

Appendix B

E-UTRA Band 5

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1. Main Test Instruments

RE in Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal. Due date
				(yyyy-mm-dd)	(yyyy-mm-dd)
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018/3/13	2021/3/12
Spectrum Analyzer (20Hz-43GHz)	Rohde & Schwarz	FSU43	SEM004-08	2019/3/2	2020/3/1
BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-01	2017/6/27	2020/6/26
Horn Antenna (800MHz-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2018/4/13	2021/4/12
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2017/10/17	2020/10/16
Amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2019/7/14	2020/7/14
Low Noise Amplifier (100MHz-18GHz)	Black Diamond Series	BDLNA-0118-352810	SEM005-05	2019/7/14	2020/7/14
Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	EMC2063	2019/9/20	2020/9/19
Pre-amplifier (26-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2019/3/2	2020/3/1
Band filter	N/A	N/A	N/A	N/A	N/A
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2019/6/12	2020/6/11
Wideband Radio Communication Tester	Anristu	MT8821C	6201462742	2019/4/3	2020/4/3
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	W005-02	2019/1/13	2020/1/12
RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal. Due date
				(yyyy-mm-dd)	(yyyy-mm-dd)
Dual Output Mobile Communication DC Source	Agilent Technologies Inc	66311B	W009-09	2018/11/2	2019/11/1
Signal Analyzer	Rohde & Schwarz	FSV	W005-02	2019/3/2	2020/3/1
Coaxial Cable	SGS	N/A	SEM031-01	2019/6/12	2020/6/11
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2018/11/2	2019/11/1
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	HTC-1	W006-17	2018/11/2	2019/11/1
Temperature Chamber	GIANT FORCE	ICT-150-40-CP-AR	W027-03	2018/11/2	2019/11/1
Wideband Radio Communication Tester	Anristu	MT8821C	6201462742	2019/3/2	2020/3/1

2. Measurement Uncertainty

For a 95% confidence level ($k = 2$), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Test Item	Extended Uncertainty	Data
Transmit Output Power Data	Power [dBm]	$U = \pm 0.37$ dB
Bandwidth	Magnitude [%]	$U = \pm 0.2\%$
Band Edge Compliance	Disturbance Power [dBm]	$U = \pm 2.0$ dB
Spurious Emissions, Conducted	Disturbance Power [dBm]	$U = \pm 2.0$ dB
Frequency Stability	Frequency Accuracy [ppm]	$U = \pm 0.24$ ppm

3 Effective (Isotropic) Radiated Power

3.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Conducted Power(dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band5	1.4MHz	QPSK	20407	1RB#0	23.51	19.61	38.45	PASS
Band5	1.4MHz	QPSK	20407	1RB#2	23.66	19.76	38.45	PASS
Band5	1.4MHz	QPSK	20407	1RB#5	23.59	19.69	38.45	PASS
Band5	1.4MHz	QPSK	20407	3RB#0	23.46	19.56	38.45	PASS
Band5	1.4MHz	QPSK	20407	3RB#1	23.54	19.64	38.45	PASS
Band5	1.4MHz	QPSK	20407	3RB#3	23.51	19.61	38.45	PASS
Band5	1.4MHz	QPSK	20407	6RB#0	22.71	18.81	38.45	PASS
Band5	1.4MHz	QPSK	20525	1RB#0	23.52	19.62	38.45	PASS
Band5	1.4MHz	QPSK	20525	1RB#5	23.76	19.86	38.45	PASS
Band5	1.4MHz	QPSK	20525	1RB#2	23.49	19.59	38.45	PASS
Band5	1.4MHz	QPSK	20525	3RB#0	23.61	19.71	38.45	PASS
Band5	1.4MHz	QPSK	20525	3RB#1	23.73	19.83	38.45	PASS
Band5	1.4MHz	QPSK	20525	3RB#3	23.53	19.63	38.45	PASS
Band5	1.4MHz	QPSK	20525	6RB#0	22.60	18.70	38.45	PASS
Band5	1.4MHz	QPSK	20643	1RB#5	23.59	19.69	38.45	PASS
Band5	1.4MHz	QPSK	20643	1RB#0	23.70	19.80	38.45	PASS
Band5	1.4MHz	QPSK	20643	1RB#2	23.58	19.68	38.45	PASS
Band5	1.4MHz	QPSK	20643	3RB#0	23.42	19.52	38.45	PASS
Band5	1.4MHz	QPSK	20643	3RB#1	23.58	19.68	38.45	PASS
Band5	1.4MHz	QPSK	20643	3RB#3	23.52	19.62	38.45	PASS
Band5	1.4MHz	QPSK	20643	6RB#0	22.63	18.73	38.45	PASS
Band5	1.4MHz	16QAM	20407	1RB#0	22.68	18.78	38.45	PASS
Band5	1.4MHz	16QAM	20407	1RB#2	22.86	18.96	38.45	PASS
Band5	1.4MHz	16QAM	20407	1RB#5	22.80	18.90	38.45	PASS
Band5	1.4MHz	16QAM	20407	3RB#1	22.75	18.85	38.45	PASS
Band5	1.4MHz	16QAM	20407	3RB#0	23.12	19.22	38.45	PASS
Band5	1.4MHz	16QAM	20407	3RB#3	22.92	19.02	38.45	PASS
Band5	1.4MHz	16QAM	20407	6RB#0	21.80	17.90	38.45	PASS
Band5	1.4MHz	16QAM	20525	1RB#0	22.99	19.09	38.45	PASS
Band5	1.4MHz	16QAM	20525	1RB#2	23.14	19.24	38.45	PASS
Band5	1.4MHz	16QAM	20525	1RB#5	22.98	19.08	38.45	PASS
Band5	1.4MHz	16QAM	20525	3RB#3	23.21	19.31	38.45	PASS
Band5	1.4MHz	16QAM	20525	3RB#0	23.17	19.27	38.45	PASS
Band5	1.4MHz	16QAM	20525	3RB#1	23.15	19.25	38.45	PASS
Band5	1.4MHz	16QAM	20525	6RB#0	21.73	17.83	38.45	PASS
Band5	1.4MHz	16QAM	20643	1RB#2	22.52	18.62	38.45	PASS
Band5	1.4MHz	16QAM	20643	1RB#0	22.63	18.73	38.45	PASS
Band5	1.4MHz	16QAM	20643	1RB#5	22.51	18.61	38.45	PASS
Band5	1.4MHz	16QAM	20643	3RB#0	22.76	18.86	38.45	PASS
Band5	1.4MHz	16QAM	20643	3RB#1	22.92	19.02	38.45	PASS
Band5	1.4MHz	16QAM	20643	3RB#3	22.71	18.81	38.45	PASS
Band5	1.4MHz	16QAM	20643	6RB#0	21.73	17.83	38.45	PASS
Band5	3MHz	QPSK	20415	1RB#8	23.61	19.71	38.45	PASS
Band5	3MHz	QPSK	20415	1RB#14	23.80	19.90	38.45	PASS
Band5	3MHz	QPSK	20415	1RB#0	23.61	19.71	38.45	PASS

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Band5	3MHz	QPSK	20415	8RB#0	22.84	18.94	38.45	PASS
Band5	3MHz	QPSK	20415	8RB#4	22.70	18.80	38.45	PASS
Band5	3MHz	QPSK	20415	8RB#7	22.64	18.74	38.45	PASS
Band5	3MHz	QPSK	20415	15RB#0	22.77	18.87	38.45	PASS
Band5	3MHz	QPSK	20525	1RB#0	23.64	19.74	38.45	PASS
Band5	3MHz	QPSK	20525	1RB#14	23.78	19.88	38.45	PASS
Band5	3MHz	QPSK	20525	1RB#8	23.55	19.65	38.45	PASS
Band5	3MHz	QPSK	20525	8RB#7	22.84	18.94	38.45	PASS
Band5	3MHz	QPSK	20525	8RB#0	22.65	18.75	38.45	PASS
Band5	3MHz	QPSK	20525	8RB#4	22.81	18.91	38.45	PASS
Band5	3MHz	QPSK	20525	15RB#0	22.70	18.80	38.45	PASS
Band5	3MHz	QPSK	20635	1RB#8	23.65	19.75	38.45	PASS
Band5	3MHz	QPSK	20635	1RB#0	23.69	19.79	38.45	PASS
Band5	3MHz	QPSK	20635	1RB#14	23.61	19.71	38.45	PASS
Band5	3MHz	QPSK	20635	8RB#0	22.84	18.94	38.45	PASS
Band5	3MHz	QPSK	20635	8RB#7	22.69	18.79	38.45	PASS
Band5	3MHz	QPSK	20635	8RB#4	22.59	18.69	38.45	PASS
Band5	3MHz	QPSK	20635	15RB#0	22.66	18.76	38.45	PASS
Band5	3MHz	16QAM	20415	1RB#14	22.77	18.87	38.45	PASS
Band5	3MHz	16QAM	20415	1RB#0	22.96	19.06	38.45	PASS
Band5	3MHz	16QAM	20415	1RB#8	22.75	18.85	38.45	PASS
Band5	3MHz	16QAM	20415	8RB#7	21.93	18.03	38.45	PASS
Band5	3MHz	16QAM	20415	8RB#4	21.70	17.80	38.45	PASS
Band5	3MHz	16QAM	20415	8RB#0	21.76	17.86	38.45	PASS
Band5	3MHz	16QAM	20415	15RB#0	21.81	17.91	38.45	PASS
Band5	3MHz	16QAM	20525	1RB#14	23.11	19.21	38.45	PASS
Band5	3MHz	16QAM	20525	1RB#0	23.19	19.29	38.45	PASS
Band5	3MHz	16QAM	20525	1RB#8	23.05	19.15	38.45	PASS
Band5	3MHz	16QAM	20525	8RB#7	21.82	17.92	38.45	PASS
Band5	3MHz	16QAM	20525	8RB#0	21.84	17.94	38.45	PASS
Band5	3MHz	16QAM	20525	8RB#4	21.79	17.89	38.45	PASS
Band5	3MHz	16QAM	20525	15RB#0	21.71	17.81	38.45	PASS
Band5	3MHz	16QAM	20635	1RB#8	22.62	18.72	38.45	PASS
Band5	3MHz	16QAM	20635	1RB#0	22.74	18.84	38.45	PASS
Band5	3MHz	16QAM	20635	1RB#14	22.51	18.61	38.45	PASS
Band5	3MHz	16QAM	20635	8RB#0	21.86	17.96	38.45	PASS
Band5	3MHz	16QAM	20635	8RB#4	21.72	17.82	38.45	PASS
Band5	3MHz	16QAM	20635	8RB#7	21.65	17.75	38.45	PASS
Band5	3MHz	16QAM	20635	15RB#0	21.79	17.89	38.45	PASS
Band5	5MHz	QPSK	20425	1RB#0	23.46	19.56	38.45	PASS
Band5	5MHz	QPSK	20425	1RB#12	23.62	19.72	38.45	PASS
Band5	5MHz	QPSK	20425	1RB#24	23.53	19.63	38.45	PASS
Band5	5MHz	QPSK	20425	12RB#0	22.83	18.93	38.45	PASS
Band5	5MHz	QPSK	20425	12RB#6	22.59	18.69	38.45	PASS
Band5	5MHz	QPSK	20425	12RB#13	22.63	18.73	38.45	PASS
Band5	5MHz	QPSK	20425	25RB#0	22.80	18.90	38.45	PASS
Band5	5MHz	QPSK	20525	1RB#0	23.63	19.73	38.45	PASS
Band5	5MHz	QPSK	20525	1RB#24	23.81	19.91	38.45	PASS
Band5	5MHz	QPSK	20525	1RB#12	23.53	19.63	38.45	PASS
Band5	5MHz	QPSK	20525	12RB#0	22.92	19.02	38.45	PASS
Band5	5MHz	QPSK	20525	12RB#6	22.62	18.72	38.45	PASS
Band5	5MHz	QPSK	20525	12RB#13	22.70	18.80	38.45	PASS
Band5	5MHz	QPSK	20525	25RB#0	22.73	18.83	38.45	PASS

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Band5	5MHz	QPSK	20625	1RB#24	23.44	19.54	38.45	PASS
Band5	5MHz	QPSK	20625	1RB#0	23.58	19.68	38.45	PASS
Band5	5MHz	QPSK	20625	1RB#12	23.58	19.68	38.45	PASS
Band5	5MHz	QPSK	20625	12RB#0	22.71	18.81	38.45	PASS
Band5	5MHz	QPSK	20625	12RB#6	22.66	18.76	38.45	PASS
Band5	5MHz	QPSK	20625	12RB#13	22.53	18.63	38.45	PASS
Band5	5MHz	QPSK	20625	25RB#0	22.73	18.83	38.45	PASS
Band5	5MHz	16QAM	20425	1RB#0	22.81	18.91	38.45	PASS
Band5	5MHz	16QAM	20425	1RB#12	22.82	18.92	38.45	PASS
Band5	5MHz	16QAM	20425	1RB#24	22.79	18.89	38.45	PASS
Band5	5MHz	16QAM	20425	12RB#6	21.80	17.90	38.45	PASS
Band5	5MHz	16QAM	20425	12RB#0	21.61	17.71	38.45	PASS
Band5	5MHz	16QAM	20425	12RB#13	21.72	17.82	38.45	PASS
Band5	5MHz	16QAM	20425	25RB#0	21.84	17.94	38.45	PASS
Band5	5MHz	16QAM	20525	1RB#0	23.06	19.16	38.45	PASS
Band5	5MHz	16QAM	20525	1RB#12	23.09	19.19	38.45	PASS
Band5	5MHz	16QAM	20525	1RB#24	23.04	19.14	38.45	PASS
Band5	5MHz	16QAM	20525	12RB#13	21.69	17.79	38.45	PASS
Band5	5MHz	16QAM	20525	12RB#0	21.73	17.83	38.45	PASS
Band5	5MHz	16QAM	20525	12RB#6	21.72	17.82	38.45	PASS
Band5	5MHz	16QAM	20525	25RB#0	21.79	17.89	38.45	PASS
Band5	5MHz	16QAM	20625	1RB#12	22.45	18.55	38.45	PASS
Band5	5MHz	16QAM	20625	1RB#0	22.63	18.73	38.45	PASS
Band5	5MHz	16QAM	20625	1RB#24	22.49	18.59	38.45	PASS
Band5	5MHz	16QAM	20625	12RB#0	21.79	17.89	38.45	PASS
Band5	5MHz	16QAM	20625	12RB#6	21.66	17.76	38.45	PASS
Band5	5MHz	16QAM	20625	12RB#13	21.58	17.68	38.45	PASS
Band5	5MHz	16QAM	20625	25RB#0	21.74	17.84	38.45	PASS
Band5	10MHz	QPSK	20450	1RB#49	23.70	19.80	38.45	PASS
Band5	10MHz	QPSK	20450	1RB#24	23.90	20.00	38.45	PASS
Band5	10MHz	QPSK	20450	1RB#0	23.80	19.90	38.45	PASS
Band5	10MHz	QPSK	20450	25RB#0	23.01	19.11	38.45	PASS
Band5	10MHz	QPSK	20450	25RB#12	22.80	18.90	38.45	PASS
Band5	10MHz	QPSK	20450	25RB#25	22.80	18.90	38.45	PASS
Band5	10MHz	QPSK	20450	50RB#0	22.94	19.04	38.45	PASS
Band5	10MHz	QPSK	20525	1RB#0	23.77	19.87	38.45	PASS
Band5	10MHz	QPSK	20525	1RB#49	23.91	20.01	38.45	PASS
Band5	10MHz	QPSK	20525	1RB#24	23.74	19.84	38.45	PASS
Band5	10MHz	QPSK	20525	25RB#25	23.03	19.13	38.45	PASS
Band5	10MHz	QPSK	20525	25RB#0	22.80	18.90	38.45	PASS
Band5	10MHz	QPSK	20525	25RB#12	22.91	19.01	38.45	PASS
Band5	10MHz	QPSK	20525	50RB#0	22.84	18.94	38.45	PASS
Band5	10MHz	QPSK	20600	1RB#24	23.74	19.84	38.45	PASS
Band5	10MHz	QPSK	20600	1RB#0	23.85	19.95	38.45	PASS
Band5	10MHz	QPSK	20600	1RB#49	23.76	19.86	38.45	PASS
Band5	10MHz	QPSK	20600	25RB#0	22.98	19.08	38.45	PASS
Band5	10MHz	QPSK	20600	25RB#25	22.84	18.94	38.45	PASS
Band5	10MHz	QPSK	20600	25RB#12	22.77	18.87	38.45	PASS
Band5	10MHz	QPSK	20600	50RB#0	22.85	18.95	38.45	PASS
Band5	10MHz	16QAM	20450	1RB#49	22.90	19.00	38.45	PASS
Band5	10MHz	16QAM	20450	1RB#0	23.10	19.20	38.45	PASS
Band5	10MHz	16QAM	20450	1RB#24	22.95	19.05	38.45	PASS
Band5	10MHz	16QAM	20450	25RB#25	22.09	18.19	38.45	PASS

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Band5	10MHz	16QAM	20450	25RB#12	21.90	18.00	38.45	PASS
Band5	10MHz	16QAM	20450	25RB#0	21.94	18.04	38.45	PASS
Band5	10MHz	16QAM	20450	50RB#0	21.96	18.06	38.45	PASS
Band5	10MHz	16QAM	20525	1RB#49	23.20	19.30	38.45	PASS
Band5	10MHz	16QAM	20525	1RB#0	23.34	19.44	38.45	PASS
Band5	10MHz	16QAM	20525	1RB#24	23.15	19.25	38.45	PASS
Band5	10MHz	16QAM	20525	25RB#25	21.91	18.01	38.45	PASS
Band5	10MHz	16QAM	20525	25RB#0	21.94	18.04	38.45	PASS
Band5	10MHz	16QAM	20525	25RB#12	21.99	18.09	38.45	PASS
Band5	10MHz	16QAM	20525	50RB#0	21.90	18.00	38.45	PASS
Band5	10MHz	16QAM	20600	1RB#24	22.74	18.84	38.45	PASS
Band5	10MHz	16QAM	20600	1RB#0	22.87	18.97	38.45	PASS
Band5	10MHz	16QAM	20600	1RB#49	22.71	18.81	38.45	PASS
Band5	10MHz	16QAM	20600	25RB#0	21.99	18.09	38.45	PASS
Band5	10MHz	16QAM	20600	25RB#12	21.92	18.02	38.45	PASS
Band5	10MHz	16QAM	20600	25RB#25	21.83	17.93	38.45	PASS
Band5	10MHz	16QAM	20600	50RB#0	21.88	17.98	38.45	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]

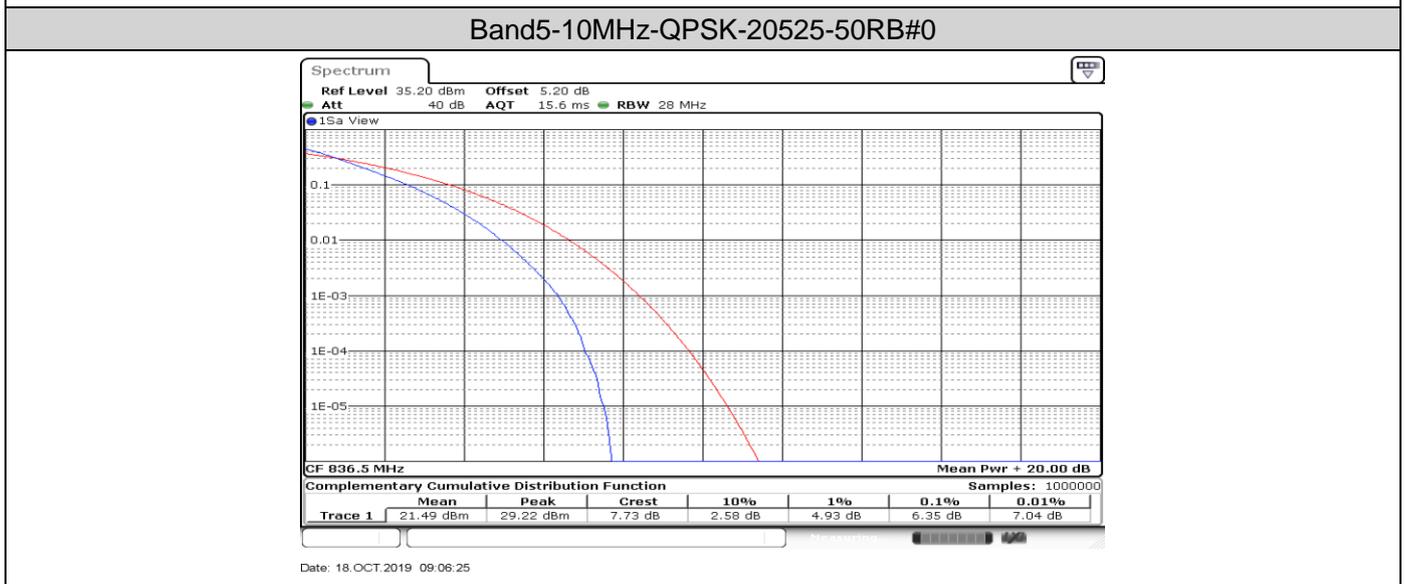
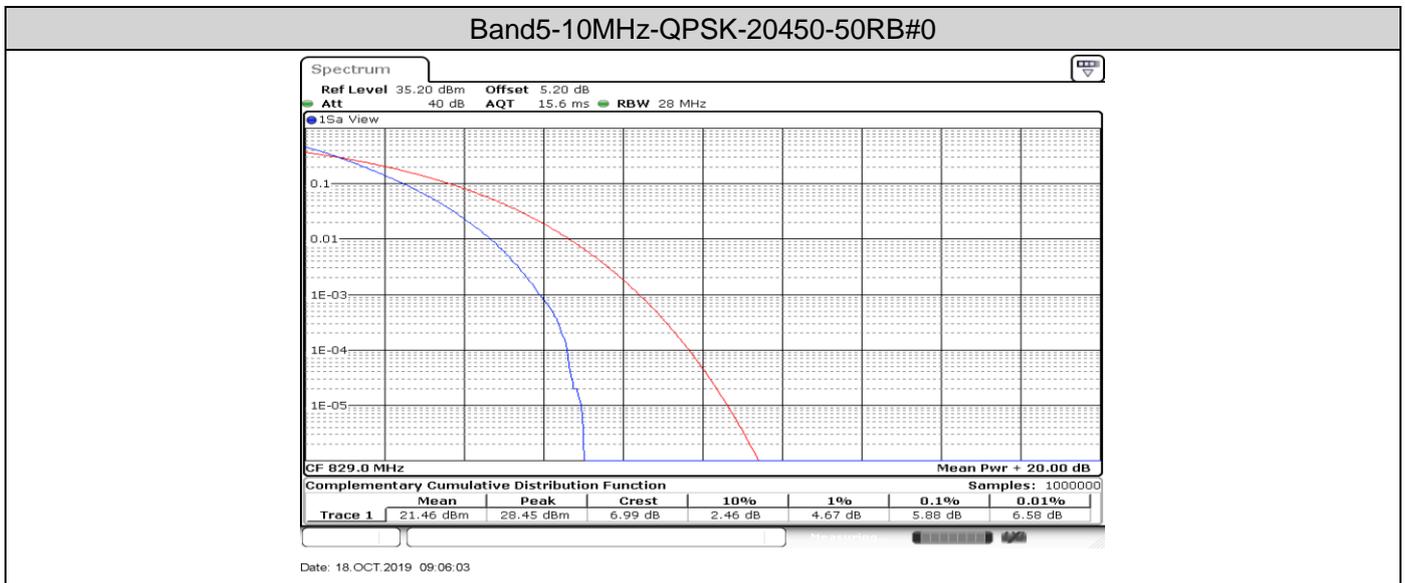
EIRP [dBm] = Conducted Power [dBm] + Gain [dBi]

4. Peak-to-Average Ratio (CCDF)

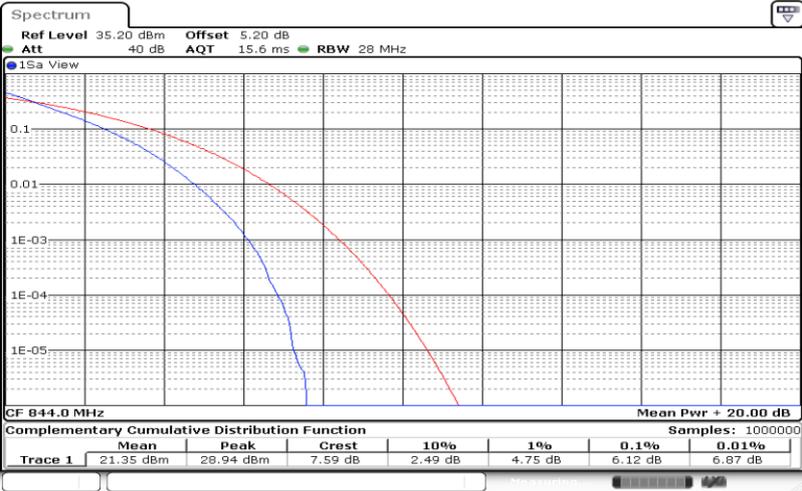
4.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band5	10MHz	QPSK	20450	50RB#0	5.88	13	PASS
Band5	10MHz	QPSK	20525	50RB#0	6.35	13	PASS
Band5	10MHz	QPSK	20600	50RB#0	6.12	13	PASS
Band5	10MHz	16QAM	20450	50RB#0	6.58	13	PASS
Band5	10MHz	16QAM	20525	50RB#0	6.81	13	PASS
Band5	10MHz	16QAM	20600	50RB#0	6.64	13	PASS

4.2. Test Plots

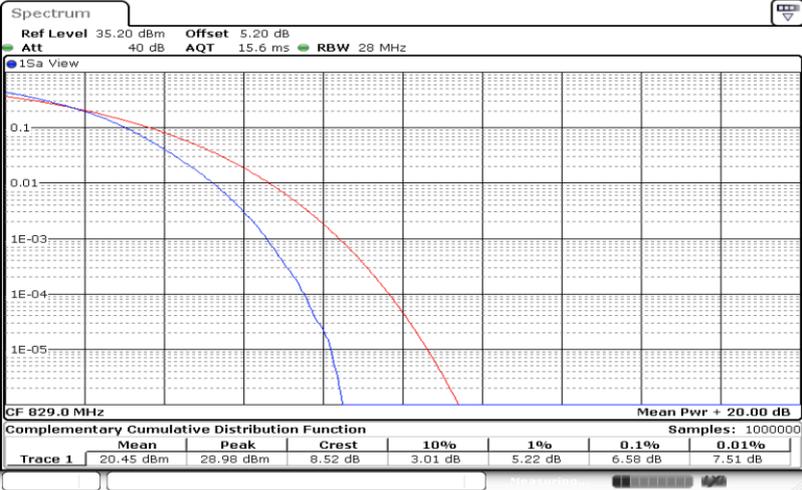


Band5-10MHz-QPSK-20600-50RB#0



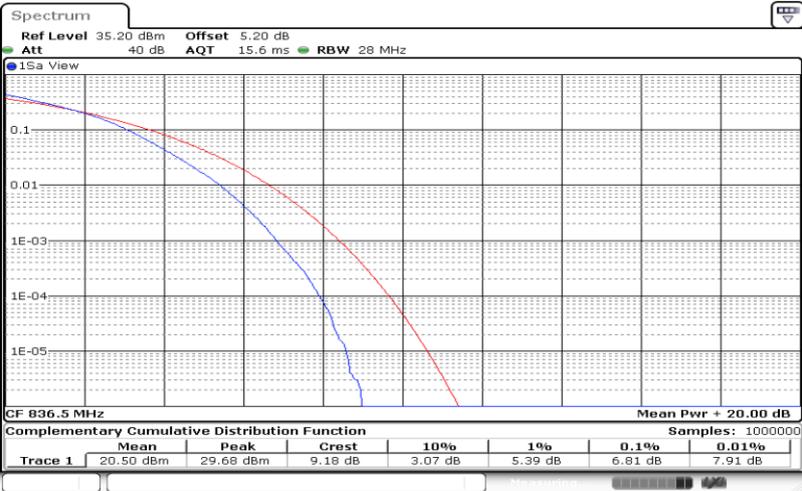
Date: 18.OCT.2019 09:06:48

Band5-10MHz-16QAM-20450-50RB#0



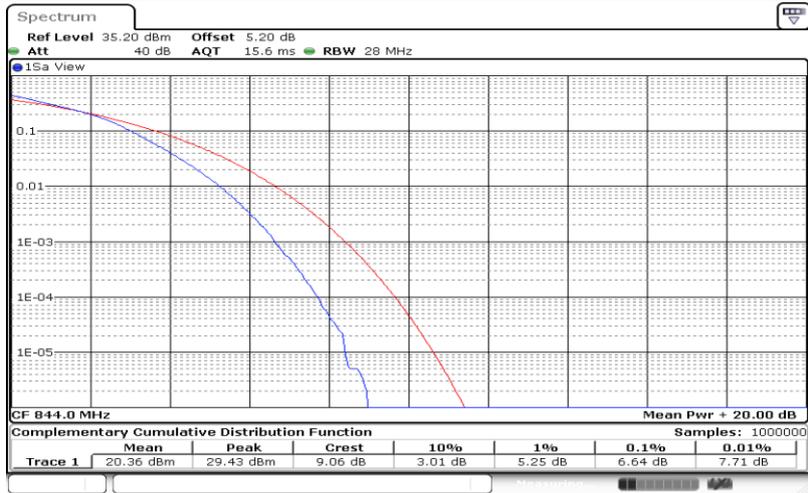
Date: 18.OCT.2019 09:06:14

Band5-10MHz-16QAM-20525-50RB#0



Date: 18.OCT.2019 09:06:37

Band5-10MHz-16QAM-20600-50RB#0

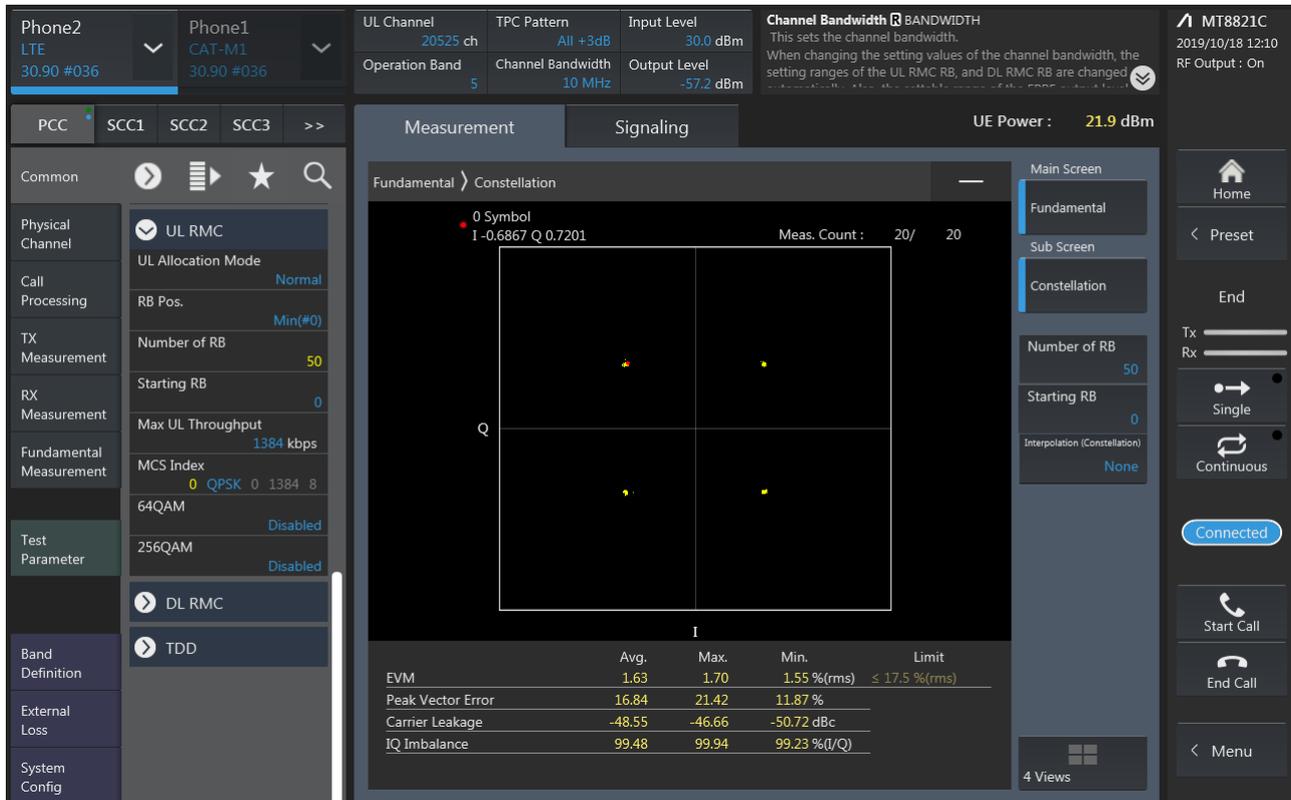


Date: 18.OCT.2019 09:07:00

5. Modulation Characteristics

5.1. Test Mode = LTE /TM1 10MHz

5.1.1. Test Channel = MCH



5.2. Test Mode = LTE /TM2 10MHz

5.2.1. Test Channel = MCH

The screenshot displays a mobile testing software interface with the following sections:

- Top Bar:** Phone2 (LTE 30.90 #036), Phone1 (CAT-M1 30.90 #036), UL Channel (20525 ch), TPC Pattern (All +3dB), Input Level (30.0 dBm), Operation Band (5), Channel Bandwidth (10 MHz), Output Level (-57.2 dBm), UL RMC - Modulation (ULRMC_MOD), and MT8821C (2019/10/18 12:10, RF Output: On).
- Measurement/Signaling:** UE Power: 20.9 dBm.
- Left Panel (Configuration):**
 - Common: Navigation icons.
 - Physical Channel: UL RMC (checked), UL Allocation Mode: Normal.
 - Call Processing: RB Pos. Min(#0).
 - TX Measurement: Number of RB: 50.
 - RX Measurement: Starting RB: 0, Max UL Throughput: 8760 kbps.
 - Fundamental Measurement: MCS Index: 11 16QAM 10 8760 8, 64QAM (Disabled), 256QAM (Disabled).
 - Test Parameter: DL RMC, TDD.
 - Band Definition, External Loss, System Config.
- Main Display (Constellation):**
 - 0 Symbol: I -0.9137, Q -0.2744. Meas. Count: 20/20.
 - Constellation diagram showing 16 points in a 4x4 grid.
 - Measurement Table:
- Right Panel (Controls):** Main Screen (Fundamental, Constellation), Sub Screen, Number of RB (50), Starting RB (0), Interpolation (Constellation) (None), Connected status, Home, Preset, End, Tx/Rx sliders, Single/Continuous modes, Start/End Call buttons, and Menu.

	Avg.	Max.	Min.	Limit
EVM	1.91	2.32	1.81 %(rms)	≤ 12.5 %(rms)
Peak Vector Error	17.51	44.47	12.15 %	
Carrier Leakage	-47.71	-46.47	-51.00 dBc	
IQ Imbalance	99.74	100.46	99.22 %(I/Q)	

6. 26dB Bandwidth and Occupied Bandwidth

6.1. Test Result

Band	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band5	1.4MHz	QPSK	20407	6RB#0	1.088	1.278	PASS
Band5	1.4MHz	QPSK	20525	6RB#0	1.091	1.290	PASS
Band5	1.4MHz	QPSK	20643	6RB#0	1.088	1.278	PASS
Band5	1.4MHz	16QAM	20407	6RB#0	1.088	1.296	PASS
Band5	1.4MHz	16QAM	20525	6RB#0	1.091	1.299	PASS
Band5	1.4MHz	16QAM	20643	6RB#0	1.088	1.293	PASS
Band5	3MHz	QPSK	20415	15RB#0	2.685	2.904	PASS
Band5	3MHz	QPSK	20525	15RB#0	2.691	2.922	PASS
Band5	3MHz	QPSK	20635	15RB#0	2.691	2.922	PASS
Band5	3MHz	16QAM	20415	15RB#0	2.679	2.910	PASS
Band5	3MHz	16QAM	20525	15RB#0	2.679	2.898	PASS
Band5	3MHz	16QAM	20635	15RB#0	2.673	2.904	PASS
Band5	5MHz	QPSK	20425	25RB#0	4.466	4.830	PASS
Band5	5MHz	QPSK	20525	25RB#0	4.466	4.840	PASS
Band5	5MHz	QPSK	20625	25RB#0	4.476	4.860	PASS
Band5	5MHz	16QAM	20425	25RB#0	4.486	4.850	PASS
Band5	5MHz	16QAM	20525	25RB#0	4.466	4.830	PASS
Band5	5MHz	16QAM	20625	25RB#0	4.476	4.860	PASS
Band5	10MHz	QPSK	20450	50RB#0	8.931	9.620	PASS
Band5	10MHz	QPSK	20525	50RB#0	8.951	9.600	PASS
Band5	10MHz	QPSK	20600	50RB#0	8.911	9.600	PASS
Band5	10MHz	16QAM	20450	50RB#0	8.931	9.520	PASS
Band5	10MHz	16QAM	20525	50RB#0	8.931	9.600	PASS
Band5	10MHz	16QAM	20600	50RB#0	8.911	9.600	PASS

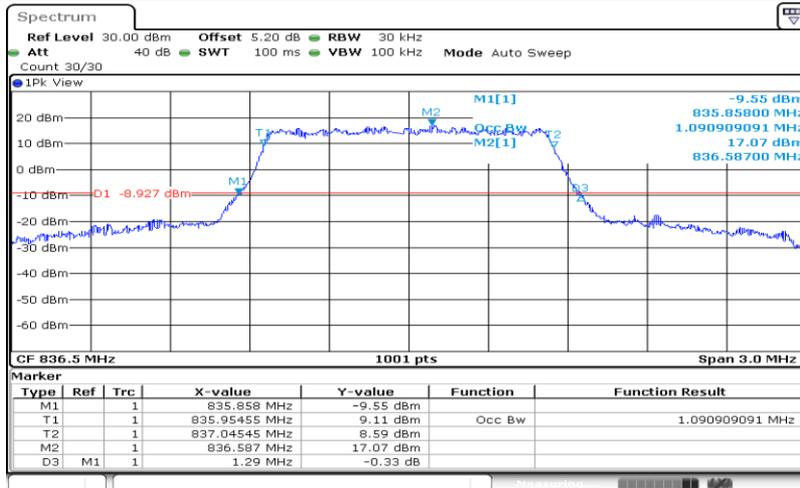
6.2. Test Plots

Band5-1.4MHz-QPSK-20407-6RB#0-1.088



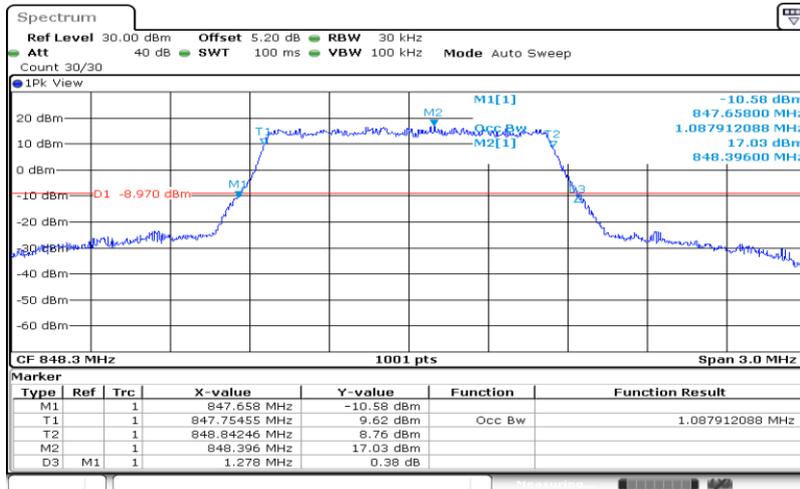
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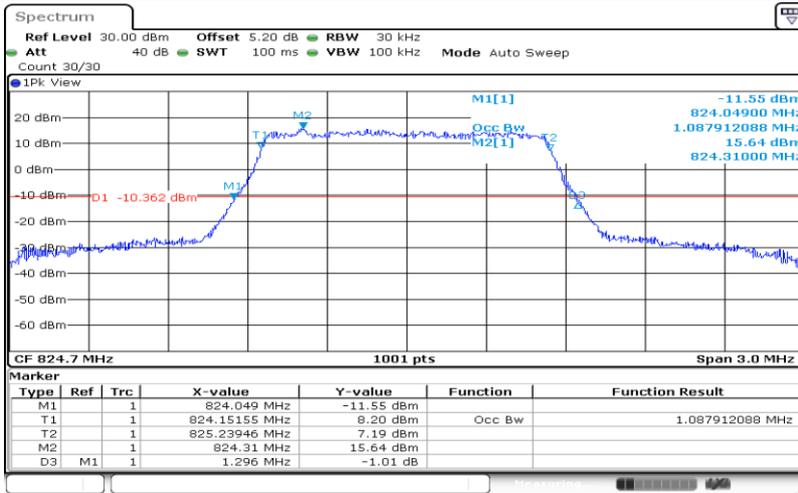
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Band5-1.4MHz-QPSK-20643-6RB#0-1.088



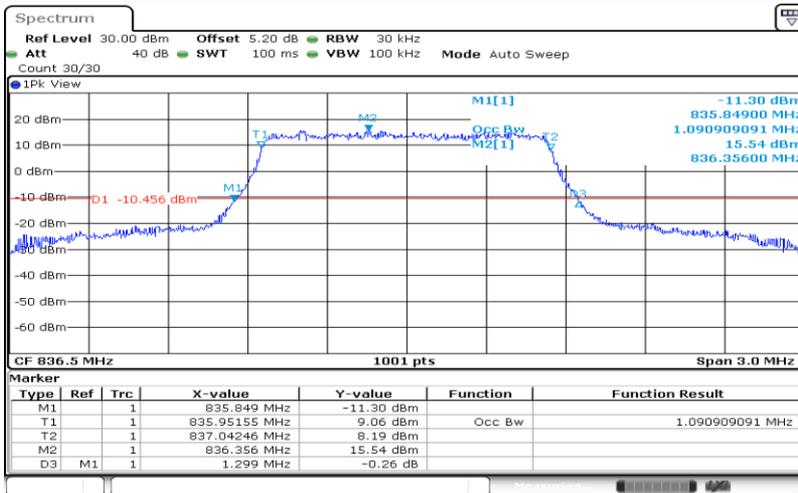
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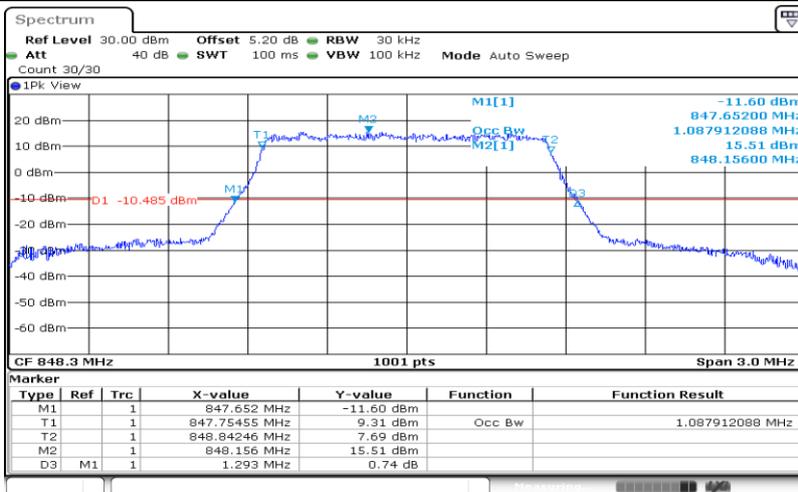
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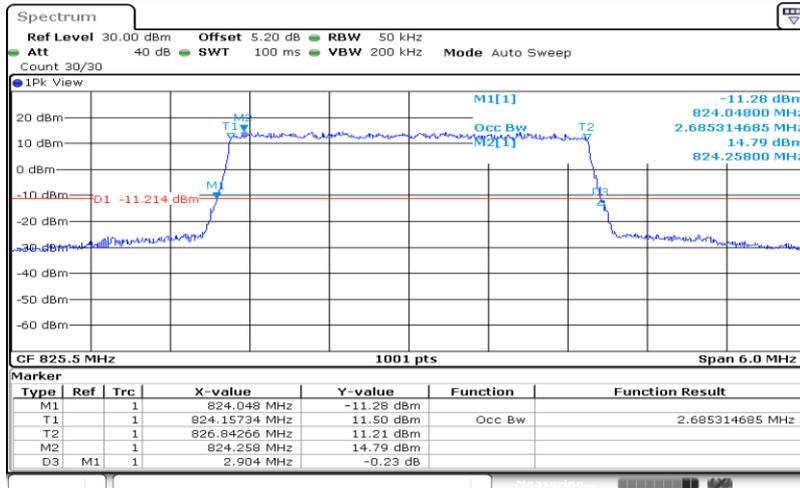
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Band5-1.4MHz-16QAM-20643-6RB#0-1.088



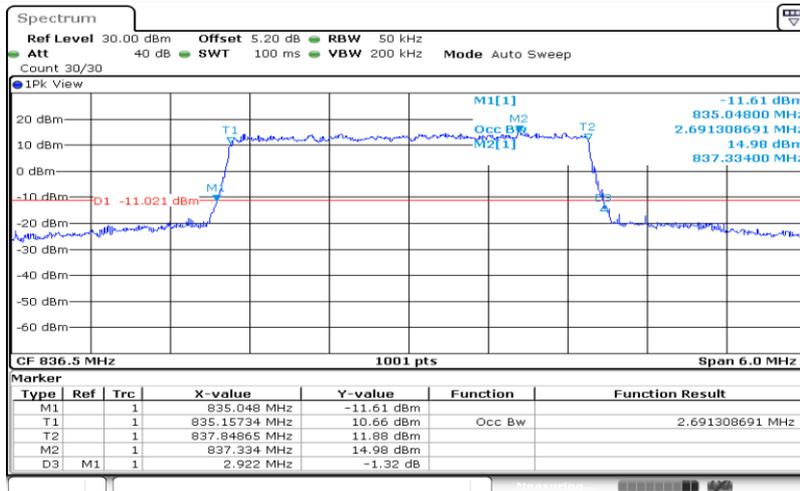
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Band5-3MHz-QPSK-20415-15RB#0-2.685



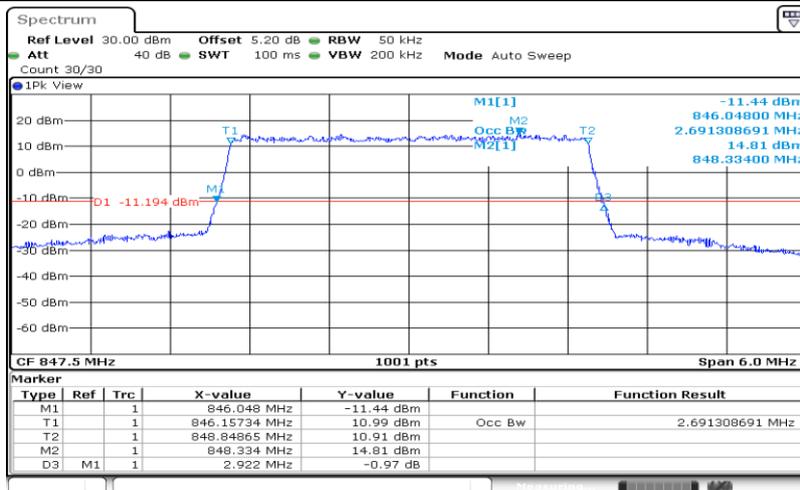
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Band5-3MHz-QPSK-20525-15RB#0-2.691



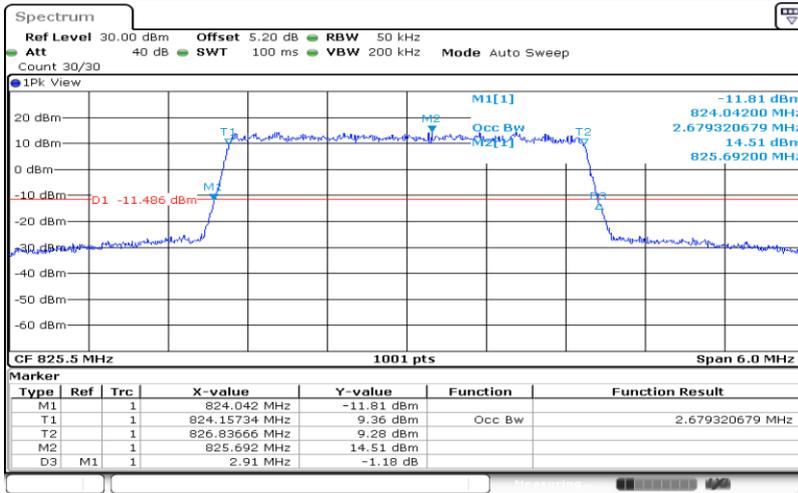
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Band5-3MHz-QPSK-20635-15RB#0-2.691



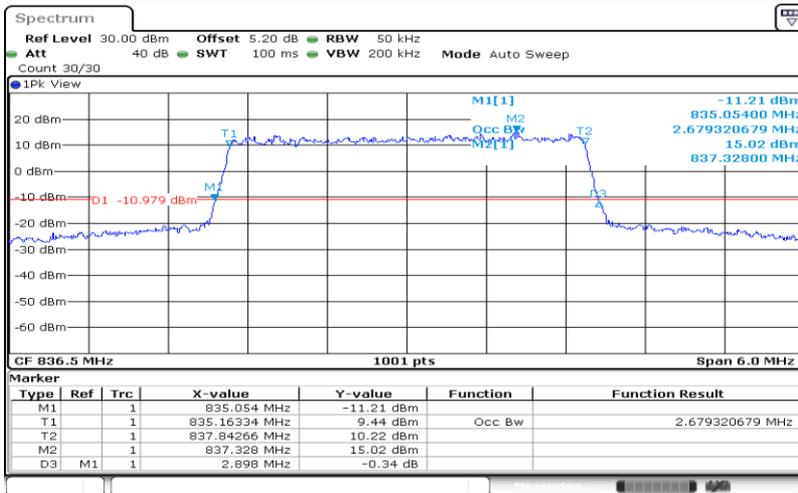
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Band5-3MHz-16QAM-20415-15RB#0-2.679



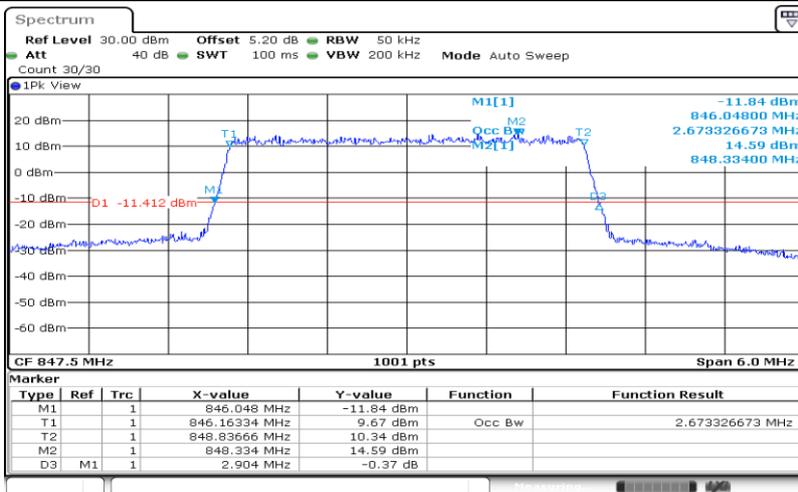
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Band5-3MHz-16QAM-20525-15RB#0-2.679



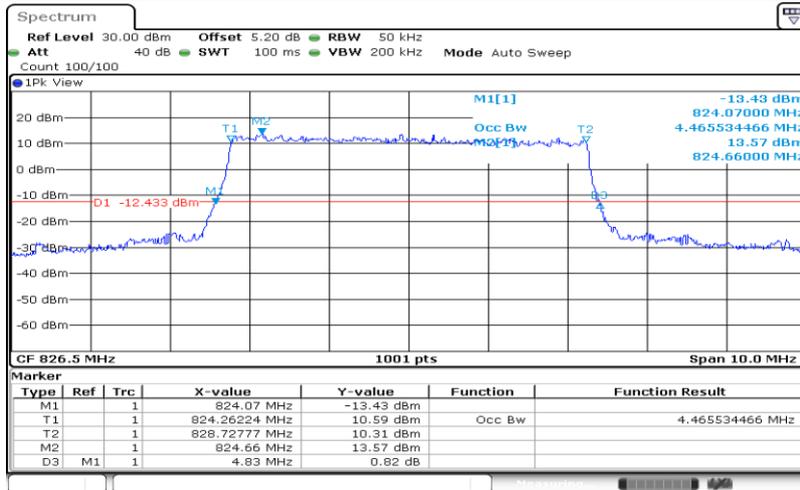
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Band5-3MHz-16QAM-20635-15RB#0-2.673



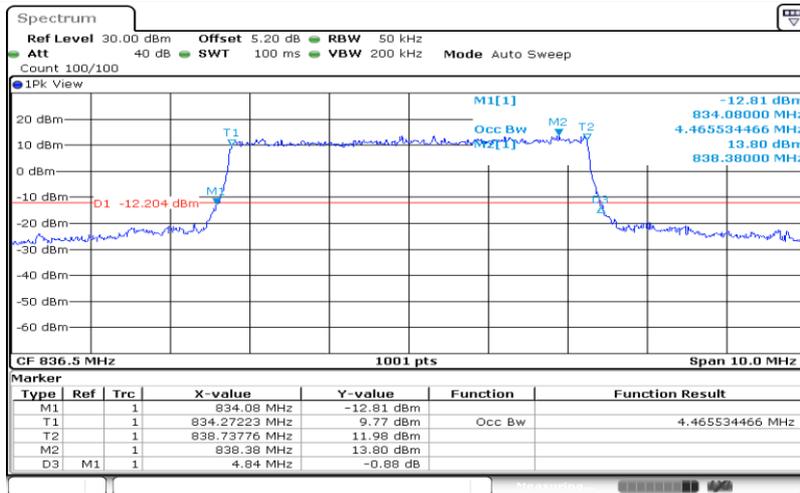
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Band5-5MHz-QPSK-20425-25RB#0-4.466



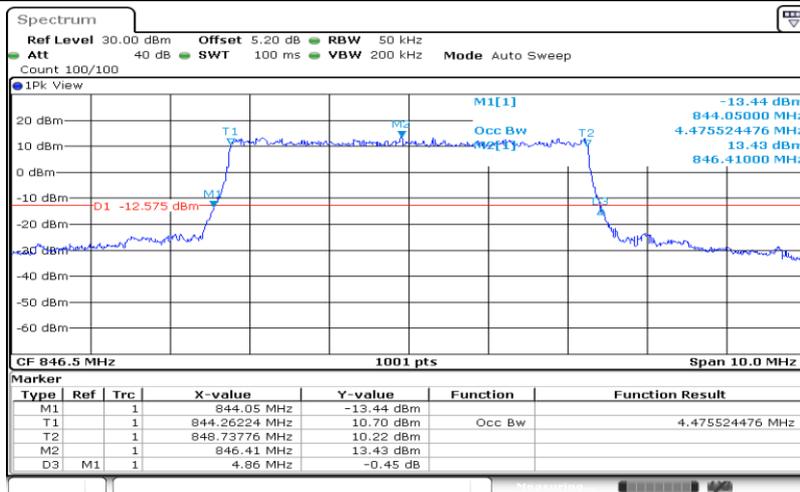
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Band5-5MHz-QPSK-20525-25RB#0-4.466



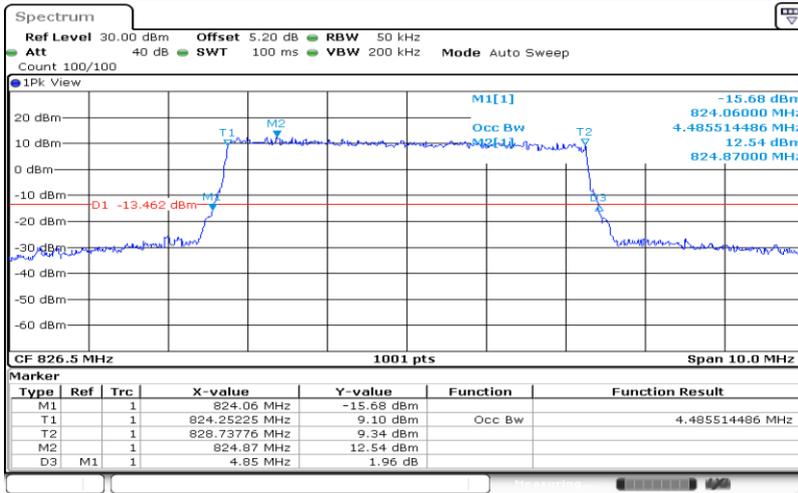
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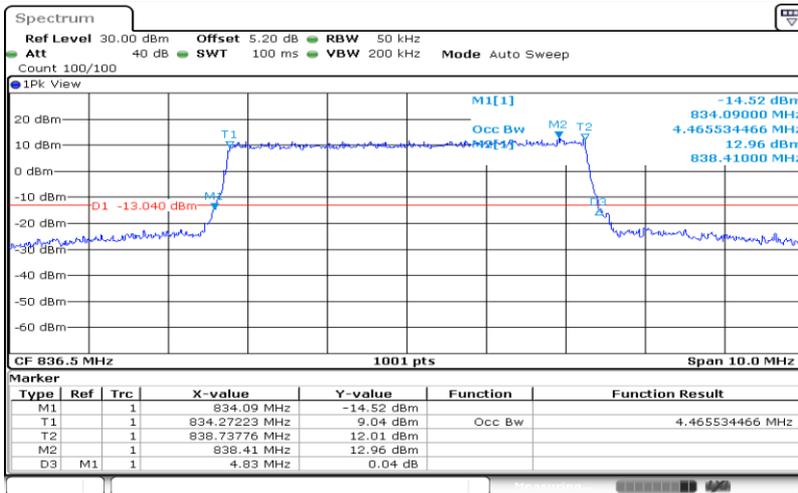
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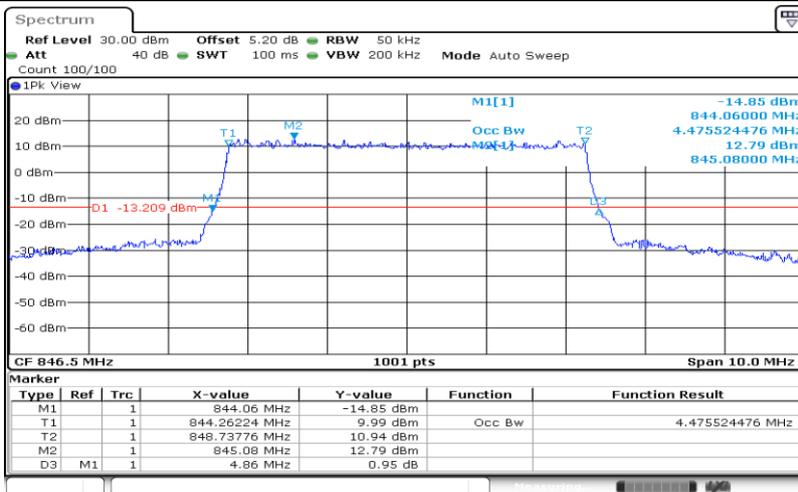
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Band5-5MHz-16QAM-20525-25RB#0-4.466



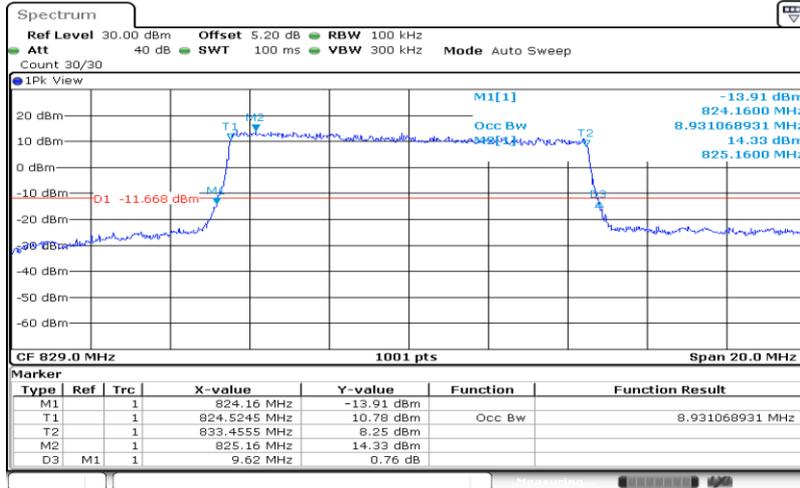
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Band5-5MHz-16QAM-20625-25RB#0-4.476



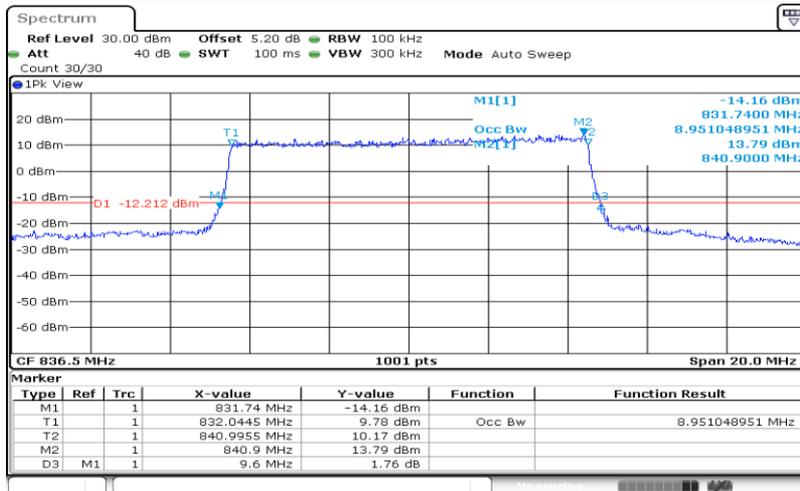
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Band5-10MHz-QPSK-20450-50RB#0-8.931



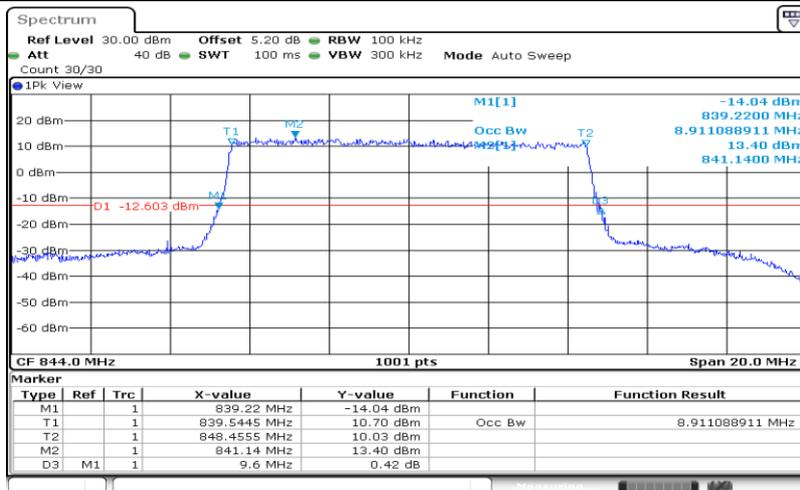
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Band5-10MHz-QPSK-20525-50RB#0-8.951



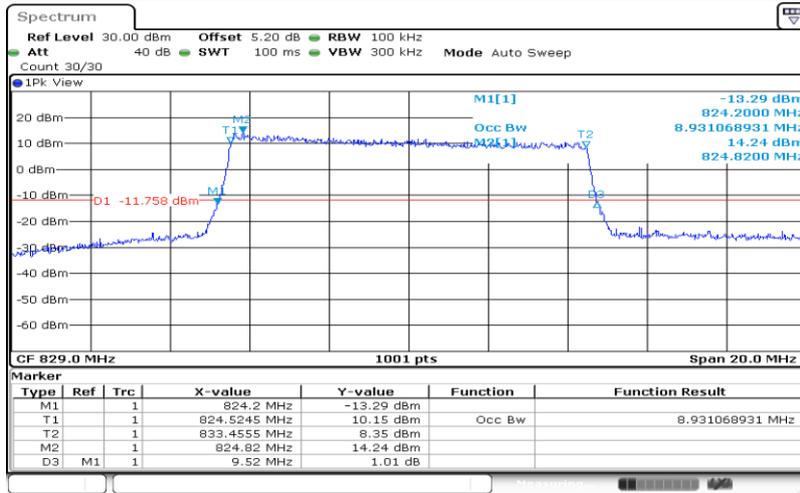
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Band5-10MHz-QPSK-20600-50RB#0-8.911

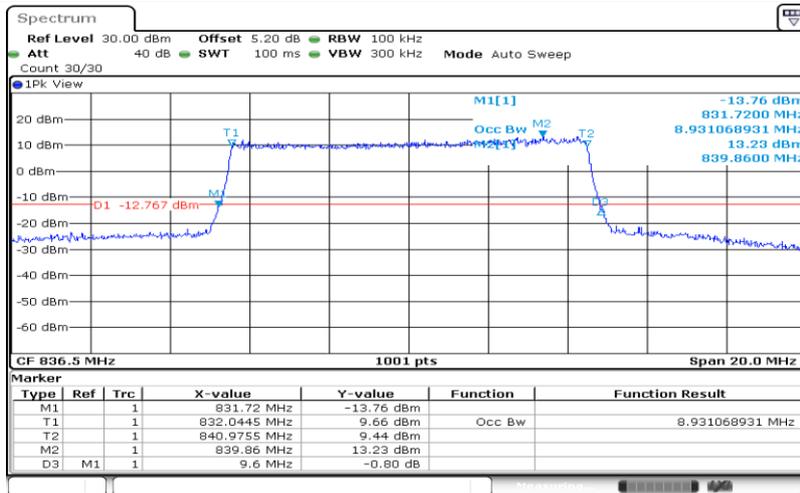


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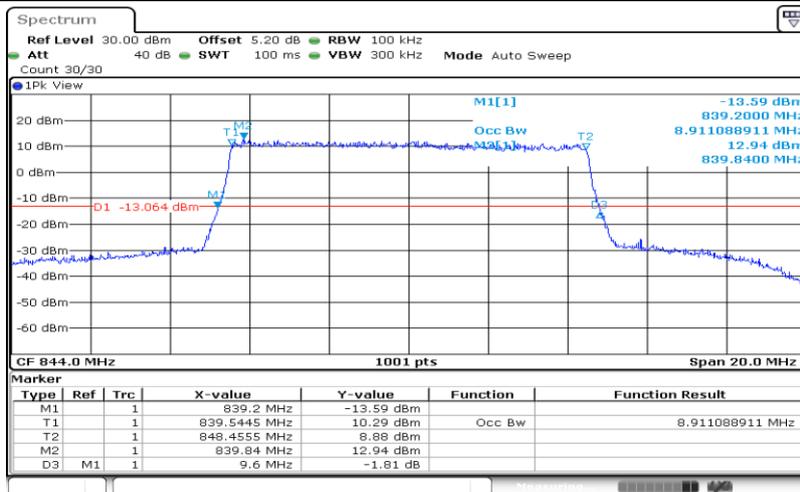
Band5-10MHz-16QAM-20450-50RB#0-8.931



Band5-10MHz-16QAM-20525-50RB#0-8.931

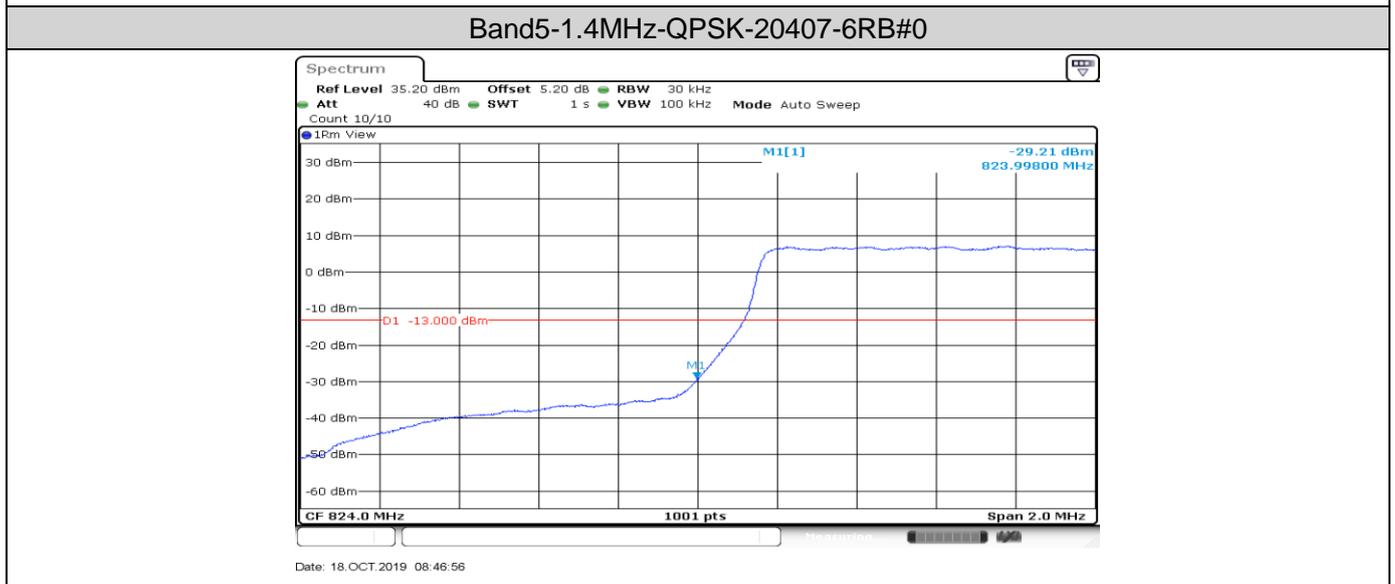
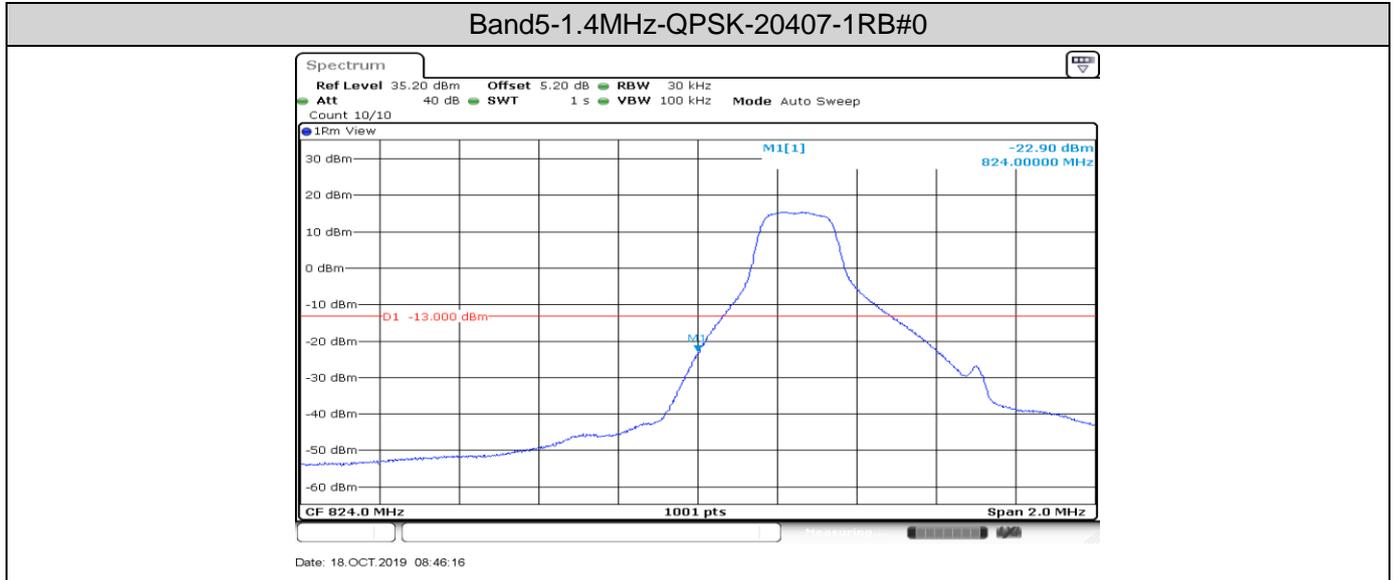


Band5-10MHz-16QAM-20600-50RB#0-8.911

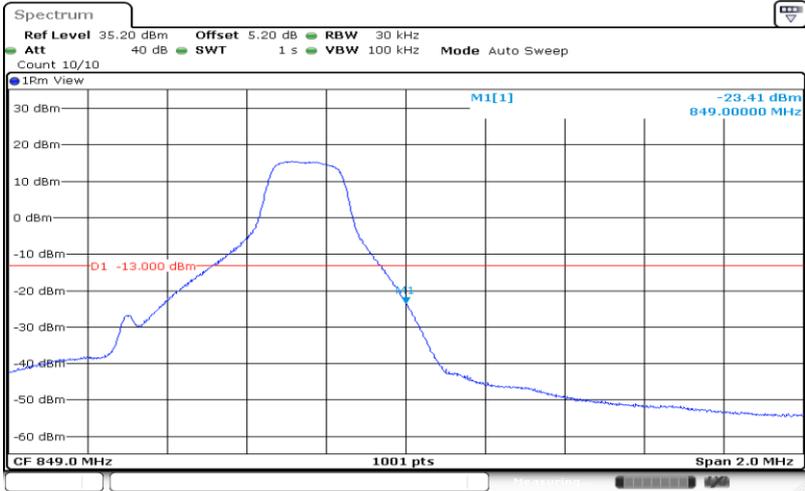


7. Band Edge Compliance

7.1. Test Plots

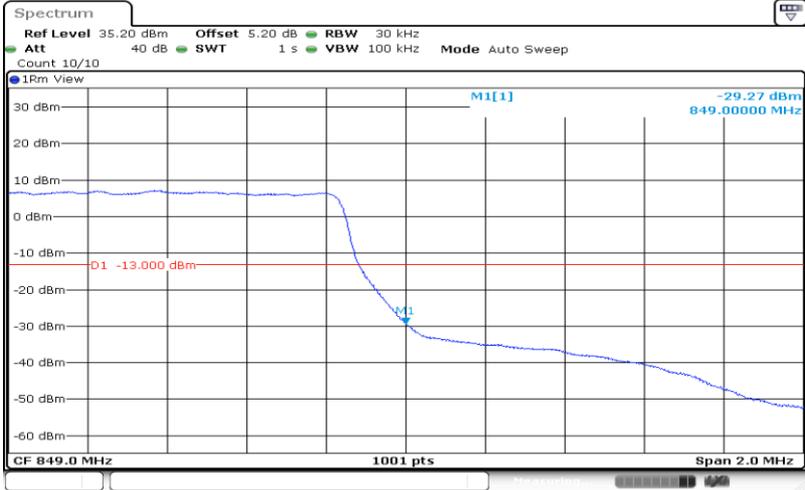


Band5-1.4MHz-QPSK-20643-1RB#5



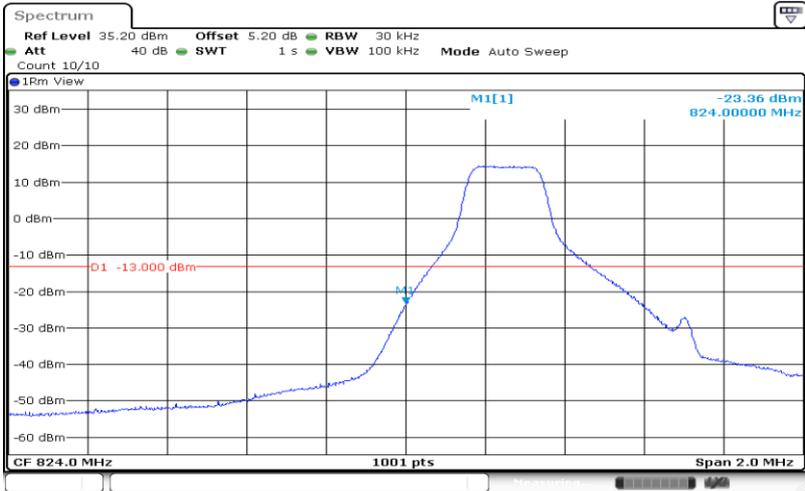
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Band5-1.4MHz-QPSK-20643-6RB#0



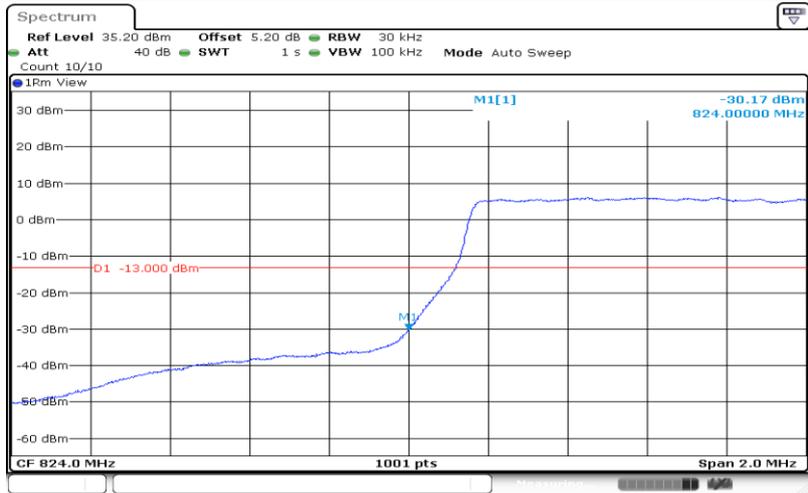
Date: 18.OCT.2019 08:48:19

Band5-1.4MHz-16QAM-20407-1RB#0



Date: 18.OCT.2019 08:46:36

Band5-1.4MHz-16QAM-20407-6RB#0



Date: 18.OCT.2019 08:47:16

Band5-1.4MHz-16QAM-20643-1RB#5



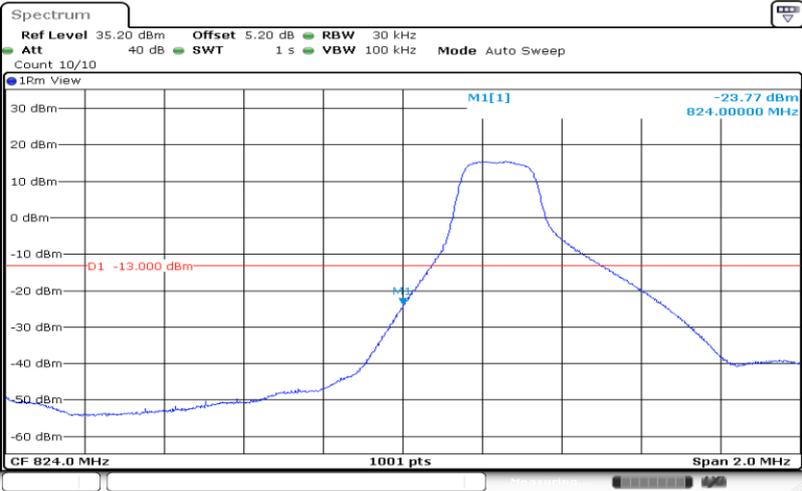
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Band5-1.4MHz-16QAM-20643-6RB#0



Date: 18.OCT.2019 08:48:39

Band5-3MHz-QPSK-20415-1RB#0



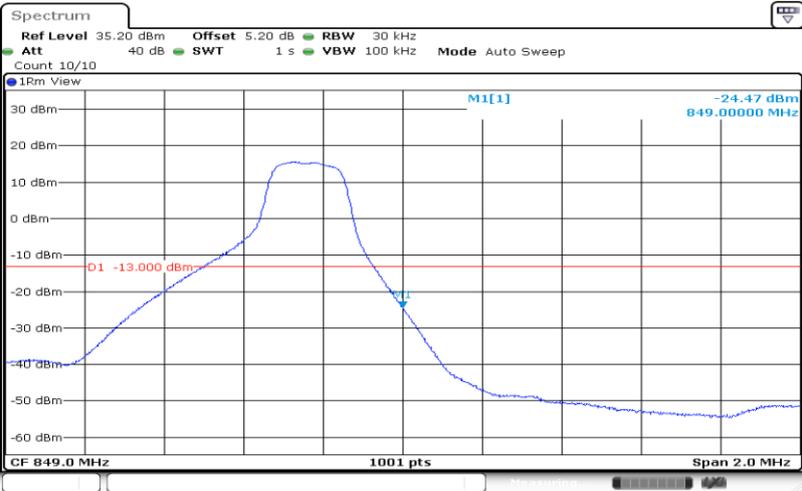
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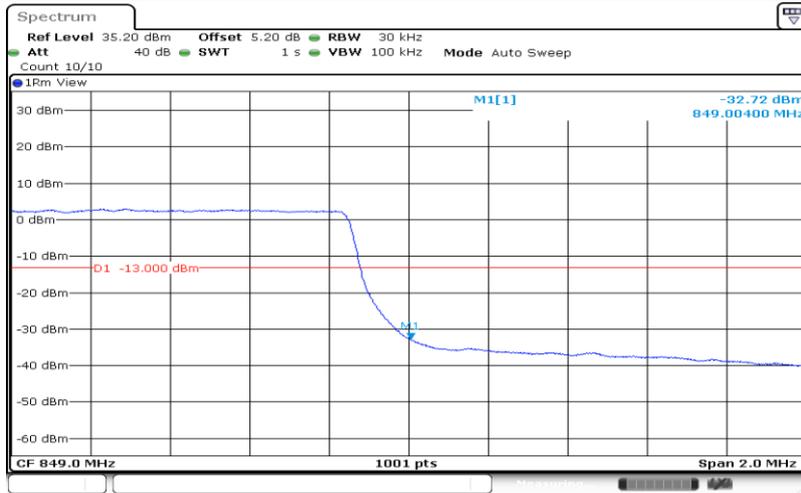
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Band5-3MHz-QPSK-20635-1RB#14



Date: 18.OCT.2019 08:50:27

Band5-3MHz-QPSK-20635-15RB#0



Date: 18.OCT.2019 08:51:06

Band5-3MHz-16QAM-20415-1RB#0



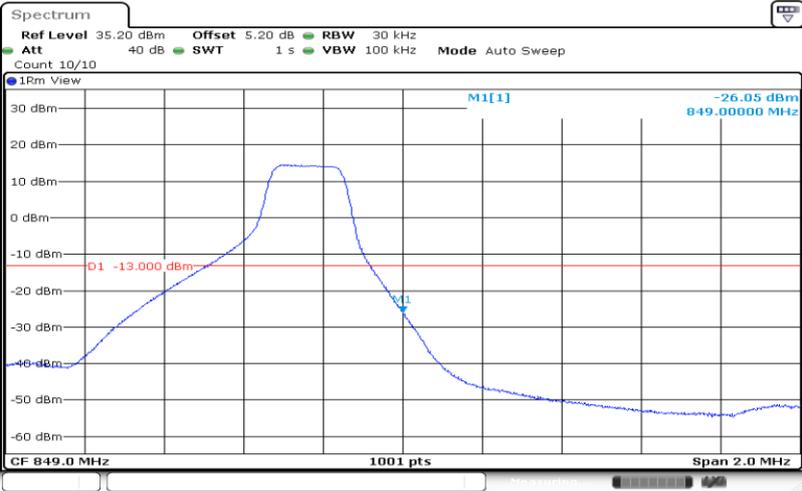
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Band5-3MHz-16QAM-20415-15RB#0



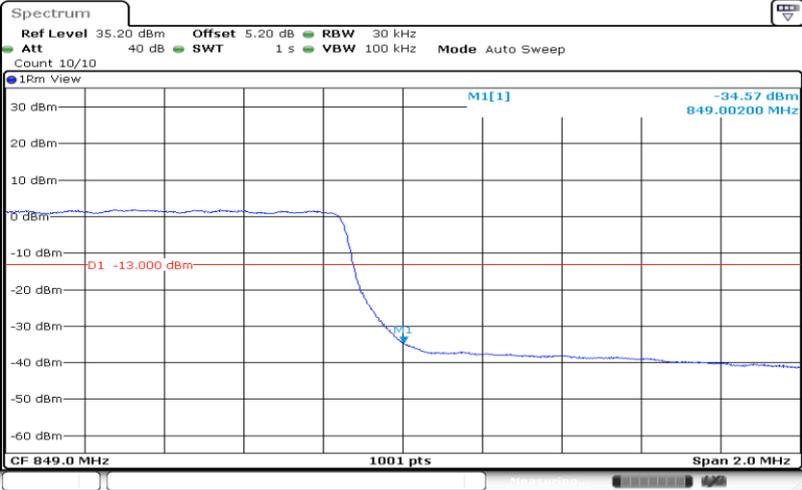
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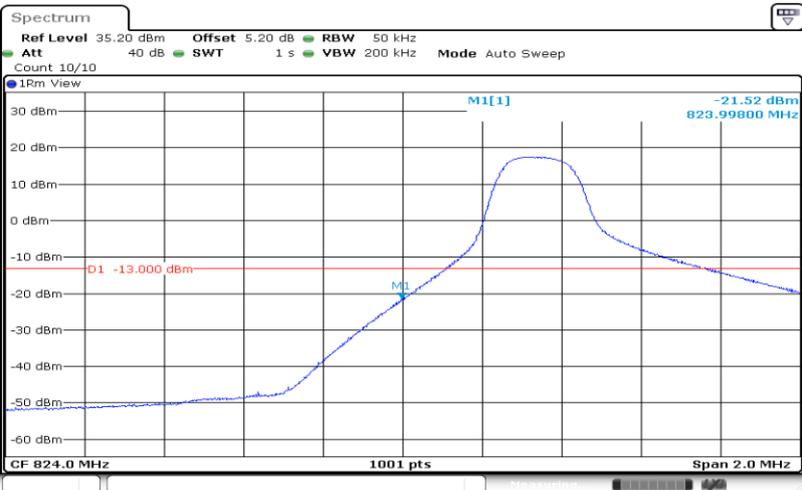
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Band5-3MHz-16QAM-20635-15RB#0



Date: 18.OCT.2019 08:51:26

Band5-5MHz-QPSK-20425-1RB#0



Date: 18.OCT.2019 08:51:51

Band5-5MHz-QPSK-20425-25RB#0



Date: 18.OCT.2019 08:52:30

Band5-5MHz-QPSK-20625-1RB#24



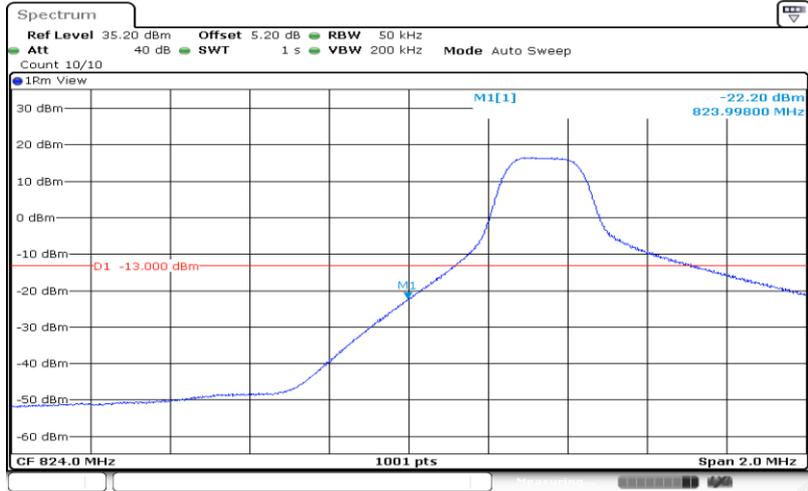
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Band5-5MHz-QPSK-20625-25RB#0



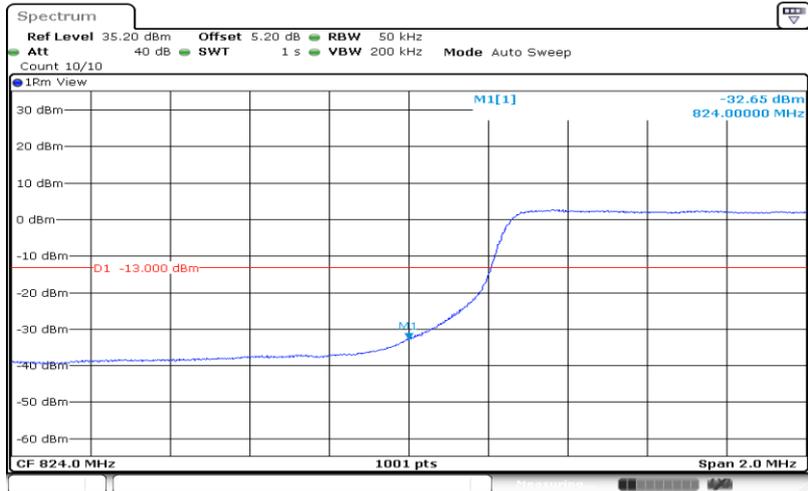
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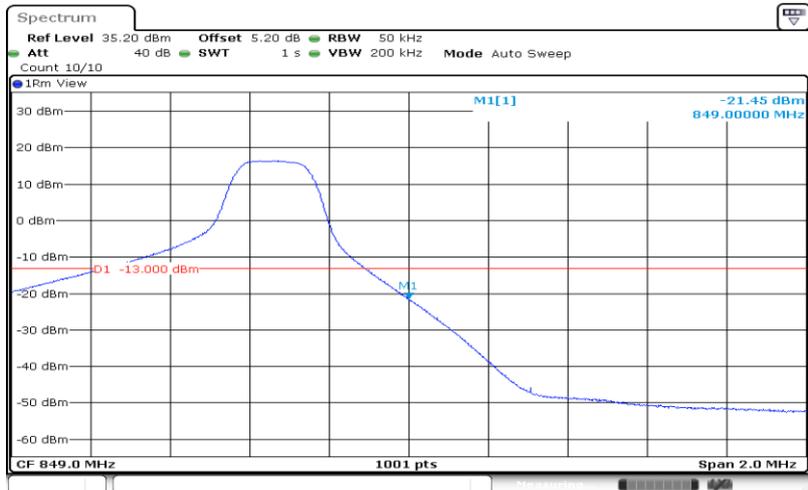
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Band5-5MHz-16QAM-20425-25RB#0



Date: 18.OCT.2019 08:52:50

Band5-5MHz-16QAM-20625-1RB#24



Date: 18.OCT.2019 08:53:33

Band5-5MHz-16QAM-20625-25RB#0



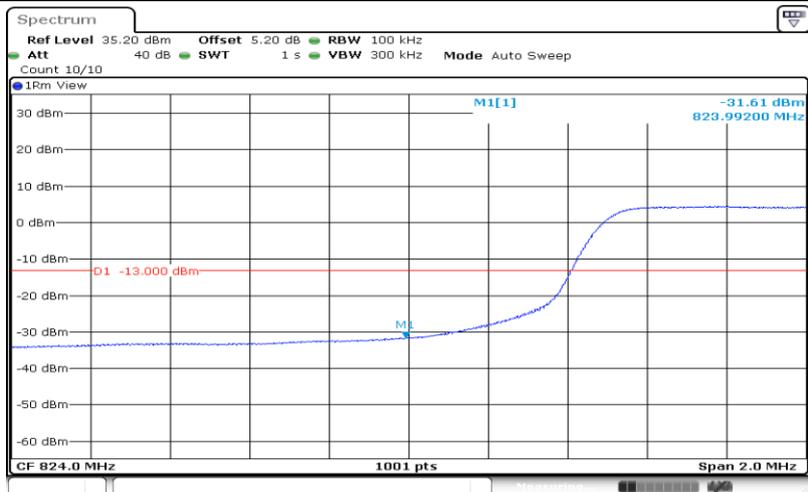
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Band5-10MHz-QPSK-20450-1RB#0



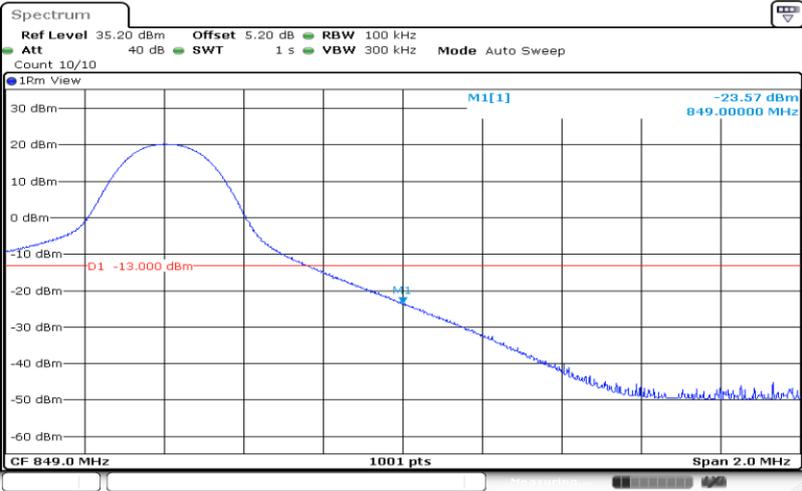
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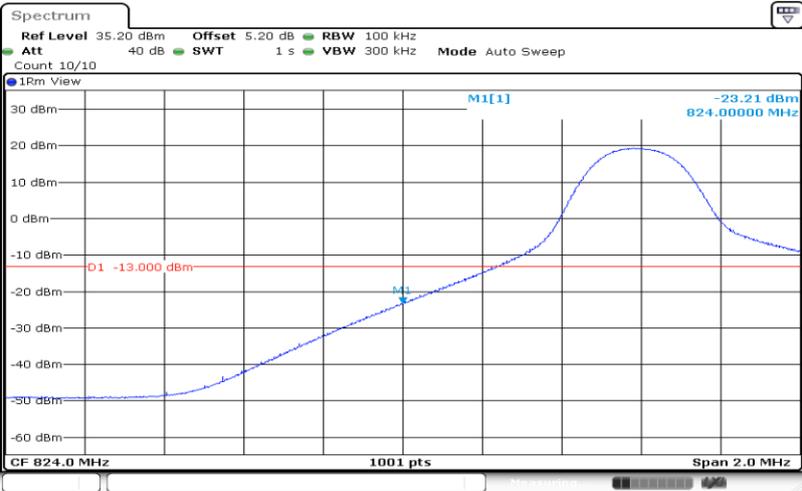
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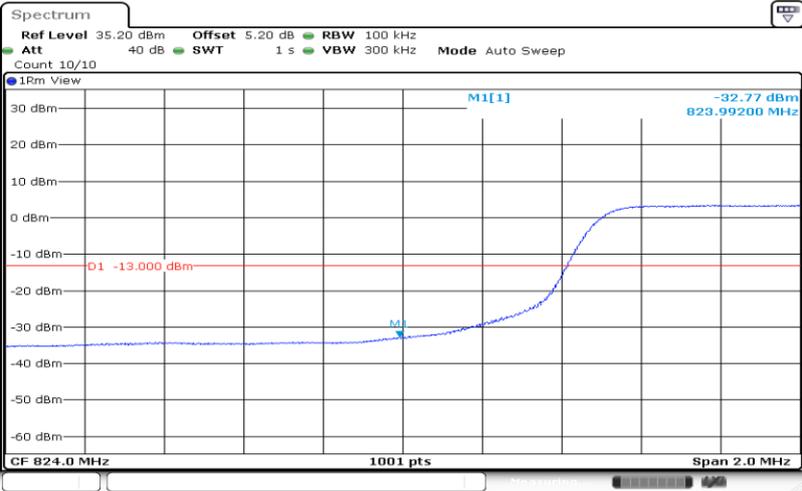
Band5-10MHz-QPSK-20600-50RB#0



Band5-10MHz-16QAM-20450-1RB#0



Band5-10MHz-16QAM-20450-50RB#0



Date: 18.OCT.2019 08:55:36

Band5-10MHz-16QAM-20600-1RB#49



Date: 18.OCT.2019 08:56:20

Band5-10MHz-16QAM-20600-50RB#0



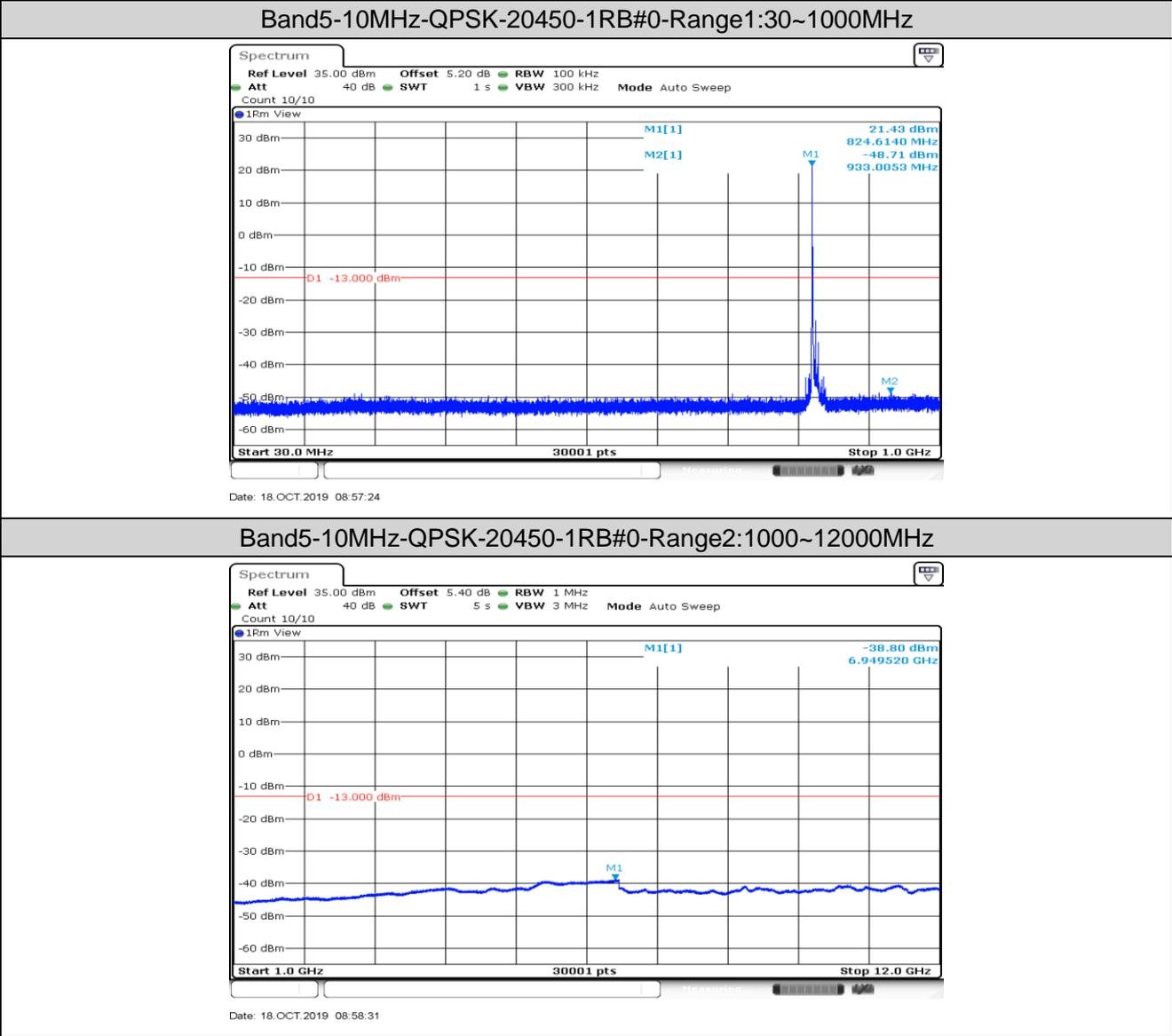
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8. Spurious Emission at Antenna Terminal

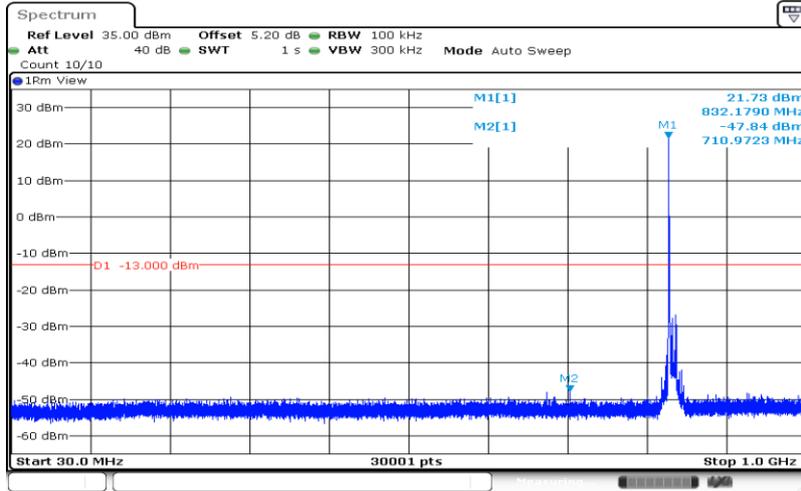
Remark1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = $k * (Span / RBW)$ " 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.

8.1. Test Plots

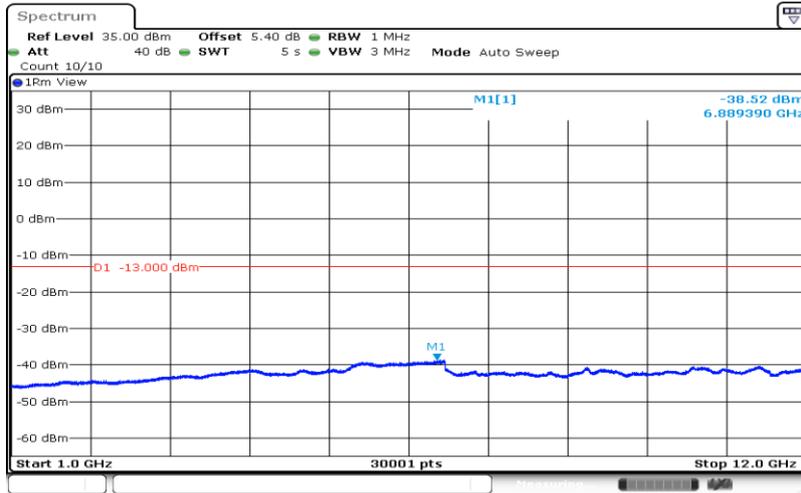


Band5-10MHz-QPSK-20525-1RB#0-Range1:30~1000MHz



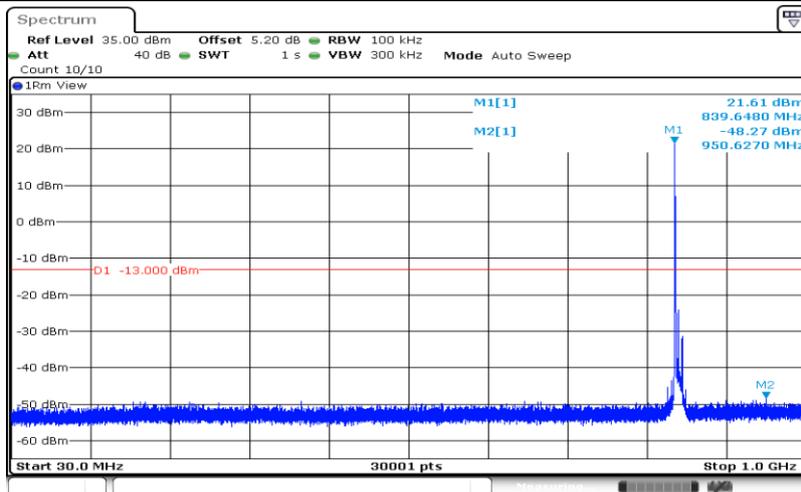
Date: 18.OCT.2019 09:00:18

Band5-10MHz-QPSK-20525-1RB#0-Range2:1000~12000MHz



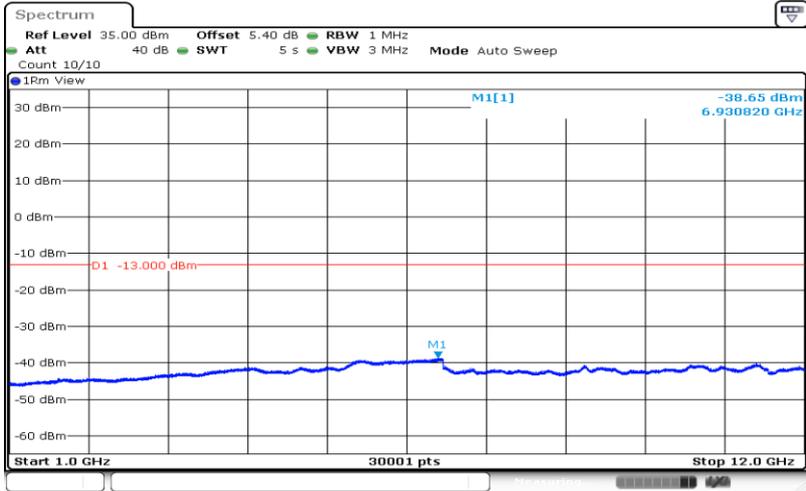
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Band5-10MHz-QPSK-20600-1RB#0-Range1:30~1000MHz



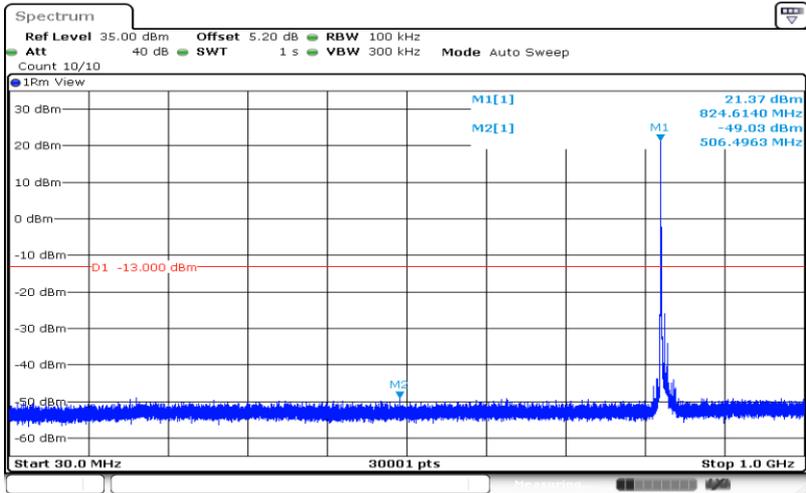
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Band5-10MHz-QPSK-20600-1RB#0-Range2:1000~12000MHz



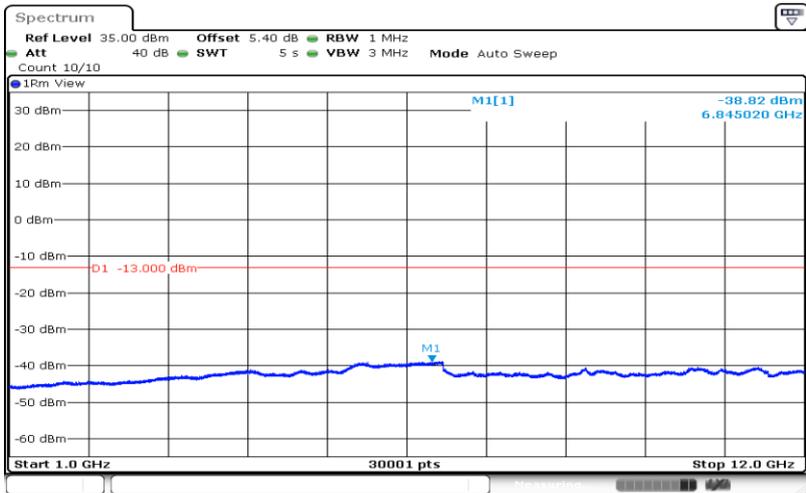
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Band5-10MHz-16QAM-20450-1RB#0-Range1:30~1000MHz



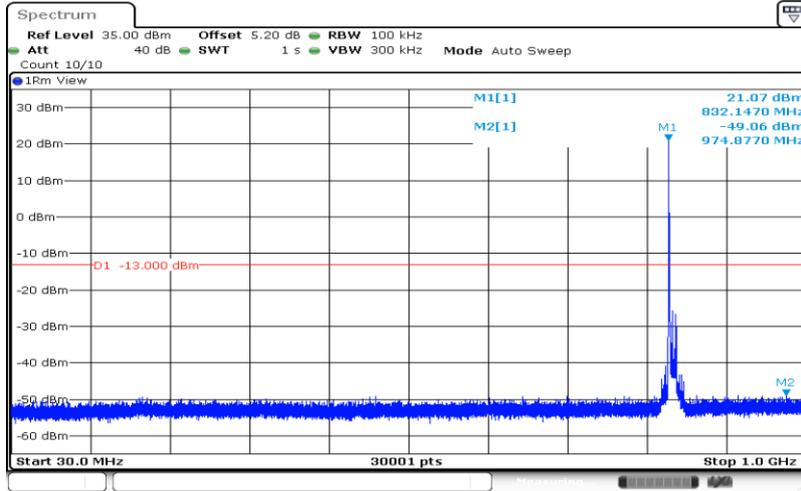
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Band5-10MHz-16QAM-20450-1RB#0-Range2:1000~12000MHz



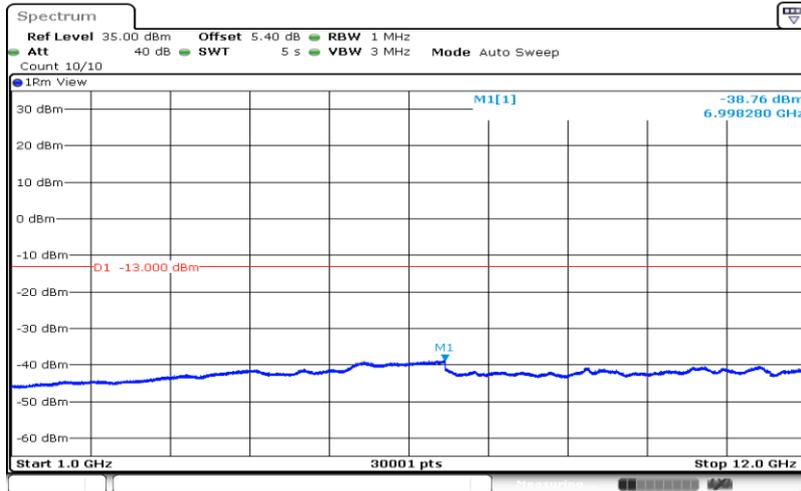
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Band5-10MHz-16QAM-20525-1RB#0-Range1:30~1000MHz



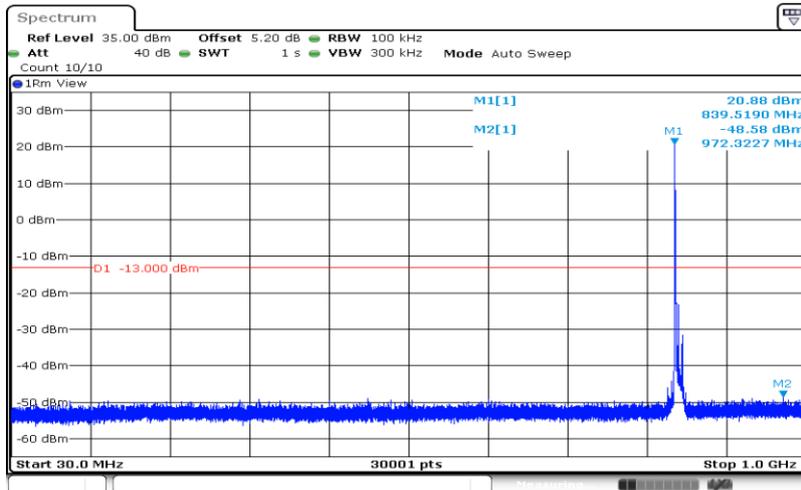
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Band5-10MHz-16QAM-20525-1RB#0-Range2:1000~12000MHz



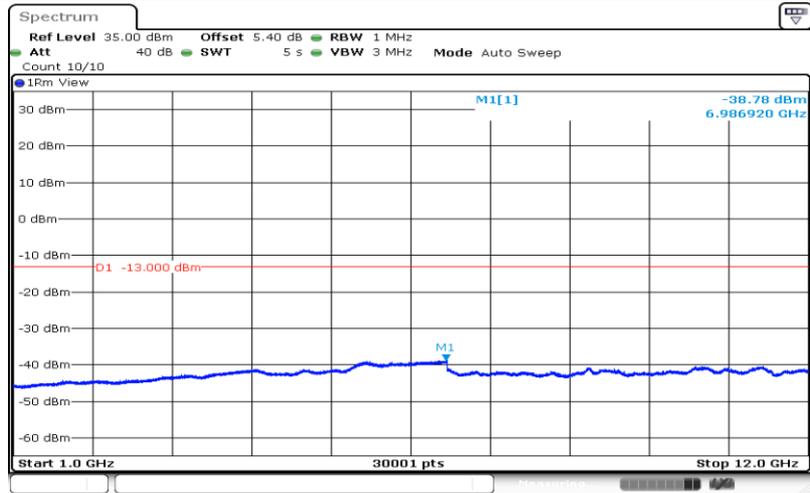
Date: 18.OCT.2019 09:02:53

Band5-10MHz-16QAM-20600-1RB#0-Range1:30~1000MHz



Date: 18.OCT.2019 09:04:40

Band5-10MHz-16QAM-20600-1RB#0-Range2:1000~12000MHz



Date: 18.OCT.2019 09:05:47

9. Frequency Stability

9.1. Frequency Vs Voltage

Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	10MHz	QPSK	20450	50RB#0	VL	NT	-1.70	-0.002051	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	VN	NT	-6.20	-0.007479	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	VH	NT	-3.70	-0.004463	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	VL	NT	-5.10	-0.006097	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	VN	NT	-8.30	-0.009922	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	VH	NT	-5.00	-0.005977	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	VL	NT	-8.80	-0.010427	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	VN	NT	-5.60	-0.006635	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	VH	NT	-9.10	-0.010782	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	VL	NT	-7.50	-0.009047	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	VN	NT	-7.70	-0.009288	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	VH	NT	-6.70	-0.008082	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	VL	NT	-6.00	-0.007173	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	VN	NT	-6.30	-0.007531	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	VH	NT	-9.20	-0.010998	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	VL	NT	-5.50	-0.006517	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	VN	NT	-4.00	-0.004739	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	VH	NT	-2.00	-0.002370	±2.5	PASS

9.2. Frequency Vs Temperature

Band	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
Band5	10MHz	QPSK	20450	50RB#0	NV	-30	-14.30	-0.017250	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	-20	-2.60	-0.003136	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	0	-7.40	-0.008926	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	10	-0.60	-0.000724	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	20	-3.90	-0.004704	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	30	-11.60	-0.013993	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	40	-8.20	-0.009891	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	50	-5.80	-0.006996	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	-30	-6.00	-0.007173	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	-20	-10.60	-0.012672	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	0	-7.90	-0.009444	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	10	-6.60	-0.007890	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	20	-1.90	-0.002271	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	30	-7.60	-0.009085	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	40	-4.60	-0.005499	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	50	-4.00	-0.004782	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	-30	-5.50	-0.006517	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	-20	-3.60	-0.004265	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	0	-9.20	-0.010900	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	10	-11.10	-0.013152	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	20	-6.70	-0.007938	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	30	-0.40	-0.000474	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	40	-6.40	-0.007583	±2.5	PASS

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Band5	10MHz	QPSK	20600	50RB#0	NV	50	-3.90	-0.004621	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	-30	-5.60	-0.006755	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	-20	-1.00	-0.001206	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	0	-9.10	-0.010977	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	10	-7.70	-0.009288	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	20	-4.20	-0.005066	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	30	-10.00	-0.012063	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	40	-6.10	-0.007358	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	50	-2.80	-0.003378	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	-30	-5.90	-0.007053	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	-20	-4.80	-0.005738	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	0	-2.20	-0.002630	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	10	-0.60	-0.000717	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	20	-7.30	-0.008727	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	30	-4.00	-0.004782	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	40	-7.60	-0.009085	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	50	-1.70	-0.002032	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	-30	-3.20	-0.003791	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	-20	-9.50	-0.011256	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	0	-3.40	-0.004028	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	10	-8.50	-0.010071	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	20	-6.50	-0.007701	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	30	-6.10	-0.007227	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	40	-5.10	-0.006043	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	50	-4.30	-0.005095	±2.5	PASS

The End