



# Appendix B

## E-UTRA BAND 13



## CONTENT

1.	EFFECTIVE (ISOTROPIC) RADIATED POWER.....	3
1.1.	Test Result.....	3
2.	PEAK-TO-AVERAGE RATIO(CCDF).....	6
2.1.	Test Result.....	6
2.2.	Test Plots.....	6
3.	MODULATION CHARACTERISTICS .....	8
3.1.	Test BAND = LTE BAND 13.....	8
3.1.1.	Test Mode = LTE /TM1 10MHz.....	8
3.1.1.1.	Test Channel = MCH.....	8
3.1.2.	Test Mode = LTE /TM2 10MHz.....	9
3.1.2.1.	Test Channel = MCH.....	9
3.1.3.	Test Mode = LTE /TM3 10MHz.....	10
3.1.3.1.	Test Channel = MCH.....	10
4.	26dB BANDWIDTH AND OCCUPIED BANDWIDTH .....	11
4.1.	Test Result.....	11
4.2.	Test Plots.....	11
5.	BAND EDGE COMPLIANCE .....	18
5.1.	Test Result.....	18
5.2.	Test Plots.....	19
6.	SPURIOUS EMISSION AT ANTENNA TERMINAL .....	37
6.1.	Test Result.....	37
6.2.	Test Plots.....	38
7.	FIELD STRENGTH OF SPURIOUS RADIATION .....	49
7.1.	Test BAND = LTE BAND 13.....	49
7.1.1.	Test Mode =LTE/TM1 10MHz .....	49
7.1.1.1.	Test Channel = MCH.....	49
8.	FREQUENCY STABILITY .....	50
8.1.	Frequency Vs Voltage.....	50
8.2.	Frequency Vs Temperature .....	50



## 1. Effective (Isotropic) Radiated Power

### 1.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	ERP (dBm)	Limit (dBm)	Verdict
BAND 13	5MHz	QPSK	23205	1RB#0	23.17	24.02	34.77	PASS
BAND 13	5MHz	QPSK	23205	1RB#12	23.11	23.96	34.77	PASS
BAND 13	5MHz	QPSK	23205	1RB#24	23.22	24.07	34.77	PASS
BAND 13	5MHz	QPSK	23205	12RB#0	22.43	23.28	34.77	PASS
BAND 13	5MHz	QPSK	23205	12RB#6	22.38	23.23	34.77	PASS
BAND 13	5MHz	QPSK	23205	12RB#13	22.31	23.16	34.77	PASS
BAND 13	5MHz	QPSK	23205	25RB#0	22.35	23.20	34.77	PASS
BAND 13	5MHz	QPSK	23230	1RB#0	23.20	24.05	34.77	PASS
BAND 13	5MHz	QPSK	23230	1RB#12	23.24	24.09	34.77	PASS
BAND 13	5MHz	QPSK	23230	1RB#24	23.16	24.01	34.77	PASS
BAND 13	5MHz	QPSK	23230	12RB#0	22.38	23.23	34.77	PASS
BAND 13	5MHz	QPSK	23230	12RB#6	22.34	23.19	34.77	PASS
BAND 13	5MHz	QPSK	23230	12RB#13	22.34	23.19	34.77	PASS
BAND 13	5MHz	QPSK	23230	25RB#0	22.43	23.28	34.77	PASS
BAND 13	5MHz	QPSK	23255	1RB#0	23.36	24.21	34.77	PASS
BAND 13	5MHz	QPSK	23255	1RB#12	23.18	24.03	34.77	PASS
BAND 13	5MHz	QPSK	23255	1RB#24	23.06	23.91	34.77	PASS
BAND 13	5MHz	QPSK	23255	12RB#0	22.30	23.15	34.77	PASS
BAND 13	5MHz	QPSK	23255	12RB#6	22.41	23.26	34.77	PASS
BAND 13	5MHz	QPSK	23255	12RB#13	22.32	23.17	34.77	PASS
BAND 13	5MHz	QPSK	23255	25RB#0	22.38	23.23	34.77	PASS
BAND 13	5MHz	64QAM	23205	1RB#0	22.63	23.48	34.77	PASS
BAND 13	5MHz	64QAM	23205	1RB#12	22.37	23.22	34.77	PASS
BAND 13	5MHz	64QAM	23205	1RB#24	22.27	23.12	34.77	PASS
BAND 13	5MHz	64QAM	23205	12RB#0	21.46	22.31	34.77	PASS
BAND 13	5MHz	64QAM	23205	12RB#6	21.41	22.26	34.77	PASS
BAND 13	5MHz	64QAM	23205	12RB#13	21.33	22.18	34.77	PASS
BAND 13	5MHz	64QAM	23205	25RB#0	21.38	22.23	34.77	PASS
BAND 13	5MHz	64QAM	23230	1RB#0	22.36	23.21	34.77	PASS
BAND 13	5MHz	64QAM	23230	1RB#12	22.34	23.19	34.77	PASS
BAND 13	5MHz	64QAM	23230	1RB#24	22.30	23.15	34.77	PASS
BAND 13	5MHz	64QAM	23230	12RB#0	21.41	22.26	34.77	PASS
BAND 13	5MHz	64QAM	23230	12RB#6	21.34	22.19	34.77	PASS
BAND 13	5MHz	64QAM	23230	12RB#13	21.37	22.22	34.77	PASS



**SGS-CSTC Standards Technical Services Co., Ltd.**  
**Shenzhen Branch**

Report No.: SZEM180500453601

Page: 4 of 50

BAND 13	5MHz	64QAM	23230	25RB#0	21.41	22.26	34.77	PASS
BAND 13	5MHz	64QAM	23255	1RB#0	22.36	23.21	34.77	PASS
BAND 13	5MHz	64QAM	23255	1RB#12	22.36	23.21	34.77	PASS
BAND 13	5MHz	64QAM	23255	1RB#24	22.37	23.22	34.77	PASS
BAND 13	5MHz	64QAM	23255	12RB#0	21.28	22.13	34.77	PASS
BAND 13	5MHz	64QAM	23255	12RB#6	21.40	22.25	34.77	PASS
BAND 13	5MHz	64QAM	23255	12RB#13	21.31	22.16	34.77	PASS
BAND 13	5MHz	64QAM	23255	25RB#0	21.33	22.18	34.77	PASS
BAND 13	5MHz	16QAM	23205	1RB#0	22.74	23.59	34.77	PASS
BAND 13	5MHz	16QAM	23205	1RB#12	22.49	23.34	34.77	PASS
BAND 13	5MHz	16QAM	23205	1RB#24	22.51	23.36	34.77	PASS
BAND 13	5MHz	16QAM	23205	12RB#0	21.48	22.33	34.77	PASS
BAND 13	5MHz	16QAM	23205	12RB#6	21.44	22.29	34.77	PASS
BAND 13	5MHz	16QAM	23205	12RB#13	21.39	22.24	34.77	PASS
BAND 13	5MHz	16QAM	23205	25RB#0	21.42	22.27	34.77	PASS
BAND 13	5MHz	16QAM	23230	1RB#0	22.47	23.32	34.77	PASS
BAND 13	5MHz	16QAM	23230	1RB#12	22.47	23.32	34.77	PASS
BAND 13	5MHz	16QAM	23230	1RB#24	22.42	23.27	34.77	PASS
BAND 13	5MHz	16QAM	23230	12RB#0	21.45	22.30	34.77	PASS
BAND 13	5MHz	16QAM	23230	12RB#6	21.38	22.23	34.77	PASS
BAND 13	5MHz	16QAM	23230	12RB#13	21.43	22.28	34.77	PASS
BAND 13	5MHz	16QAM	23230	25RB#0	21.41	22.26	34.77	PASS
BAND 13	5MHz	16QAM	23255	1RB#0	22.48	23.33	34.77	PASS
BAND 13	5MHz	16QAM	23255	1RB#12	22.45	23.30	34.77	PASS
BAND 13	5MHz	16QAM	23255	1RB#24	22.39	23.24	34.77	PASS
BAND 13	5MHz	16QAM	23255	12RB#0	21.41	22.26	34.77	PASS
BAND 13	5MHz	16QAM	23255	12RB#6	21.48	22.33	34.77	PASS
BAND 13	5MHz	16QAM	23255	12RB#13	21.36	22.21	34.77	PASS
BAND 13	5MHz	16QAM	23255	25RB#0	21.32	22.17	34.77	PASS
BAND 13	10MHz	QPSK	23230	1RB#0	23.22	24.07	34.77	PASS
BAND 13	10MHz	QPSK	23230	1RB#24	23.32	24.17	34.77	PASS
BAND 13	10MHz	QPSK	23230	1RB#49	23.14	23.99	34.77	PASS
BAND 13	10MHz	QPSK	23230	25RB#0	22.46	23.31	34.77	PASS
BAND 13	10MHz	QPSK	23230	25RB#12	22.47	23.32	34.77	PASS
BAND 13	10MHz	QPSK	23230	25RB#25	22.40	23.25	34.77	PASS
BAND 13	10MHz	QPSK	23230	50RB#0	22.46	23.31	34.77	PASS
BAND 13	10MHz	64QAM	23230	1RB#0	22.39	23.24	34.77	PASS
BAND 13	10MHz	64QAM	23230	1RB#24	22.41	23.26	34.77	PASS
BAND 13	10MHz	64QAM	23230	1RB#49	22.20	23.05	34.77	PASS
BAND 13	10MHz	64QAM	23230	25RB#0	21.46	22.31	34.77	PASS
BAND 13	10MHz	64QAM	23230	25RB#12	21.39	22.24	34.77	PASS

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



**SGS-CSTC Standards Technical Services Co., Ltd.**  
**Shenzhen Branch**

Report No.: SZEM180500453601

Page: 5 of 50

BAND 13	10MHz	64QAM	23230	25RB#25	21.34	22.19	34.77	PASS
BAND 13	10MHz	64QAM	23230	50RB#0	21.47	22.32	34.77	PASS
BAND 13	10MHz	16QAM	23230	1RB#0	22.53	23.38	34.77	PASS
BAND 13	10MHz	16QAM	23230	1RB#24	22.50	23.35	34.77	PASS
BAND 13	10MHz	16QAM	23230	1RB#49	22.50	23.35	34.77	PASS
BAND 13	10MHz	16QAM	23230	25RB#0	21.44	22.29	34.77	PASS
BAND 13	10MHz	16QAM	23230	25RB#12	21.46	22.31	34.77	PASS
BAND 13	10MHz	16QAM	23230	25RB#25	21.35	22.20	34.77	PASS
BAND 13	10MHz	16QAM	23230	50RB#0	21.50	22.35	34.77	PASS

Note:

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

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

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

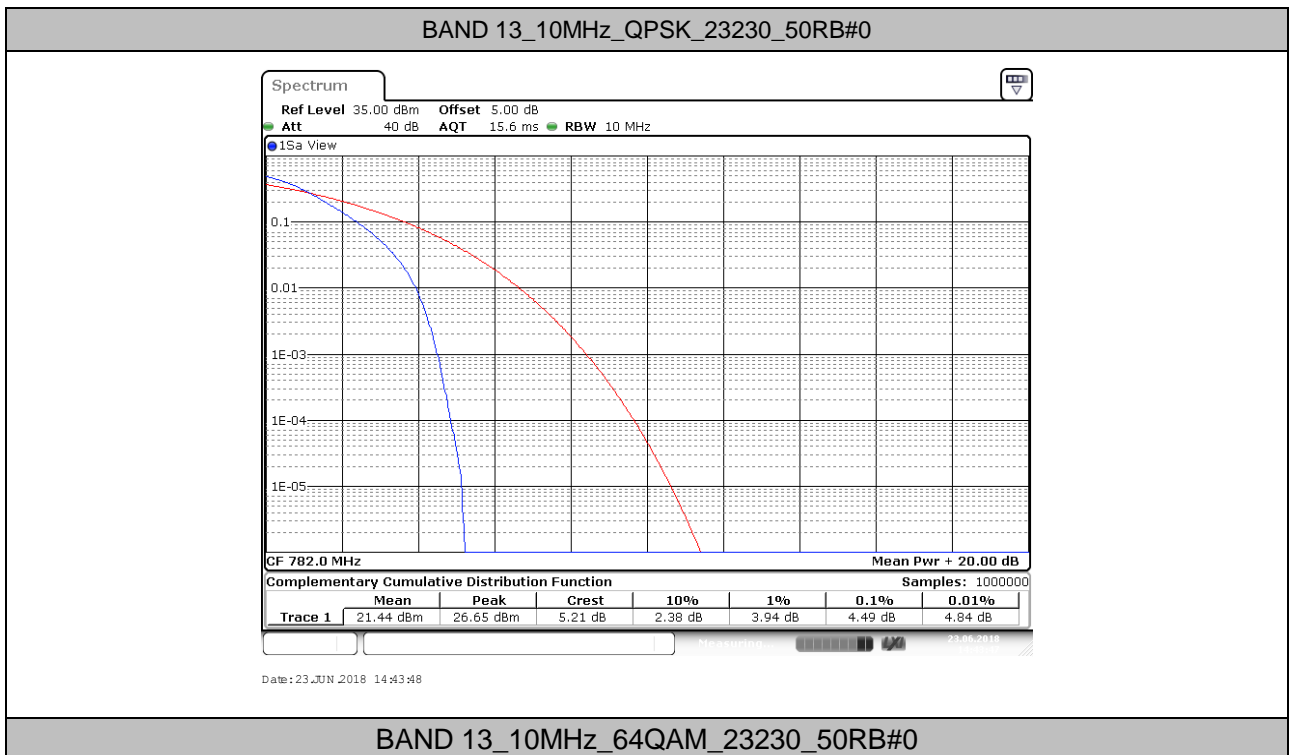
b: SGP=Signal Generator Level

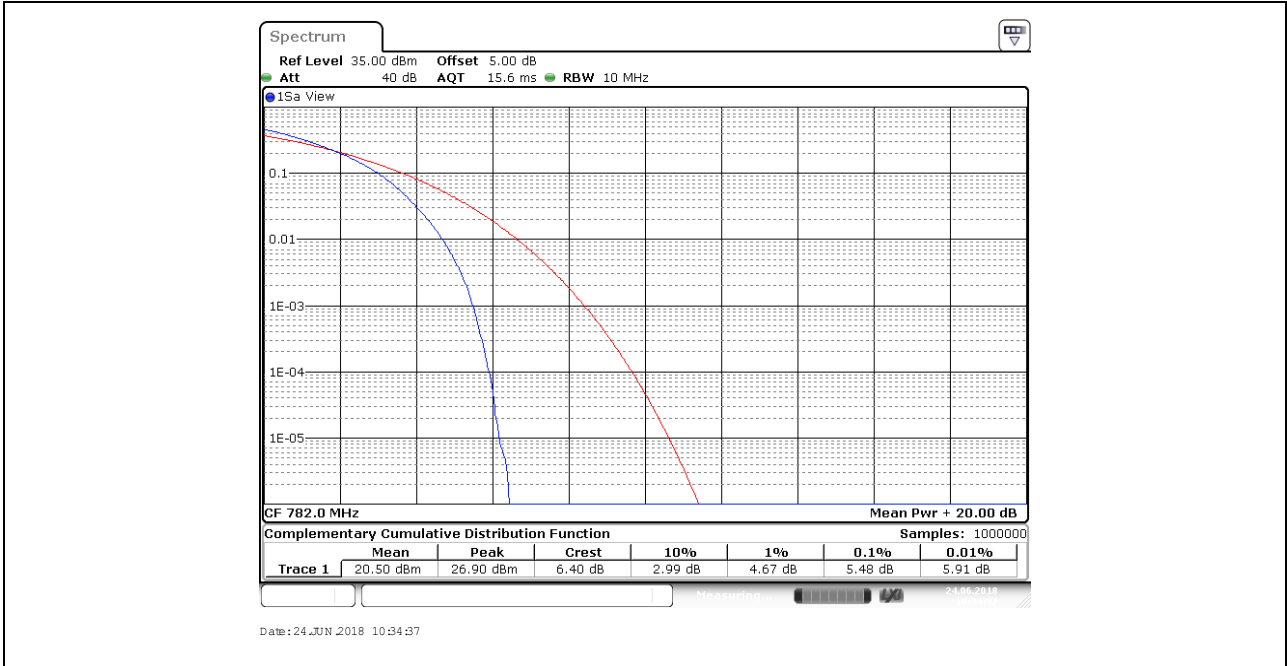
## 2. Peak-to-Average Ratio(CCDF)

### 2.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
BAND 13	10MHz	QPSK	23230	50RB#0	4.49	13	PASS
BAND 13	10MHz	64QAM	23230	50RB#0	5.48	13	PASS
BAND 13	10MHz	16QAM	23230	50RB#0	5.48	13	PASS

### 2.2. Test Plots





**BAND 13\_10MHz\_16QAM\_23230\_50RB#0**

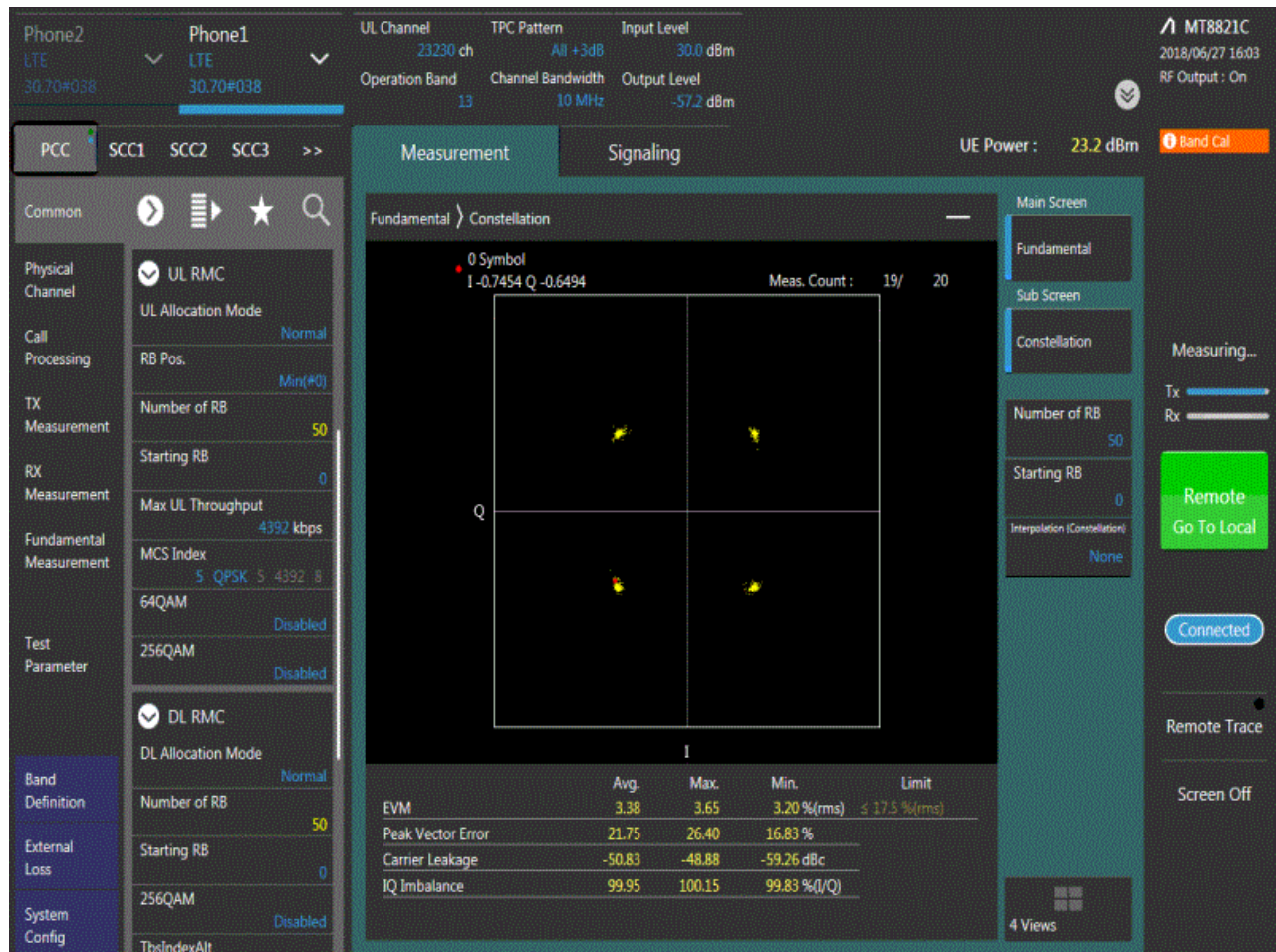


### 3. Modulation Characteristics

#### 3.1. Test BAND = LTE BAND 13

#### 3.1.1. Test Mode = LTE /TM1 10MHz

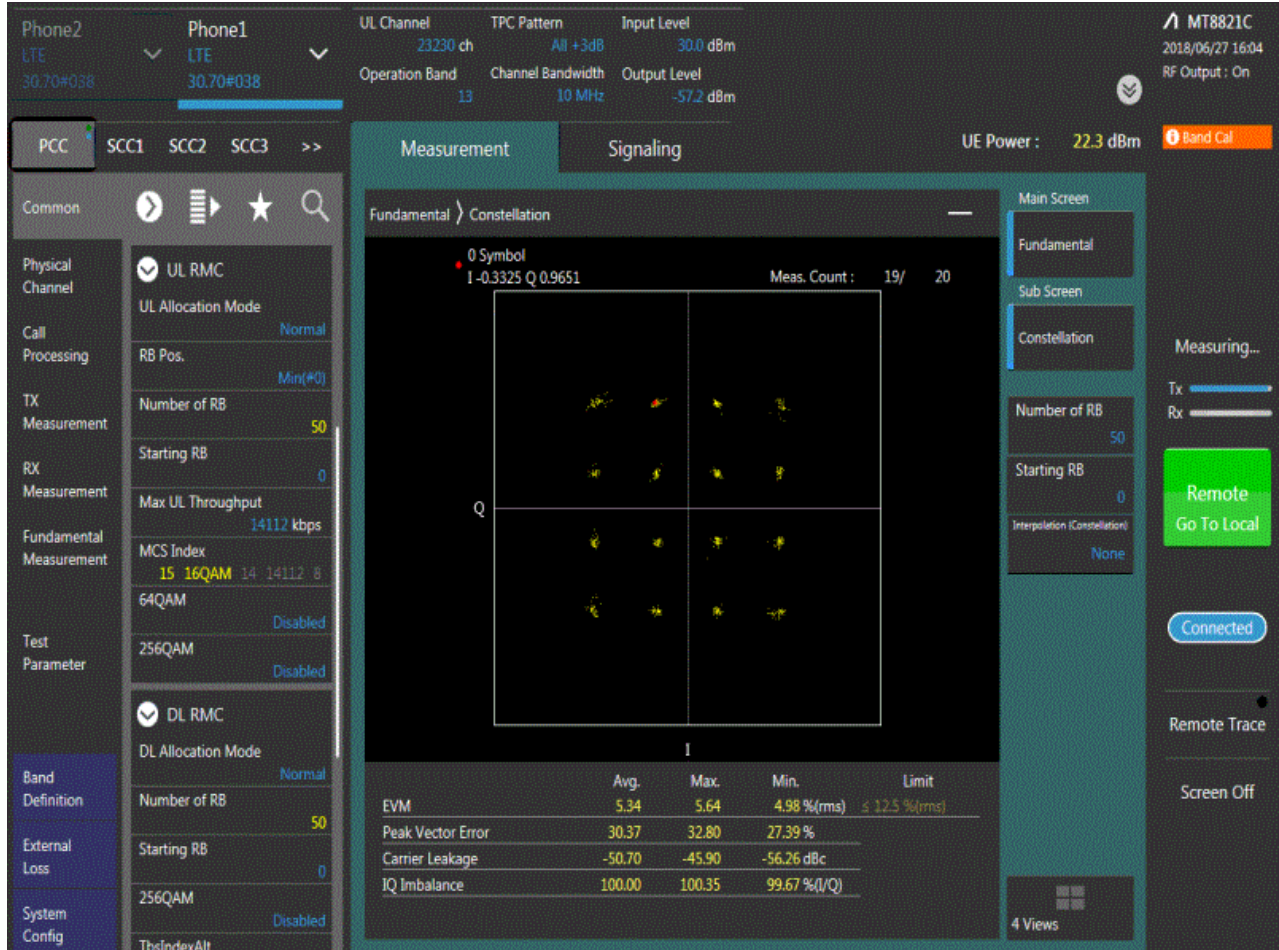
#### 3.1.1.1. Test Channel = MCH





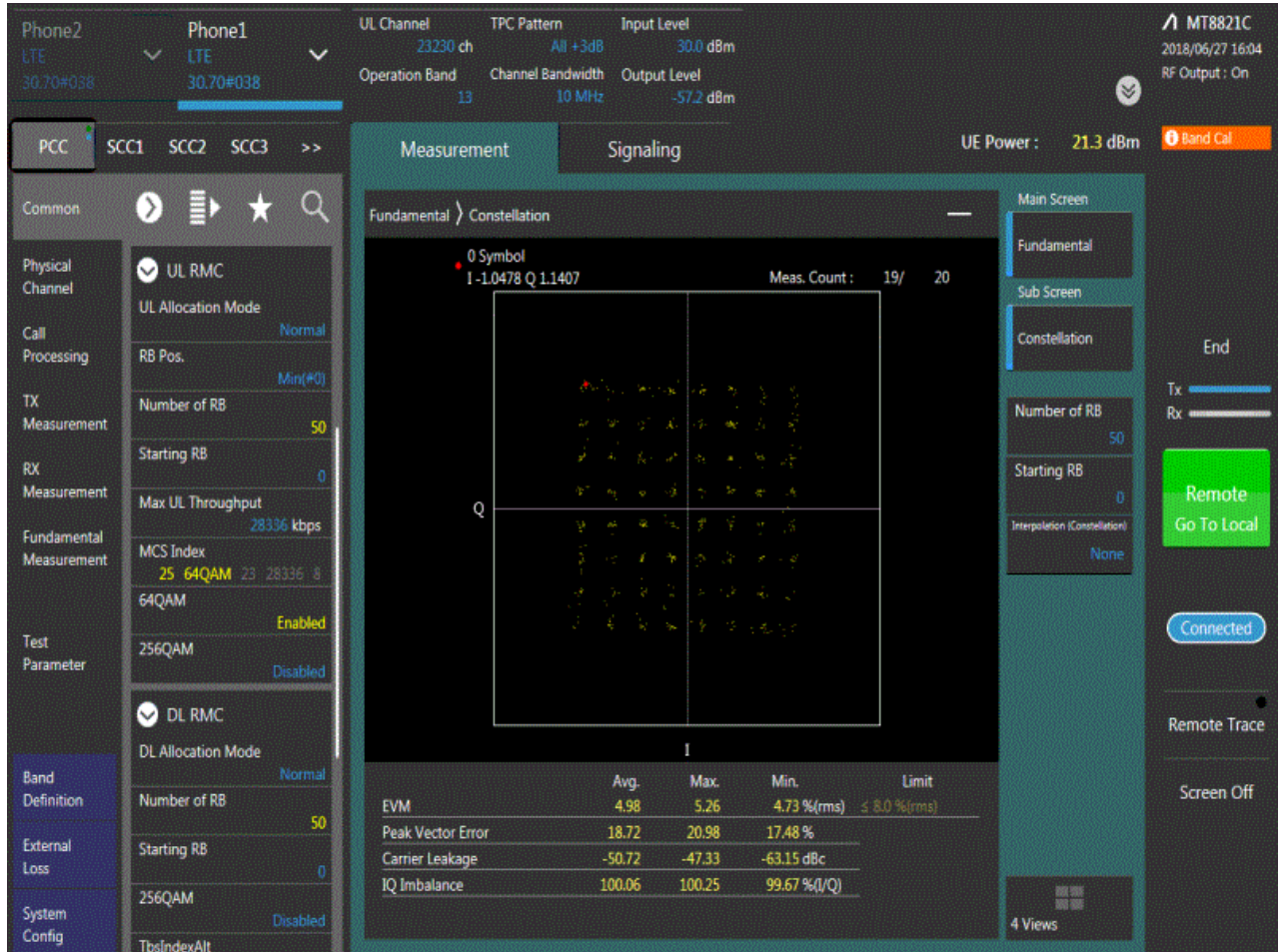
### 3.1.2. Test Mode = LTE /TM2 10MHz

#### 3.1.2.1. Test Channel = MCH



### 3.1.3. Test Mode = LTE /TM3 10MHz

#### 3.1.3.1. Test Channel = MCH



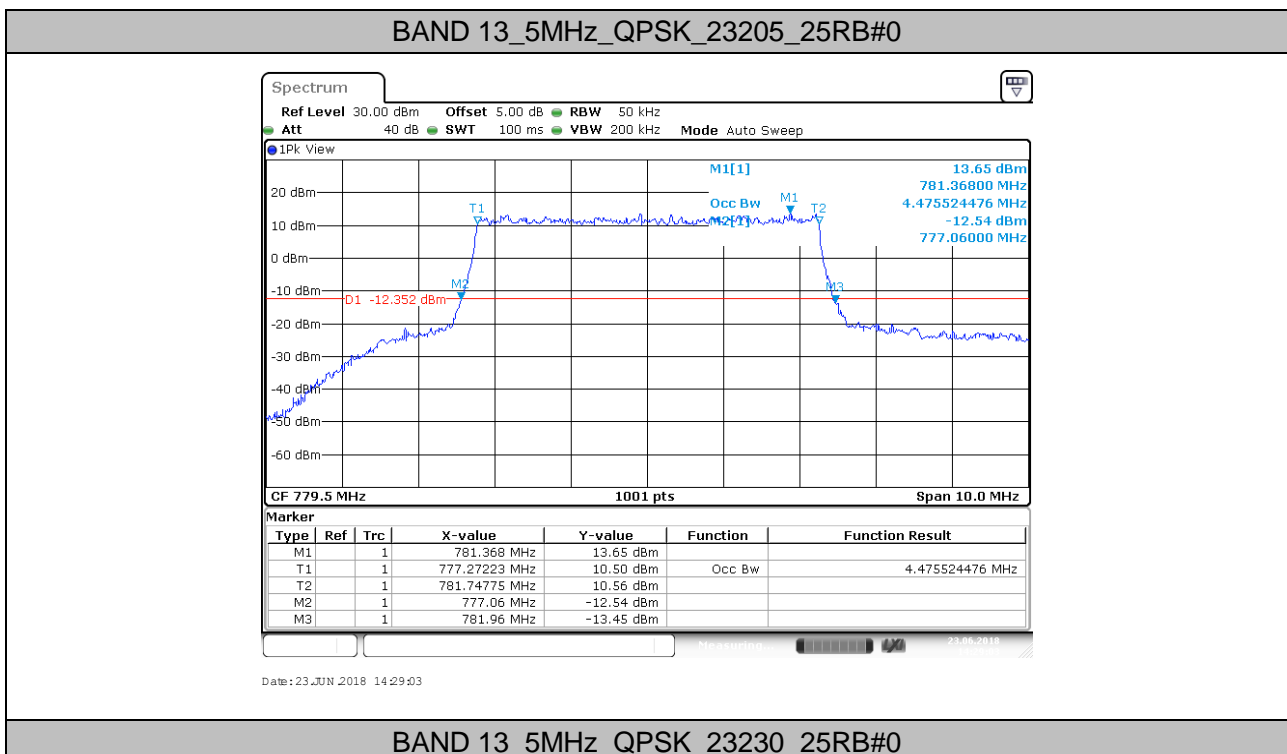


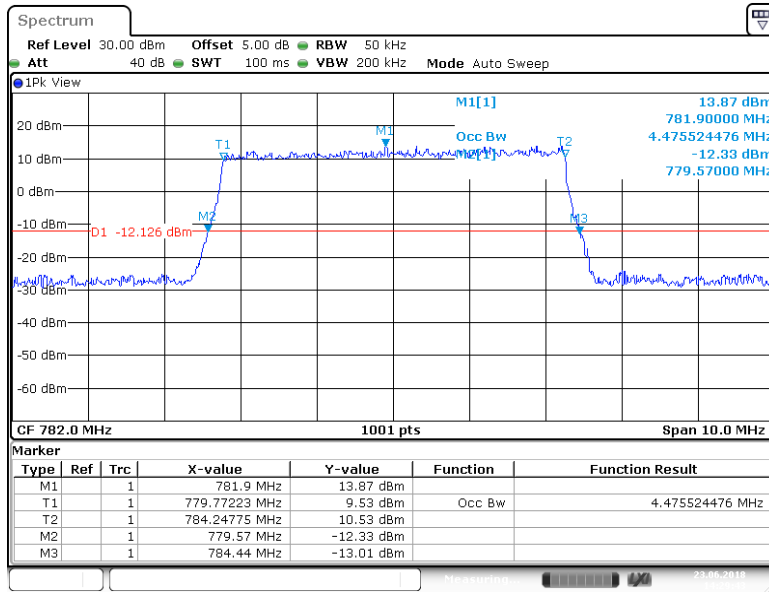
## 4. 26dB Bandwidth and Occupied Bandwidth

### 4.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
BAND 13	5MHz	QPSK	23205	25RB#0	4.476	4.900	PASS
BAND 13	5MHz	QPSK	23230	25RB#0	4.476	4.870	PASS
BAND 13	5MHz	QPSK	23255	25RB#0	4.466	4.860	PASS
BAND 13	5MHz	64QAM	23205	25RB#0	4.476	4.940	PASS
BAND 13	5MHz	64QAM	23230	25RB#0	4.466	4.900	PASS
BAND 13	5MHz	64QAM	23255	25RB#0	4.466	4.950	PASS
BAND 13	5MHz	16QAM	23205	25RB#0	4.486	4.950	PASS
BAND 13	5MHz	16QAM	23230	25RB#0	4.486	4.920	PASS
BAND 13	5MHz	16QAM	23255	25RB#0	4.476	4.910	PASS
BAND 13	10MHz	QPSK	23230	50RB#0	8.931	9.660	PASS
BAND 13	10MHz	64QAM	23230	50RB#0	8.931	9.700	PASS
BAND 13	10MHz	16QAM	23230	50RB#0	8.931	9.660	PASS

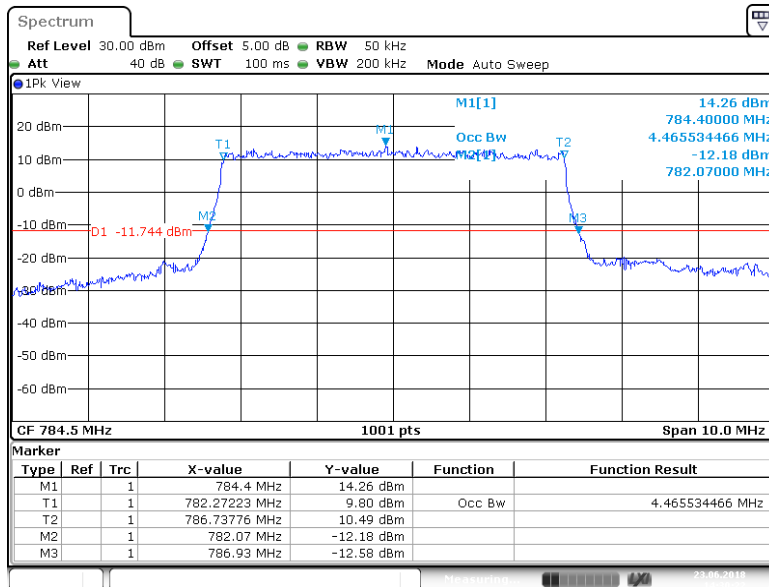
### 4.2. Test Plots





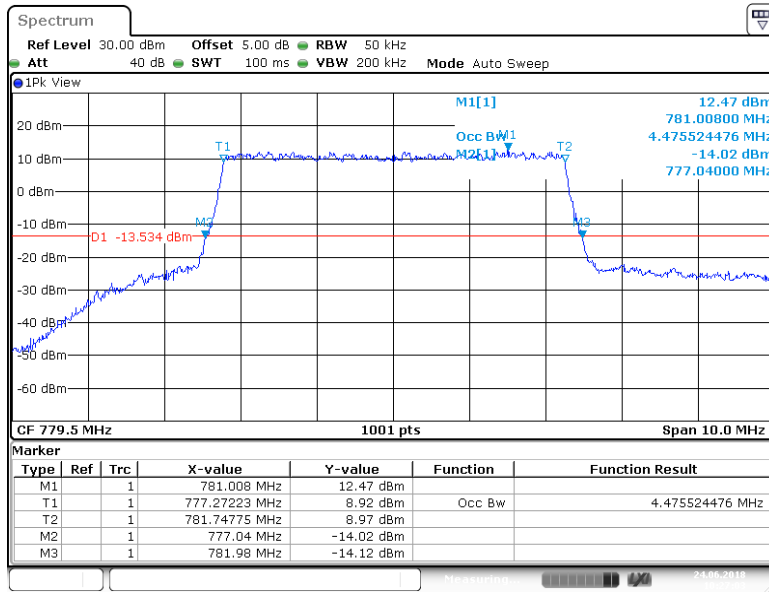
Date: 23 JUN 2018 14:29:43

**BAND 13\_5MHz\_QPSK\_23255\_25RB#0**



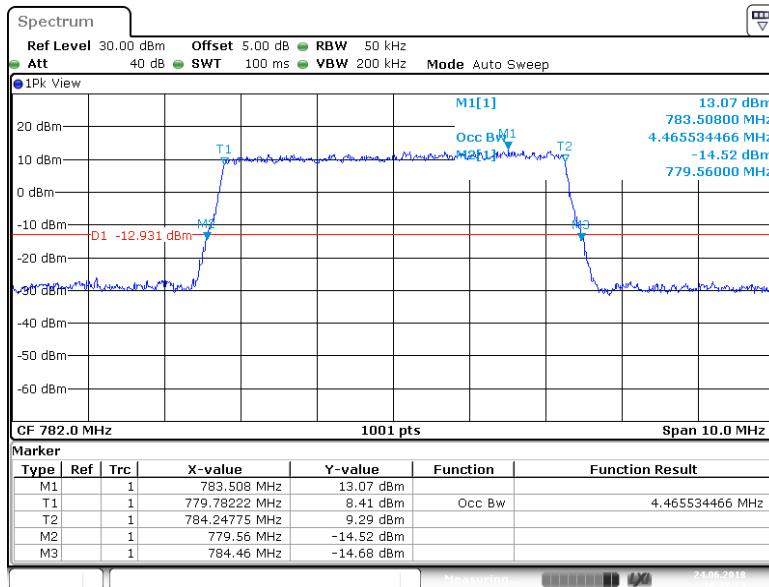
Date: 23 JUN 2018 14:30:22

**BAND 13\_5MHz\_64QAM\_23205\_25RB#0**



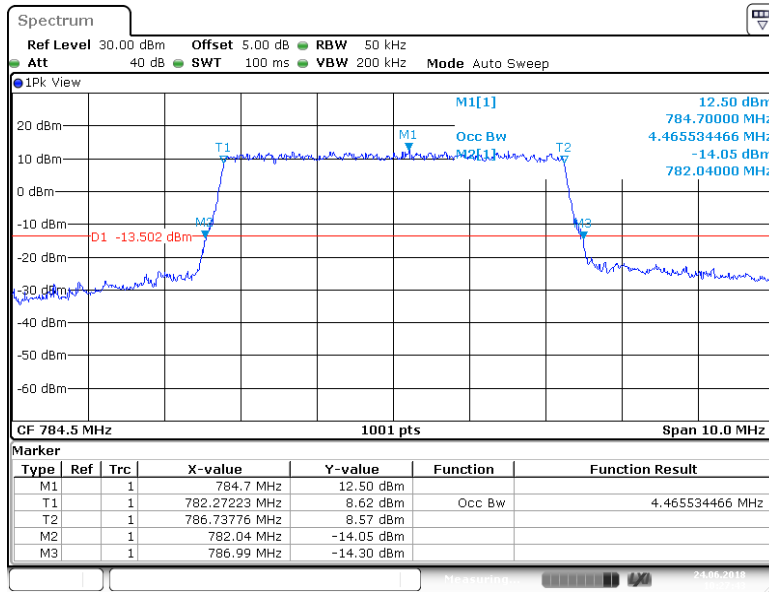
Date: 24 JUN 2018 10:27:03

**BAND 13\_5MHz\_64QAM\_23230\_25RB#0**



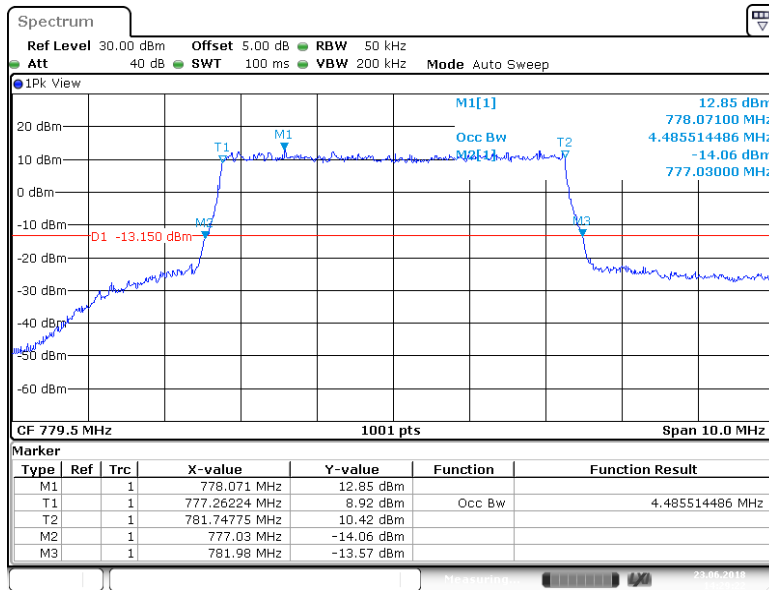
Date: 24 JUN 2018 10:27:23

**BAND 13\_5MHz\_64QAM\_23255\_25RB#0**



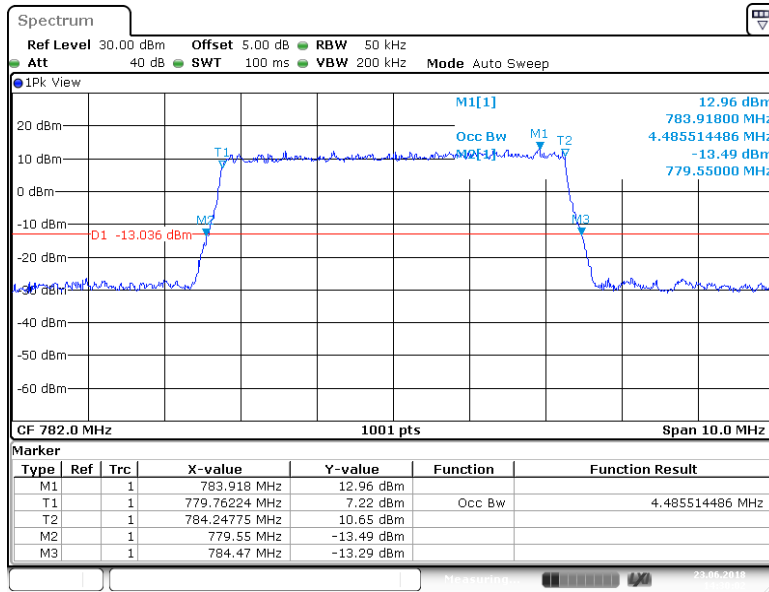
Date: 24 JUN 2018 10:27:43

**BAND 13\_5MHz\_16QAM\_23205\_25RB#0**



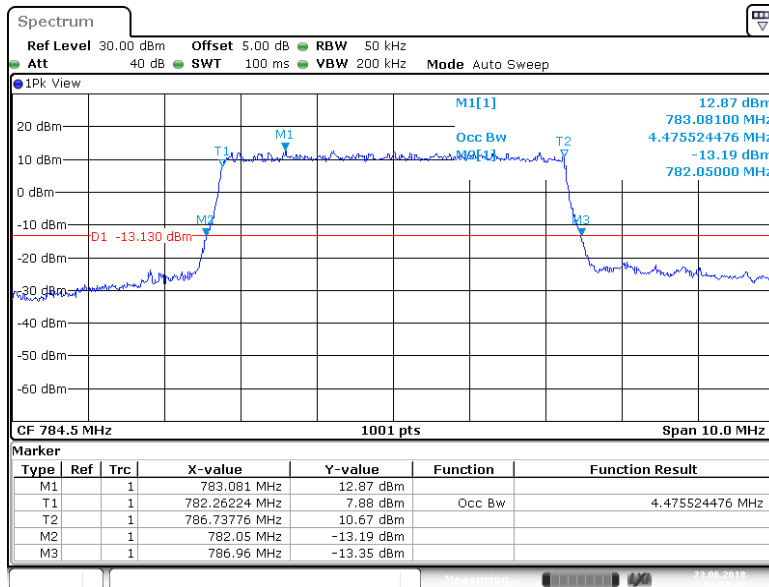
Date: 23 JUN 2018 14:29:23

**BAND 13\_5MHz\_16QAM\_23230\_25RB#0**



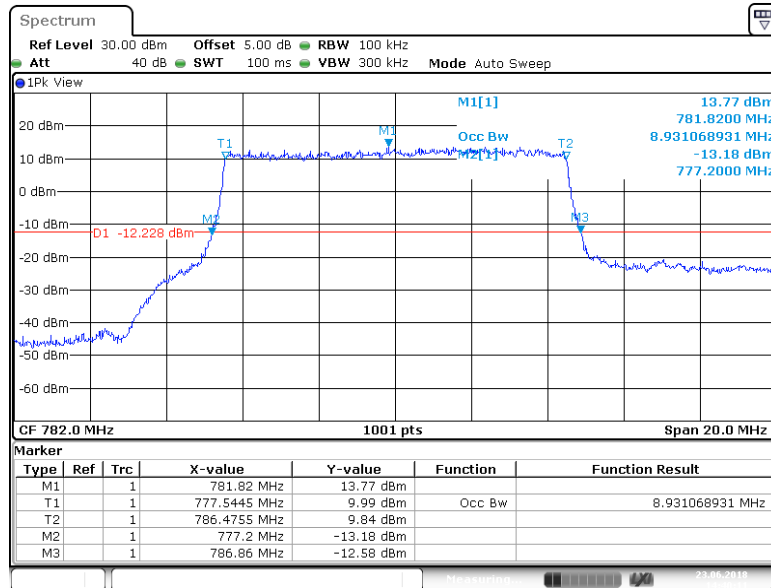
Date: 23 JUN 2018 14:30:03

**BAND 13\_5MHz\_16QAM\_23255\_25RB#0**



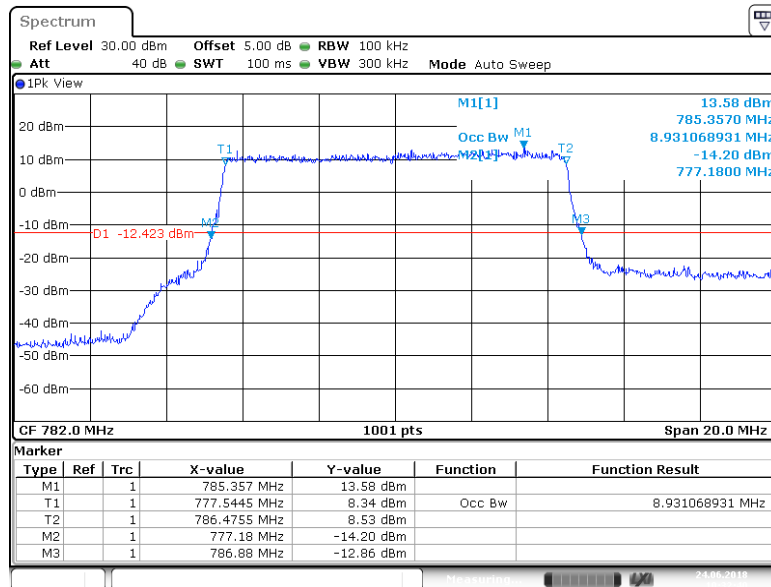
Date: 23 JUN 2018 14:30:42

**BAND 13\_10MHz\_QPSK\_23230\_50RB#0**



Date: 23 JUN 2018 14:40:12

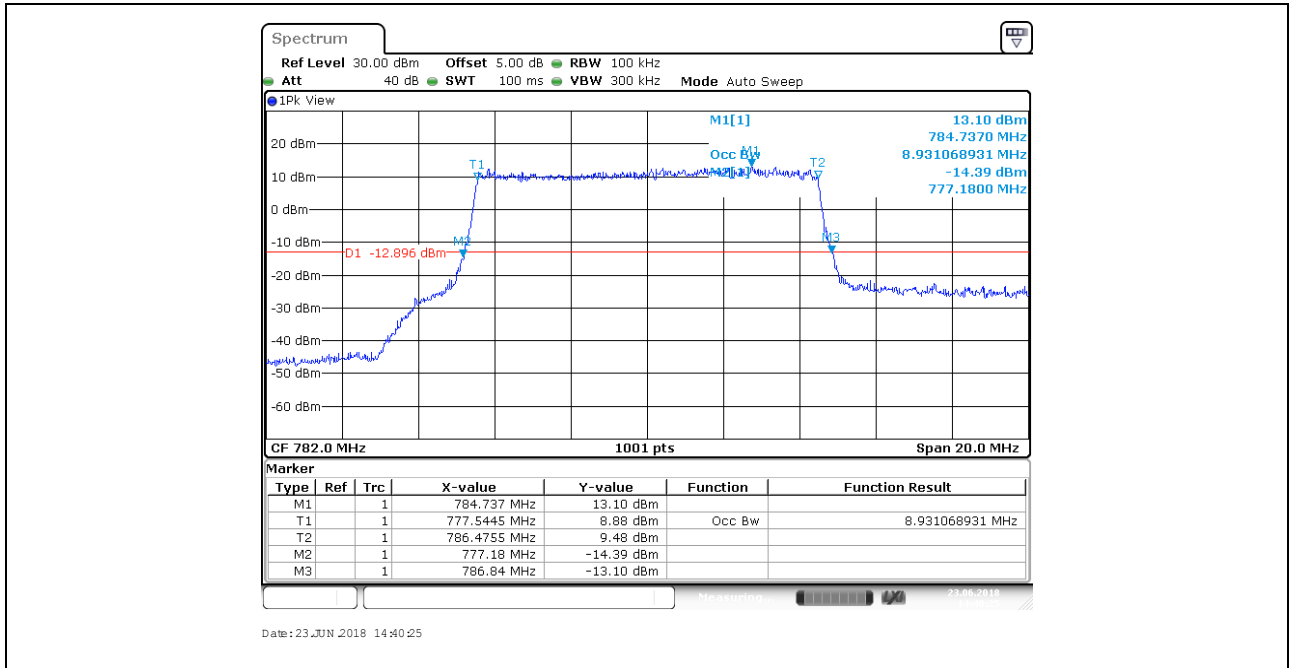
**BAND 13\_10MHz\_64QAM\_23230\_50RB#0**



Date: 24 JUN 2018 10:32:40

**BAND 13\_10MHz\_16QAM\_23230\_50RB#0**







## 5. Band Edge Compliance

### 5.1. Test Result

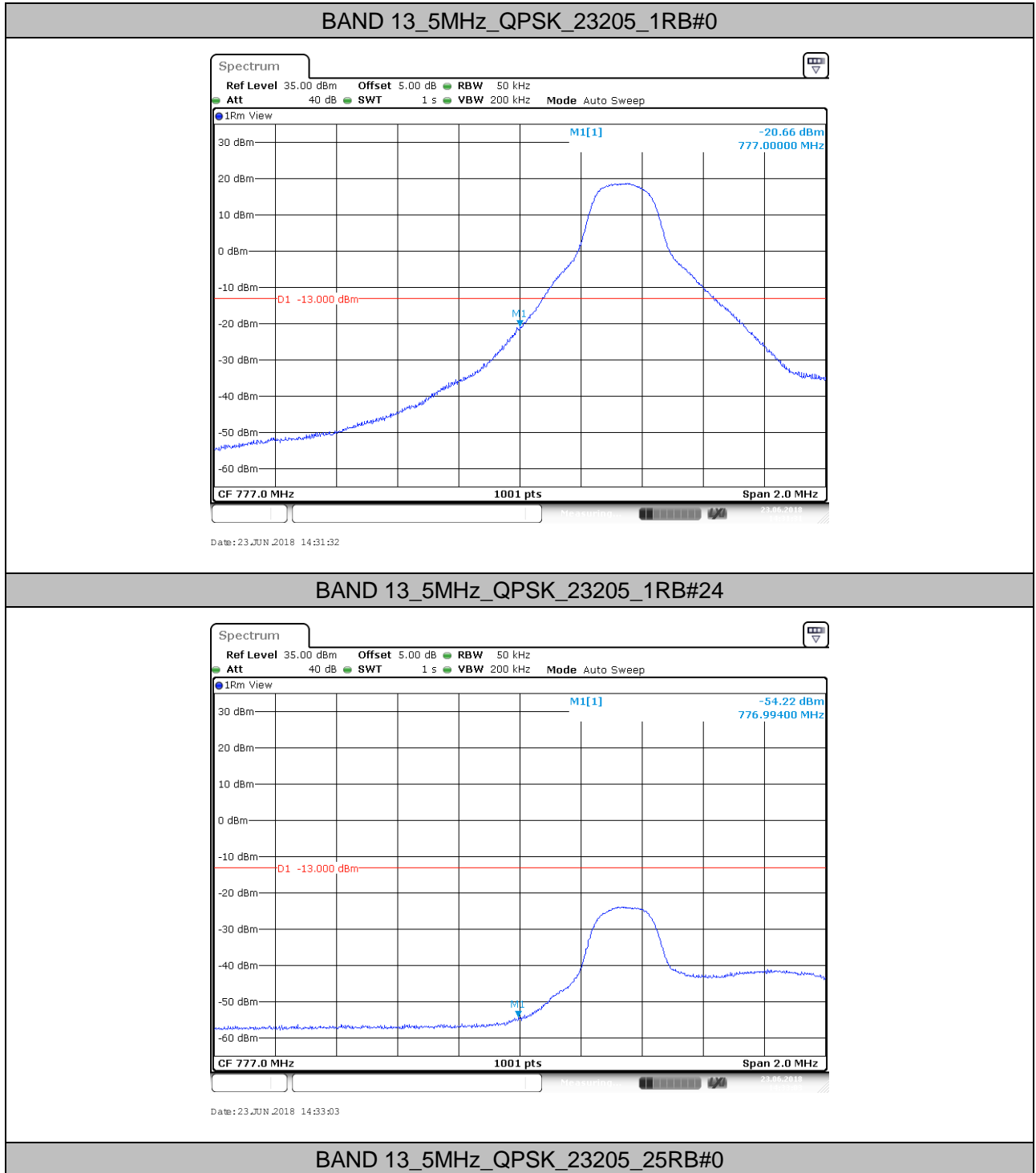
BAND	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	Verdict
BAND 13	5MHz	QPSK	23205	1RB#0	-20.66	PASS
BAND 13	5MHz	QPSK	23205	1RB#24	-54.22	PASS
BAND 13	5MHz	QPSK	23205	25RB#0	-27.73	PASS
BAND 13	5MHz	QPSK	23255	1RB#0	-55.29	PASS
BAND 13	5MHz	QPSK	23255	1RB#24	-21.87	PASS
BAND 13	5MHz	QPSK	23255	25RB#0	-28.79	PASS
BAND 13	5MHz	64QAM	23205	1RB#0	-21.07	PASS
BAND 13	5MHz	64QAM	23205	1RB#24	-54.55	PASS
BAND 13	5MHz	64QAM	23205	25RB#0	-30.10	PASS
BAND 13	5MHz	64QAM	23255	1RB#0	-55.70	PASS
BAND 13	5MHz	64QAM	23255	1RB#24	-22.41	PASS
BAND 13	5MHz	64QAM	23255	25RB#0	-29.94	PASS
BAND 13	5MHz	16QAM	23205	1RB#0	-21.77	PASS
BAND 13	5MHz	16QAM	23205	1RB#24	-54.79	PASS
BAND 13	5MHz	16QAM	23205	25RB#0	-29.62	PASS
BAND 13	5MHz	16QAM	23255	1RB#0	-54.46	PASS
BAND 13	5MHz	16QAM	23255	1RB#24	-22.24	PASS
BAND 13	5MHz	16QAM	23255	25RB#0	-29.12	PASS
BAND13	10MHz	QPSK	23230_Left	1RB#0	-28.80	PASS
BAND13	10MHz	QPSK	23230_Left	1RB#49	-51.52	PASS
BAND13	10MHz	QPSK	23230_Left	50RB#0	-28.14	PASS
BAND13	10MHz	QPSK	23230_Right	1RB#0	-52.03	PASS
BAND13	10MHz	QPSK	23230_Right	1RB#49	-28.89	PASS
BAND13	10MHz	QPSK	23230_Right	50RB#0	-27.42	PASS
BAND13	10MHz	16QAM	23230_Left	1RB#0	-29.67	PASS
BAND13	10MHz	16QAM	23230_Left	1RB#49	-51.22	PASS
BAND13	10MHz	16QAM	23230_Left	50RB#0	-30.68	PASS
BAND13	10MHz	16QAM	23230_Right	1RB#0	-51.99	PASS
BAND13	10MHz	16QAM	23230_Right	1RB#49	-29.52	PASS
BAND13	10MHz	16QAM	23230_Right	50RB#0	-30.44	PASS
BAND13	10MHz	64QAM	23230_Left	1RB#0	-28.94	PASS
BAND13	10MHz	64QAM	23230_Left	1RB#49	-51.35	PASS
BAND13	10MHz	64QAM	23230_Left	50RB#0	-28.04	PASS
BAND13	10MHz	64QAM	23230_Right	1RB#0	-51.47	PASS
BAND13	10MHz	64QAM	23230_Right	1RB#49	-28.91	PASS

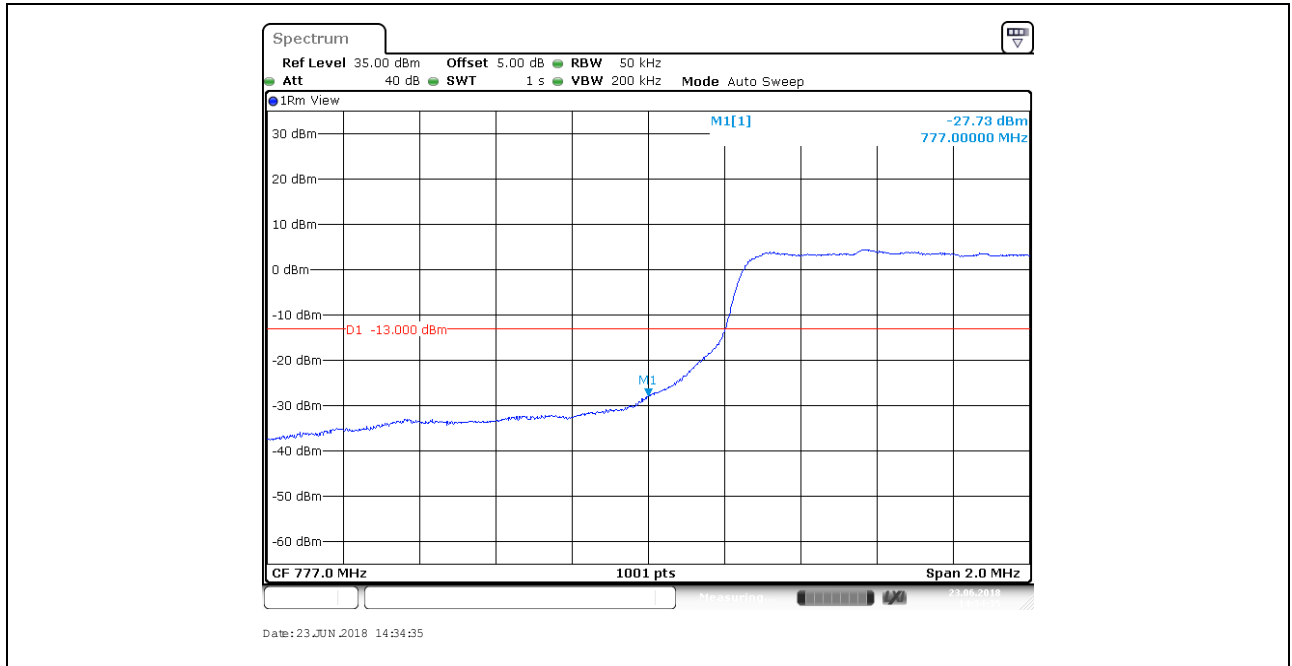
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.



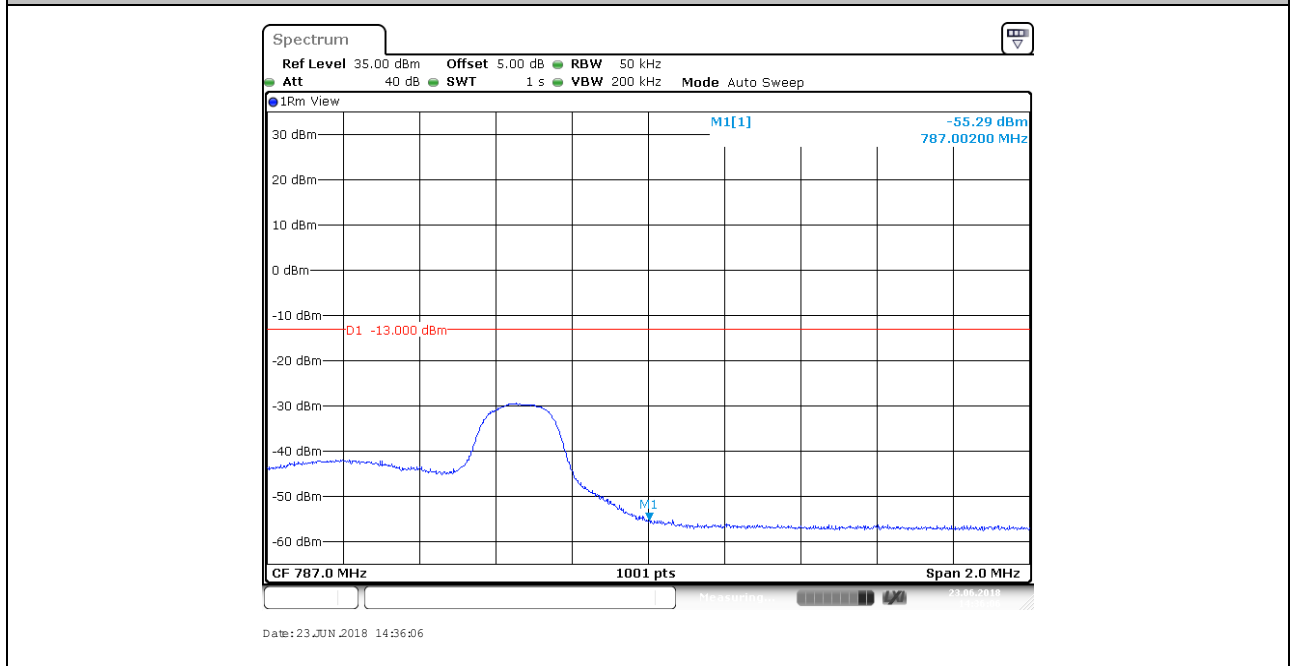
BAND13	10MHz	64QAM	23230_Right	50RB#0	-27.53	PASS
--------	-------	-------	-------------	--------	--------	------

## 5.2. Test Plots

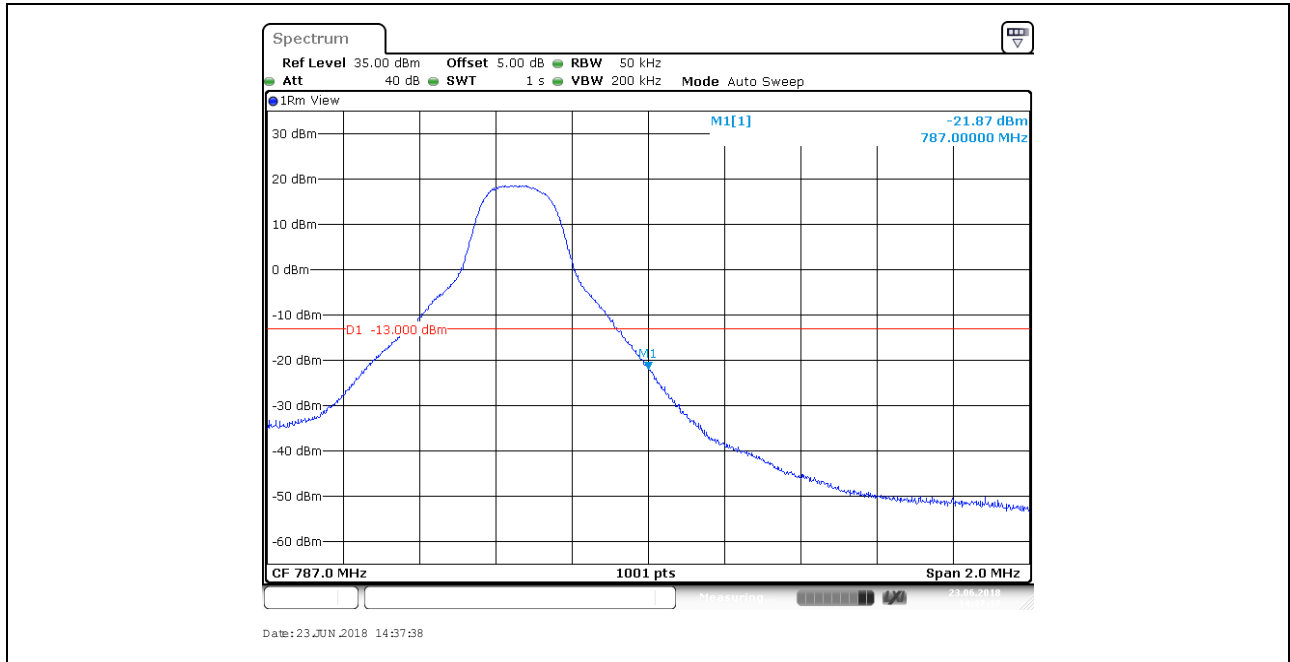




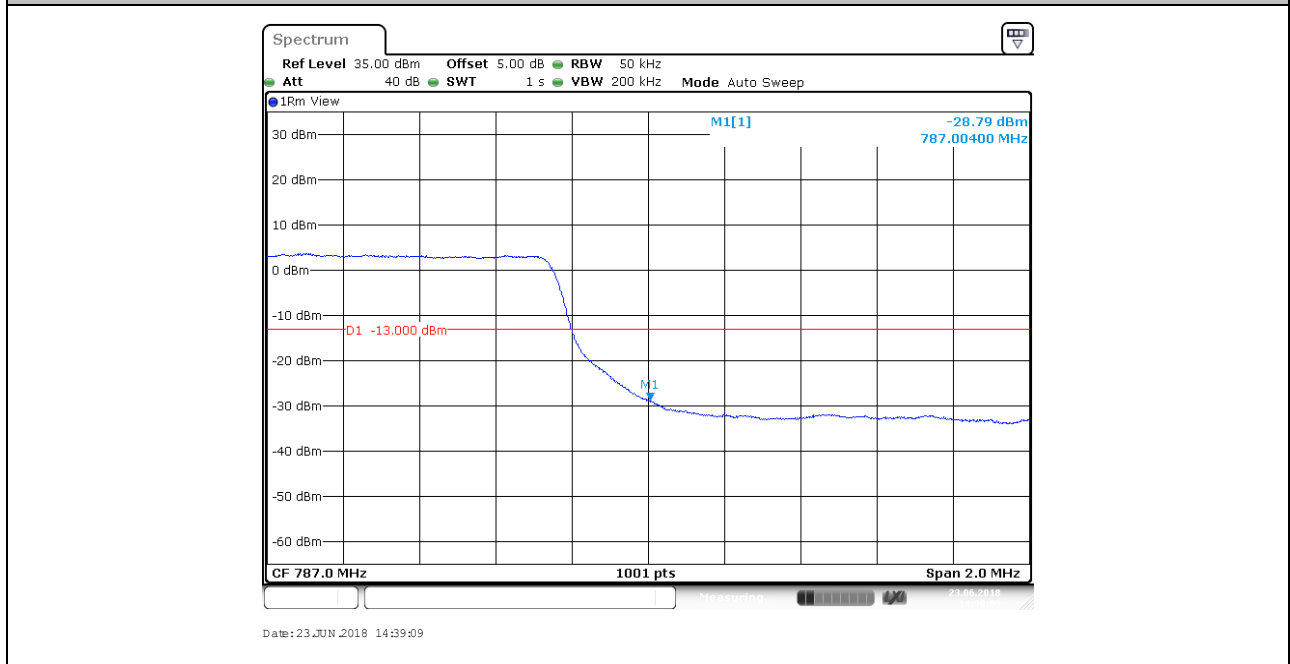
BAND 13\_5MHz\_QPSK\_23255\_1RB#0



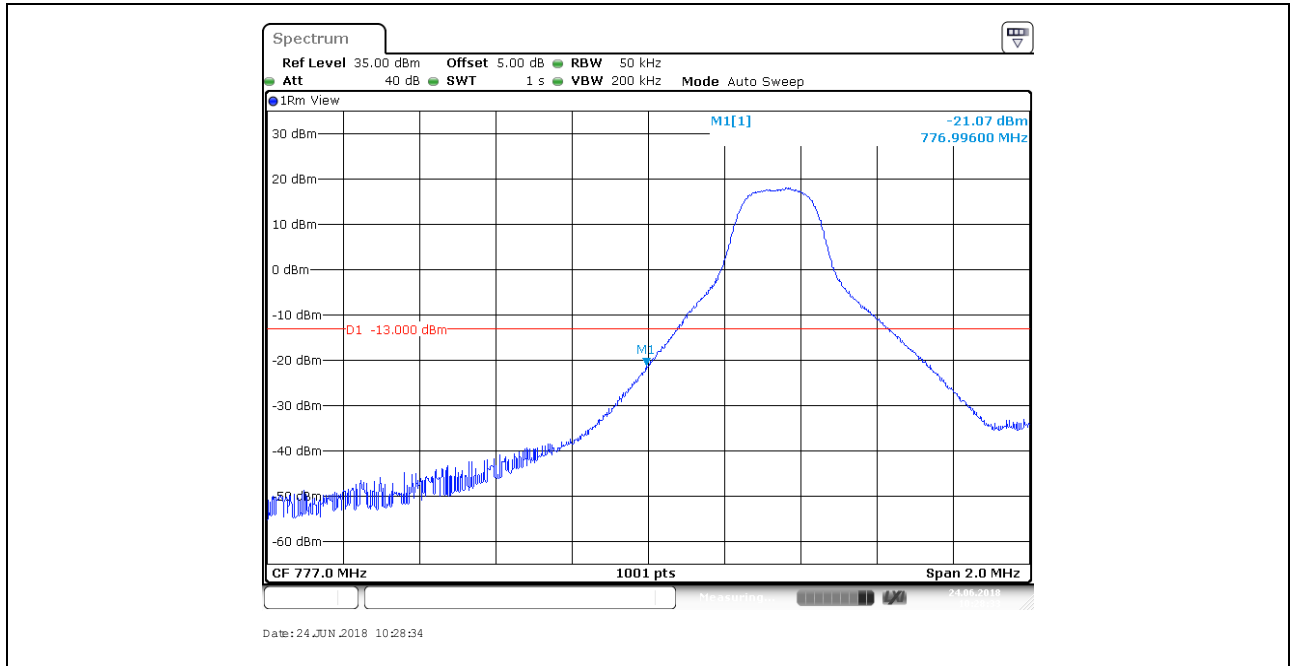
BAND 13\_5MHz\_QPSK\_23255\_1RB#24



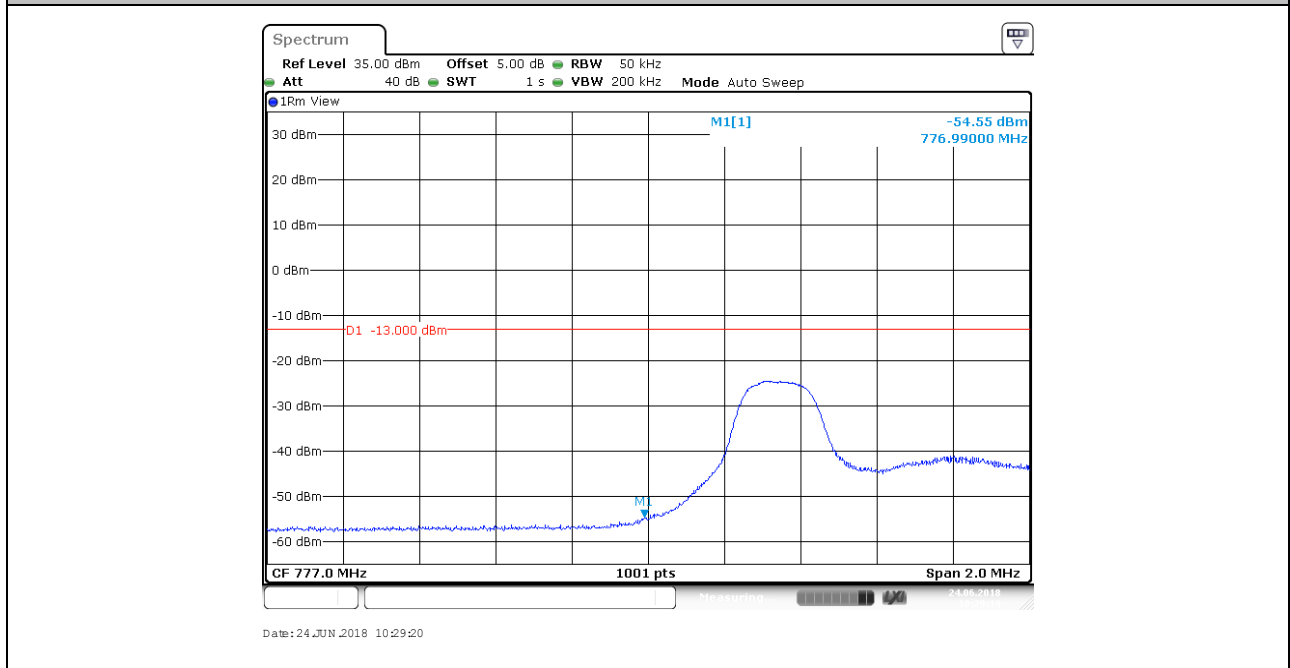
BAND 13\_5MHz\_QPSK\_23255\_25RB#0



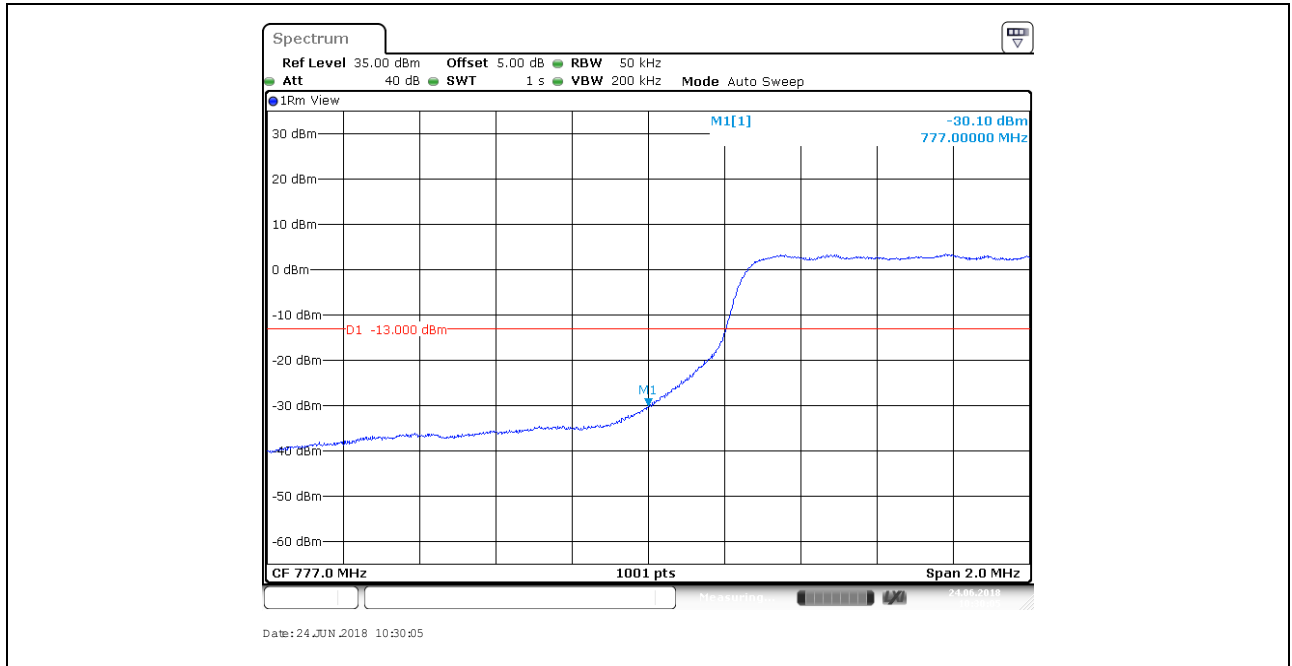
BAND 13\_5MHz\_64QAM\_23205\_1RB#0



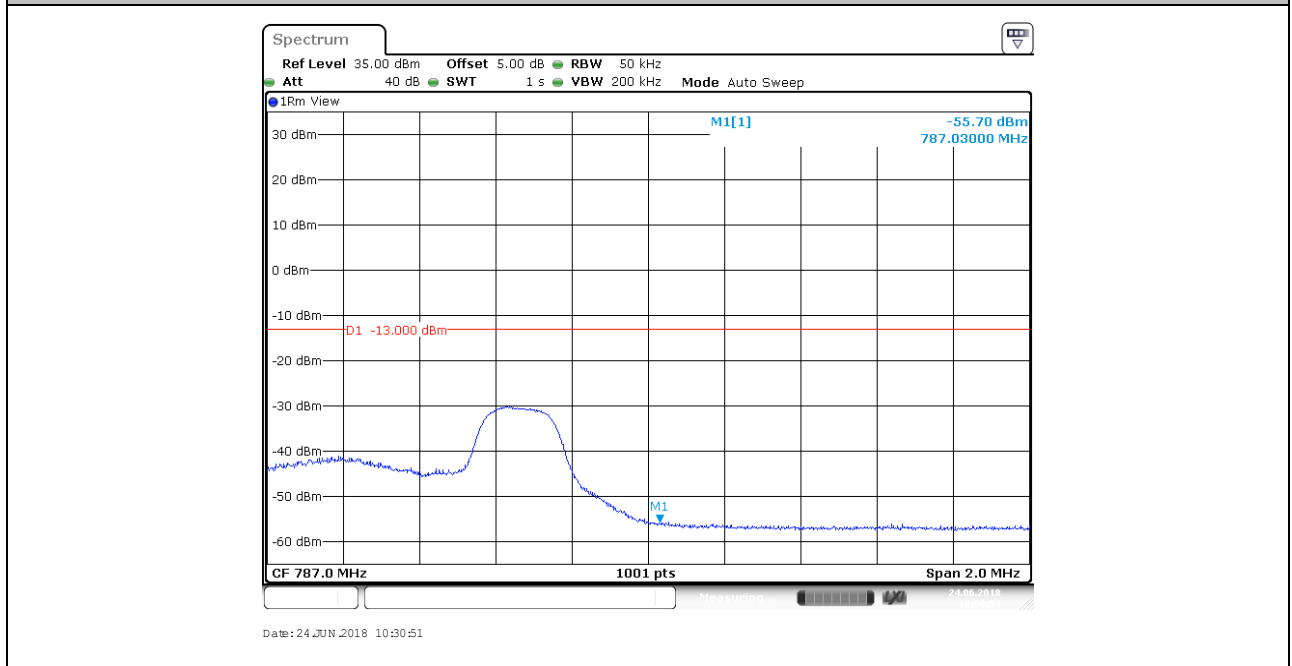
BAND 13\_5MHz\_64QAM\_23205\_1RB#24



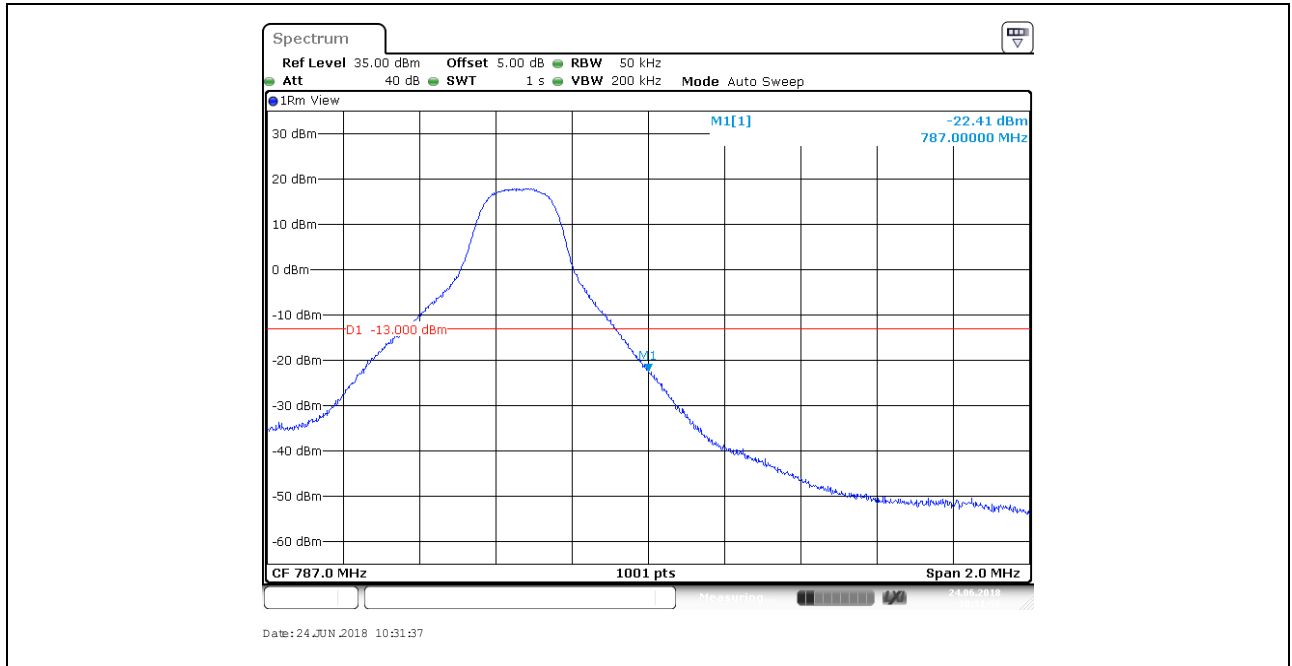
BAND 13\_5MHz\_64QAM\_23205\_25RB#0



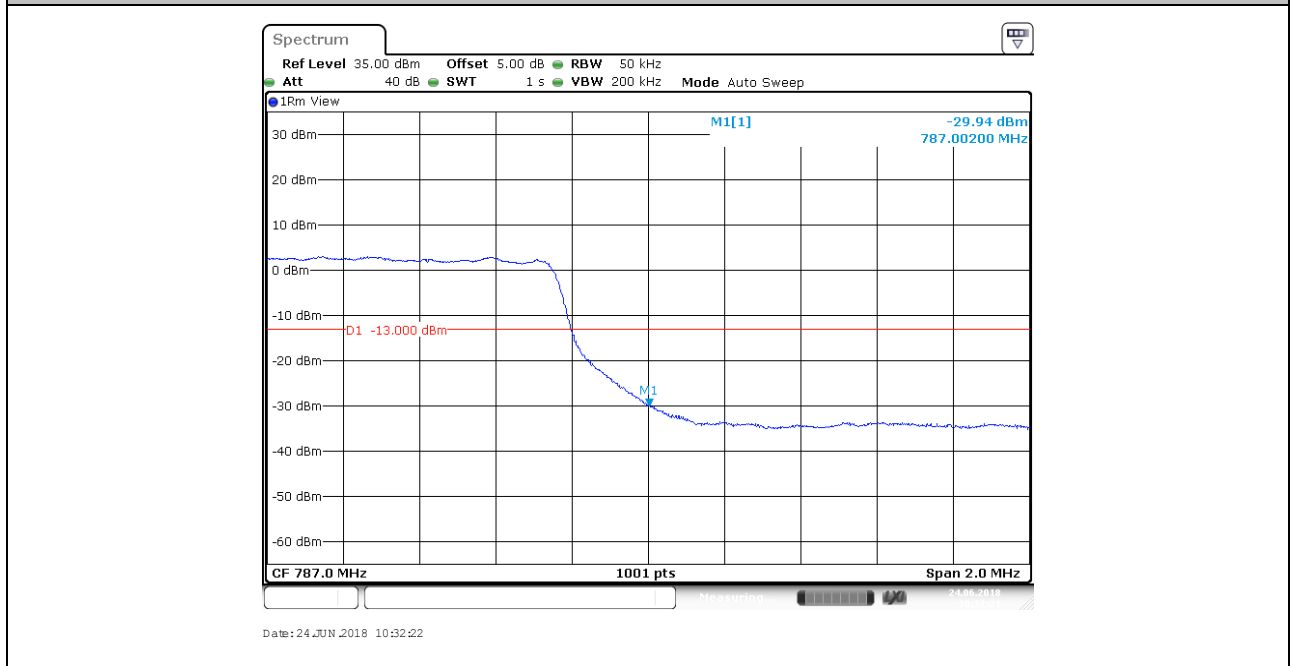
BAND 13\_5MHz\_64QAM\_23255\_1RB#0



BAND 13\_5MHz\_64QAM\_23255\_1RB#24

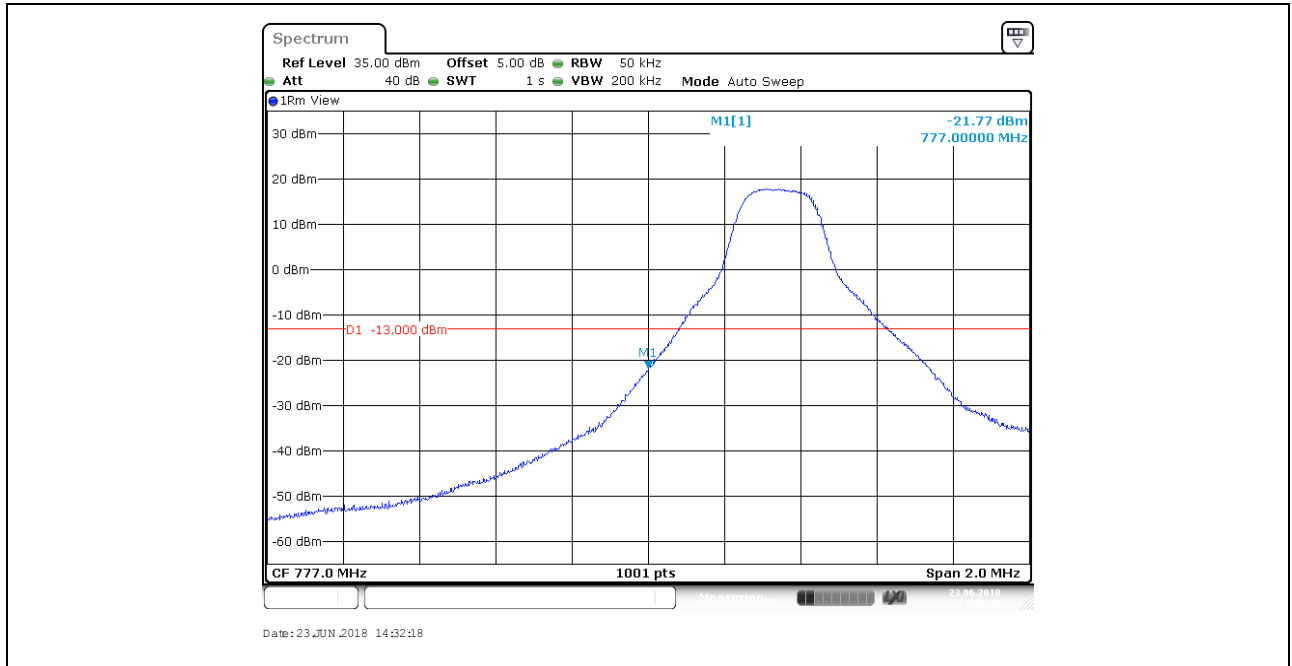


BAND 13\_5MHz\_64QAM\_23255\_25RB#0

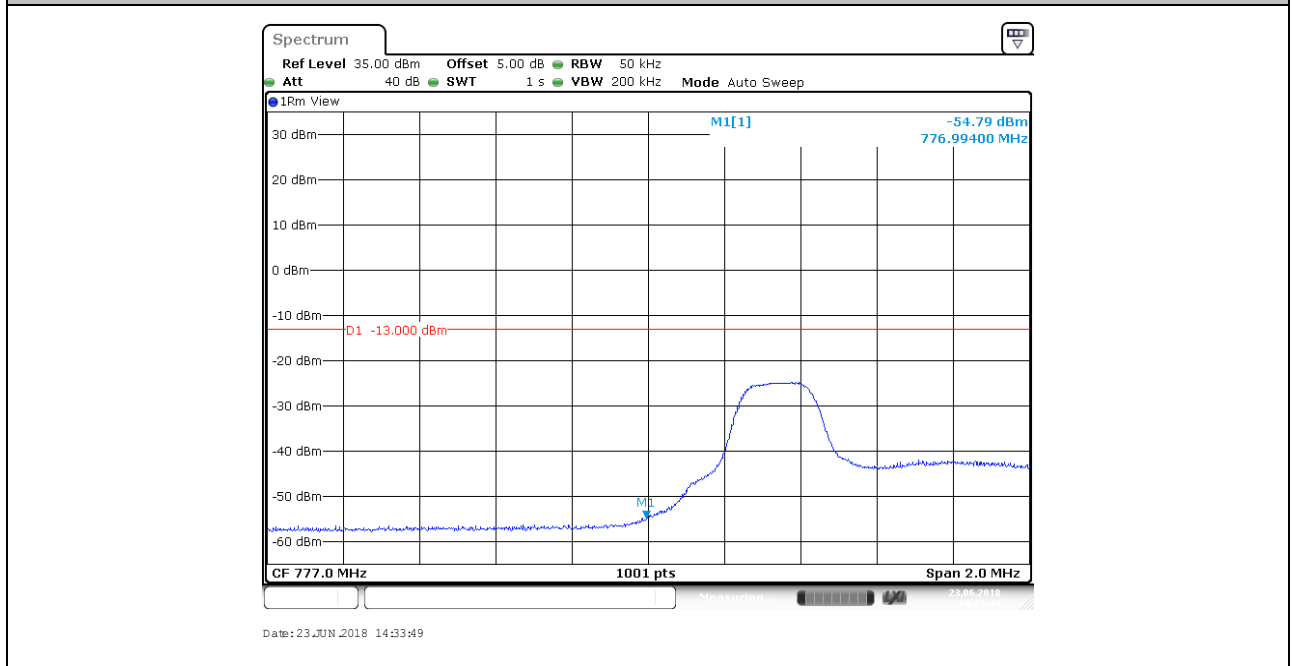


BAND 13\_5MHz\_16QAM\_23205\_1RB#0

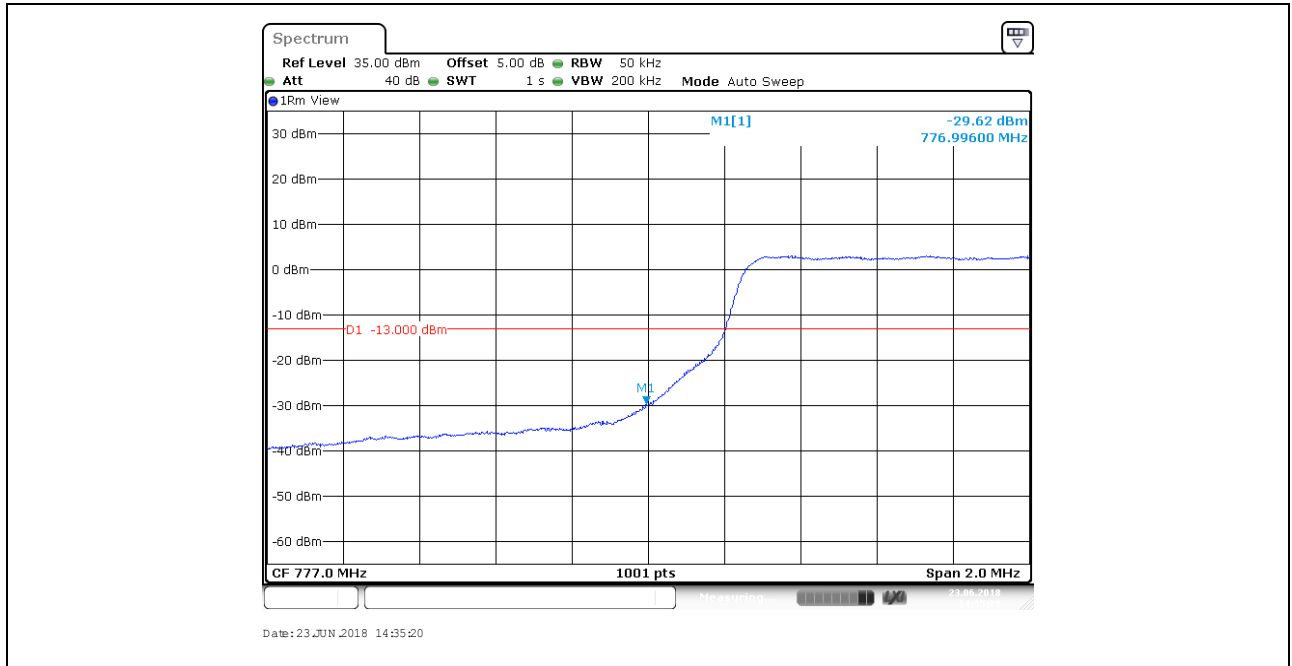




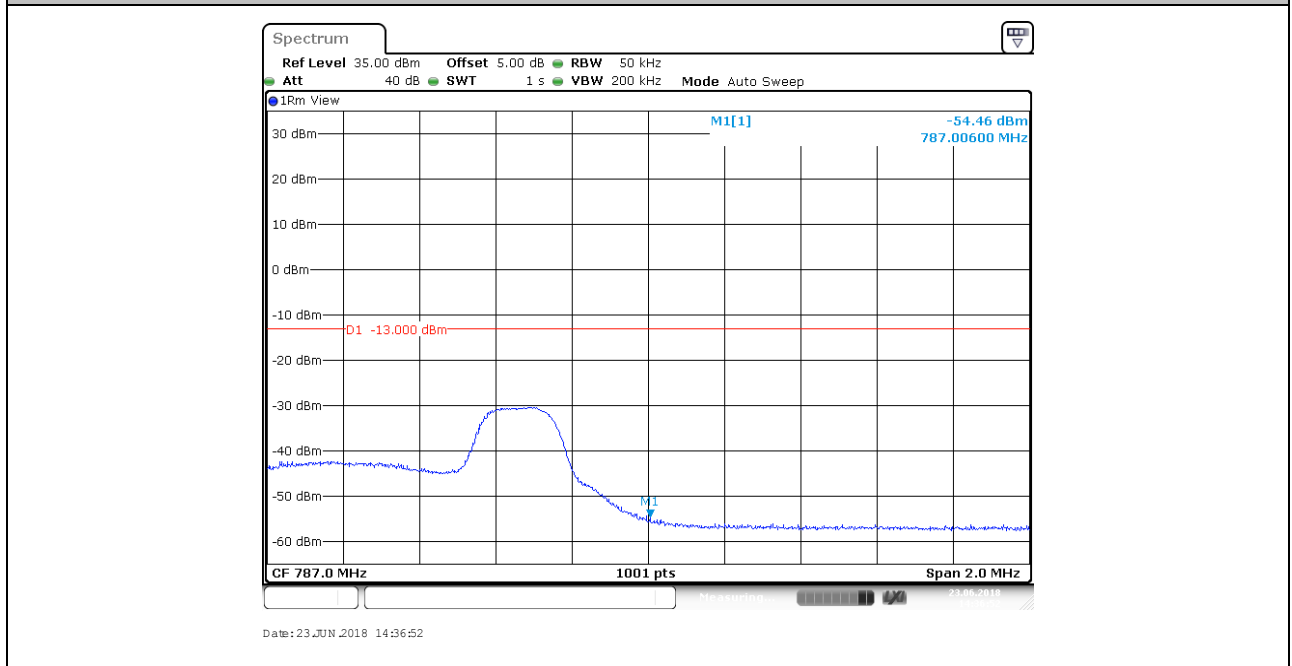
BAND 13\_5MHz\_16QAM\_23205\_1RB#24



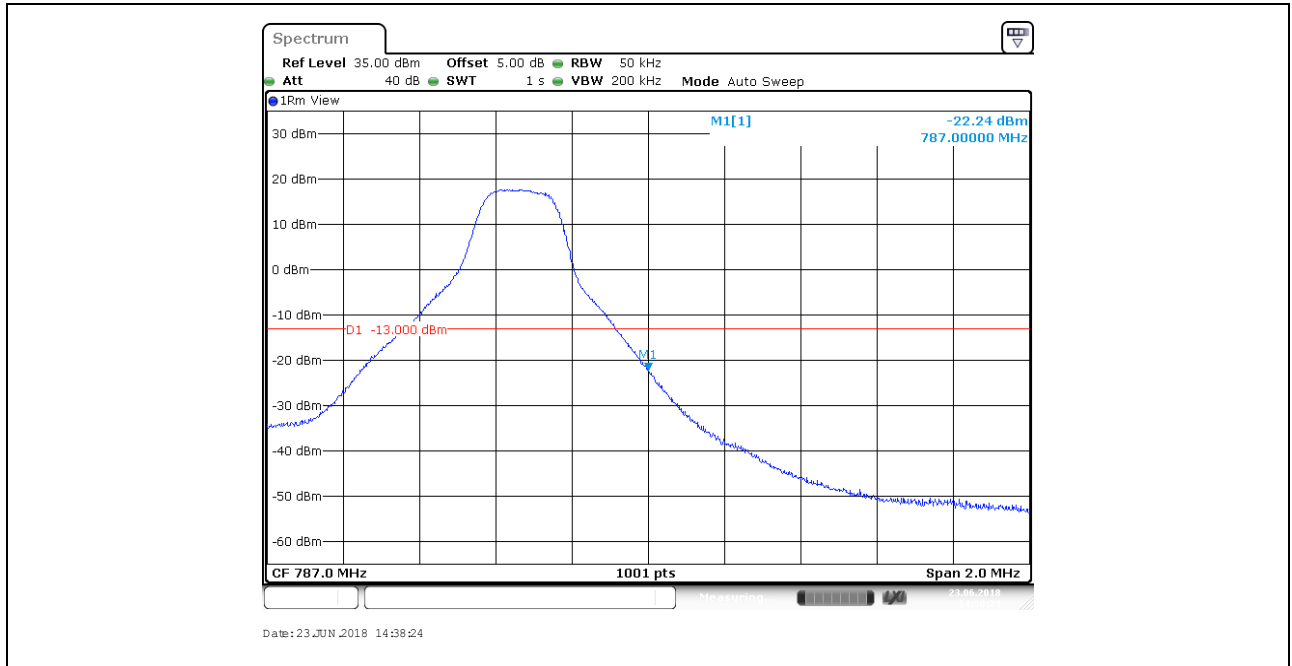
BAND 13\_5MHz\_16QAM\_23205\_25RB#0



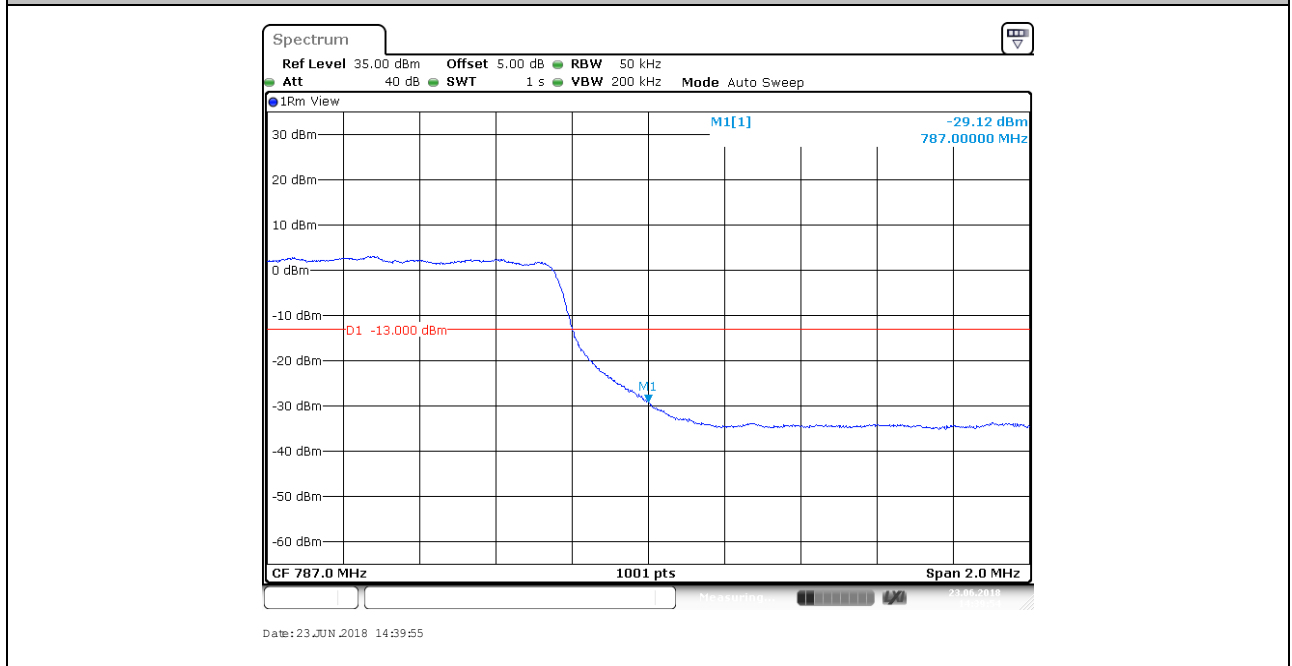
BAND 13\_5MHz\_16QAM\_23255\_1RB#0



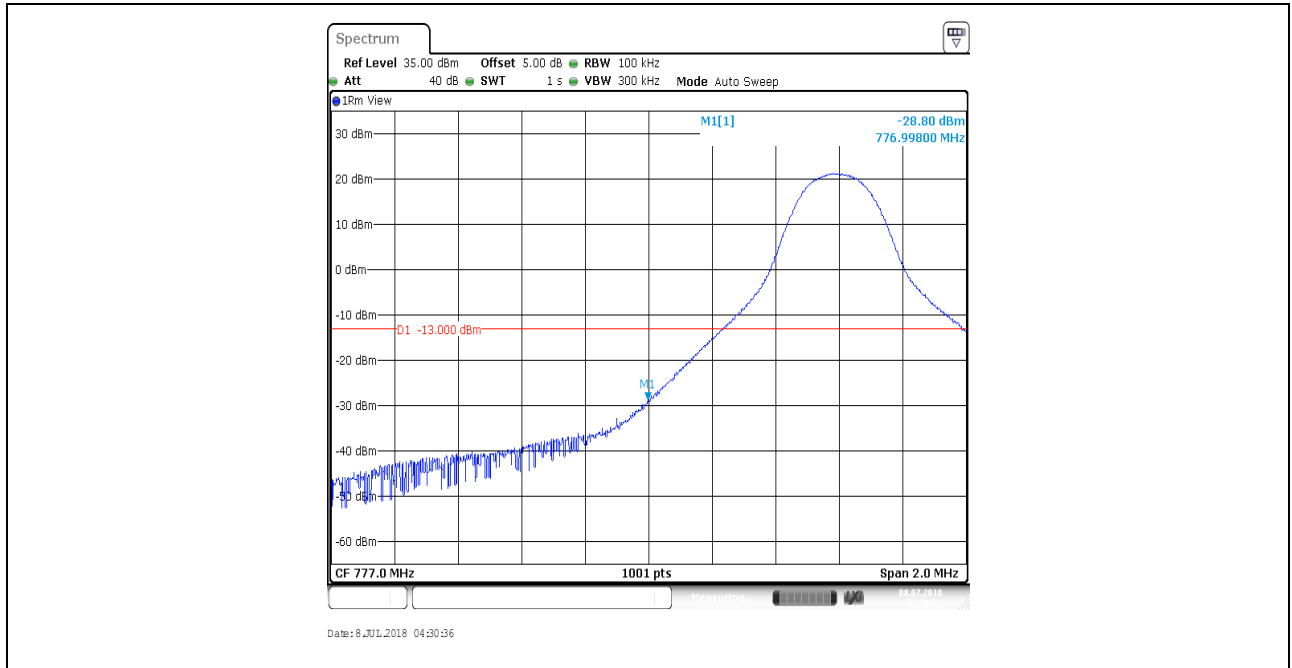
BAND 13\_5MHz\_16QAM\_23255\_1RB#24



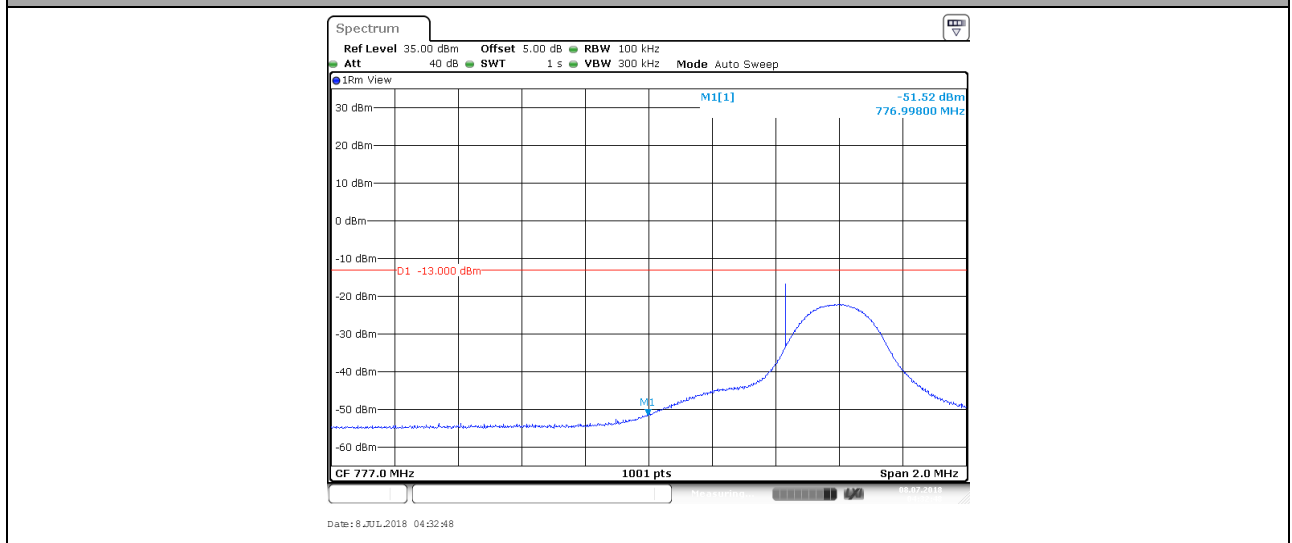
**BAND 13\_5MHz\_16QAM\_23255\_25RB#0**



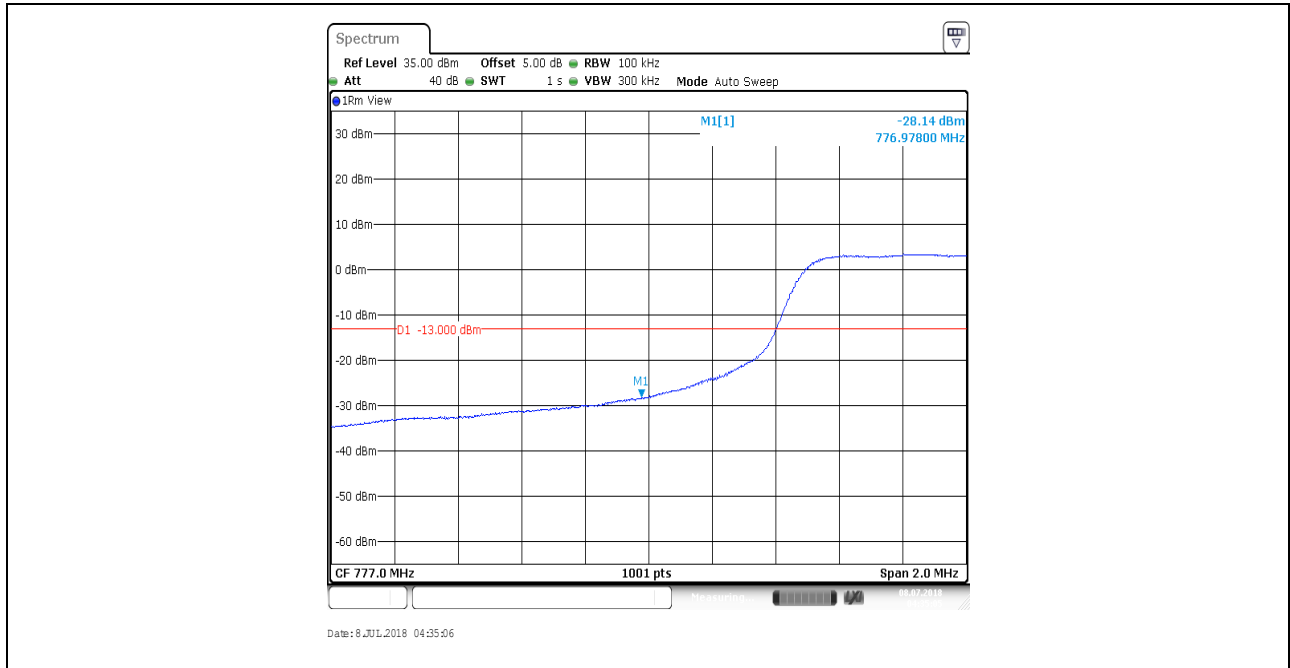
**BAND13\_10MHz\_QPSK\_23230\_Left\_1RB#0**



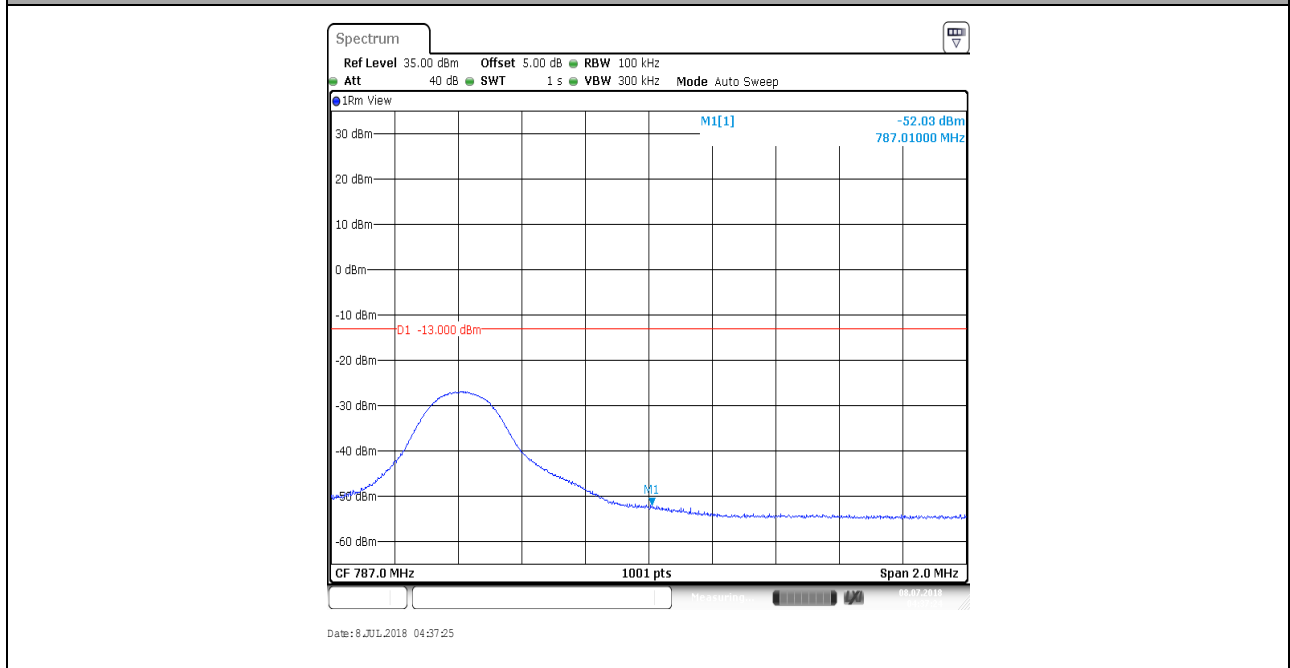
BAND13\_10MHz\_QPSK\_23230\_Left\_1RB#49



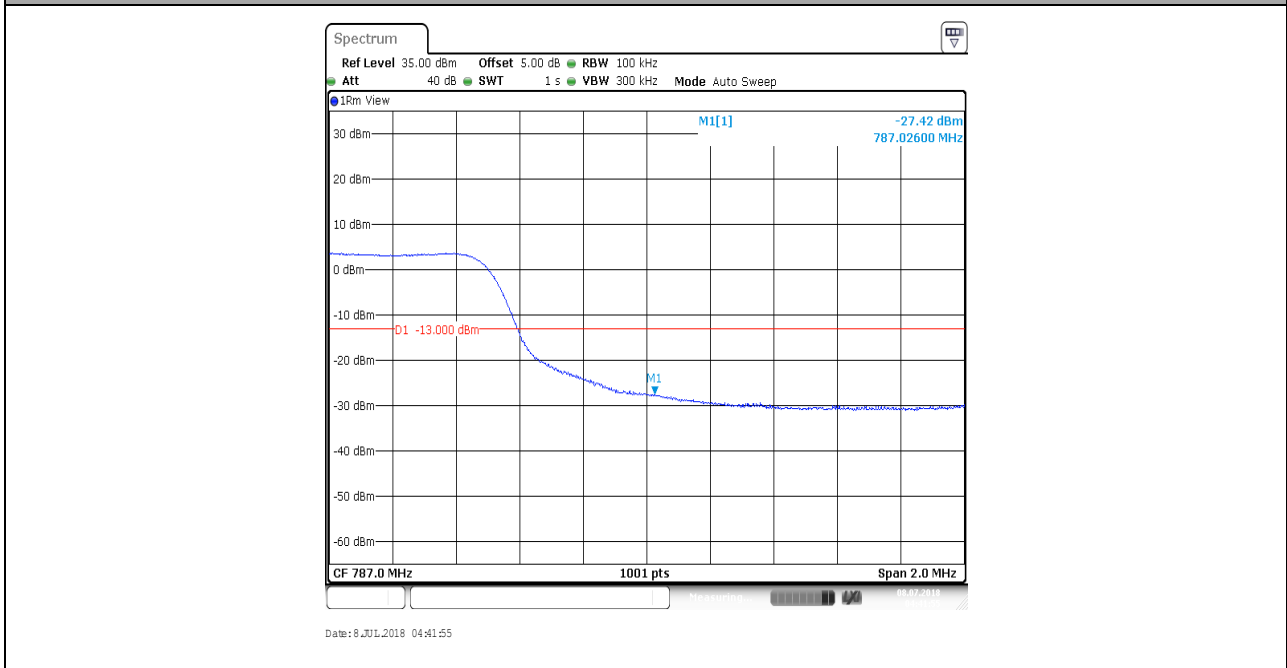
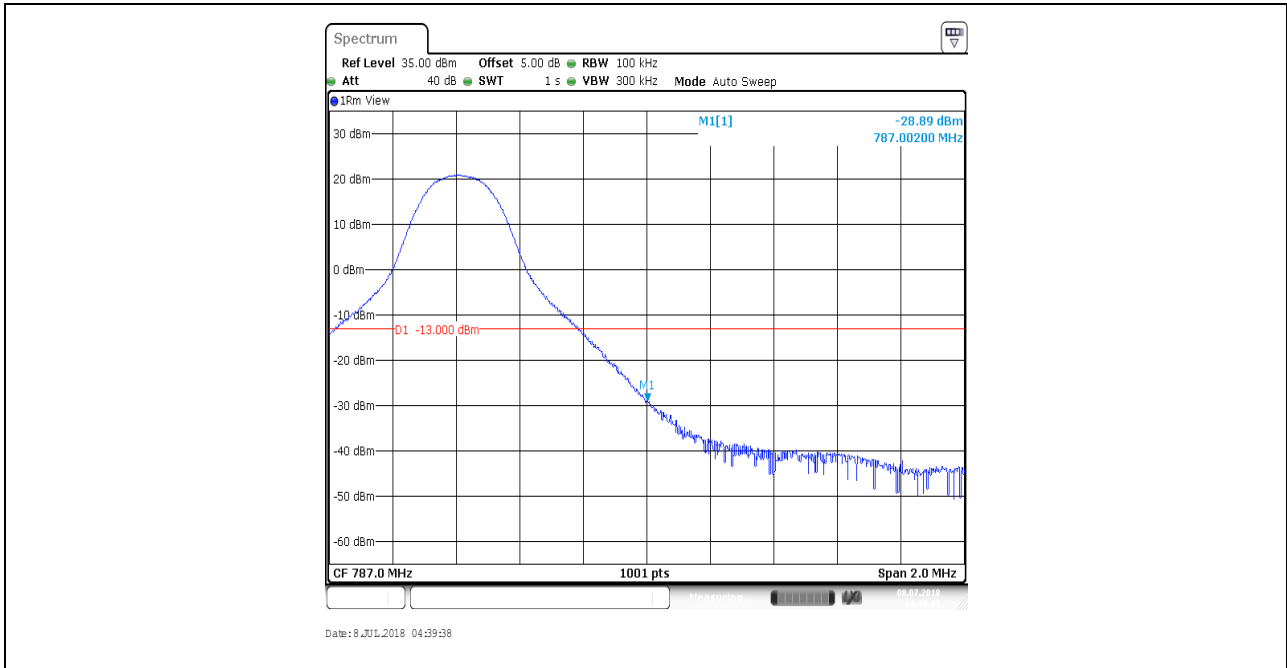
BAND13\_10MHz\_QPSK\_23230\_Left\_50RB#0

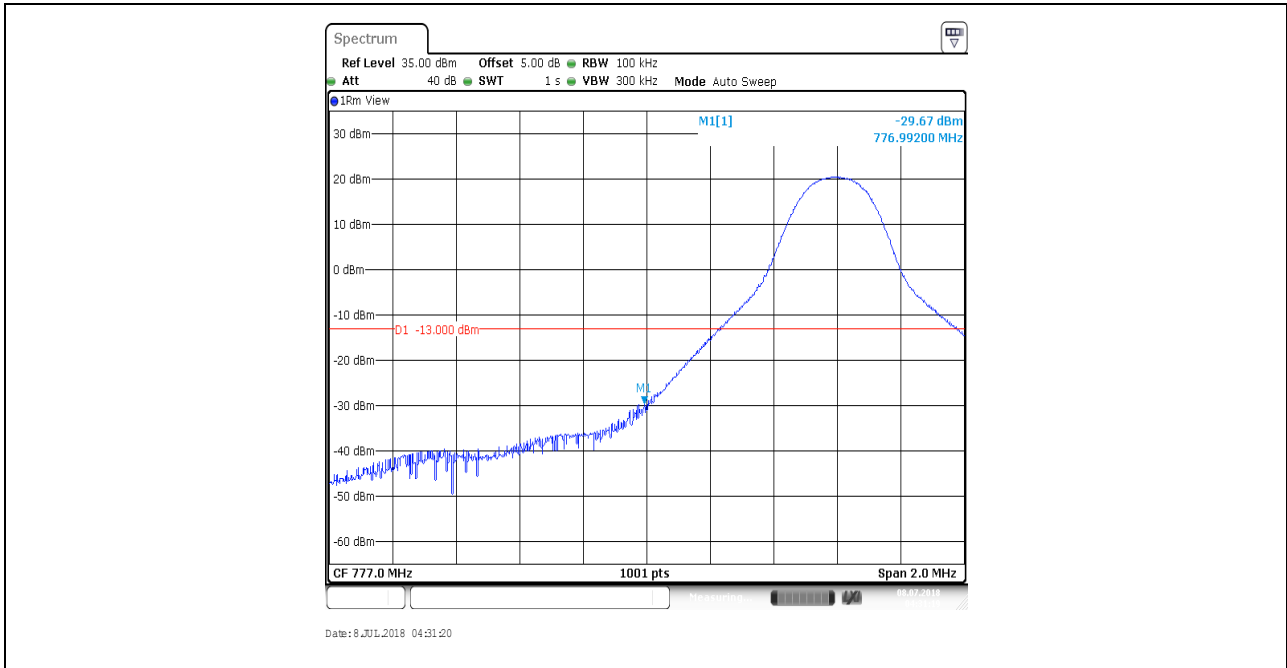


BAND13\_10MHz\_QPSK\_23230\_Right\_1RB#0

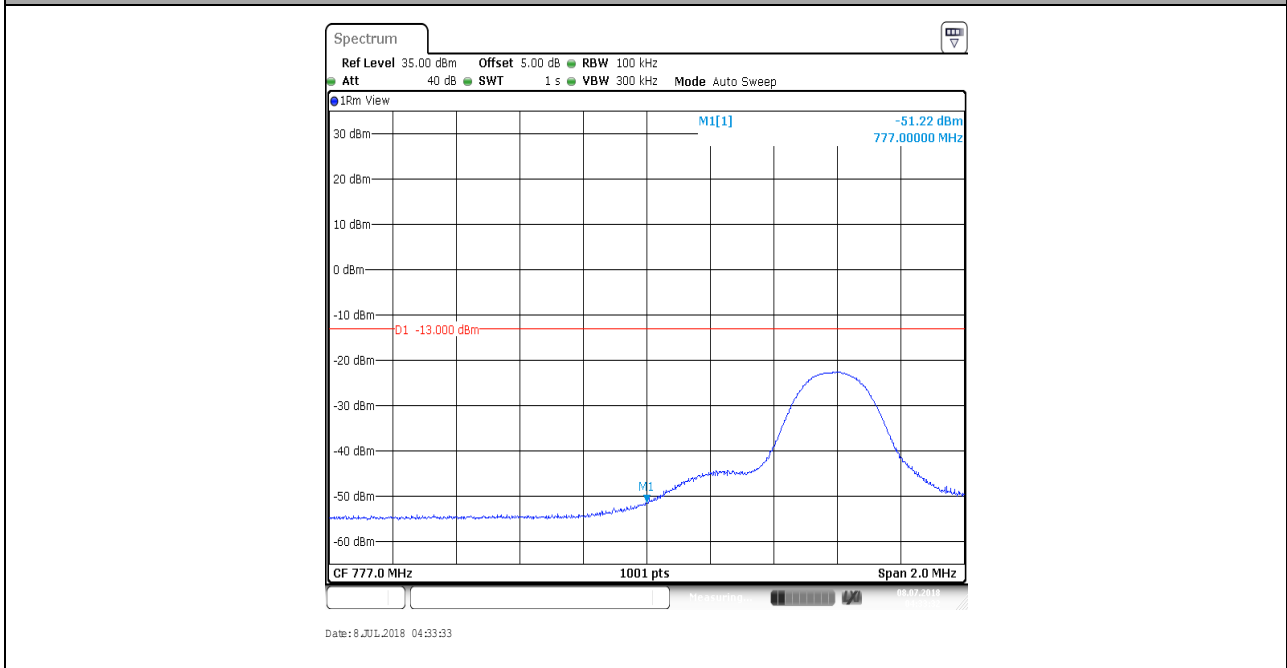


BAND13\_10MHz\_QPSK\_23230\_Right\_1RB#49

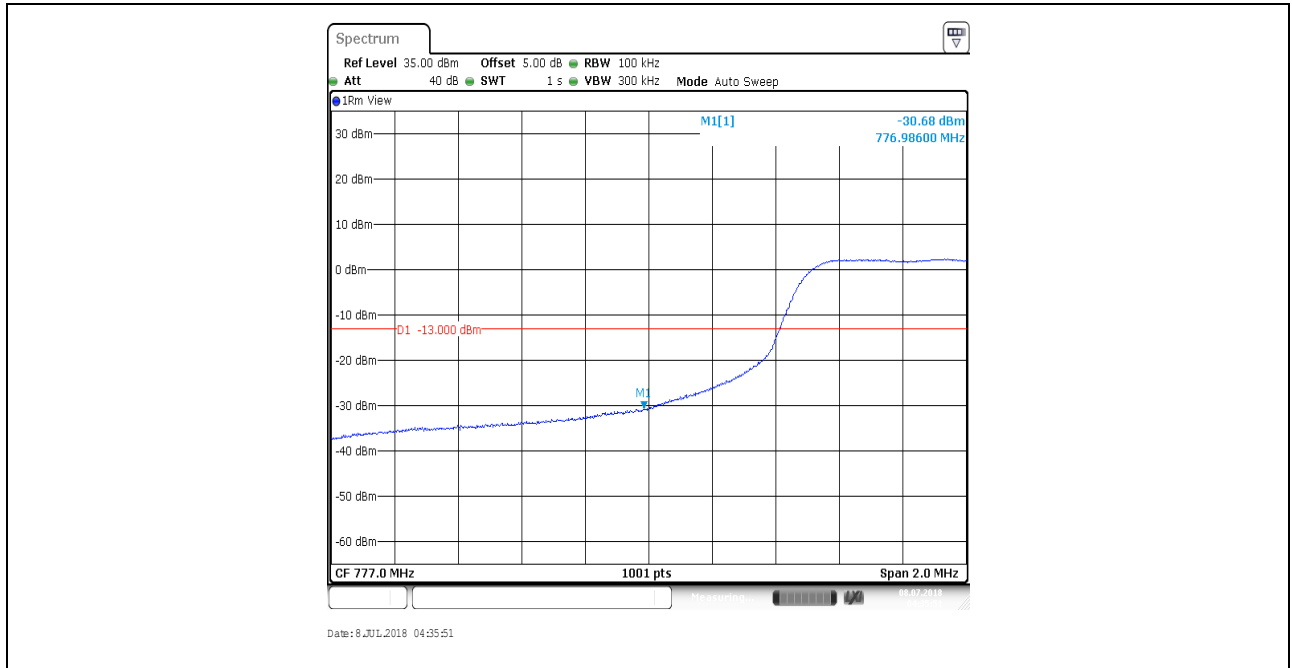




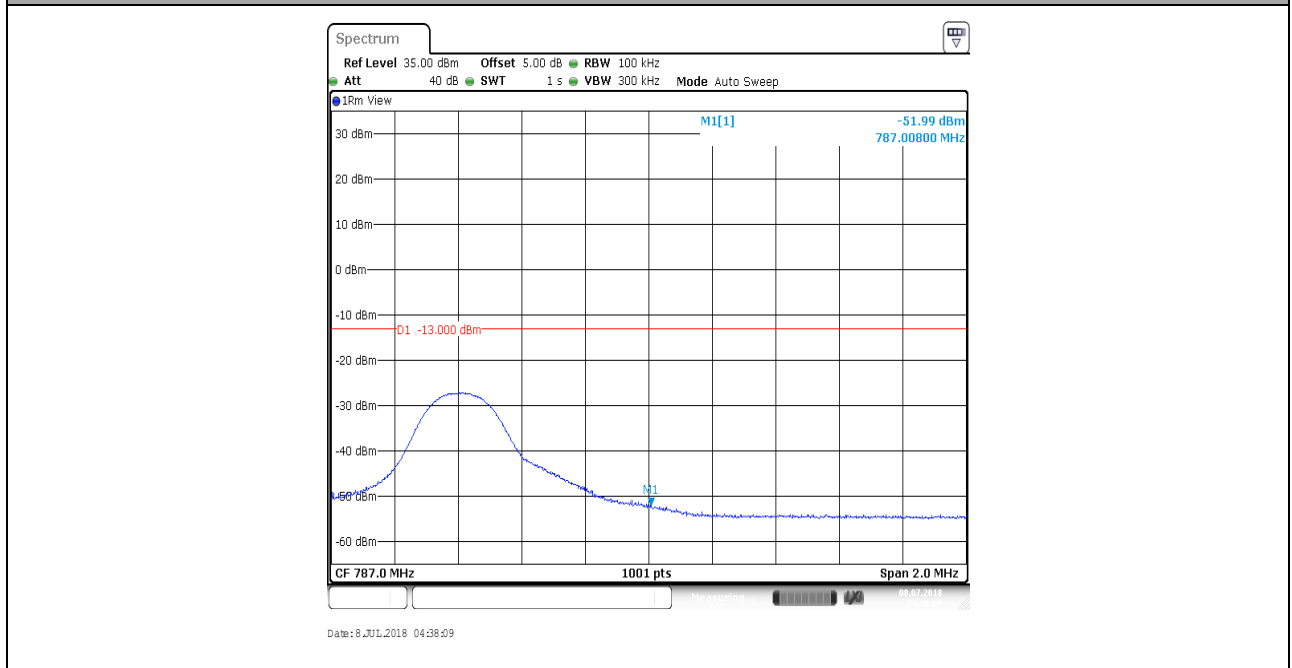
BAND13\_10MHz\_16QAM\_23230\_Left\_1RB#49



BAND13\_10MHz\_16QAM\_23230\_Left\_50RB#0

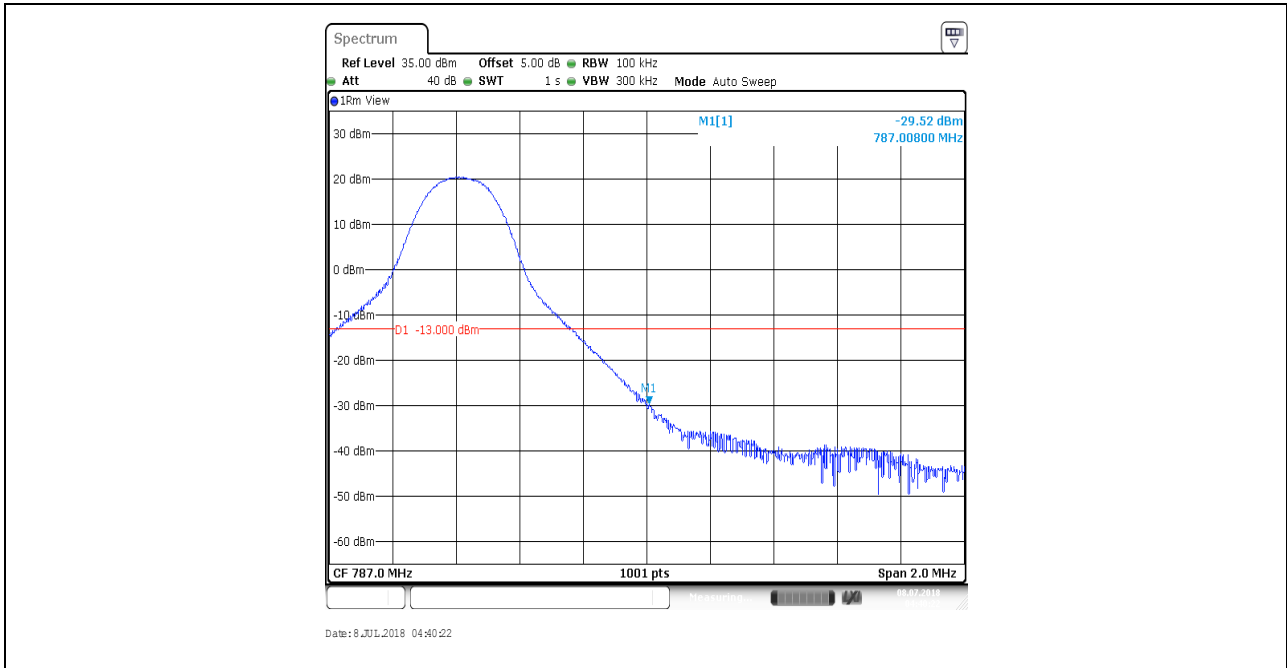


BAND13\_10MHz\_16QAM\_23230\_Right\_1RB#0

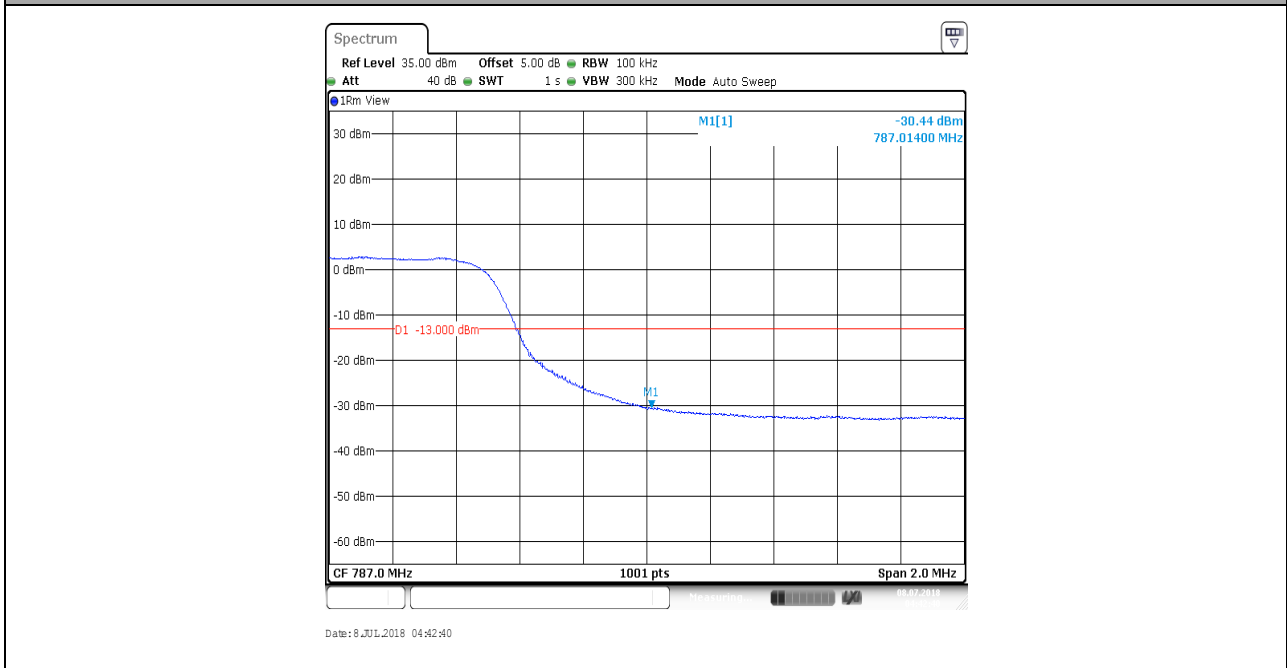


BAND13\_10MHz\_16QAM\_23230\_Right\_1RB#49

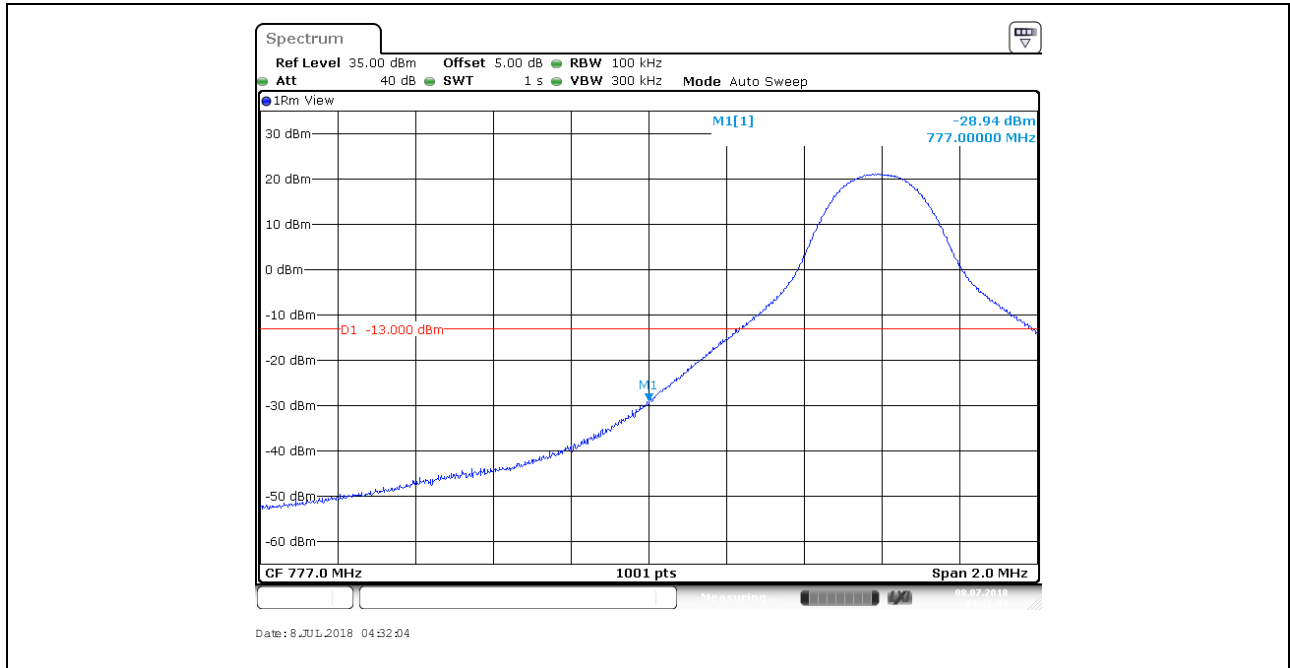




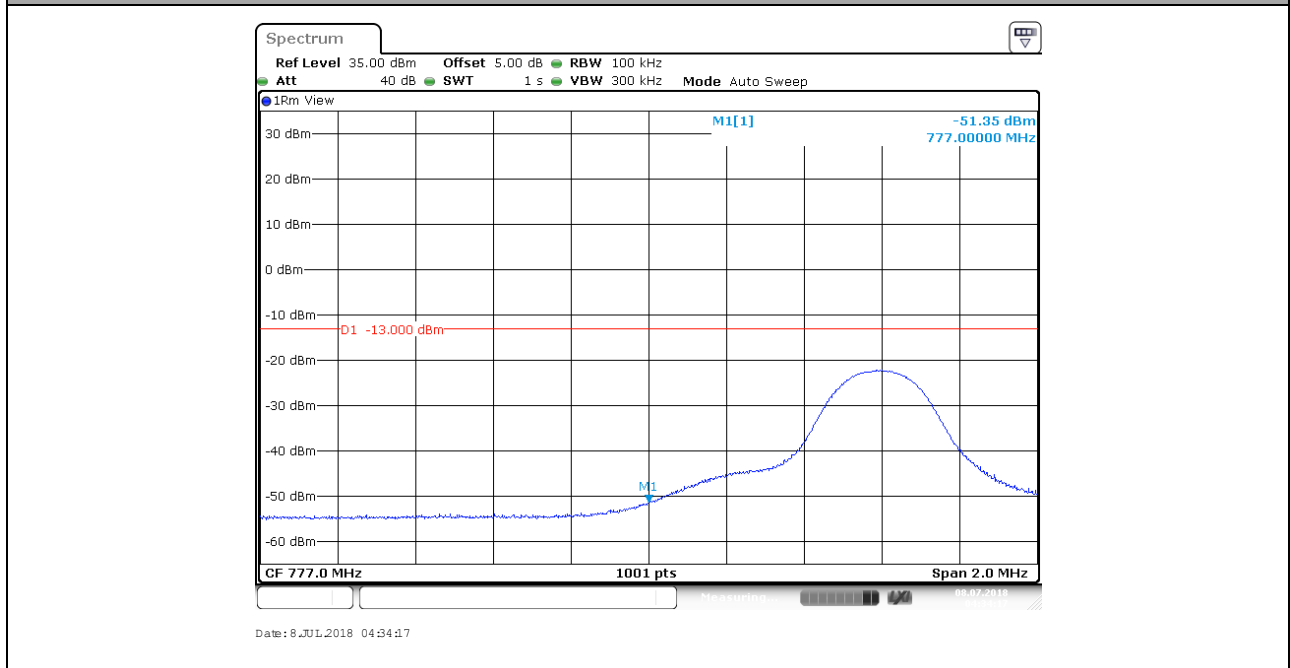
BAND13\_10MHz\_16QAM\_23230\_Right\_50RB#0



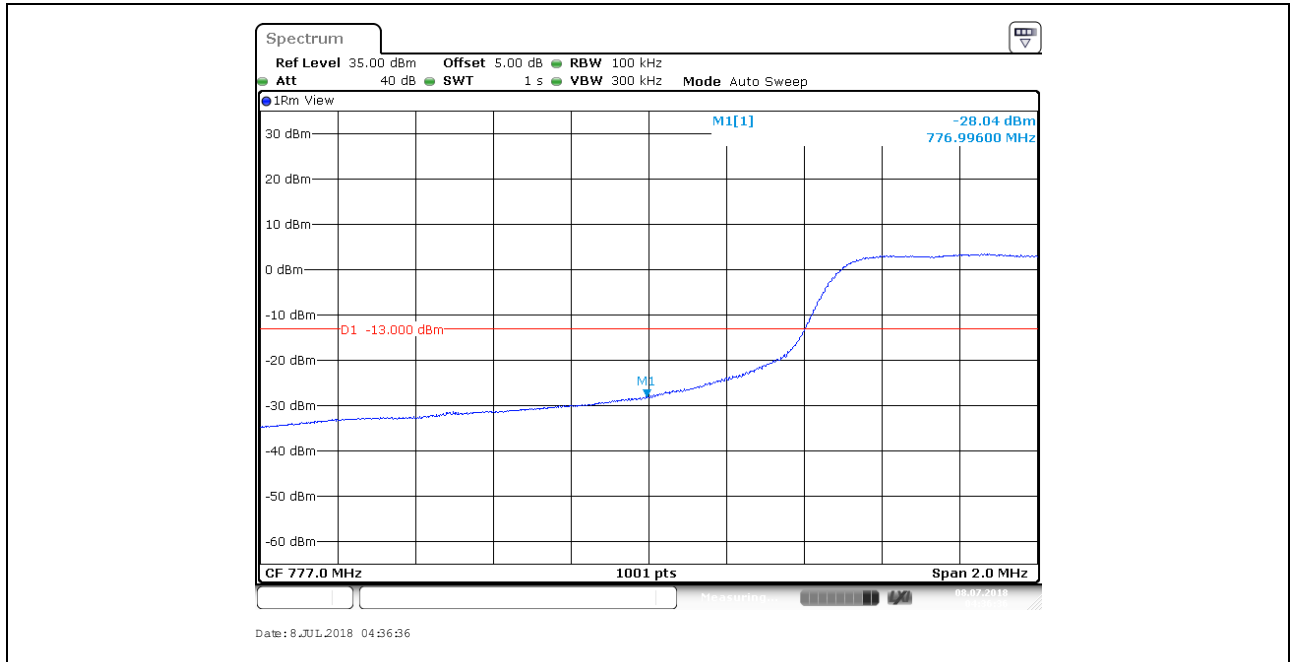
BAND13\_10MHz\_64QAM\_23230\_Left\_1RB#0



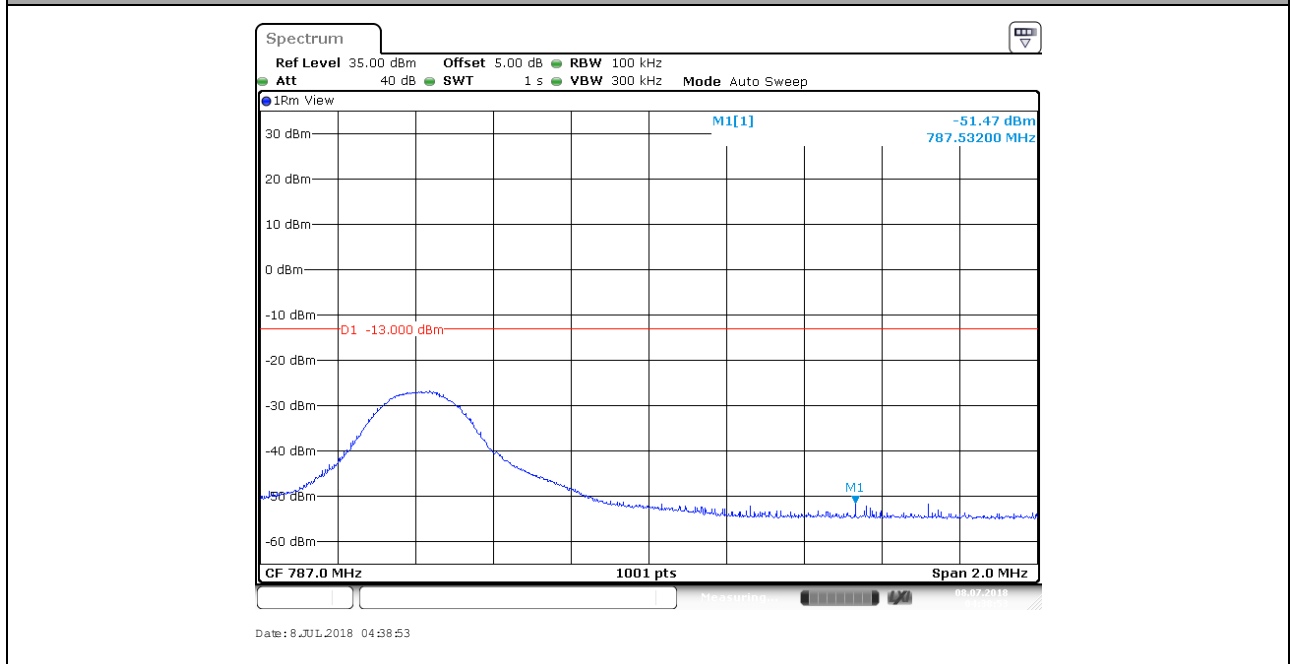
BAND13\_10MHz\_64QAM\_23230\_Left\_1RB#49



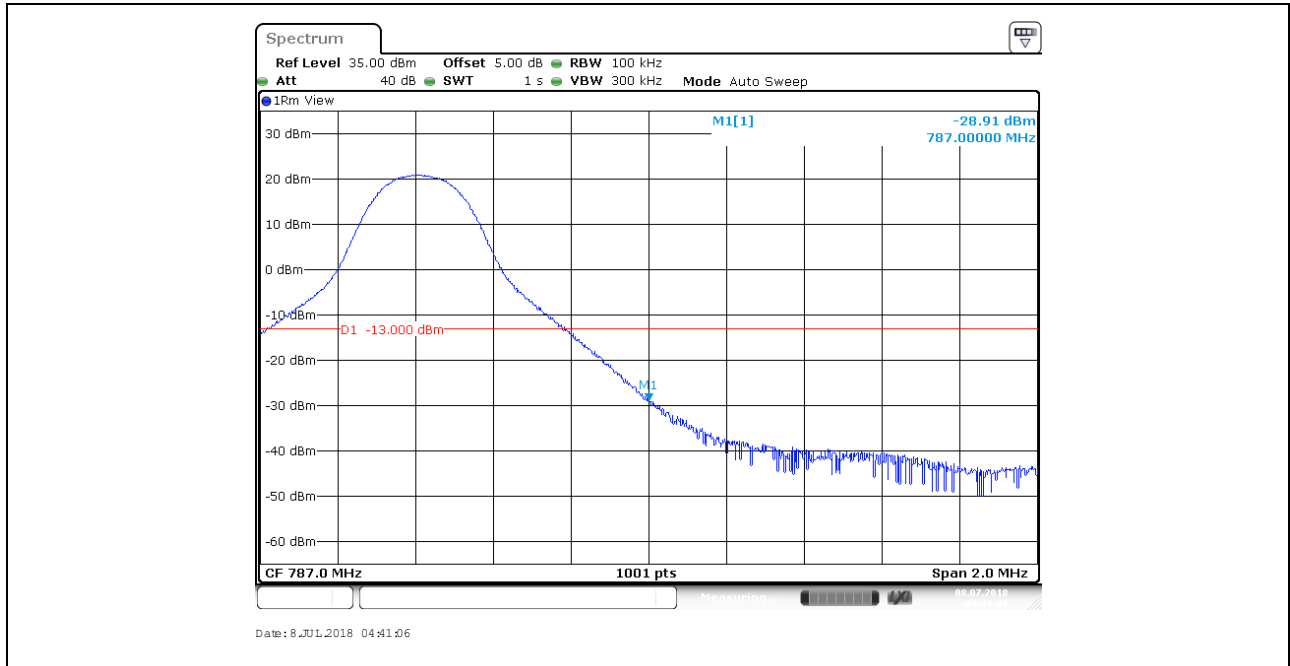
BAND13\_10MHz\_64QAM\_23230\_Left\_50RB#0



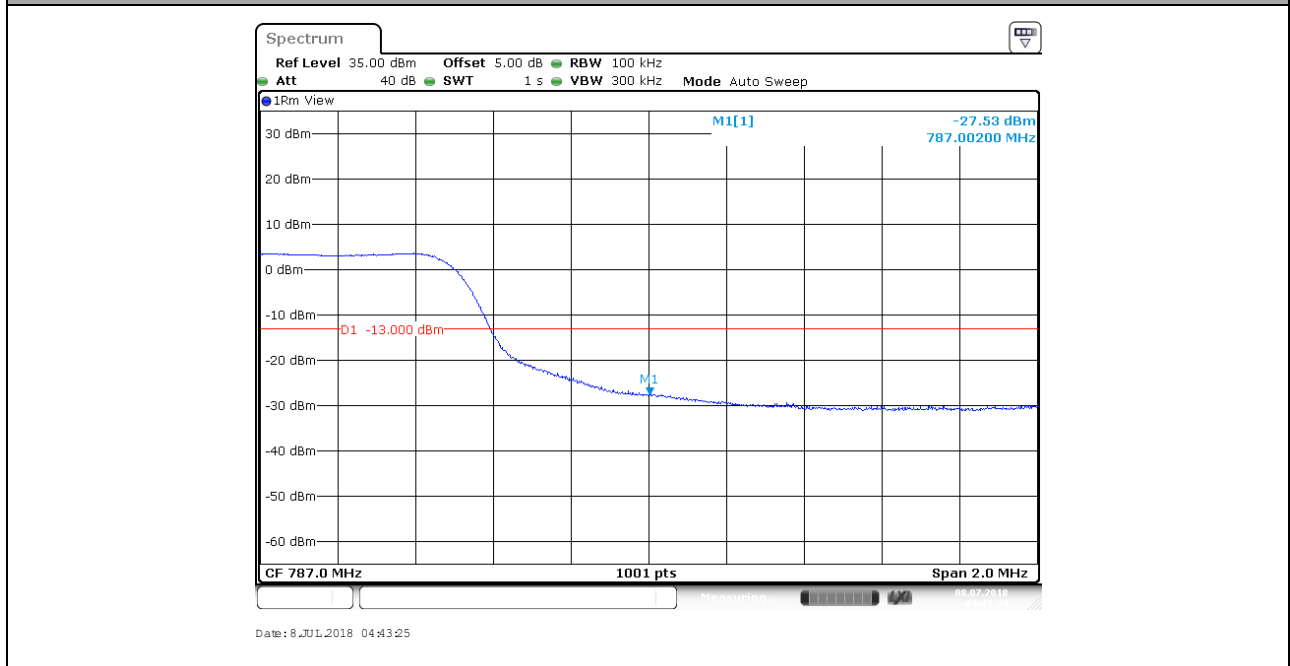
BAND13\_10MHz\_64QAM\_23230\_Right\_1RB#0



BAND13\_10MHz\_64QAM\_23230\_Right\_1RB#49



BAND13\_10MHz\_64QAM\_23230\_Right\_50RB#0





## 6. Spurious Emission at Antenna Terminal

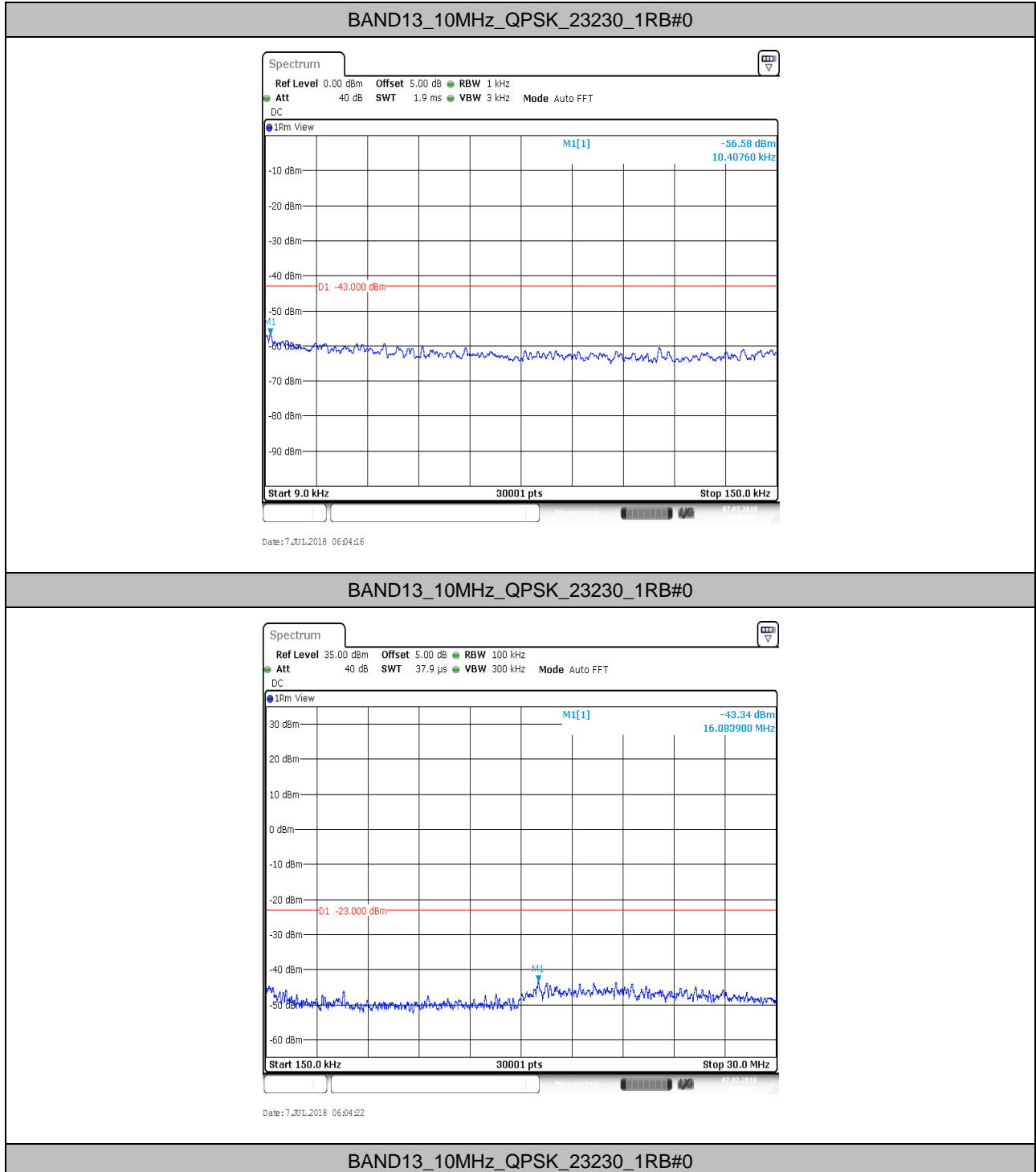
NOTE: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of  $< RBW/2$  so that narrowBAND signals are not lost between frequency bins. As to the present test item, the "Measurement Points = 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

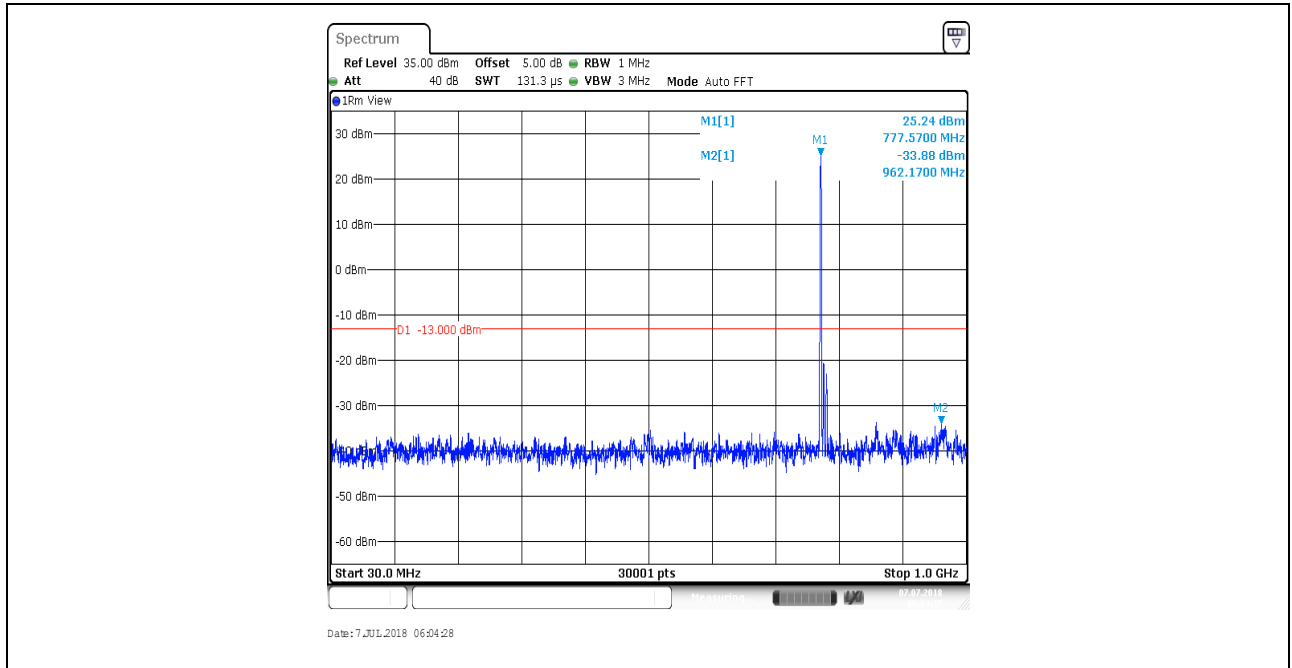
### 6.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Frequency Range	Result (dBm)	Verdict
BAND13	10MHz	QPSK	23230	1RB#0	Range1:0.009~0.15MHz	-56.58	PASS
BAND13	10MHz	QPSK	23230	1RB#0	Range2:0.15~30MHz	-43.34	PASS
BAND13	10MHz	QPSK	23230	1RB#0	Range3:30~1000MHz	-33.88	PASS
BAND13	10MHz	QPSK	23230	1RB#0	Range4:1000~1559MHz	-44.73	PASS
BAND13	10MHz	QPSK	23230	1RB#0	Range5:1559~1610MHz	-45.05	PASS
BAND13	10MHz	QPSK	23230	1RB#0	Range6:1610~5000MHz	-41.57	PASS
BAND13	10MHz	QPSK	23230	1RB#0	Range7:5000~12000MHz	-39	PASS
BAND13	10MHz	64QAM	23230	1RB#0	Range1:0.009~0.15MHz	-55.54	PASS
BAND13	10MHz	64QAM	23230	1RB#0	Range2:0.15~30MHz	-43.21	PASS
BAND13	10MHz	64QAM	23230	1RB#0	Range3:30~1000MHz	-33.8	PASS
BAND13	10MHz	64QAM	23230	1RB#0	Range4:1000~1559MHz	-44.81	PASS
BAND13	10MHz	64QAM	23230	1RB#0	Range5:1559~1610MHz	-45.1	PASS
BAND13	10MHz	64QAM	23230	1RB#0	Range6:1610~5000MHz	-41.66	PASS
BAND13	10MHz	64QAM	23230	1RB#0	Range7:5000~12000MHz	-38.67	PASS
BAND13	10MHz	16QAM	23230	1RB#0	Range1:0.009~0.15MHz	-57.02	PASS
BAND13	10MHz	16QAM	23230	1RB#0	Range2:0.15~30MHz	-42.9	PASS
BAND13	10MHz	16QAM	23230	1RB#0	Range3:30~1000MHz	-34.4	PASS
BAND13	10MHz	16QAM	23230	1RB#0	Range4:1000~1559MHz	-44.95	PASS
BAND13	10MHz	16QAM	23230	1RB#0	Range5:1559~1610MHz	-45.1	PASS
BAND13	10MHz	16QAM	23230	1RB#0	Range6:1610~5000MHz	-41.69	PASS
BAND13	10MHz	16QAM	23230	1RB#0	Range7:5000~12000MHz	-39.01	PASS

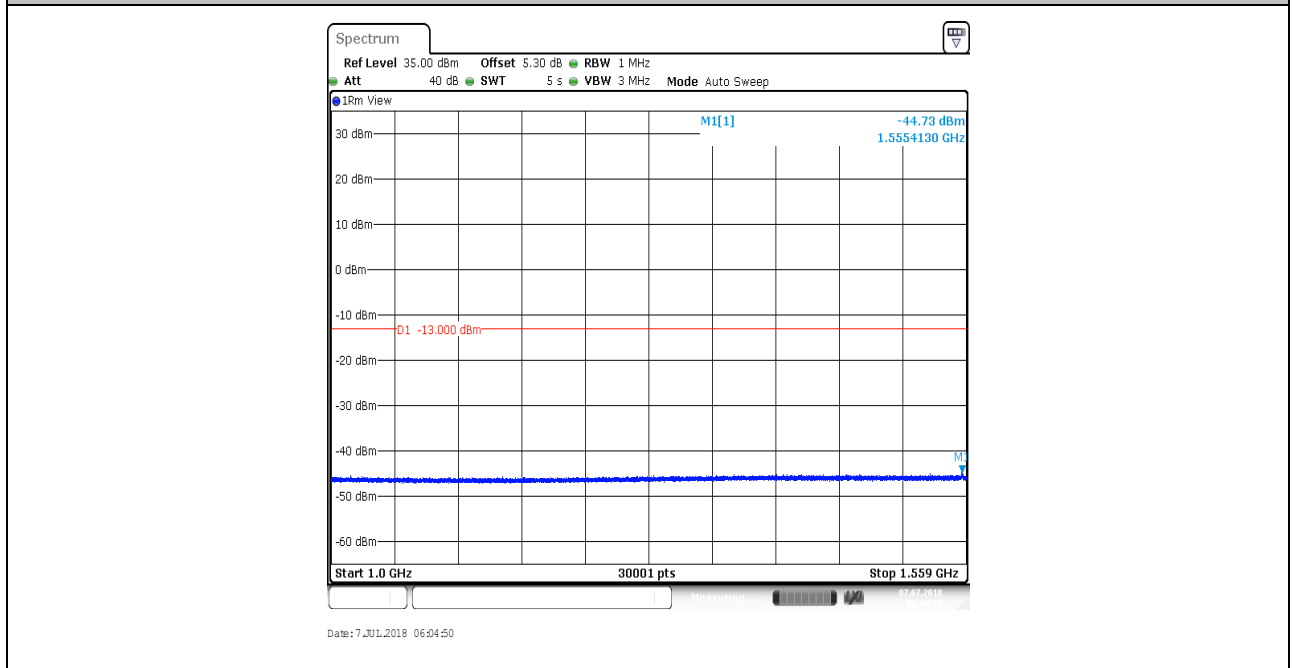


## 6.2. Test Plots

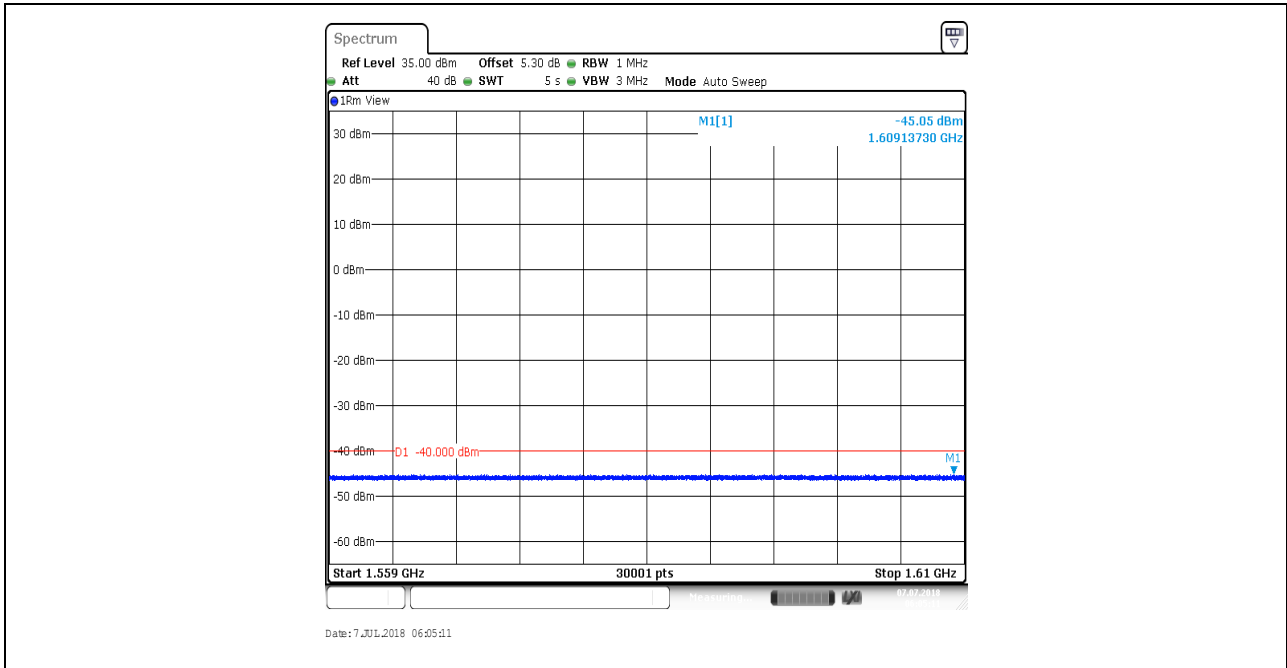




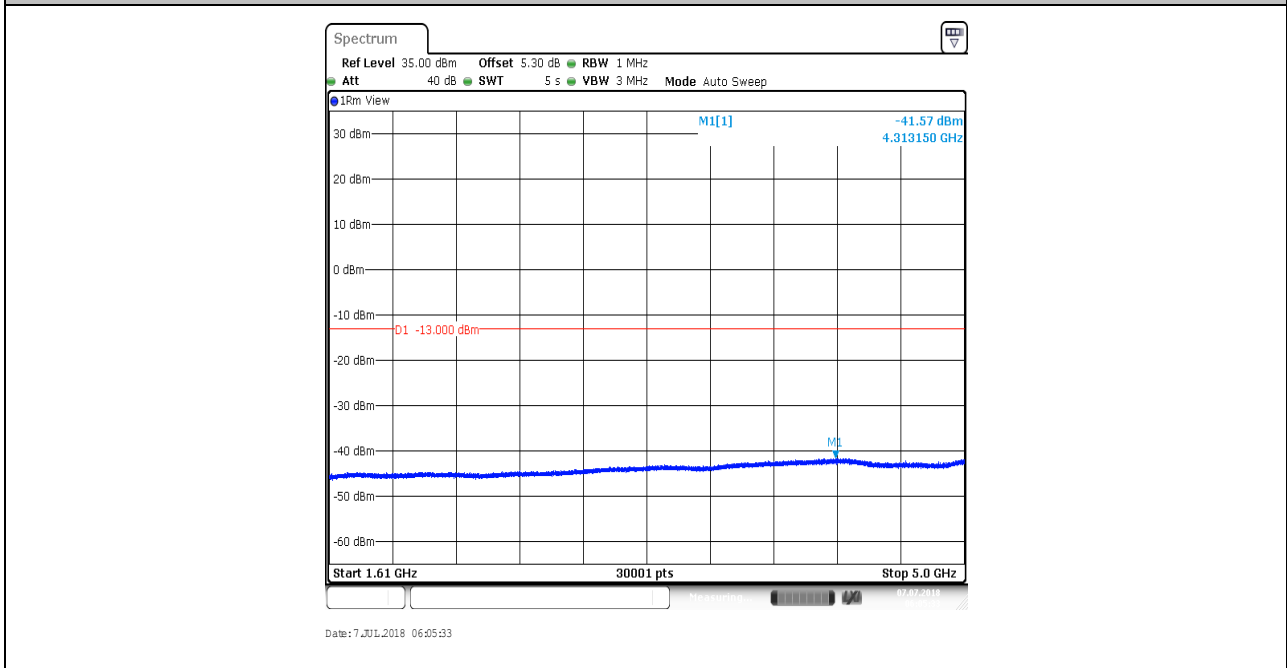
BAND13\_10MHz\_QPSK\_23230\_1RB#0



BAND13\_10MHz\_QPSK\_23230\_1RB#0

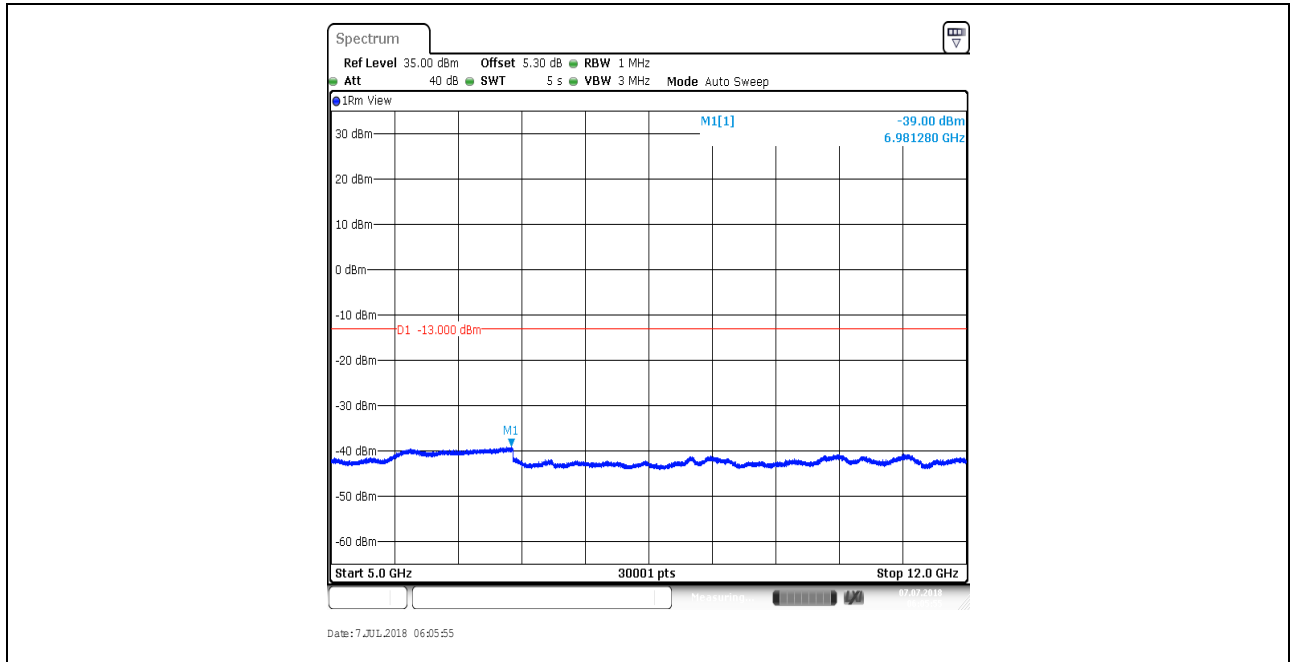


BAND13\_10MHz\_QPSK\_23230\_1RB#0

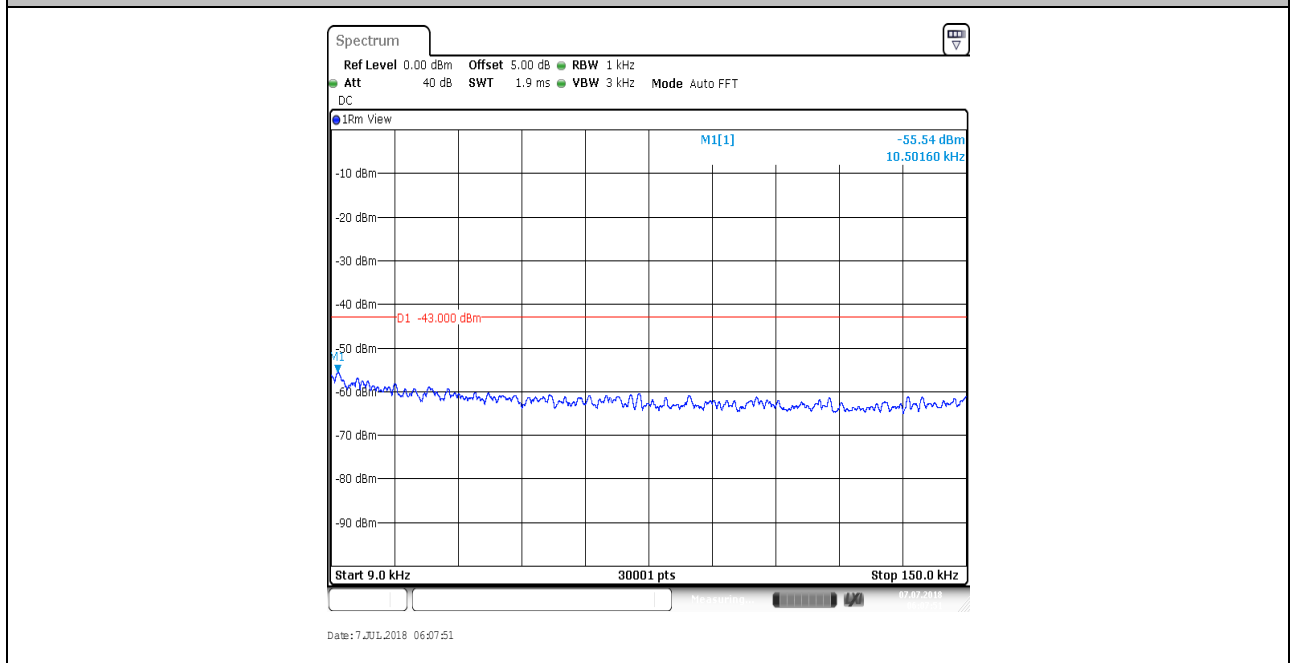


BAND13\_10MHz\_QPSK\_23230\_1RB#0

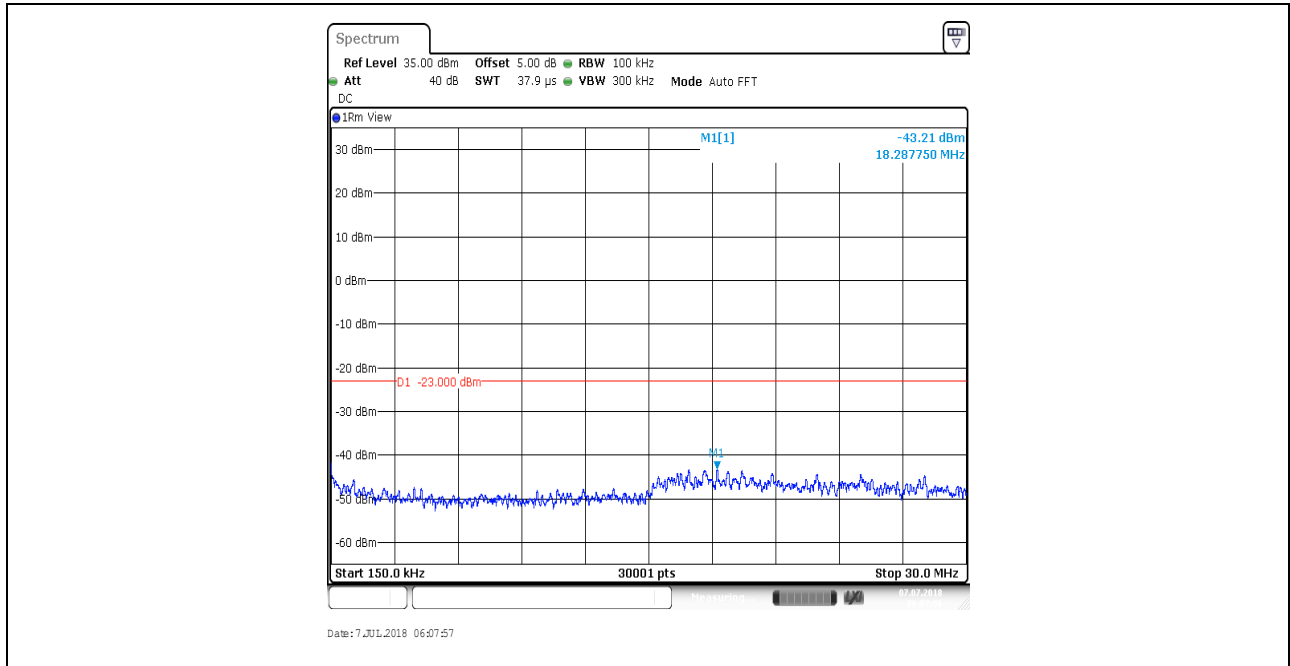




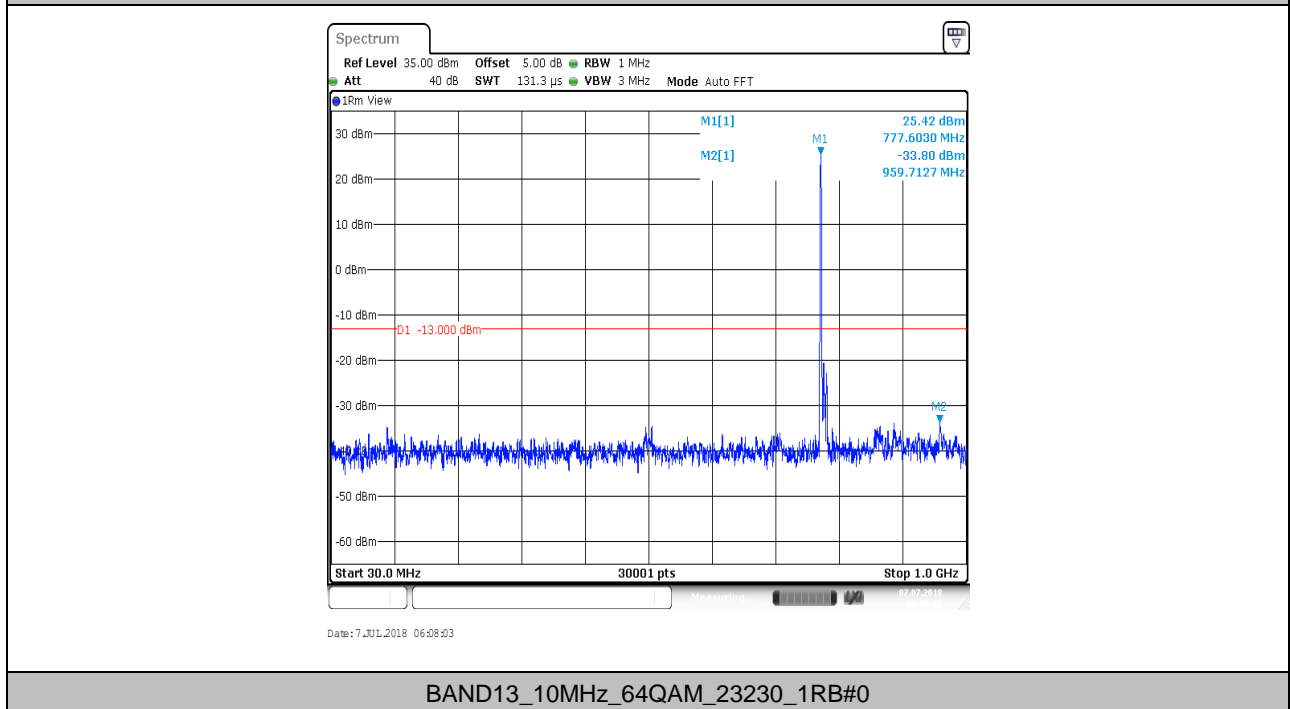
BAND13\_10MHz\_64QAM\_23230\_1RB#0



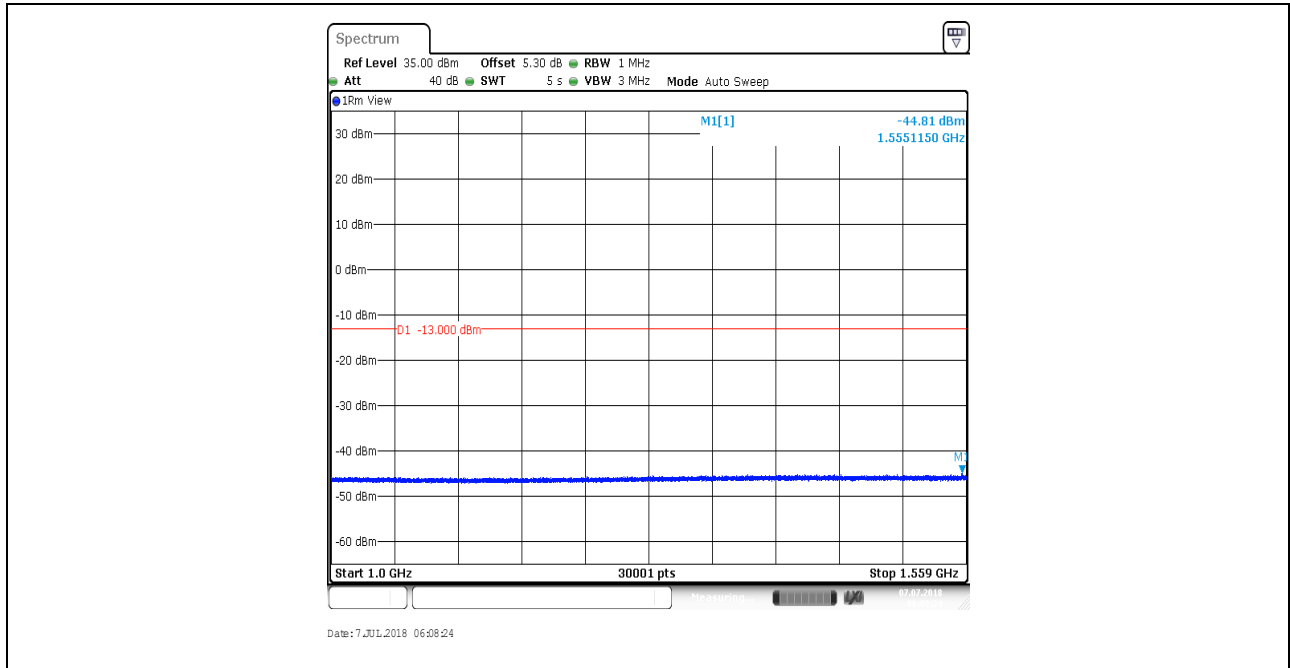
BAND13\_10MHz\_64QAM\_23230\_1RB#0



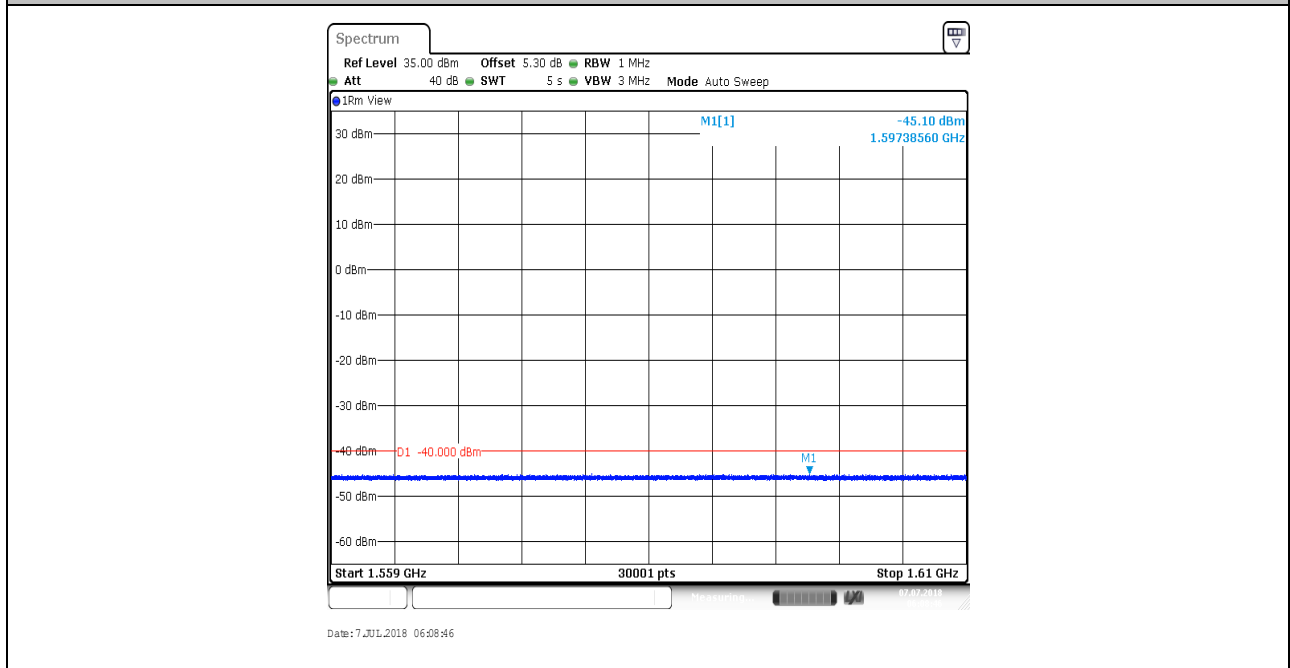
BAND13\_10MHz\_64QAM\_23230\_1RB#0



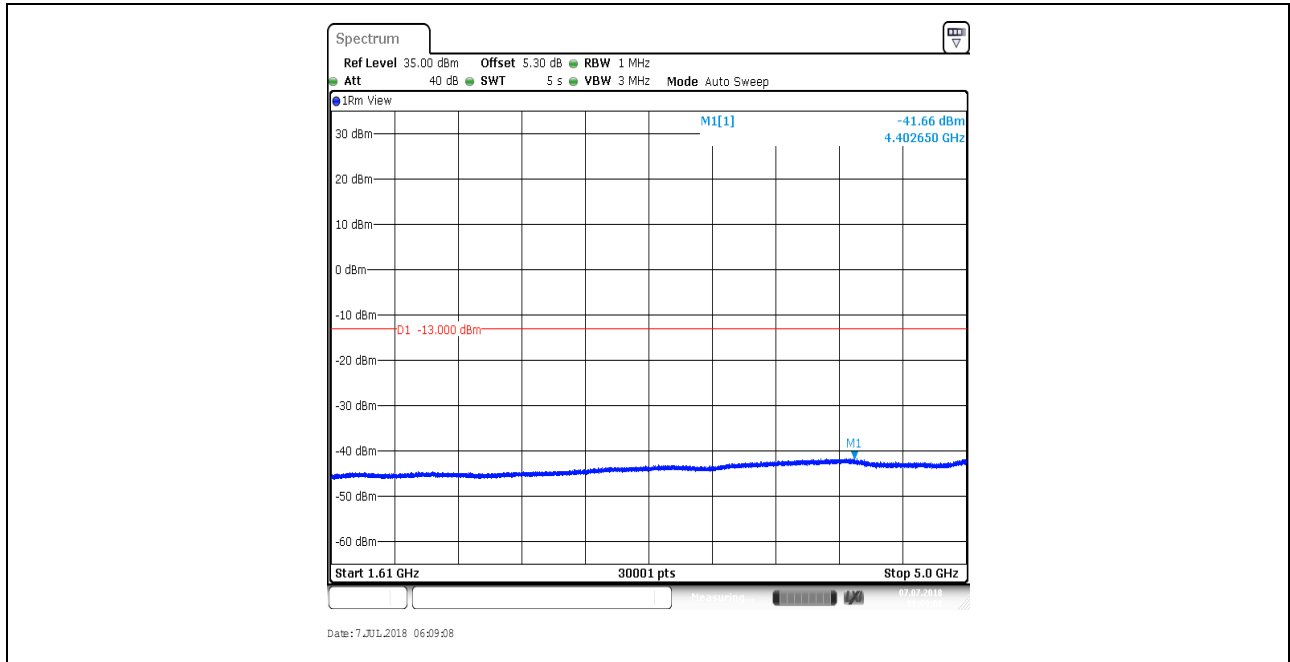
BAND13\_10MHz\_64QAM\_23230\_1RB#0



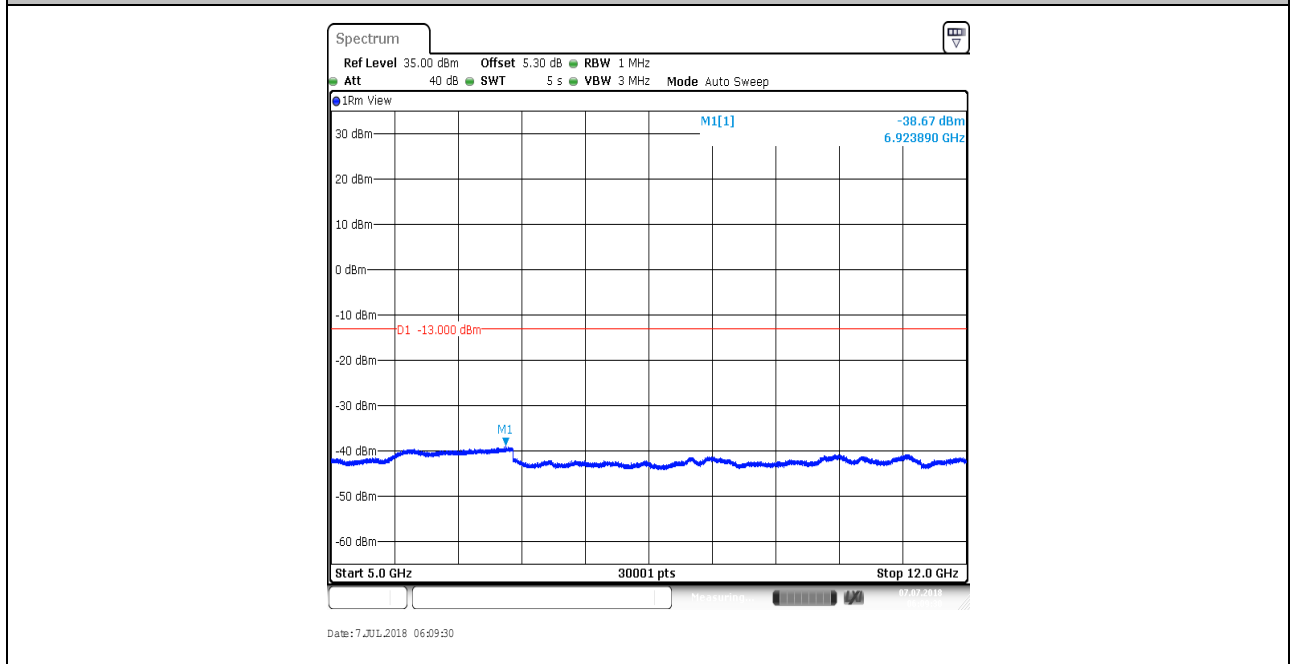
BAND13\_10MHz\_64QAM\_23230\_1RB#0



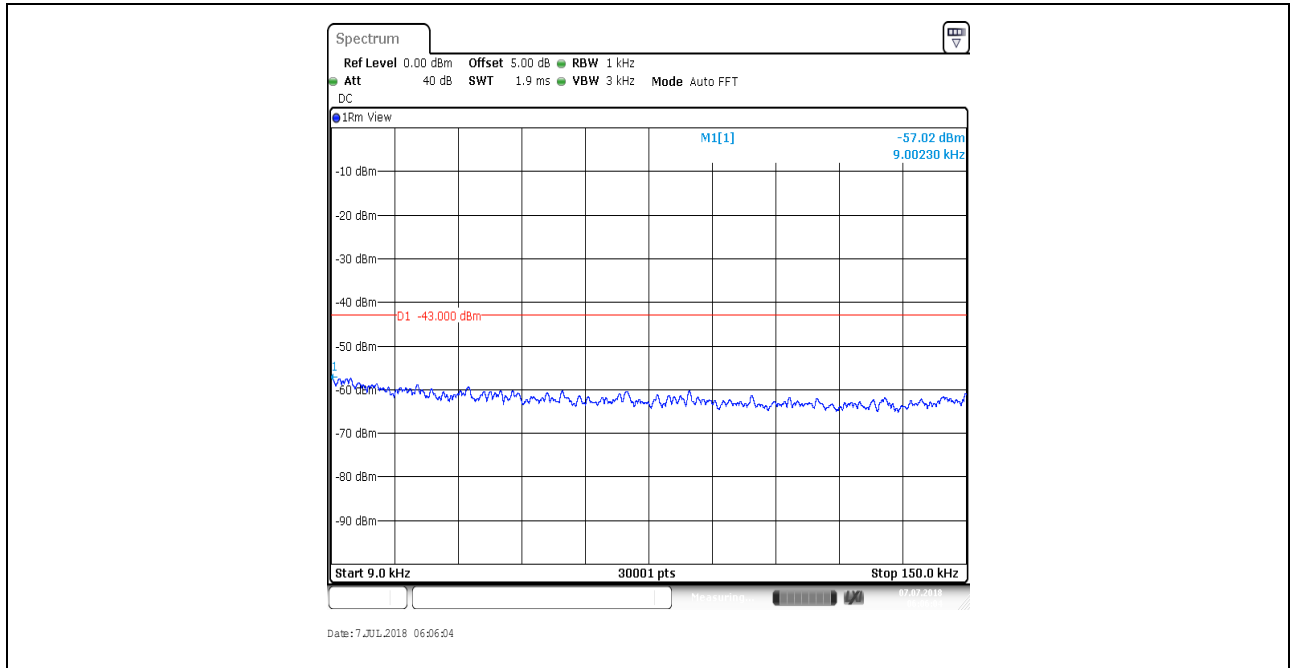
BAND13\_10MHz\_64QAM\_23230\_1RB#0



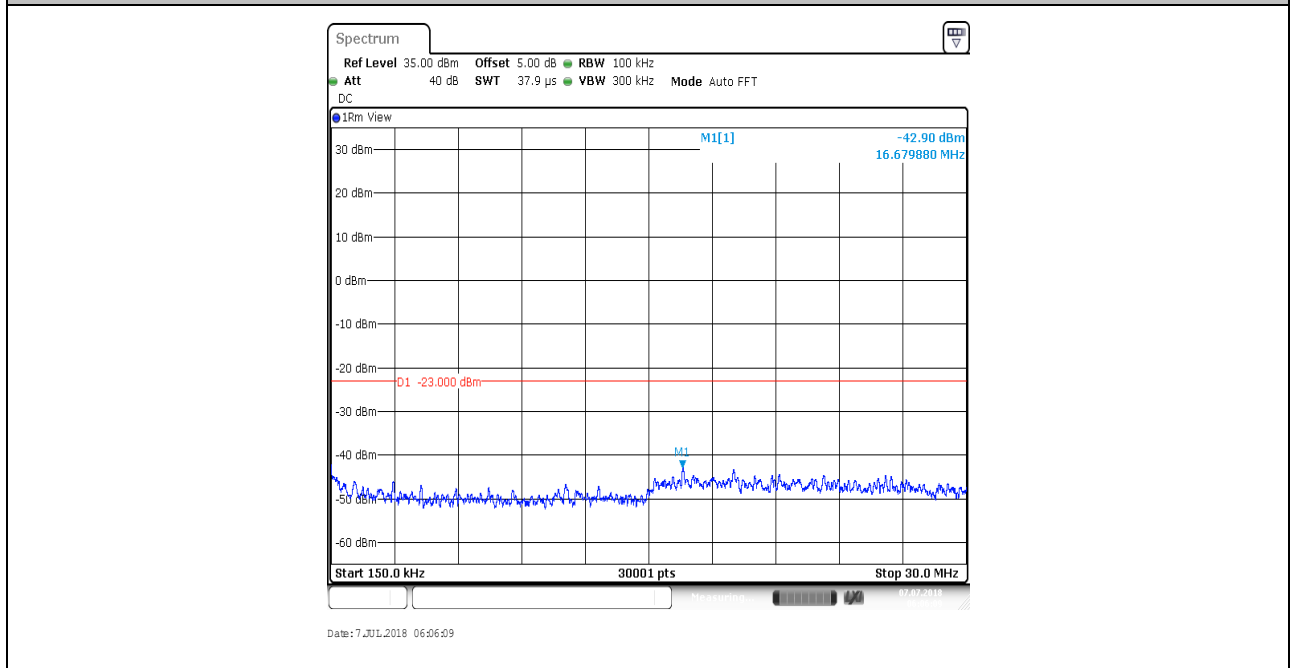
BAND13\_10MHz\_64QAM\_23230\_1RB#0



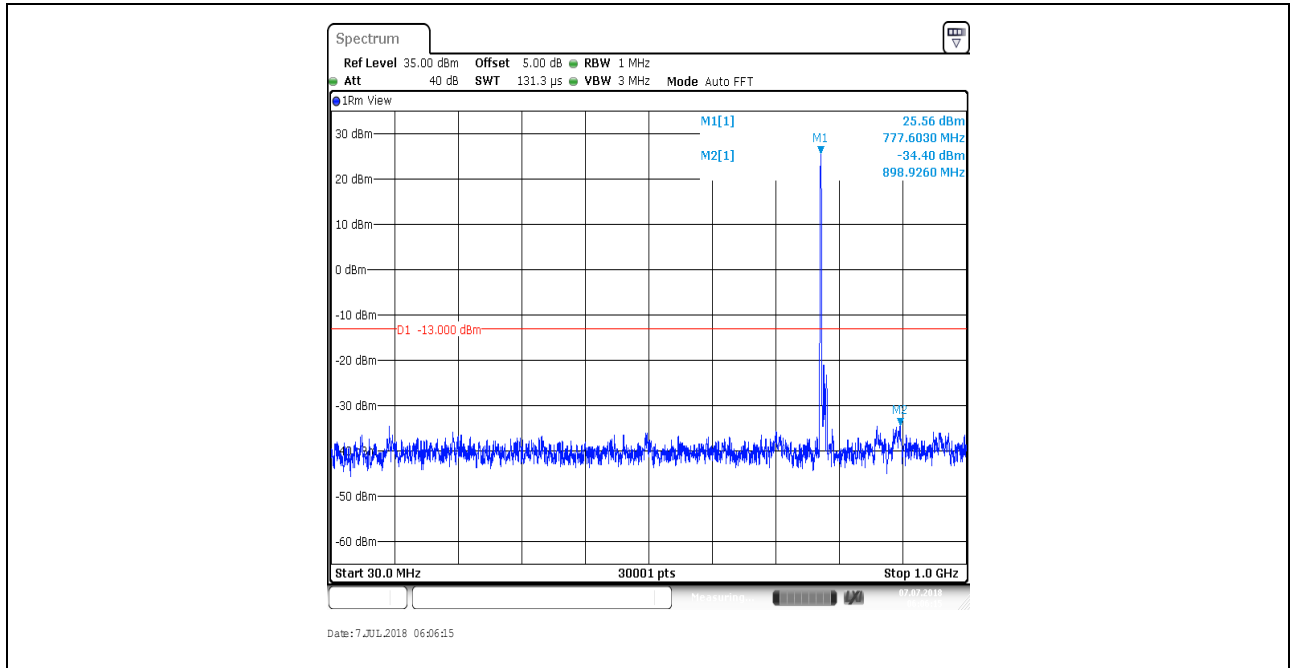
BAND13\_10MHz\_16QAM\_23230\_1RB#0



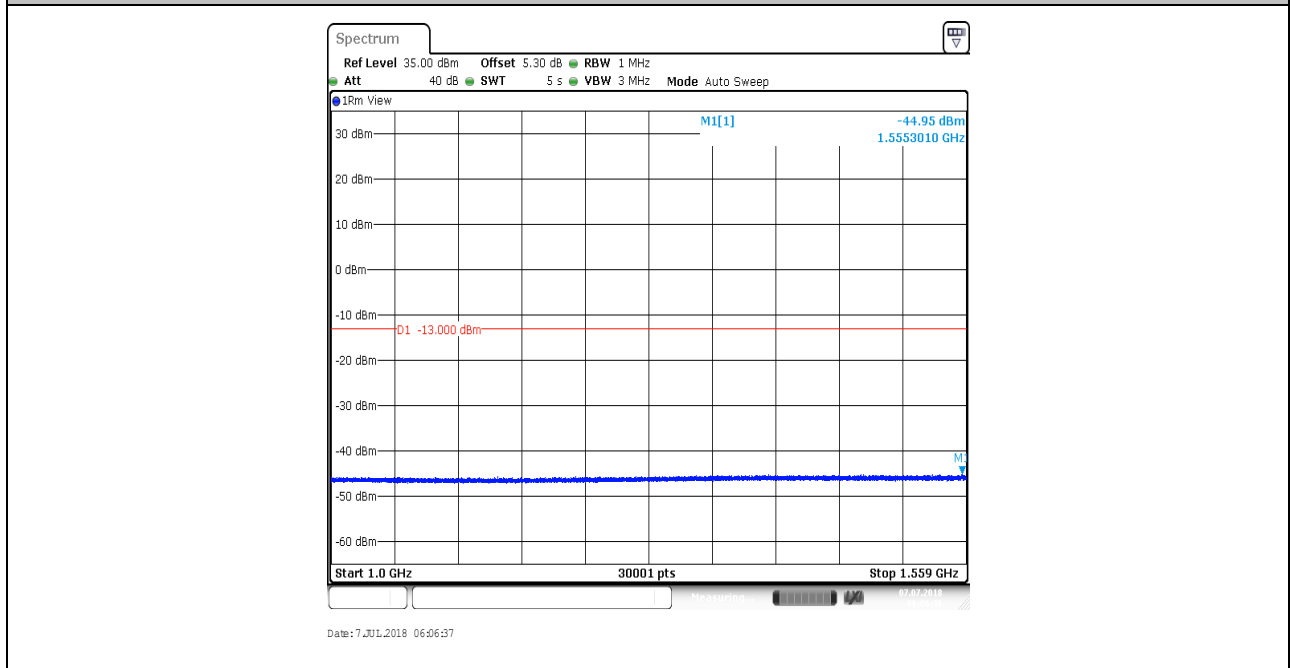
BAND13\_10MHz\_16QAM\_23230\_1RB#0



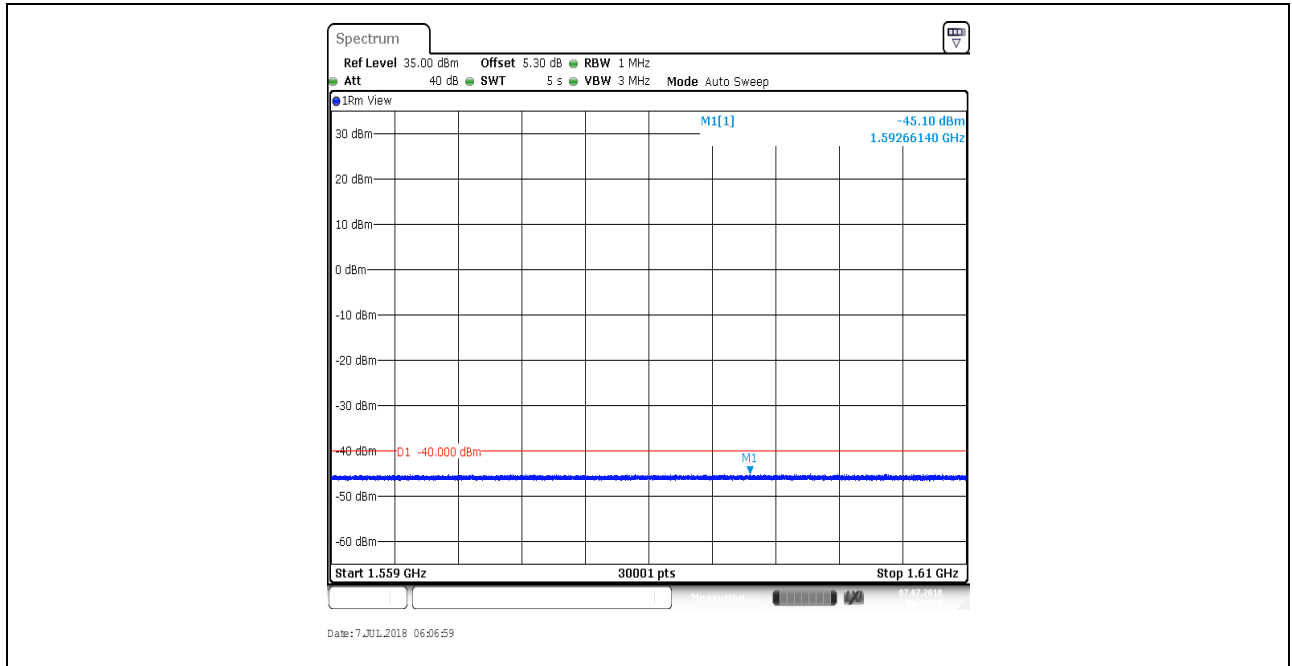
BAND13\_10MHz\_16QAM\_23230\_1RB#0



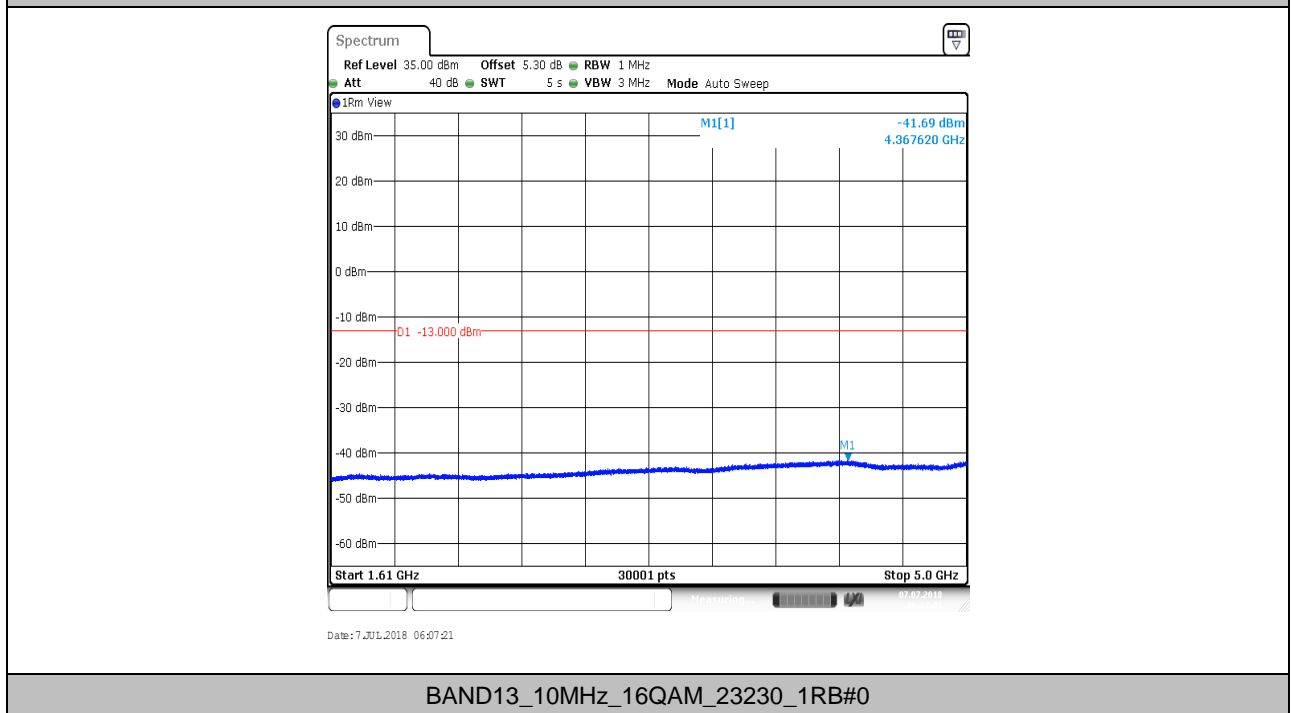
BAND13\_10MHz\_16QAM\_23230\_1RB#0



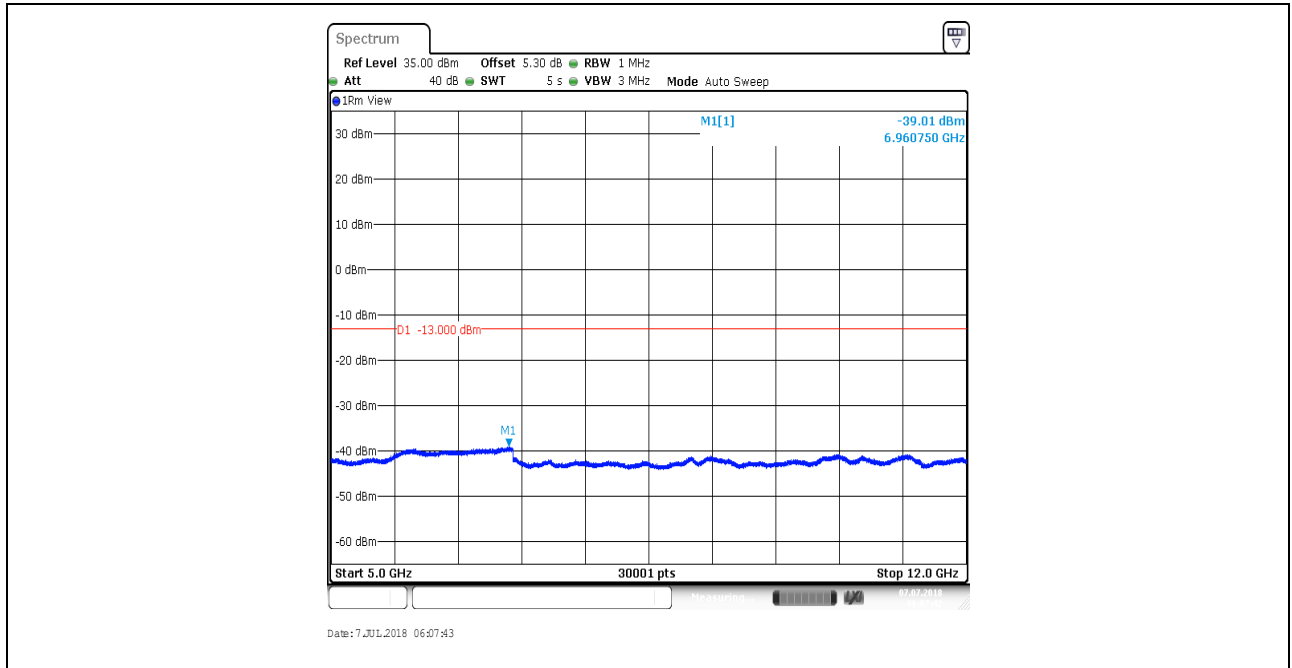
BAND13\_10MHz\_16QAM\_23230\_1RB#0



BAND13\_10MHz\_16QAM\_23230\_1RB#0



BAND13\_10MHz\_16QAM\_23230\_1RB#0







## 7. Field Strength of Spurious Radiation

### 7.1. Test BAND = LTE BAND 13

#### 7.1.1. Test Mode = LTE/TM1 10MHz

##### 7.1.1.1. Test Channel = MCH

Frequency (MHz)	Level (dBm)	Limit Line (dBm)	Over Limit (dB)	Polarization
72.280000	-74.41	-13	61.41	Vertical
182.646667	-78.49	-13	65.49	Vertical
260.113333	-79.85	-13	66.85	Vertical
1595.500000	-66.09	-13	53.09	Vertical
4219.725000	-67.41	-13	54.41	Vertical
7990.537500	-64.23	-13	51.23	Vertical
63.413333	-73.23	-13	60.23	Horizontal
189.600000	-78.23	-13	65.23	Horizontal
1555.000000	-78.9	-13	65.9	Horizontal
4780.350000	-67.23	-13	54.23	Horizontal
6251.625000	-68.11	-13	55.11	Horizontal
9841.575000	-66.45	-13	53.45	Horizontal

#### NOTE:

- 1) All modes are tested, but the data presented above is the worst case. the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.
- 2) We have tested all modulation and all Bandwidth, but only the worst case data presented in this report.



## 8. Frequency Stability

### 8.1. Frequency Vs Voltage

Voltage										
BAND	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
BAND 13	10MHz	QPSK	23230	50RB#0	VL	NT	-2.00	-0.002558	±2.5	PASS
BAND 13	10MHz	QPSK	23230	50RB#0	VN	NT	-3.20	-0.004092	±2.5	PASS
BAND 13	10MHz	QPSK	23230	50RB#0	VH	NT	0.40	0.000512	±2.5	PASS
BAND 13	10MHz	64QAM	23230	50RB#0	VL	NT	0.20	0.000256	±2.5	PASS
BAND 13	10MHz	64QAM	23230	50RB#0	VN	NT	1.40	0.001790	±2.5	PASS
BAND 13	10MHz	64QAM	23230	50RB#0	VH	NT	6.70	0.008568	±2.5	PASS
BAND 13	10MHz	16QAM	23230	50RB#0	VL	NT	0.40	0.000512	±2.5	PASS
BAND 13	10MHz	16QAM	23230	50RB#0	VN	NT	1.50	0.001918	±2.5	PASS
BAND 13	10MHz	16QAM	23230	50RB#0	VH	NT	0.40	0.000512	±2.5	PASS

### 8.2. Frequency Vs Temperature

Temperature										
BAND	Bandwidth	Modulation	Channel	RB Configure	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Verdict
BAND 13	10MHz	QPSK	23230	50RB#0	NV	-30	-0.30	-0.000384	±2.5	PASS
BAND 13	10MHz	QPSK	23230	50RB#0	NV	-20	0.00	0.000000	±2.5	PASS
BAND 13	10MHz	QPSK	23230	50RB#0	NV	0	-0.70	-0.000895	±2.5	PASS
BAND 13	10MHz	QPSK	23230	50RB#0	NV	10	0.90	0.001151	±2.5	PASS
BAND 13	10MHz	QPSK	23230	50RB#0	NV	20	0.20	0.000256	±2.5	PASS
BAND 13	10MHz	64QAM	23230	50RB#0	NV	-30	1.40	0.001790	±2.5	PASS
BAND 13	10MHz	64QAM	23230	50RB#0	NV	-20	-4.90	-0.006266	±2.5	PASS
BAND 13	10MHz	64QAM	23230	50RB#0	NV	0	3.10	0.003964	±2.5	PASS
BAND 13	10MHz	64QAM	23230	50RB#0	NV	10	3.50	0.004476	±2.5	PASS
BAND 13	10MHz	64QAM	23230	50RB#0	NV	20	3.50	0.004476	±2.5	PASS
BAND 13	10MHz	16QAM	23230	50RB#0	NV	-30	1.10	0.001407	±2.5	PASS
BAND 13	10MHz	16QAM	23230	50RB#0	NV	-20	1.50	0.001918	±2.5	PASS
BAND 13	10MHz	16QAM	23230	50RB#0	NV	0	0.60	0.000767	±2.5	PASS
BAND 13	10MHz	16QAM	23230	50RB#0	NV	10	1.00	0.001279	±2.5	PASS
BAND 13	10MHz	16QAM	23230	50RB#0	NV	20	1.50	0.001918	±2.5	PASS

The End