

**Antenna 4:**

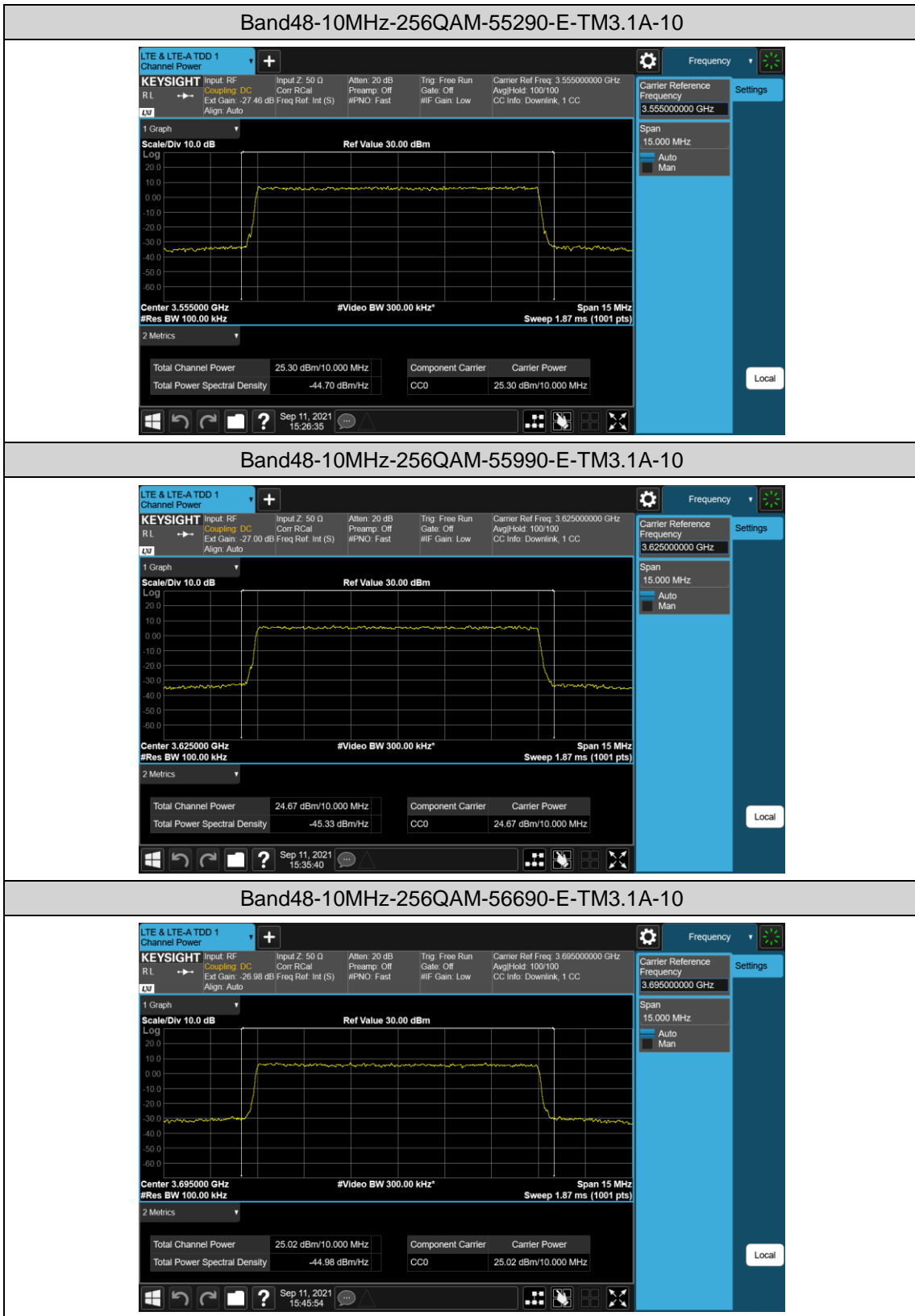
**Appendix A: Effective (Isotropic) Radiated Power Output Data**

**Test Result**

Band	Bandwidth	Modulation	Channel	Mode	Power (dBm/10MHz)
Band48	10MHz	256QAM	55290	E-TM3.1A	25.30
Band48	10MHz	256QAM	55990	E-TM3.1A	24.67
Band48	10MHz	256QAM	56690	E-TM3.1A	25.02
Band48	10MHz	QPSK	55290	E-TM1.1	25.52
Band48	10MHz	QPSK	55990	E-TM1.1	24.86
Band48	10MHz	QPSK	56690	E-TM1.1	24.95
Band48	20MHz	256QAM	55340	E-TM3.1A	23.40
Band48	20MHz	256QAM	55990	E-TM3.1A	23.11
Band48	20MHz	256QAM	56640	E-TM3.1A	22.99
Band48	20MHz	QPSK	55340	E-TM1.1	22.83
Band48	20MHz	QPSK	55990	E-TM1.1	22.76
Band48	20MHz	QPSK	56640	E-TM1.1	22.92

Band	Bandwidth	Modulation	Channel	Mode	Power (dBm/20MHz)
Band48	20MHz	256QAM	55340	E-TM3.1A	25.78
Band48	20MHz	256QAM	55990	E-TM3.1A	25.33
Band48	20MHz	256QAM	56640	E-TM3.1A	25.34
Band48	20MHz	QPSK	55340	E-TM1.1	25.35
Band48	20MHz	QPSK	55990	E-TM1.1	25.48
Band48	20MHz	QPSK	56640	E-TM1.1	25.57

Test Graphs



Band48-10MHz-QPSK-55290-E-TM1.1-10



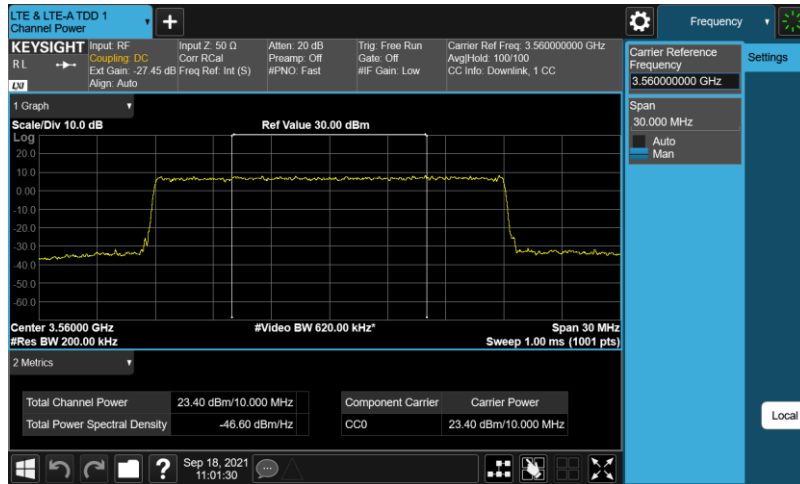
Band48-10MHz-QPSK-55990-E-TM1.1-10



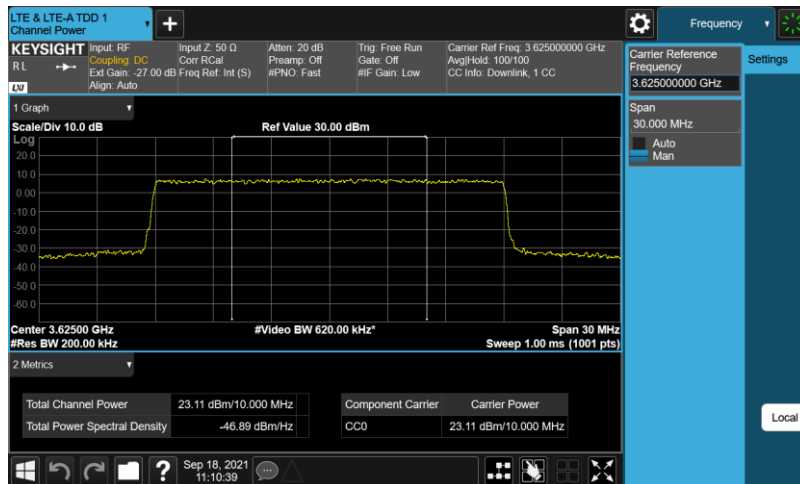
Band48-10MHz-QPSK-56690-E-TM1.1-10



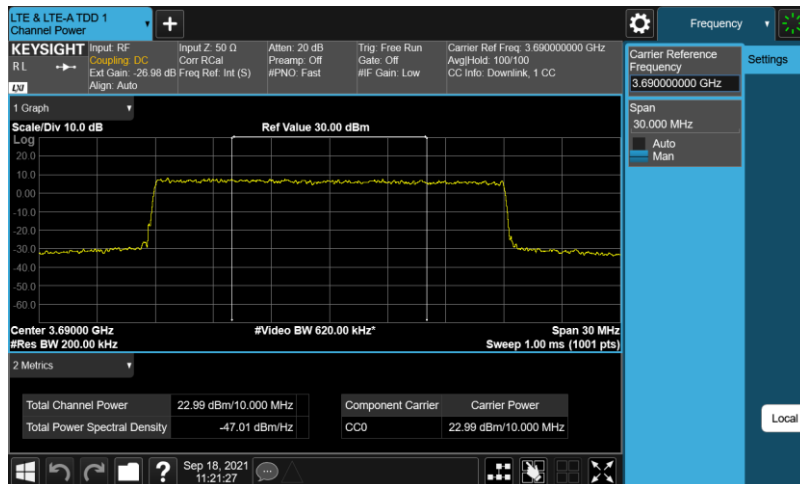
Band48-20MHz-256QAM-55340-E-TM3.1A-10



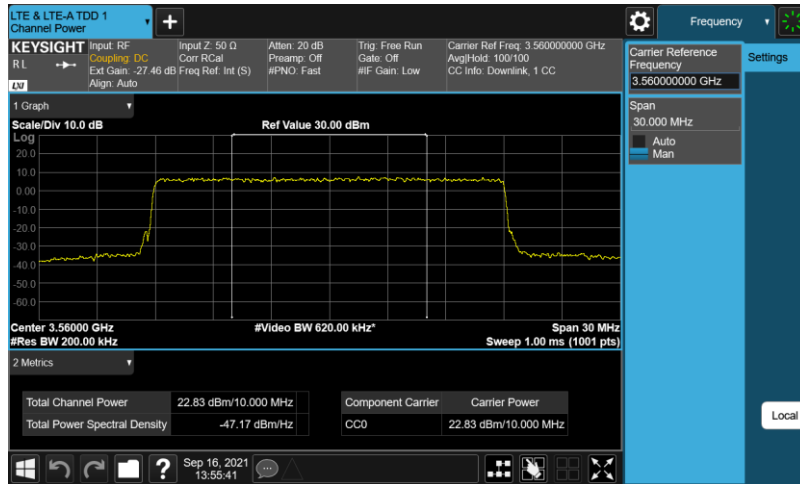
Band48-20MHz-256QAM-55990-E-TM3.1A-10



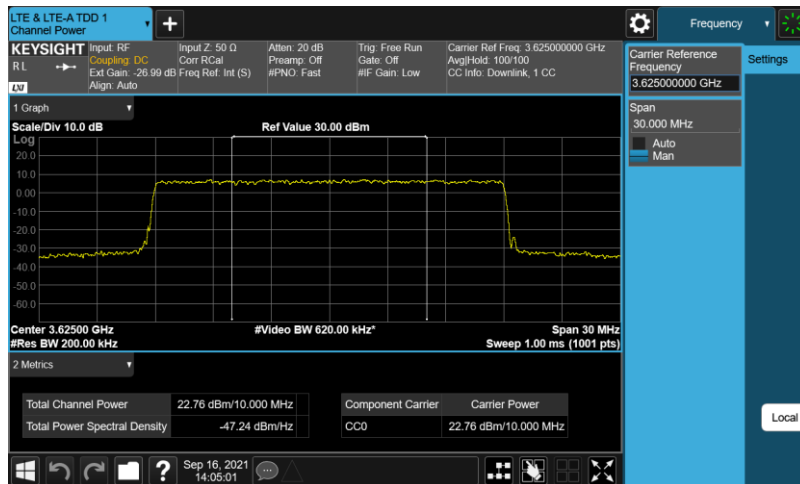
Band48-20MHz-256QAM-56640-E-TM3.1A-10



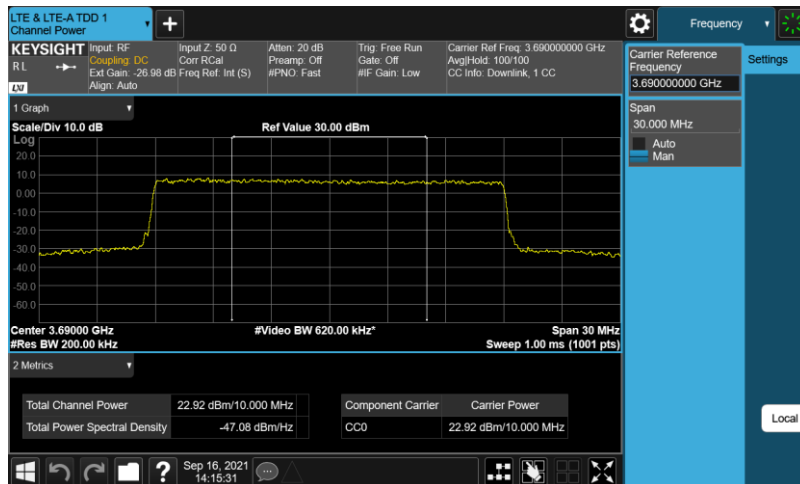
Band48-20MHz-QPSK-55340-E-TM1.1-10



Band48-20MHz-QPSK-55990-E-TM1.1-10



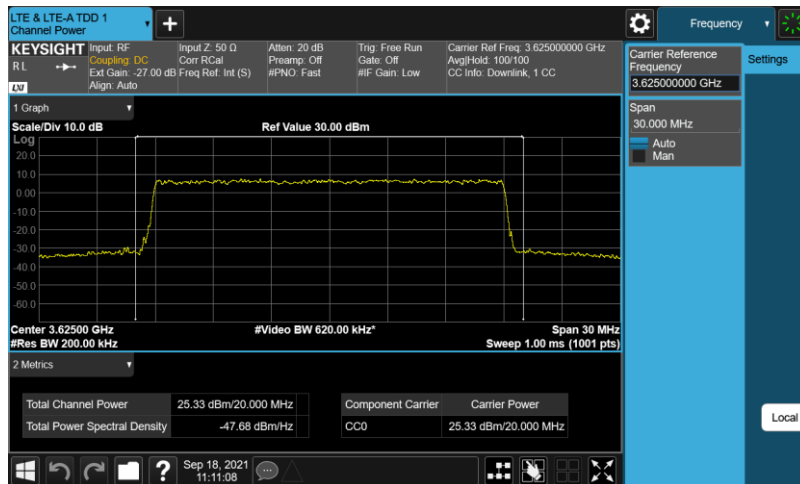
Band48-20MHz-QPSK-56640-E-TM1.1-10



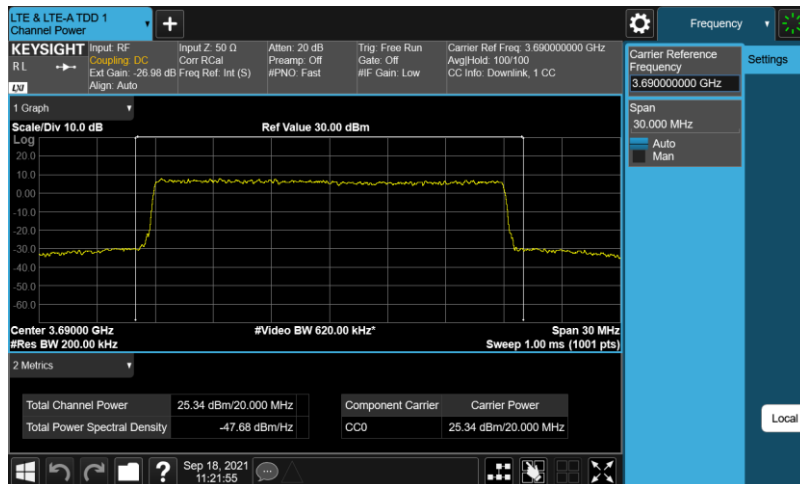
Band48-20MHz-256QAM-55340-E-TM3.1A-20



Band48-20MHz-256QAM-55990-E-TM3.1A-20



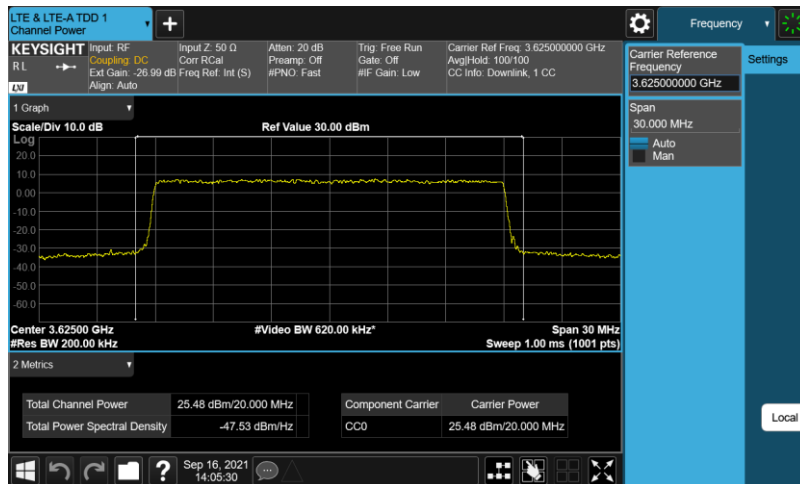
Band48-20MHz-256QAM-56640-E-TM3.1A-20



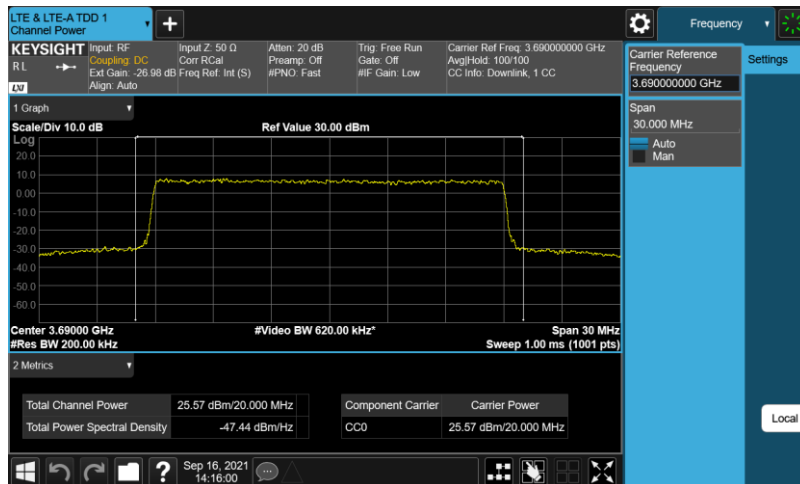
Band48-20MHz-QPSK-55340-E-TM1.1-20



Band48-20MHz-QPSK-55990-E-TM1.1-20



Band48-20MHz-QPSK-56640-E-TM1.1-20



## Appendix B: Power Spectral Density

### Test Result

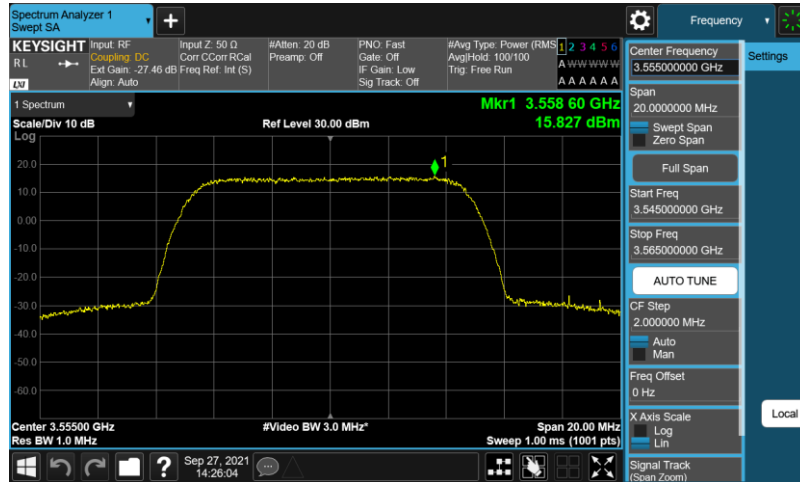
Band	Bandwidth	Modulation	Channel	Mode	PSD (dBm/MHz)
Band48	10MHz	256QAM	55290	E-TM3.1A	15.71
Band48	10MHz	256QAM	55990	E-TM3.1A	15.52
Band48	10MHz	256QAM	56690	E-TM3.1A	15.22
Band48	10MHz	QPSK	55290	E-TM1.1	15.83
Band48	10MHz	QPSK	55990	E-TM1.1	15.25
Band48	10MHz	QPSK	56690	E-TM1.1	15.45
Band48	20MHz	256QAM	55340	E-TM3.1A	12.92
Band48	20MHz	256QAM	55990	E-TM3.1A	12.75
Band48	20MHz	256QAM	56640	E-TM3.1A	12.96
Band48	20MHz	QPSK	55340	E-TM1.1	12.98
Band48	20MHz	QPSK	55990	E-TM1.1	13.23
Band48	20MHz	QPSK	56640	E-TM1.1	13.17



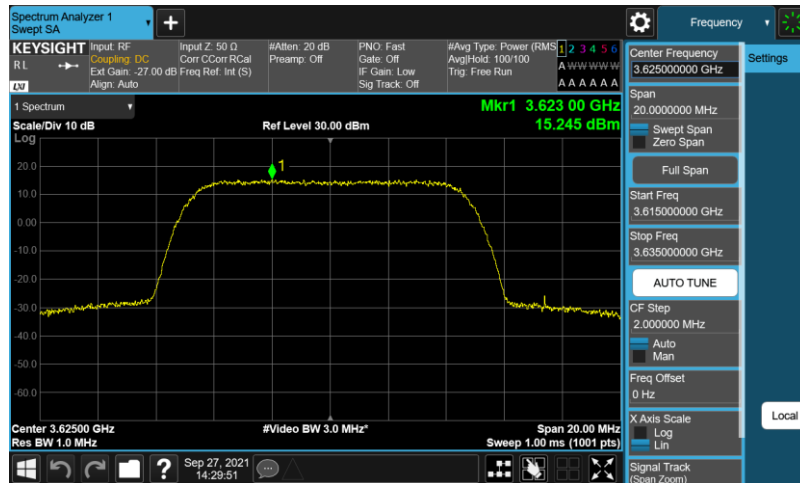
Test Graphs



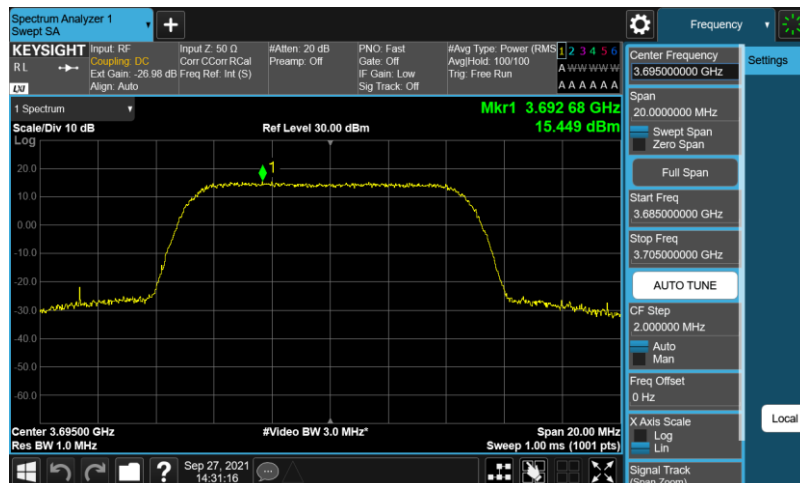
Band48-10MHz-QPSK-55290-E-TM1.1



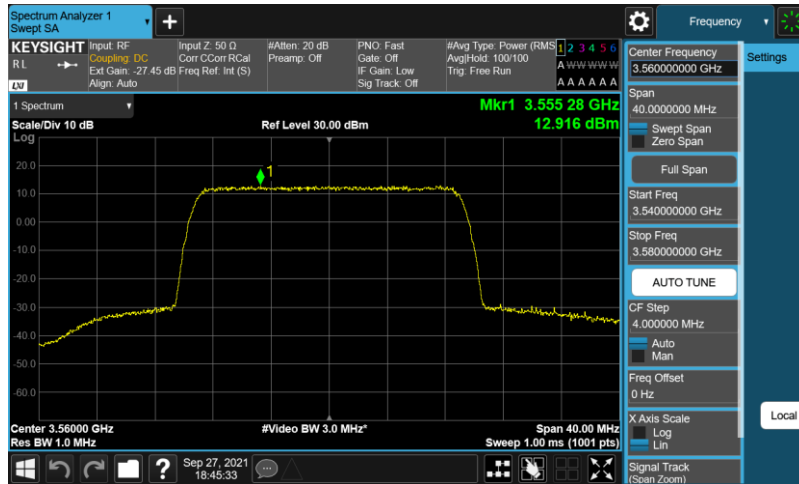
Band48-10MHz-QPSK-55990-E-TM1.1



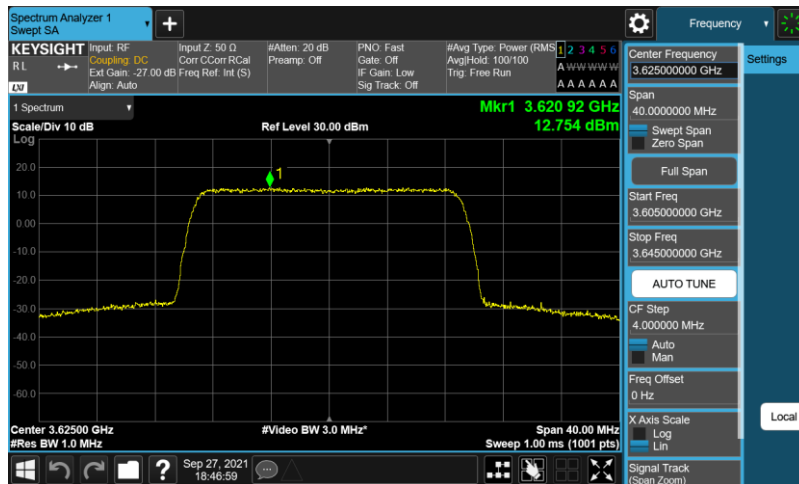
Band48-10MHz-QPSK-56690-E-TM1.1



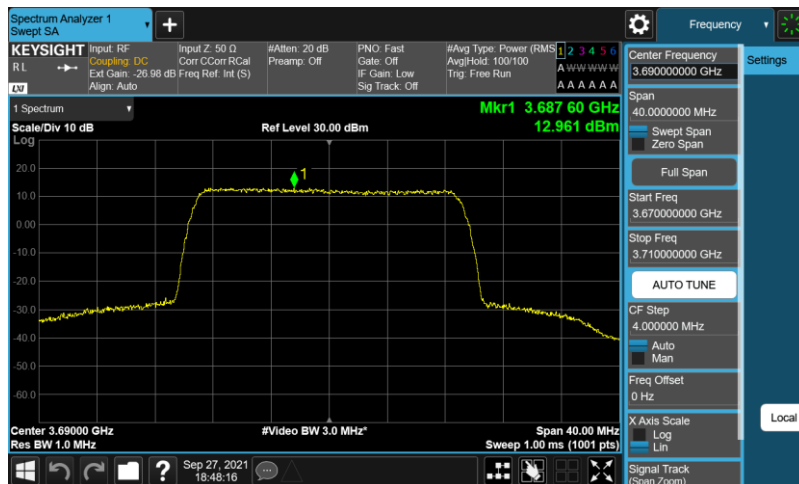
Band48-20MHz-256QAM-55340-E-TM3.1A



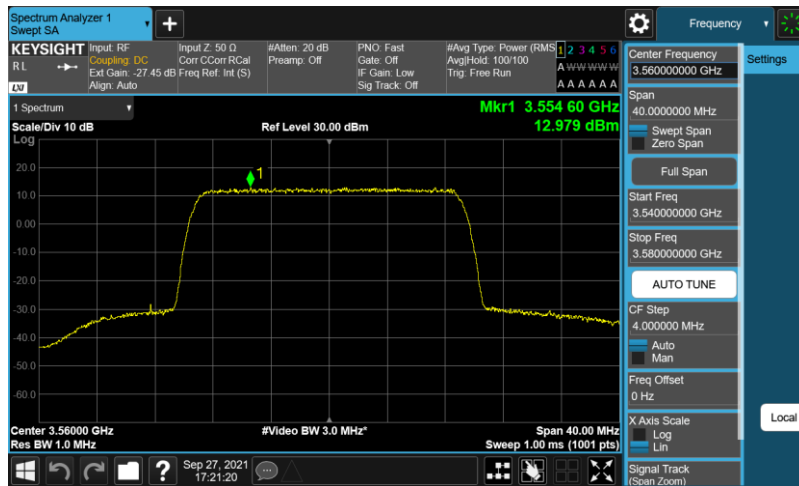
Band48-20MHz-256QAM-55990-E-TM3.1A



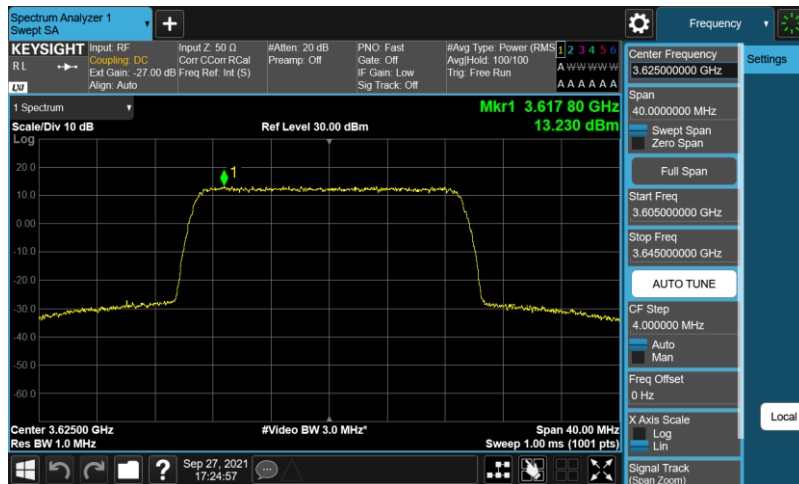
Band48-20MHz-256QAM-56640-E-TM3.1A



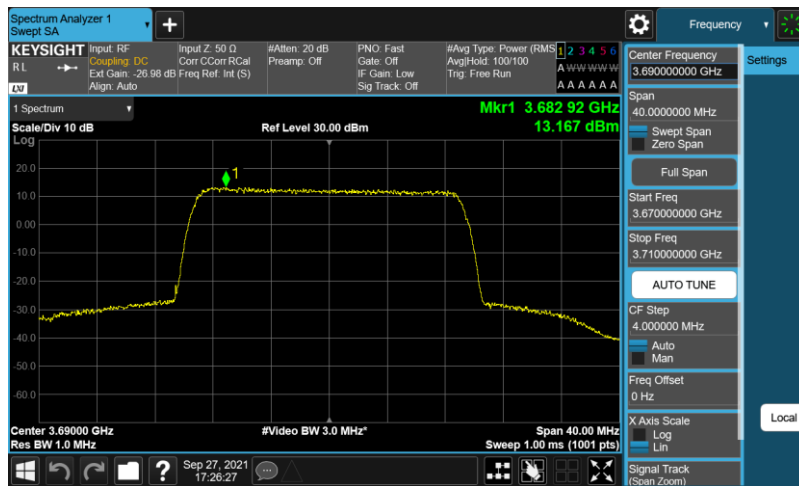
Band48-20MHz-QPSK-55340-E-TM1.1



Band48-20MHz-QPSK-55990-E-TM1.1



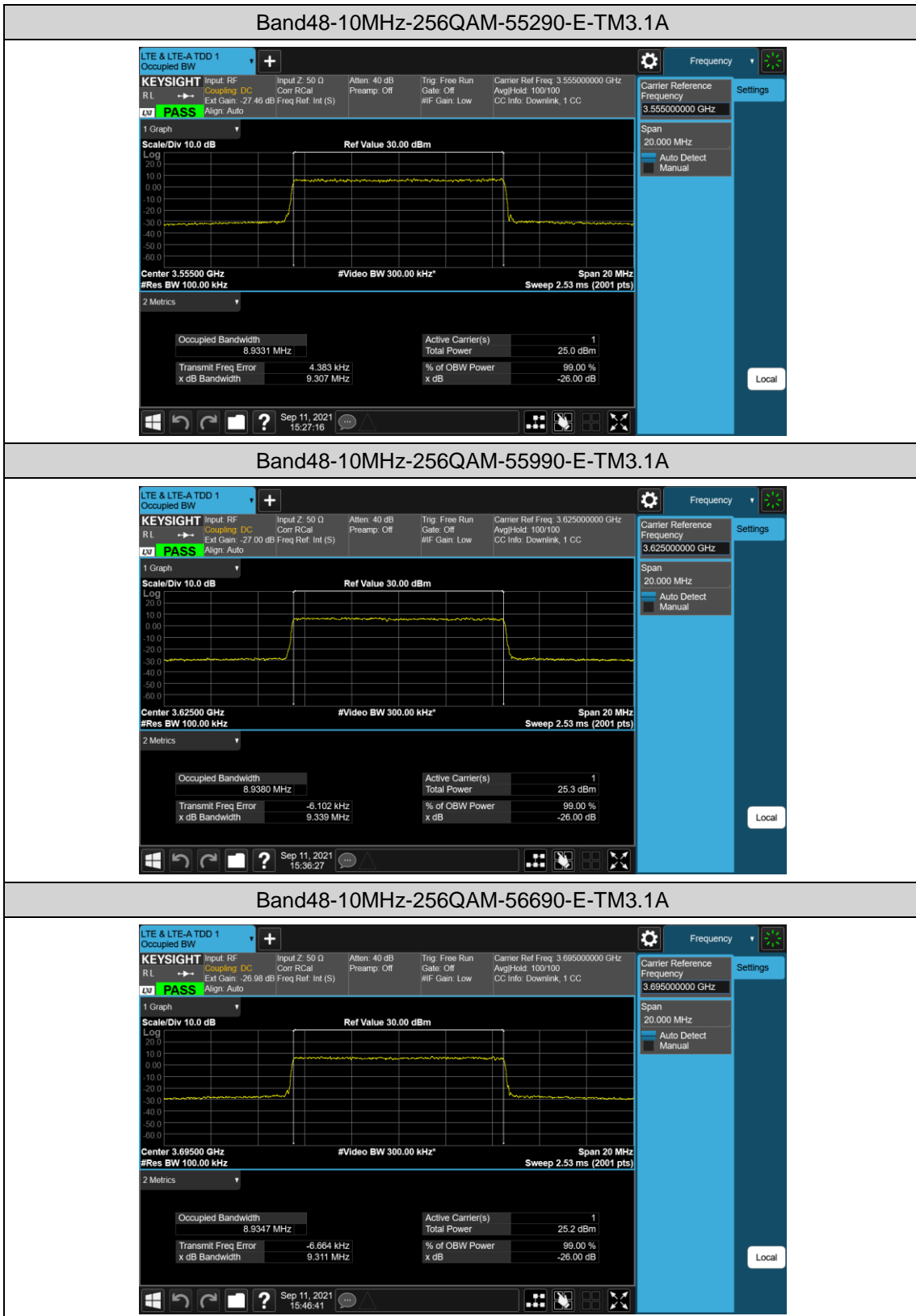
Band48-20MHz-QPSK-56640-E-TM1.1



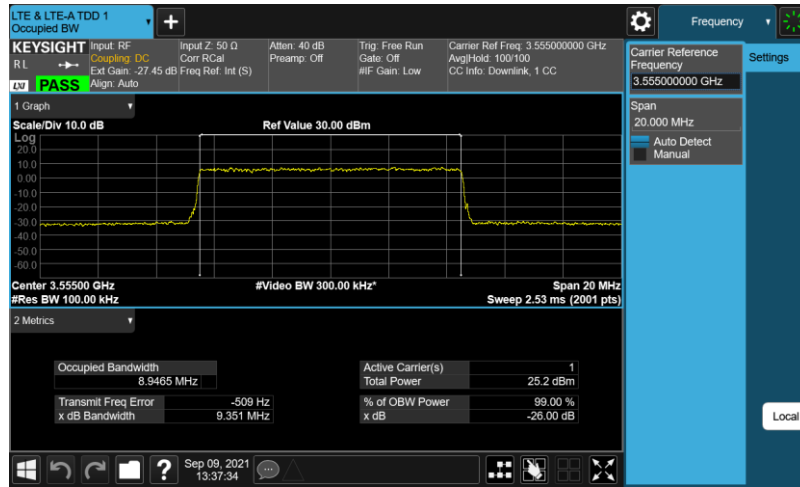
**Appendix C: 26dB Bandwidth and Occupied Bandwidth****Test Result**

Band	Bandwidth	Modulation	Channel	Mode	99%(MHz)	EBW(MHz)
Band48	10MHz	256QAM	55290	E-TM3.1A	8.9331	9.307
Band48	10MHz	256QAM	55990	E-TM3.1A	8.9380	9.339
Band48	10MHz	256QAM	56690	E-TM3.1A	8.9347	9.311
Band48	10MHz	QPSK	55290	E-TM1.1	8.9465	9.351
Band48	10MHz	QPSK	55990	E-TM1.1	8.9382	9.319
Band48	10MHz	QPSK	56690	E-TM1.1	8.9323	9.324
Band48	20MHz	256QAM	55340	E-TM3.1A	17.863	18.51
Band48	20MHz	256QAM	55990	E-TM3.1A	17.869	18.66
Band48	20MHz	256QAM	56640	E-TM3.1A	17.850	18.54
Band48	20MHz	QPSK	55340	E-TM1.1	17.855	18.51
Band48	20MHz	QPSK	55990	E-TM1.1	17.870	18.50
Band48	20MHz	QPSK	56640	E-TM1.1	17.846	18.52

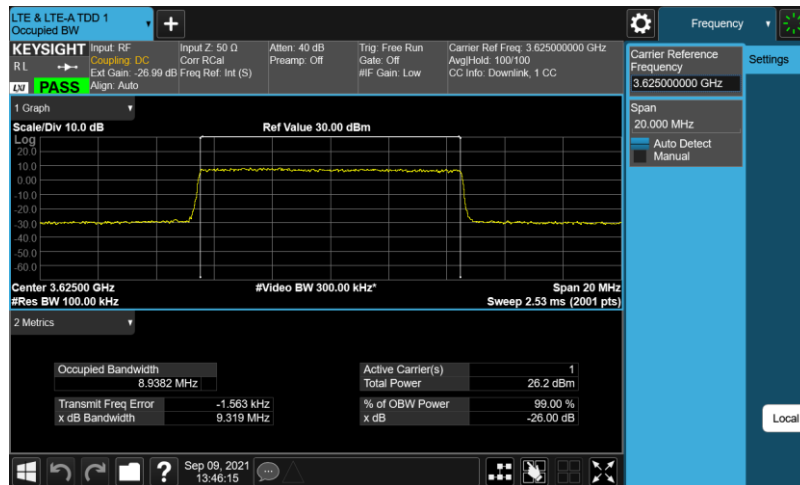
Test Graphs



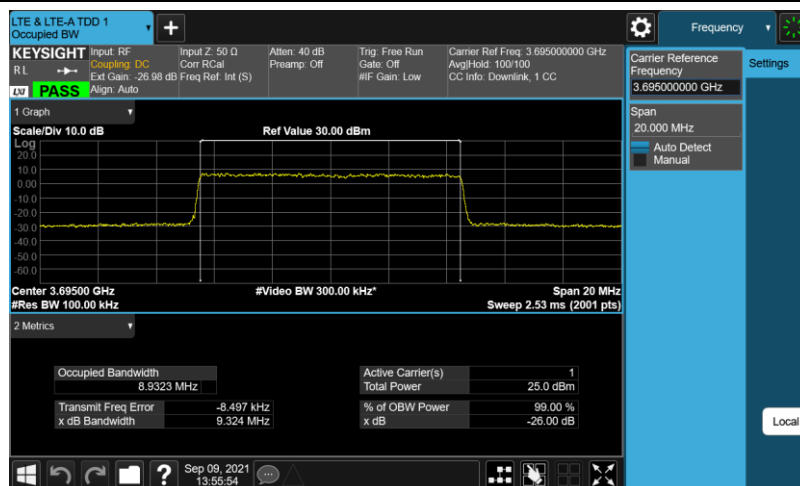
Band48-10MHz-QPSK-55290-E-TM1.1



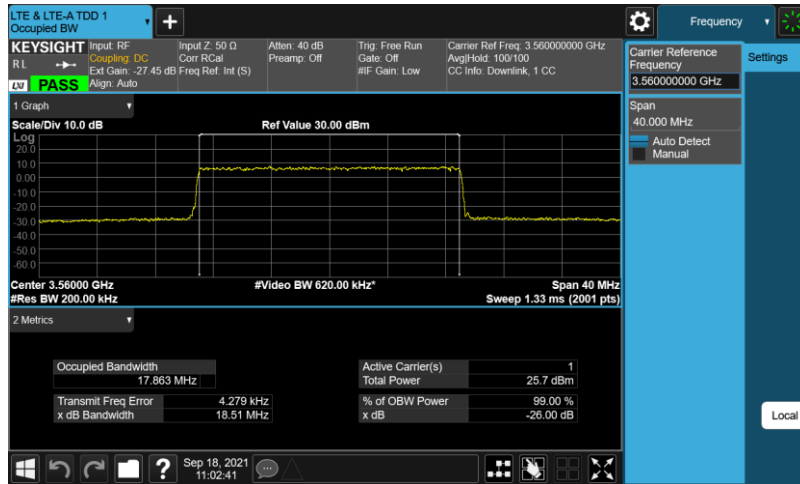
Band48-10MHz-QPSK-55990-E-TM1.1



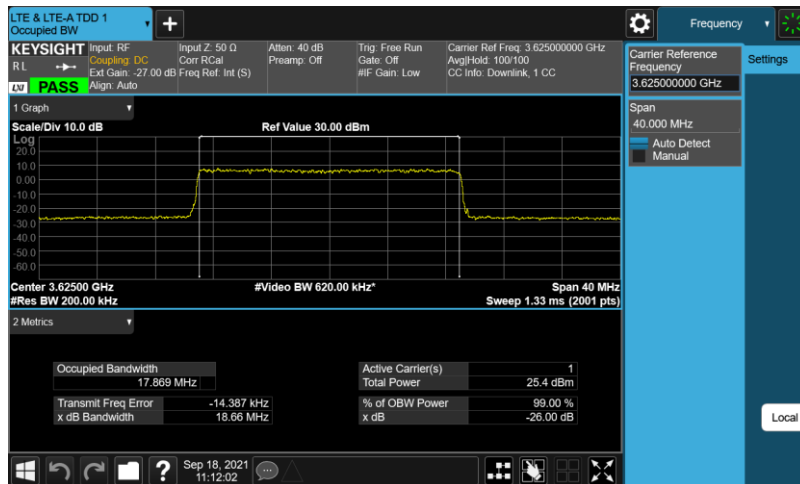
Band48-10MHz-QPSK-56690-E-TM1.1



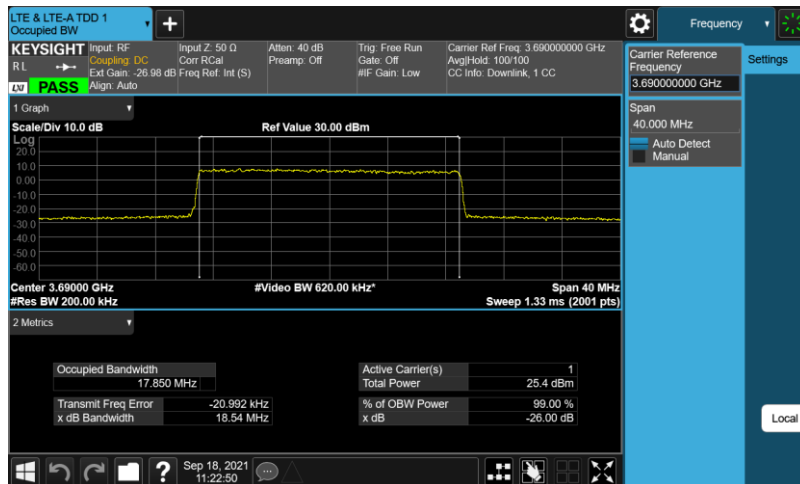
Band48-20MHz-256QAM-55340-E-TM3.1A



Band48-20MHz-256QAM-55990-E-TM3.1A

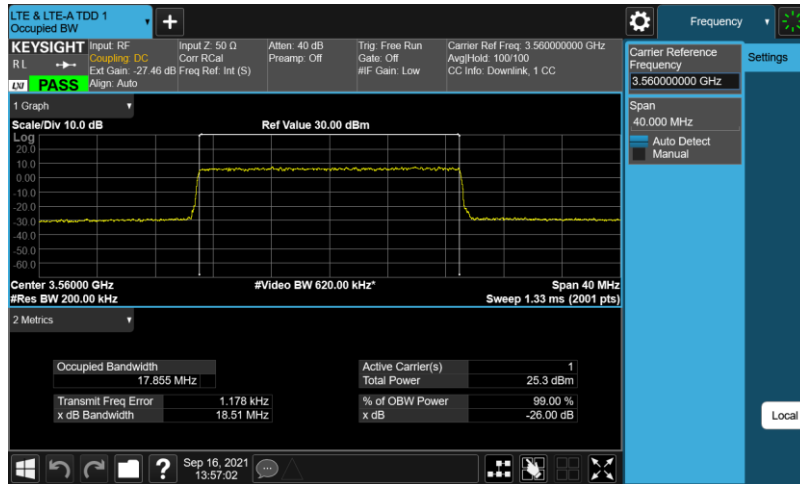


Band48-20MHz-256QAM-56640-E-TM3.1A

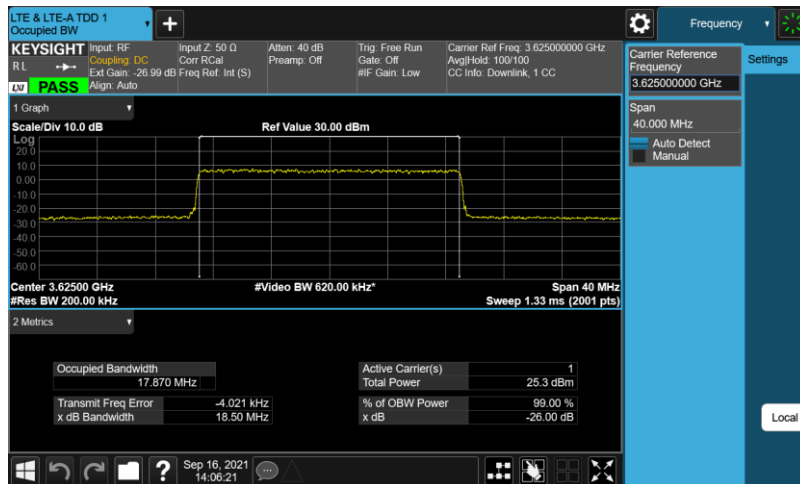




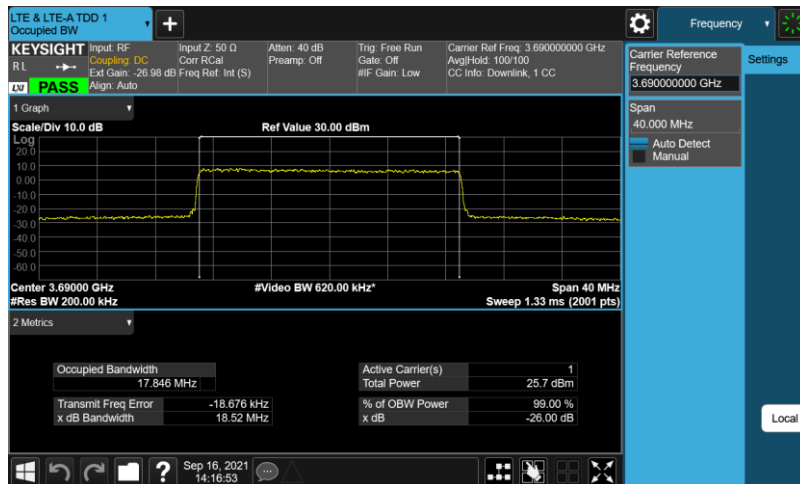
Band48-20MHz-QPSK-55340-E-TM1.1



Band48-20MHz-QPSK-55990-E-TM1.1



Band48-20MHz-QPSK-56640-E-TM1.1



## Appendix D: Frequency Stability

### Test Result

Voltage measurement									
Band	Bandwidth	Modulation	Channel	Mode	Voltage [Vac]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
Band48	10MHz	256QAM	55990	E-TM3.1A	102	25	66	0.018	within the authorized bands
Band48	10MHz	256QAM	55990	E-TM3.1A	120	25	64	0.018	
Band48	10MHz	256QAM	55990	E-TM3.1A	138	25	68	0.019	
Band48	10MHz	QPSK	55990	E-TM1.1	102	25	66	0.018	
Band48	10MHz	QPSK	55990	E-TM1.1	120	25	70	0.019	
Band48	10MHz	QPSK	55990	E-TM1.1	138	25	72	0.020	
Band48	20MHz	256QAM	55990	E-TM3.1A	102	25	72	0.020	
Band48	20MHz	256QAM	55990	E-TM3.1A	120	25	66	0.018	
Band48	20MHz	256QAM	55990	E-TM3.1A	138	25	67	0.018	
Band48	20MHz	QPSK	55990	E-TM1.1	102	25	70	0.019	
Band48	20MHz	QPSK	55990	E-TM1.1	120	25	68	0.019	
Band48	20MHz	QPSK	55990	E-TM1.1	138	25	72	0.020	

Temperature measurement									
Band	Bandwidth	Modulation	Channel	Mode	Voltage [Vac]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)
Band48	10MHz	256QAM	55990	E-TM3.1A	120	-30	66	0.018	within the authorized bands
Band48	10MHz	256QAM	55990	E-TM3.1A	120	-20	66	0.018	
Band48	10MHz	256QAM	55990	E-TM3.1A	120	-10	68	0.019	
Band48	10MHz	256QAM	55990	E-TM3.1A	120	0	65	0.018	
Band48	10MHz	256QAM	55990	E-TM3.1A	120	10	62	0.017	
Band48	10MHz	256QAM	55990	E-TM3.1A	120	20	68	0.019	
Band48	10MHz	256QAM	55990	E-TM3.1A	120	30	70	0.019	
Band48	10MHz	256QAM	55990	E-TM3.1A	120	40	72	0.020	
Band48	10MHz	256QAM	55990	E-TM3.1A	120	50	70	0.019	
Band48	10MHz	QPSK	55990	E-TM1.1	120	-30	55	0.015	
Band48	10MHz	QPSK	55990	E-TM1.1	120	-20	58	0.016	
Band48	10MHz	QPSK	55990	E-TM1.1	120	-10	64	0.018	
Band48	10MHz	QPSK	55990	E-TM1.1	120	0	62	0.017	
Band48	10MHz	QPSK	55990	E-TM1.1	120	10	60	0.017	
Band48	10MHz	QPSK	55990	E-TM1.1	120	20	55	0.015	
Band48	10MHz	QPSK	55990	E-TM1.1	120	30	57	0.016	

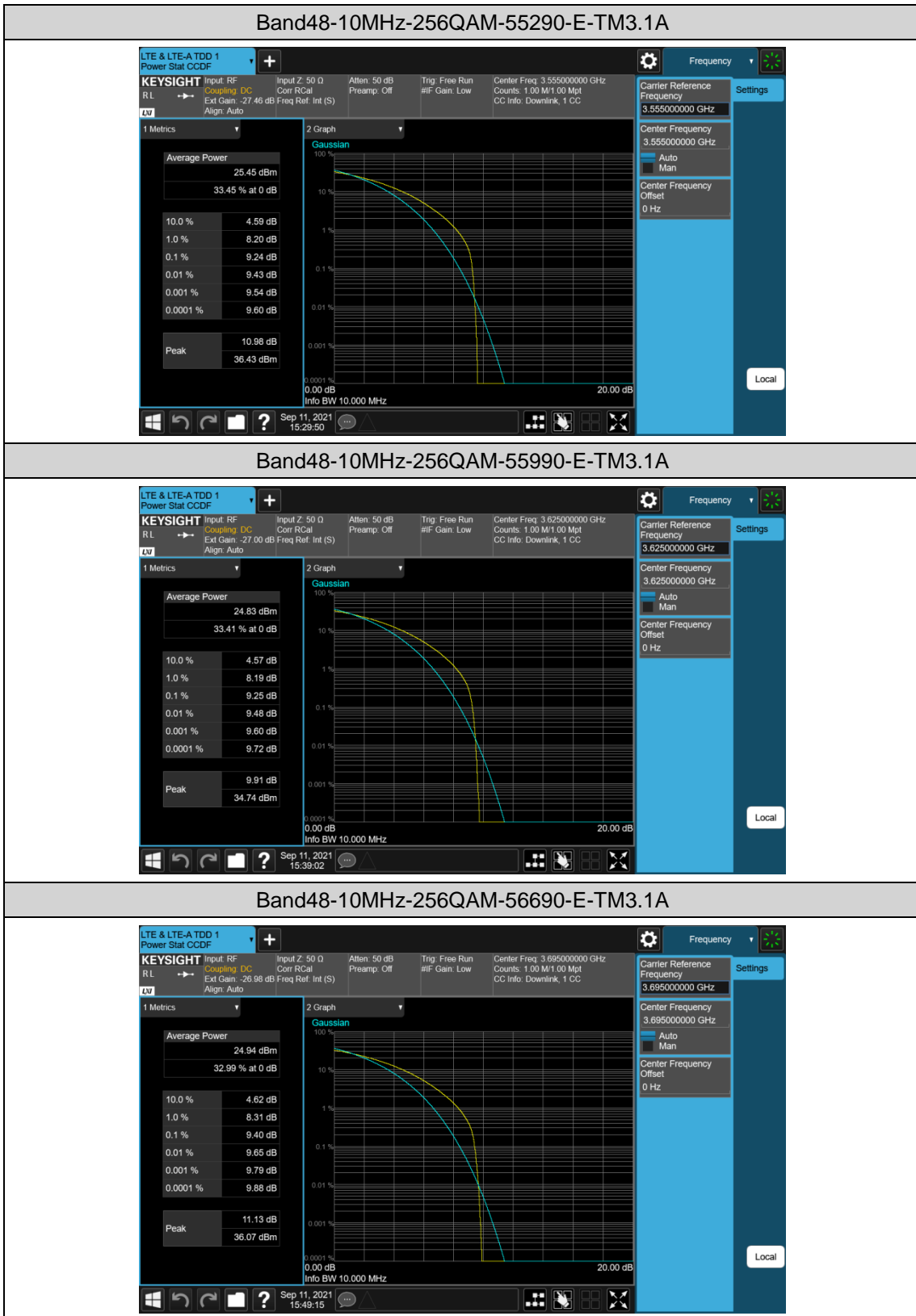
Band48	10MHz	QPSK	55990	E-TM1.1	120	40	57	0.016
Band48	10MHz	QPSK	55990	E-TM1.1	120	50	60	0.017
Band48	20MHz	256QAM	55990	E-TM3.1A	120	-30	64	0.018
Band48	20MHz	256QAM	55990	E-TM3.1A	120	-20	66	0.018
Band48	20MHz	256QAM	55990	E-TM3.1A	120	-10	65	0.018
Band48	20MHz	256QAM	55990	E-TM3.1A	120	0	68	0.019
Band48	20MHz	256QAM	55990	E-TM3.1A	120	10	65	0.018
Band48	20MHz	256QAM	55990	E-TM3.1A	120	20	70	0.019
Band48	20MHz	256QAM	55990	E-TM3.1A	120	30	63	0.017
Band48	20MHz	256QAM	55990	E-TM3.1A	120	40	68	0.019
Band48	20MHz	256QAM	55990	E-TM3.1A	120	50	66	0.018
Band48	20MHz	QPSK	55990	E-TM1.1	120	-30	55	0.015
Band48	20MHz	QPSK	55990	E-TM1.1	120	-20	58	0.016
Band48	20MHz	QPSK	55990	E-TM1.1	120	-10	62	0.017
Band48	20MHz	QPSK	55990	E-TM1.1	120	0	64	0.018
Band48	20MHz	QPSK	55990	E-TM1.1	120	10	61	0.017
Band48	20MHz	QPSK	55990	E-TM1.1	120	20	60	0.017
Band48	20MHz	QPSK	55990	E-TM1.1	120	30	58	0.016
Band48	20MHz	QPSK	55990	E-TM1.1	120	40	60	0.017
Band48	20MHz	QPSK	55990	E-TM1.1	120	50	61	0.017

## Appendix E: Peak-to-Average Ratio(CCDF)

### Test Result

Band	Bandwidth	Modulation	Channel	Mode	Result(dBm)
Band48	10MHz	256QAM	55290	E-TM3.1A	9.24
Band48	10MHz	256QAM	55990	E-TM3.1A	9.25
Band48	10MHz	256QAM	56690	E-TM3.1A	9.40
Band48	10MHz	QPSK	55290	E-TM1.1	9.01
Band48	10MHz	QPSK	55990	E-TM1.1	9.23
Band48	10MHz	QPSK	56690	E-TM1.1	9.23
Band48	20MHz	256QAM	55340	E-TM3.1A	9.28
Band48	20MHz	256QAM	55990	E-TM3.1A	9.74
Band48	20MHz	256QAM	56640	E-TM3.1A	9.46
Band48	20MHz	QPSK	55340	E-TM1.1	8.78
Band48	20MHz	QPSK	55990	E-TM1.1	9.60
Band48	20MHz	QPSK	56640	E-TM1.1	9.93

Test Graphs



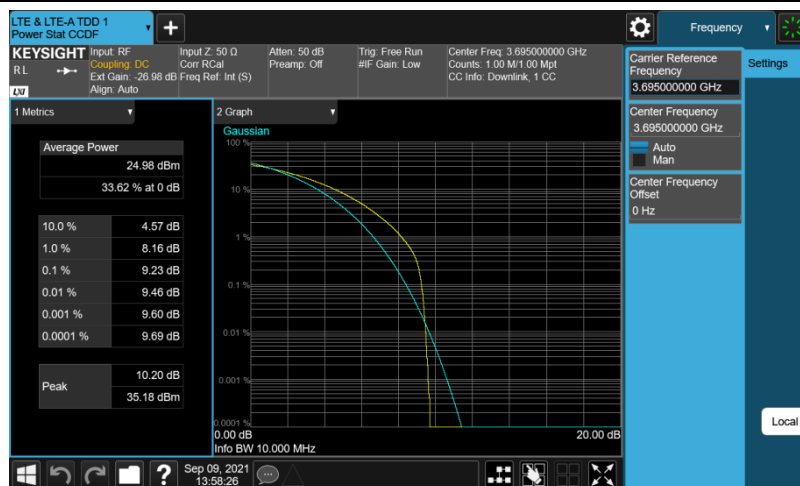
Band48-10MHz-QPSK-55290-E-TM1.1



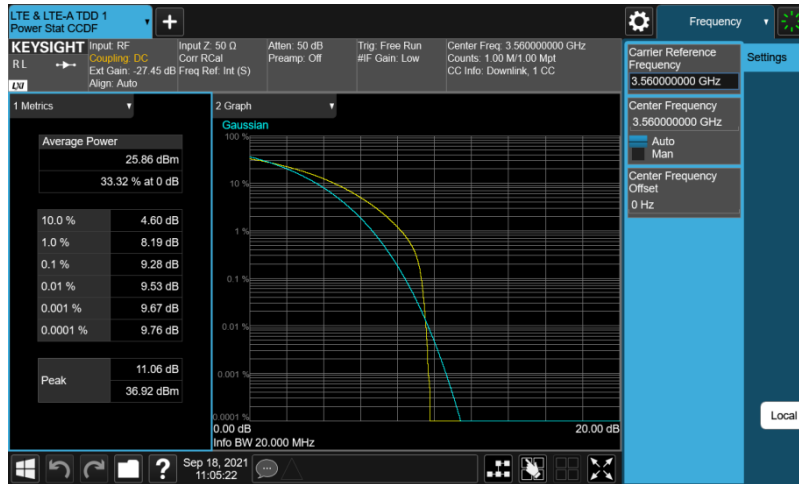
Band48-10MHz-QPSK-55990-E-TM1.1



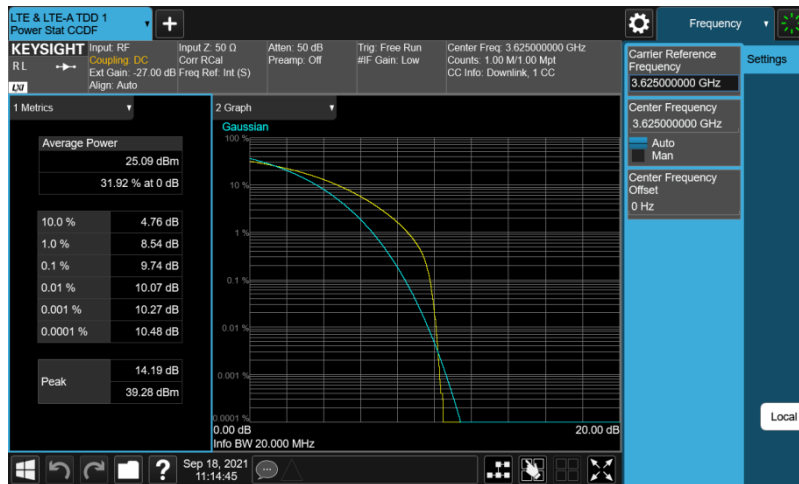
Band48-10MHz-QPSK-56690-E-TM1.1



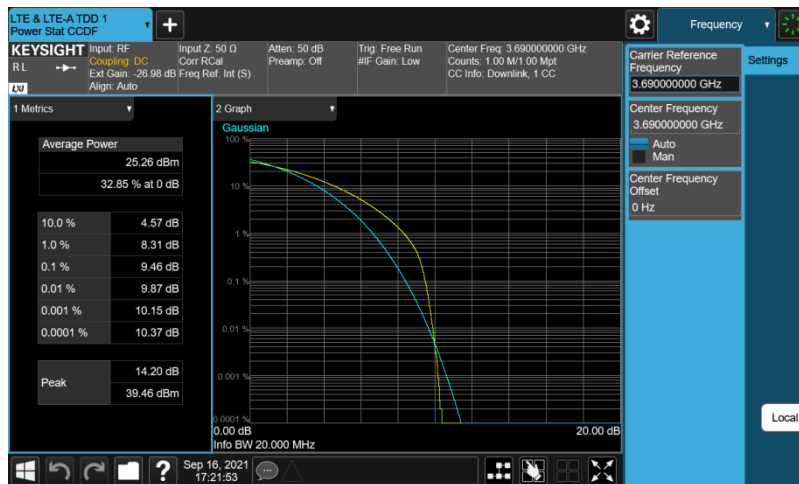
Band48-20MHz-256QAM-55340-E-TM3.1A



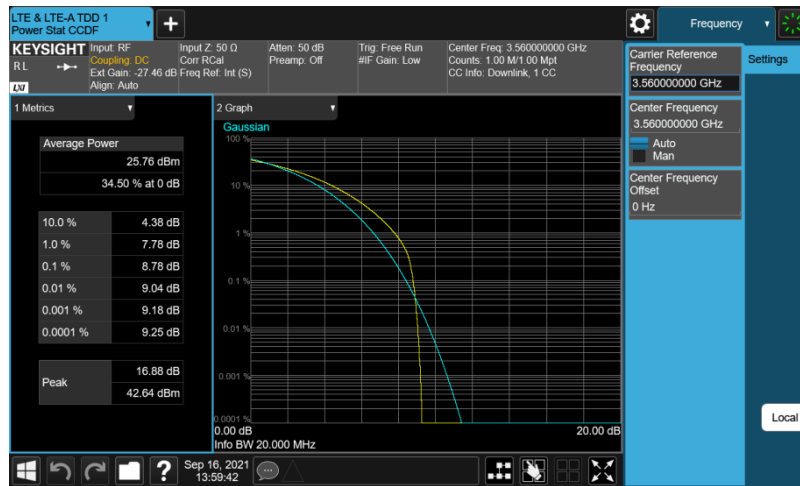
Band48-20MHz-256QAM-55990-E-TM3.1A



Band48-20MHz-256QAM-56640-E-TM3.1A



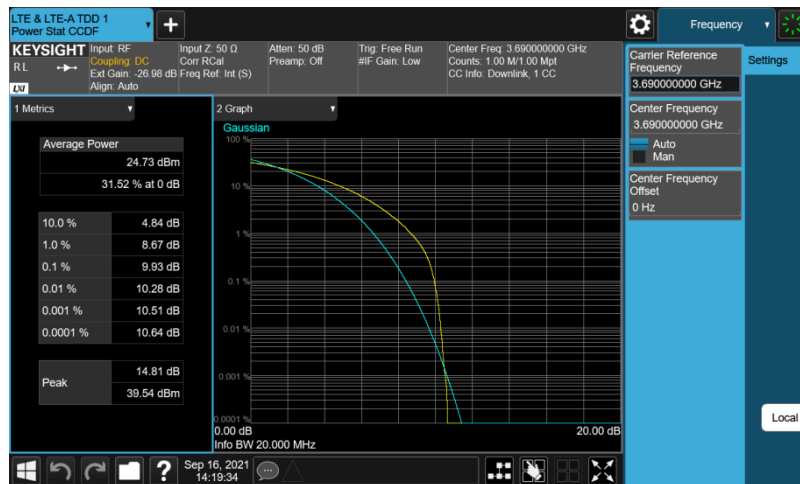
Band48-20MHz-QPSK-55340-E-TM1.1



Band48-20MHz-QPSK-55990-E-TM1.1



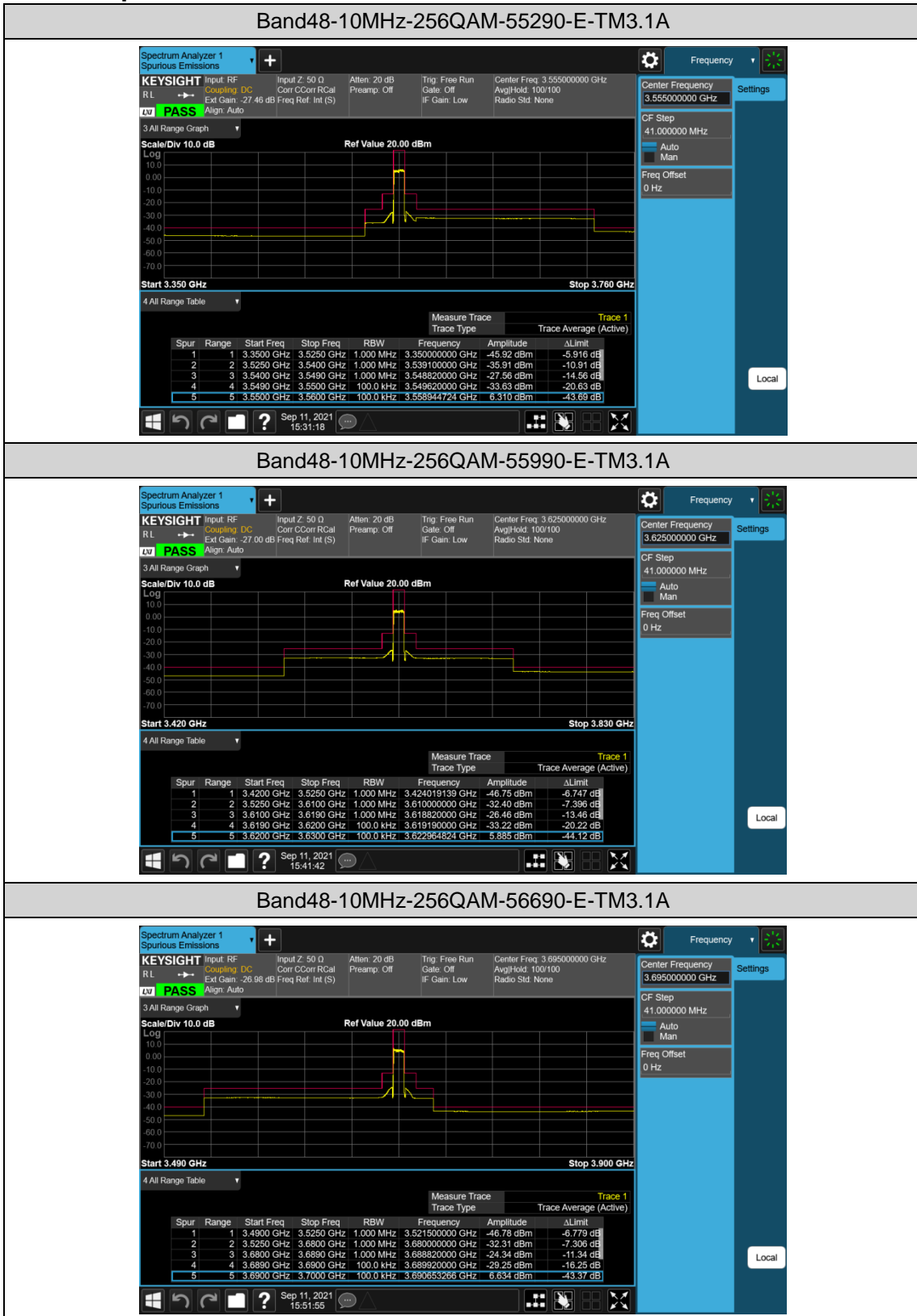
Band48-20MHz-QPSK-56640-E-TM1.1



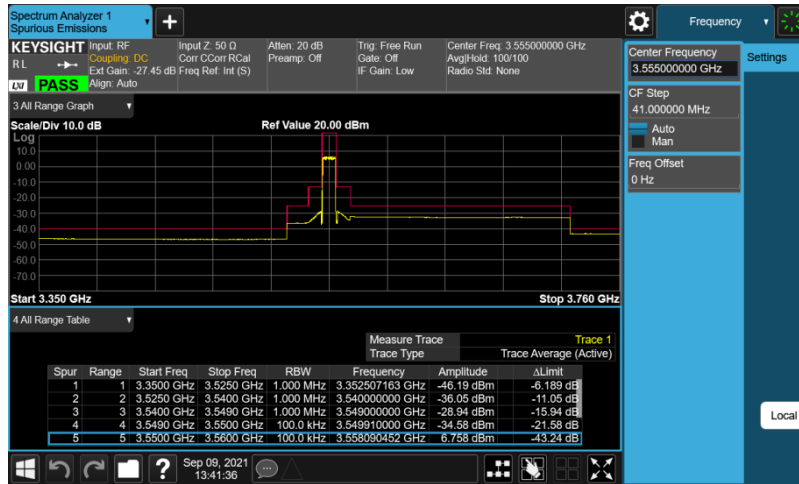


## Appendix F: Emission Mask

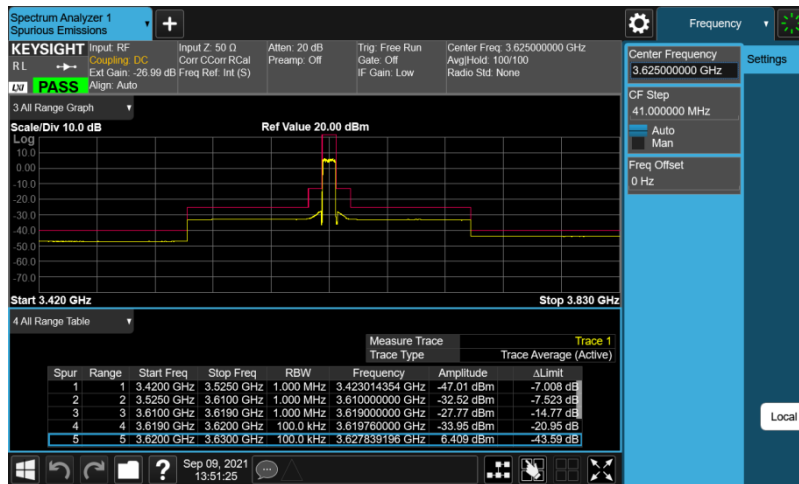
### Test Graphs



Band48-10MHz-QPSK-55290-E-TM1.1



Band48-10MHz-QPSK-55990-E-TM1.1



Band48-10MHz-QPSK-56690-E-TM1.1

