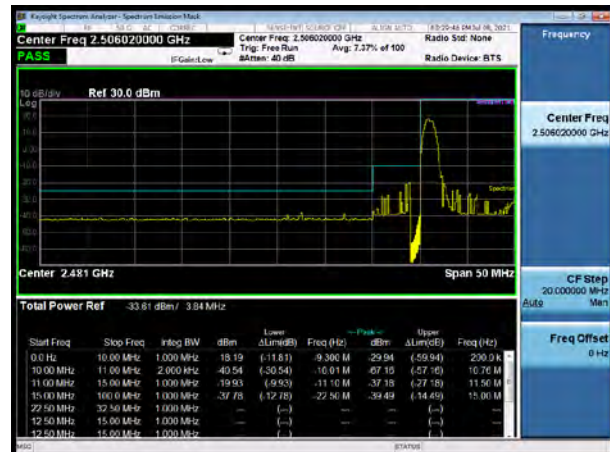
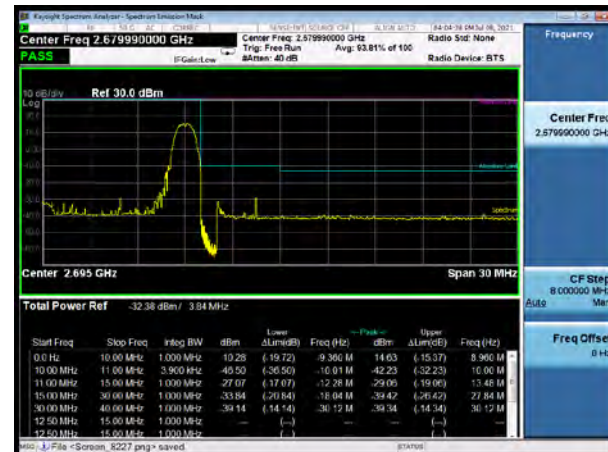




DC_66A-n41A 20MHz 64QAM 1RB CH-Low



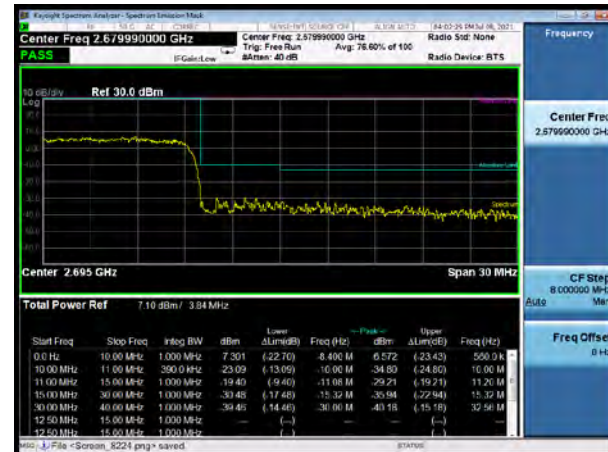
DC_66A-n41A 20MHz 64QAM 1RB CH-High



DC_66A-n41A 20MHz 64QAM 100%RB CH-Low



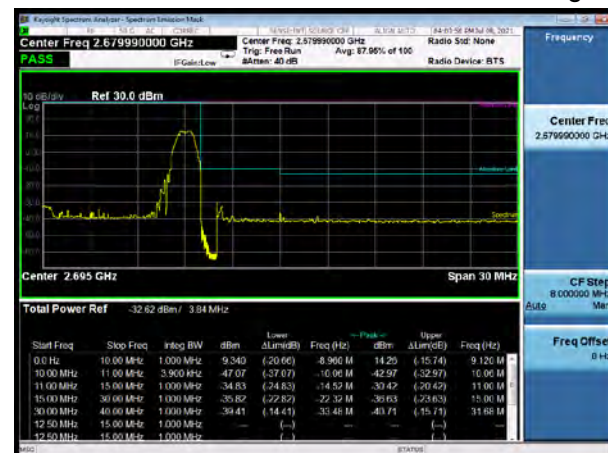
DC_66A-n41A 20MHz 64QAM 100%RB CH-High



DC_66A-n41A 20MHz 256QAM 1RB CH-Low

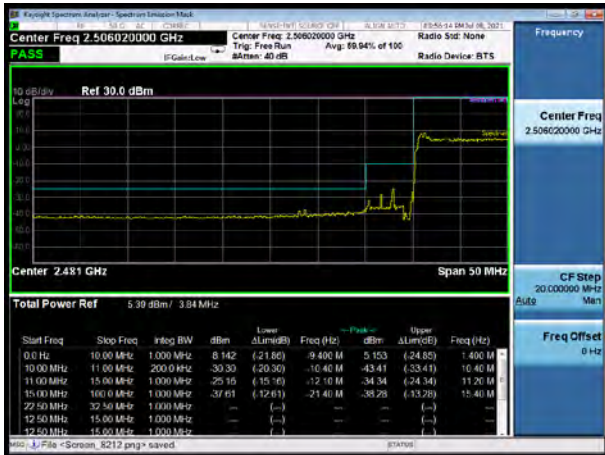


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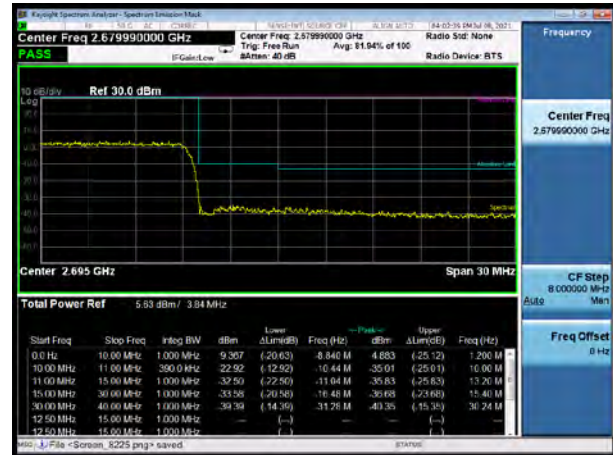




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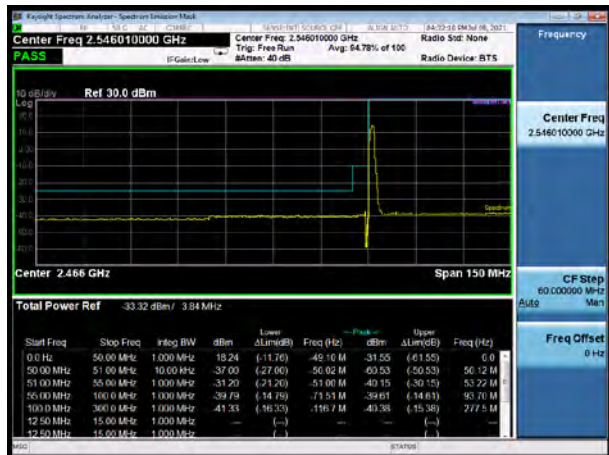


DC_66A-n41A 20MHz 256QAM 100%RB CH-High





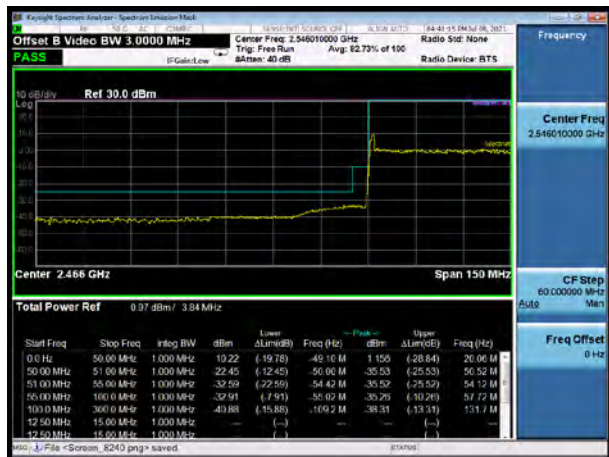
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DC_66A-n41A 100MHz PI/2 BPSK 1RB CH-High



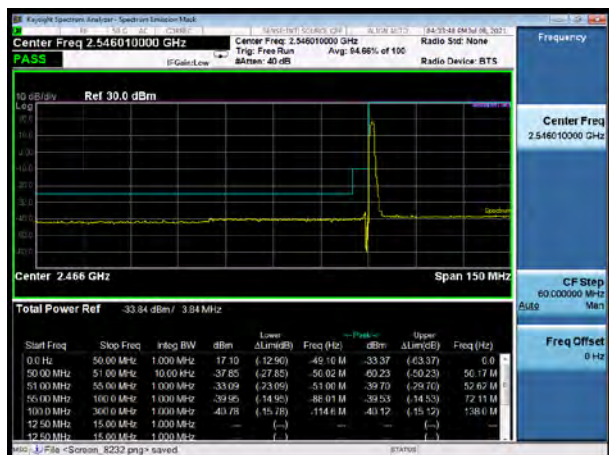
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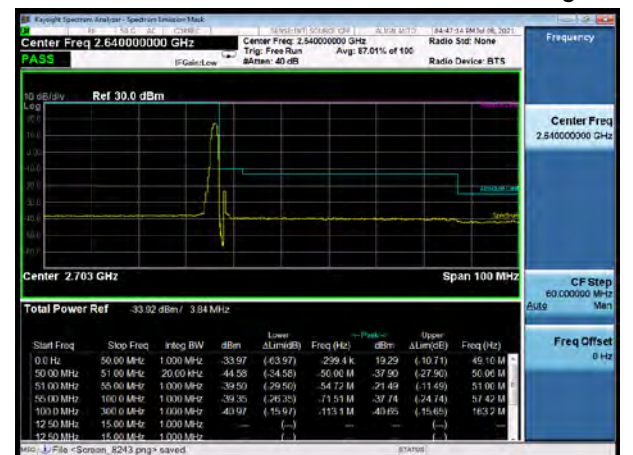
DC_66A-n41A 100MHz PI/2 BPSK 100%RB CH-High



DC_66A-n41A 100MHz QPSK 1RB CH-Low

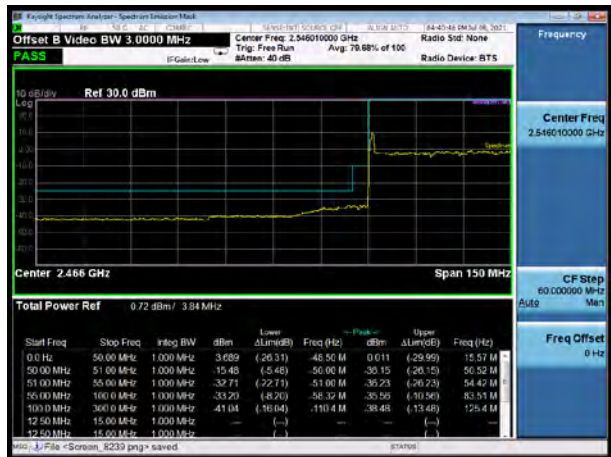


DC_66A-n41A 100MHz QPSK 1RB CH-High





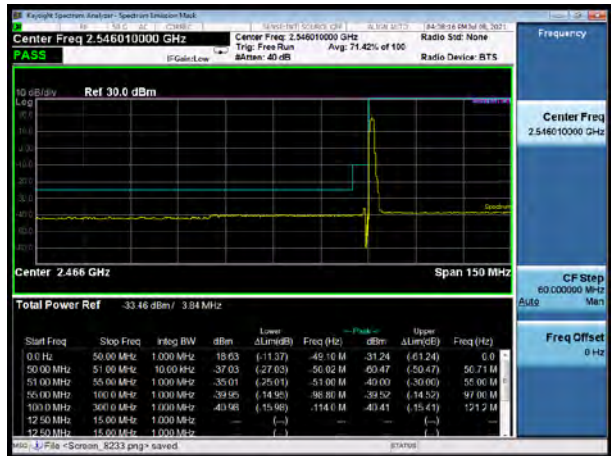
DC_66A-n41A 100MHz QPSK 100%RB CH-Low



DC_66A-n41A 100MHz QPSK 100%RB CH-High



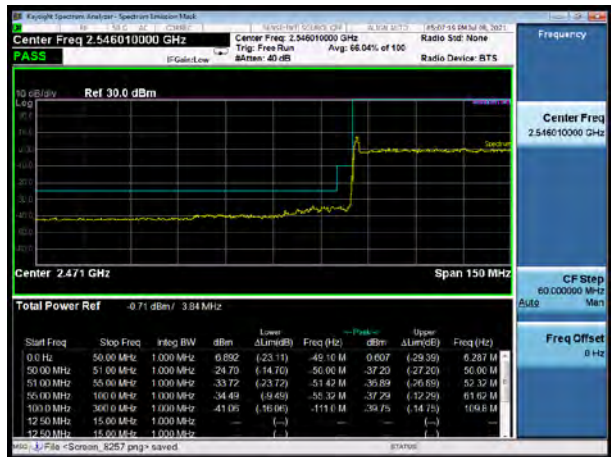
DC_66A-n41A 100MHz 16QAM 1RB CH-Low



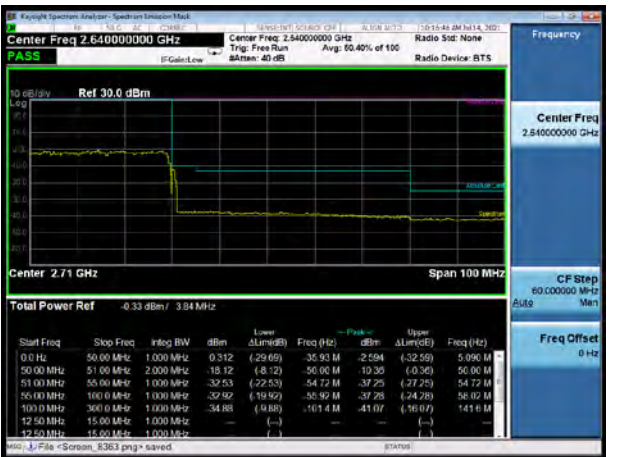
DC_66A-n41A 100MHz 16QAM 1RB CH-High



DC_66A-n41A 100MHz 16QAM 100%RB CH-Low



DC_66A-n41A 100MHz 16QAM 100%RB CH-High





DC_66A-n41A 100MHz 64QAM 1RB CH-Low



DC_66A-n41A 100MHz 64QAM 1RB CH-High



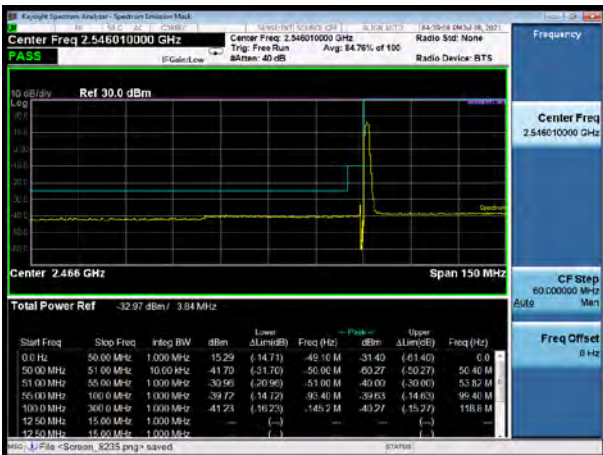
DC_66A-n41A 100MHz 64QAM 100%RB CH-Low



DC_66A-n41A 100MHz 64QAM 100%RB CH-High



DC_66A-n41A 100MHz 256QAM 1RB CH-Low



DC_66A-n41A 100MHz 256QAM 1RB CH-High

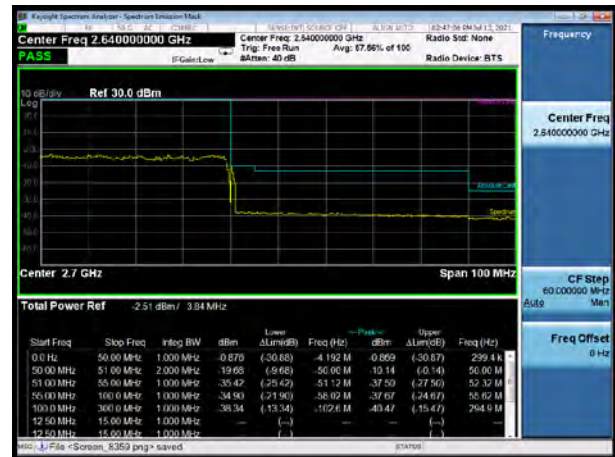


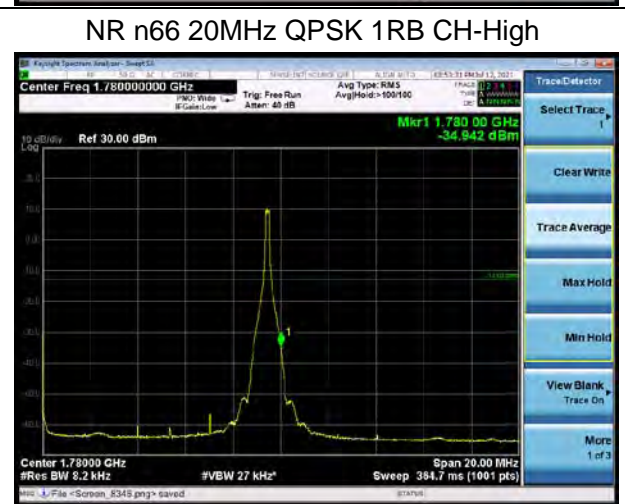
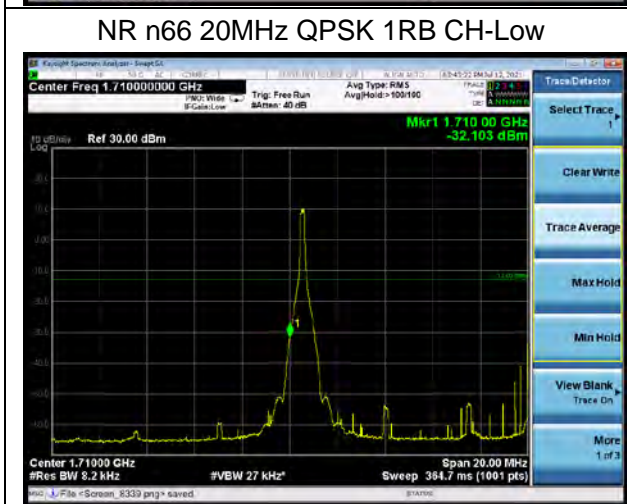
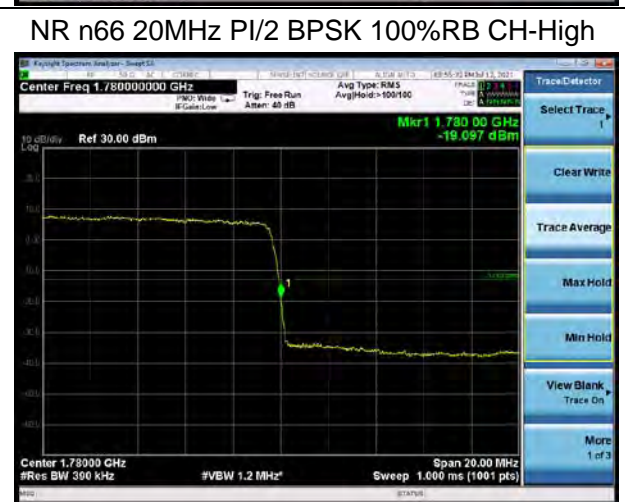
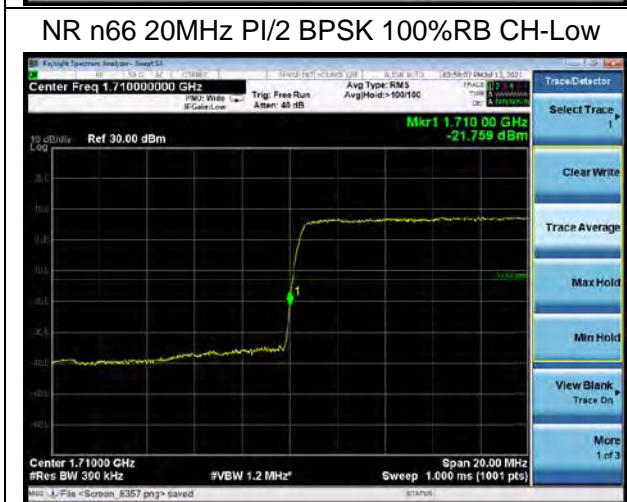
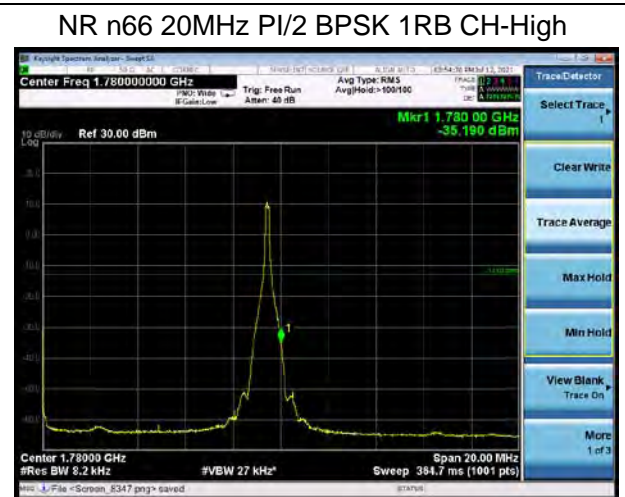
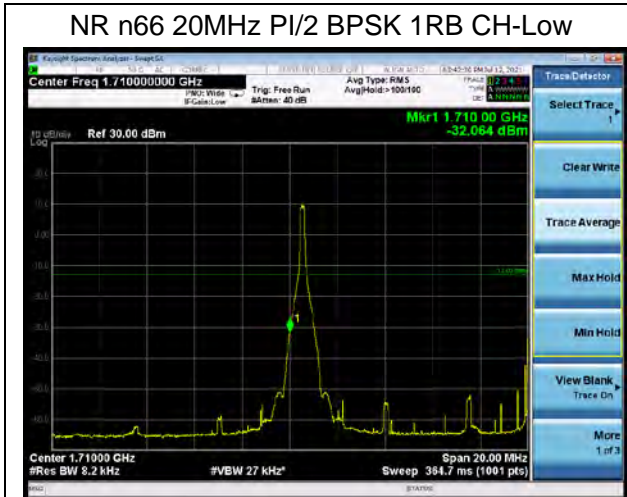


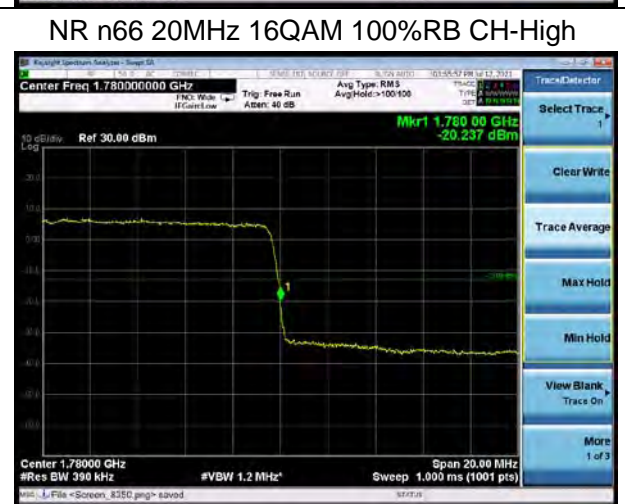
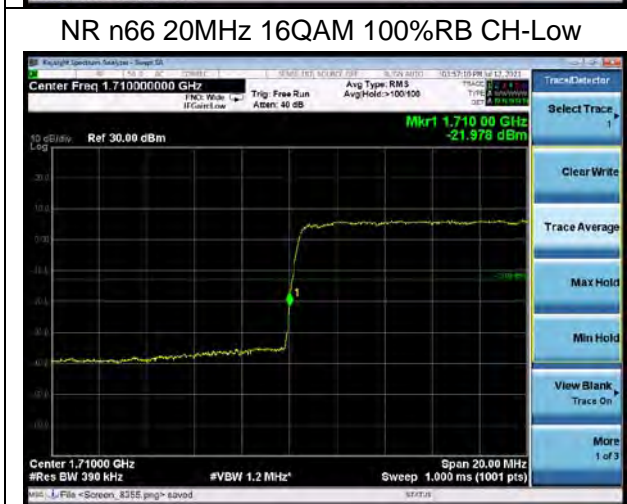
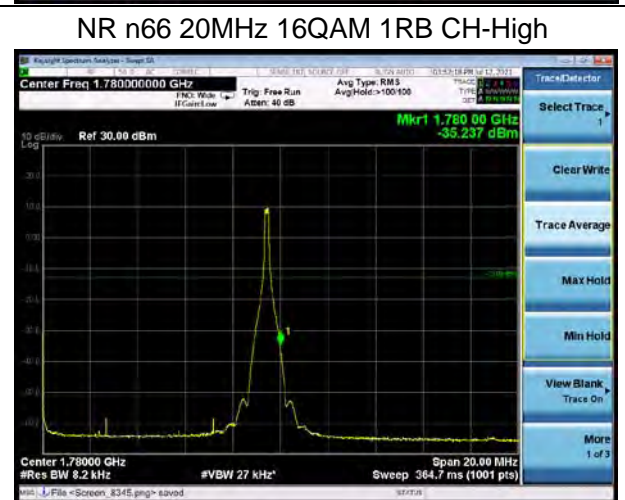
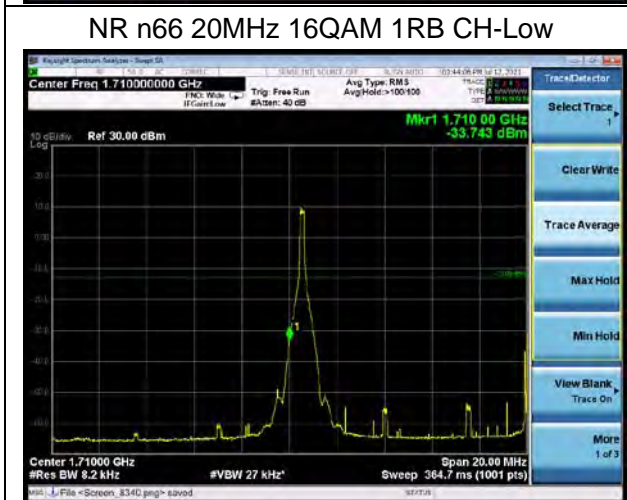
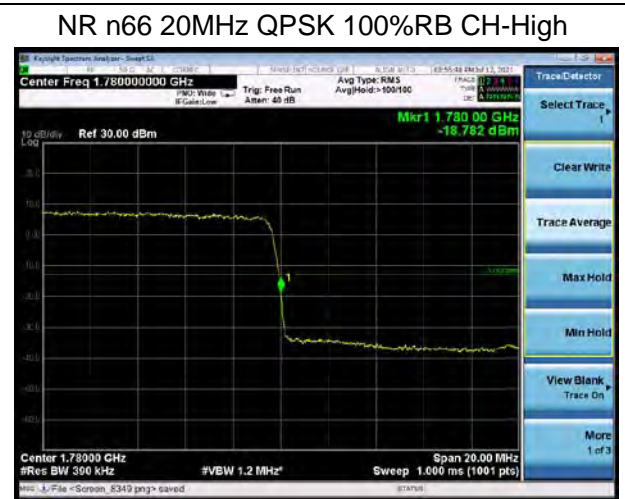
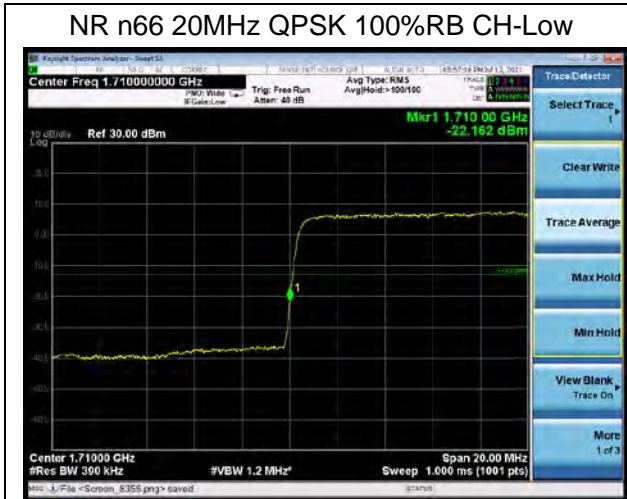
DC_66A-n41A 100MHz 256QAM 100%RB CH-Low

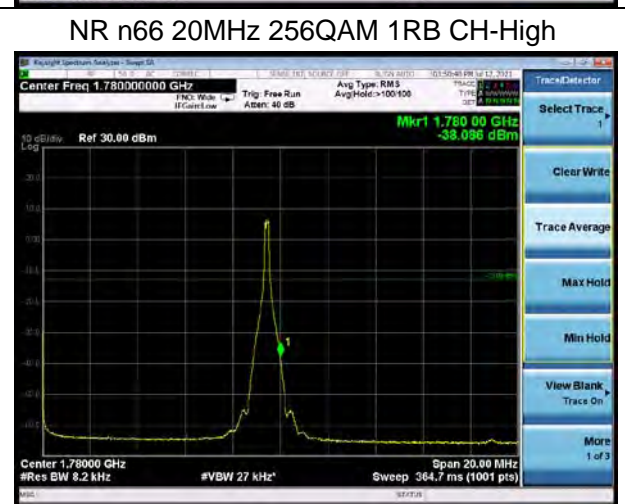
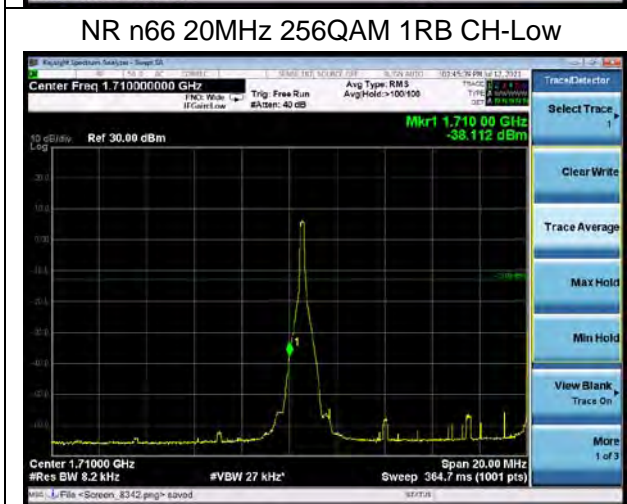
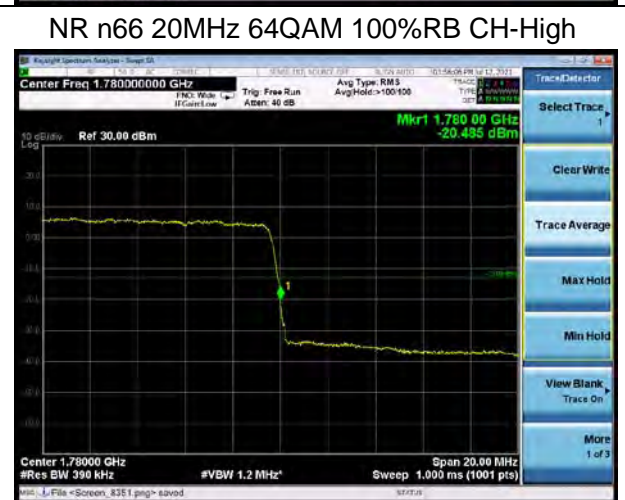
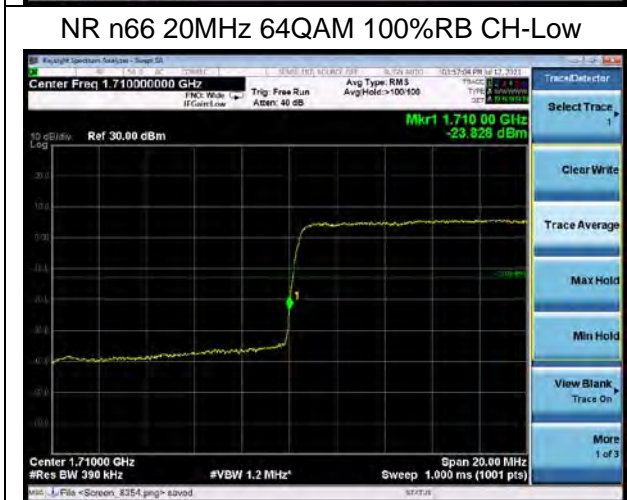
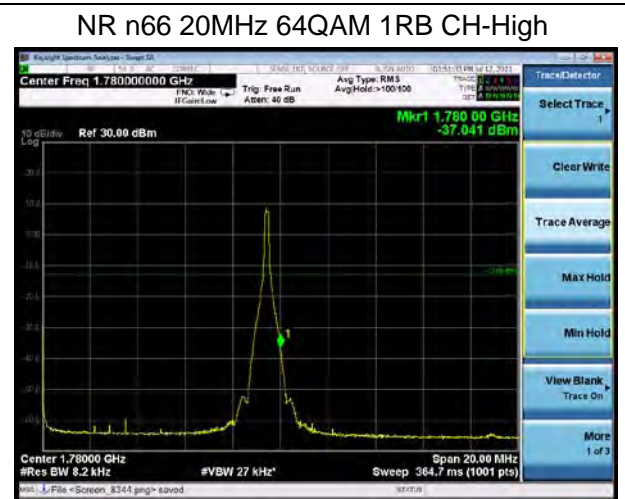
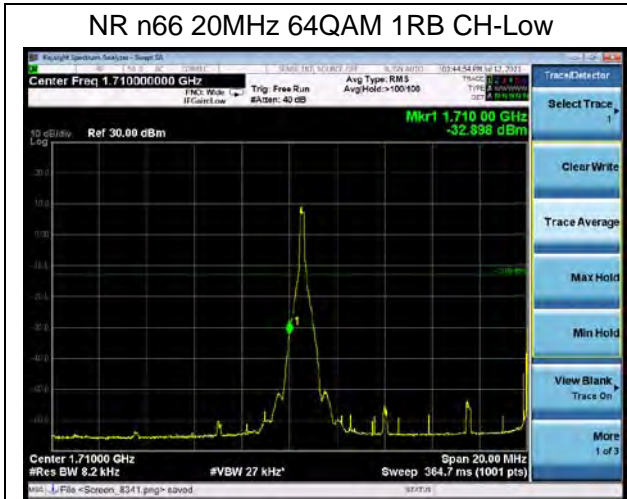


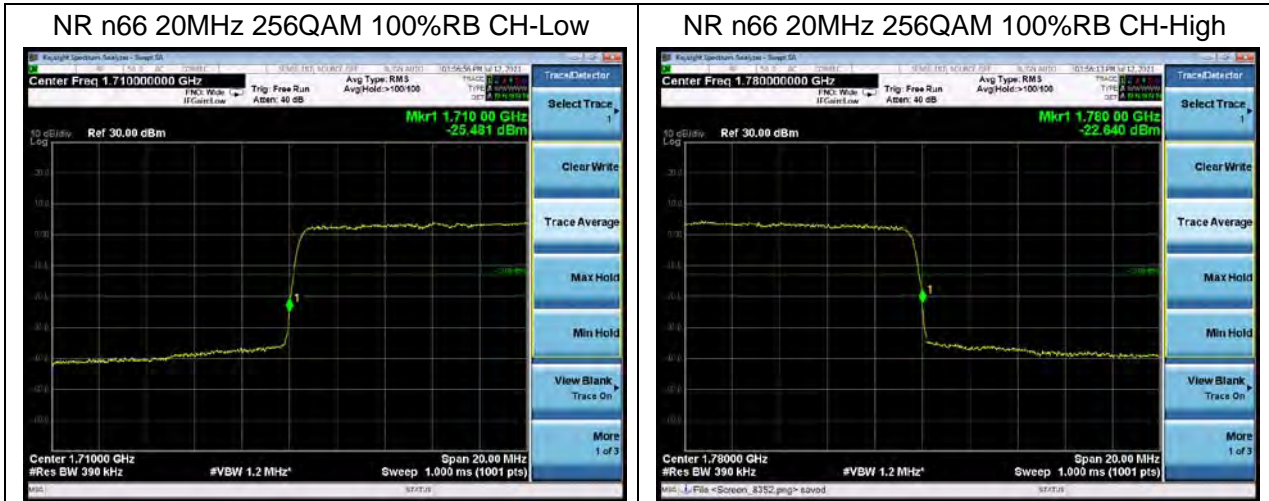
DC_66A-n41A 100MHz 256QAM 100%RB CH-High

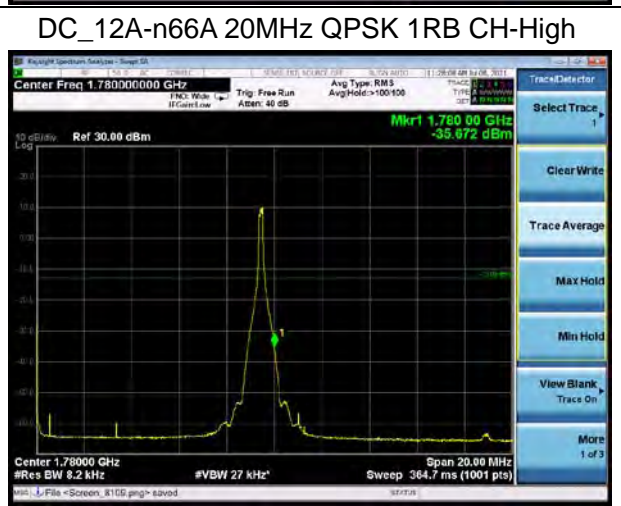
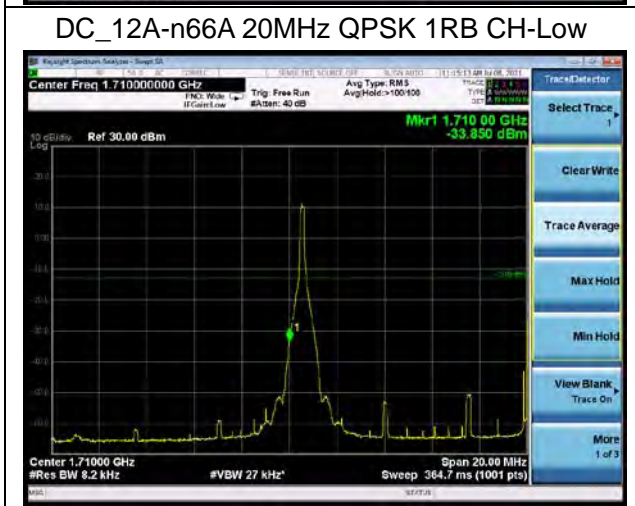
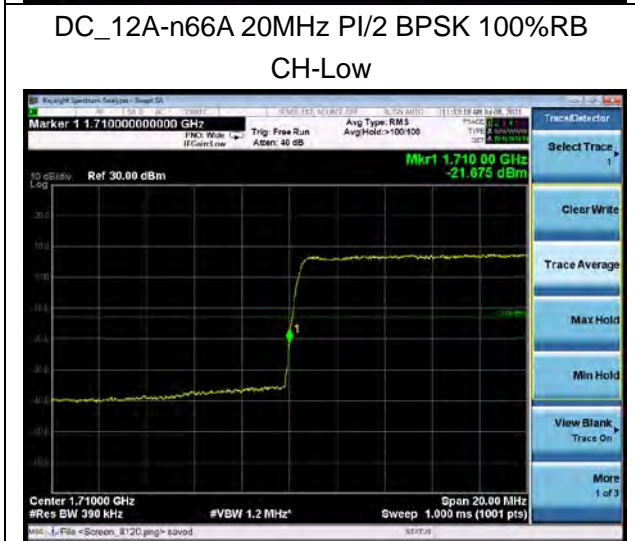
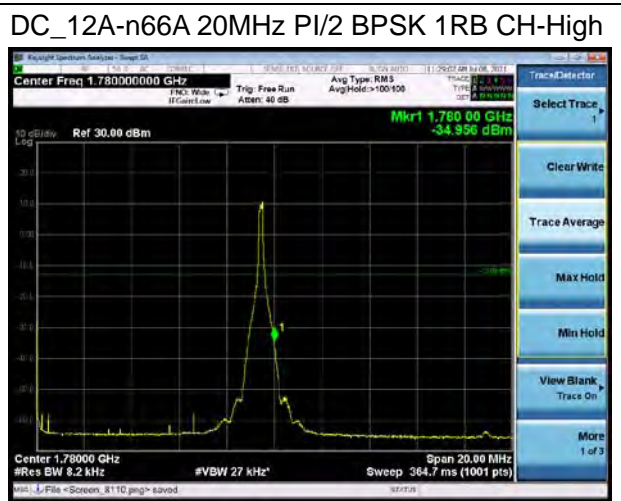
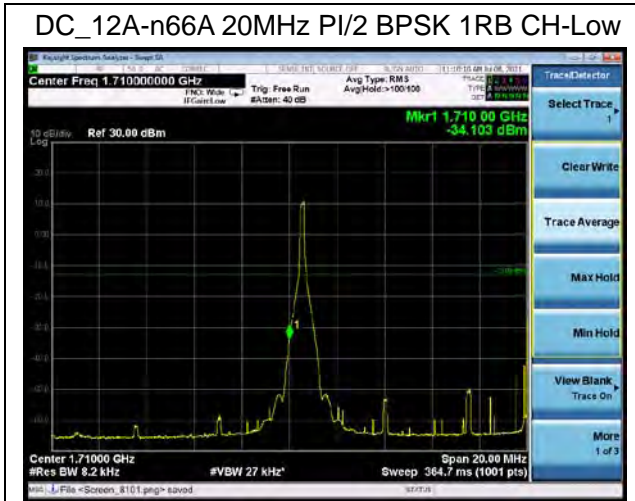


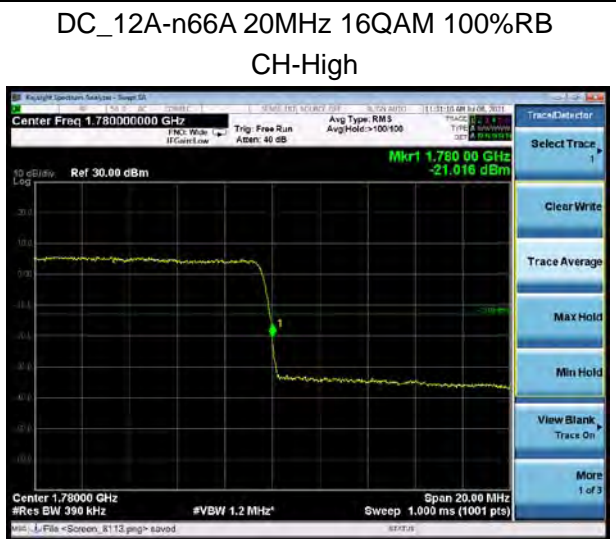
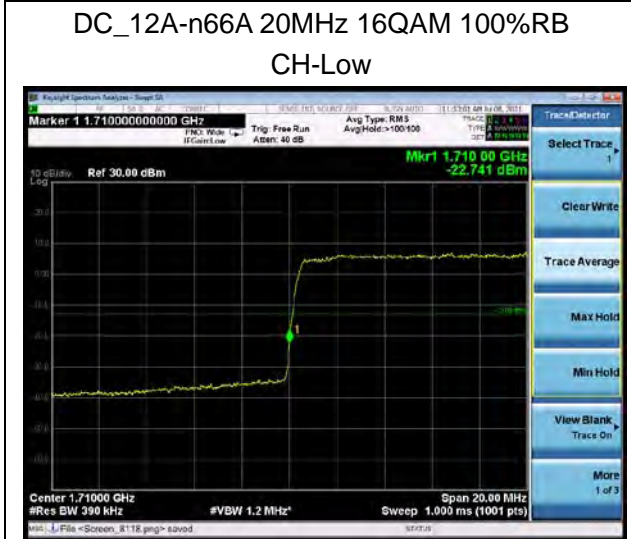
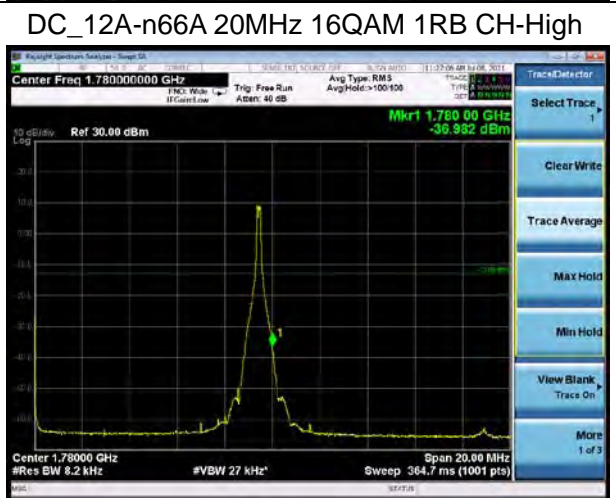
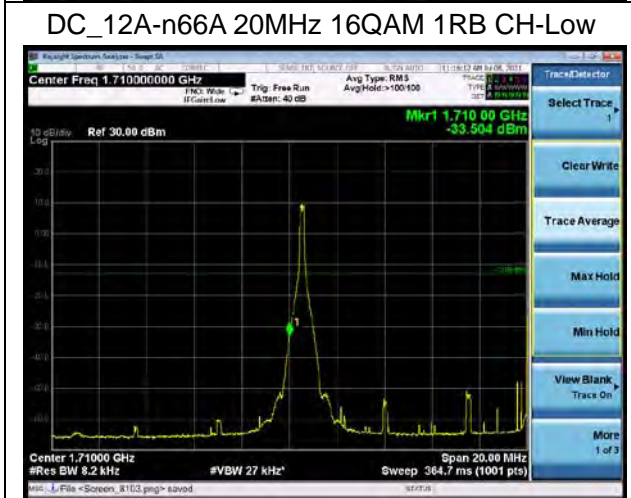
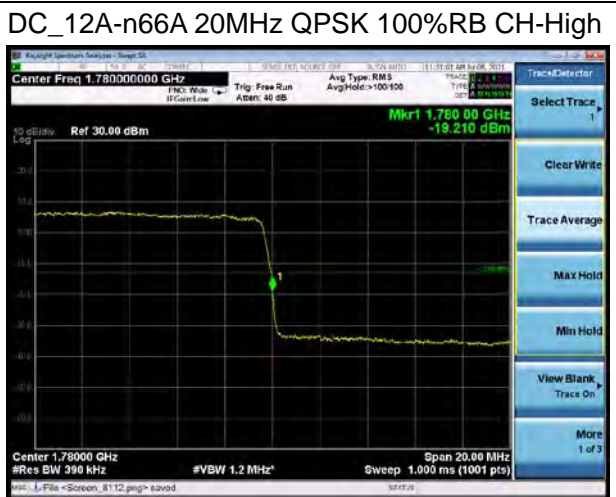
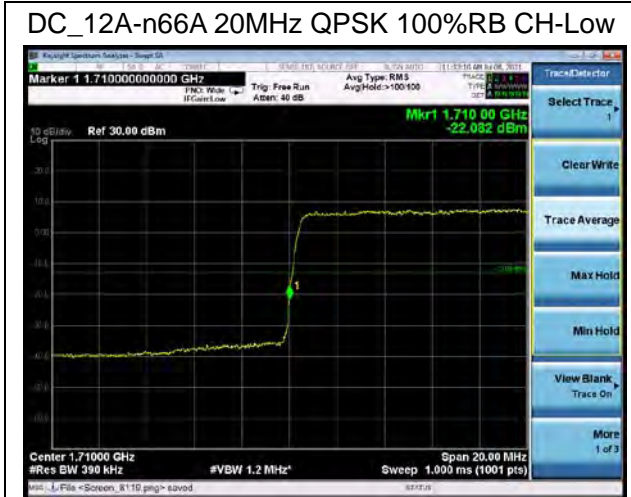


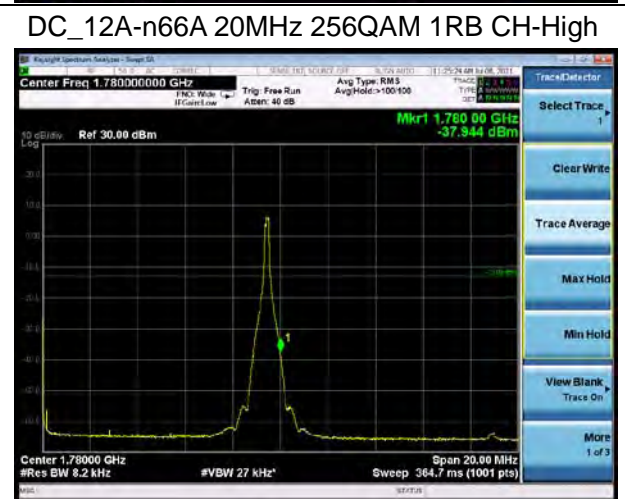
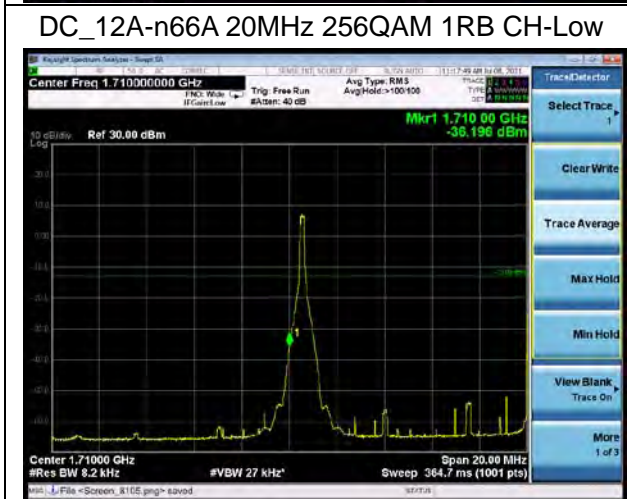
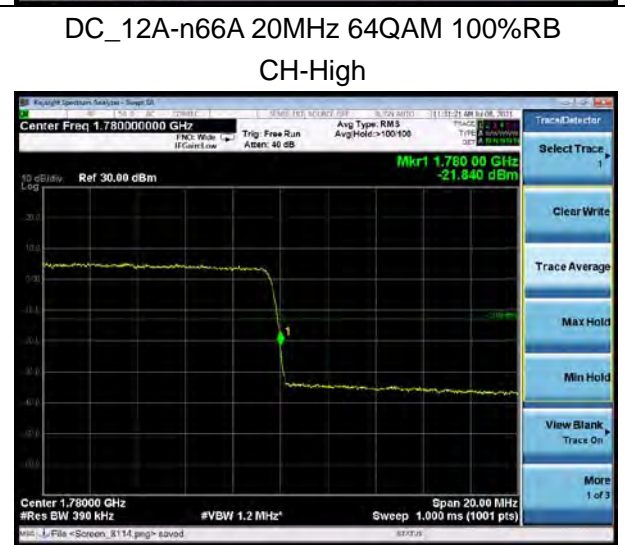
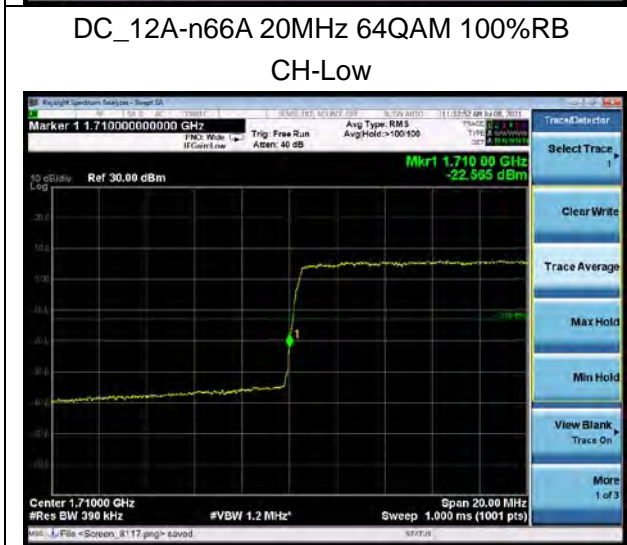
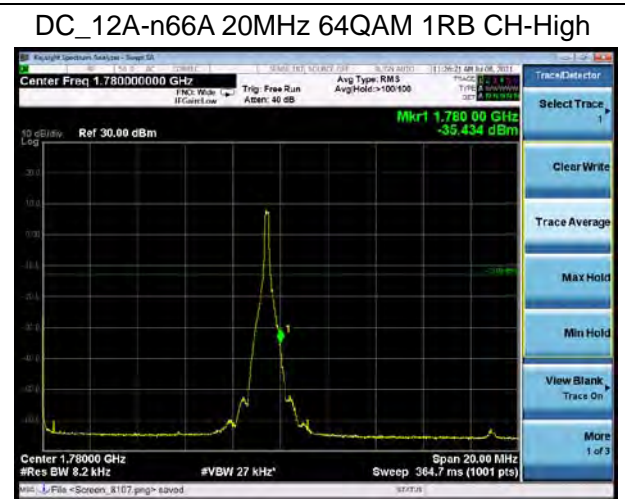
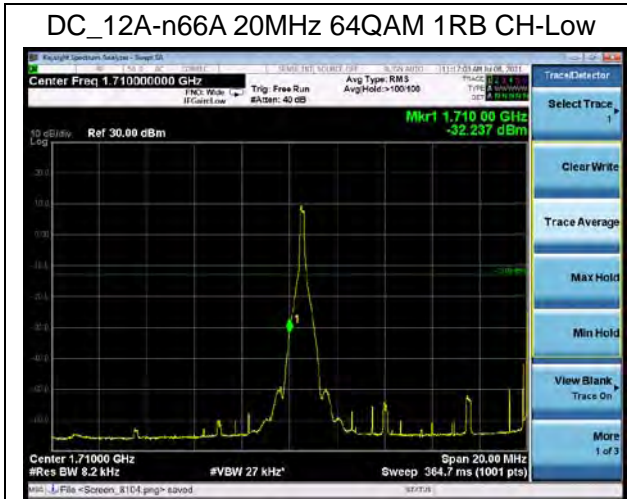






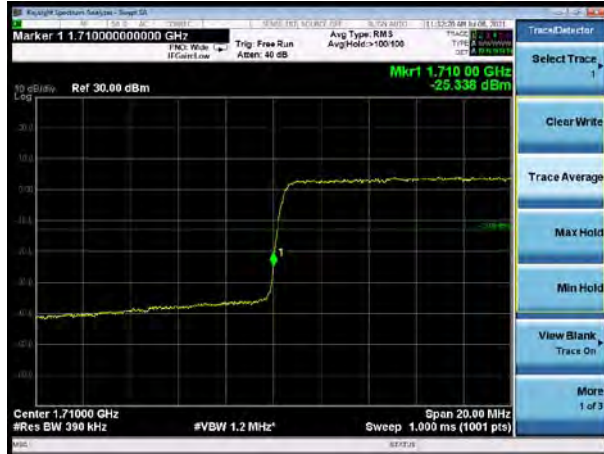








DC_12A-n66A 20MHz 256QAM 100%RB
CH-Low



DC_12A-n66A 20MHz 256QAM 100%RB
CH-High



5.4 Peak-to-Average Power Ratio (PAPR)

Ambient condition

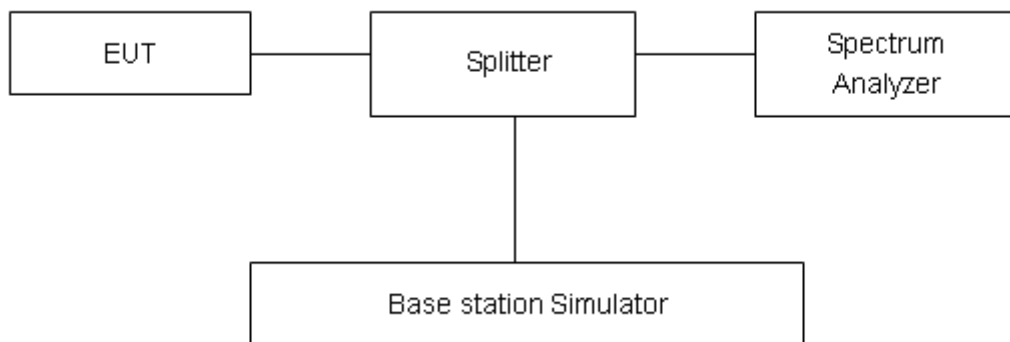
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

Measure the total peak power and record as PPk. And measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

$$PAPR (dB) = PPk (dBm) - PAvg (dBm).$$

Test Setup



Limits

Rule Part 27.50(d)(5) Equipment employed must be authorized in accordance with the provisions of 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.4$ dB.



Test Results

NR n41								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
P1/2 BPSK	100	509202	2546.01	30.98	24.23	6.75	≤13	PASS
		518598	2592.99	31.15	24.12	7.03	≤13	PASS
		528000	2640	31.09	24.04	7.05	≤13	PASS
QPSK	100	509202	2546.01	31.24	24.29	6.95	≤13	PASS
		518598	2592.99	31.03	24.15	6.88	≤13	PASS
		528000	2640	30.90	24.03	6.87	≤13	PASS
16QAM	100	509202	2546.01	31.21	24.16	7.05	≤13	PASS
		518598	2592.99	31.19	24.15	7.04	≤13	PASS
		528000	2640	30.75	24.02	6.73	≤13	PASS
64QAM	100	509202	2546.01	31.64	24.16	7.48	≤13	PASS
		518598	2592.99	31.85	24.07	7.78	≤13	PASS
		528000	2640	31.32	24.02	7.30	≤13	PASS
256QAM	100	509202	2546.01	31.15	22.67	8.48	≤13	PASS
		518598	2592.99	31.56	22.65	8.91	≤13	PASS
		528000	2640	31.16	22.41	8.75	≤13	PASS



DC_66A-n41A								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
P1/2 BPSK	20	501204	2506.02	27.30	15.79	11.51	≤13	PASS
		518598	2592.99	27.66	16.01	11.65	≤13	PASS
		535998	2679.99	27.58	16.44	11.14	≤13	PASS
QPSK	20	501204	2506.02	27.27	15.76	11.51	≤13	PASS
		518598	2592.99	27.72	16.15	11.57	≤13	PASS
		535998	2679.99	27.44	15.65	11.79	≤13	PASS
16QAM	20	501204	2506.02	26.96	15.22	11.74	≤13	PASS
		518598	2592.99	27.31	15.49	11.82	≤13	PASS
		535998	2679.99	27.09	15.21	11.88	≤13	PASS
64QAM	20	501204	2506.02	26.73	15.19	11.54	≤13	PASS
		518598	2592.99	27.02	15.10	11.92	≤13	PASS
		535998	2679.99	26.71	14.6	12.11	≤13	PASS
256QAM	20	501204	2506.02	25.15	13.89	11.26	≤13	PASS
		518598	2592.99	24.95	12.16	12.79	≤13	PASS
		535998	2679.99	25.08	13.34	11.74	≤13	PASS



NR n66								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
P1/2 BPSK	20	344000	1720	27.89	21.20	6.69	≤13	PASS
		349000	1745	28.15	22.24	5.91	≤13	PASS
		354000	1770	28.12	22.37	5.75	≤13	PASS
QPSK	20	344000	1720	27.82	20.58	7.24	≤13	PASS
		349000	1745	27.76	20.04	7.72	≤13	PASS
		354000	1770	28.13	22.38	5.75	≤13	PASS
16QAM	20	344000	1720	27.66	19.28	8.38	≤13	PASS
		349000	1745	27.75	20.03	7.72	≤13	PASS
		354000	1770	28.14	21.33	6.81	≤13	PASS
64QAM	20	344000	1720	27.28	18.71	8.57	≤13	PASS
		349000	1745	27.19	18.68	8.51	≤13	PASS
		354000	1770	27.71	20.99	6.72	≤13	PASS
256QAM	20	344000	1720	25.31	17.26	8.05	≤13	PASS
		349000	1745	25.21	17.02	8.19	≤13	PASS
		354000	1770	25.83	19.00	6.83	≤13	PASS



DC_12A-n66A								
Modulation	Bandwidth (MHz)	Channel	Frequency (MHz)	Peak (dBm)	Avg (dBm)	PAPR (dB)	Limit (dB)	Conclusion
P1/2 BPSK	20	344000	1720	28.50	23.05	5.45	≤13	PASS
		349000	1745	28.15	22.81	5.34	≤13	PASS
		354000	1770	27.53	22.19	5.34	≤13	PASS
QPSK	20	344000	1720	28.53	23.12	5.41	≤13	PASS
		349000	1745	28.51	22.81	5.70	≤13	PASS
		354000	1770	27.55	22.24	5.31	≤13	PASS
16QAM	20	344000	1720	28.48	22.11	6.37	≤13	PASS
		349000	1745	28.50	21.90	6.60	≤13	PASS
		354000	1770	27.51	21.26	6.25	≤13	PASS
64QAM	20	344000	1720	28.13	21.62	6.51	≤13	PASS
		349000	1745	27.95	21.33	6.62	≤13	PASS
		354000	1770	27.26	20.73	6.53	≤13	PASS
256QAM	20	344000	1720	26.26	19.56	6.70	≤13	PASS
		349000	1745	26.01	19.34	6.67	≤13	PASS
		354000	1770	25.28	18.68	6.60	≤13	PASS

5.5 Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

Frequency Stability (Temperature Variation)

The temperature inside the climate chamber is varied from -30°C to +50°C in 10°C step size.

(1) With all power removed, the temperature was decreased to -10°C and permitted to stabilize for three hours.

(2) Measure the carrier frequency with the test equipment in a “call mode”. These measurements should be made within 1 minute of powering up the mobile station, to prevent significant self warming.

(3) Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, un-powered, before making measurements.

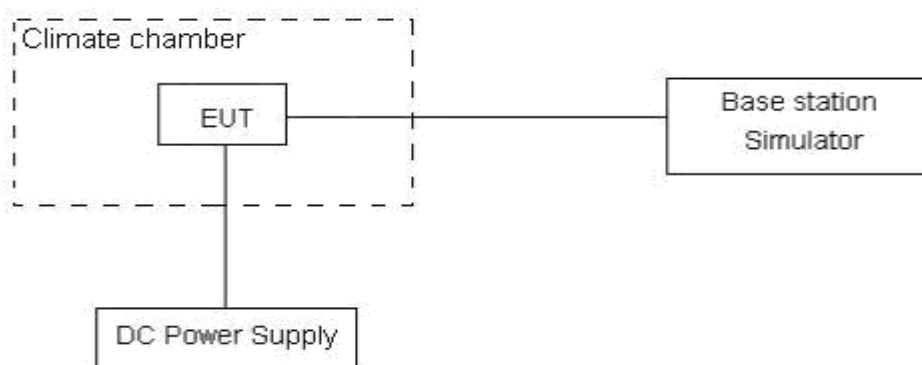
Frequency Stability (Voltage Variation)

The frequency stability shall be measured with variation of primary supply voltage as follows:

Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

This transceiver is specified to operate with an input voltage of between 3.6 V and 4.2 V, with a nominal voltage of 3.87V.

Test setup



Limits

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 3, U = 0.01\text{ppm}$.



Test Result

NR n41									
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	20MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	13.34	11.35	11.61	4.34	0.00710	0.00604	0.00618	0.00812
Extreme (50°C)		12.34	6.62	12.54	7.34	0.00656	0.00352	0.00667	0.00955
Extreme (40°C)		4.84	7.96	12.25	5.84	0.00257	0.00423	0.00652	0.00256
Extreme (30°C)		12.98	5.93	13.67	17.98	0.00690	0.00315	0.00727	0.00433
Extreme (20°C)		2.39	11.13	15.36	3.39	0.00127	0.00592	0.00817	0.00234
Extreme (10°C)		15.56	10.51	17.93	14.56	0.00828	0.00559	0.00954	0.00460
Extreme (0°C)		11.96	11.37	10.09	10.96	0.00636	0.00605	0.00537	0.00752
Extreme (-10°C)		14.44	15.42	15.69	17.44	0.00768	0.00820	0.00835	0.00924
Extreme (-20°C)		14.42	9.74	11.25	17.42	0.00767	0.00518	0.00598	0.00562
Extreme (-30°C)		16.52	5.17	12.91	14.52	0.00879	0.00275	0.00687	0.00520
25°C	LV	9.58	3.73	15.41	1.58	0.00510	0.00199	0.00820	0.00886
	HV	11.85	16.11	4.51	9.85	0.00630	0.00857	0.00240	0.00624
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	40MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	8.25	17.88	5.72	15.25	0.00439	0.00951	0.00304	0.00952
Extreme (50°C)		7.68	17.30	7.68	3.68	0.00409	0.00920	0.00409	0.00311
Extreme (40°C)		10.87	15.21	3.36	1.87	0.00578	0.00809	0.00179	0.00430
Extreme (30°C)		16.25	16.35	17.98	17.25	0.00864	0.00869	0.00956	0.00870
Extreme (20°C)		10.27	17.73	15.99	8.27	0.00546	0.00943	0.00850	0.00787
Extreme (10°C)		7.59	6.84	8.56	6.59	0.00404	0.00364	0.00455	0.00507
Extreme (0°C)		9.64	8.56	6.03	8.64	0.00513	0.00455	0.00321	0.00127
Extreme (-10°C)		3.47	1.39	9.32	16.47	0.00185	0.00074	0.00496	0.00059
Extreme (-20°C)		15.59	4.26	17.06	10.59	0.00829	0.00227	0.00908	0.00259
Extreme (-30°C)		7.70	12.62	11.81	1.70	0.00409	0.00671	0.00628	0.00681
25°C	LV	10.74	2.30	16.95	15.74	0.00571	0.00122	0.00902	0.00060
	HV	9.30	10.33	7.66	3.30	0.00494	0.00550	0.00407	0.00425
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	60MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	3.79	11.94	7.65	7.79	0.00202	0.00635	0.00407	0.00466



Extreme (50°C)		1.23	15.53	2.39	8.23	0.00065	0.00826	0.00127	0.00384
Extreme (40°C)		12.98	15.32	13.48	8.98	0.00690	0.00815	0.00717	0.00533
Extreme (30°C)		17.09	1.52	11.37	3.09	0.00909	0.00081	0.00605	0.00259
Extreme (20°C)		17.66	15.72	8.50	8.66	0.00939	0.00836	0.00452	0.00385
Extreme (10°C)		3.21	5.78	3.28	17.21	0.00171	0.00307	0.00174	0.00282
Extreme (0°C)		5.88	15.39	9.00	1.88	0.00313	0.00818	0.00479	0.00118
Extreme (-10°C)		15.84	11.17	8.14	2.84	0.00842	0.00594	0.00433	0.00069
Extreme (-20°C)		17.12	14.60	13.86	1.12	0.00910	0.00777	0.00737	0.00123
Extreme (-30°C)		15.53	12.33	6.36	11.53	0.00826	0.00656	0.00338	0.00111
25°C	LV	13.78	12.89	4.78	3.78	0.00733	0.00686	0.00254	0.00356
	HV	2.13	3.66	11.94	12.13	0.00113	0.00195	0.00635	0.00491
Condition		Freq.Error	Freq.Error	Freq.Error	Freq.Error	Frequency	Frequency	Frequency	Frequency
BANDWIDTH	100MHz	(Hz)	(Hz)	(Hz)	(Hz)	Stability	Stability	Stability	Stability
Temperature	Voltage	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
Normal (25°C)		256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Extreme (50°C)	Normal	4.82	17.26	6.43	8.82	0.00256	0.00918	0.00342	0.00183
Extreme (40°C)		16.90	1.80	6.81	15.90	0.00899	0.00096	0.00362	0.00325
Extreme (30°C)		7.21	11.15	11.42	6.21	0.00384	0.00593	0.00607	0.00725
Extreme (20°C)		17.27	8.66	16.82	8.27	0.00918	0.00461	0.00895	0.00319
Extreme (10°C)		11.02	5.05	17.90	5.02	0.00586	0.00269	0.00952	0.00800
Extreme (0°C)		5.30	2.64	10.56	15.30	0.00282	0.00140	0.00562	0.00233
Extreme (-10°C)		9.52	1.53	5.15	6.52	0.00506	0.00081	0.00274	0.00651
Extreme (-20°C)		1.21	3.76	17.06	8.21	0.00064	0.00200	0.00908	0.00818
Extreme (-30°C)		13.51	9.75	4.10	3.51	0.00719	0.00519	0.00218	0.00807
25°C		2.64	9.20	1.10	17.64	0.00140	0.00489	0.00059	0.00117
25°C	LV	12.37	14.03	5.30	7.37	0.00658	0.00746	0.00282	0.00246
	HV	5.73	4.30	11.05	2.73	0.00305	0.00229	0.00588	0.00104



DC_66A-n41A									
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	20MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	4.06	1.44	12.51	12.06	0.00216	0.00077	0.00665	0.00617
Extreme (50°C)		11.42	8.76	17.39	11.42	0.00607	0.00466	0.00925	0.00226
Extreme (40°C)		4.91	16.37	9.29	14.91	0.00261	0.00871	0.00494	0.00764
Extreme (30°C)		2.05	4.75	5.44	1.05	0.00109	0.00253	0.00289	0.00305
Extreme (20°C)		3.66	6.68	3.80	11.66	0.00195	0.00355	0.00202	0.00814
Extreme (10°C)		8.13	3.94	6.50	5.13	0.00433	0.00209	0.00346	0.00638
Extreme (0°C)		16.74	7.00	4.65	17.74	0.00891	0.00372	0.00247	0.00219
Extreme (-10°C)		16.88	7.95	3.28	11.88	0.00898	0.00423	0.00174	0.00640
Extreme (-20°C)		5.61	5.85	17.05	9.61	0.00298	0.00311	0.00907	0.00202
Extreme (-30°C)		5.38	7.71	2.84	3.38	0.00286	0.00410	0.00151	0.00189
25°C		LV	14.81	1.34	15.11	2.81	0.00788	0.00071	0.00804
	HV	12.66	5.76	12.34	12.66	0.00674	0.00306	0.00657	0.00347
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	40MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	7.81	8.91	5.85	12.81	0.00415	0.00474	0.00311	0.00578
Extreme (50°C)		12.71	12.64	10.67	13.71	0.00676	0.00673	0.00568	0.00549
Extreme (40°C)		1.01	16.49	12.71	6.01	0.00054	0.00877	0.00676	0.00753
Extreme (30°C)		4.51	14.55	6.58	10.51	0.00240	0.00774	0.00350	0.00854
Extreme (20°C)		14.08	8.33	8.81	13.08	0.00749	0.00443	0.00469	0.00067
Extreme (10°C)		17.42	1.87	16.83	14.42	0.00926	0.00100	0.00895	0.00284
Extreme (0°C)		9.35	14.03	14.64	7.35	0.00498	0.00747	0.00779	0.00443
Extreme (-10°C)		10.86	8.55	5.38	15.86	0.00578	0.00455	0.00286	0.00354
Extreme (-20°C)		5.86	9.35	12.86	14.86	0.00312	0.00497	0.00684	0.00624
Extreme (-30°C)		15.77	5.94	6.25	16.77	0.00839	0.00316	0.00333	0.00882
25°C		LV	15.56	9.29	8.82	4.56	0.00828	0.00494	0.00469
	HV	7.84	10.87	5.84	11.84	0.00417	0.00578	0.00311	0.00134
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	60MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	14.79	10.90	14.44	11.79	0.00787	0.00580	0.00768	0.00930
Extreme (50°C)		3.54	1.35	16.65	7.54	0.00188	0.00072	0.00885	0.00095
Extreme (40°C)		3.13	16.82	13.56	1.13	0.00167	0.00895	0.00721	0.00268



Extreme (30℃)		3.85	4.82	15.03	10.85	0.00205	0.00256	0.00800	0.00859
Extreme (20℃)		13.46	16.98	17.07	1.46	0.00716	0.00903	0.00908	0.00435
Extreme (10℃)		4.91	17.18	4.65	8.91	0.00261	0.00914	0.00247	0.00057
Extreme (0℃)		16.61	1.64	6.93	10.61	0.00883	0.00087	0.00369	0.00357
Extreme (-10℃)		8.99	7.51	2.87	1.99	0.00478	0.00400	0.00153	0.00502
Extreme (-20℃)		1.88	6.61	14.60	2.88	0.00100	0.00351	0.00777	0.00382
Extreme (-30℃)		1.37	6.67	8.26	12.37	0.00073	0.00355	0.00439	0.00251
Normal (25℃)	LV	12.16	2.19	3.02	2.16	0.00647	0.00117	0.00160	0.00244
	HV	15.47	9.96	16.99	2.47	0.00823	0.00530	0.00904	0.00132
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	100MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25℃)	Normal	14.35	9.74	6.44	15.35	0.00763	0.00518	0.00343	0.00644
Extreme (50℃)		10.53	14.31	1.81	16.53	0.00560	0.00761	0.00096	0.00904
Extreme (40℃)		2.93	7.04	10.15	9.93	0.00156	0.00374	0.00540	0.00099
Extreme (30℃)		1.38	1.89	14.02	12.38	0.00073	0.00100	0.00746	0.00623
Extreme (20℃)		6.99	4.05	15.81	1.99	0.00372	0.00216	0.00841	0.00337
Extreme (10℃)		2.09	7.98	1.95	16.09	0.00111	0.00425	0.00104	0.00506
Extreme (0℃)		11.17	4.14	16.51	16.17	0.00594	0.00220	0.00878	0.00298
Extreme (-10℃)		7.83	7.73	15.55	10.83	0.00416	0.00411	0.00827	0.00280
Extreme (-20℃)		7.99	7.56	1.07	17.99	0.00425	0.00402	0.00057	0.00863
Extreme (-30℃)		10.76	7.39	11.93	2.76	0.00572	0.00393	0.00635	0.00843
25℃	LV	15.62	13.01	12.89	2.62	0.00831	0.00692	0.00685	0.00099
	HV	12.14	12.63	6.06	14.14	0.00646	0.00672	0.00322	0.00380



NR n66									
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	5MHz	(Hz)	(Hz)	(Hz)	(Hz)	(ppm)	(ppm)	(ppm)	(ppm)
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	1.67	14.75	12.61	2.67	0.00089	0.00785	0.00671	0.00330
Extreme (50°C)		6.75	16.49	6.05	4.75	0.00359	0.00877	0.00322	0.00076
Extreme (40°C)		4.65	4.27	17.07	15.65	0.00248	0.00227	0.00908	0.00731
Extreme (30°C)		16.23	16.84	14.85	11.23	0.00864	0.00896	0.00790	0.00348
Extreme (20°C)		12.73	16.56	6.36	1.73	0.00677	0.00881	0.00338	0.00067
Extreme (10°C)		3.14	6.84	14.77	5.14	0.00167	0.00364	0.00786	0.00527
Extreme (0°C)		5.24	13.67	3.62	13.24	0.00279	0.00727	0.00192	0.00112
Extreme (-10°C)		10.37	2.37	10.68	4.37	0.00551	0.00126	0.00568	0.00164
Extreme (-20°C)		7.78	3.95	13.62	10.78	0.00414	0.00210	0.00725	0.00085
Extreme (-30°C)		11.41	10.50	7.41	14.41	0.00607	0.00558	0.00394	0.00746
25°C	LV	13.42	12.17	5.25	6.42	0.00714	0.00647	0.00279	0.00061
	HV	7.63	9.31	12.29	13.63	0.00406	0.00495	0.00654	0.00795
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	10MHz	(Hz)	(Hz)	(Hz)	(Hz)	(ppm)	(ppm)	(ppm)	(ppm)
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	16.48	2.19	6.69	10.48	0.00876	0.00116	0.00356	0.00089
Extreme (50°C)		16.17	7.64	15.70	11.17	0.00860	0.00406	0.00835	0.00349
Extreme (40°C)		13.40	12.19	10.68	7.40	0.00713	0.00648	0.00568	0.00764
Extreme (30°C)		14.91	2.44	14.89	12.91	0.00793	0.00130	0.00792	0.00589
Extreme (20°C)		9.63	15.69	16.26	14.63	0.00512	0.00835	0.00865	0.00069
Extreme (10°C)		9.43	7.10	9.99	5.43	0.00502	0.00378	0.00531	0.00787
Extreme (0°C)		5.35	5.65	6.88	4.35	0.00285	0.00301	0.00366	0.00073
Extreme (-10°C)		13.70	13.54	11.58	1.70	0.00729	0.00720	0.00616	0.00146
Extreme (-20°C)		17.81	2.18	6.22	5.81	0.00947	0.00116	0.00331	0.00676
Extreme (-30°C)		17.89	15.28	17.23	7.89	0.00952	0.00813	0.00917	0.00100
Normal (25°C)	LV	11.05	15.47	14.34	7.05	0.00588	0.00823	0.00763	0.00643
	HV	13.35	14.68	5.61	3.35	0.00710	0.00781	0.00299	0.00907
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	15MHz	(Hz)	(Hz)	(Hz)	(Hz)	(ppm)	(ppm)	(ppm)	(ppm)
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	7.66	3.56	9.88	5.66	0.00408	0.00189	0.00526	0.00840
Extreme (50°C)		6.33	4.90	15.35	5.33	0.00337	0.00261	0.00816	0.00620



Extreme (40°C)		16.31	16.35	9.62	2.31	0.00867	0.00870	0.00512	0.00259
Extreme (30°C)		7.75	13.62	16.71	14.75	0.00412	0.00724	0.00889	0.00853
Extreme (20°C)		12.47	14.56	4.29	13.47	0.00663	0.00774	0.00228	0.00654
Extreme (10°C)		1.65	13.96	10.26	12.65	0.00088	0.00742	0.00546	0.00528
Extreme (0°C)		9.84	4.81	9.55	4.84	0.00523	0.00256	0.00508	0.00273
Extreme (-10°C)		9.79	9.62	17.25	3.79	0.00521	0.00511	0.00918	0.00589
Extreme (-20°C)		14.00	5.25	6.08	14.00	0.00744	0.00279	0.00324	0.00425
Extreme (-30°C)		13.61	4.33	4.22	12.61	0.00724	0.00230	0.00224	0.00513
25°C	LV	15.89	3.38	3.61	2.89	0.00845	0.00180	0.00192	0.00086
	HV	12.91	7.21	12.50	15.91	0.00687	0.00384	0.00665	0.00834
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	20MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	9.50	3.26	15.09	17.50	0.00505	0.00173	0.00803	0.00220
Extreme (50°C)		3.86	4.58	10.13	3.86	0.00205	0.00244	0.00539	0.00284
Extreme (40°C)		2.89	6.82	2.34	11.89	0.00154	0.00363	0.00124	0.00287
Extreme (30°C)		8.23	2.91	15.68	13.23	0.00438	0.00155	0.00834	0.00295
Extreme (20°C)		14.86	2.39	12.44	6.86	0.00791	0.00127	0.00662	0.00876
Extreme (10°C)		8.55	13.76	6.70	13.55	0.00455	0.00732	0.00356	0.00895
Extreme (0°C)		4.58	8.50	15.05	14.58	0.00244	0.00452	0.00800	0.00324
Extreme (-10°C)		7.68	11.72	6.43	8.68	0.00409	0.00623	0.00342	0.00258
Extreme (-20°C)		2.83	10.64	9.97	9.83	0.00151	0.00566	0.00530	0.00893
Extreme (-30°C)		2.97	16.63	6.68	4.97	0.00158	0.00884	0.00355	0.00378
Normal (25°C)		LV	3.99	11.35	12.38	17.99	0.00212	0.00603	0.00659
	HV	1.01	14.17	2.65	15.01	0.00054	0.00754	0.00141	0.00338



DC_12A-n66A									
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	5MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	6.59	2.02	5.75	3.59	0.00351	0.00108	0.00306	0.00476
Extreme (50°C)		17.80	10.24	16.53	6.80	0.00947	0.00545	0.00879	0.00739
Extreme (40°C)		12.82	13.81	11.67	5.82	0.00682	0.00735	0.00621	0.00335
Extreme (30°C)		9.53	1.86	12.55	14.53	0.00507	0.00099	0.00667	0.00865
Extreme (20°C)		11.65	11.93	12.55	8.65	0.00620	0.00635	0.00668	0.00196
Extreme (10°C)		2.45	15.07	4.02	1.45	0.00131	0.00801	0.00214	0.00471
Extreme (0°C)		7.46	8.07	10.26	7.46	0.00397	0.00429	0.00546	0.00948
Extreme (-10°C)		6.94	3.82	4.11	9.94	0.00369	0.00203	0.00219	0.00241
Extreme (-20°C)		4.16	7.31	11.03	2.16	0.00222	0.00389	0.00586	0.00479
Extreme (-30°C)		12.53	13.92	13.65	7.53	0.00667	0.00740	0.00726	0.00936
Normal (25°C)		LV	14.74	4.38	4.09	1.74	0.00784	0.00233	0.00217
	HV	11.46	14.80	16.39	6.46	0.00610	0.00787	0.00872	0.00390
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	10MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	14.50	8.49	7.35	12.50	0.00771	0.00452	0.00391	0.00935
Extreme (50°C)		13.41	13.41	1.73	4.41	0.00713	0.00713	0.00092	0.00870
Extreme (40°C)		15.38	15.38	8.82	10.38	0.00818	0.00818	0.00469	0.00780
Extreme (30°C)		2.61	3.33	9.60	4.61	0.00139	0.00177	0.00511	0.00640
Extreme (20°C)		9.27	1.88	2.42	12.27	0.00493	0.00100	0.00129	0.00101
Extreme (10°C)		16.11	1.64	9.01	1.11	0.00857	0.00087	0.00479	0.00453
Extreme (0°C)		7.47	9.51	11.75	14.47	0.00397	0.00506	0.00625	0.00241
Extreme (-10°C)		11.95	15.75	16.24	13.95	0.00636	0.00838	0.00864	0.00072
Extreme (-20°C)		6.10	16.71	9.46	6.10	0.00324	0.00889	0.00503	0.00207
Extreme (-30°C)		16.61	16.07	12.41	9.61	0.00884	0.00855	0.00660	0.00812
Normal (25°C)		LV	5.31	2.76	17.45	2.31	0.00282	0.00147	0.00928
	HV	6.85	7.59	7.07	5.85	0.00364	0.00404	0.00376	0.00524
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	15MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	12.12	12.83	16.32	7.12	0.00645	0.00683	0.00868	0.00547
Extreme (50°C)		4.36	14.36	7.89	5.36	0.00232	0.00764	0.00420	0.00665
Extreme (40°C)		4.89	7.86	4.52	6.89	0.00260	0.00418	0.00240	0.00762



Extreme (30°C)		5.16	8.45	11.32	4.16	0.00275	0.00449	0.00602	0.00193
Extreme (20°C)		8.53	9.16	14.61	9.53	0.00454	0.00487	0.00777	0.00632
Extreme (10°C)		5.04	17.58	16.76	10.04	0.00268	0.00935	0.00891	0.00340
Extreme (0°C)		10.33	14.55	4.25	6.33	0.00549	0.00774	0.00226	0.00123
Extreme (-10°C)		4.17	12.59	5.72	13.17	0.00222	0.00669	0.00304	0.00413
Extreme (-20°C)		9.46	12.17	9.26	11.46	0.00503	0.00647	0.00492	0.00470
Extreme (-30°C)		5.17	8.64	1.77	4.17	0.00275	0.00460	0.00094	0.00396
Normal (25°C)	LV	4.02	11.19	13.13	1.02	0.00214	0.00595	0.00698	0.00676
	HV	14.70	17.29	4.72	8.70	0.00782	0.00920	0.00251	0.00920
Condition		Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Freq.Error (Hz)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)	Frequency Stability (ppm)
BANDWIDTH	20MHz								
Temperature	Voltage	256QAM	64QAM	16QAM	QPSK	256QAM	64QAM	16QAM	QPSK
Normal (25°C)	Normal	16.98	8.08	2.89	3.98	0.00903	0.00430	0.00154	0.00149
Extreme (50°C)		13.23	15.58	17.50	16.23	0.00704	0.00829	0.00931	0.00833
Extreme (40°C)		2.15	10.01	17.38	14.15	0.00114	0.00533	0.00924	0.00234
Extreme (30°C)		15.14	6.71	9.93	5.14	0.00805	0.00357	0.00528	0.00257
Extreme (20°C)		12.25	17.65	1.06	13.25	0.00652	0.00939	0.00056	0.00723
Extreme (10°C)		6.59	3.50	7.90	8.59	0.00350	0.00186	0.00420	0.00549
Extreme (0°C)		17.82	5.79	10.77	3.82	0.00948	0.00308	0.00573	0.00479
Extreme (-10°C)		16.28	2.19	4.25	5.28	0.00866	0.00116	0.00226	0.00102
Extreme (-20°C)		2.60	5.48	7.75	8.60	0.00138	0.00291	0.00412	0.00563
Extreme (-30°C)		11.46	3.29	6.05	16.46	0.00610	0.00175	0.00322	0.00664
Normal (25°C)		LV	4.35	16.36	3.18	1.35	0.00231	0.00870	0.00169
	HV	12.63	9.02	9.56	9.63	0.00672	0.00480	0.00508	0.00063

5.6 Spurious Emissions at Antenna Terminals

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to Spectrum Analyzer and Base Station Simulator via power Splitter. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 9kHz to the 10th harmonic of the carrier. The peak detector is used.

RBW is set to 100kHz, VBW is set to 300kHz for 30MHz~1GHz

RBW is set to 1MHz, VBW is set to 3MHz for above 1GHz, Sweep is set to ATUO.

RBW is set to 1 kHz (0.009MHz~ 0.15 MHz),

RBW is set to 10 kHz (0.15 MHz~ 30 MHz)

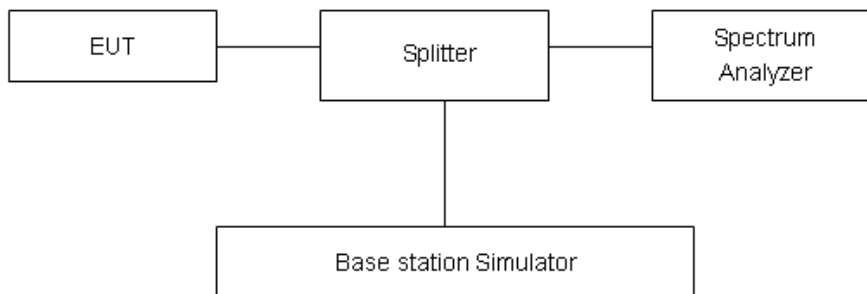
RBW is set to 100 kHz (30MHz~1000 MHz)

RBW is set to 1000 kHz (above 1000MHz)

Of those disturbances below (limit – 20 dB), the mark is not required for the EUT.

The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup



Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB..”

Rule Part 27.53(m) $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

Part 27.53(a)/(h)/(g) Limit	-13 dBm
Part 27.53(m) Limit	-25 dBm



Measurement Uncertainty

The assessed measurement uncertainty to ensure 99.75% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

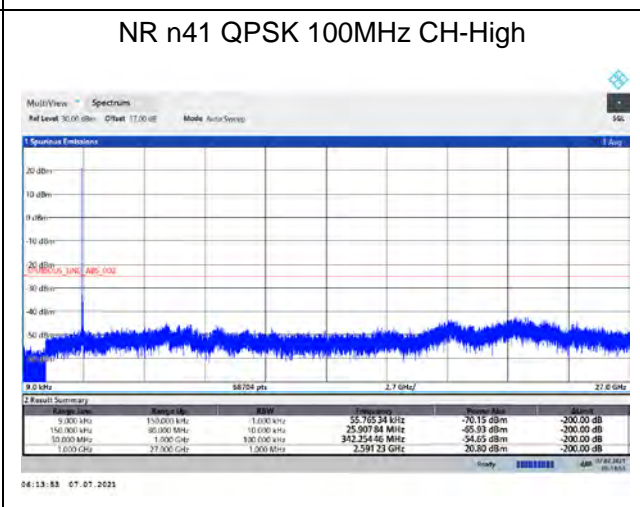
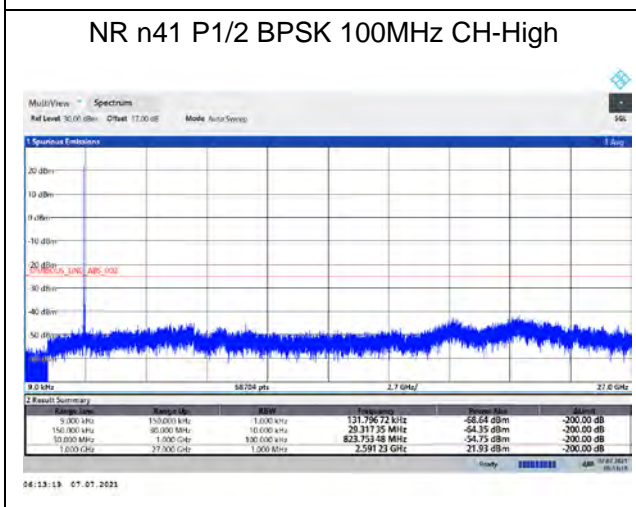
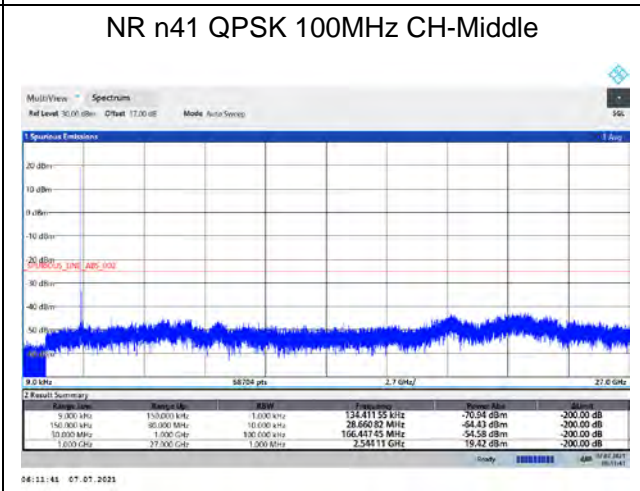
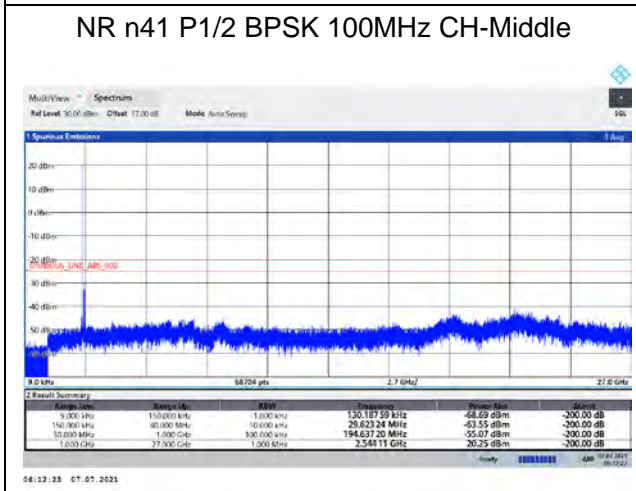
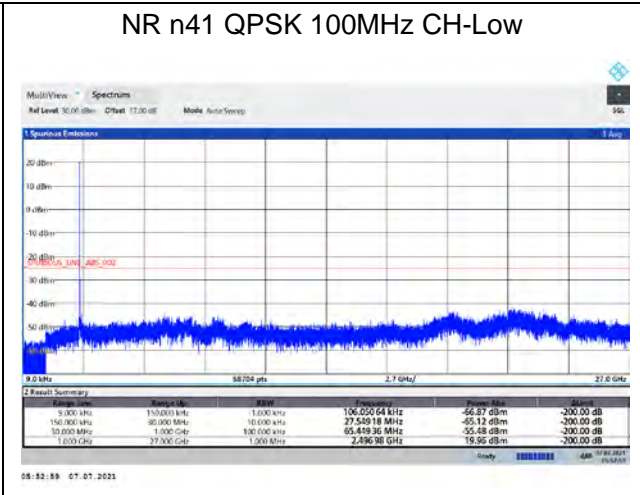
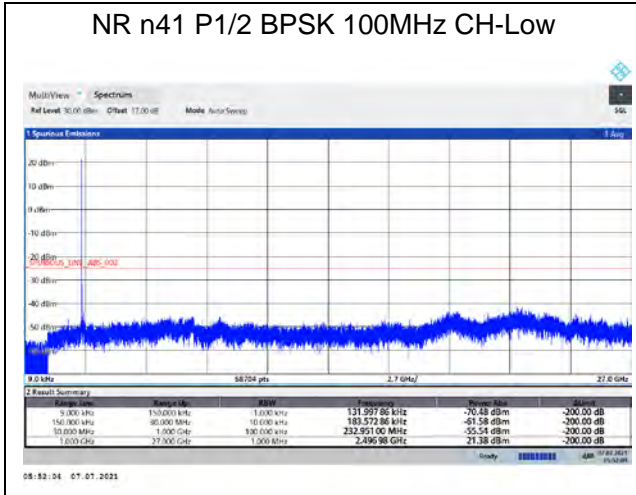
Frequency	Uncertainty
9kHz-1GHz	0.684 dB
1GHz-27GHz	1.407 dB



Test Result

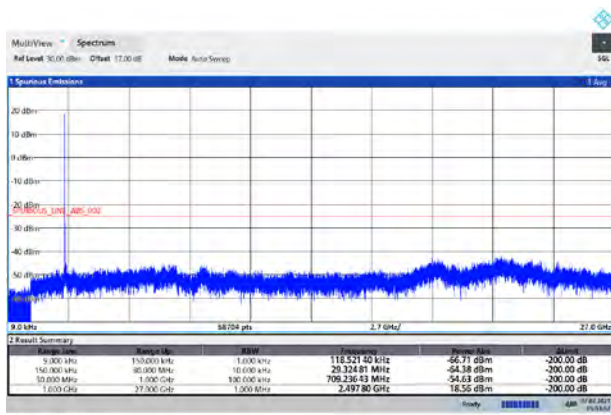
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions more than 20 dB below the limit are not reported.

The signal beyond the limit is carrier.



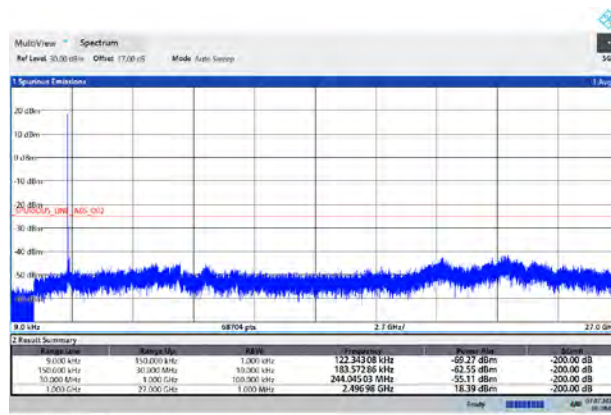


NR n41 16QAM 100MHz CH-Low



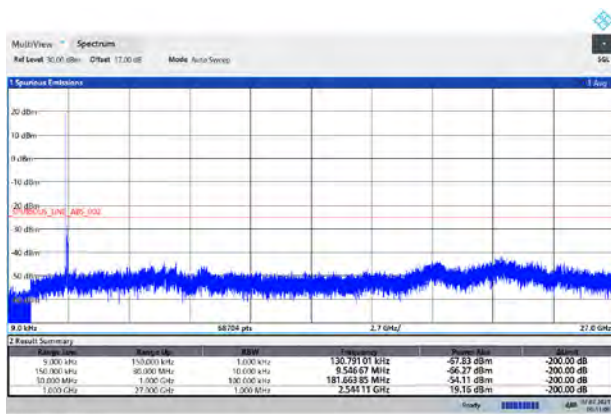
08:53:58 07.07.2021

NR n41 64QAM 100MHz CH-Low



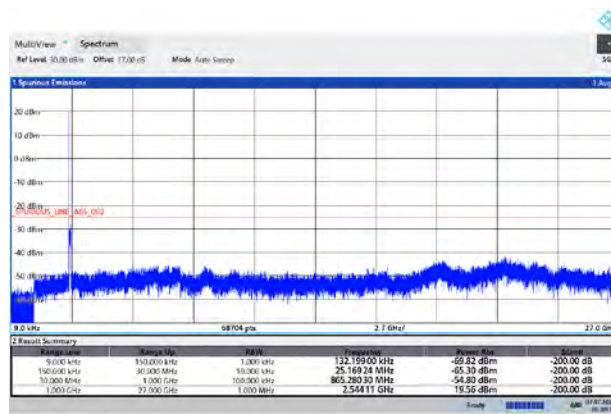
08:08:03 07.07.2021

NR n41 16QAM 100MHz CH-Middle



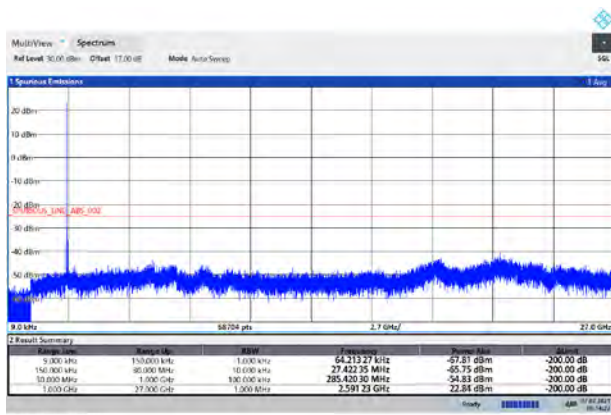
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NR n41 64QAM 100MHz CH-Middle



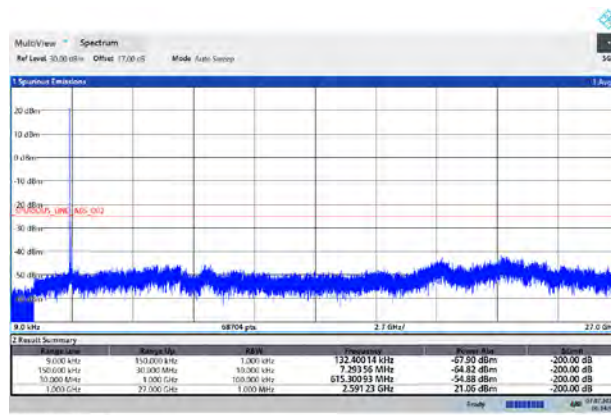
08:10:20 07.07.2021

NR n41 16QAM 100MHz CH-High



08:14:33 07.07.2021

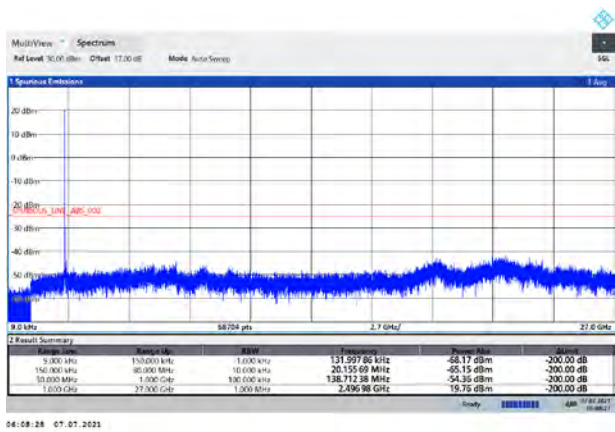
NR n41 64QAM 100MHz CH-High



08:14:53 07.07.2021

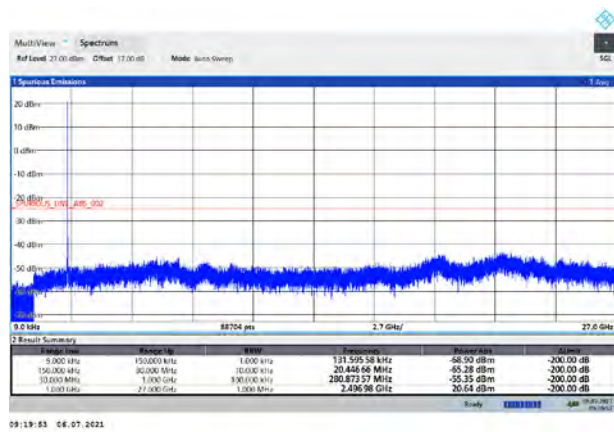


NR n41 256QAM 100MHz CH-Low



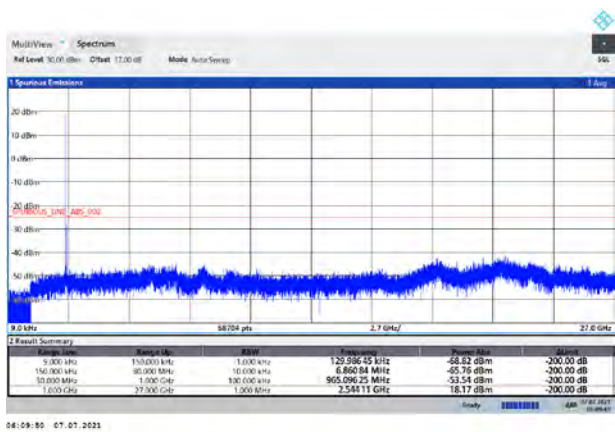
04:08:28 07.07.2021

DC_66A-n41A P1/2 BPSK 20MHz CH-Low



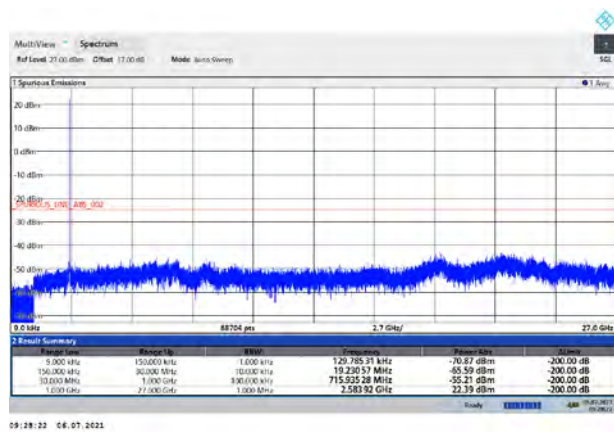
09:19:53 06.07.2021

NR n41 256QAM 100MHz CH-Middle



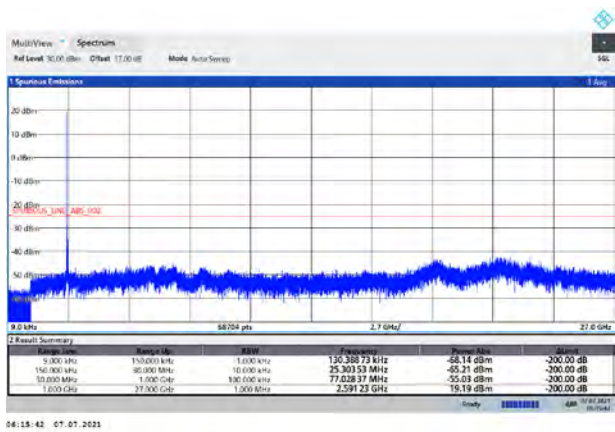
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DC_66A-n41A P1/2 BPSK 20MHz CH-Middle



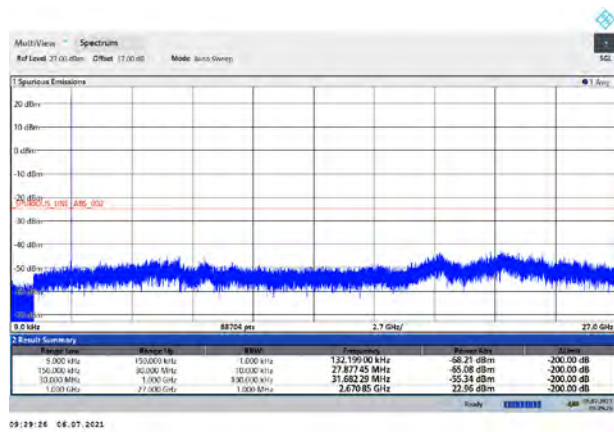
09:19:22 06.07.2021

NR n41 256QAM 100MHz CH-High



04:18:42 07.07.2021

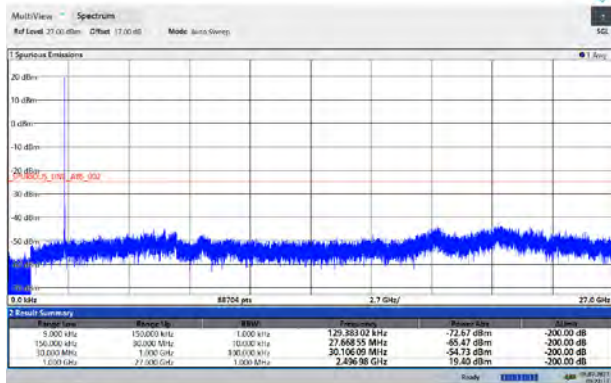
DC_66A-n41A P1/2 BPSK 20MHz CH-High



09:19:26 06.07.2021

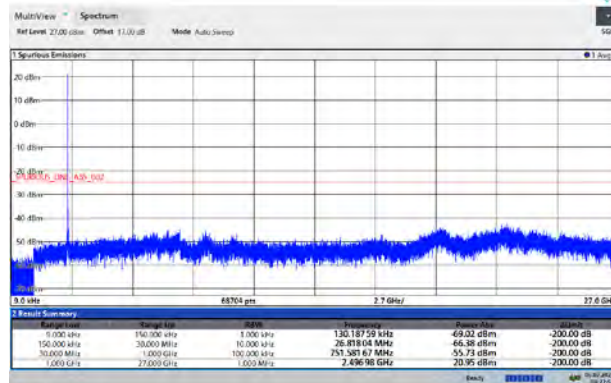


DC_66A-n41A QPSK 20MHz CH-Low



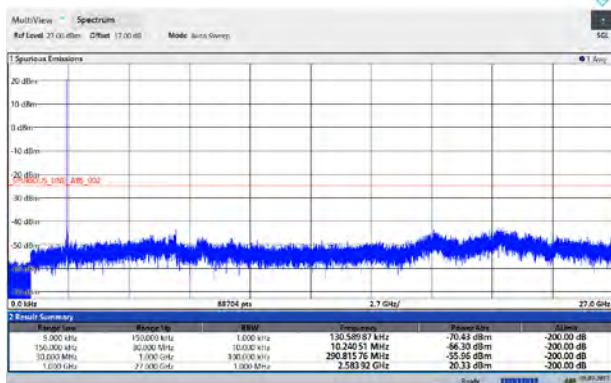
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DC_66A-n41A 16QAM 20MHz CH-Low



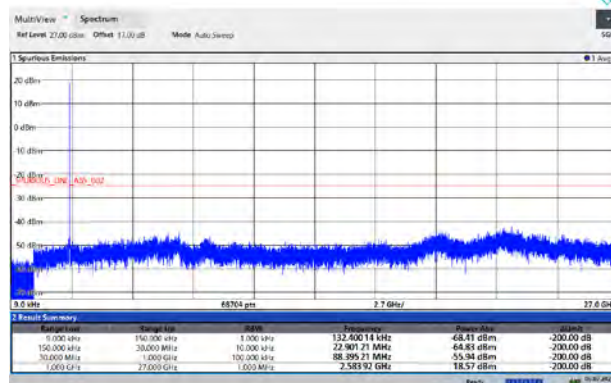
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DC_66A-n41A QPSK 20MHz CH-Middle



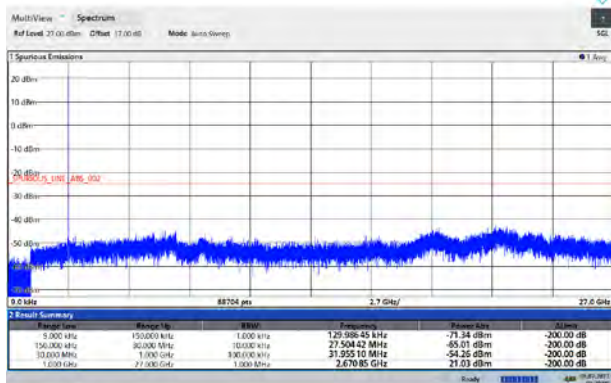
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DC_66A-n41A 16QAM 20MHz CH-Middle



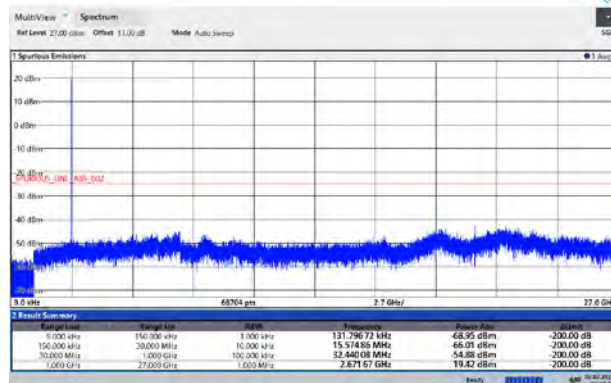
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DC_66A-n41A QPSK 20MHz CH-High



09:30:31 06.07.2021

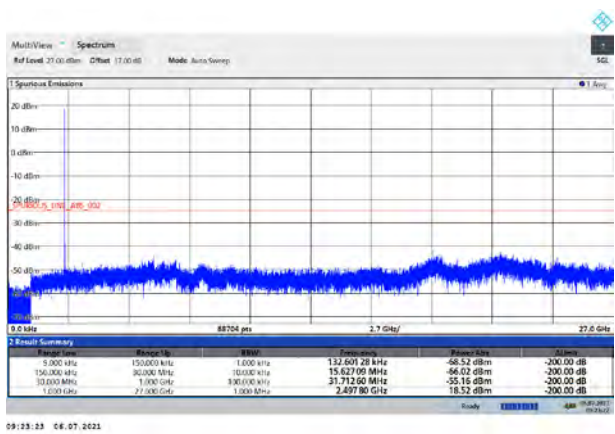
DC_66A-n41A 16QAM 20MHz CH-High



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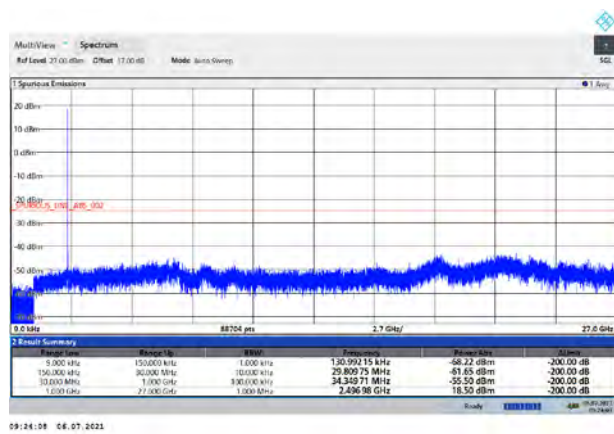


DC_66A-n41A 64QAM 20MHz CH-Low



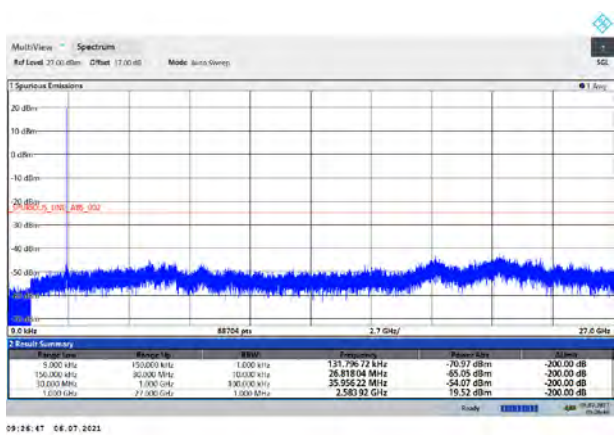
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DC_66A-n41A 256QAM 20MHz CH-Low



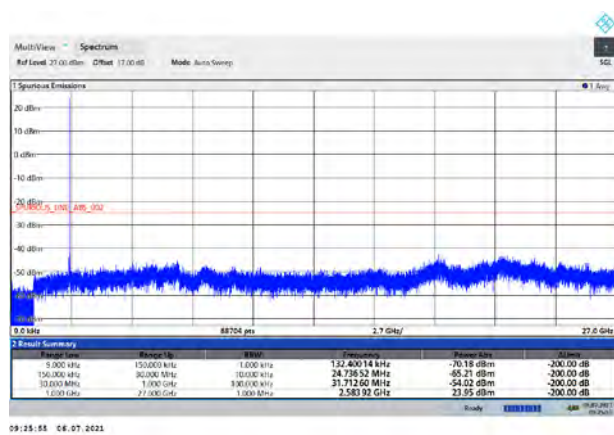
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DC_66A-n41A 64QAM 20MHz CH-Middle



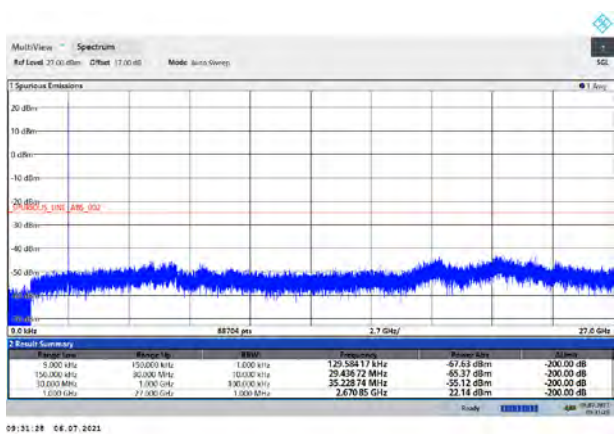
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DC_66A-n41A 256QAM 20MHz CH-Middle



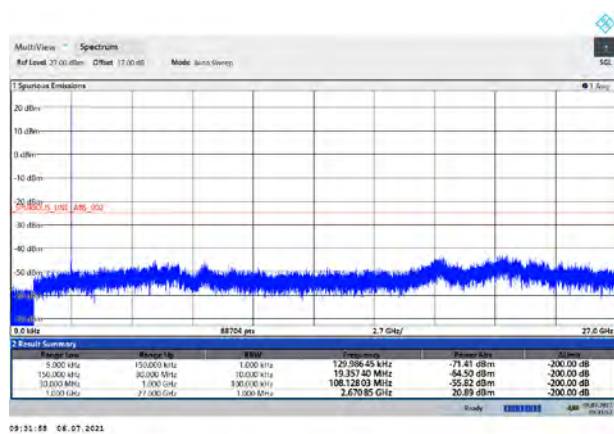
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DC_66A-n41A 64QAM 20MHz CH-High



09:31:28 06.07.2021

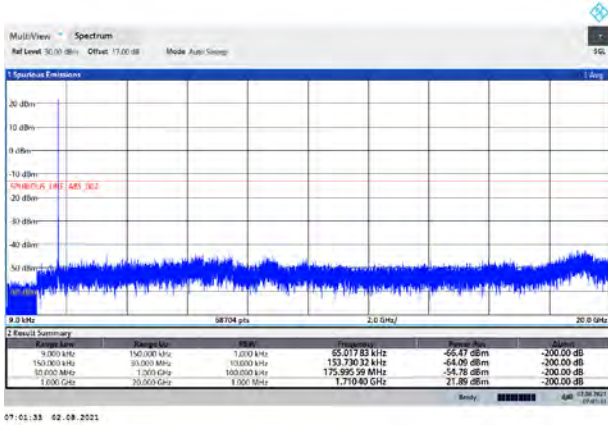
DC_66A-n41A 256QAM 20MHz CH-High



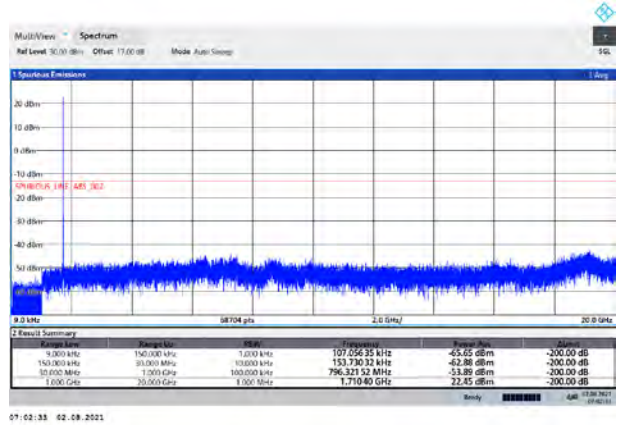
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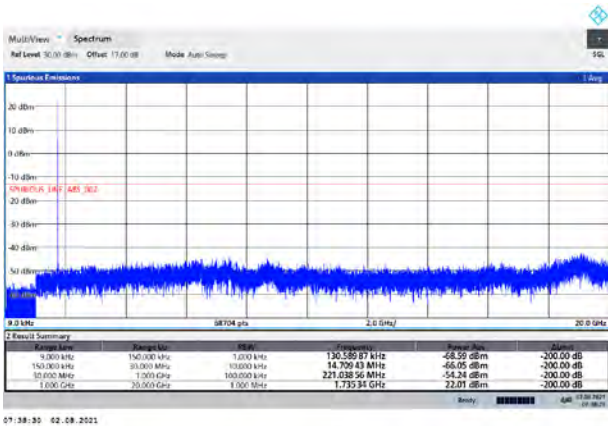
NR n66 P1/2 BPSK 20MHz CH-Low



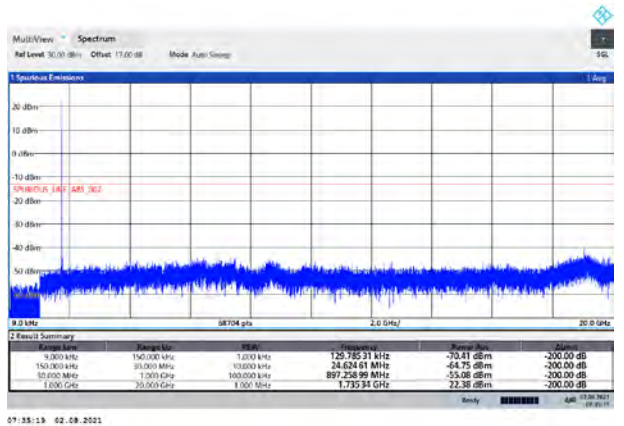
NR n66 QPSK 20MHz CH-Low



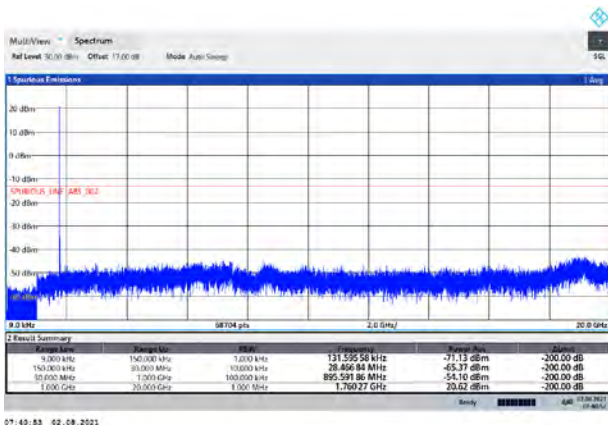
NR n66 P1/2 BPSK 20MHz CH-Middle



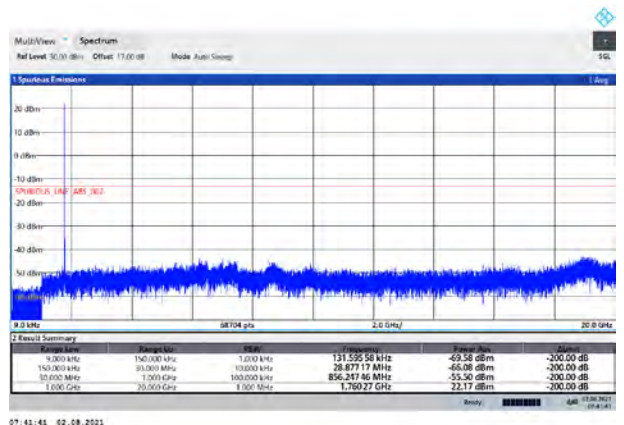
NR n66 QPSK 20MHz CH-Middle



NR n66 P1/2 BPSK 20MHz CH-High

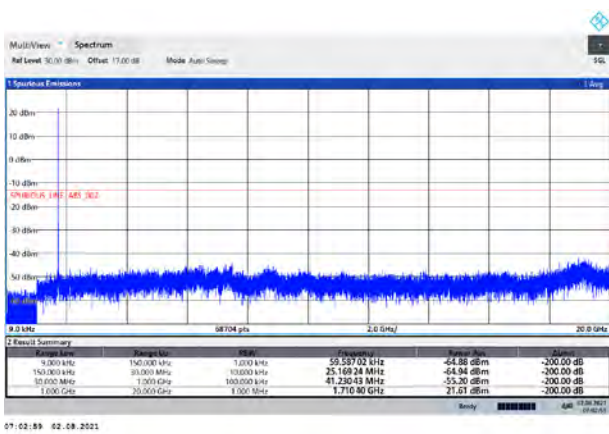


NR n66 QPSK 20MHz CH-High



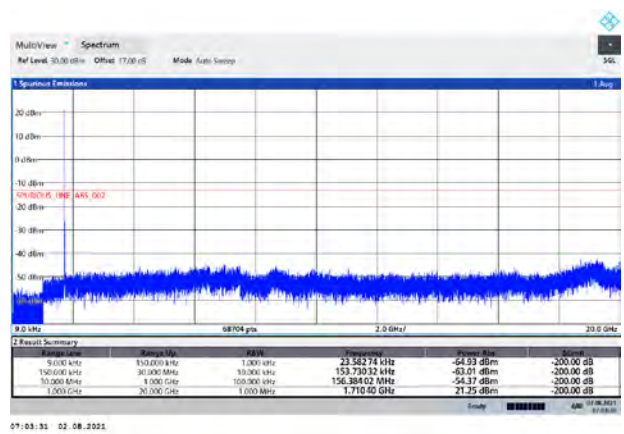


NR n66 16QAM 20MHz CH-Low



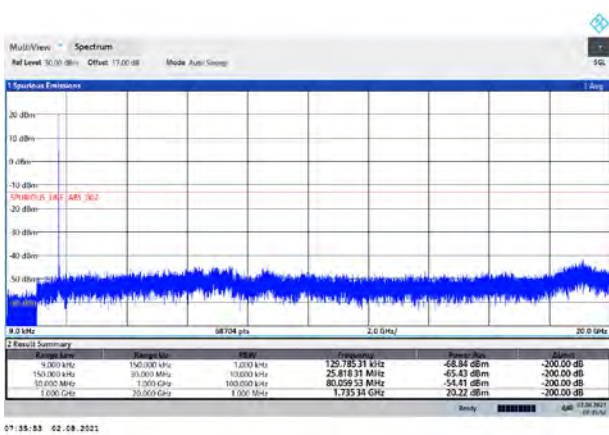
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NR n66 64QAM 20MHz CH-Low



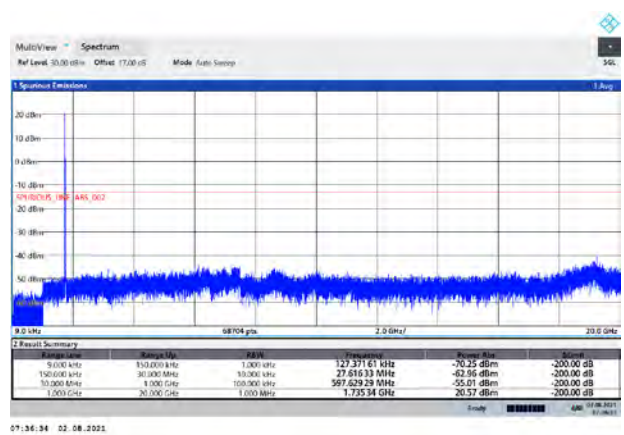
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NR n66 16QAM 20MHz CH-Middle



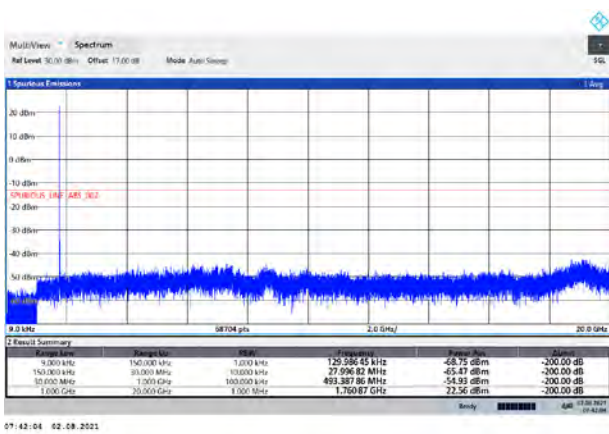
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NR n66 64QAM 20MHz CH-Middle



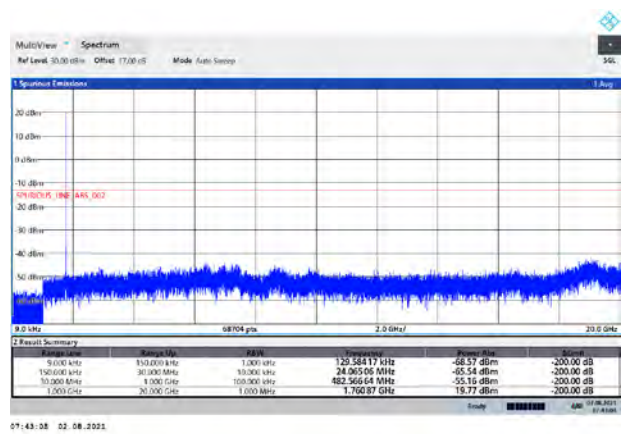
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NR n66 16QAM 20MHz CH-High



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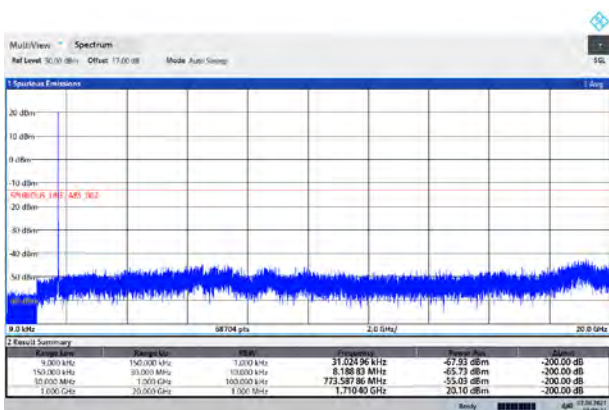
NR n66 64QAM 20MHz CH-High



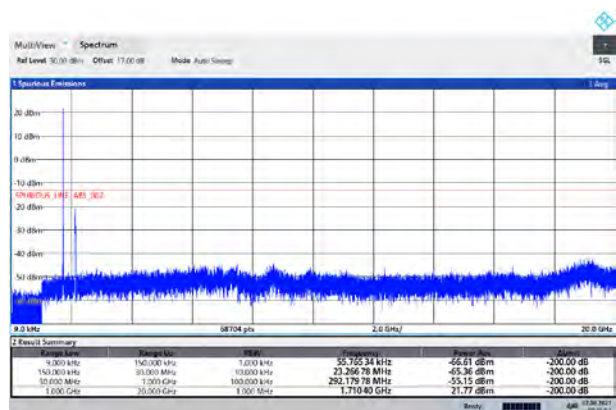
07:43:08 02.08.2021



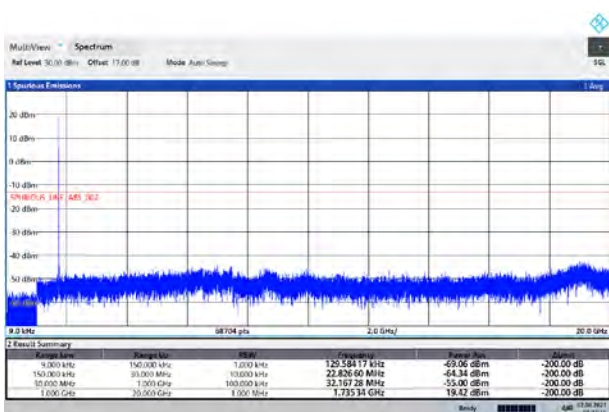
NR n66 256QAM 20MHz CH-Low



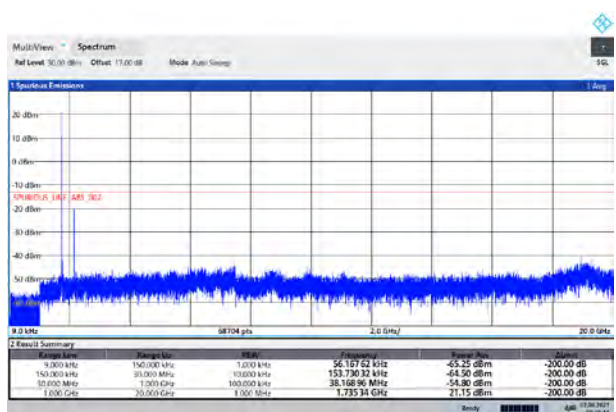
DC_12A-n66A P1/2 BPSK 20MHz CH-Low



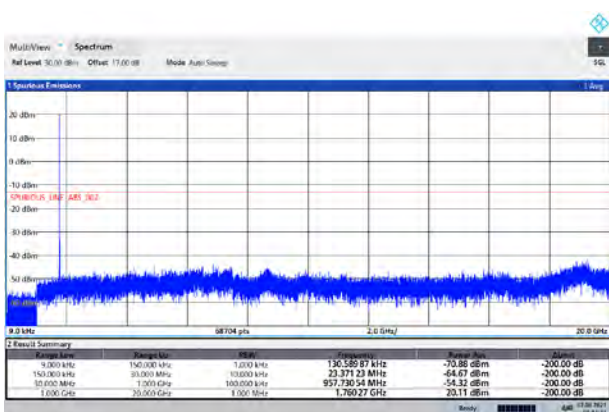
NR n66 256QAM 20MHz CH-Middle



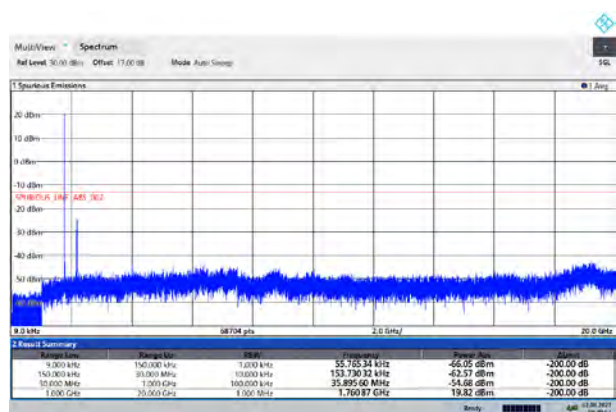
DC_12A-n66A P1/2 BPSK 20MHz CH-Middle

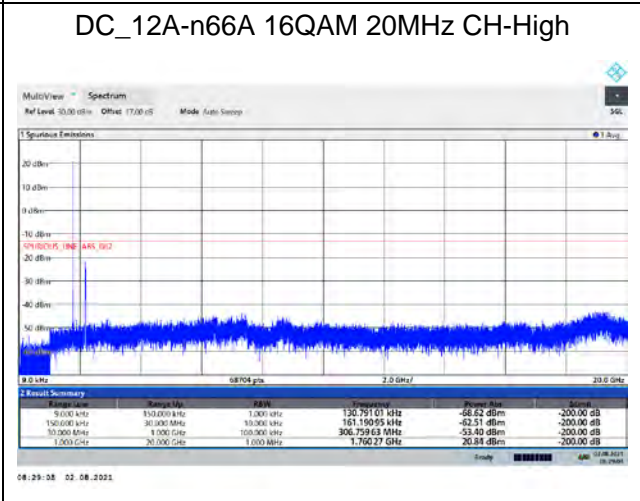
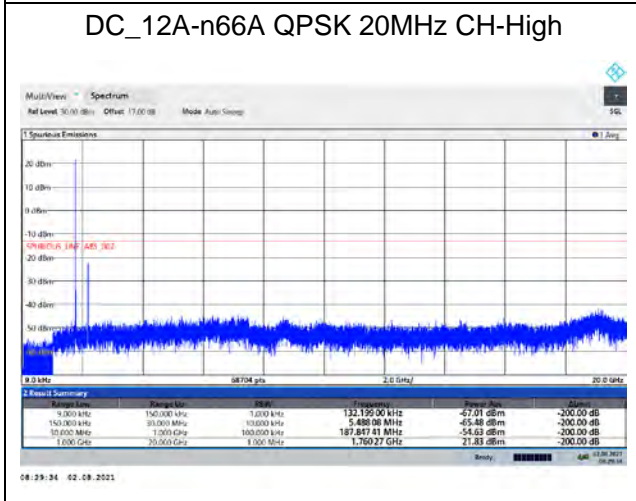
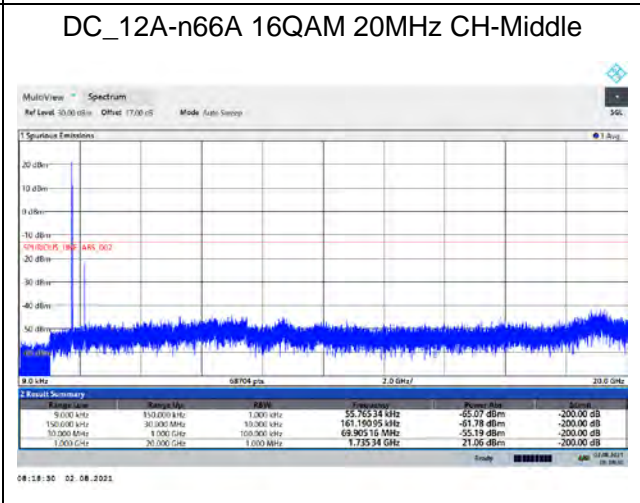
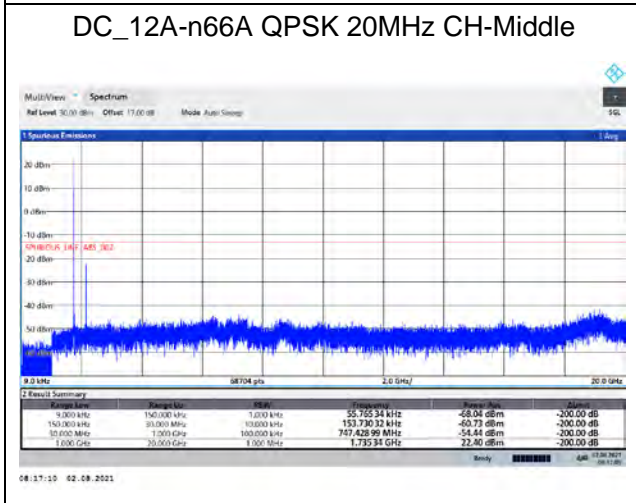
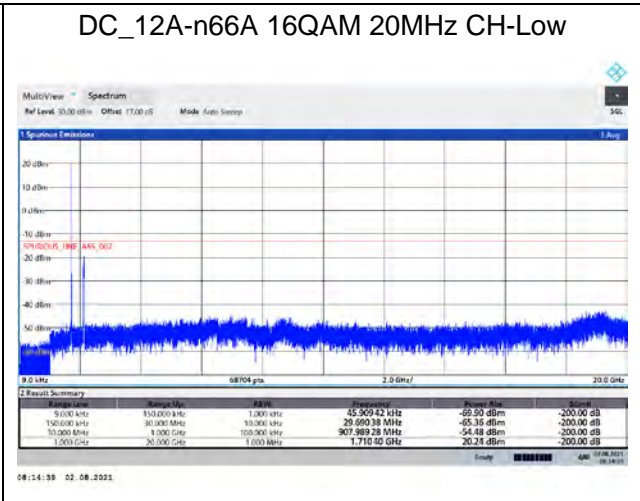
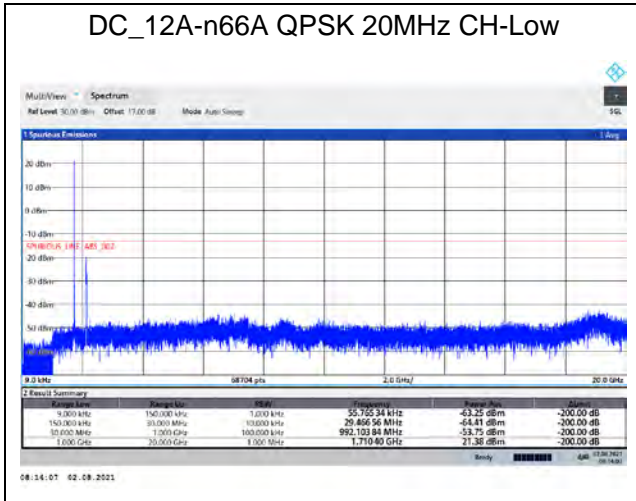


NR n66 256QAM 20MHz CH-High



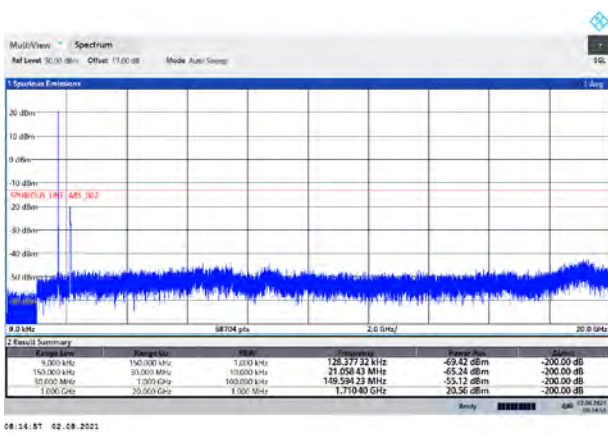
DC_12A-n66A P1/2 BPSK 20MHz CH-High





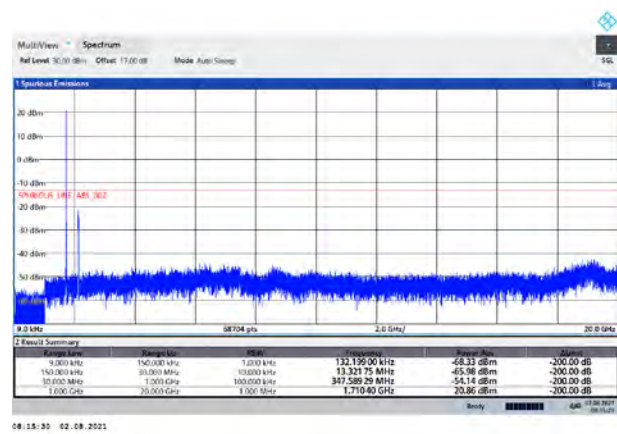


DC_12A-n66A 64QAM 20MHz CH-Low



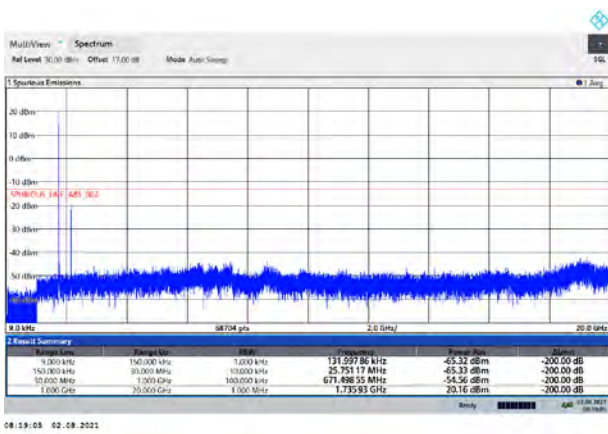
08:14:51 02.08.2021

DC_12A-n66A 256QAM 20MHz CH-Low



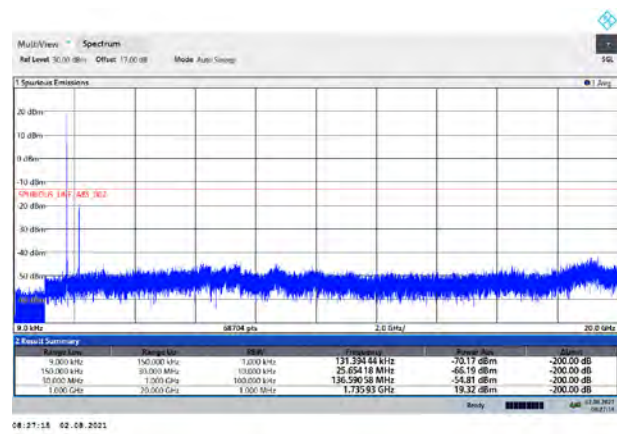
08:15:30 02.08.2021

DC_12A-n66A 64QAM 20MHz CH-Middle



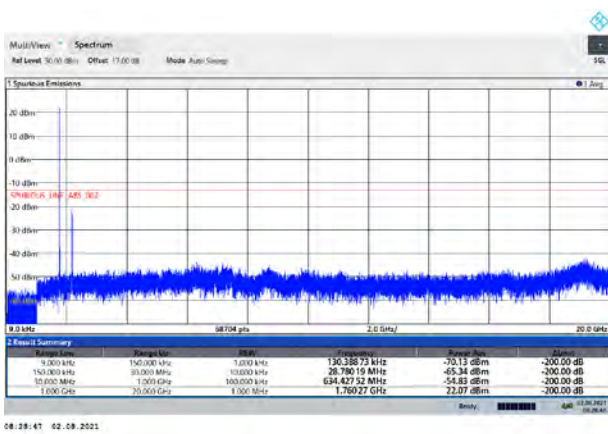
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DC_12A-n66A 256QAM 20MHz CH-Middle



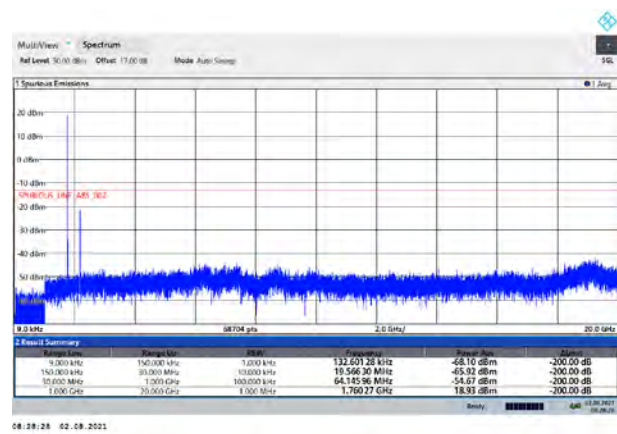
08:21:18 02.08.2021

DC_12A-n66A 64QAM 20MHz CH-High



08:28:41 02.08.2021

DC_12A-n66A 256QAM 20MHz CH-High



08:30:28 02.08.2021

5.7 Radiates Spurious Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

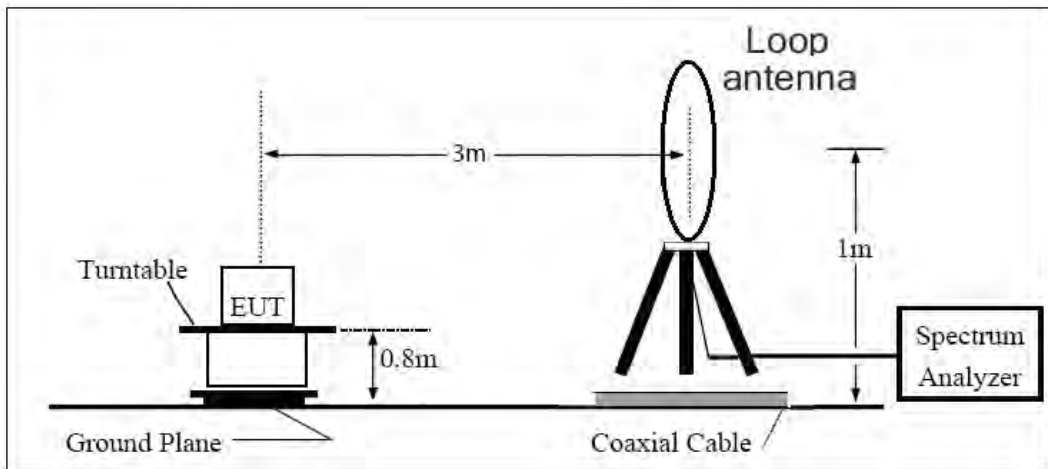
Method of Measurement

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI C63.26 (2015).
2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
3. A loop antenna, A log-periodic antenna or horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
4. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=100kHz, VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz, and the maximum value of the receiver should be recorded as (Pr).
5. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
7. The measurement results are obtained as described below:
Power(EIRP)=PMea- PAg - Pcl + Ga
The measurement results are amend as described below:
Power(EIRP)=PMea- Pcl + Ga
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

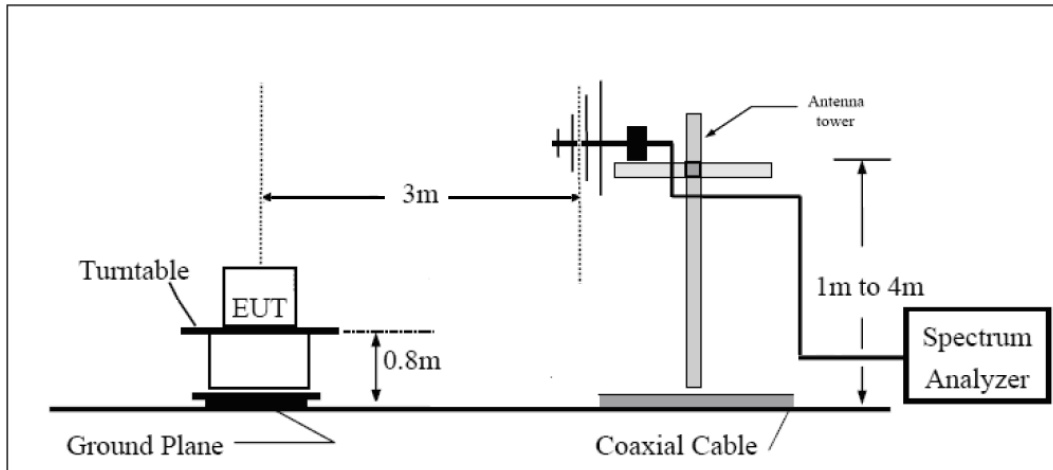
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

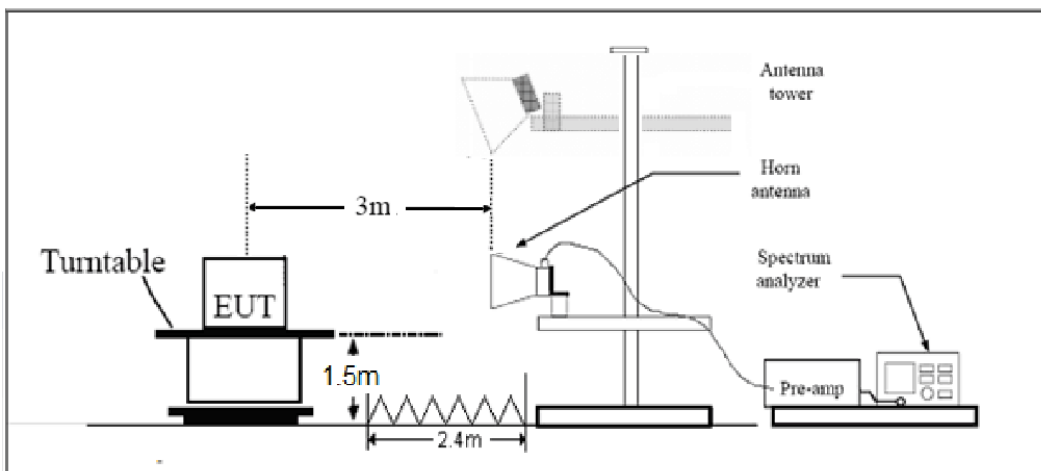
9KHz ~ 30MHz



30MHz ~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits



Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.”

Rule Part 27.53(m) $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(4) of this section.

Part 27.53(a)/(h)/(g) Limit	-13 dBm
Part 27.53(m) Limit	-25 dBm

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = \pm 1.96$, $U = \pm 3.55$ dB.

**Test Result**

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

NR n41 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5165.98	-58.23	3.20	12.50	Horizontal	-48.93	-25.00	23.93	135
3	7748.97	-56.99	4.40	12.20	Horizontal	-49.19	-25.00	24.19	270
4	10331.96	-51.14	4.70	11.80	Horizontal	-44.04	-25.00	19.04	225
5	12914.96	-51.30	5.40	14.00	Horizontal	-42.70	-25.00	17.70	135
6	156497.94	-53.61	6.10	16.80	Horizontal	-42.91	-25.00	17.91	0
7	18080.93	--	--	--	--	--	--	--	--
8	20663.92	--	--	--	--	--	--	--	--
9	23246.91	--	--	--	--	--	--	--	--
10	25829.90	--	--	--	--	--	--	--	--

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

NR n41 QPSK 40MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5144.00	-56.95	3.20	12.50	Horizontal	-47.65	-25.00	22.65	180
3	7716.00	-54.74	4.40	12.20	Horizontal	-46.94	-25.00	21.94	90
4	10288.00	-49.60	4.70	11.80	Horizontal	-42.50	-25.00	17.50	0
5	12860.00	-50.58	5.40	14.00	Horizontal	-41.98	-25.00	16.98	0
6	15432.00	-50.59	6.10	16.80	Horizontal	-39.89	-25.00	14.89	45
7	18004.00	--	--	--	--	--	--	--	--
8	20576.00	--	--	--	--	--	--	--	--
9	23148.00	--	--	--	--	--	--	--	--
10	25720.00	--	--	--	--	--	--	--	--

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



NR n41 QPSK 100MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5088.00	-54.98	3.20	12.50	Horizontal	-45.68	-25.00	20.68	45
3	7632.00	-54.05	4.40	12.30	Horizontal	-46.15	-25.00	21.15	0
4	10176.00	-52.50	4.70	11.80	Horizontal	-45.40	-25.00	20.40	90
5	12720.00	-52.69	5.40	14.00	Horizontal	-44.09	-25.00	19.09	135
6	15264.00	-53.54	6.10	16.80	Horizontal	-42.84	-25.00	17.84	225
7	17808.00	-49.35	5.70	14.15	Horizontal	-40.90	-25.00	15.90	45
8	203562.00	--	--	--	--	--	--	--	--
9	22896.00	--	--	--	--	--	--	--	--
10	25440.00	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

DC_66A-n41A QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5168.10	-51.09	3.20	12.50	Horizontal	-41.79	-25.00	16.79	270
3	7752.20	-53.16	4.40	12.20	Horizontal	-45.36	-25.00	20.36	180
4	10351.96	-51.44	4.70	11.80	Horizontal	-44.34	-25.00	19.34	0
5	12939.95	-53.35	5.40	14.00	Horizontal	-44.75	-25.00	19.75	45
6	15527.94	-60.89	6.10	16.80	Horizontal	-50.19	-25.00	25.19	315
7	18115.93	--	--	--	--	--	--	--	--
8	20703.92	--	--	--	--	--	--	--	--
9	23291.91	--	--	--	--	--	--	--	--
10	25879.90	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



DC_66A-n41A QPSK 40MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5147.60	-53.23	3.20	12.50	Horizontal	-43.93	-25.00	18.93	315
3	7703.97	-56.15	4.40	12.20	Horizontal	-48.35	-25.00	23.35	270
4	10271.96	-54.59	4.70	11.80	Horizontal	-47.49	-25.00	22.49	180
5	12839.95	-52.63	5.40	14.00	Horizontal	-44.03	-25.00	19.03	90
6	15407.94	-61.81	6.10	16.80	Horizontal	-51.11	-25.00	26.11	45
7	17975.93	--	--	--	--	--	--	--	--
8	20543.92	--	--	--	--	--	--	--	--
9	23111.91	--	--	--	--	--	--	--	--
10	25679.90	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

DC_66A-n41A QPSK 100MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5085.98	-50.45	3.20	12.50	Horizontal	-41.15	-25.00	16.15	45
3	7628.97	-49.13	4.40	12.20	Horizontal	-41.33	-25.00	16.33	0
4	10171.96	-51.72	4.70	11.80	Horizontal	-44.62	-25.00	19.62	180
5	12714.95	-55.13	5.40	14.00	Horizontal	-46.53	-25.00	21.53	270
6	15257.94	-59.62	6.10	16.80	Horizontal	-48.92	-25.00	23.92	315
7	17800.93	--	--	--	--	--	--	--	--
8	20343.92	--	--	--	--	--	--	--	--
9	22886.91	--	--	--	--	--	--	--	--
10	25429.90	--	--	--	--	--	--	--	--

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



NR n66 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3485.00	-65.08	2.6	10.75	Horizontal	-56.93	-13.00	43.93	0
3	5227.50	-46.02	2.4	11.05	Horizontal	-37.37	-13.00	24.37	315
4	6970.00	-56.15	4.5	11.15	Horizontal	-49.50	-13.00	36.50	270
5	8712.50	-55.16	5.1	11.35	Horizontal	-48.91	-13.00	35.91	45
6	10455.00	-47.49	5.3	11.95	Horizontal	-40.84	-13.00	27.84	180
7	12197.50	-53.90	5.5	13.55	Horizontal	-45.85	-13.00	32.85	225
8	13940.00	-52.40	6.3	13.75	Horizontal	-44.95	-13.00	31.95	315
9	15682.50	-56.65	6.7	13.85	Horizontal	-49.50	-13.00	36.50	0
10	17425.00	-52.67	6.8	14.25	Horizontal	-45.22	-13.00	32.22	45

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.



NR n66 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3740.00	-60.84	2.6	10.75	Horizontal	-52.69	-13.00	39.69	45
3	5205.00	-52.65	2.4	11.05	Horizontal	-44.00	-13.00	31.00	0
4	6940.00	-59.29	4.5	11.15	Horizontal	-52.64	-13.00	39.64	0
5	8675.00	-52.24	5.1	11.35	Horizontal	-45.99	-13.00	32.99	90
6	10410.00	-46.29	5.3	11.95	Horizontal	-39.64	-13.00	26.64	45
7	12145.00	-50.62	5.5	13.55	Horizontal	-42.57	-13.00	17.57	135
8	13880.00	-51.92	6.3	13.75	Horizontal	-44.47	-13.00	19.47	135
9	15615.00	-49.85	6.7	13.85	Horizontal	-42.70	-13.00	17.70	90
10	17350.00	-48.48	6.8	14.25	Horizontal	-41.03	-13.00	16.03	45

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.

DC_2A-n66A QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3742.10	-55.90	2.6	10.75	Horizontal	-47.75	-13.00	34.75	270
3	5227.50	-48.21	2.4	11.05	Horizontal	-39.56	-13.00	26.56	180
4	6970.00	-52.87	4.5	11.15	Horizontal	-46.22	-13.00	33.22	90
5	8712.50	-51.95	5.1	11.35	Horizontal	-45.70	-13.00	32.70	0
6	10455.00	-46.93	5.3	11.95	Horizontal	-40.28	-13.00	27.28	45
7	12197.50	-54.05	5.5	13.55	Horizontal	-46.00	-13.00	33.00	315
8	13940.00	-51.53	6.3	13.75	Horizontal	-44.08	-13.00	31.08	180
9	15682.50	-55.36	6.7	13.85	Horizontal	-48.21	-13.00	35.21	0
10	17425.00	-54.01	6.8	14.25	Horizontal	-46.56	-13.00	33.56	225

Note: 1.The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



DC_2A-n66A QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3740.00	-60.66	2.6	10.75	Horizontal	-52.51	-13.00	39.51	0
3	5205.00	-45.61	2.4	11.05	Horizontal	-36.96	-13.00	23.96	225
4	6940.00	-53.43	4.5	11.15	Horizontal	-46.78	-13.00	33.78	270
5	8675.00	-53.72	5.1	11.35	Horizontal	-47.47	-13.00	34.47	315
6	10410.00	-49.50	5.3	11.95	Horizontal	-42.85	-13.00	29.85	45
7	12145.00	-54.65	5.5	13.55	Horizontal	-46.60	-13.00	33.60	90
8	13880.00	-49.69	6.3	13.75	Horizontal	-42.24	-13.00	29.24	225
9	15615.00	-53.82	6.7	13.85	Horizontal	-46.67	-13.00	33.67	45
10	17350.00	-51.91	6.8	14.25	Horizontal	-44.46	-13.00	31.46	315

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.
2. The worst emission was found in the antenna is Horizontal position.



6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2021-05-15	2022-05-14
Power Splitter	Hua Xiang	SHX-GF2-2-13	10120101	/	/
Spectrum Analyzer	Key sight	N9010A	MY50210259	2021-05-15	2022-05-14
Signal Analyzer	R&S	FSV3030	101411	2020-12-13	2021-12-12
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2019-12-16	2022-12-15
Horn Antenna	R&S	HF907	102723	2018-08-11	2021-08-10
Horn Antenna	ETS-Lindgren	3160-09	00102644	2018-06-20	2023-06-19
Horn Antenna	STEATITE	QSH-SL-26-40-K-15	16779	2019-12-24	2022-12-23
Signal generator	R&S	SMB 100A	102594	2021-05-15	2022-05-14
Climatic Chamber	ESPEC	SU-242	93000506	2020-12-13	2021-12-12
MOB COMMS DC SUPPLY	Keysight	66319D	MY43004105	2021-06-09	2021-12-08
RF Cable	Agilent	SMA 15cm	0001	2021-06-09	2021-12-08
Software	R&S	EMC32	9.26.0	/	/

*****END OF REPORT *****



ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.



ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.