

Appendix

LTE Band 13 Test Data

Conducted Test Data

Conducted Output Power and ERP

Condition	Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	Gain (dBm)	ERP (dBm)	ERP Limit (dBm)	Verdict
NVNT	Band13	5	23205	1	#0	QPSK	24.60	2.60	25.05	34.77	PASS
NVNT	Band13	5	23205	1	#Mid	QPSK	24.44	2.60	24.89	34.77	PASS
NVNT	Band13	5	23205	1	#Max	QPSK	24.33	2.60	24.78	34.77	PASS
NVNT	Band13	5	23205	12	#0	QPSK	23.44	2.60	23.89	34.77	PASS
NVNT	Band13	5	23205	12	#Mid	QPSK	23.49	2.60	23.94	34.77	PASS
NVNT	Band13	5	23205	12	#Max	QPSK	23.45	2.60	23.90	34.77	PASS
NVNT	Band13	5	23205	25	#0	QPSK	23.27	2.60	23.72	34.77	PASS
NVNT	Band13	5	23205	1	#0	QAM16	23.21	2.60	23.66	34.77	PASS
NVNT	Band13	5	23205	1	#Mid	QAM16	22.80	2.60	23.25	34.77	PASS
NVNT	Band13	5	23205	1	#Max	QAM16	22.62	2.60	23.07	34.77	PASS
NVNT	Band13	5	23205	12	#0	QAM16	22.01	2.60	22.46	34.77	PASS
NVNT	Band13	5	23205	12	#Mid	QAM16	22.06	2.60	22.51	34.77	PASS
NVNT	Band13	5	23205	12	#Max	QAM16	22.00	2.60	22.45	34.77	PASS
NVNT	Band13	5	23205	25	#0	QAM16	22.25	2.60	22.70	34.77	PASS
NVNT	Band13	5	23230	1	#0	QPSK	24.00	2.60	24.45	34.77	PASS
NVNT	Band13	5	23230	1	#Mid	QPSK	24.49	2.60	24.94	34.77	PASS
NVNT	Band13	5	23230	1	#Max	QPSK	24.30	2.60	24.75	34.77	PASS
NVNT	Band13	5	23230	12	#0	QPSK	23.18	2.60	23.63	34.77	PASS
NVNT	Band13	5	23230	12	#Mid	QPSK	23.27	2.60	23.72	34.77	PASS
NVNT	Band13	5	23230	12	#Max	QPSK	23.19	2.60	23.64	34.77	PASS
NVNT	Band13	5	23230	25	#0	QPSK	23.18	2.60	23.63	34.77	PASS
NVNT	Band13	5	23230	1	#0	QAM16	23.28	2.60	23.73	34.77	PASS
NVNT	Band13	5	23230	1	#Mid	QAM16	23.30	2.60	23.75	34.77	PASS
NVNT	Band13	5	23230	1	#Max	QAM16	22.99	2.60	23.44	34.77	PASS
NVNT	Band13	5	23230	12	#0	QAM16	22.01	2.60	22.46	34.77	PASS
NVNT	Band13	5	23230	12	#Mid	QAM16	22.02	2.60	22.47	34.77	PASS
NVNT	Band13	5	23230	12	#Max	QAM16	22.02	2.60	22.47	34.77	PASS
NVNT	Band13	5	23230	25	#0	QAM16	22.04	2.60	22.49	34.77	PASS
NVNT	Band13	5	23255	1	#0	QPSK	24.01	2.60	24.46	34.77	PASS
NVNT	Band13	5	23255	1	#Mid	QPSK	24.62	2.60	25.07	34.77	PASS
NVNT	Band13	5	23255	1	#Max	QPSK	23.99	2.60	24.44	34.77	PASS
NVNT	Band13	5	23255	12	#0	QPSK	23.13	2.60	23.58	34.77	PASS
NVNT	Band13	5	23255	12	#Mid	QPSK	23.18	2.60	23.63	34.77	PASS
NVNT	Band13	5	23255	12	#Max	QPSK	23.13	2.60	23.58	34.77	PASS
NVNT	Band13	5	23255	25	#0	QPSK	23.17	2.60	23.62	34.77	PASS
NVNT	Band13	5	23255	1	#0	QAM16	23.16	2.60	23.61	34.77	PASS

NVNT	Band13	5	23255	1	#Mid	QAM16	23.42	2.60	23.87	34.77	PASS
NVNT	Band13	5	23255	1	#Max	QAM16	23.04	2.60	23.49	34.77	PASS
NVNT	Band13	5	23255	12	#0	QAM16	22.02	2.60	22.47	34.77	PASS
NVNT	Band13	5	23255	12	#Mid	QAM16	22.09	2.60	22.54	34.77	PASS
NVNT	Band13	5	23255	12	#Max	QAM16	22.03	2.60	22.48	34.77	PASS
NVNT	Band13	5	23255	25	#0	QAM16	22.23	2.60	22.68	34.77	PASS
NVNT	Band13	10	23230	1	#0	QPSK	24.40	2.60	24.85	34.77	PASS
NVNT	Band13	10	23230	1	#Mid	QPSK	24.27	2.60	24.72	34.77	PASS
NVNT	Band13	10	23230	1	#Max	QPSK	23.94	2.60	24.39	34.77	PASS
NVNT	Band13	10	23230	25	#0	QPSK	23.12	2.60	23.57	34.77	PASS
NVNT	Band13	10	23230	25	#Mid	QPSK	23.16	2.60	23.61	34.77	PASS
NVNT	Band13	10	23230	25	#Max	QPSK	23.06	2.60	23.51	34.77	PASS
NVNT	Band13	10	23230	50	#0	QPSK	23.03	2.60	23.48	34.77	PASS
NVNT	Band13	10	23230	1	#0	QAM16	23.50	2.60	23.95	34.77	PASS
NVNT	Band13	10	23230	1	#Mid	QAM16	23.84	2.60	24.29	34.77	PASS
NVNT	Band13	10	23230	1	#Max	QAM16	23.31	2.60	23.76	34.77	PASS
NVNT	Band13	10	23230	25	#0	QAM16	22.02	2.60	22.47	34.77	PASS
NVNT	Band13	10	23230	25	#Mid	QAM16	21.98	2.60	22.43	34.77	PASS
NVNT	Band13	10	23230	25	#Max	QAM16	21.88	2.60	22.33	34.77	PASS
NVNT	Band13	10	23230	50	#0	QAM16	21.93	2.60	22.38	34.77	PASS

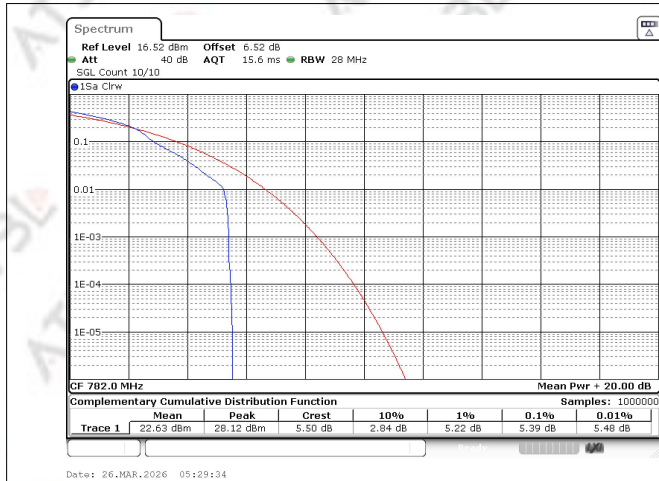
Frequency stability

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Voltage (Vdc)	Temperature (°C)	Result (Hz)	Result (ppm)	Verdict
Band13	10	23230	50	#0	QPSK	VL	NT	-1.08	-0.001	PASS
Band13	10	23230	50	#0	QPSK	VN	NT	0.40	0.001	PASS
Band13	10	23230	50	#0	QPSK	VH	NT	-1.51	-0.002	PASS

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Voltage (Vdc)	Temperature (°C)	Result (Hz)	Result (ppm)	Verdict
Band13	10	23230	50	#0	QPSK	NV	-30	-1.75	-0.002	PASS
Band13	10	23230	50	#0	QPSK	NV	-20	-1.64	-0.002	PASS
Band13	10	23230	50	#0	QPSK	NV	-10	-1.07	-0.001	PASS
Band13	10	23230	50	#0	QPSK	NV	0	-0.89	-0.001	PASS
Band13	10	23230	50	#0	QPSK	NV	10	-1.04	-0.001	PASS
Band13	10	23230	50	#0	QPSK	NV	20	-1.39	-0.002	PASS
Band13	10	23230	50	#0	QPSK	NV	30	-1.47	-0.002	PASS
Band13	10	23230	50	#0	QPSK	NV	40	-1.04	-0.001	PASS
Band13	10	23230	50	#0	QPSK	NV	50	-0.54	-0.001	PASS

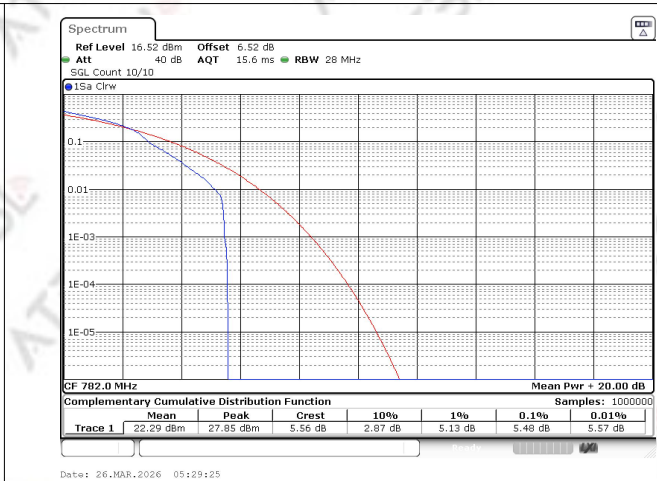
Peak-to-Average Ratio

Condition	Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Result (dB)	high Limit (dB)	Verdict
NVNT	Band13	5	23230	1	#0	QPSK	4.58	13	PASS
NVNT	Band13	5	23230	1	#0	QAM16	5.48	13	PASS
NVNT	Band13	10	23230	1	#0	QPSK	4.64	13	PASS
NVNT	Band13	10	23230	1	#0	QAM16	5.39	13	PASS



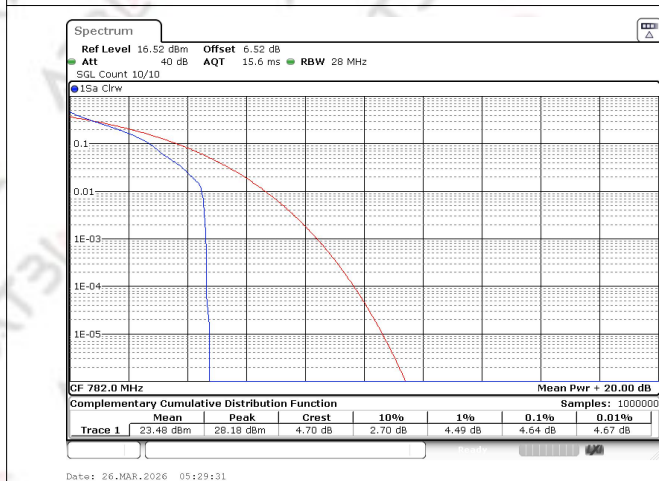
Band13 QAM16 BW=10MHz Channel=23230 RB Size=1 Position=#0

NVNT



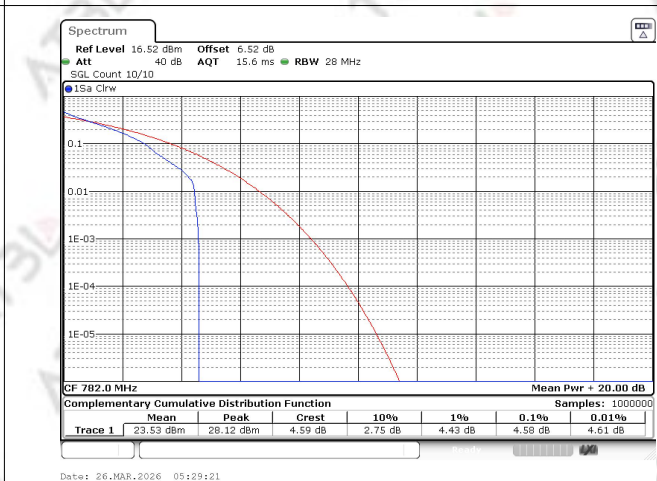
Band13 QAM16 BW=5MHz Channel=23230 RB Size=1 Position=#0

NVNT



Band13 QPSK BW=10MHz Channel=23230 RB Size=1 Position=#0

NVNT

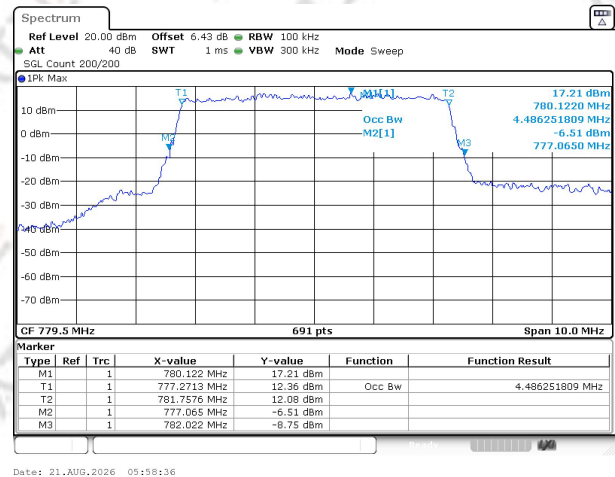
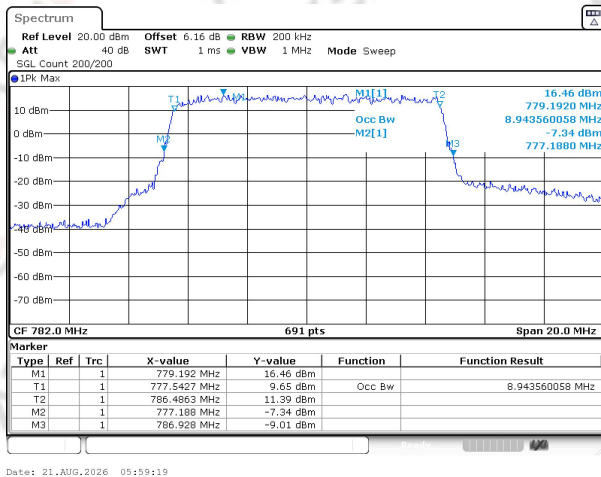


Band13 QPSK BW=5MHz Channel=23230 RB Size=1 Position=#0

NVNT

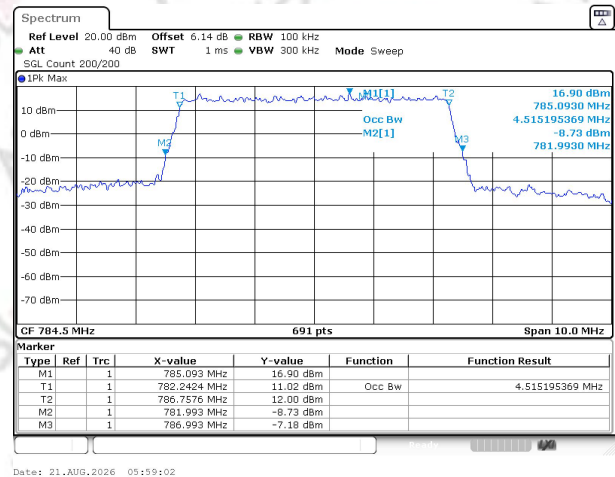
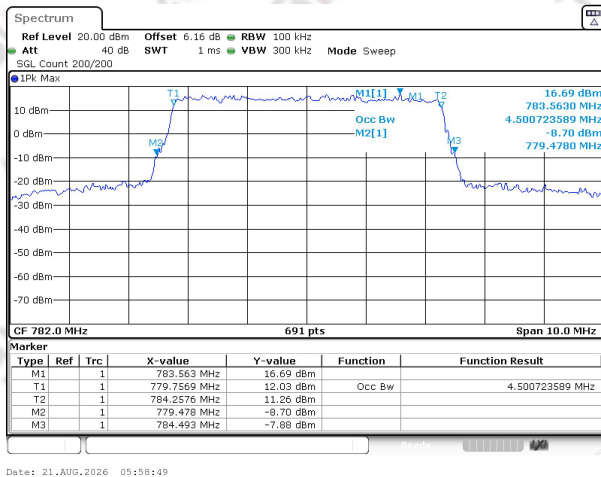
Occupied bandwidth

Condition	Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	99% OBW (MHz)	-26dB EBW (MHz)	Verdict
NVNT	Band13	5	23205	25	#0	QPSK	4.486	4.884	PASS
NVNT	Band13	5	23205	25	#0	QAM16	4.486	4.957	PASS
NVNT	Band13	5	23230	25	#0	QPSK	4.515	4.957	PASS
NVNT	Band13	5	23230	25	#0	QAM16	4.501	5.014	PASS
NVNT	Band13	5	23255	25	#0	QPSK	4.515	4.986	PASS
NVNT	Band13	5	23255	25	#0	QAM16	4.515	5.000	PASS
NVNT	Band13	10	23230	50	#0	QPSK	8.944	9.855	PASS
NVNT	Band13	10	23230	50	#0	QAM16	8.944	9.739	PASS



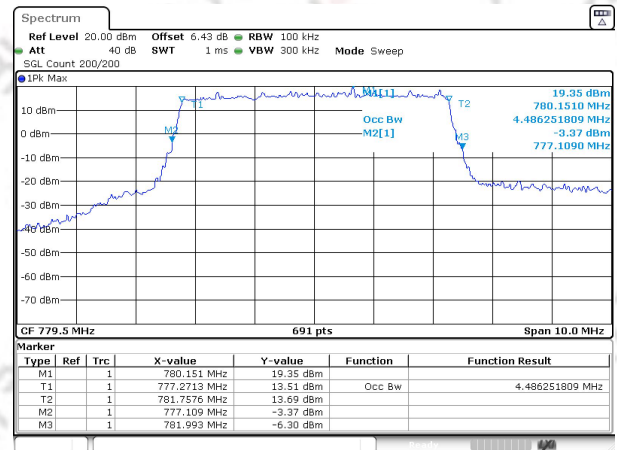
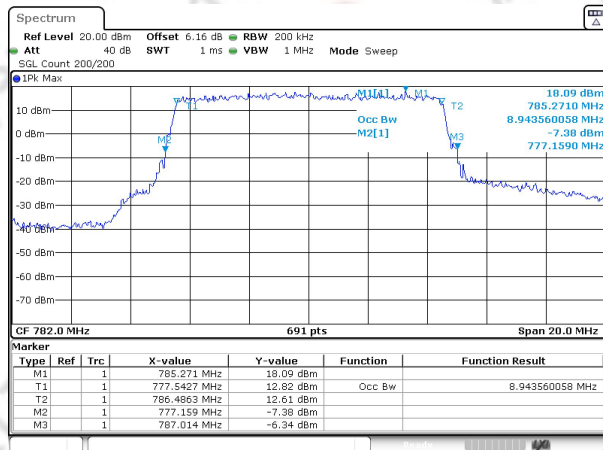
Band13 QAM16 BW=10MHz Channel=23230 RB Size=50 Position=#0

Band13 QAM16 BW=5MHz Channel=23205 RB Size=25 Position=#0



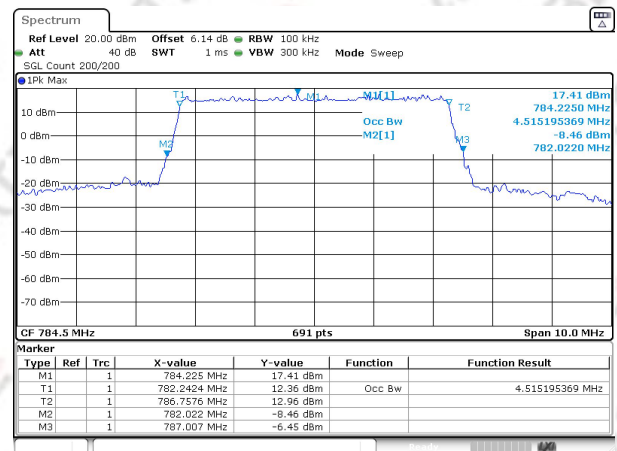
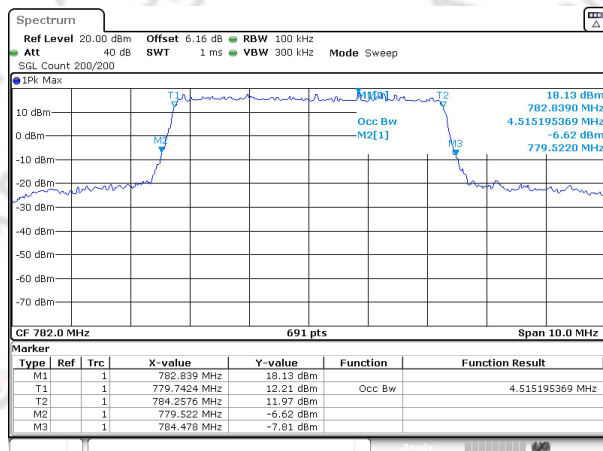
Band13 QAM16 BW=5MHz Channel=23230 RB Size=25 Position=#0

Band13 QAM16 BW=5MHz Channel=23255 RB Size=25 Position=#0



Band13 QPSK BW=10MHz Channel=23230 RB Size=50 Position=#0

Band13 QPSK BW=5MHz Channel=23205 RB Size=25 Position=#0

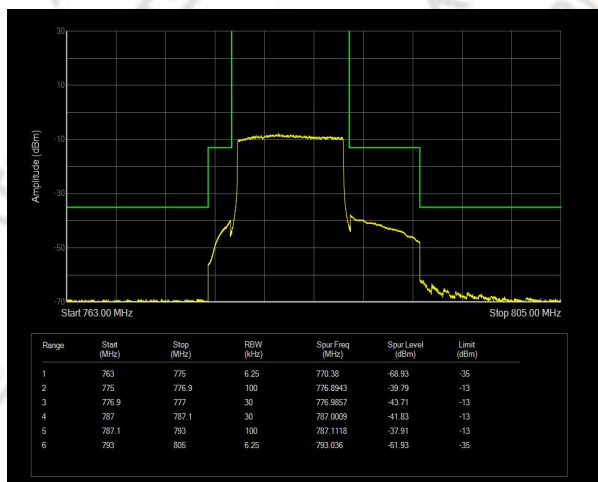


Band13 QPSK BW=5MHz Channel=23230 RB Size=25 Position=#0

Band13 QPSK BW=5MHz Channel=23255 RB Size=25 Position=#0

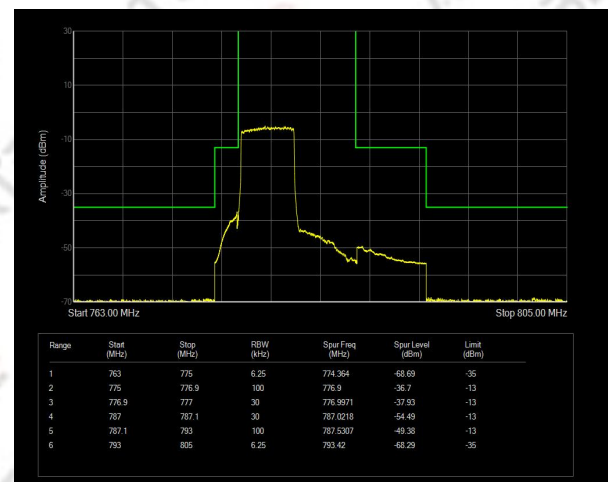
Band edge

Condition	Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
NVNT	Band13	5	23205	25	#0	QPSK	776.90	-35.18	-13	PASS
NVNT	Band13	5	23205	25	#0	QAM16	776.90	-36.70	-13	PASS
NVNT	Band13	5	23255	25	#0	QPSK	787.11	-34.60	-13	PASS
NVNT	Band13	5	23255	25	#0	QAM16	787.11	-35.92	-13	PASS
NVNT	Band13	10	23230	50	#0	QPSK	787.12	-36.78	-13	PASS
NVNT	Band13	10	23230	50	#0	QAM16	787.11	-37.91	-13	PASS



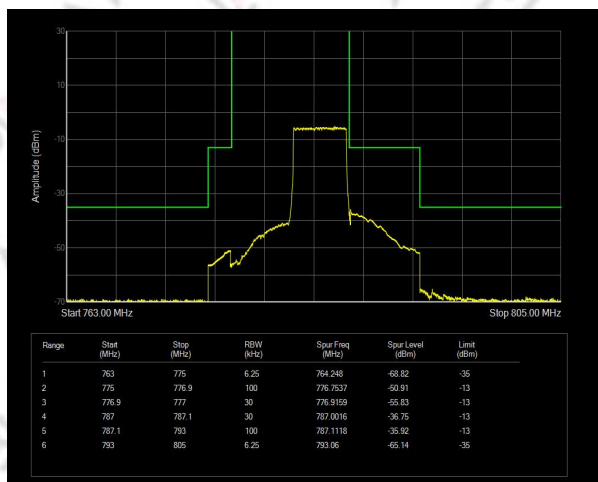
Band13 QAM16 BW=10MHz Channel=23230 RB Size=50 Position=#0

NVNT



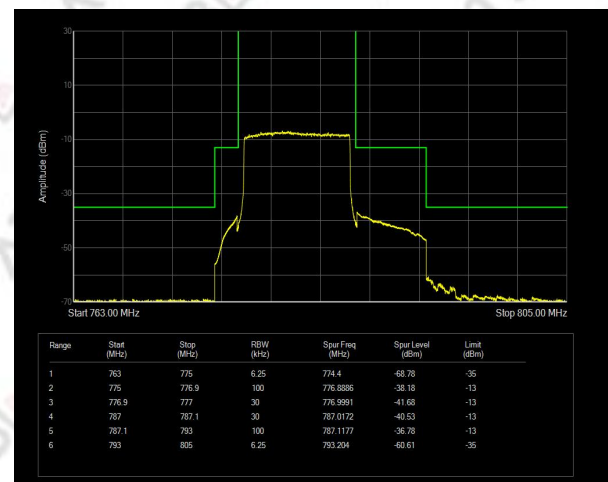
Band13 QAM16 BW=5MHz Channel=23205 RB Size=25 Position=#0

NVNT



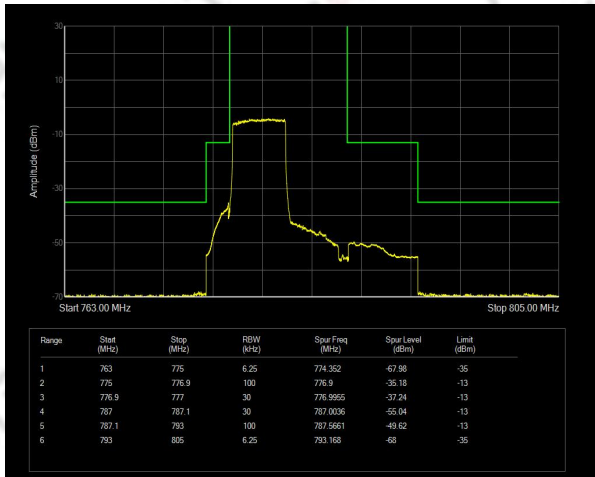
Band13 QAM16 BW=5MHz Channel=23255 RB Size=25 Position=#0

NVNT



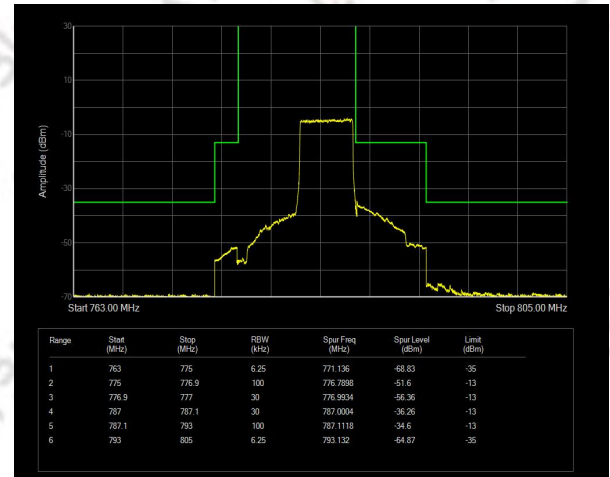
Band13 QPSK BW=10MHz Channel=23230 RB Size=50 Position=#0

NVNT



Band13 QPSK BW=5MHz Channel=23205 RB Size=25 Position=#0

NVNT

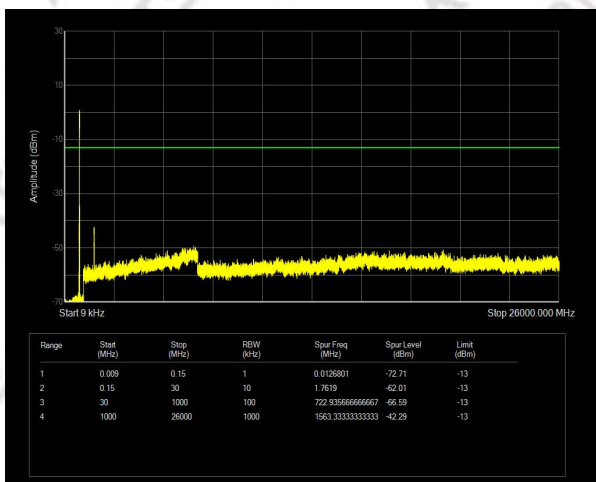


Band13 QPSK BW=5MHz Channel=23255 RB Size=25 Position=#0

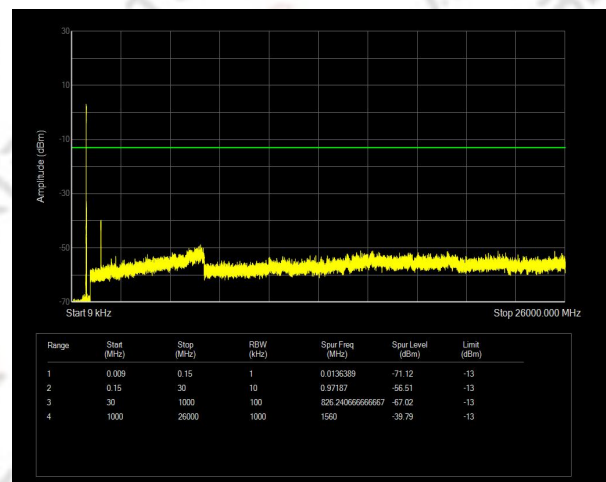
NVNT

Out-of-band emissions

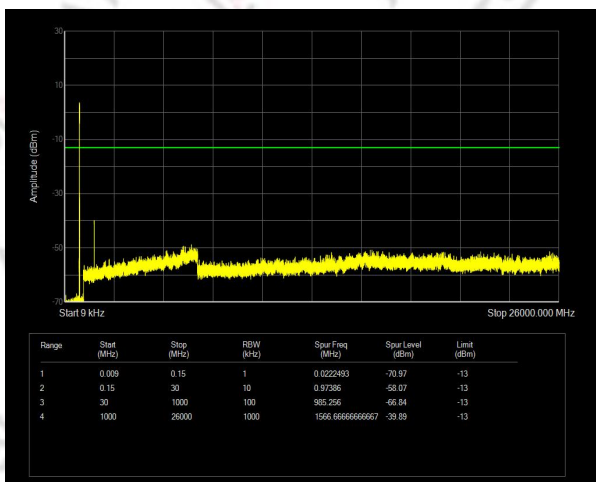
Condition	Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Spur Freq (MHz)	Spur Level (dBm)	Limit (dBm)	Verdict
NVNT	Band13	5	23205	25	#0	QPSK	1561.67	-39.30	-13	PASS
NVNT	Band13	5	23205	25	#0	QAM16	1560.00	-39.79	-13	PASS
NVNT	Band13	5	23255	25	#0	QPSK	1569.17	-39.00	-13	PASS
NVNT	Band13	5	23255	25	#0	QAM16	1566.67	-39.89	-13	PASS
NVNT	Band13	10	23230	50	#0	QPSK	1564.17	-41.88	-13	PASS
NVNT	Band13	10	23230	50	#0	QAM16	1563.33	-42.29	-13	PASS



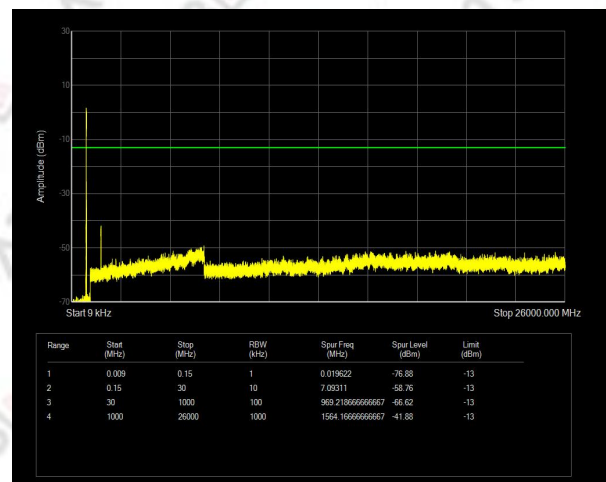
Band13 QAM16 BW=10MHz Channel=23230 RB Size=50 Position=#0
NVNT



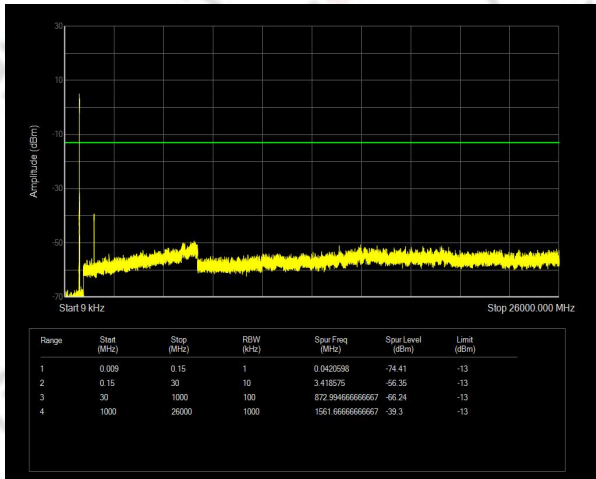
Band13 QAM16 BW=5MHz Channel=23205 RB Size=25 Position=#0
NVNT



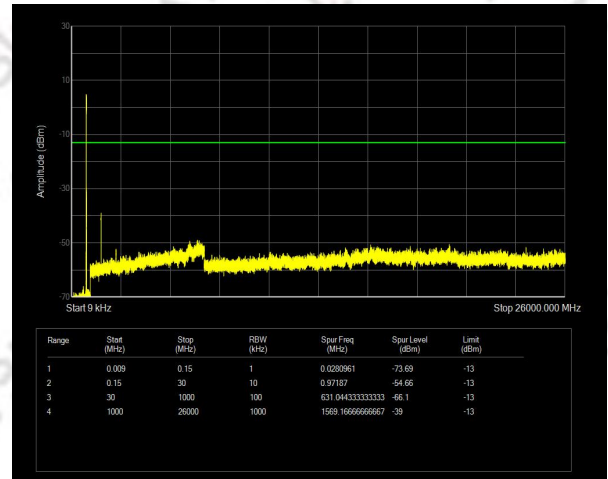
Band13 QAM16 BW=5MHz Channel=23255 RB Size=25 Position=#0
NVNT



Band13 QPSK BW=10MHz Channel=23230 RB Size=50 Position=#0
NVNT



Band13 QPSK BW=5MHz Channel=23205 RB Size=25 Position=#0
NVNT

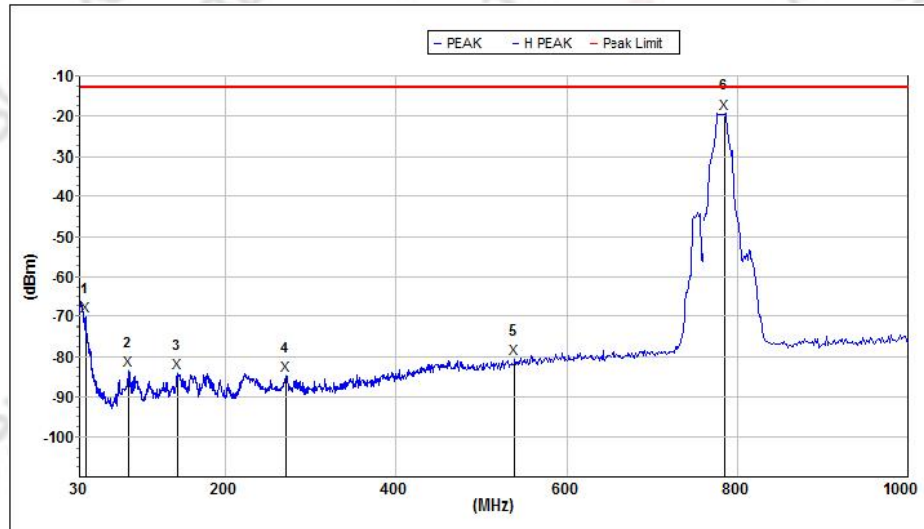


Band13 QPSK BW=5MHz Channel=23255 RB Size=25 Position=#0
NVNT

Radiated Test Data

For 30 MHz ~ 1 GHz

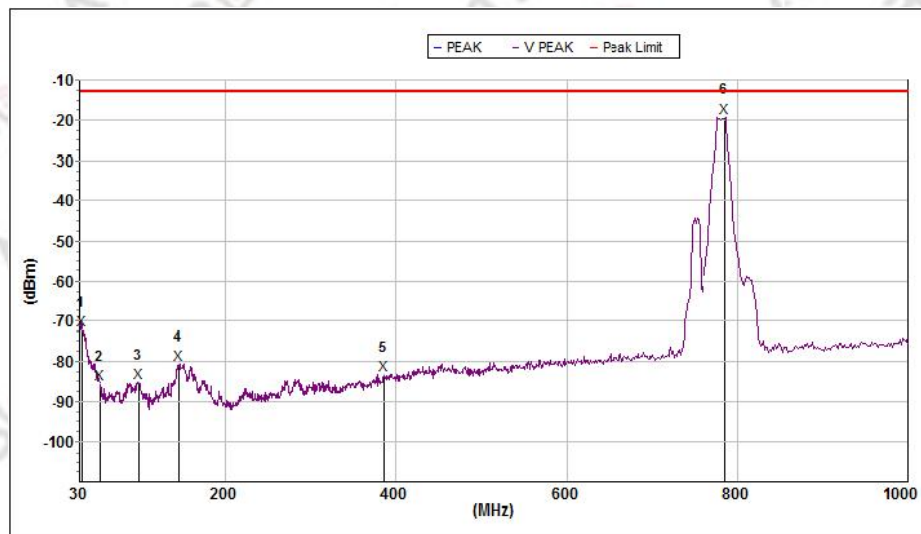
Mode:QPSK / Middle Channel / Horizontal



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	37.220	-69.8	-13.0	56.8	-19.8	39.7	1.1	H
2	86.200	-83.2	-13.0	70.2	-24.3	40.4	1.3	H
3	144.842	-83.9	-13.0	70.9	-20.1	40.3	1.5	H
4	271.801	-84.6	-13.0	71.6	-19.7	40.0	2.0	H
5	538.532	-80.4	-13.0	67.4	-12.2	39.2	2.6	H
6	785.093	-19.2	-13.0	6.2	-7.4	38.9	3.3	H

Note: Point 6 serves as the primary frequency signal

Mode:QPSK / Middle Channel / Vertical

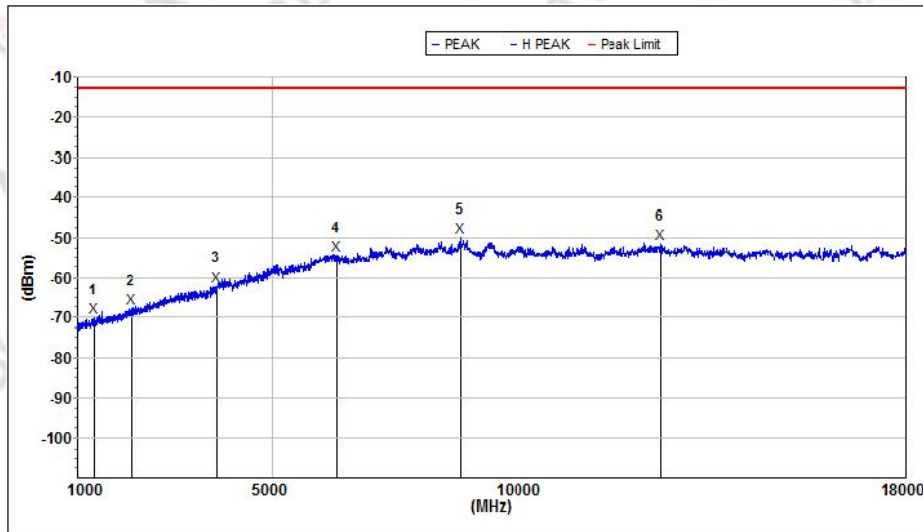


Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	32.806	-72.1	-13.0	59.1	-19.6	39.3	1.1	V
2	53.318	-85.5	-13.0	72.5	-19.7	40.0	1.2	V
3	98.487	-85.2	-13.0	72.2	-24.2	40.3	1.3	V
4	146.630	-80.6	-13.0	67.6	-19.9	40.3	1.5	V
5	385.957	-83.3	-13.0	70.3	-15.7	39.1	2.3	V
6	785.093	-19.2	-13.0	6.2	-7.4	38.9	3.3	V

Note: Point 6 serves as the primary frequency signal

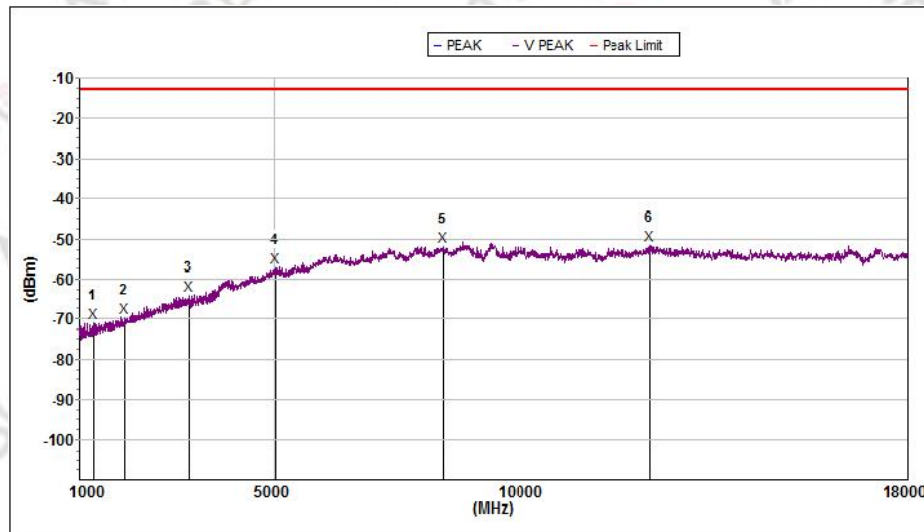
For 1 GHz ~ 18 GHz

Mode:QPSK / Middle Channel / Horizontal



Mk.	Freq. (MHz)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Factor (dB)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1329.863	-69.8	-13.0	56.8	-23.7	53.5	4.2	H
2	2094.774	-67.7	-13.0	54.7	-22.0	53.9	5.2	H
3	3847.959	-61.9	-13.0	48.9	-15.2	53.4	7.7	H
4	6326.346	-54.3	-13.0	41.3	-6.5	51.6	10.2	H
5	8855.875	-49.8	-13.0	36.8	-2.6	52.4	12.0	H
6	12951.698	-51.5	-13.0	38.5	2.7	51.7	14.7	H

Mode:QPSK / Middle Channel / Vertical



Mk.	Freq. (MHz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Amp.G. (dB)	Cbl.L. (dB)	Pol.
Peak								
1	1296.644	-70.8	-13.0	57.8	-23.8	53.5	4.1	V
2	1917.279	-69.4	-13.0	56.4	-22.9	53.8	5.0	V
3	3255.007	-64.0	-13.0	51.0	-17.6	53.9	6.8	V
4	5018.643	-56.9	-13.0	43.9	-10.6	52.4	8.7	V
5	8479.367	-51.9	-13.0	38.9	-3.3	52.2	11.5	V
6	12709.346	-51.5	-13.0	38.5	2.4	51.7	14.6	V

*****END OF THE APPENDIX*****