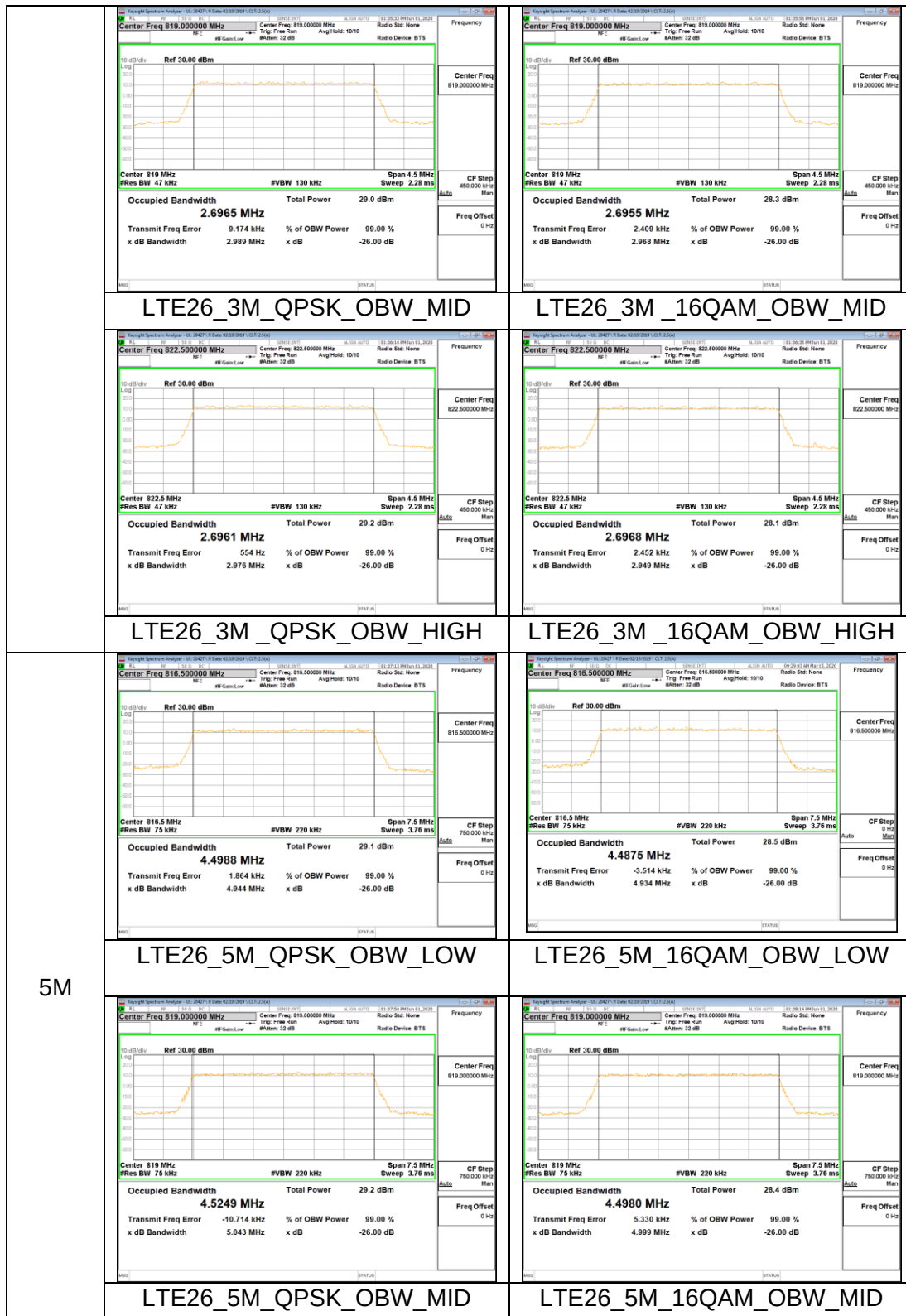
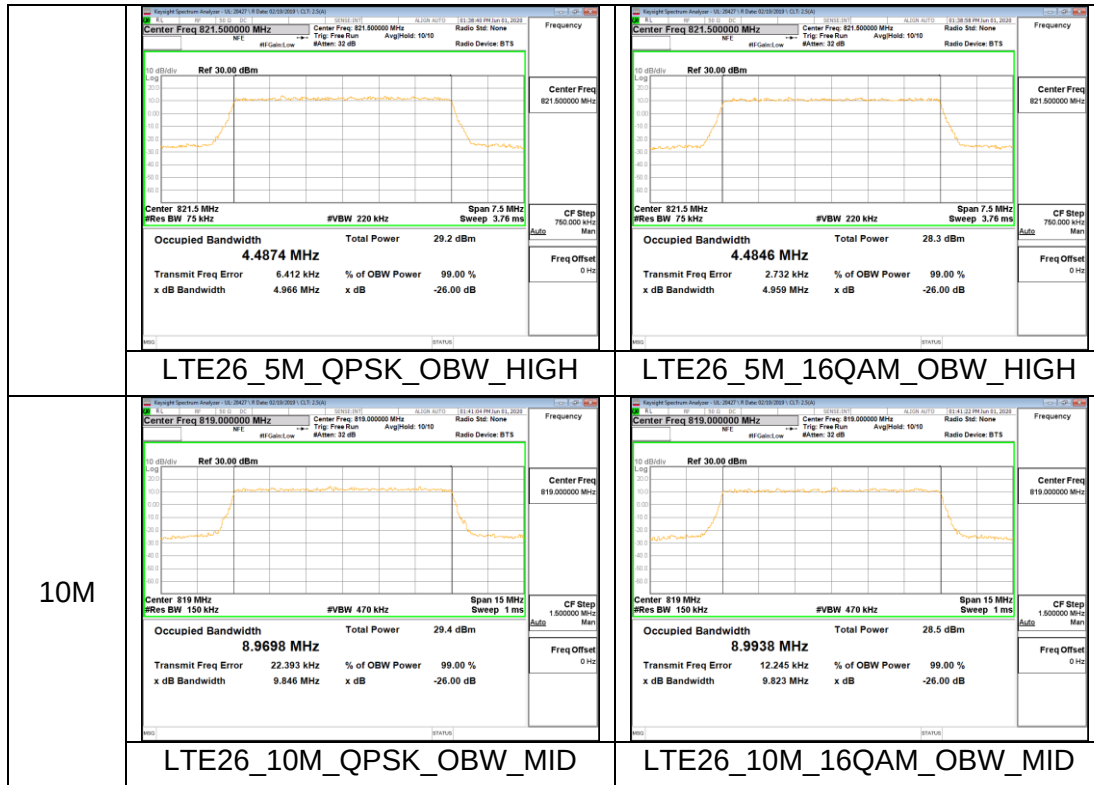
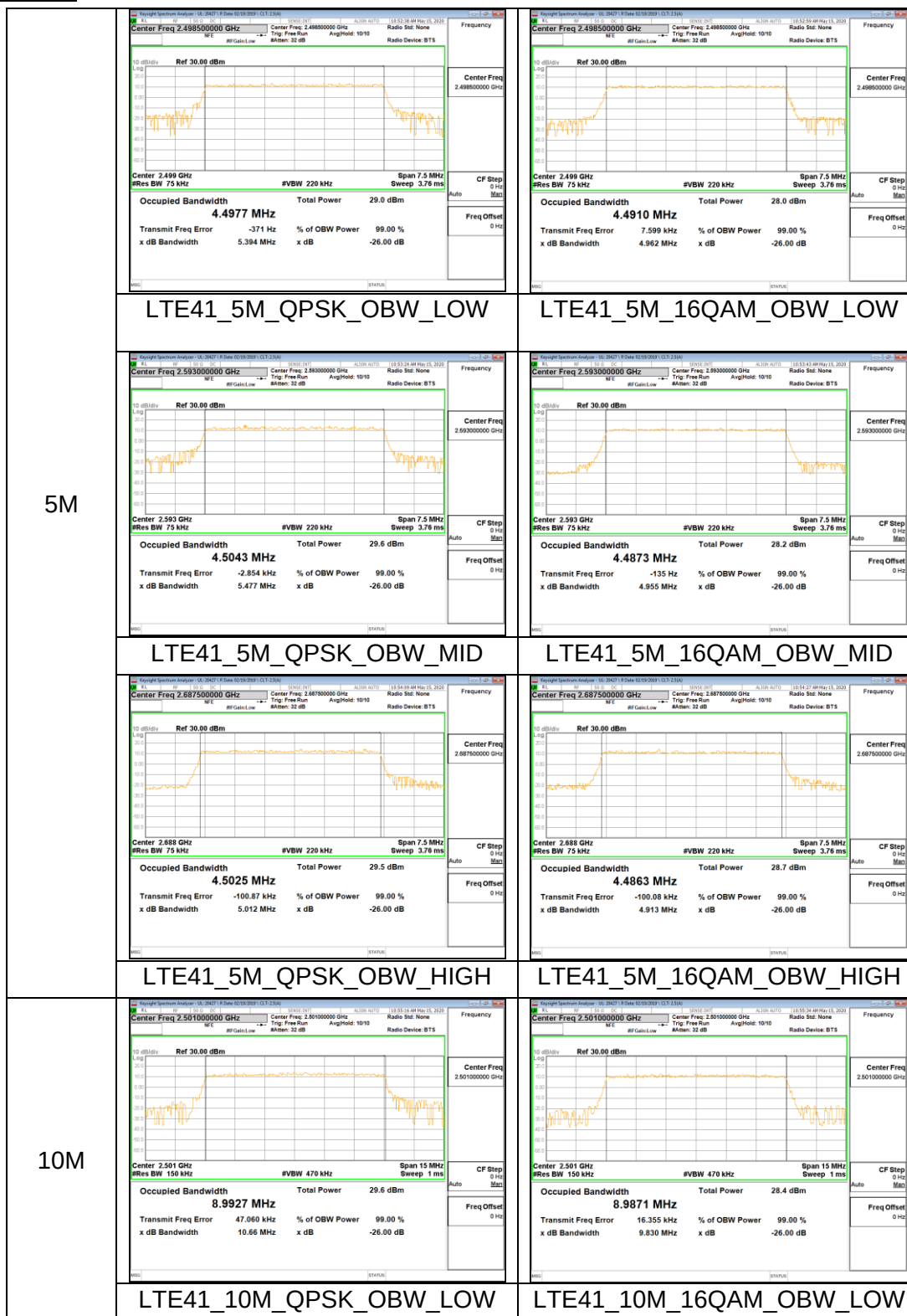
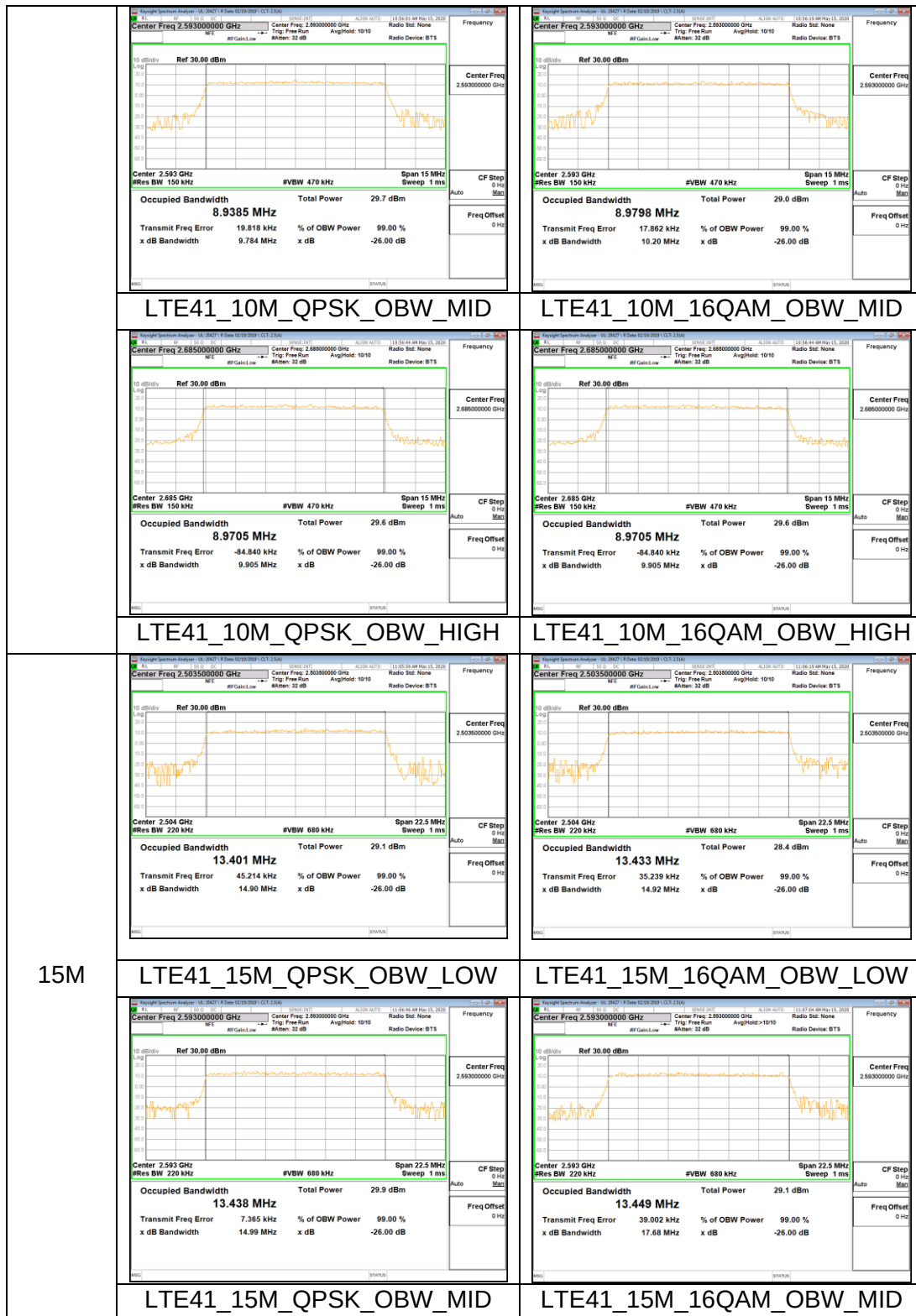






LTE Band 41



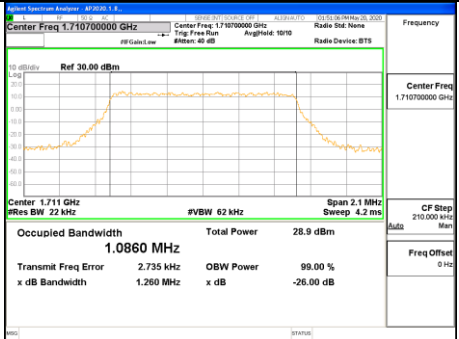
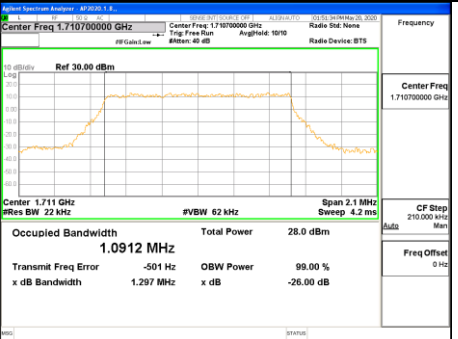
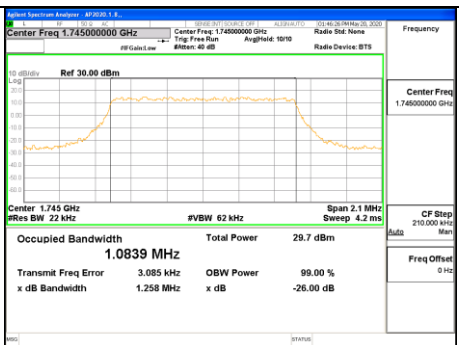
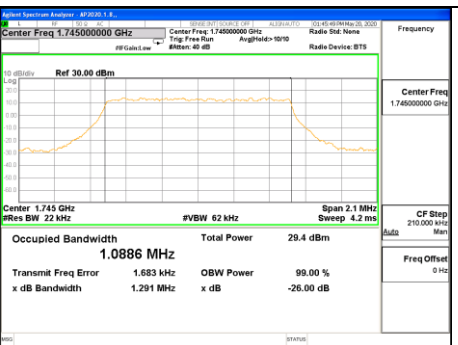
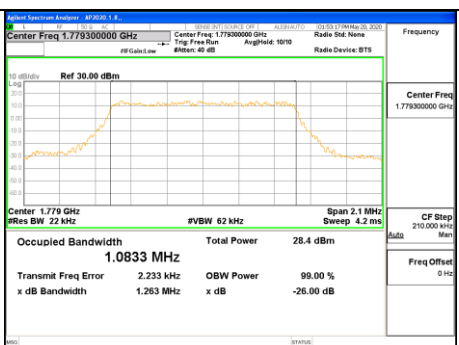
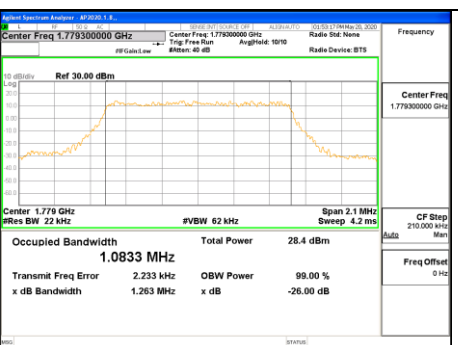
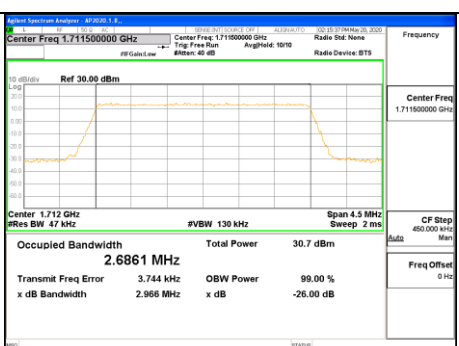
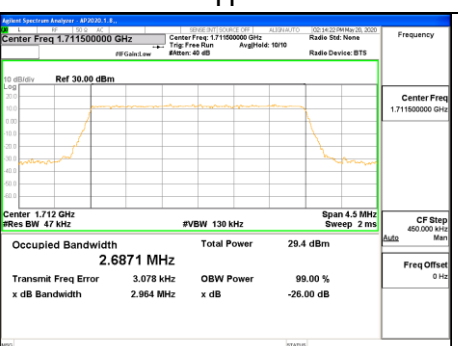


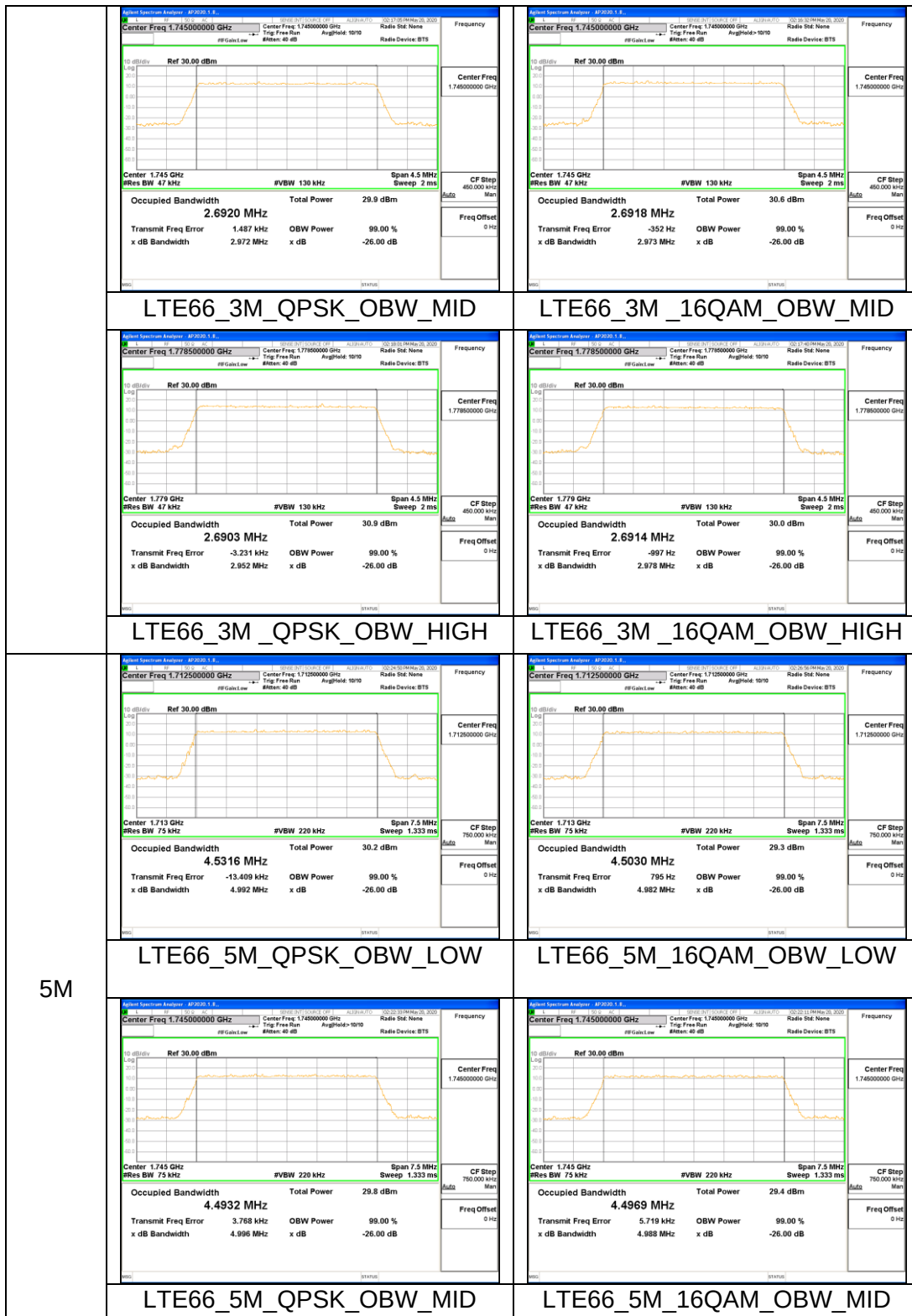
15M

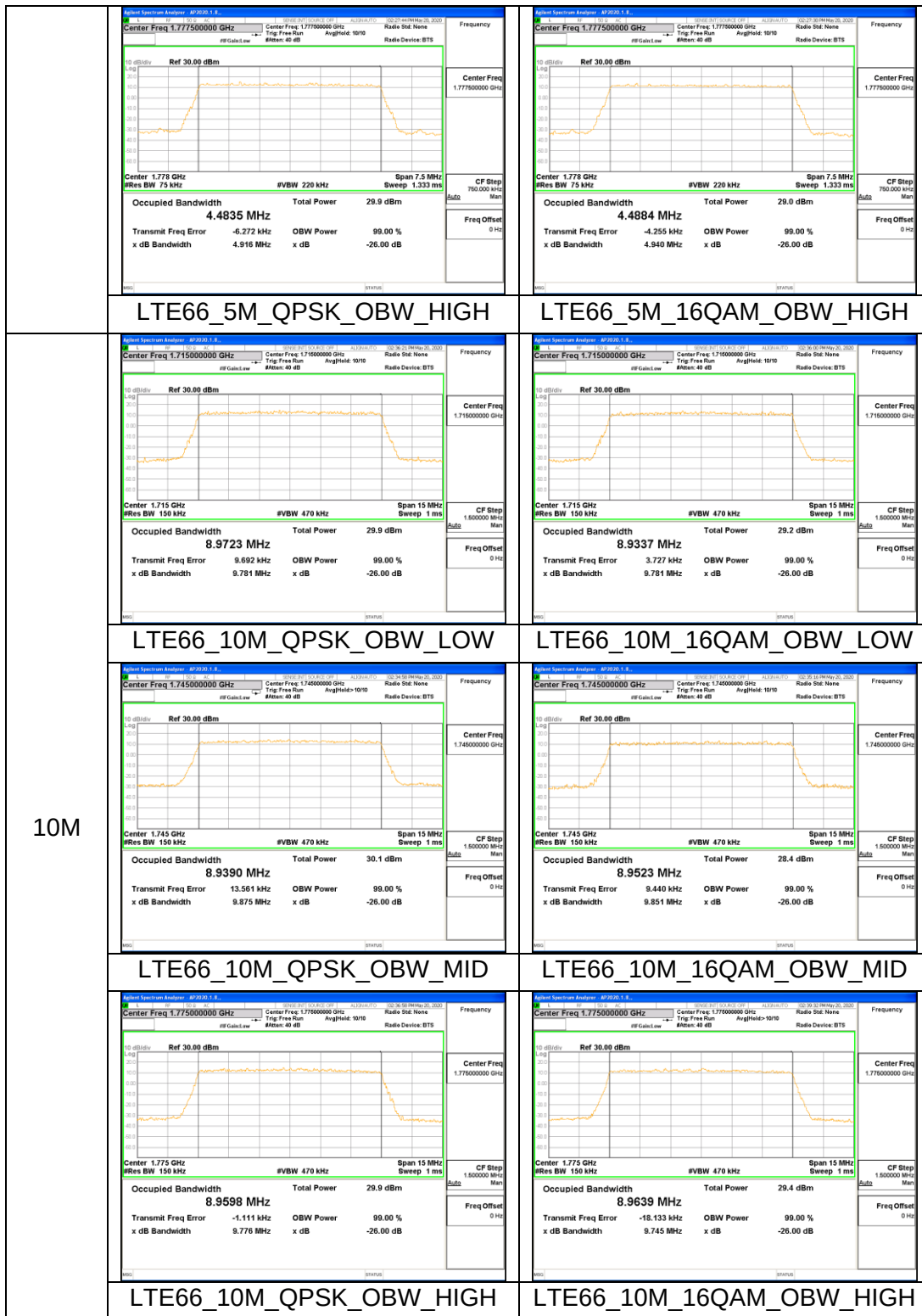


20M

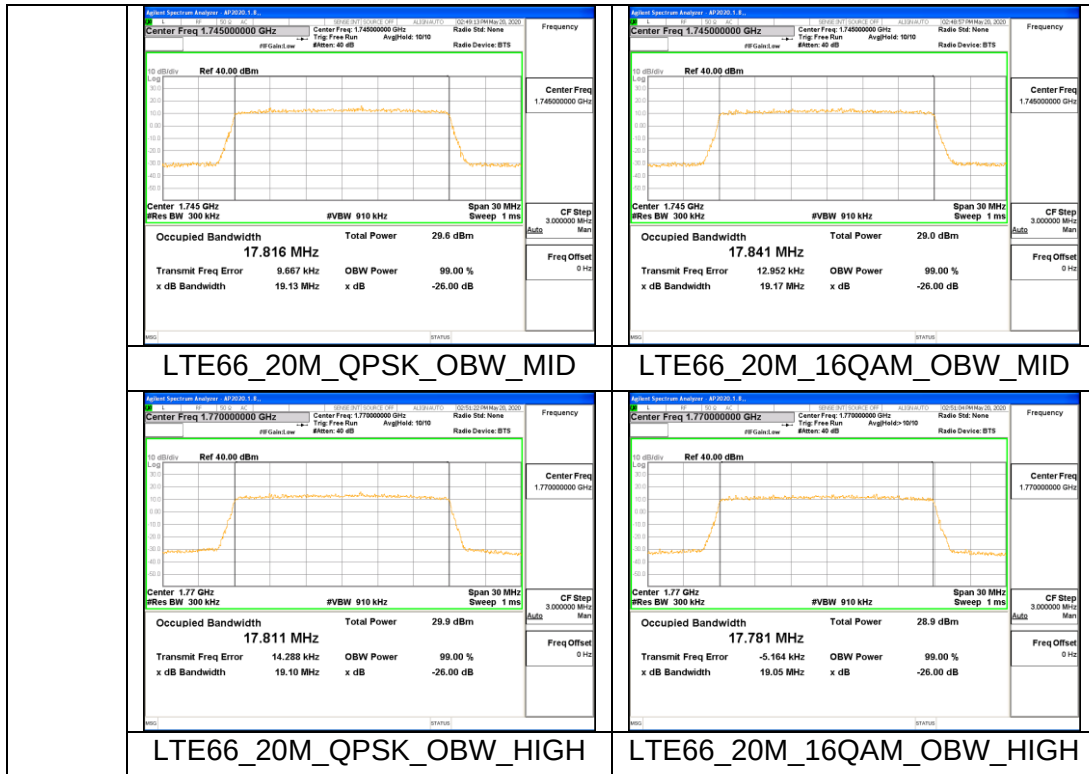
LTE Band 66

1.4M	 LTE66_1.4M_QPSK_OBW_LOW	 LTE66_1.4M_16QAM_OBW_LOW
	 LTE66_1.4M_QPSK_OBW_MID	 LTE66_1.4M_16QAM_OBW_MID
	 LTE66_1.4M_QPSK_OBW_HIGH	 LTE66_1.4M_16QAM_OBW_HIGH
	 LTE66_3M_QPSK_OBW_LOW	 LTE66_3M_16QAM_OBW_LOW

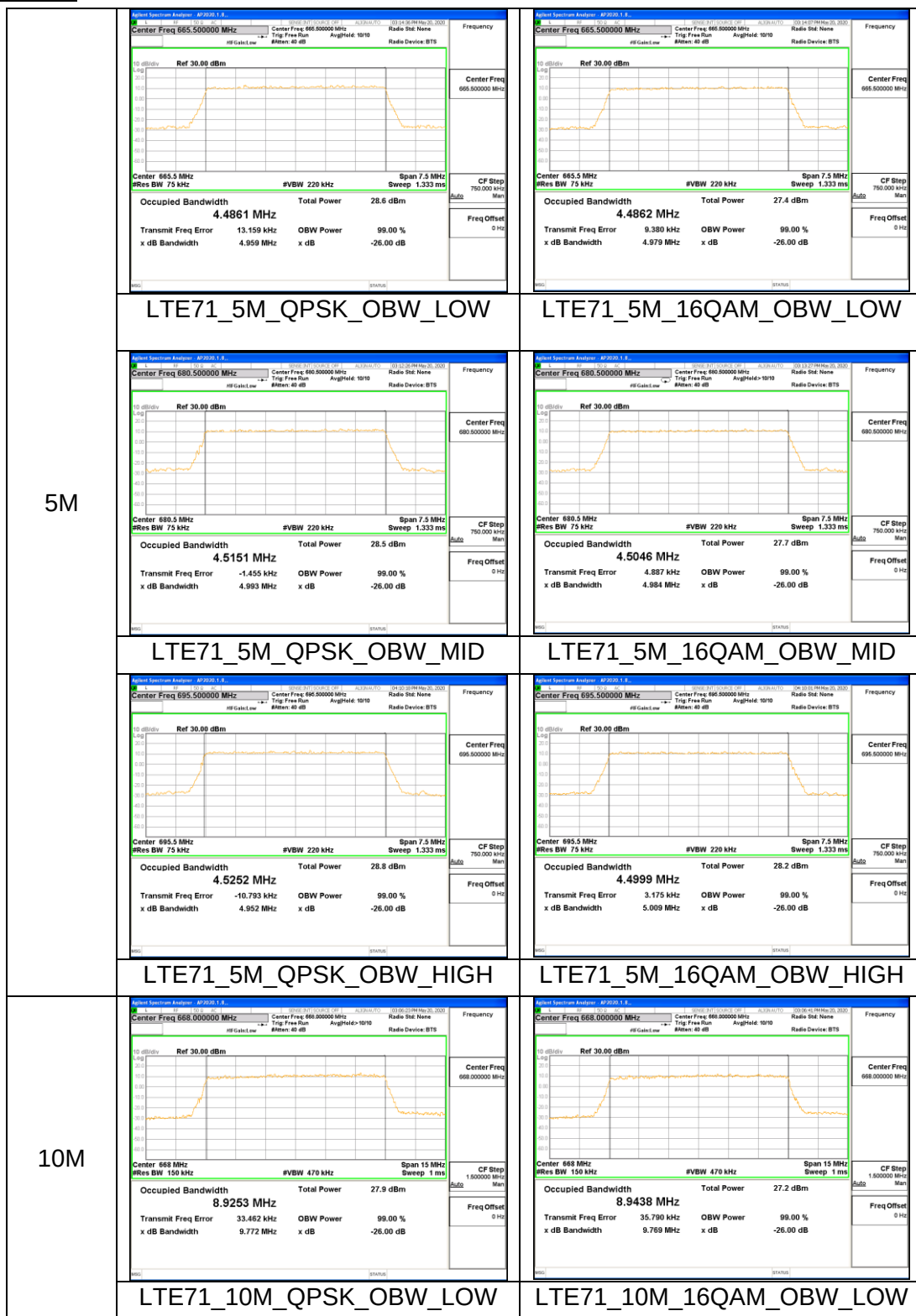


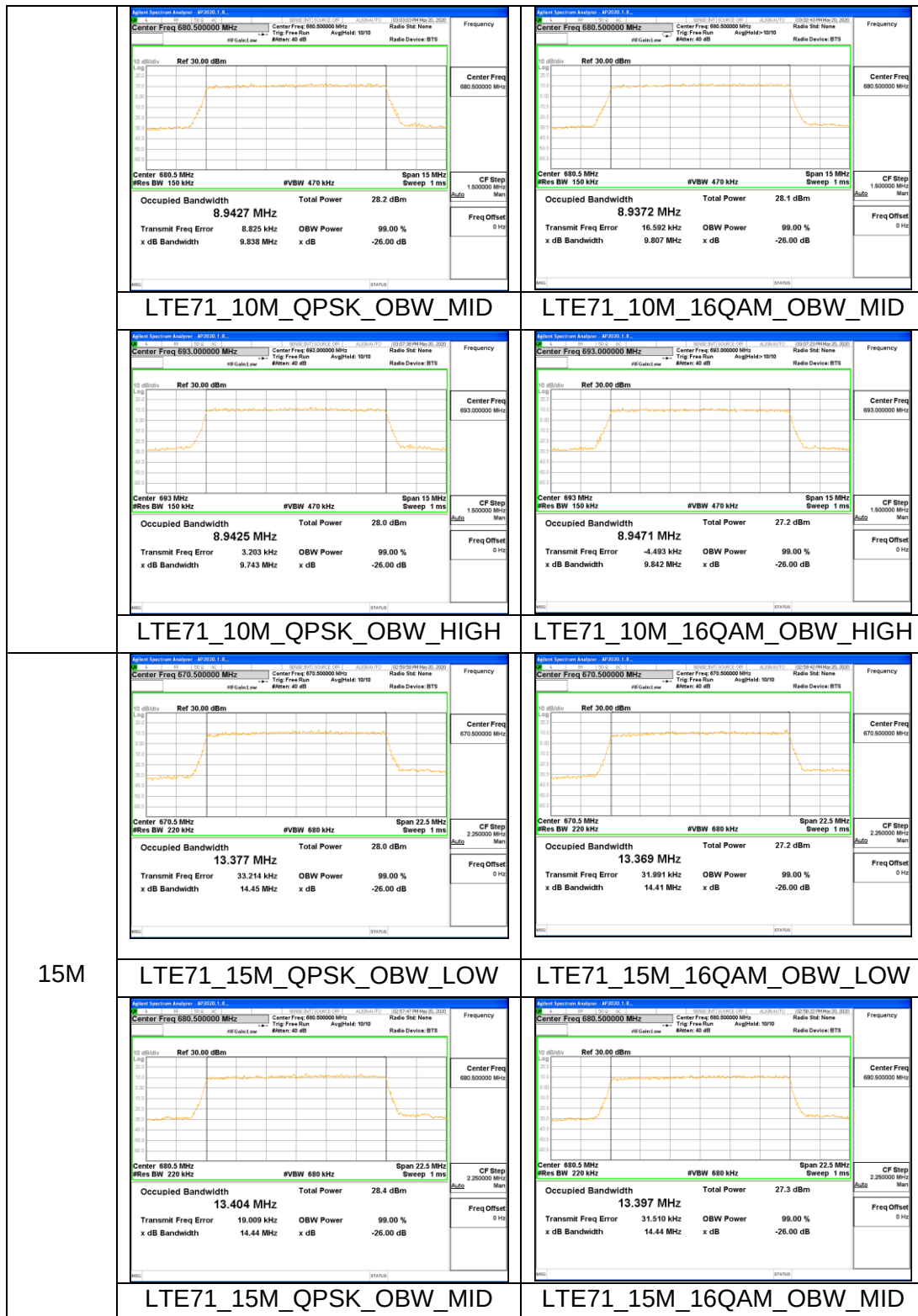






LTE Band 71







20M

6.4 FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, §27.54, §90.213.

LIMITS

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

§24.235 and §27.54 - The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

§90.213 - The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v03r01.

RESULTS

See the following pages.

Test Mode	Test Conditions		Frequency Deviation Middle Channel		
LTE Band 2	Power (VDC)	Temperature (°C)	Frequency Error	Frequency Error	Limit
			Hz	ppm	ppm
	VN	-30	-2.62	-0.0014	2.5
		-20	-2.69	-0.0014	
		-10	-3.12	-0.0017	
		0	-3.03	-0.0016	
		+10	-3.26	-0.0017	
		+20	-2.20	-0.0012	
		+30	-4.05	-0.0022	
		+40	-4.82	-0.0026	
		+50	-4.98	-0.0026	
	VL	TN	-5.78	-0.0031	
	VH		-0.84	-0.0004	
	End Point		-0.73	-0.0004	

Test Mode	Test Conditions		Frequency Deviation Middle Channel		
LTE Band 4	Power (VDC)	Temperature (°C)	Frequency Error	Frequency Error	Limit
			Hz	ppm	ppm
	VN	-30	0.72	0.0004	2.5
		-20	0.84	0.0005	
		-10	0.60	0.0003	
		0	-0.07	0.0000	
		+10	0.29	0.0002	
		+20	1.44	0.0008	
		+30	0.07	0.0000	
		+40	-0.36	-0.0002	
		+50	0.06	0.0000	
	VL	TN	-0.53	-0.0003	
	VH		1.40	0.0008	
	End Point		1.69	0.0010	

Test Mode	Test Conditions		Frequency Deviation Middle Channel		
LTE Band 5	Power (VDC)	Temperature (°C)	Frequency Error	Frequency Error	Limit
	VN	TN	Hz	ppm	ppm
			-0.13	-0.0002	2.5
			0.31	0.0004	
			-0.70	-0.0008	
			-1.12	-0.0013	
			-0.82	-0.0010	
			-0.33	-0.0004	
			-0.23	-0.0003	
			-0.54	-0.0006	
			-0.46	-0.0005	
	VL	TN	-1.07	-0.0013	2.5
	VH		-1.43	-0.0017	
	End Point		-1.50	-0.0018	

Test Mode	Test Conditions		Frequency Deviation Middle Channel		
LTE Band 12	Power (VDC)	Temperature (°C)	Frequency Error	Frequency Error	Limit
	VN	TN	Hz	ppm	ppm
			-1.40	-0.0020	2.5
			-0.72	-0.0010	
			-1.70	-0.0024	
			-1.44	-0.0020	
			-1.36	-0.0019	
			-1.43	-0.0020	
			-0.41	-0.0006	
			-0.10	-0.0001	
			-0.40	-0.0006	
	VL	TN	-0.76	-0.0011	2.5
	VH		-0.44	-0.0006	
	End Point		-0.57	-0.0008	

Test Mode	Test Conditions		Frequency Deviation Middle Channel		
LTE Band 13	Power (VDC)	Temperature (°C)	Frequency Error	Frequency Error	Limit
	VN	TN	Hz	ppm	ppm
			-30	-1.00	-0.0013
			-20	-0.92	-0.0012
			-10	-1.46	-0.0019
			0	-1.07	-0.0014
			+10	-0.90	-0.0012
			+20	-1.03	-0.0013
			+30	-1.57	-0.0020
			+40	-1.30	-0.0017
			+50	-2.29	-0.0029
	VL	TN	-1.14	-0.0015	2.5
	VH		-1.85	-0.0024	
	End Point		-0.90	-0.0012	

Test Mode	Test Conditions		Frequency Deviation Middle Channel		
LTE Band 25	Power (VDC)	Temperature (°C)	Frequency Error	Frequency Error	Limit
	VN	TN	Hz	ppm	ppm
			-30	0.92	0.0005
			-20	1.92	0.0010
			-10	1.14	0.0006
			0	1.80	0.0010
			+10	1.56	0.0008
			+20	1.87	0.0010
			+30	-0.36	-0.0002
			+40	0.14	0.0001
			+50	-0.96	-0.0005
	VL	TN	-0.06	0.0000	2.5
	VH		2.00	0.0011	
	End Point		2.69	0.0014	

Test Mode	Test Conditions		Frequency Deviation Middle Channel		
LTE Band 26	Power (VDC)	Temperature (°C)	Frequency Error	Frequency Error	Limit
			Hz	ppm	ppm
	VN	-30	3.32	0.0041	2.5
		-20	0.97	0.0012	
		-10	2.32	0.0028	
		0	-0.75	-0.0009	
		+10	1.25	0.0015	
		+20	0.89	0.0011	
		+30	-2.21	-0.0027	
		+40	-2.57	-0.0031	
		+50	-0.84	-0.0010	
	VL	TN	1.26	0.0015	
	VH		1.28	0.0016	
	End Point		1.75	0.0021	

Test Mode	Test Conditions		Frequency Deviation Middle Channel		
LTE Band 41	Power (VDC)	Temperature (°C)	Frequency Error	Frequency Error	Limit
			Hz	ppm	ppm
	VN	-30	12.13	0.0047	2.5
		-20	10.83	0.0042	
		-10	13.86	0.0053	
		0	10.87	0.0042	
		+10	12.25	0.0047	
		+20	13.07	0.0050	
		+30	12.26	0.0047	
		+40	11.76	0.0045	
		+50	13.73	0.0053	
	VL	TN	13.58	0.0052	
	VH		12.90	0.0050	
	End Point		11.90	0.0046	

Test Mode	Test Conditions		Frequency Deviation Middle Channel		
LTE Band 66	Power (VDC)	Temperature (°C)	Frequency Error	Frequency Error	Limit
			Hz	ppm	ppm
	VN	-30	-2.30	-0.0013	2.5
		-20	-2.40	-0.0014	
		-10	-2.80	-0.0016	
		0	-2.60	-0.0015	
		+10	-2.98	-0.0017	
		+20	-2.15	-0.0012	
		+30	-3.85	-0.0022	
		+40	-3.45	-0.0020	
		+50	-2.98	-0.0017	
	VL	TN	-3.40	-0.0020	
	VH		-2.50	-0.0014	
	End Point		-1.33	-0.0008	

Test Mode	Test Conditions		Frequency Deviation Middle Channel		
LTE Band 71	Power (VDC)	Temperature (°C)	Frequency Error	Frequency Error	Limit
			Hz	ppm	ppm
	VN	-30	-1.37	-0.0020	2.5
		-20	-1.32	-0.0019	
		-10	-0.74	-0.0011	
		0	-1.39	-0.0020	
		+10	-1.50	-0.0022	
		+20	-1.69	-0.0025	
		+30	-1.70	-0.0025	
		+40	-3.06	-0.0045	
		+50	-2.53	-0.0037	
	VL	TN	-1.93	-0.0028	
	VH		-1.92	-0.0028	
	End Point		-1.02	-0.0015	

6.5 BAND EDGE EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.917, §24.238, §27.53, §90.691.

LIMITS

FCC: §2.1051, §22.917, §24.238, §27.53

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.

FCC: §90.691 Emission mask requirements for EA-based systems.

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v03r01:

The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

Set the RBW = $1 \sim 1.5$ % of OBW (Typically limited to a minimum RBW of 1% of the OBW)

- b) Set VBW $\geq 3 \times$ RBW;
- c) Set span ≥ 1.5 times the OBW;
- d) Sweep time = Auto;
- e) Detector = RMS;
- f) Ensure that the number of measurement points $\geq 2 \times$ Span/RBW;
- g) Trace mode = Average (100).

TEST PROCEDURE (LTE Band41)

(m)(6) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

RESULTS

See the following pages.

LTE Band 2

