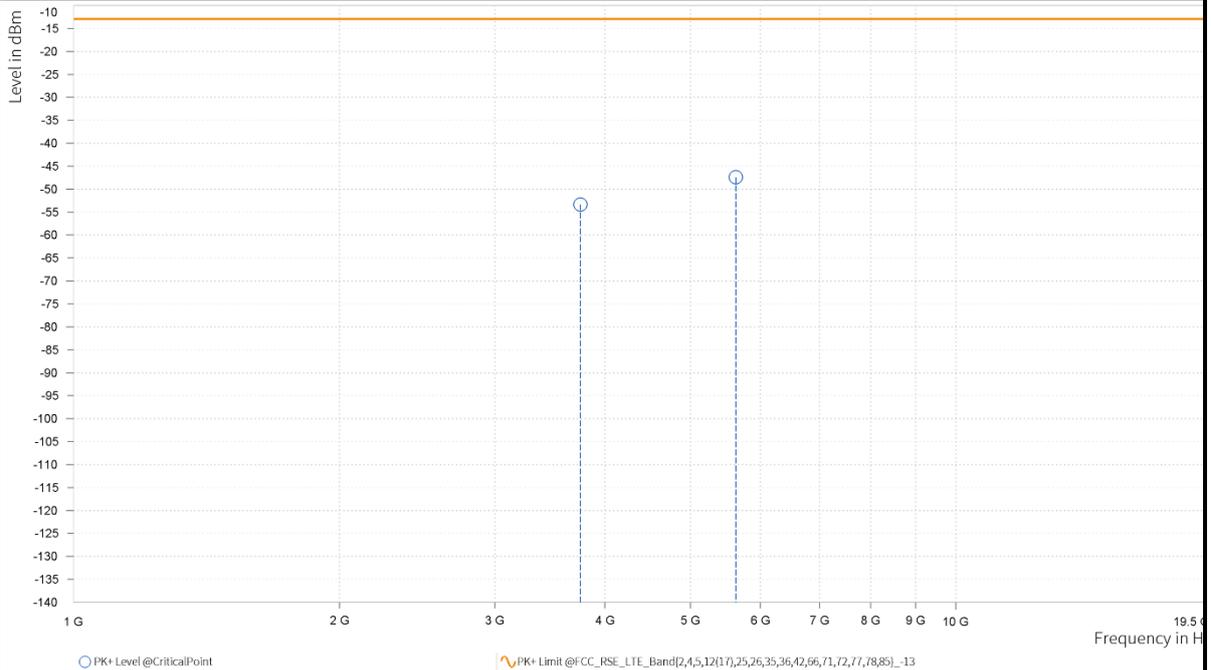




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 18900
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

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]
4	3,751.000	-53.36	-13.00	40.36	21.46	H	82.7	2.00
4	5,626.500	-47.43	-13.00	34.43	24.71	H	36	2.00

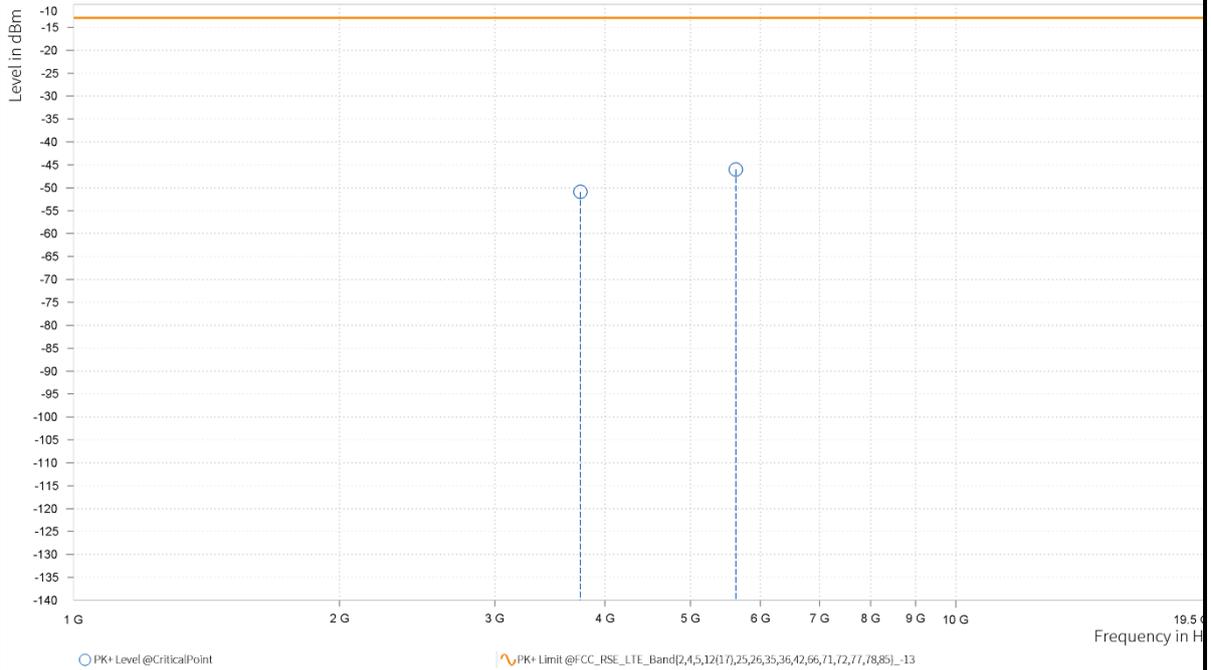




CHANNEL BANDWIDTH	10MHz / QPSK	MODE	TX channel 18900
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

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]
4	3,751.000	-50.90	-13.00	37.90	21.46	H	276.6	1.00
4	5,626.500	-46.00	-13.00	33.00	24.71	H	268.2	2.00

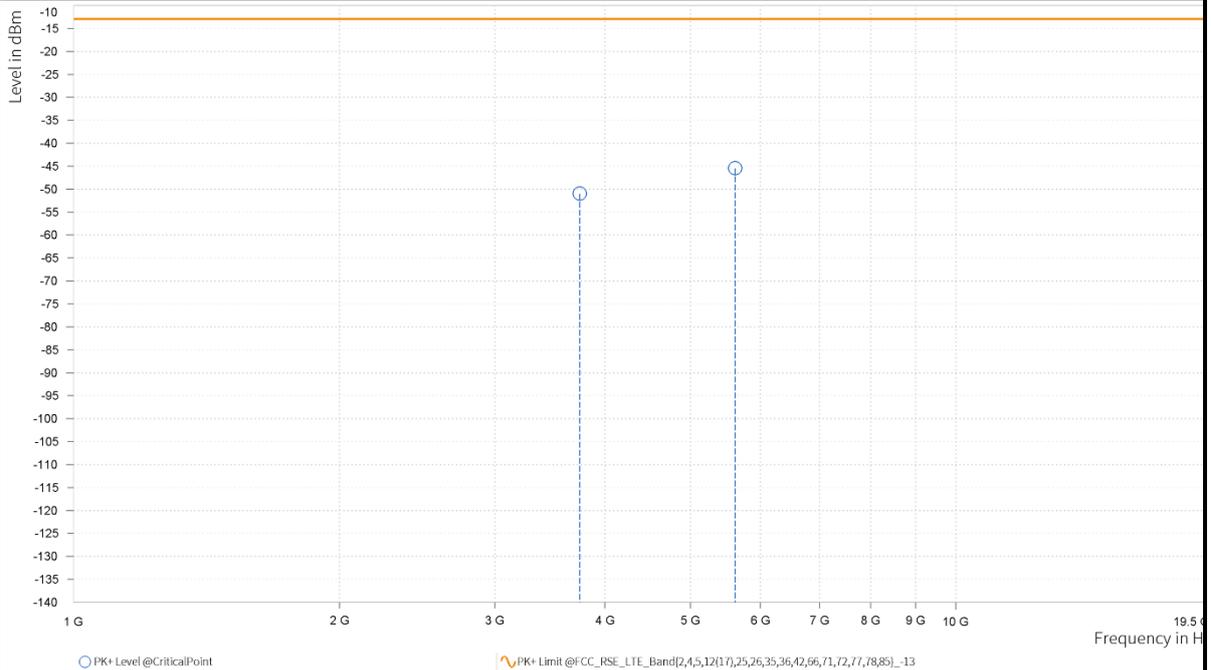




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 18900
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

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]
4	3,746.500	-50.97	-13.00	37.97	21.38	H	0.9	2.00
4	5,620.000	-45.46	-13.00	32.46	24.66	H	359.2	1.00

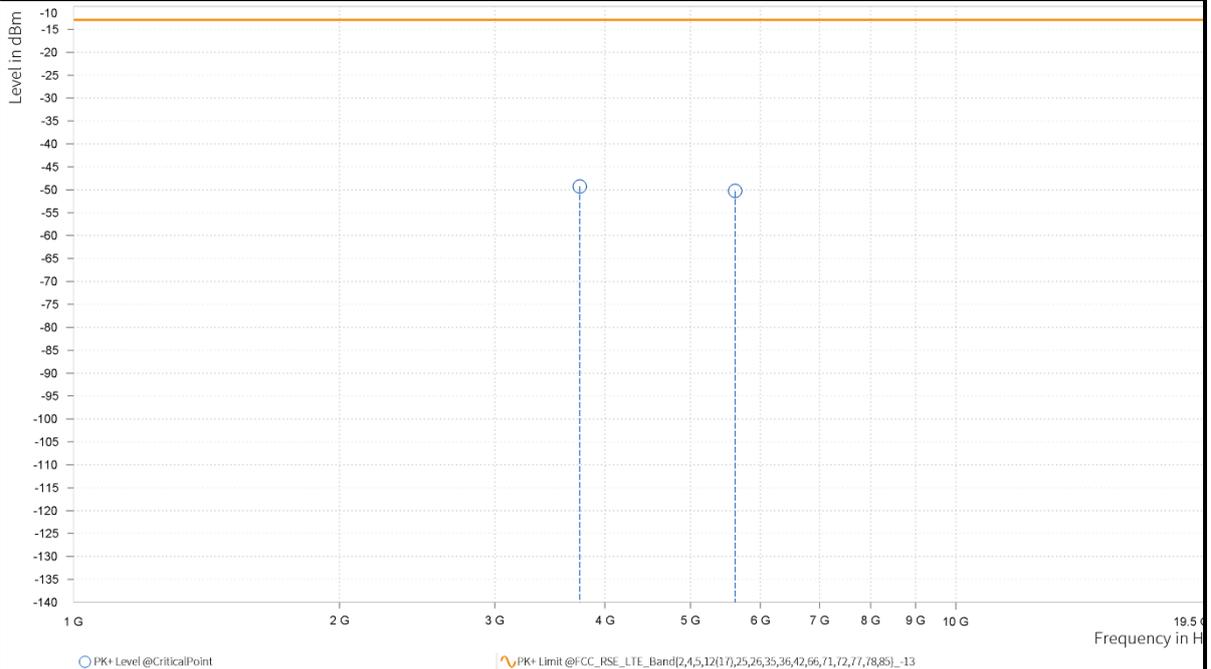




CHANNEL BANDWIDTH	15MHz / QPSK	MODE	TX channel 18900
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

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]
4	3,746.500	-49.29	-13.00	36.29	22.04	V	359	2.00
4	5,619.750	-50.24	-13.00	37.24	25.06	V	183.8	1.00

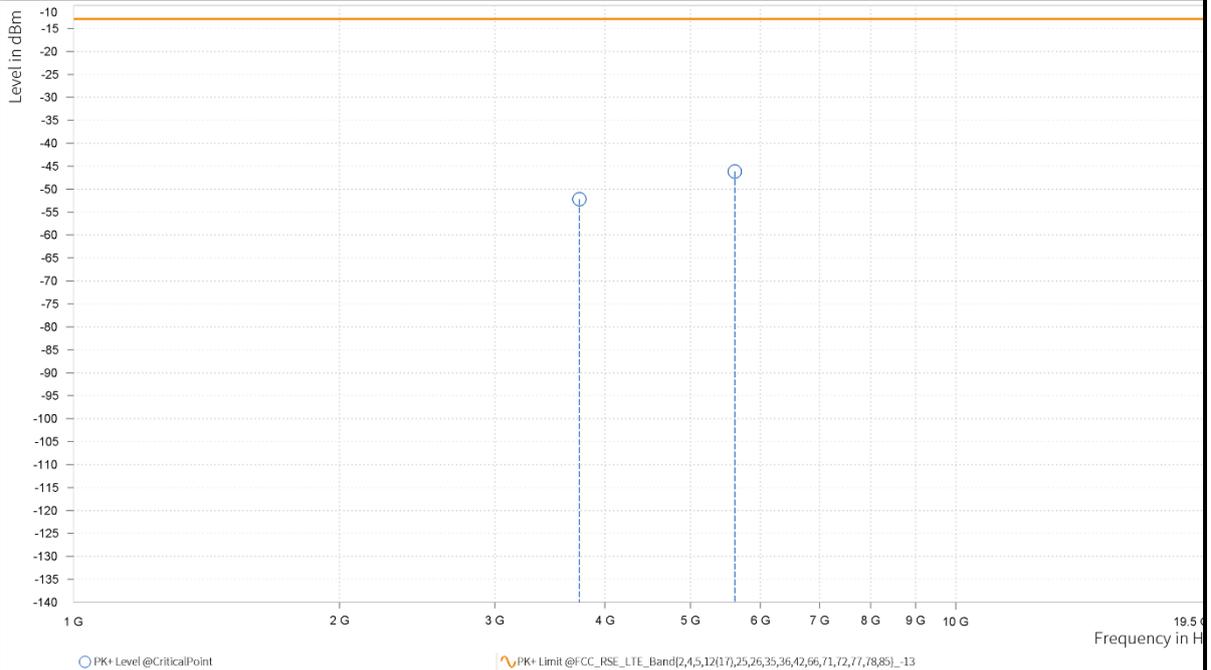




CHANNEL BANDWIDTH	20MHz / QPSK	MODE	TX channel 18900
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

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]
4	3,742.000	-52.17	-13.00	39.17	21.35	H	1	1.00
4	5,613.000	-46.13	-13.00	33.13	24.60	H	316.2	1.00

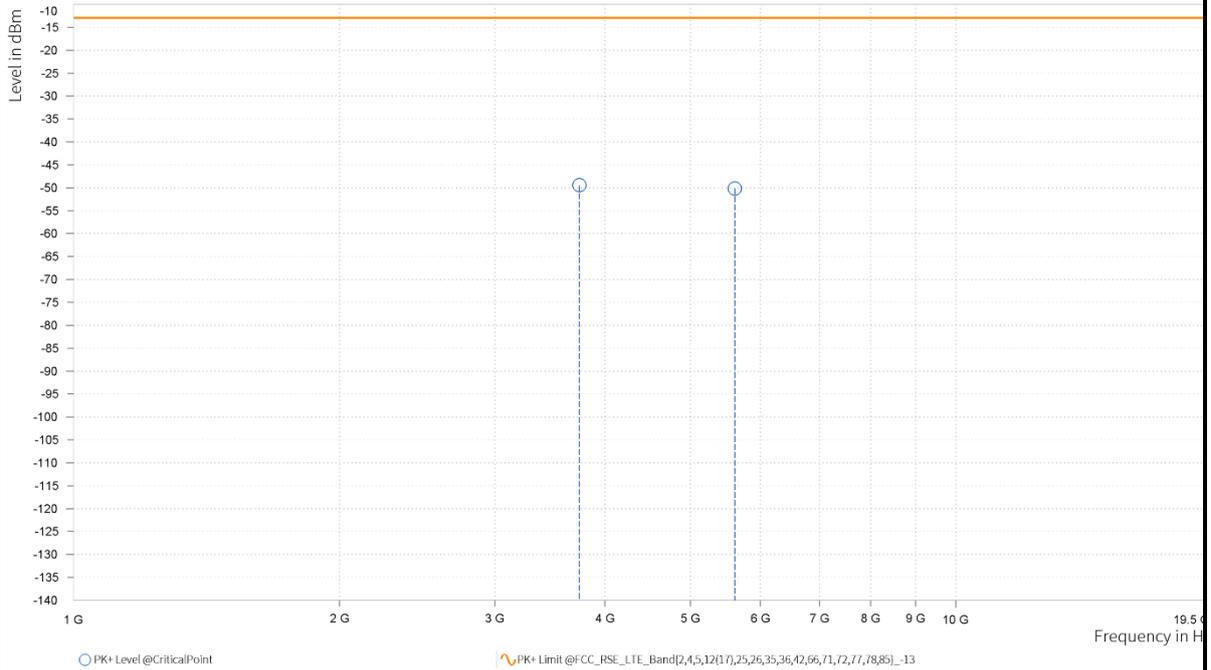




CHANNEL BANDWIDTH	3MHz / QPSK	MODE	TX channel 18900
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	120Vac 60HZ	TESTED BY	Hanwen Xu

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]
4	3,742.000	-49.46	-13.00	36.46	22.00	V	359.1	1.00
4	5,613.000	-50.14	-13.00	37.14	25.05	V	70.7	2.00



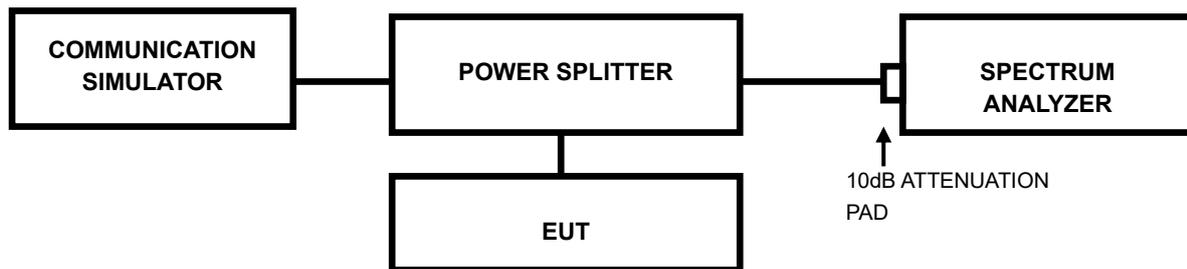


3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

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

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

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

3.7.4 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

GSM

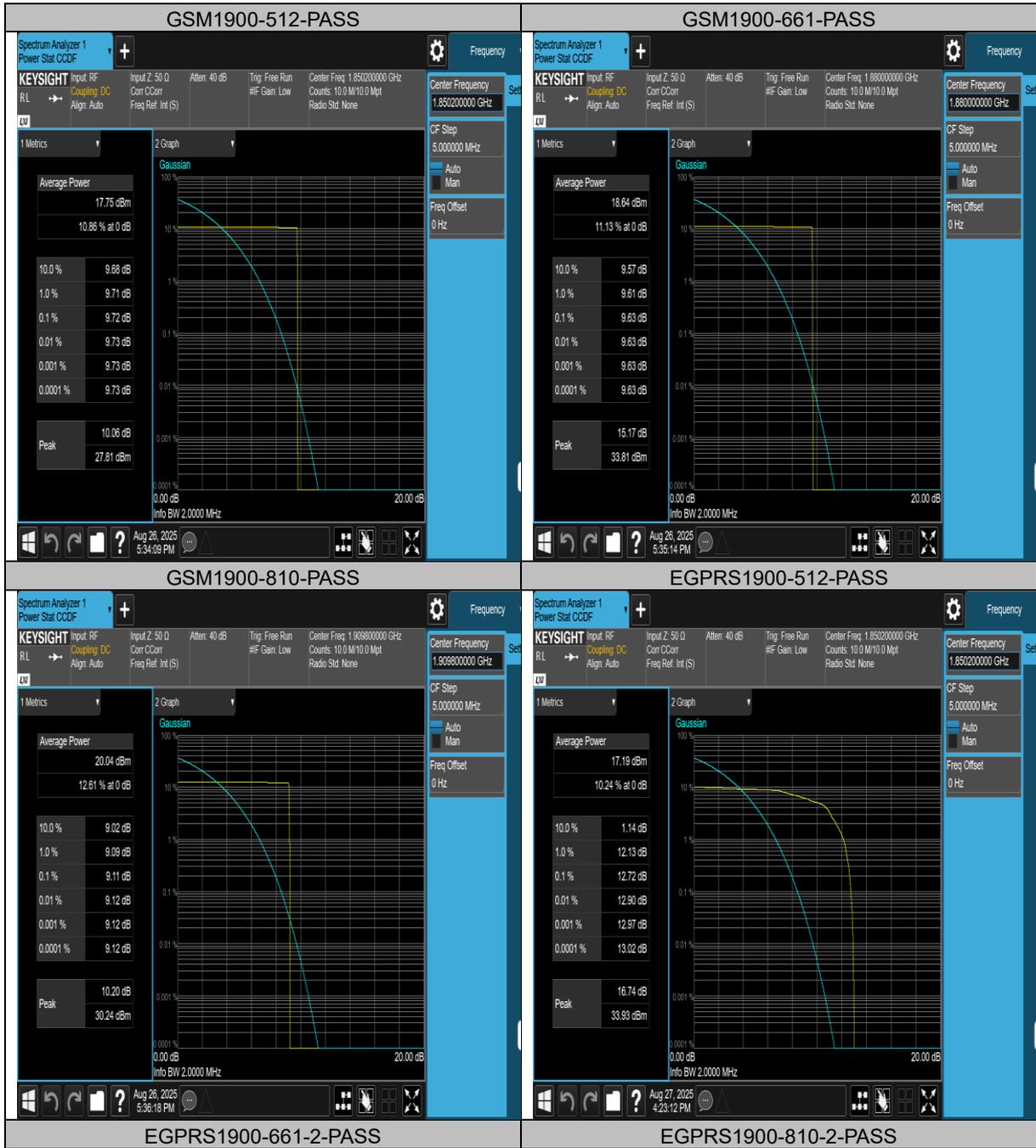
PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Channel	Result(dB)	Limit(dB)	Verdict
GSM1900	512	9.72	13	PASS
GSM1900	661	9.63	13	PASS
GSM1900	810	9.11	13	PASS
EGPRS1900	512	12.72	13	PASS
EGPRS1900	661	12.67	13	PASS
EGPRS1900	810	12.69	13	PASS

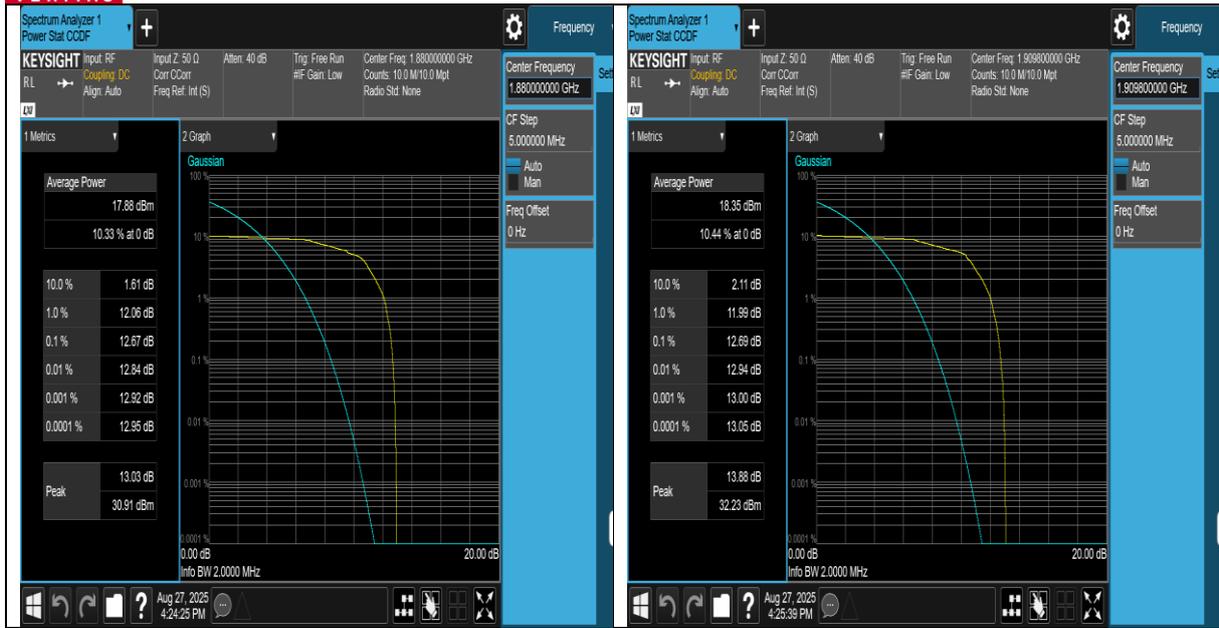


Test Graphs





BUREAU VERITAS Test Report No.: PSU-QBJ2508070215RF02



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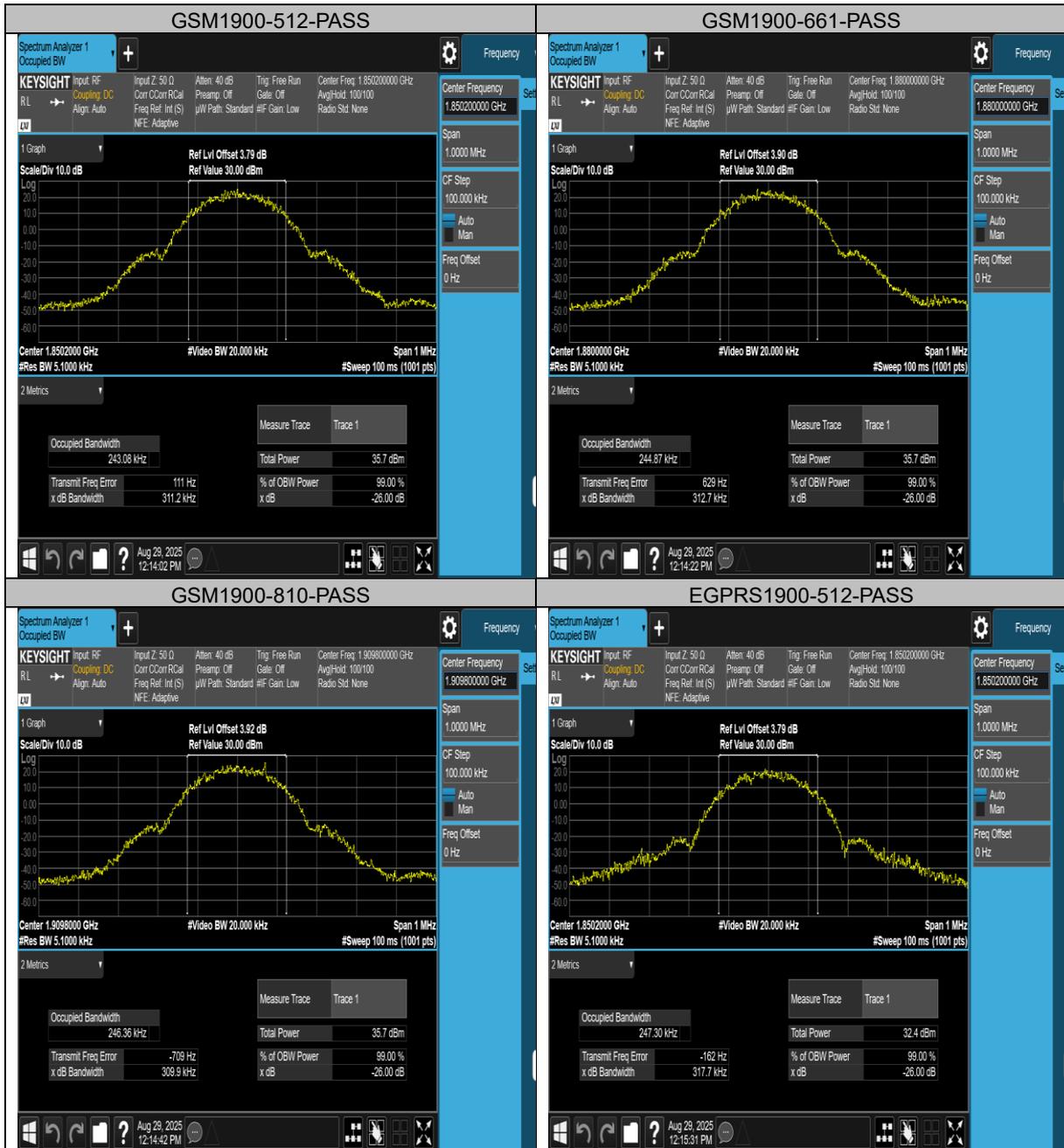


APPENDIX : 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

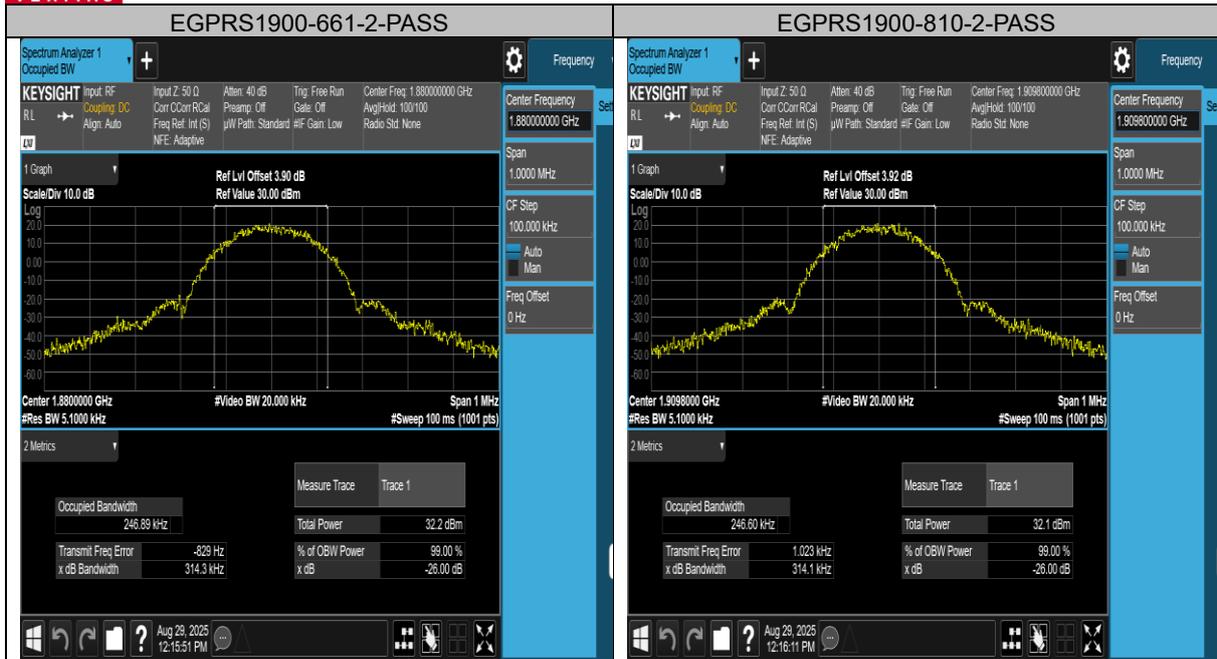
Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
GSM1900	512	0.24308	0.3112	---	PASS
GSM1900	661	0.24487	0.3127	---	PASS
GSM1900	810	0.24636	0.3099	---	PASS
EGPRS1900	512	0.24730	0.3177	---	PASS
EGPRS1900	661	0.24689	0.3143	---	PASS
EGPRS1900	810	0.24660	0.3141	---	PASS

Test Graphs





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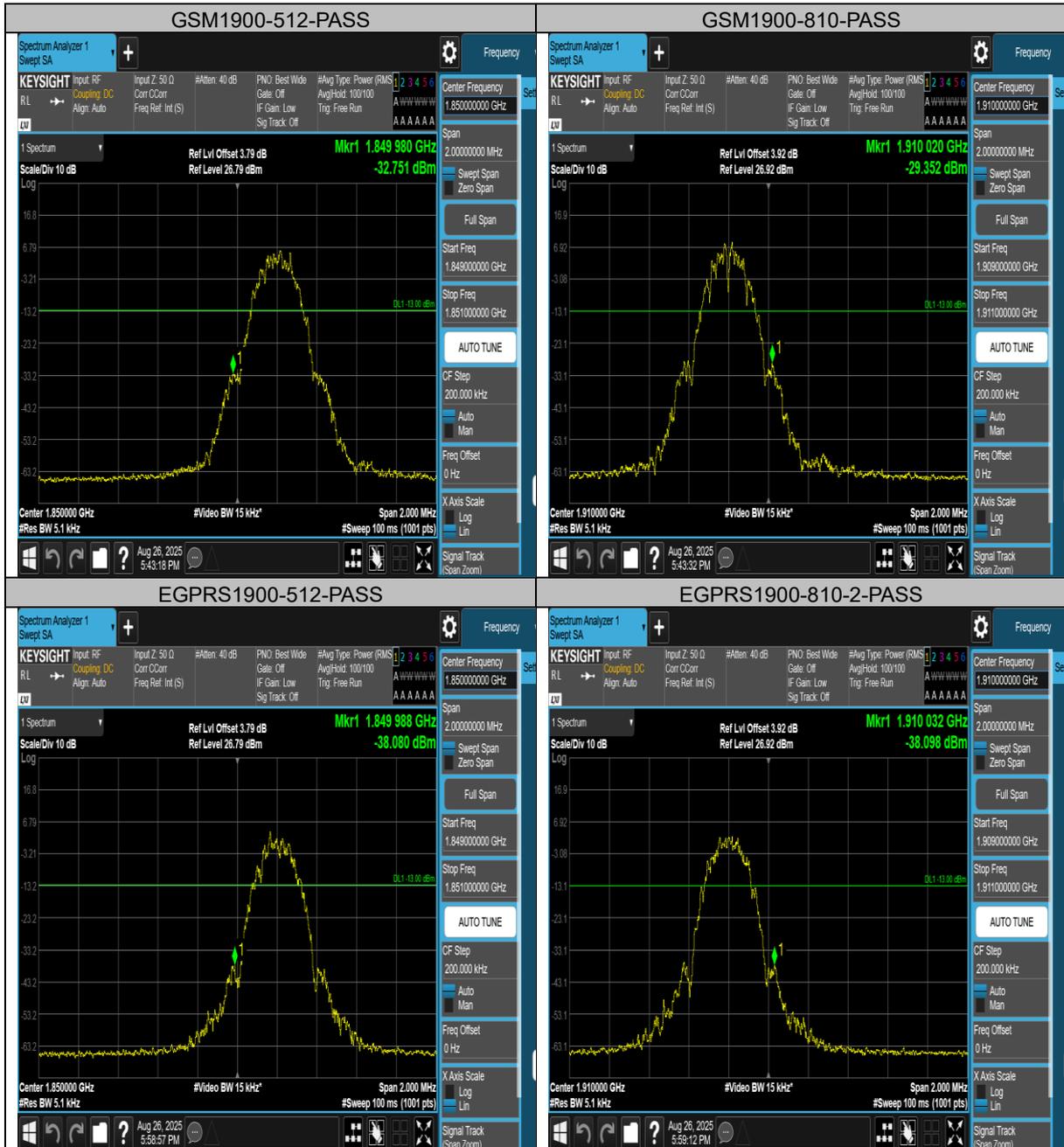


APPENDIX : BAND EDGE

Test Result

Band	Channel	Freq (MHz)	Result (dBm)	Limit(dBm)	Verdict
GSM1900	512	1849.98	-32.75	-13	PASS
GSM1900	810	1910.02	-29.35	-13	PASS
EGPRS1900	512	1849.99	-38.08	-13	PASS
EGPRS1900	810	1910.03	-38.10	-13	PASS

Test Graphs





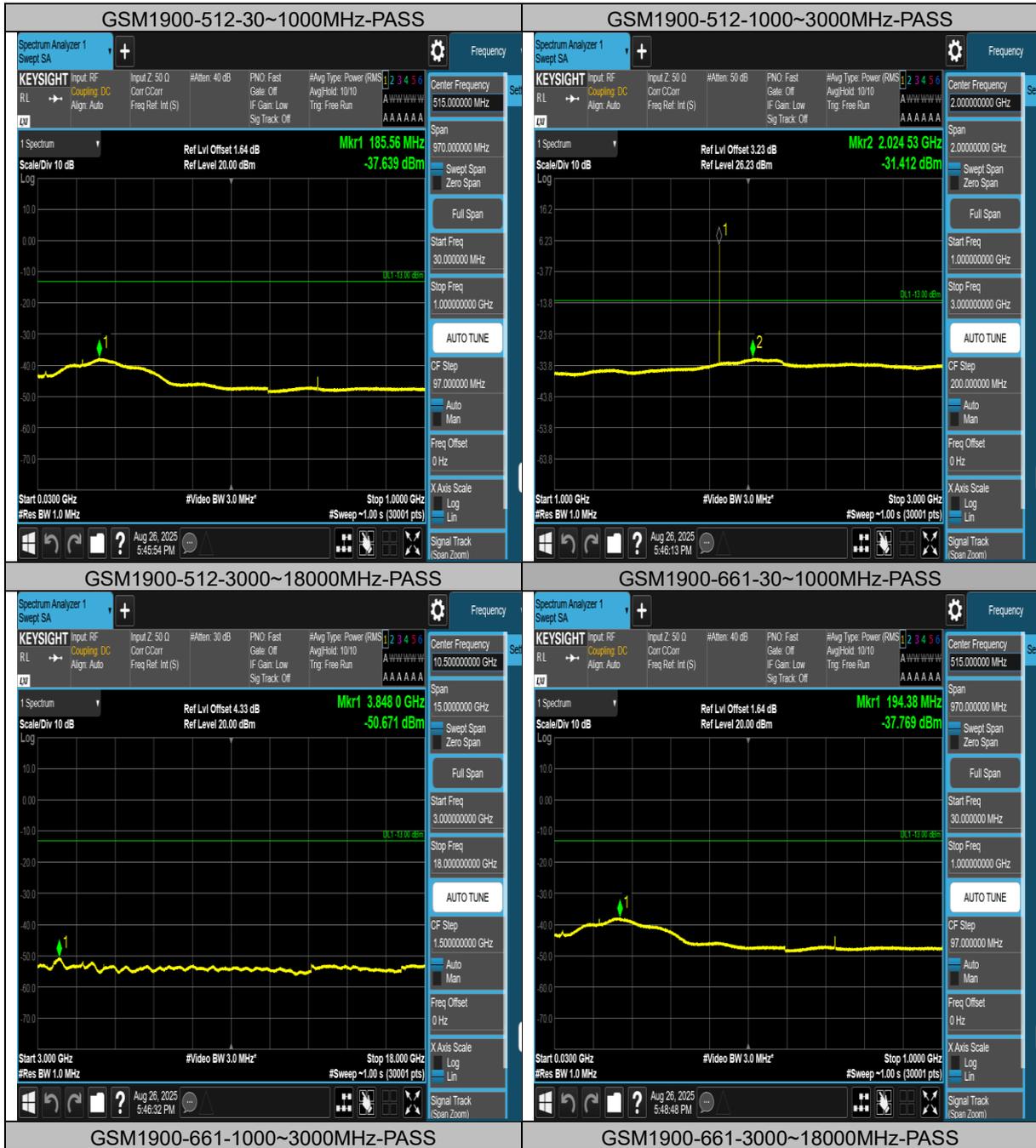
APPENDIX : CONDUCTED SPURIOUS EMISSION

Test Result

Band	Channel	Frequency Range(MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GSM1900	512	30~1000MHz	185.56	-37.64	-13	PASS
GSM1900	512	1000~3000MHz	2024.53	-31.41	-13	PASS
GSM1900	512	3000~18000MHz	3848	-50.67	-13	PASS
GSM1900	661	30~1000MHz	194.38	-37.77	-13	PASS
GSM1900	661	1000~3000MHz	2027.87	-31.45	-13	PASS
GSM1900	661	3000~18000MHz	3891.5	-50.5	-13	PASS
GSM1900	810	30~1000MHz	189.37	-37.74	-13	PASS
GSM1900	810	1000~3000MHz	2032.07	-31.44	-13	PASS
GSM1900	810	3000~18000MHz	3861.5	-50.64	-13	PASS
EGPRS1900	512	30~1000MHz	185.49	-37.71	-13	PASS
EGPRS1900	512	1000~3000MHz	2031.87	-31.42	-13	PASS
EGPRS1900	512	3000~18000MHz	3859	-50.66	-13	PASS
EGPRS1900	661	30~1000MHz	187.69	-37.7	-13	PASS
EGPRS1900	661	1000~3000MHz	2047.8	-31.46	-13	PASS
EGPRS1900	661	3000~18000MHz	3837.5	-50.61	-13	PASS
EGPRS1900	810	30~1000MHz	189.27	-37.46	-13	PASS
EGPRS1900	810	1000~3000MHz	2050.87	-31.32	-13	PASS
EGPRS1900	810	3000~18000MHz	3826	-50.6	-13	PASS

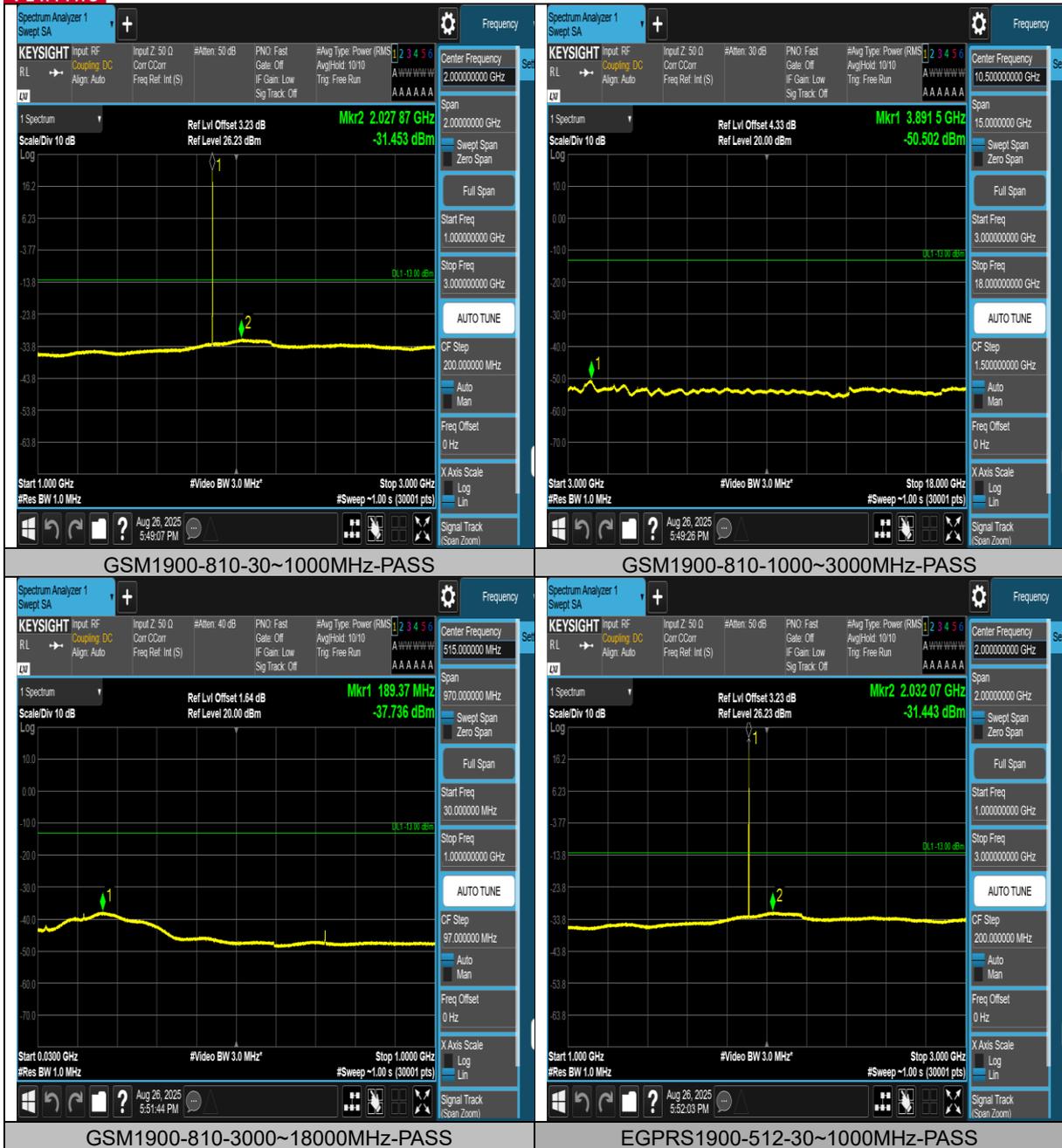


Test Graphs





BUREAU VERITAS Test Report No.: PSU-QBJ2508070215RF02



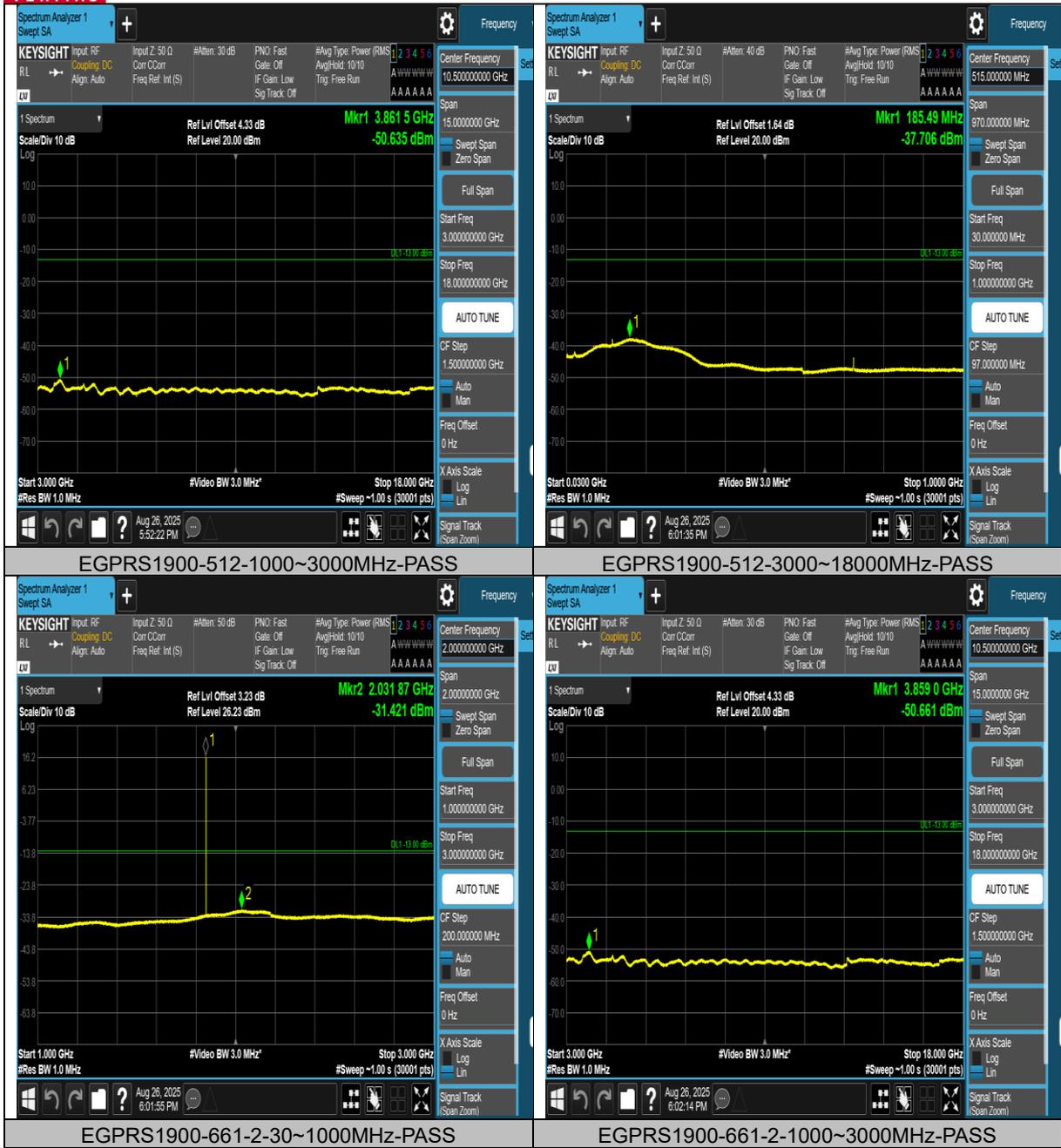
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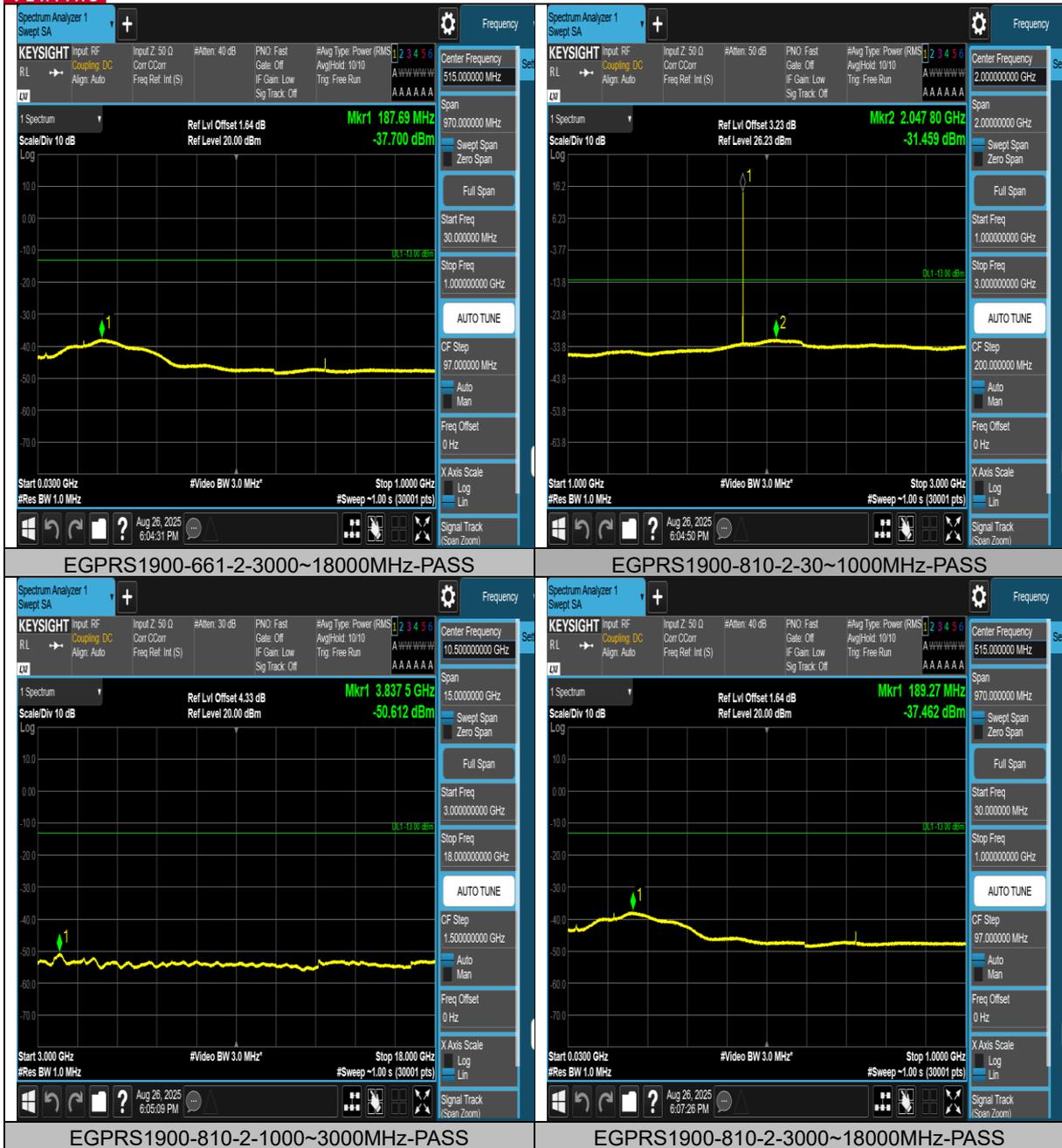
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APPENDIX: FREQUENCY STABILITY

Test Result

Voltage							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM1900	512	VN	NT	570.00	0.308075	±2.5	PASS
GSM1900	512	VL	NT	110.00	0.059453	±2.5	PASS
GSM1900	512	VH	NT	350.00	0.189169	±2.5	PASS
GSM1900	810	VN	NT	790.00	0.413656	±2.5	PASS
GSM1900	810	VL	NT	210.00	0.109959	±2.5	PASS
GSM1900	810	VH	NT	2100.00	1.099592	±2.5	PASS

Temperature							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM1900	512	NV	-30	90.00	0.048643	±2.5	PASS
GSM1900	512	NV	-20	-400.00	-0.216193	±2.5	PASS
GSM1900	512	NV	-10	-160.00	-0.086477	±2.5	PASS
GSM1900	512	NV	0	520.00	0.281051	±2.5	PASS
GSM1900	512	NV	10	480.00	0.259431	±2.5	PASS
GSM1900	512	NV	20	300.00	0.162145	±2.5	PASS
GSM1900	512	NV	30	0.00	0.000000	±2.5	PASS
GSM1900	512	NV	40	1090.00	0.589125	±2.5	PASS
GSM1900	512	NV	50	280.00	0.151335	±2.5	PASS
GSM1900	810	NV	-30	240.00	0.125668	±2.5	PASS
GSM1900	810	NV	-20	-250.00	-0.130904	±2.5	PASS
GSM1900	810	NV	-10	-270.00	-0.141376	±2.5	PASS
GSM1900	810	NV	0	610.00	0.319405	±2.5	PASS
GSM1900	810	NV	10	540.00	0.282752	±2.5	PASS
GSM1900	810	NV	20	-510.00	-0.267044	±2.5	PASS
GSM1900	810	NV	30	180.00	0.094251	±2.5	PASS
GSM1900	810	NV	40	850.00	0.445073	±2.5	PASS
GSM1900	810	NV	50	-220.00	-0.115195	±2.5	PASS

WCDMA B2

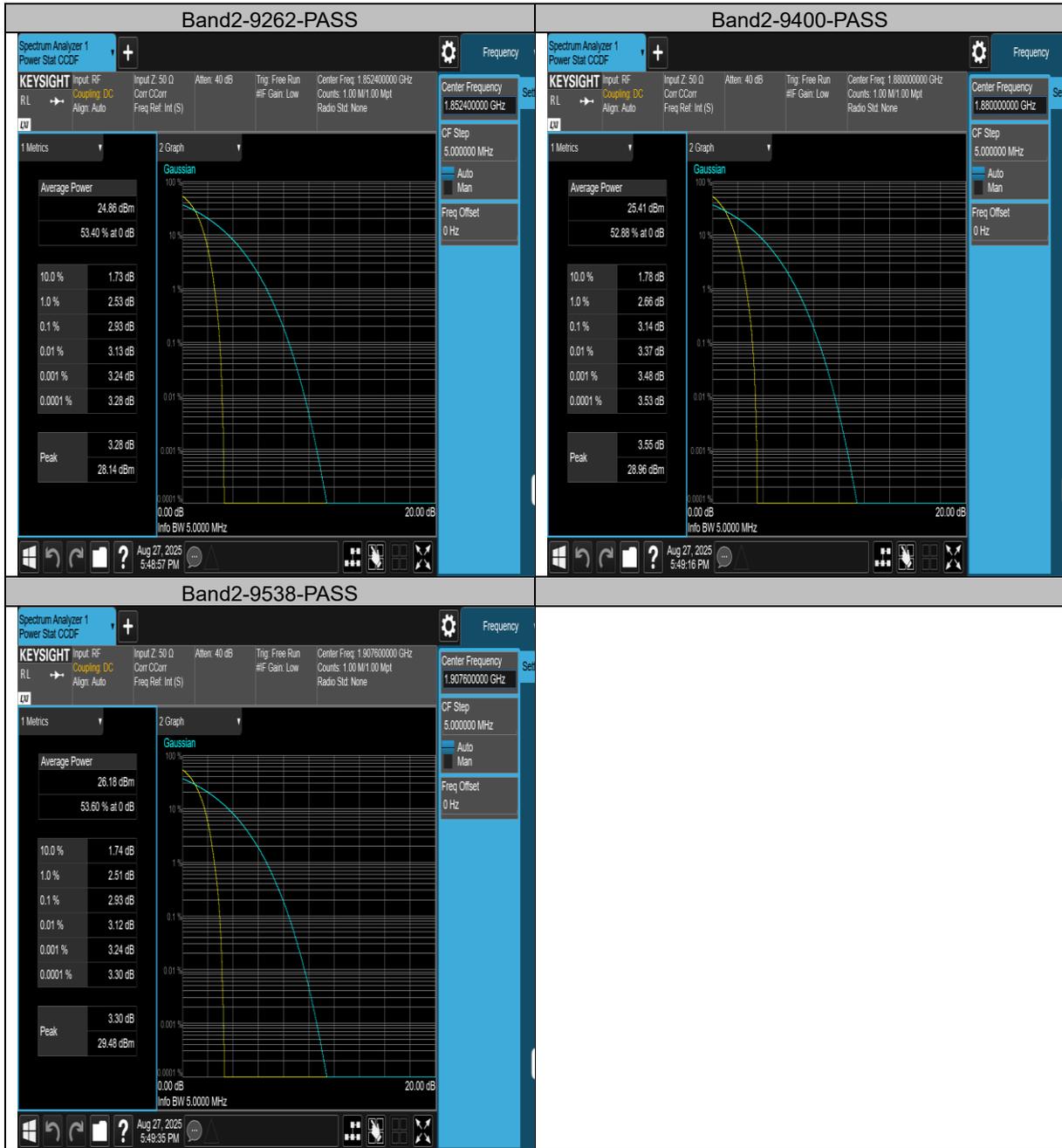
PEAK-TO-AVERAGE RATIO

Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band2	9262	2.93	13	PASS
Band2	9400	3.14	13	PASS
Band2	9538	2.93	13	PASS



Test Graphs



APPENDIX : 26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(kHz)	Verdict
Band2	9262	4.1553	4.709	---	PASS
Band2	9400	4.1604	4.688	---	PASS
Band2	9538	4.1547	4.706	---	PASS



Test Graphs



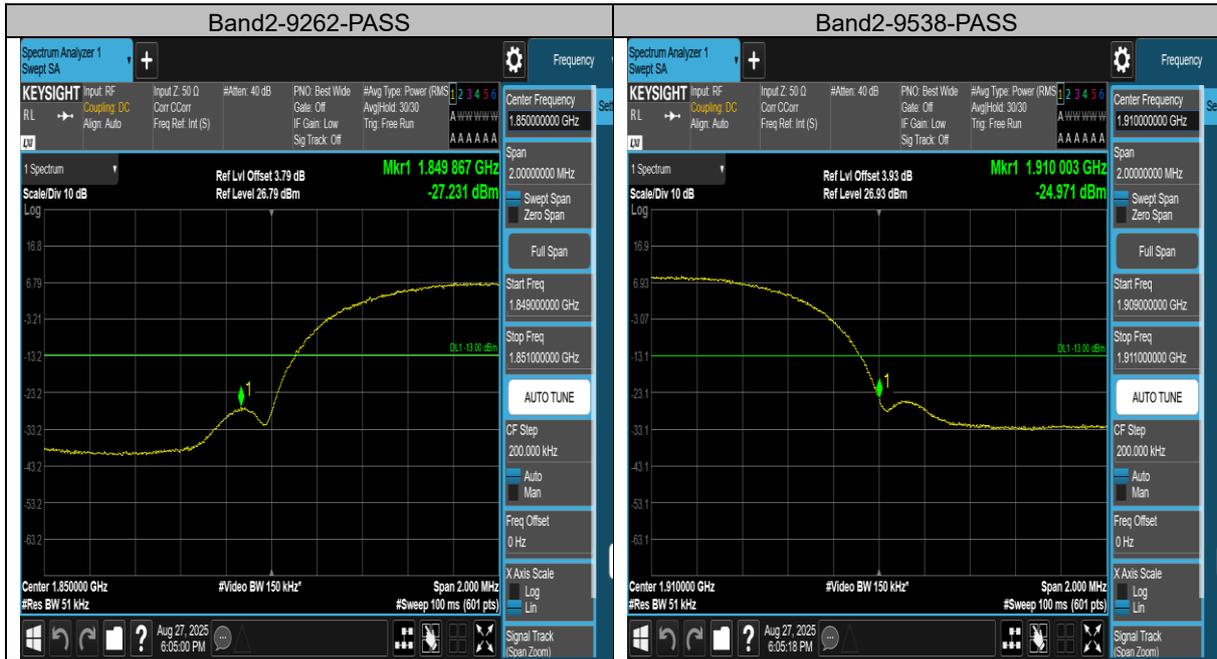
APPENDIX : BAND EDGE

Test Result

Band	Channel	Frequency (MHz)	Result (dBm)	Limit(dBm)	Verdict
Band2	9262	1849.87	-27.23	-13	PASS
Band2	9538	1910.00	-24.97	-13	PASS



Test Graphs



APPENDIX : CONDUCTED SPURIOUS EMISSION

Test Result

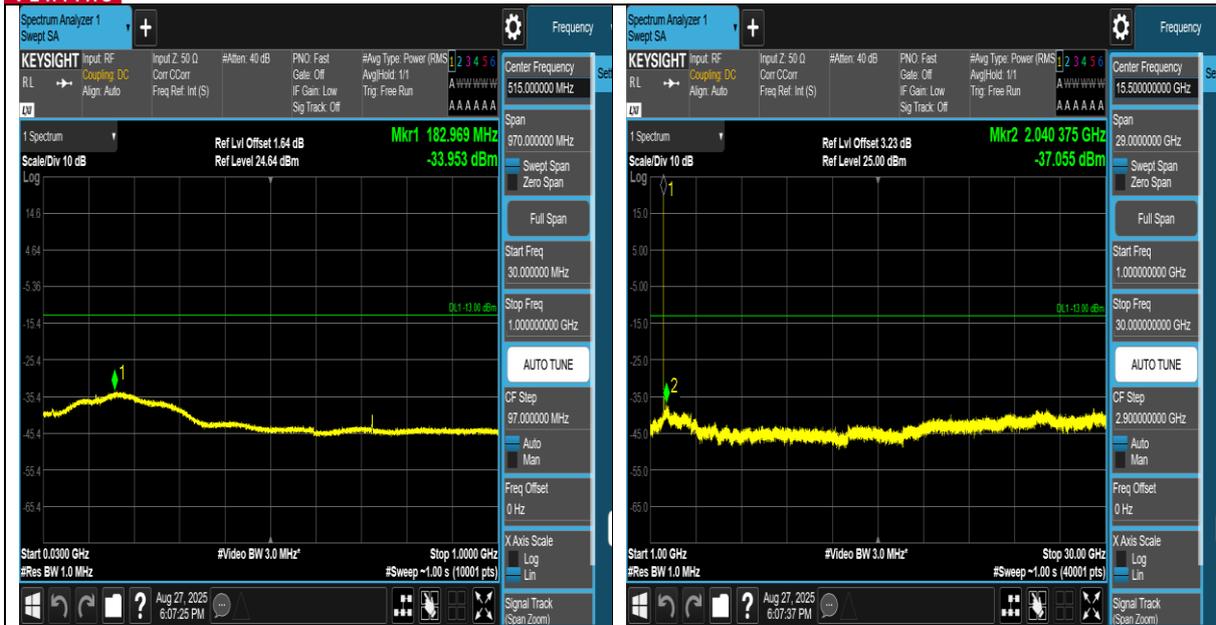
Band	Channel	Frequency Range (Mhz)	Frequency (dBm)	Result (dBm)	Limit (dBm)	Verdict
Band2	9262	30~1000MHz	182.97	-33.95	-13	PASS
Band2	9262	1000~30000MHz	2040.38	-37.06	-13	PASS
Band2	9262	3000~20000MHz	3141.1	-38.17	-13	PASS
Band2	9400	30~1000MHz	196.65	-33.85	-13	PASS
Band2	9400	1000~30000MHz	2030.23	-37.36	-13	PASS
Band2	9400	3000~20000MHz	3292.4	-37.99	-13	PASS
Band2	9538	30~1000MHz	178.8	-34.11	-13	PASS
Band2	9538	1000~30000MHz	2131.73	-37.51	-13	PASS
Band2	9538	3000~20000MHz	3238	-37.98	-13	PASS

Test Graphs



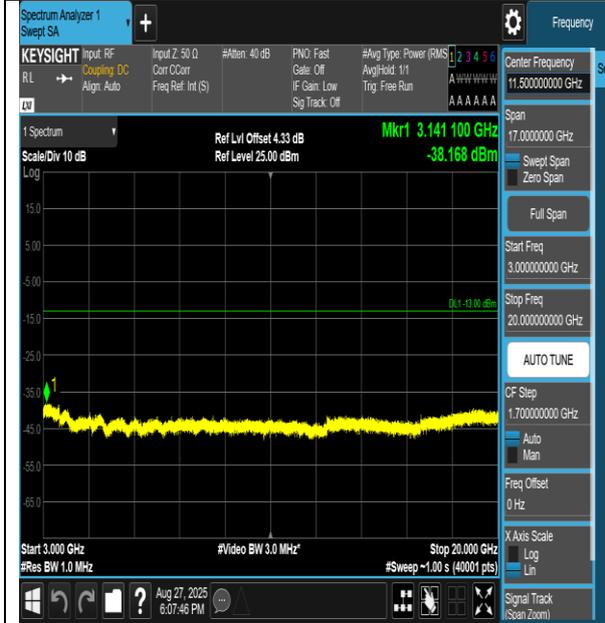


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Band2-9262-3000~20000MHz-PASS

Band2-9400-30~1000MHz-PASS



Band2-9400-1000~30000MHz-PASS

Band2-9400-3000~20000MHz-PASS

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Tel: +86 (0557) 368 1008

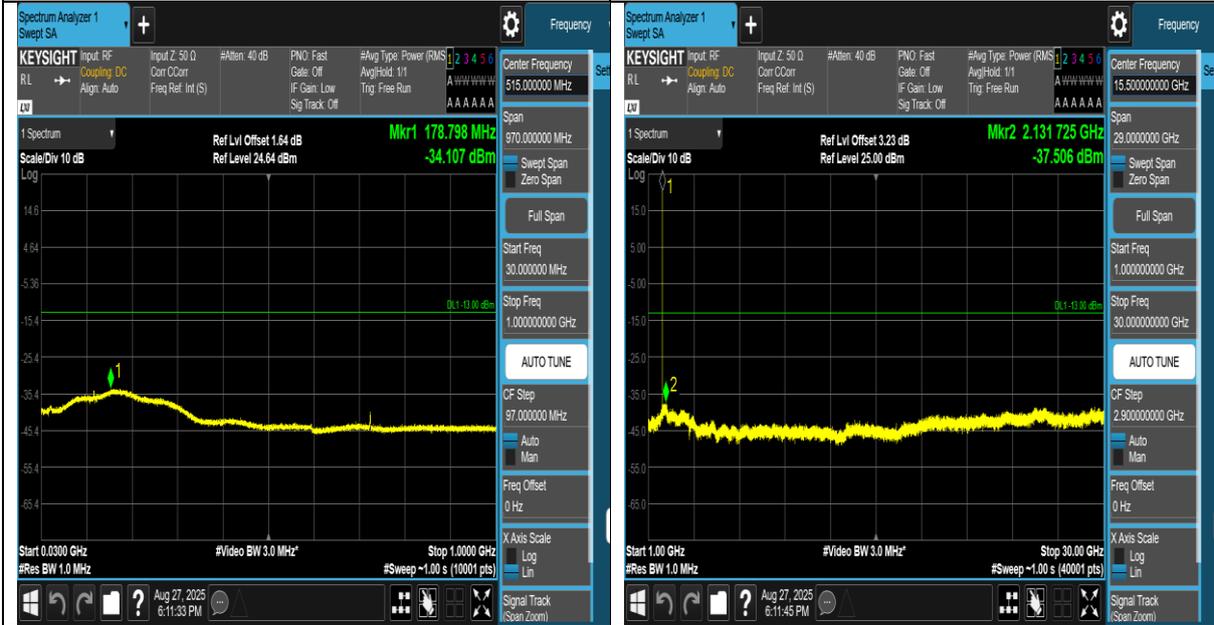


BUREAU VERITAS Test Report No.: PSU-QBJ2508070215RF02



Band2-9538-30~1000MHz-PASS

Band2-9538-1000~3000MHz-PASS



Band2-9538-3000~20000MHz-PASS

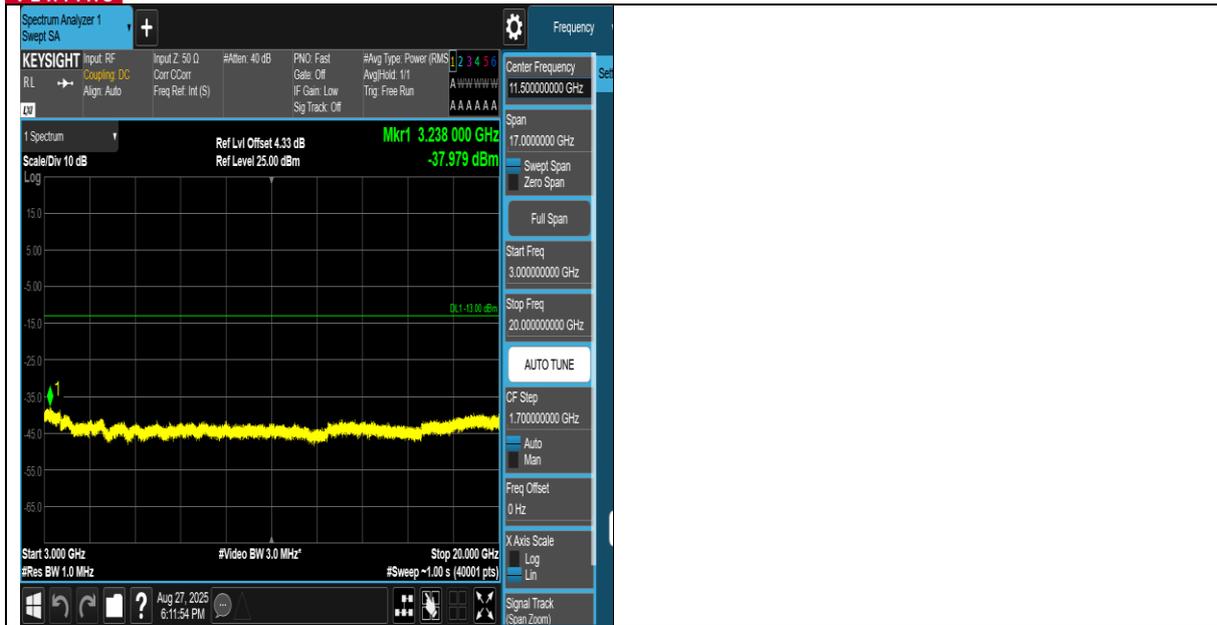
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APPENDIX : FREQUENCY STABILITY

Test Result

Voltage							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band2	9262	VN	NT	2134.65	1.152371	±2.5	PASS
Band2	9262	VL	NT	655.79	0.354019	±2.5	PASS
Band2	9262	VH	NT	1855.95	1.001914	±2.5	PASS
Band2	9538	VN	NT	2364.08	1.239295	±2.5	PASS
Band2	9538	VL	NT	345.82	0.181283	±2.5	PASS
Band2	9538	VH	NT	954.30	0.500264	±2.5	PASS

Temperature							
Band	Channel	Voltage (Vdc)	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band2	9262	NV	-30	2414.13	1.303243	±2.5	PASS
Band2	9262	NV	-20	-685.50	-0.370059	±2.5	PASS
Band2	9262	NV	-10	354.09	0.191152	±2.5	PASS
Band2	9262	NV	0	-2315.66	-1.250088	±2.5	PASS
Band2	9262	NV	10	-1655.89	-0.893915	±2.5	PASS
Band2	9262	NV	20	-925.26	-0.499493	±2.5	PASS
Band2	9262	NV	30	-385.46	-0.208086	±2.5	PASS
Band2	9262	NV	40	3334.90	1.800311	±2.5	PASS
Band2	9262	NV	50	1204.35	0.650158	±2.5	PASS
Band2	9538	NV	-30	-1135.77	-0.595392	±2.5	PASS
Band2	9538	NV	-20	-3835.46	-2.010621	±2.5	PASS
Band2	9538	NV	-10	-395.27	-0.207208	±2.5	PASS
Band2	9538	NV	0	1794.87	0.940905	±2.5	PASS
Band2	9538	NV	10	-1905.87	-0.999093	±2.5	PASS
Band2	9538	NV	20	-515.25	-0.270104	±2.5	PASS
Band2	9538	NV	30	-1375.28	-0.720948	±2.5	PASS
Band2	9538	NV	40	434.95	0.228009	±2.5	PASS
Band2	9538	NV	50	1474.13	0.772767	±2.5	PASS

LTE BAND 2

PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band2	20MHz	QPSK	18700	1RB#0	3.72	13	PASS
Band2	20MHz	QPSK	18700	100RB#0	5.25	13	PASS
Band2	20MHz	QPSK	18900	1RB#0	4.35	13	PASS
Band2	20MHz	QPSK	18900	100RB#0	5.48	13	PASS
Band2	20MHz	QPSK	19100	1RB#0	4.05	13	PASS
Band2	20MHz	QPSK	19100	100RB#0	5.27	13	PASS
Band2	20MHz	64QAM	18700	1RB#0	5.59	13	PASS



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Band2	20MHz	64QAM	18700	100RB#0	6.53	13	PASS
Band2	20MHz	64QAM	18900	1RB#0	6.14	13	PASS
Band2	20MHz	64QAM	18900	100RB#0	6.65	13	PASS
Band2	20MHz	64QAM	19100	1RB#0	5.95	13	PASS
Band2	20MHz	64QAM	19100	100RB#0	6.57	13	PASS
Band2	20MHz	16QAM	18700	1RB#0	4.59	13	PASS
Band2	20MHz	16QAM	18700	100RB#0	6.08	13	PASS
Band2	20MHz	16QAM	18900	1RB#0	5.33	13	PASS
Band2	20MHz	16QAM	18900	100RB#0	6.27	13	PASS
Band2	20MHz	16QAM	19100	1RB#0	5.16	13	PASS
Band2	20MHz	16QAM	19100	100RB#0	6.09	13	PASS



Test Graphs

