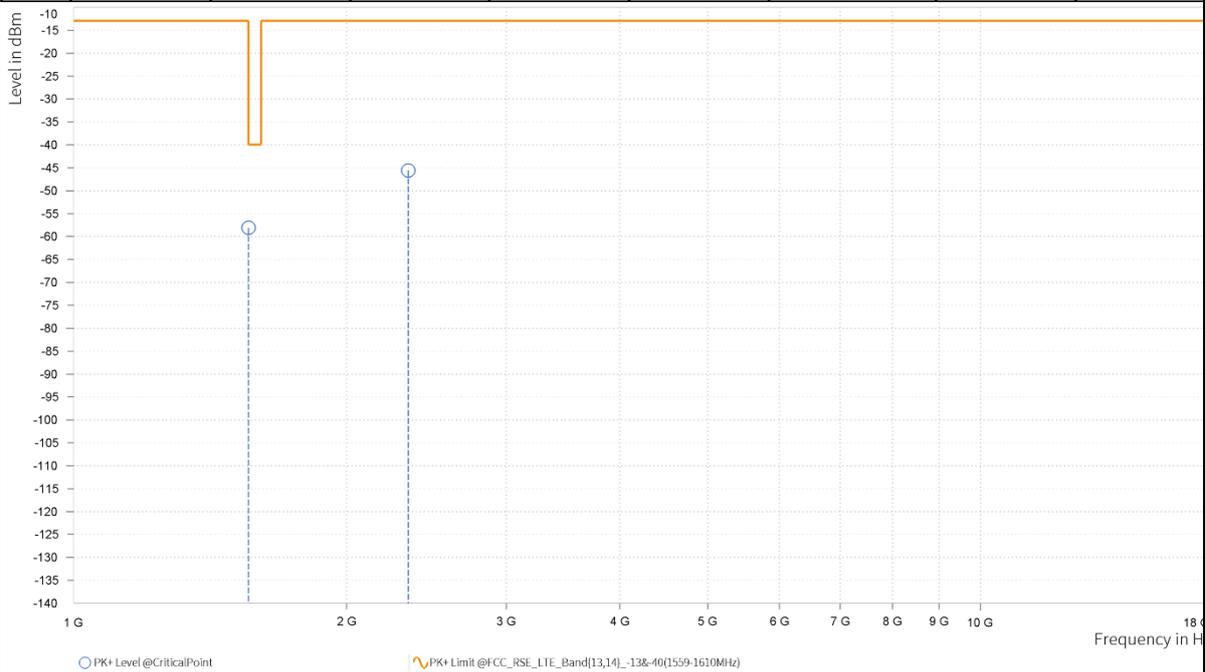




LTE B13 ANT1			
<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 23230
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	120Vac 60HZ	<b>TESTED BY</b>	Hanwen Xu

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,559.500	-58.10	-40.00	18.10	12.73	H	0.9	2.00
3	2,339.250	-45.58	-13.00	32.58	19.58	H	189.5	1.00

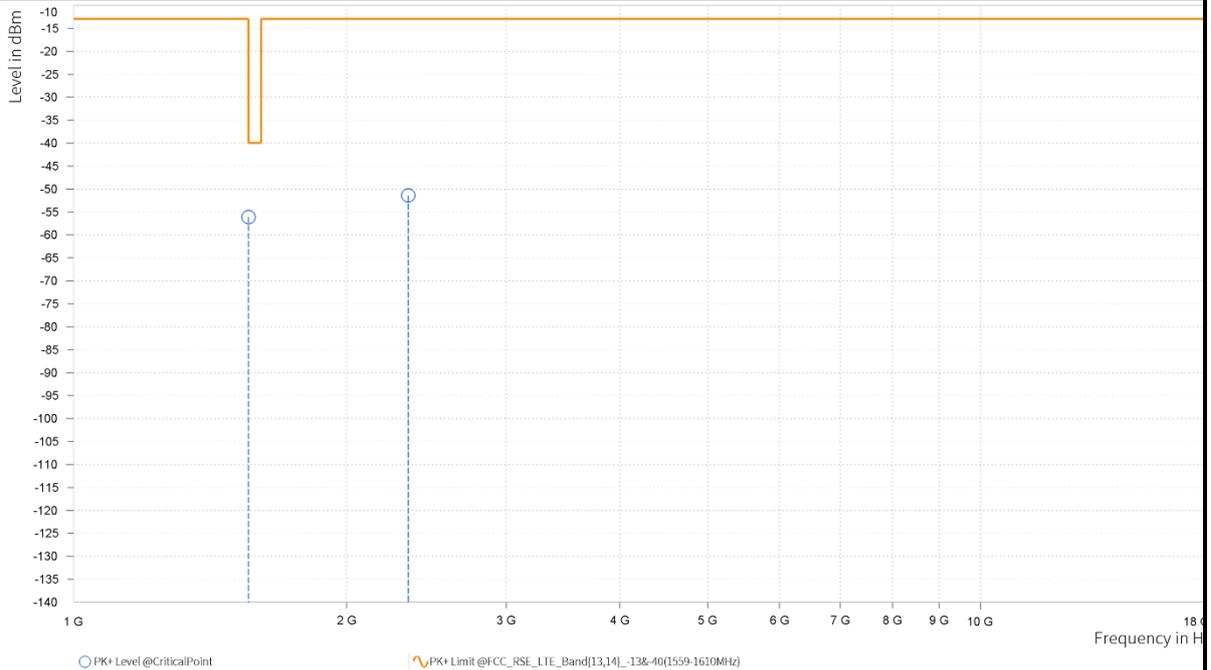




<b>CHANNEL BANDWIDTH</b>	5MHz / QPSK	<b>MODE</b>	TX channel 23230
<b>FREQUENCY RANGE</b>	Above 1000MHz	<b>ENVIRONMENTAL CONDITIONS</b>	23deg. C, 70%RH
<b>INPUT POWER</b>	120Vac 60HZ	<b>TESTED BY</b>	Hanwen Xu

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,559.500	-56.11	-40.00	16.11	14.12	V	1	1.00
3	2,339.250	-51.40	-13.00	38.40	19.98	V	1	1.00



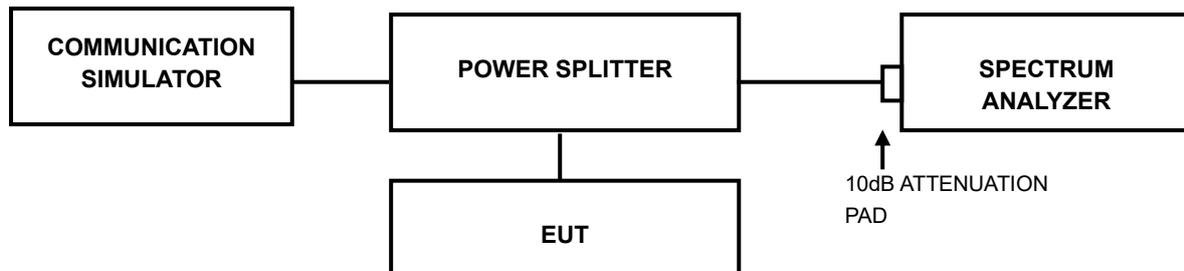


### 3.7 PEAK TO AVERAGE RATIO

#### 4.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

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

#### 4.7.2 TEST SETUP



#### 4.7.3 TEST PROCEDURES

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

#### 4.7.4 TEST RESULTS

Please Refer to Appendix of this test report.



## 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 Center, 88 Zuyi Road, High-tech District, Suzhou City, Anhui Province, China  
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



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

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



# 6 Appendix

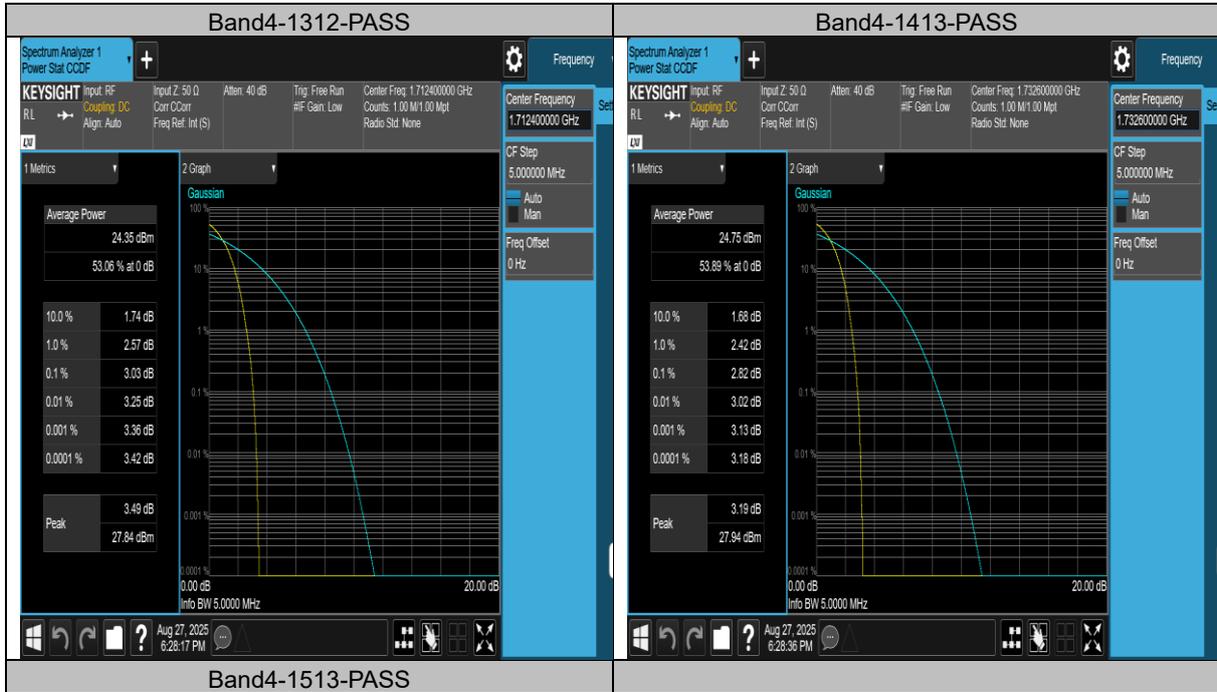
## WCDMA B4

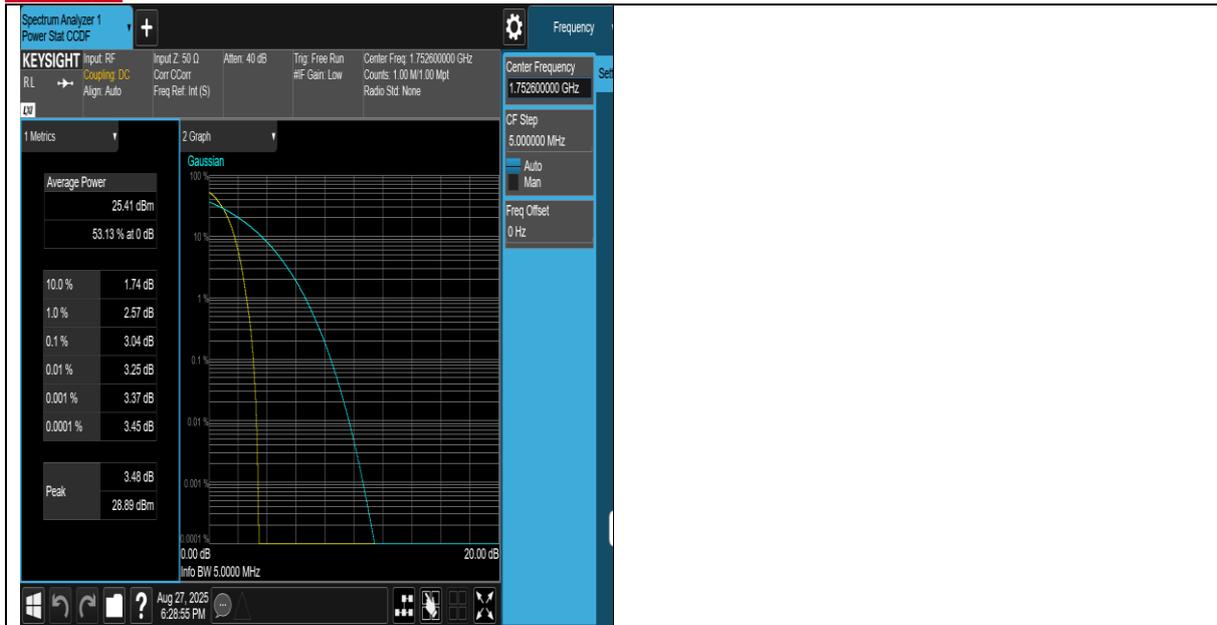
### APPENDIX PEAK-TO-AVERAGE RATIO

#### Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band4	1312	3.03	13	PASS
Band4	1413	2.82	13	PASS
Band4	1513	3.04	13	PASS

#### Test Graphs



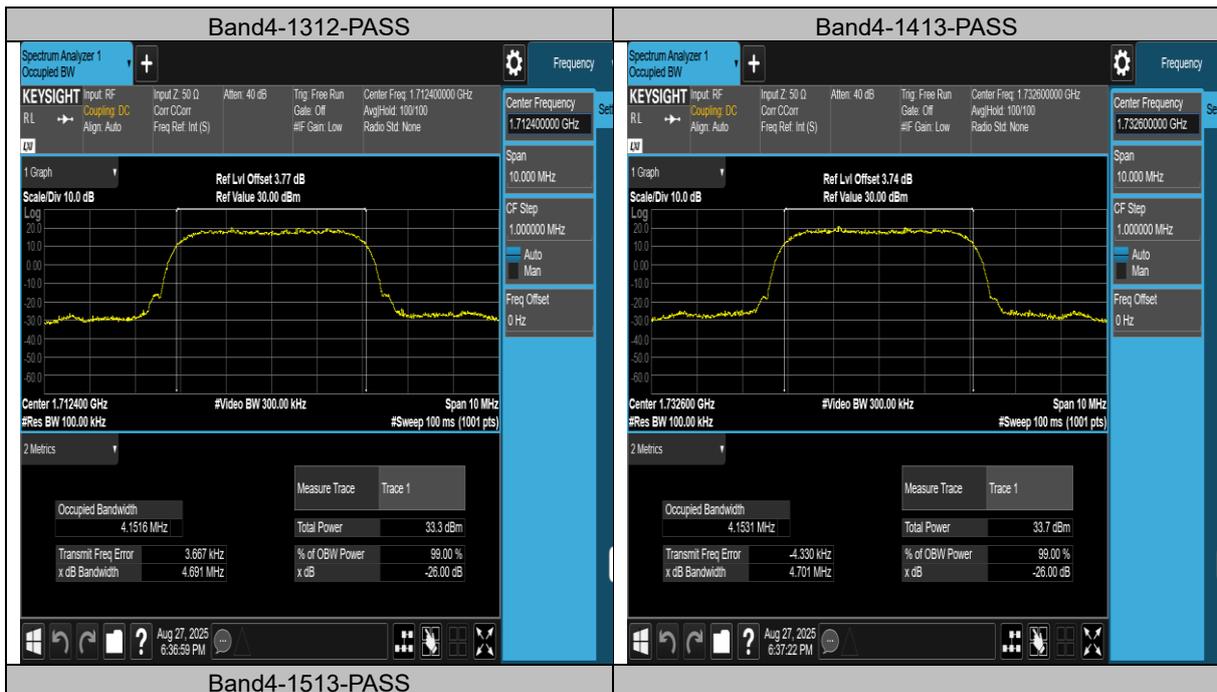


## APPENDIX : 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

### Test Result

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(kHz)	Verdict
Band4	1312	4.1516	4.691	---	PASS
Band4	1413	4.1531	4.701	---	PASS
Band4	1513	4.1488	4.701	---	PASS

### Test Graphs



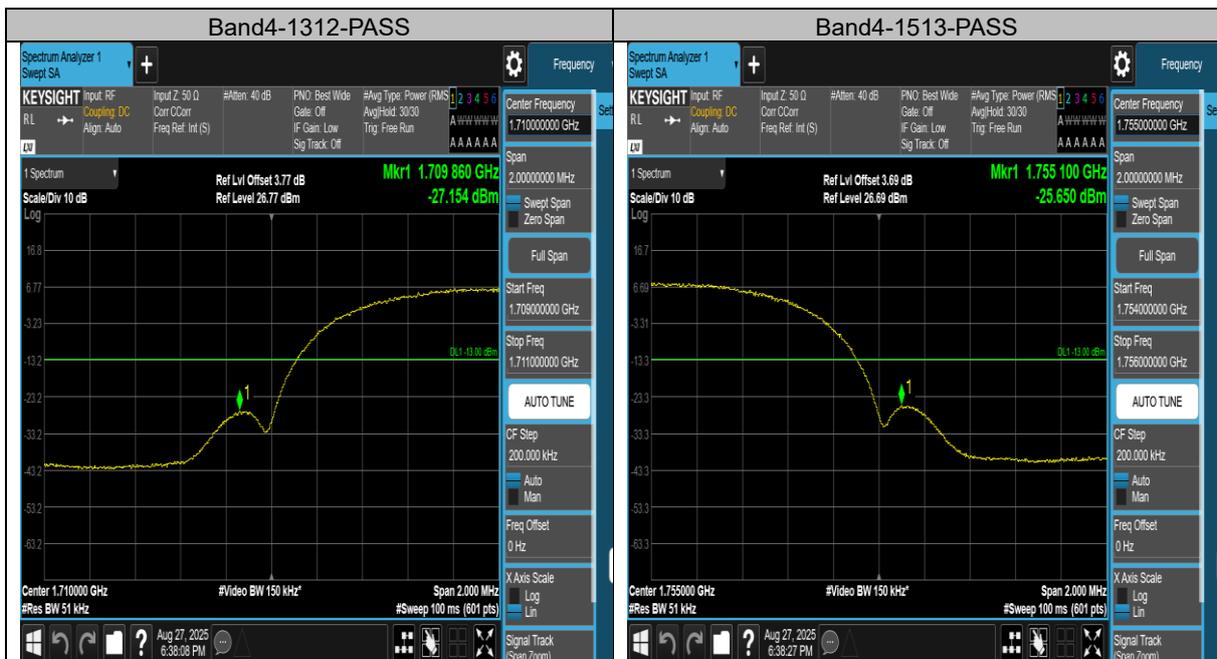


## APPENDIX : BAND EDGE

### Test Result

Band	Channel	Frequency (MHz)	Result (dBm)	Limit(dBm)	Verdict
Band4	1312	1709.86	-27.15	-13	PASS
Band4	1513	1755.10	-25.65	-13	PASS

### Test Graphs



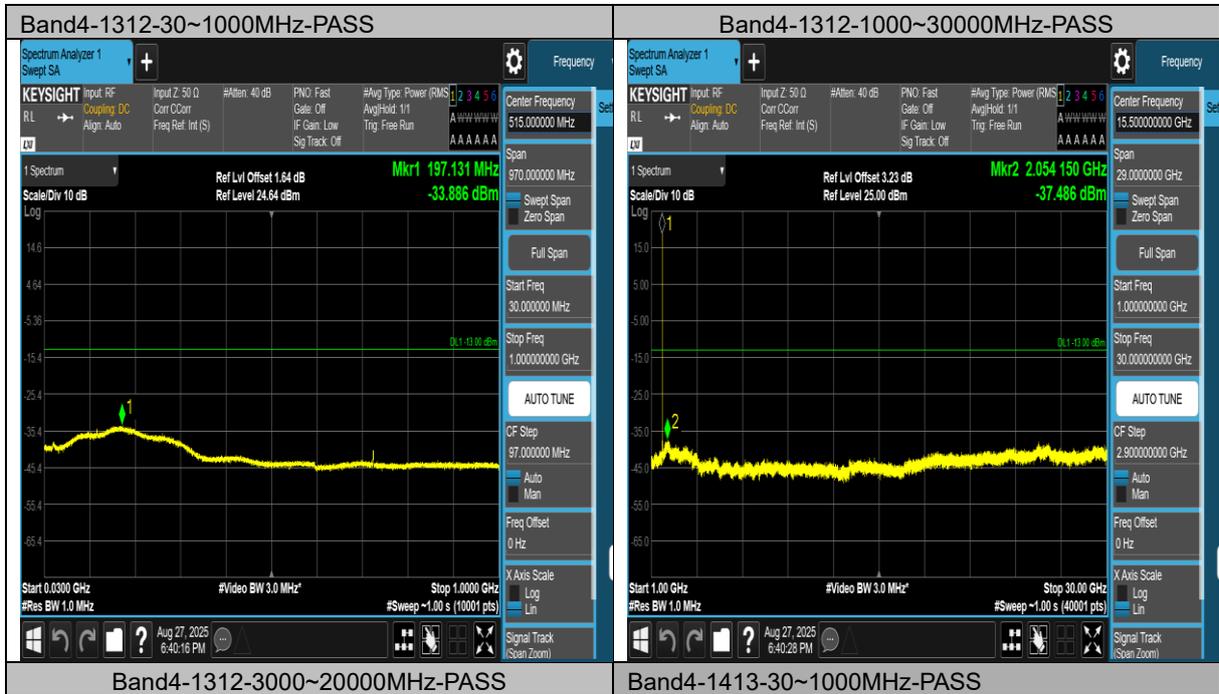


**APPENDIX : CONDUCTED SPURIOUS EMISSION**

**Test Result**

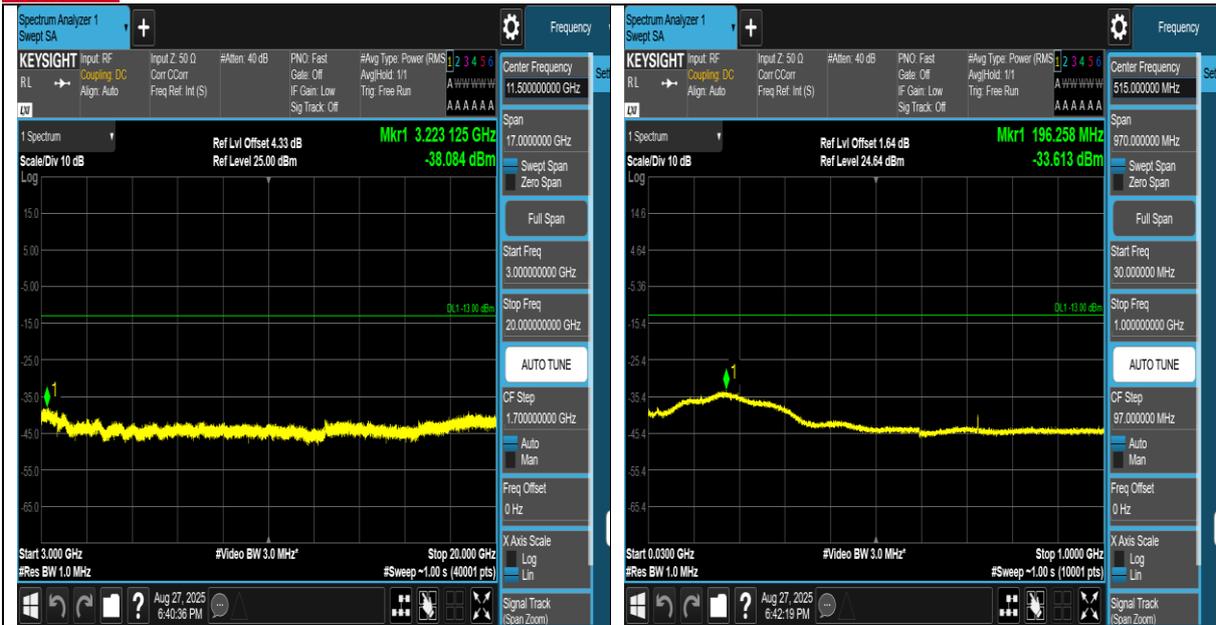
Band	Channel	Frequency Range (Mhz)	Frequency (dBm)	Result (dBm)	Limit (dBm)	Verdict
Band4	1312	30~1000MHz	197.13	-33.89	-13	PASS
Band4	1312	1000~30000MHz	2054.15	-37.49	-13	PASS
Band4	1312	3000~20000MHz	3223.13	-38.08	-13	PASS
Band4	1413	30~1000MHz	196.26	-33.61	-13	PASS
Band4	1413	1000~30000MHz	2131.73	-37.45	-13	PASS
Band4	1413	3000~20000MHz	3115.6	-37.74	-13	PASS
Band4	1513	30~1000MHz	193.06	-34.07	-13	PASS
Band4	1513	1000~30000MHz	2014.28	-37.13	-13	PASS
Band4	1513	3000~20000MHz	3132.6	-37.9	-13	PASS

**Test Graphs**





**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF03



Band4-1413-1000~3000MHz-PASS

Band4-1413-3000~20000MHz-PASS

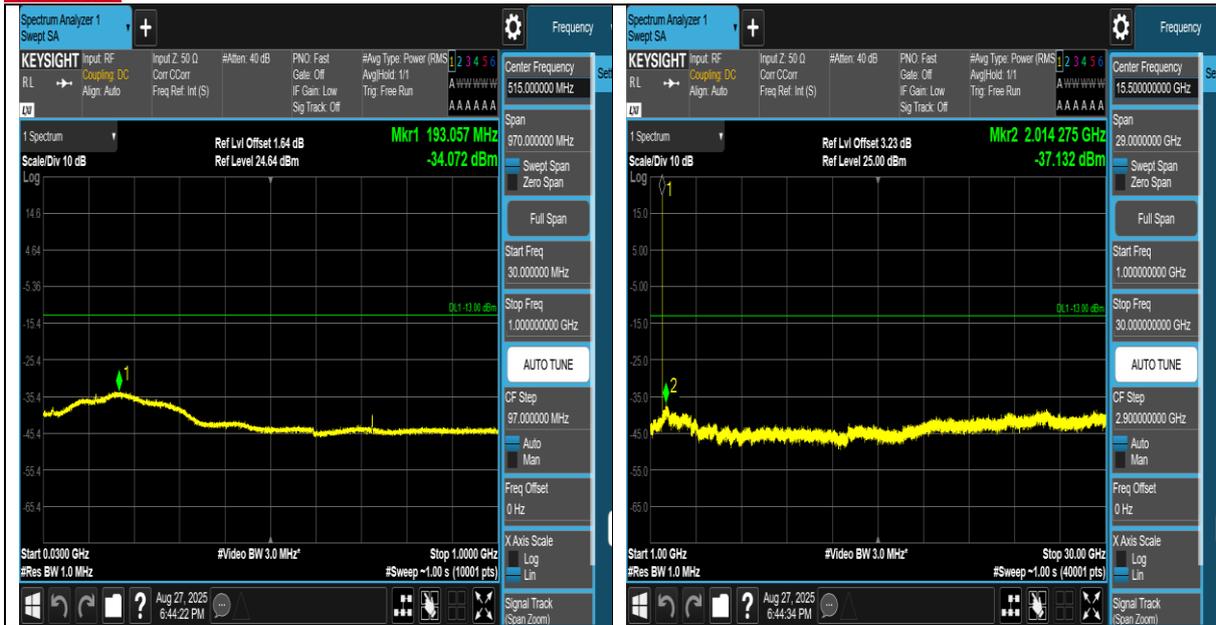


Band4-1513-30~1000MHz-PASS

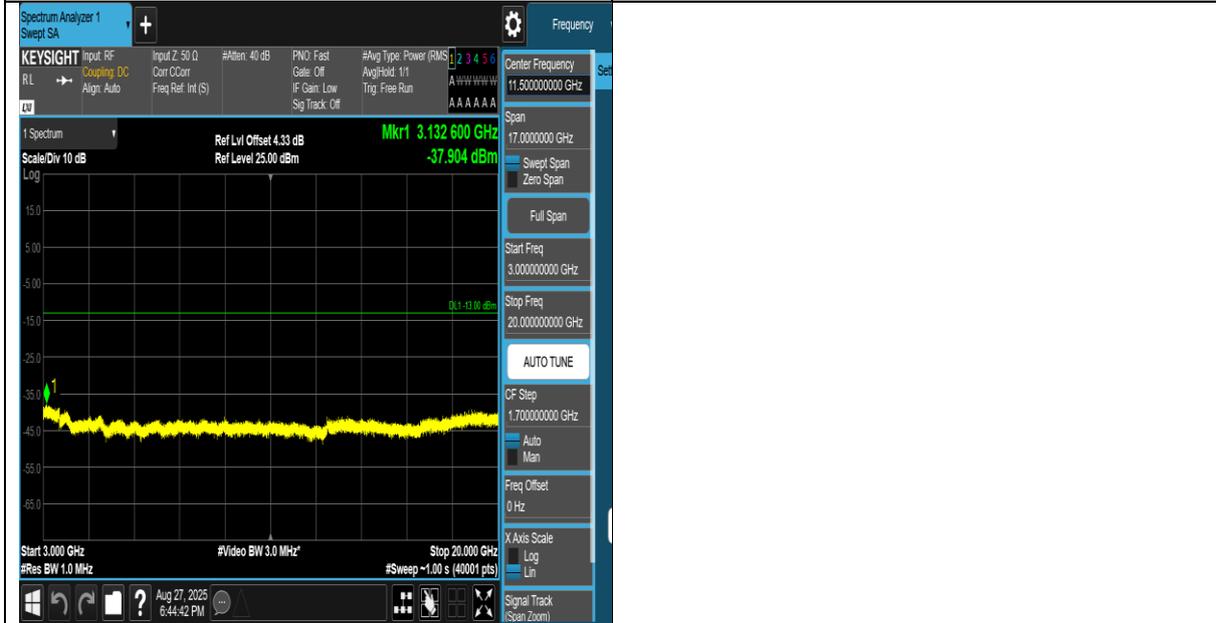
Band4-1513-1000~3000MHz-PASS



**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF03



**Band4-1513-3000~20000MHz-PASS**



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**APPENDIX: FREQUENCY STABILITY**

**Test Result**

Voltage							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band4	1312	VN	NT	1967.46	1.148951	±2.5	PASS
Band4	1312	VL	NT	2122.09	1.239250	±2.5	PASS
Band4	1312	VH	NT	2057.28	1.201403	±2.5	PASS
Band4	1513	VN	NT	1878.77	1.071987	±2.5	PASS
Band4	1513	VL	NT	1002.22	0.571850	±2.5	PASS
Band4	1513	VH	NT	287.69	0.164150	±2.5	PASS

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band4	1312	NV	-30	1017.01	0.593907	±2.5	PASS
Band4	1312	NV	-20	977.99	0.571120	±2.5	PASS
Band4	1312	NV	-10	2387.60	1.394301	±2.5	PASS
Band4	1312	NV	0	-2172.92	-1.268931	±2.5	PASS
Band4	1312	NV	10	-2152.07	-1.256756	±2.5	PASS
Band4	1312	NV	20	-372.84	-0.217729	±2.5	PASS
Band4	1312	NV	30	-3922.83	-2.290835	±2.5	PASS
Band4	1312	NV	40	-1272.26	-0.742972	±2.5	PASS
Band4	1312	NV	50	-2582.71	-1.508241	±2.5	PASS
Band4	1513	NV	-30	-2962.23	-1.690190	±2.5	PASS
Band4	1513	NV	-20	-172.56	-0.098462	±2.5	PASS
Band4	1513	NV	-10	227.29	0.129687	±2.5	PASS
Band4	1513	NV	0	-602.99	-0.344053	±2.5	PASS
Band4	1513	NV	10	2887.44	1.647521	±2.5	PASS
Band4	1513	NV	20	-2992.91	-1.707697	±2.5	PASS
Band4	1513	NV	30	-1762.31	-1.005543	±2.5	PASS
Band4	1513	NV	40	-3422.30	-1.952696	±2.5	PASS
Band4	1513	NV	50	1177.49	0.671852	±2.5	PASS

**LTE B7**

**APPENDIX : PEAK-TO-AVERAGE RATIO(CCDF)**

**Test Result**

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band7	20MHz	QPSK	20850	1RB#0	3.55	13	PASS
Band7	20MHz	QPSK	20850	100RB#0	5.03	13	PASS
Band7	20MHz	QPSK	21100	1RB#0	3.79	13	PASS
Band7	20MHz	QPSK	21100	100RB#0	4.94	13	PASS
Band7	20MHz	QPSK	21350	1RB#0	3.96	13	PASS
Band7	20MHz	QPSK	21350	100RB#0	5.06	13	PASS
Band7	20MHz	64QAM	20850	1RB#0	5.39	13	PASS

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Tel: +86 (0557) 368 1008



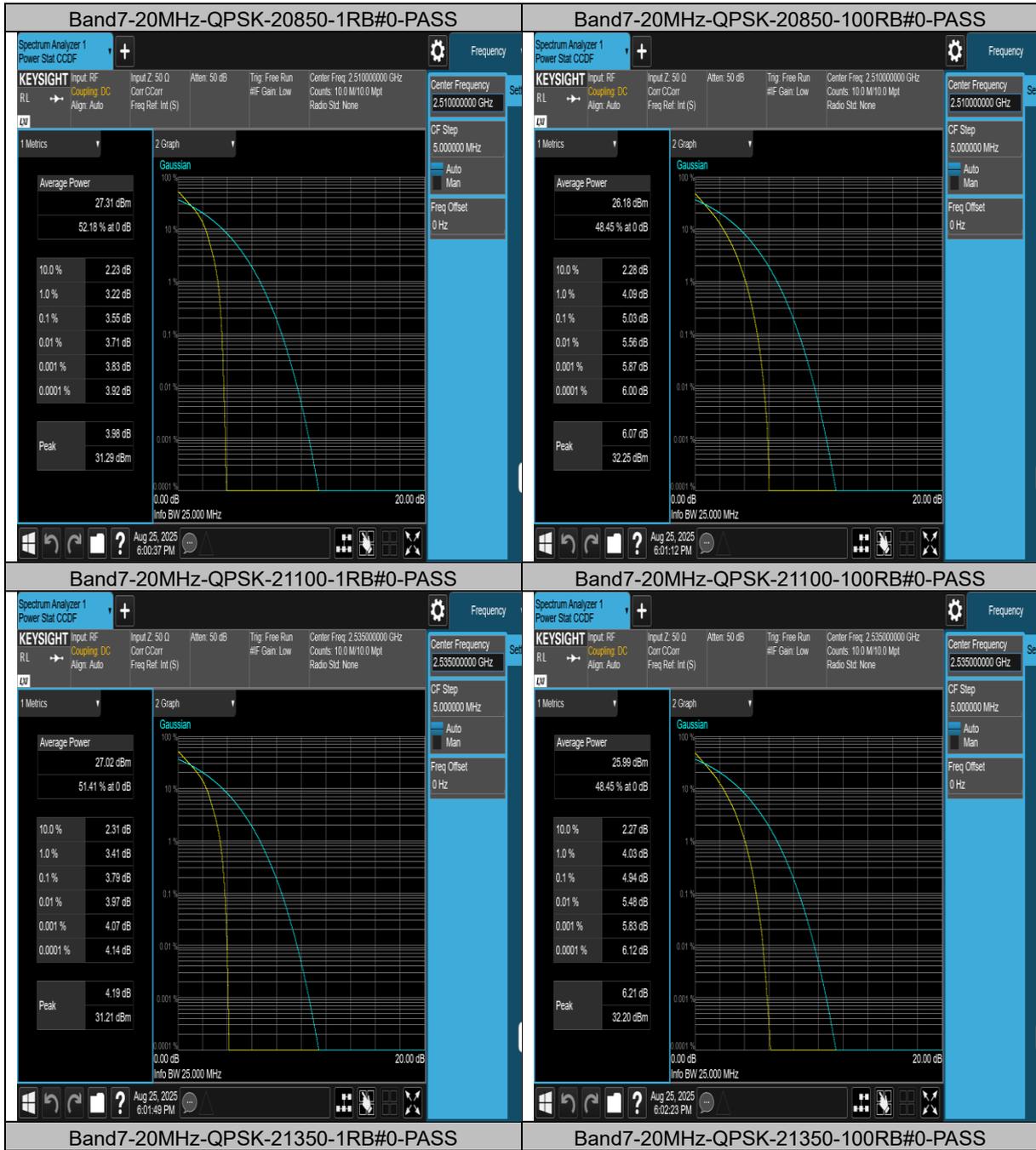
**BUREAU**  
**VERITAS**

**Test Report No.: PSU-QBJ2508070215RF03**

Band7	20MHz	64QAM	20850	100RB#0	6.24	13	PASS
Band7	20MHz	64QAM	21100	1RB#0	5.64	13	PASS
Band7	20MHz	64QAM	21100	100RB#0	6.23	13	PASS
Band7	20MHz	64QAM	21350	1RB#0	5.65	13	PASS
Band7	20MHz	64QAM	21350	100RB#0	6.30	13	PASS
Band7	20MHz	16QAM	20850	1RB#0	4.68	13	PASS
Band7	20MHz	16QAM	20850	100RB#0	5.84	13	PASS
Band7	20MHz	16QAM	21100	1RB#0	4.64	13	PASS
Band7	20MHz	16QAM	21100	100RB#0	5.77	13	PASS
Band7	20MHz	16QAM	21350	1RB#0	5.01	13	PASS
Band7	20MHz	16QAM	21350	100RB#0	5.88	13	PASS

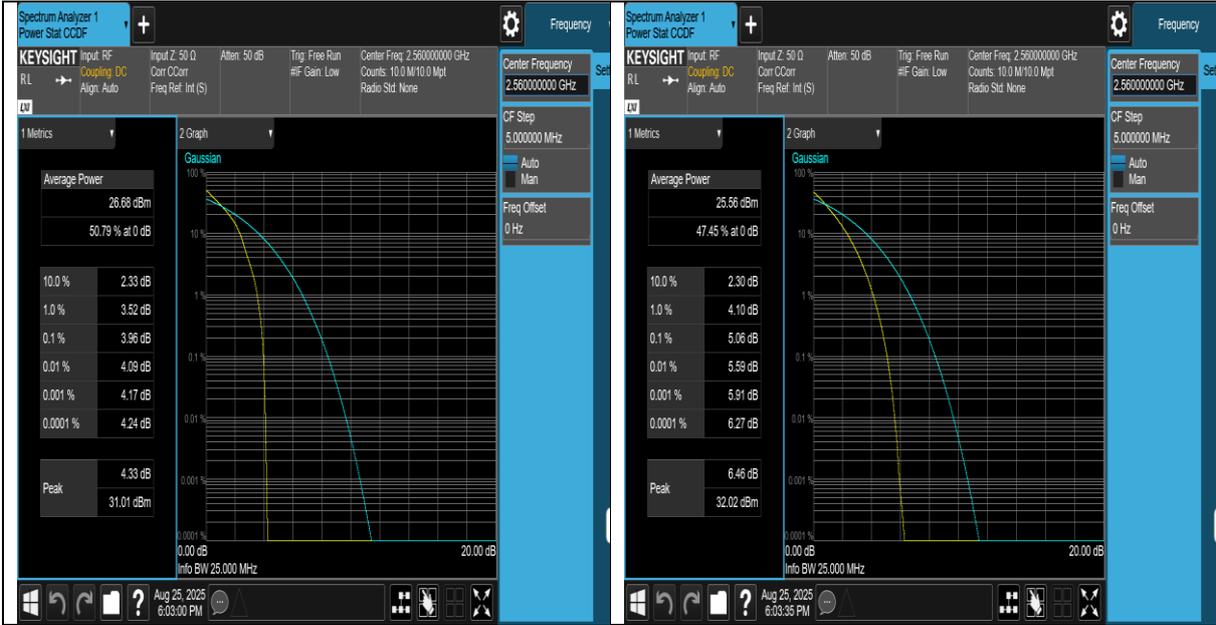


### Test Graphs



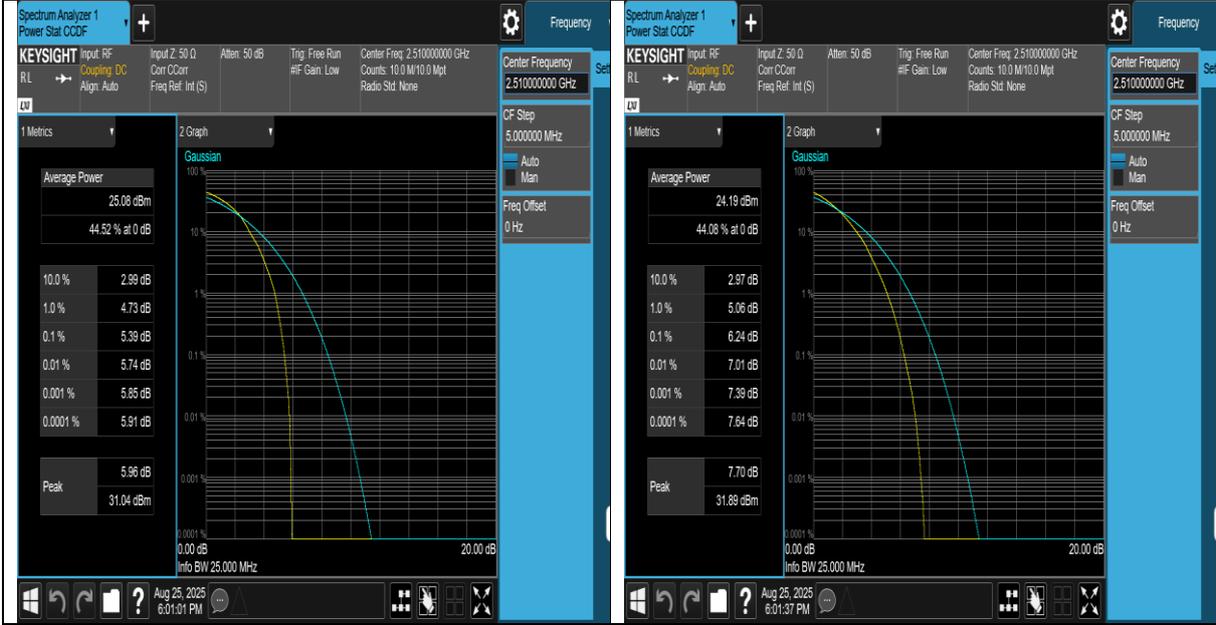


**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF03



Band7-20MHz-64QAM-20850-1RB#0-PASS

Band7-20MHz-64QAM-20850-100RB#0-PASS

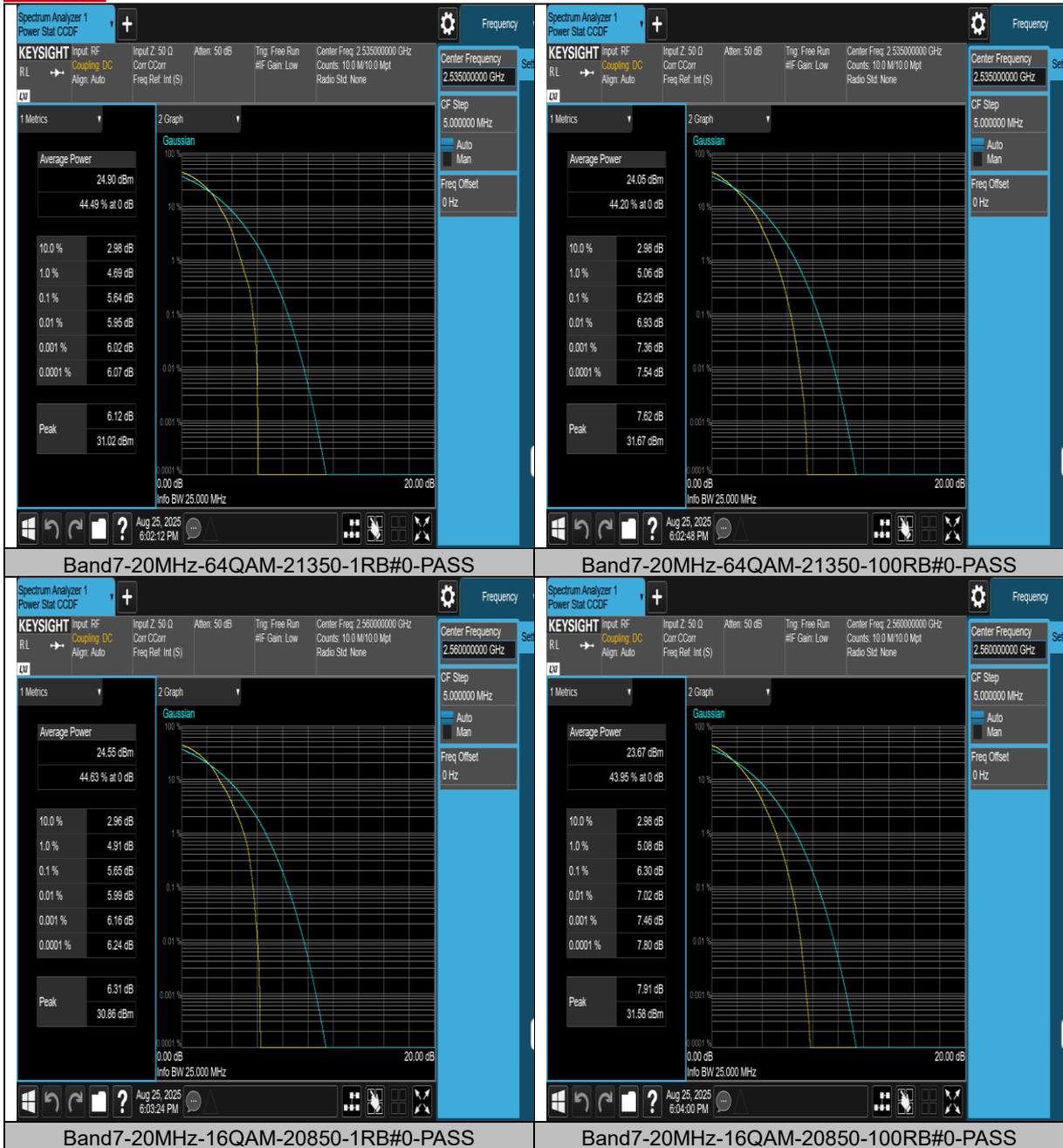


Band7-20MHz-64QAM-21100-1RB#0-PASS

Band7-20MHz-64QAM-21100-100RB#0-PASS

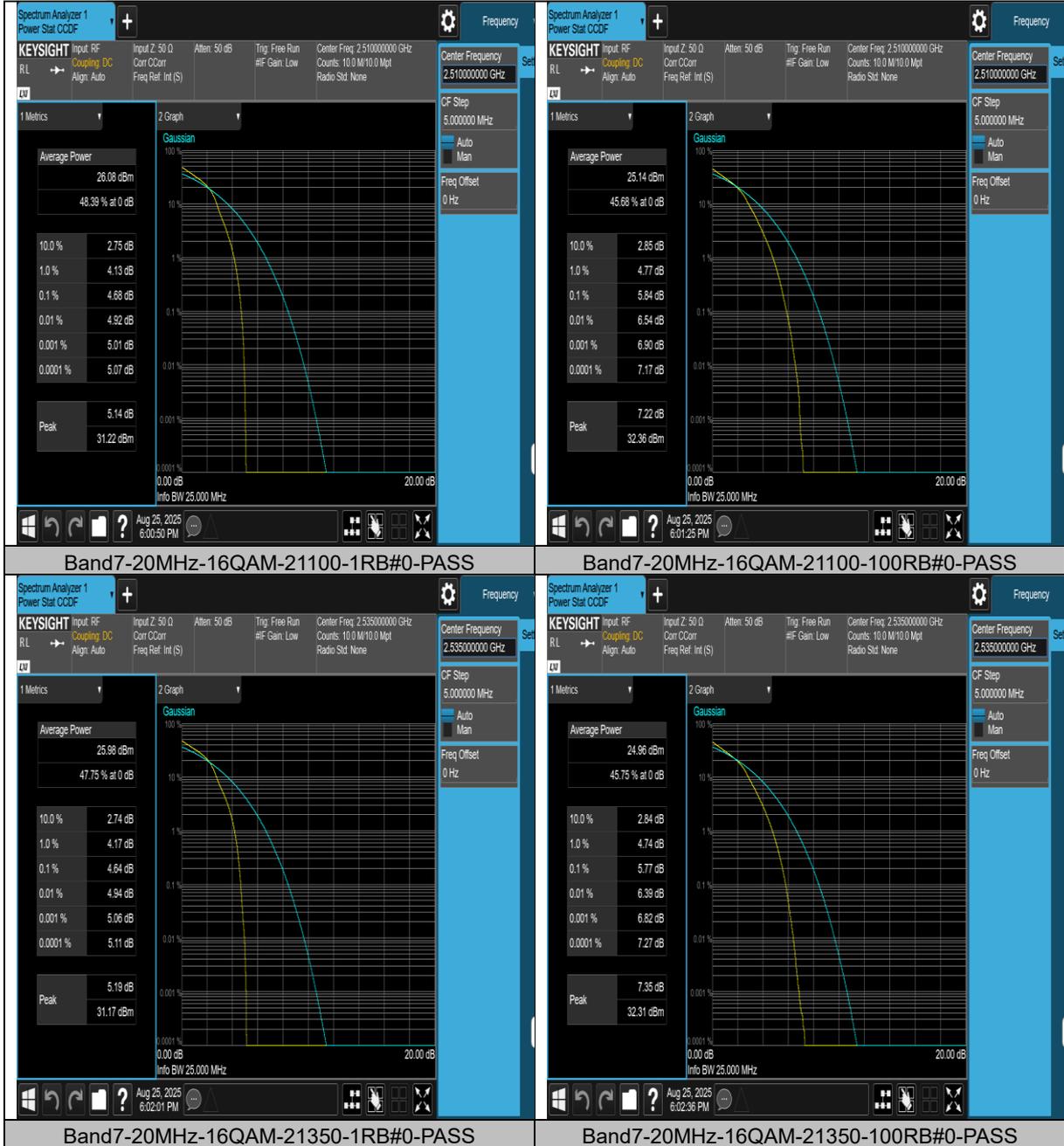


**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF03



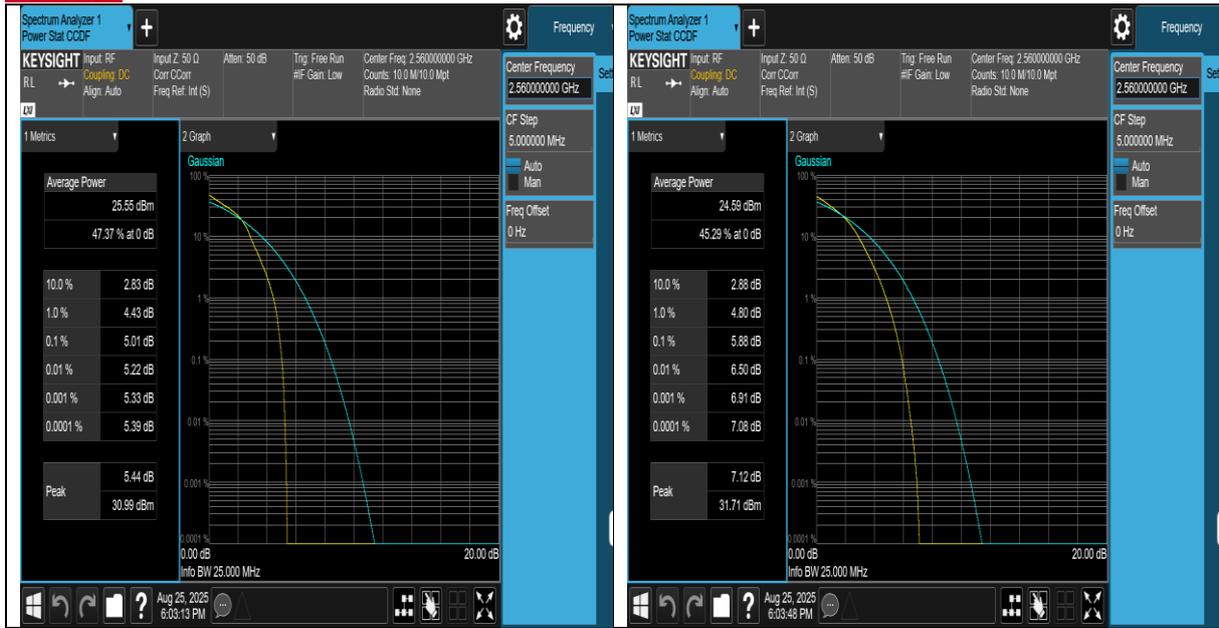


**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF03





**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF03



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Tel: +86 (0557) 368 1008



**APPENDIX: 26DB BANDWIDTH AND OCCUPIED BANDWIDTH**

**Test Result**

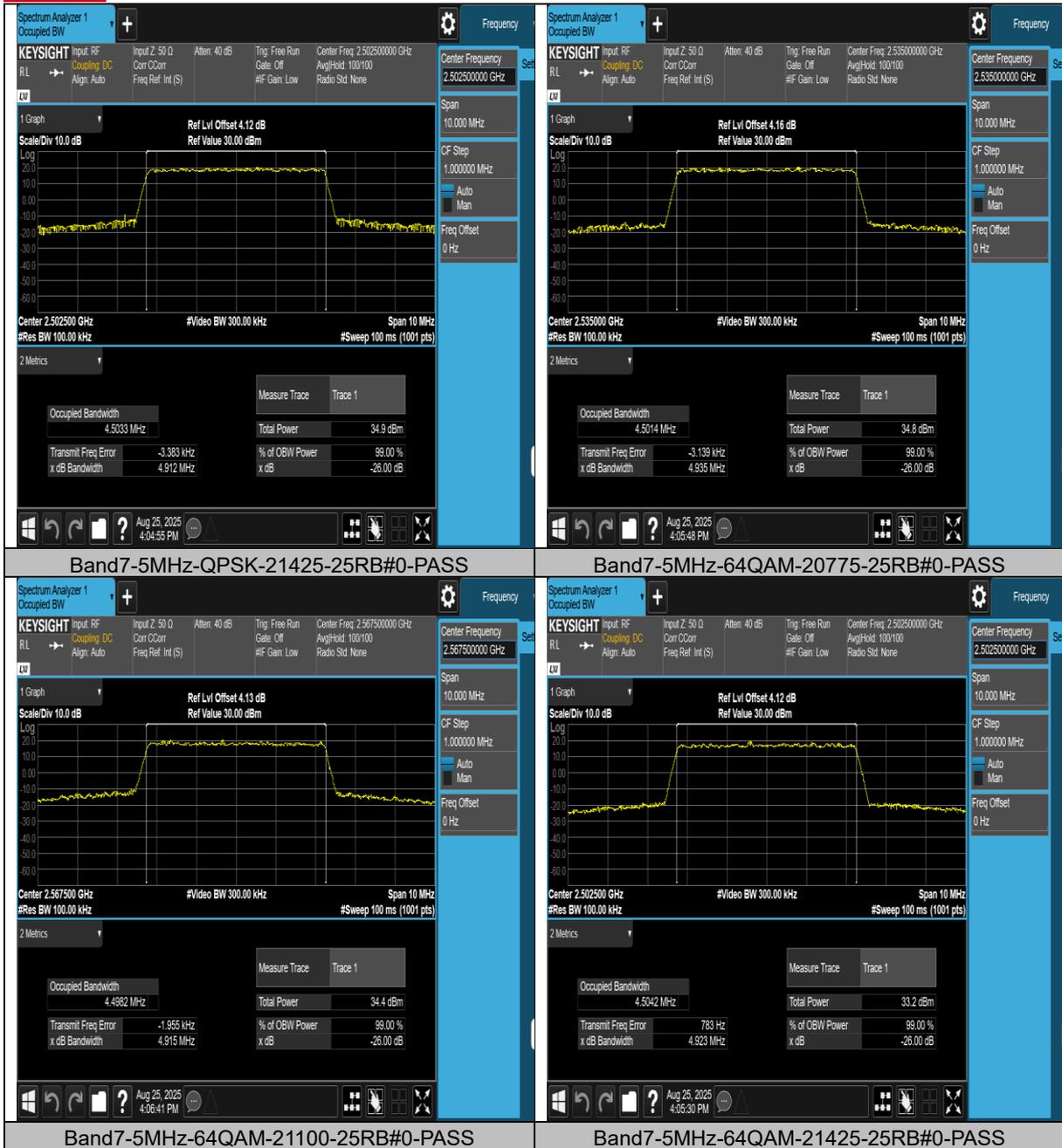
Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band7	5MHz	QPSK	20775	25RB#0	4.5033	4.912	PASS
Band7	5MHz	QPSK	21100	25RB#0	4.5014	4.935	PASS
Band7	5MHz	QPSK	21425	25RB#0	4.4982	4.915	PASS
Band7	5MHz	64QAM	20775	25RB#0	4.5042	4.923	PASS
Band7	5MHz	64QAM	21100	25RB#0	4.5024	5.103	PASS
Band7	5MHz	64QAM	21425	25RB#0	4.4893	4.902	PASS
Band7	5MHz	16QAM	20775	25RB#0	4.5156	4.939	PASS
Band7	5MHz	16QAM	21100	25RB#0	4.4960	4.895	PASS
Band7	5MHz	16QAM	21425	25RB#0	4.5053	4.928	PASS
Band7	10MHz	QPSK	20800	50RB#0	8.9853	9.813	PASS
Band7	10MHz	QPSK	21100	50RB#0	8.9812	9.739	PASS
Band7	10MHz	QPSK	21400	50RB#0	8.9757	9.812	PASS
Band7	10MHz	64QAM	20800	50RB#0	8.9795	9.723	PASS
Band7	10MHz	64QAM	21100	50RB#0	8.9877	9.770	PASS
Band7	10MHz	64QAM	21400	50RB#0	8.9664	9.725	PASS
Band7	10MHz	16QAM	20800	50RB#0	8.9708	9.750	PASS
Band7	10MHz	16QAM	21100	50RB#0	8.9757	9.762	PASS
Band7	10MHz	16QAM	21400	50RB#0	8.9869	9.700	PASS
Band7	15MHz	QPSK	20825	75RB#0	13.487	14.68	PASS
Band7	15MHz	QPSK	21100	75RB#0	13.449	14.67	PASS
Band7	15MHz	QPSK	21375	75RB#0	13.427	14.53	PASS
Band7	15MHz	64QAM	20825	75RB#0	13.440	14.57	PASS
Band7	15MHz	64QAM	21100	75RB#0	13.483	14.61	PASS
Band7	15MHz	64QAM	21375	75RB#0	13.450	14.61	PASS
Band7	15MHz	16QAM	20825	75RB#0	13.464	14.62	PASS
Band7	15MHz	16QAM	21100	75RB#0	13.490	14.68	PASS
Band7	15MHz	16QAM	21375	75RB#0	13.476	14.58	PASS
Band7	20MHz	QPSK	20850	100RB#0	17.913	19.33	PASS
Band7	20MHz	QPSK	21100	100RB#0	17.933	19.54	PASS
Band7	20MHz	QPSK	21350	100RB#0	17.903	19.28	PASS
Band7	20MHz	64QAM	20850	100RB#0	17.888	19.30	PASS
Band7	20MHz	64QAM	21100	100RB#0	17.934	19.41	PASS
Band7	20MHz	64QAM	21350	100RB#0	17.914	19.38	PASS
Band7	20MHz	16QAM	20850	100RB#0	17.957	19.30	PASS
Band7	20MHz	16QAM	21100	100RB#0	17.927	19.32	PASS
Band7	20MHz	16QAM	21350	100RB#0	17.918	19.30	PASS

**Test Graphs**

Band7-5MHz-QPSK-20775-25RB#0-PASS	Band7-5MHz-QPSK-21100-25RB#0-PASS
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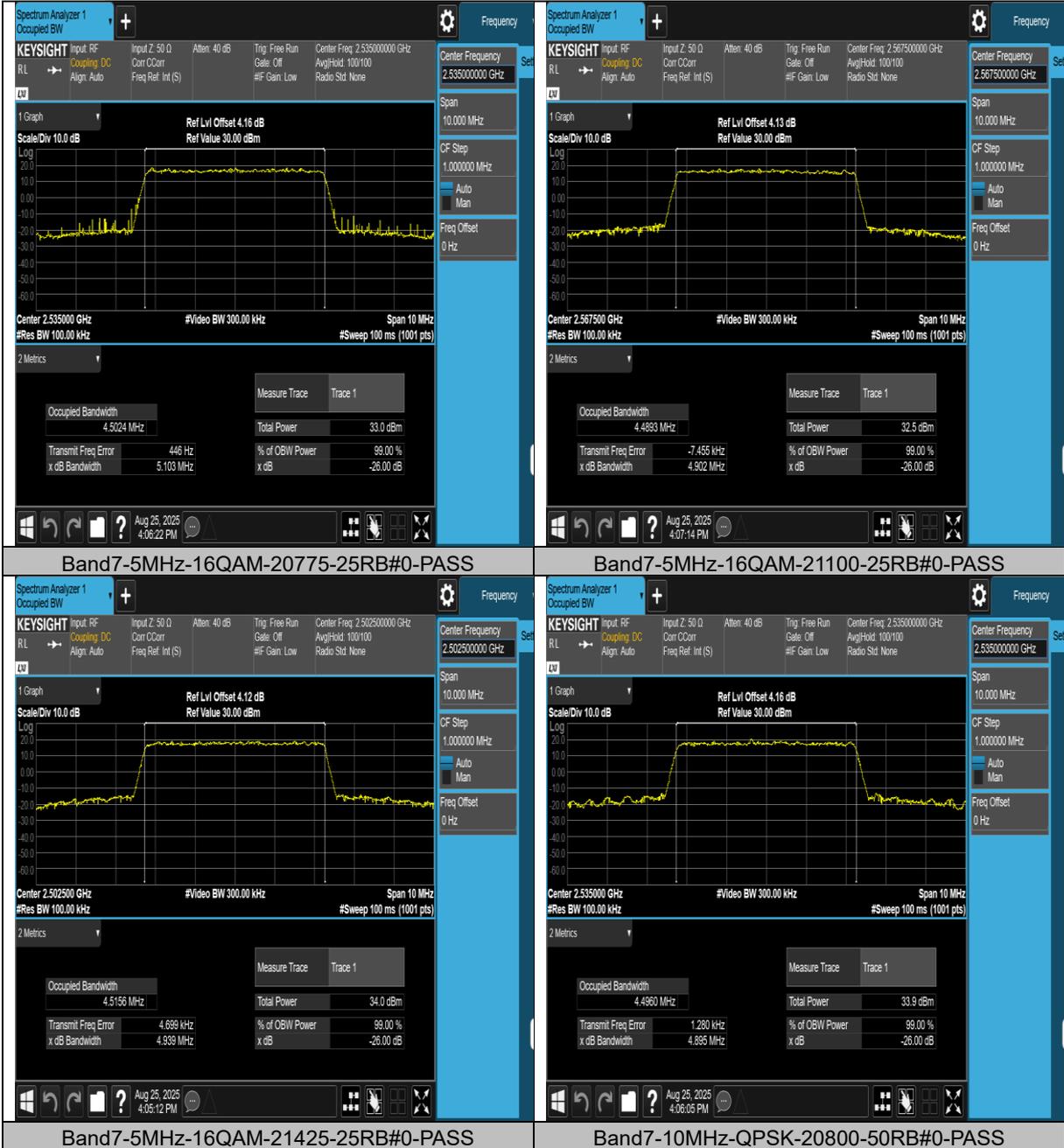


**BUREAU VERITAS** Test Report No.: PSU-QBJ2508070215RF03



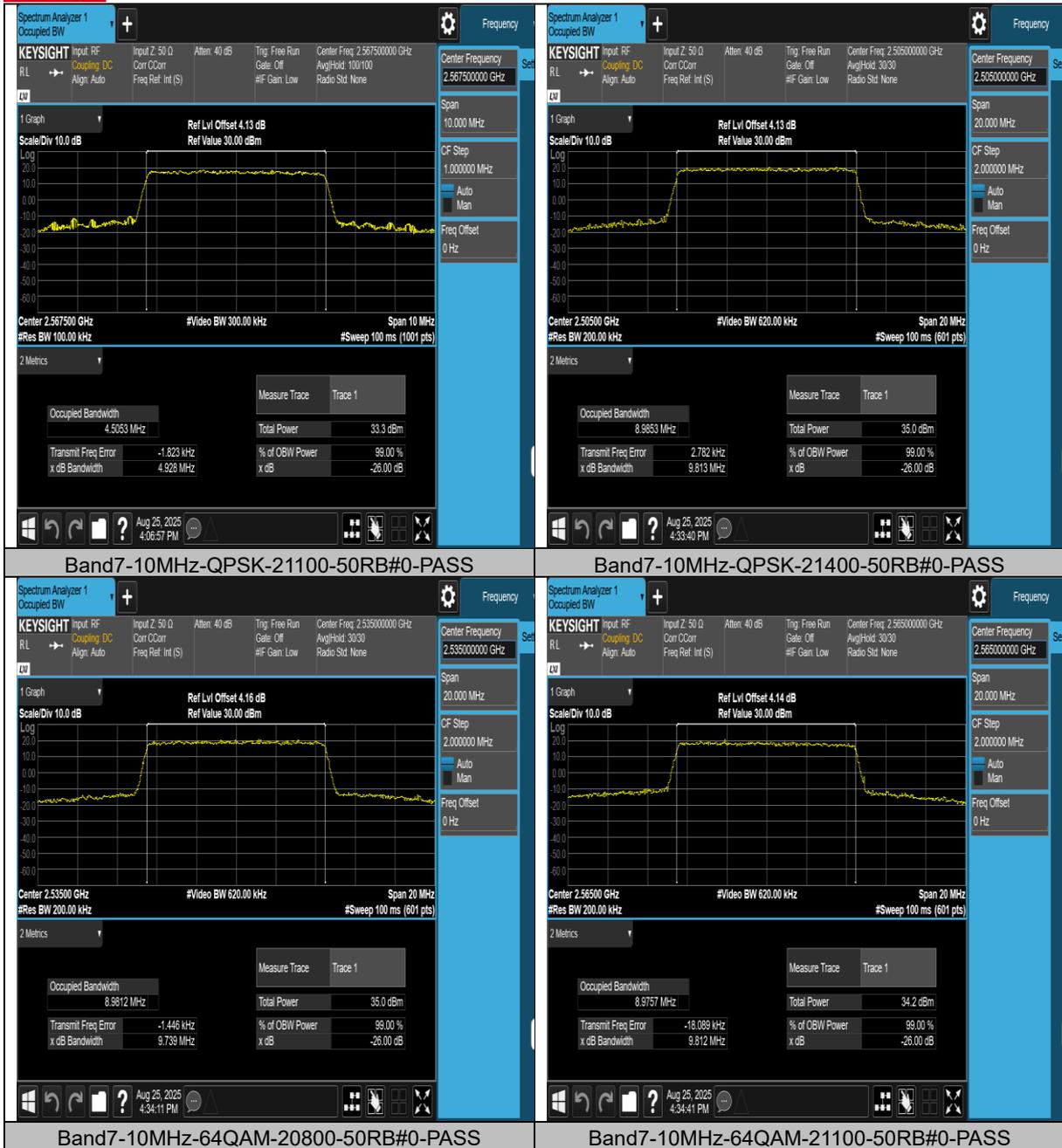


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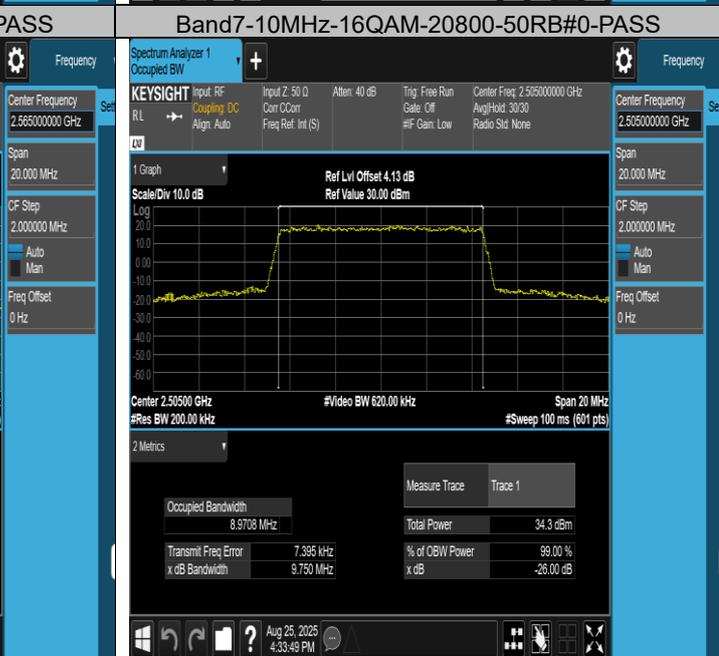
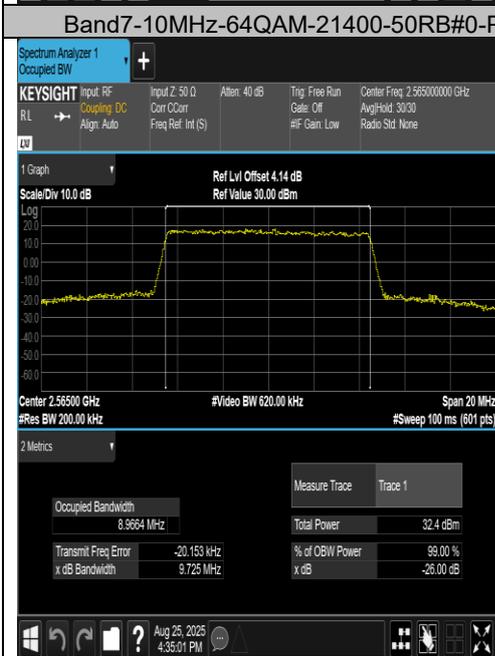
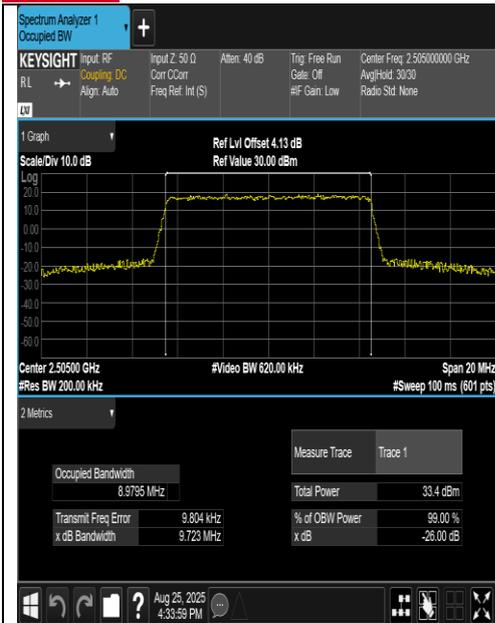


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