

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

3.6.2 TEST PROCEDURES

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

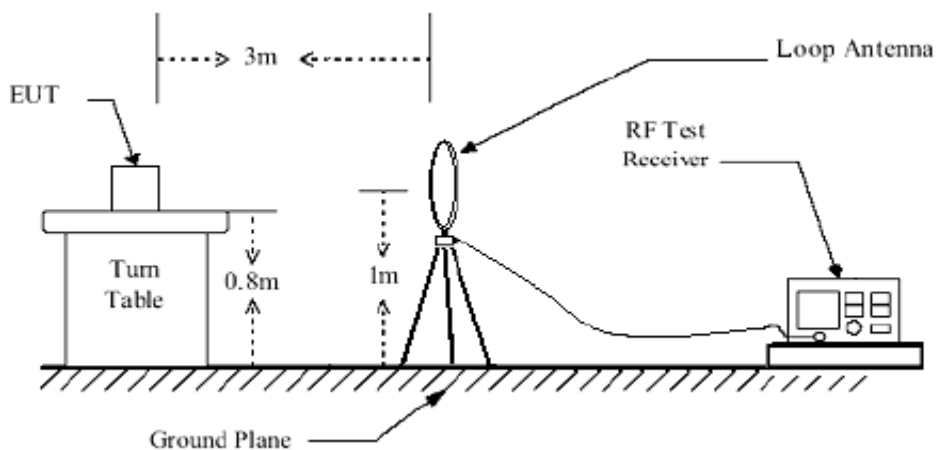
NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.6.3 DEVIATION FROM TEST STANDARD

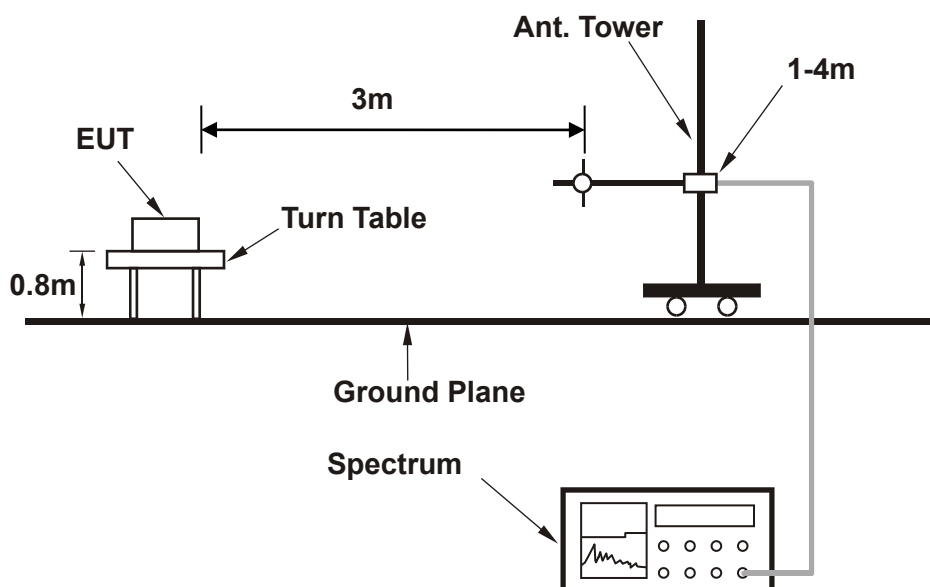
No deviation

3.6.4 TEST SETUP

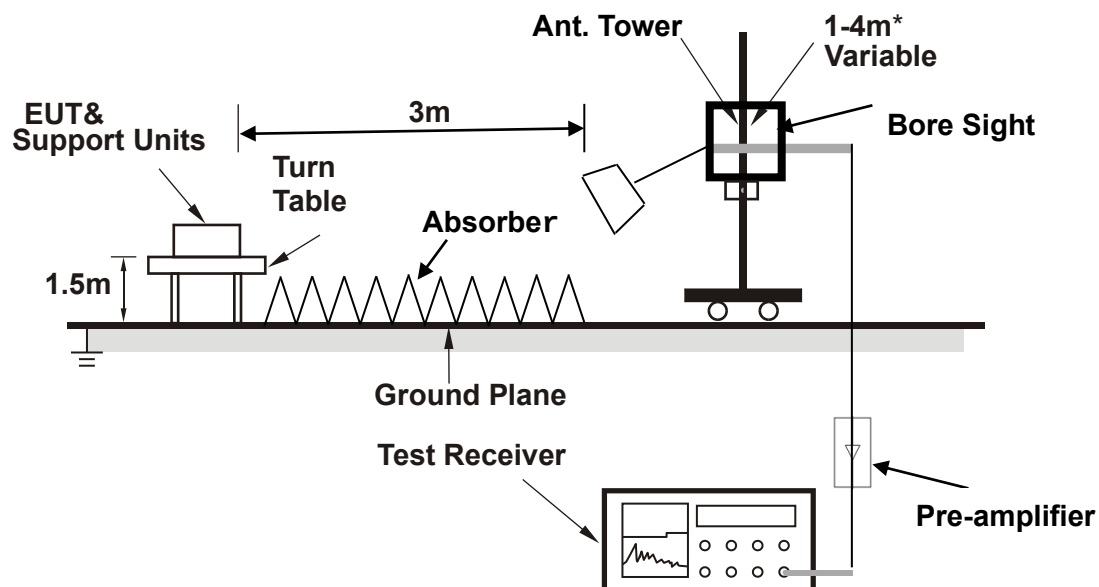
< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna

Depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

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

3.6.5 TEST RESULTS

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

BELOW 1GHz WORST-CASE DATA

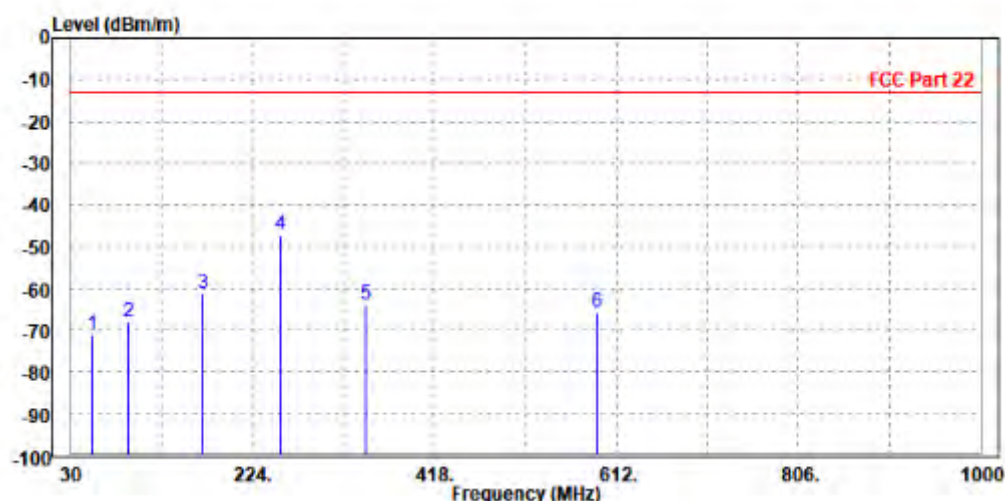
30 MHz – 1GHz data:

EDGE 850(Ant0) (UP):

CHANNEL BANDWIDTH: 128 ~ 251

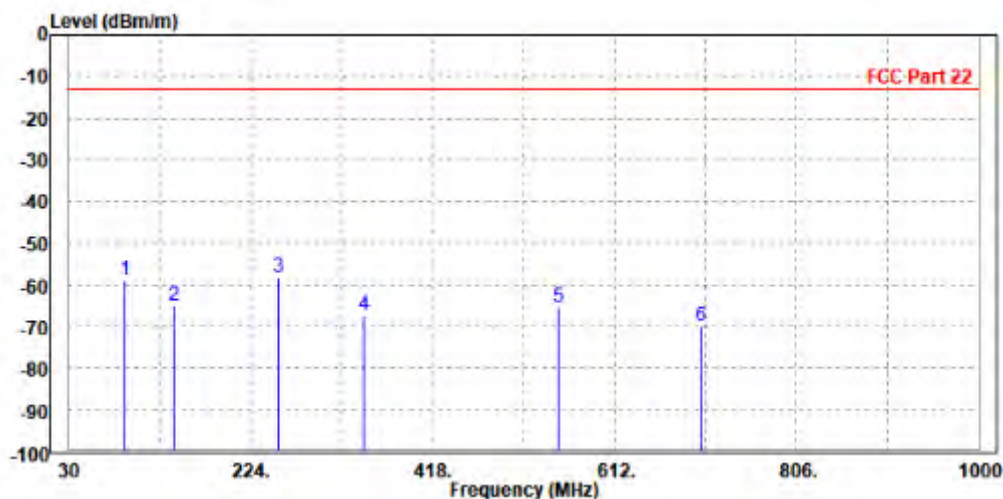
MODE	TX channel 189	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	52.310	-71.00	-53.63	-13.00	-58.00	-17.37	Peak	Horizontal
2	91.110	-67.98	-46.96	-13.00	-54.98	-21.02	Peak	Horizontal
3	171.620	-61.10	-44.42	-13.00	-48.10	-16.68	Peak	Horizontal
4 PP	254.070	-47.28	-35.75	-13.00	-34.28	-11.53	Peak	Horizontal
5	344.280	-63.70	-52.32	-13.00	-50.70	-11.38	Peak	Horizontal
6	591.630	-65.80	-61.40	-13.00	-52.80	-4.40	Peak	Horizontal



MODE	TX channel 189	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	89.170	-58.82	-42.78	-13.00	-45.82	-16.04	Peak	Vertical
2	142.520	-65.01	-50.76	-13.00	-52.01	-14.25	Peak	Vertical
3 PP	254.070	-58.30	-44.93	-13.00	-45.30	-13.37	Peak	Vertical
4	344.280	-67.29	-57.28	-13.00	-54.29	-10.01	Peak	Vertical
5	552.830	-65.49	-58.44	-13.00	-52.49	-7.05	Peak	Vertical
6	703.180	-69.91	-64.67	-13.00	-56.91	-5.24	Peak	Vertical





ABOVE 1GHz DATA

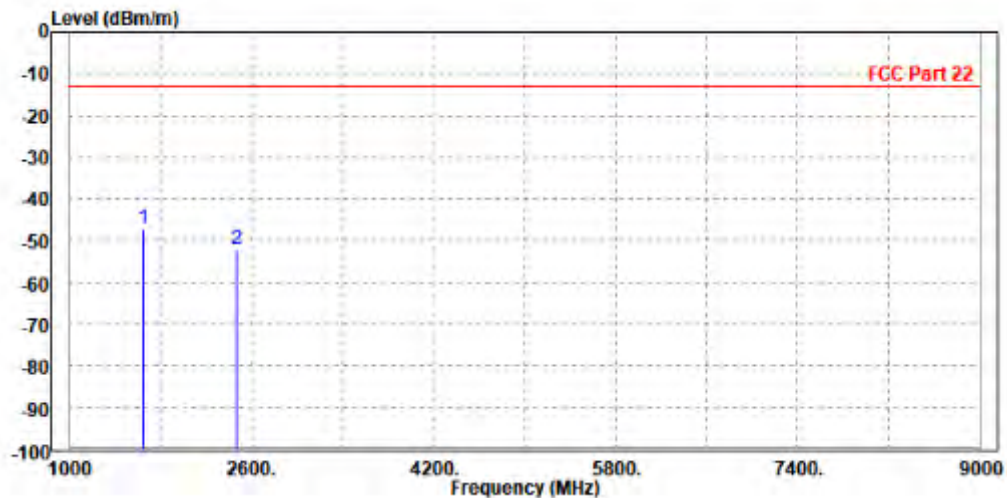
Note: For higher frequency, the emission is too low to be detected.

GSM 850(Ant0) (UP):

CH 128:

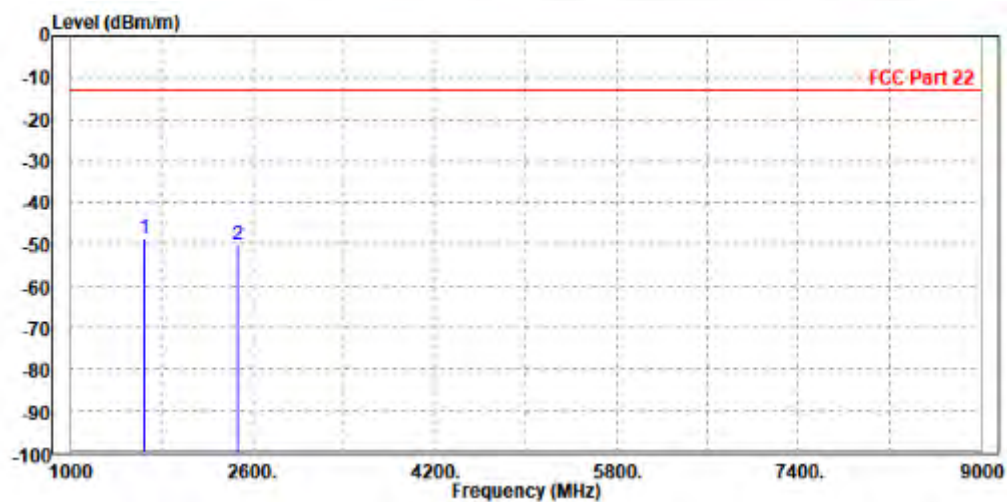
MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1648.000	-47.02	-47.79	-13.00	-34.02	0.77	Peak	Horizontal
2		2472.600	-52.20	-57.54	-13.00	-39.20	5.34	Peak	Horizontal



MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

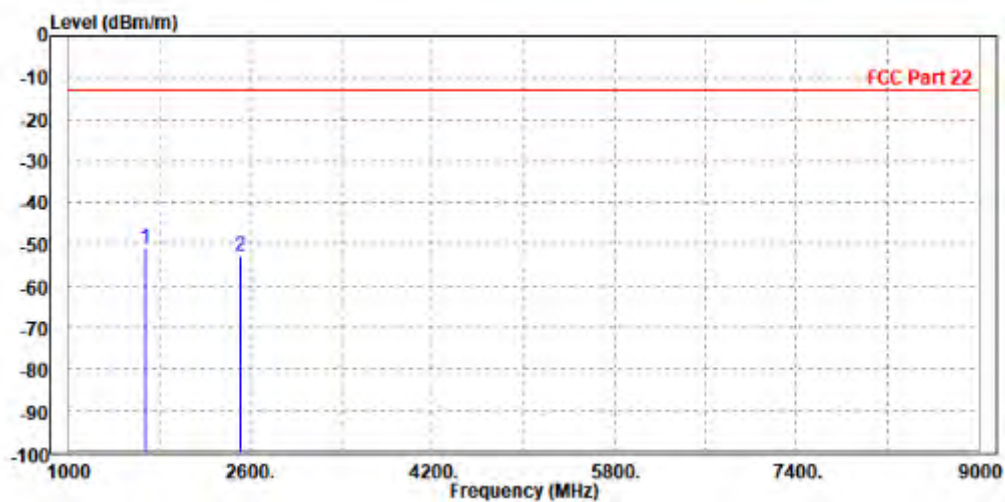
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1648.400	-48.63	-49.67	-13.00	-35.63	1.04	Peak	Vertical
2		2472.000	-50.08	-54.94	-13.00	-37.08	4.86	Peak	Vertical



CH 189:

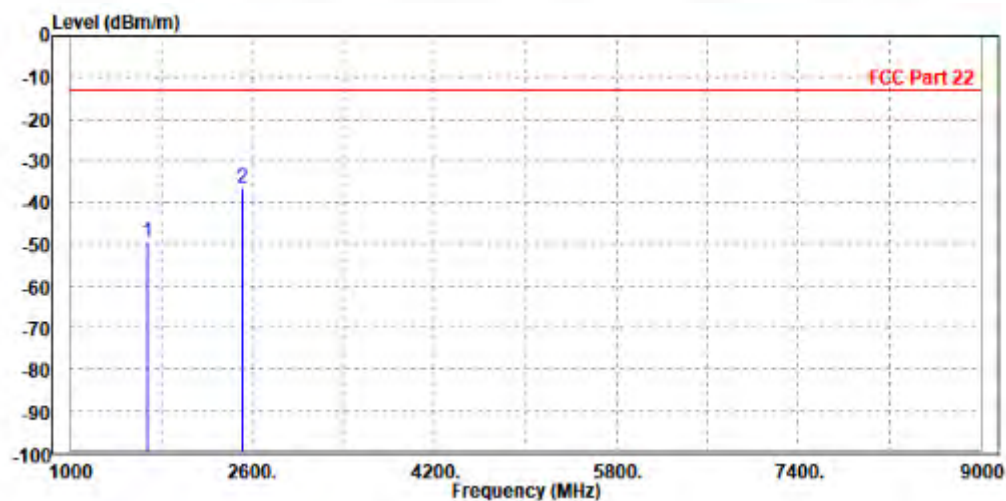
MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1672.000	-51.05	-52.02	-13.00	-38.05	0.97	Peak	Horizontal
2	2509.200	-52.97	-58.43	-13.00	-39.97	5.46	Peak	Horizontal



MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

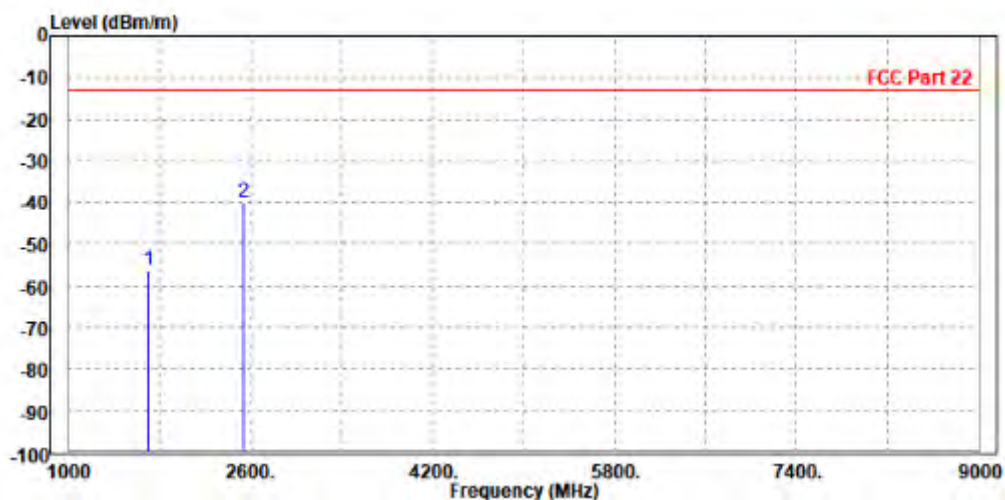
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.800	-49.30	-50.52	-13.00	-36.30	1.22	Peak	Vertical
2 PP	2512.000	-36.35	-41.33	-13.00	-23.35	4.98	Peak	Vertical



CH 251:

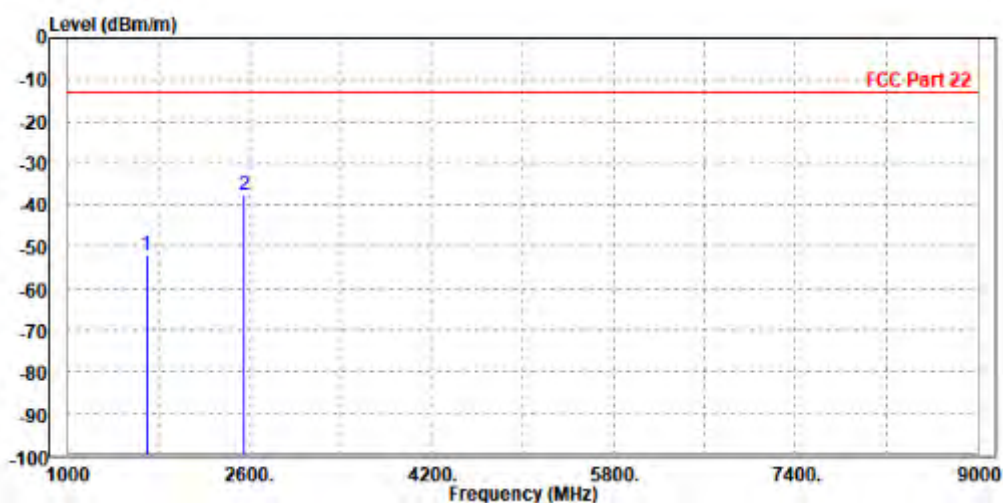
MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1697.600	-56.23	-57.41	-13.00	-43.23	1.18	Peak	Horizontal
2 PP	2544.000	-40.11	-45.65	-13.00	-27.11	5.54	Peak	Horizontal



MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1696.000	-52.06	-53.44	-13.00	-39.06	1.38	Peak	Vertical
2 PP	2546.400	-37.59	-42.68	-13.00	-24.59	5.09	Peak	Vertical

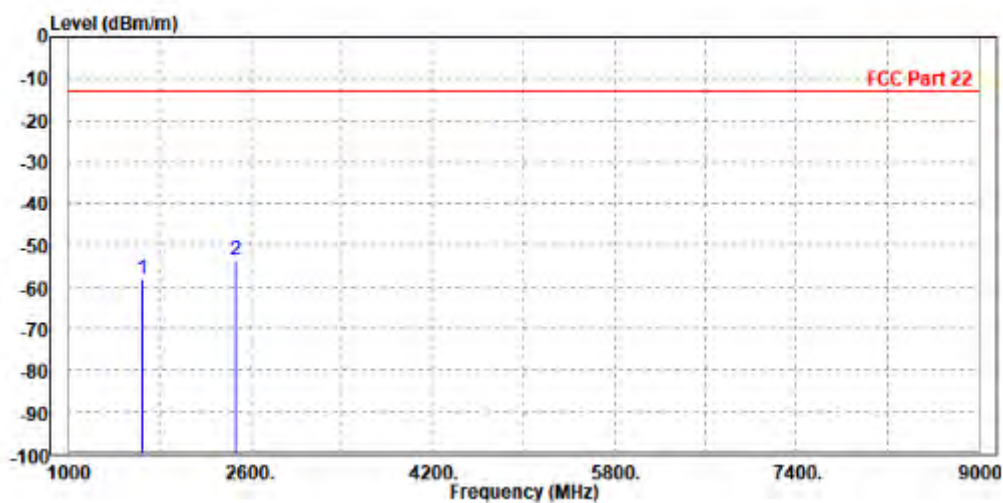


EDGE 850(Ant0) (UP):

CH 128:

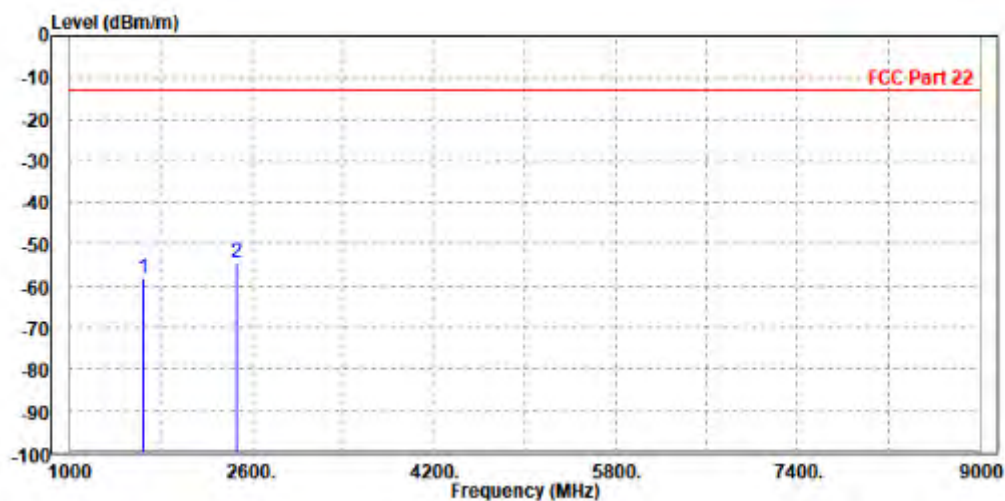
MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.400	-58.08	-58.86	-13.00	-45.08	0.78	Peak	Horizontal
2 PP	2472.000	-53.78	-59.12	-13.00	-40.78	5.34	Peak	Horizontal



MODE	TX channel 128	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

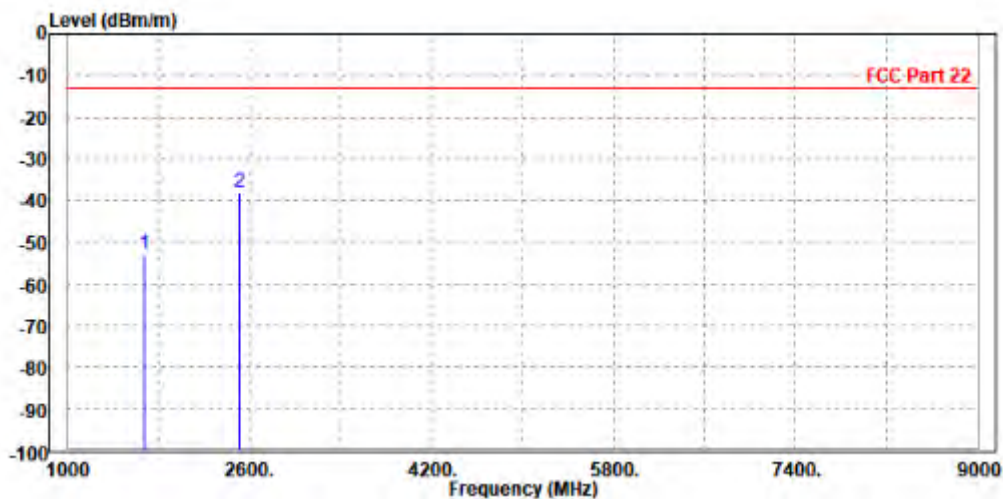
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1648.000	-58.08	-59.12	-13.00	-45.08	1.04	Peak	Vertical
2 PP	2472.600	-54.36	-59.22	-13.00	-41.36	4.86	Peak	Vertical



CH 189:

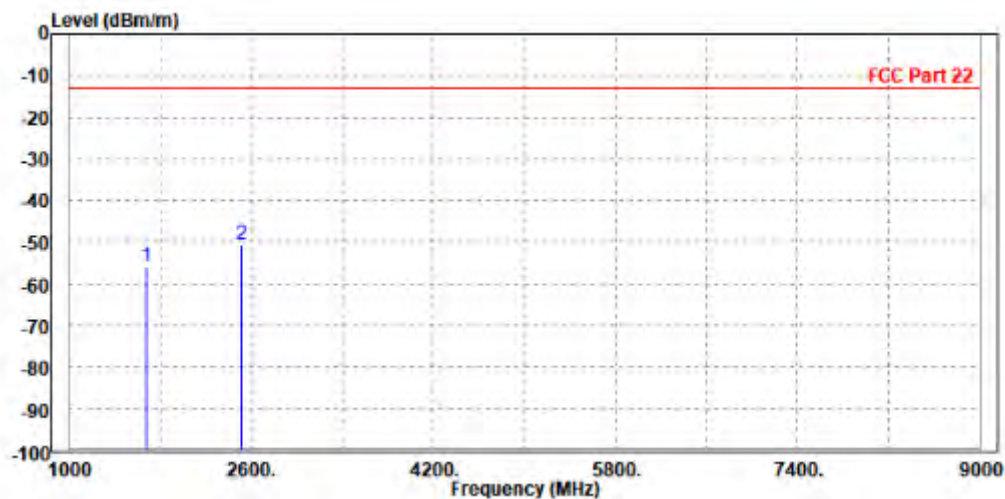
MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.000	-52.94	-53.91	-13.00	-39.94	0.97	Peak	Horizontal
2 PP	2509.200	-38.00	-43.46	-13.00	-25.00	5.46	Peak	Horizontal



MODE	TX channel 189	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

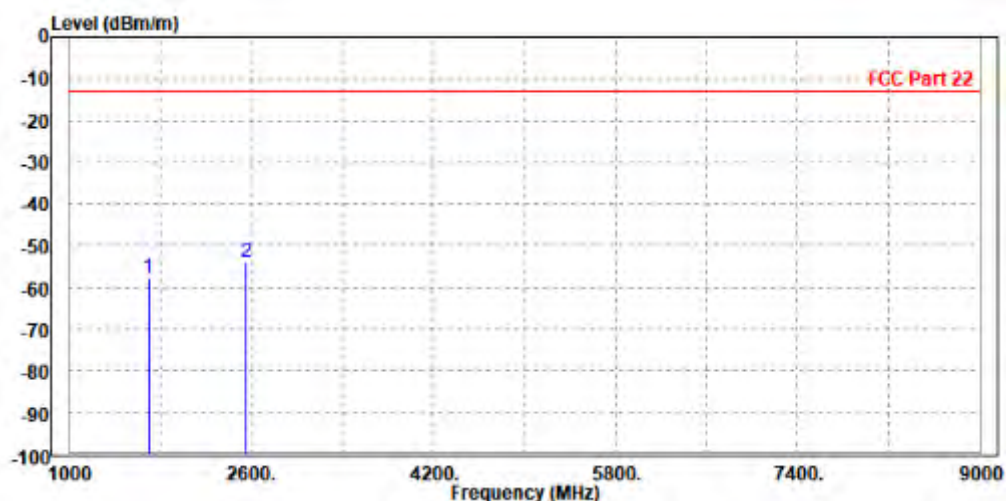
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.800	-55.97	-57.19	-13.00	-42.97	1.22	Peak	Vertical
2 PP	2512.000	-50.67	-55.65	-13.00	-37.67	4.98	Peak	Vertical



CH 251:

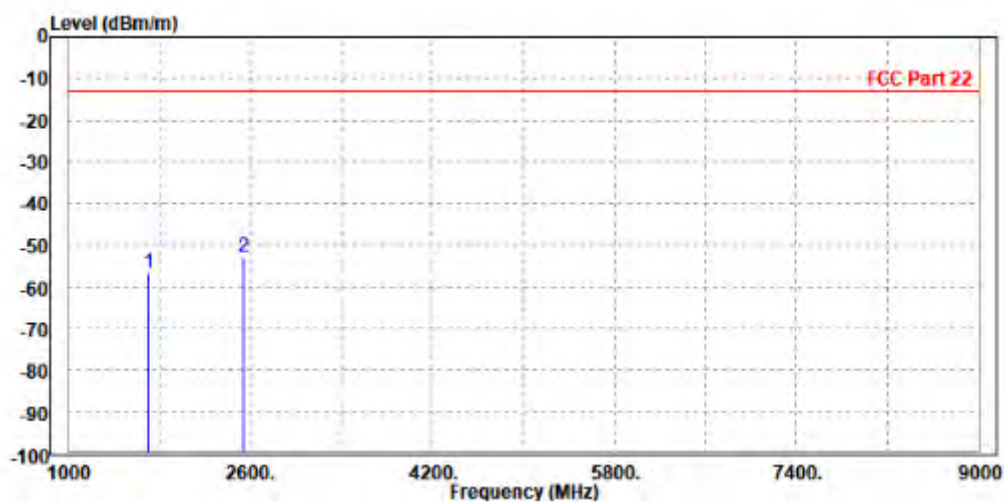
MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1696.000	-57.87	-59.03	-13.00	-44.87	1.16	Peak	Horizontal
2 PP	2546.400	-53.90	-59.45	-13.00	-40.90	5.55	Peak	Horizontal



MODE	TX channel 251	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1697.600	-56.70	-58.10	-13.00	-43.70	1.40	Peak	Vertical
2 PP	2544.000	-52.80	-57.88	-13.00	-39.80	5.08	Peak	Vertical

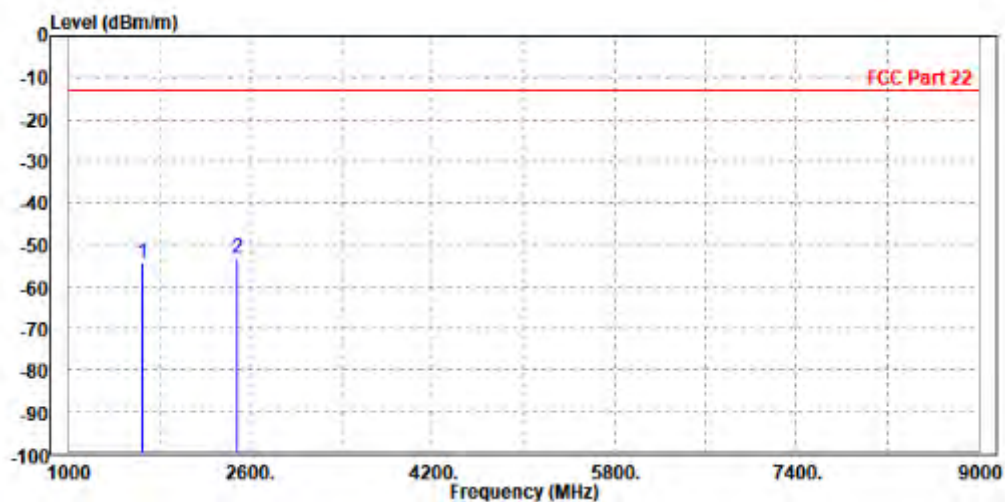


WCDMA Band V(Ant1) (DOWN):

CH 4132:

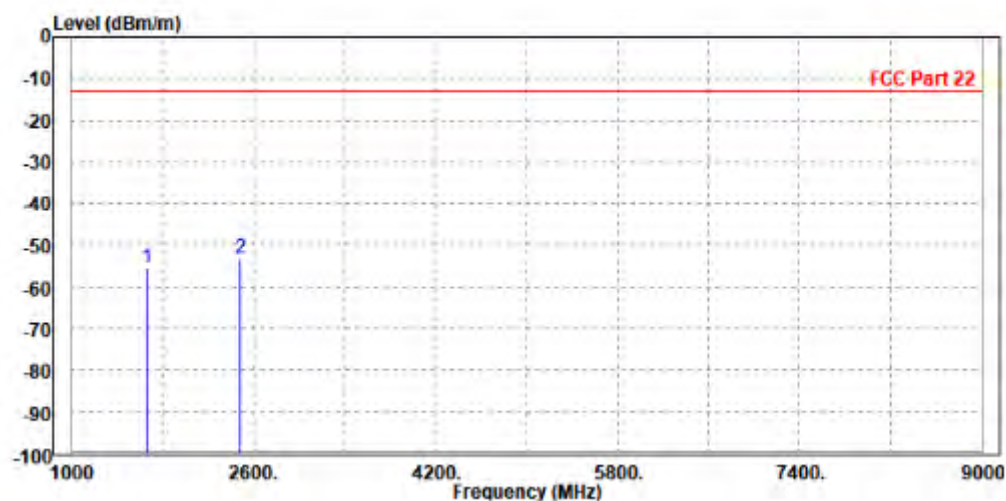
MODE	TX channel 4132	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1652.800	-54.51	-55.32	-13.00	-41.51	0.81	Peak	Horizontal
2 PP	2480.000	-53.41	-58.78	-13.00	-40.41	5.37	Peak	Horizontal



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

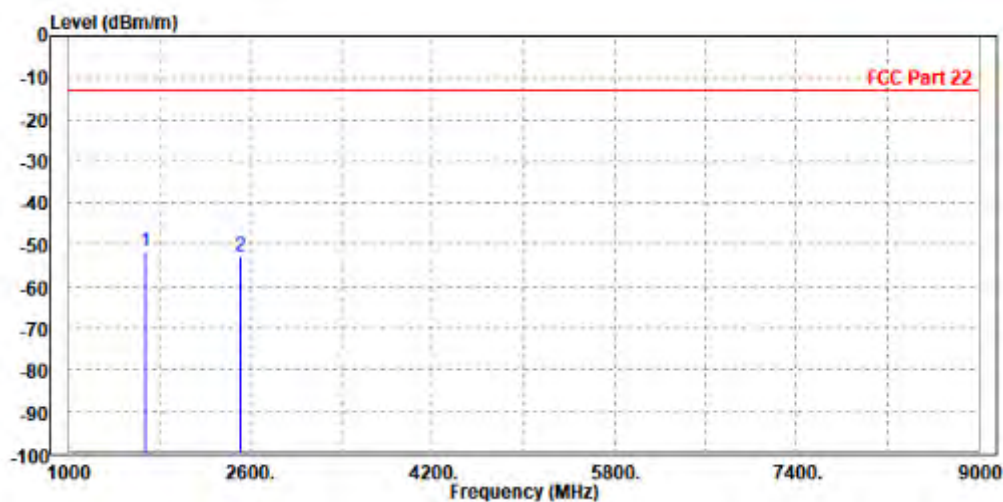
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1656.000	-55.59	-56.68	-13.00	-42.59	1.09	Peak	Vertical
2 PP	2479.200	-53.25	-58.13	-13.00	-40.25	4.88	Peak	Vertical



CH 4182:

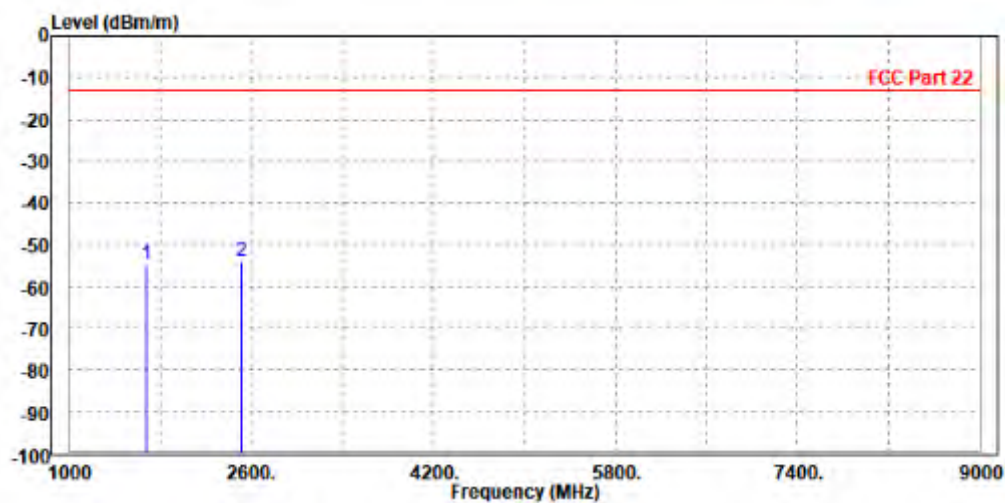
MODE	TX channel 4182	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1672.000	-51.57	-52.54	-13.00	-38.57	0.97	Peak	Horizontal
2		2509.200	-52.95	-58.41	-13.00	-39.95	5.46	Peak	Horizontal



MODE	TX channel 4182	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

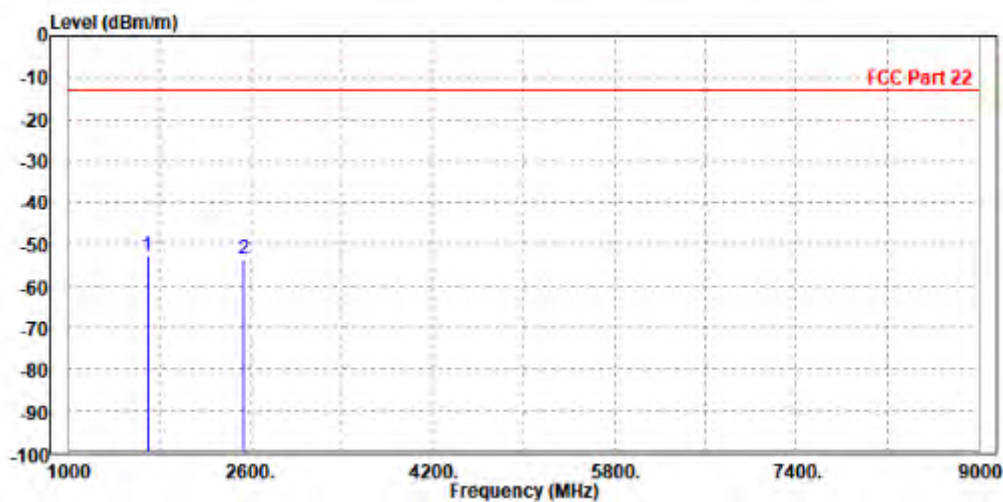
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.800	-54.66	-55.88	-13.00	-41.66	1.22	Peak	Vertical
2 PP	2512.000	-54.03	-59.01	-13.00	-41.03	4.98	Peak	Vertical



CH 4233:

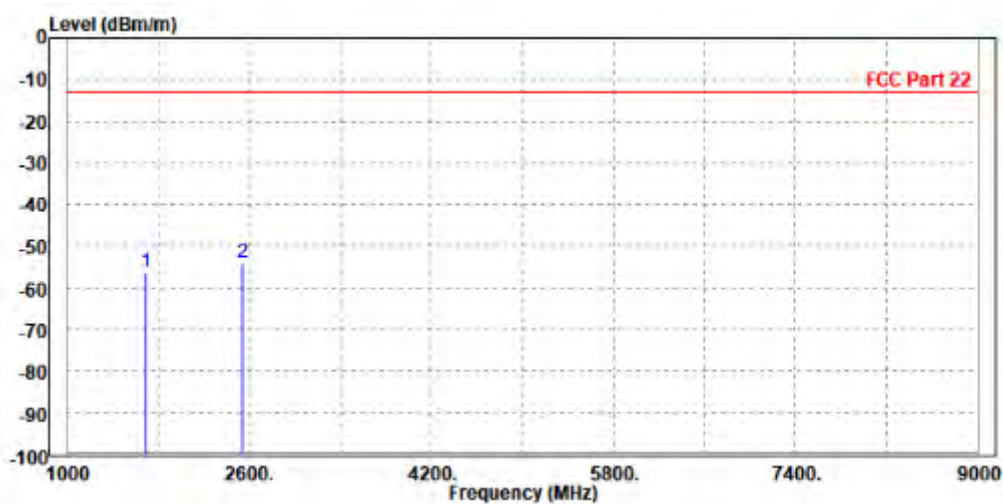
MODE	TX channel 4233	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP 1696.000	-52.73	-53.89	-13.00	-39.73	1.16	Peak	Horizontal
2	2539.800	-53.74	-59.27	-13.00	-40.74	5.53	Peak	Horizontal



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

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1693.200	-56.16	-57.52	-13.00	-43.16	1.36	Peak	Vertical
2 PP	2536.000	-54.13	-59.18	-13.00	-41.13	5.05	Peak	Vertical

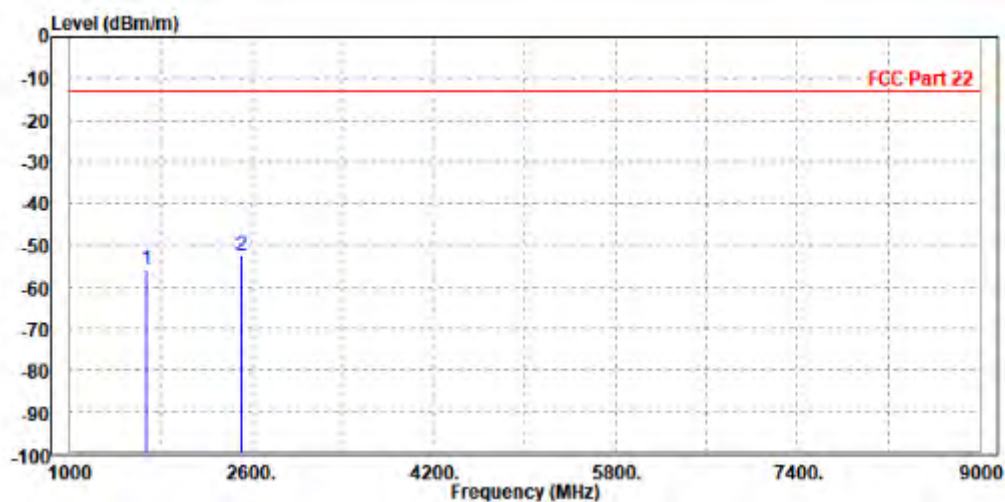


LTE Band 26(Ant0) (UP):

CHANNEL BANDWIDTH: 1.4MHz / QPSK

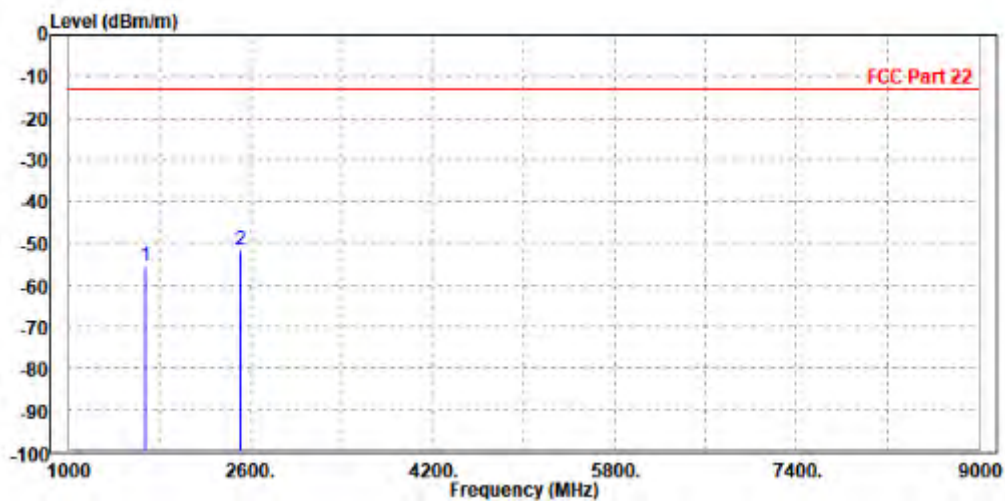
MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1673.000	-55.90	-56.88	-13.00	-42.90	0.98	Peak	Horizontal
2 PP	2512.000	-52.49	-57.96	-13.00	-39.49	5.47	Peak	Horizontal



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

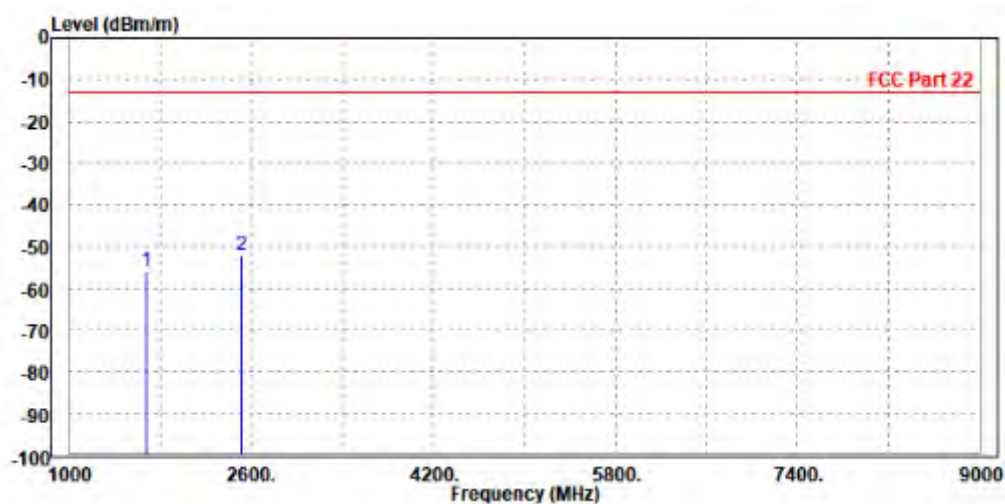
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.000	-55.52	-56.73	-13.00	-42.52	1.21	Peak	Vertical
2 PP	2509.500	-51.70	-56.67	-13.00	-38.70	4.97	Peak	Vertical



CHANNEL BANDWIDTH: 3MHz / QPSK

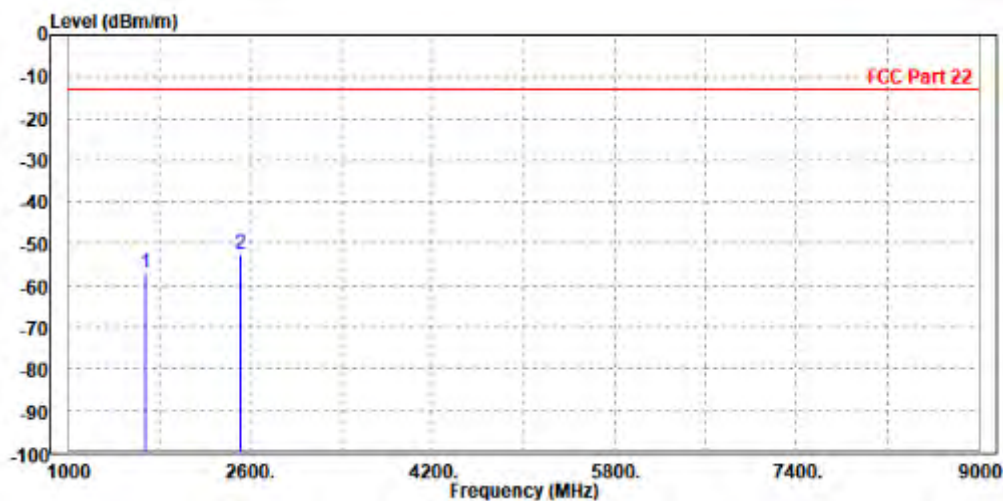
MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.000	-56.00	-56.97	-13.00	-43.00	0.97	Peak	Horizontal
2 PP	2509.500	-52.07	-57.53	-13.00	-39.07	5.46	Peak	Horizontal



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

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1673.000	-56.91	-58.13	-13.00	-43.91	1.22	Peak	Vertical
2 PP	2512.000	-52.40	-57.38	-13.00	-39.40	4.98	Peak	Vertical

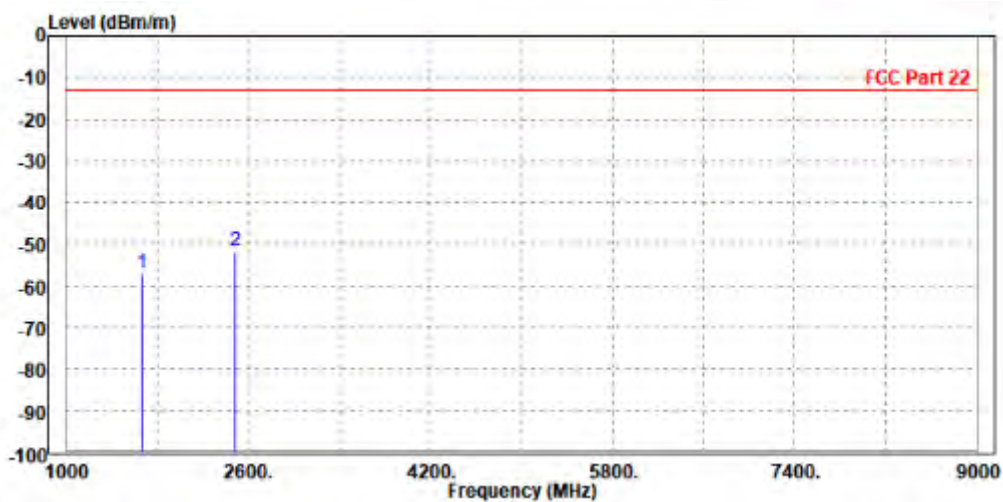


CHANNEL BANDWIDTH: 5MHz / QPSK

CH26815

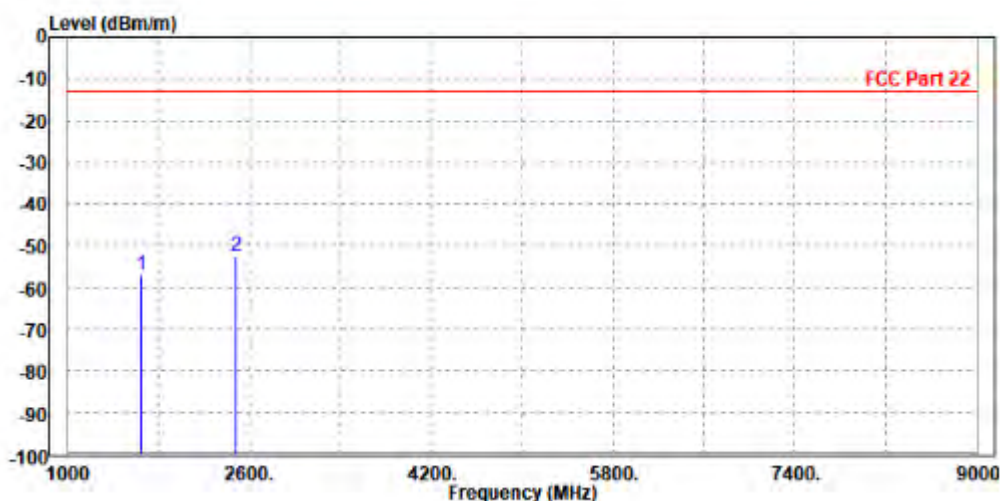
MODE	TX channel 26815	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1656.000	-56.97	-57.81	-13.00	-43.97	0.84	Peak	Horizontal
2 PP	2479.500	-51.78	-57.14	-13.00	-38.78	5.36	Peak	Horizontal



MODE	TX channel 26815	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1653.000	-56.94	-58.01	-13.00	-43.94	1.07	Peak	Vertical
2 PP	2479.500	-52.59	-57.47	-13.00	-39.59	4.88	Peak	Vertical





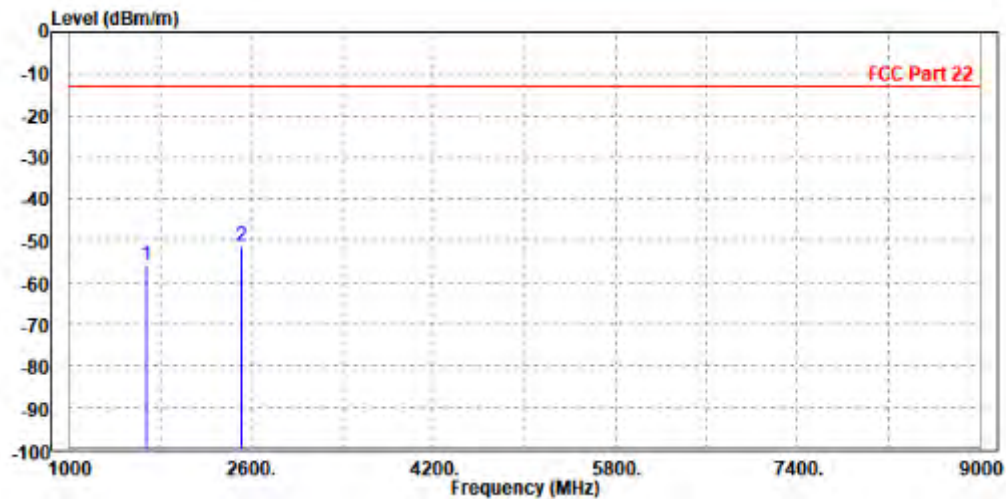
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CH26915

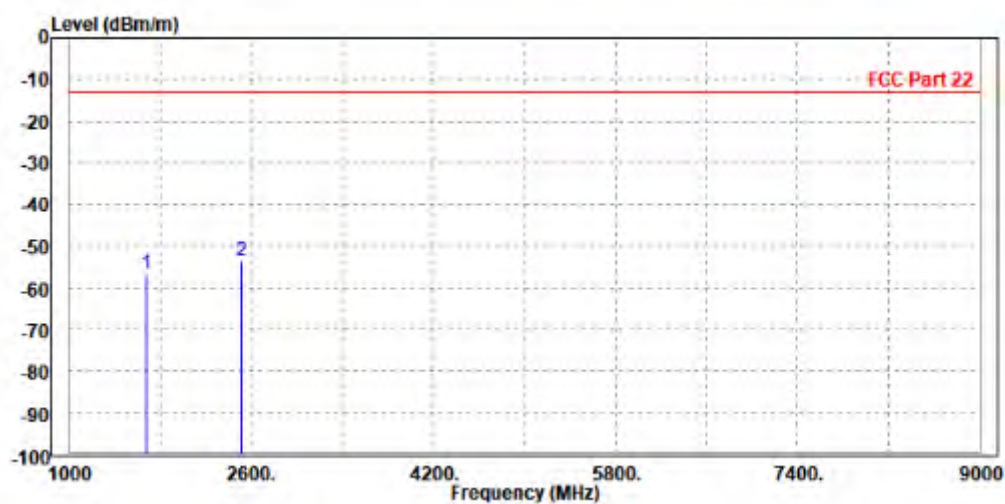
MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1673.000	-56.04	-57.02	-13.00	-43.04	0.98	Peak	Horizontal
2 PP	2512.000	-51.28	-56.75	-13.00	-38.28	5.47	Peak	Horizontal



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

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.000	-56.63	-57.84	-13.00	-43.63	1.21	Peak	Vertical
2 PP	2509.500	-53.71	-58.68	-13.00	-40.71	4.97	Peak	Vertical

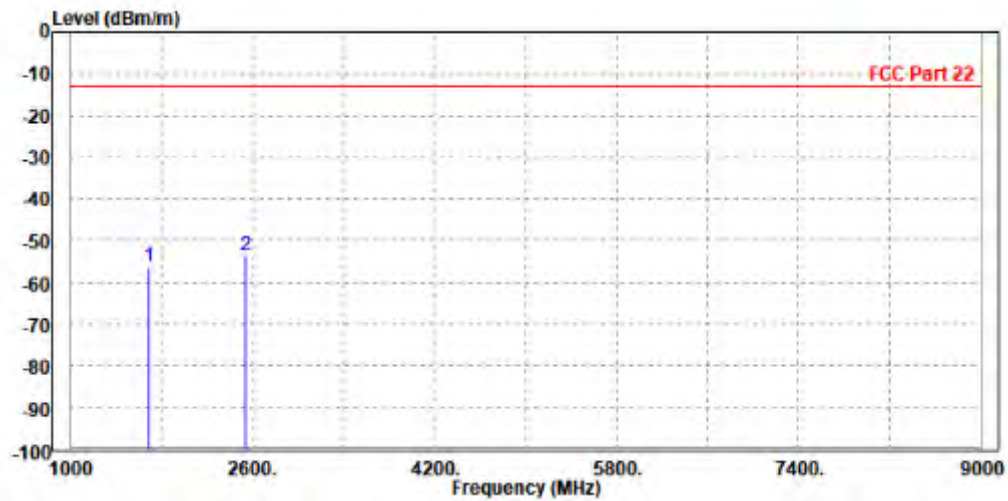




CH27015

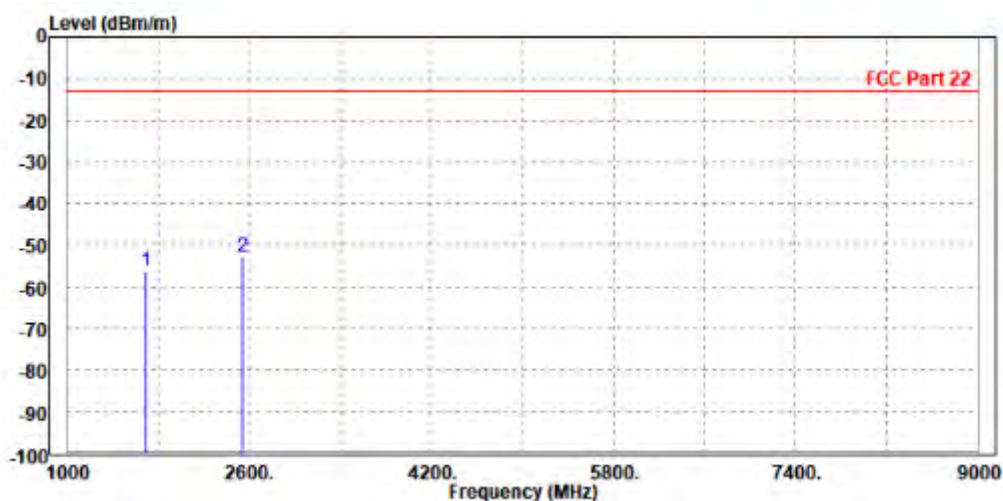
MODE	TX channel 27015	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1693.000	-56.41	-57.55	-13.00	-43.41	1.14	Peak	Horizontal
2 PP	2536.000	-53.48	-59.01	-13.00	-40.48	5.53	Peak	Horizontal



MODE	TX channel 27015	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

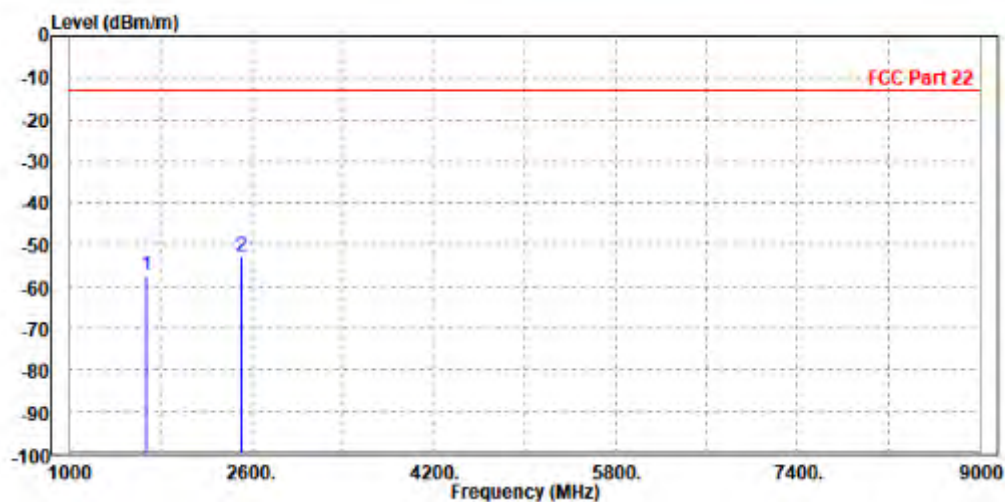
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1693.000	-56.09	-57.45	-13.00	-43.09	1.36	Peak	Vertical
2 PP	2539.500	-52.95	-58.02	-13.00	-39.95	5.07	Peak	Vertical



CHANNEL BANDWIDTH: 10MHz / QPSK

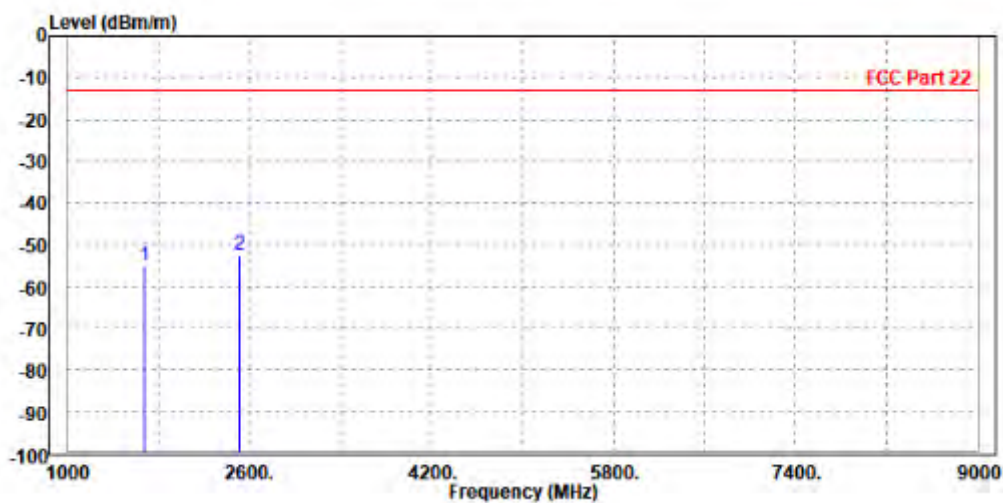
MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1673.000	-57.48	-58.46	-13.00	-44.48	0.98	Peak	Horizontal
2 PP	2512.000	-52.91	-58.38	-13.00	-39.91	5.47	Peak	Horizontal



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

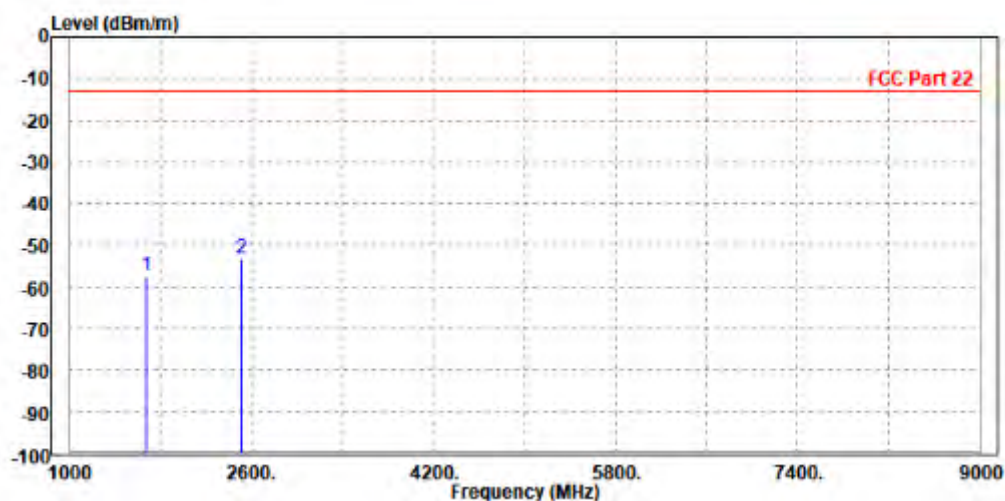
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.000	-55.23	-56.44	-13.00	-42.23	1.21	Peak	Vertical
2 PP	2509.500	-52.38	-57.35	-13.00	-39.38	4.97	Peak	Vertical



CHANNEL BANDWIDTH: 15MHz / QPSK

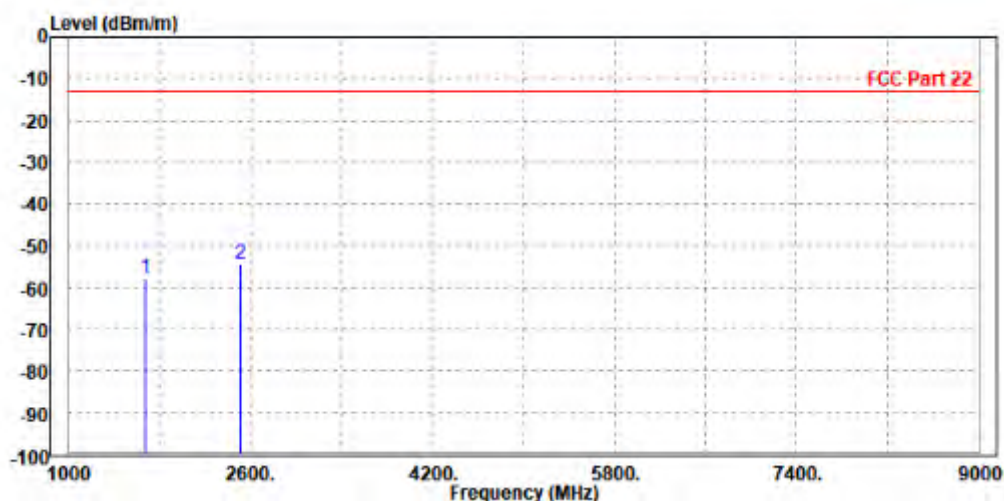
MODE	TX channel 26915	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1672.000	-57.53	-58.50	-13.00	-44.53	0.97	Peak	Horizontal
2 PP	2509.500	-53.19	-58.65	-13.00	-40.19	5.46	Peak	Horizontal



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

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1673.000	-57.90	-59.12	-13.00	-44.90	1.22	Peak	Vertical
2 PP	2512.000	-54.25	-59.23	-13.00	-41.25	4.98	Peak	Vertical

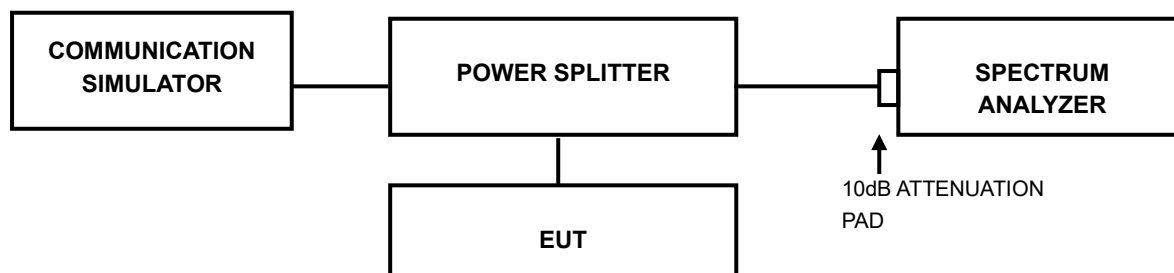


3.7 PEAK TO AVERAGE RATIO

3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

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

3.7.2 TEST SETUP



3.7.3 TEST PROCEDURES

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



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3.7.4 TEST RESULTS

Please Refer to Appendix Of this test report.



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4 PHOTOGRAPHS OF THE TEST CONFIGURATION

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



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5 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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

Shenzhen EMC/RF Lab:

Tel: +86-755-88696566

Fax: +86-755-88696577

Email: customerservice.sw@bureauveritas.com

Web Site: www.adt.com.tw

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

6 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.



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7 APPENDIX

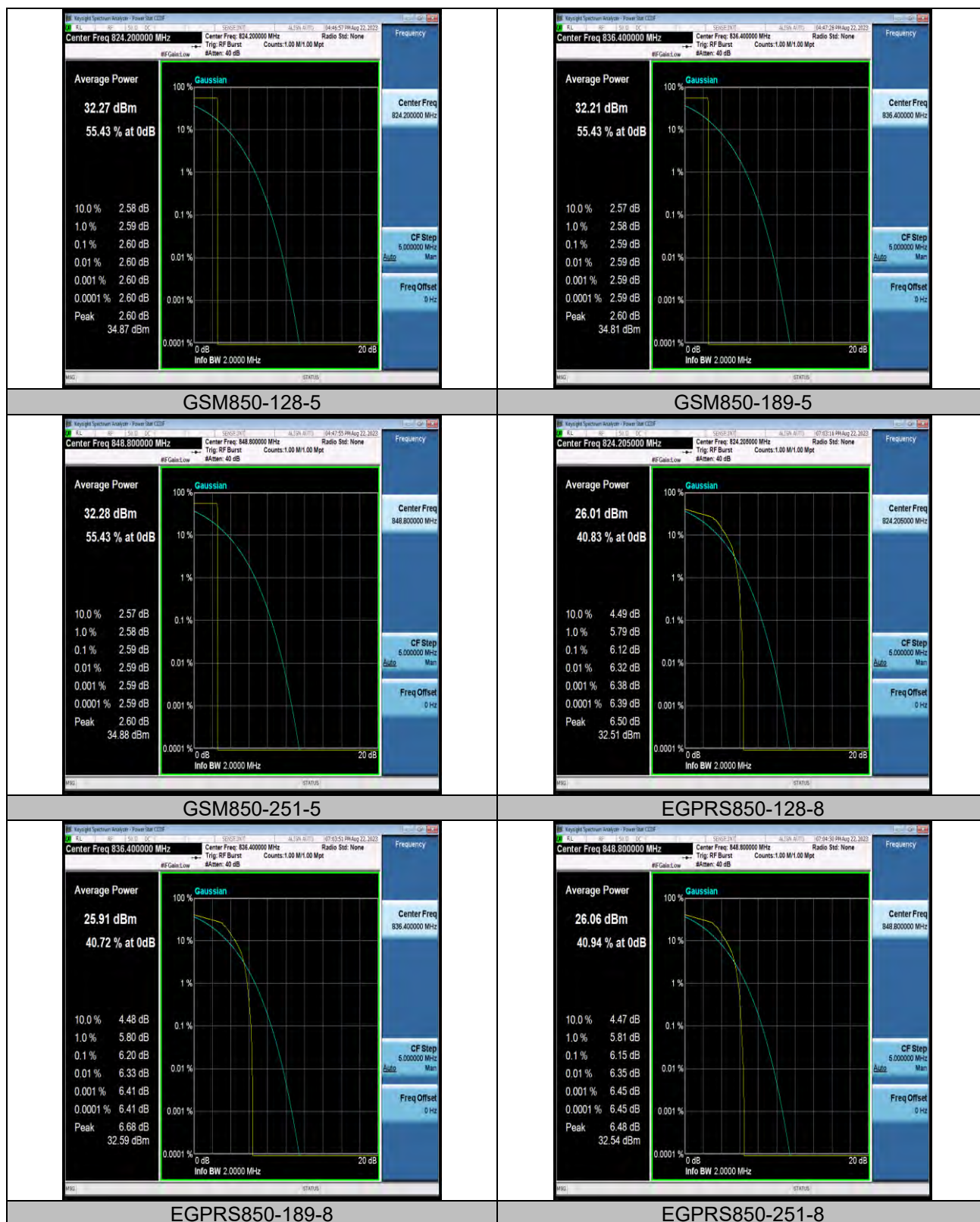
GSM850

PEAK-TO-AVERAGE RATIO(CCDF)

Test Result

Band	Channel	Result(dB)	Limit(dB)	Verdict
GSM850	128	2.6	13	PASS
GSM850	189	2.59	13	PASS
GSM850	251	2.59	13	PASS
EGPRS850	128	6.12	13	PASS
EGPRS850	189	6.2	13	PASS
EGPRS850	251	6.15	13	PASS

Test Graphs

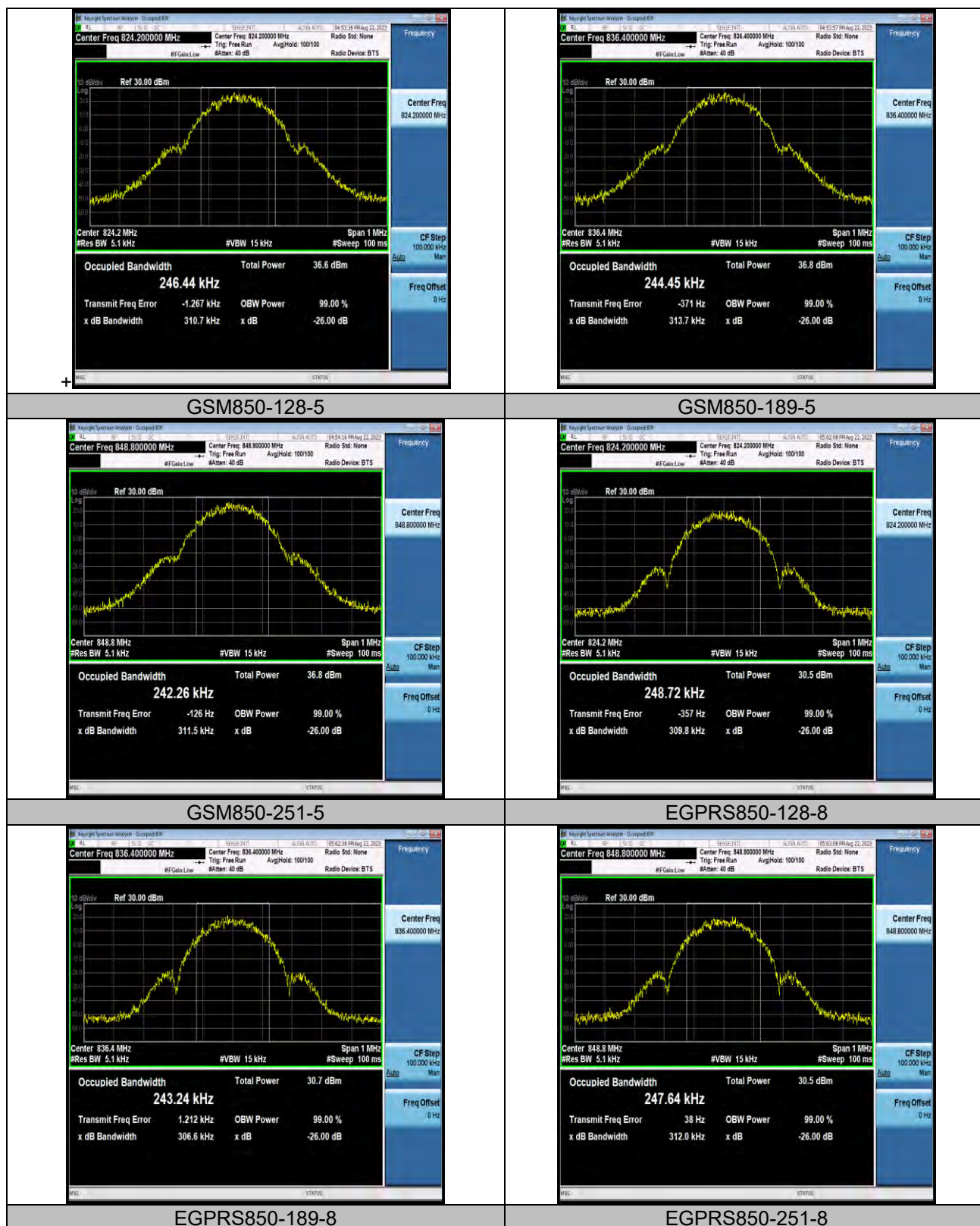


26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit (MHz)	Verdict
GSM850	128	0.24644	0.3107	---	PASS
GSM850	189	0.24445	0.3137	---	PASS
GSM850	251	0.24226	0.3115	---	PASS
EGPRS850	128	0.24872	0.3098	---	PASS
EGPRS850	189	0.24324	0.3066	---	PASS
EGPRS850	251	0.24764	0.3120	---	PASS

Test Graphs





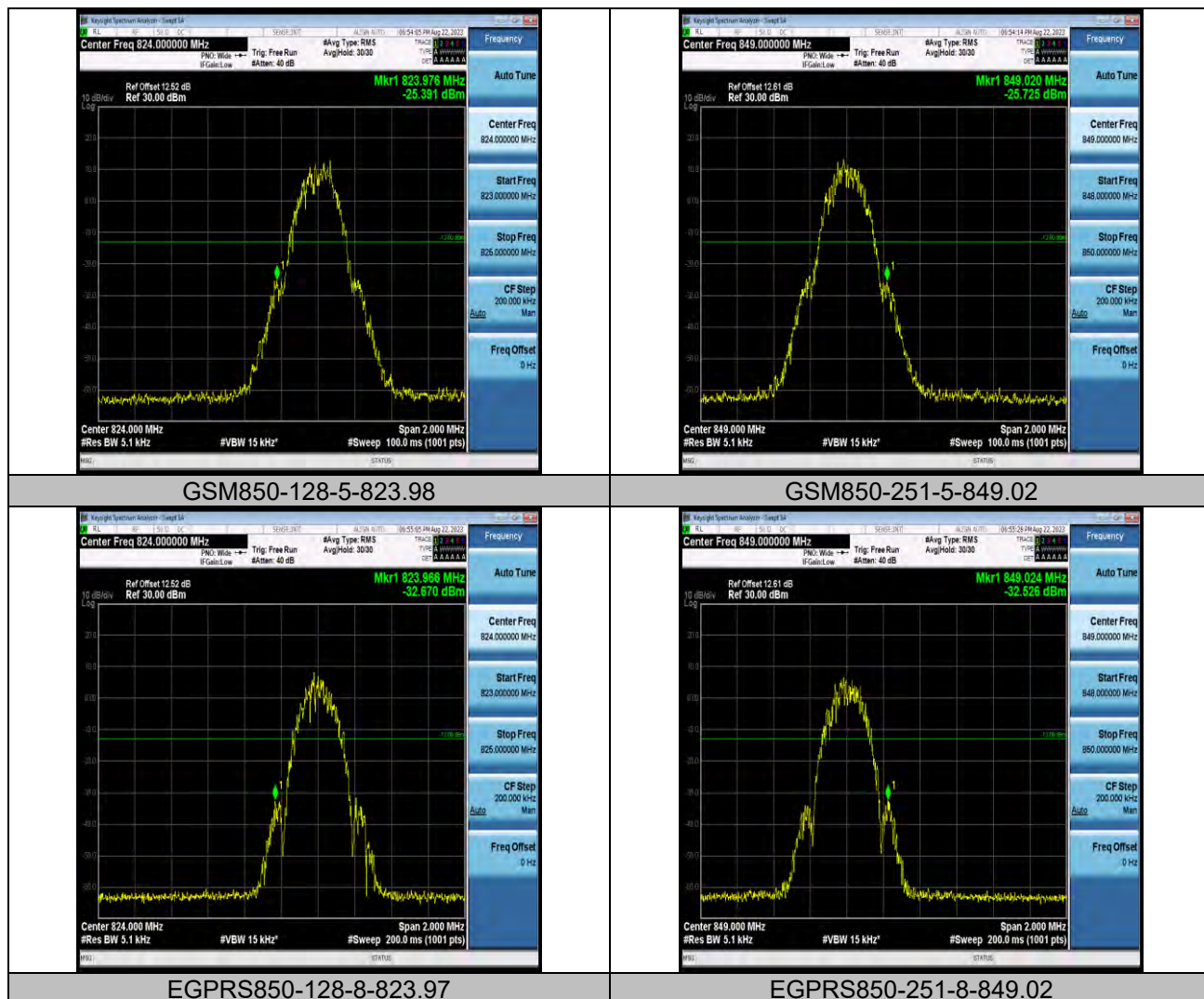
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BAND EDGE

Test Result

Band	Channel	Freq (MHz)	Result (dBm)	Limit(dBm)	Verdict
GSM850	128	823.98	-25.39	-13	PASS
GSM850	251	849.02	-25.73	-13	PASS
EGPRS850	128	823.97	-32.67	-13	PASS
EGPRS850	251	849.02	-32.53	-13	PASS

Test Graphs



CONDUCTED SPURIOUS EMISSION

Test Result

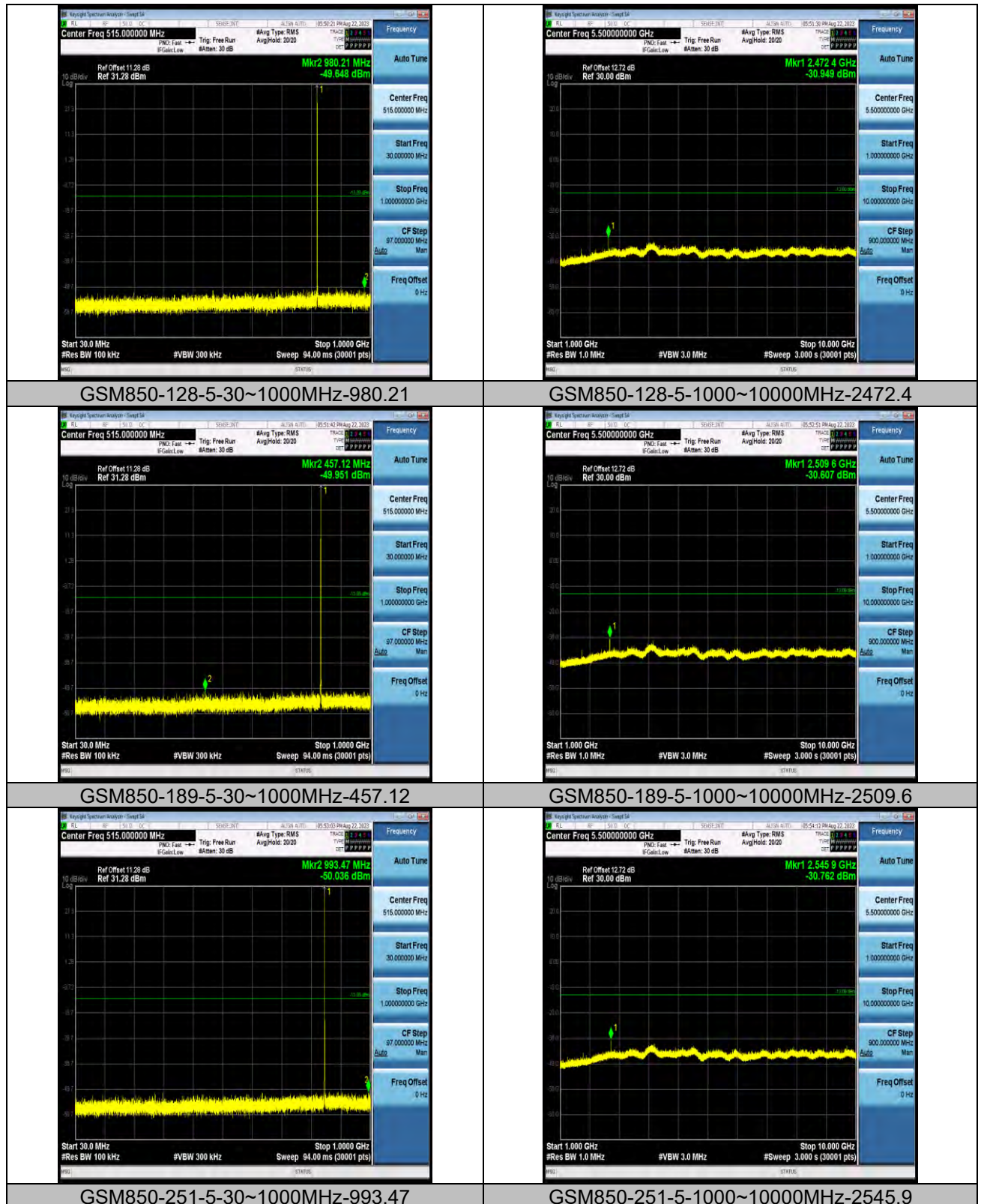
Band	Channel	Frequency Range(MHz)	Max.Freq. (MHz)	Result (dBm)	Limit (dBm)	Verdict
GSM850	128	30~1000MHz	980.21	-49.65	-13	PASS
GSM850	128	1000~10000MHz	2472.4	-30.95	-13	PASS
GSM850	189	30~1000MHz	457.12	-49.95	-13	PASS
GSM850	189	1000~10000MHz	2509.6	-30.61	-13	PASS
GSM850	251	30~1000MHz	993.47	-50.04	-13	PASS
GSM850	251	1000~10000MHz	2545.9	-30.76	-13	PASS
EGPRS850	128	30~1000MHz	480.99	-49.82	-13	PASS
EGPRS850	128	1000~10000MHz	3738.7	-32.53	-13	PASS
EGPRS850	189	30~1000MHz	977.21	-50.08	-13	PASS
EGPRS850	189	1000~10000MHz	3810.7	-32.54	-13	PASS
EGPRS850	251	30~1000MHz	636.41	-50.04	-13	PASS
EGPRS850	251	1000~10000MHz	3742.6	-32.3	-13	PASS



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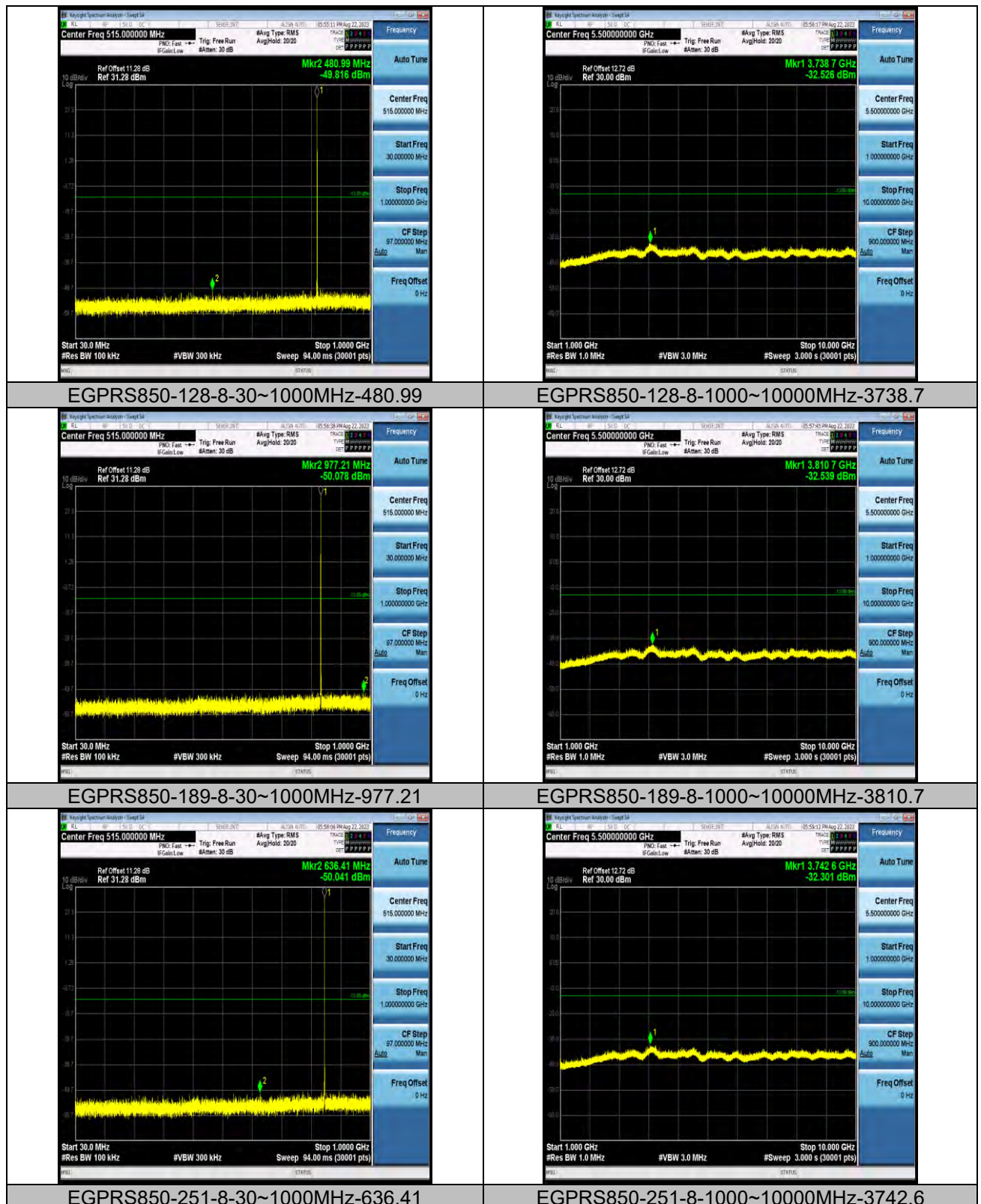
Test Graphs





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FREQUENCY STABILITY

Test Result

Voltage							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM850	128	NV	NT	1.00	0.001213	±2.5	PASS
GSM850	128	LV	NT	1.94	0.002354	±2.5	PASS
GSM850	128	HV	NT	3.39	0.004113	±2.5	PASS
GSM850	189	NV	NT	2.00	0.002391	±2.5	PASS
GSM850	189	LV	NT	3.62	0.004328	±2.5	PASS
GSM850	189	HV	NT	1.61	0.001925	±2.5	PASS
GSM850	251	NV	NT	3.68	0.004336	±2.5	PASS
GSM850	251	LV	NT	3.68	0.004336	±2.5	PASS
GSM850	251	HV	NT	1.36	0.001602	±2.5	PASS

Temperature							
Band	Channel	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
GSM850	128	NV	-30	-2.94	-0.003567	±2.5	PASS
GSM850	128	NV	-20	-2.49	-0.003021	±2.5	PASS
GSM850	128	NV	-10	-0.36	-0.000437	±2.5	PASS
GSM850	128	NV	0	-0.65	-0.000789	±2.5	PASS
GSM850	128	NV	10	-1.81	-0.002196	±2.5	PASS
GSM850	128	NV	20	-0.74	-0.000898	±2.5	PASS
GSM850	128	NV	30	1.39	0.001686	±2.5	PASS
GSM850	128	NV	40	-0.77	-0.000934	±2.5	PASS
GSM850	128	NV	50	0.45	0.000546	±2.5	PASS
GSM850	189	NV	-30	0.23	0.000275	±2.5	PASS
GSM850	189	NV	-20	-2.16	-0.002582	±2.5	PASS
GSM850	189	NV	-10	2.52	0.003013	±2.5	PASS
GSM850	189	NV	0	1.74	0.002080	±2.5	PASS
GSM850	189	NV	10	0.19	0.000227	±2.5	PASS
GSM850	189	NV	20	2.49	0.002977	±2.5	PASS
GSM850	189	NV	30	0.94	0.001124	±2.5	PASS
GSM850	189	NV	40	0.00	0.000000	±2.5	PASS
GSM850	189	NV	50	-0.71	-0.000849	±2.5	PASS
GSM850	251	NV	-30	3.26	0.003841	±2.5	PASS
GSM850	251	NV	-20	1.94	0.002286	±2.5	PASS
GSM850	251	NV	-10	0.39	0.000459	±2.5	PASS
GSM850	251	NV	0	0.81	0.000954	±2.5	PASS
GSM850	251	NV	10	-0.74	-0.000872	±2.5	PASS
GSM850	251	NV	20	1.78	0.002097	±2.5	PASS
GSM850	251	NV	30	1.00	0.001178	±2.5	PASS
GSM850	251	NV	40	-0.06	-0.000071	±2.5	PASS
GSM850	251	NV	50	3.03	0.003570	±2.5	PASS

MAX Deviation calculation

Frequency Stability	Frequency(MHz)	Limit Line(MHz)	Result
$f_L - \text{MAX}(\Delta f) $	824.076776	≥ 824	PASS
$f_H + \text{MAX}(\Delta f) $	848.921134	≤ 849	

- Note :
1. $|\text{MAX}(\Delta f)|$ = Max Deviation
 2. f_L = Occ low channel f_L (-13dBm/MHz)
 3. f_H = Occ High channel f_H (-13dBm/MHz)
 4. $|\text{MAX}(\Delta f)|$ = 3.68Hz.



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WCDMA BAND5

PEAK-TO-AVERAGE RATIO

Test Result

Band	Channel	Peak-to-Average Ratio(dB)	Limit(dBm)	Verdict
Band5	4132	2.88	13	PASS
Band5	4182	3.02	13	PASS
Band5	4233	2.89	13	PASS

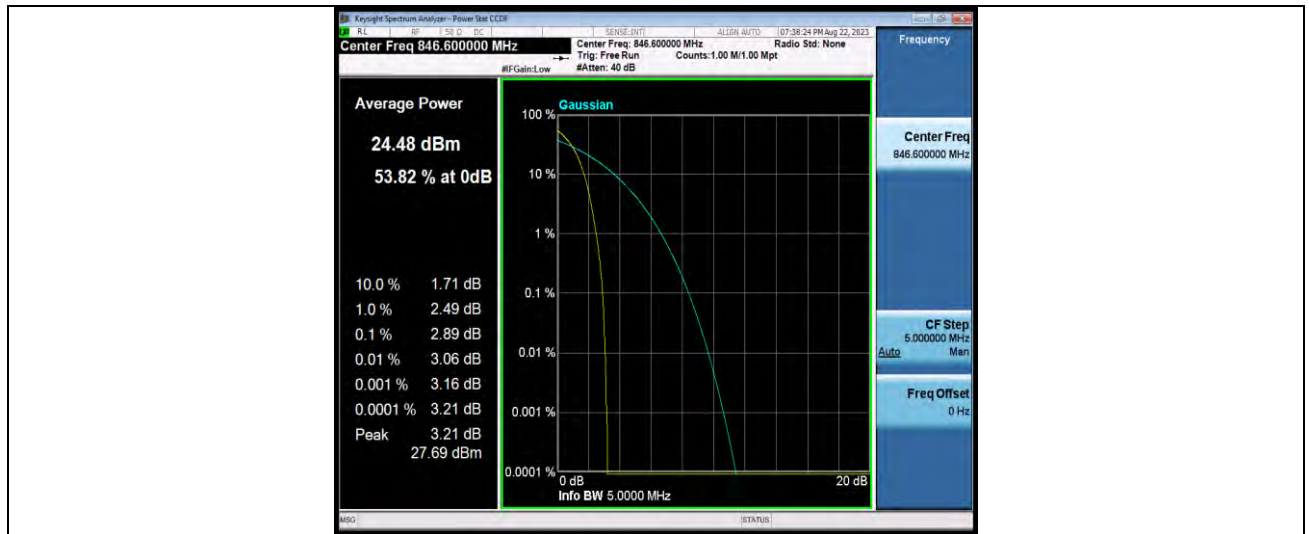
Test Graphs





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26DB BANDWIDTH AND OCCUPIED BANDWIDTH

Test Result

Band	Channel	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Limit(kHz)	Verdict
Band5	4132	4.1862	4.721	---	PASS
Band5	4182	4.1786	4.710	---	PASS
Band5	4233	4.1825	4.721	---	PASS

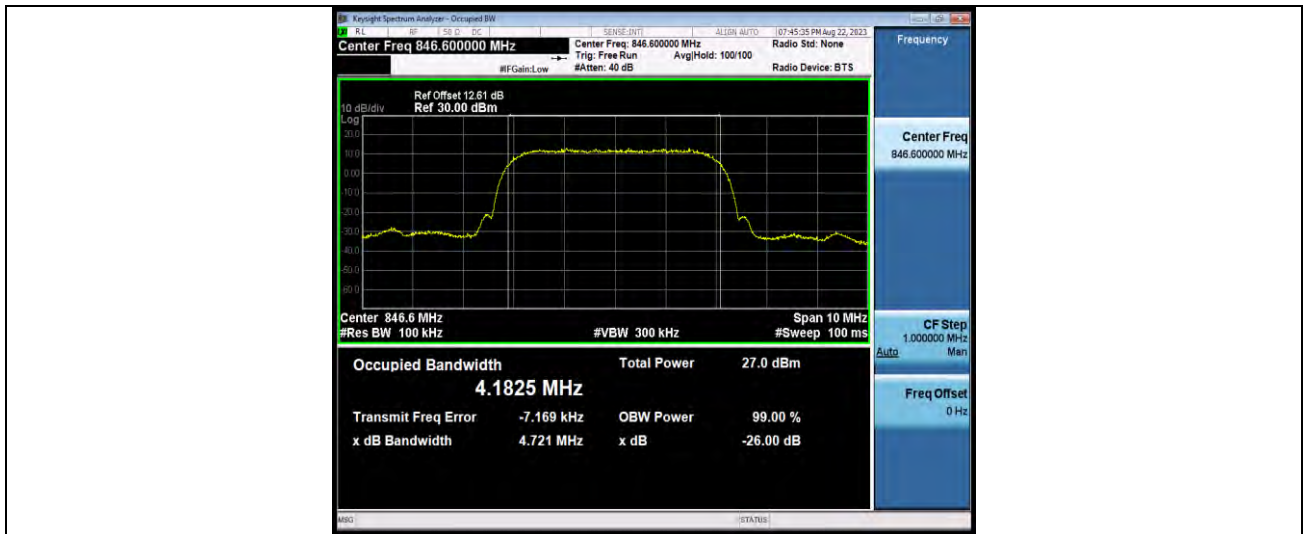
Test Graphs





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Test Report No.: W7L-P23080006RF04





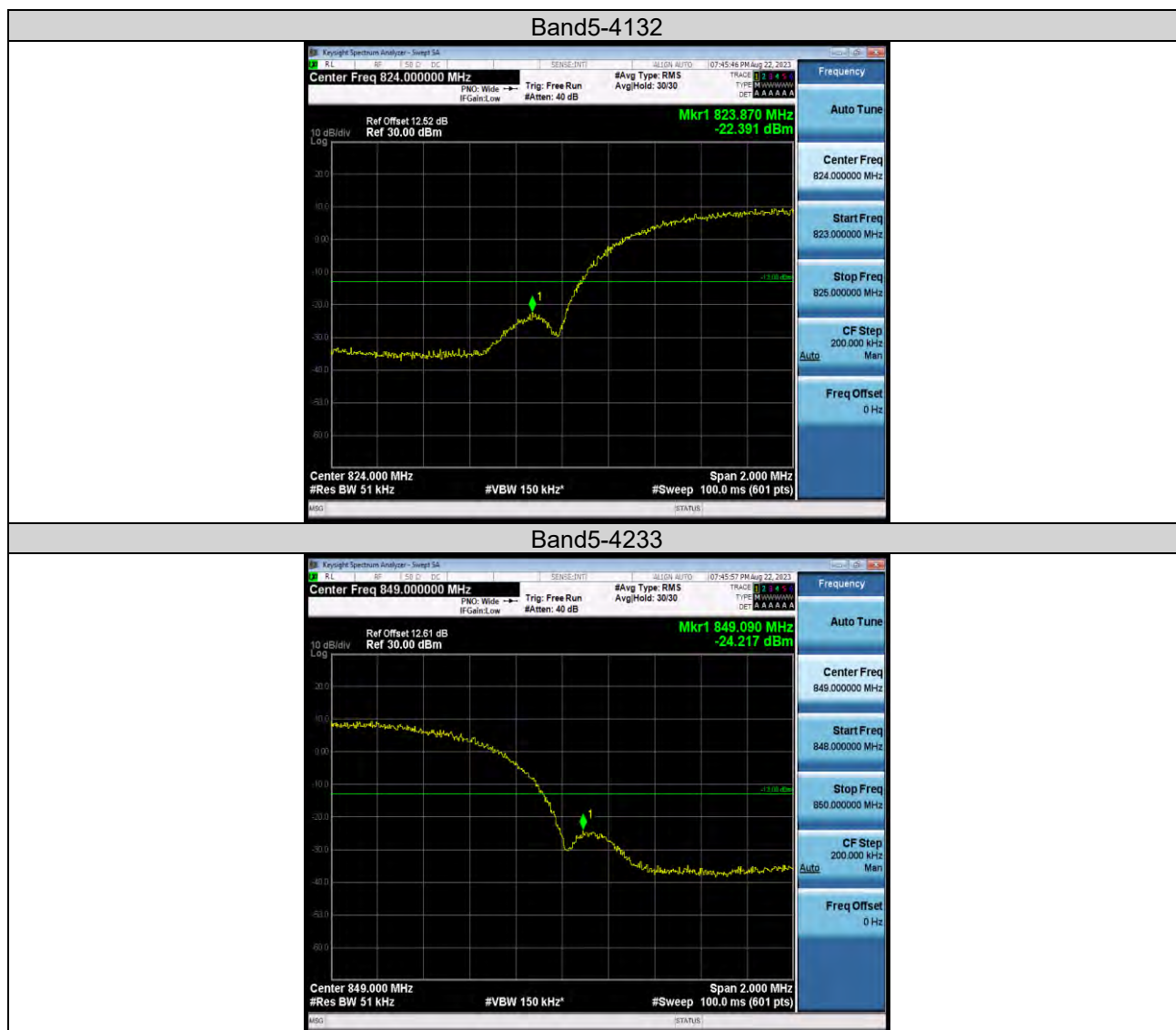
Test Report No.: W7L-P23080006RF04

BAND EDGE

Test Result

Band	Channel	Frequency (MHz)	Result (dBm)	Limit(dBm)	Verdict
Band5	4132	823.87	-22.39	-13	PASS
Band5	4233	849.09	-24.22	-13	PASS

Test Graphs

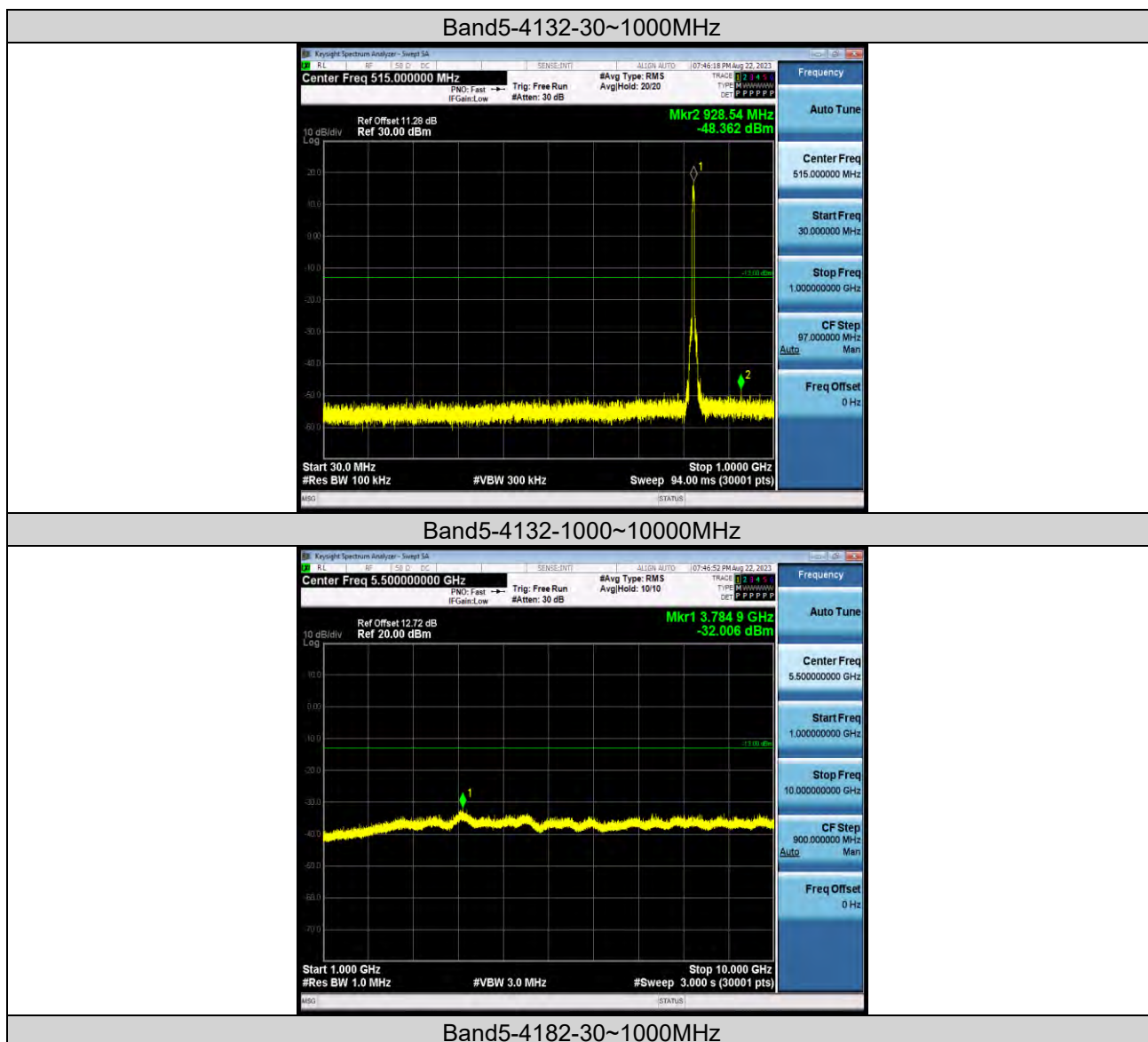


CONDUCTED SPURIOUS EMISSION

Test Result

Band	Channel	Frequency Range (Mhz)	Frequency (dBm)	Result (dBm)	Limit (dBm)	Verdict
Band5	4132	30~1000MHz	928.54	-48.36	-13	PASS
Band5	4132	1000~10000MHz	3784.9	-32.01	-13	PASS
Band5	4182	30~1000MHz	987.55	-49.75	-13	PASS
Band5	4182	1000~10000MHz	3810.4	-31.85	-13	PASS
Band5	4233	30~1000MHz	586.62	-49.41	-13	PASS
Band5	4233	1000~10000MHz	3742.6	-32.5	-13	PASS

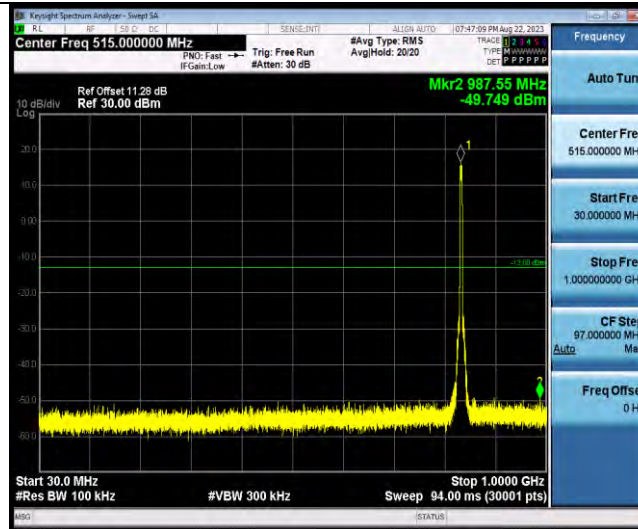
Test Graphs





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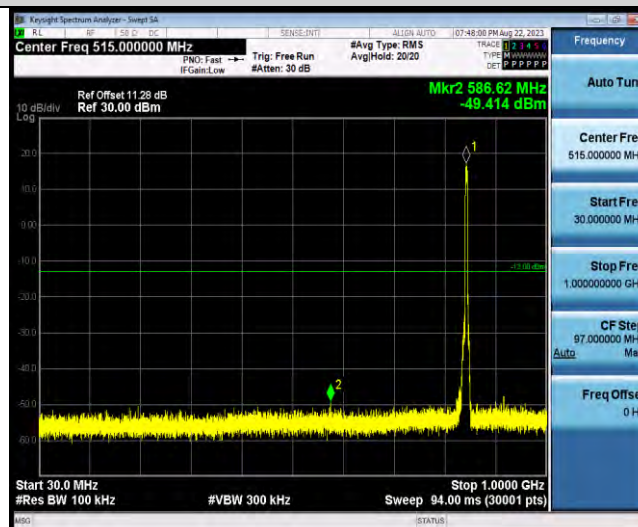
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Band5-4182-1000~10000MHz



Band5-4233-30~1000MHz



Band5-4233-1000~10000MHz



BUREAU
VERITAS

Test Report No.: W7L-P23080006RF04

