

Appendix B.5

E-UTRA Band 5

Table of Contents

1. MAIN TEST INSTRUMENTS.....	3
2. MEASUREMENT UNCERTAINTY	3
3. EFFECTIVE (ISOTROPIC) RADIATED POWER.....	4
3.1. TEST RESULT	4
4. PEAK-TO-AVERAGE RATIO(CCDF)	9
4.1. TEST RESULT	9
4.2. TEST PLOTS	9
5. MODULATION CHARACTERISTICS	12
5.1. TEST BAND = LTE BAND 5.....	12
5.2. TEST MODE = LTE /TM1 10MHZ	12
5.2.1. TEST CHANNEL = MCH.....	12
5.3. TEST MODE = LTE /TM2 10MHZ	13
5.3.1. TEST CHANNEL = MCH.....	13
6. 26DB BANDWIDTH AND OCCUPIED BANDWIDTH	14
6.1. TEST RESULT	14
6.2. TEST PLOTS	15
7. BAND EDGE COMPLIANCE	23
7.1. TEST PLOTS	23
8. SPURIOUS EMISSION AT ANTENNA TERMINAL	34
8.1. TEST PLOTS	34
9. FREQUENCY STABILITY	39
9.1. FREQUENCY VS VOLTAGE	39
9.2. FREQUENCY VS TEMPERATURE.....	40

1. Main Test Instruments

RE in Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (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	2018/4/2	2019/4/1
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	2018/9/2	2019/9/2
Low Noise Amplifier (100MHz-18GHz)	Black Diamond Series	BDLNA-0118-352810	SEM005-05	2018/9/2	2019/9/2
Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	EMC2063	2018/10/20	2019/10/19
Pre-amplifier (26-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2018/4/2	2019/4/1
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	2018/7/12	2019/7/11
Wideband Radio Communication Tester	Anritsu	MT8821C	6201462742	2018/5/2	2019/5/1
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	W005-02	2018/3/13	2019/3/12

RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
Dual Output Mobile Communication DC Source	Agilent Technologies Inc	66311B	W009-09	2018/9/15	2019/9/15
Signal Analyzer	Rohde & Schwarz	FSV	W025-05	2018/3/13	2019/3/12
Coaxial Cable	SGS	N/A	SEM031-01	2018/7/12	2019/7/11
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2018/9/2	2019/9/2
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	HTC-1	W006-17	2018/9/10	2019/9/10
Temperature Chamber	GIANT FORCE	ICT-150-40-CP-AR	W027-03	2018/11/27	2019/11/27
Wideband Radio Communication Tester	Anritsu	MT8821C	6201462742	2018/5/2	2019/5/1
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	W005-02	2018/3/13	2019/3/12

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]	$U = \pm 0.37 \text{ dB}$
Bandwidth	Magnitude [%]	$U = \pm 0.2\%$
Band Edge Compliance	Disturbance Power [dBm]	$U = \pm 2.0 \text{ dB}$
Spurious Emissions, Conducted	Disturbance Power [dBm]	$U = \pm 2.0 \text{ dB}$
Frequency Stability	Frequency Accuracy [ppm]	$U = \pm 0.24 \text{ ppm}$

3. Effective (Isotropic) Radiated Power

3.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	ERP (dBm)	Limit (dBm)	Verdict
Band5	1.4MHz	QPSK	20407	1RB#0	23.42	18.95	38.45	PASS
Band5	1.4MHz	QPSK	20407	1RB#2	23.31	18.84	38.45	PASS
Band5	1.4MHz	QPSK	20407	1RB#5	23.22	18.75	38.45	PASS
Band5	1.4MHz	QPSK	20407	3RB#0	23.31	18.84	38.45	PASS
Band5	1.4MHz	QPSK	20407	3RB#1	23.35	18.88	38.45	PASS
Band5	1.4MHz	QPSK	20407	3RB#3	23.48	19.01	38.45	PASS
Band5	1.4MHz	QPSK	20407	6RB#0	22.48	18.01	38.45	PASS
Band5	1.4MHz	QPSK	20525	1RB#0	23.19	18.72	38.45	PASS
Band5	1.4MHz	QPSK	20525	1RB#2	23.30	18.83	38.45	PASS
Band5	1.4MHz	QPSK	20525	1RB#5	23.32	18.85	38.45	PASS
Band5	1.4MHz	QPSK	20525	3RB#0	23.26	18.79	38.45	PASS
Band5	1.4MHz	QPSK	20525	3RB#1	23.35	18.88	38.45	PASS
Band5	1.4MHz	QPSK	20525	3RB#3	23.46	18.99	38.45	PASS
Band5	1.4MHz	QPSK	20525	6RB#0	22.36	17.89	38.45	PASS
Band5	1.4MHz	QPSK	20643	1RB#0	23.43	18.96	38.45	PASS
Band5	1.4MHz	QPSK	20643	1RB#2	23.39	18.92	38.45	PASS
Band5	1.4MHz	QPSK	20643	1RB#5	23.24	18.77	38.45	PASS
Band5	1.4MHz	QPSK	20643	3RB#0	23.44	18.97	38.45	PASS
Band5	1.4MHz	QPSK	20643	3RB#1	23.58	19.11	38.45	PASS
Band5	1.4MHz	QPSK	20643	3RB#3	23.53	19.06	38.45	PASS
Band5	1.4MHz	QPSK	20643	6RB#0	22.36	17.89	38.45	PASS
Band5	1.4MHz	16QAM	20407	1RB#0	22.02	17.55	38.45	PASS
Band5	1.4MHz	16QAM	20407	1RB#2	22.22	17.75	38.45	PASS
Band5	1.4MHz	16QAM	20407	1RB#5	22.08	17.61	38.45	PASS
Band5	1.4MHz	16QAM	20407	3RB#0	22.41	17.94	38.45	PASS
Band5	1.4MHz	16QAM	20407	3RB#1	22.48	18.01	38.45	PASS
Band5	1.4MHz	16QAM	20407	3RB#3	22.50	18.03	38.45	PASS
Band5	1.4MHz	16QAM	20407	6RB#0	21.37	16.90	38.45	PASS
Band5	1.4MHz	16QAM	20525	1RB#0	21.91	17.44	38.45	PASS
Band5	1.4MHz	16QAM	20525	1RB#2	21.95	17.48	38.45	PASS
Band5	1.4MHz	16QAM	20525	1RB#5	21.99	17.52	38.45	PASS
Band5	1.4MHz	16QAM	20525	3RB#0	22.46	17.99	38.45	PASS
Band5	1.4MHz	16QAM	20525	3RB#1	22.46	17.99	38.45	PASS
Band5	1.4MHz	16QAM	20525	3RB#3	22.45	17.98	38.45	PASS
Band5	1.4MHz	16QAM	20525	6RB#0	21.42	16.95	38.45	PASS
Band5	1.4MHz	16QAM	20643	1RB#0	22.03	17.56	38.45	PASS
Band5	1.4MHz	16QAM	20643	1RB#2	22.01	17.54	38.45	PASS

Band5	1.4MHz	16QAM	20643	1RB#5	22.52	18.05	38.45	PASS
Band5	1.4MHz	16QAM	20643	3RB#0	22.90	18.43	38.45	PASS
Band5	1.4MHz	16QAM	20643	3RB#1	22.51	18.04	38.45	PASS
Band5	1.4MHz	16QAM	20643	3RB#3	22.73	18.26	38.45	PASS
Band5	1.4MHz	16QAM	20643	6RB#0	21.24	16.77	38.45	PASS
Band5	3MHz	QPSK	20415	1RB#0	23.30	18.83	38.45	PASS
Band5	3MHz	QPSK	20415	1RB#8	23.29	18.82	38.45	PASS
Band5	3MHz	QPSK	20415	1RB#14	23.01	18.54	38.45	PASS
Band5	3MHz	QPSK	20415	8RB#0	22.42	17.95	38.45	PASS
Band5	3MHz	QPSK	20415	8RB#4	22.48	18.01	38.45	PASS
Band5	3MHz	QPSK	20415	8RB#7	22.44	17.97	38.45	PASS
Band5	3MHz	QPSK	20415	15RB#0	22.47	18.00	38.45	PASS
Band5	3MHz	QPSK	20525	1RB#0	23.17	18.70	38.45	PASS
Band5	3MHz	QPSK	20525	1RB#8	23.23	18.76	38.45	PASS
Band5	3MHz	QPSK	20525	1RB#14	23.09	18.62	38.45	PASS
Band5	3MHz	QPSK	20525	8RB#0	22.34	17.87	38.45	PASS
Band5	3MHz	QPSK	20525	8RB#4	22.32	17.85	38.45	PASS
Band5	3MHz	QPSK	20525	8RB#7	22.28	17.81	38.45	PASS
Band5	3MHz	QPSK	20525	15RB#0	22.28	17.81	38.45	PASS
Band5	3MHz	QPSK	20635	1RB#0	23.14	18.67	38.45	PASS
Band5	3MHz	QPSK	20635	1RB#8	23.23	18.76	38.45	PASS
Band5	3MHz	QPSK	20635	1RB#14	23.22	18.75	38.45	PASS
Band5	3MHz	QPSK	20635	8RB#0	22.37	17.90	38.45	PASS
Band5	3MHz	QPSK	20635	8RB#4	22.40	17.93	38.45	PASS
Band5	3MHz	QPSK	20635	8RB#7	22.44	17.97	38.45	PASS
Band5	3MHz	QPSK	20635	15RB#0	22.44	17.97	38.45	PASS
Band5	3MHz	16QAM	20415	1RB#0	21.94	17.47	38.45	PASS
Band5	3MHz	16QAM	20415	1RB#8	21.97	17.50	38.45	PASS
Band5	3MHz	16QAM	20415	1RB#14	21.74	17.27	38.45	PASS
Band5	3MHz	16QAM	20415	8RB#0	21.53	17.06	38.45	PASS
Band5	3MHz	16QAM	20415	8RB#4	21.58	17.11	38.45	PASS
Band5	3MHz	16QAM	20415	8RB#7	21.56	17.09	38.45	PASS
Band5	3MHz	16QAM	20415	15RB#0	21.46	16.99	38.45	PASS
Band5	3MHz	16QAM	20525	1RB#0	21.68	17.21	38.45	PASS
Band5	3MHz	16QAM	20525	1RB#8	22.12	17.65	38.45	PASS
Band5	3MHz	16QAM	20525	1RB#14	22.05	17.58	38.45	PASS
Band5	3MHz	16QAM	20525	8RB#0	21.19	16.72	38.45	PASS
Band5	3MHz	16QAM	20525	8RB#4	21.23	16.76	38.45	PASS
Band5	3MHz	16QAM	20525	8RB#7	21.21	16.74	38.45	PASS
Band5	3MHz	16QAM	20525	15RB#0	21.35	16.88	38.45	PASS
Band5	3MHz	16QAM	20635	1RB#0	21.91	17.44	38.45	PASS
Band5	3MHz	16QAM	20635	1RB#8	22.01	17.54	38.45	PASS
Band5	3MHz	16QAM	20635	1RB#14	22.14	17.67	38.45	PASS
Band5	3MHz	16QAM	20635	8RB#0	21.07	16.60	38.45	PASS

Band5	3MHz	16QAM	20635	8RB#4	21.30	16.83	38.45	PASS
Band5	3MHz	16QAM	20635	8RB#7	21.58	17.11	38.45	PASS
Band5	3MHz	16QAM	20635	15RB#0	21.38	16.91	38.45	PASS
Band5	5MHz	QPSK	20425	1RB#0	23.31	18.84	38.45	PASS
Band5	5MHz	QPSK	20425	1RB#12	23.30	18.83	38.45	PASS
Band5	5MHz	QPSK	20425	1RB#24	22.89	18.42	38.45	PASS
Band5	5MHz	QPSK	20425	12RB#0	22.41	17.94	38.45	PASS
Band5	5MHz	QPSK	20425	12RB#6	22.34	17.87	38.45	PASS
Band5	5MHz	QPSK	20425	12RB#13	22.31	17.84	38.45	PASS
Band5	5MHz	QPSK	20425	25RB#0	22.27	17.80	38.45	PASS
Band5	5MHz	QPSK	20525	1RB#0	23.06	18.59	38.45	PASS
Band5	5MHz	QPSK	20525	1RB#12	23.37	18.90	38.45	PASS
Band5	5MHz	QPSK	20525	1RB#24	22.94	18.47	38.45	PASS
Band5	5MHz	QPSK	20525	12RB#0	22.27	17.80	38.45	PASS
Band5	5MHz	QPSK	20525	12RB#6	22.26	17.79	38.45	PASS
Band5	5MHz	QPSK	20525	12RB#13	22.27	17.80	38.45	PASS
Band5	5MHz	QPSK	20525	25RB#0	22.19	17.72	38.45	PASS
Band5	5MHz	QPSK	20625	1RB#0	23.09	18.62	38.45	PASS
Band5	5MHz	QPSK	20625	1RB#12	23.10	18.63	38.45	PASS
Band5	5MHz	QPSK	20625	1RB#24	22.86	18.39	38.45	PASS
Band5	5MHz	QPSK	20625	12RB#0	22.22	17.75	38.45	PASS
Band5	5MHz	QPSK	20625	12RB#6	22.21	17.74	38.45	PASS
Band5	5MHz	QPSK	20625	12RB#13	22.33	17.86	38.45	PASS
Band5	5MHz	QPSK	20625	25RB#0	22.40	17.93	38.45	PASS
Band5	5MHz	16QAM	20425	1RB#0	21.91	17.44	38.45	PASS
Band5	5MHz	16QAM	20425	1RB#12	22.37	17.90	38.45	PASS
Band5	5MHz	16QAM	20425	1RB#24	21.77	17.30	38.45	PASS
Band5	5MHz	16QAM	20425	12RB#0	21.13	16.66	38.45	PASS
Band5	5MHz	16QAM	20425	12RB#6	21.29	16.82	38.45	PASS
Band5	5MHz	16QAM	20425	12RB#13	21.05	16.58	38.45	PASS
Band5	5MHz	16QAM	20425	25RB#0	21.26	16.79	38.45	PASS
Band5	5MHz	16QAM	20525	1RB#0	22.26	17.79	38.45	PASS
Band5	5MHz	16QAM	20525	1RB#12	22.31	17.84	38.45	PASS
Band5	5MHz	16QAM	20525	1RB#24	22.15	17.68	38.45	PASS
Band5	5MHz	16QAM	20525	12RB#0	21.21	16.74	38.45	PASS
Band5	5MHz	16QAM	20525	12RB#6	21.19	16.72	38.45	PASS
Band5	5MHz	16QAM	20525	12RB#13	21.20	16.73	38.45	PASS
Band5	5MHz	16QAM	20525	25RB#0	21.35	16.88	38.45	PASS
Band5	5MHz	16QAM	20625	1RB#0	21.92	17.45	38.45	PASS
Band5	5MHz	16QAM	20625	1RB#12	22.33	17.86	38.45	PASS
Band5	5MHz	16QAM	20625	1RB#24	22.24	17.77	38.45	PASS
Band5	5MHz	16QAM	20625	12RB#0	21.10	16.63	38.45	PASS
Band5	5MHz	16QAM	20625	12RB#6	21.07	16.60	38.45	PASS
Band5	5MHz	16QAM	20625	12RB#13	21.22	16.75	38.45	PASS

Band5	5MHz	16QAM	20625	25RB#0	21.50	17.03	38.45	PASS
Band5	10MHz	QPSK	20450	1RB#0	23.38	18.91	38.45	PASS
Band5	10MHz	QPSK	20450	1RB#24	23.53	19.06	38.45	PASS
Band5	10MHz	QPSK	20450	1RB#49	22.85	18.38	38.45	PASS
Band5	10MHz	QPSK	20450	25RB#0	22.53	18.06	38.45	PASS
Band5	10MHz	QPSK	20450	25RB#12	22.23	17.76	38.45	PASS
Band5	10MHz	QPSK	20450	25RB#25	22.15	17.68	38.45	PASS
Band5	10MHz	QPSK	20450	50RB#0	22.33	17.86	38.45	PASS
Band5	10MHz	QPSK	20525	1RB#0	23.08	18.61	38.45	PASS
Band5	10MHz	QPSK	20525	1RB#24	23.69	19.22	38.45	PASS
Band5	10MHz	QPSK	20525	1RB#49	23.16	18.69	38.45	PASS
Band5	10MHz	QPSK	20525	25RB#0	22.35	17.88	38.45	PASS
Band5	10MHz	QPSK	20525	25RB#12	22.43	17.96	38.45	PASS
Band5	10MHz	QPSK	20525	25RB#25	22.25	17.78	38.45	PASS
Band5	10MHz	QPSK	20525	50RB#0	22.29	17.82	38.45	PASS
Band5	10MHz	QPSK	20600	1RB#0	23.02	18.55	38.45	PASS
Band5	10MHz	QPSK	20600	1RB#24	23.50	19.03	38.45	PASS
Band5	10MHz	QPSK	20600	1RB#49	23.07	18.60	38.45	PASS
Band5	10MHz	QPSK	20600	25RB#0	22.61	18.14	38.45	PASS
Band5	10MHz	QPSK	20600	25RB#12	22.43	17.96	38.45	PASS
Band5	10MHz	QPSK	20600	25RB#25	22.22	17.75	38.45	PASS
Band5	10MHz	QPSK	20600	50RB#0	22.24	17.77	38.45	PASS
Band5	10MHz	16QAM	20450	1RB#0	22.08	17.61	38.45	PASS
Band5	10MHz	16QAM	20450	1RB#24	21.75	17.28	38.45	PASS
Band5	10MHz	16QAM	20450	1RB#49	22.09	17.62	38.45	PASS
Band5	10MHz	16QAM	20450	25RB#0	21.32	16.85	38.45	PASS
Band5	10MHz	16QAM	20450	25RB#12	21.28	16.81	38.45	PASS
Band5	10MHz	16QAM	20450	25RB#25	21.28	16.81	38.45	PASS
Band5	10MHz	16QAM	20450	50RB#0	21.32	16.85	38.45	PASS
Band5	10MHz	16QAM	20525	1RB#0	21.80	17.33	38.45	PASS
Band5	10MHz	16QAM	20525	1RB#24	22.33	17.86	38.45	PASS
Band5	10MHz	16QAM	20525	1RB#49	21.89	17.42	38.45	PASS
Band5	10MHz	16QAM	20525	25RB#0	21.38	16.91	38.45	PASS
Band5	10MHz	16QAM	20525	25RB#12	21.38	16.91	38.45	PASS
Band5	10MHz	16QAM	20525	25RB#25	21.31	16.84	38.45	PASS
Band5	10MHz	16QAM	20525	50RB#0	21.37	16.90	38.45	PASS
Band5	10MHz	16QAM	20600	1RB#0	21.90	17.43	38.45	PASS
Band5	10MHz	16QAM	20600	1RB#24	21.91	17.44	38.45	PASS
Band5	10MHz	16QAM	20600	1RB#49	21.82	17.35	38.45	PASS
Band5	10MHz	16QAM	20600	25RB#0	21.30	16.83	38.45	PASS
Band5	10MHz	16QAM	20600	25RB#12	21.25	16.78	38.45	PASS
Band5	10MHz	16QAM	20600	25RB#25	21.34	16.87	38.45	PASS
Band5	10MHz	16QAM	20600	50RB#0	21.46	16.99	38.45	PASS

Remark:

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

$$\text{ERP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBd]}$$

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

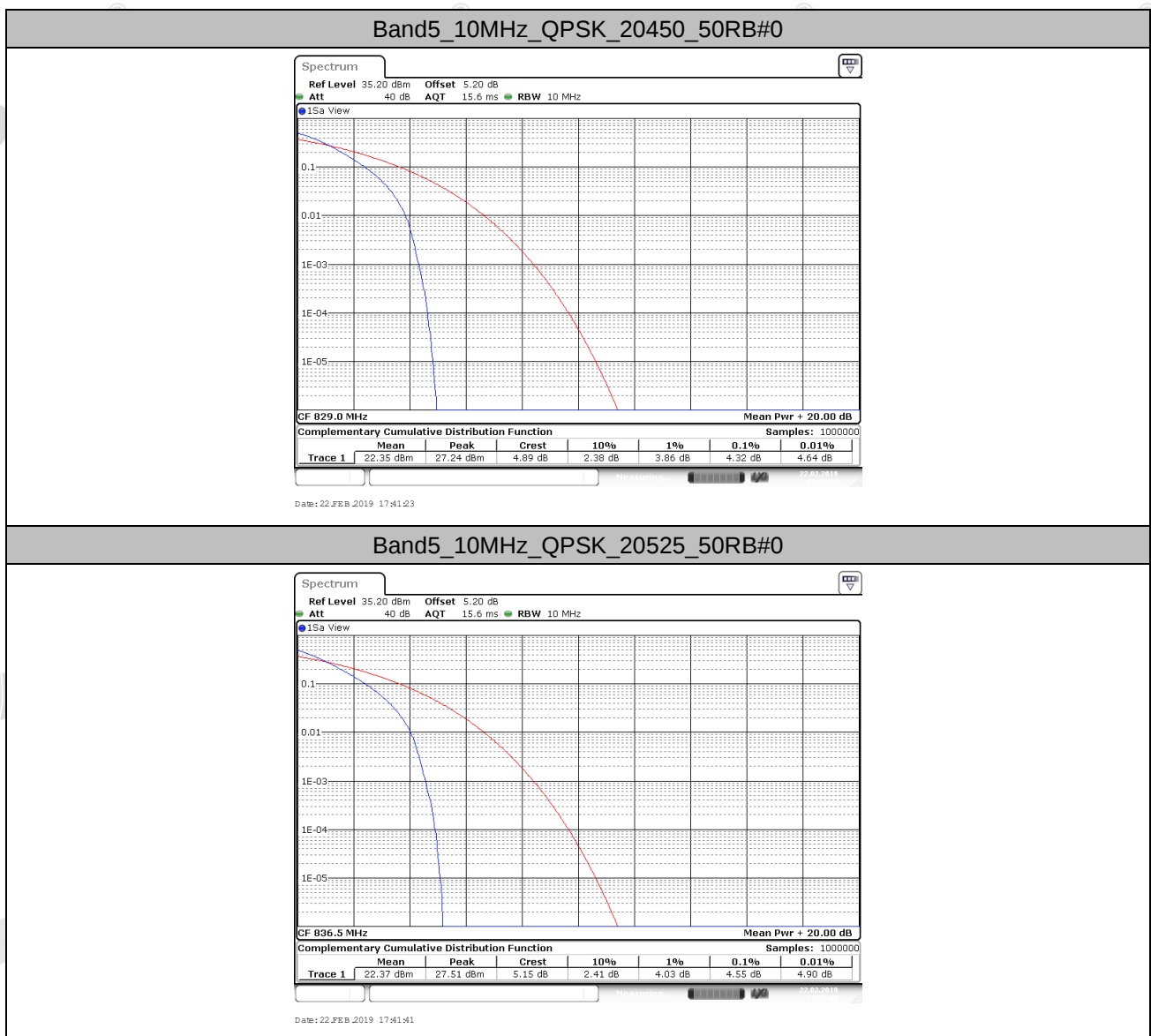
b: SGP=Signal Generator Level

4. Peak-to-Average Ratio(CCDF)

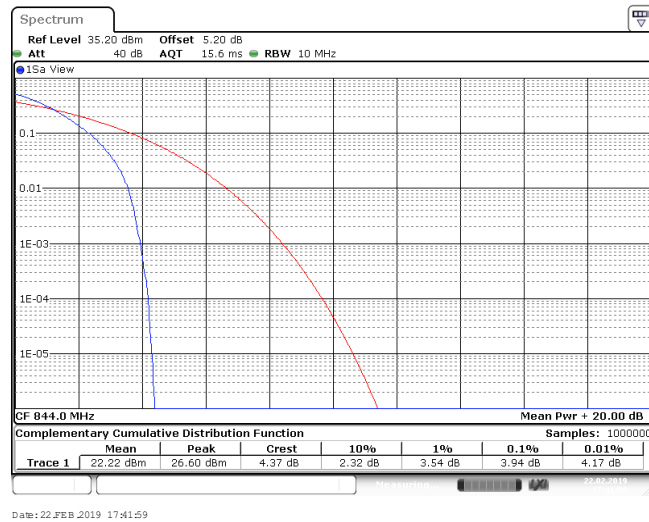
4.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band5	10MHz	QPSK	20450	50RB#0	4.32	13	PASS
Band5	10MHz	QPSK	20525	50RB#0	4.55	13	PASS
Band5	10MHz	QPSK	20600	50RB#0	3.94	13	PASS
Band5	10MHz	16QAM	20450	50RB#0	5.22	13	PASS
Band5	10MHz	16QAM	20525	50RB#0	5.59	13	PASS
Band5	10MHz	16QAM	20600	50RB#0	4.87	13	PASS

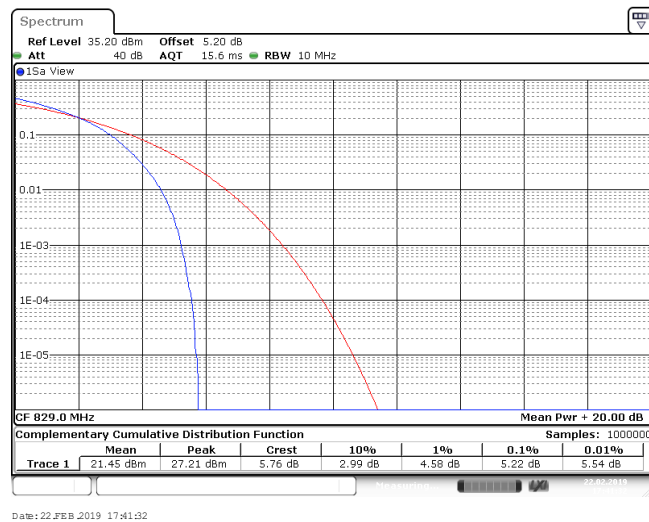
4.2. Test Plots



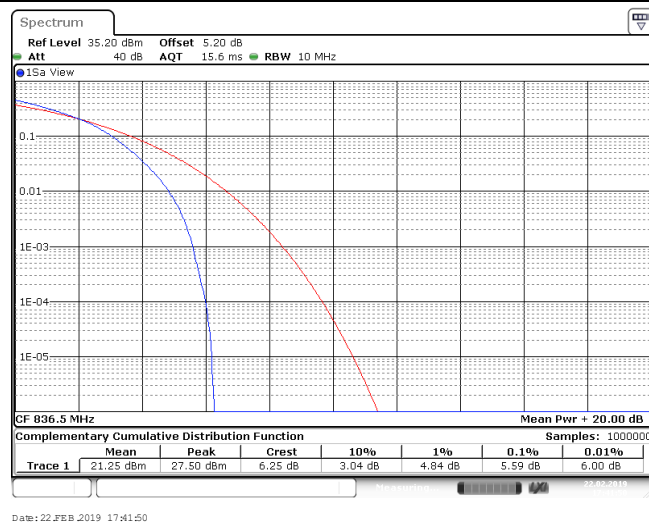
Band5_10MHz_QPSK_20600_50RB#0

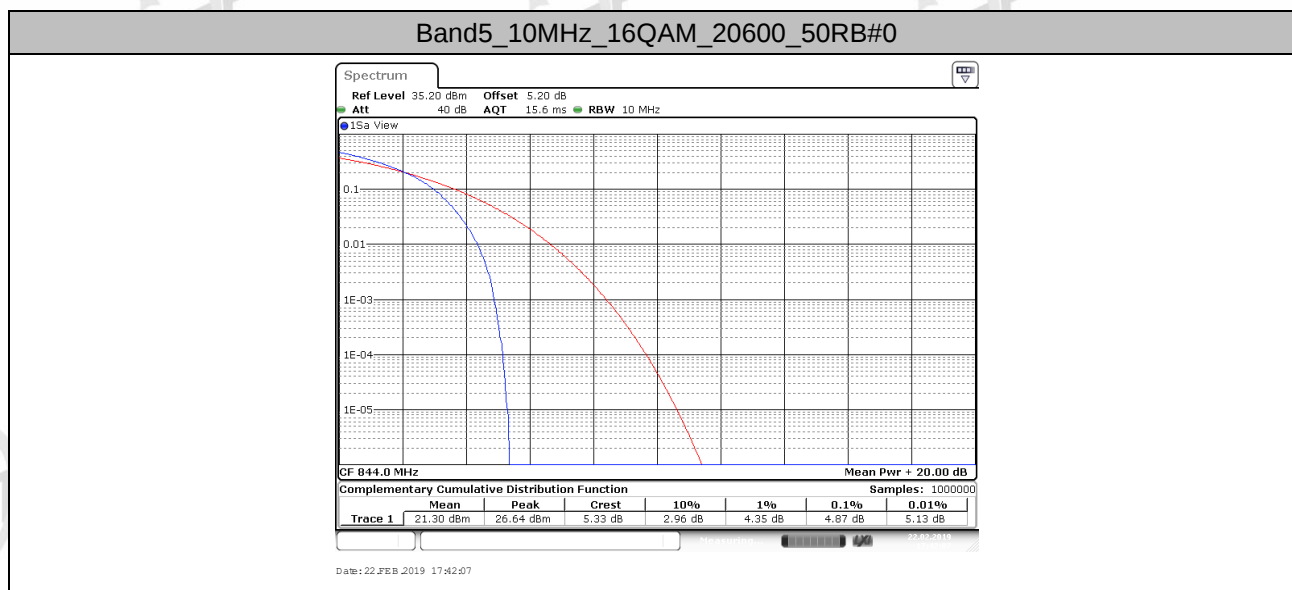


Band5_10MHz_16QAM_20450_50RB#0



Band5_10MHz_16QAM_20525_50RB#0



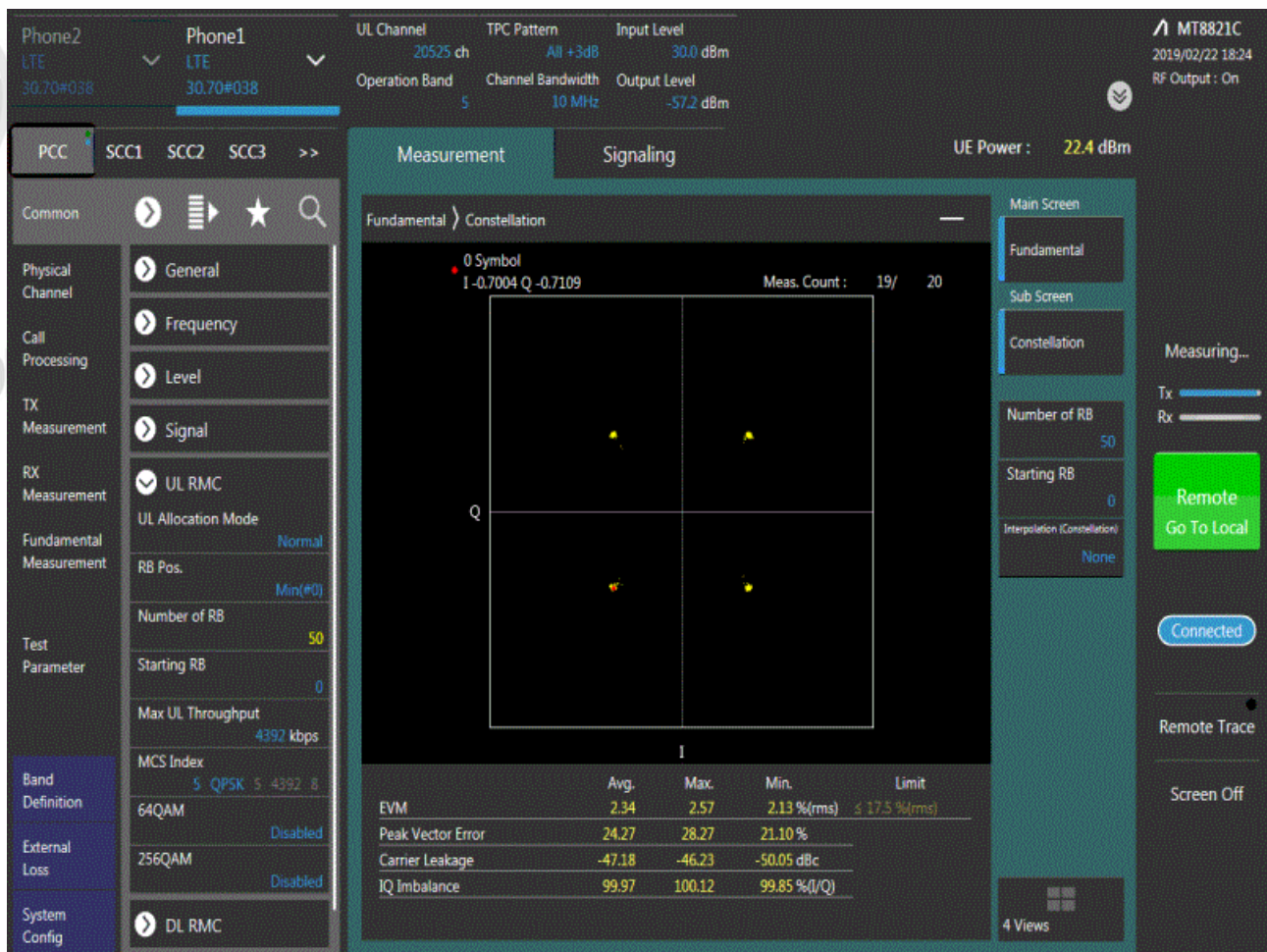


5. Modulation Characteristics

5.1. Test BAND = LTE Band 5

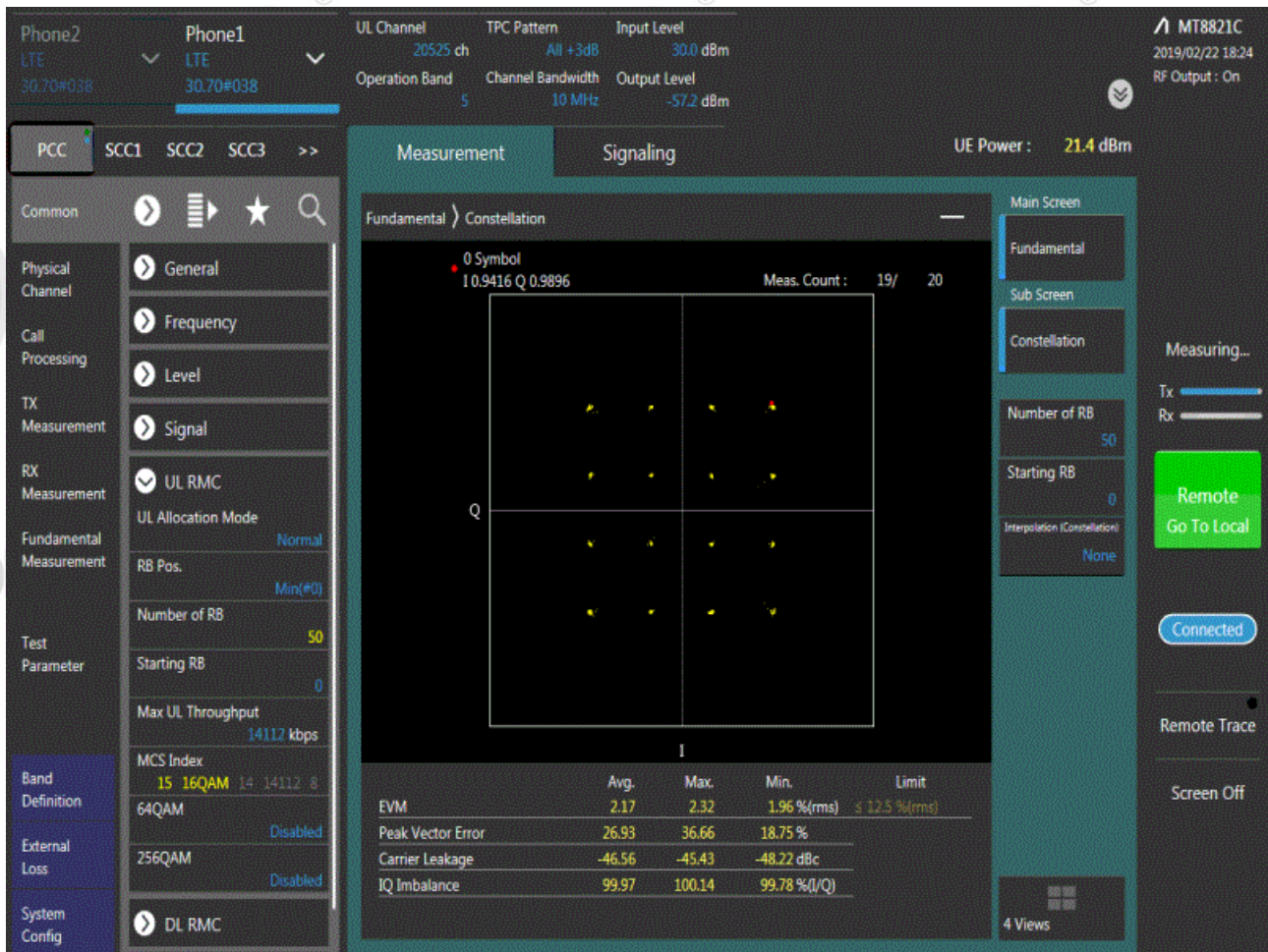
5.2. Test Mode = LTE /TM1 10MHz

5.2.1. Test Channel = MCH



5.3. Test Mode = LTE /TM2 10MHz

5.3.1. Test Channel = MCH



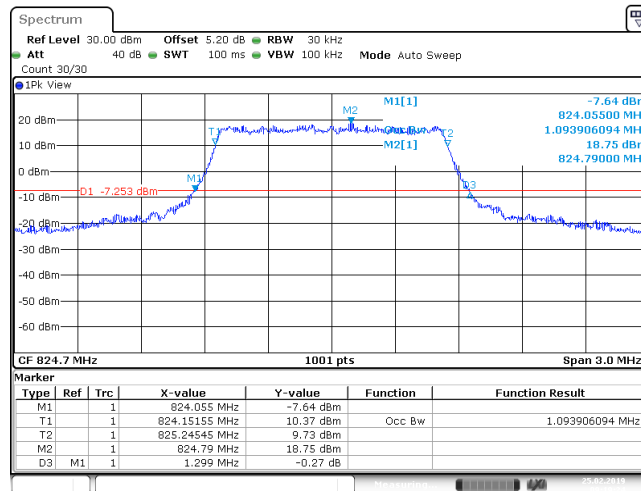
6. 26dB Bandwidth and Occupied Bandwidth

6.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band5	1.4MHz	QPSK	20407	6RB#0	1.094	1.299	PASS
Band5	1.4MHz	QPSK	20525	6RB#0	1.094	1.296	PASS
Band5	1.4MHz	QPSK	20643	6RB#0	1.100	1.344	PASS
Band5	1.4MHz	16QAM	20407	6RB#0	1.091	1.305	PASS
Band5	1.4MHz	16QAM	20525	6RB#0	1.091	1.293	PASS
Band5	1.4MHz	16QAM	20643	6RB#0	1.097	1.317	PASS
Band5	3MHz	QPSK	20415	15RB#0	2.697	2.994	PASS
Band5	3MHz	QPSK	20525	15RB#0	2.697	3.006	PASS
Band5	3MHz	QPSK	20635	15RB#0	2.703	3.024	PASS
Band5	3MHz	16QAM	20415	15RB#0	2.685	2.976	PASS
Band5	3MHz	16QAM	20525	15RB#0	2.685	2.982	PASS
Band5	3MHz	16QAM	20635	15RB#0	2.691	2.982	PASS
Band5	5MHz	QPSK	20425	25RB#0	4.466	4.930	PASS
Band5	5MHz	QPSK	20525	25RB#0	4.476	4.930	PASS
Band5	5MHz	QPSK	20625	25RB#0	4.476	4.940	PASS
Band5	5MHz	16QAM	20425	25RB#0	4.486	4.970	PASS
Band5	5MHz	16QAM	20525	25RB#0	4.496	4.960	PASS
Band5	5MHz	16QAM	20625	25RB#0	4.496	4.980	PASS
Band5	10MHz	QPSK	20450	50RB#0	8.911	9.660	PASS
Band5	10MHz	QPSK	20525	50RB#0	8.911	9.720	PASS
Band5	10MHz	QPSK	20600	50RB#0	8.931	9.700	PASS
Band5	10MHz	16QAM	20450	50RB#0	8.911	9.720	PASS
Band5	10MHz	16QAM	20525	50RB#0	8.931	9.780	PASS
Band5	10MHz	16QAM	20600	50RB#0	8.931	9.720	PASS

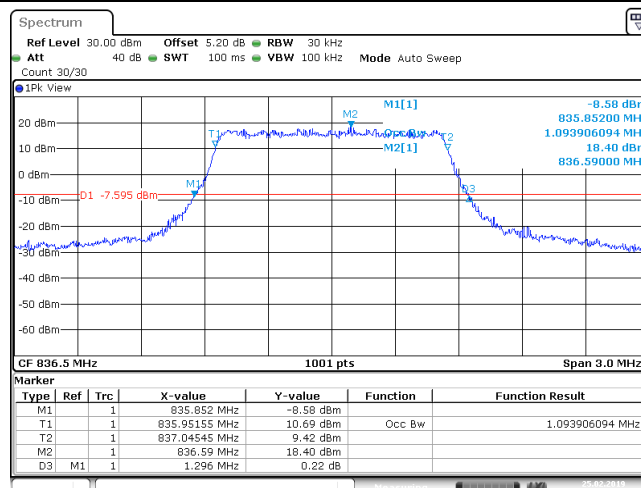
6.2. Test Plots

Band5_1.4MHz_QPSK_20407_6RB#0



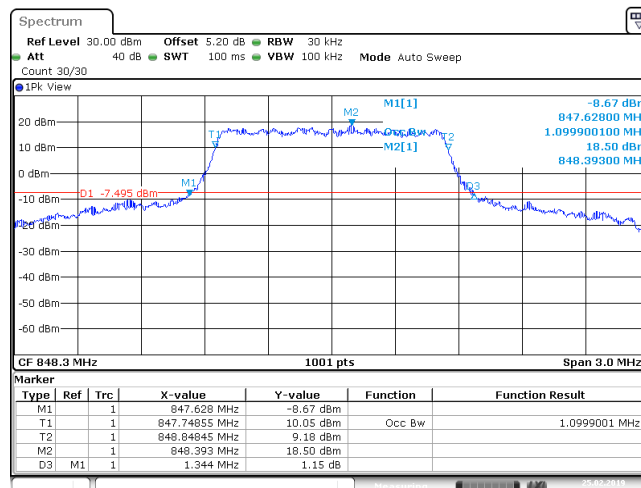
Date:25.FEB.2019 09:19:24

Band5_1.4MHz_QPSK_20525_6RB#0



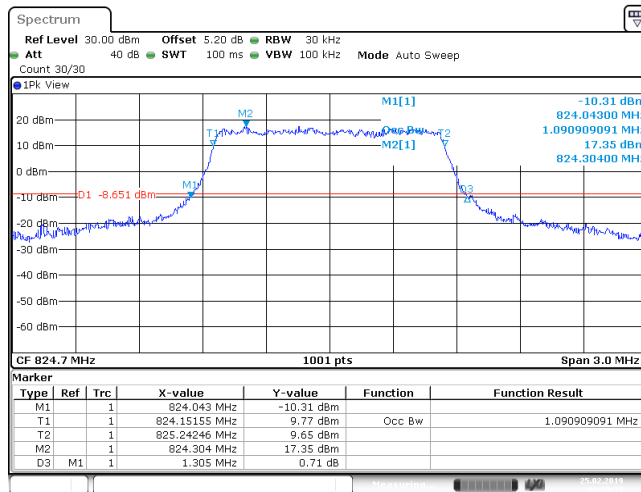
Date:25.FEB.2019 09:19:50

Band5_1.4MHz_QPSK_20643_6RB#0



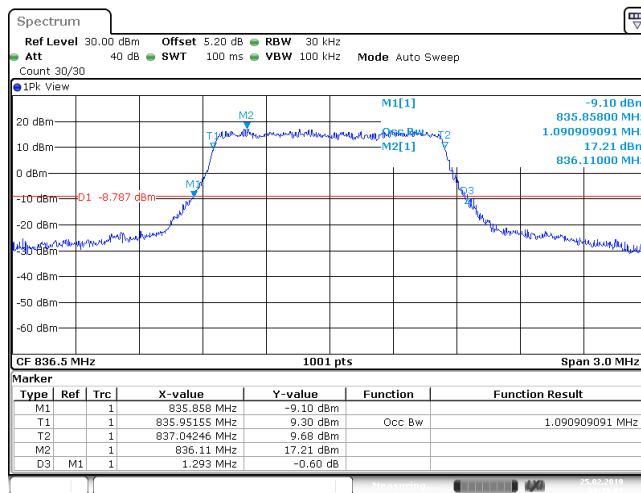
Date:25.FEB.2019 09:20:16

Band5_1.4MHz_16QAM_20407_6RB#0



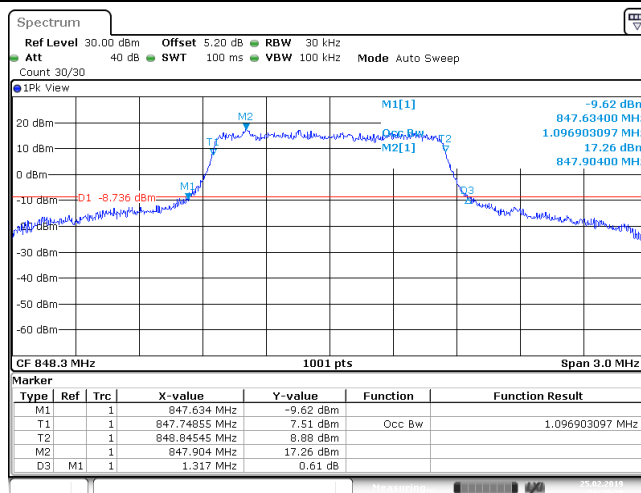
Date: 25 FEB 2019 09:19:37

Band5_1.4MHz_16QAM_20525_6RB#0



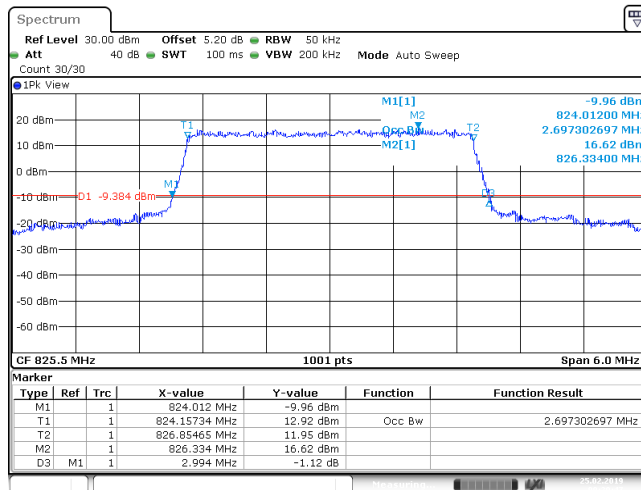
Date: 25 FEB 2019 09:20:03

Band5_1.4MHz_16QAM_20643_6RB#0



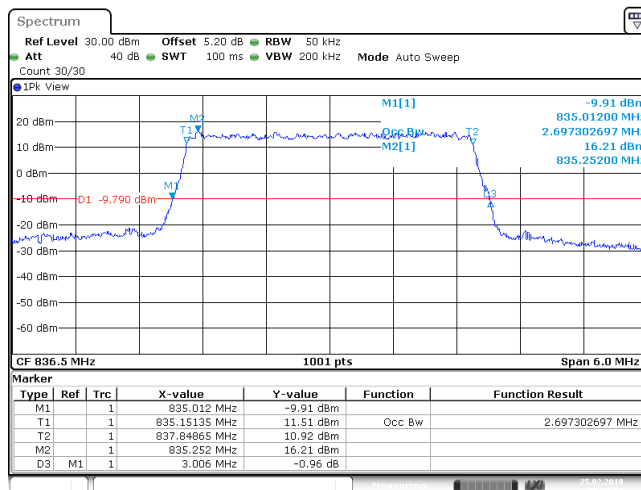
Date: 25 FEB 2019 09:20:29

Band5_3MHz_QPSK_20415_15RB#0



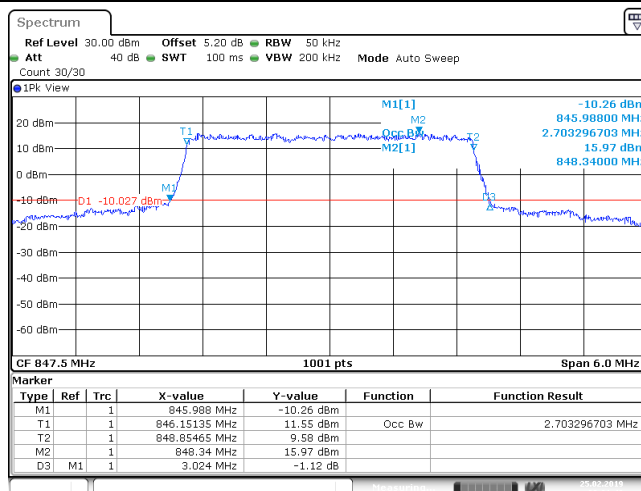
Date: 25 FEB 2019 09:20:48

Band5_3MHz_QPSK_20525_15RB#0



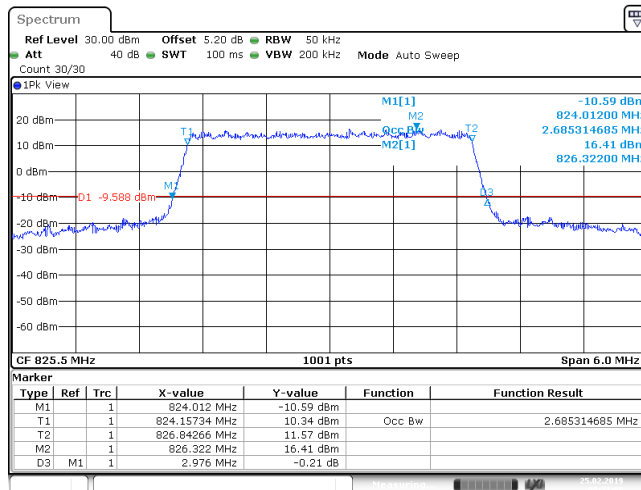
Date: 25 FEB 2019 09:21:14

Band5_3MHz_QPSK_20635_15RB#0



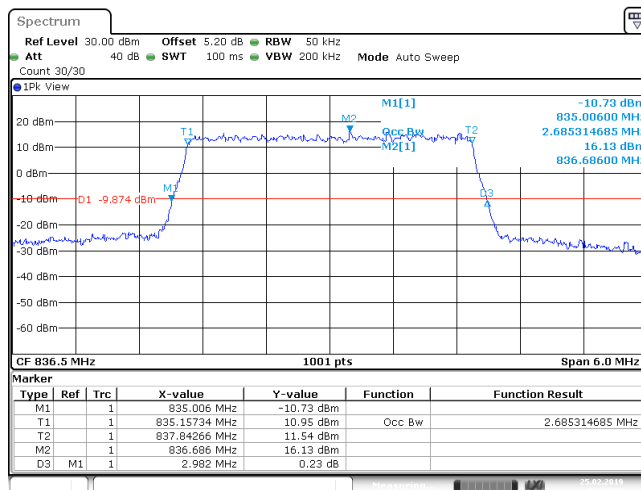
Date: 25 FEB 2019 09:21:40

Band5_3MHz_16QAM_20415_15RB#0



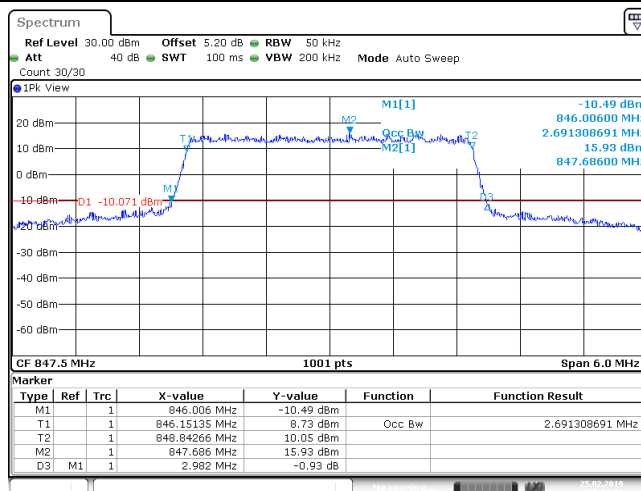
Date: 25 FEB 2019 09:21:01

Band5_3MHz_16QAM_20525_15RB#0



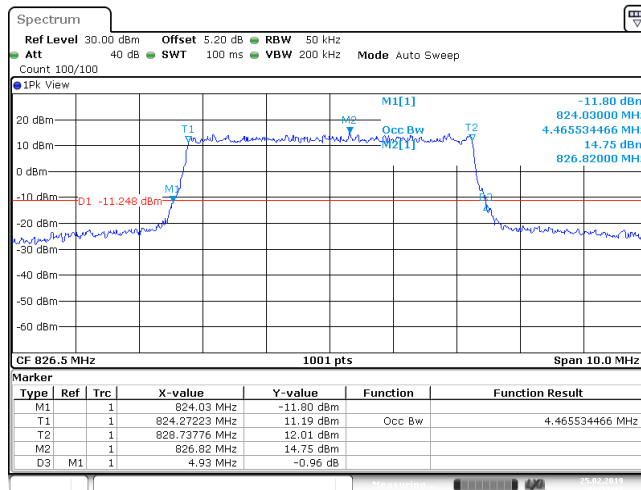
Date: 25 FEB 2019 09:21:27

Band5_3MHz_16QAM_20635_15RB#0



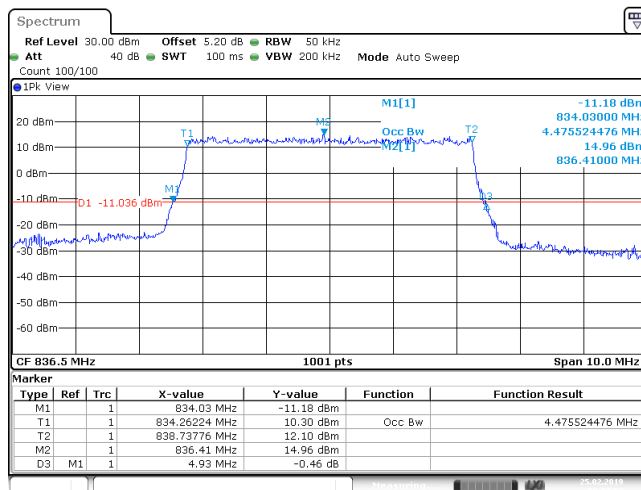
Date: 25 FEB 2019 09:21:53

Band5_5MHz_QPSK_20425_25RB#0



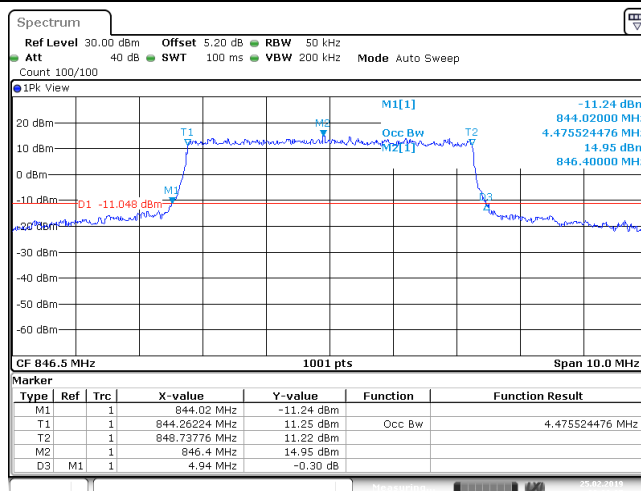
Date: 25.FEB.2019 09:22:18

Band5_5MHz_QPSK_20525_25RB#0



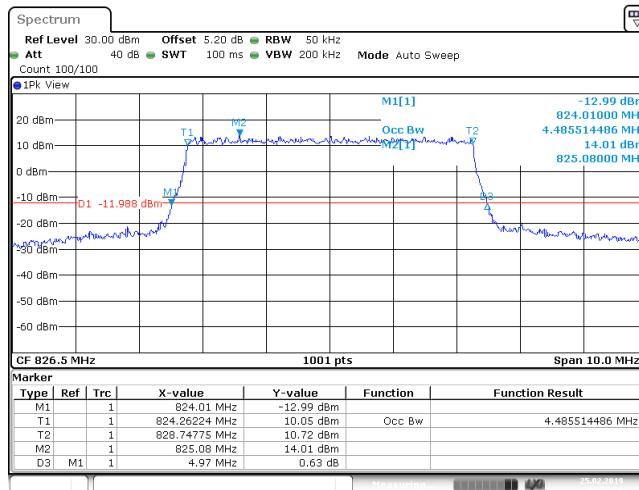
Date: 25.FEB.2019 09:22:58

Band5_5MHz_QPSK_20625_25RB#0



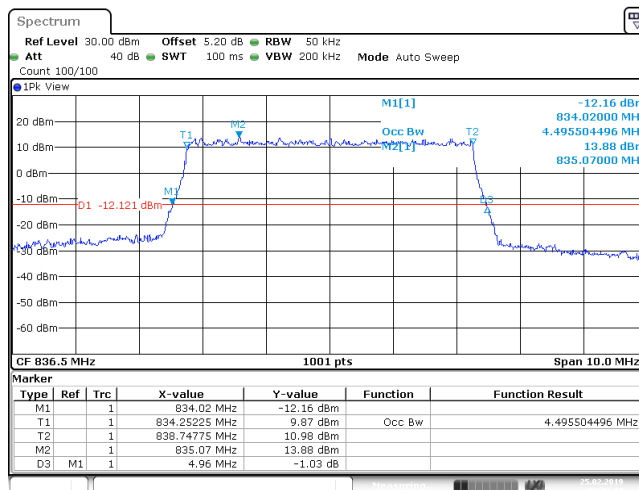
Date: 25.FEB.2019 09:23:38

Band5_5MHz_16QAM_20425_25RB#0



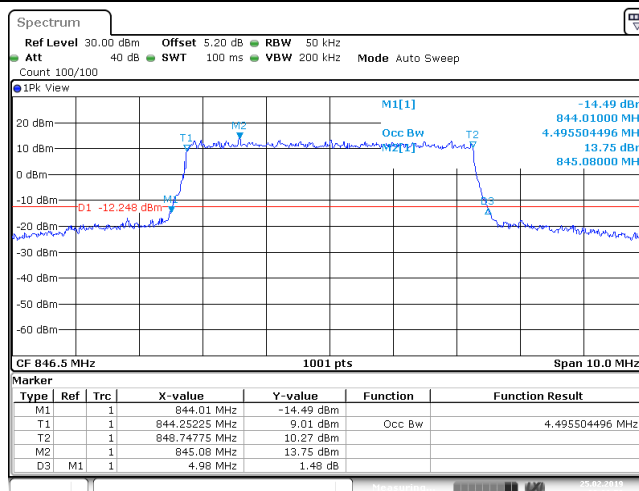
Date: 25 FEB 2019 09:22:37

Band5_5MHz_16QAM_20525_25RB#0



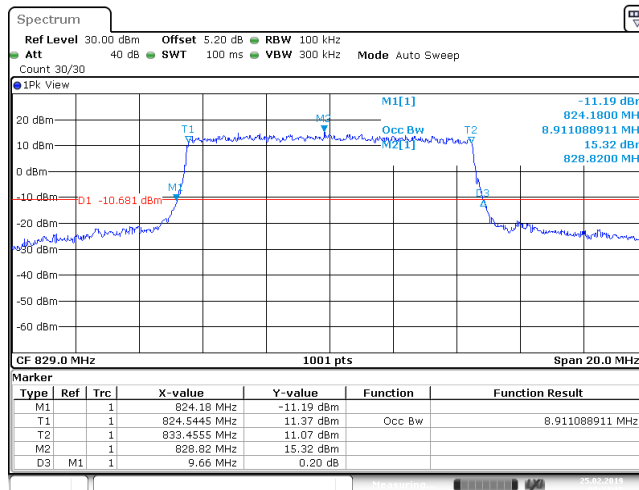
Date: 25 FEB 2019 09:23:18

Band5_5MHz_16QAM_20625_25RB#0



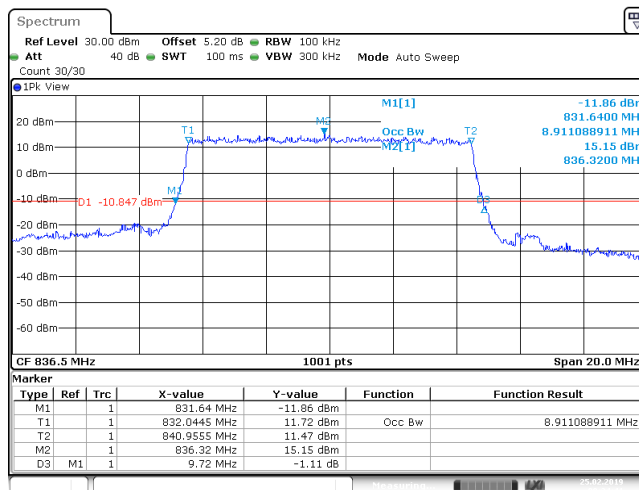
Date: 25 FEB 2019 09:23:58

Band5_10MHz_QPSK_20450_50RB#0



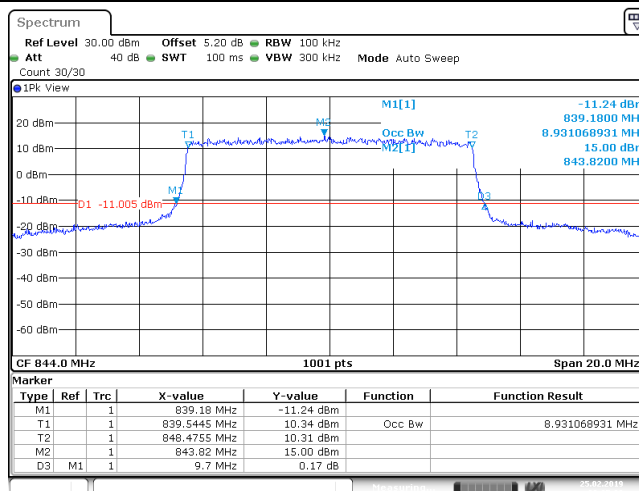
Date: 25 FEB 2019 09:24:16

Band5_10MHz_QPSK_20525_50RB#0



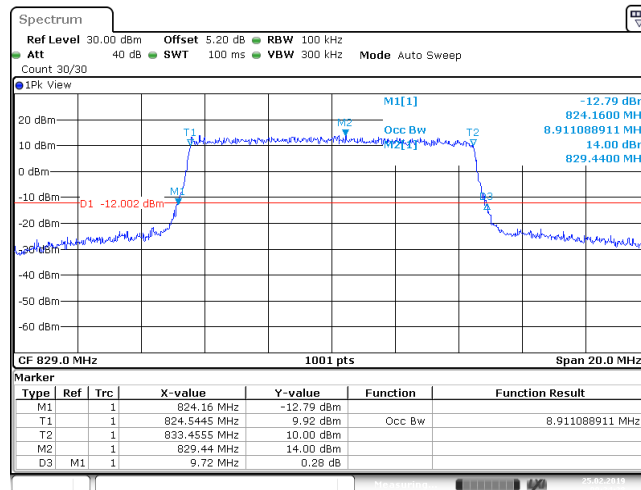
Date: 25 FEB 2019 09:24:42

Band5_10MHz_QPSK_20600_50RB#0



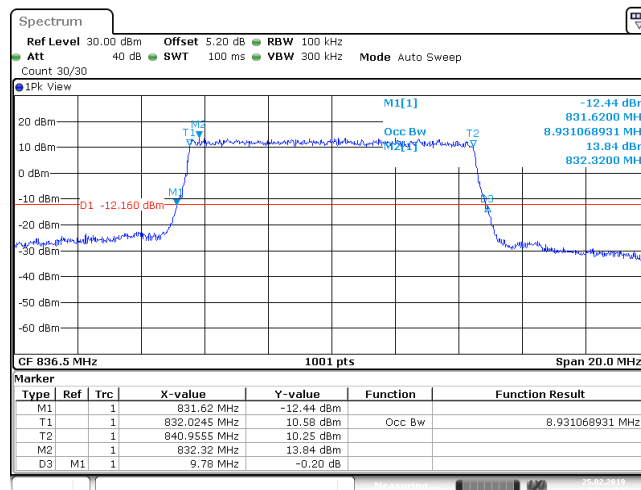
Date: 25 FEB 2019 09:25:08

Band5_10MHz_16QAM_20450_50RB#0



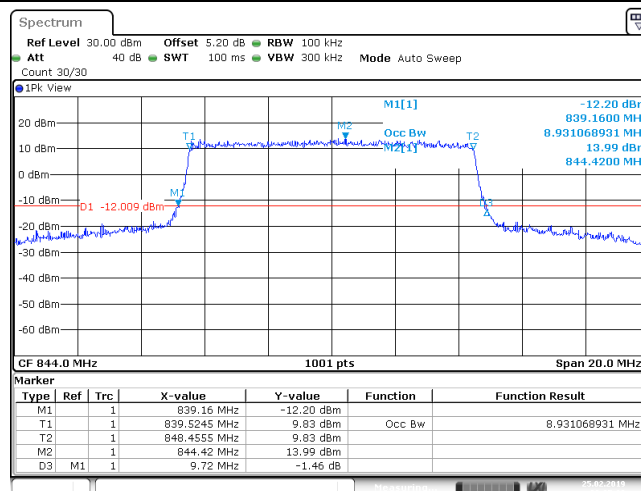
Date: 25 FEB 2019 09:24:28

Band5_10MHz_16QAM_20525_50RB#0



Date: 25 FEB 2019 09:24:55

Band5_10MHz_16QAM_20600_50RB#0

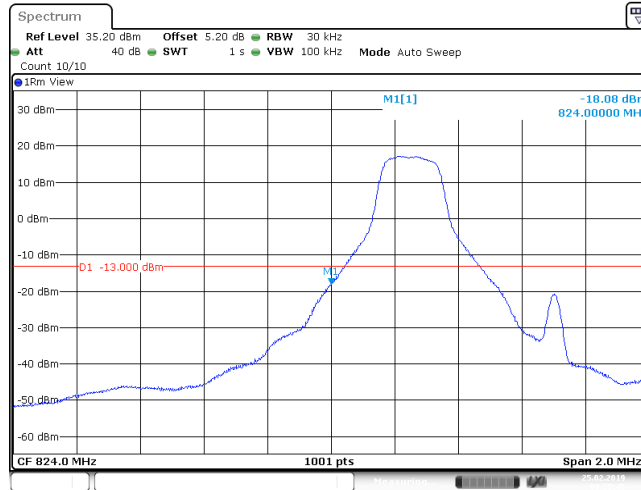


Date: 25 FEB 2019 09:25:21

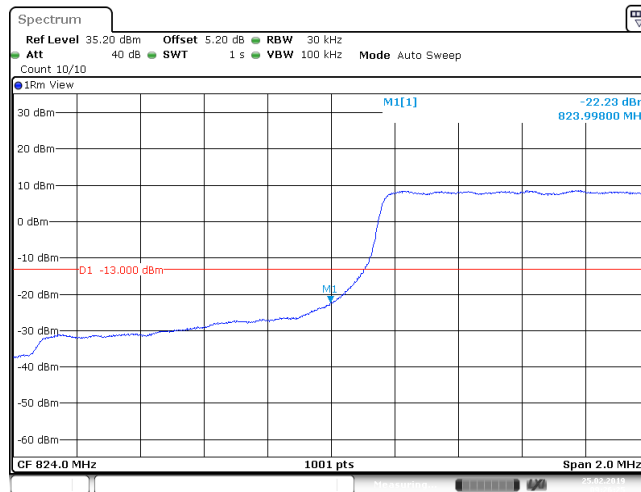
7. Band Edge Compliance

7.1. Test Plots

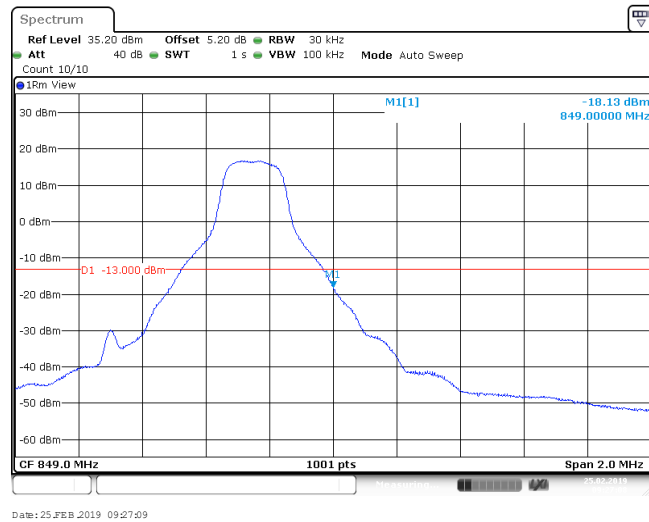
Band5_1.4MHz_QPSK_20407_1RB#0



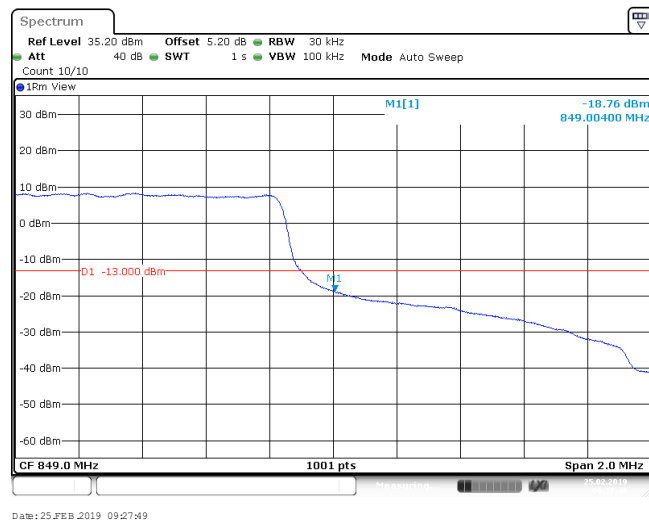
Band5_1.4MHz_QPSK_20407_6RB#0



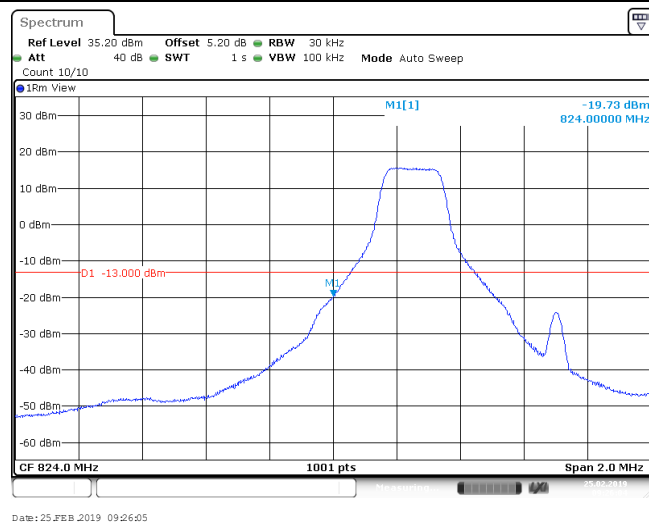
Band5_1.4MHz_QPSK_20643_1RB#5



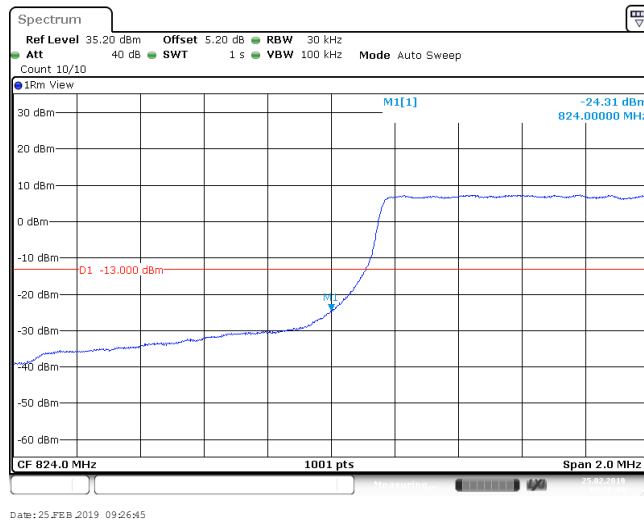
Band5_1.4MHz_QPSK_20643_6RB#0



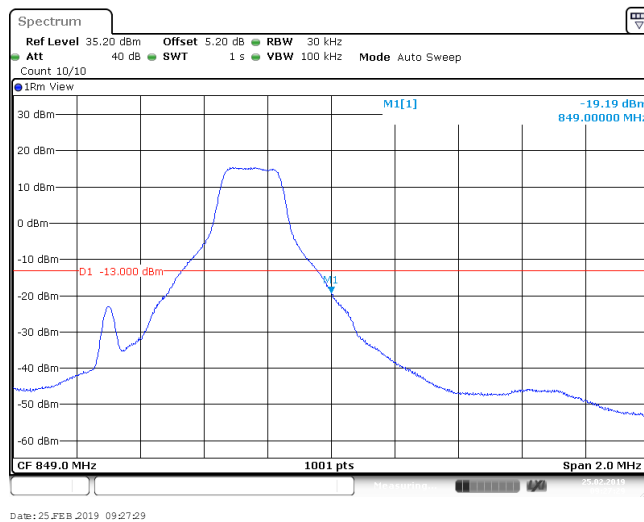
Band5_1.4MHz_16QAM_20407_1RB#0



Band5_1.4MHz_16QAM_20407_6RB#0



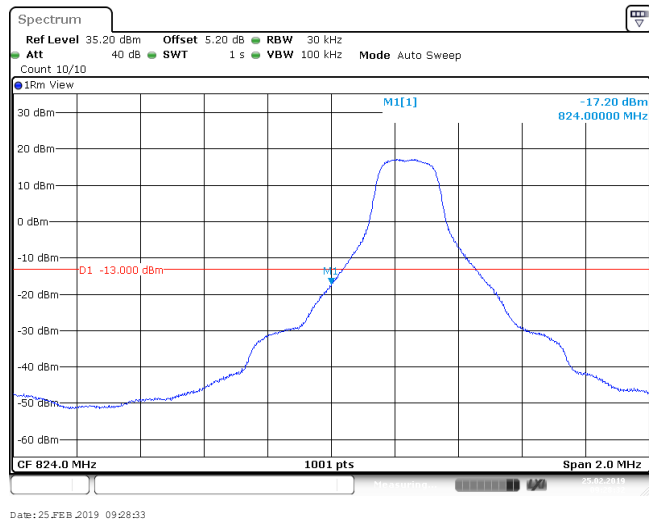
Band5_1.4MHz_16QAM_20643_1RB#5



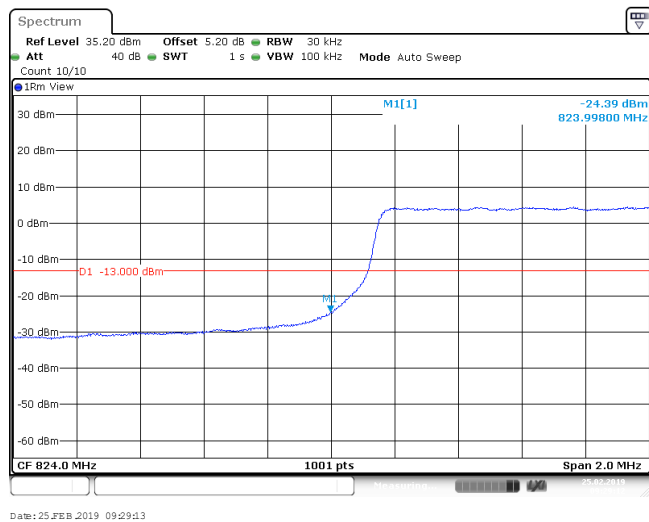
Band5_1.4MHz_16QAM_20643_6RB#0



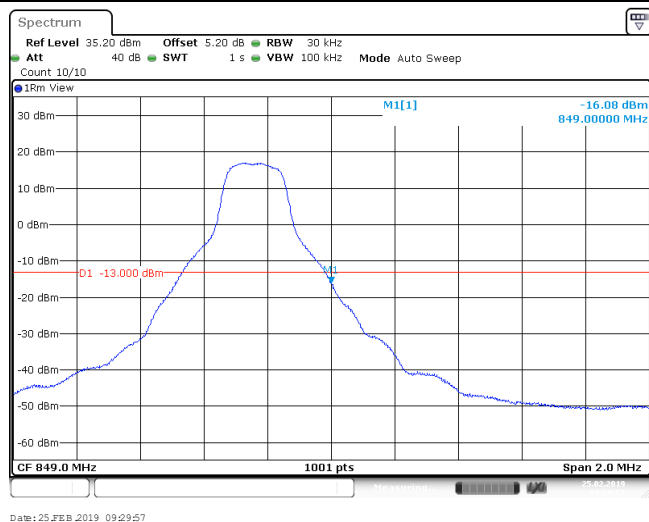
Band5_3MHz_QPSK_20415_1RB#0



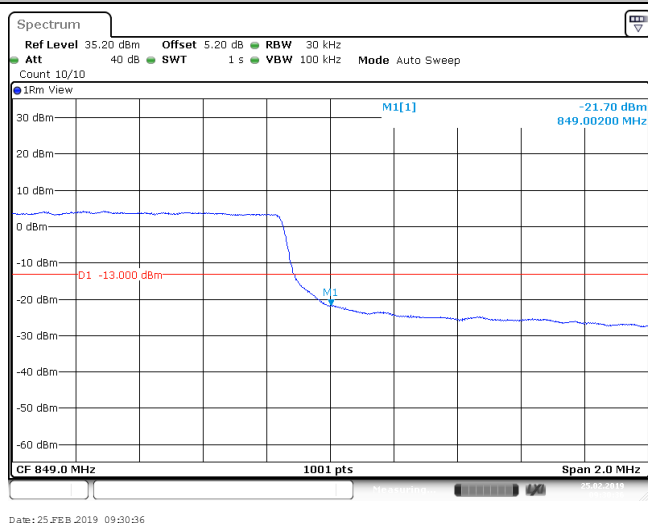
Band5_3MHz_QPSK_20415_15RB#0



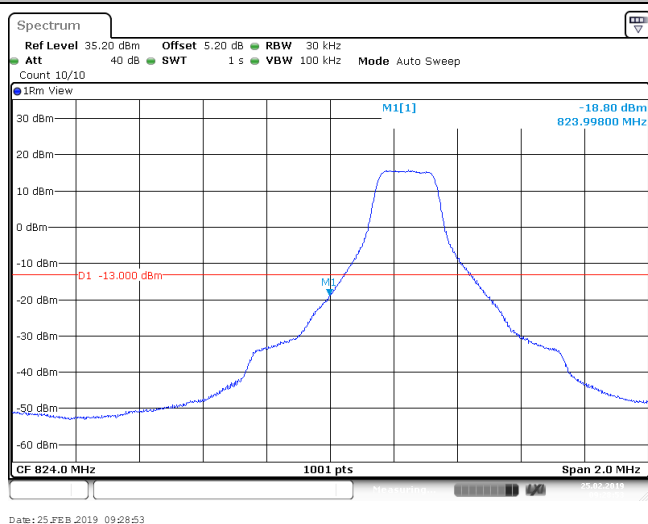
Band5_3MHz_QPSK_20635_1RB#14



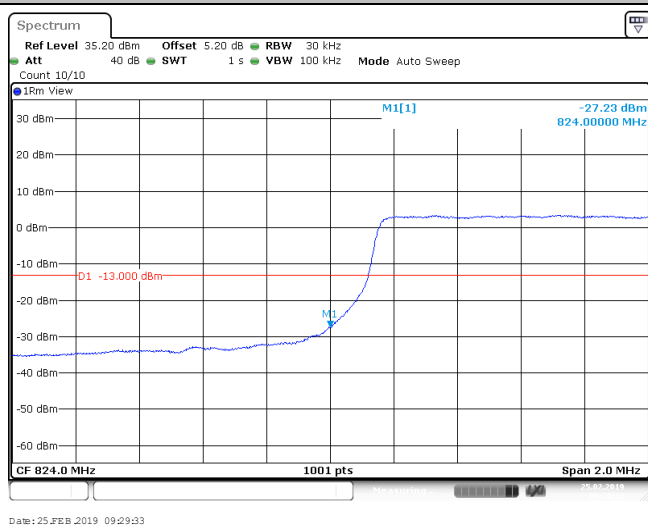
Band5_3MHz_QPSK_20635_15RB#0



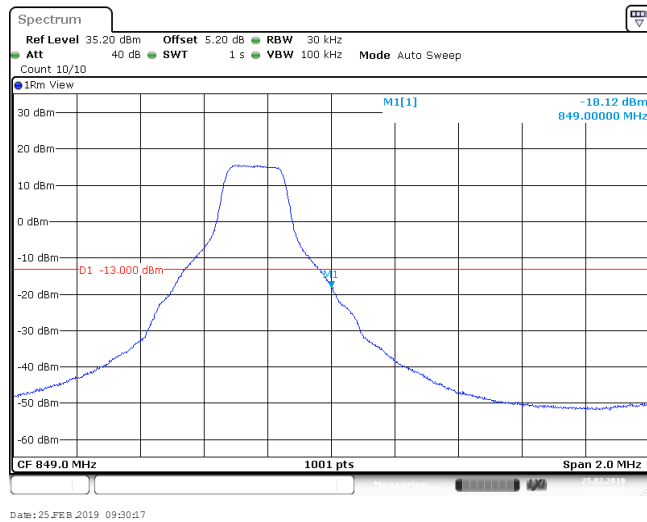
Band5_3MHz_16QAM_20415_1RB#0



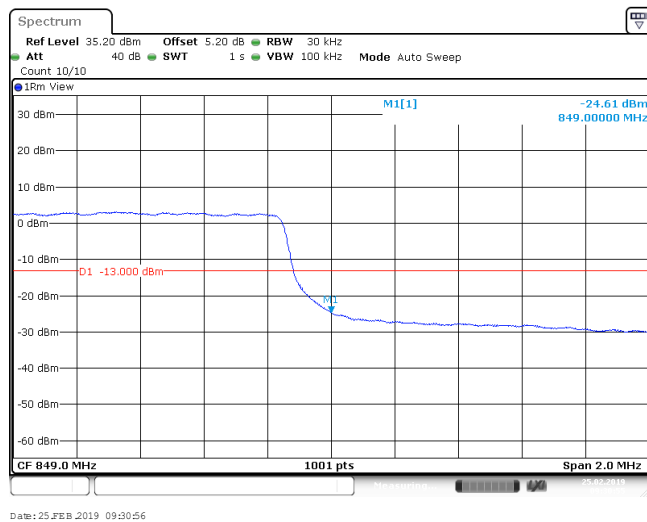
Band5_3MHz_16QAM_20415_15RB#0



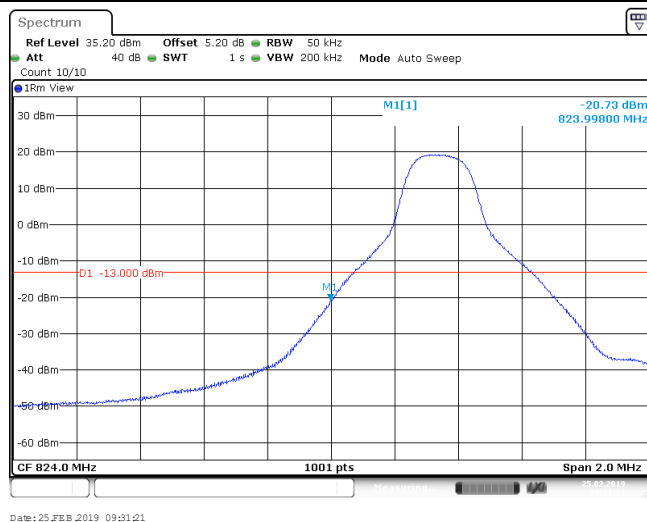
Band5_3MHz_16QAM_20635_1RB#14



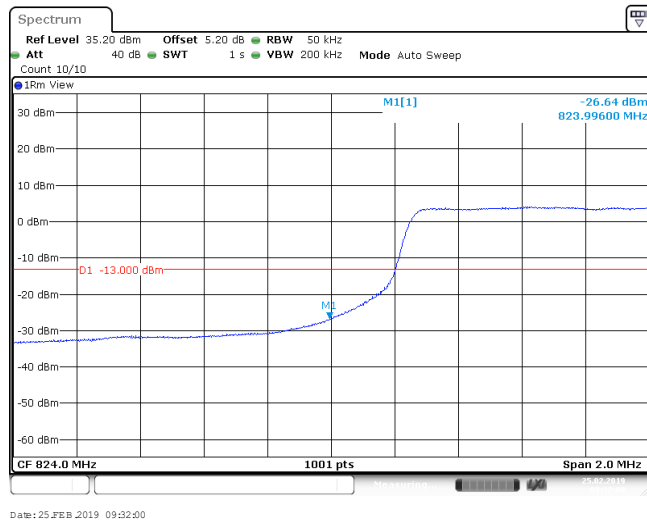
Band5_3MHz_16QAM_20635_15RB#0



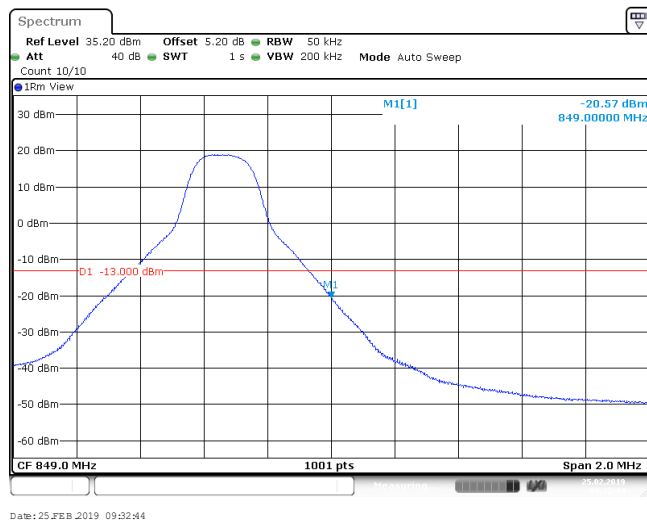
Band5_5MHz_QPSK_20425_1RB#0



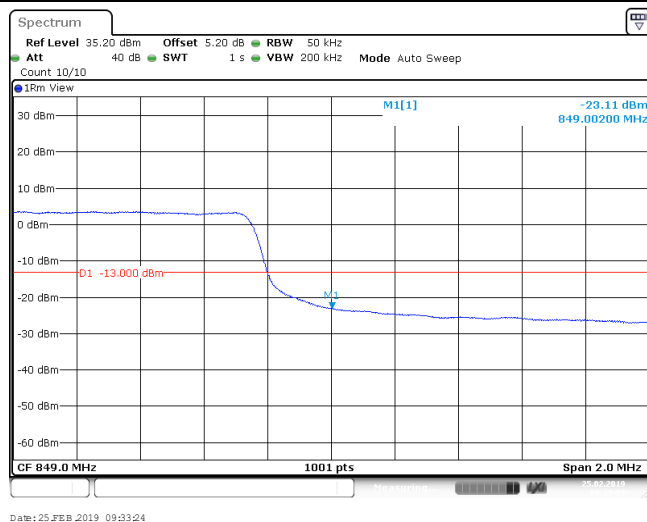
Band5_5MHz_QPSK_20425_25RB#0



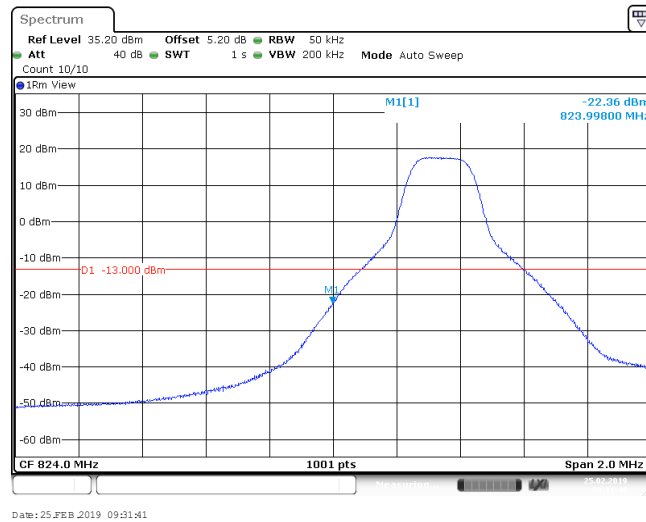
Band5_5MHz_QPSK_20625_1RB#24



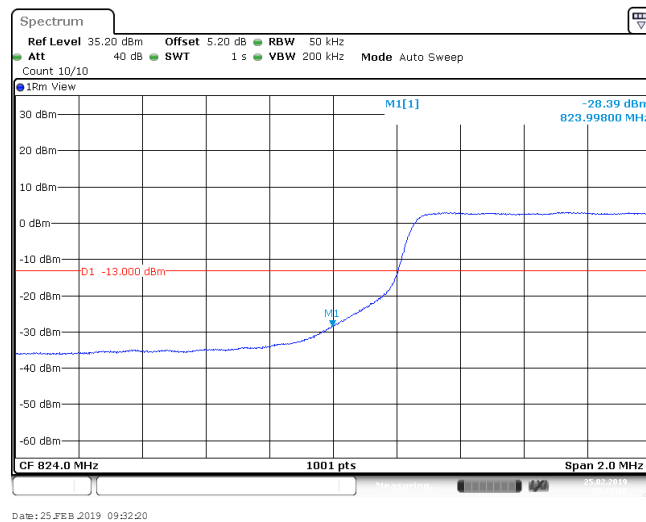
Band5_5MHz_QPSK_20625_25RB#0



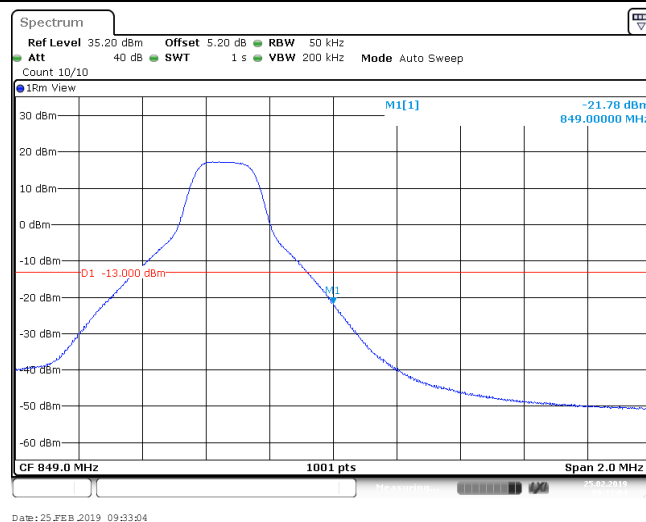
Band5_5MHz_16QAM_20425_1RB#0



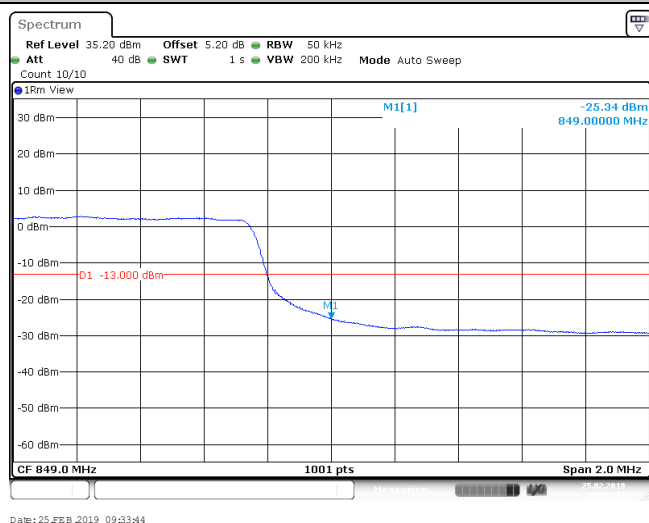
Band5_5MHz_16QAM_20425_25RB#0



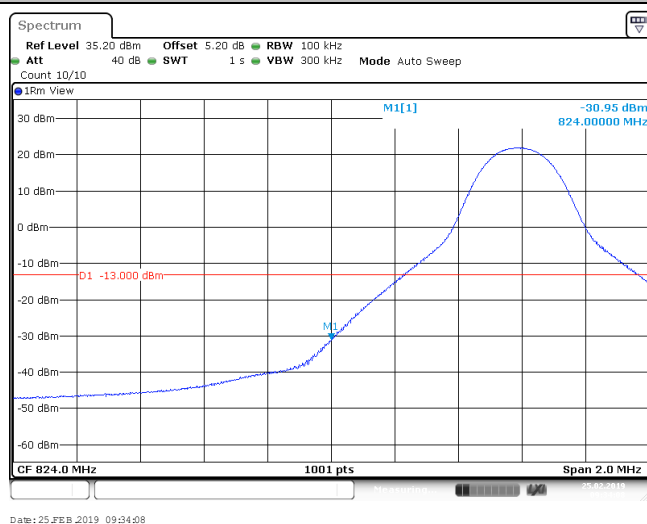
Band5_5MHz_16QAM_20625_1RB#24



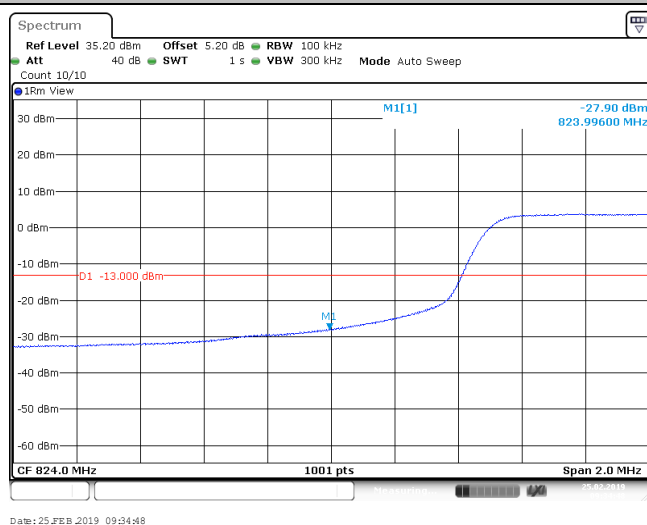
Band5_5MHz_16QAM_20625_25RB#0



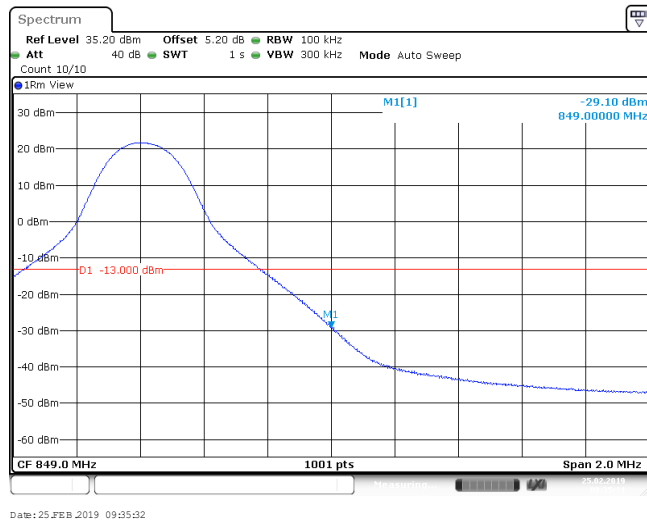
Band5_10MHz_QPSK_20450_1RB#0



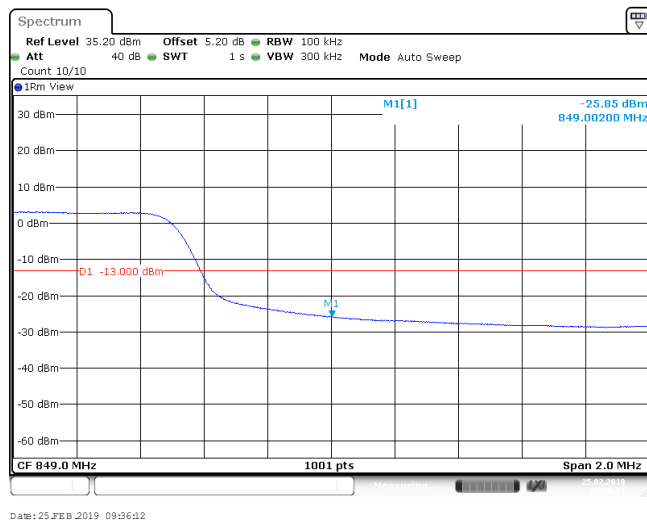
Band5_10MHz_QPSK_20450_50RB#0



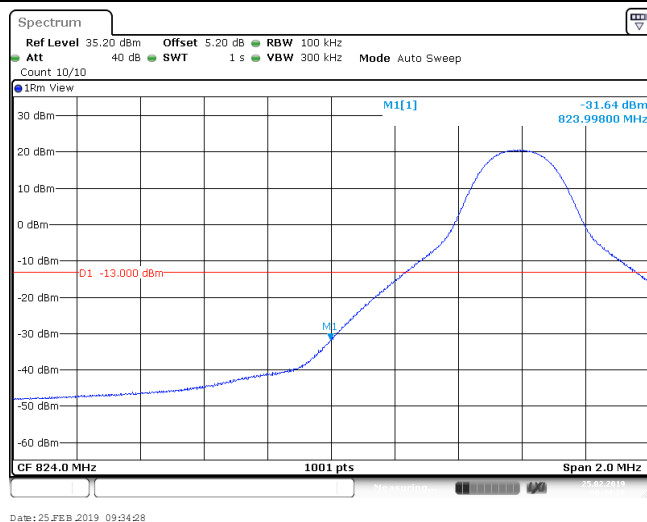
Band5_10MHz_QPSK_20600_1RB#49



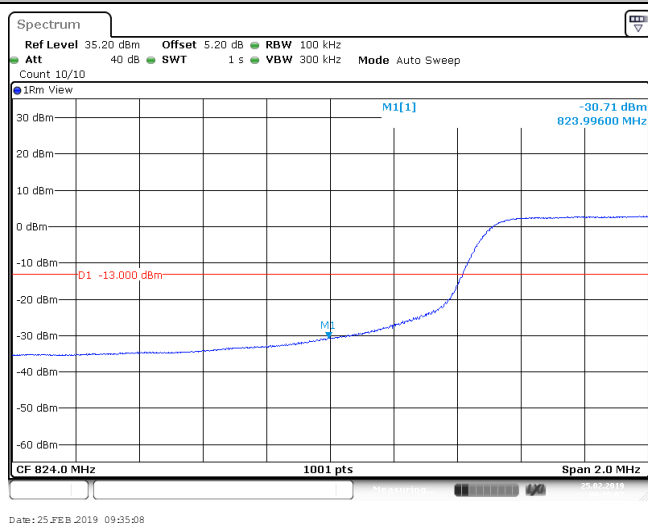
Band5_10MHz_QPSK_20600_50RB#0



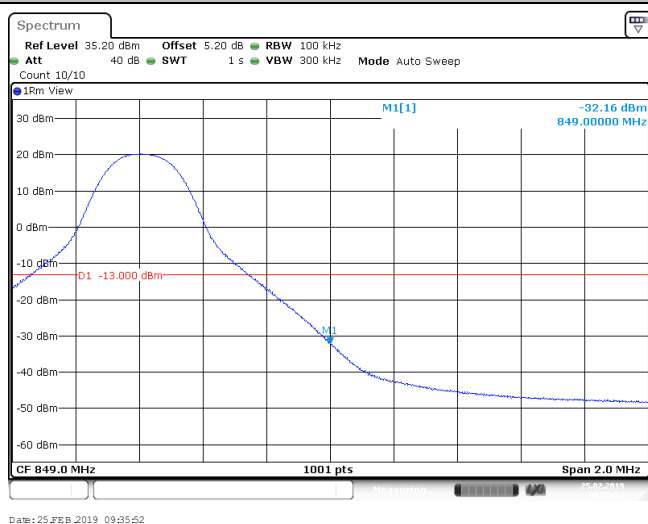
Band5_10MHz_16QAM_20450_1RB#0



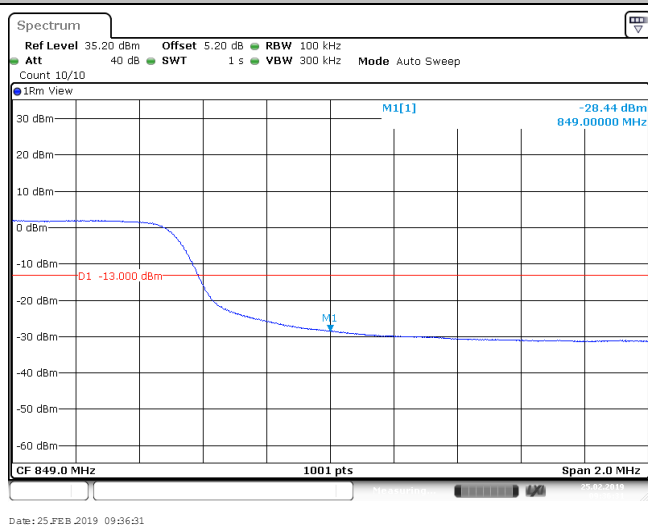
Band5_10MHz_16QAM_20450_50RB#0



Band5_10MHz_16QAM_20600_1RB#49



Band5_10MHz_16QAM_20600_50RB#0

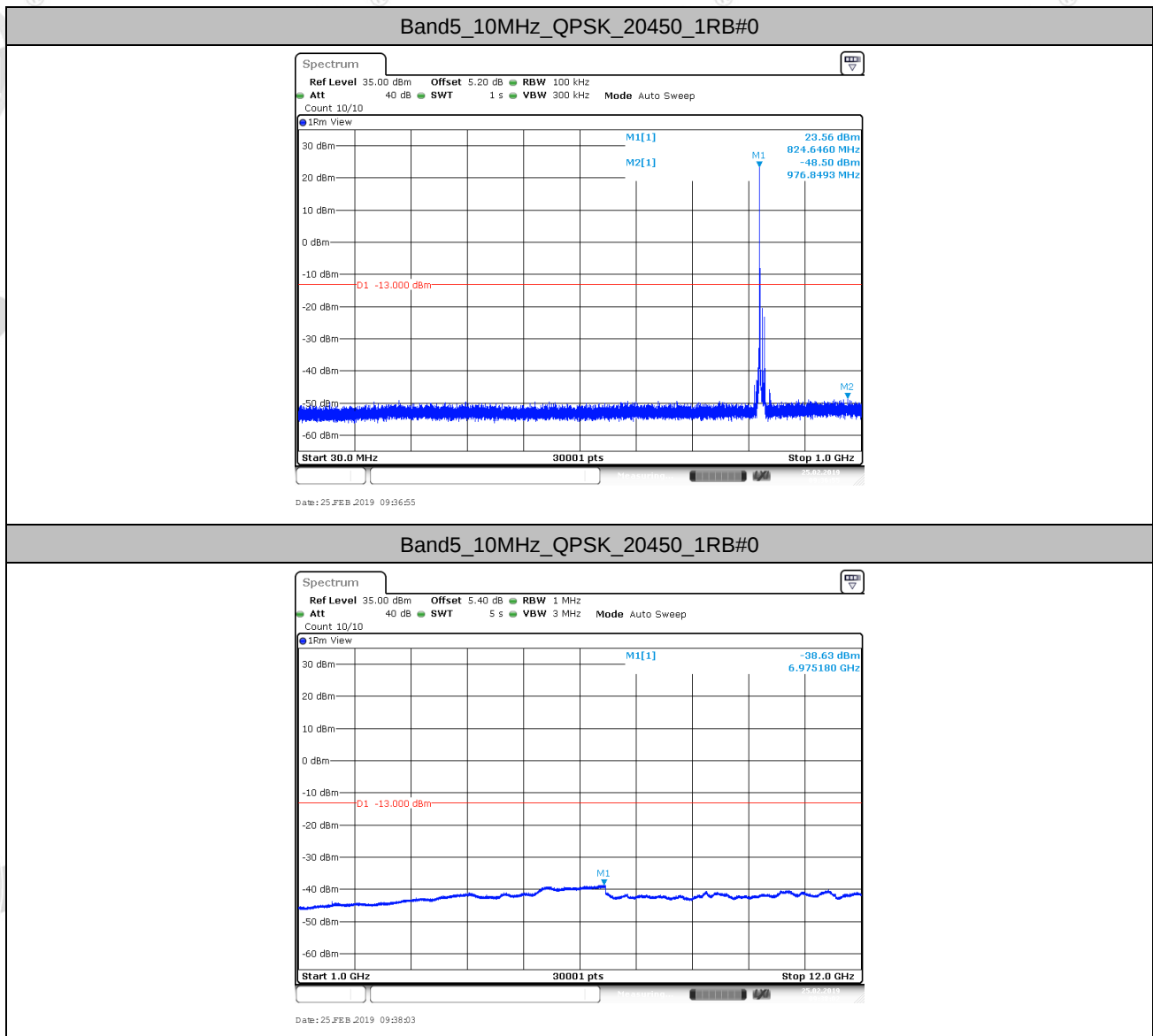


8. Spurious Emission at Antenna Terminal

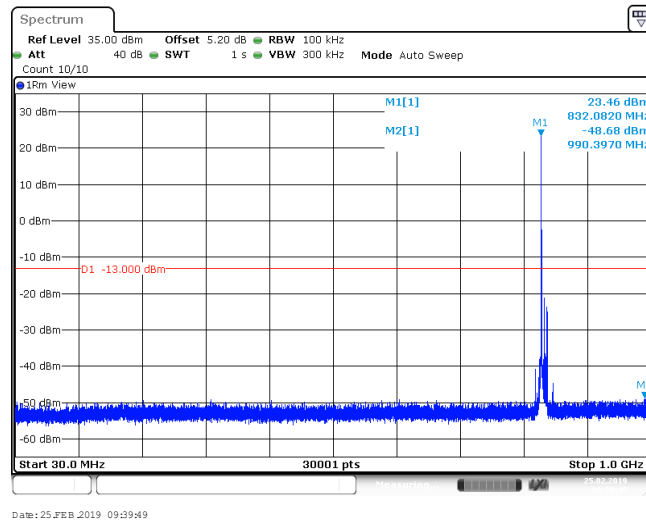
Remark1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of $< RBW/2$ so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points =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

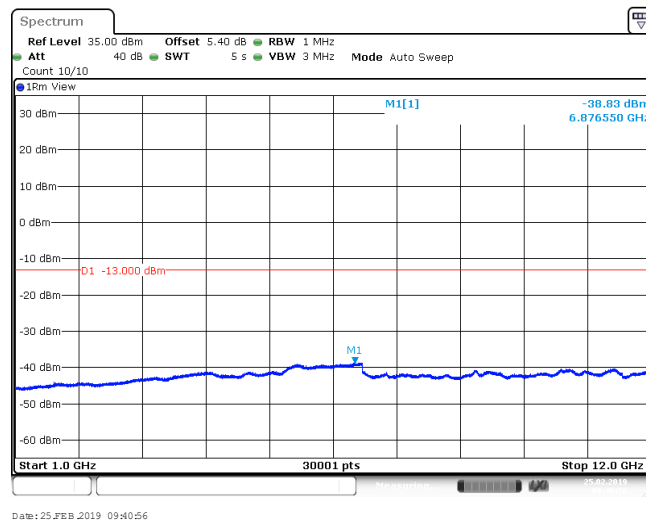
8.1. Test Plots



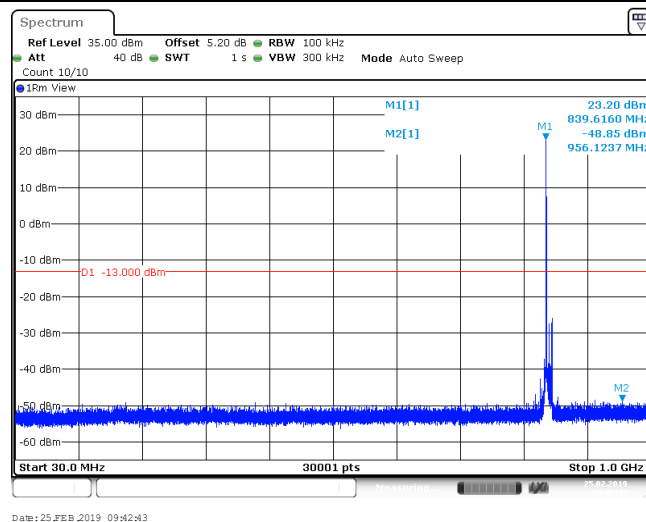
Band5_10MHz_QPSK_20525_1RB#0



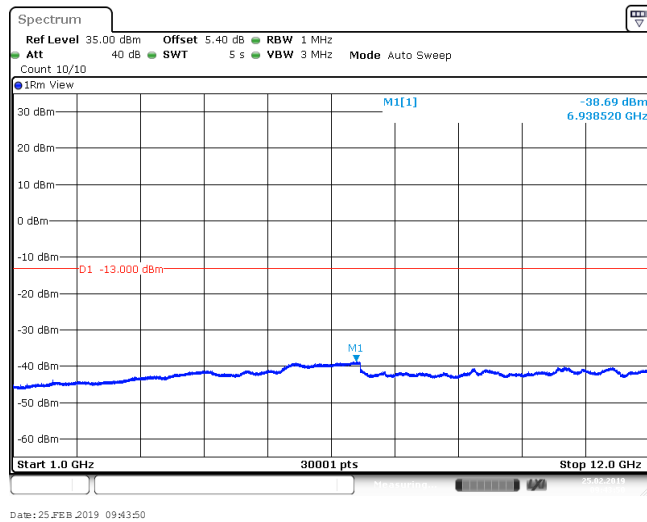
Band5_10MHz_QPSK_20525_1RB#0



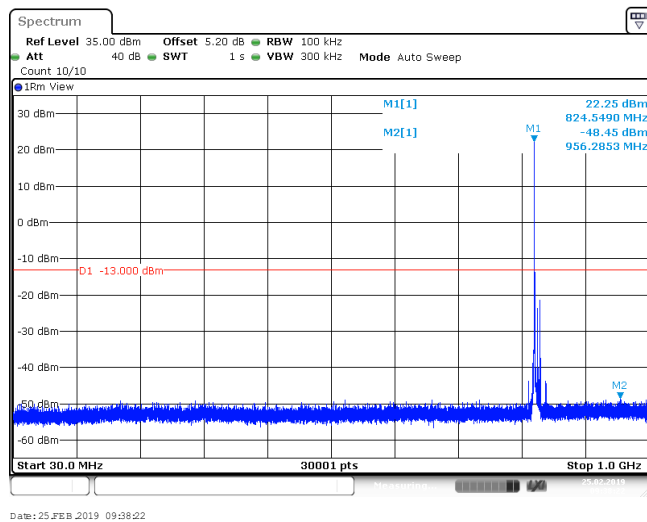
Band5_10MHz_QPSK_20600_1RB#0



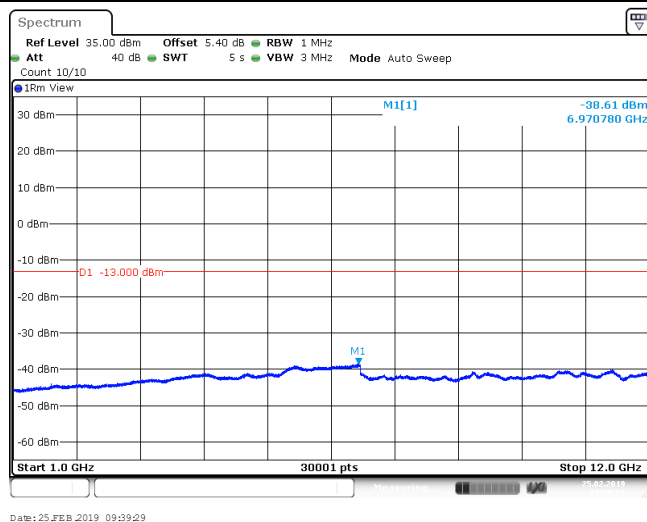
Band5_10MHz_QPSK_20600_1RB#0



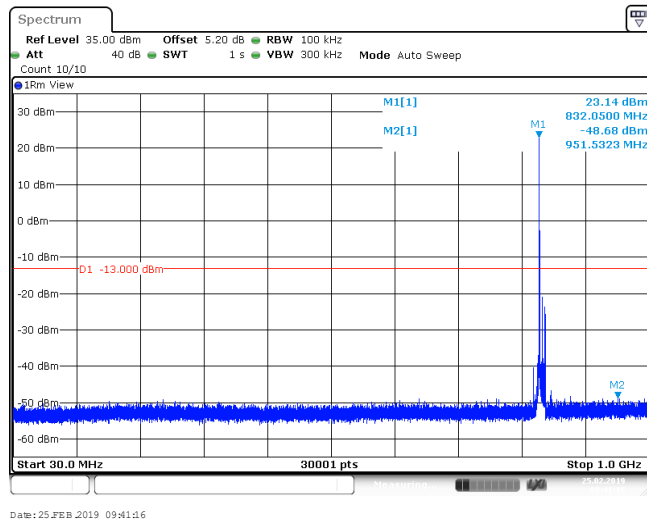
Band5_10MHz_16QAM_20450_1RB#0



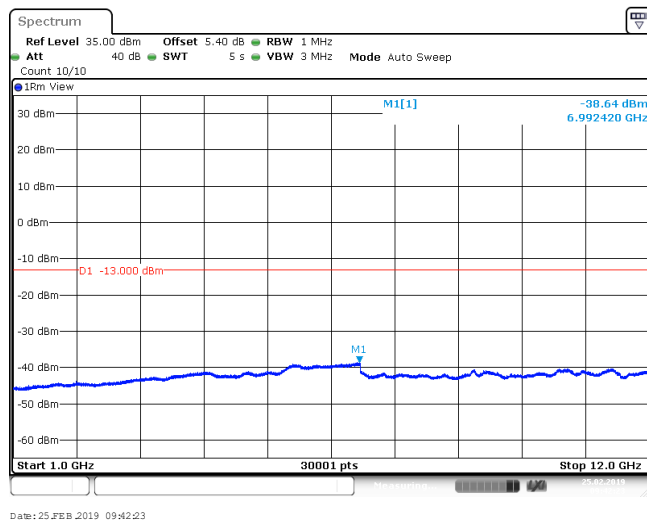
Band5_10MHz_16QAM_20450_1RB#0



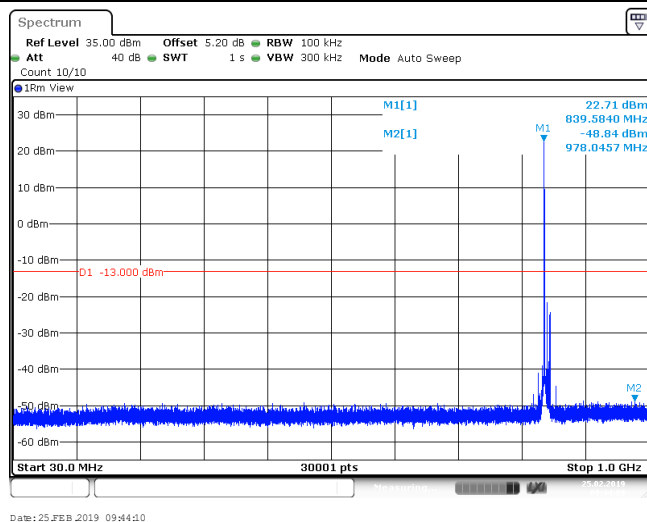
Band5_10MHz_16QAM_20525_1RB#0

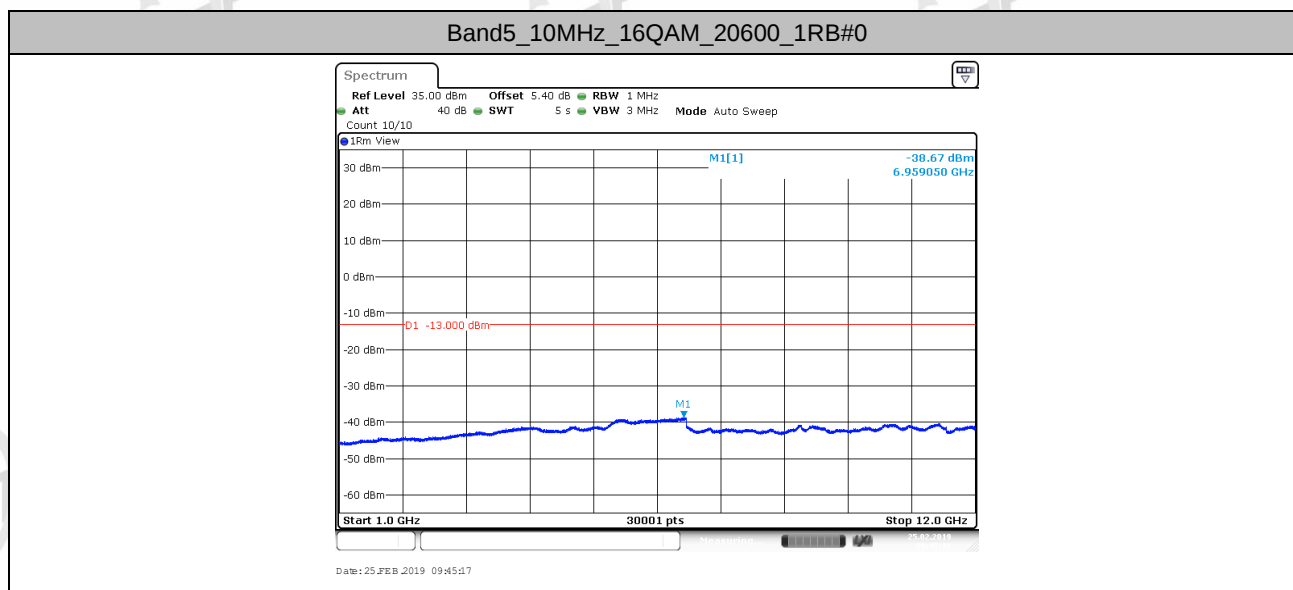


Band5_10MHz_16QAM_20525_1RB#0



Band5_10MHz_16QAM_20600_1RB#0





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
Band5	10MHz	QPSK	20450	50RB#0	VL	NT	-0.70	-0.000844	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	VN	NT	-0.50	-0.000603	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	VH	NT	-1.30	-0.001568	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	VL	NT	0.00	0.000000	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	VN	NT	-1.60	-0.001913	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	VH	NT	-0.10	-0.000120	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	VL	NT	-0.50	-0.000592	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	VN	NT	-2.20	-0.002607	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	VH	NT	-1.20	-0.001422	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	VL	NT	-1.20	-0.001448	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	VN	NT	-0.30	-0.000362	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	VH	NT	-0.60	-0.000724	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	VL	NT	-1.80	-0.002152	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	VN	NT	-1.10	-0.001315	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	VH	NT	-0.30	-0.000359	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	VL	NT	-1.20	-0.001422	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	VN	NT	-1.00	-0.001185	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	VH	NT	-0.80	-0.000948	±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
Band5	10MHz	QPSK	20450	50RB#0	NV	-30	-1.10	-0.001327	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	-20	-1.00	-0.001206	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	0	-0.40	-0.000483	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	10	0.50	0.000603	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	20	0.10	0.000121	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	30	0.70	0.000844	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	40	-1.20	-0.001448	±2.5	PASS
Band5	10MHz	QPSK	20450	50RB#0	NV	50	-0.50	-0.000603	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	-30	-1.80	-0.002152	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	-20	-1.50	-0.001793	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	0	-1.20	-0.001435	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	10	-1.40	-0.001674	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	20	-1.80	-0.002152	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	30	0.20	0.000239	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	40	0.10	0.000120	±2.5	PASS
Band5	10MHz	QPSK	20525	50RB#0	NV	50	-0.30	-0.000359	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	-30	-1.50	-0.001777	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	-20	-0.20	-0.000237	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	0	-0.70	-0.000829	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	10	-1.10	-0.001303	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	20	-1.50	-0.001777	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	30	-0.20	-0.000237	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	40	-0.50	-0.000592	±2.5	PASS
Band5	10MHz	QPSK	20600	50RB#0	NV	50	-1.00	-0.001185	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	-30	-0.20	-0.000241	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	-20	-1.30	-0.001568	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	0	-0.60	-0.000724	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	10	-0.90	-0.001086	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	20	0.30	0.000362	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	30	0.20	0.000241	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	40	-0.20	-0.000241	±2.5	PASS
Band5	10MHz	16QAM	20450	50RB#0	NV	50	-1.90	-0.002292	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	-30	-1.10	-0.001315	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	-20	-0.80	-0.000956	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	0	-1.30	-0.001554	±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	-0.50	-0.000598	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	30	-0.80	-0.000956	±2.5	PASS
Band5	10MHz	16QAM	20525	50RB#0	NV	40	0.00	0.000000	±2.5	PASS

Band5	10MHz	16QAM	20525	50RB#0	NV	50	-0.60	-0.000717	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	-30	-1.00	-0.001185	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	-20	-0.90	-0.001066	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	0	0.10	0.000118	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	10	-1.00	-0.001185	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	20	-0.70	-0.000829	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	30	-0.70	-0.000829	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	40	0.20	0.000237	±2.5	PASS
Band5	10MHz	16QAM	20600	50RB#0	NV	50	0.60	0.000711	±2.5	PASS

The End