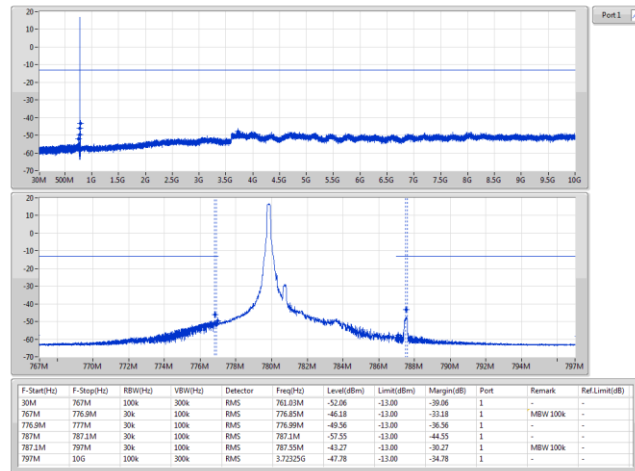


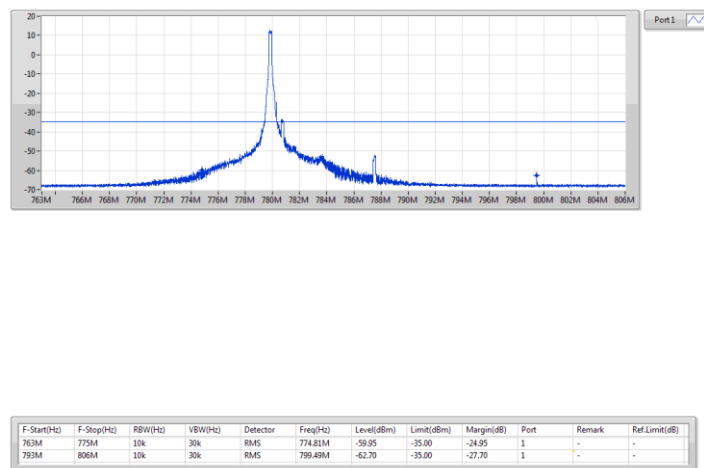
Band 13 LTE-M1_5MHz_Nss1_1TX
782MHz_QPSK_RB 1,#RB 0,NB 0

CSE-TX



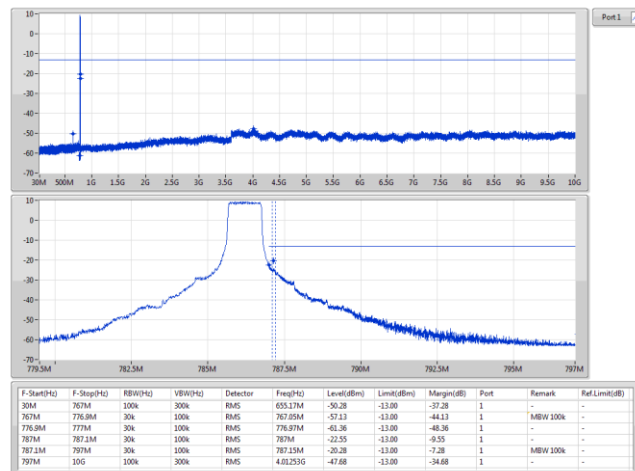
Band 13 LTE-M1_5MHz_Nss1_1TX
782MHz_QPSK_RB 1,#RB 0,NB 0

CSE-TX



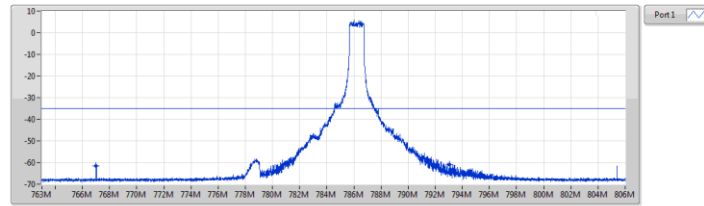
Band 13 LTE-M1_5MHz_Nss1_1TX
784.5MHz_QPSK_RB 6,#RB 0,NB 3

CSE-TX



Band 13 LTE-M1_5MHz_Nss1_1TX
784.5MHz_QPSK_RB 6,#RB 0,NB 3

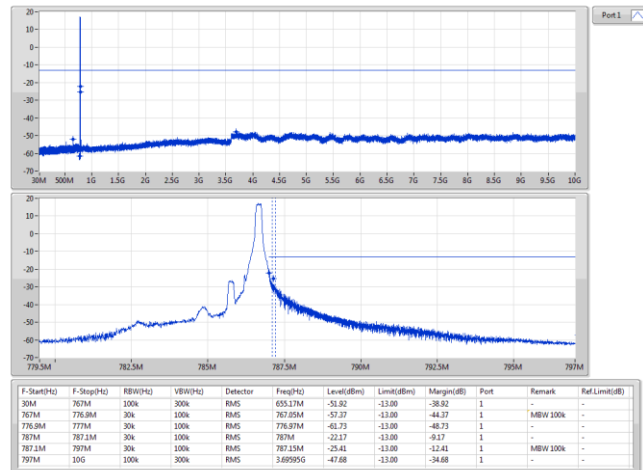
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
763M	775M	10K	30K	RMS	767.01M	-61.55	-35.00	-26.55	1	-	-
793M	806M	10K	30K	RMS	793.03M	-60.81	-35.00	-25.81	1	-	-

Band 13 LTE-M1_5MHz_Nss1_1TX
784.5MHz_QPSK_RB 1,#RB 5,NB 3

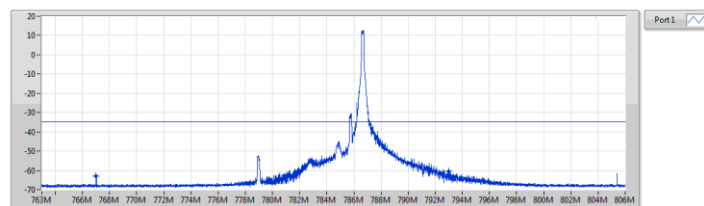
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
30M	767M	100K	300K	RMS	655.17M	-51.82	-13.00	-38.82	1	-	-
767M	776.8M	30K	100K	RMS	767.05M	-57.37	-13.00	-44.37	1	MBW 100K	-
776.8M	777M	30K	100K	RMS	776.97M	-61.73	-13.00	-48.73	1	-	-
777M	787.1M	30K	100K	RMS	787M	-22.17	-13.00	-9.17	1	-	-
787.1M	797M	30K	100K	RMS	787.15M	-25.41	-13.00	-12.41	1	MBW 100K	-
797M	10G	100K	300K	RMS	3.69995G	-47.68	-13.00	-34.68	1	-	-

Band 13 LTE-M1_5MHz_Nss1_1TX
784.5MHz_QPSK_RB 1,#RB 5,NB 3

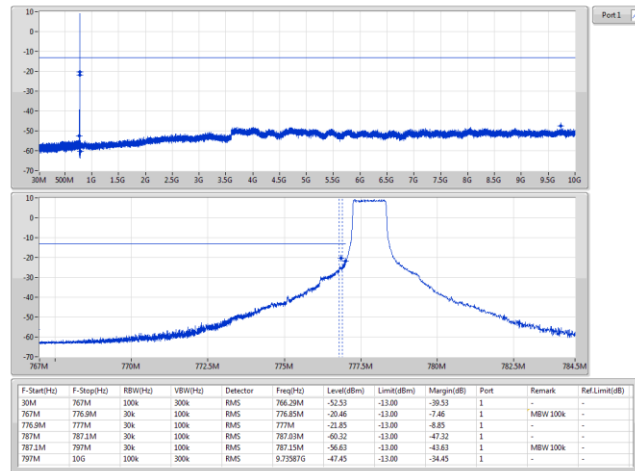
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
763M	775M	10K	30K	RMS	767.01M	-63.06	-35.00	-28.06	1	-	-
793M	806M	10K	30K	RMS	793.01M	-60.66	-35.00	-25.66	1	-	-

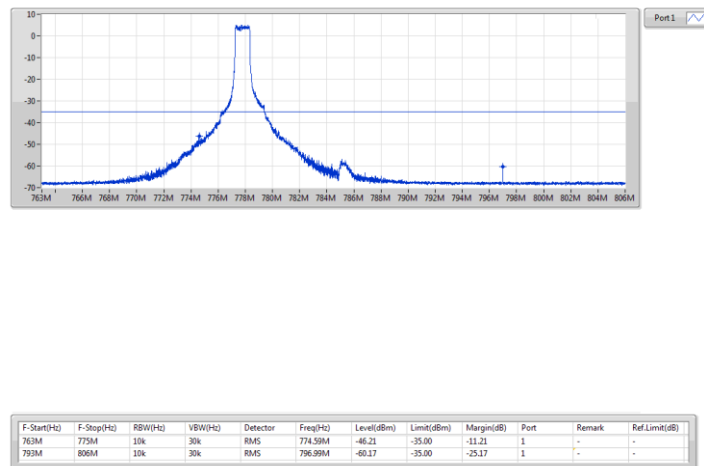
Band 13 LTE-M1_5MHz_Nss1_1TX
779.5MHz_16QAM_RB 6,#RB 0,NB 0

CSE-TX



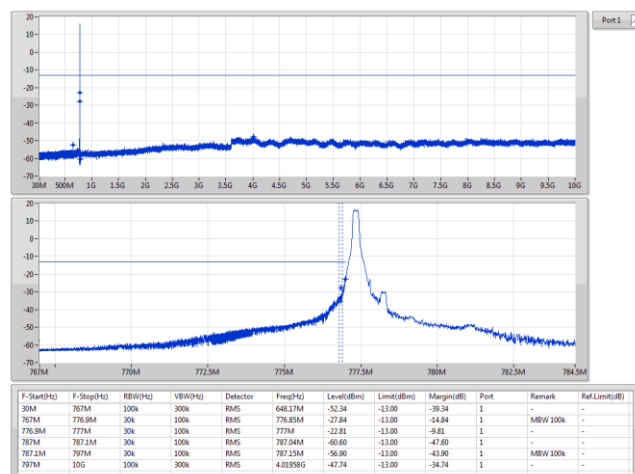
Band 13 LTE-M1_5MHz_Nss1_1TX
779.5MHz_16QAM_RB 6,#RB 0,NB 0

CSE-TX



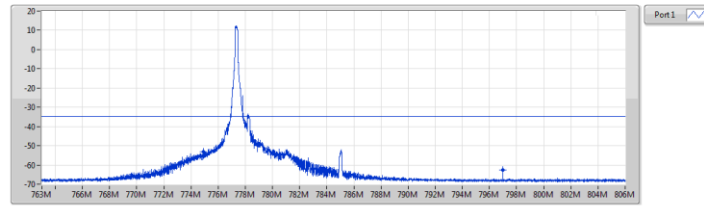
Band 13 LTE-M1_5MHz_Nss1_1TX
779.5MHz_16QAM_RB 1,#RB 0,NB 0

CSE-TX



Band 13 LTE-M1_5MHz_Nss1_1TX
779.5MHz_16QAM_RB 1,#RB 0,NB 0

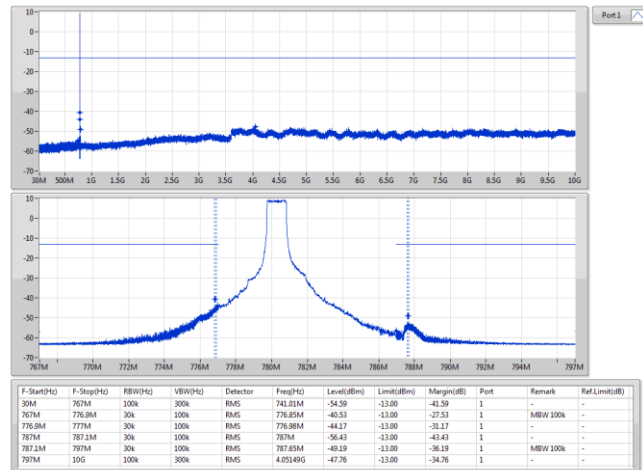
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
763M	775M	10K	30K	RMS	774.93M	-53.26	-35.00	-18.26	1	-	-
793M	806M	10K	30K	RMS	796.98M	-62.48	-35.00	-27.48	1	-	-

Band 13 LTE-M1_5MHz_Nss1_1TX
782MHz_16QAM_RB 6,#RB 0,NB 0

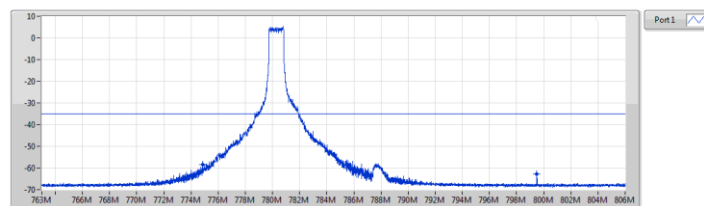
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
30M	767M	100K	300K	RMS	741.01M	-54.59	-13.00	-41.59	1	-	-
767M	776.8M	30K	100K	RMS	776.85M	-40.53	-13.00	-27.53	1	MBW 100K	-
776.8M	777M	30K	100K	RMS	776.98M	-44.17	-13.00	-31.17	1	-	-
777M	787.1M	30K	100K	RMS	787M	-56.43	-13.00	-43.43	1	-	-
787.1M	797M	30K	100K	RMS	787.85M	-49.19	-13.00	-36.19	1	MBW 100K	-
797M	10G	100K	300K	RMS	4.05149G	-47.76	-13.00	-34.76	1	-	-

Band 13 LTE-M1_5MHz_Nss1_1TX
782MHz_16QAM_RB 6,#RB 0,NB 0

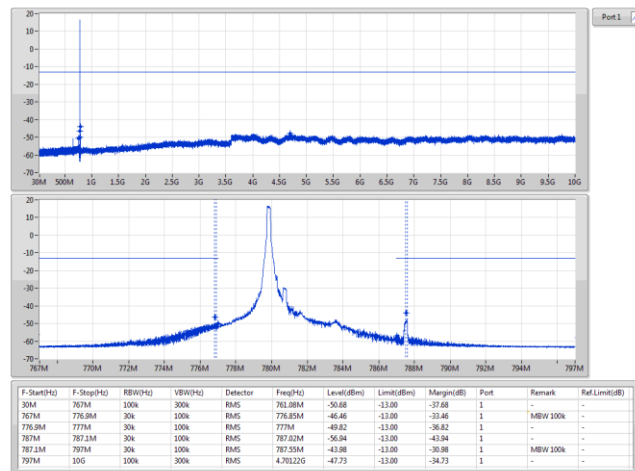
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
763M	775M	10K	30K	RMS	774.86M	-58.59	-35.00	-23.59	1	-	-
793M	806M	10K	30K	RMS	799.49M	-62.66	-35.00	-27.66	1	-	-

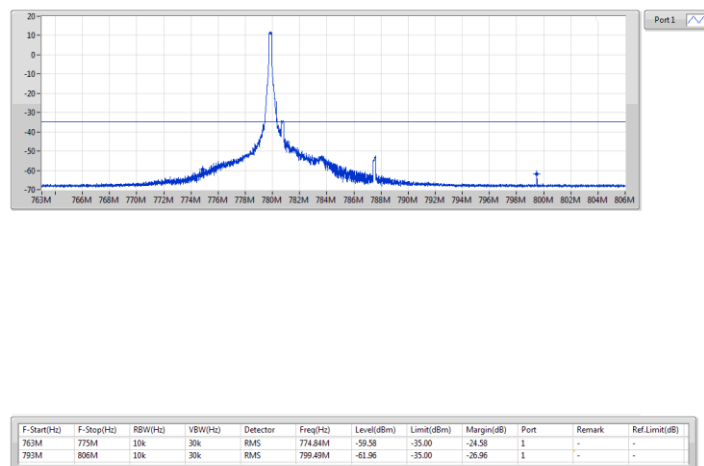
Band 13 LTE-M1_5MHz_Nss1_1TX
782MHz_16QAM_RB 1,#RB 0,NB 0

CSE-TX



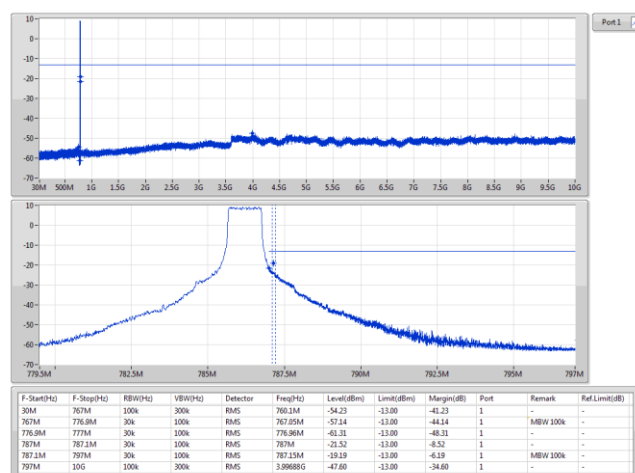
Band 13 LTE-M1_5MHz_Nss1_1TX
782MHz_16QAM_RB 1,#RB 0,NB 0

CSE-TX



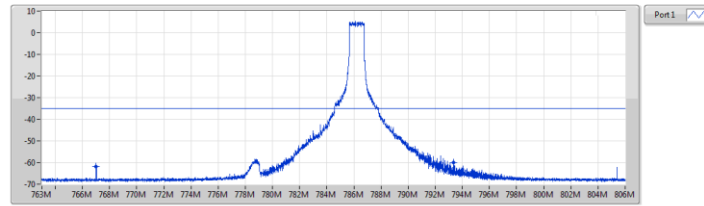
Band 13 LTE-M1_5MHz_Nss1_1TX
784.5MHz_16QAM_RB 6,#RB 0,NB 3

CSE-TX



Band 13 LTE-M1_5MHz_Nss1_1TX
784.5MHz_16QAM_RB 6,#RB 0,NB 3

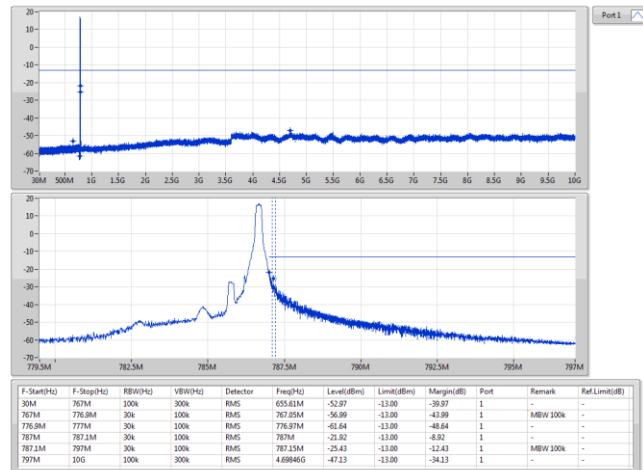
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
763M	775M	10k	30k	RMS	767.01M	-61.89	-35.00	-26.89	1	-	-
793M	806M	10k	30k	RMS	793.34M	-59.96	-35.00	-24.96	1	-	-

Band 13 LTE-M1_5MHz_Nss1_1TX
784.5MHz_16QAM_RB 1,#RB 5,NB 3

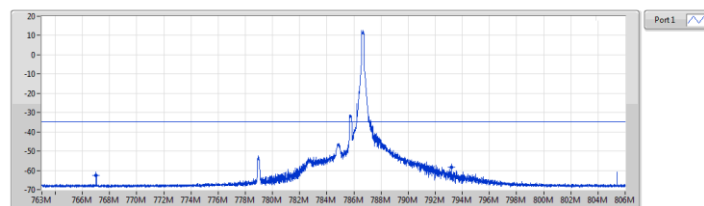
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
30M	767M	100k	300k	RMS	655.61M	-52.97	-13.00	-39.97	1	-	-
767M	776.8M	30k	100k	RMS	767.05M	-56.89	-13.00	-43.89	1	MBW 100k	-
776.8M	777M	30k	100k	RMS	776.97M	-61.64	-13.00	-48.64	1	-	-
777M	787.1M	30k	100k	RMS	787M	-21.92	-13.00	-8.92	1	-	-
787.1M	797M	30k	100k	RMS	787.15M	-25.43	-13.00	-12.43	1	MBW 100k	-
797M	10G	100k	300k	RMS	4.69846G	-47.13	-13.00	-34.13	1	-	-

Band 13 LTE-M1_5MHz_Nss1_1TX
784.5MHz_16QAM_RB 1,#RB 5,NB 3

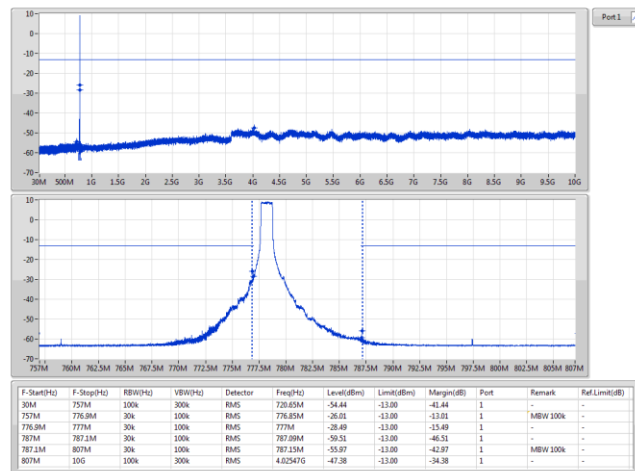
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
763M	775M	10k	30k	RMS	767.01M	-62.64	-35.00	-27.64	1	-	-
793M	806M	10k	30k	RMS	793.2M	-58.51	-35.00	-23.51	1	-	-

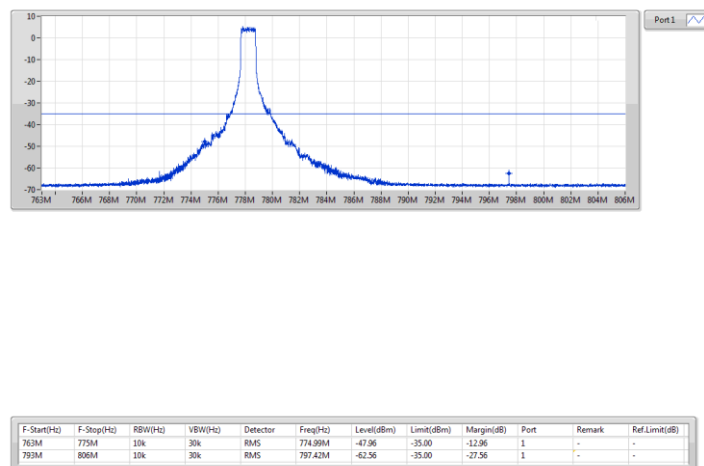
Band 13 LTE-M1_10MHz Nss1_1TX
782MHz QPSK_RB 6,#RB 0,NB 0

CSE-TX



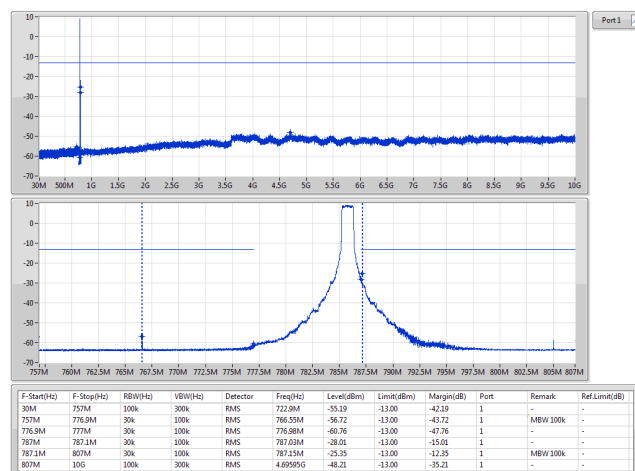
Band 13 LTE-M1_10MHz Nss1_1TX
782MHz QPSK_RB 6,#RB 0,NB 0

CSE-TX



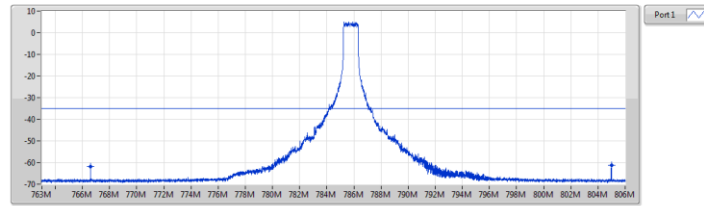
Band 13 LTE-M1_10MHz Nss1_1TX
782MHz QPSK_RB 6,#RB 0,NB 7

CSE-TX-Port-05,12,



Band 13_LTE-M1_10MHz_Nss1_1TX
782MHz_QPSK_RB 6,#RB 0,NB 7

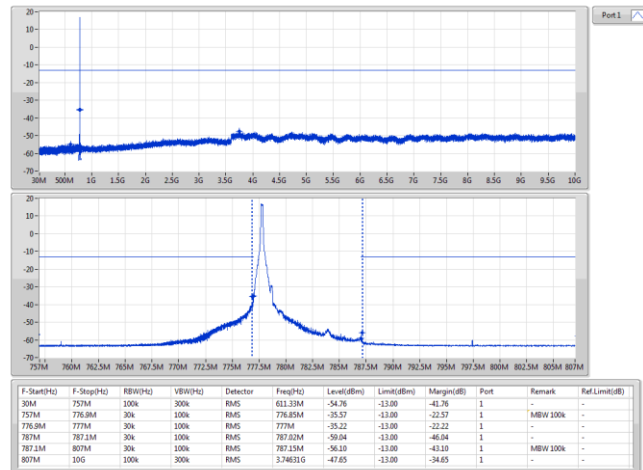
CSE-TX-Port-13



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
763M	775M	10k	30k	RMS	786.58M	-61.93	-35.00	-26.93	1	-	-
793M	806M	10k	30k	RMS	804.58M	-61.11	-35.00	-26.11	1	-	-

Band 13_LTE-M1_10MHz_Nss1_1TX
782MHz_QPSK_RB 1,#RB 0,NB 0

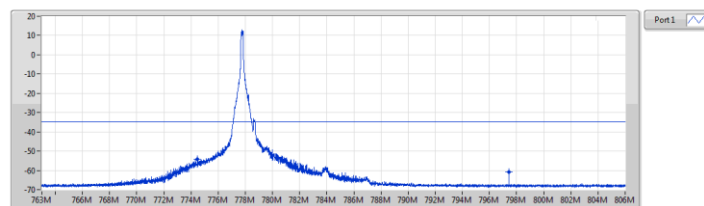
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
30M	757M	100k	300k	RMS	611.33M	-54.76	-13.00	-41.76	1	-	-
757M	776.8M	30k	100k	RMS	776.85M	-35.57	-13.00	-22.57	1	MBW 100k	-
776.8M	777M	30k	100k	RMS	777M	-35.22	-13.00	-22.22	1	-	-
777M	787.15M	30k	100k	RMS	787.33M	-59.04	-13.00	-46.04	1	-	-
787.15M	807M	30k	100k	RMS	787.15M	-56.10	-13.00	-43.10	1	MBW 100k	-
807M	10G	100k	300k	RMS	3.74831G	-47.65	-13.00	-34.65	1	-	-

Band 13_LTE-M1_10MHz_Nss1_1TX
782MHz_QPSK_RB 1,#RB 0,NB 0

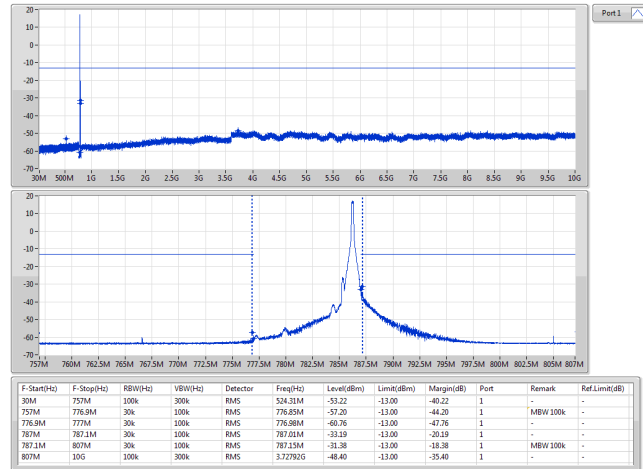
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
763M	775M	10k	30k	RMS	774.45M	-54.24	-35.00	-19.24	1	-	-
793M	806M	10k	30k	RMS	797.42M	-60.94	-35.00	-25.94	1	-	-

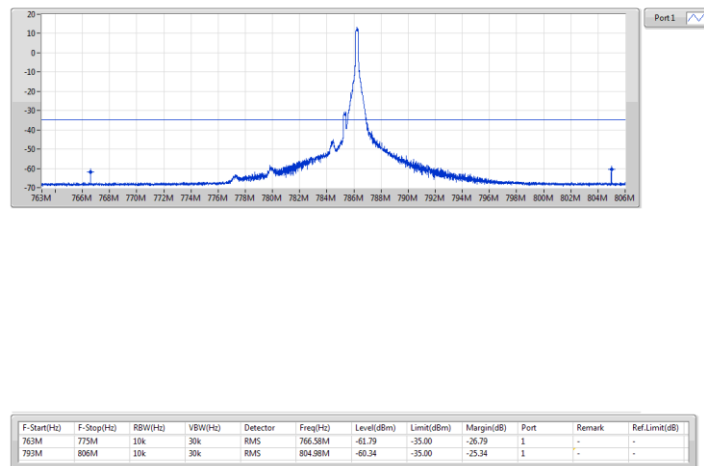
Band 13 LTE-M1_10MHz Nss1_1TX
782MHz QPSK_RB 1,#RB 5,NB 7

CSE-TX-Port-05,12,



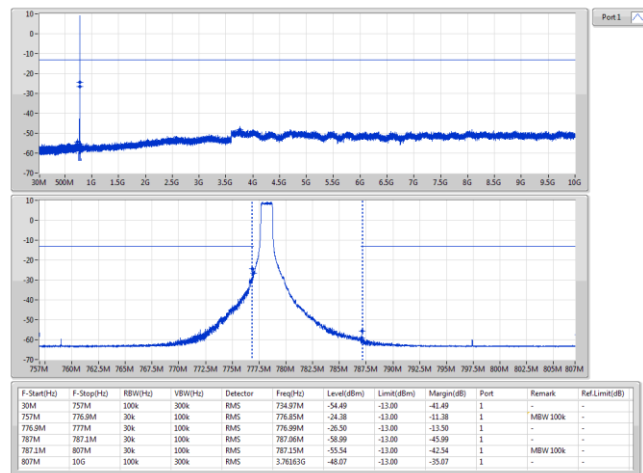
Band 13 LTE-M1_10MHz Nss1_1TX
782MHz QPSK_RB 1,#RB 5,NB 7

CSE-TX-Port-13



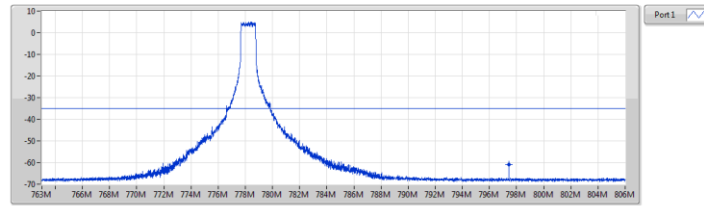
Band 13 LTE-M1_10MHz Nss1_1TX
782MHz 16QAM_RB 6,#RB 0,NB 0

CSE-TX



Band 13_LTE-M1_10MHz_Nss1_1TX
782MHz_16QAM_RB 6,#RB 0,NB 0

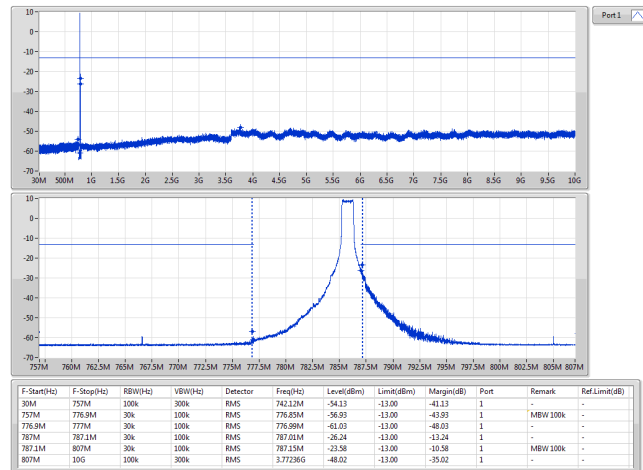
CSE-TX



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
763M	775M	10k	30k	RMS	774.99M	-46.66	-35.00	-13.66	1	-	-
793M	806M	10k	30k	RMS	797.42M	-40.89	-35.00	-25.89	1	-	-

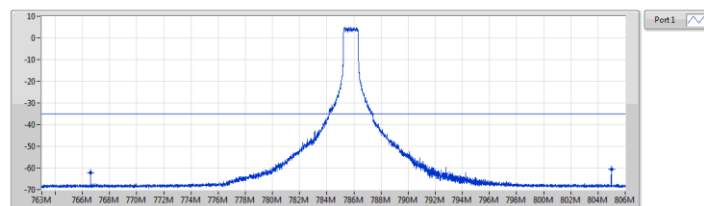
Band 13_LTE-M1_10MHz_Nss1_1TX
782MHz_16QAM_RB 6,#RB 0,NB 7

CSE-TX-Port-05,12,



Band 13_LTE-M1_10MHz_Nss1_1TX
782MHz_16QAM_RB 6,#RB 0,NB 7

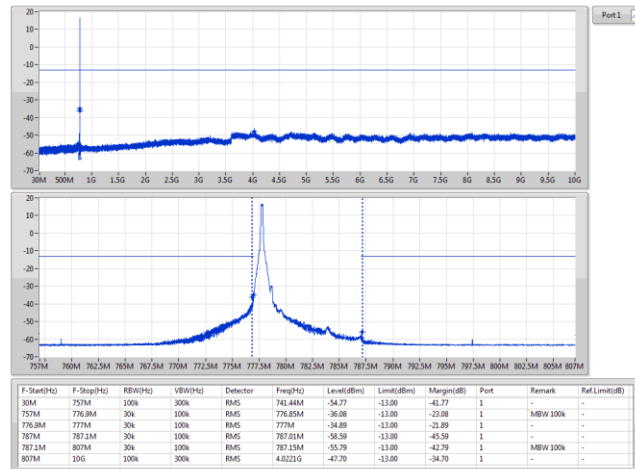
CSE-TX-Port-13



F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
763M	775M	10k	30k	RMS	766.58M	-42.22	-35.00	-27.22	1	-	-
793M	806M	10k	30k	RMS	804.98M	-60.63	-35.00	-25.63	1	-	-

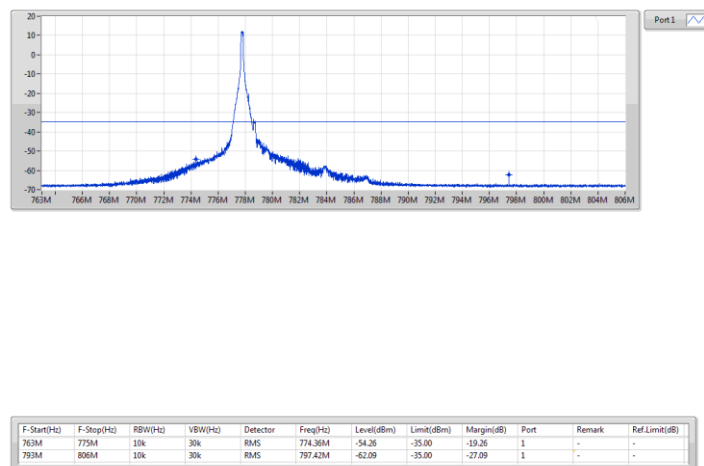
Band 13 LTE-M1_10MHz Nss1_1TX
782MHz_16QAM_RB 1,#RB 0,NB 0

CSE-TX



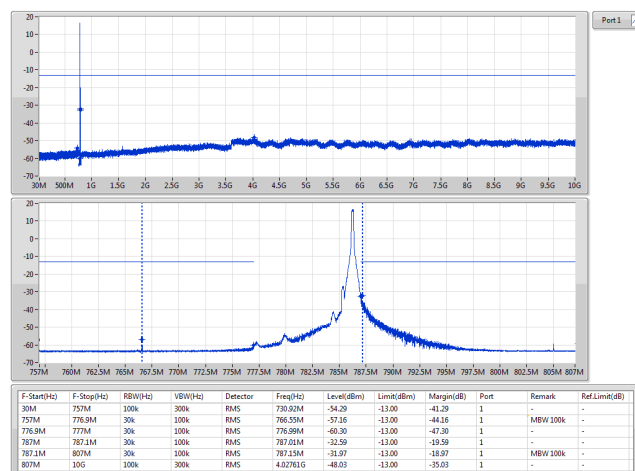
Band 13 LTE-M1_10MHz Nss1_1TX
782MHz_16QAM_RB 1,#RB 0,NB 0

CSE-TX



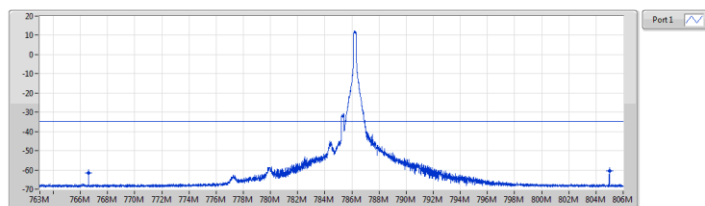
Band 13 LTE-M1_10MHz Nss1_1TX
782MHz_16QAM_RB 1,#RB 5,NB 7

CSE-TX-Port-05,12,



Band 13_LTE-M1_10MHz_Nss1_1TX
782MHz_16QAM_RB 1,#RB 5,NB 7

CSE-TX-Port-13



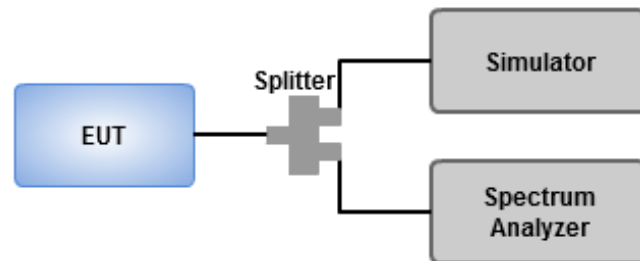
F-Start(Hz)	F-Stop(Hz)	RBW(Hz)	VBW(Hz)	Detector	Freq(Hz)	Level(dBm)	Limit(dBm)	Margin(dB)	Port	Remark	Ref.Limit(dB)
763M	775M	10k	30k	RBAS	766.58M	-61.59	-35.00	-26.59	1	-	-
793M	806M	10k	30k	RBAS	804.58M	-60.50	-35.00	-25.50	1	-	-

3.4 Occupied Bandwidth

3.4.1 Test Procedures

1. Set resolution bandwidth (RBW) = 30 kHz, Video bandwidth= 100 kHz.
2. Detector = Peak, Trace mode = max hold.
3. Sweep = auto couple, Allow the trace to stabilize.
4. Using occupied bandwidth measurement function of spectrum analyzer to measure occupied bandwidth.

3.4.2 Test Setup



3.4.3 Test Result of Occupied Bandwidth

Summary of LTE Band 12

Mode	Max-OBW	ITU-Code	Min-OBW
	(Hz)		(Hz)
Band 12_LTE-M1_1.4MHz_Nss1_1TX_RB 6	1.098M	1M10	1.092M
Band 12_LTE-M1_3MHz_Nss1_1TX_RB 6	1.113M	1M11	1.101M
Band 12_LTE-M1_5MHz_Nss1_1TX_RB 6	1.115M	1M12	1.097M
Band 12_LTE-M1_10MHz_Nss1_1TX_RB 6	1.128M	1M13	1.108M

Max-N dB = Maximum 26dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 26dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

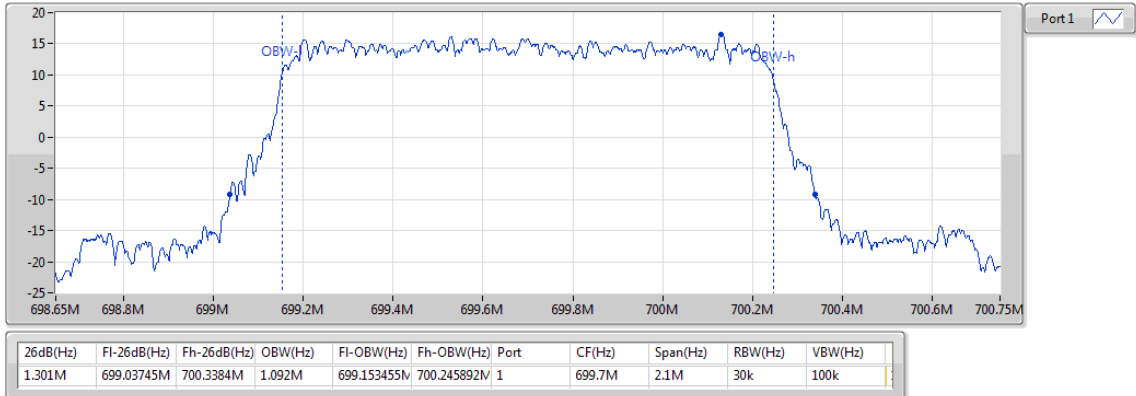
Mode	Result	Limit (Hz)	Port 1-NdB (Hz)	Port 1-OBW (Hz)
LTE-M1_1.4MHz_Nss1_1TX	-	-	-	-
699.7MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.301M	1.092M
707.5MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.294M	1.098M
715.3MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.274M	1.097M
699.7MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.293M	1.094M
707.5MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.282M	1.096M
715.3MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.275M	1.098M
LTE-M1_3MHz_Nss1_1TX	-	-	-	-
700.5MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.395M	1.104M
707.5MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.438M	1.113M
714.5MHz_QPSK_RB 6,#RB 0,NB 1	Pass	Inf	1.433M	1.101M
700.5MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.391M	1.104M
707.5MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.42M	1.111M
714.5MHz_16QAM_RB 6,#RB 0,NB 1	Pass	Inf	1.42M	1.107M
LTE-M1_5MHz_Nss1_1TX	-	-	-	-
701.5MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.339M	1.098M
707.5MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.335M	1.097M
713.5MHz_QPSK_RB 6,#RB 0,NB 3	Pass	Inf	1.391M	1.102M
701.5MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.459M	1.115M
707.5MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.395M	1.115M
713.5MHz_16QAM_RB 6,#RB 0,NB 3	Pass	Inf	1.538M	1.114M
LTE-M1_10MHz_Nss1_1TX	-	-	-	-
704MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.65M	1.128M
707.5MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.485M	1.108M
711MHz_QPSK_RB 6,#RB 0,NB 7	Pass	Inf	1.785M	1.117M
704MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.5M	1.12M
707.5MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.575M	1.124M
711MHz_16QAM_RB 6,#RB 0,NB 7	Pass	Inf	1.59M	1.115M

Port X-N dB = Port X 26dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

Band 12_LTE-M1_1.4MHz_Nss1_1TX

EBW

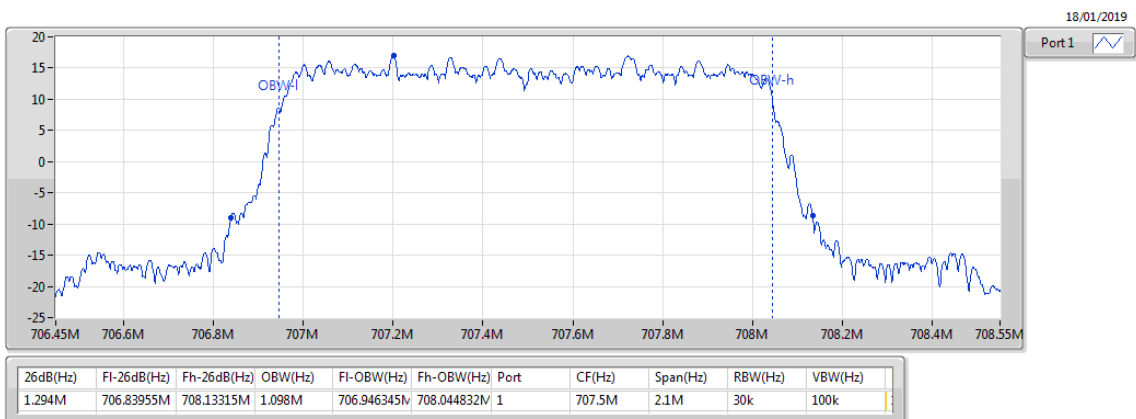
699.7MHz_QPSK_RB 6,#RB 0,NB 0



Band 12_LTE-M1_1.4MHz_Nss1_1TX

EBW

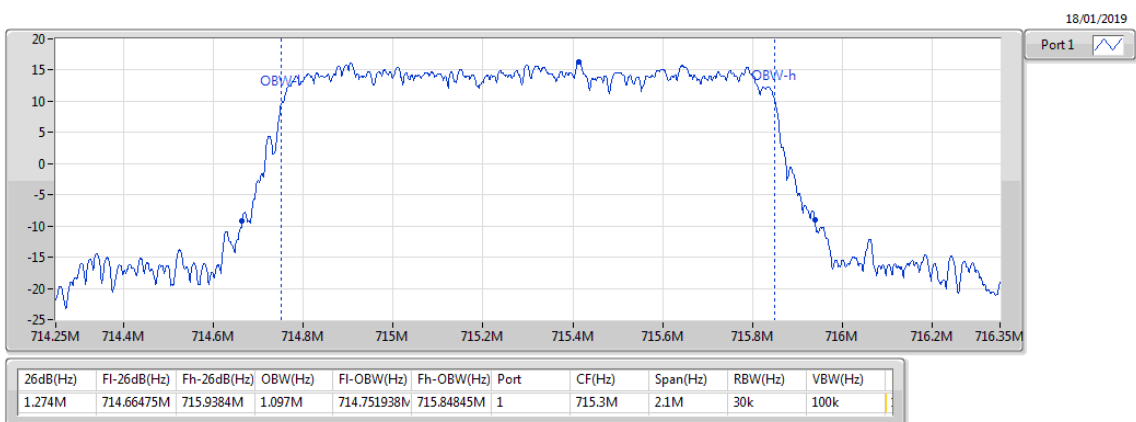
707.5MHz_QPSK_RB 6,#RB 0,NB 0



Band 12_LTE-M1_1.4MHz_Nss1_1TX

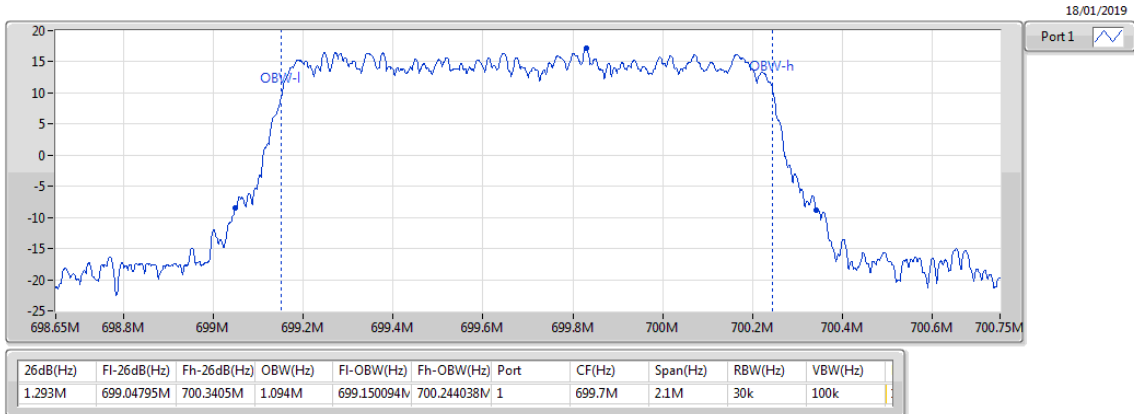
EBW

715.3MHz_QPSK_RB 6,#RB 0,NB 0



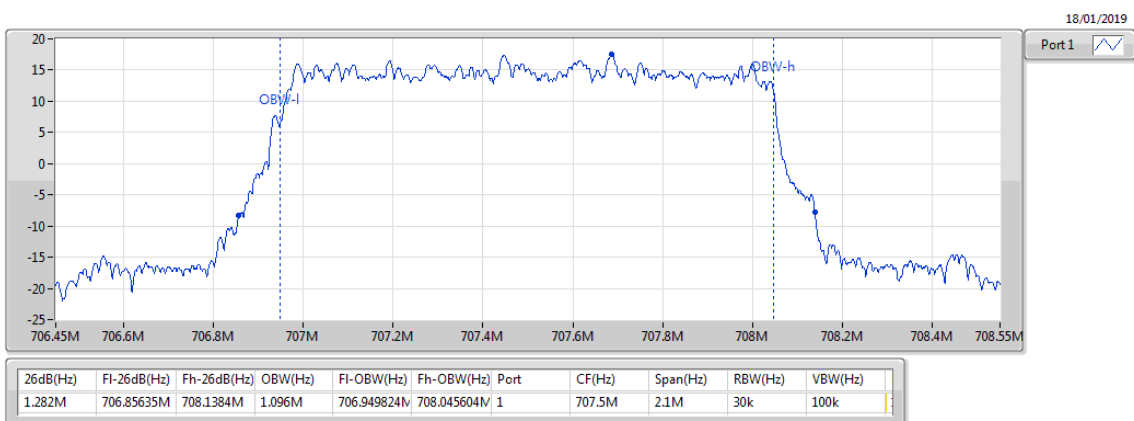
Band 12_LTE-M1_1.4MHz_Nss1_1TX
699.7MHz_16QAM_RB 6,#RB 0,NB 0

EBW



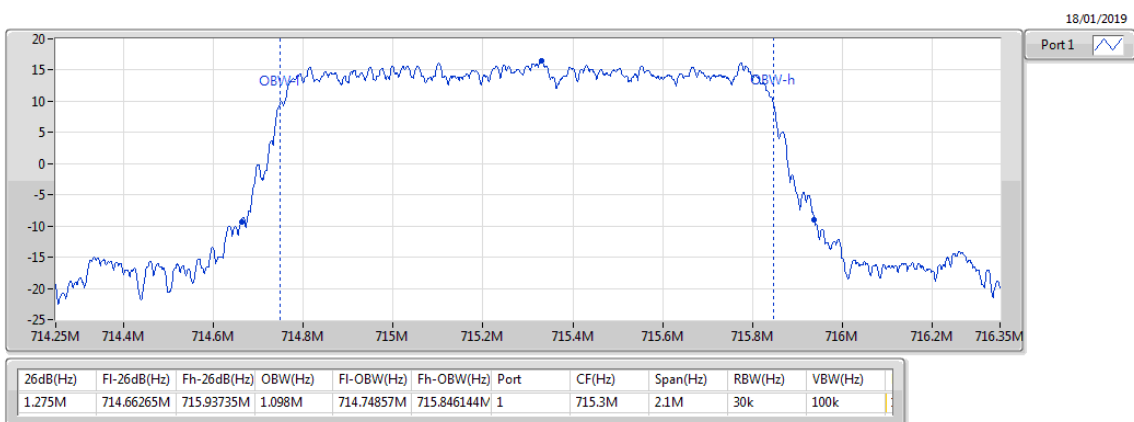
Band 12_LTE-M1_1.4MHz_Nss1_1TX
707.5MHz_16QAM_RB 6,#RB 0,NB 0

EBW



Band 12_LTE-M1_1.4MHz_Nss1_1TX
715.3MHz_16QAM_RB 6,#RB 0,NB 0

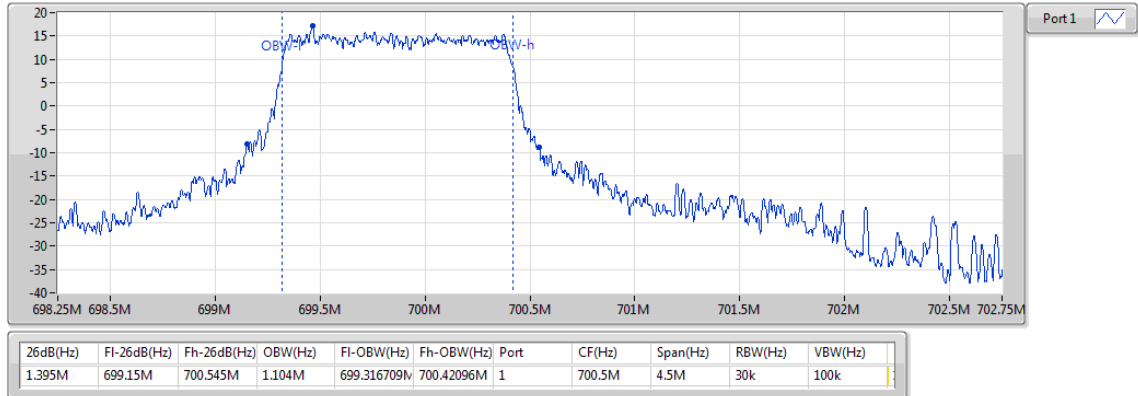
EBW



Band 12_LTE-M1_3MHz_Nss1_1TX

EBW

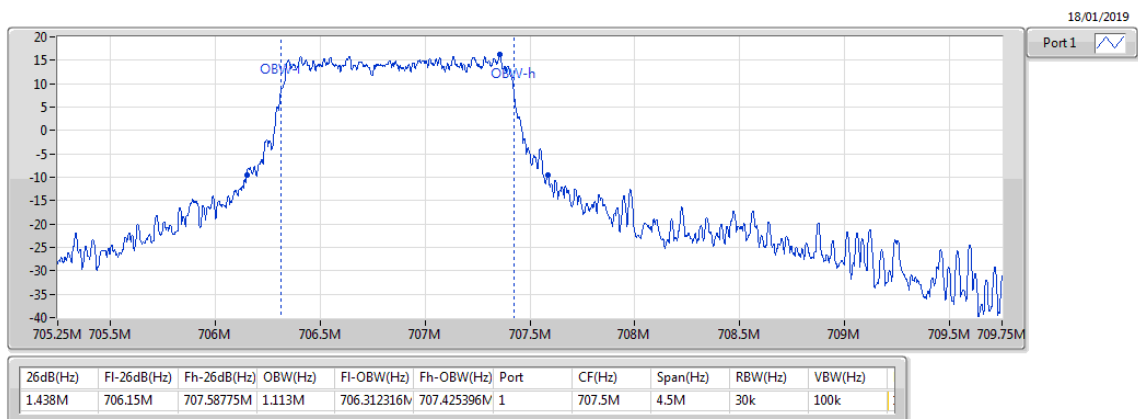
700.5MHz_QPSK_RB 6,#RB 0,NB 0



Band 12_LTE-M1_3MHz_Nss1_1TX

EBW

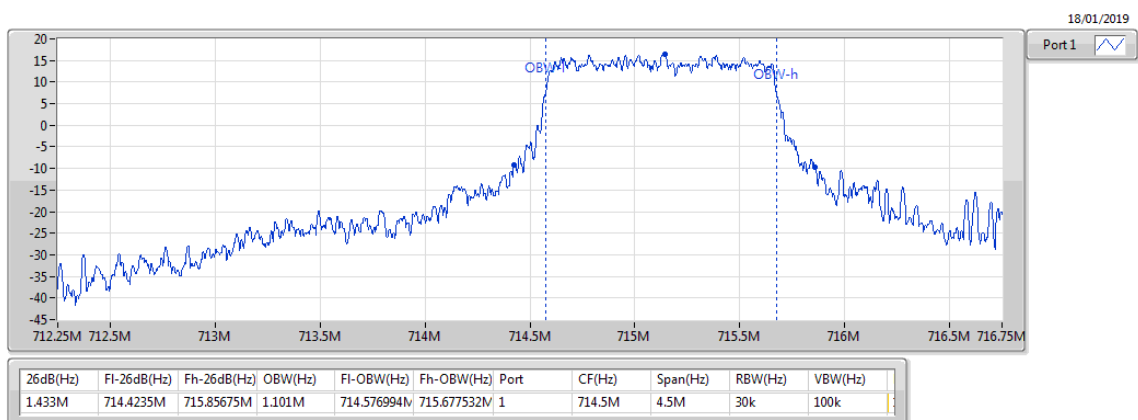
707.5MHz_QPSK_RB 6,#RB 0,NB 0



Band 12_LTE-M1_3MHz_Nss1_1TX

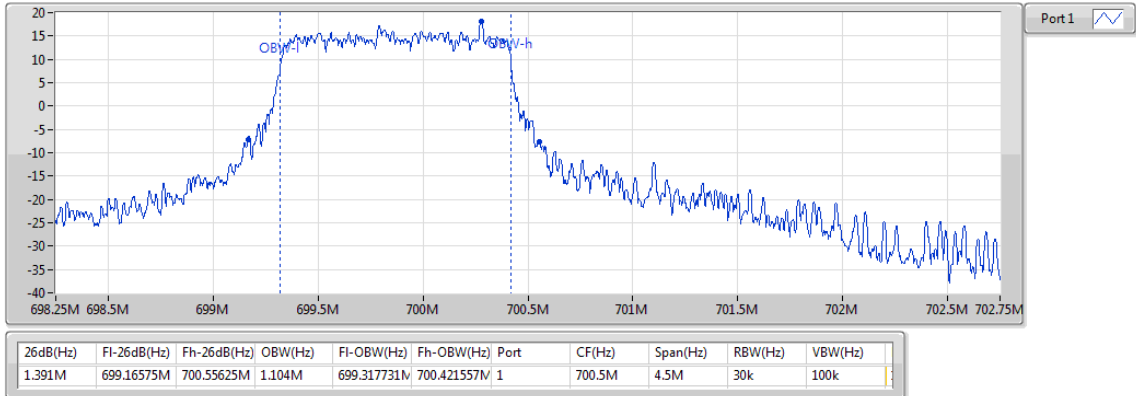
EBW

714.5MHz_QPSK_RB 6,#RB 0,NB 1



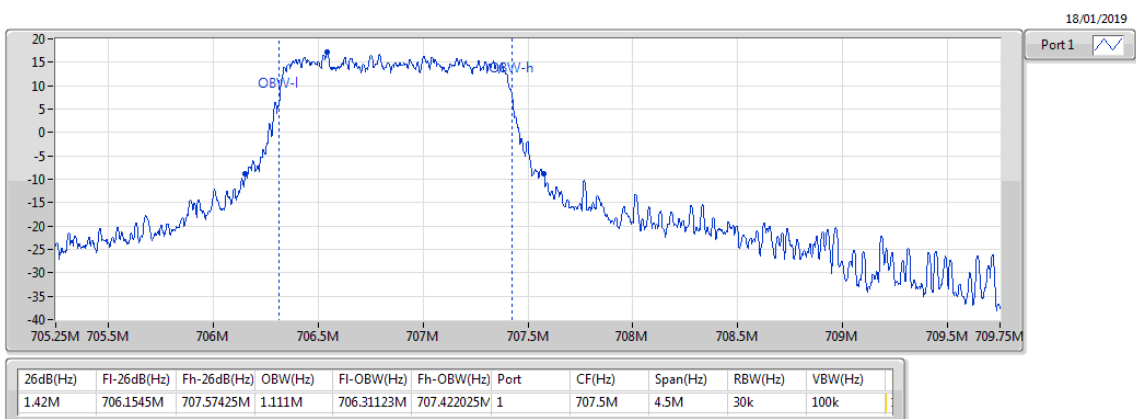
Band 12_LTE-M1_3MHz_Nss1_1TX
700.5MHz_16QAM_RB 6,#RB 0,NB 0

EBW



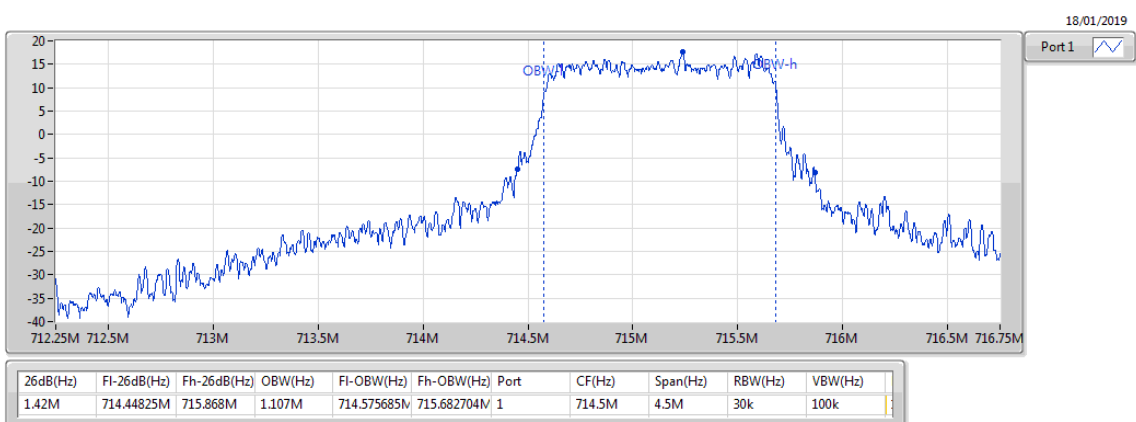
Band 12_LTE-M1_3MHz_Nss1_1TX
707.5MHz_16QAM_RB 6,#RB 0,NB 0

EBW



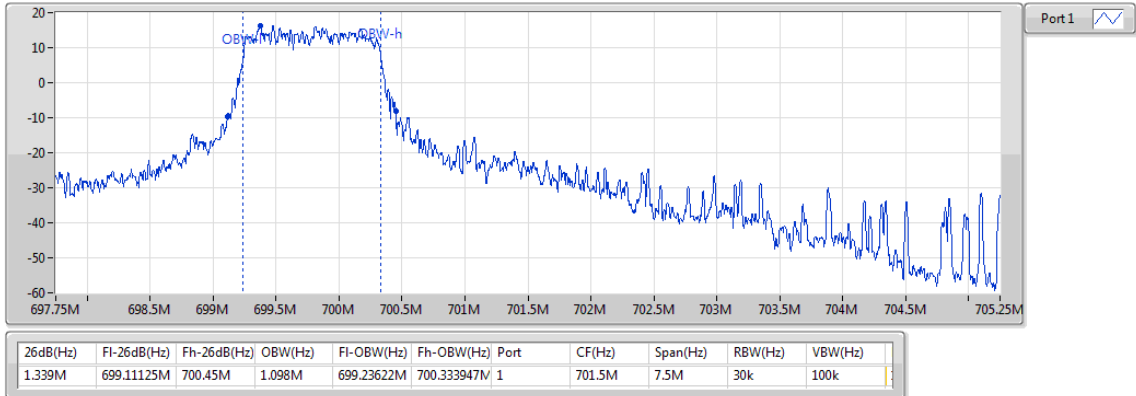
Band 12_LTE-M1_3MHz_Nss1_1TX
714.5MHz_16QAM_RB 6,#RB 0,NB 1

EBW



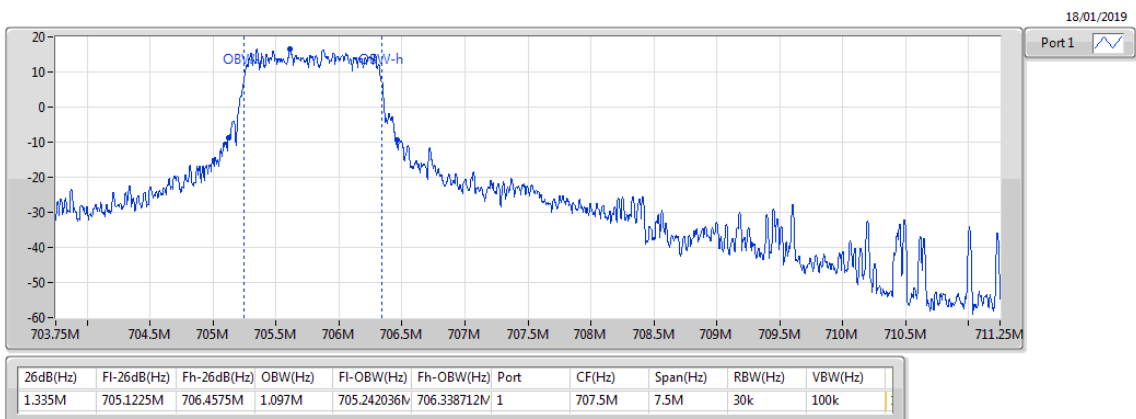
Band 12_LTE-M1_5MHz_Nss1_1TX
701.5MHz_QPSK_RB 6,#RB 0,NB 0

EBW



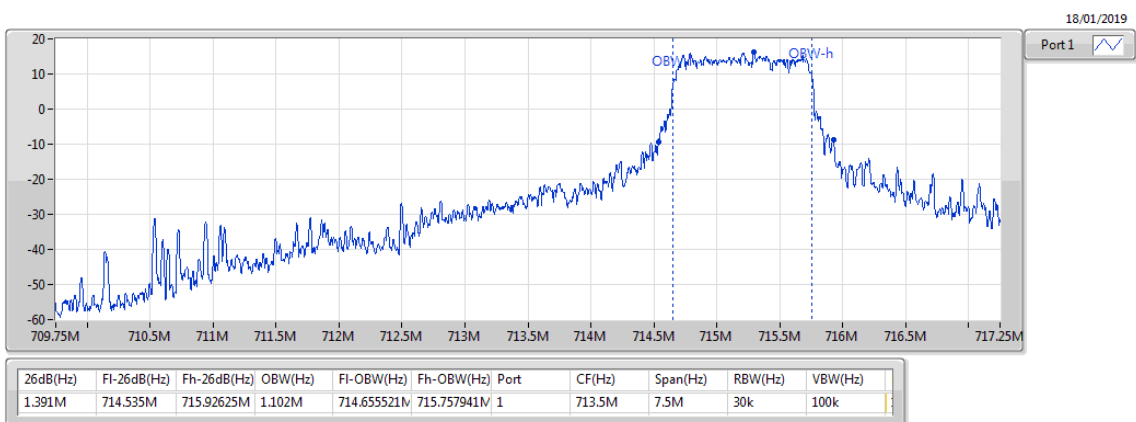
Band 12_LTE-M1_5MHz_Nss1_1TX
707.5MHz_QPSK_RB 6,#RB 0,NB 0

EBW



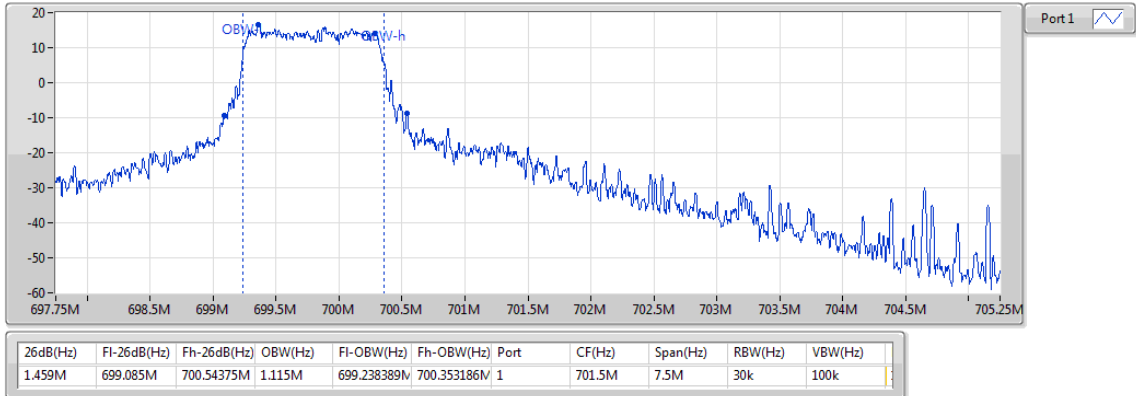
Band 12_LTE-M1_5MHz_Nss1_1TX
713.5MHz_QPSK_RB 6,#RB 0,NB 3

EBW



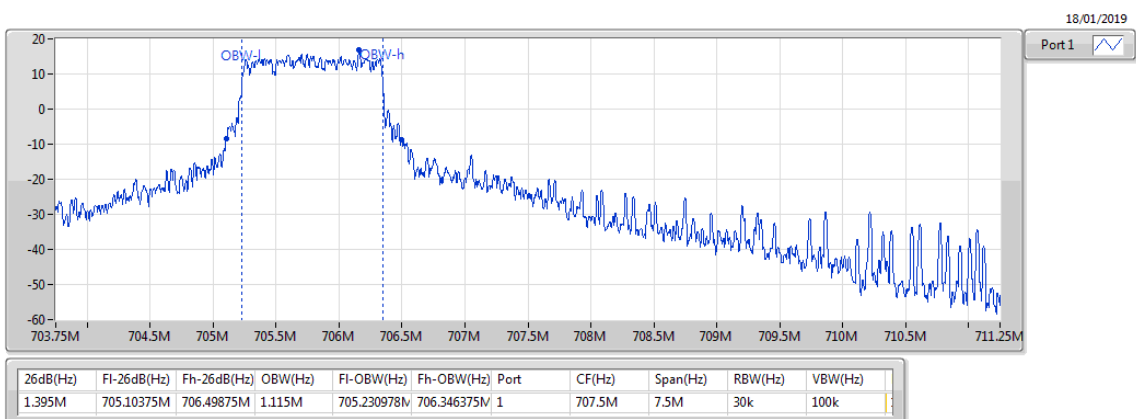
Band 12_LTE-M1_5MHz_Nss1_1TX
701.5MHz_16QAM_RB 6,#RB 0,NB 0

EBW



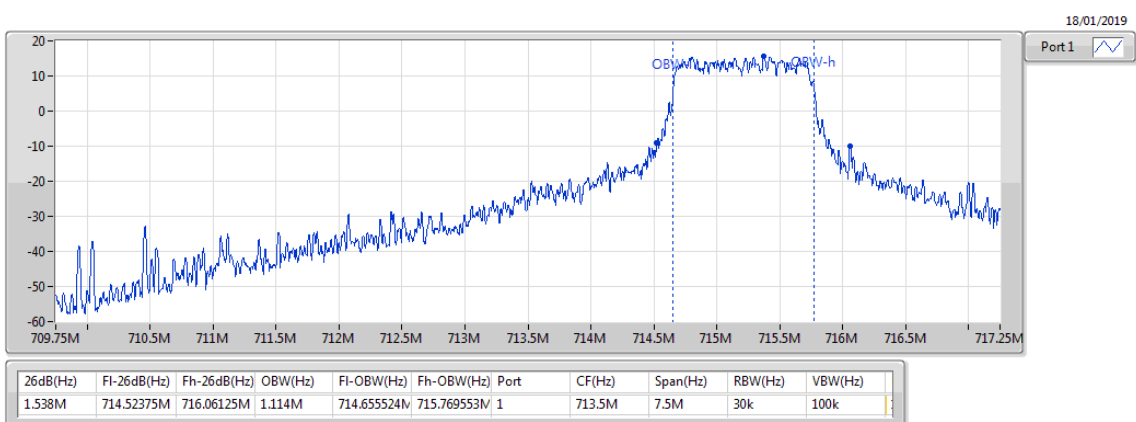
Band 12_LTE-M1_5MHz_Nss1_1TX
707.5MHz_16QAM_RB 6,#RB 0,NB 0

EBW



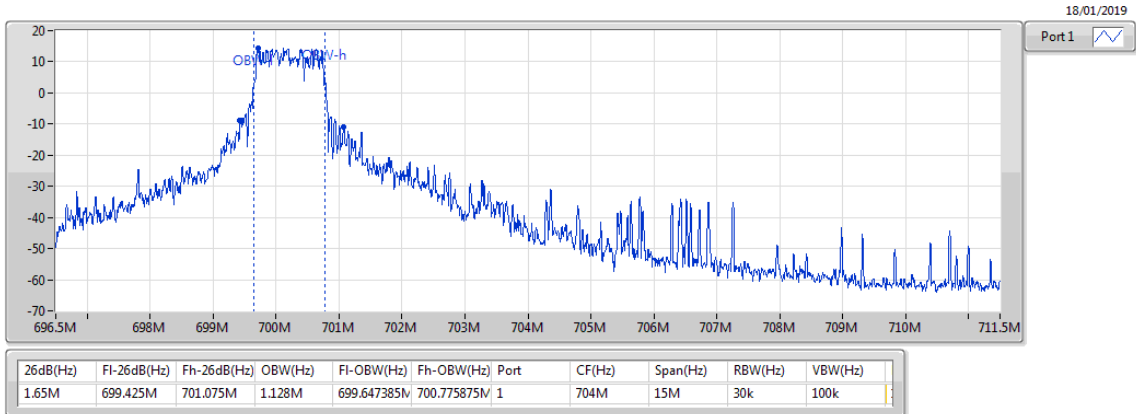
Band 12_LTE-M1_5MHz_Nss1_1TX
713.5MHz_16QAM_RB 6,#RB 0,NB 3

EBW



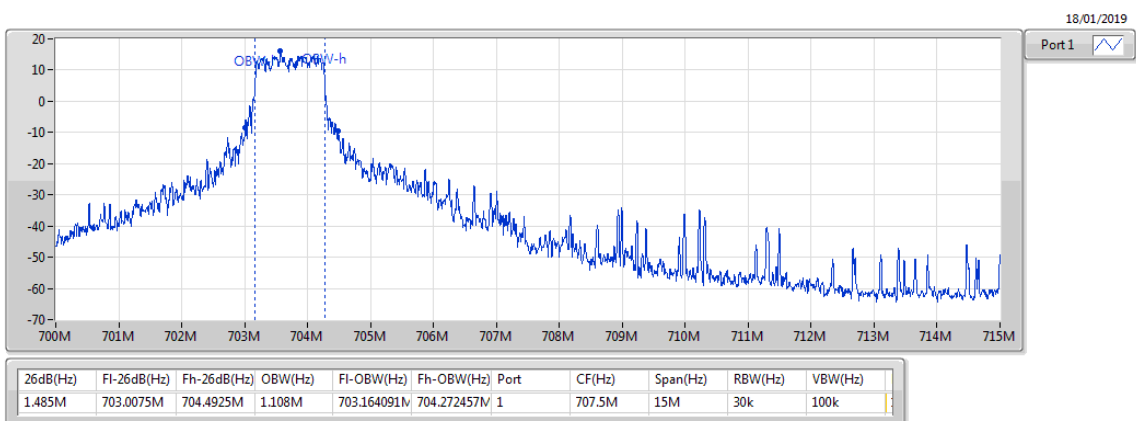
Band 12_LTE-M1_10MHz_Nss1_1TX
704MHz_QPSK_RB 6,#RB 0,NB 0

EBW



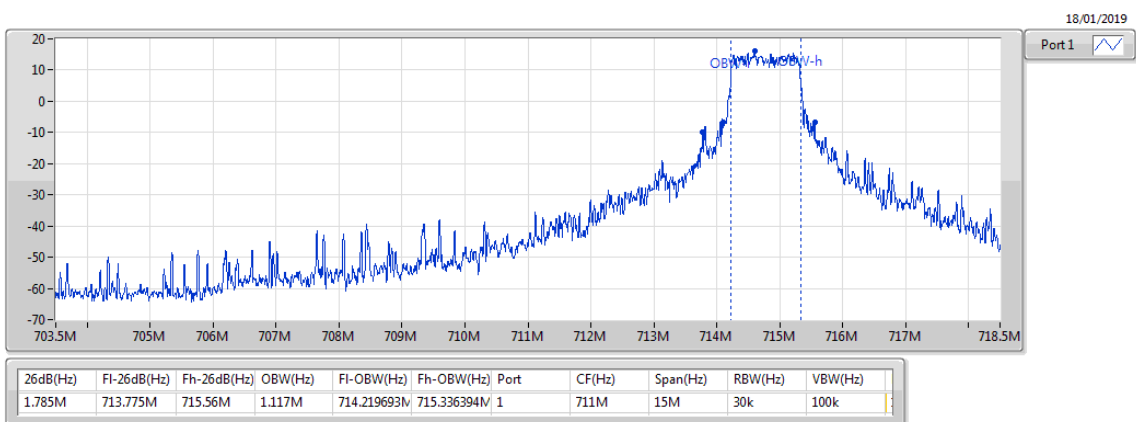
Band 12_LTE-M1_10MHz_Nss1_1TX
707.5MHz_QPSK_RB 6,#RB 0,NB 0

EBW



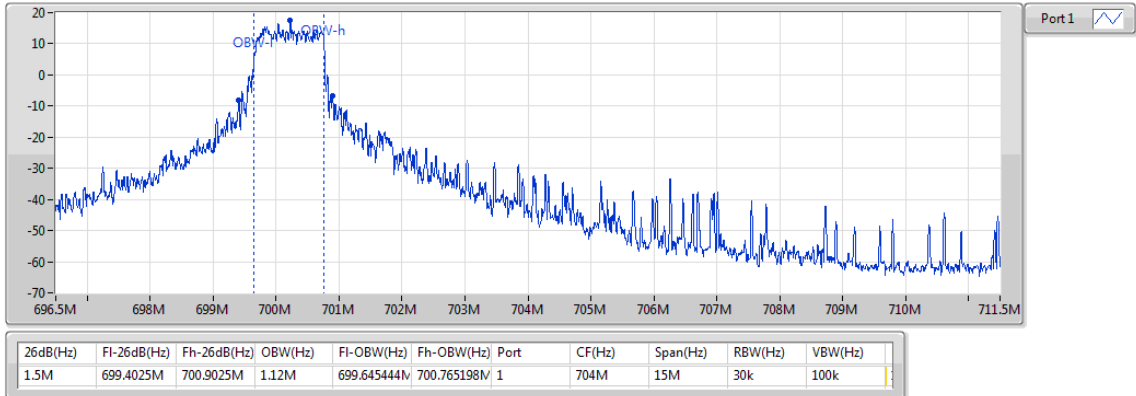
Band 12_LTE-M1_10MHz_Nss1_1TX
711MHz_QPSK_RB 6,#RB 0,NB 7

EBW



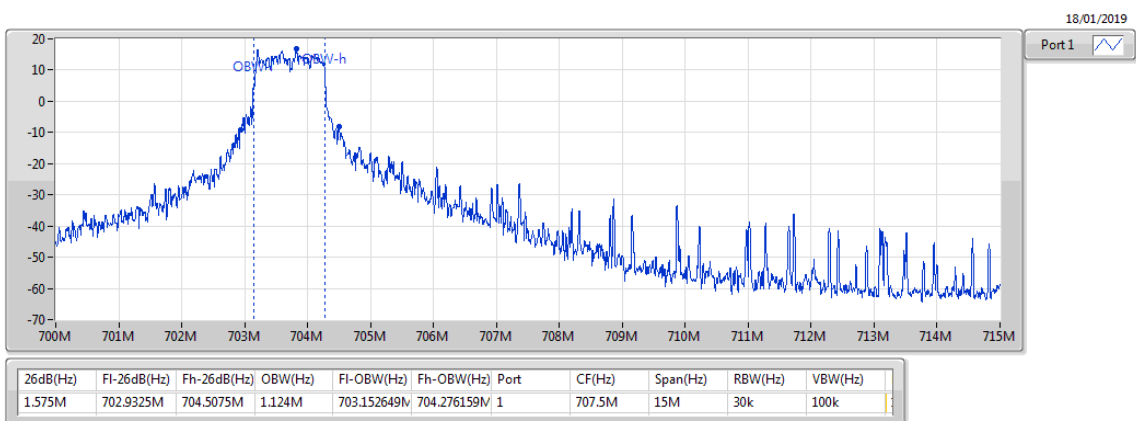
Band 12_LTE-M1_10MHz_Nss1_1TX
704MHz_16QAM_RB 6,#RB 0,NB 0

EBW



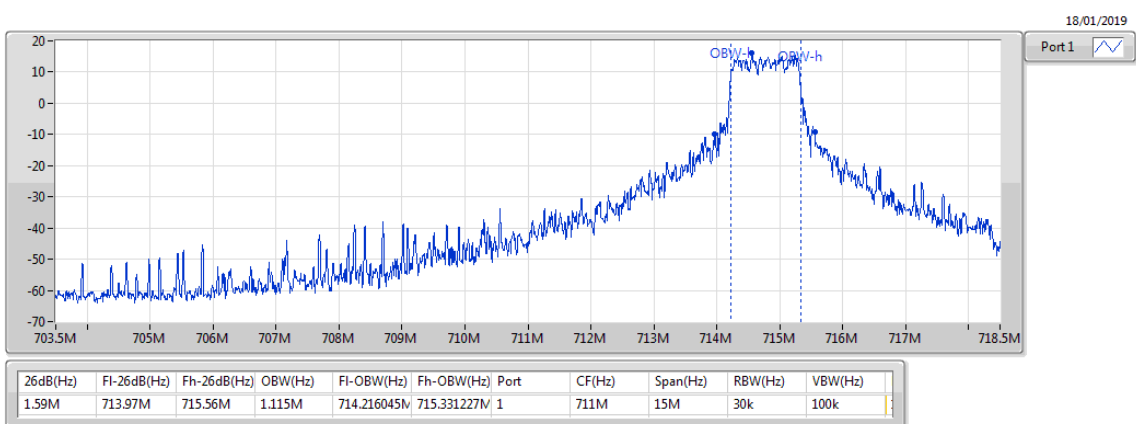
Band 12_LTE-M1_10MHz_Nss1_1TX
707.5MHz_16QAM_RB 6,#RB 0,NB 0

EBW



Band 12_LTE-M1_10MHz_Nss1_1TX
711MHz_16QAM_RB 6,#RB 0,NB 7

EBW



Summary of LTE Band 13

Mode	Max-OBW	ITU-Code	Min-OBW
	(Hz)		(Hz)
Band 13_LTE-M1_5MHz_Nss1_1TX_RB 6	1.11M	1M11	1.087M
Band 13_LTE-M1_10MHz_Nss1_1TX_RB 6	1.127M	1M13	1.118M

Min-N dB = Minimum 26dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

Result

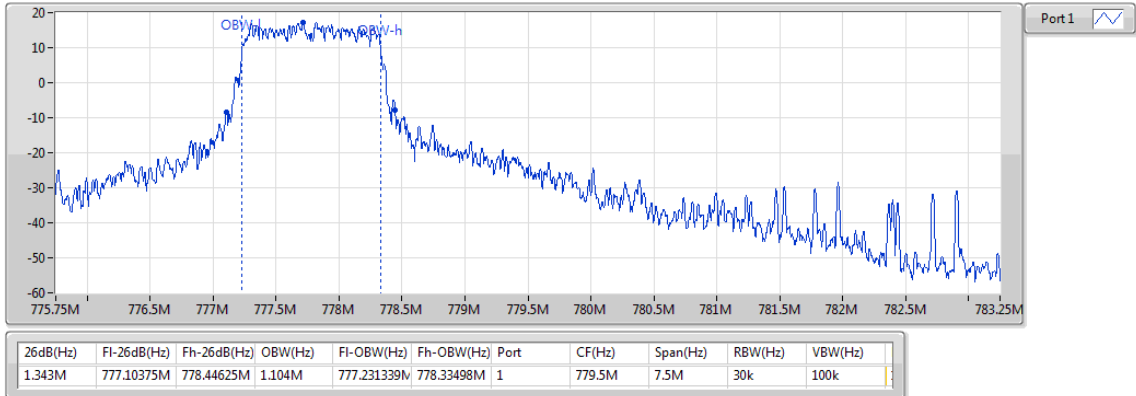
Mode	Result	Limit (Hz)	Port 1-NdB (Hz)	Port 1-OBW (Hz)
LTE-M1_5MHz_Nss1_1TX	-	-	-	-
779.5MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.343M	1.104M
782MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.444M	1.094M
784.5MHz_QPSK_RB 6,#RB 0,NB 3	Pass	Inf	1.436M	1.087M
779.5MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.53M	1.109M
782MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.339M	1.11M
784.5MHz_16QAM_RB 6,#RB 0,NB 3	Pass	Inf	1.436M	1.108M
LTE-M1_10MHz_Nss1_1TX	-	-	-	-
782MHz_QPSK_RB 6,#RB 0,NB 0	Pass	Inf	1.635M	1.118M
782MHz_16QAM_RB 6,#RB 0,NB 0	Pass	Inf	1.478M	1.127M

Port X-N dB = Port X 26dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

Band 13_LTE-M1_5MHz_Nss1_1TX

EBW

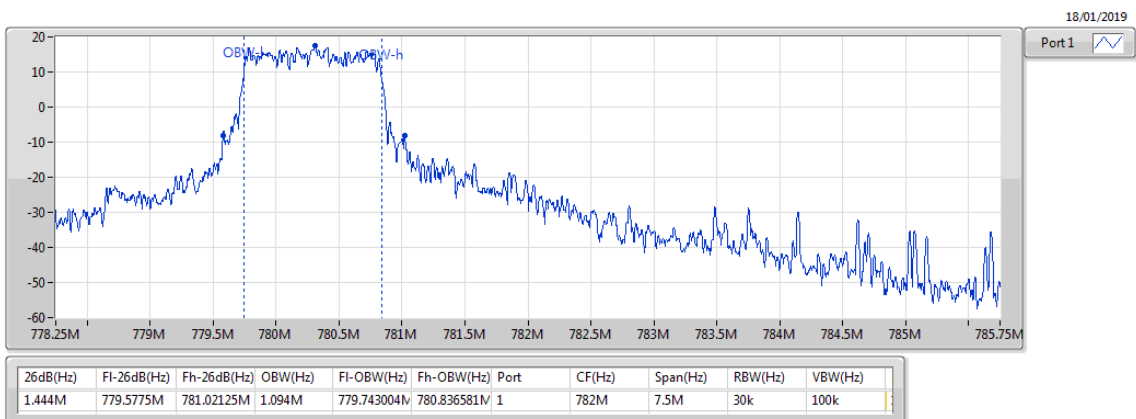
779.5MHz_QPSK_RB 6,#RB 0,NB 0



Band 13_LTE-M1_5MHz_Nss1_1TX

EBW

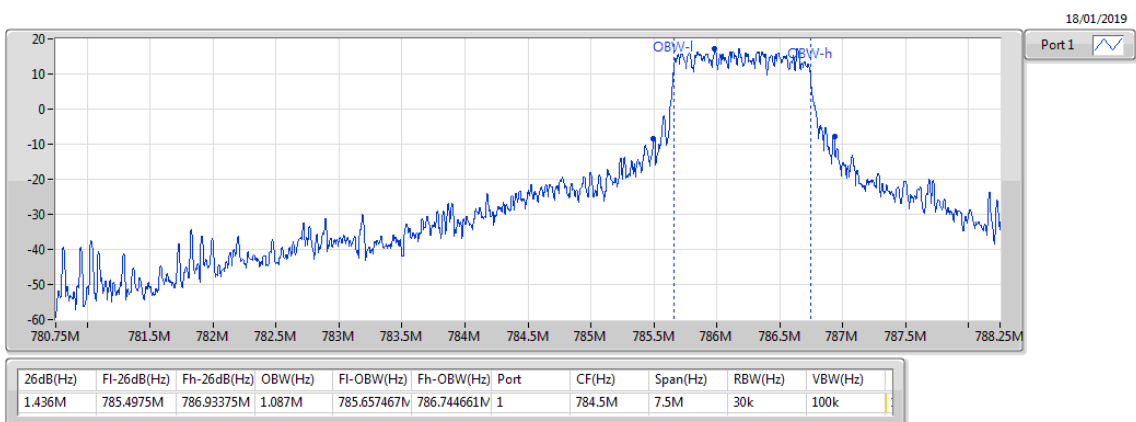
782MHz_QPSK_RB 6,#RB 0,NB 0



Band 13_LTE-M1_5MHz_Nss1_1TX

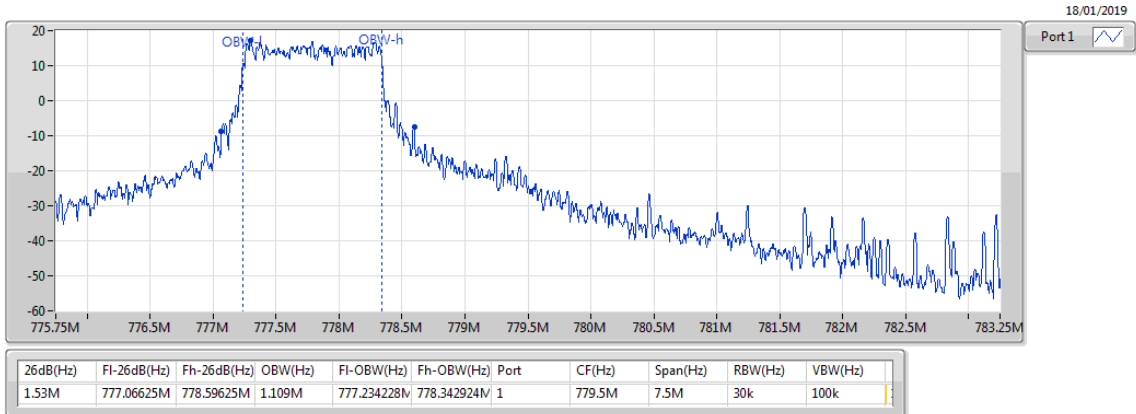
EBW

784.5MHz_QPSK_RB 6,#RB 0,NB 3



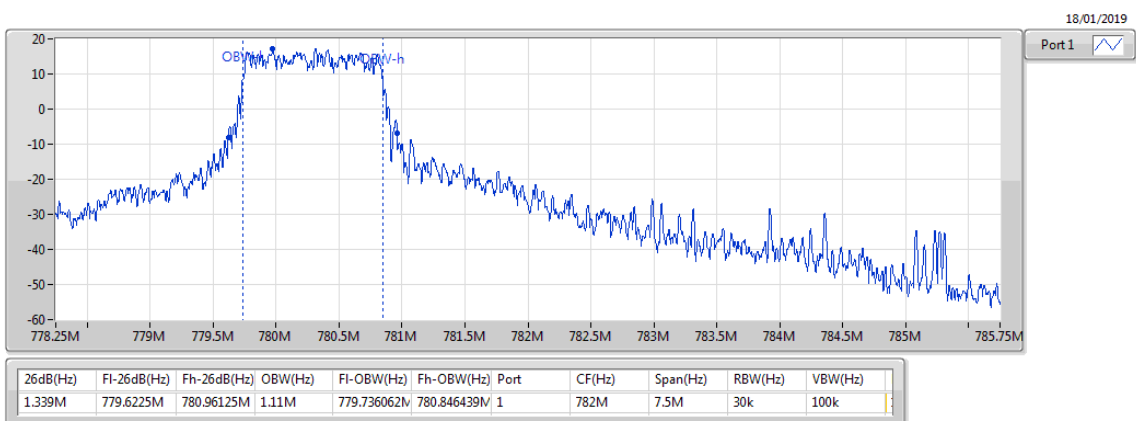
Band 13_LTE-M1_5MHz_Nss1_1TX
779.5MHz_16QAM_RB 6,#RB 0,NB 0

EBW



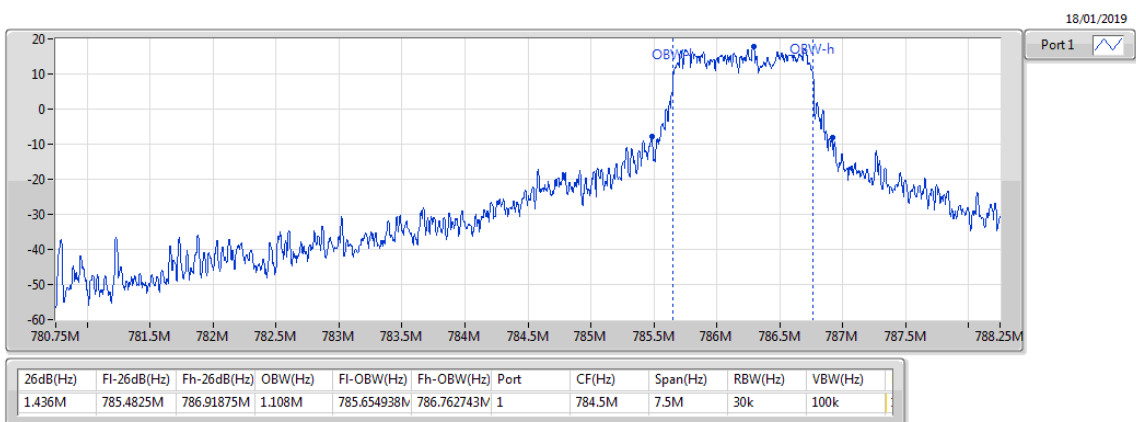
Band 13_LTE-M1_5MHz_Nss1_1TX
782MHz_16QAM_RB 6,#RB 0,NB 0

EBW



Band 13_LTE-M1_5MHz_Nss1_1TX
784.5MHz_16QAM_RB 6,#RB 0,NB 3

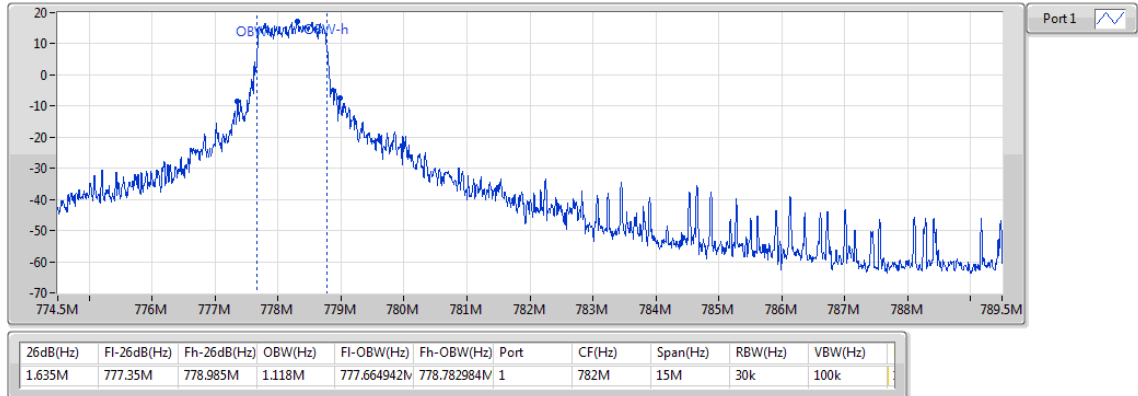
EBW



Band 13_LTE-M1_10MHz_Nss1_1TX

EBW

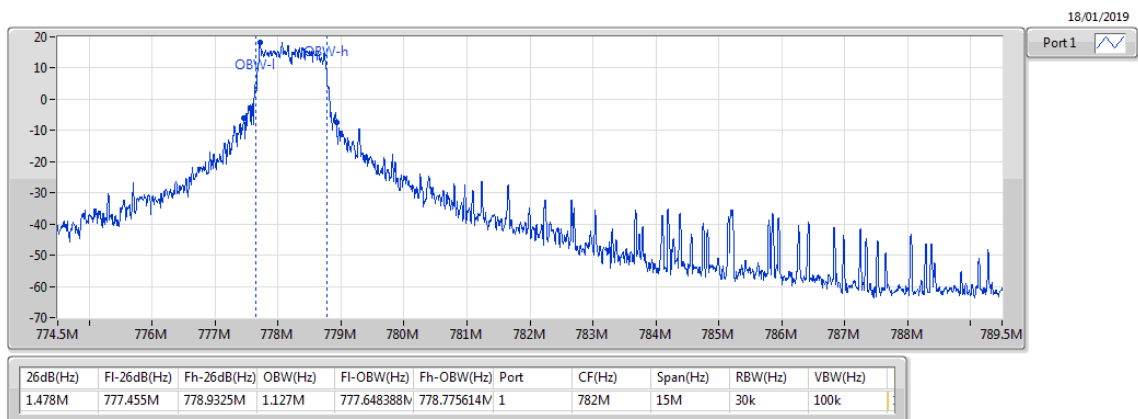
782MHz_QPSK_RB 6,#RB 0,NB 0



Band 13_LTE-M1_10MHz_Nss1_1TX

EBW

782MHz_16QAM_RB 6,#RB 0,NB 0



3.5 Frequency Stability

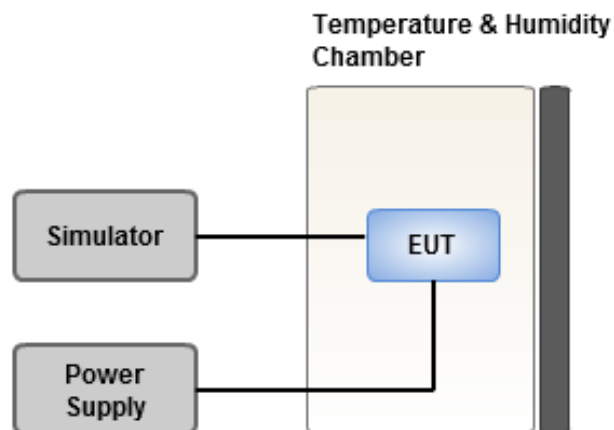
3.5.1 Limit of Frequency Stability

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.5.2 Test Procedures

1. EUT was placed at temperature chamber and connected to an external power supply.
2. Temperature and voltage condition shall be tested to confirm frequency stability.
3. The test shall be performed under normal and extreme condition for temperature and voltage.
4. Tem Link up EUT and simulator. Confirm frequency drift value of simulator and record it.

3.5.3 Test Setup



3.5.4 Test Result of Frequency Stability

LTE Band: 12	Frequency Drift (ppm)			
Temperature (°C)	CB: 1.4MHz	CB: 3MHz	CB: 5MHz	CB: 10MHz
T20°CVmax	-0.014	-0.013	-0.013	-0.013
T20°CVmin	-0.013	-0.013	-0.013	-0.13
T75°CVnom	-0.046	-0.043	-0.045	-0.044
T70°CVnom	-0.041	-0.042	-0.044	-0.043
T60°CVnom	-0.038	-0.037	-0.039	-0.036
T50°CVnom	-0.033	-0.034	-0.036	-0.031
T40°CVnom	-0.027	-0.025	-0.028	-0.025
T30°CVnom	-0.015	-0.016	-0.016	-0.014
T20°CVnom	-0.014	-0.013	-0.012	-0.012
T10°CVnom	-0.013	-0.012	-0.012	-0.012
T0°CVnom	-0.013	-0.012	-0.012	-0.012
T-10°CVnom	-0.012	-0.011	-0.011	-0.011
T-20°CVnom	-0.011	-0.01	-0.01	-0.011
T-30°CVnom	-0.011	-0.01	-0.01	-0.011
T-35°CVnom	-0.009	-0.01	-0.01	-0.01
Vnom [V]: 3.6	Vmax [V]: 3.7		Vmin [V]: 2.45	
Tnom [°C]: 20	Tmax [°C]: 75		Tmin [°C]: -35	

LTE Band: 13	Frequency Drift (ppm)	
Temperature (°C)	CB: 5MHz	CB: 10MHz
T20°CVmax	-0.013	-0.012
T20°CVmin	-0.013	-0.013
T75°CVnom	-0.043	-0.041
T70°CVnom	-0.04	-0.038
T60°CVnom	-0.037	-0.035
T50°CVnom	-0.031	-0.028
T40°CVnom	-0.025	-0.027
T30°CVnom	-0.011	-0.016
T20°CVnom	-0.013	-0.013
T10°CVnom	-0.012	-0.013
T0°CVnom	-0.012	-0.012
T-10°CVnom	-0.012	-0.012
T-20°CVnom	-0.009	-0.011
T-30°CVnom	-0.008	-0.009
T-35°CVnom	-0.008	-0.008
Vnom [V]: 3.6	Vmax [V]: 3.7	Vmin [V]: 2.45
Tnom [°C]: 20	Tmax [°C]: 75	Tmin [°C]: -35

3.6 Peak to Average Ratio

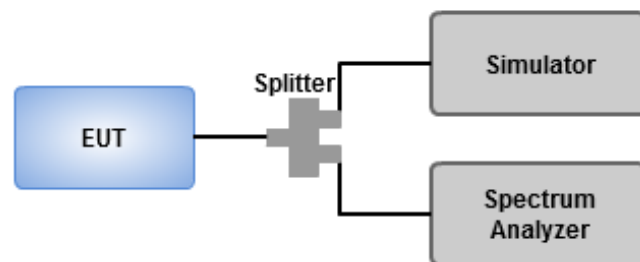
3.6.1 Limit of Peak to Average Ratio

The Peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.6.2 Test Procedures

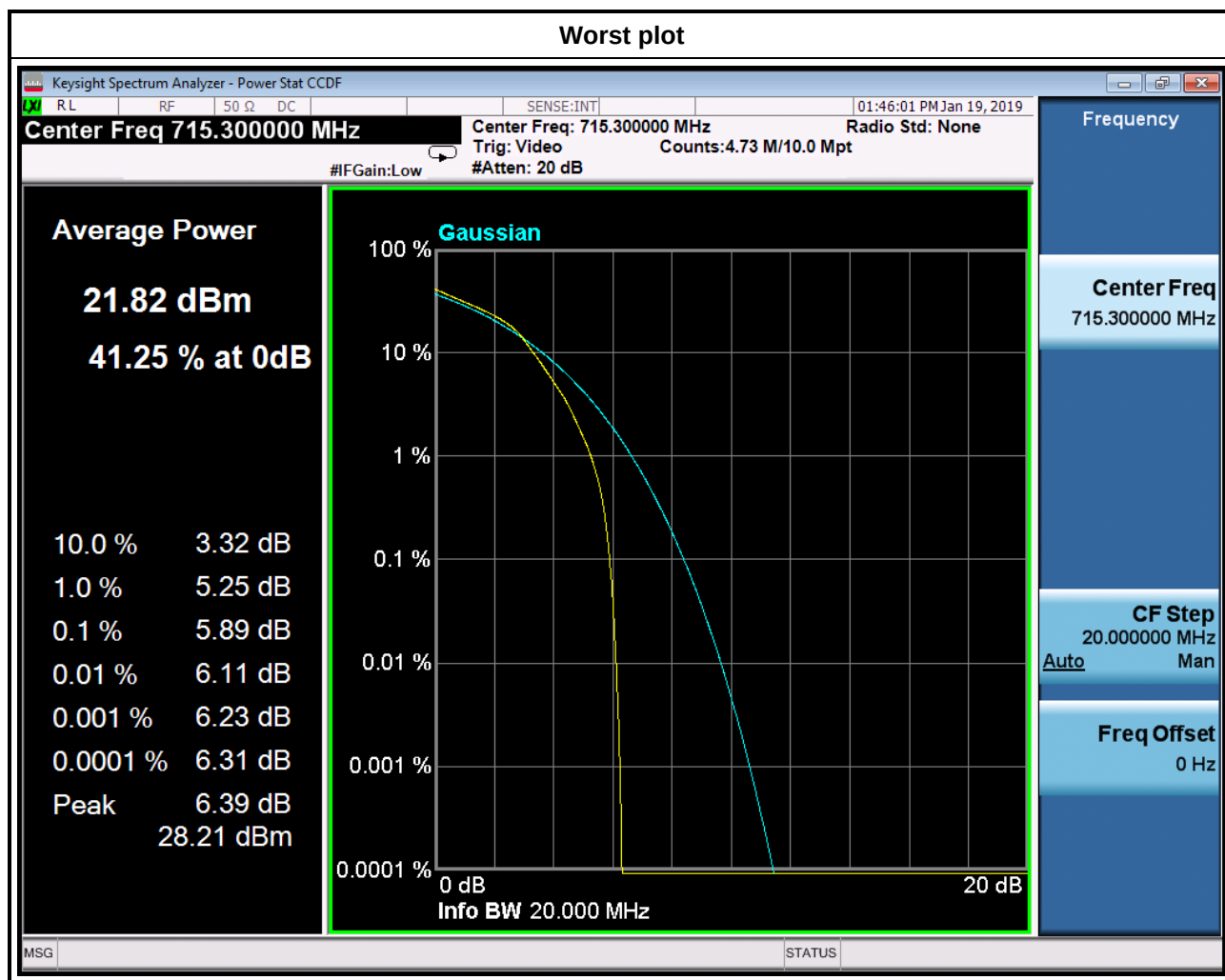
1. Set the number of counts to a value that stabilizes the measured CCDF curve.
2. Set the measurement interval to 1 ms.
3. Record the maximum PAPR level associated with a probability of 0.1%.

3.6.3 Test Setup

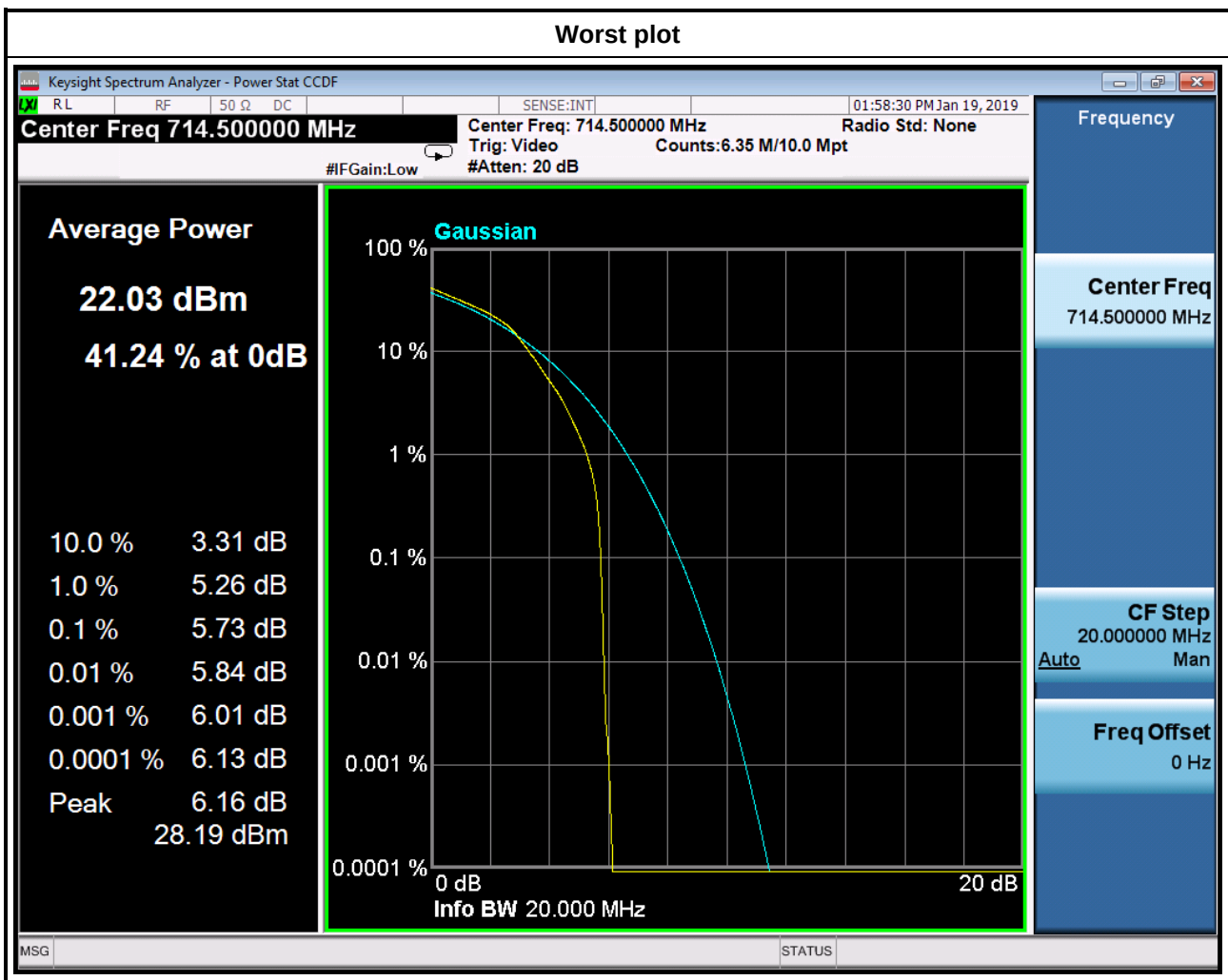


3.6.4 Test Result of Peak to Average Ratio

Mode	Channel Bandwidth (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average Ratio (dB)
LTE Band 12	1.4	QPSK	23017	699.7	5.38
LTE Band 12	1.4	QPSK	23095	707.5	5.48
LTE Band 12	1.4	QPSK	23173	715.3	5.52
LTE Band 12	1.4	16QAM	23017	699.7	5.88
LTE Band 12	1.4	16QAM	23095	707.5	5.88
LTE Band 12	1.4	16QAM	23173	715.3	5.89



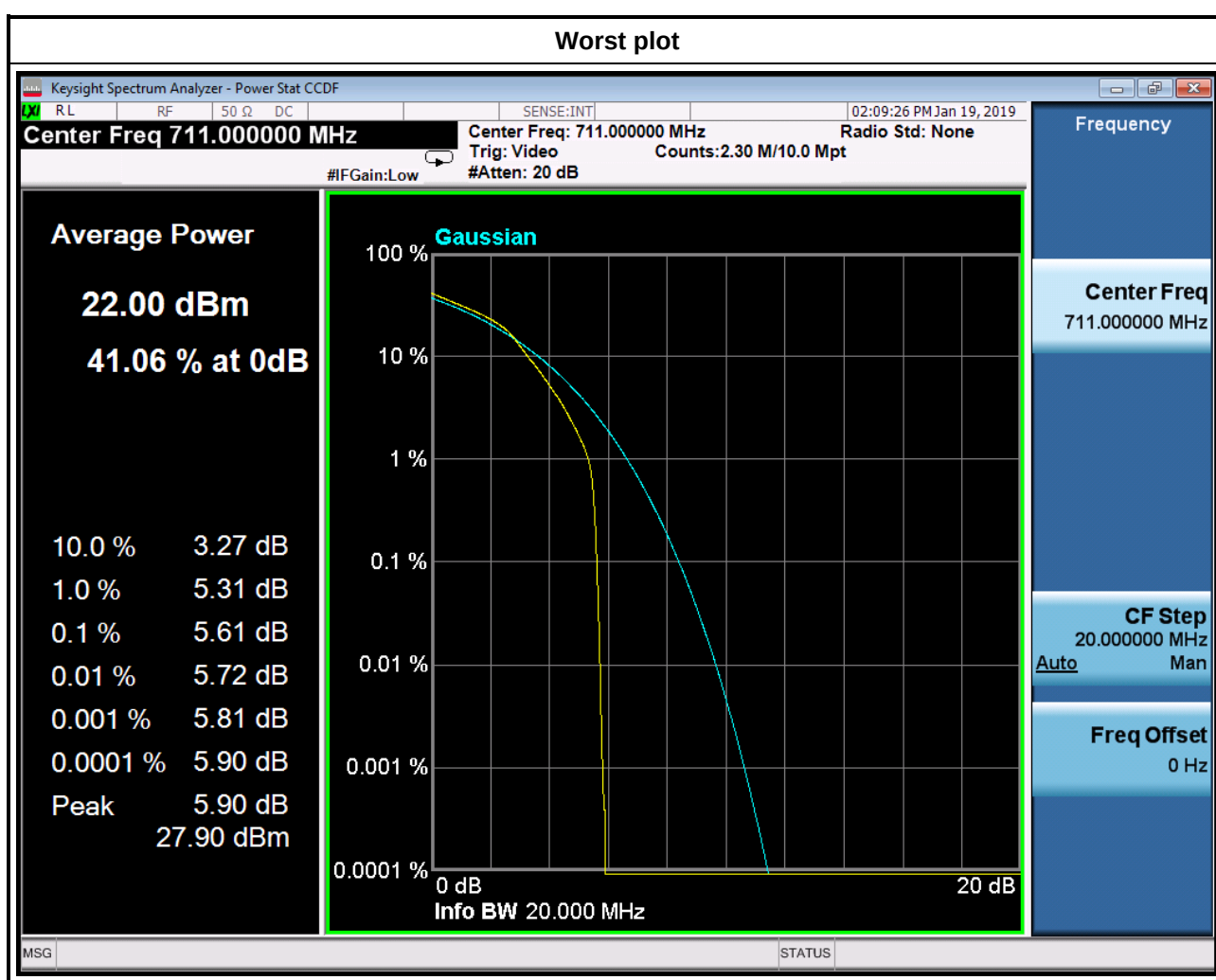
Mode	Channel Bandwidth (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average Ratio (dB)
LTE Band 12	3	QPSK	23025	700.5	5.07
LTE Band 12	3	QPSK	23095	707.5	5.18
LTE Band 12	3	QPSK	23165	714.5	5.21
LTE Band 12	3	16QAM	23025	700.5	5.65
LTE Band 12	3	16QAM	23095	707.5	5.68
LTE Band 12	3	16QAM	23165	714.5	5.73



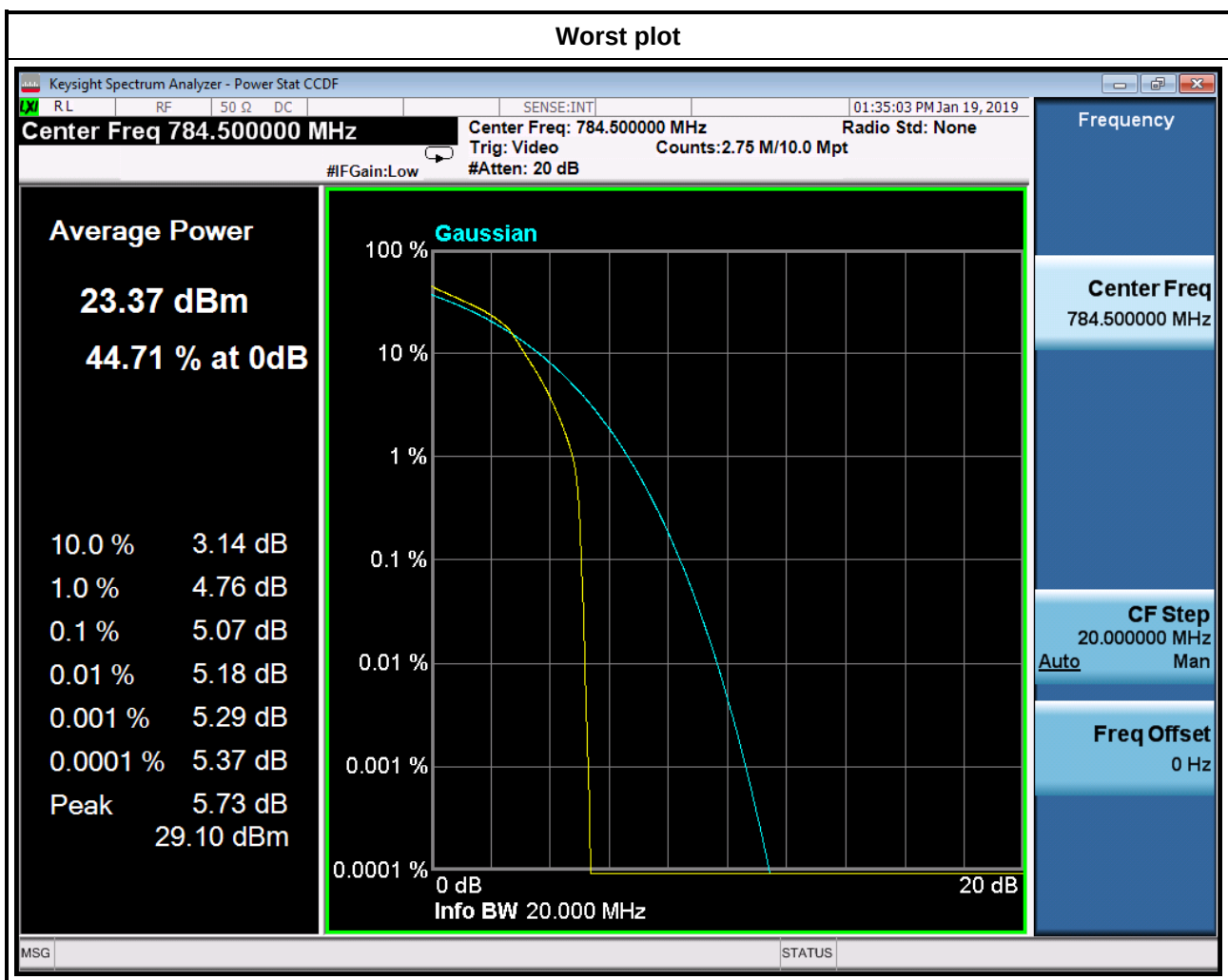
Mode	Channel Bandwidth (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average Ratio (dB)
LTE Band 12	5	QPSK	23035	701.5	5.05
LTE Band 12	5	QPSK	23095	707.5	4.99
LTE Band 12	5	QPSK	23155	713.5	5.20
LTE Band 12	5	16QAM	23035	701.5	5.64
LTE Band 12	5	16QAM	23095	707.5	5.51
LTE Band 12	5	16QAM	23155	713.5	5.61



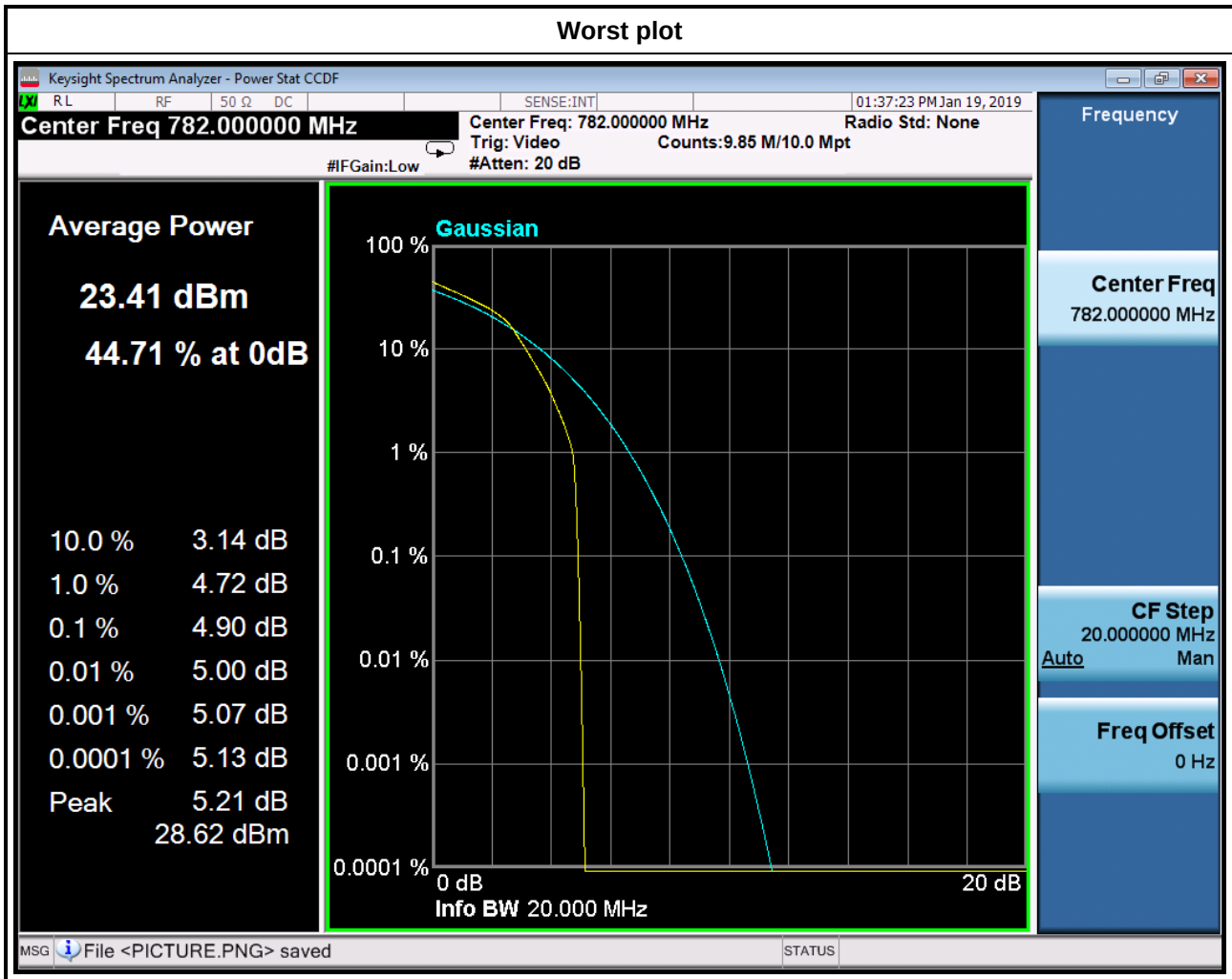
Mode	Channel Bandwidth (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average Ratio (dB)
LTE Band 12	10	QPSK	23060	704.0	4.97
LTE Band 12	10	QPSK	23095	707.5	4.87
LTE Band 12	10	QPSK	23130	711.0	4.99
LTE Band 12	10	16QAM	23060	704.0	5.52
LTE Band 12	10	16QAM	23095	707.5	5.52
LTE Band 12	10	16QAM	23130	711.0	5.61



Mode	Channel Bandwidth (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average Ratio (dB)
LTE Band 13	5	QPSK	23205	779.5	4.62
LTE Band 13	5	QPSK	23230	782.0	4.47
LTE Band 13	5	QPSK	23255	784.5	4.57
LTE Band 13	5	16QAM	23205	779.5	5.04
LTE Band 13	5	16QAM	23230	782.0	4.93
LTE Band 13	5	16QAM	23255	784.5	5.07



Mode	Channel Bandwidth (MHz)	Modulation	Channel	Frequency (MHz)	Peak to Average Ratio (dB)
LTE Band 13	10	QPSK	23230	782.0	4.43
LTE Band 13	10	16QAM	23230	782.0	4.90



4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

Linkou

Tel: 886-2-2601-1640

No. 30-2, Ding Fwu Tsuen, Lin
Kou District, New Taipei City,
Taiwan, R.O.C.

Kwei Shan

Tel: 886-3-271-8666

No. 3-1, Lane 6, Wen San 3rd St.,
Kwei Shan District, Tao Yuan City
333, Taiwan, R.O.C.

Kwei Shan Site II

Tel: 886-3-271-8640

No. 14-1, Lane 19, Wen San 3rd
St., Kwei Shan District, Tao Yuan
City 333, Taiwan, R.O.C.

If you have any suggestion, please feel free to contact us as below information.

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Email: ICC_Service@icertifi.com.tw

==END==