



TEST REPORT

APPLICANT : MiMOMax Wireless Limited

PRODUCT NAME : 900MHz TornadoX Transceiver

MODEL NAME : MWL-TORNADOX-BGCD

BRAND NAME : Ubiik Mimomax

FCC ID : XMK-MMXTRNXB012

STANDARD(S) : 47 CFR Part 2
47 CFR Part 24
47 CFR Part 101

RECEIPT DATE : 2024-06-20

TEST DATE : 2024-07-11 to 2025-03-25

ISSUE DATE : 2025-07-11

Tested by:

Gan Jing

Gan Jing (Rapporteur)

Approved by:

Shen Junsheng

Shen Junsheng(Supervisor)

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Change History		
Issue	Date	Reason for change
1.0	2025-07-11	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	MiMOMax Wireless Limited
Applicant Address:	540 Wairakei Road, Christchurch 8053, New Zealand
Manufacturer:	MiMOMax Wireless Limited
Manufacturer Address:	540 Wairakei Road, Christchurch 8053, New Zealand

1.2. Equipment Under Test (EUT) Description

Product Name:	900MHz TornadoX Transceiver	
EUT Serial No:	(N/A, marked 1# by test site)	
Hardware Version:	P001	
Software Version:	TRN_04.08.04	
Operating Frequency Range:	928-929MHz, 930-931 MHz, 932-932.5MHz, 932.5-935MHz, 940-941MHz, 941-941.5MHz, 941.5-944MHz, 952-960MHz, 2Tx/2Rx	
Channel Bandwidth:	12.5kHz; 25kHz; 50kHz	
Modulation Type:	QPSK; 16QAM; 64QAM; 256QAM	
Operating Voltage:	10.5-60Vdc	
Antenna Gain:	Omni Antenna	2.5 dBi
		4.0 dBi
		6.0 dBi
		8.0 dBi
	Panel Antenna	8.0 dBi
		10.0dBi
		12.0 dBi
		16.0 dBi
	Parabolic Antenna	21.5 dBi
Emission Designator:	BW(kHz)	Designator
	12.5kHz	10K0W1W
	25.0kHz	20K0W1W
	50.0kHz	42K0W1W

Note 1: The EUT description presented in the report are provided by applicant and/or manufacturer,



REPORT No.: SZ24060163W02

and the test laboratory is not responsible for the accuracy of the information. For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer for more detailed information.

1.3. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2, Part 24 and Part101 for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 24	Personal Communications Services
3	47 CFR Part 101	Fixed Microwave Services

Test detailed items/section required by FCC rules and results are listed as below:

Section	Description	Test Engineer	Result	Remark
2.1046 24.132 101.113	Transmitter Conducted Output Power and ERP/EIRP	Gan Jing	PASS	/
2.1049	Occupied Bandwidth	Gan Jing	PASS	/
2.1051 24.133 101.111	Conducted Spurious Emissions	Gan Jing	PASS	/
2.1053 24.133 101.111	Radiated Spurious Emissions	Li Hanbin Gao Jianrou	PASS	/
2.1055 24.135 101.101	Frequency stability	Gan Jing	PASS	/

Note 1: The TornadoX Transceiver complies with FCC 47 CFR Part 2, Part 24 and Part 101 when tested in accordance with the test methods described in 47 CFR Part 2, Part 24 and Part 101.

Note 2: The TornadoX Transceiver supports 2 Tx antenna ports, which was defined as Channel H & Channel V separately.

Note 3: The path loss during the conducted RF test is calibrated to correct the results by the Ext Gain setting. The Ext Gain contains two parts that cable loss of 0.7B and attenuator of 30.0dB.

Note 4: Any additions, deviation, or exclusions from the method shall be noted in the "Remark".

Note 5: The antenna gain of EUT presented in the report are provided by applicant and/or manufacturer, and the test laboratory is not responsible for the accuracy of the information.



1.4. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60



2. Summary Test Results And Description

2.1. Radio Frequency Power Output and E.R.P.

2.1.1. Test result

Nominal Frequency: 928.5375 MHz Tx Port: Channel H

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 12.0dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	33.53	2.254	2.50	35.38	3.451	43.38	21.777
12.5	16QAM	24	33.64	2.312	2.50	35.49	3.540	43.49	22.336
12.5	64QAM	24	33.75	2.371	2.50	35.60	3.631	43.60	22.909
12.5	256QAM	24	33.92	2.466	2.50	35.77	3.776	43.77	23.823
25.0	QPSK	24	33.87	2.438	2.50	35.72	3.733	43.72	23.550
25.0	16QAM	24	33.80	2.399	2.50	35.65	3.673	43.65	23.174
25.0	64QAM	24	33.56	2.270	2.50	35.41	3.475	43.41	21.928
25.0	256QAM	24	33.61	2.296	2.50	35.46	3.516	43.46	22.182
50.0	QPSK	24	33.64	2.312	2.50	35.49	3.540	43.49	22.336
50.0	16QAM	24	33.79	2.393	2.50	35.64	3.664	43.64	23.121
50.0	64QAM	24	33.73	2.360	2.50	35.58	3.614	43.58	22.803
50.0	256QAM	24	33.84	2.421	2.50	35.69	3.707	43.69	23.388

Nominal Frequency: 928.5375 MHz Tx Port: Channel V

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 12.0dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	33.70	2.344	2.50	35.55	3.589	43.55	22.646
12.5	16QAM	24	33.72	2.355	2.50	35.57	3.606	43.57	22.751
12.5	64QAM	24	33.94	2.477	2.50	35.79	3.793	43.79	23.933
12.5	256QAM	24	34.06	2.547	2.50	35.91	3.899	43.91	24.604



25.0	QPSK	24	34.00	2.512	2.50	35.85	3.846	43.85	24.266
25.0	16QAM	24	34.03	2.529	2.50	35.88	3.873	43.88	24.434
25.0	64QAM	24	33.68	2.333	2.50	35.53	3.573	43.53	22.542
25.0	256QAM	24	33.51	2.244	2.50	35.36	3.436	43.36	21.677
50.0	QPSK	24	33.69	2.339	2.50	35.54	3.581	43.54	22.594
50.0	16QAM	24	33.94	2.477	2.50	35.79	3.793	43.79	23.933
50.0	64QAM	24	33.75	2.371	2.50	35.60	3.631	43.60	22.909
50.0	256QAM	24	33.86	2.432	2.50	35.71	3.724	43.71	23.496

Nominal Frequency: 930.50 MHz Tx Port: Channel H

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 21.5dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	33.80	2.399	2.50	35.65	3.673	53.15	206.538
12.5	16QAM	24	33.96	2.489	2.50	35.81	3.811	53.31	214.289
12.5	64QAM	24	34.01	2.518	2.50	35.86	3.855	53.36	216.770
12.5	256QAM	24	33.94	2.477	2.50	35.79	3.793	53.29	213.304
25.0	QPSK	24	33.96	2.489	2.50	35.81	3.811	53.31	214.289
25.0	16QAM	24	33.98	2.500	2.50	35.83	3.828	53.33	215.278
25.0	64QAM	24	34.02	2.523	2.50	35.87	3.864	53.37	217.270
25.0	256QAM	24	33.97	2.495	2.50	35.82	3.819	53.32	214.783
50.0	QPSK	24	33.88	2.443	2.50	35.73	3.741	53.23	210.378
50.0	16QAM	24	33.64	2.312	2.50	35.49	3.540	52.99	199.067
50.0	64QAM	24	33.93	2.472	2.50	35.78	3.784	53.28	212.814
50.0	256QAM	24	34.12	2.582	2.50	35.97	3.954	53.47	222.331



Nominal Frequency: 930.50 MHz Tx Port: Channel V

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 21.5dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	33.60	2.291	2.50	35.45	3.508	52.95	197.242
12.5	16QAM	24	33.73	2.360	2.50	35.58	3.614	53.08	203.236
12.5	64QAM	24	34.07	2.553	2.50	35.92	3.908	53.42	219.786
12.5	256QAM	24	33.81	2.404	2.50	35.66	3.681	53.16	207.014
25.0	QPSK	24	33.70	2.344	2.50	35.55	3.589	53.05	201.837
25.0	16QAM	24	33.62	2.301	2.50	35.47	3.524	52.97	198.153
25.0	64QAM	24	33.88	2.443	2.50	35.73	3.741	53.23	210.378
25.0	256QAM	24	33.91	2.460	2.50	35.76	3.767	53.26	211.836
50.0	QPSK	24	34.01	2.518	2.50	35.86	3.855	53.36	216.770
50.0	16QAM	24	33.78	2.388	2.50	35.63	3.656	53.13	205.589
50.0	64QAM	24	33.86	2.432	2.50	35.71	3.724	53.21	209.411
50.0	256QAM	24	33.98	2.500	2.50	35.83	3.828	53.33	215.278

Nominal Frequency: 933.50 MHz Tx Port: Channel H

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 21.5dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	33.83	2.415	2.50	35.68	3.698	53.18	207.970
12.5	16QAM	24	33.88	2.443	2.50	35.73	3.741	53.23	210.378
12.5	64QAM	24	33.69	2.339	2.50	35.54	3.581	53.04	201.372
12.5	256QAM	24	34.15	2.600	2.50	36.00	3.981	53.50	223.872
25.0	QPSK	24	33.74	2.366	2.50	35.59	3.622	53.09	203.704
25.0	16QAM	24	33.74	2.366	2.50	35.59	3.622	53.09	203.704
25.0	64QAM	24	34.04	2.535	2.50	35.89	3.882	53.39	218.273
25.0	256QAM	24	33.94	2.477	2.50	35.79	3.793	53.29	213.304
50.0	QPSK	24	33.71	2.350	2.50	35.56	3.597	53.06	202.302



50.0	16QAM	24	33.99	2.506	2.50	35.84	3.837	53.34	215.774
50.0	64QAM	24	34.06	2.547	2.50	35.91	3.899	53.41	219.280
50.0	256QAM	24	34.20	2.630	2.50	36.05	4.027	53.55	226.464

Nominal Frequency: 933.50 MHz Tx Port: Channel V

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 21.5dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	33.70	2.344	2.50	35.55	3.589	53.05	201.837
12.5	16QAM	24	33.68	2.333	2.50	35.53	3.573	53.03	200.909
12.5	64QAM	24	33.82	2.410	2.50	35.67	3.690	53.17	207.491
12.5	256QAM	24	34.11	2.576	2.50	35.96	3.945	53.46	221.820
25.0	QPSK	24	33.84	2.421	2.50	35.69	3.707	53.19	208.449
25.0	16QAM	24	33.81	2.404	2.50	35.66	3.681	53.16	207.014
25.0	64QAM	24	33.88	2.443	2.50	35.73	3.741	53.23	210.378
25.0	256QAM	24	33.86	2.432	2.50	35.71	3.724	53.21	209.411
50.0	QPSK	24	33.79	2.393	2.50	35.64	3.664	53.14	206.063
50.0	16QAM	24	33.82	2.410	2.50	35.67	3.690	53.17	207.491
50.0	64QAM	24	33.98	2.500	2.50	35.83	3.828	53.33	215.278
50.0	256QAM	24	34.12	2.582	2.50	35.97	3.954	53.47	222.331

Nominal Frequency: 940.50 MHz Tx Port: Channel H

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 21.5dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	34.12	2.582	2.50	35.97	3.954	53.47	222.331
12.5	16QAM	24	33.77	2.382	2.50	35.62	3.648	53.12	205.116
12.5	64QAM	24	33.97	2.495	2.50	35.82	3.819	53.32	214.783
12.5	256QAM	24	33.97	2.495	2.50	35.82	3.819	53.32	214.783
25.0	QPSK	24	33.53	2.280	2.50	35.38	3.451	52.88	194.089



25.0	16QAM	24	33.56	2.415	2.50	35.41	3.475	52.91	195.434
25.0	64QAM	24	33.69	2.455	2.50	35.54	3.581	53.04	201.372
25.0	256QAM	24	33.62	2.636	2.50	35.47	3.524	52.97	198.153
50.0	QPSK	24	33.58	2.280	2.50	35.43	3.491	52.93	196.336
50.0	16QAM	24	33.83	2.415	2.50	35.68	3.698	53.18	207.970
50.0	64QAM	24	33.90	2.455	2.50	35.75	3.758	53.25	211.349
50.0	256QAM	24	34.21	2.636	2.50	36.06	4.036	53.56	226.986

Nominal Frequency: 940.50 MHz Tx Port: Channel V

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 21.5dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	33.55	2.265	2.50	35.40	3.467	52.90	194.984
12.5	16QAM	24	34.11	2.576	2.50	35.96	3.945	53.46	221.820
12.5	64QAM	24	34.17	2.612	2.50	36.02	3.999	53.52	224.905
12.5	256QAM	24	33.88	2.443	2.50	35.73	3.741	53.23	210.378
25.0	QPSK	24	33.76	2.377	2.50	35.61	3.639	53.11	204.644
25.0	16QAM	24	33.72	2.355	2.50	35.57	3.606	53.07	202.768
25.0	64QAM	24	33.96	2.489	2.50	35.81	3.811	53.31	214.289
25.0	256QAM	24	33.93	2.472	2.50	35.78	3.784	53.28	212.814
50.0	QPSK	24	33.84	2.421	2.50	35.69	3.707	53.19	208.449
50.0	16QAM	24	33.99	2.506	2.50	35.84	3.837	53.34	215.774
50.0	64QAM	24	34.13	2.588	2.50	35.98	3.963	53.48	222.844
50.0	256QAM	24	34.12	2.582	2.50	35.97	3.954	53.47	222.331

Nominal Frequency: 942.5 MHz Tx Port: Channel H

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 21.5dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	33.48	2.228	2.50	35.33	3.412	52.83	191.867
12.5	16QAM	24	33.59	2.286	2.50	35.44	3.499	52.94	196.789



12.5	64QAM	24	33.73	2.360	2.50	35.58	3.614	53.08	203.236
12.5	256QAM	24	34.02	2.523	2.50	35.87	3.864	53.37	217.270
25.0	QPSK	24	33.54	2.259	2.50	35.39	3.459	52.89	194.536
25.0	16QAM	24	33.62	2.301	2.50	35.47	3.524	52.97	198.153
25.0	64QAM	24	33.85	2.427	2.50	35.70	3.715	53.20	208.930
25.0	256QAM	24	33.68	2.333	2.50	35.53	3.573	53.03	200.909
50.0	QPSK	24	33.74	2.366	2.50	35.59	3.622	53.09	203.704
50.0	16QAM	24	33.70	2.344	2.50	35.55	3.589	53.05	201.837
50.0	64QAM	24	33.82	2.410	2.50	35.67	3.690	53.17	207.491
50.0	256QAM	24	33.95	2.483	2.50	35.80	3.802	53.30	213.796

Nominal Frequency: 942.5 MHz Tx Port: Channel V

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 21.5dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	33.90	2.344	2.50	35.55	3.589	53.05	201.837
12.5	16QAM	24	33.86	2.323	2.50	35.51	3.556	53.01	199.986
12.5	64QAM	24	33.90	2.518	2.50	35.86	3.855	53.36	216.770
12.5	256QAM	24	34.10	2.443	2.50	35.73	3.741	53.23	210.378
25.0	QPSK	24	33.52	2.249	2.50	35.37	3.443	52.87	193.642
25.0	16QAM	24	33.65	2.317	2.50	35.50	3.548	53.00	199.526
25.0	64QAM	24	33.49	2.234	2.50	35.34	3.420	52.84	192.309
25.0	256QAM	24	33.42	2.198	2.50	35.27	3.365	52.77	189.234
50.0	QPSK	24	33.70	2.455	2.50	35.75	3.758	53.25	211.349
50.0	16QAM	24	33.66	2.432	2.50	35.71	3.724	53.21	209.411
50.0	64QAM	24	34.01	2.455	2.50	35.75	3.758	53.25	211.349
50.0	256QAM	24	33.88	2.570	2.50	35.95	3.936	53.45	221.309



Nominal Frequency: 952.5375 MHz Tx Port: Channel H

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 21.5dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	33.57	2.275	2.50	35.42	3.483	52.92	195.884
12.5	16QAM	24	33.69	2.339	2.50	35.54	3.581	53.04	201.372
12.5	64QAM	24	33.96	2.489	2.50	35.81	3.811	53.31	214.289
12.5	256QAM	24	33.98	2.500	2.50	35.83	3.828	53.33	215.278
25.0	QPSK	24	33.72	2.355	2.50	35.57	3.606	53.07	202.768
25.0	16QAM	24	33.64	2.312	2.50	35.49	3.540	52.99	199.067
25.0	64QAM	24	33.85	2.427	2.50	35.70	3.715	53.20	208.930
25.0	256QAM	24	33.93	2.472	2.50	35.78	3.784	53.28	212.814
50.0	QPSK	24	33.57	2.275	2.50	35.42	3.483	52.92	195.884
50.0	16QAM	24	33.56	2.270	2.50	35.41	3.475	52.91	195.434
50.0	64QAM	24	33.73	2.360	2.50	35.58	3.614	53.08	203.236
50.0	256QAM	24	34.01	2.518	2.50	35.86	3.855	53.36	216.770

Nominal Frequency: 952.5375 MHz Tx Port: Channel V

Channel Bandwidth (kHz)	Modulation Type	Voltage (Vdc)	Measured Power (dBm)	Measured Power (Watt)	Rated Power (Watt)	E.R.P. (ANT Gain = 4.0dBi)		E.R.P. (ANT Gain = 21.5dBi)	
						dBm	Watt	dBm	Watt
12.5	QPSK	24	33.76	2.377	2.50	35.61	3.639	53.11	204.644
12.5	16QAM	24	33.89	2.449	2.50	35.74	3.750	53.24	210.863
12.5	64QAM	24	33.92	2.466	2.50	35.77	3.776	53.27	212.324
12.5	256QAM	24	33.95	2.483	2.50	35.80	3.802	53.30	213.796
25.0	QPSK	24	33.82	2.410	2.50	35.67	3.690	53.17	207.491
25.0	16QAM	24	33.83	2.415	2.50	35.68	3.698	53.18	207.970
25.0	64QAM	24	33.98	2.500	2.50	35.83	3.828	53.33	215.278
25.0	256QAM	24	33.97	2.495	2.50	35.82	3.819	53.32	214.783
50.0	QPSK	24	33.51	2.244	2.50	35.36	3.436	52.86	193.197



50.0	16QAM	24	33.54	2.259	2.50	35.39	3.459	52.89	194.536
50.0	64QAM	24	33.74	2.366	2.50	35.59	3.622	53.09	203.704
50.0	256QAM	24	33.98	2.500	2.50	35.83	3.828	53.33	215.278

Note1: Measurements were carried out at the RF output terminals of the transmitter using spectrum analyzer. The path loss during the conducted RF test is calibrated to correct the results by the Ext Gain setting. The Ext Gain contains two parts that cable loss of 0.7dB and attenuator of 30.0dB.

Note 2: The transmitter has a rated output power of 2.512 Watt (34dBm).The measured power has been shown to be within +/- 1 dB of the rated power.

Note3: E.I.R.P. (dBm) = Conducted Output Power (dBm) + Antenna Gain (dBi); E.R.P. (dBm) = E.I.R.P. (dBm) - 2.15.

Note 4: Part 24 does not specify the transmitter output power.

Base stations transmitting in the 930-931 MHz and 940-941 MHz bands are limited to 3500 watts e.r.p. per authorized channel and are unlimited in antenna height except as provided in paragraph (d) of this section.

Note 5: The product's antenna is a special MIMO antenna with cross-polarization which is able to transmit and receive on both the vertical and horizontal polarizations at the same time, the MIMO antennas are essentially two antennas in one.

Note 6: According to KDB 662911, the MIMO directional gain is the gain of an individual antenna.

Note7: The DUT transmitter ports are completely uncorrelated. According to KDB 662911 the conducted power or E.R.P is measured on each port individually and it complies with the regulations.

Note 8: This product is based on the interactive calculation of erp limits and conducted power. In the 928-929MHz and 932-932.5MHz range, an antenna with a maximum gain of 12dBi can be used to meet the erp requirements.

Note 9: The bandwidth of the frequency band 932 to 932.5MHz is only 0.5MHz. Therefore, the frequency bands of 932 to 932.5MHz and 932.5 to 935MHz are considered as one frequency band, and 933.5Mhz has been chosen at the middle frequency to be the test point. The test results at 933.5MHz should be adequate to represent both frequency bands of 932 to 932.5MHz and 932.5 to 935MHz. Similarly, 942.5MHz has been tested to present the performances of the frequency bands 941 to 941.5MHz and 941.5 to 944MHz.

2.2. Occupied Bandwidth

2.2.1. Definition

Emission Designator:

Frequency (MHz)	BW(kHz)	Designator
928-929MHz	12.5kHz	10K0W1W
	25.0kHz	20K0W1W
	50.0kHz	42K0W1W
930-931MHz	12.5kHz	10K0W1W
	25.0kHz	20K0W1W
	50.0kHz	42K0W1W
932-932.5MHz	12.5kHz	10K0W1W
	25.0kHz	20K0W1W
	50.0kHz	42K0W1W
932.5-935MHz	12.5kHz	10K0W1W
	25.0kHz	20K0W1W
	50.0kHz	42K0W1W
940-941MHz	12.5kHz	10K0W1W
	25.0kHz	20K0W1W
	50.0kHz	42K0W1W
941-941.5MHz	12.5kHz	10K0W1W
	25.0kHz	20K0W1W
	50.0kHz	42K0W1W
941.5-944MHz	12.5kHz	10K0W1W
	25.0kHz	20K0W1W
	50.0kHz	42K0W1W
952-960MHz	12.5kHz	10K0W1W
	25.0kHz	20K0W1W
	50.0kHz	42K0W1W

Note: The above data combined with uncertainty and rounding calculations are consistent with the actual test data.

According to FCC section 2.1049, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as the 99% emission bandwidth.

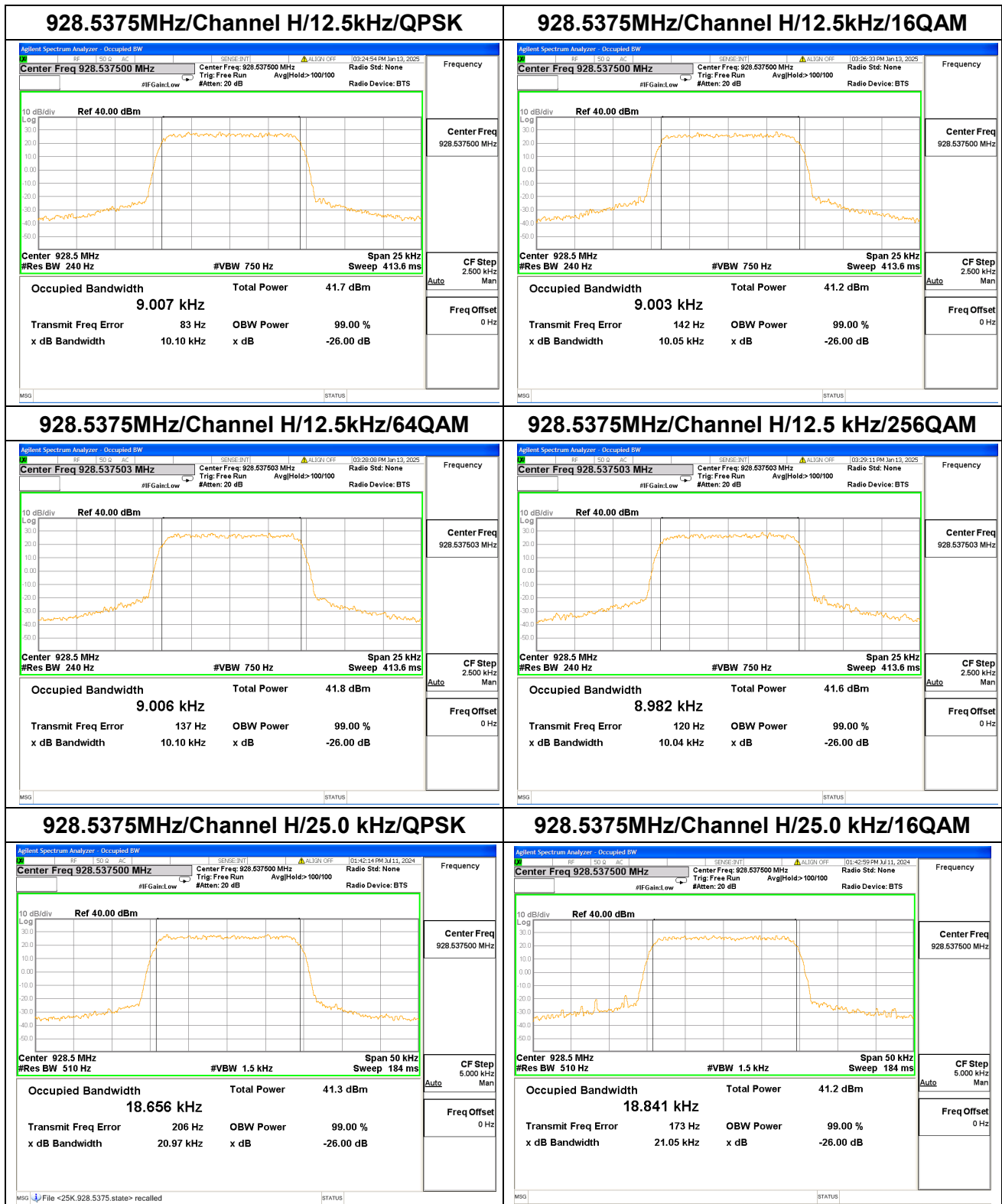


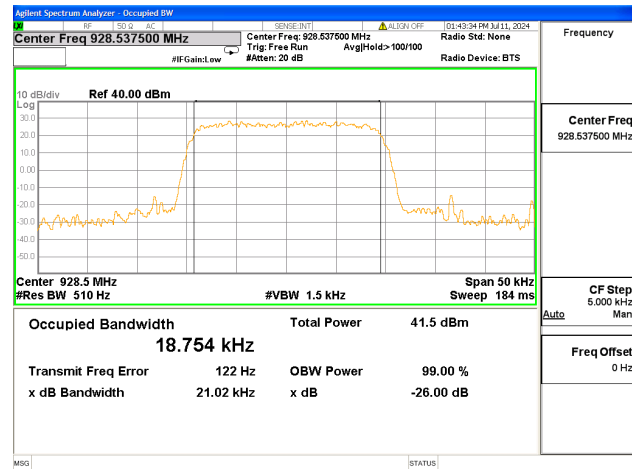
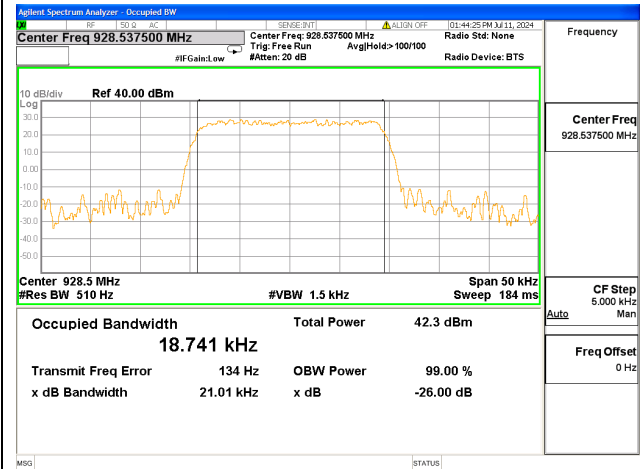
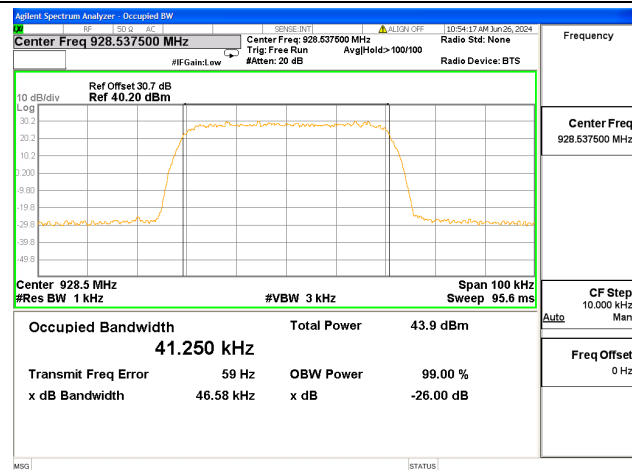
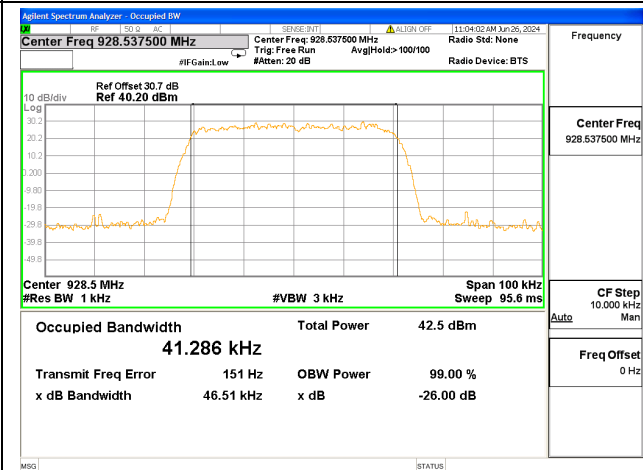
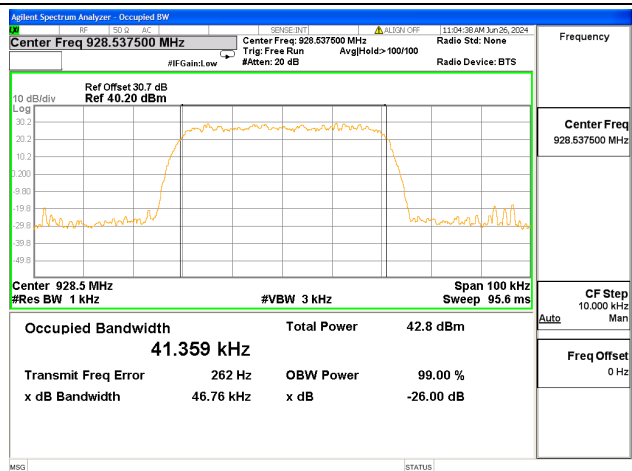
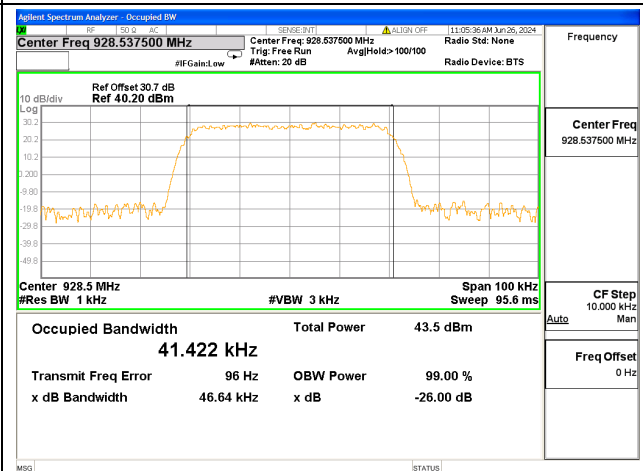
2.2.2. Test Description

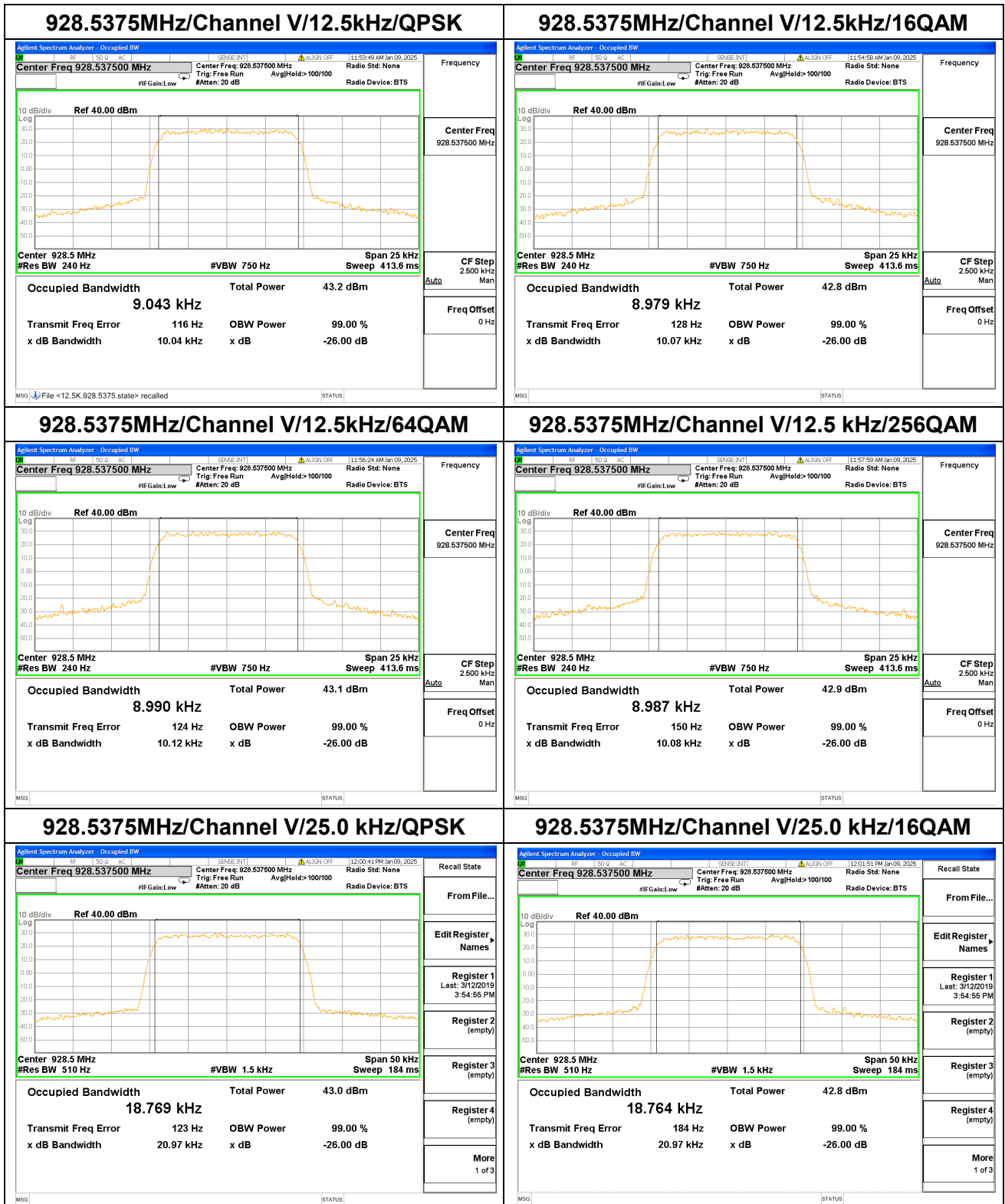
Measurements have been made of each modulation type using a spectrum analyzer operating in occupied bandwidth mode.

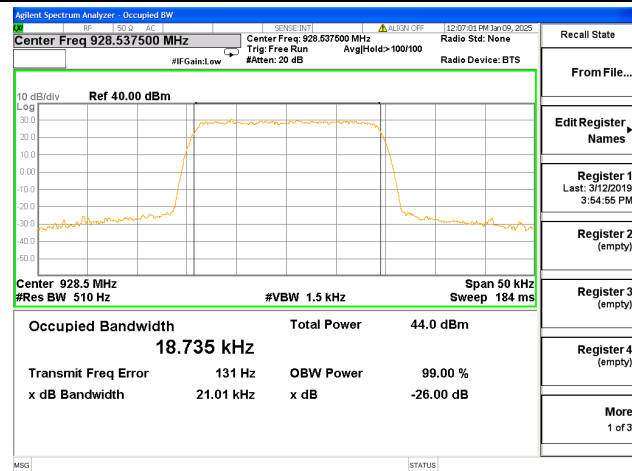
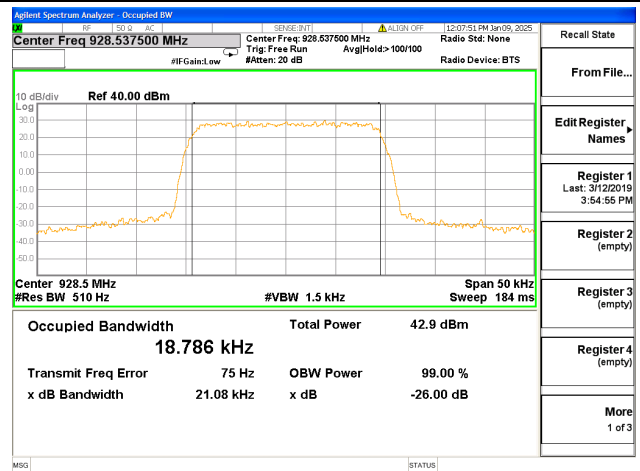
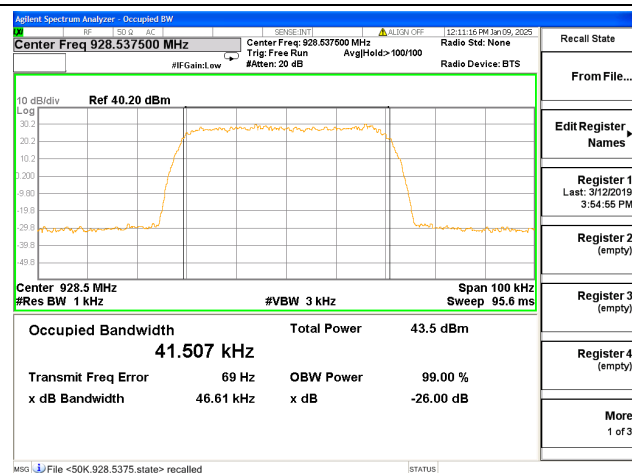
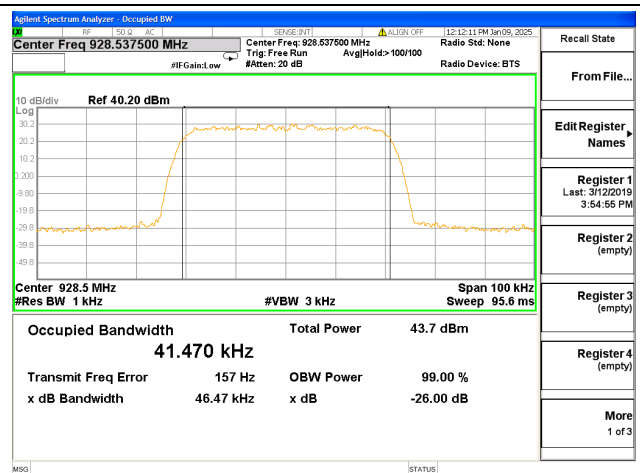
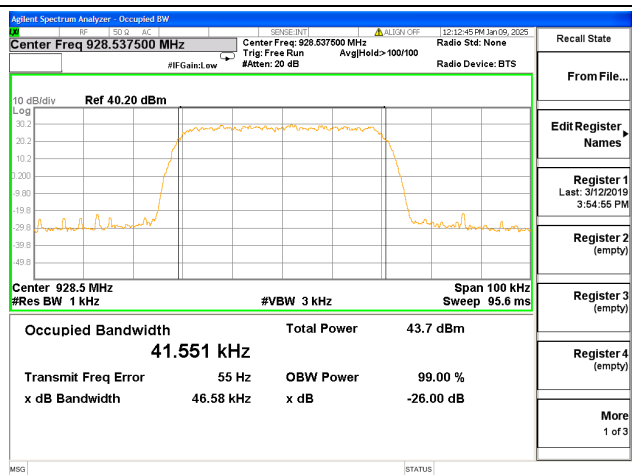
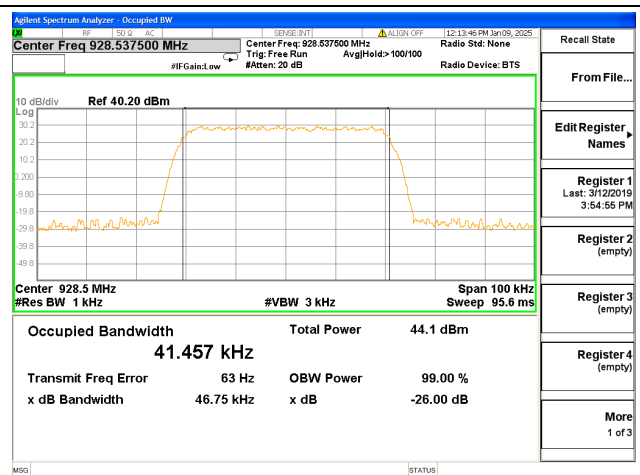
2.2.3. Test Result

928.5375MHz			
Tx Port	Channel Bandwidth(kHz)	Emission Type	Occupied Bandwidth(kHz)
H	12.5	QPSK	9.007
		16QAM	9.003
		64QAM	9.006
		256QAM	8.982
	25.0	QPSK	18.656
		16QAM	18.841
		64QAM	18.754
		256QAM	18.741
	50.0	QPSK	41.250
		16QAM	41.286
		64QAM	41.359
		256QAM	41.422
V	12.5	QPSK	9.043
		16QAM	8.979
		64QAM	8.990
		256QAM	8.987
	25.0	QPSK	18.769
		16QAM	18.671
		64QAM	18.735
		256QAM	18.786
	50.0	QPSK	41.507
		16QAM	41.470
		64QAM	41.551
		256QAM	41.457



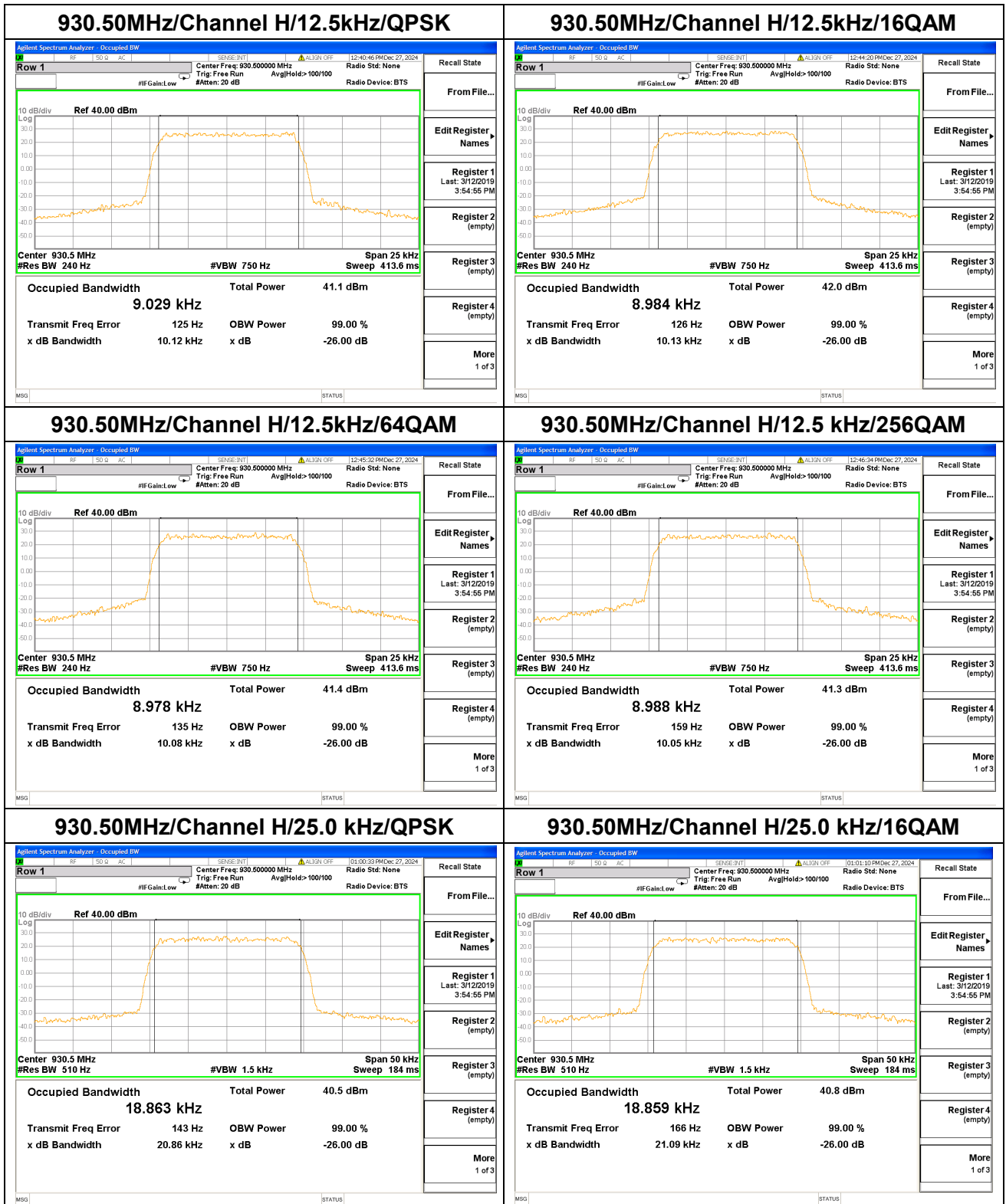
**928.5375MHz/Channel H/25.0 kHz/64QAM****928.5375MHz/Channel H/25.0 kHz/256QAM****928.5375MHz/Channel H/50.0 kHz/QPSK****928.5375MHz/Channel H/50.0 kHz/16QAM****928.5375MHz/Channel H/50.0 kHz/64QAM****928.5375MHz/Channel H/50.0 kHz/256QAM**

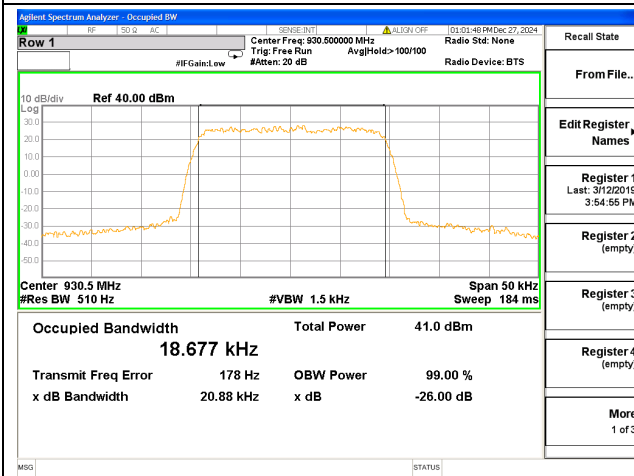
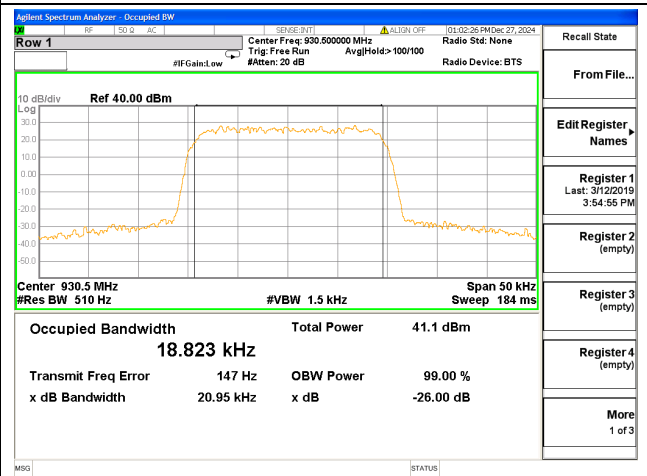
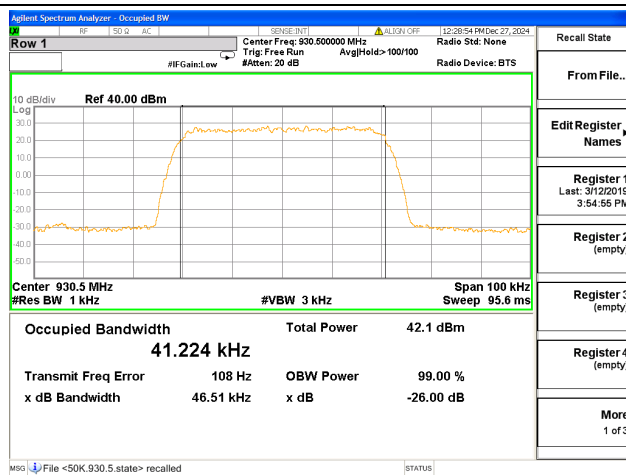
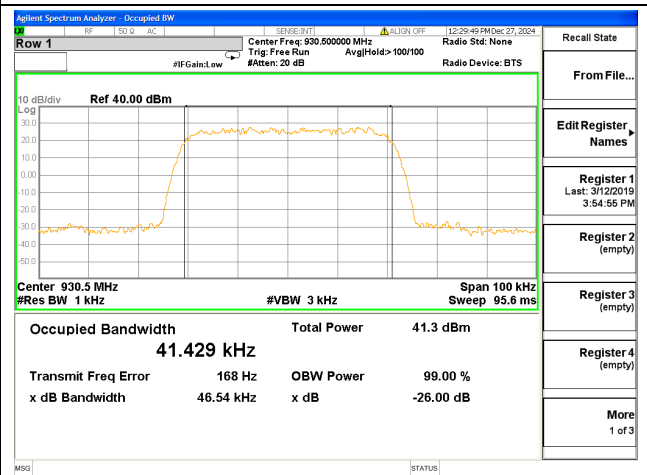
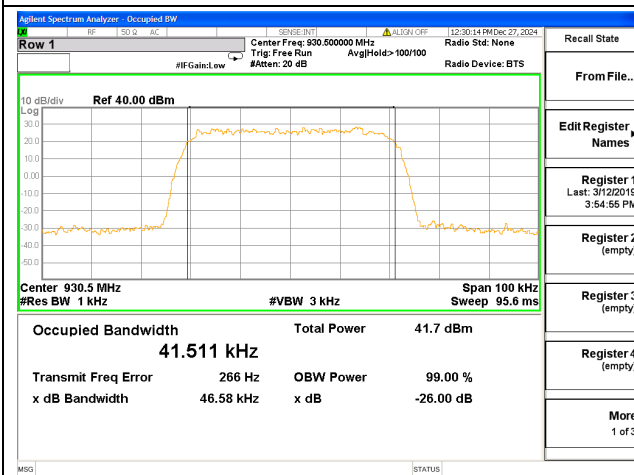
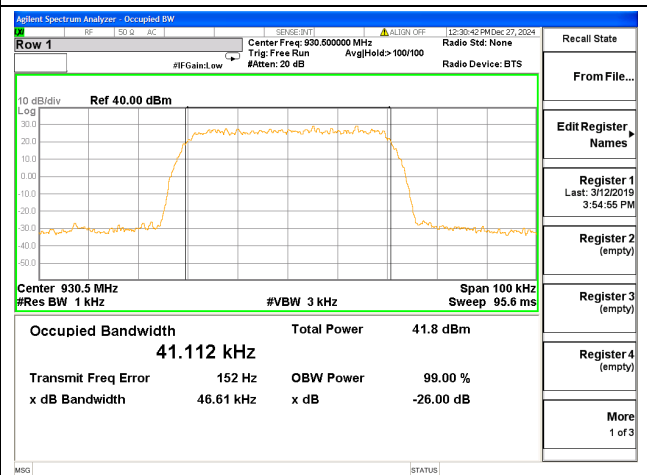


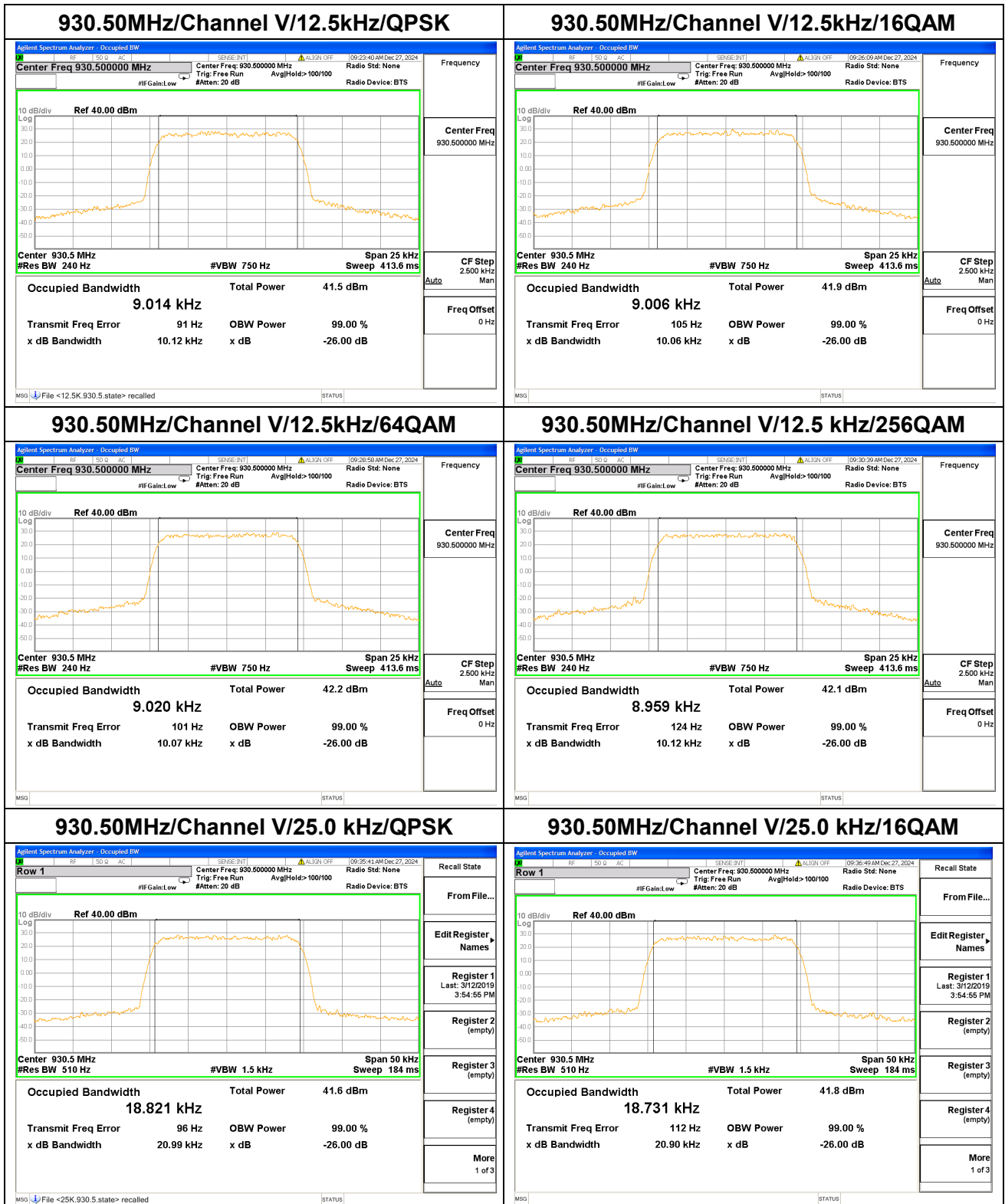
**928.5375MHz/Channel V/25.0 kHz/64QAM****928.5375MHz/Channel V/25.0 kHz/256QAM****928.5375MHz/Channel V/50.0 kHz/QPSK****928.5375MHz/Channel V/50.0 kHz/16QAM****928.5375MHz/Channel V/50.0 kHz/64QAM****928.5375MHz/Channel V/50.0 kHz/256QAM**

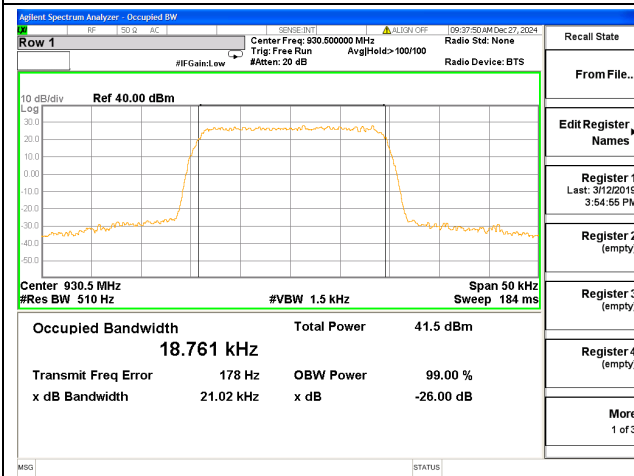
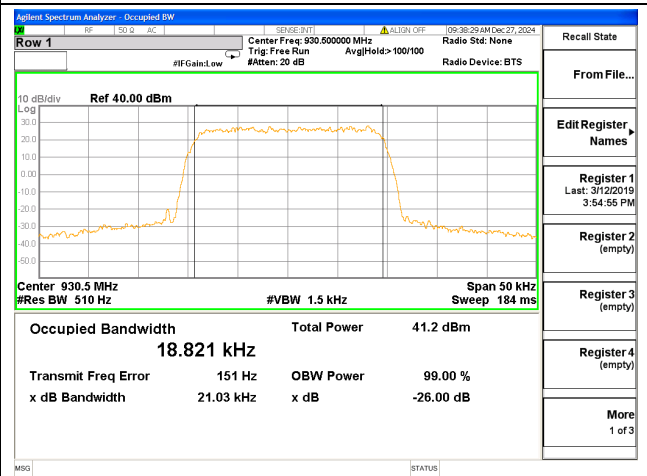
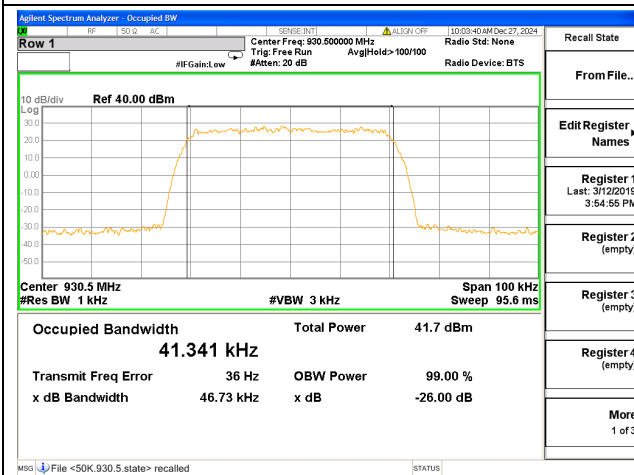
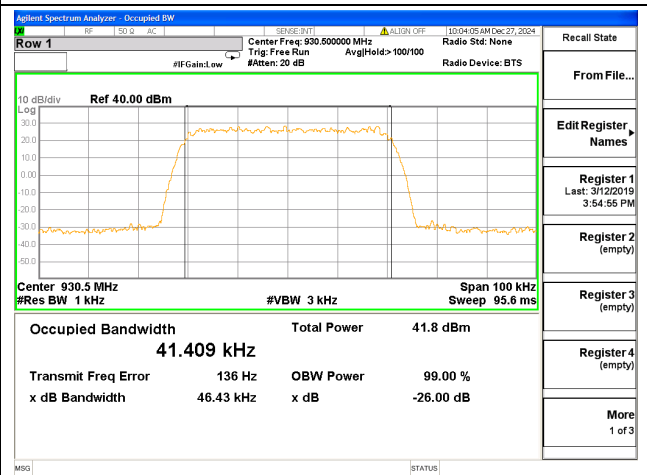
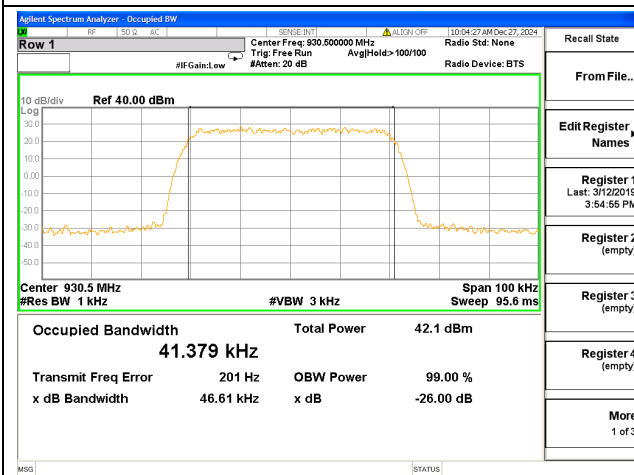
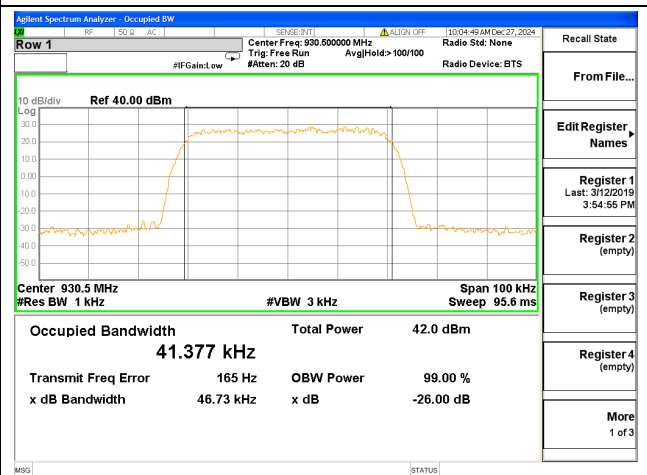


930.50 MHz			
Tx Port	Channel Bandwidth(kHz)	Emission Type	Occupied Bandwidth(kHz)
H	12.5	QPSK	9.029
		16QAM	8.984
		64QAM	8.978
		256QAM	8.988
	25.0	QPSK	18.863
		16QAM	18.859
		64QAM	18.677
		256QAM	18.823
	50.0	QPSK	41.224
		16QAM	41.429
		64QAM	41.511
		256QAM	41.112
V	12.5	QPSK	9.014
		16QAM	9.006
		64QAM	9.020
		256QAM	8.959
	25.0	QPSK	18.821
		16QAM	18.731
		64QAM	18.761
		256QAM	18.821
	50.0	QPSK	41.341
		16QAM	41.409
		64QAM	41.379
		256QAM	41.377



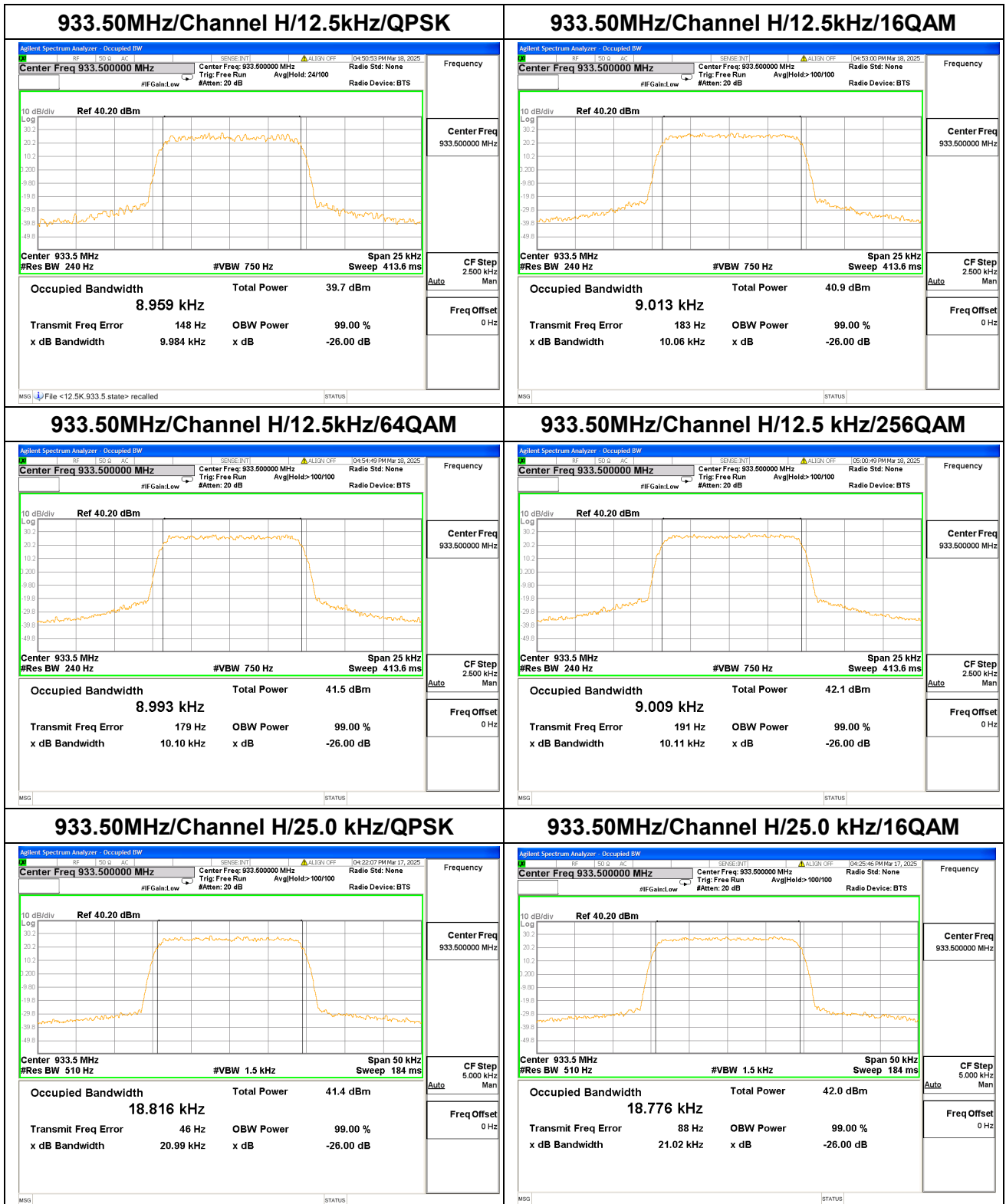
**930.50MHz/Channel H/25.0 kHz/64QAM****930.50MHz/Channel H/25.0 kHz/256QAM****930.50MHz/Channel H/50.0 kHz/QPSK****930.50MHz/Channel H/50.0 kHz/16QAM****930.50MHz/Channel H/50.0 kHz/64QAM****930.50MHz/Channel H/50.0 kHz/256QAM**

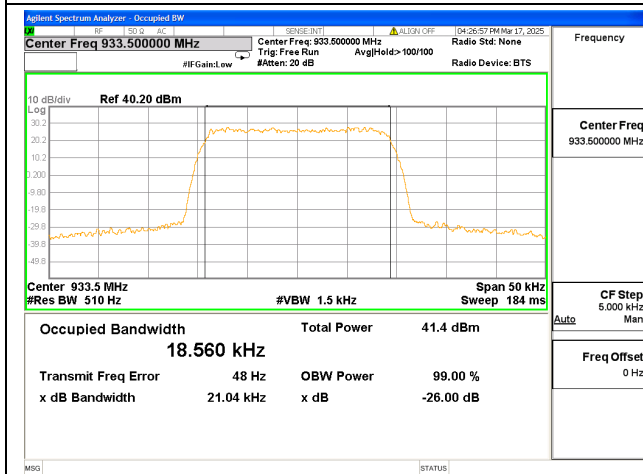
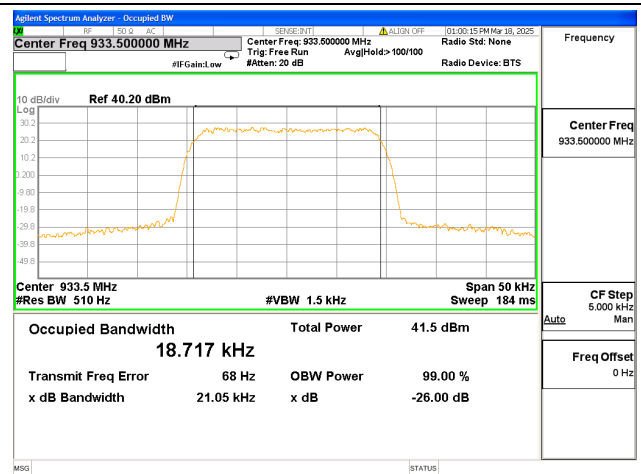
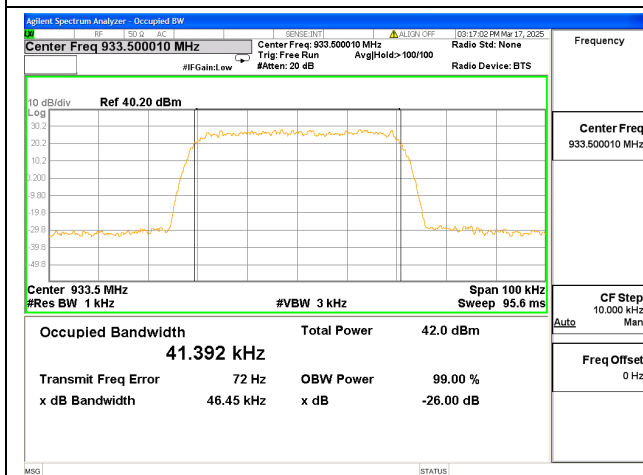
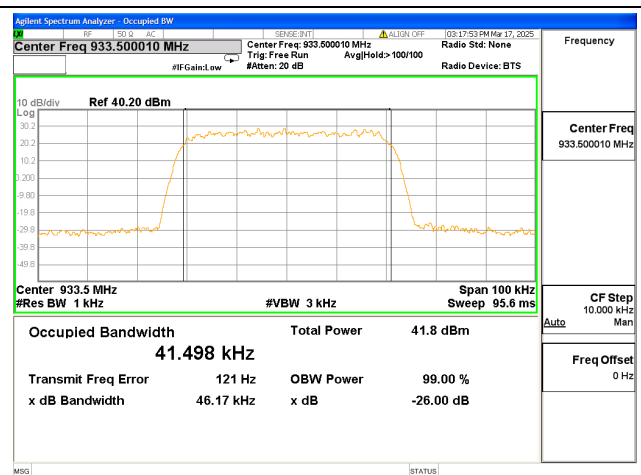
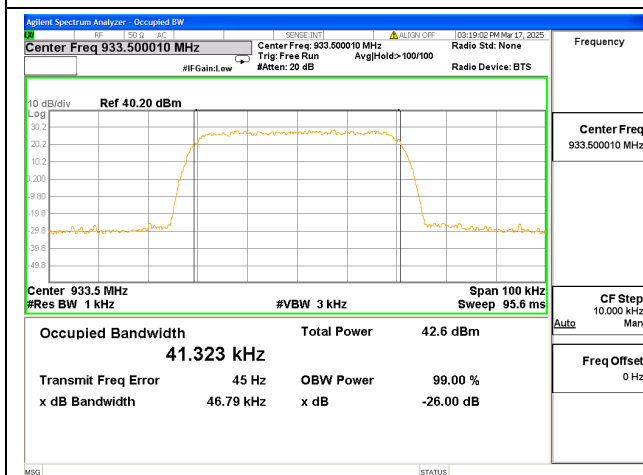
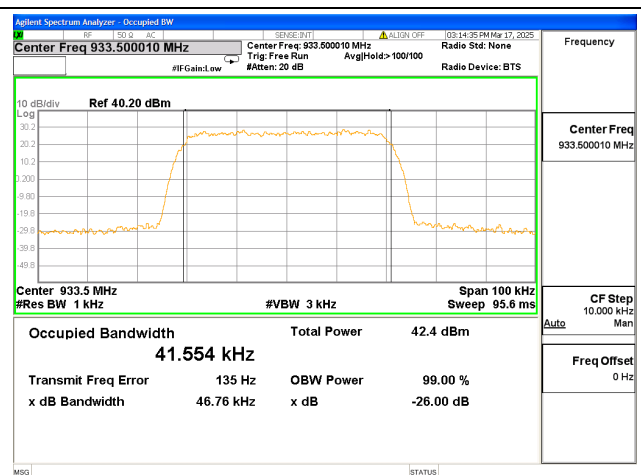


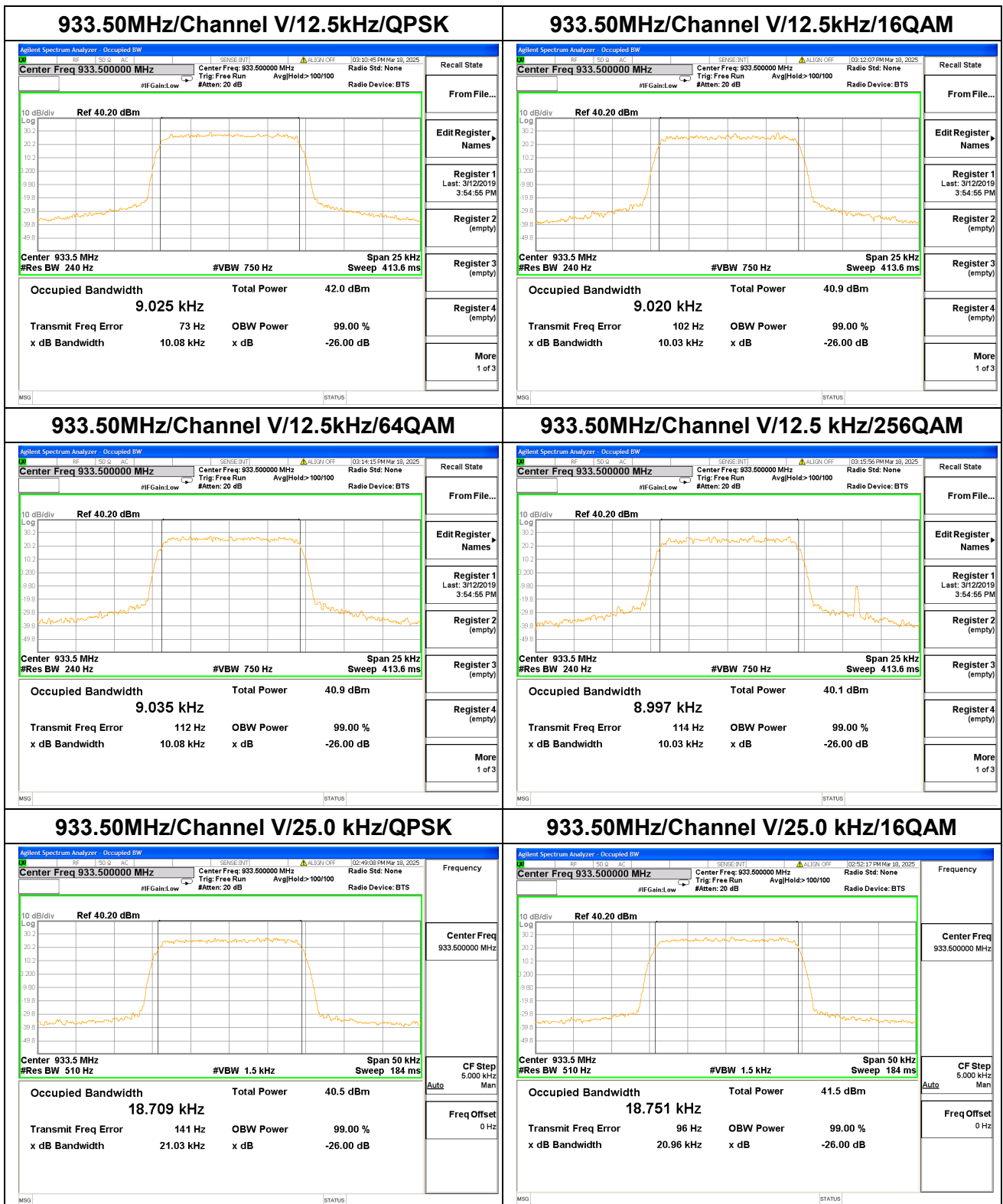
**930.50MHz/Channel V/25.0 kHz/64QAM****930.50MHz/Channel V/25.0 kHz/256QAM****930.50MHz/Channel V/50.0 kHz/QPSK****930.50MHz/Channel V/50.0 kHz/16QAM****930.50MHz/Channel V/50.0 kHz/64QAM****930.50MHz/Channel V/50.0 kHz/256QAM**

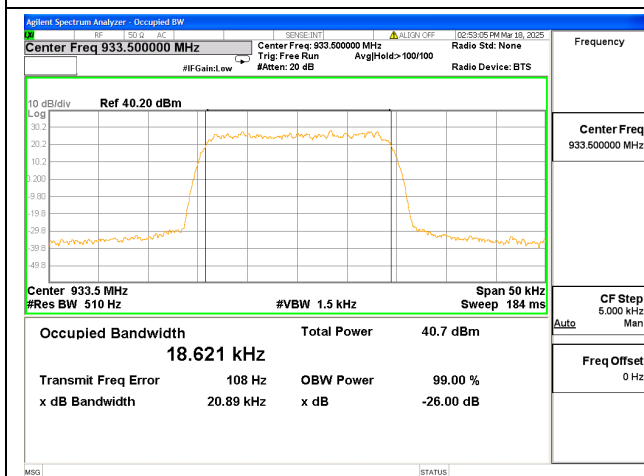
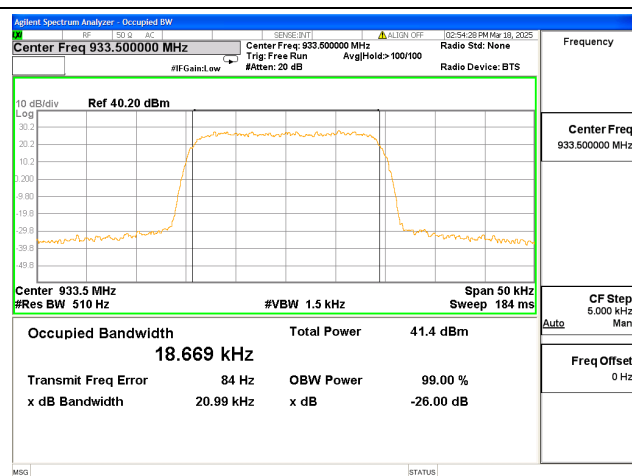
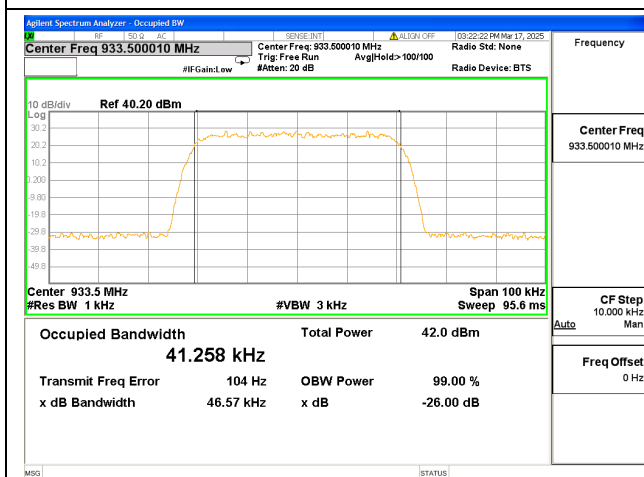
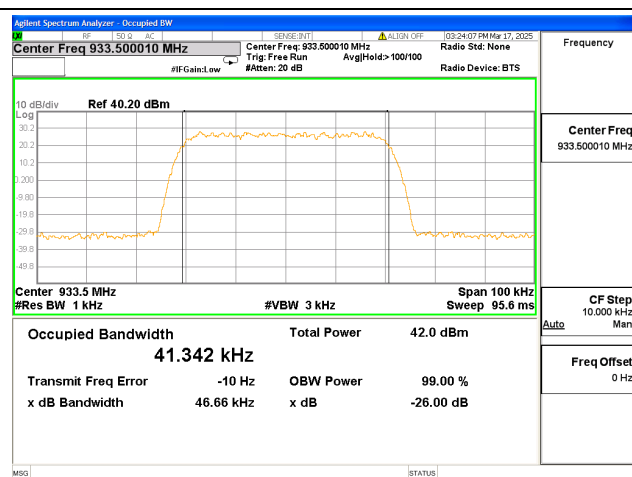
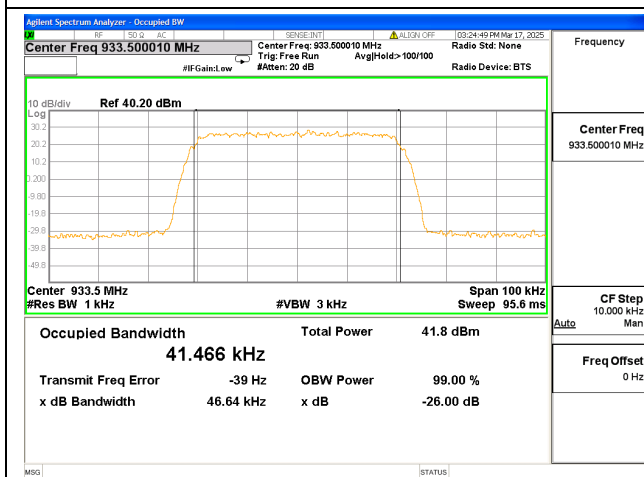
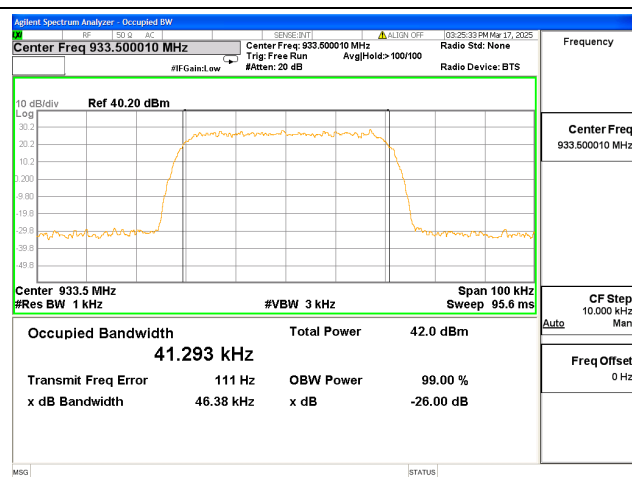


933.50 MHz			
Tx Port	Channel Bandwidth(kHz)	Emission Type	Occupied Bandwidth(kHz)
H	12.5	QPSK	8.959
		16QAM	9.013
		64QAM	8.993
		256QAM	9.009
	25.0	QPSK	18.816
		16QAM	18.776
		64QAM	18.560
		256QAM	18.717
	50.0	QPSK	41.392
		16QAM	41.498
		64QAM	41.323
		256QAM	41.554
V	12.5	QPSK	9.025
		16QAM	9.020
		64QAM	9.035
		256QAM	8.997
	25.0	QPSK	18.709
		16QAM	18.751
		64QAM	18.621
		256QAM	18.669
	50.0	QPSK	41.258
		16QAM	41.342
		64QAM	41.466
		256QAM	41.293



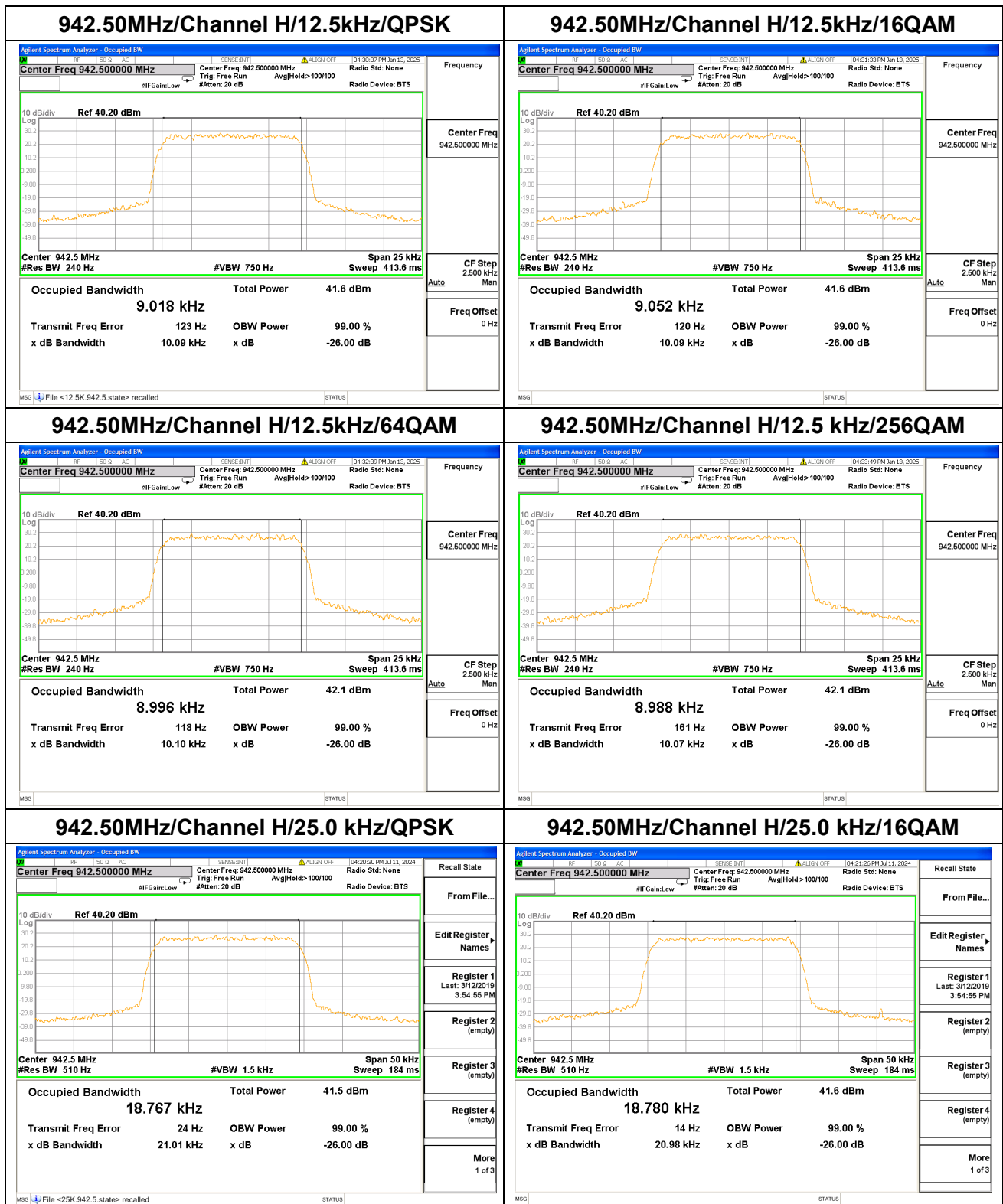
**933.50MHz/Channel H/25.0 kHz/64QAM****933.50MHz/Channel H/25.0 kHz/256QAM****933.50MHz/Channel H/50.0 kHz/QPSK****933.50MHz/Channel H/50.0 kHz/16QAM****933.50MHz/Channel H/50.0 kHz/64QAM****933.50MHz/Channel H/50.0 kHz/256QAM**

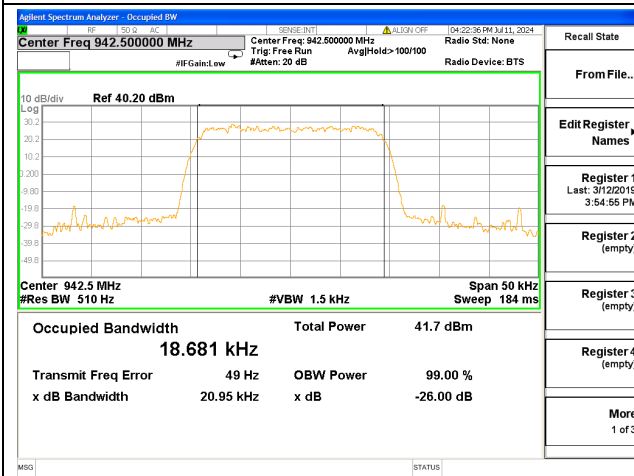
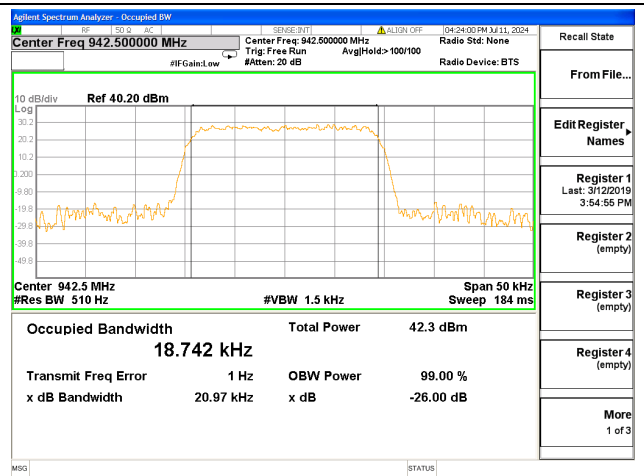
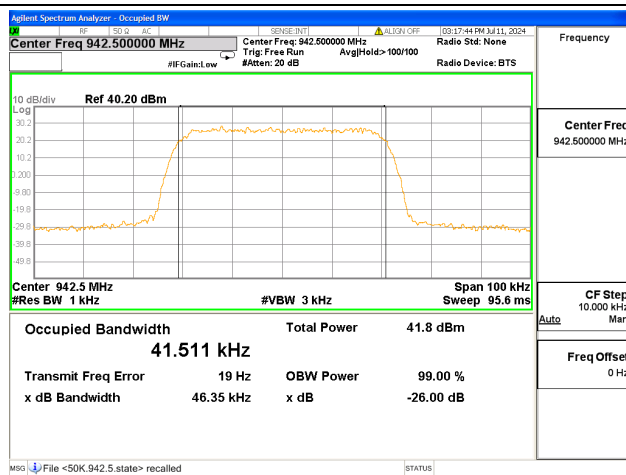
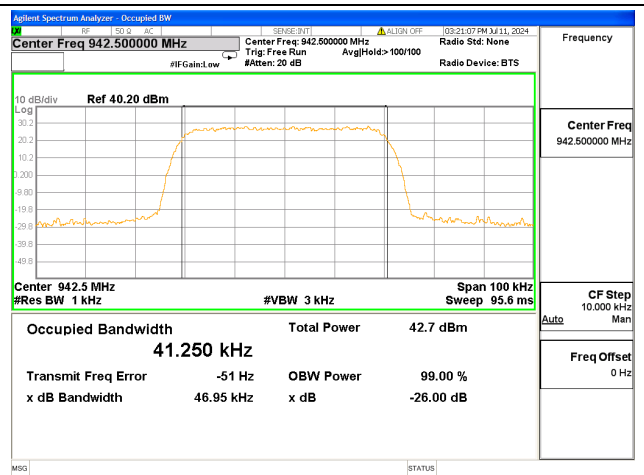
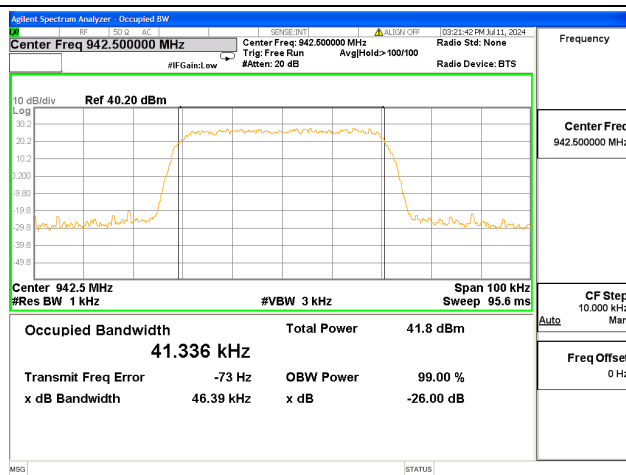


**933.50MHz/Channel V/25.0 kHz/64QAM****933.50MHz/Channel V/25.0 kHz/256QAM****933.50MHz/Channel V/50.0 kHz/QPSK****933.50MHz/Channel V/50.0 kHz/16QAM****933.50MHz/Channel V/50.0 kHz/64QAM****933.50MHz/Channel V/50.0 kHz/256QAM**

942.50 MHz			
Tx Port	Channel Bandwidth(kHz)	Emission Type	Occupied Bandwidth(kHz)
H	12.5	QPSK	9.018
		16QAM	9.052
		64QAM	8.996
		256QAM	8.998
	25.0	QPSK	18.767
		16QAM	18.780
		64QAM	18.681
		256QAM	18.742
	50.0	QPSK	41.511
		16QAM	41.250
		64QAM	41.336
		256QAM	41.280
V	12.5	QPSK	8.993
		16QAM	9.014
		64QAM	8.996
		256QAM	8.998
	25.0	QPSK	18.767
		16QAM	18.780
		64QAM	18.681
		256QAM	18.742
	50.0	QPSK	41.511
		16QAM	41.250
		64QAM	41.336
		256QAM	41.280





**942.50MHz/Channel H/25.0 kHz/64QAM****942.50MHz/Channel H/25.0 kHz/256QAM****942.50MHz/Channel H/50.0 kHz/QPSK****942.50MHz/Channel H/50.0 kHz/16QAM****942.50MHz/Channel H/50.0 kHz/64QAM****942.50MHz/Channel H/50.0 kHz/256QAM**