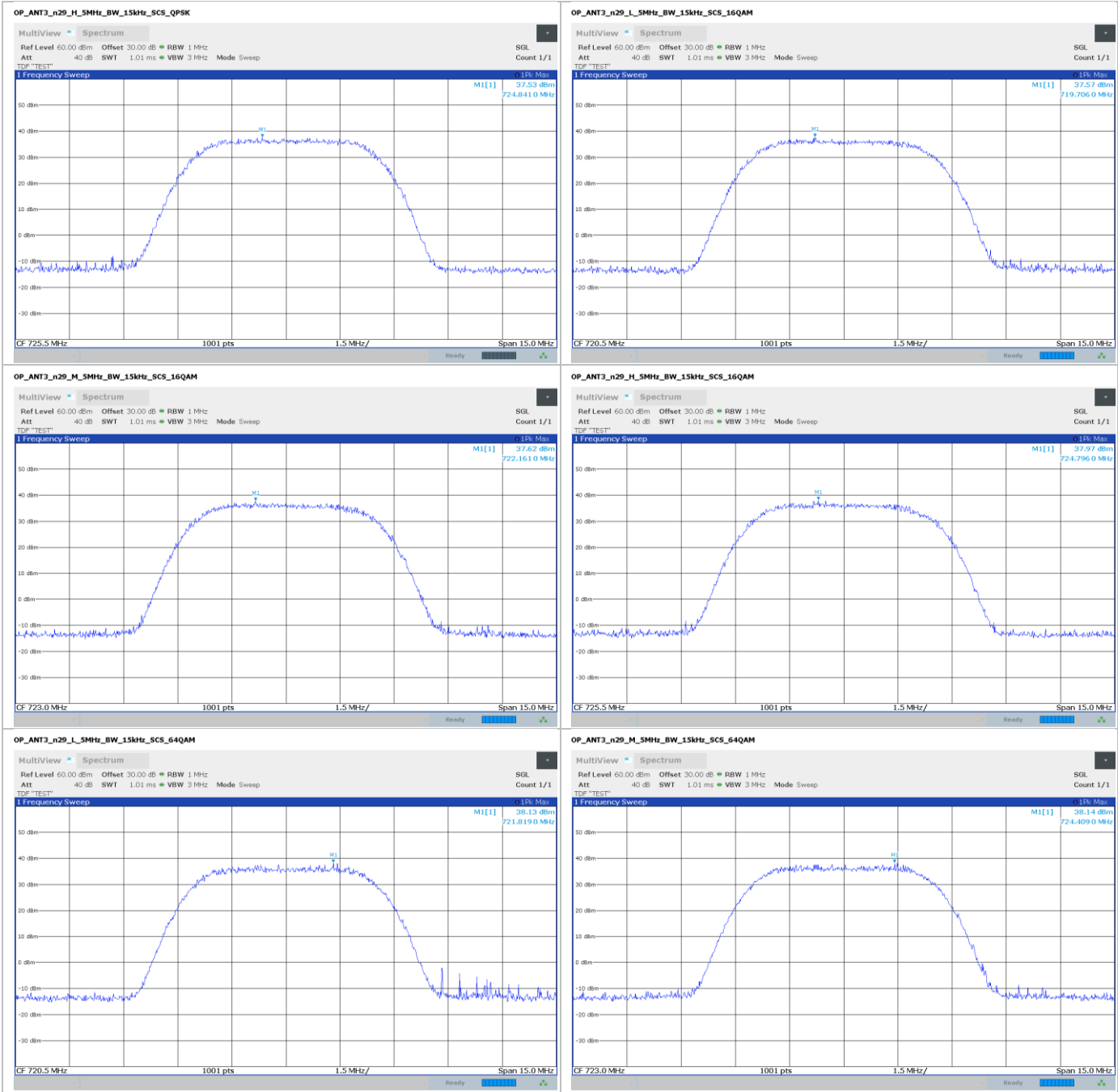


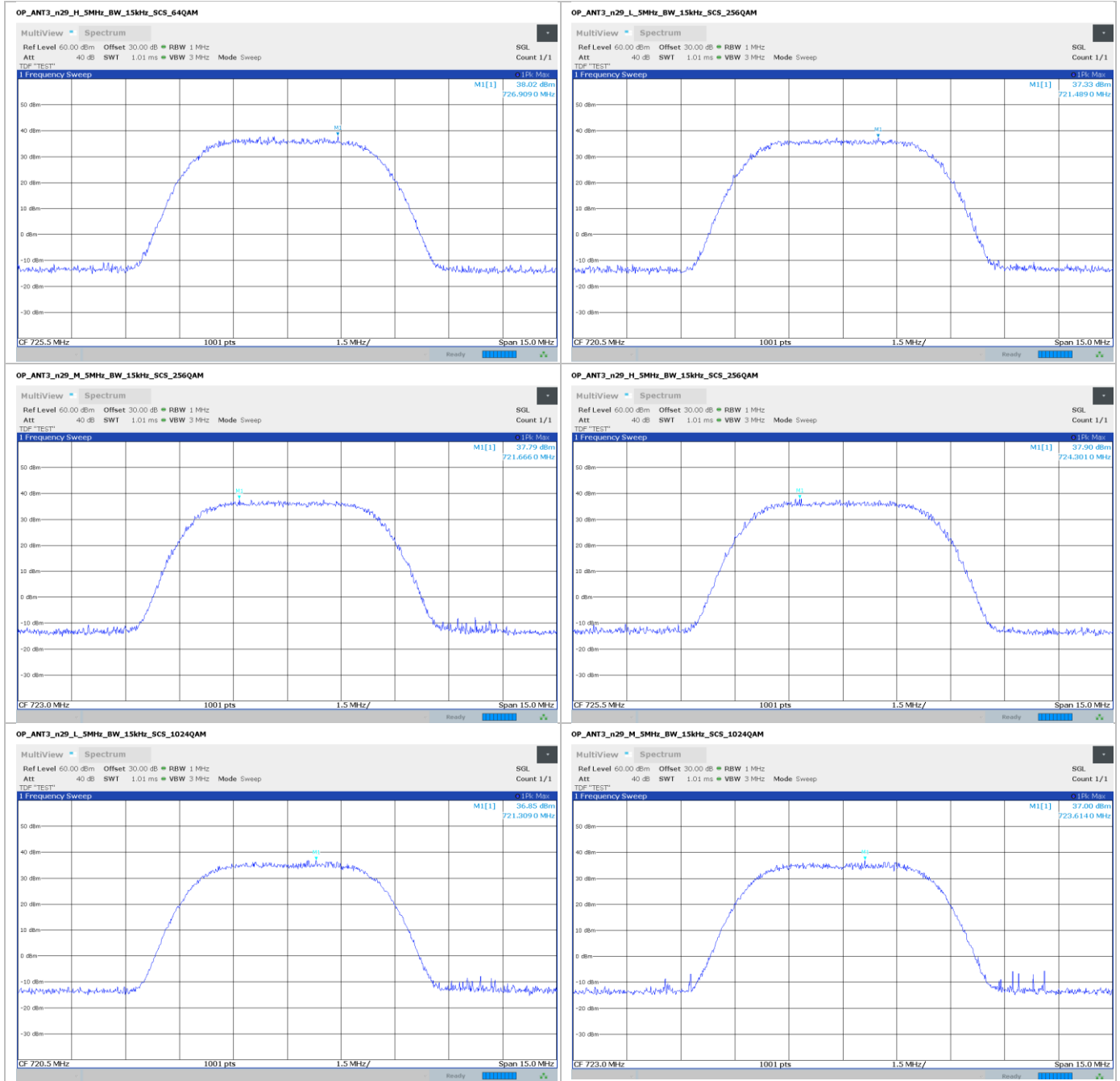
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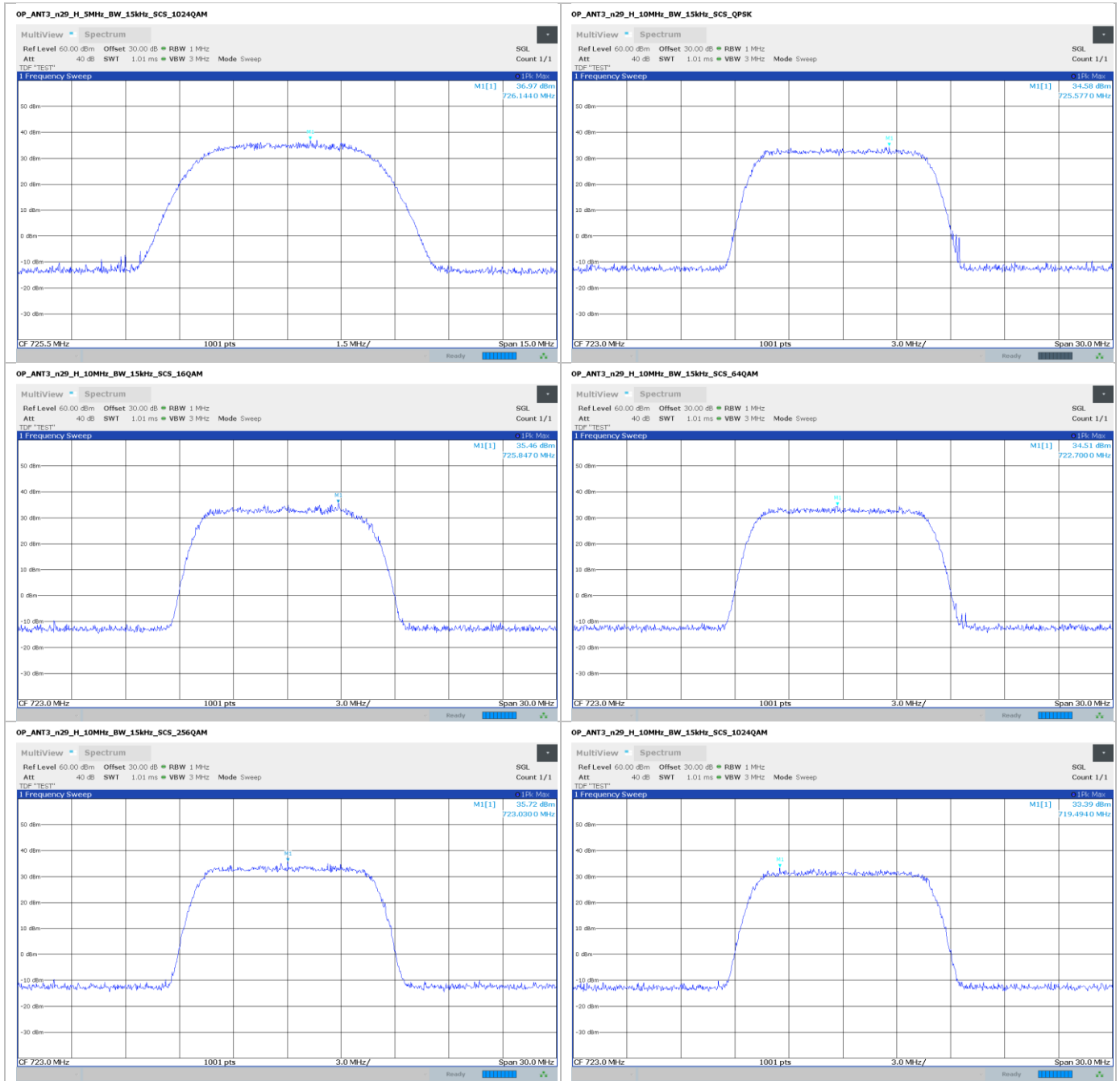
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Band n71:

Band	Modulation	OBW (MHz)	Port	Frequency (MHz)	Power Density (dBm/1 MHz)	Correlation factor (dB)	Total power density across all ports (dBm / 1 MHz)
n71 (NB-IoT)	QPSK	0.2	C	627	33.73	6.02	39.75
n71 (NB-IoT)	QPSK	0.2	C	627	34.05	6.02	40.07
n71 (NB-IoT)	QPSK	0.2	C	651.9	33	6.02	39.02

Table 8.4-4: Conducted output power, band n71, 0.2 MHz OBW

Band	Modulation	OBW (MHz)	Port	Frequency (MHz)	Power Density (dBm/1 MHz)	Correlation factor (dB)	Total power density across all ports (dBm / 1 MHz)
n71	QPSK	5	C	619.5	39.81	6.02	45.83
n71	QPSK	5	C	634.5	39.73	6.02	45.75
n71	QPSK	5	C	649.5	39.26	6.02	45.28
n71	16QAM	5	C	619.5	39.65	6.02	45.67
n71	16QAM	5	C	634.5	39.7	6.02	45.72
n71	16QAM	5	C	649.5	39.43	6.02	45.45
n71	64QAM	5	C	619.5	39.58	6.02	45.6
n71	64QAM	5	C	634.5	39.28	6.02	45.3
n71	64QAM	5	C	649.5	39.3	6.02	45.32
n71	256QAM	5	C	619.5	38.99	6.02	45.01
n71	256QAM	5	C	634.5	39.78	6.02	45.8
n71	256QAM	5	C	649.5	38.66	6.02	44.68
n71	1024QAM	5	C	619.5	38.84	6.02	44.86
n71	1024QAM	5	C	634.5	38.96	6.02	44.98
n71	1024QAM	5	C	649.5	38.02	6.02	44.04

Table 8.4-5: Conducted output power, band n71, 5 MHz OBW

Band	Modulation	OBW (MHz)	Port	Frequency (MHz)	Power Density (dBm/1 MHz)	Correlation factor (dB)	Total power density across all ports (dBm / 1 MHz)
n71	QPSK	10	C	619.5	36.38	6.02	42.84
n71	QPSK	10	C	634.5	37.03	6.02	43.05
n71	QPSK	10	C	649.5	36.15	6.02	42.17
n71	16QAM	10	C	619.5	36.95	6.02	42.97
n71	16QAM	10	C	634.5	37.06	6.02	43.08
n71	16QAM	10	C	649.5	36.97	6.02	42.99
n71	64QAM	10	C	619.5	36.25	6.02	42.27
n71	64QAM	10	C	634.5	36.9	6.02	42.92
n71	64QAM	10	C	649.5	36.71	6.02	42.73
n71	256QAM	10	C	619.5	36.66	6.02	42.68
n71	256QAM	10	C	634.5	36.75	6.02	42.77
n71	256QAM	10	C	649.5	35.99	6.02	42.01
n71	1024QAM	10	C	619.5	34.77	6.02	40.49
n71	1024QAM	10	C	634.5	35.27	6.02	41.29
n71	1024QAM	10	C	649.5	35.2	6.02	41.22

Table 8.4-6: Conducted output power, band n71, 10 MHz OBW

Band	Modulation	OBW (MHz)	Port	Frequency (MHz)	Power Density (dBm/1 MHz)	Correlation factor (dB)	Total power density across all ports (dBm / 1 MHz)
n71	QPSK	15	C	619.5	34.37	6.02	40.39
n71	QPSK	15	C	634.5	34.52	6.02	40.54
n71	QPSK	15	C	649.5	34.44	6.02	40.46
n71	16QAM	15	C	619.5	35.59	6.02	41.61
n71	16QAM	15	C	634.5	35.16	6.02	41.18
n71	16QAM	15	C	649.5	35.49	6.02	41.51
n71	64QAM	15	C	619.5	34.98	6.02	41
n71	64QAM	15	C	634.5	34.52	6.02	40.54
n71	64QAM	15	C	649.5	35.1	6.02	41.12
n71	256QAM	15	C	619.5	35.11	6.02	41.13
n71	256QAM	15	C	634.5	34.99	6.02	41.01
n71	256QAM	15	C	649.5	34.92	6.02	40.94
n71	1024QAM	15	C	619.5	33.62	6.02	39.64
n71	1024QAM	15	C	634.5	33.65	6.02	39.67
n71	1024QAM	15	C	649.5	33.45	6.02	39.47

Table 8.4-7: Conducted output power, band n71, 15 MHz OBW

Band	Modulation	OBW (MHz)	Port	Frequency (MHz)	Power Density (dBm/1 MHz)	Correlation factor (dB)	Total power density across all ports (dBm / 1 MHz)
n71	QPSK	20	C	619.5	34.55	6.02	40.57
n71	QPSK	20	C	634.5	34.37	6.02	40.39
n71	QPSK	20	C	649.5	34.33	6.02	40.45
n71	16QAM	20	C	619.5	34.77	6.02	40.79
n71	16QAM	20	C	634.5	34.38	6.02	40.4
n71	16QAM	20	C	649.5	34.77	6.02	40.79
n71	64QAM	20	C	619.5	33.34	6.02	39.36
n71	64QAM	20	C	634.5	33.5	6.02	39.52
n71	64QAM	20	C	649.5	33.53	6.02	39.55
n71	256QAM	20	C	619.5	33.94	6.02	39.96
n71	256QAM	20	C	634.5	33.91	6.02	39.93
n71	256QAM	20	C	649.5	33.44	6.02	39.46
n71	1024QAM	20	C	619.5	32.64	6.02	38.66
n71	1024QAM	20	C	634.5	32.59	6.02	38.61
n71	1024QAM	20	C	649.5	31.73	6.02	37.75

Table 8.4-8: Conducted output power, band n71, 20 MHz OBW

For informational purposes, the table below documents the peak total channel power. Measured data obtained from the PAPR measurements documented in section 8.5 of this report.

Band	Modulation	OBW (MHz)	Port	Frequency (MHz)	Total channel power (dBm)	Correlation factor (dB)	Total channel power across all ports(dBm)
n71 (NB-IoT)	QPSK	0.2	C	627	44.37	6.02	50.39
n71 (NB-IoT)	QPSK	0.2	C	627	44.48	6.02	50.5
n71 (NB-IoT)	QPSK	0.2	C	651.9	44.58	6.02	50.6
n71	QPSK	5	C	619.5	43.30	6.02	49.32
n71	QPSK	5	C	634.5	43.19	6.02	49.21
n71	QPSK	5	C	649.5	43.06	6.02	49.08
n71	16QAM	5	C	619.5	43.33	6.02	49.35
n71	16QAM	5	C	634.5	43.25	6.02	49.27
n71	16QAM	5	C	649.5	43.09	6.02	49.11
n71	64QAM	5	C	619.5	43.65	6.02	49.67
n71	64QAM	5	C	634.5	43.42	6.02	49.44
n71	64QAM	5	C	649.5	43.03	6.02	49.05
n71	256QAM	5	C	619.5	43.34	6.02	49.36
n71	256QAM	5	C	634.5	43.29	6.02	49.31
n71	256QAM	5	C	649.5	43.07	6.02	49.09
n71	1024QAM	5	C	619.5	43.22	6.02	49.24
n71	1024QAM	5	C	634.5	43.18	6.02	49.2
n71	1024QAM	5	C	649.5	42.97	6.02	48.99
n71	QPSK	10	C	619.5	44.00	6.02	50.02
n71	QPSK	10	C	634.5	43.65	6.02	49.67
n71	QPSK	10	C	649.5	43.85	6.02	49.87
n71	16QAM	10	C	619.5	43.72	6.02	49.74
n71	16QAM	10	C	634.5	43.71	6.02	49.73
n71	16QAM	10	C	649.5	43.91	6.02	49.93
n71	64QAM	10	C	619.5	43.83	6.02	49.85
n71	64QAM	10	C	634.5	43.67	6.02	49.69
n71	64QAM	10	C	649.5	43.79	6.02	49.81
n71	256QAM	10	C	619.5	43.94	6.02	49.96
n71	256QAM	10	C	634.5	43.54	6.02	49.56
n71	256QAM	10	C	649.5	43.97	6.02	49.99
n71	1024QAM	10	C	619.5	43.60	6.02	49.62
n71	1024QAM	10	C	634.5	43.22	6.02	49.24
n71	1024QAM	10	C	649.5	43.52	6.02	49.54
n71	QPSK	15	C	619.5	44.09	6.02	50.11
n71	QPSK	15	C	634.5	43.61	6.02	49.63
n71	QPSK	15	C	649.5	43.53	6.02	49.55
n71	16QAM	15	C	619.5	44.11	6.02	50.13
n71	16QAM	15	C	634.5	43.94	6.02	49.96
n71	16QAM	15	C	649.5	44.44	6.02	50.46
n71	64QAM	15	C	619.5	44.14	6.02	50.16
n71	64QAM	15	C	634.5	43.67	6.02	49.69
n71	64QAM	15	C	649.5	44.41	6.02	50.43
n71	256QAM	15	C	619.5	44.05	6.02	50.07
n71	256QAM	15	C	634.5	43.59	6.02	49.61
n71	256QAM	15	C	649.5	44.03	6.02	50.05
n71	1024QAM	15	C	619.5	43.61	6.02	49.63
n71	1024QAM	15	C	634.5	43.30	6.02	49.32
n71	1024QAM	15	C	649.5	43.92	6.02	49.94

Band	Modulation	OBW (MHz)	Port	Frequency (MHz)	Total channel power (dBm)	Correlation factor (dB)	Total channel power across all ports(dBm)
n71	QPSK	20	C	619.5	44.09	6.02	50.11
n71	QPSK	20	C	634.5	44.10	6.02	50.12
n71	QPSK	20	C	649.5	45.23	6.02	51.25
n71	16QAM	20	C	619.5	44.22	6.02	50.24
n71	16QAM	20	C	634.5	44.09	6.02	50.11
n71	16QAM	20	C	649.5	44.49	6.02	50.51
n71	64QAM	20	C	619.5	44.12	6.02	50.14
n71	64QAM	20	C	634.5	43.76	6.02	49.78
n71	64QAM	20	C	649.5	44.51	6.02	50.53
n71	256QAM	20	C	619.5	44.19	6.02	50.21
n71	256QAM	20	C	634.5	43.84	6.02	49.86
n71	256QAM	20	C	649.5	44.41	6.02	50.43
n71	1024QAM	20	C	619.5	44.06	6.02	50.08
n71	1024QAM	20	C	634.5	43.37	6.02	49.39
n71	1024QAM	20	C	649.5	43.80	6.02	50.39

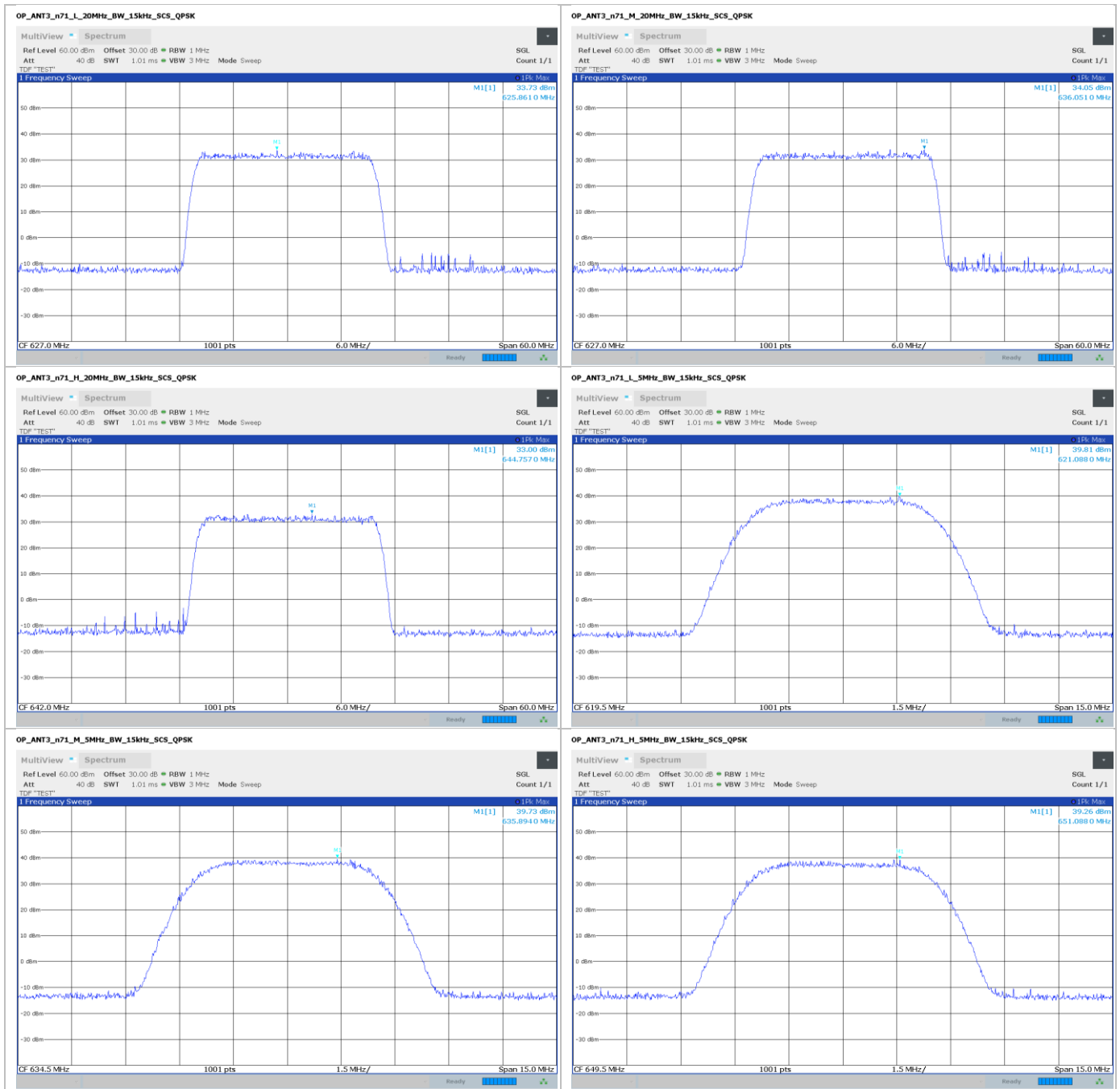
Table 8.4-3: Conducted total channel power, band n71

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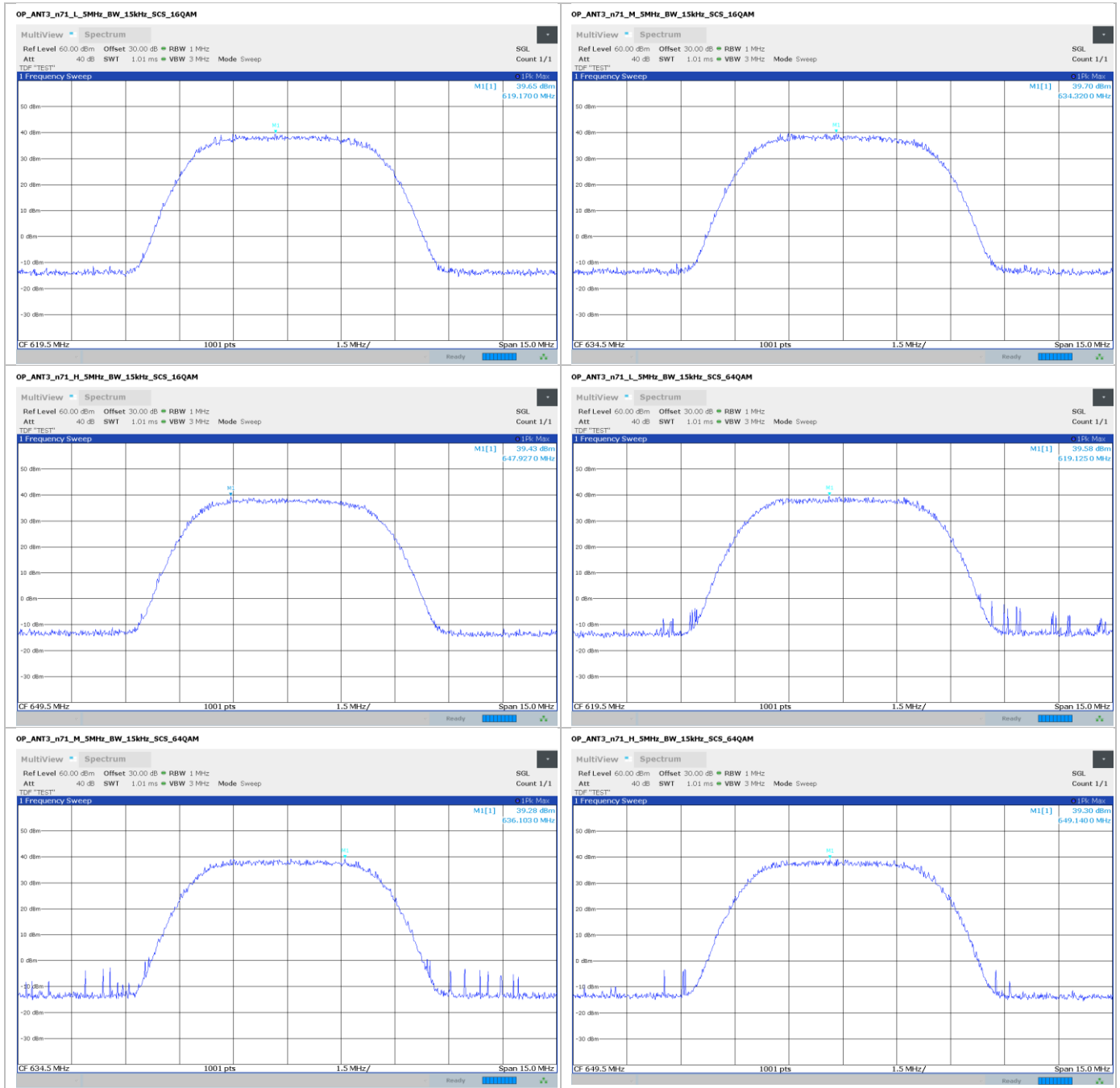


Band n71



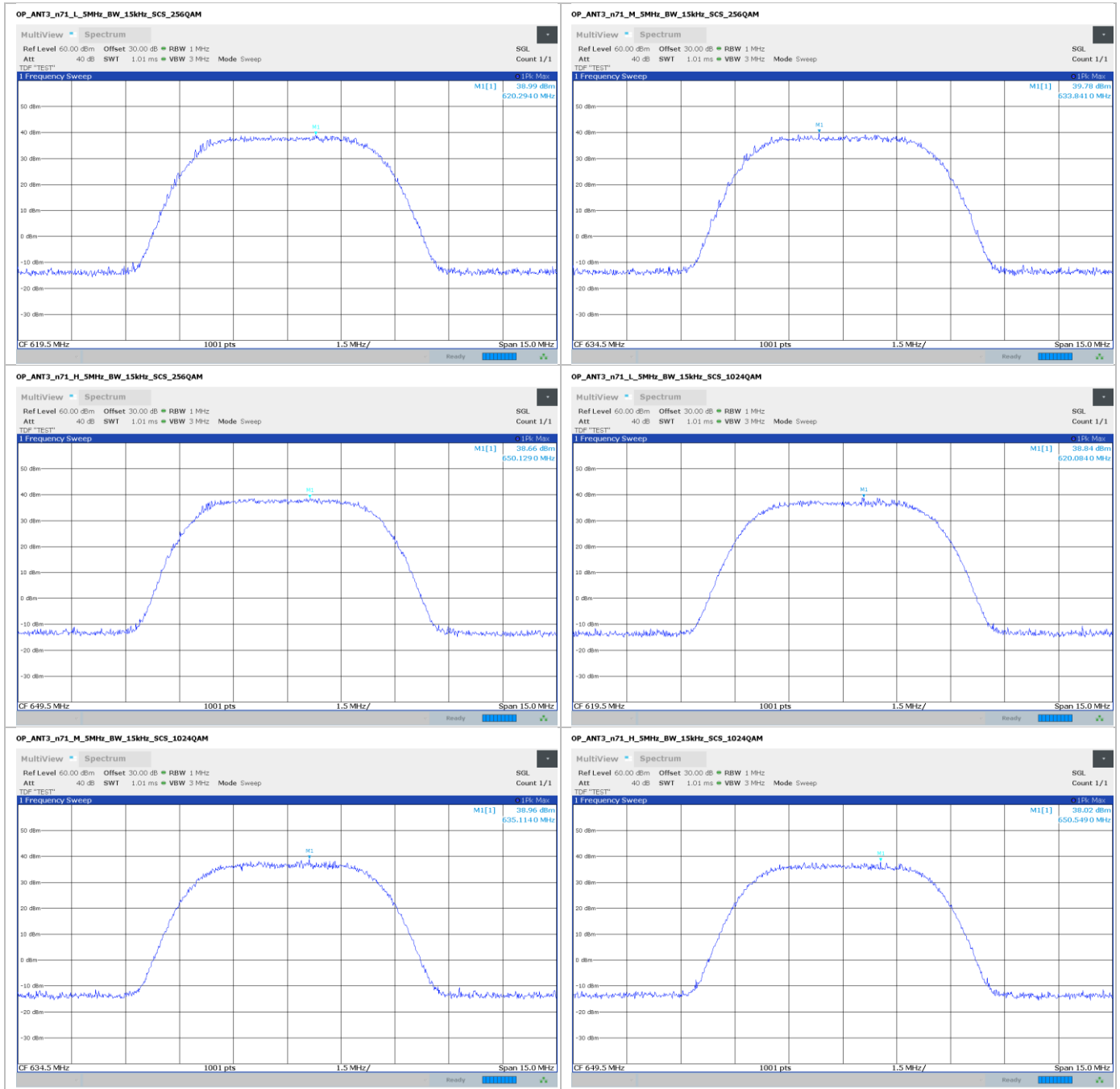
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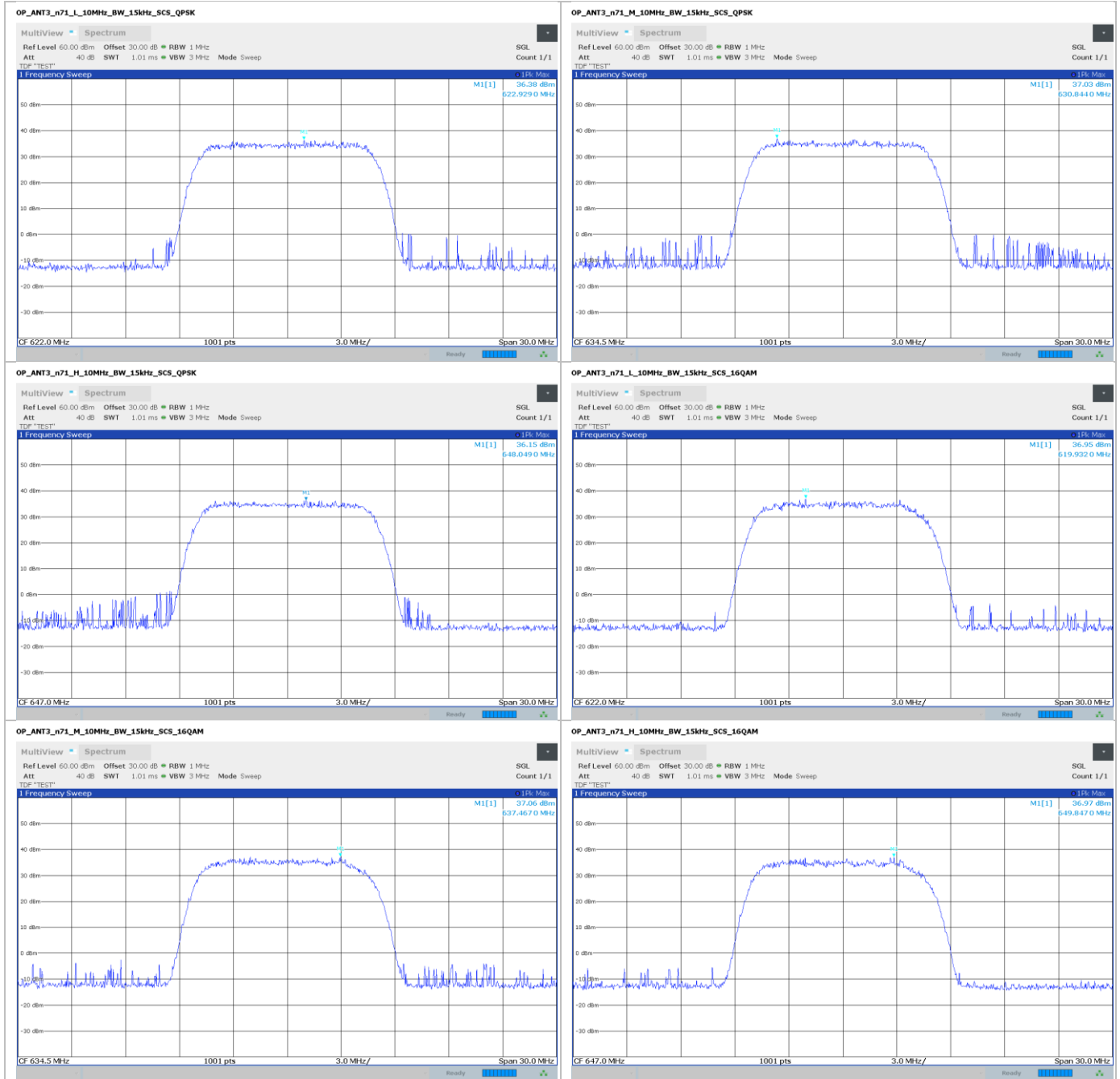
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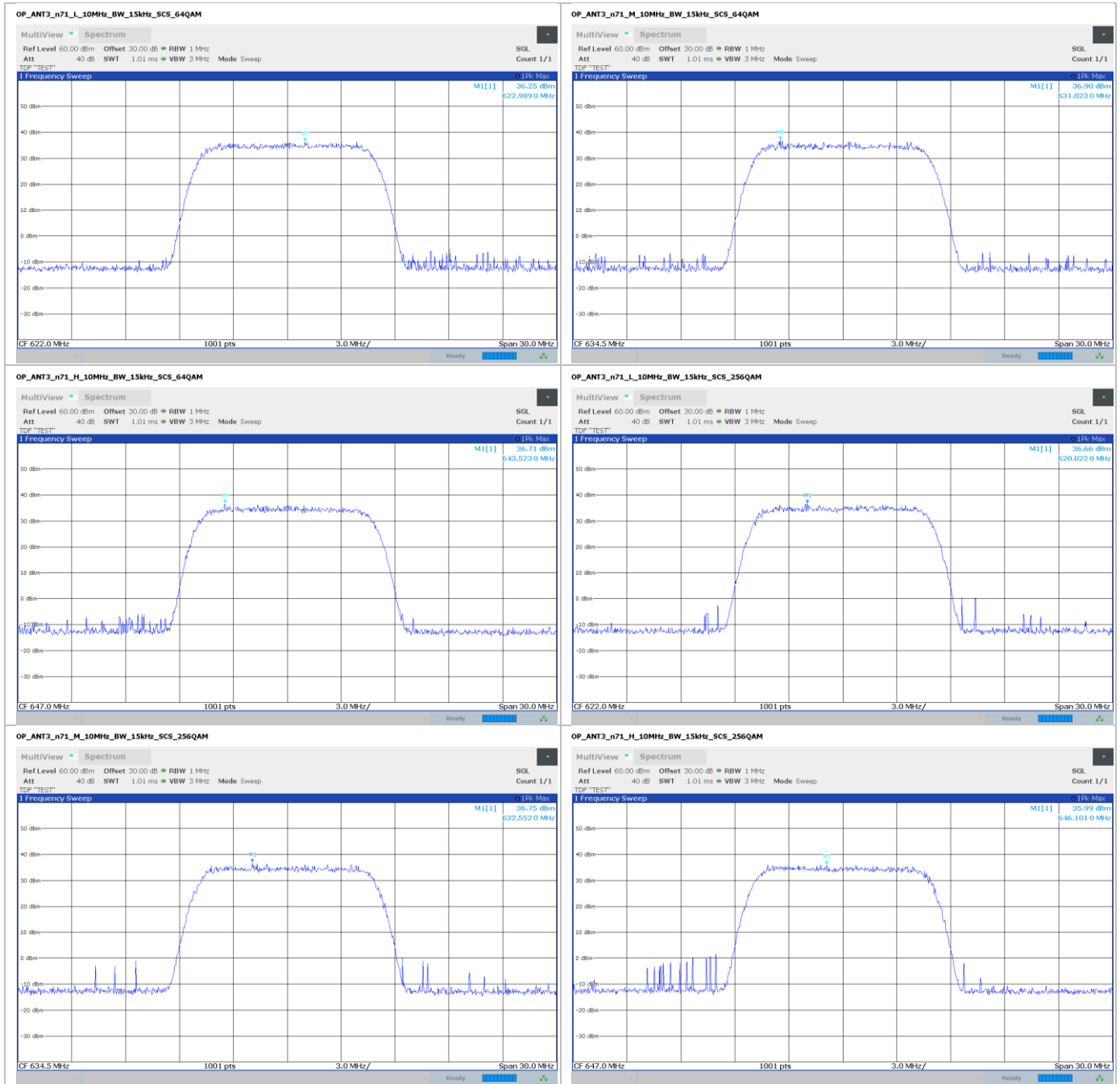
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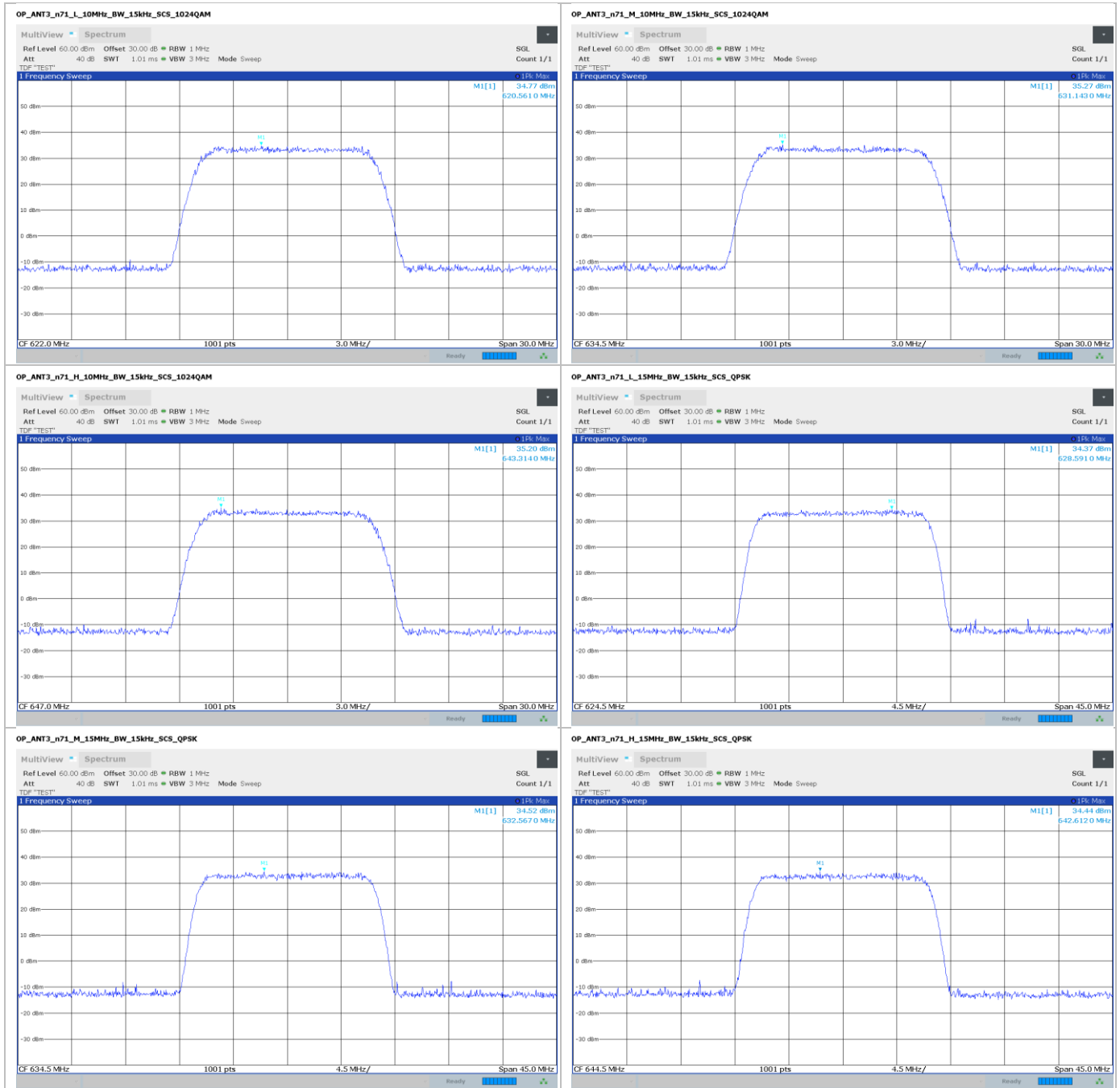
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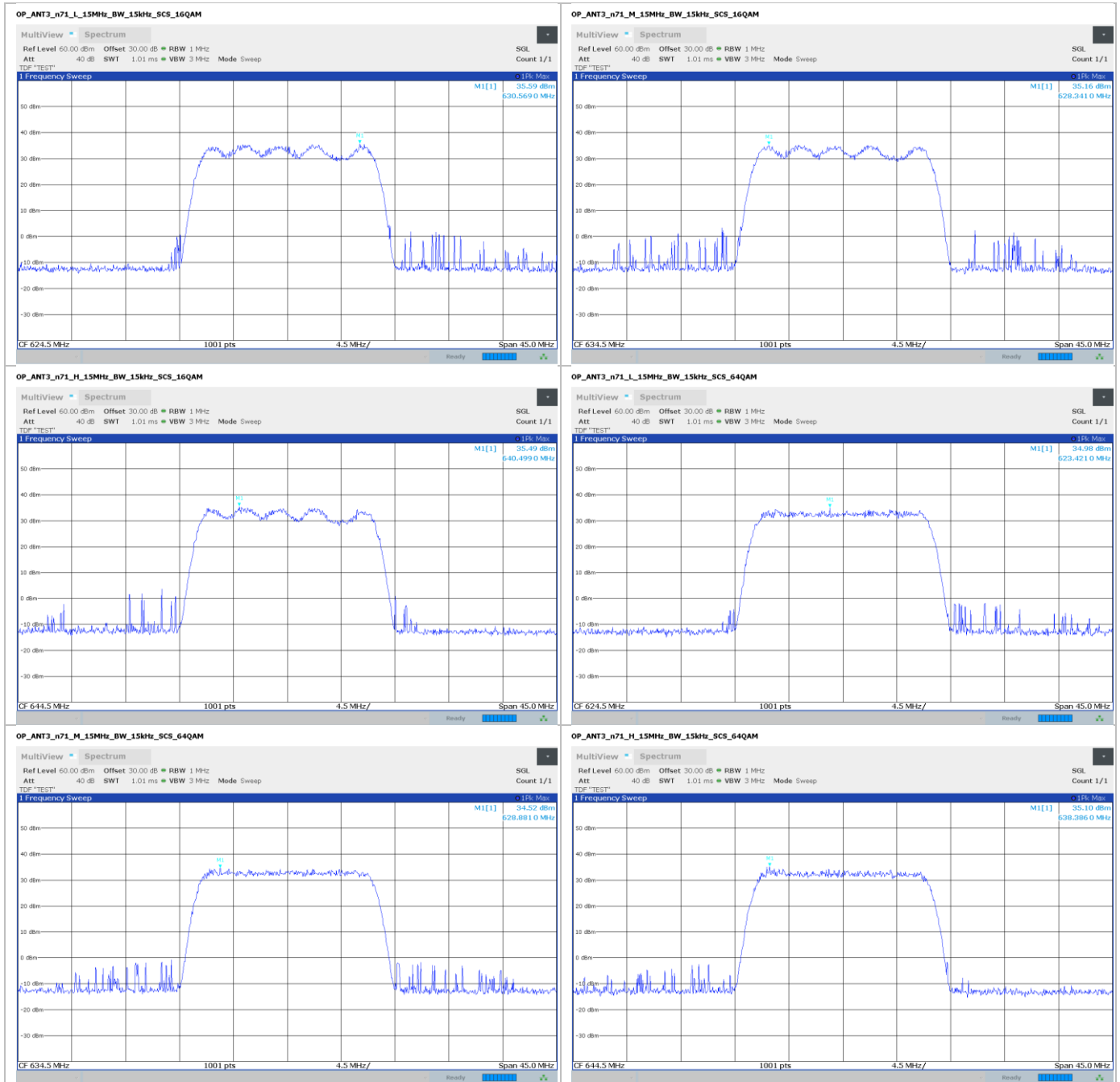
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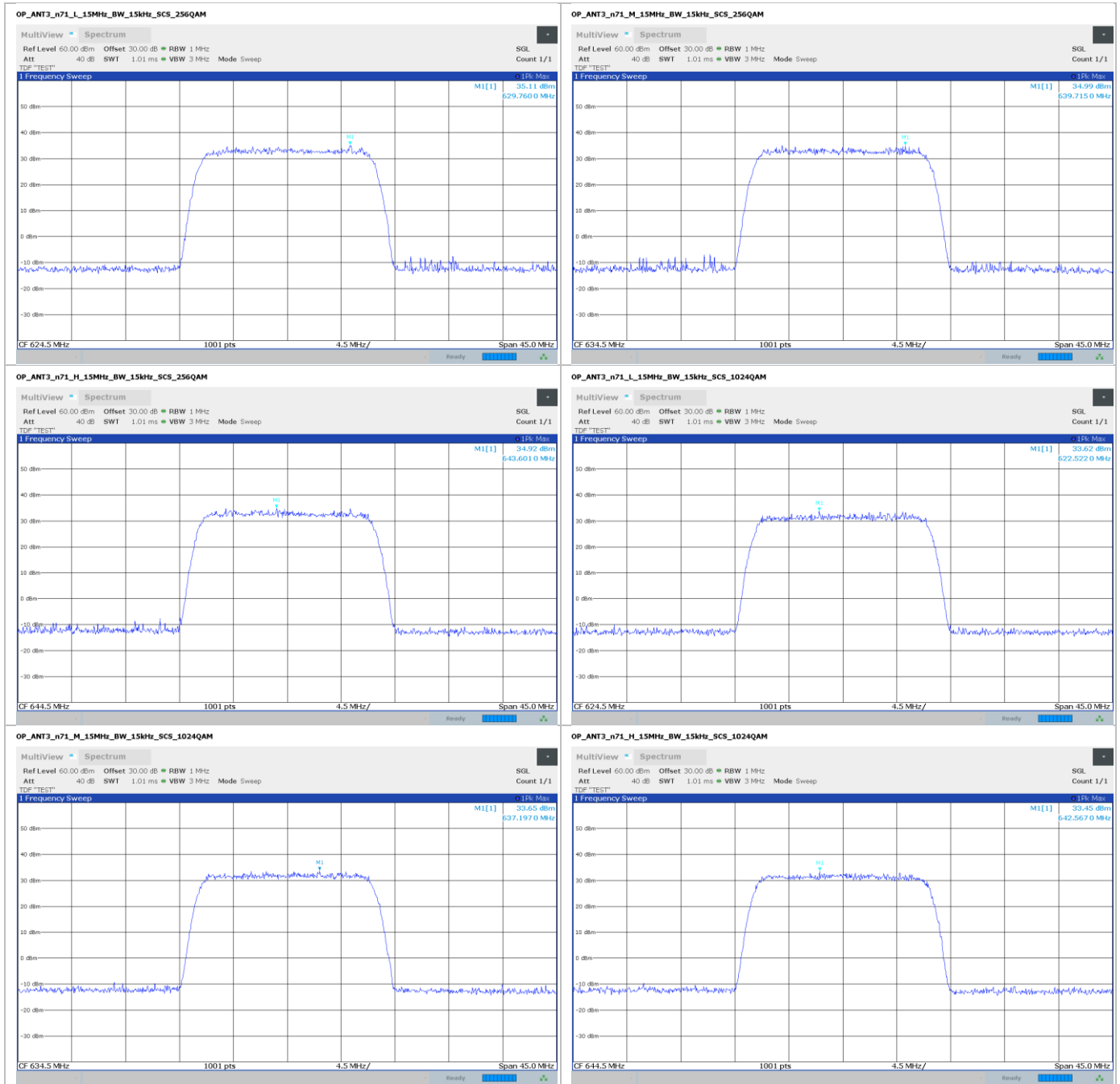
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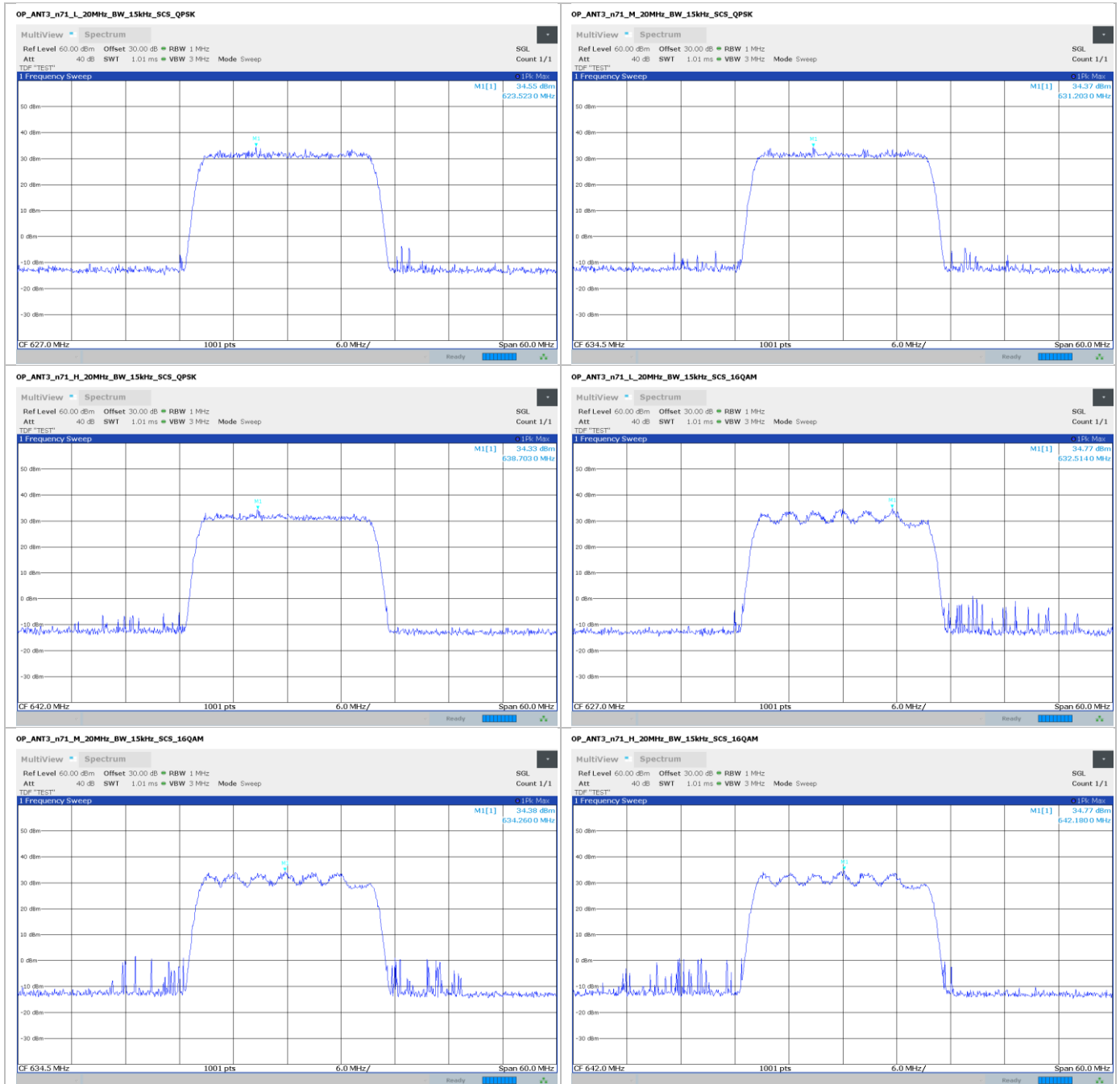
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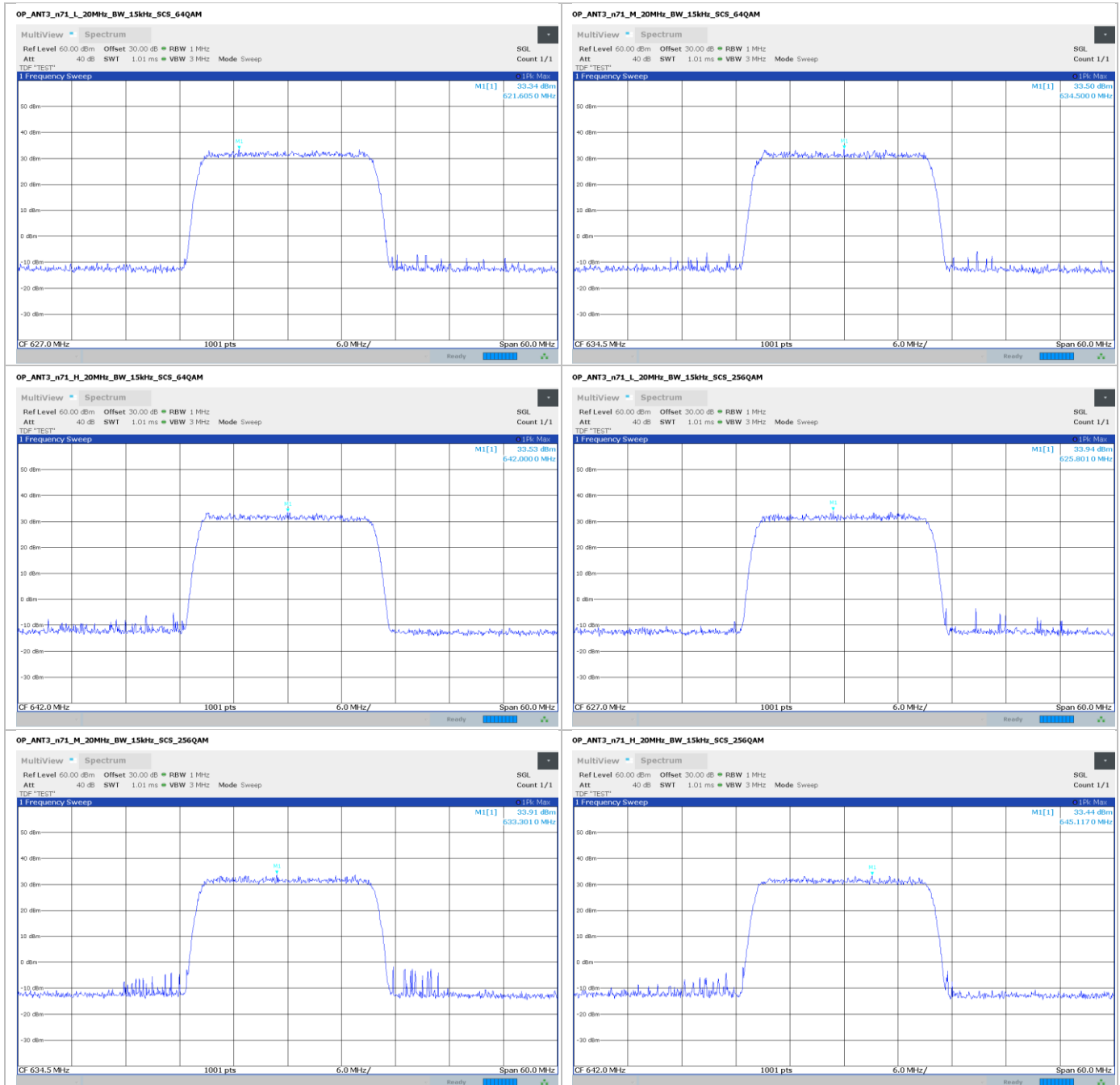
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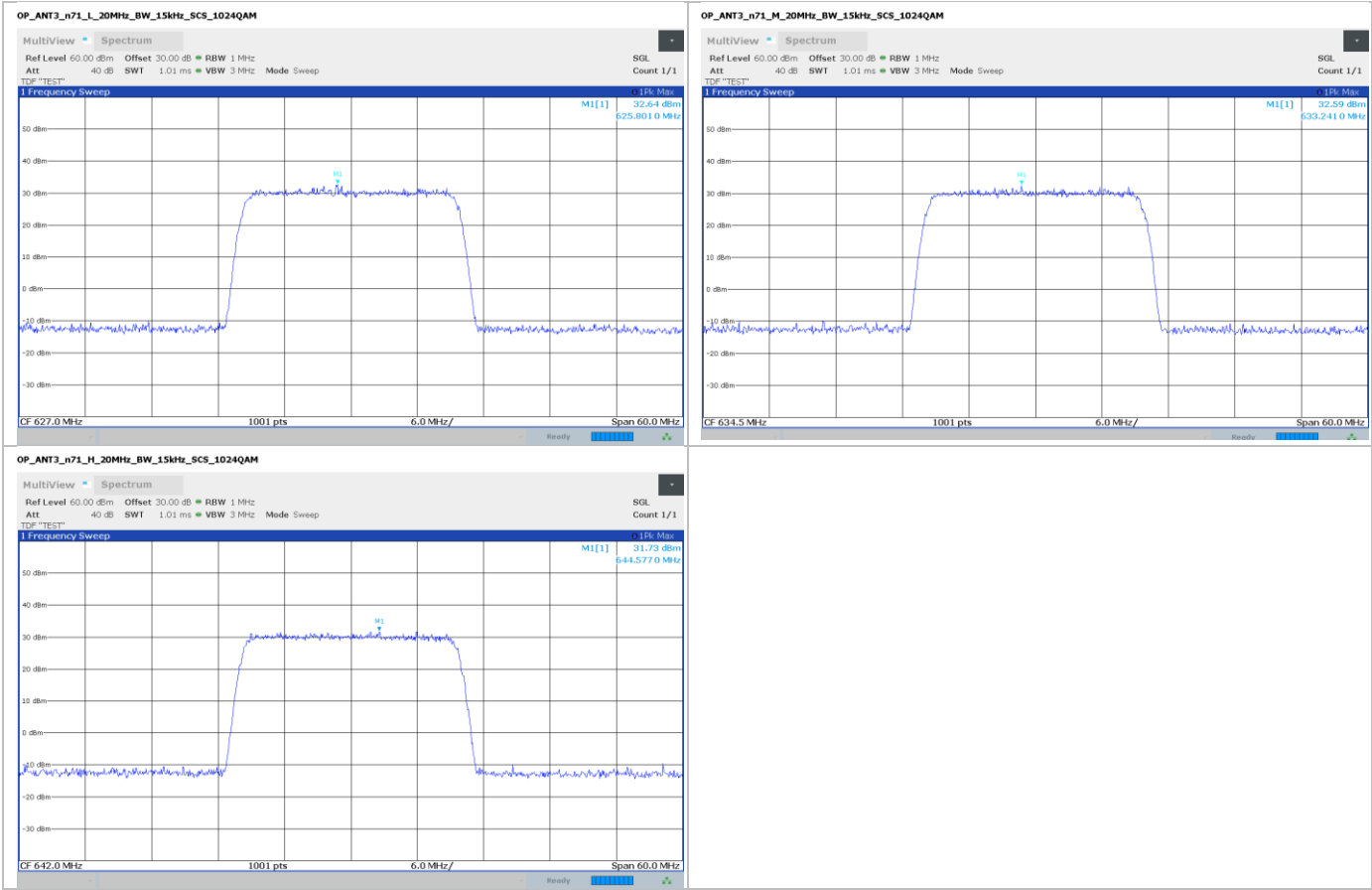
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8.5 FCC 27.50(b) / 90.205/90.635 Peak to Average Power Ratio

8.5.1 Definitions and limits

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

8.5.2 Test summary

Test date	July 12, 2022	Temperature	21 °C
Test engineer	Lan Sayasane, EMC Test Engineer	Air pressure	1005 mbar
Verdict	Pass	Relative humidity	65%

8.5.3 Observations, settings and special notes

Selection of Port C was according to section 8.5.4 of this document.

Test method: ANSI C63.26 Section 5.2.3.4.

Spectrum analyzer settings:

Resolution bandwidth	≥ OBW
Number of counts	The necessary number up to stabilizes the measured
Trace mode	Clear/Write

8.5.4 Test data

Band n26:

Band	OBW Declared	Port	Channel (MHz)	0.1% (dB)	0.1% Limit (dB)	Margin (dB)
n26 (NB-IoT)	0.2 MHz	C	866.5	7.28	13	5.72
n26 (NB-IoT)	0.2 MHz	C	866.5	7.82	13	5.18

Table 8.5-1: Peak to average power ratio, NB-IoT mode

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n26	5 MHz	C	866.5	7.68	13	5.32

Table 8.5-2: Peak to average power ratio, QPSK Modulation, 5 MHz

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n26	5 MHz	C	866.5	7.66	13	5.34

Table 8.5-3: Peak to average power ratio, 16QAM Modulation, 5 MHz

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n26	5 MHz	C	866.5	7.68	13	5.32

Table 8.5-4: Peak to average power ratio, 64QAM Modulation, 5 MHz

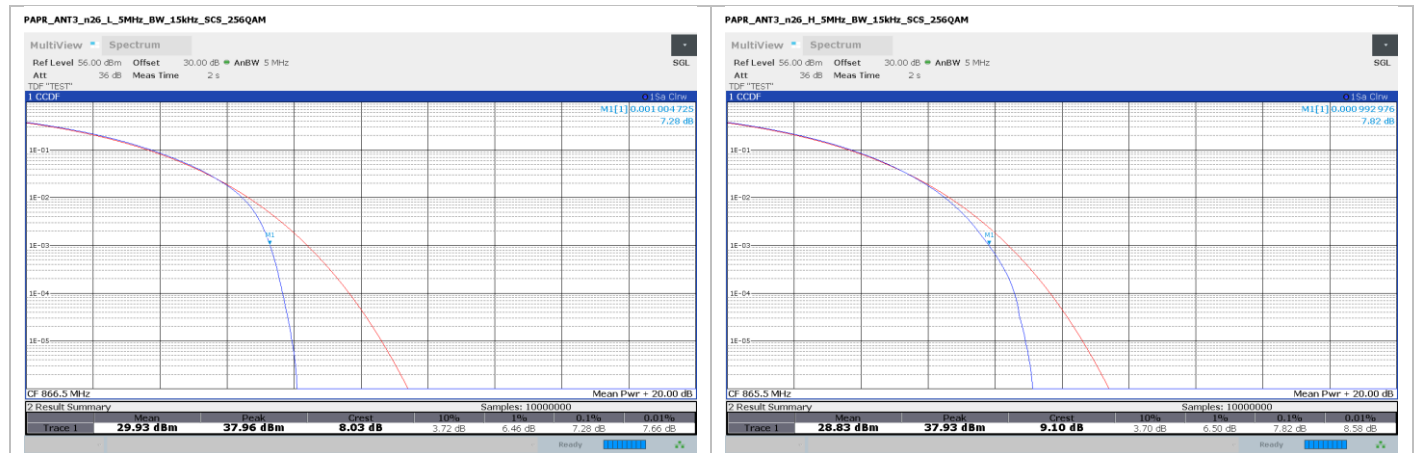
Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n26	5 MHz	C	866.5	7.7	13	5.3

Table 8.5-5: Peak to average power ratio, 256QAM Modulation.

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n26	5 MHz	C	866.5	8.4	13	4.6

Table 8.5-6: Peak to average power ratio, 1024QAM Modulation, 5MHz

Band n26 (NB-IoT) – 0.2 MHz

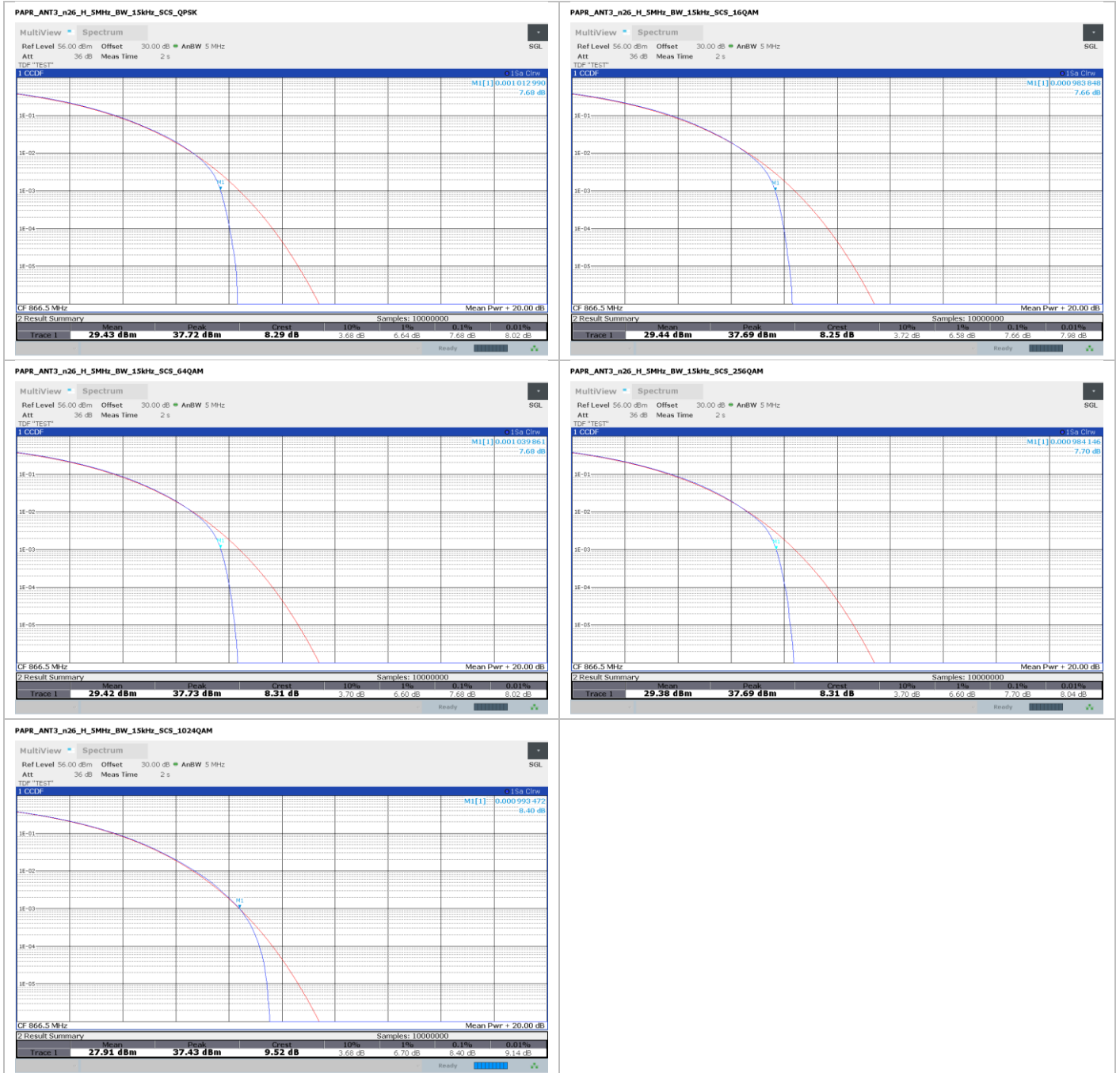


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Band n26 – 5 MHz



Band n29:

Band	OBW Declared	Port	Channel (MHz)	0.1% (dB)	0.1% Limit (dB)	Margin (dB)
n29	5 MHz	C	720.5	7.52	13	5.48
n29	5 MHz	C	723	7.64	13	5.36
n29	5 MHz	C	725.5	7.68	13	5.32

Table 8.5-7: Peak to average power ratio, QPSK Modulation, 5 MHz

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n29	5 MHz	C	720.5	7.52	13	5.48
n29	5 MHz	C	723	7.64	13	5.36
n29	5 MHz	C	725.5	7.68	13	5.32

Table 8.5-8: Peak to average power ratio, 16QAM Modulation, 5 MHz

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n29	5 MHz	C	720.5	7.52	13	5.48
n29	5 MHz	C	723	7.64	13	5.36
n29	5 MHz	C	725.5	7.68	13	5.32

Table 8.5-9: Peak to average power ratio, 64QAM Modulation, 5 MHz

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n29	5 MHz	C	720.5	7.54	13	5.46
n29	5 MHz	C	723	7.66	13	5.34
n29	5 MHz	C	725.5	7.7	13	5.3

Table 8.5-10: Peak to average power ratio, 256QAM Modulation, 5 MHz

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n29	5 MHz	C	720.5	8.24	13	4.76
n29	5 MHz	C	723	8.4	13	4.6
n29	5 MHz	C	725.5	8.4	13	4.6

Table 8.5-11: Peak to average power ratio, 1024QAM Modulation, 5 MHz

Band	OBW Declared	Port	Channel (MHz)	0.1% (dB)	0.1% Limit (dB)	Margin (dB)
n29	10 MHz	C	723	7.88	13	5.12

Table 8.5-12: Peak to average power ratio, QPSK Modulation, 10 MHz

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n29	10 MHz	C	723	7.86	13	5.14

Table 8.5-13: Peak to average power ratio, 16QAM Modulation, 10 MHz

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n29	10 MHz	C	723	7.88	13	5.12

Table 8.5-14: Peak to average power ratio, 64QAM Modulation, 10 MHz

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n29	10 MHz	C	723	7.88	13	5.12

Table 8.5-15: Peak to average power ratio, 256QAM Modulation, 10 MHz

Band	OBW Declared	Port	Channel (MHz)	0.1%	0.1% Limit	Margin
n29	10 MHz	C	723	8.3	13	4.7

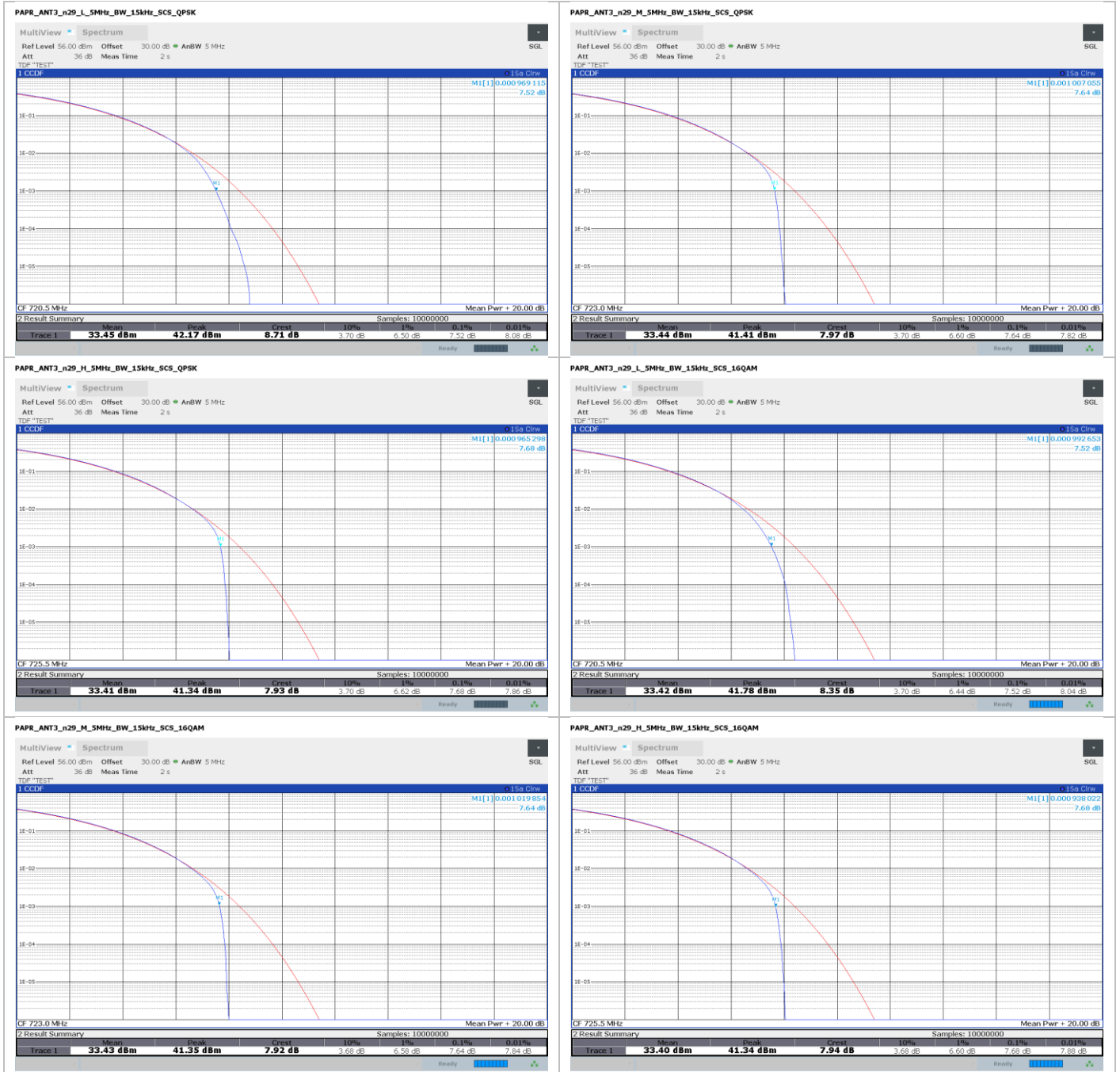
Table 8.5-16: Peak to average power ratio, 1024QAM Modulation, 10 MHz

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FCC 27.50(d)(5) / 90.205/90.635 Peak to Average Power Ratio
FCC Part 27 / FCC Part 90

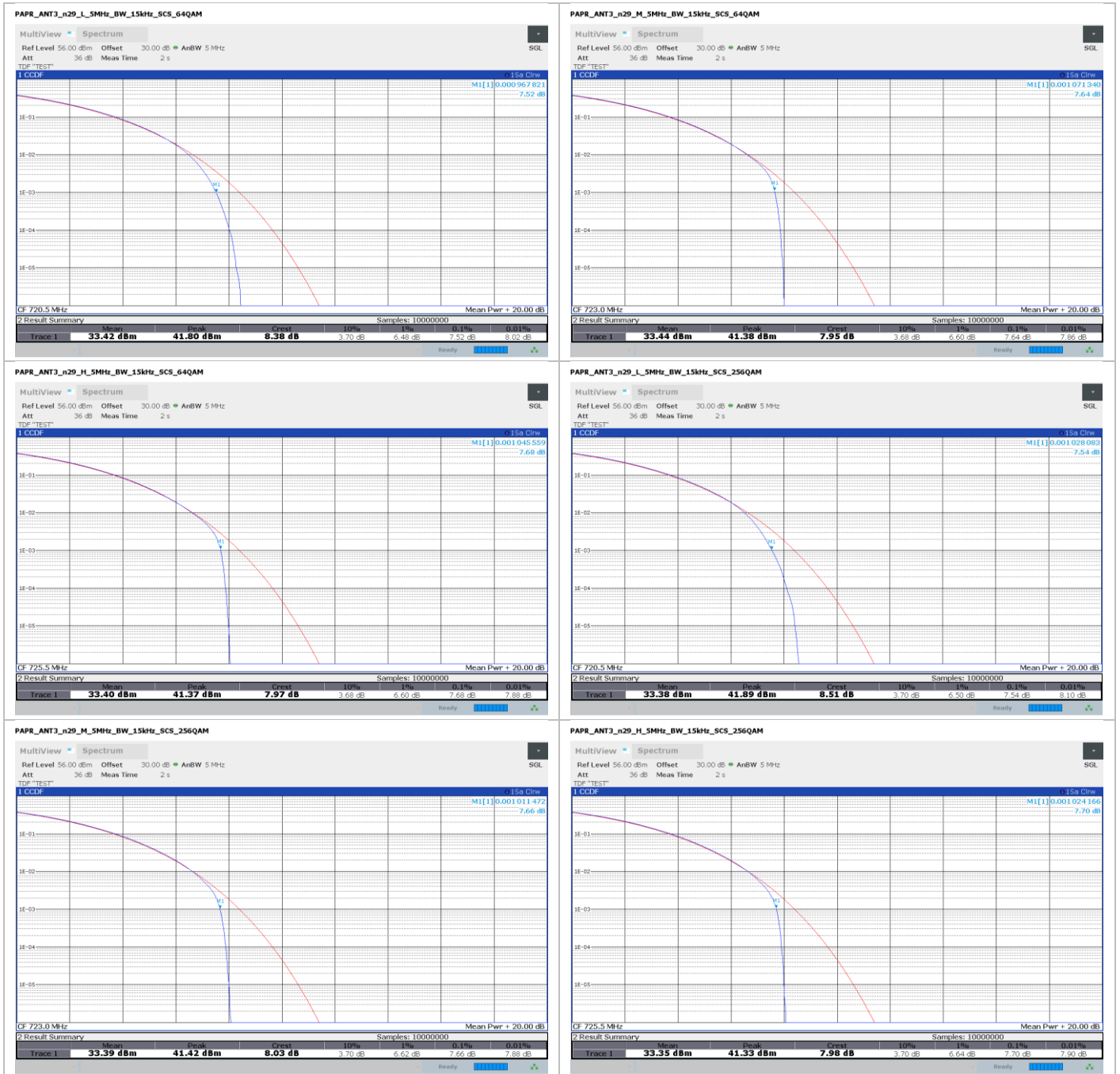


Band n29 – 5 MHz



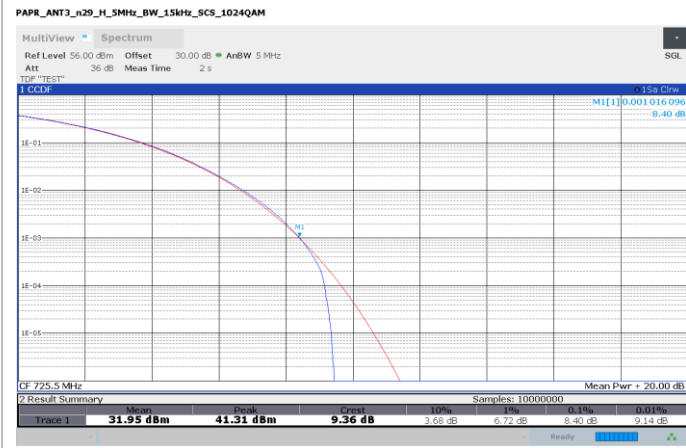
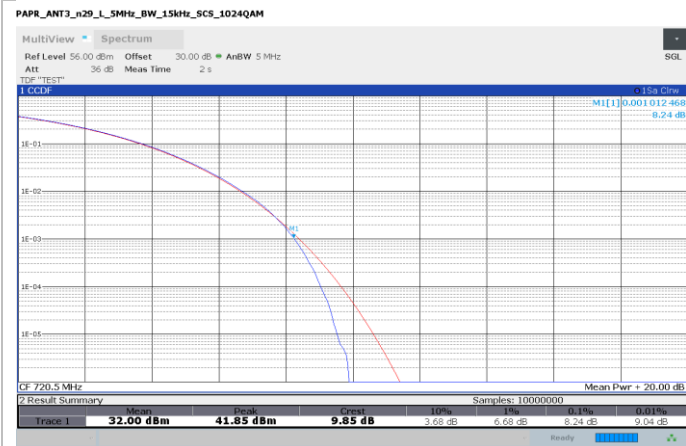
Section 8
Test name
Specification

Testing
 FCC 27.50(d)(5) / 90.205/90.635 Peak to Average Power Ratio
 FCC Part 27 / FCC Part 90



Section 8
Test name
Specification

Testing
FCC 27.50(d)(5) / 90.205/90.635 Peak to Average Power Ratio
FCC Part 27 / FCC Part 90



Band n29 – 10 MHz

