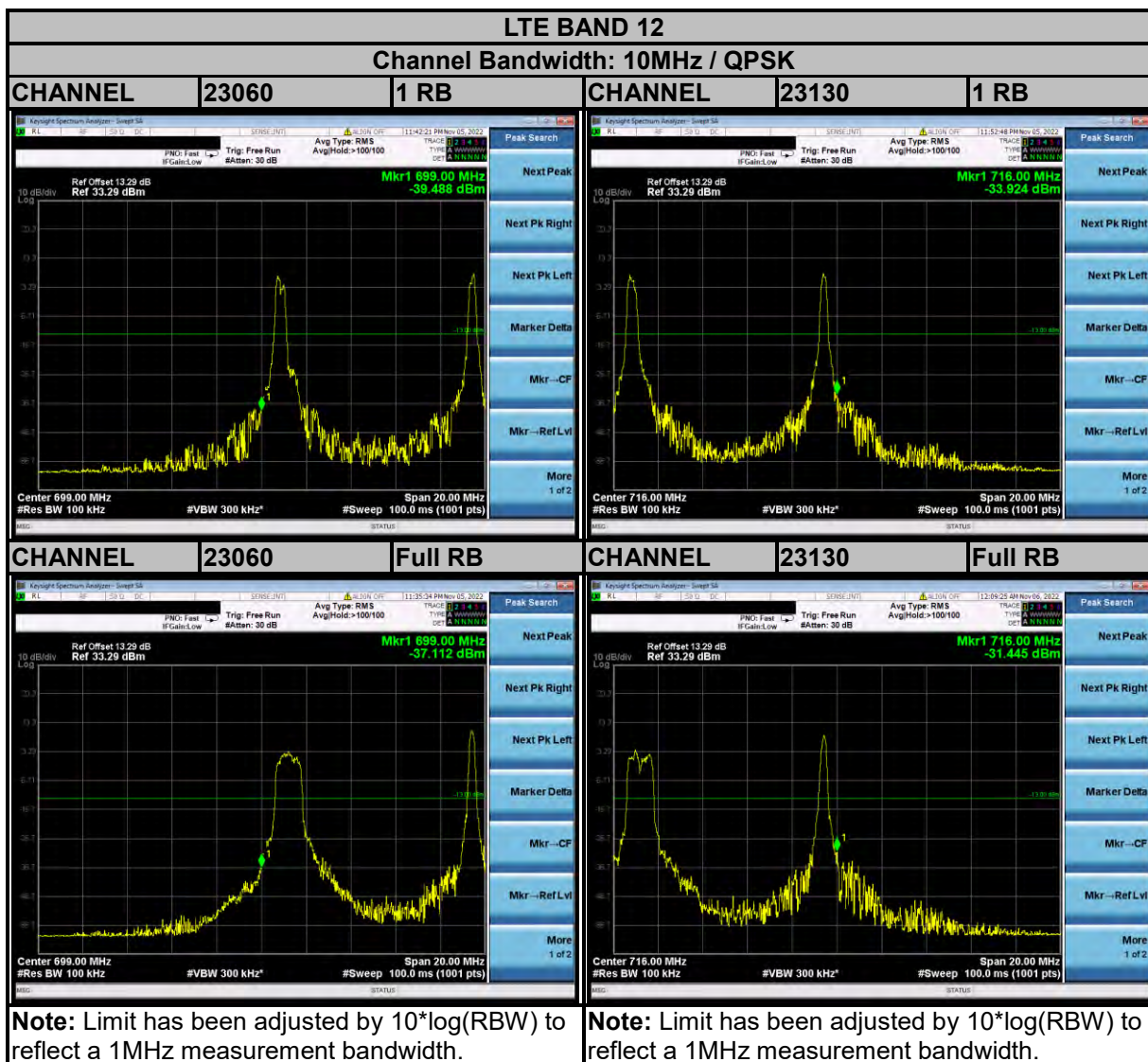
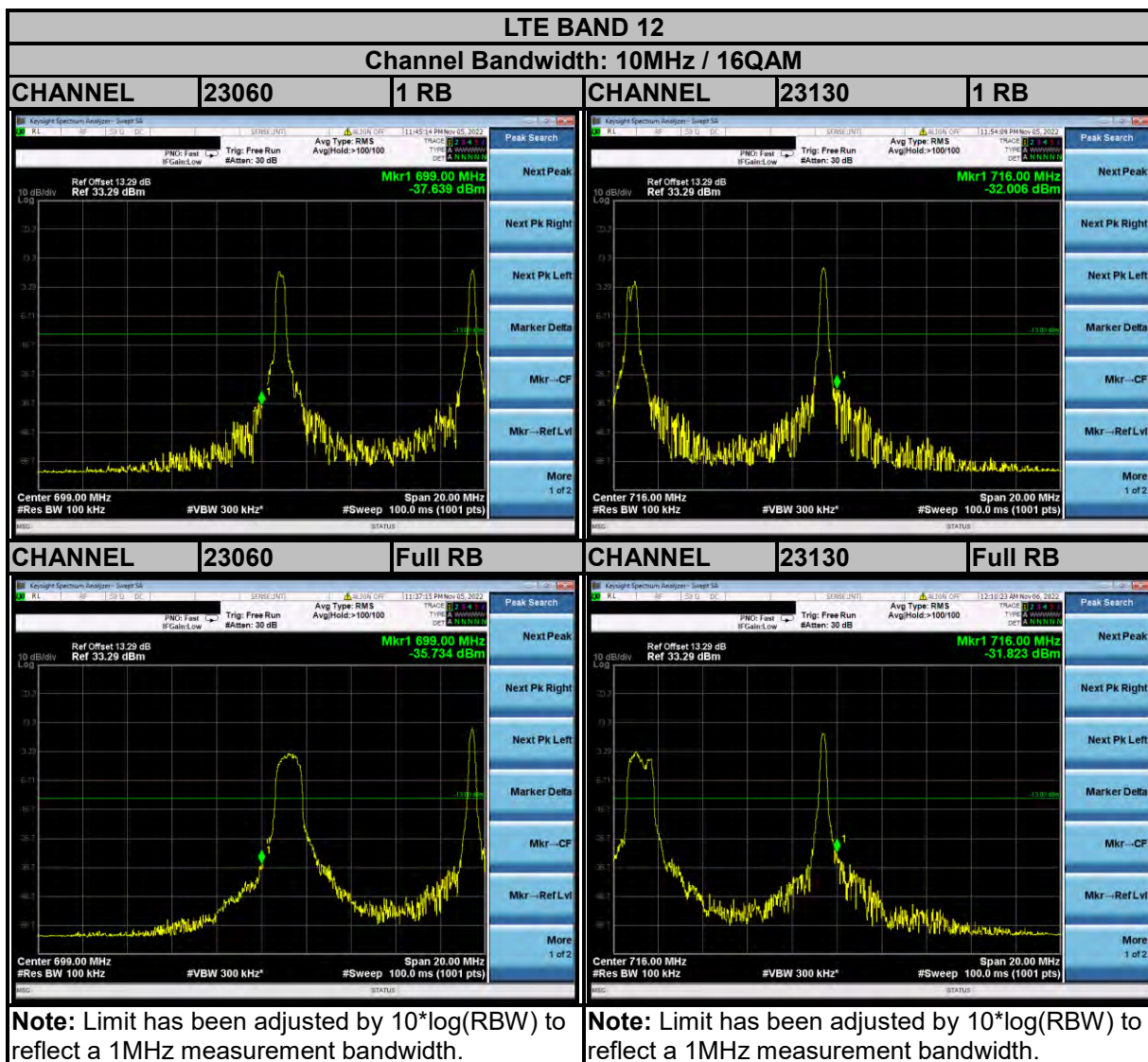
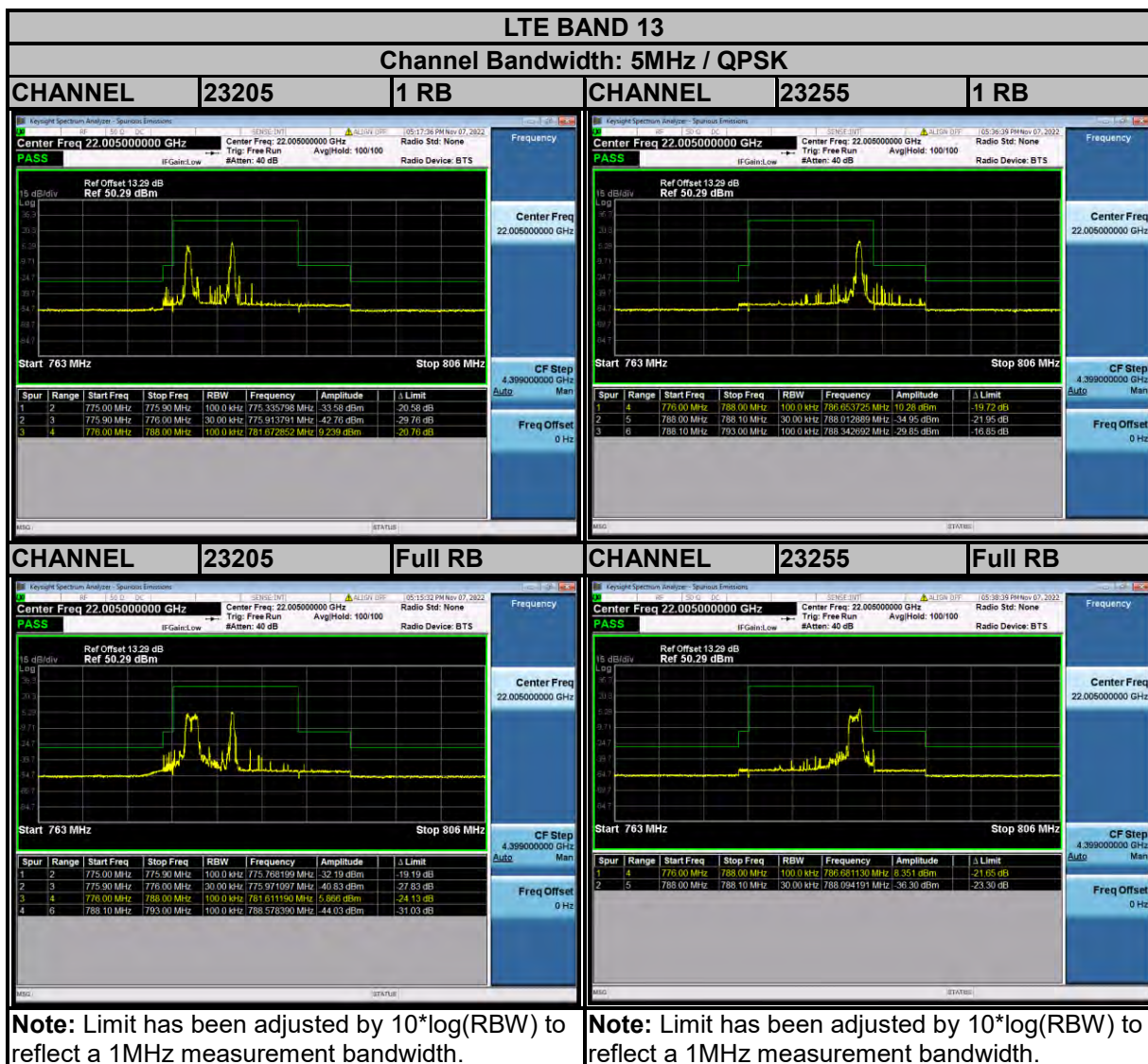
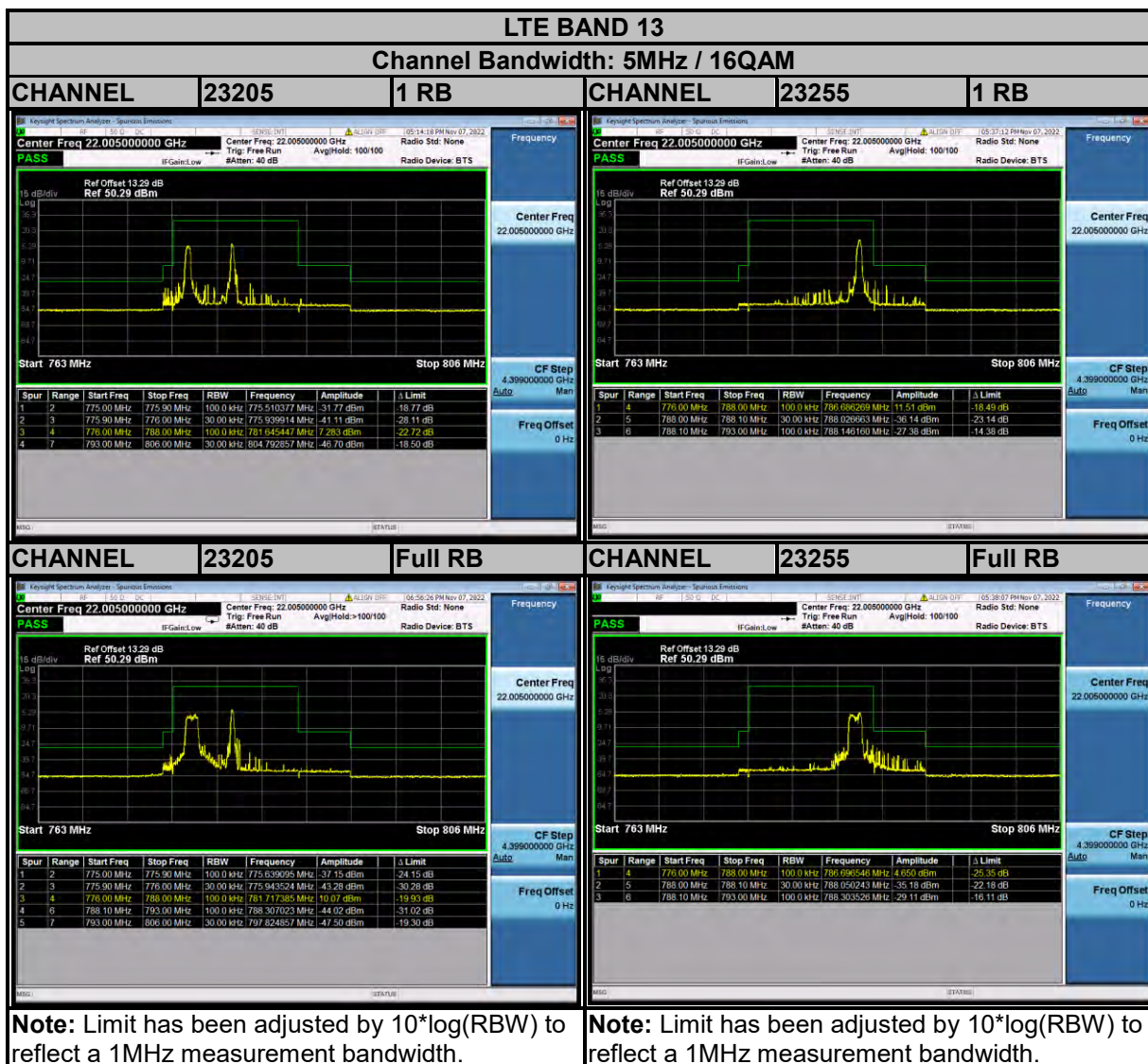
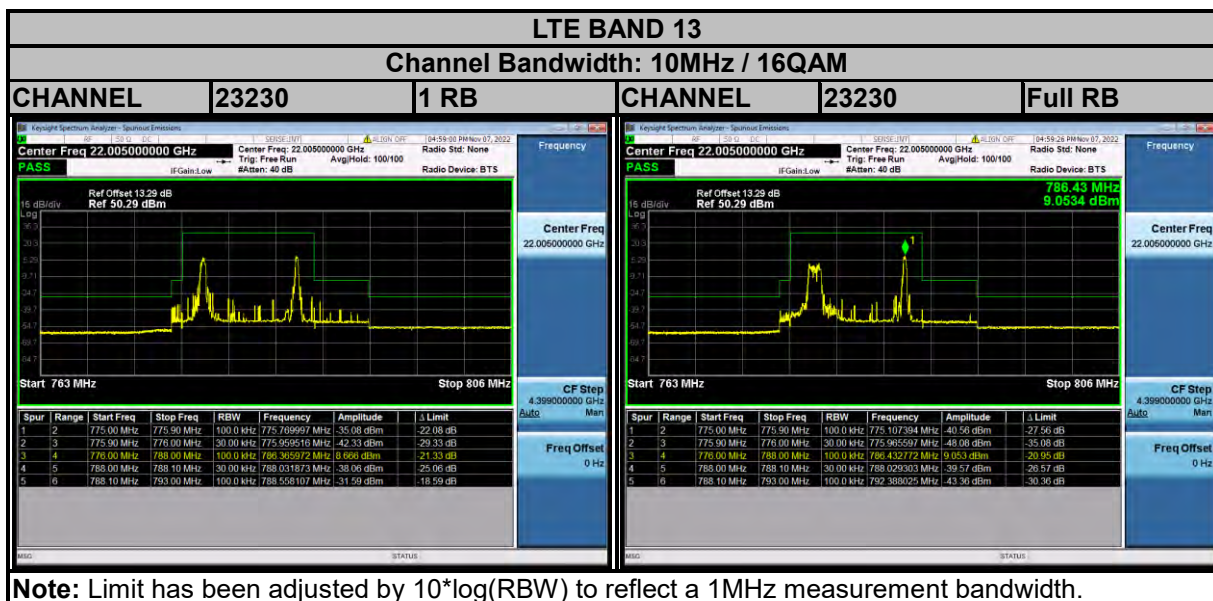
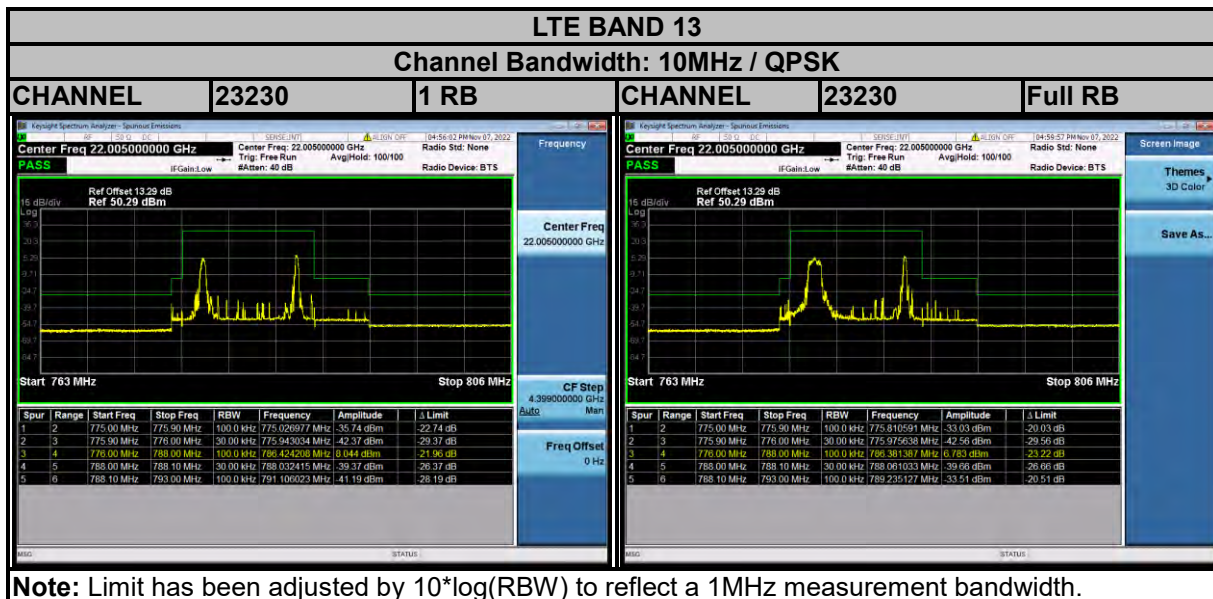












3.5 CONDUCTED SPURIOUS EMISSIONS

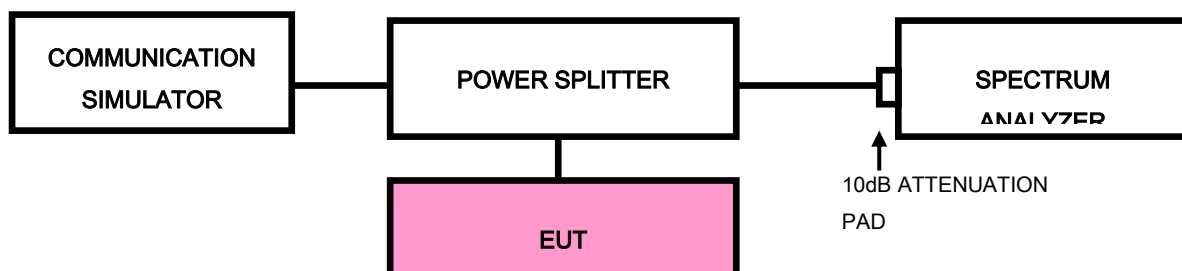
3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $55 + 10 \log_{10}(P)$ dB. The limit of emission is equal to -25dBm.

3.5.2 TEST PROCEDURE

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

3.5.3 TEST SETUP

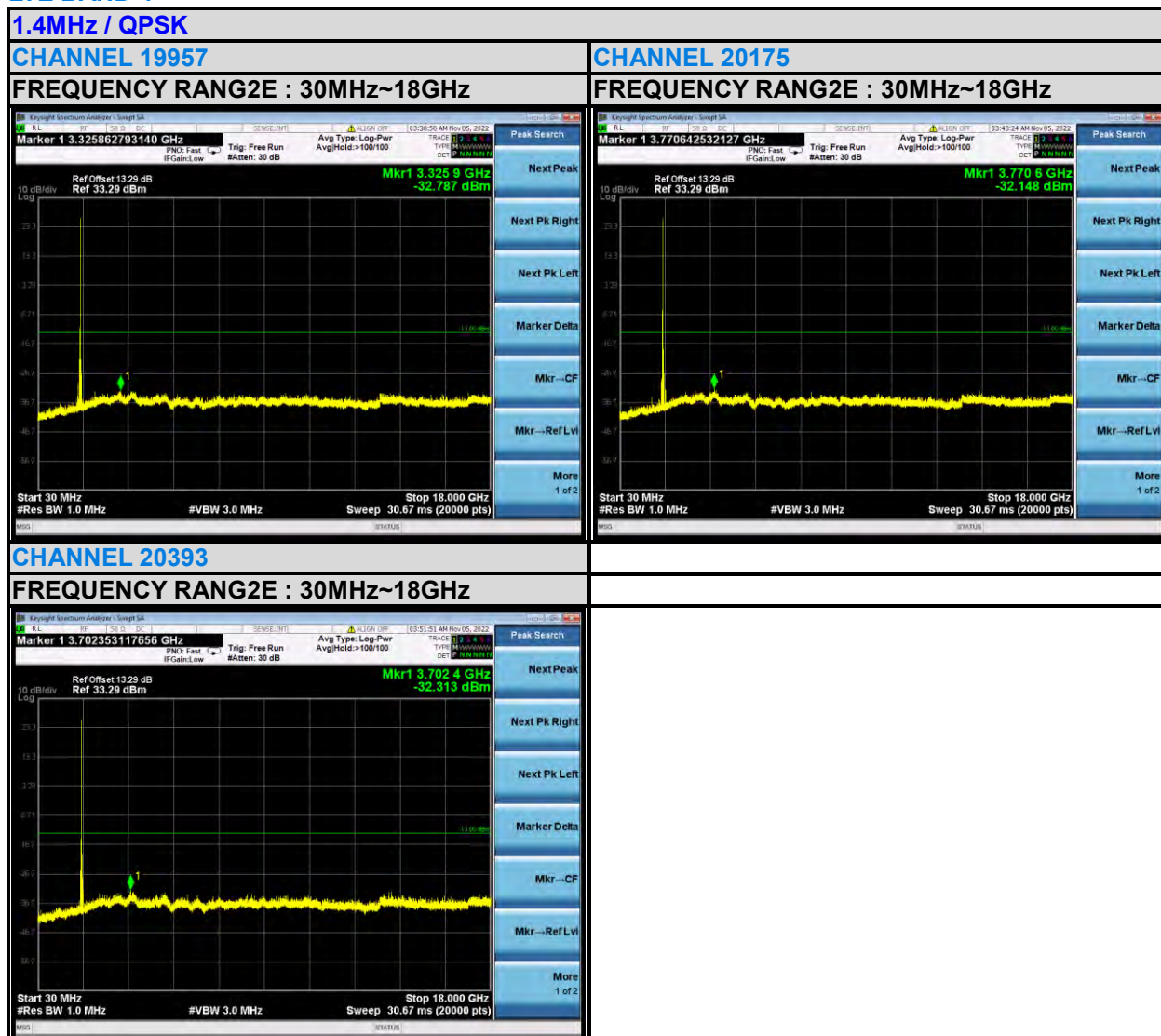


3.5.4 TEST RESULTS

NOTE .1.The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

2. All modulation modes (QPSK & 16QAM) of LTE were tested. The worst case was found in QPSK modulation. So only show the worst mode data.

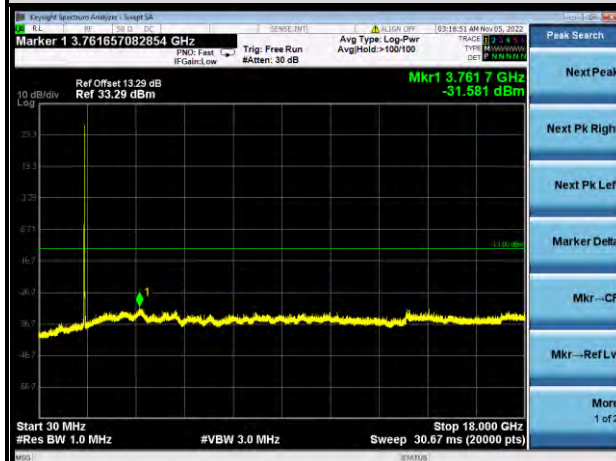
LTE BAND 4



3MHz / QPSK

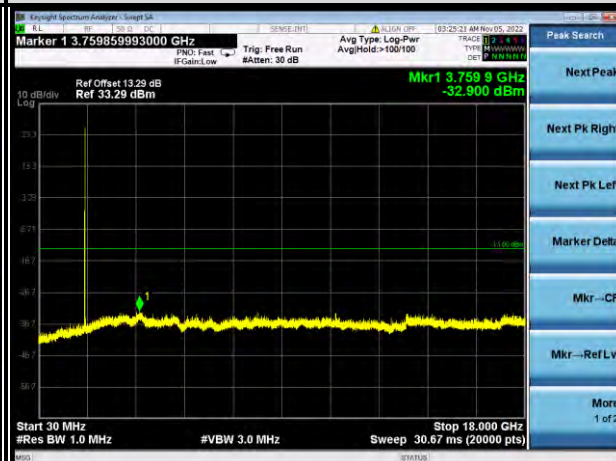
CHANNEL 19965

FREQUENCY RANG2E : 30MHz~18GHz



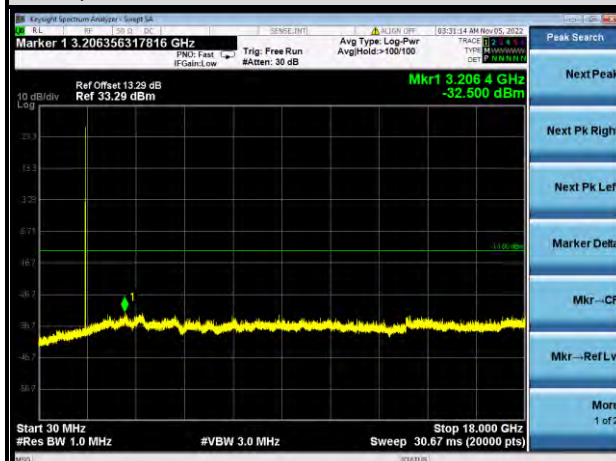
CHANNEL 20175

FREQUENCY RANG2E : 30MHz~18GHz



CHANNEL 20385

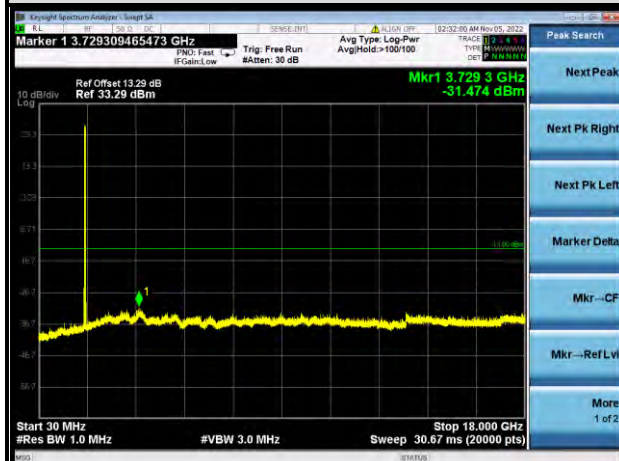
FREQUENCY RANG2E : 30MHz~18GHz



5MHz / QPSK

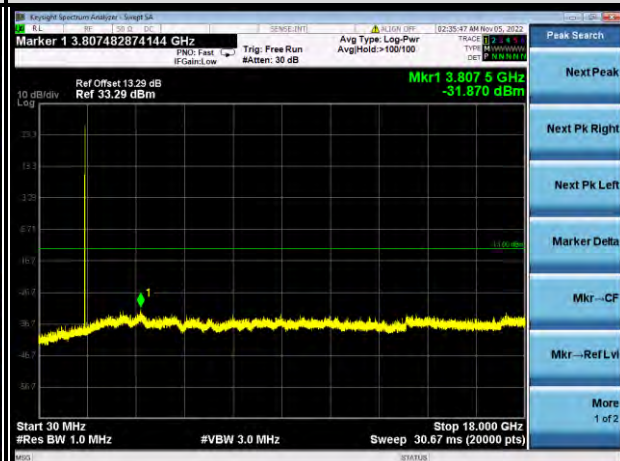
CHANNEL 19975

FREQUENCY RANG2E : 30MHz~18GHz



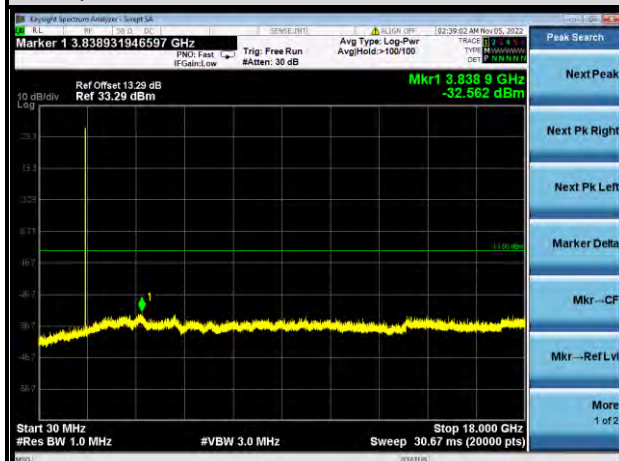
CHANNEL 20175

FREQUENCY RANG2E : 30MHz~18GHz



CHANNEL 20375

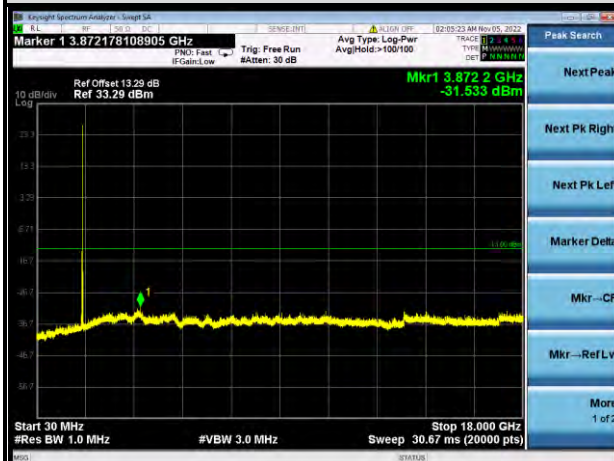
FREQUENCY RANG2E : 30MHz~18GHz



10MHz / QPSK

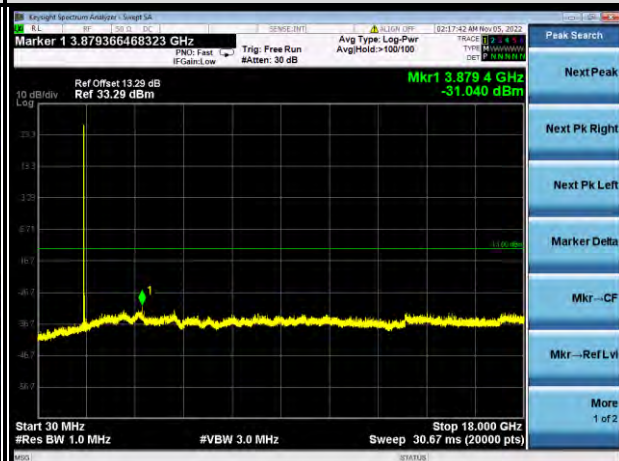
CHANNEL 20000

FREQUENCY RANG2E : 30MHz~18GHz



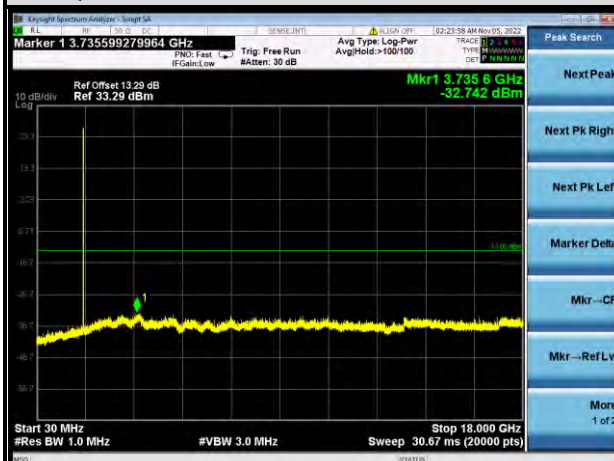
CHANNEL 20175

FREQUENCY RANG2E : 30MHz~18GHz



CHANNEL 20350

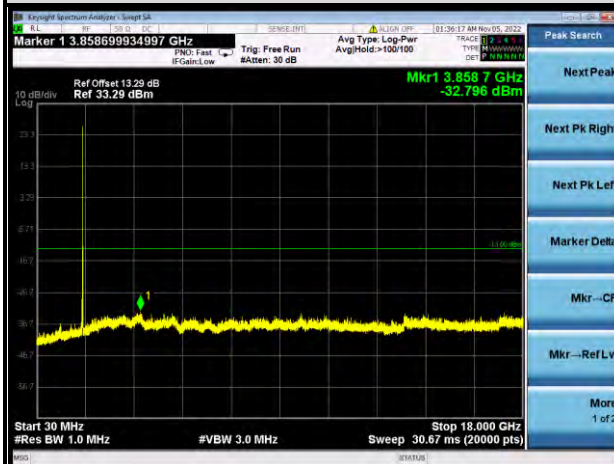
FREQUENCY RANG2E : 30MHz~18GHz



15MHz / QPSK

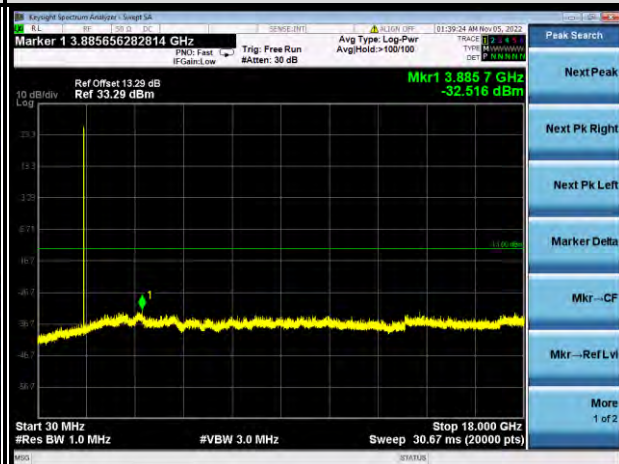
CHANNEL 20025

FREQUENCY RANG2E : 30MHz~18GHz



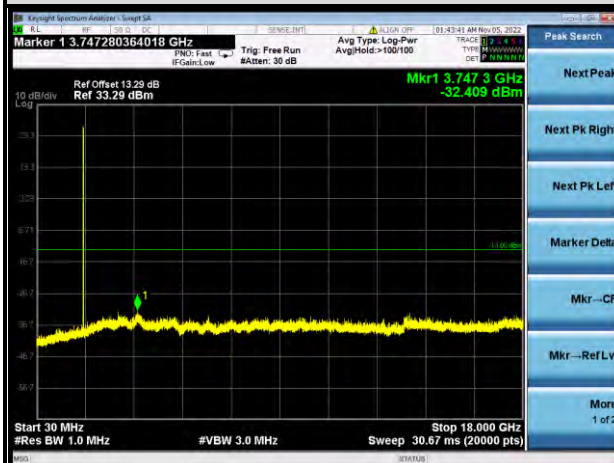
CHANNEL 20175

FREQUENCY RANG2E : 30MHz~18GHz



CHANNEL 20325

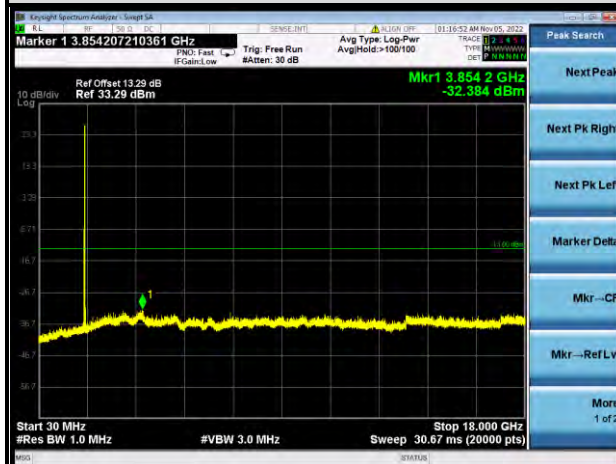
FREQUENCY RANG2E : 30MHz~18GHz



20MHz / QPSK

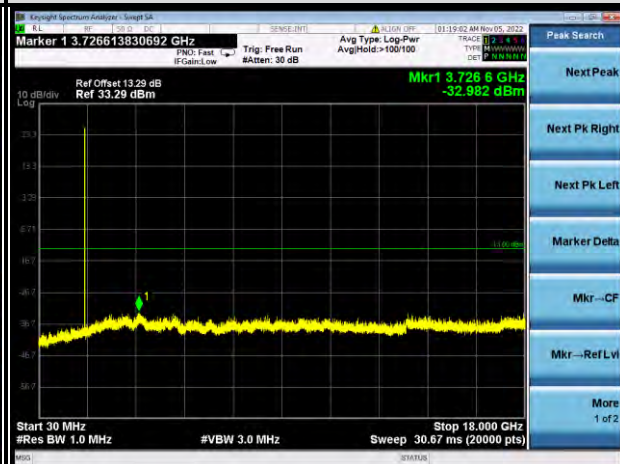
CHANNEL 20050

FREQUENCY RANG2E : 30MHz~18GHz



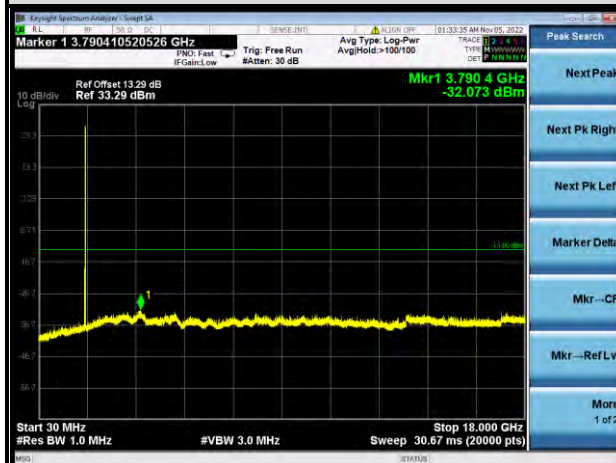
CHANNEL 20175

FREQUENCY RANG2E : 30MHz~18GHz



CHANNEL 20300

FREQUENCY RANG2E : 30MHz~18GHz





BUREAU
VERITAS

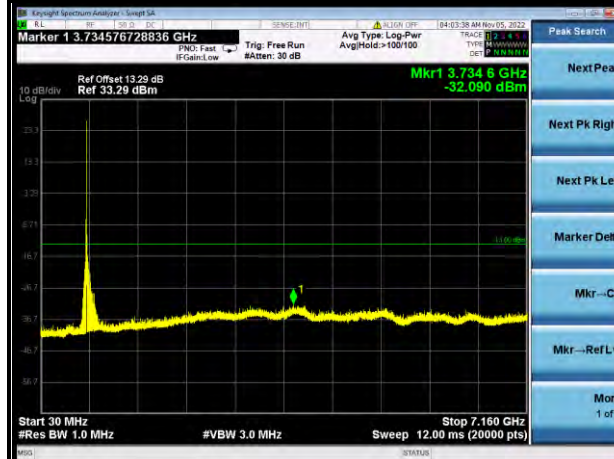
LTE BAND 12

Test Report No.: W7L-P22100018RF03

1.4MHz / QPSK

CHANNEL 23017

FREQUENCY RANGE : 30MHz~7.16GHz



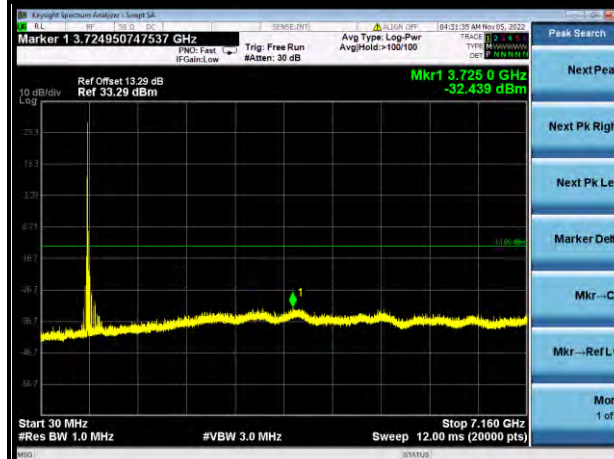
CHANNEL 23095

FREQUENCY RANGE : 30MHz~7.16GHz



CHANNEL 23173

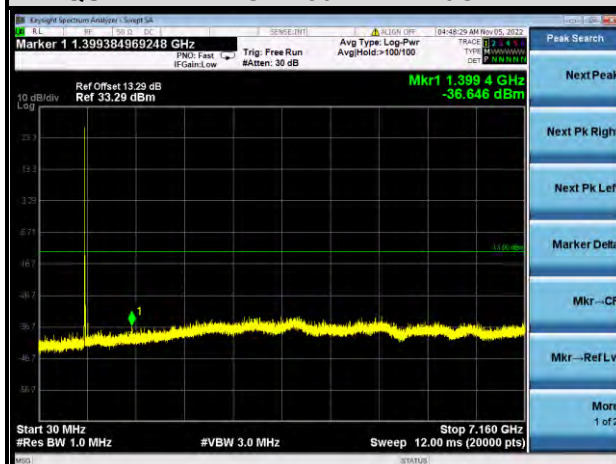
FREQUENCY RANGE : 30MHz~7.16GHz



3MHz / QPSK

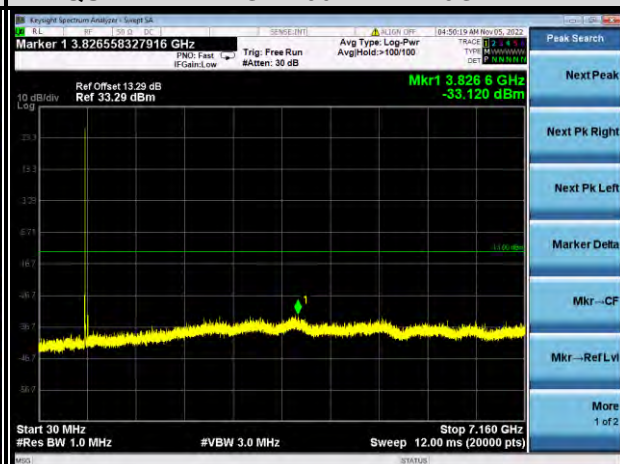
CHANNEL 23025

FREQUENCY RANGE : 30MHz~7.16GHz



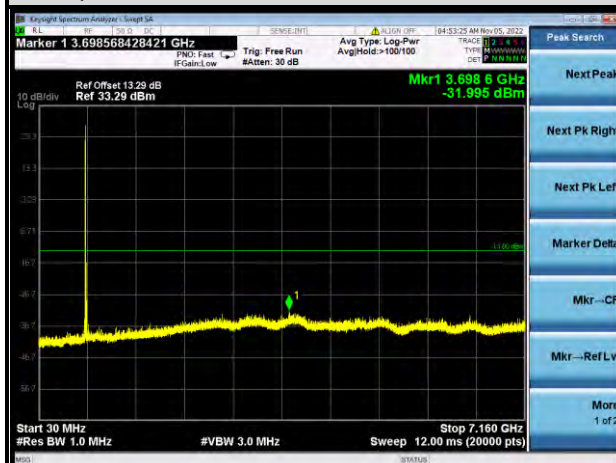
CHANNEL 23095

FREQUENCY RANGE : 30MHz~7.16GHz



CHANNEL 23165

FREQUENCY RANGE : 30MHz~7.16GHz

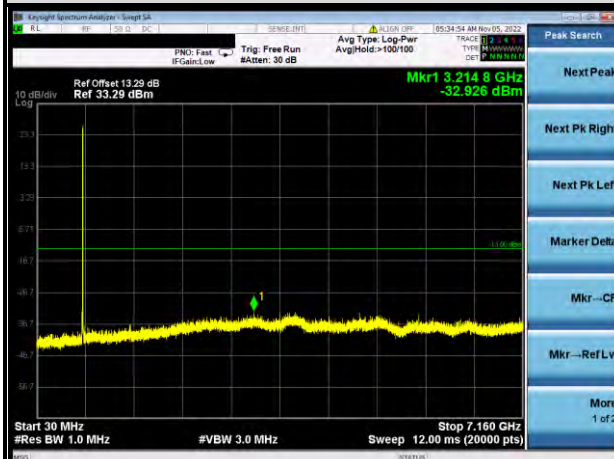




10MHz / QPSK

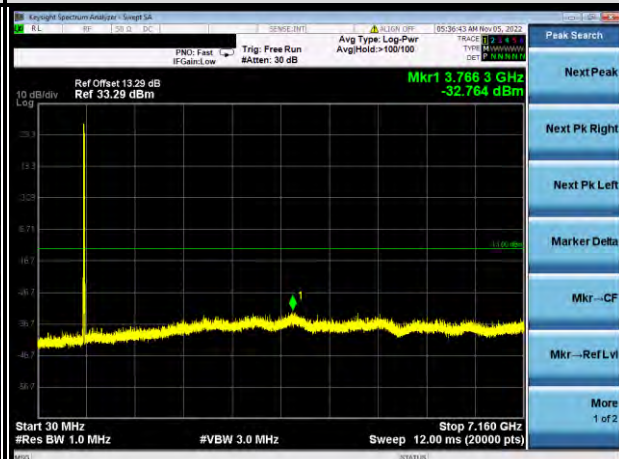
CHANNEL 23060

FREQUENCY RANGE : 30MHz~7.16GHz



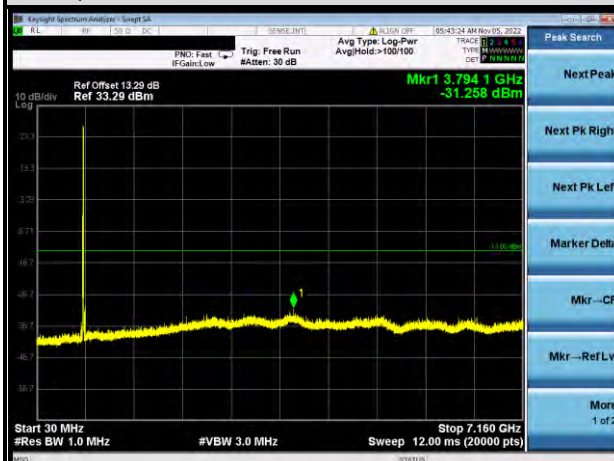
CHANNEL 23095

FREQUENCY RANGE : 30MHz~7.16GHz



CHANNEL 23130

FREQUENCY RANGE : 30MHz~7.16GHz





BUREAU
VERITAS

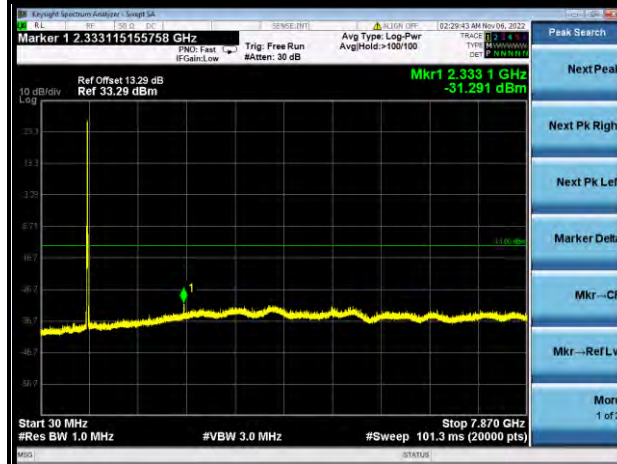
Test Report No.: W7L-P22100018RF03

LTE BAND 13

5MHz / QPSK

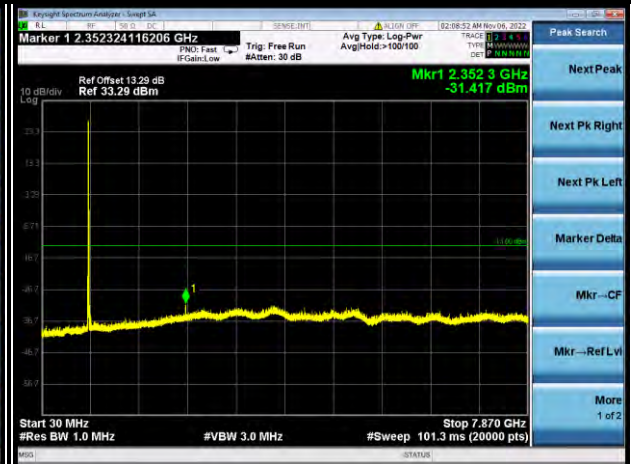
CHANNEL 23205

FREQUENCY RANGE : 30MHz~7.87GHz



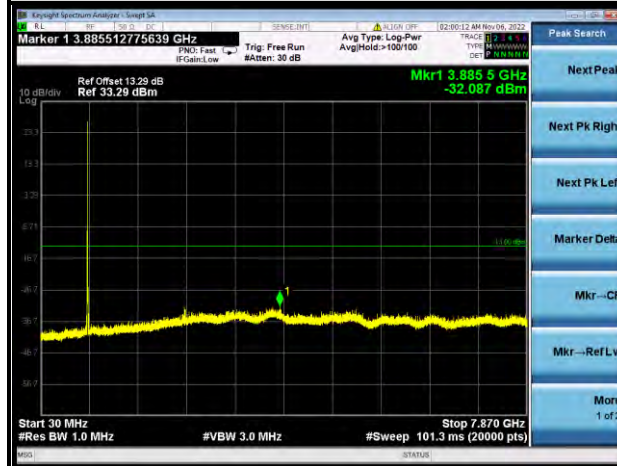
CHANNEL 23230

FREQUENCY RANGE : 30MHz~7.87GHz



CHANNEL 23255

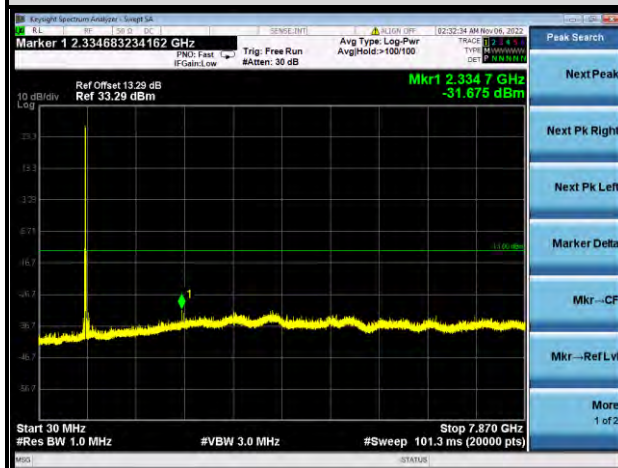
FREQUENCY RANGE : 30MHz~7.87GHz



10MHz / QPSK

CHANNEL 23230

FREQUENCY RANGE : 30MHz~7.87GHz



3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

3.6.2 TEST PROCEDURES

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

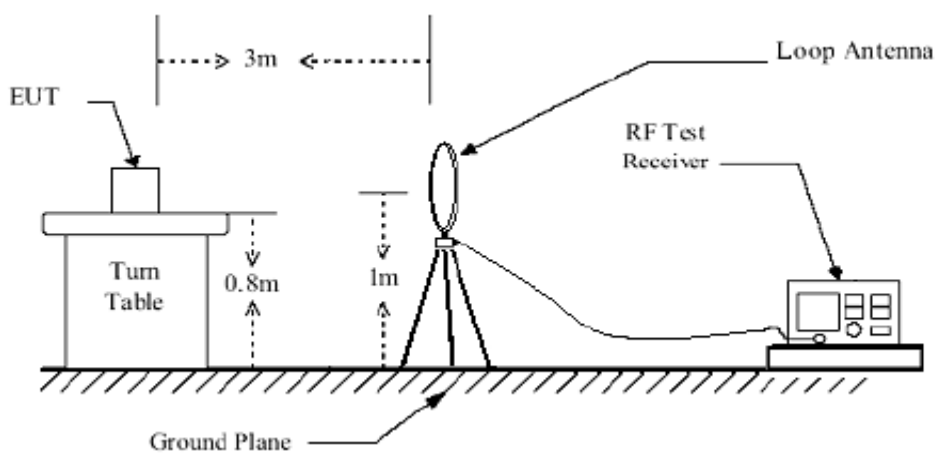
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.6.3 DEVIATION FROM TEST STANDARD

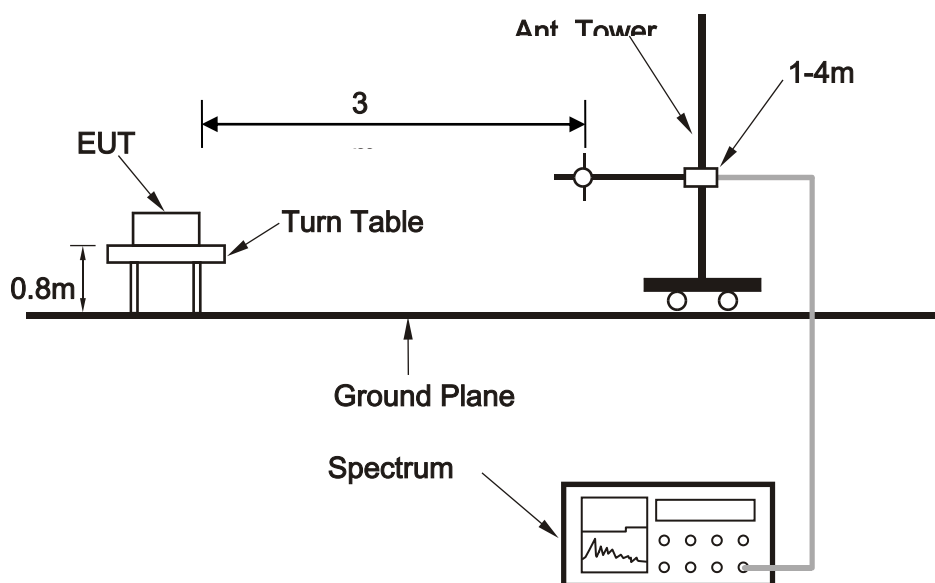
No deviation

3.6.4 TEST SETUP

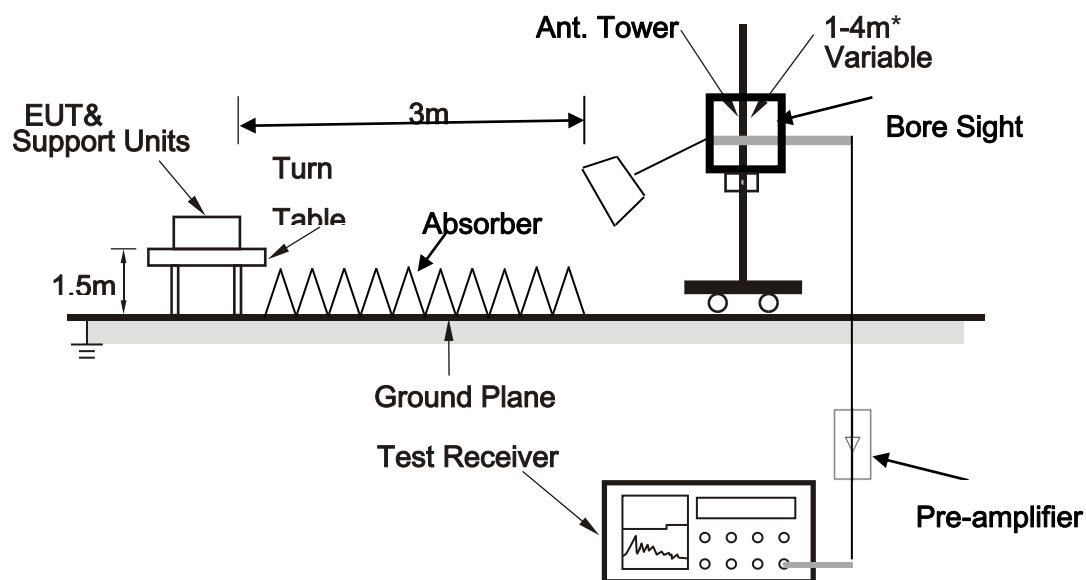
< Frequency Range below 30MHz >



< 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

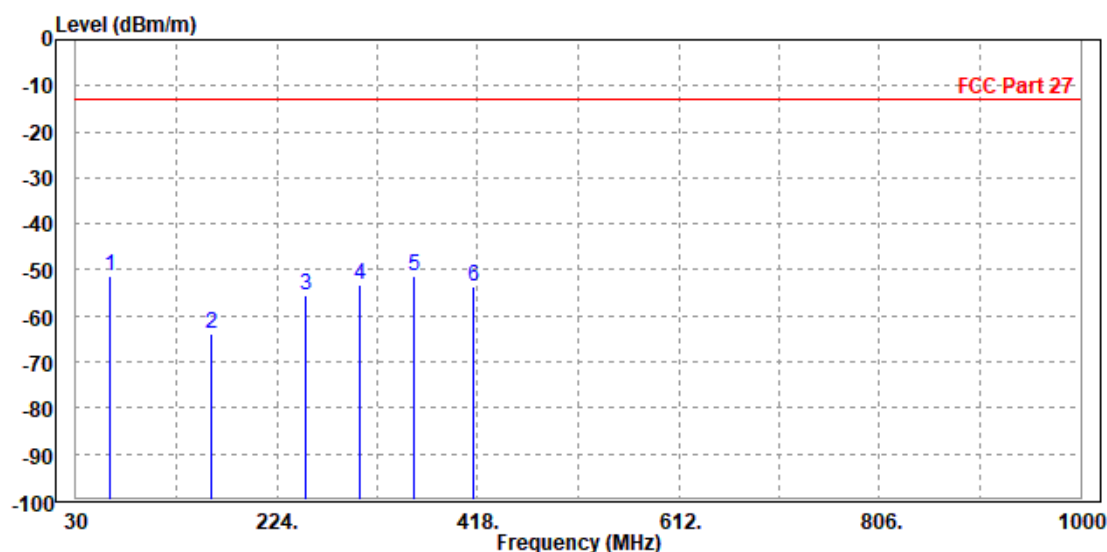
30 MHz – 1GHz data:

LTE Band 13

CHANNEL BANDWIDTH: 5MHz / QPSK

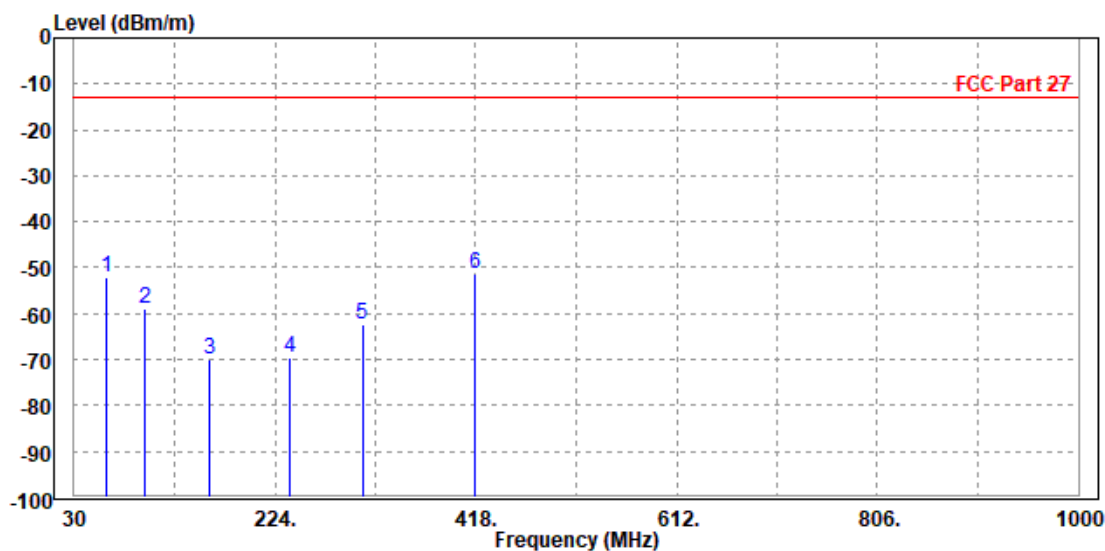
MODE	TX channel 23255	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	62.980	-51.40	-31.92	-13.00	-38.40	-19.48	Peak	Horizontal
2	159.980	-63.83	-47.98	-13.00	-50.83	-15.85	Peak	Horizontal
3	251.160	-55.52	-44.04	-13.00	-42.52	-11.48	Peak	Horizontal
4	304.510	-53.11	-40.76	-13.00	-40.11	-12.35	Peak	Horizontal
5 PP	355.920	-51.28	-40.18	-13.00	-38.28	-11.10	Peak	Horizontal
6	413.150	-53.47	-43.68	-13.00	-40.47	-9.79	Peak	Horizontal



MODE	TX channel 23255	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	62.010	-52.08	-29.09	-13.00	-39.08	-22.99	Peak	Vertical
2	97.900	-59.02	-50.68	-13.00	-46.02	-8.34	Peak	Vertical
3	159.980	-70.12	-53.32	-13.00	-57.12	-16.80	Peak	Vertical
4	237.580	-69.54	-54.84	-13.00	-56.54	-14.70	Peak	Vertical
5	308.390	-62.47	-51.81	-13.00	-49.47	-10.66	Peak	Vertical
6 PP	417.030	-51.15	-42.31	-13.00	-38.15	-8.84	Peak	Vertical





**BUREAU
VERITAS**

Test Report No.: W7L-P22100018RF03

ABOVE 1GHz

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

WORST-CASE DATA

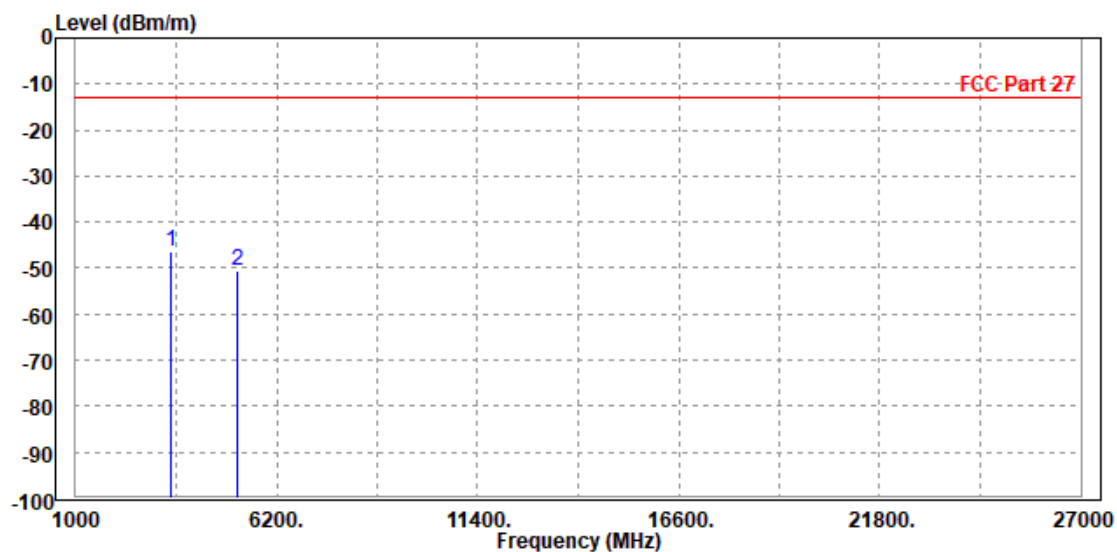
LTE Band 4

CHANNEL BANDWIDTH: 1.4MHz / QPSK

CH 20175

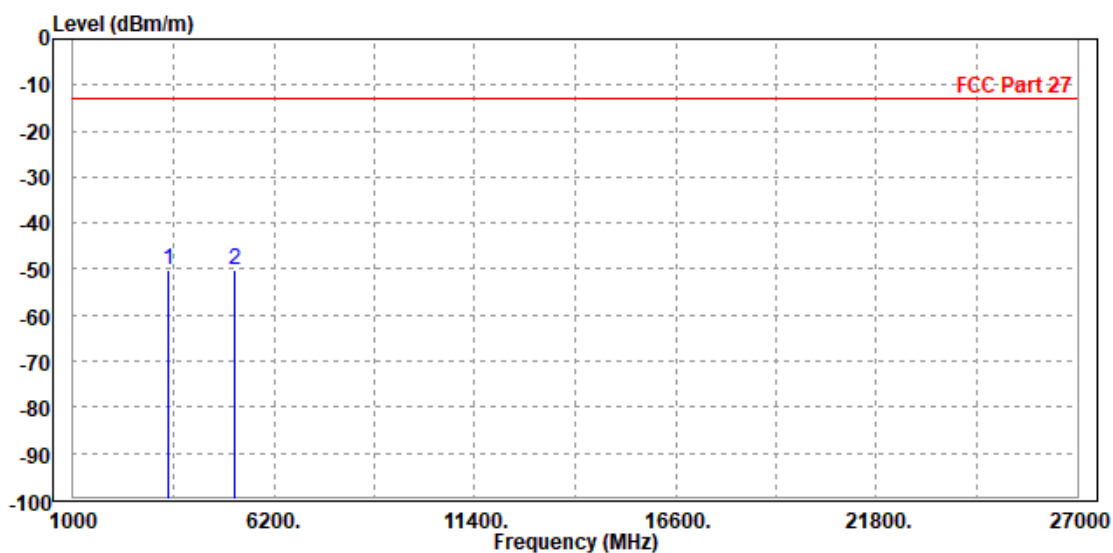
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3470.000	-46.51	-53.79	-13.00	-33.51	7.28	Peak	Horizontal
2	5197.500	-50.44	-60.44	-13.00	-37.44	10.00	Peak	Horizontal



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	3465.000	-50.13	-57.39	-13.00	-37.13	7.26	Peak	Vertical
2 PP	5186.000	-50.02	-60.46	-13.00	-37.02	10.44	Peak	Vertical





BUREAU
VERITAS

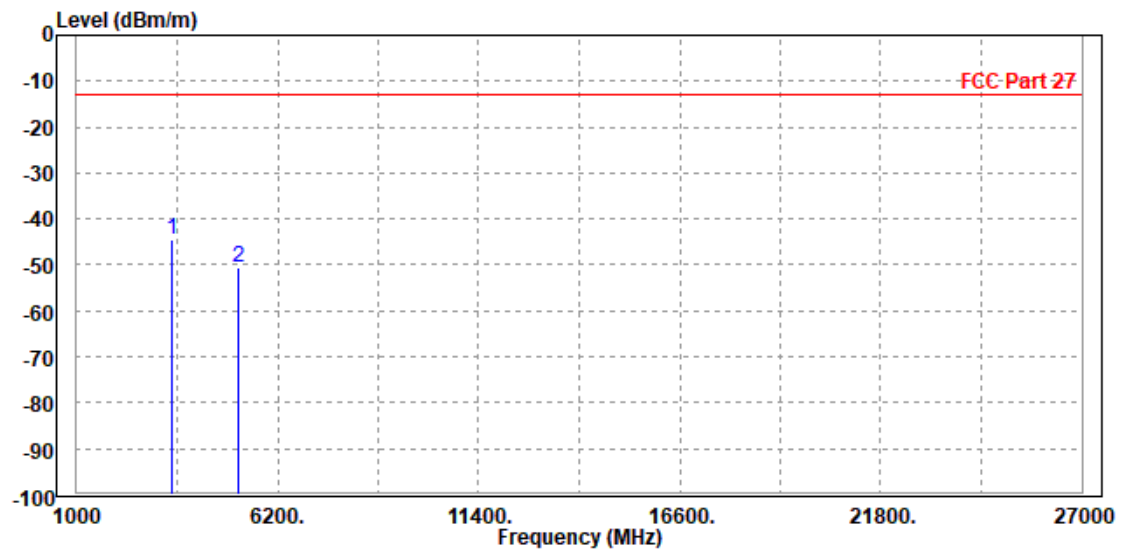
Test Report No.: W7L-P22100018RF03

CHANNEL BANDWIDTH: 3MHz / QPSK

CH 20175

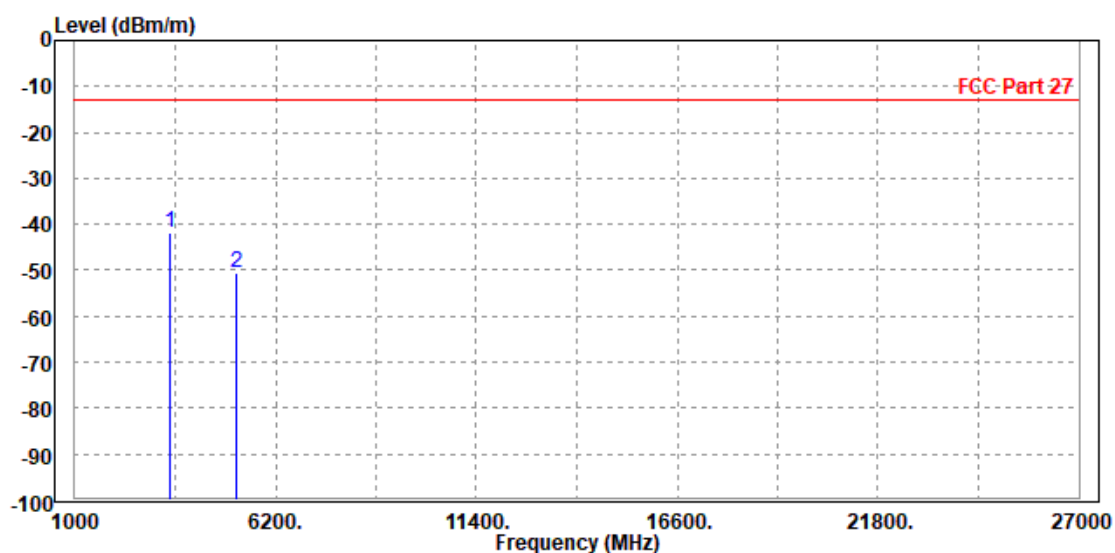
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3465.000	-44.32	-51.59	-13.00	-31.32	7.27	Peak	Horizontal
2		5186.000	-50.56	-60.54	-13.00	-37.56	9.98	Peak	Horizontal



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	3470.000	-41.71	-48.98	-13.00	-28.71	7.27	Peak	Vertical
2	5197.500	-50.71	-61.16	-13.00	-37.71	10.45	Peak	Vertical





**BUREAU
VERITAS**

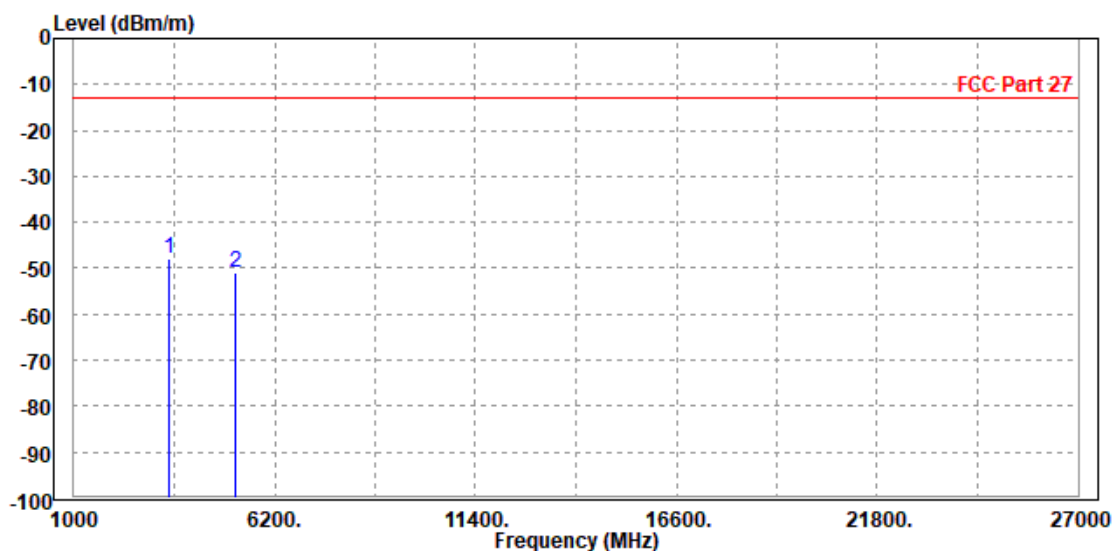
Test Report No.: W7L-P22100018RF03

CHANNEL BANDWIDTH: 5MHz / QPSK

CH 20175

MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	3470.000	-47.92	-55.20	-13.00	-34.92	7.28	Peak	Horizontal
2	5197.500	-50.99	-60.99	-13.00	-37.99	10.00	Peak	Horizontal

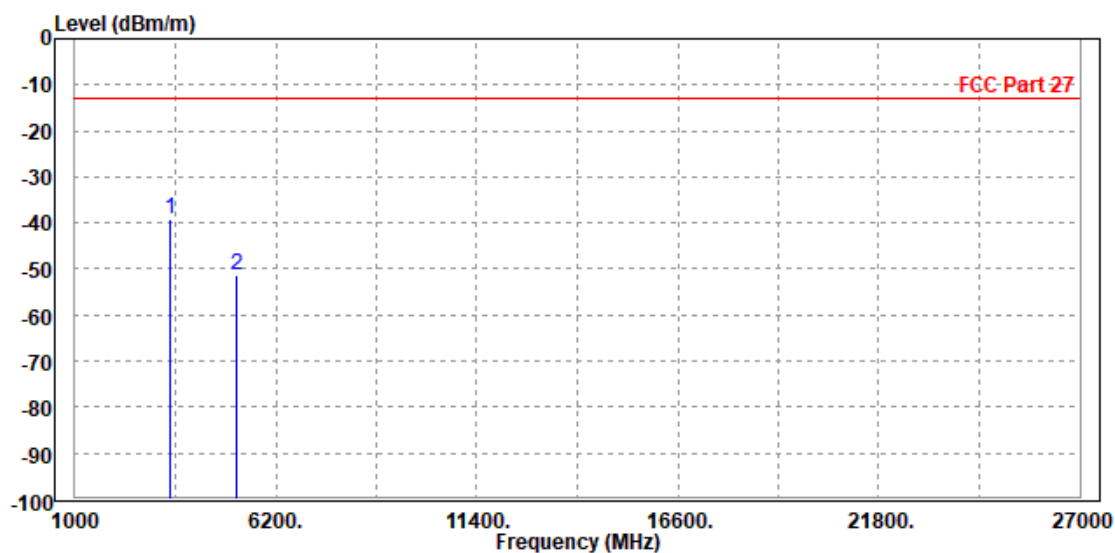




Test Report No.: W7L-P22100018RF03

MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	3465.000	-39.10	-46.36	-13.00	-26.10	7.26	Peak	Vertical
2	5186.000	-51.35	-61.79	-13.00	-38.35	10.44	Peak	Vertical





**BUREAU
VERITAS**

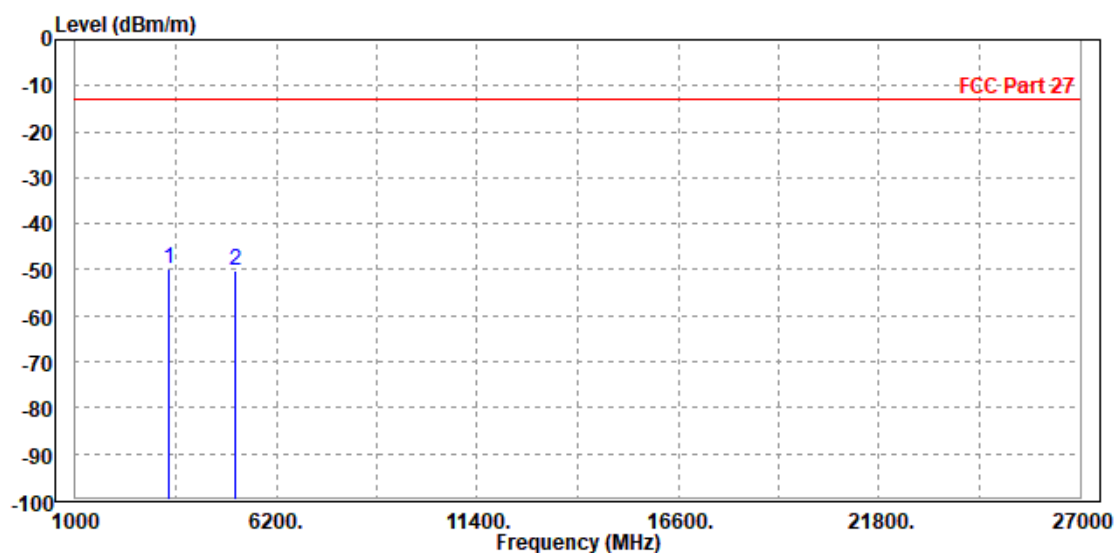
Test Report No.: W7L-P22100018RF03

CHANNEL BANDWIDTH: 10MHz / QPSK

CH 20000

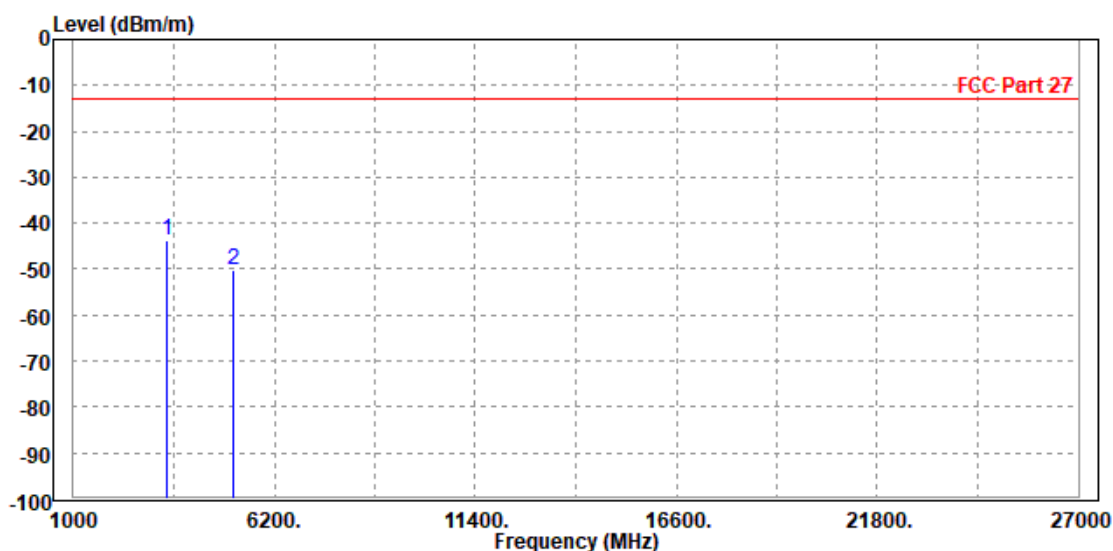
MODE	TX channel 20000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3430.000	-49.90	-57.13	-13.00	-36.90	7.23	Peak	Horizontal
2	5134.000	-50.20	-60.10	-13.00	-37.20	9.90	Peak	Horizontal



MODE	TX channel 20000	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	3418.000	-43.71	-50.90	-13.00	-30.71	7.19	Peak	Vertical
2	5145.000	-50.10	-60.50	-13.00	-37.10	10.40	Peak	Vertical



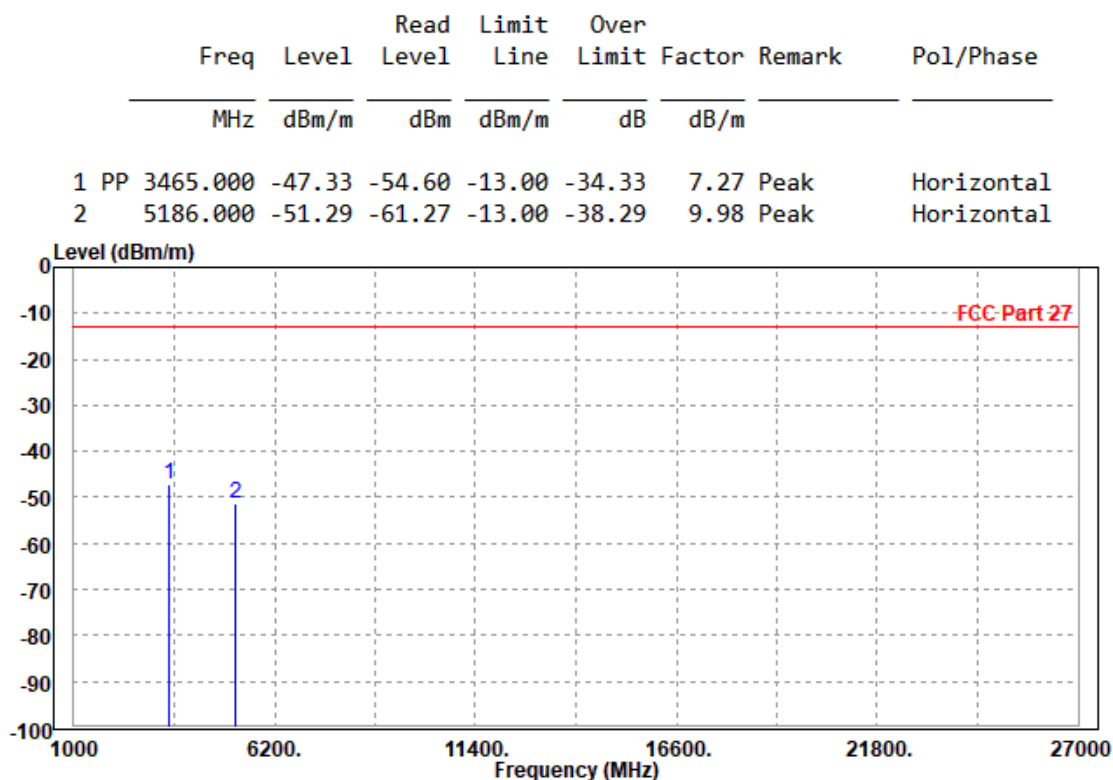


**BUREAU
VERITAS**

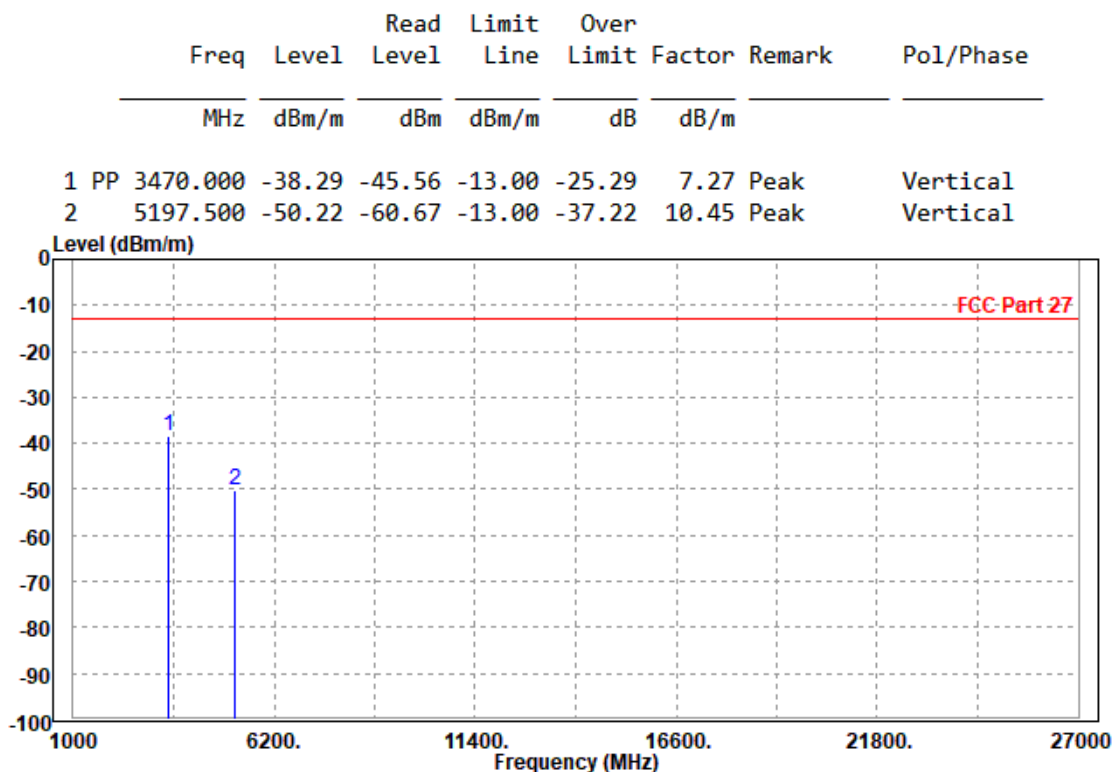
Test Report No.: W7L-P22100018RF03

CH 20175

MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			





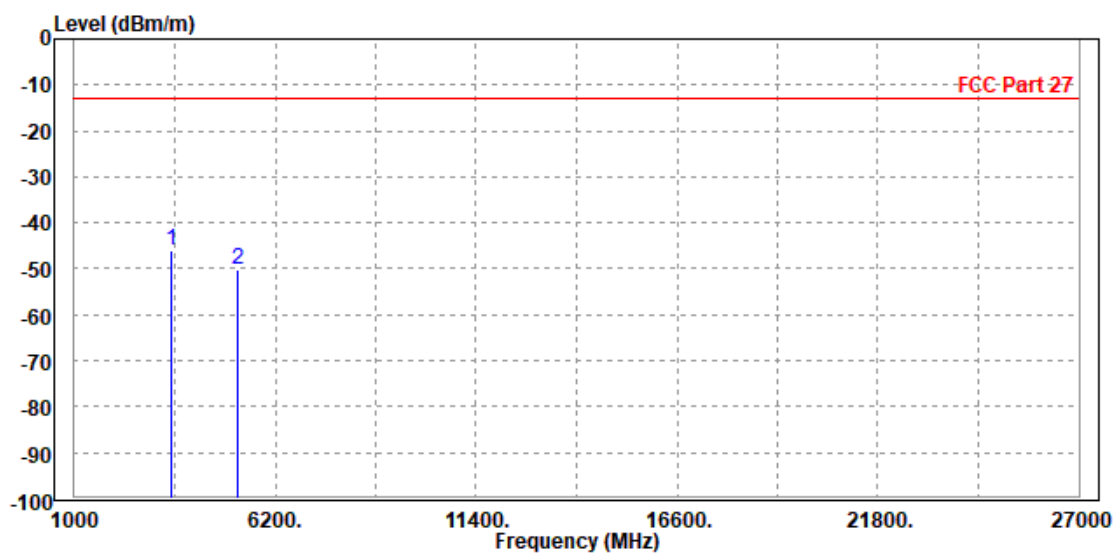
**BUREAU
VERITAS**

Test Report No.: W7L-P22100018RF03

CH 20350

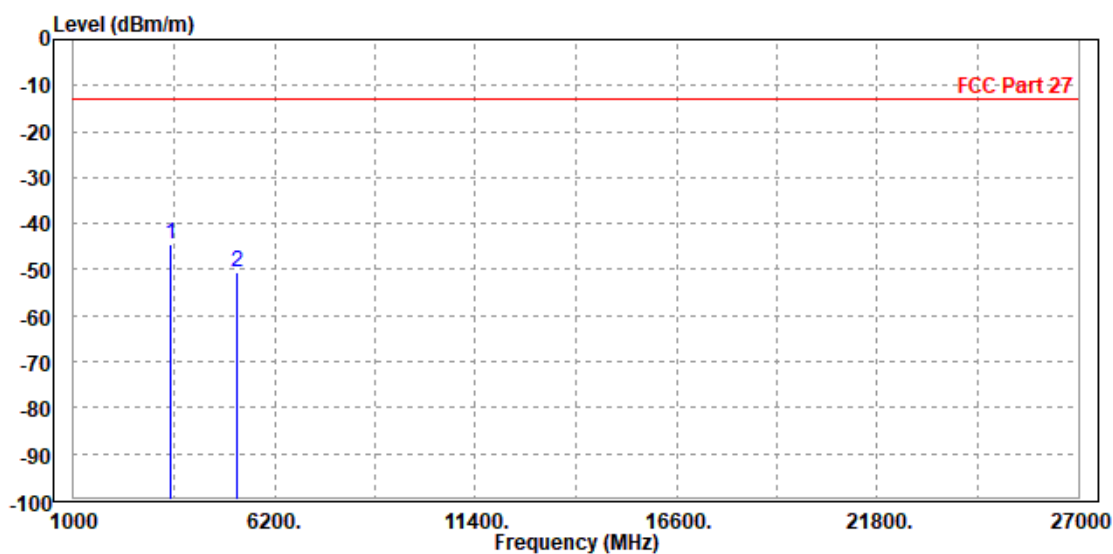
MODE	TX channel 20350	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3496.000	-46.06	-53.38	-13.00	-33.06	7.32	Peak	Horizontal
2		5250.000	-50.12	-60.20	-13.00	-37.12	10.08	Peak	Horizontal



MODE	TX channel 20350	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	3496.000	-44.59	-51.90	-13.00	-31.59	7.31	Peak	Vertical
2		5250.000	-50.76	-61.26	-13.00	-37.76	10.50	Peak	Vertical





**BUREAU
VERITAS**

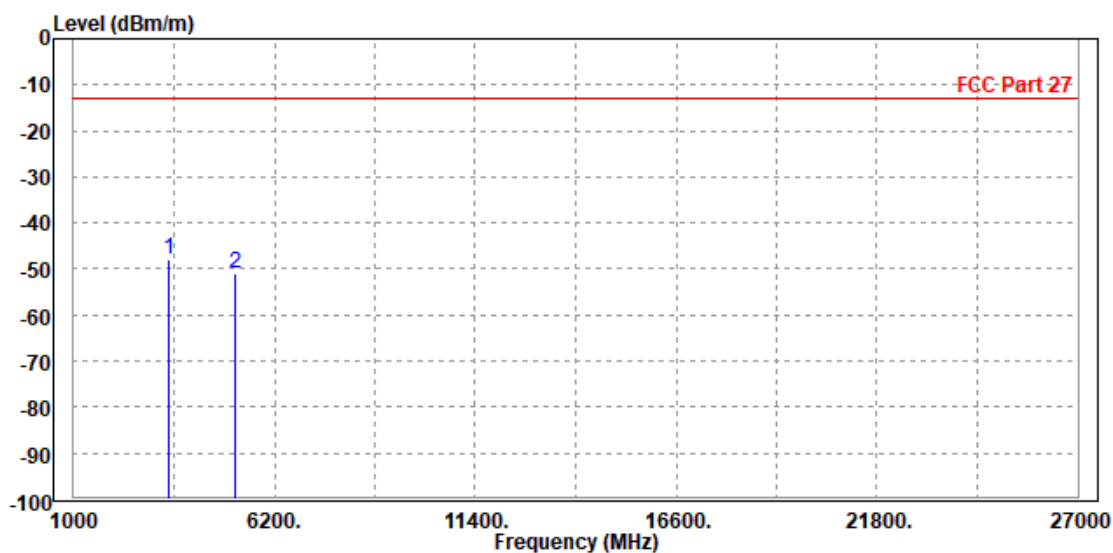
Test Report No.: W7L-P22100018RF03

CHANNEL BANDWIDTH: 15MHz / QPSK

CH20175

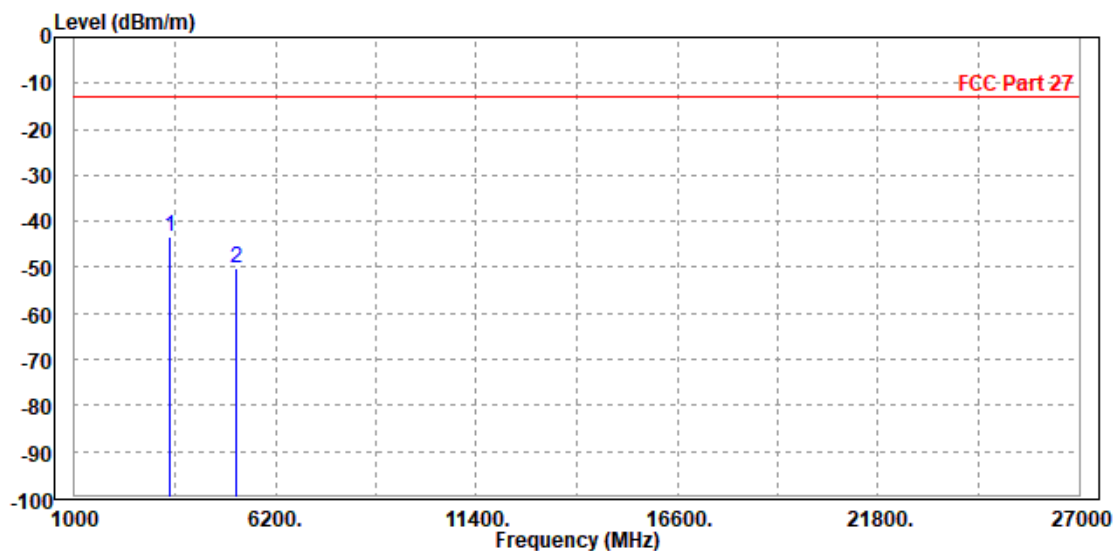
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	3465.000	-47.78	-55.05	-13.00	-34.78	7.27	Peak	Horizontal
2		5186.000	-50.99	-60.97	-13.00	-37.99	9.98	Peak	Horizontal



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	3470.000	-43.48	-50.75	-13.00	-30.48	7.27	Peak	Vertical
2	5197.500	-50.07	-60.52	-13.00	-37.07	10.45	Peak	Vertical



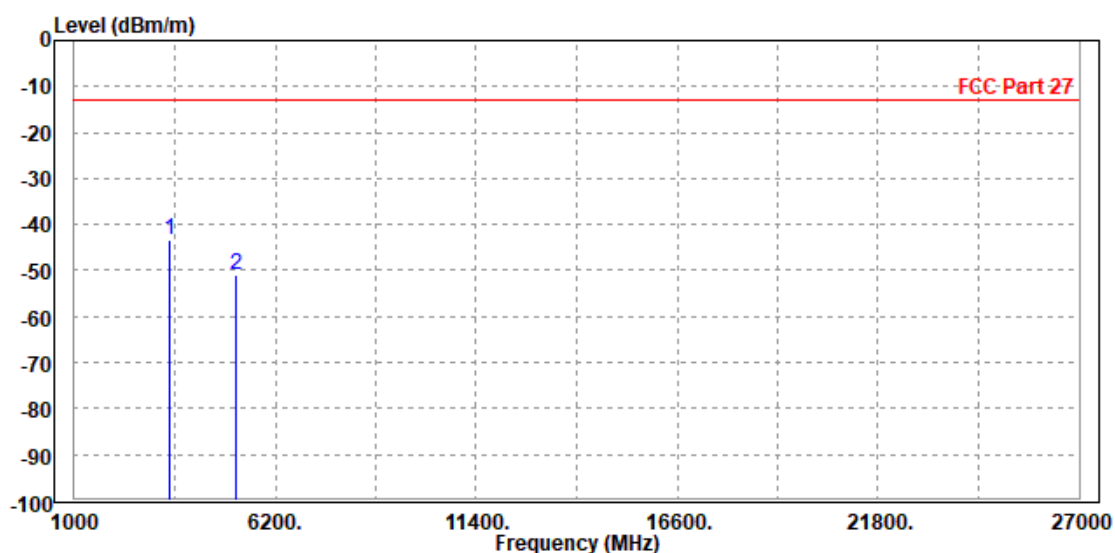


Test Report No.: W7L-P22100018RF03

CHANNEL BANDWIDTH: 20MHz / QPSK
CH 20175

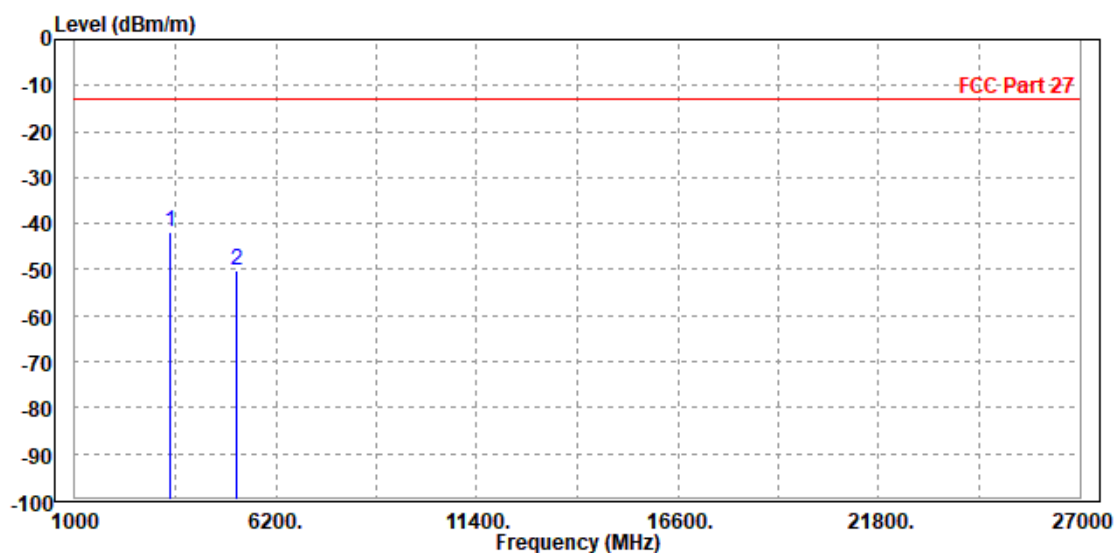
MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	3470.000	-43.29	-50.57	-13.00	-30.29	7.28	Peak	Horizontal
2	5197.500	-51.07	-61.07	-13.00	-38.07	10.00	Peak	Horizontal



MODE	TX channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

			Read	Limit	Over			
Freq	Level	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
MHz	dBm/m	dBm	dBm/m	dB	dB/m			
1 PP 3465.000	-41.91	-49.17	-13.00	-28.91	7.26	Peak	Vertical	
2 5186.000	-50.26	-60.70	-13.00	-37.26	10.44	Peak	Vertical	





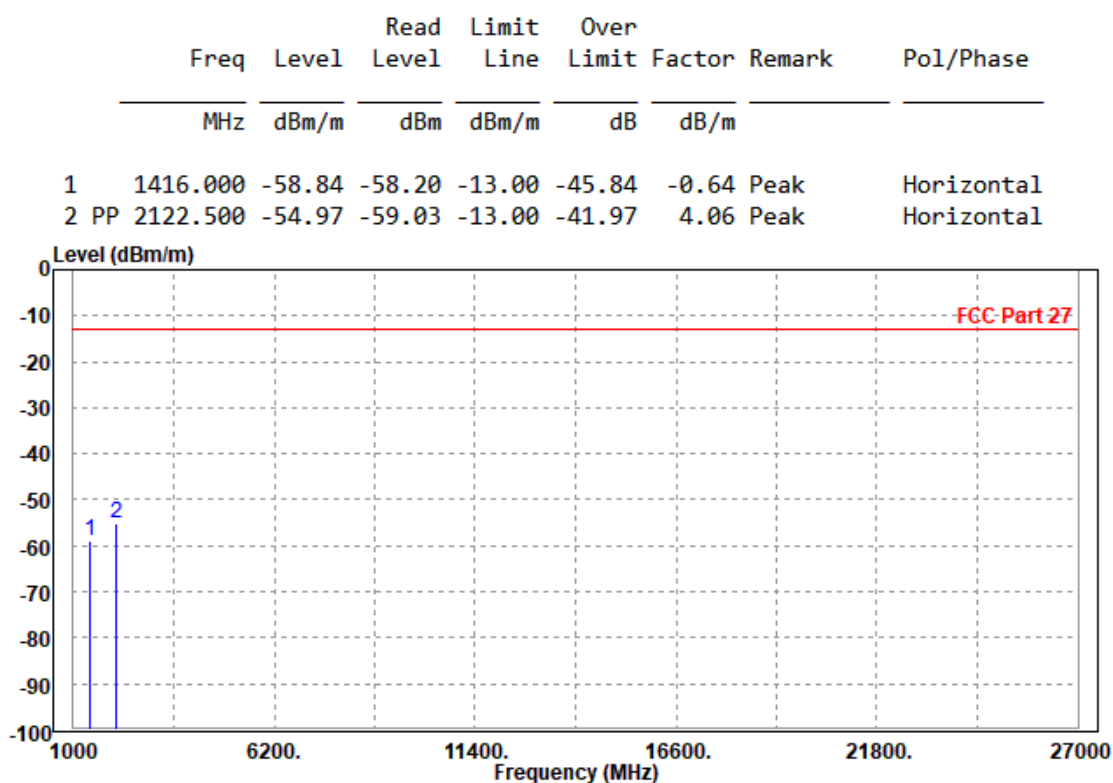
**BUREAU
VERITAS**

Test Report No.: W7L-P22100018RF03

LTE BAND 12

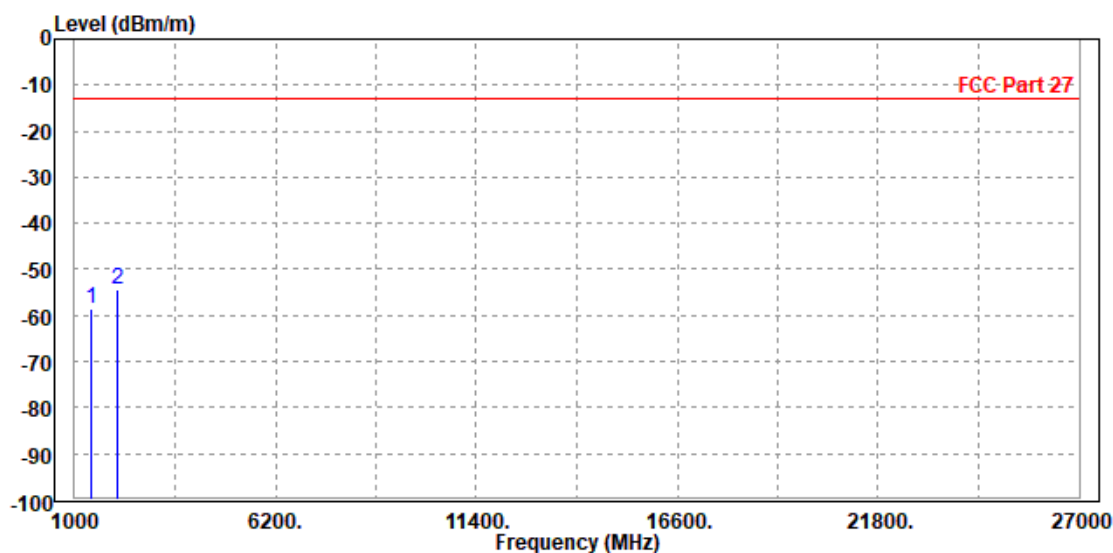
CHANNEL BANDWIDTH: 1.4MHz / QPSK

MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	1416.000	-58.41	-58.01	-13.00	-45.41	-0.40	Peak	Vertical
2 PP	2122.500	-54.27	-58.19	-13.00	-41.27	3.92	Peak	Vertical





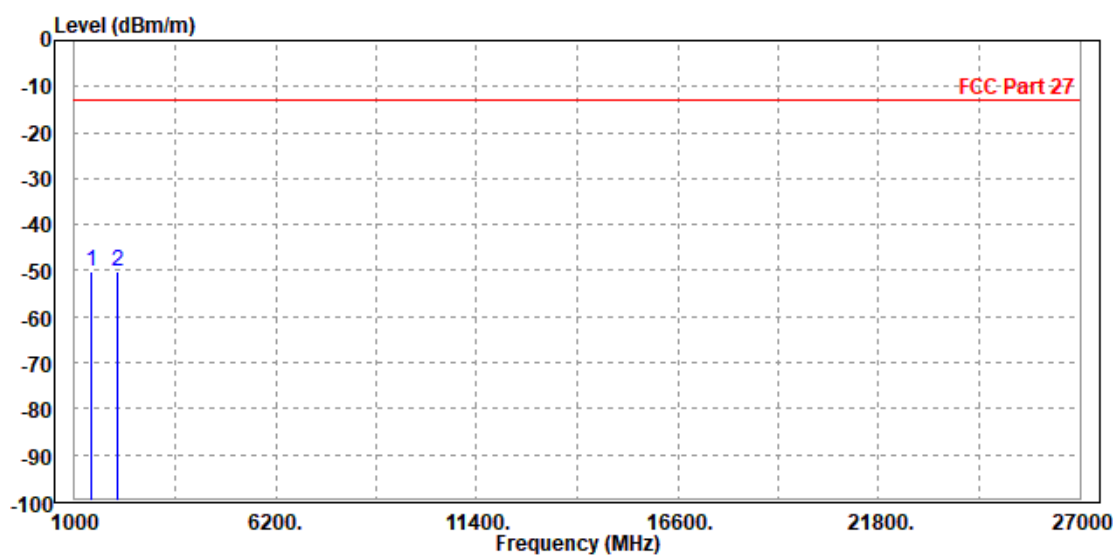
**BUREAU
VERITAS**

Test Report No.: W7L-P22100018RF03

CHANNEL BANDWIDTH: 3MHz / QPSK

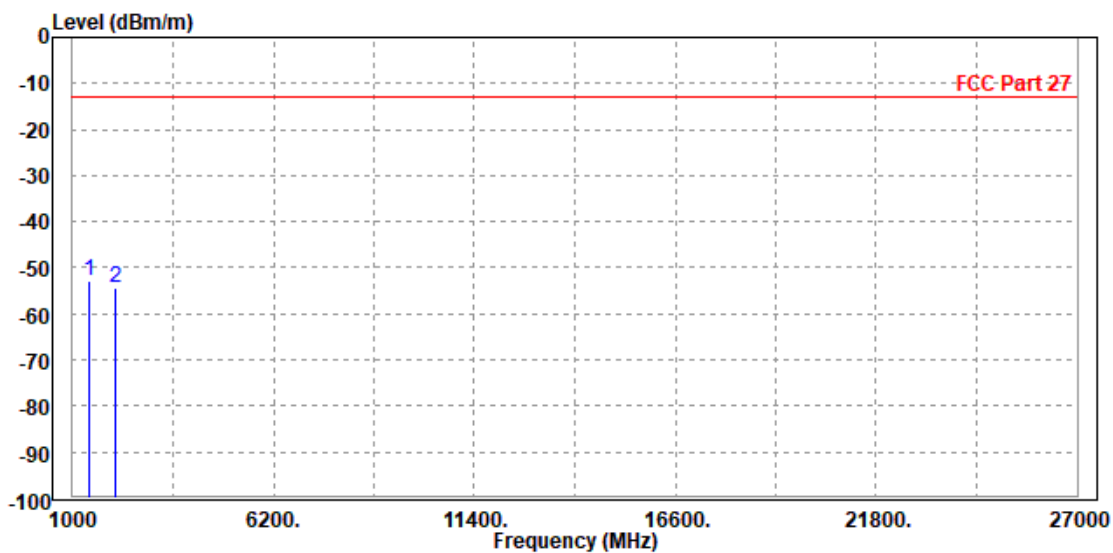
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1415.000	-50.28	-49.63	-13.00	-37.28	-0.65	Peak	Horizontal
2		2118.000	-50.32	-54.37	-13.00	-37.32	4.05	Peak	Horizontal



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	1416.000	-52.85	-52.45	-13.00	-39.85	-0.40	Peak	Vertical
2		2122.500	-54.49	-58.41	-13.00	-41.49	3.92	Peak	Vertical





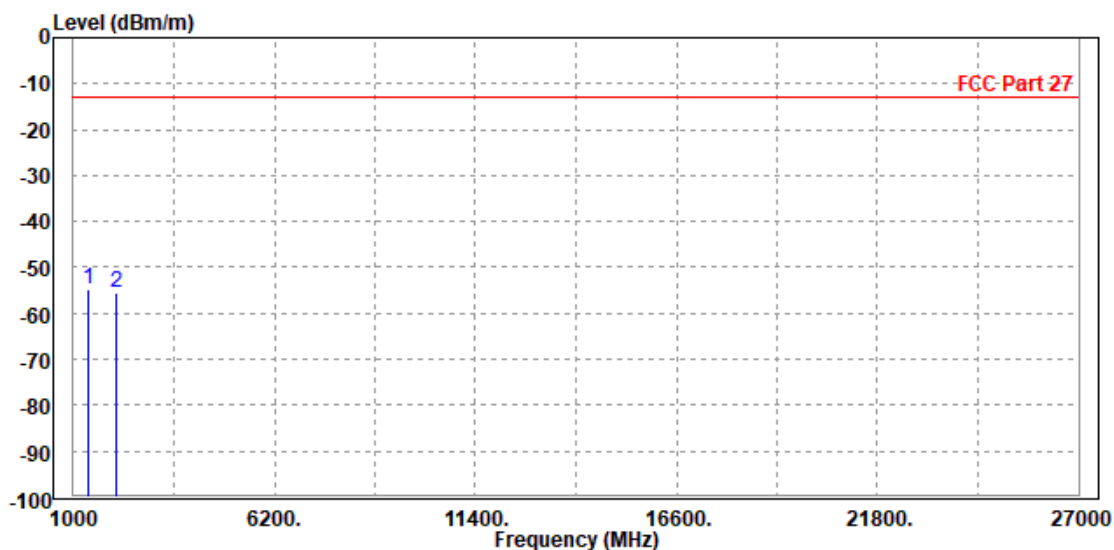
Test Report No.: W7L-P22100018RF03

CHANNEL BANDWIDTH: 5MHz / QPSK

CH 23035

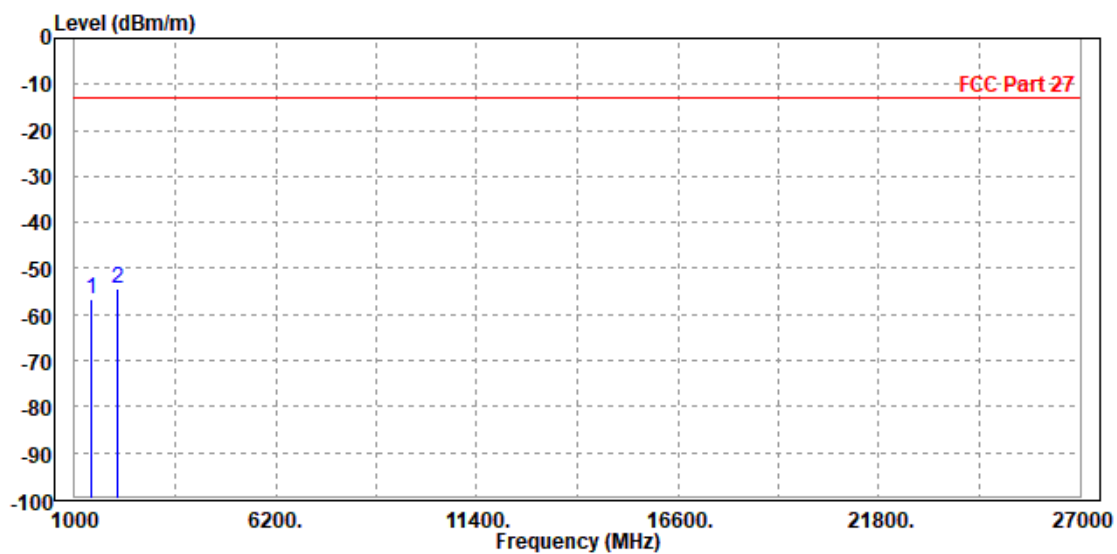
MODE	TX channel 23035	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

			Read	Limit	Over			
Freq	Level	Level	Level	Line	Limit	Factor	Remark	Pol/Phase
MHz	dBm/m	dBm	dBm/m	dB	dB/m			
1 PP 1403.000	-54.67	-53.99	-13.00	-41.67	-0.68	Peak	Horizontal	
2 2092.000	-55.43	-59.38	-13.00	-42.43	3.95	Peak	Horizontal	



MODE	TX channel 23035	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

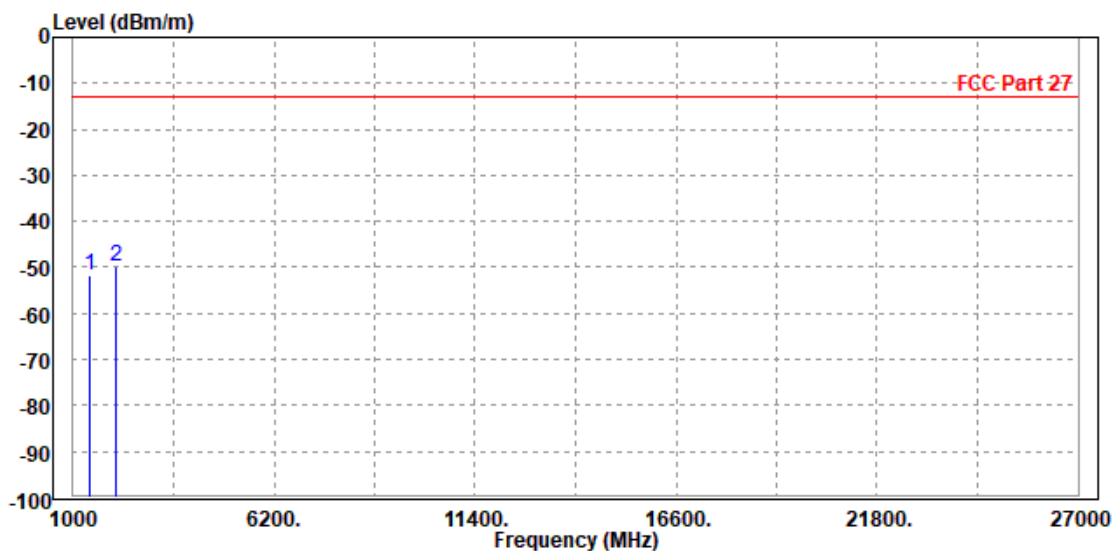
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1416.000	-56.68	-56.28	-13.00	-43.68	-0.40	Peak	Vertical
2 PP	2104.500	-54.40	-58.27	-13.00	-41.40	3.87	Peak	Vertical



CH 23095

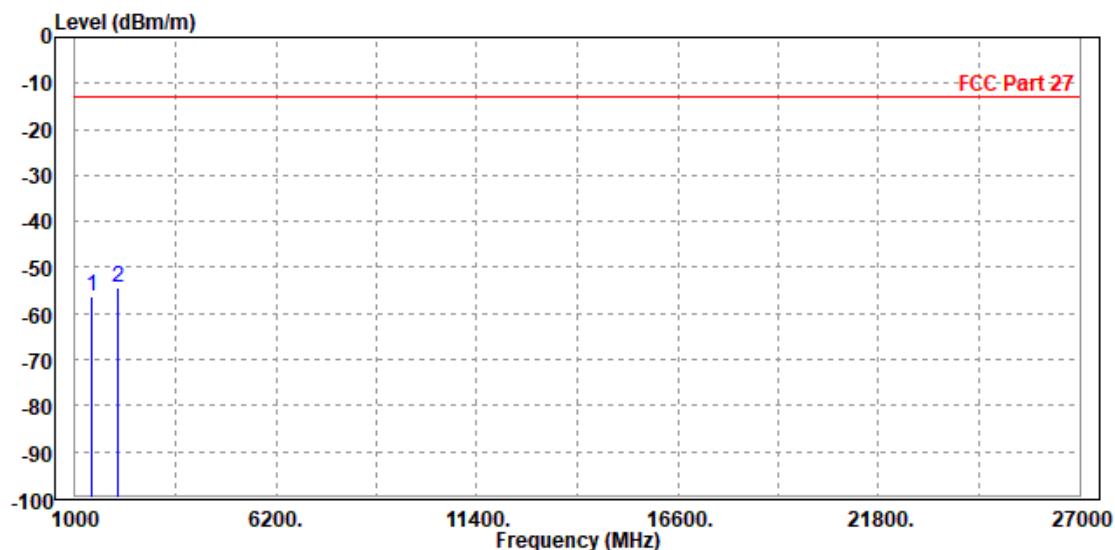
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1416.000	-51.63	-50.99	-13.00	-38.63	-0.64	Peak	Horizontal
2 PP	2122.500	-49.76	-53.82	-13.00	-36.76	4.06	Peak	Horizontal



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

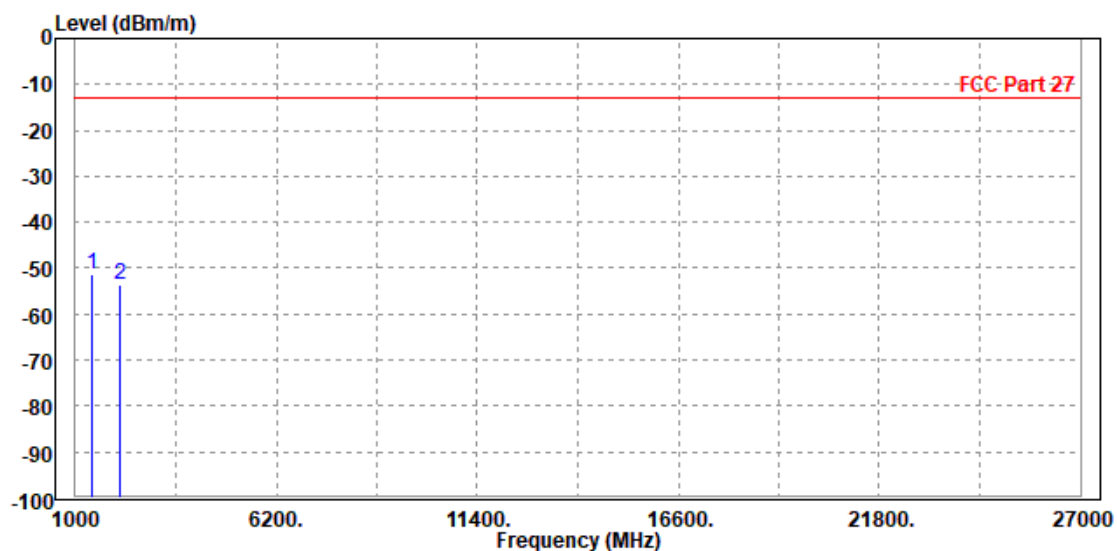
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1415.000	-56.44	-56.03	-13.00	-43.44	-0.41	Peak	Vertical
2 PP	2118.000	-54.56	-58.46	-13.00	-41.56	3.90	Peak	Vertical



CH 23155

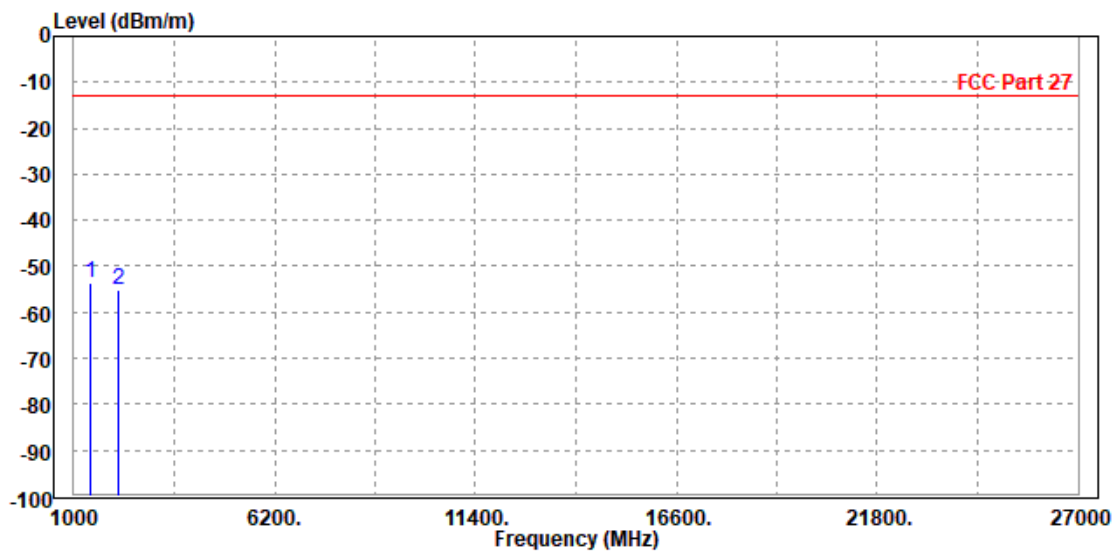
MODE	TX channel 23155	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1416.000	-51.42	-50.78	-13.00	-38.42	-0.64	Peak	Horizontal
2	2140.500	-53.66	-57.79	-13.00	-40.66	4.13	Peak	Horizontal



MODE	TX channel 23155	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	1427.000	-53.69	-53.34	-13.00	-40.69	-0.35	Peak	Vertical
2	2144.000	-55.23	-59.20	-13.00	-42.23	3.97	Peak	Vertical

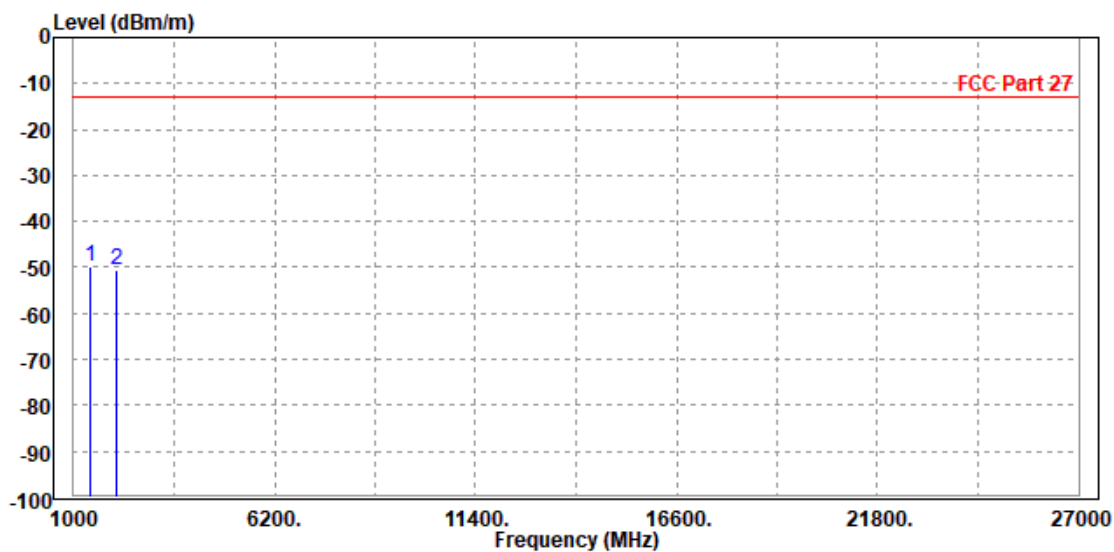


CHANNEL BANDWIDTH: 10MHz / QPSK

CH23095

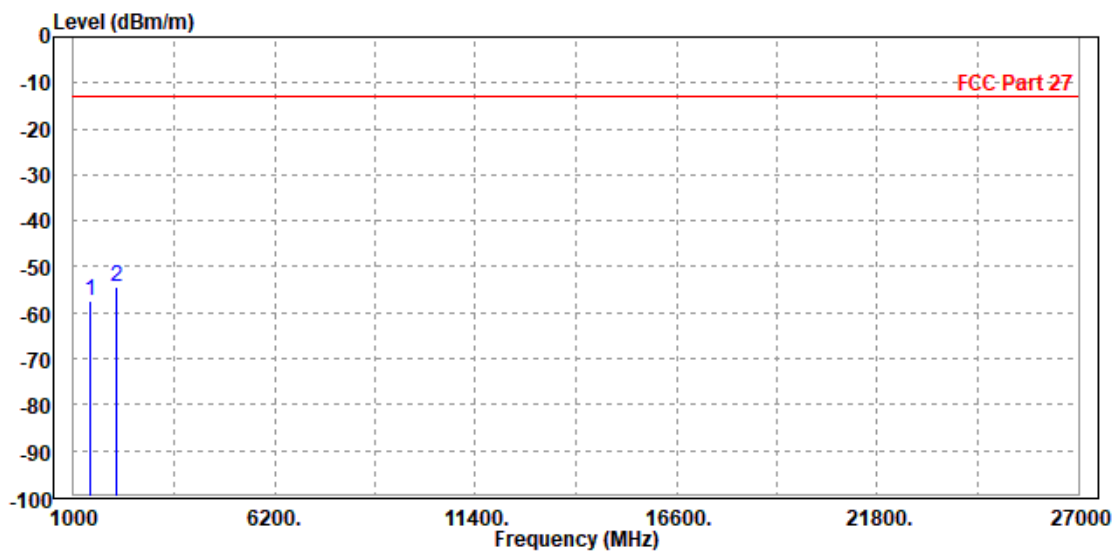
MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1415.000	-49.91	-49.26	-13.00	-36.91	-0.65	Peak	Horizontal
2	2118.000	-50.74	-54.79	-13.00	-37.74	4.05	Peak	Horizontal



MODE	TX channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	1416.000	-57.36	-56.96	-13.00	-44.36	-0.40	Peak	Vertical
2 PP	2122.500	-54.24	-58.16	-13.00	-41.24	3.92	Peak	Vertical



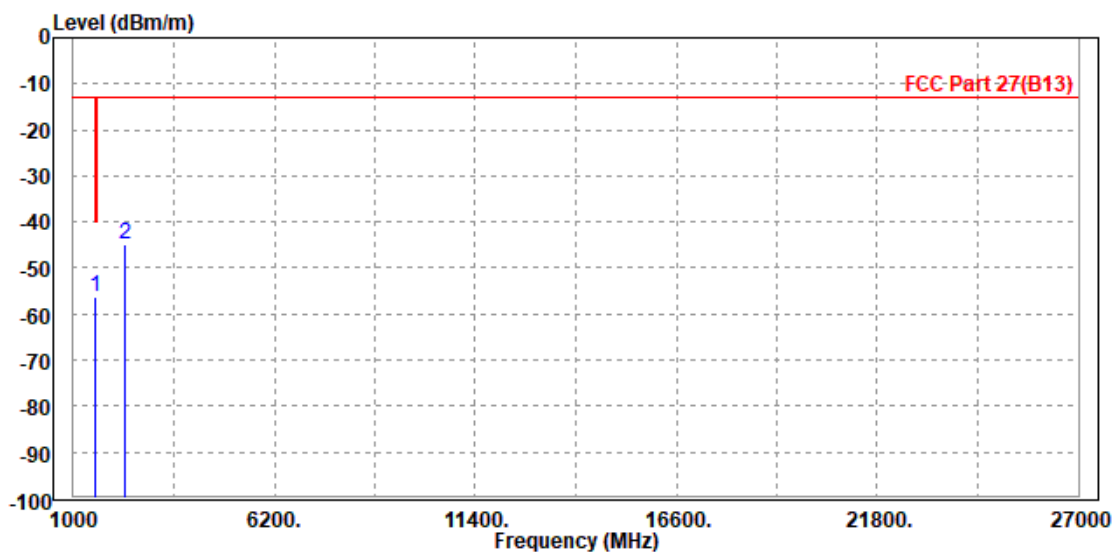
LTE B13

CHANNEL BANDWIDTH: 5MHz / QPSK

CH23205

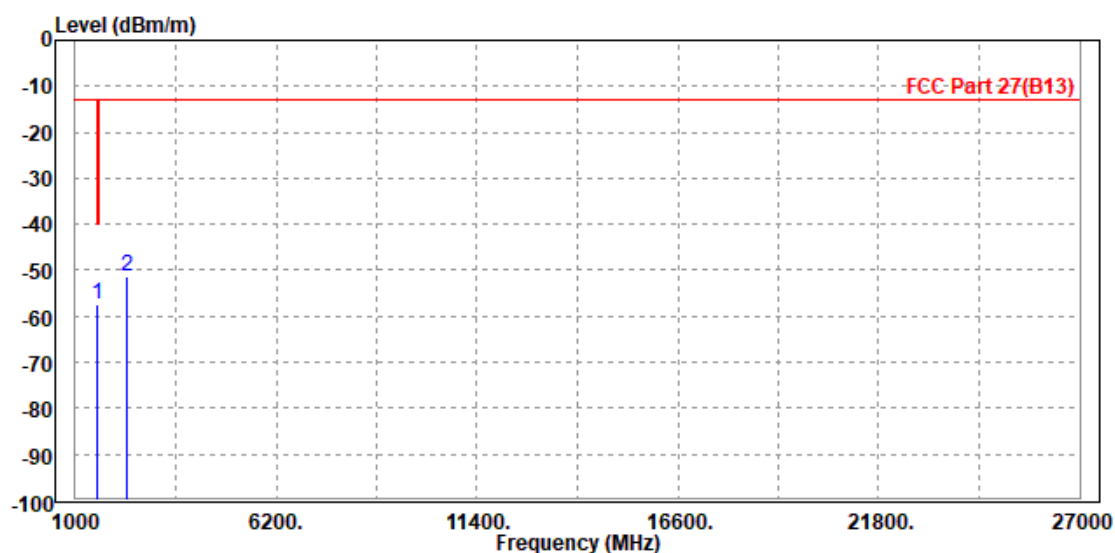
MODE	TX channel 23205	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1559.000	-56.30	-56.35	-40.00	-16.30	0.05	Peak	Horizontal
2	2326.000	-44.86	-49.67	-13.00	-31.86	4.81	Peak	Horizontal



MODE	TX channel 23205	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

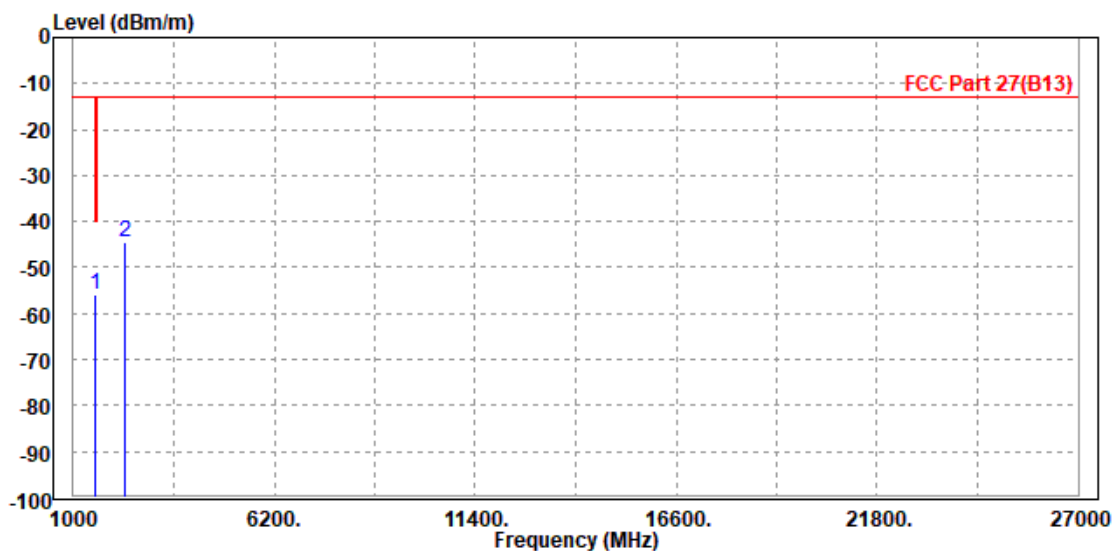
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1572.000	-57.30	-57.79	-40.00	-17.30	0.49	Peak	Vertical
2		2338.500	-51.25	-55.75	-13.00	-38.25	4.50	Peak	Vertical



CH23230

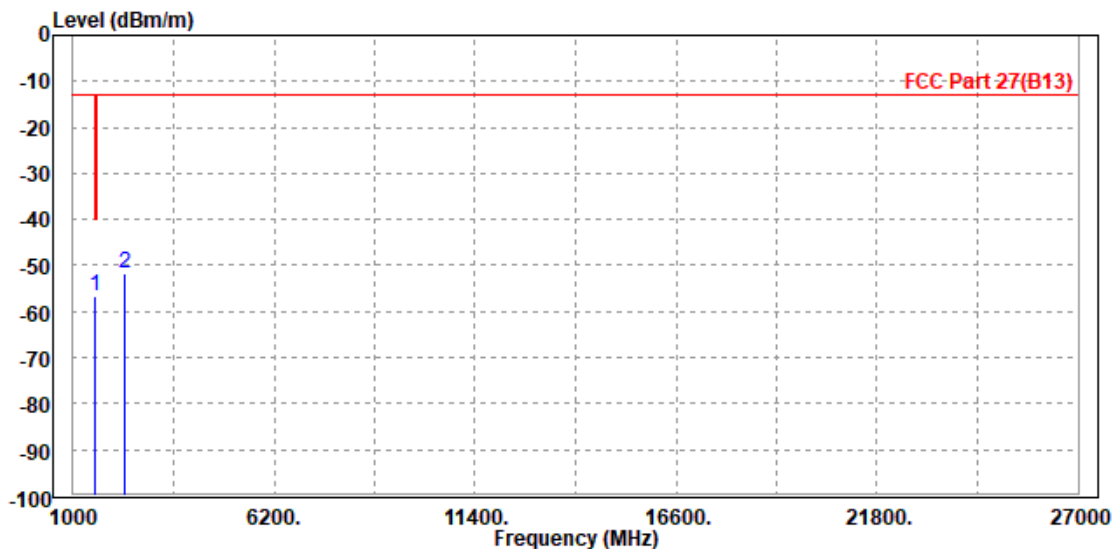
MODE	TX channel 23230	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1572.000	-55.86	-56.02	-40.00	-15.86	0.16	Peak	Horizontal
2		2346.000	-44.56	-49.44	-13.00	-31.56	4.88	Peak	Horizontal



MODE	TX channel 23230	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

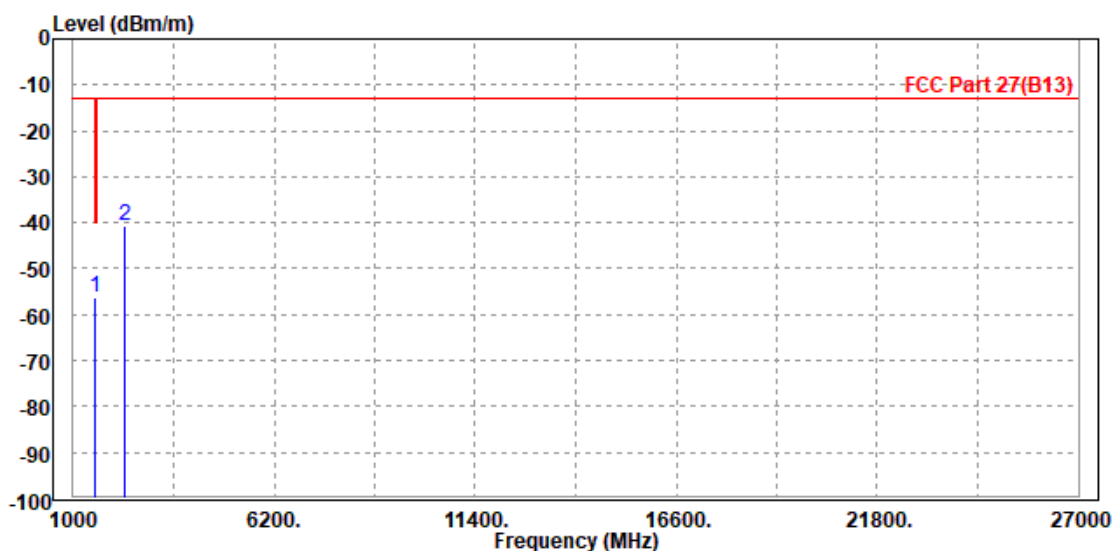
		Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
		MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	PP	1564.000	-56.60	-57.03	-40.00	-16.60	0.43	Peak	Vertical
2		2352.000	-51.76	-56.30	-13.00	-38.76	4.54	Peak	Vertical



CH23255

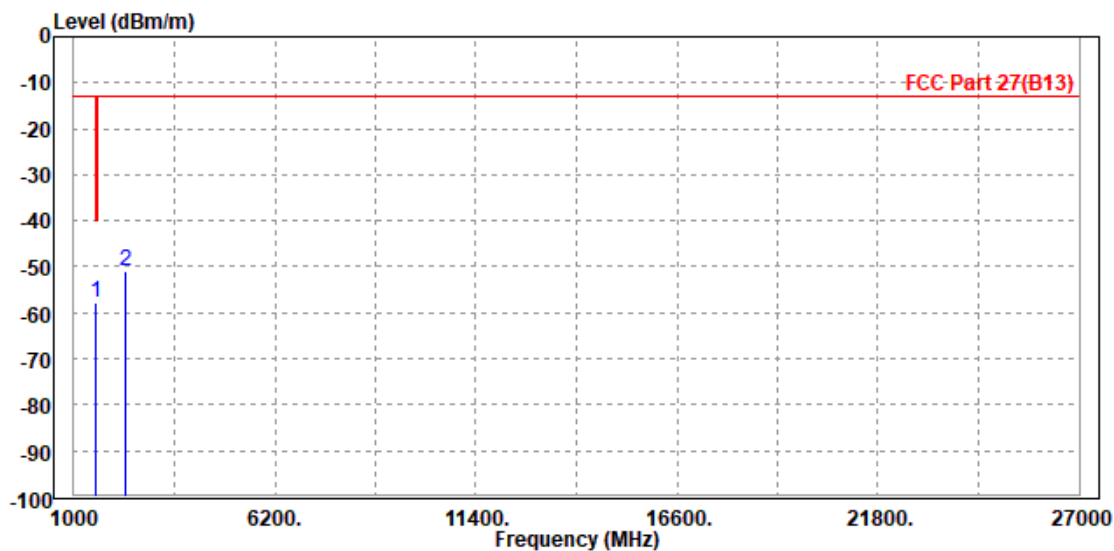
MODE	TX channel 23255	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1572.000	-56.20	-56.36	-40.00	-16.20	0.16	Peak	Horizontal
2	2353.500	-40.52	-45.43	-13.00	-27.52	4.91	Peak	Horizontal



MODE	TX channel 23255	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	1569.000	-57.85	-58.31	-40.00	-17.85	0.46	Peak	Vertical
2	2352.000	-50.95	-55.49	-13.00	-37.95	4.54	Peak	Vertical





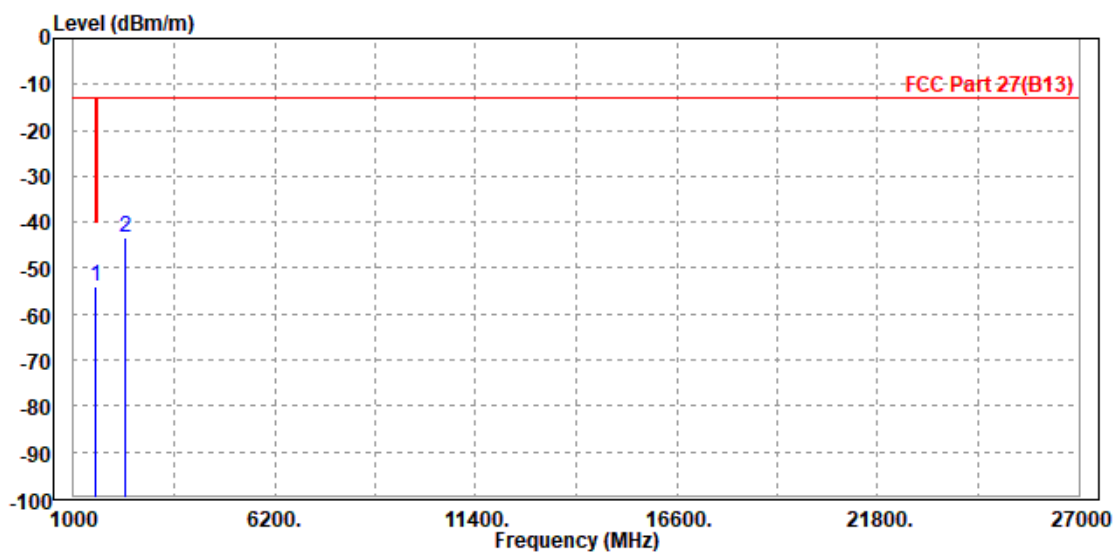
Test Report No.: W7L-P22100018RF03

CHANNEL BANDWIDTH: 10MHz /QPSK

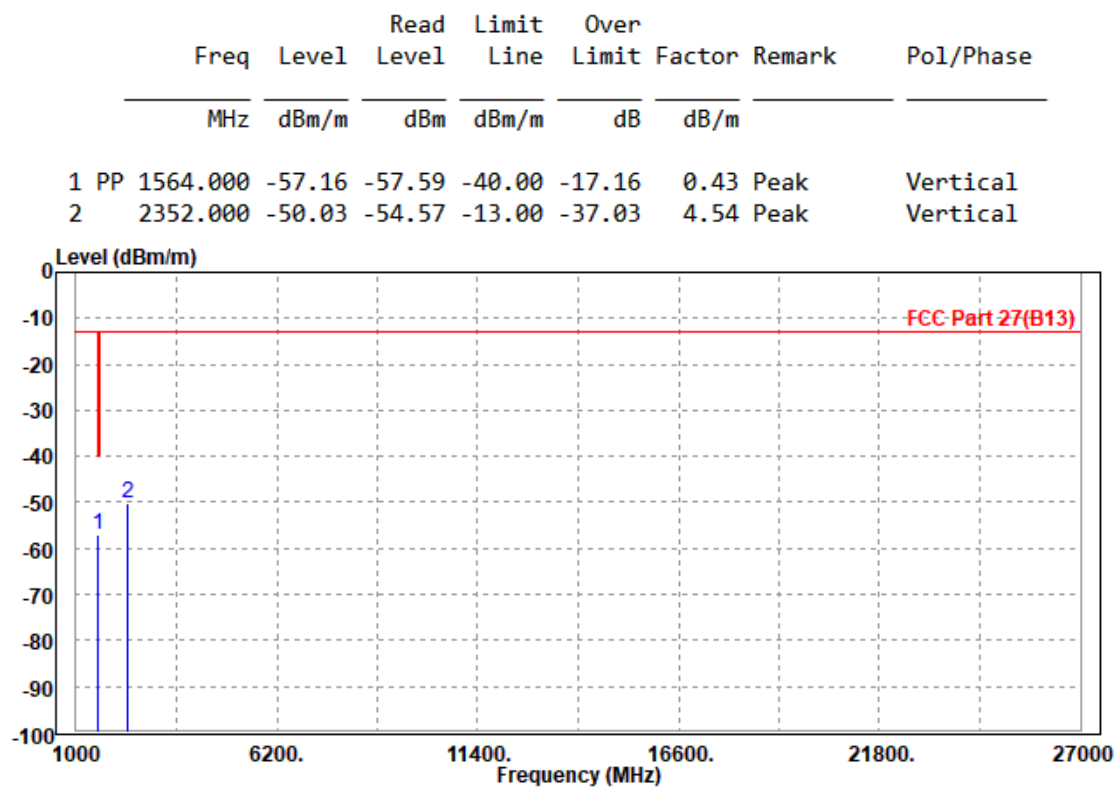
CH23230

MODE	TX channel 23230	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
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	1572.000	-53.86	-54.02	-40.00	-13.86	0.16	Peak	Horizontal
2	2346.000	-43.34	-48.22	-13.00	-30.34	4.88	Peak	Horizontal



MODE	TX channel 23230	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	DC 13.5V
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

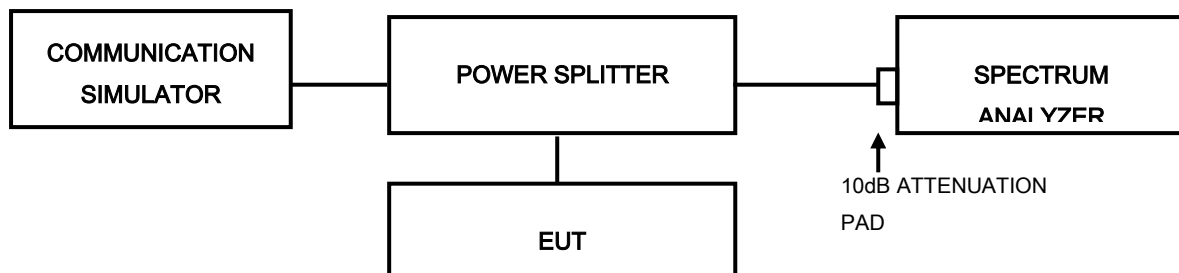


3.7 PEAK TO AVERAGE RATIO

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



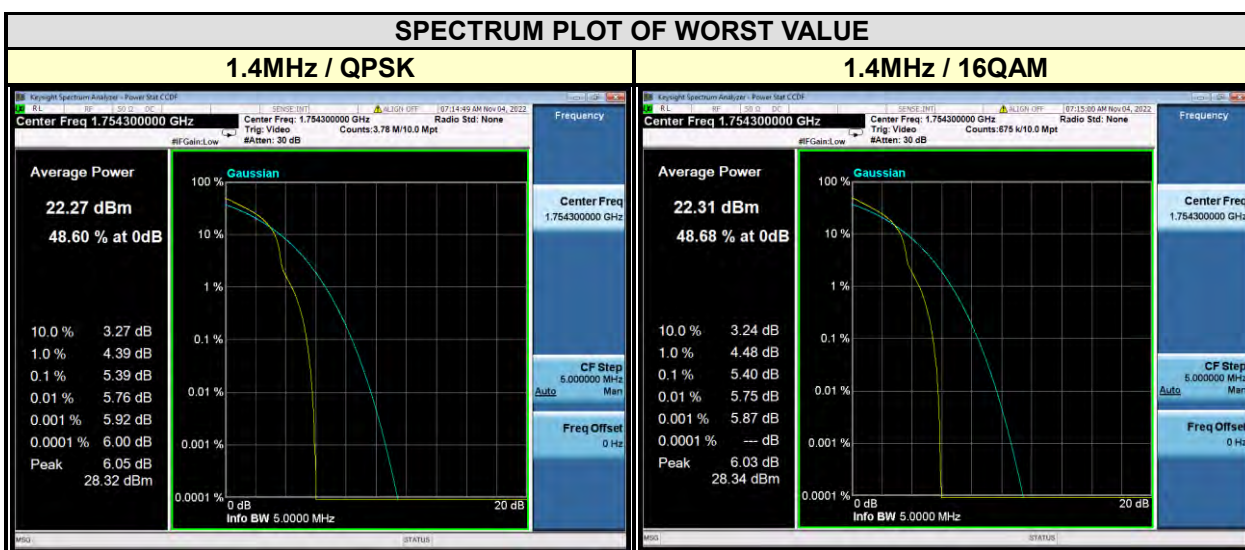
3.7.3 TEST PROCEDURES

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%.

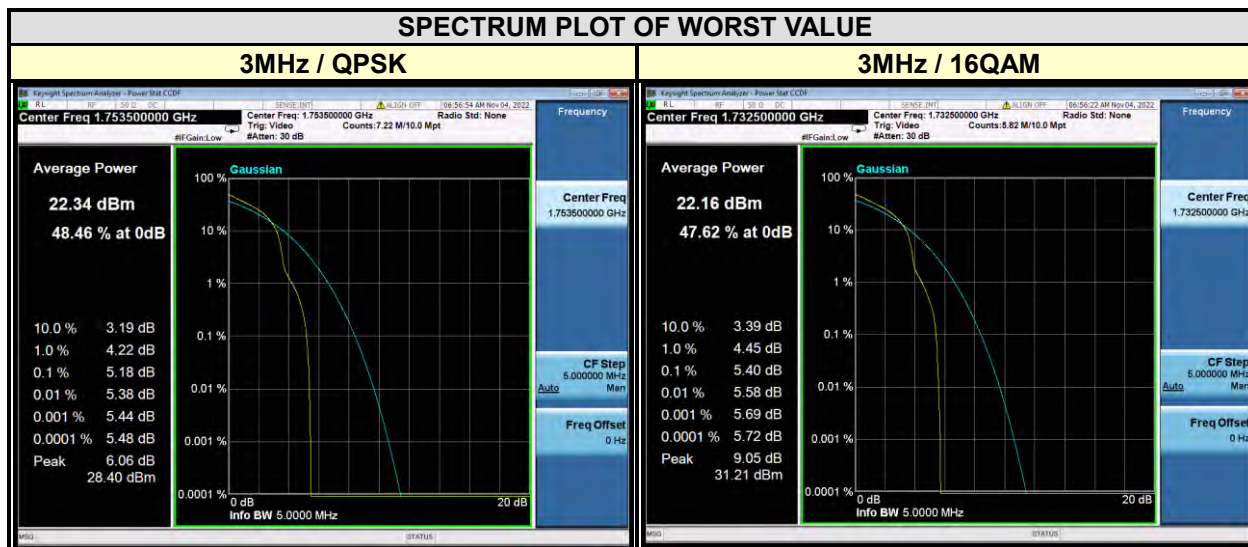
3.7.4 TEST RESULTS

LTE BAND 4

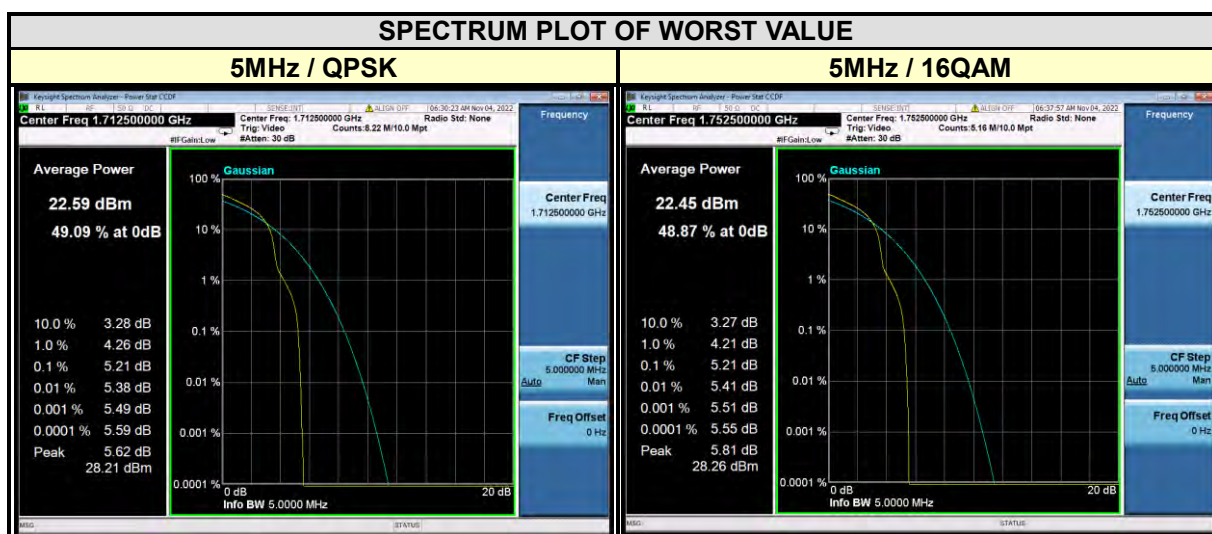
CHANNEL BANDWIDTH: 1.4MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
19957	1710.7	5.24	5.36
20175	1732.5	5.29	5.15
20393	1754.3	5.39	5.40



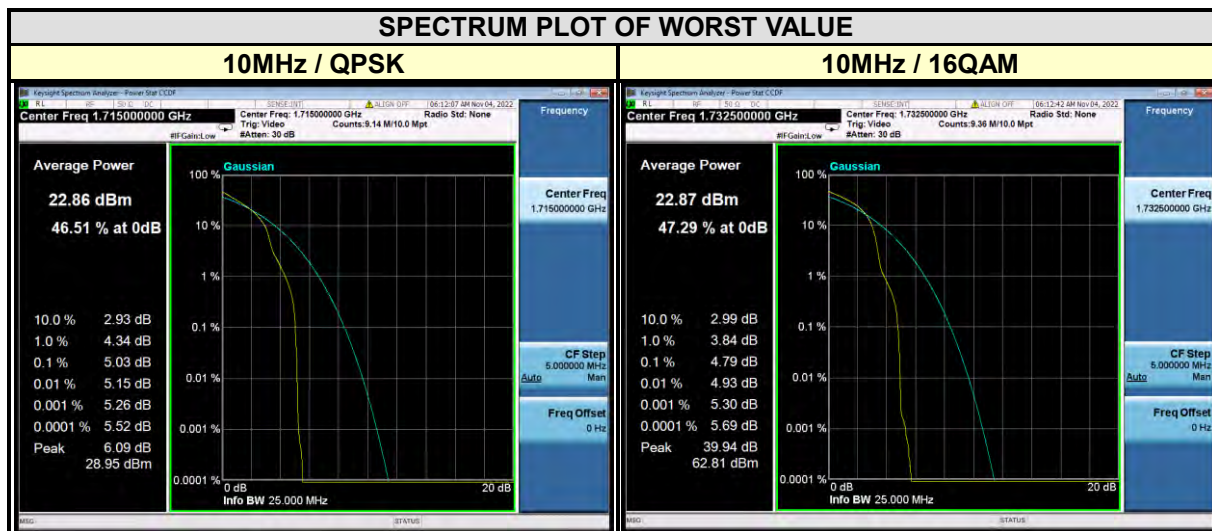
CHANNEL BANDWIDTH: 3MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
19965	1711.5	5.01	5.06
20175	1732.5	5.10	5.40
20385	1753.5	5.18	5.03



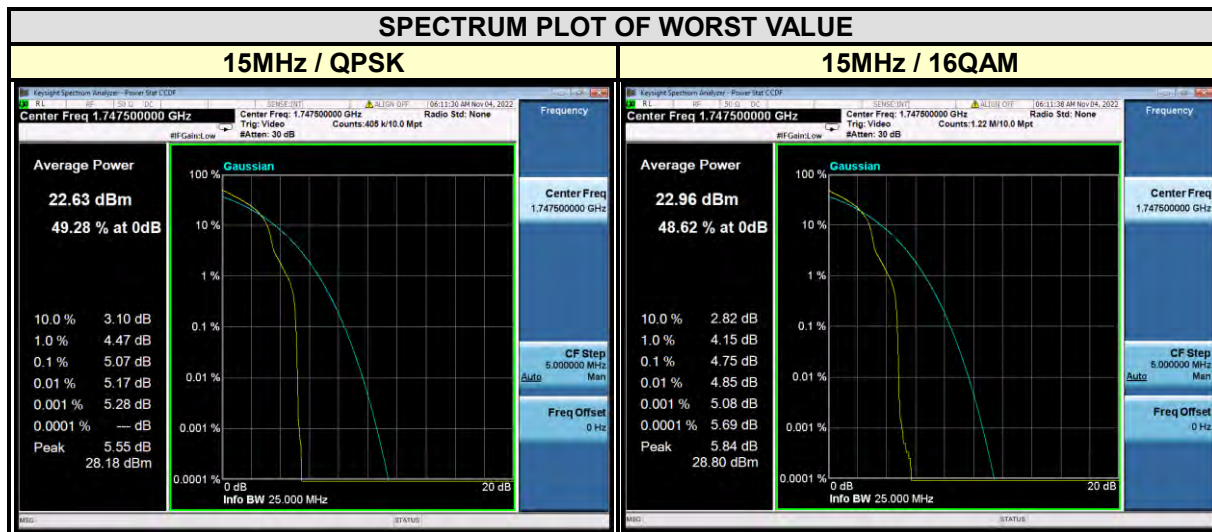
CHANNEL BANDWIDTH: 5MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
19975	1712.5	5.21	5.12
20175	1732.5	5.05	5.09
20375	1752.5	5.09	5.21



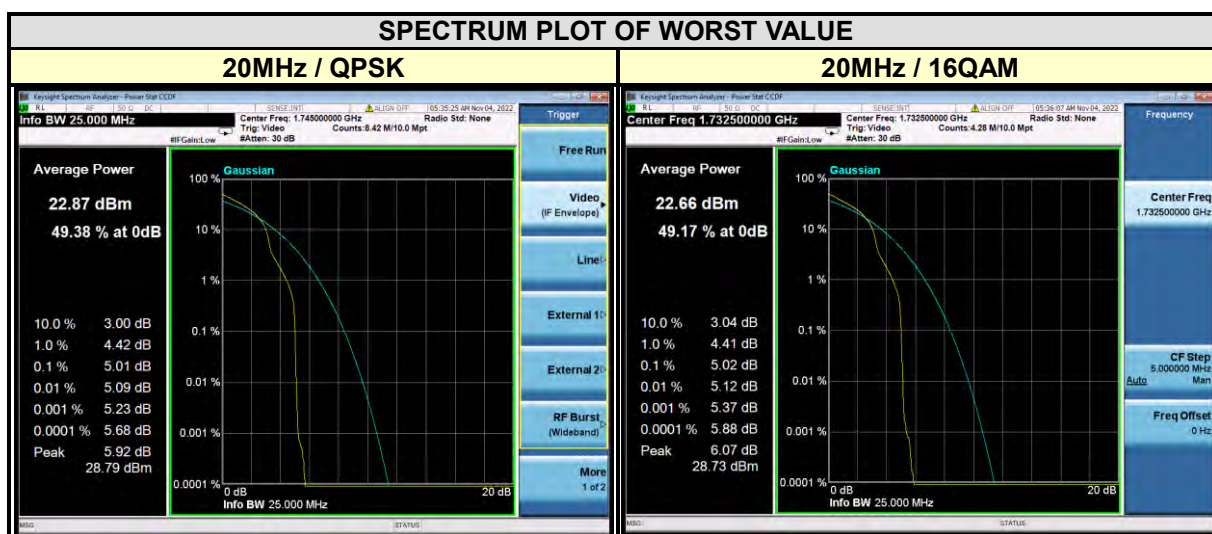
CHANNEL BANDWIDTH: 10MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
20000	1715	5.03	4.68
20175	1732.5	4.70	4.79
20350	1750	4.69	4.63



CHANNEL BANDWIDTH: 15MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
20025	1717.5	4.82	4.75
20175	1732.5	4.73	4.73
20325	1747.5	5.07	4.75



CHANNEL BANDWIDTH: 20MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
20050	1720	4.58	4.70
20175	1732.5	4.91	5.02
20300	1745	5.01	4.89



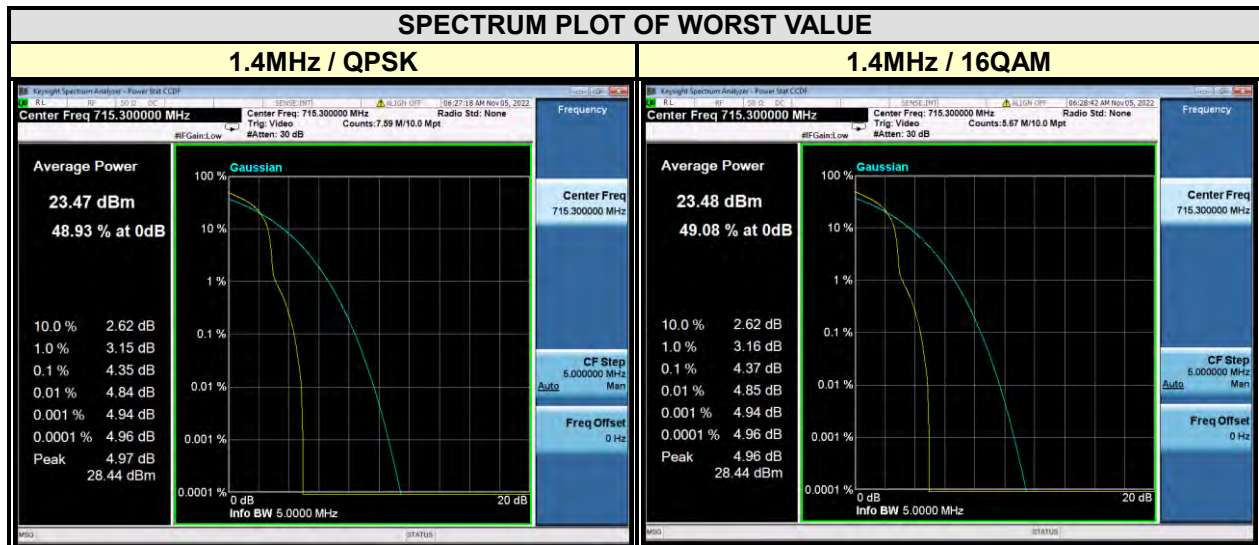


BUREAU
VERITAS

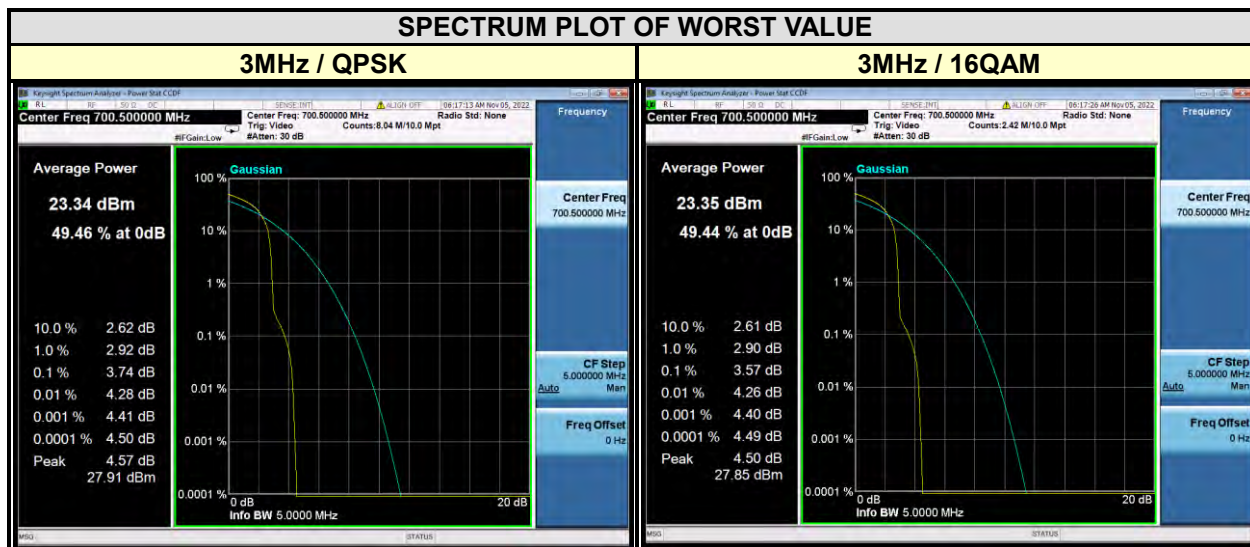
Test Report No.: W7L-P22100018RF03

LTE BAND 12

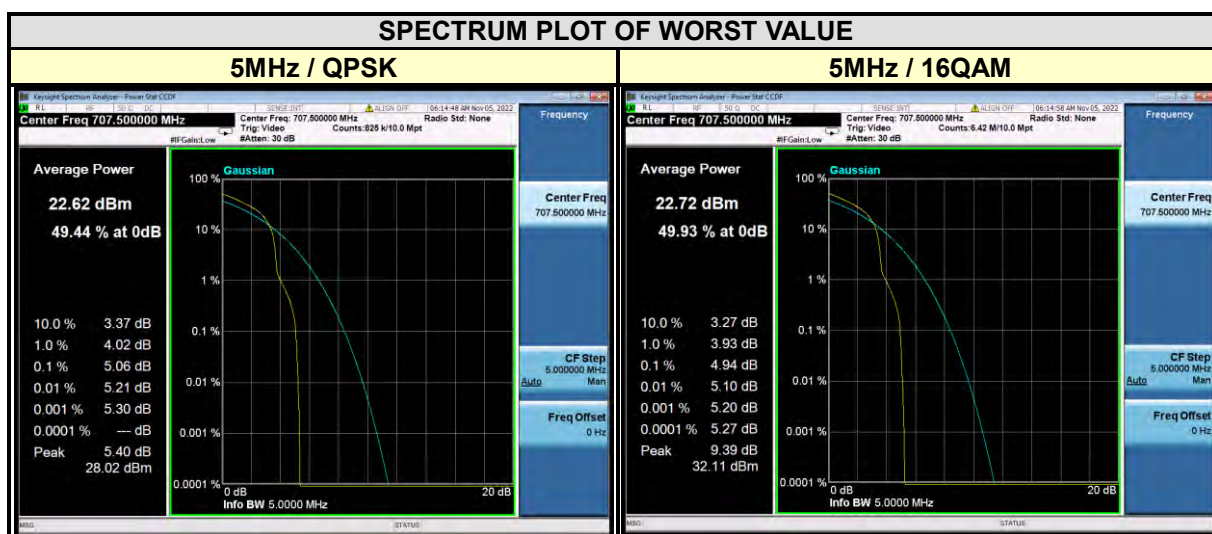
CHANNEL BANDWIDTH: 1.4MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
23017	699.7	4.30	4.29
23095	707.5	4.31	4.30
23173	715.3	4.35	4.37



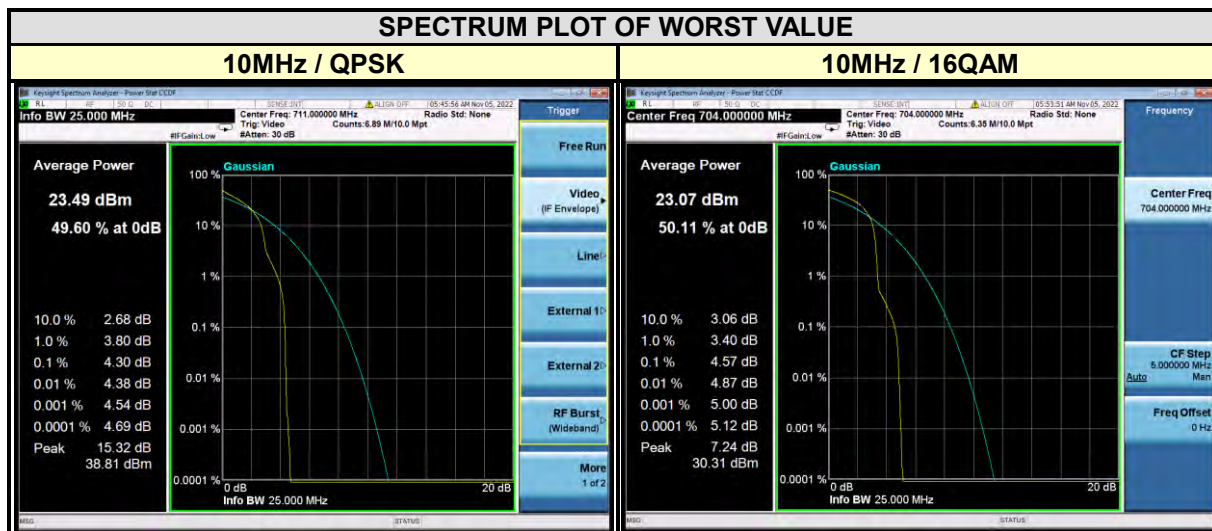
CHANNEL BANDWIDTH: 3MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
23025	700.5	3.74	3.57
23095	707.5	3.68	3.48
23165	714.5	3.67	3.55



CHANNEL BANDWIDTH: 5MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
23035	701.5	2.93	2.93
23095	707.5	5.06	4.94
23155	713.5	2.92	2.92



CHANNEL BANDWIDTH: 10MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
23060	704	4.06	4.57
23095	707.5	4.24	4.21
23130	711	4.30	4.22



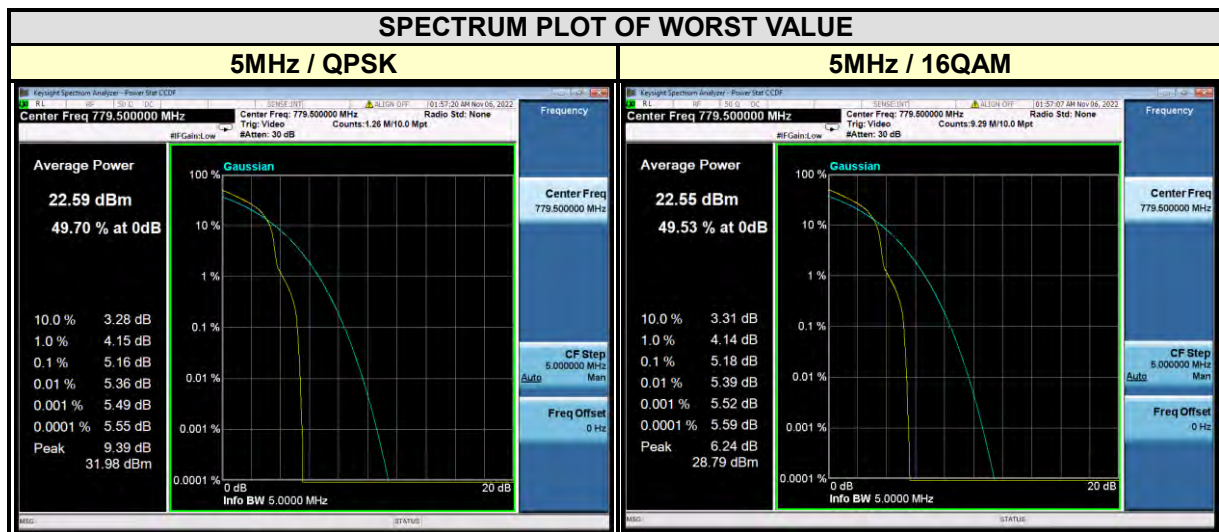


BUREAU
VERITAS

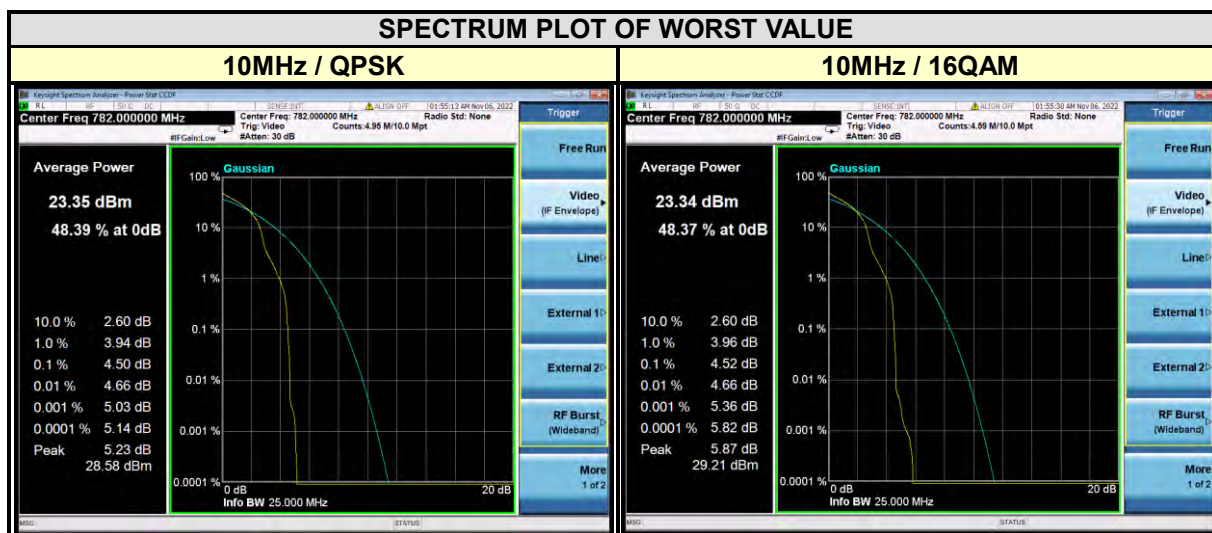
Test Report No.: W7L-P22100018RF03

LTE BAND 13

CHANNEL BANDWIDTH: 5MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
23205	779.5	5.16	5.18
23230	782	5.09	5.10
23255	784.5	5.07	5.10



CHANNEL BANDWIDTH: 10MHz			
CHANNEL	Frequency (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM
23230	782	4.50	4.52





Test Report No.: W7L-P22100018RF03

4 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@cn.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.



Test Report No.: W7L-P22100018RF03

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.