



Appendix B

E-UTRA Band 14



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1 Effective (Isotropic) Radiated Power

1.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Config.	Result (dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band14	5MHz	QPSK	23305	1RB#0	23.48	20.6	34.77	PASS
Band14	5MHz	QPSK	23305	1RB#12	23.58	20.7	34.77	PASS
Band14	5MHz	QPSK	23305	1RB#24	23.50	20.62	34.77	PASS
Band14	5MHz	QPSK	23305	12RB#0	22.64	19.76	34.77	PASS
Band14	5MHz	QPSK	23305	12RB#6	22.63	19.75	34.77	PASS
Band14	5MHz	QPSK	23305	12RB#13	22.63	19.75	34.77	PASS
Band14	5MHz	QPSK	23305	25RB#0	22.67	19.79	34.77	PASS
Band14	5MHz	QPSK	23330	1RB#0	23.57	20.69	34.77	PASS
Band14	5MHz	QPSK	23330	1RB#12	23.51	20.63	34.77	PASS
Band14	5MHz	QPSK	23330	1RB#24	23.46	20.58	34.77	PASS
Band14	5MHz	QPSK	23330	12RB#0	22.61	19.73	34.77	PASS
Band14	5MHz	QPSK	23330	12RB#6	22.64	19.76	34.77	PASS
Band14	5MHz	QPSK	23330	12RB#13	22.59	19.71	34.77	PASS
Band14	5MHz	QPSK	23330	25RB#0	22.58	19.7	34.77	PASS
Band14	5MHz	QPSK	23355	1RB#0	23.56	20.68	34.77	PASS
Band14	5MHz	QPSK	23355	1RB#12	23.45	20.57	34.77	PASS
Band14	5MHz	QPSK	23355	1RB#24	23.53	20.65	34.77	PASS
Band14	5MHz	QPSK	23355	12RB#0	22.59	19.71	34.77	PASS
Band14	5MHz	QPSK	23355	12RB#6	22.59	19.71	34.77	PASS
Band14	5MHz	QPSK	23355	12RB#13	22.66	19.78	34.77	PASS
Band14	5MHz	QPSK	23355	25RB#0	22.60	19.72	34.77	PASS
Band14	5MHz	16QAM	23305	1RB#0	22.82	19.94	34.77	PASS
Band14	5MHz	16QAM	23305	1RB#12	22.83	19.95	34.77	PASS
Band14	5MHz	16QAM	23305	1RB#24	22.82	19.94	34.77	PASS
Band14	5MHz	16QAM	23305	12RB#0	21.70	18.82	34.77	PASS
Band14	5MHz	16QAM	23305	12RB#6	21.68	18.8	34.77	PASS
Band14	5MHz	16QAM	23305	12RB#13	21.62	18.74	34.77	PASS
Band14	5MHz	16QAM	23305	25RB#0	21.61	18.73	34.77	PASS
Band14	5MHz	16QAM	23330	1RB#0	22.78	19.9	34.77	PASS
Band14	5MHz	16QAM	23330	1RB#12	22.72	19.84	34.77	PASS
Band14	5MHz	16QAM	23330	1RB#24	22.78	19.9	34.77	PASS
Band14	5MHz	16QAM	23330	12RB#0	21.64	18.76	34.77	PASS



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Band14	5MHz	16QAM	23330	12RB#6	21.60	18.72	34.77	PASS
Band14	5MHz	16QAM	23330	12RB#13	21.57	18.69	34.77	PASS
Band14	5MHz	16QAM	23330	25RB#0	21.51	18.63	34.77	PASS
Band14	5MHz	16QAM	23355	1RB#0	22.84	19.96	34.77	PASS
Band14	5MHz	16QAM	23355	1RB#12	22.69	19.81	34.77	PASS
Band14	5MHz	16QAM	23355	1RB#24	22.80	19.92	34.77	PASS
Band14	5MHz	16QAM	23355	12RB#0	21.63	18.75	34.77	PASS
Band14	5MHz	16QAM	23355	12RB#6	21.62	18.74	34.77	PASS
Band14	5MHz	16QAM	23355	12RB#13	21.67	18.79	34.77	PASS
Band14	5MHz	16QAM	23355	25RB#0	21.56	18.68	34.77	PASS
Band14	5MHz	64QAM	23305	1RB#0	21.66	18.78	34.77	PASS
Band14	5MHz	64QAM	23305	1RB#12	21.73	18.85	34.77	PASS
Band14	5MHz	64QAM	23305	1RB#24	21.74	18.86	34.77	PASS
Band14	5MHz	64QAM	23305	12RB#0	20.67	17.79	34.77	PASS
Band14	5MHz	64QAM	23305	12RB#6	20.71	17.83	34.77	PASS
Band14	5MHz	64QAM	23305	12RB#13	20.60	17.72	34.77	PASS
Band14	5MHz	64QAM	23305	25RB#0	20.65	17.77	34.77	PASS
Band14	5MHz	64QAM	23330	1RB#0	21.69	18.81	34.77	PASS
Band14	5MHz	64QAM	23330	1RB#12	21.71	18.83	34.77	PASS
Band14	5MHz	64QAM	23330	1RB#24	21.65	18.77	34.77	PASS
Band14	5MHz	64QAM	23330	12RB#0	20.67	17.79	34.77	PASS
Band14	5MHz	64QAM	23330	12RB#6	20.61	17.73	34.77	PASS
Band14	5MHz	64QAM	23330	12RB#13	20.58	17.7	34.77	PASS
Band14	5MHz	64QAM	23330	25RB#0	20.62	17.74	34.77	PASS
Band14	5MHz	64QAM	23355	1RB#0	21.66	18.78	34.77	PASS
Band14	5MHz	64QAM	23355	1RB#12	21.66	18.78	34.77	PASS
Band14	5MHz	64QAM	23355	1RB#24	21.71	18.83	34.77	PASS
Band14	5MHz	64QAM	23355	12RB#0	20.62	17.74	34.77	PASS
Band14	5MHz	64QAM	23355	12RB#6	20.60	17.72	34.77	PASS
Band14	5MHz	64QAM	23355	12RB#13	20.66	17.78	34.77	PASS
Band14	5MHz	64QAM	23355	25RB#0	20.54	17.66	34.77	PASS
Band14	10MHz	QPSK	23330	1RB#0	23.53	20.65	34.77	PASS
Band14	10MHz	QPSK	23330	1RB#24	23.55	20.67	34.77	PASS
Band14	10MHz	QPSK	23330	1RB#49	23.57	20.69	34.77	PASS
Band14	10MHz	QPSK	23330	25RB#0	22.65	19.77	34.77	PASS
Band14	10MHz	QPSK	23330	25RB#12	22.64	19.76	34.77	PASS
Band14	10MHz	QPSK	23330	25RB#25	22.55	19.67	34.77	PASS
Band14	10MHz	QPSK	23330	50RB#0	22.61	19.73	34.77	PASS



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Band14	10MHz	16QAM	23330	1RB#0	22.83	19.95	34.77	PASS
Band14	10MHz	16QAM	23330	1RB#24	22.81	19.93	34.77	PASS
Band14	10MHz	16QAM	23330	1RB#49	22.86	19.98	34.77	PASS
Band14	10MHz	16QAM	23330	25RB#0	21.62	18.74	34.77	PASS
Band14	10MHz	16QAM	23330	25RB#12	21.64	18.76	34.77	PASS
Band14	10MHz	16QAM	23330	25RB#25	21.53	18.65	34.77	PASS
Band14	10MHz	16QAM	23330	50RB#0	21.57	18.69	34.77	PASS
Band14	10MHz	64QAM	23330	1RB#0	21.69	18.81	34.77	PASS
Band14	10MHz	64QAM	23330	1RB#24	21.63	18.75	34.77	PASS
Band14	10MHz	64QAM	23330	1RB#49	21.68	18.8	34.77	PASS
Band14	10MHz	64QAM	23330	25RB#0	20.62	17.74	34.77	PASS
Band14	10MHz	64QAM	23330	25RB#12	20.66	17.78	34.77	PASS
Band14	10MHz	64QAM	23330	25RB#25	20.59	17.71	34.77	PASS
Band14	10MHz	64QAM	23330	50RB#0	20.62	17.74	34.77	PASS

Remark:

a: For getting the EIRP (Efficient Isotropic Radiated Power), the following formula should be taken to calculate it,

ERP [dBm] = Conducted Power [dBm] + Gain [dBd]

EIRP [dBm] = Conducted Power [dBm] + Gain [dBi]



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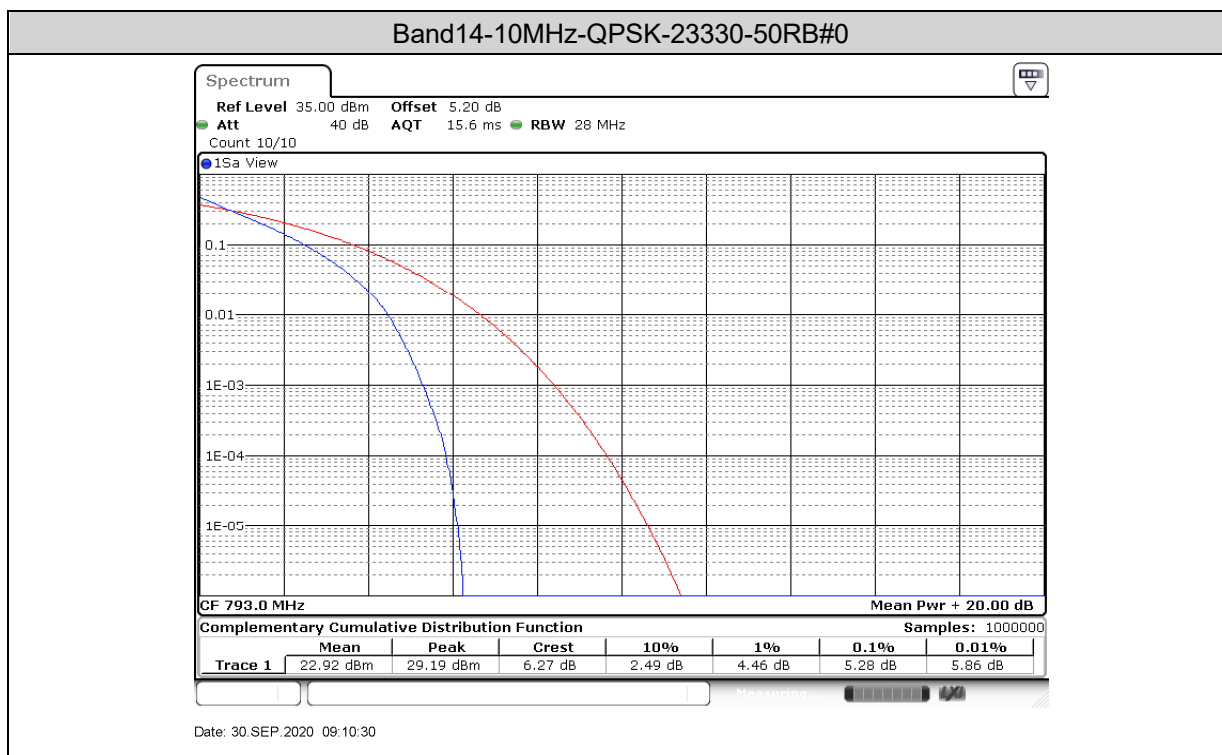
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2. Peak-to-Average Ratio (CCDF)

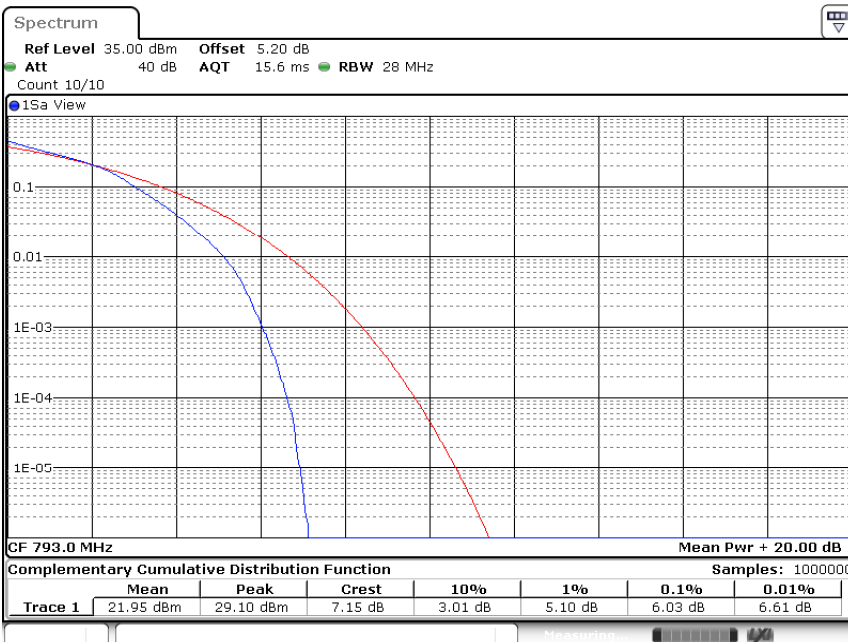
2.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band14	10MHz	QPSK	23330	50RB#0	5.28	13	PASS
Band14	10MHz	16QAM	23330	50RB#0	6.03	13	PASS
Band14	10MHz	64QAM	23330	50RB#0	6.52	13	PASS

2.2. Test Plots

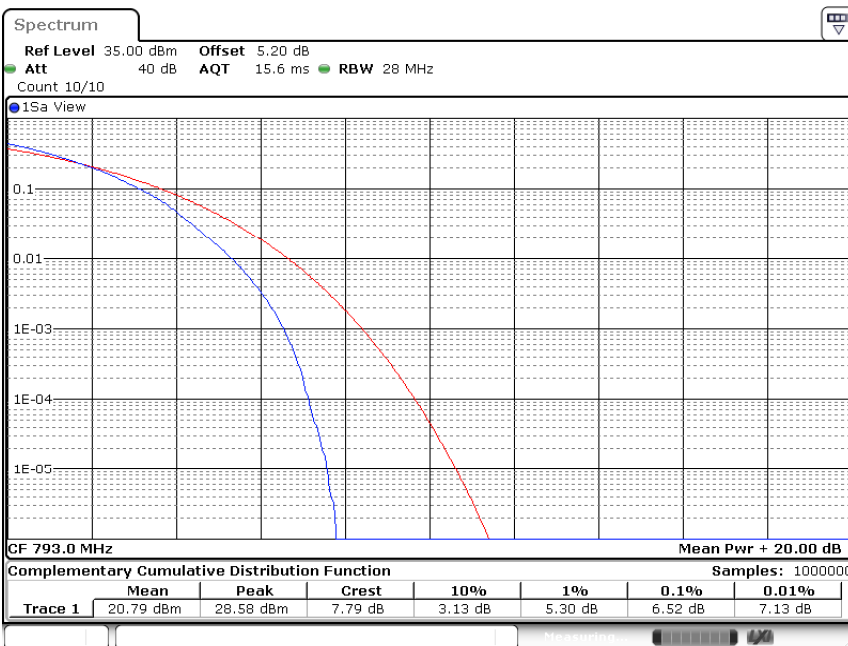


Band14-10MHz-16QAM-23330-50RB#0



Date: 30.SEP.2020 09:10:45

Band14-10MHz-64QAM-23330-50RB#0



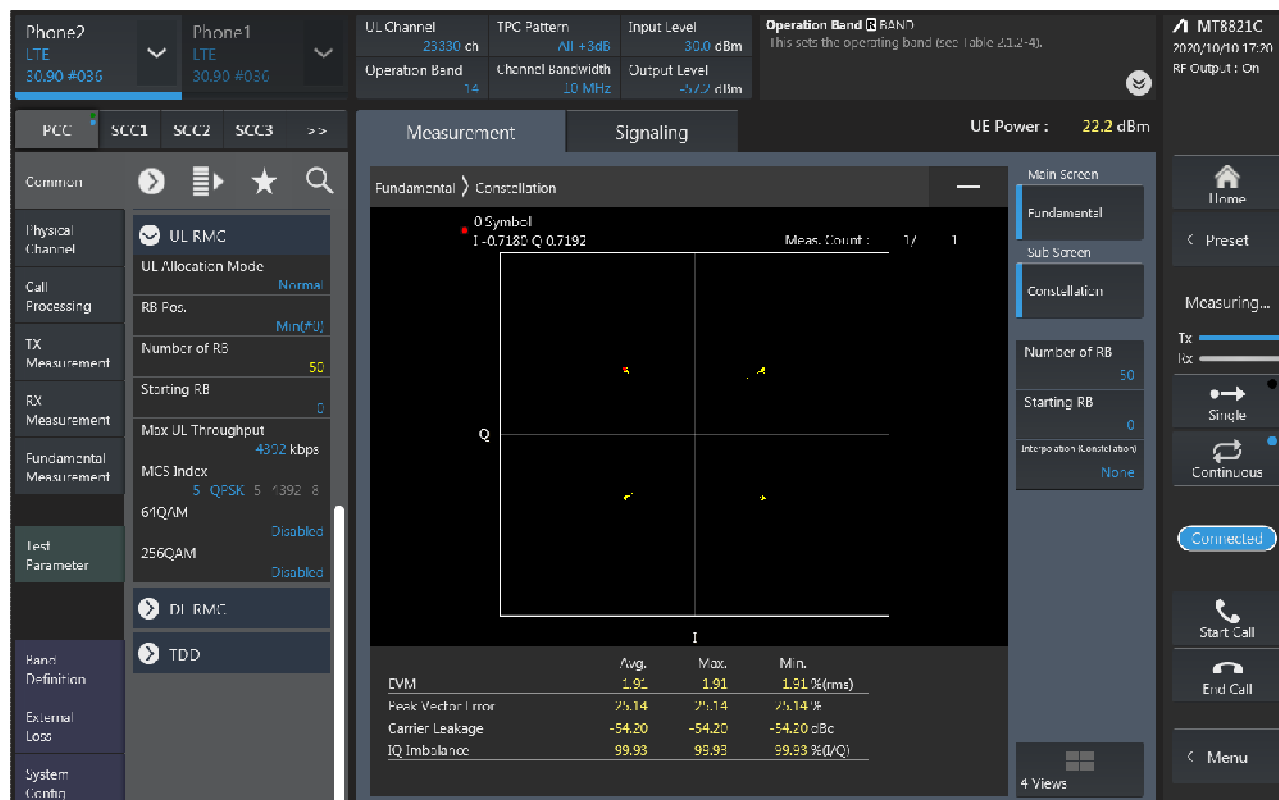
Date: 30.SEP.2020 09:24:17



3. Modulation Characteristics

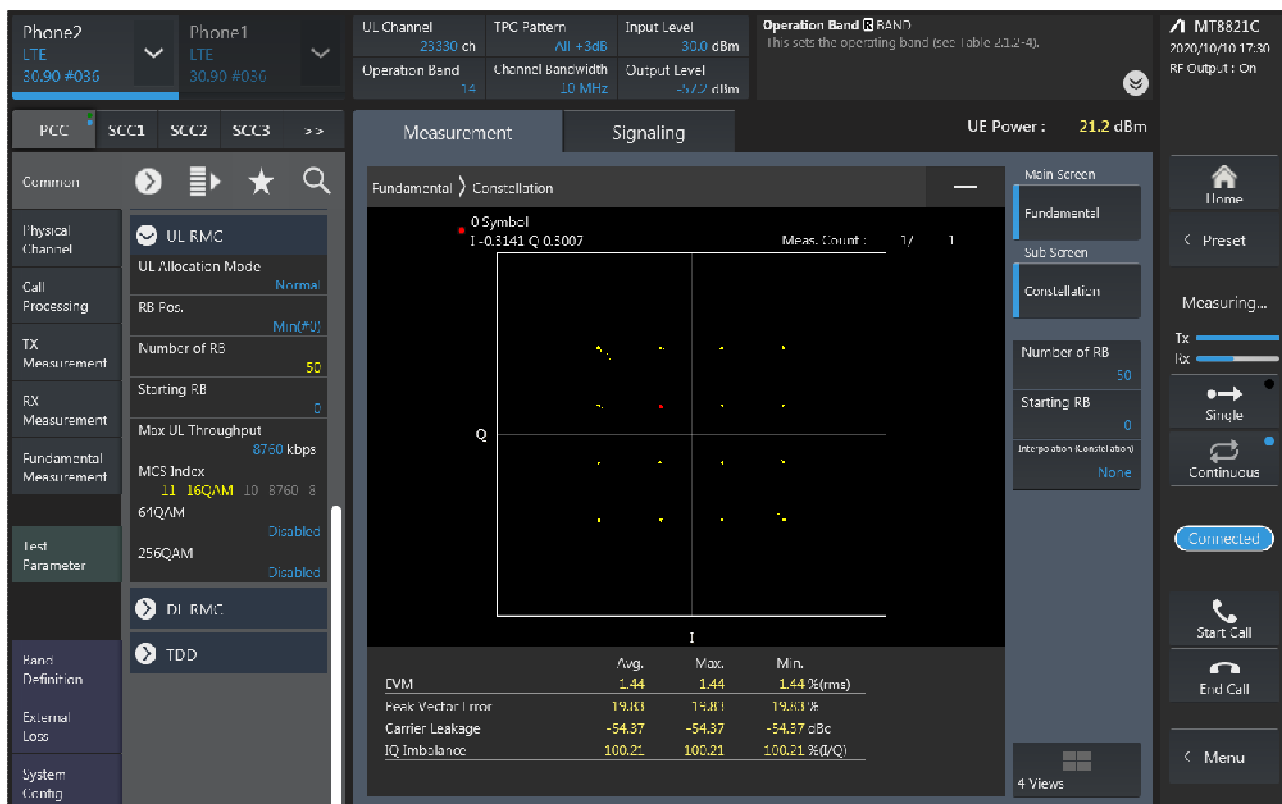
3.1. Test Mode = LTE /TM1 10MHz

3.1.1. Test Channel = MCH



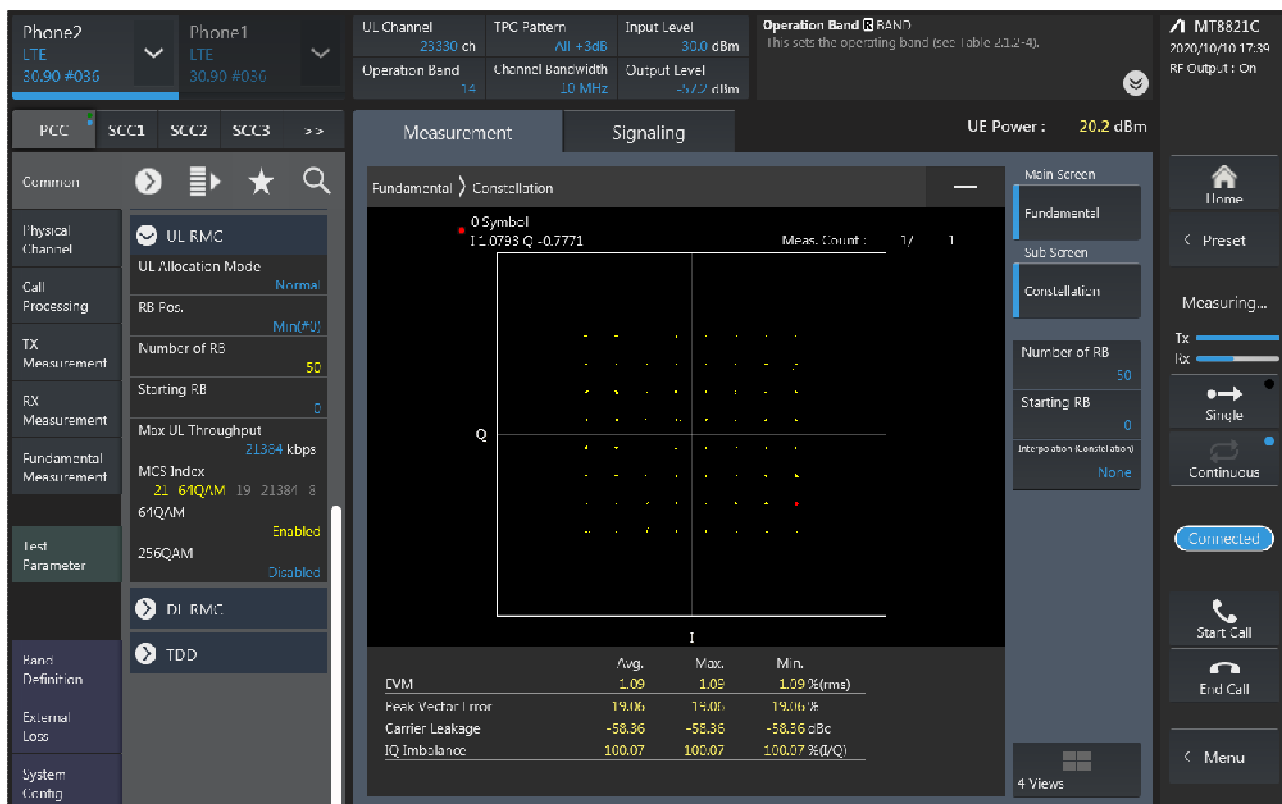
3.2. Test Mode = LTE /TM2 10MHz

3.2.1. Test Channel = MCH



3.3. Test Mode = LTE /TM3 10MHz

3.3.1. Test Channel = MCH



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4. 26dB Bandwidth and Occupied Bandwidth

4.1. Test Result

Band	Bandwidth h	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band14	5MHz	QPSK	23305	25RB#0	4.476	4.890	PASS
Band14	5MHz	QPSK	23330	25RB#0	4.476	4.890	PASS
Band14	5MHz	QPSK	23355	25RB#0	4.476	4.900	PASS
Band14	5MHz	16QAM	23305	25RB#0	4.486	4.910	PASS
Band14	5MHz	16QAM	23330	25RB#0	4.496	4.910	PASS
Band14	5MHz	16QAM	23355	25RB#0	4.486	4.920	PASS
Band14	5MHz	64QAM	23305	25RB#0	4.476	4.880	PASS
Band14	5MHz	64QAM	23330	25RB#0	4.476	4.880	PASS
Band14	5MHz	64QAM	23355	25RB#0	4.466	4.870	PASS
Band14	10MHz	QPSK	23330	50RB#0	8.952	9.700	PASS
Band14	10MHz	16QAM	23330	50RB#0	8.918	9.733	PASS
Band14	10MHz	64QAM	23330	50RB#0	8.918	9.633	PASS



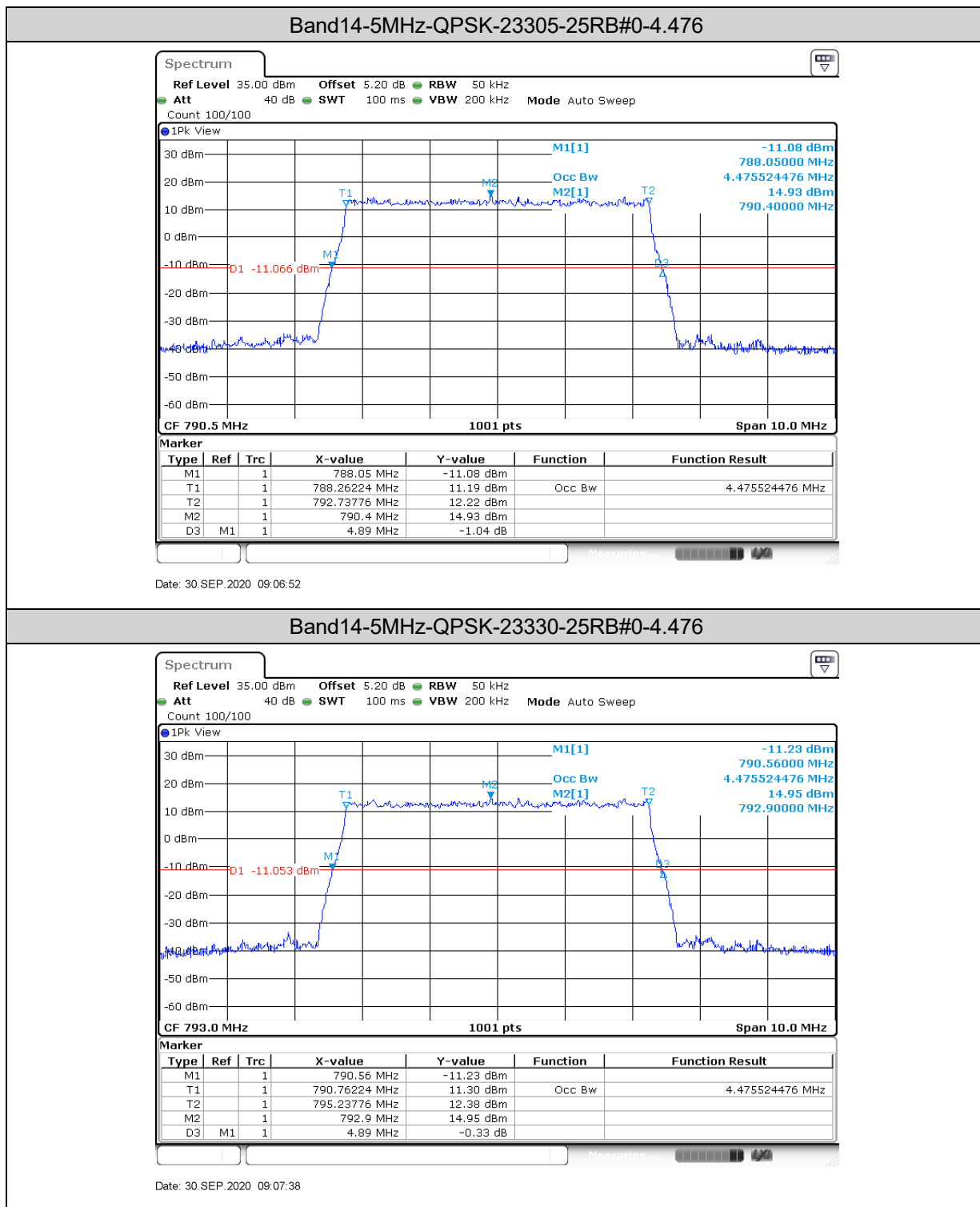
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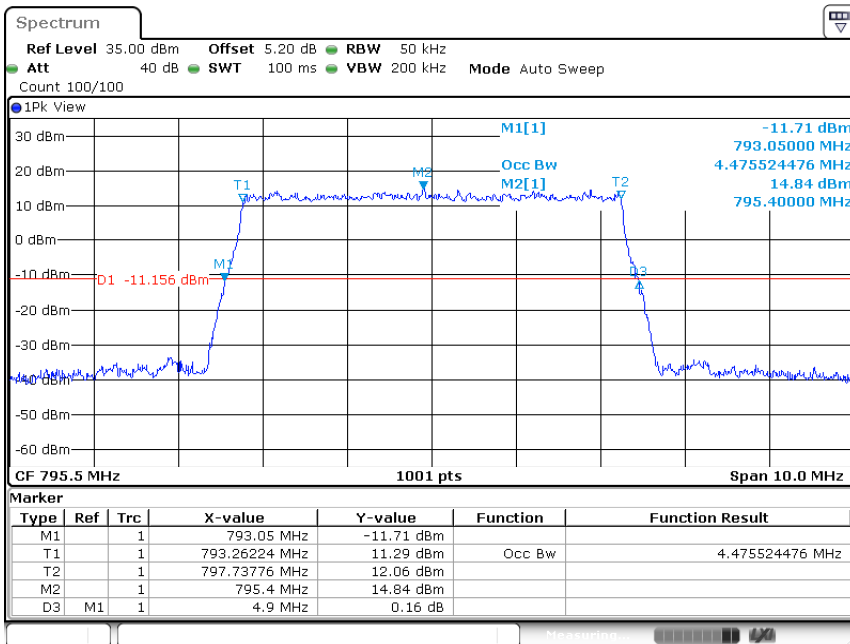
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4.2. Test Plots

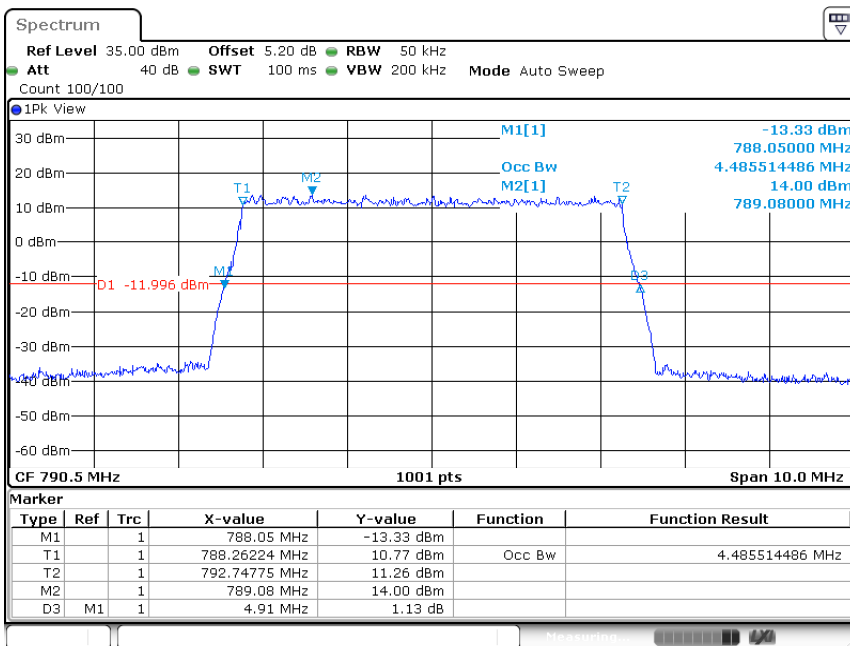


Band14-5MHz-QPSK-23355-25RB#0-4.476



Date: 30.SEP.2020 09:08:24

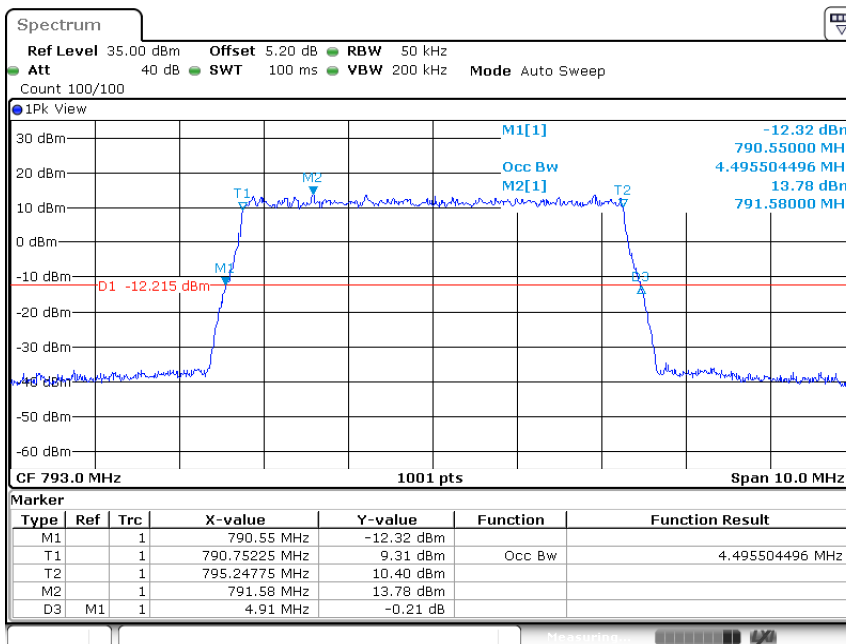
Band14-5MHz-16QAM-23305-25RB#0-4.486



Date: 30.SEP.2020 09:07:15

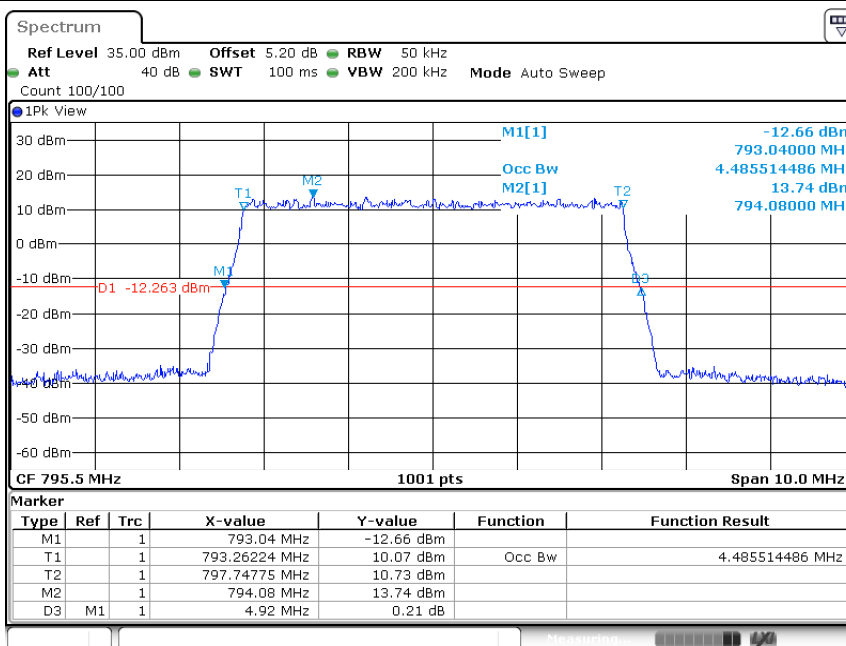


Band14-5MHz-16QAM-23330-25RB#0-4.496



Date: 30.SEP.2020 09:08:01

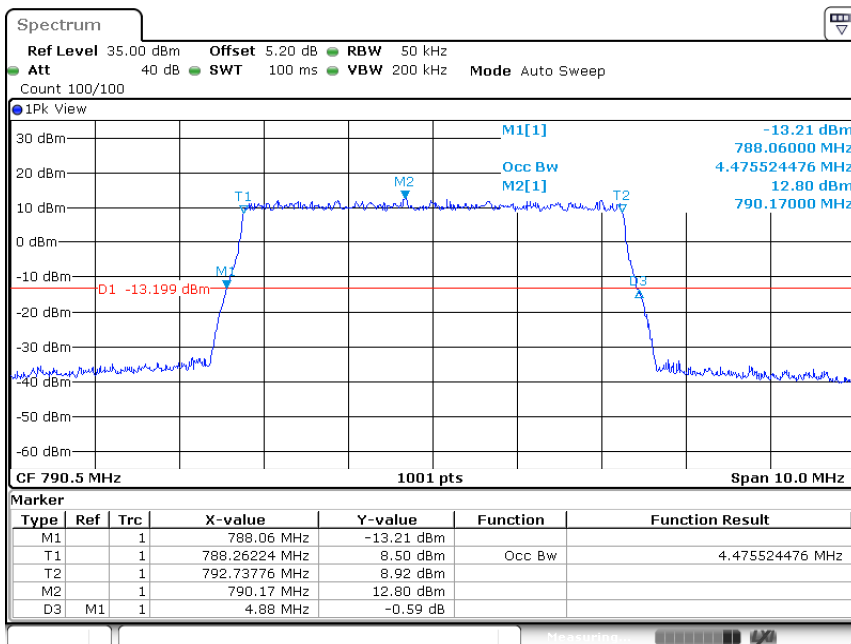
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Date: 30.SEP.2020 09:08:47

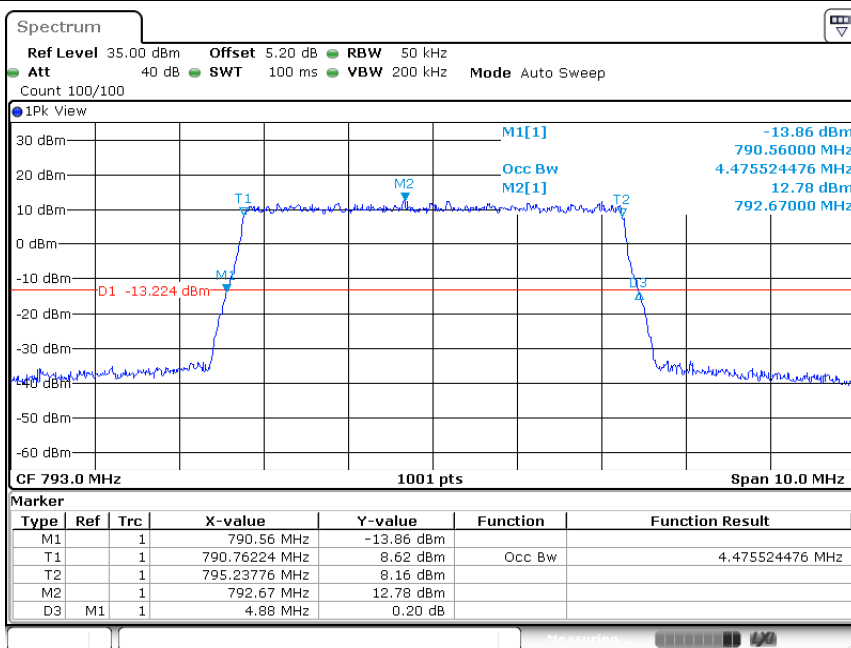


Band14-5MHz-64QAM-23305-25RB#0-4.476



Date: 30.SEP.2020 09:22:25

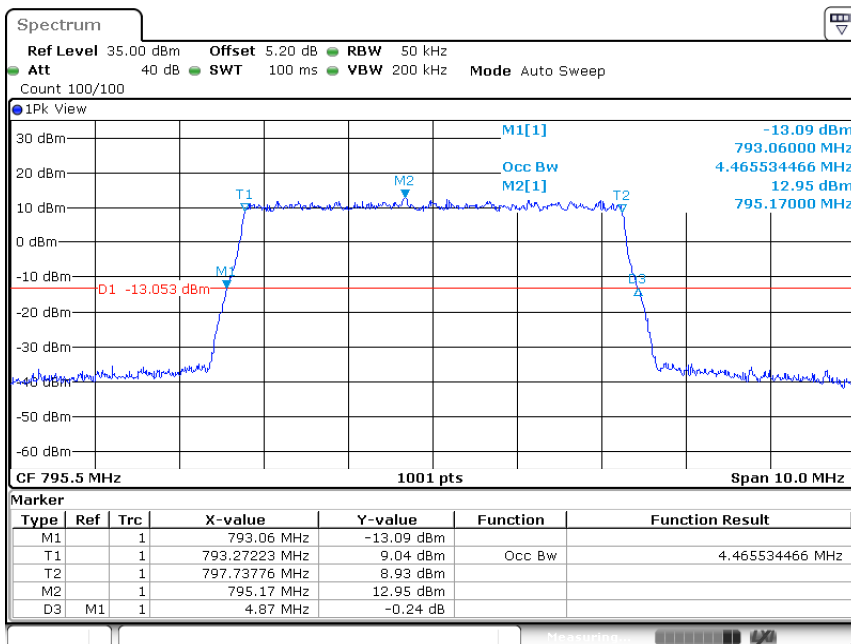
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Date: 30.SEP.2020 09:22:48

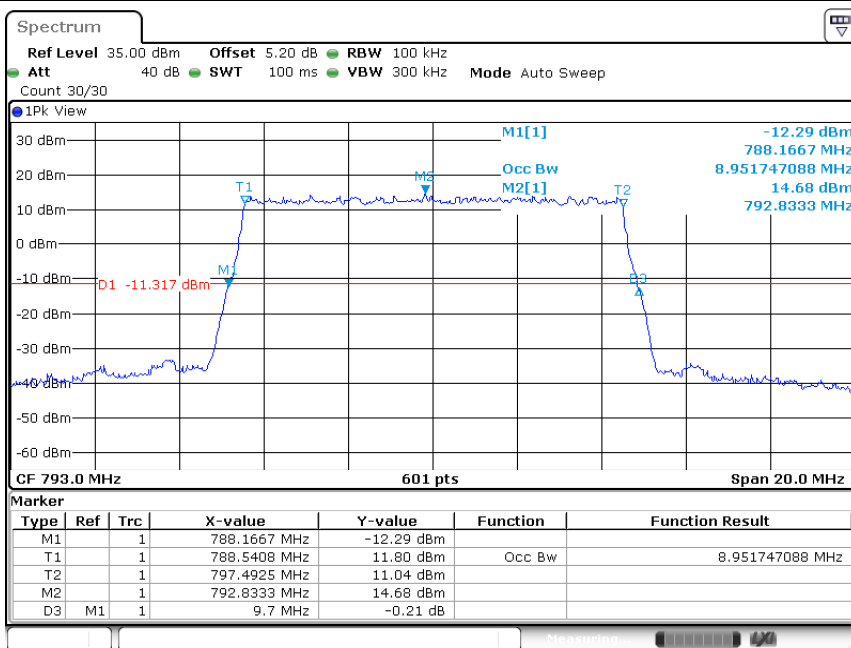


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Date: 30.SEP.2020 09:23:11

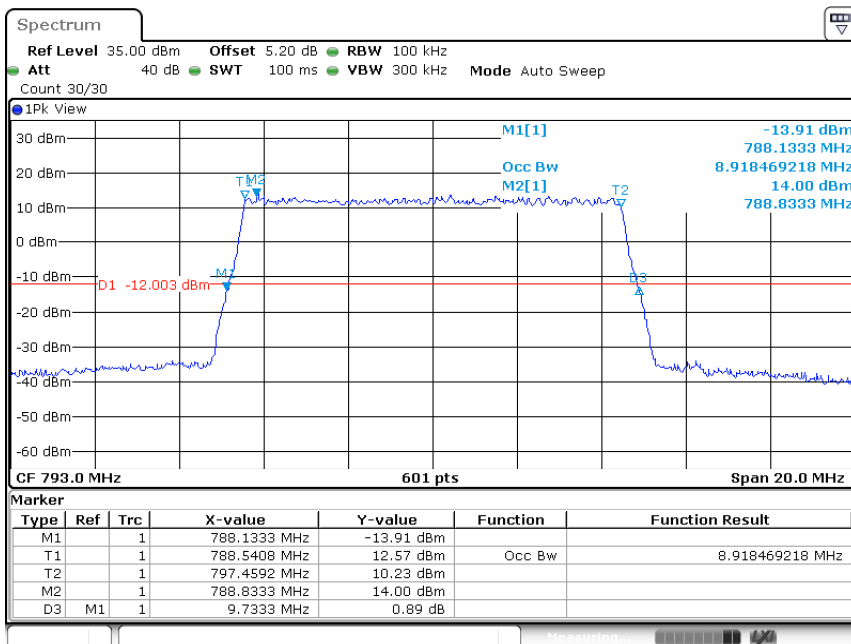
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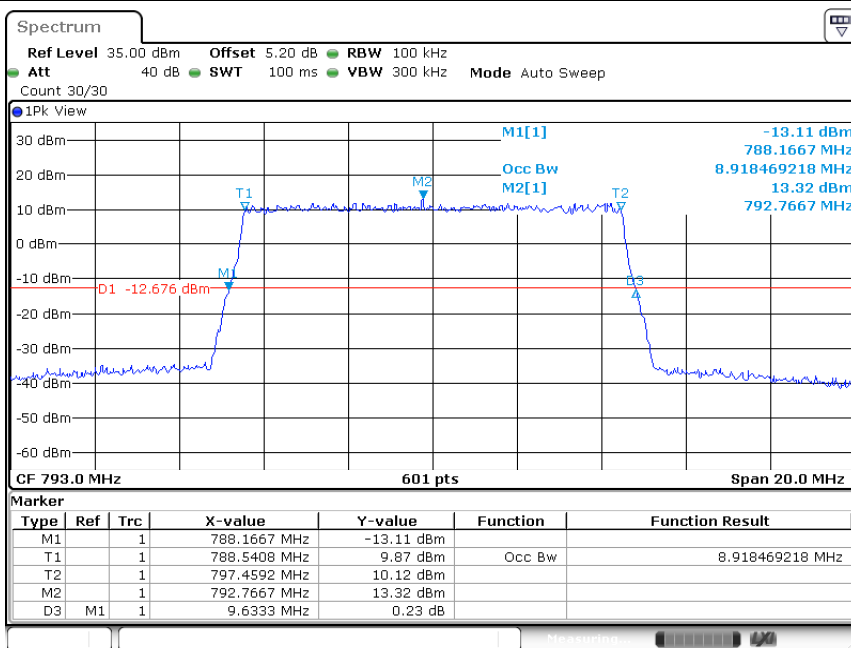


Band14-10MHz-16QAM-23330-50RB#0-8.918



Date: 30.SEP.2020 09:09:23

Band14-10MHz-64QAM-23330-50RB#0-8.918

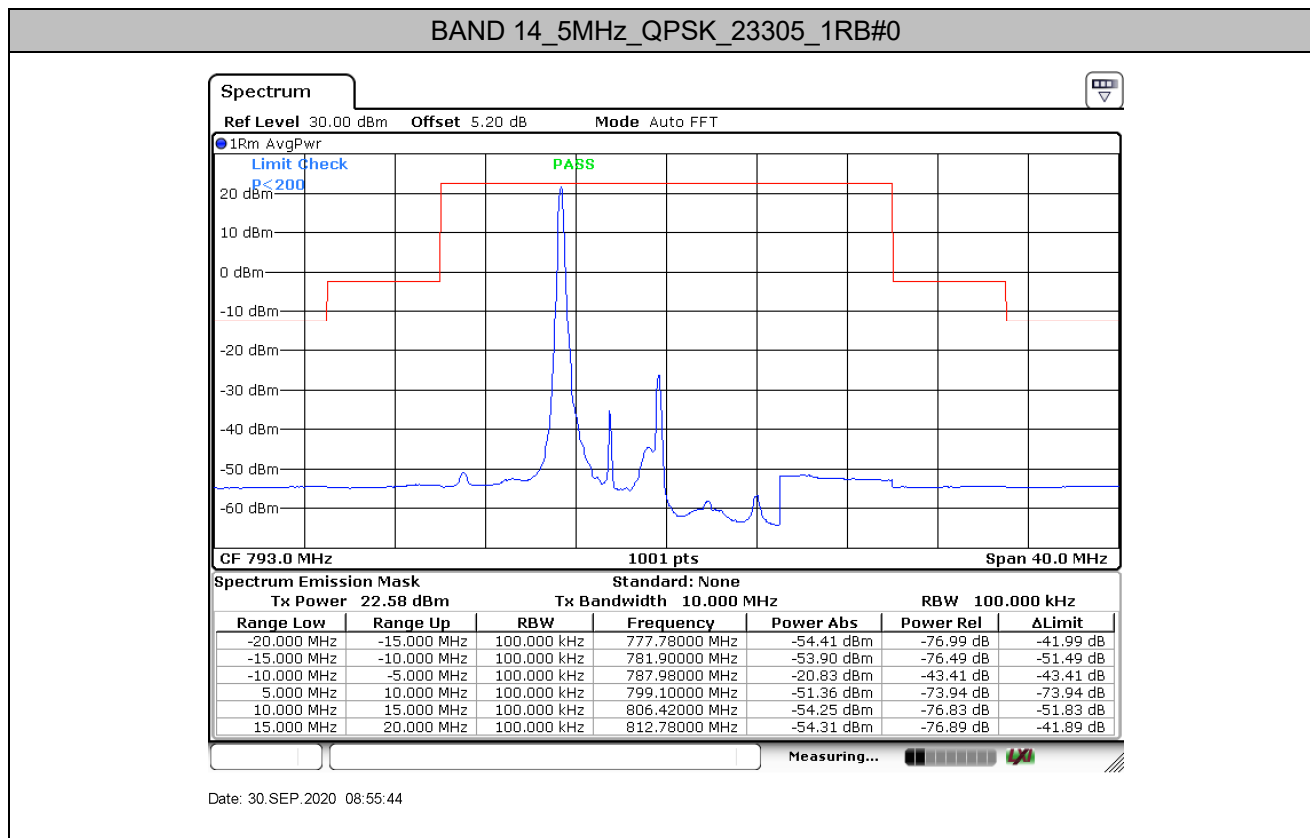


Date: 30.SEP.2020 09:23:32

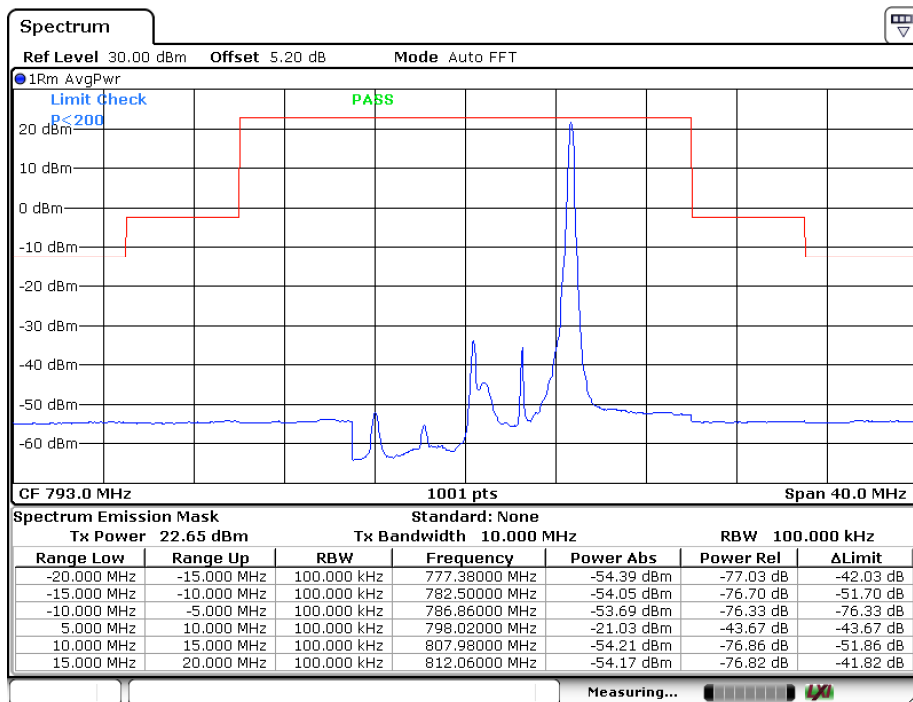


5. Emission Mask

5.1. Test Plots



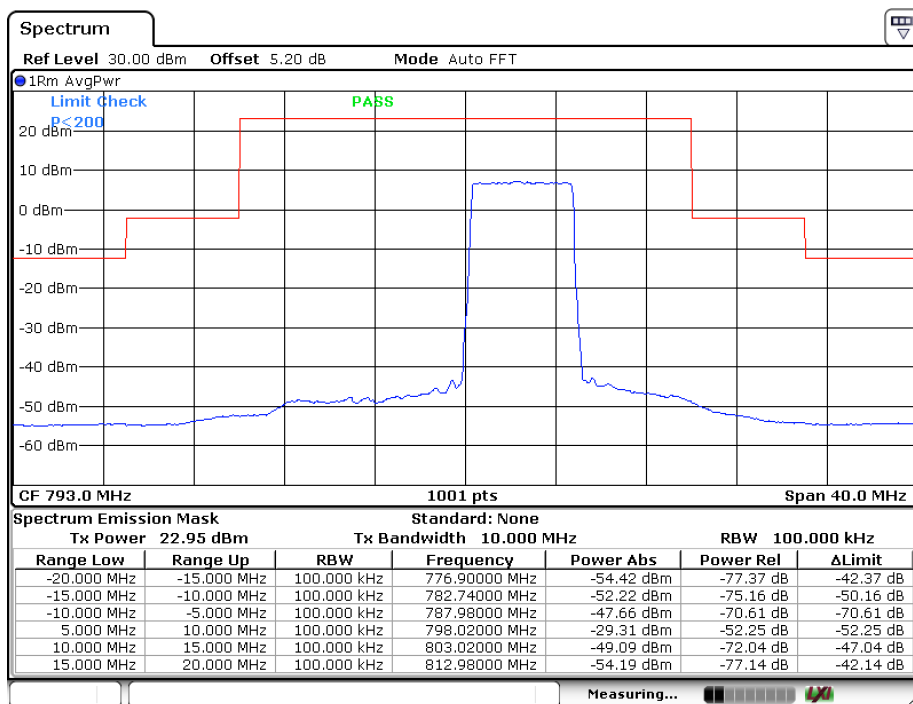
BAND 14_5MHz_QPSK_23355_1RB#24



Date: 30.SEP.2020 08:59:04



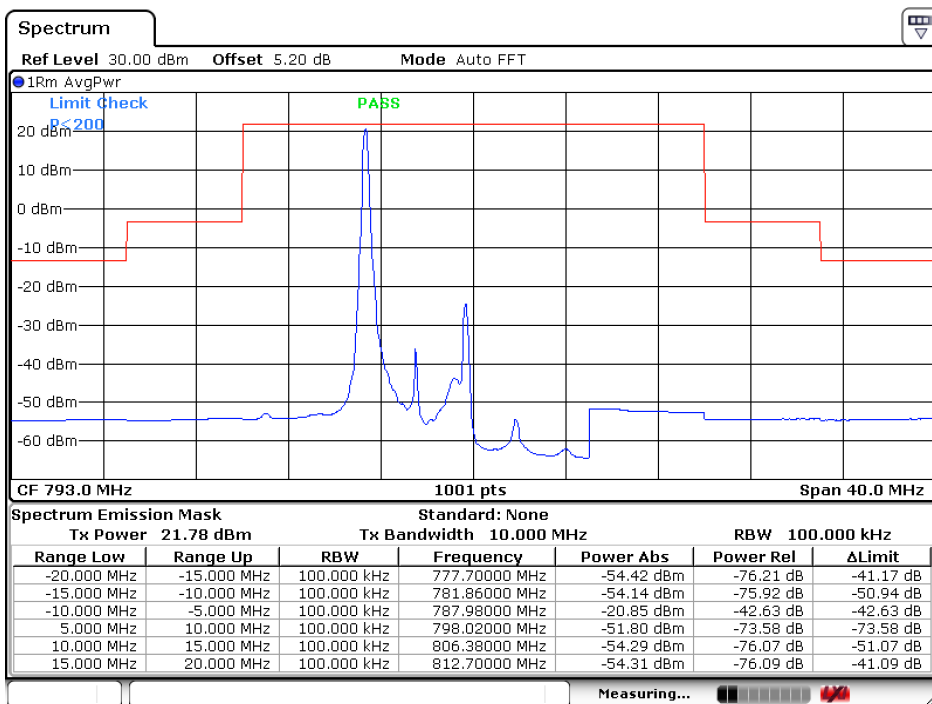
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Date: 30.SEP.2020 08:59:21



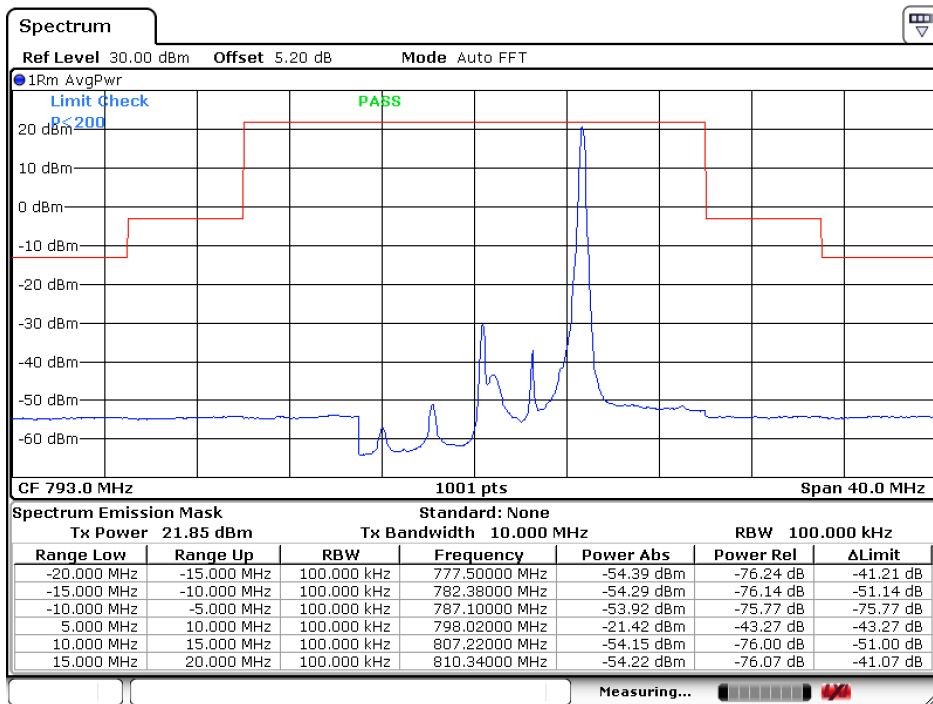
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Date: 20.OCT.2020 20:23:25



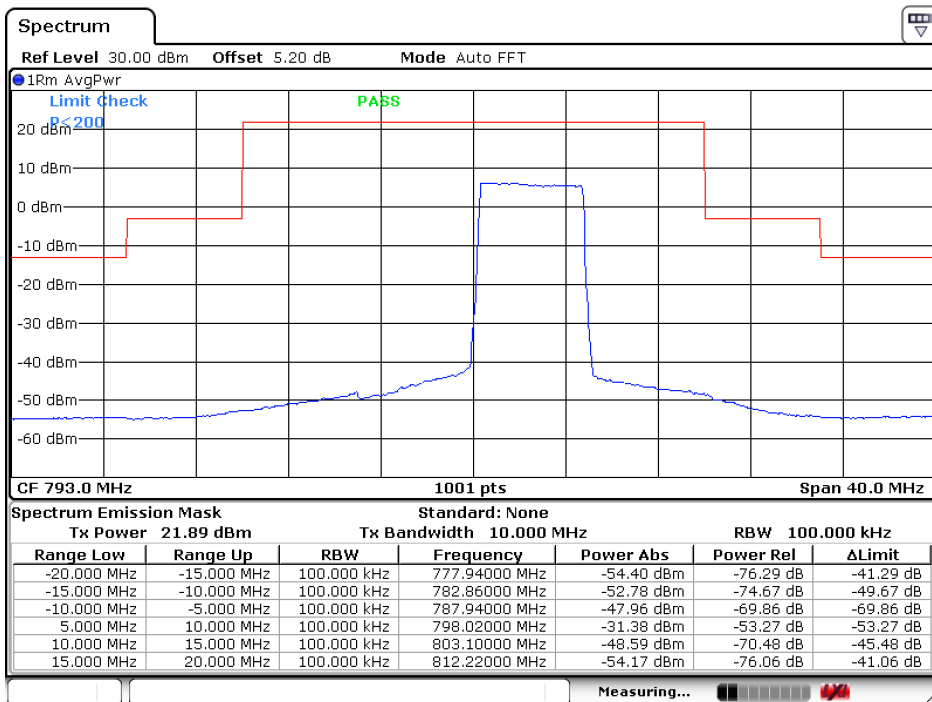
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Date: 20.OCT.2020 20:29:01



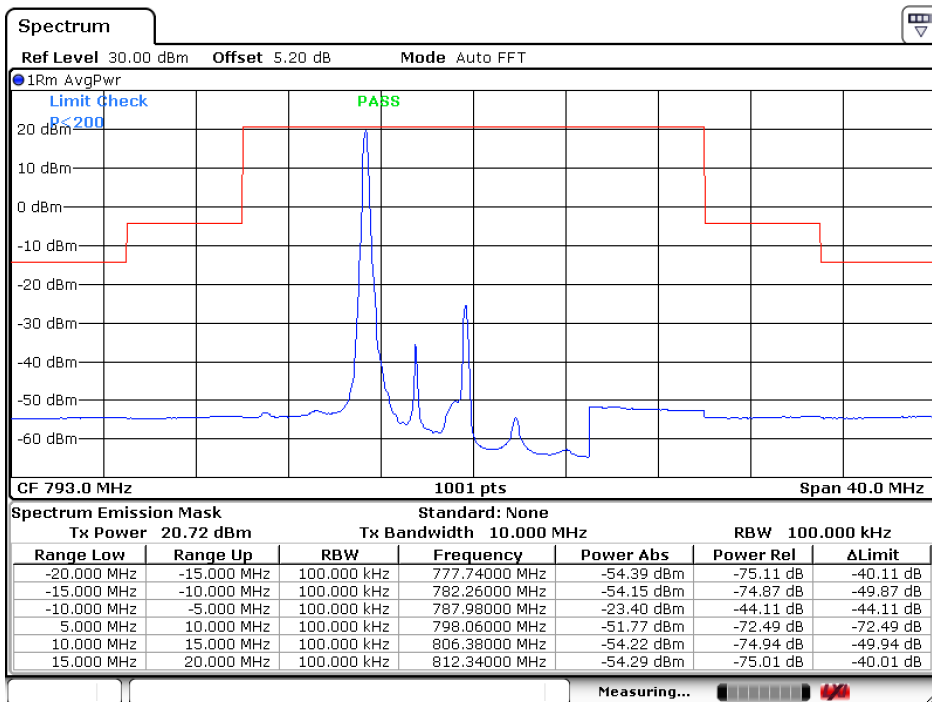
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Date: 20.OCT.2020 20:29:51



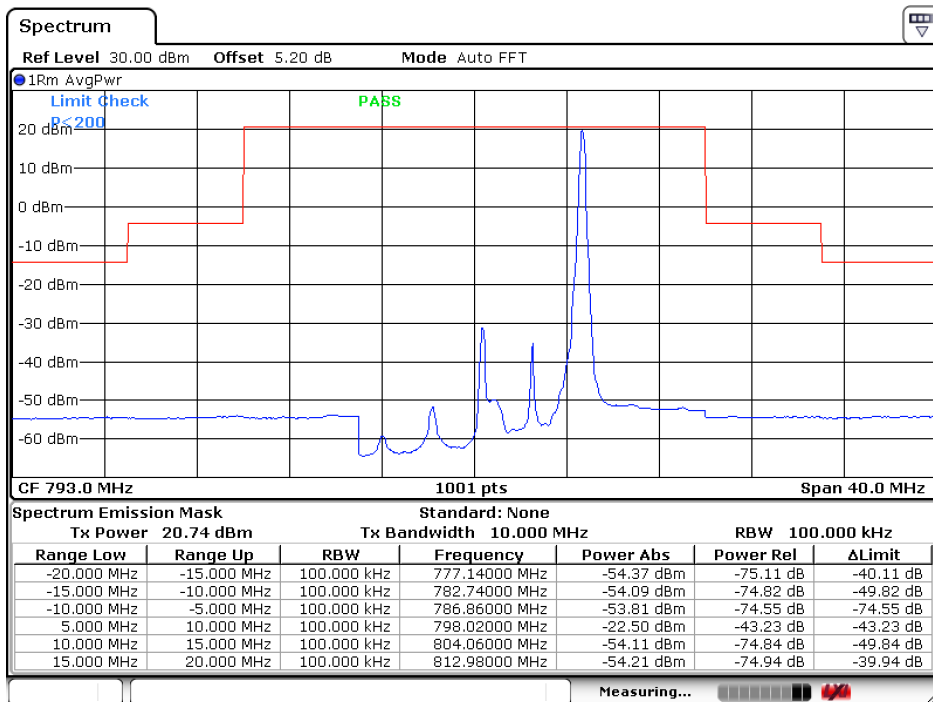
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Date: 20.OCT.2020 20:24:10



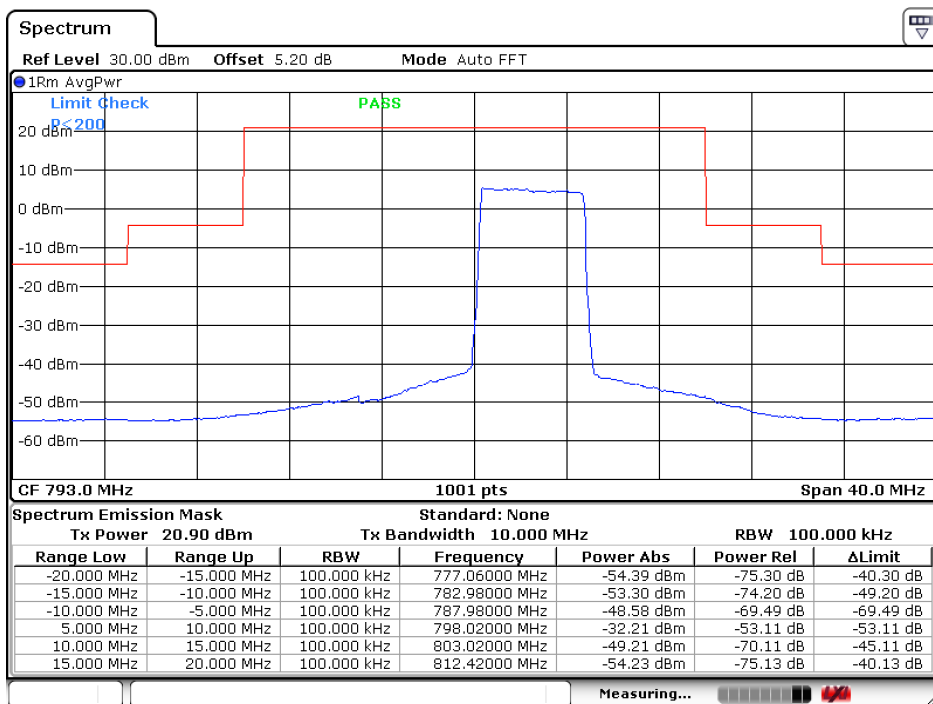
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Date: 20.OCT.2020 20:29:14



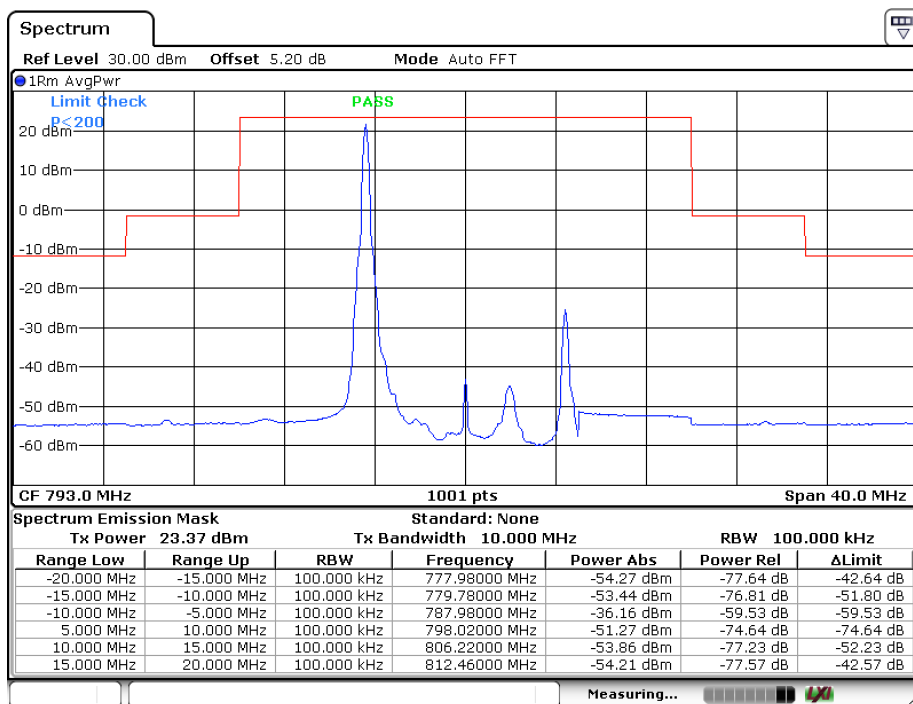
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Date: 20.OCT.2020 20:29:32



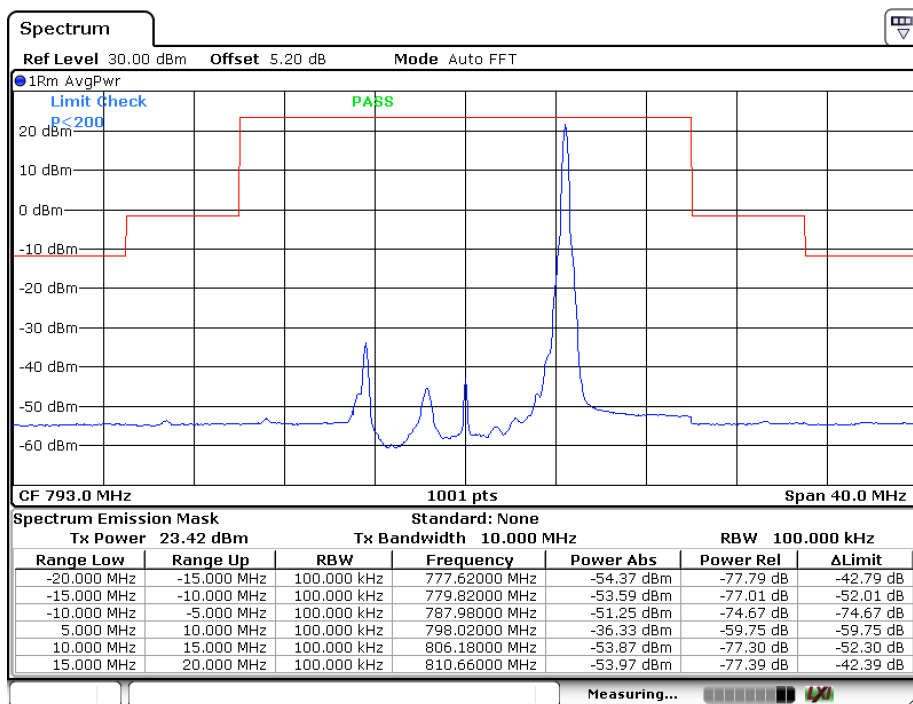
BAND 14_10MHz_QPSK_23330_1RB#0



Date: 30.SEP.2020 09:00:43



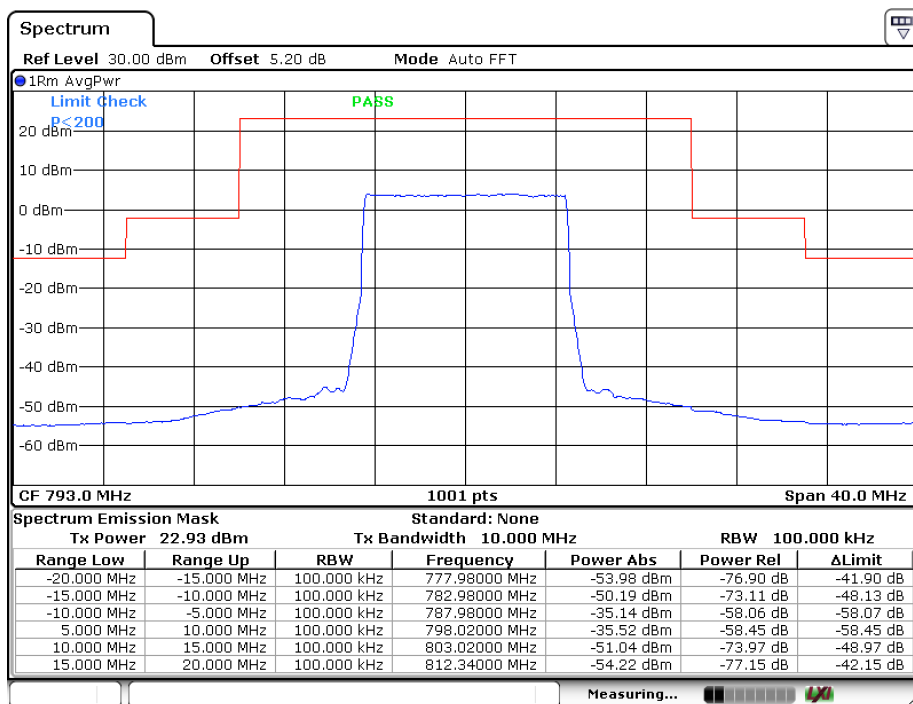
BAND 14_10MHz_QPSK_23330_1RB#49



Date: 30.SEP.2020 09:01:00



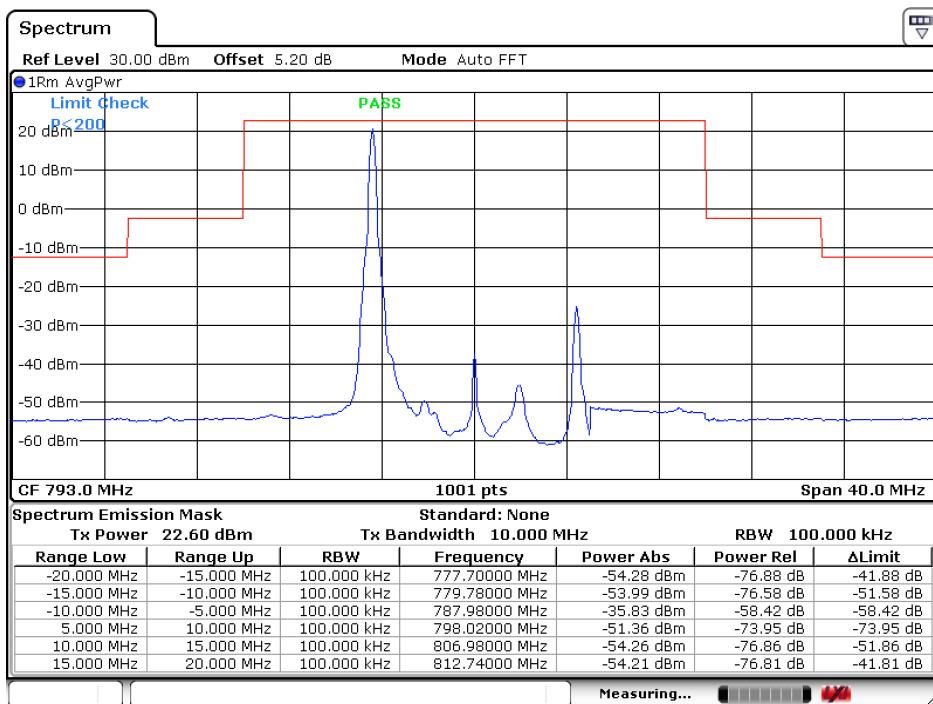
BAND 14_10MHz_QPSK_23330_50RB#0



Date: 30.SEP.2020 09:00:20



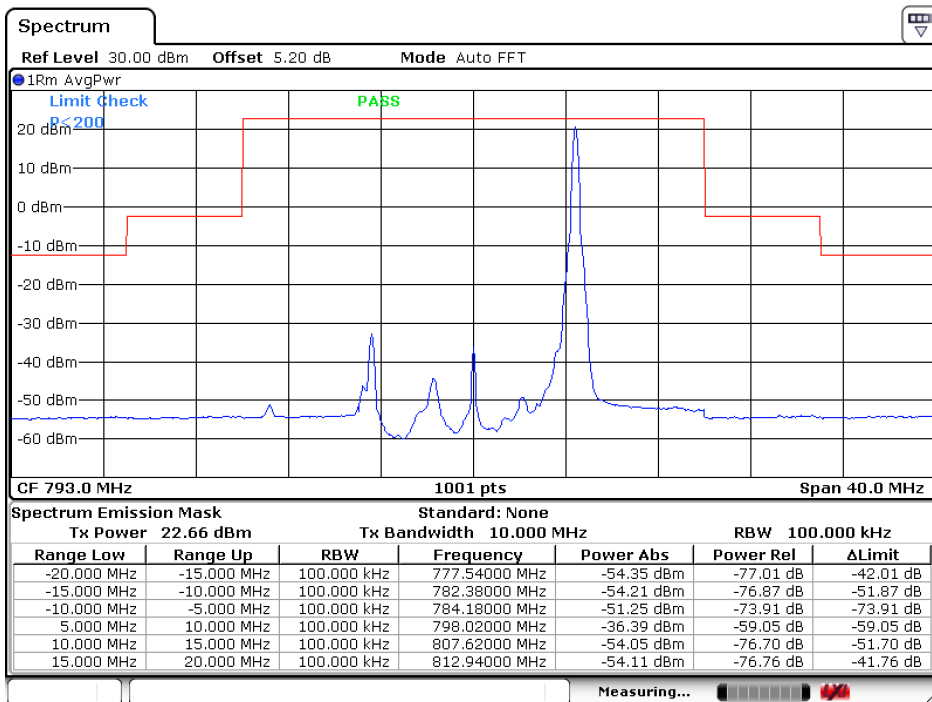
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Date: 20.OCT.2020 20:31:57



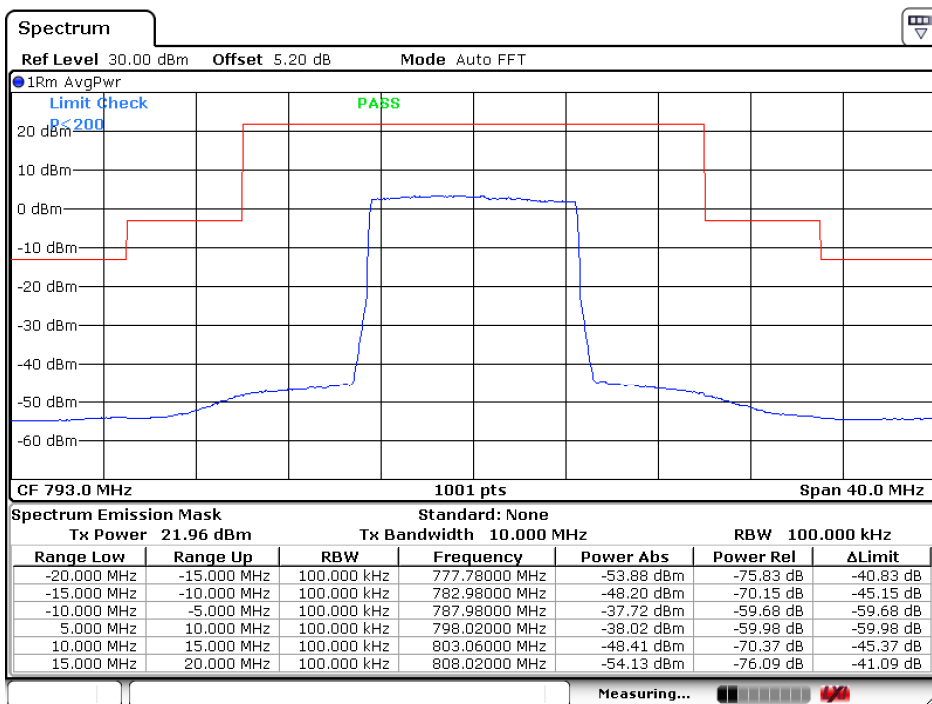
BAND 14_10MHz_16QAM_23330_1RB#49



Date: 20.OCT.2020 20:32:15



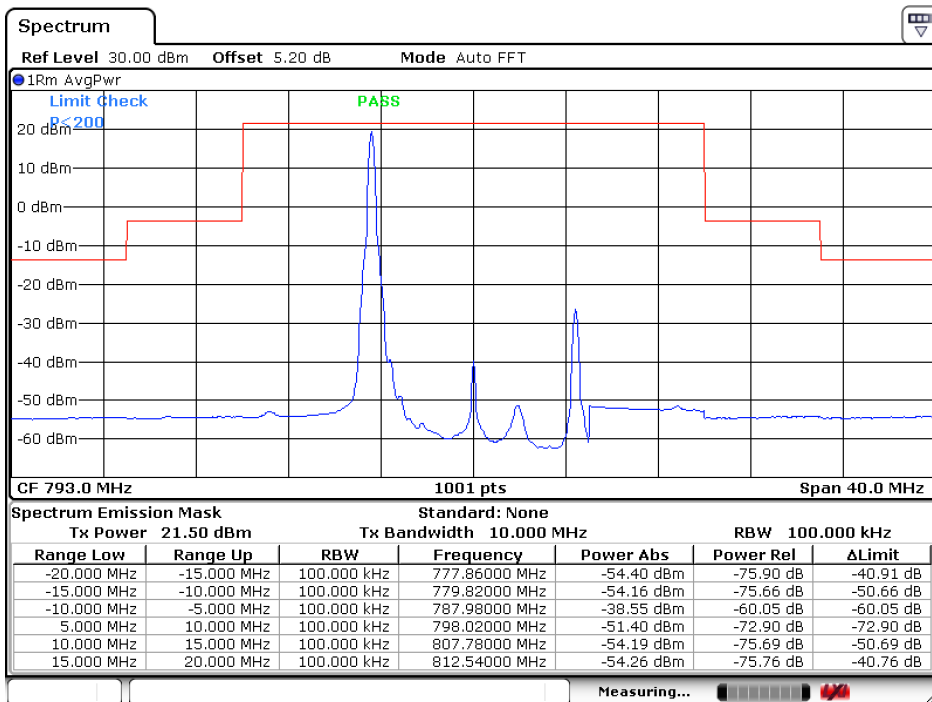
BAND 14_10MHz_16QAM_23330_50RB#0



Date: 20.OCT.2020 20:31:03



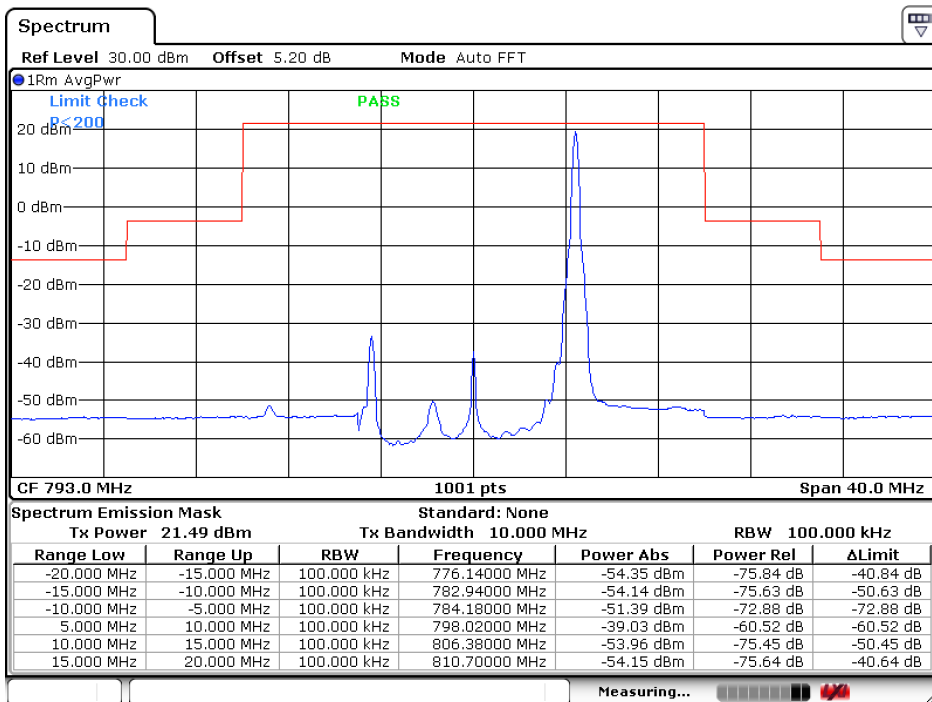
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Date: 20.OCT.2020 20:31:41



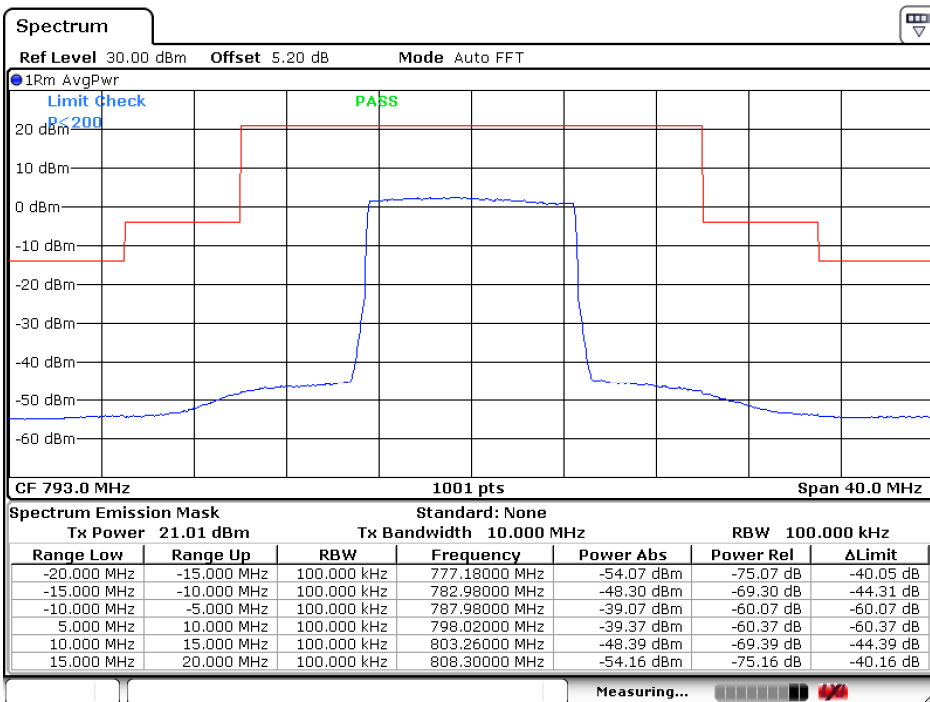
BAND 14_10MHz_64QAM_23330_1RB#49



Date: 20.OCT.2020 20:32:33



BAND 14_10MHz_64QAM_23330_50RB#0

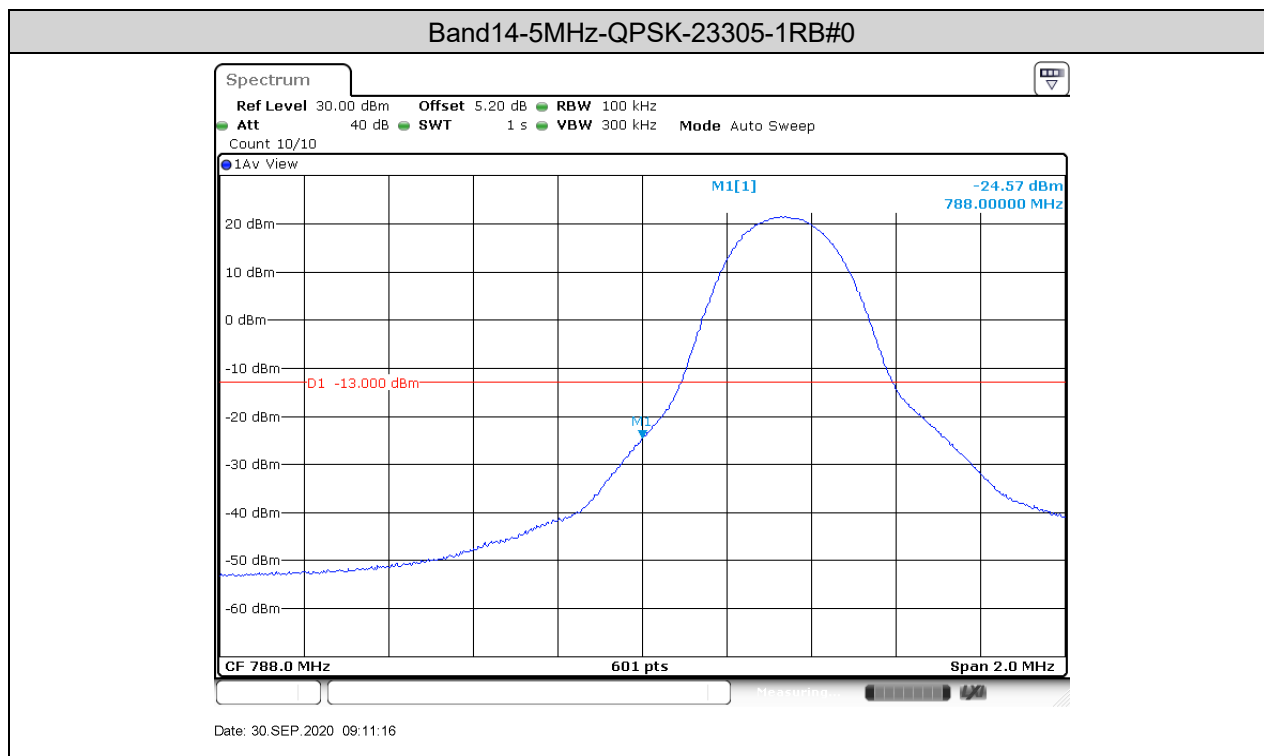


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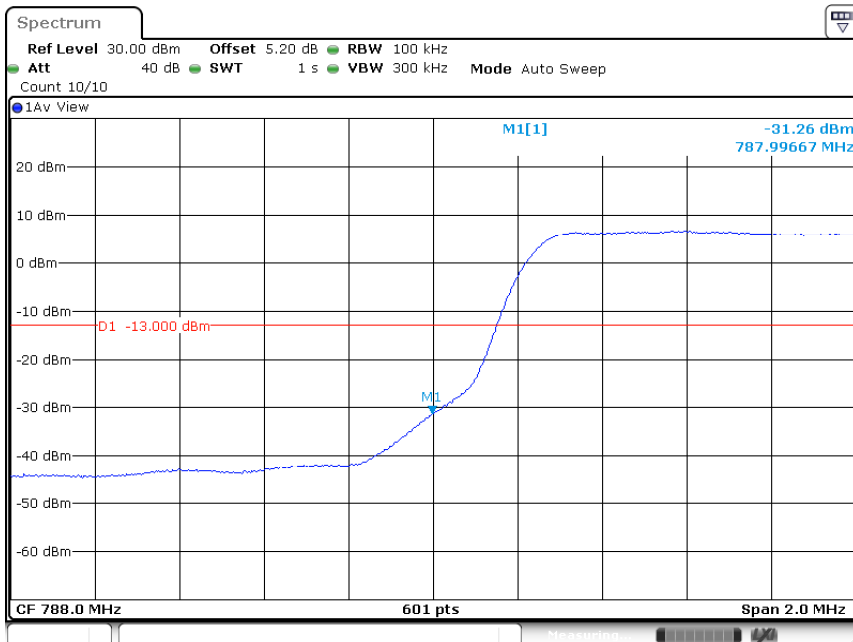
6. Band Edge Compliance

6.1. Test Plots



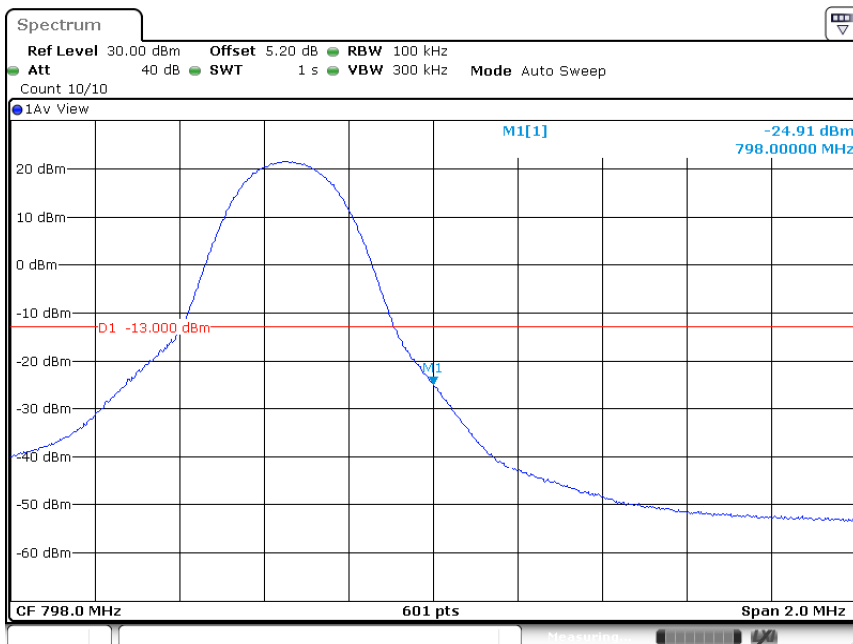
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Band14-5MHz-QPSK-23305-25RB#0



Date: 30.SEP.2020 09:12:03

Band14-5MHz-QPSK-23355-1RB#24



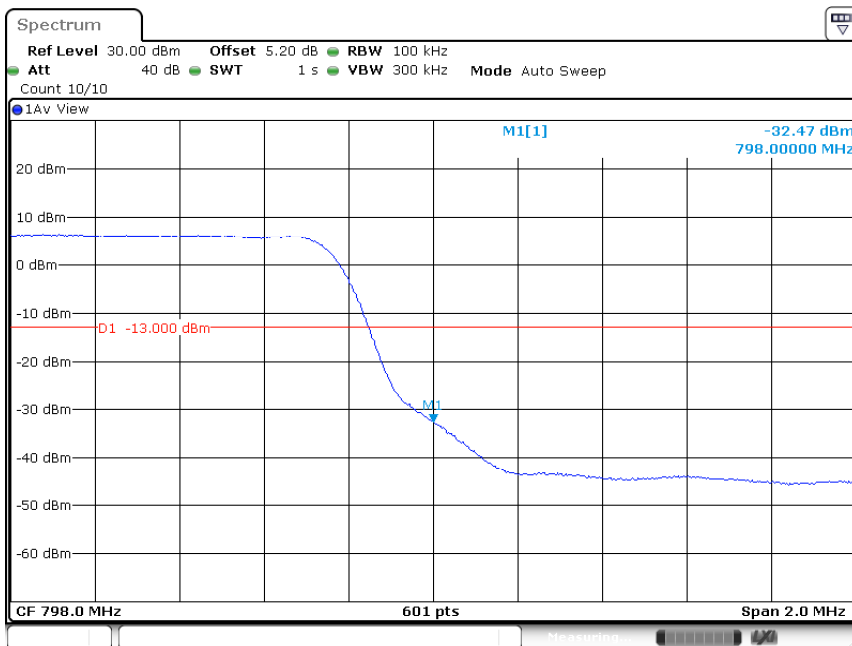
Date: 30.SEP.2020 09:12:58



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Band14-5MHz-QPSK-23355-25RB#0



Date: 30.SEP.2020 09:13:45

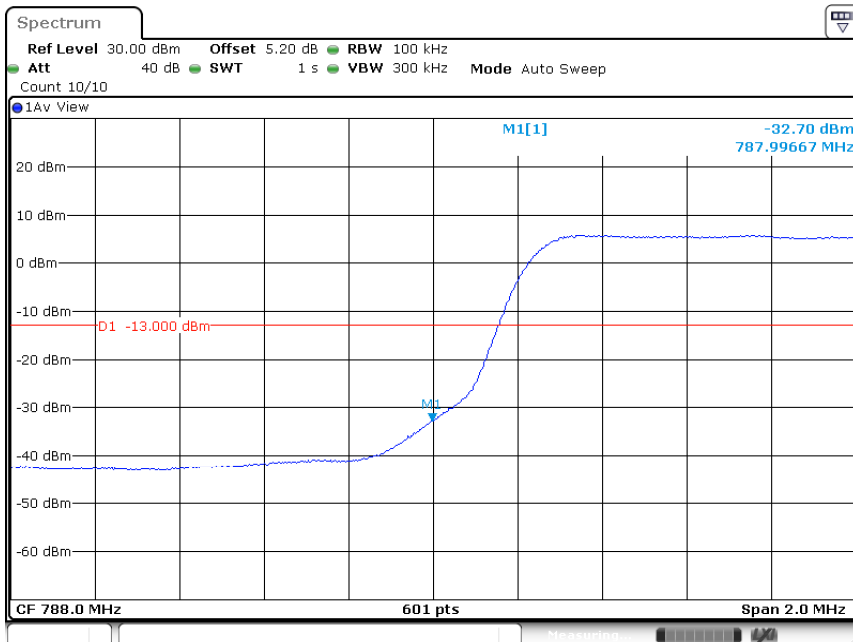
Band14-5MHz-16QAM-23305-1RB#0



Date: 30.SEP.2020 09:11:39

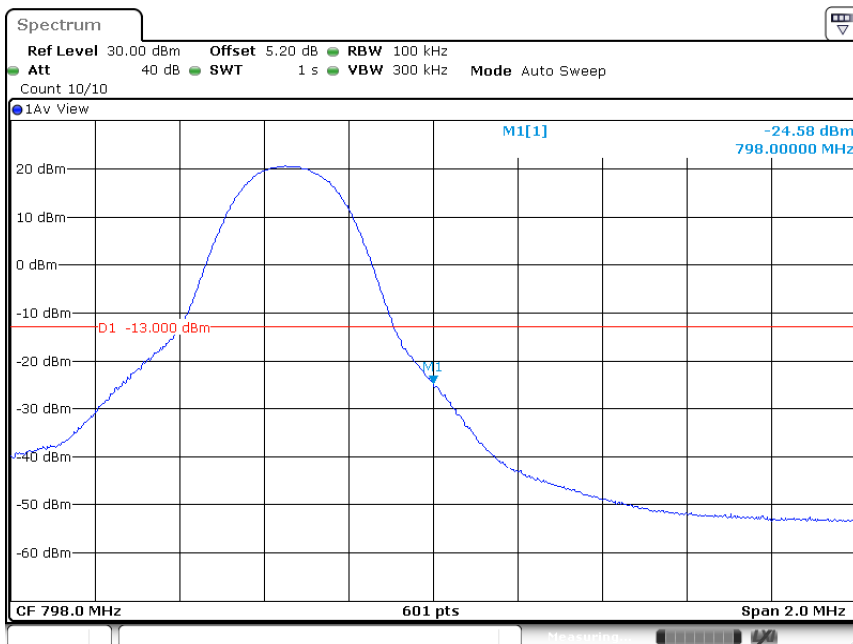


Band14-5MHz-16QAM-23305-25RB#0



Date: 30.SEP.2020 09:12:27

Band14-5MHz-16QAM-23355-1RB#24

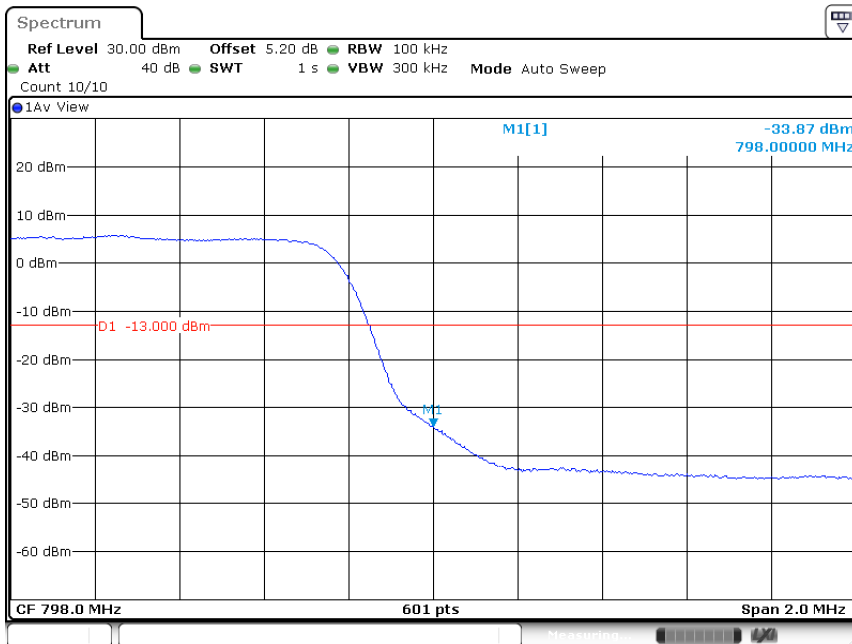


Date: 30.SEP.2020 09:13:21



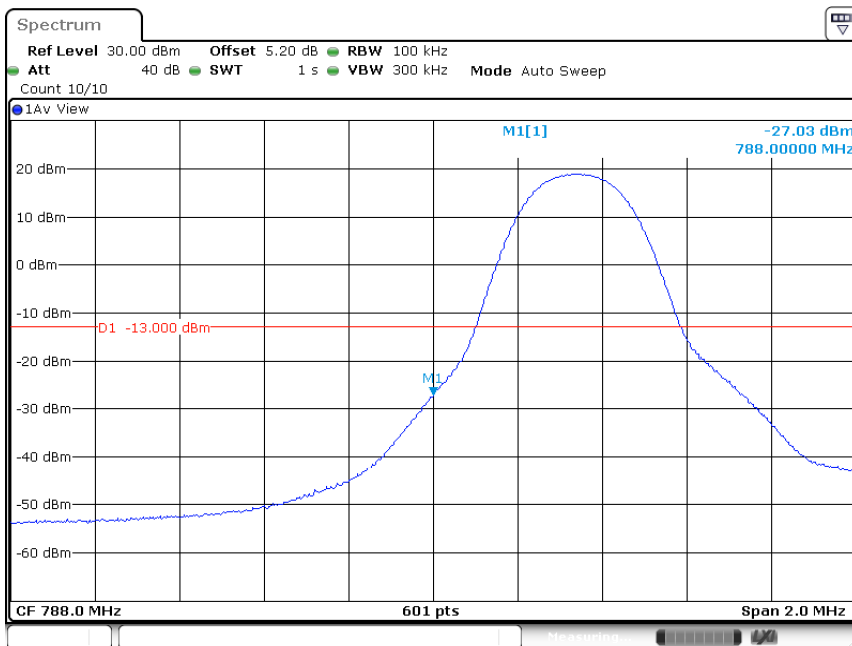
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Band14-5MHz-16QAM-23355-25RB#0



Date: 30.SEP.2020 09:14:08

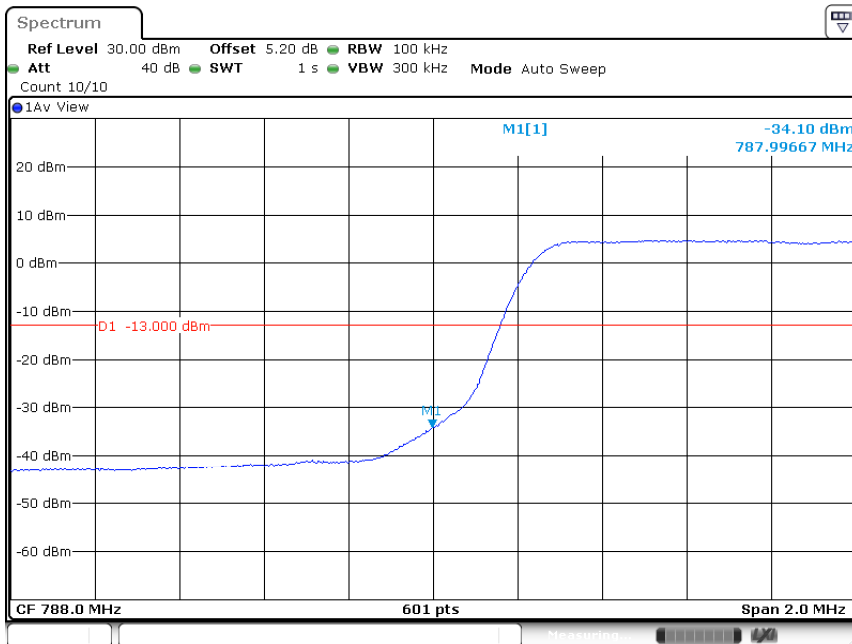
Band14-5MHz-64QAM-23305-1RB#0



Date: 30.SEP.2020 09:24:49

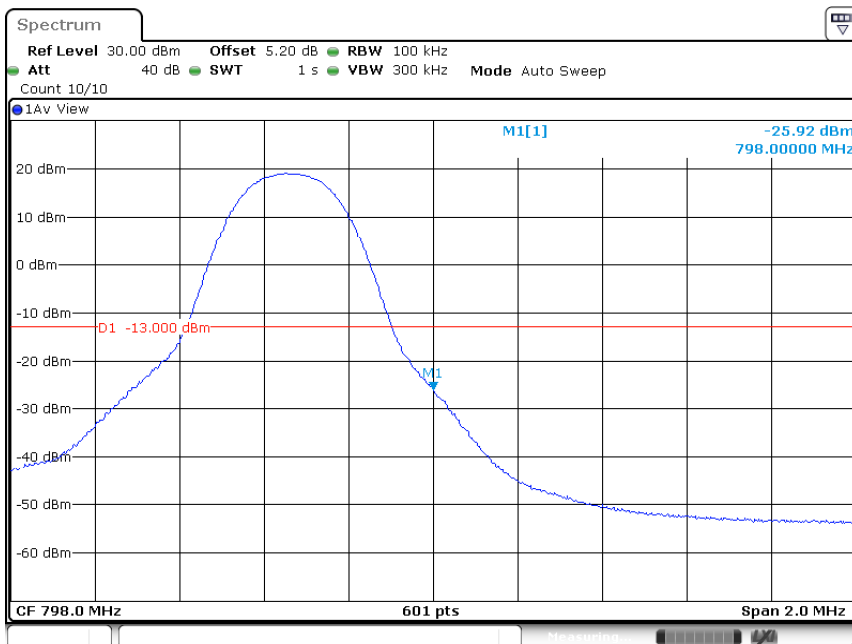


Band14-5MHz-64QAM-23305-25RB#0



Date: 30.SEP.2020 09:25:12

Band14-5MHz-64QAM-23355-1RB#24



Date: 30.SEP.2020 09:25:44

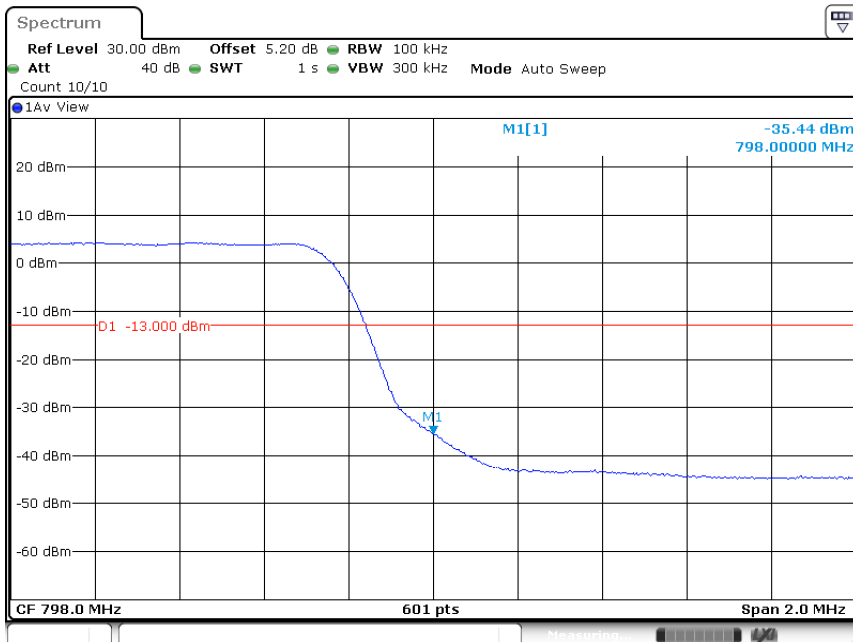


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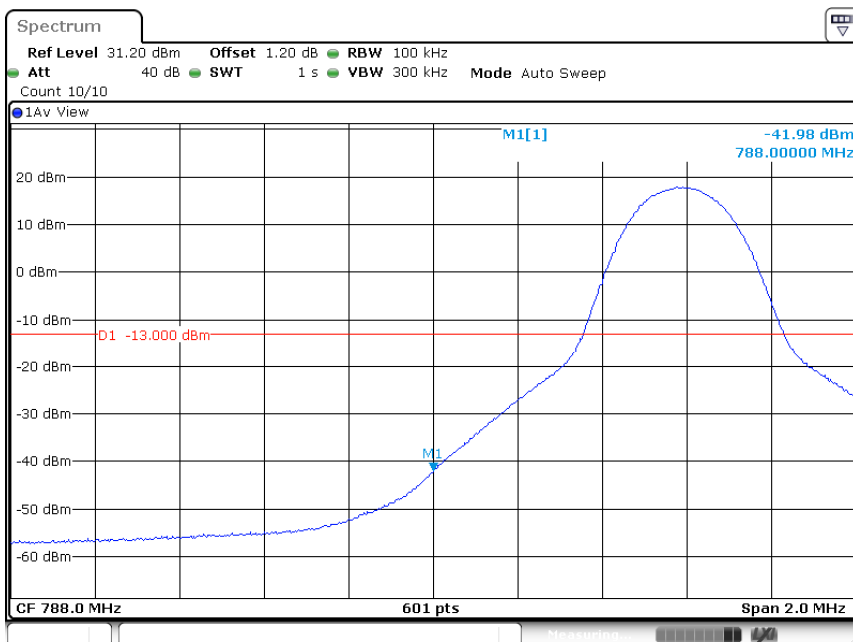
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Band14-5MHz-64QAM-23355-25RB#0



Date: 30.SEP.2020 09:26:07

Band14-10MHz-QPSK-23330_Left-1RB#0

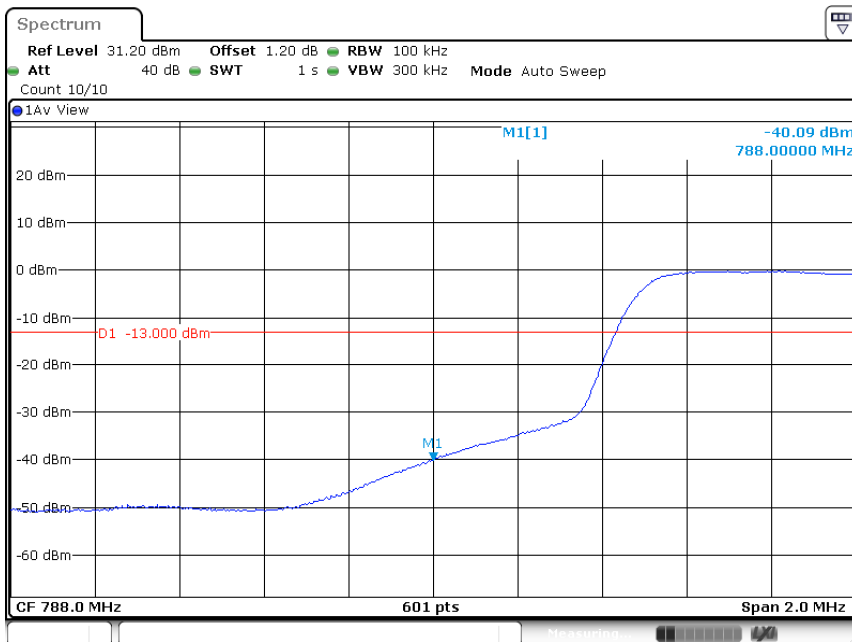


Date: 12.OCT.2020 09:55:59



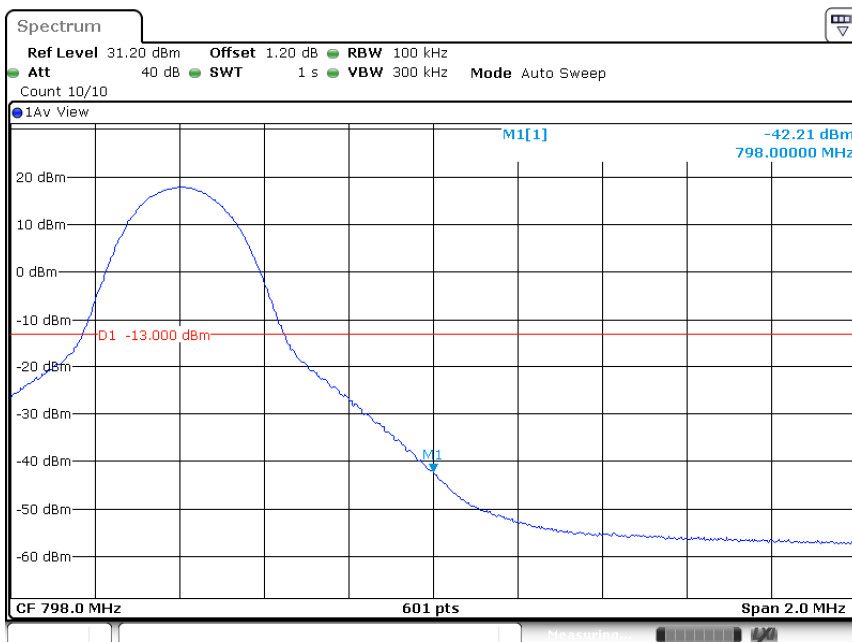
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Band14-10MHz-QPSK-23330_Left-50RB#0



Date: 12.OCT.2020 09:56:44

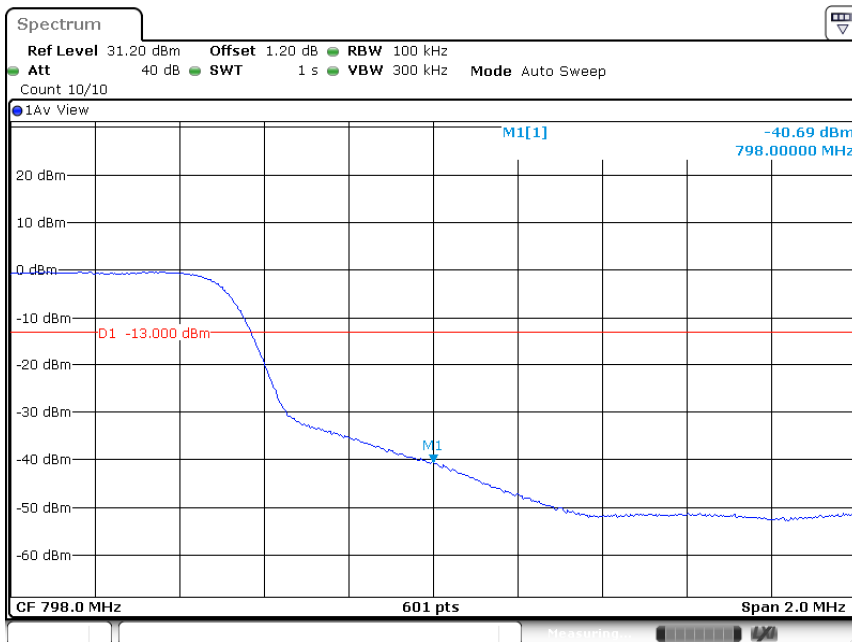
Band14-10MHz-QPSK-23330_Right-1RB#49



Date: 12.OCT.2020 09:57:32

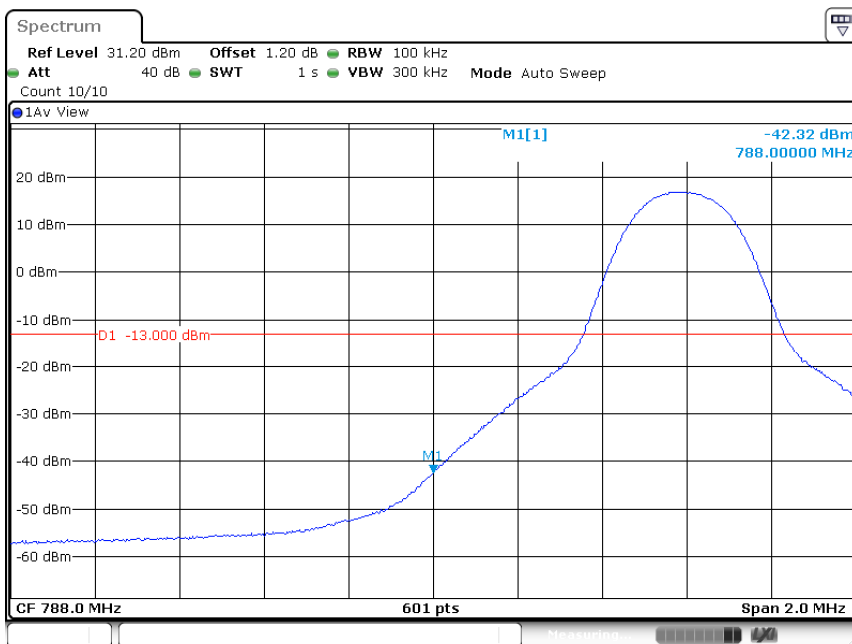


Band14-10MHz-QPSK-23330_Right-50RB#0



Date: 12.OCT.2020 09:58:17

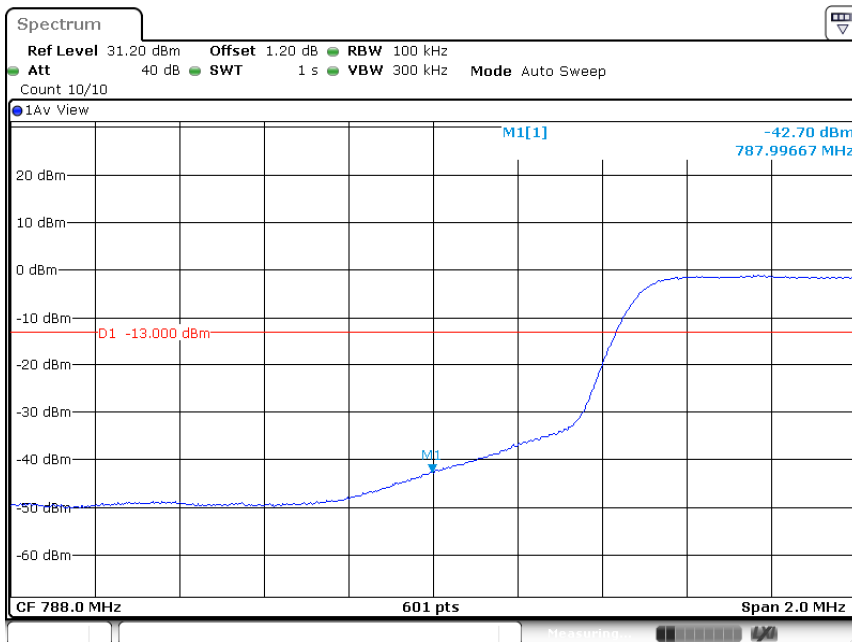
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Date: 12.OCT.2020 09:08:55

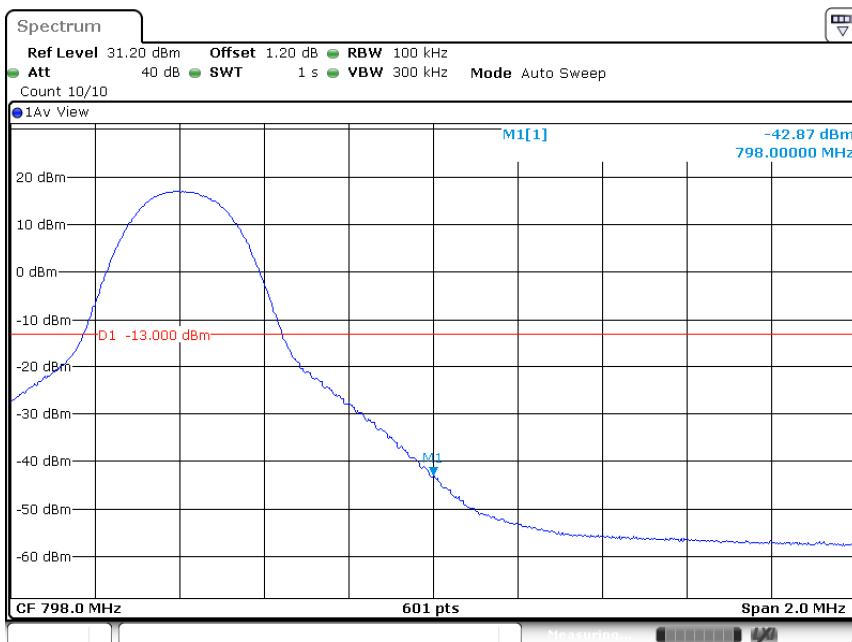


Band14-10MHz-16QAM-23330_Left-50RB#0



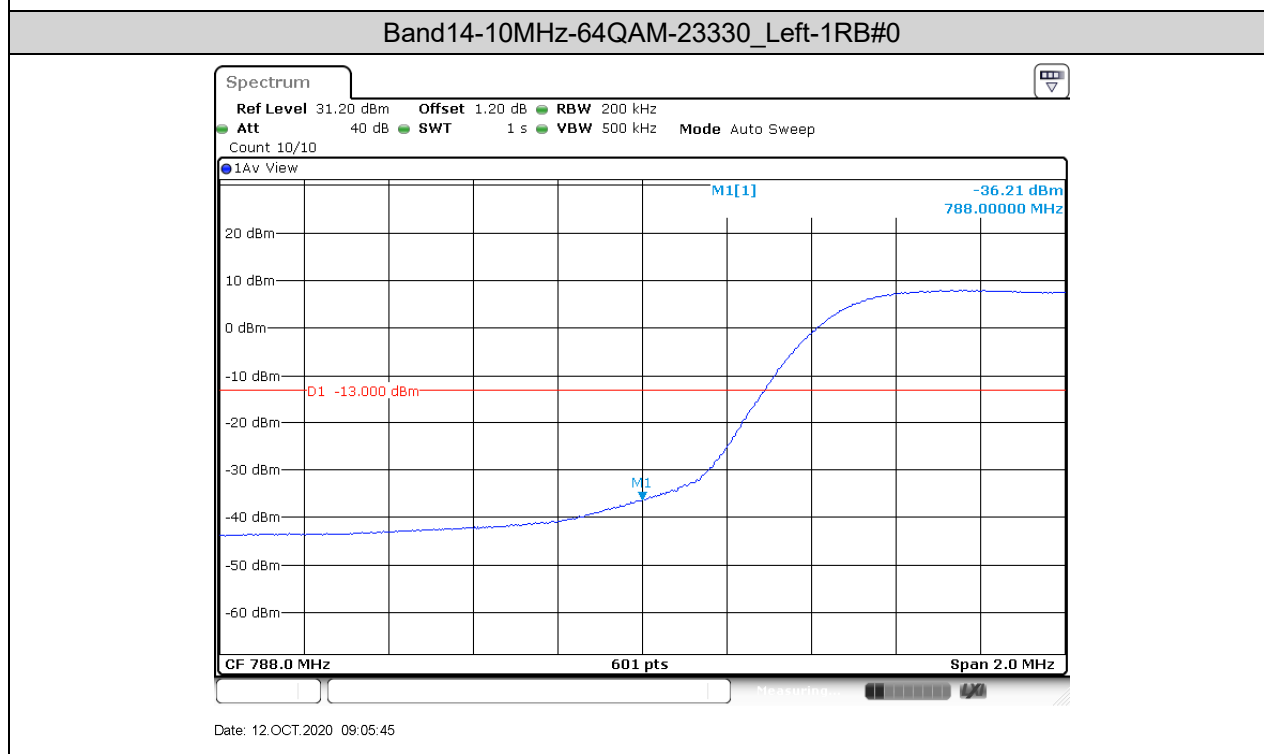
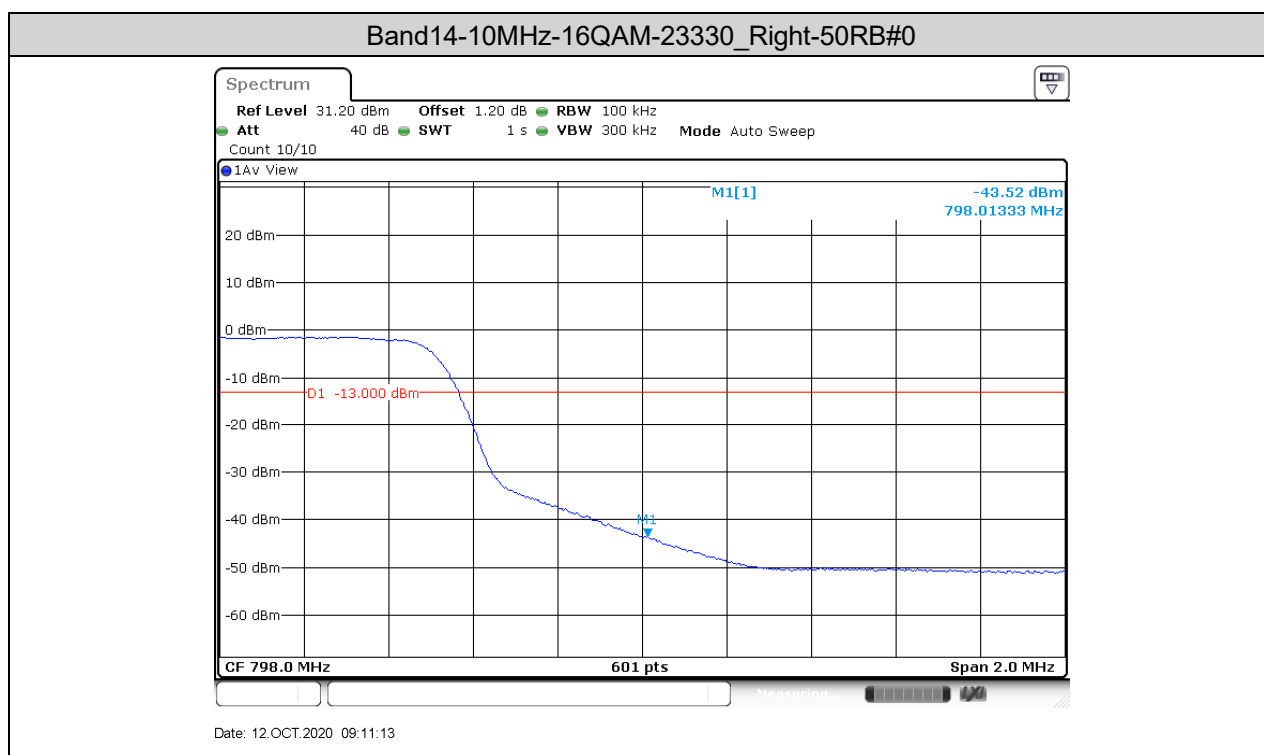
Date: 12.OCT.2020 09:09:39

Band14-10MHz-16QAM-23330_Right-1RB#49



Date: 12.OCT.2020 09:10:28





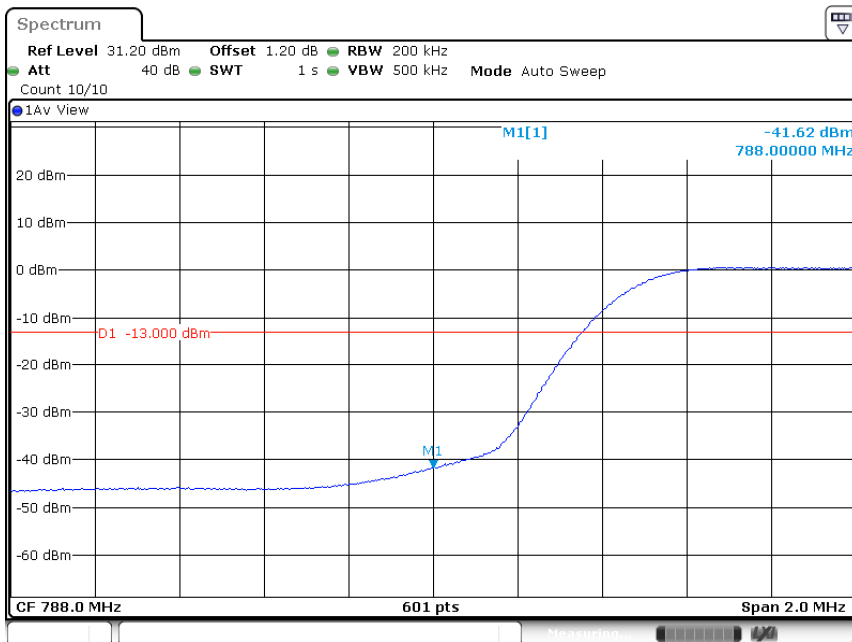
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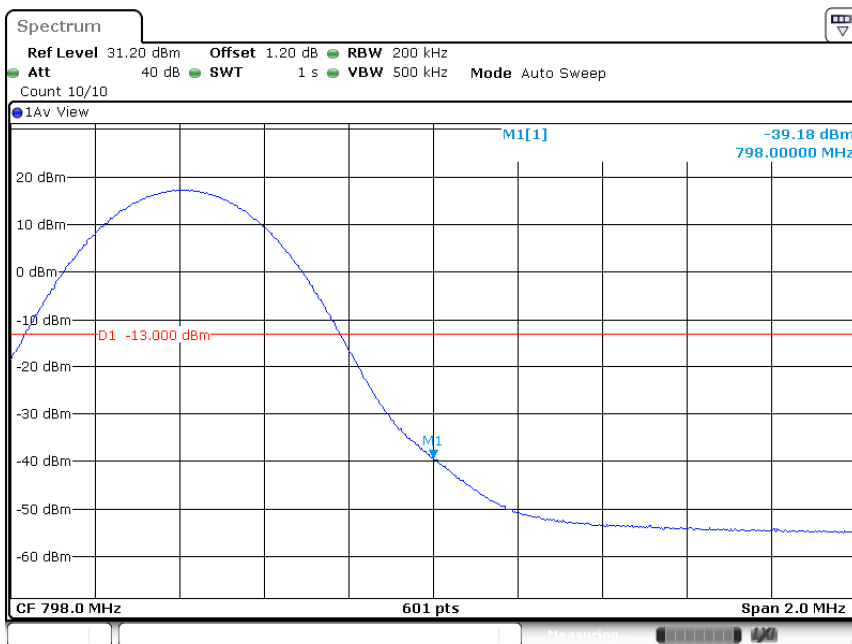
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Band14-10MHz-64QAM-23330_Left-50RB#0



Date: 12.OCT.2020 09:06:07

Band14-10MHz-64QAM-23330_Right-1RB#49

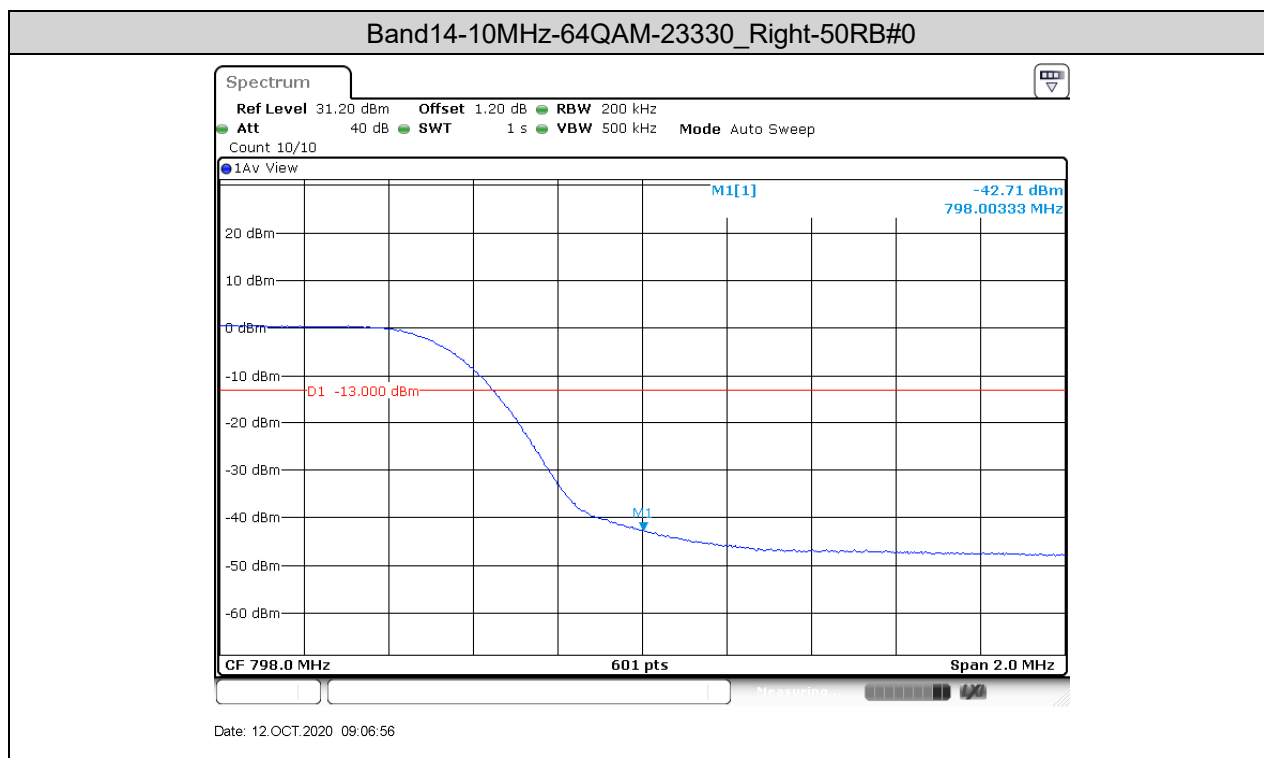


Date: 12.OCT.2020 09:06:34



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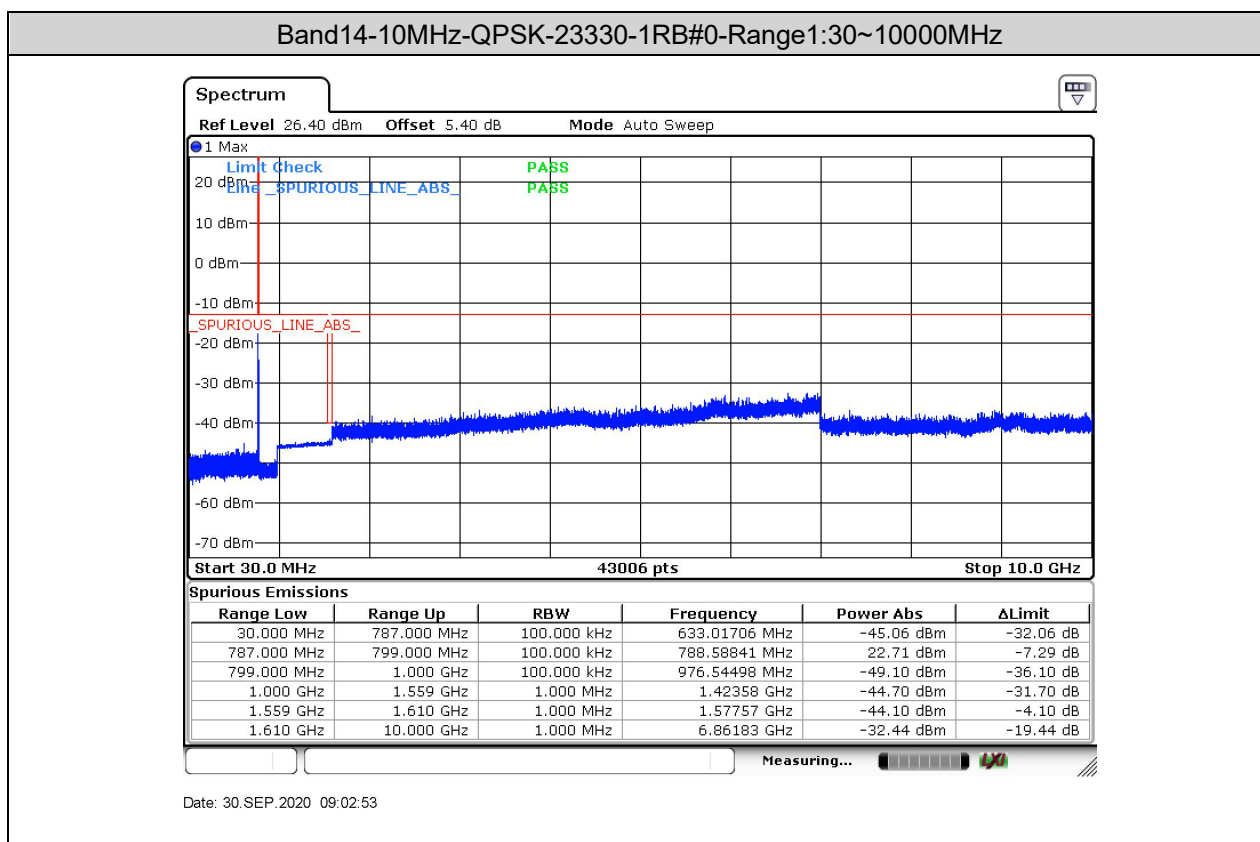
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7. Spurious Emission at Antenna Terminal

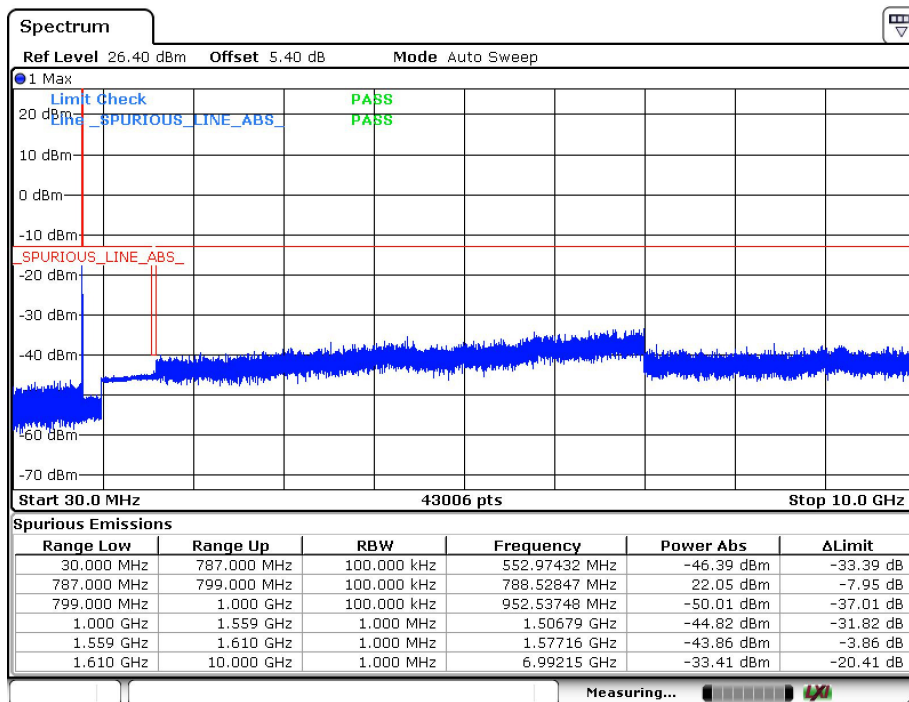
Remark1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (\text{Span} / RBW)$ " with k between 4 and 5, which results in an acceptable level error of less than 0.5 dB.

Remark2: only the worst case data displayed in this report.

7.1. Test Plots



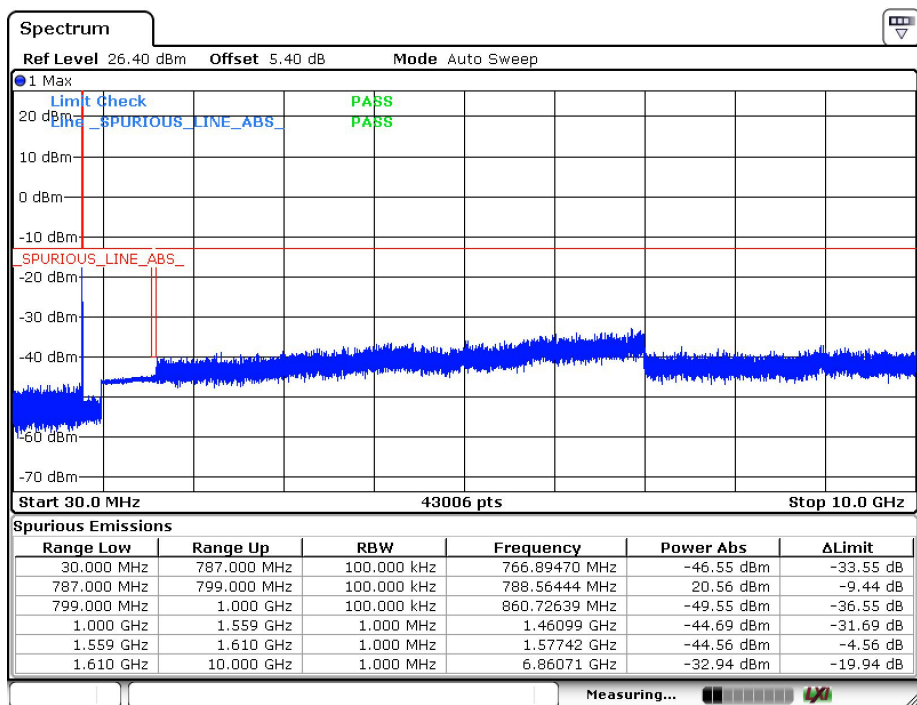
Band14-10MHz-16QAM-23330-1RB#0-Range1:30~10000MHz



Date: 30.SEP.2020 09:03:10

Band14-10MHz-64QAM-23330-1RB#0-Range1:30~10000MHz





Date: 30.SEP.2020 09:03:25





8. Field Strength of Spurious Radiation

8.1. Test Mode =LTE/TM1 10MHz

8.1.1. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Margin (dB)	Polarization
69.713333	-72.97	-13.00	59.97	Vertical
106.486667	-74.62	-13.00	61.62	Vertical
530.391667	-78.98	-13.00	65.98	Vertical
1577.000000	-63.30	-40.00	23.30	Vertical
3942.825000	-52.94	-13.00	39.94	Vertical
4731.600000	-61.29	-13.00	48.29	Vertical
45.913333	-66.56	-13.00	53.56	Horizontal
101.726667	-71.90	-13.00	58.90	Horizontal
471.770833	-75.86	-13.00	62.86	Horizontal
1577.000000	-63.64	-40.00	23.64	Horizontal
3942.825000	-50.21	-13.00	37.21	Horizontal
4731.600000	-58.60	-13.00	45.60	Horizontal

Remark:

- 1 According to 971168 D01 Power Meas License Digital Systems, The amplitudes of unwanted emissions that are attenuated more than 20 dB below the applicable limit are not required to be reported.
- 2 The disturbance below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the worst case data displayed in this report.
- 3 all modulation and all Bandwidth had been tested, but only the worst case data displayed in this report.





9. Frequency Stability

9.1. Frequency Vs Voltage

Voltage										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band14	10MHz	QPSK	23330	50RB#0	VL	NT	3.30	0.004161	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	VN	NT	-0.20	-0.000252	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	VH	NT	0.40	0.000504	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	VL	NT	-1.30	-0.001639	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	VN	NT	-2.10	-0.002648	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	VH	NT	0.60	0.000757	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	VL	NT	2.00	0.002522	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	VN	NT	-1.60	-0.002018	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	VH	NT	-1.40	-0.001765	±2.5	PASS

9.2. Frequency Vs Temperature

Temperature										
Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band14	10MHz	QPSK	23330	50RB#0	NV	-30	-2.10	-0.002648	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	-20	0.50	0.000631	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	-10	3.60	0.004540	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	0	1.10	0.001387	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	10	-1.60	-0.002018	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	20	2.10	0.002648	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	30	0.10	0.000126	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	40	-2.70	-0.003405	±2.5	PASS
Band14	10MHz	QPSK	23330	50RB#0	NV	50	1.00	0.001261	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	-30	1.80	0.002270	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	-20	2.60	0.003279	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	-10	3.50	0.004414	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	0	-1.80	-0.002270	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	10	-0.90	-0.001135	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	20	-0.50	-0.000631	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	30	-1.10	-0.001387	±2.5	PASS



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Band14	10MHz	16QAM	23330	50RB#0	NV	40	-0.80	-0.001009	±2.5	PASS
Band14	10MHz	16QAM	23330	50RB#0	NV	50	-0.20	-0.000252	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	NV	-30	-1.20	-0.001513	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	NV	-20	-0.90	-0.001135	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	NV	-10	-0.90	-0.001135	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	NV	0	-1.40	-0.001765	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	NV	10	-1.30	-0.001639	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	NV	20	-1.00	-0.001261	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	NV	30	-0.90	-0.001135	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	NV	40	-0.60	-0.000757	±2.5	PASS
Band14	10MHz	64QAM	23330	50RB#0	NV	50	-0.10	-0.000126	±2.5	PASS

The End

