



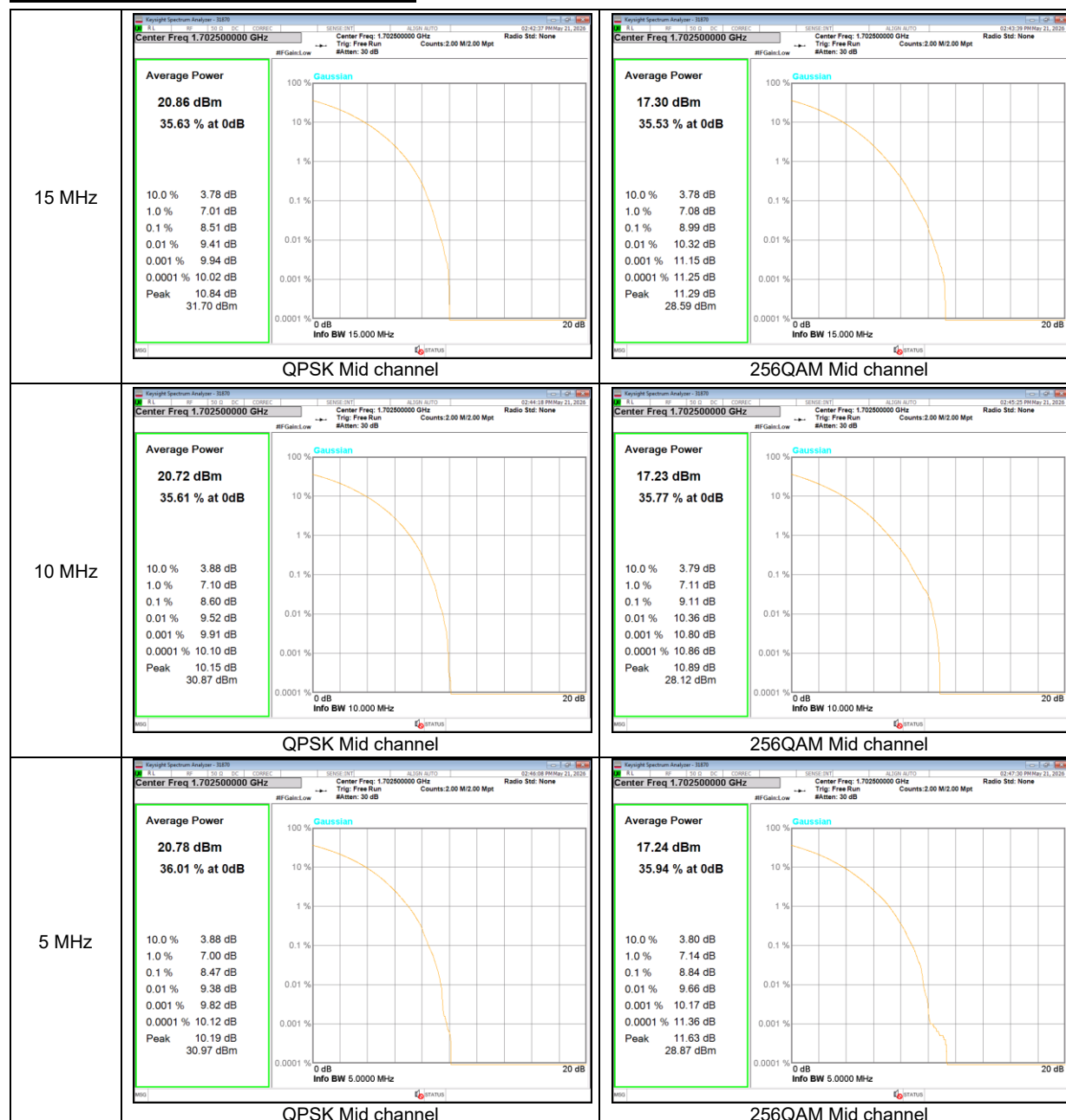


NR Band n66 CP-OFDM (ANT Main 1)





NR Band n70 CP-OFDM (ANT Main 1)



NR Band n71 CP-OFDM (ANT Main 1)



NR Band n77 (PC2, 3450-3550 MHz) CP-OFDM (ANT Main 2)







NR Band n77 (PC2, 3700-3980 MHz) CP-OFDM (ANT Main 2)







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 B4 (ANT Main 1)

Band	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
B4	Rel.99	1732.60	4.205	4.648
	HSDPA		4.146	4.657

- LTE Band 7 (ANT Sub 3)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B7	20M	QPSK	2535.00	17.925	19.090
		16QAM		17.874	19.060
	15M	QPSK		13.424	14.530
		16QAM		13.403	14.250
	10M	QPSK		8.967	9.619
		16QAM		8.954	9.755
	5M	QPSK		4.481	4.919
		16QAM		4.483	4.842

- LTE Band 12 (ANT Main 1)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B12	10M	QPSK	707.50	8.919	9.613
		16QAM		8.937	9.580
	5M	QPSK		4.484	4.943
		16QAM		4.477	4.870
	3M	QPSK		2.691	2.905
		16QAM		2.678	2.891
	1.4M	QPSK		1.082	1.266
		16QAM		1.086	1.276

- LTE Band 13 (ANT SUB 1)

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B13	10M	QPSK	782.00	8.950	9.689
		16QAM		8.953	9.529
	5M	QPSK		4.471	4.916
		16QAM		4.476	4.886

- LTE Band 30 (ANT Main 1)

Band	BW	Modulation	f [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B30	10M	QPSK	2310.00	8.954	9.549
		16QAM		8.937	9.584
	5M	QPSK		4.486	4.928
		16QAM		4.481	4.827

- LTE Band 41 (PC3) (ANT Main 1)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B41 (PC3)	20M	QPSK	2593.00	17.880	20.880
		16QAM		17.930	19.160
	15M	QPSK		13.437	14.360
		16QAM		13.452	16.140
	10M	QPSK		8.978	10.810
		16QAM		8.946	9.549
	5M	QPSK		4.480	5.172
		16QAM		4.474	5.184

- LTE Band 66 (ANT Main 1)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B66	20M	QPSK	1745.00	17.927	19.100
		16QAM		17.917	19.030
	15M	QPSK		13.423	14.540
		16QAM		13.432	14.450
	10M	QPSK		8.956	9.561
		16QAM		8.969	9.587
	5M	QPSK		4.491	4.910
		16QAM		4.486	4.857
	3M	QPSK		2.684	2.895
		16QAM		2.677	2.913
	1.4M	QPSK		1.083	1.260
		16QAM		1.087	1.270

- LTE Band 71 (ANT Sub 1)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
LTE B71	20M	QPSK	680.50	17.959	19.310
		16QAM		17.959	19.200
	15M	QPSK		13.458	14.530
		16QAM		13.462	14.590
	10M	QPSK		8.973	9.833
		16QAM		8.983	9.539
	5M	QPSK		4.486	4.872
		16QAM		4.487	4.888

- NR Band n7 CP-OFDM (ANT Main 1)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n7	40M	QPSK	2535.00	38.706	40.290
		16QAM		38.584	40.250
	35M	QPSK		33.559	35.050
		16QAM		33.605	34.960
	30M	QPSK		28.662	29.980
		16QAM		28.601	29.910
	25M	QPSK		23.736	24.820
		16QAM		23.749	24.860
	20M	QPSK		18.935	19.850
		16QAM		18.919	19.770
	15M	QPSK		14.115	14.780
		16QAM		14.120	14.790
	10M	QPSK		9.276	9.790
		16QAM		9.276	9.778
	5M	QPSK		4.476	4.905
		16QAM		4.476	4.857

- NR Band n12 CP-OFDM (ANT Main 1)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n12	15M	QPSK	707.50	14.078	14.750
		16QAM		14.103	14.740
	10M	QPSK		9.273	9.783
		16QAM		9.288	9.777
	5M	QPSK		4.477	4.877
		16QAM		4.477	4.852

- NR Band n30 CP-OFDM (ANT Main 1)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n30	10M	QPSK	2310.00	9.262	9.784
		16QAM		9.268	9.830
	5M	QPSK		4.483	4.905
		16QAM		4.477	4.841

- NR Band n41 (PC2) CP-OFDM (ANT Main 1)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n41	100M	QPSK	2592.99	97.070	101.600
		16QAM		96.995	101.500
	90M	QPSK		87.226	91.160
		16QAM		87.119	91.440
	80M	QPSK		77.436	80.580
		16QAM		77.476	80.690
	70M	QPSK		67.475	70.320
		16QAM		67.388	70.370
	60M	QPSK		57.903	60.250
		16QAM		57.867	60.350
	50M	QPSK		47.440	49.670
		16QAM		47.463	49.620
	40M	QPSK		37.793	39.460
		16QAM		37.932	39.540
	30M	QPSK		27.809	29.200
		16QAM		27.770	29.150
	25M	QPSK		23.270	24.470
		16QAM		23.277	24.290
	20M	QPSK		18.237	19.170
		16QAM		18.187	19.120
	15M	QPSK		13.562	14.350
		16QAM		13.548	14.460
	10M	QPSK		8.573	9.169
		16QAM		8.575	9.180

- NR Band n66 CP-OFDM (ANT Main 1)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n66	40M	QPSK	1745.00	38.585	40.260
		16QAM		38.585	40.270
	35M	QPSK		33.653	35.010
		16QAM		33.608	34.990
	30M	QPSK		28.592	29.910
		16QAM		28.664	29.940
	25M	QPSK		23.578	24.650
		16QAM		23.609	24.580
	20M	QPSK		18.938	19.750
		16QAM		18.952	19.790
	15M	QPSK		14.135	14.770
		16QAM		14.102	14.780
	10M	QPSK		9.310	9.763
		16QAM		9.305	9.753
	5M	QPSK		4.493	4.904
		16QAM		4.485	4.849

- NR Band n70 CP-OFDM (ANT Main 1)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n70	15M	QPSK	1702.50	14.107	14.780
		16QAM		14.127	14.780
	10M	QPSK		9.273	9.880
		16QAM		9.275	9.811
	5M	QPSK		4.479	4.897
		16QAM		4.475	4.861

- NR Band n71 CP-OFDM (ANT Main 1)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n71	20M	QPSK	680.50	18.941	19.830
		16QAM		18.935	19.810
	15M	QPSK		14.134	14.760
		16QAM		14.121	14.800
	10M	QPSK		9.278	9.774
		16QAM		9.345	9.833
	5M	QPSK		4.479	5.041
		16QAM		4.490	4.863

- NR Band n77 (PC2, 3450-3550 MHz) CP-OFDM (ANT Main 2)

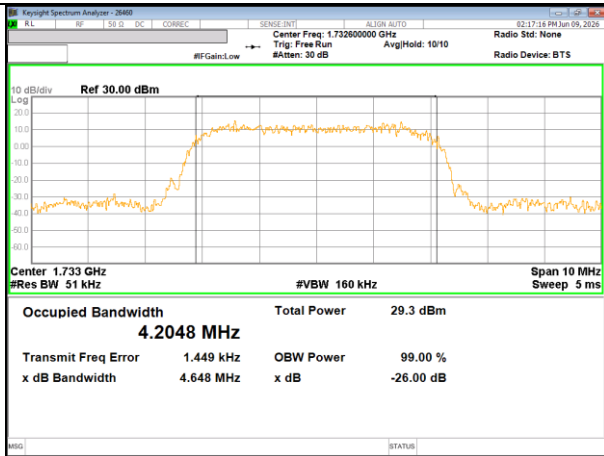
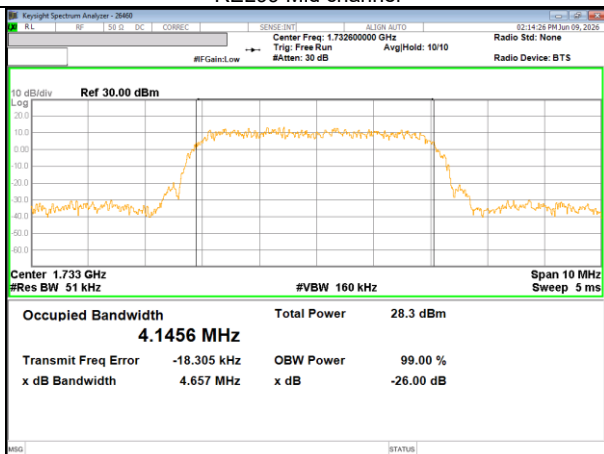
Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n77	100M	QPSK	3499.98	97.504	101.400
		16QAM		97.585	101.700
	90M	QPSK		87.759	97.540
		16QAM		87.565	91.560
	80M	QPSK		77.553	80.740
		16QAM		77.569	80.740
	70M	QPSK		67.549	70.480
		16QAM		67.612	70.500
	60M	QPSK		57.713	60.290
		16QAM		57.926	60.380
	50M	QPSK		47.574	49.610
		16QAM		47.523	49.520
	40M	QPSK		37.899	39.490
		16QAM		37.904	39.820
	30M	QPSK		27.853	29.460
		16QAM		27.862	29.700
	25M	QPSK		23.222	24.370
		16QAM		23.253	24.310
	20M	QPSK		18.230	20.160
		16QAM		18.216	19.330
	15M	QPSK		13.603	15.510
		16QAM		13.592	14.340
	10M	QPSK		8.595	10.480
		16QAM		8.582	9.208

- NR Band n77 (PC2, 3700-3980 MHz) CP-OFDM (ANT Main 2)

Band	BW	Modulation	Frequency [MHz]	99% BW (MHz)	-26dB BW (MHz)
NR n77	100M	QPSK	3840.00	97.512	101.800
		16QAM		97.582	101.400
	90M	QPSK		87.461	91.270
		16QAM		87.587	91.580
	80M	QPSK		77.441	80.790
		16QAM		77.313	80.770
	70M	QPSK		67.630	70.440
		16QAM		67.318	70.320
	60M	QPSK		57.806	60.200
		16QAM		57.812	60.380
	50M	QPSK		47.485	49.570
		16QAM		47.466	49.510
	40M	QPSK		37.811	39.810
		16QAM		37.838	39.490
	30M	QPSK		27.897	29.210
		16QAM		27.810	29.330
	25M	QPSK		23.217	24.230
		16QAM		23.225	24.450
	20M	QPSK		18.214	19.150
		16QAM		18.230	19.050
	15M	QPSK		13.571	14.370
		16QAM		13.611	14.310
	10M	QPSK		8.589	9.306
		16QAM		8.558	9.112

8.3.1. OCCUPIED BANDWIDTH RESULT

WCDMA B4 (ANT Main 1)

Band 4	 REL99 Mid channel
	 HSDPA Mid channel

LTE Band 7 (ANT Sub 3)

