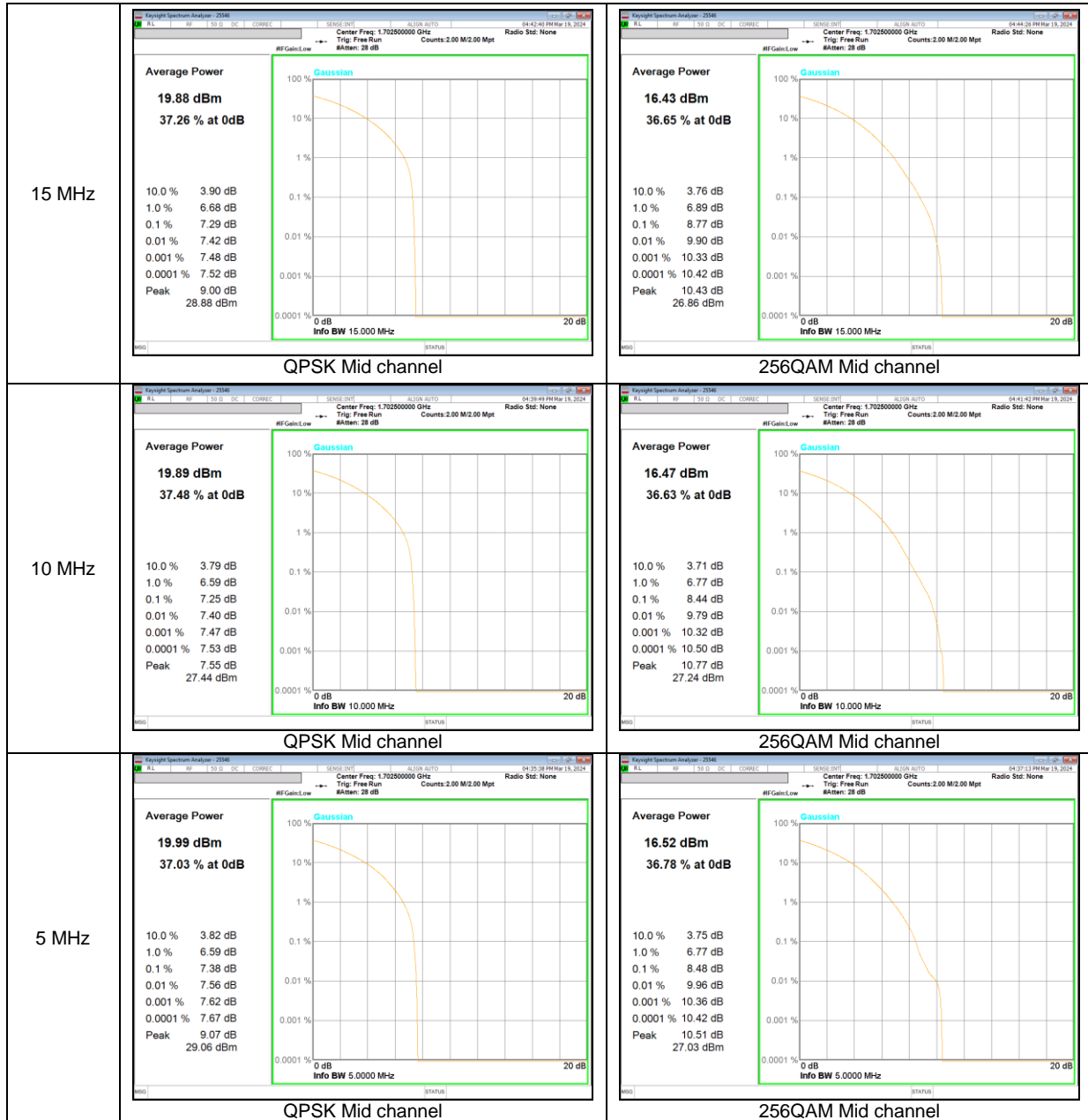


**NR Band n66 CP-OFDM**

<p>40 MHz</p>	<p><b>Average Power</b>                  20.61 dBm                  37.11 % at 0dB</p> <p>10.0 % 3.70 dB                  1.0 % 6.39 dB                  0.1 % 7.04 dB                  0.01 % 7.24 dB                  0.001 % 7.37 dB                  Peak 7.46 dB                  28.07 dBm</p> <p><b>QPSK Mid channel</b></p>	<p><b>Average Power</b>                  17.05 dBm                  36.75 % at 0dB</p> <p>10.0 % 3.63 dB                  1.0 % 6.73 dB                  0.1 % 8.48 dB                  0.01 % 9.73 dB                  0.001 % 10.28 dB                  Peak 10.39 dB                  27.44 dBm</p> <p><b>256QAM Mid channel</b></p>
<p>35 MHz</p>	<p><b>Average Power</b>                  20.11 dBm                  36.66 % at 0dB</p> <p>10.0 % 3.69 dB                  1.0 % 6.61 dB                  0.1 % 7.57 dB                  0.01 % 7.75 dB                  0.001 % 7.85 dB                  0.0001 % 7.92 dB                  Peak 7.95 dB                  28.06 dBm</p> <p><b>QPSK Mid channel</b></p>	<p><b>Average Power</b>                  16.71 dBm                  36.69 % at 0dB</p> <p>10.0 % 3.61 dB                  1.0 % 6.69 dB                  0.1 % 8.54 dB                  0.01 % 9.82 dB                  0.001 % 10.41 dB                  0.0001 % 10.54 dB                  Peak 10.56 dB                  27.27 dBm</p> <p><b>256QAM Mid channel</b></p>
<p>30 MHz</p>	<p><b>Average Power</b>                  20.52 dBm                  37.10 % at 0dB</p> <p>10.0 % 3.71 dB                  1.0 % 6.44 dB                  0.1 % 7.16 dB                  0.01 % 7.30 dB                  0.001 % 7.38 dB                  0.0001 % 7.43 dB                  Peak 7.51 dB                  28.03 dBm</p> <p><b>QPSK Mid channel</b></p>	<p><b>Average Power</b>                  17.10 dBm                  36.53 % at 0dB</p> <p>10.0 % 3.62 dB                  1.0 % 6.69 dB                  0.1 % 8.45 dB                  0.01 % 9.53 dB                  0.001 % 10.14 dB                  0.0001 % 10.27 dB                  Peak 10.31 dB                  27.41 dBm</p> <p><b>256QAM Mid channel</b></p>
<p>25 MHz</p>	<p><b>Average Power</b>                  20.59 dBm                  36.96 % at 0dB</p> <p>10.0 % 3.73 dB                  1.0 % 6.48 dB                  0.1 % 7.21 dB                  0.01 % 7.33 dB                  0.001 % 7.39 dB                  0.0001 % 7.44 dB                  Peak 7.45 dB                  28.04 dBm</p> <p><b>QPSK Mid channel</b></p>	<p><b>Average Power</b>                  17.05 dBm                  36.70 % at 0dB</p> <p>10.0 % 3.63 dB                  1.0 % 6.73 dB                  0.1 % 8.55 dB                  0.01 % 9.71 dB                  0.001 % 10.25 dB                  0.0001 % 10.35 dB                  Peak 10.44 dB                  27.49 dBm</p> <p><b>256QAM Mid channel</b></p>



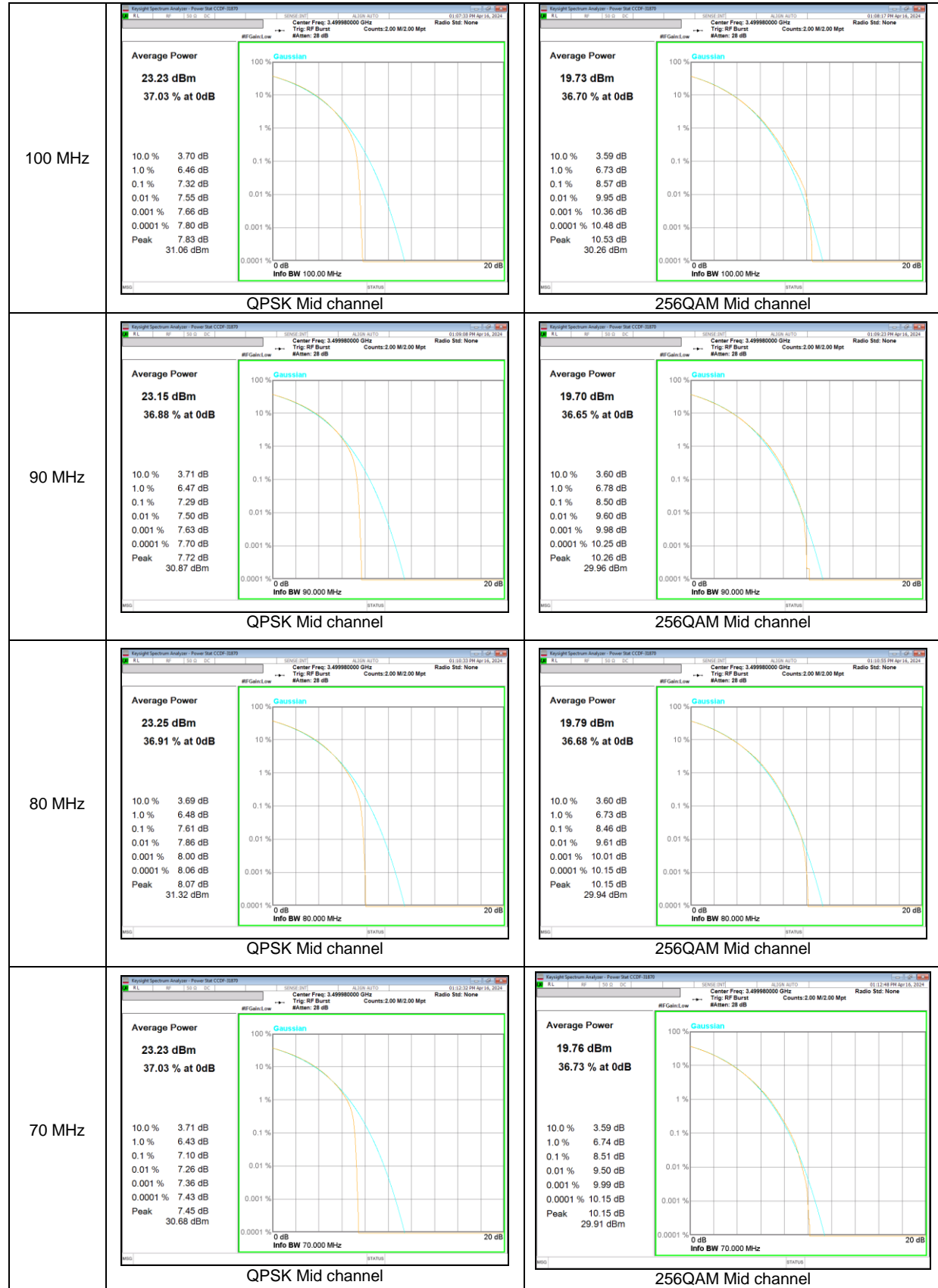
**NR Band n70 CP-OFDM**

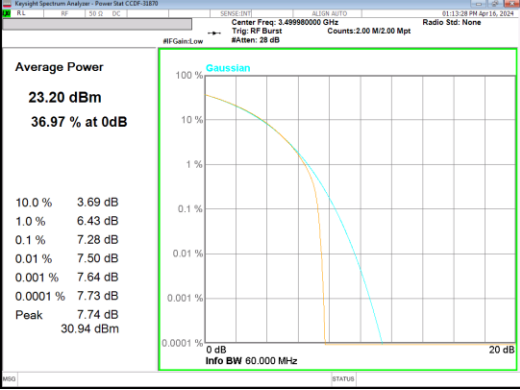
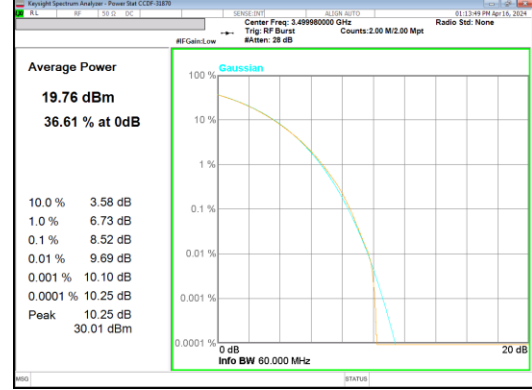
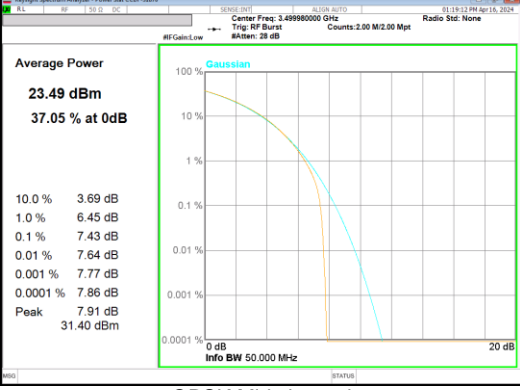
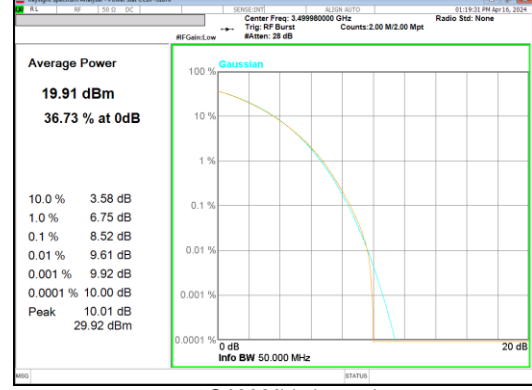
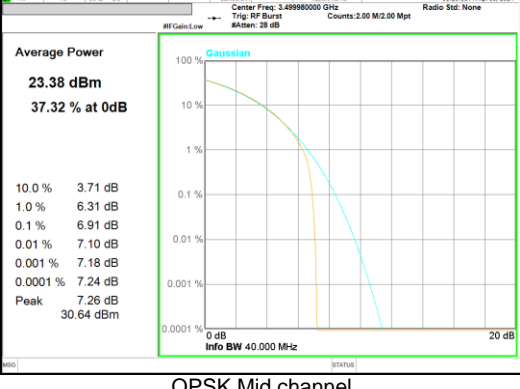
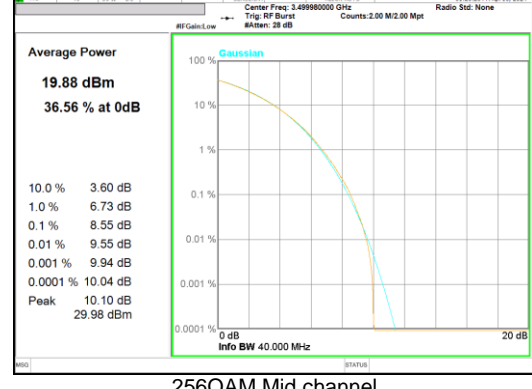
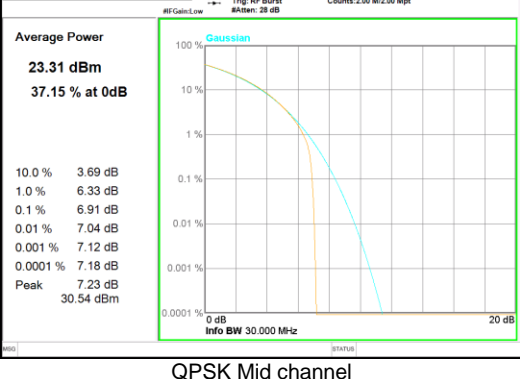
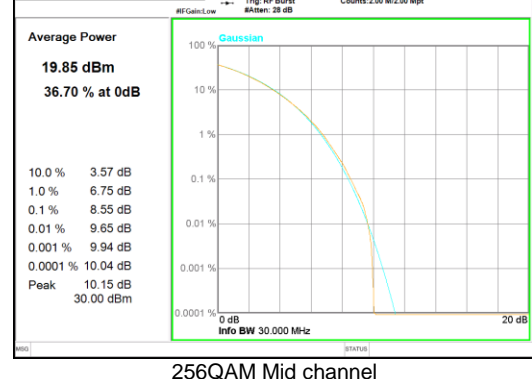


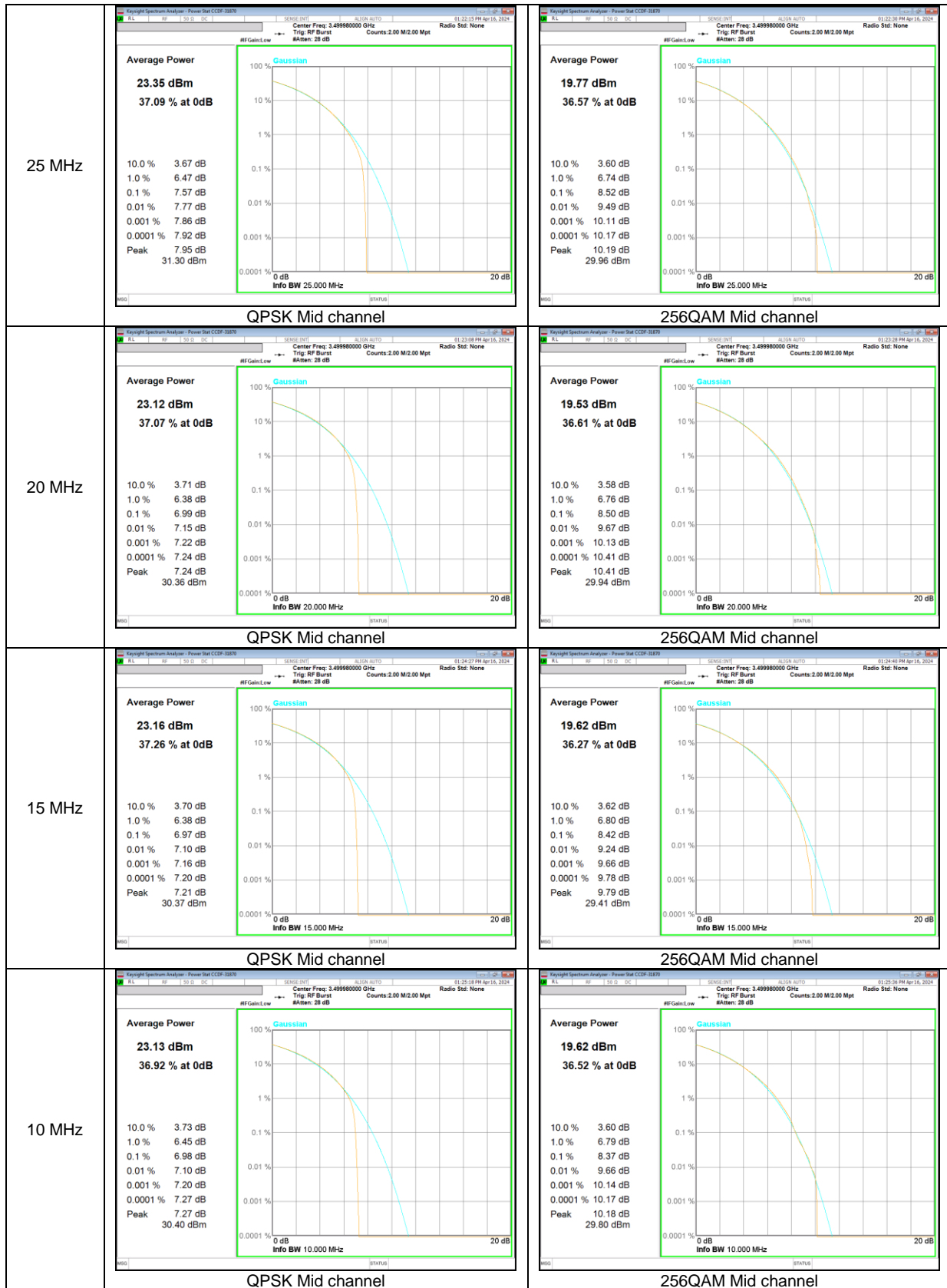
**NR Band n71 CP-OFDM**



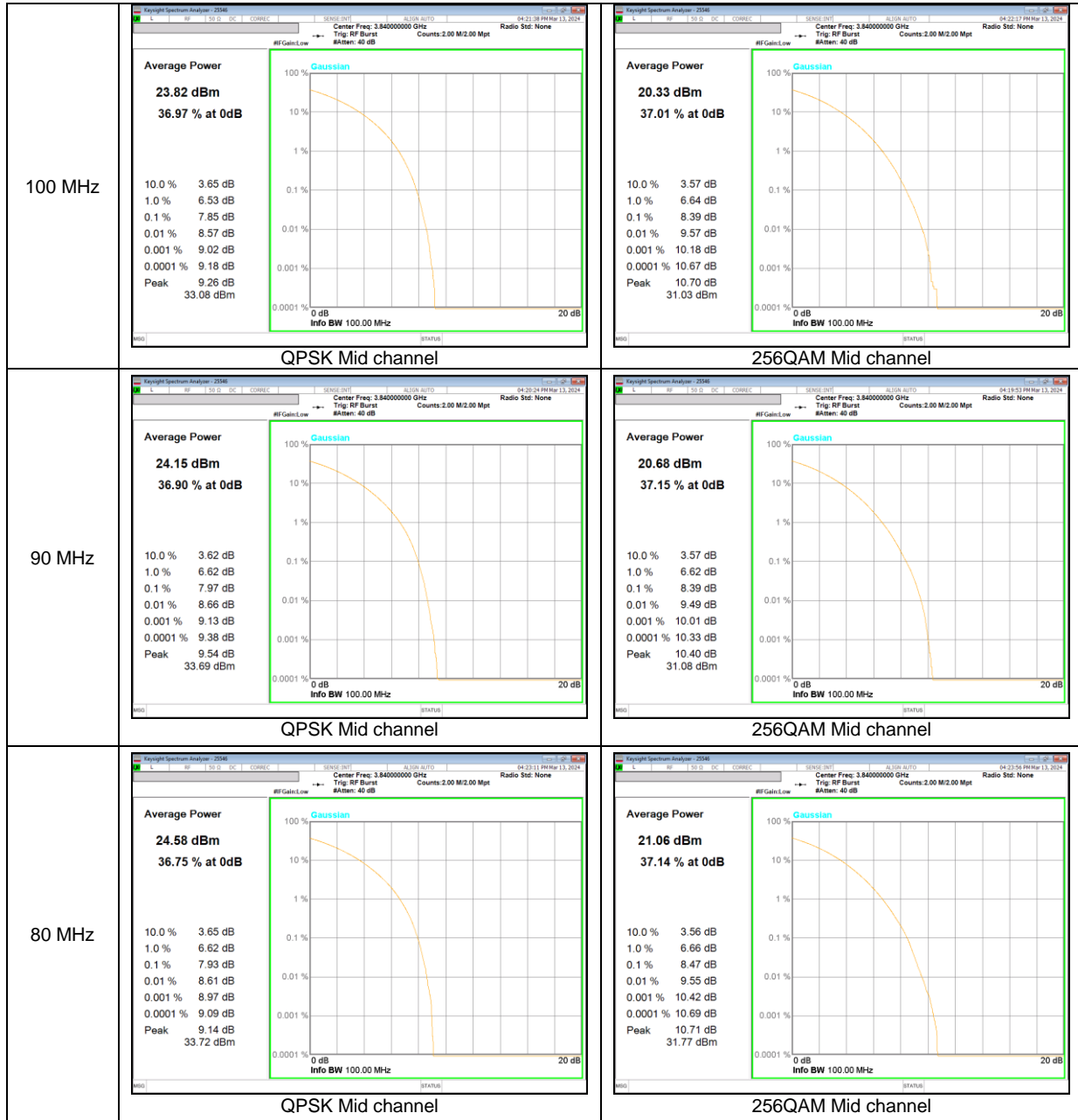
**NR Band n77(PC2) CP-OFDM (3450-3550 MHz)**



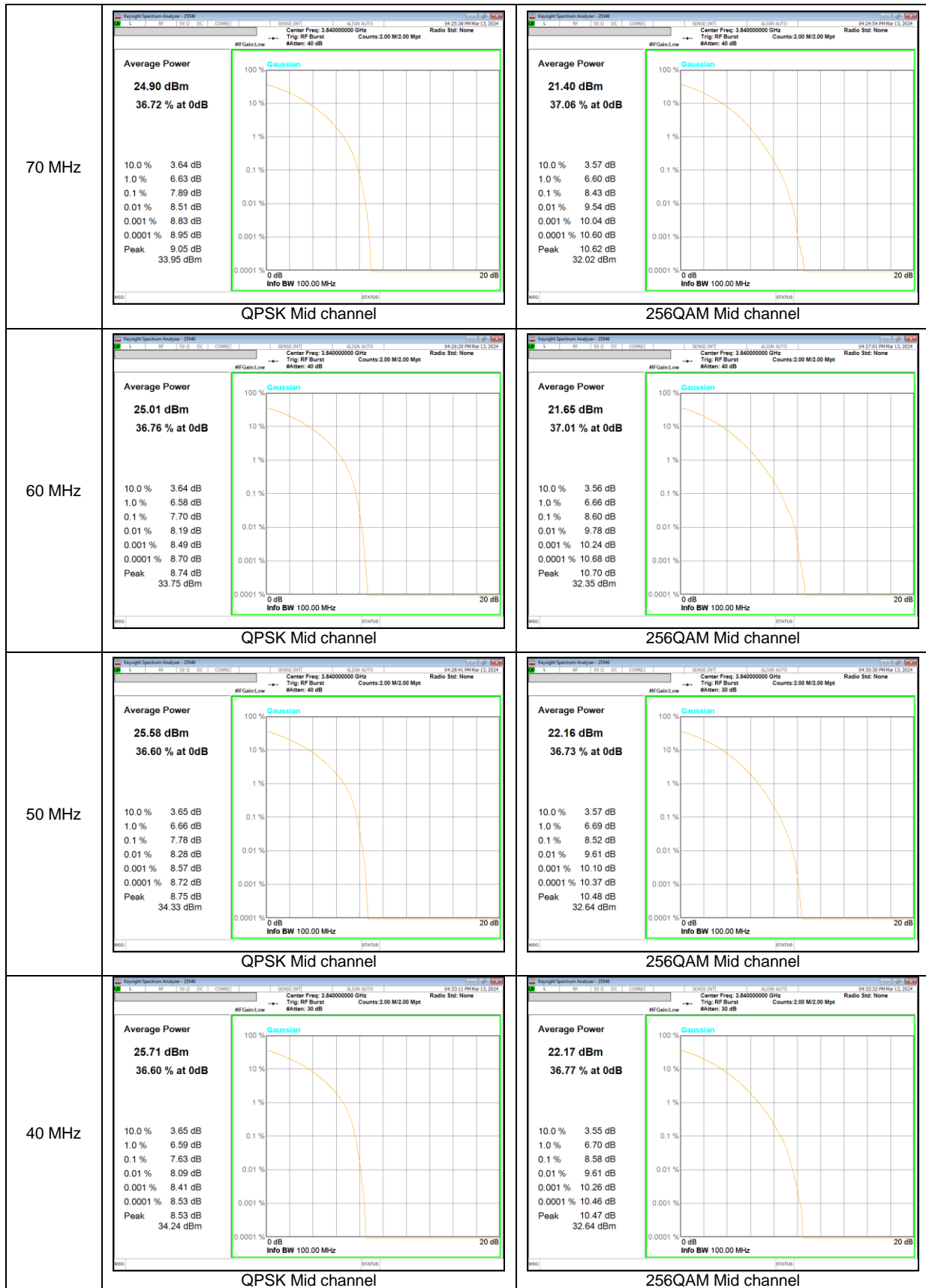
60 MHz	 <p><b>Average Power</b>                  23.20 dBm                  36.97 % at 0dB</p> <p>10.0 % 3.69 dB                  1.0 % 6.43 dB                  0.1 % 7.28 dB                  0.01 % 7.50 dB                  0.001 % 7.64 dB                  0.0001 % 7.73 dB                  Peak 7.74 dB                  30.94 dBm</p> <p>Info BW 60.000 MHz</p> <p><b>QPSK Mid channel</b></p>	 <p><b>Average Power</b>                  19.76 dBm                  36.61 % at 0dB</p> <p>10.0 % 3.58 dB                  1.0 % 6.73 dB                  0.1 % 8.52 dB                  0.01 % 9.69 dB                  0.001 % 10.10 dB                  0.0001 % 10.25 dB                  Peak 10.25 dB                  30.01 dBm</p> <p>Info BW 60.000 MHz</p> <p><b>256QAM Mid channel</b></p>
50 MHz	 <p><b>Average Power</b>                  23.49 dBm                  37.05 % at 0dB</p> <p>10.0 % 3.69 dB                  1.0 % 6.45 dB                  0.1 % 7.43 dB                  0.01 % 7.64 dB                  0.001 % 7.77 dB                  0.0001 % 7.86 dB                  Peak 7.91 dB                  31.40 dBm</p> <p>Info BW 50.000 MHz</p> <p><b>QPSK Mid channel</b></p>	 <p><b>Average Power</b>                  19.91 dBm                  36.73 % at 0dB</p> <p>10.0 % 3.58 dB                  1.0 % 6.75 dB                  0.1 % 8.52 dB                  0.01 % 9.61 dB                  0.001 % 9.92 dB                  0.0001 % 10.00 dB                  Peak 10.01 dB                  29.92 dBm</p> <p>Info BW 50.000 MHz</p> <p><b>256QAM Mid channel</b></p>
40 MHz	 <p><b>Average Power</b>                  23.38 dBm                  37.32 % at 0dB</p> <p>10.0 % 3.71 dB                  1.0 % 6.31 dB                  0.1 % 6.91 dB                  0.01 % 7.10 dB                  0.001 % 7.18 dB                  0.0001 % 7.24 dB                  Peak 7.26 dB                  30.64 dBm</p> <p>Info BW 40.000 MHz</p> <p><b>QPSK Mid channel</b></p>	 <p><b>Average Power</b>                  19.88 dBm                  36.56 % at 0dB</p> <p>10.0 % 3.60 dB                  1.0 % 6.73 dB                  0.1 % 8.55 dB                  0.01 % 9.55 dB                  0.001 % 9.94 dB                  0.0001 % 10.04 dB                  Peak 10.10 dB                  29.98 dBm</p> <p>Info BW 40.000 MHz</p> <p><b>256QAM Mid channel</b></p>
30 MHz	 <p><b>Average Power</b>                  23.31 dBm                  37.15 % at 0dB</p> <p>10.0 % 3.69 dB                  1.0 % 6.33 dB                  0.1 % 6.91 dB                  0.01 % 7.04 dB                  0.001 % 7.12 dB                  0.0001 % 7.18 dB                  Peak 7.23 dB                  30.54 dBm</p> <p>Info BW 30.000 MHz</p> <p><b>QPSK Mid channel</b></p>	 <p><b>Average Power</b>                  19.85 dBm                  36.70 % at 0dB</p> <p>10.0 % 3.57 dB                  1.0 % 6.75 dB                  0.1 % 8.55 dB                  0.01 % 9.65 dB                  0.001 % 9.94 dB                  0.0001 % 10.04 dB                  Peak 10.15 dB                  30.00 dBm</p> <p>Info BW 30.000 MHz</p> <p><b>256QAM Mid channel</b></p>

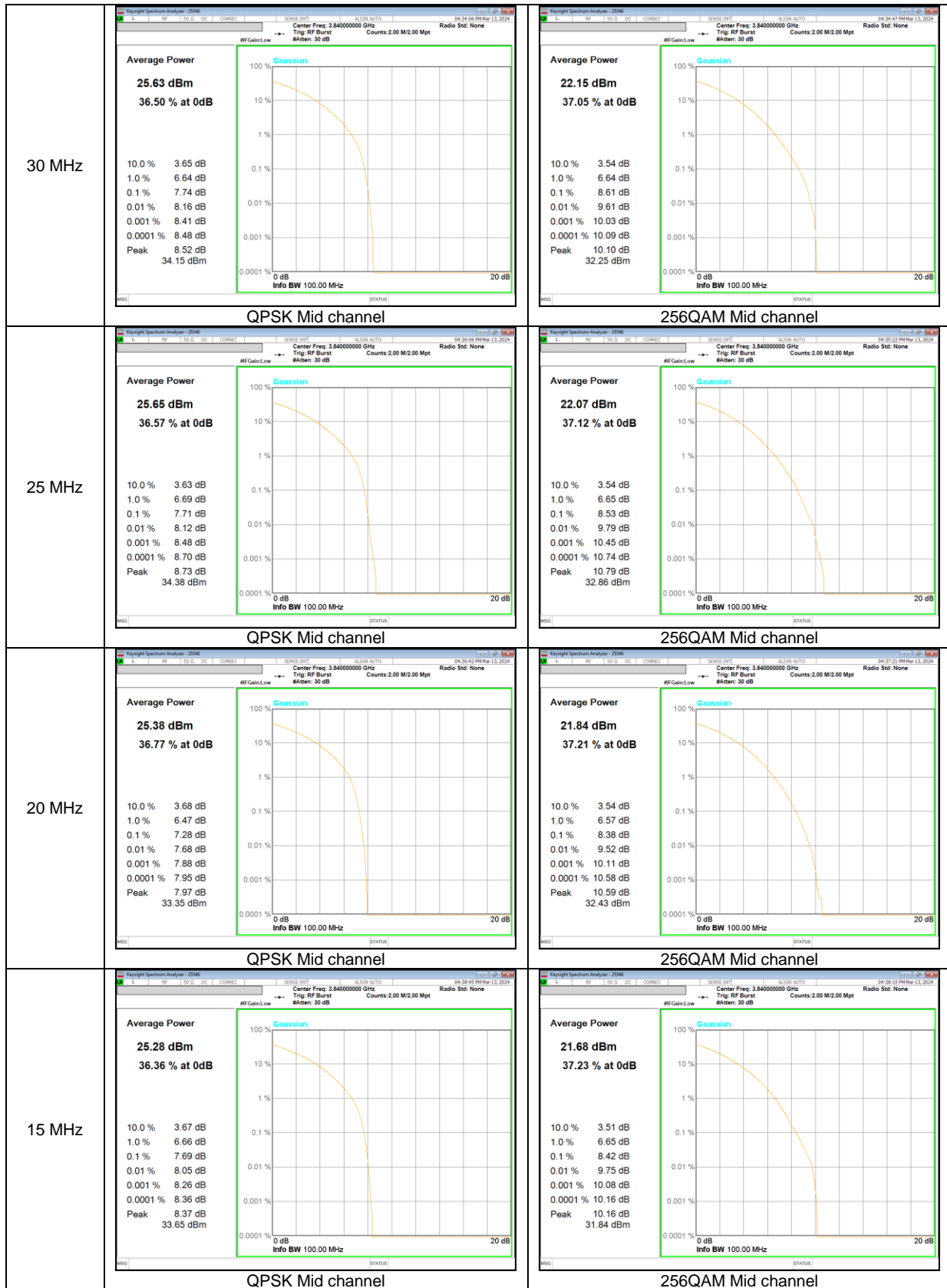


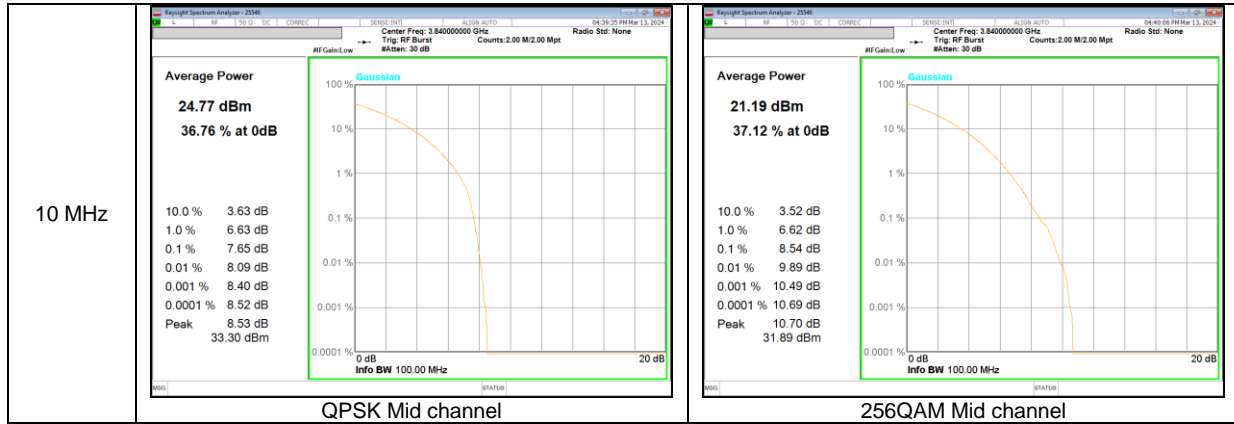
**NR Band n77(PC2) CP-OFDM (3700-3980 MHz)**











### **8.3. OCCUPIED BANDWIDTH**

#### **RULE PART(S)**

FCC: §2.1049

#### **LIMITS**

For reporting purposes only

#### **TEST PROCEDURE**

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at middle channel in each band. The -26dB bandwidth was also measured and recorded.

(KDB 971168 D01 Power Meas License Digital Systems v03r01)

#### **RESULTS**

See the following pages.

**- WCDMA**

Band	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
B4	Rel.99	1732.6	4.155	4.709
	HSDPA		4.146	4.700

**- LTE Band 7**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B7	20M	QPSK	2535.0	17.858	18.930
		16QAM		17.933	19.710
	15M	QPSK		13.437	14.660
		16QAM		13.473	14.800
	10M	QPSK		8.955	9.912
		16QAM		8.967	9.859
	5M	QPSK		4.498	5.115
		16QAM		4.495	5.153

**- LTE Band 12**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B12	10M	QPSK	707.5	8.965	9.988
		16QAM		8.967	10.040
	5M	QPSK		4.491	5.073
		16QAM		4.502	5.043
	3M	QPSK		2.699	3.060
		16QAM		2.705	3.078
	1.4M	QPSK		1.092	1.410
		16QAM		1.091	1.374

**- LTE Band 13**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B13	10M	QPSK	782.0	8.943	9.848
		16QAM		8.963	9.825
	5M	QPSK		4.487	5.043
		16QAM		4.492	5.066

**- LTE Band 30**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B30	10M	QPSK	2310.0	8.977	10.050
		16QAM		8.985	9.902
	5M	QPSK		4.506	5.152
		16QAM		4.495	5.092

**- LTE Band 41(PC2)**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B41(PC2)	20M	QPSK	2593.0	17.912	19.720
		16QAM		17.904	19.700
	15M	QPSK		13.449	14.820
		16QAM		13.434	14.740
	10M	QPSK		8.952	9.720
		16QAM		8.947	9.804
	5M	QPSK		4.481	5.174
		16QAM		4.483	5.078

**- LTE Band 41C(UL CA)**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
41C	20+20	QPSK	2593.0	37.627	40.010
		16QAM		37.635	39.370

**- LTE Band 66**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B66	20M	QPSK	1745.0	17.932	19.520
		16QAM		17.971	19.770
	15M	QPSK		13.483	14.920
		16QAM		13.465	14.860
	10M	QPSK		8.971	9.905
		16QAM		8.971	9.925
	5M	QPSK		4.504	5.140
		16QAM		4.496	5.089
	3M	QPSK		2.700	3.074
		16QAM		2.707	3.071
	1.4M	QPSK		1.088	1.353
		16QAM		1.093	1.343

**- LTE Band 66B(UL CA)**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
66B	20M	QPSK	1745.0	18.779	20.060
		16QAM		18.828	20.070
	15M	QPSK		13.902	14.870
		16QAM		13.925	14.930
	10M	QPSK		9.329	10.140
		16QAM		9.315	10.100

**- LTE Band 66C(UL CA)**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
66C	40M	QPSK	1745.0	37.688	40.090
		16QAM		37.735	40.130

**- LTE Band 71**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B71	20M	QPSK	680.5	17.878	19.720
		16QAM		17.869	19.560
	15M	QPSK		13.413	14.780
		16QAM		13.456	14.780
	10M	QPSK		8.965	9.979
		16QAM		8.960	9.891
	5M	QPSK		4.494	5.105
		16QAM		4.503	5.111

**- NR Band n7 CP-OFDM**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n7	40M	QPSK	2535.0	38.560	40.270
		16QAM		38.494	40.270
	35M	QPSK		33.499	35.060
		16QAM		33.458	35.080
	30M	QPSK		28.514	29.910
		16QAM		28.539	29.890
	25M	QPSK		23.689	24.930
		16QAM		23.711	24.990
	20M	QPSK		18.914	19.930
		16QAM		18.918	20.070
	15M	QPSK		14.120	14.910
		16QAM		14.091	15.620
	10M	QPSK		9.297	10.210
		16QAM		9.297	10.080
	5M	QPSK		4.495	5.445
		16QAM		4.487	5.185

**- NR Band n12 CP-OFDM**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n12	15M	QPSK	707.5	14.176	15.080
		16QAM		14.156	15.100
	10M	QPSK		9.309	10.030
		16QAM		9.310	9.984
	5M	QPSK		4.474	5.222
		16QAM		4.482	5.044

**- NR Band n30 CP-OFDM**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n30	10M	QPSK	2310.0	9.260	10.010
		16QAM		9.267	9.960
	5M	QPSK	2310.0	4.485	5.107
		16QAM		4.497	5.162



**- NR Band n41(PC2) CP-OFDM**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n41	100M	QPSK	2593.0	97.666	101.500
		16QAM		97.581	101.400
	90M	QPSK		87.818	91.410
		16QAM		87.750	91.450
	80M	QPSK		77.558	80.770
		16QAM		77.646	80.940
	70M	QPSK		67.851	70.460
		16QAM		67.692	70.350
	60M	QPSK		57.757	60.440
		16QAM		58.164	60.370
	50M	QPSK		47.668	49.770
		16QAM		47.561	49.490
	40M	QPSK		38.037	40.020
		16QAM		37.923	39.520
	30M	QPSK		27.925	29.350
		16QAM		27.869	29.060
	25M	QPSK		23.220	25.060
		16QAM		23.278	24.370
	20M	QPSK		18.238	19.160
		16QAM		18.201	19.340
15M	QPSK	13.547	14.630		
	16QAM	13.584	14.700		
10M	QPSK	8.580	9.940		
	16QAM	8.608	9.636		

**- NR Band n66 CP-OFDM**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n66	40M	QPSK	1745.0	38.669	40.300
		16QAM		38.770	40.290
	35M	QPSK		33.536	34.790
		16QAM		33.532	34.770
	30M	QPSK		28.596	29.830
		16QAM		28.645	29.890
	25M	QPSK		23.767	25.000
		16QAM		23.833	24.870
	20M	QPSK		18.935	20.030
		16QAM		18.915	20.020
	15M	QPSK		14.127	14.910
		16QAM		14.134	14.910
	10M	QPSK		9.294	10.020
		16QAM		9.303	10.080
	5M	QPSK		4.482	5.147
		16QAM		4.474	5.164

**- NR Band n70 CP-OFDM**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n70	15M	QPSK	1702.5	14.105	14.920
		16QAM		14.129	14.990
	10M	QPSK		9.294	10.020
		16QAM		9.286	10.100
	5M	QPSK		4.487	5.194
		16QAM		4.469	5.134

**- NR Band n71 CP-OFDM**

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n71	20M	QPSK	680.5	18.911	20.060
		16QAM		19.018	20.140
	15M	QPSK		14.109	14.870
		16QAM		14.112	14.840
	10M	QPSK		9.306	10.040
		16QAM		9.309	10.190
	5M	QPSK		4.481	5.242
		16QAM		4.472	5.084

**- NR Band n77(PC2) CP-OFDM (3450 - 3550 MHz)**

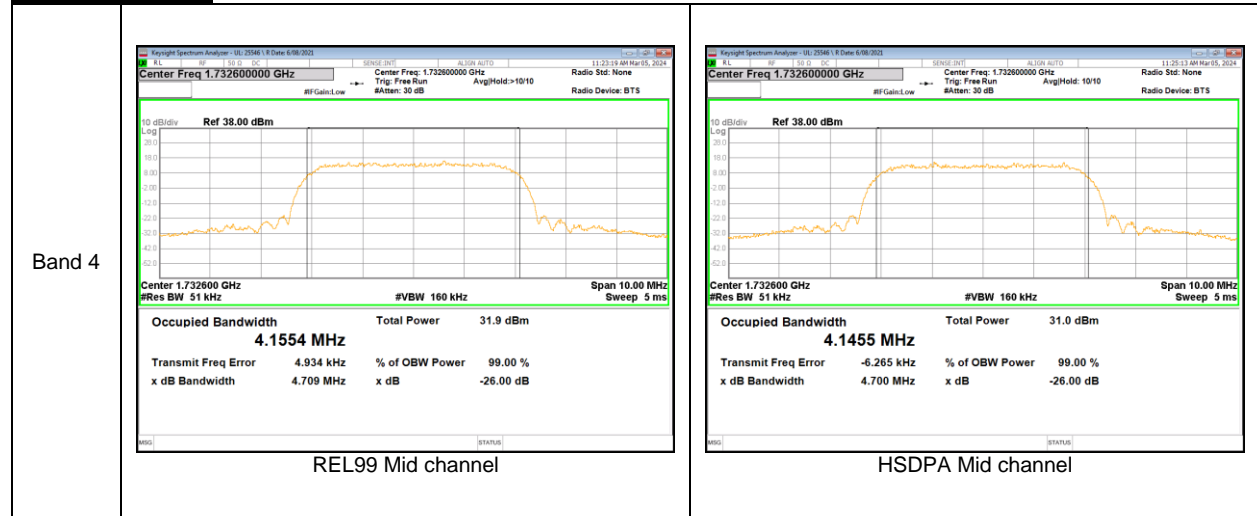
Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n77(PC2)	100M	QPSK	3500.0	97.898	101.500
		16QAM		97.826	101.400
	90M	QPSK		87.867	91.520
		16QAM		88.014	91.420
	80M	QPSK		77.584	80.840
		16QAM		77.820	80.550
	70M	QPSK		67.743	70.840
		16QAM		67.843	70.380
	60M	QPSK		58.060	60.530
		16QAM		58.012	60.510
	50M	QPSK		47.557	49.790
		16QAM		47.616	49.650
	40M	QPSK		37.914	39.650
		16QAM		37.983	39.650
	30M	QPSK		27.883	29.460
		16QAM		27.995	29.210
	25M	QPSK		23.197	24.390
		16QAM		23.284	24.640
	20M	QPSK		18.219	19.600
		16QAM		18.244	19.320
	15M	QPSK		13.589	14.680
		16QAM		13.566	14.800
	10M	QPSK		8.597	9.735
		16QAM		8.584	9.561

**- NR Band n77(PC2) CP-OFDM (3700 - 3980 MHz)**

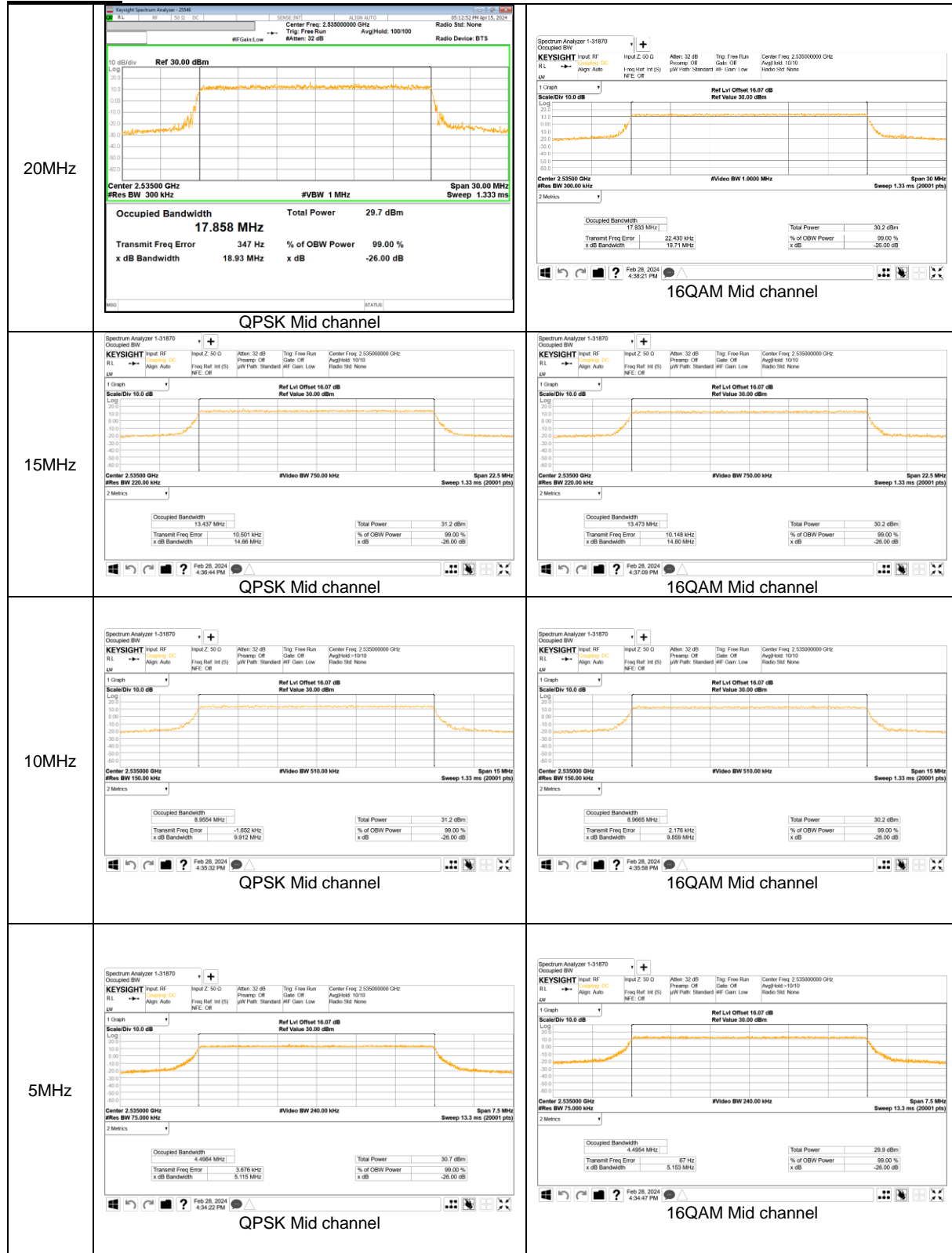
Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n77(PC2)	100M	QPSK	3840.0	97.901	101.500
		16QAM		97.645	101.600
	90M	QPSK		88.022	91.580
		16QAM		87.937	91.480
	80M	QPSK		77.648	80.710
		16QAM		77.717	80.910
	70M	QPSK		67.640	70.400
		16QAM		67.782	70.500
	60M	QPSK		58.178	60.320
		16QAM		58.222	60.450
	50M	QPSK		47.616	49.590
		16QAM		47.614	49.550
	40M	QPSK		37.974	39.710
		16QAM		37.988	39.660
	30M	QPSK		27.915	29.750
		16QAM		27.983	29.090
	25M	QPSK		23.259	24.530
		16QAM		23.232	24.370
	20M	QPSK		18.214	19.750
		16QAM		18.251	19.830
	15M	QPSK		13.615	14.810
		16QAM		13.594	14.720
	10M	QPSK		8.580	10.040
		16QAM		8.590	10.100

### 8.3.1. OCCUPIED BANDWIDTH RESULTS

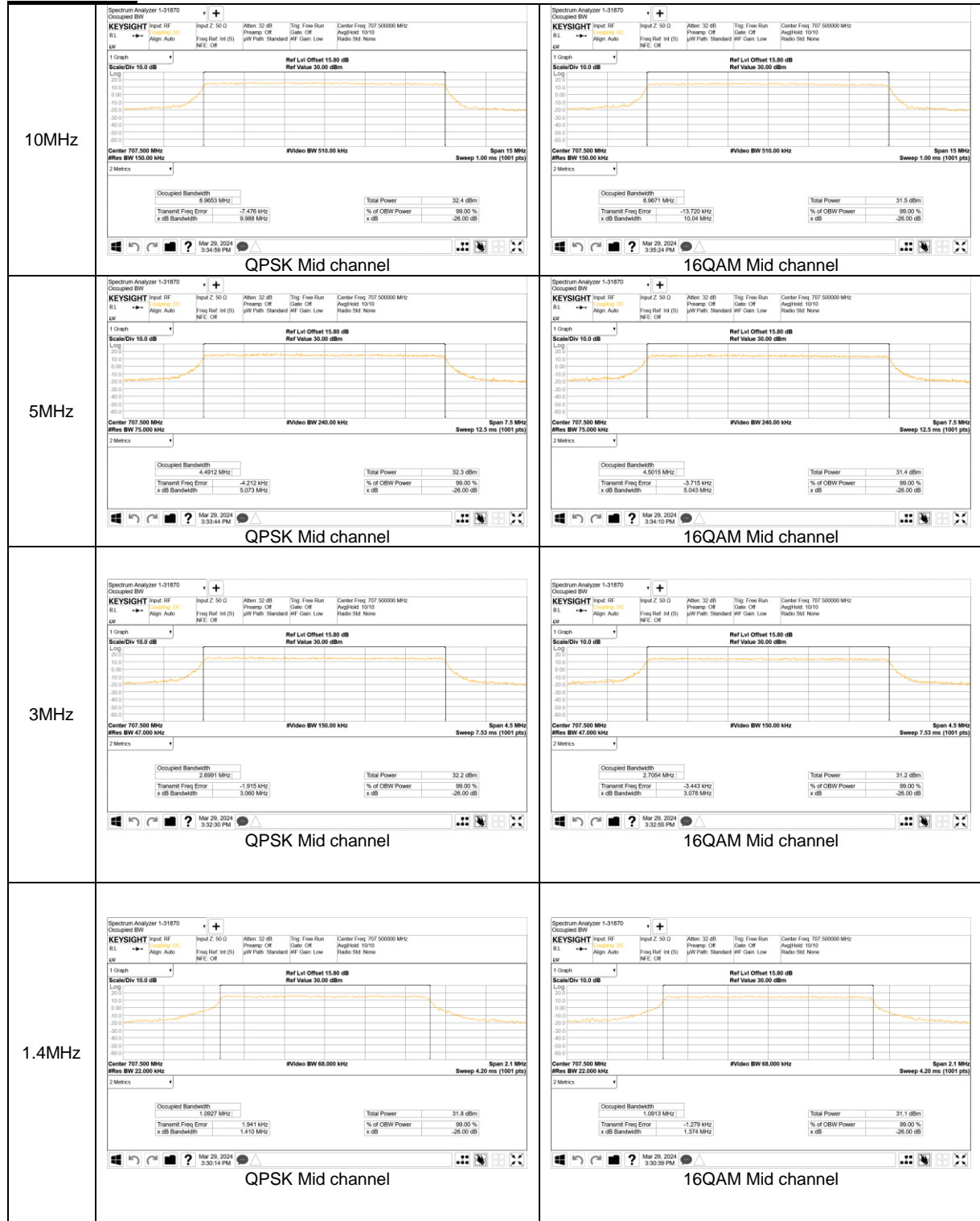
#### WCDMA Band 4



**LTE Band 7**



**LTE Band 12**

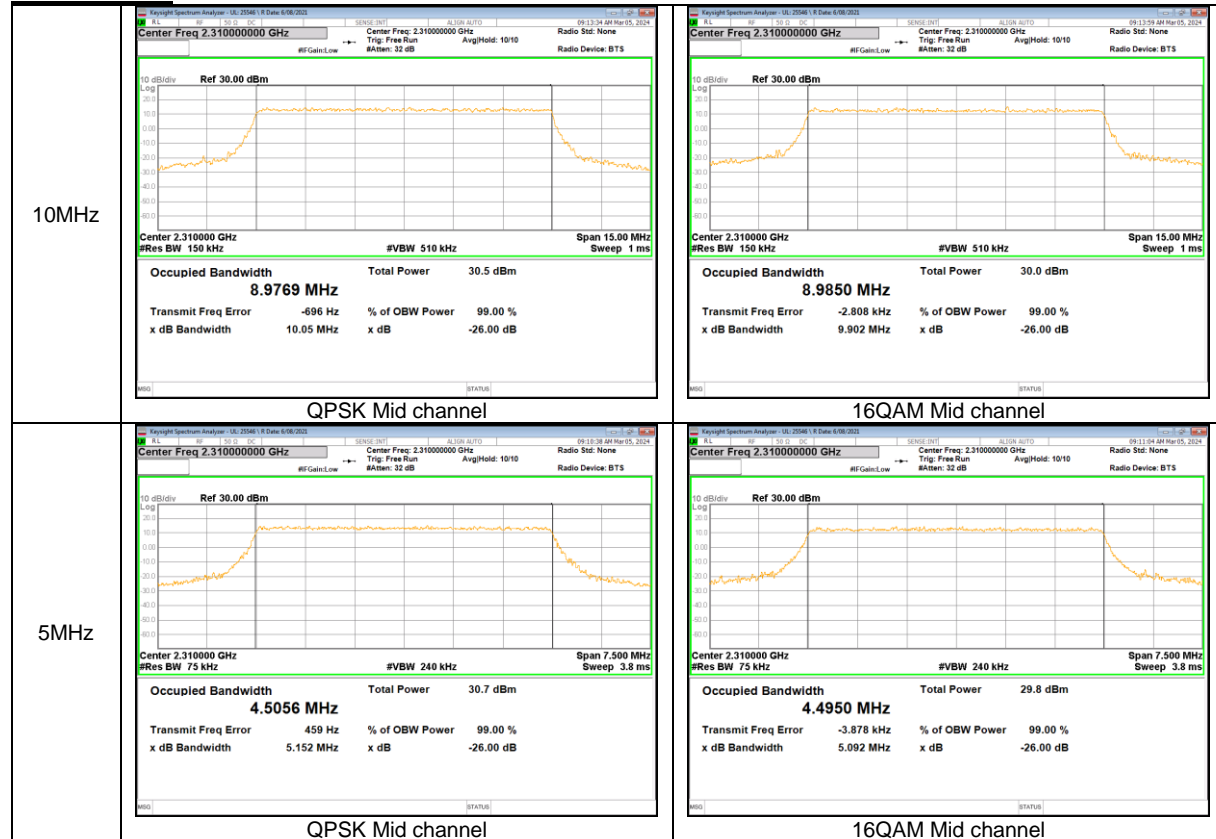


**LTE Band 13**

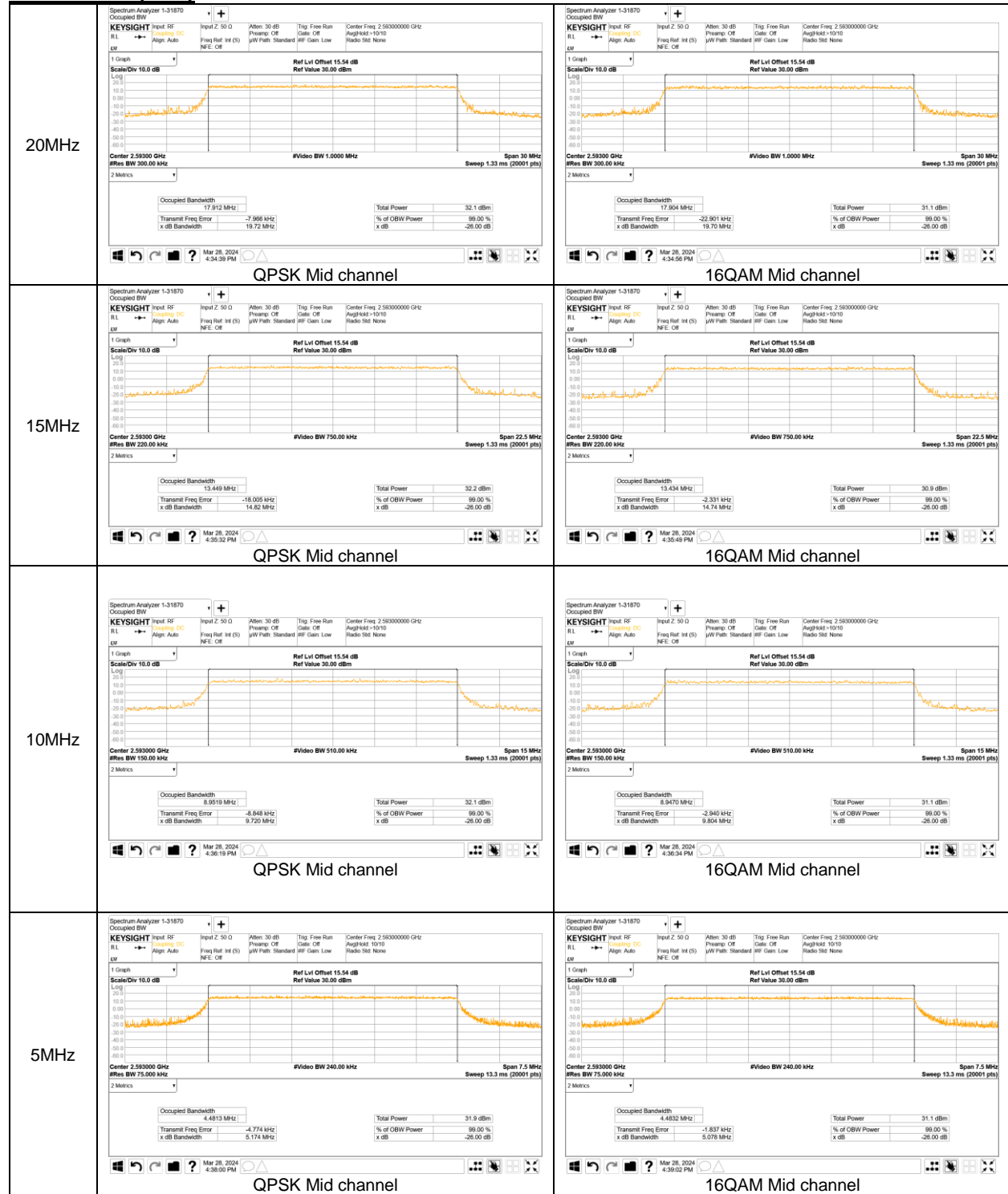




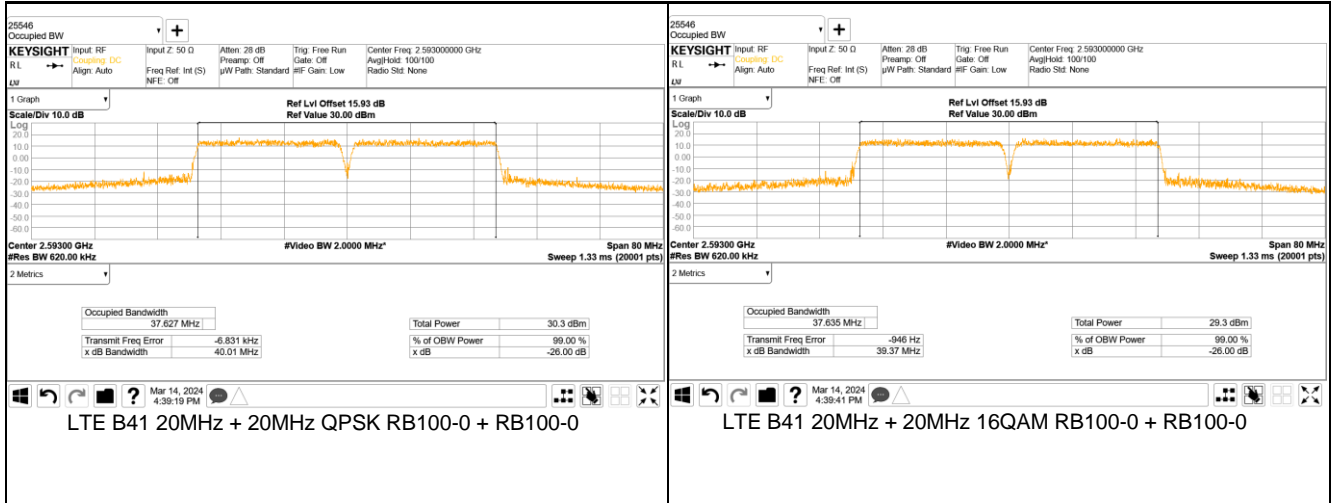
**LTE Band 30**



**LTE Band 41(PC2)**



**LTE Band 41C (UL CA)**



**LTE Band 66**



