

# Appendix B.13

## E-UTRA Band 41

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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	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	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	2018/7/12	2019/7/11
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	2018/7/12	2019/7/11
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
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	W005-02	2018/11/2	2019/11/1

## 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)	EIRP (dBm)	Limit (dBm)	Verdict
Band41	5MHz	QPSK	39675	1RB#0	22.78	26.78	33.00	PASS
Band41	5MHz	QPSK	39675	1RB#12	23.00	27.00	33.00	PASS
Band41	5MHz	QPSK	39675	1RB#24	22.60	26.60	33.00	PASS
Band41	5MHz	QPSK	39675	12RB#0	21.75	25.75	33.00	PASS
Band41	5MHz	QPSK	39675	12RB#6	21.72	25.72	33.00	PASS
Band41	5MHz	QPSK	39675	12RB#13	21.29	25.29	33.00	PASS
Band41	5MHz	QPSK	39675	25RB#0	21.75	25.75	33.00	PASS
Band41	5MHz	QPSK	40620	1RB#0	22.70	26.70	33.00	PASS
Band41	5MHz	QPSK	40620	1RB#12	22.67	26.67	33.00	PASS
Band41	5MHz	QPSK	40620	1RB#24	22.56	26.56	33.00	PASS
Band41	5MHz	QPSK	40620	12RB#0	21.69	25.69	33.00	PASS
Band41	5MHz	QPSK	40620	12RB#6	21.66	25.66	33.00	PASS
Band41	5MHz	QPSK	40620	12RB#13	21.52	25.52	33.00	PASS
Band41	5MHz	QPSK	40620	25RB#0	21.68	25.68	33.00	PASS
Band41	5MHz	QPSK	41565	1RB#0	22.77	26.77	33.00	PASS
Band41	5MHz	QPSK	41565	1RB#12	22.77	26.77	33.00	PASS
Band41	5MHz	QPSK	41565	1RB#24	22.69	26.69	33.00	PASS
Band41	5MHz	QPSK	41565	12RB#0	21.82	25.82	33.00	PASS
Band41	5MHz	QPSK	41565	12RB#6	21.90	25.90	33.00	PASS
Band41	5MHz	QPSK	41565	12RB#13	21.86	25.86	33.00	PASS
Band41	5MHz	QPSK	41565	25RB#0	21.82	25.82	33.00	PASS
Band41	5MHz	16QAM	39675	1RB#0	22.09	26.09	33.00	PASS
Band41	5MHz	16QAM	39675	1RB#12	22.42	26.42	33.00	PASS
Band41	5MHz	16QAM	39675	1RB#24	21.85	25.85	33.00	PASS
Band41	5MHz	16QAM	39675	12RB#0	20.86	24.86	33.00	PASS
Band41	5MHz	16QAM	39675	12RB#6	20.76	24.76	33.00	PASS
Band41	5MHz	16QAM	39675	12RB#13	20.71	24.71	33.00	PASS
Band41	5MHz	16QAM	39675	25RB#0	20.78	24.78	33.00	PASS
Band41	5MHz	16QAM	40620	1RB#0	21.86	25.86	33.00	PASS
Band41	5MHz	16QAM	40620	1RB#12	21.83	25.83	33.00	PASS
Band41	5MHz	16QAM	40620	1RB#24	21.78	25.78	33.00	PASS
Band41	5MHz	16QAM	40620	12RB#0	20.72	24.72	33.00	PASS
Band41	5MHz	16QAM	40620	12RB#6	20.71	24.71	33.00	PASS
Band41	5MHz	16QAM	40620	12RB#13	20.63	24.63	33.00	PASS
Band41	5MHz	16QAM	40620	25RB#0	20.65	24.65	33.00	PASS
Band41	5MHz	16QAM	41565	1RB#0	22.04	26.04	33.00	PASS
Band41	5MHz	16QAM	41565	1RB#12	22.08	26.08	33.00	PASS

Band41	5MHz	16QAM	41565	1RB#24	21.99	25.99	33.00	PASS
Band41	5MHz	16QAM	41565	12RB#0	20.90	24.90	33.00	PASS
Band41	5MHz	16QAM	41565	12RB#6	20.98	24.98	33.00	PASS
Band41	5MHz	16QAM	41565	12RB#13	20.89	24.89	33.00	PASS
Band41	5MHz	16QAM	41565	25RB#0	20.88	24.88	33.00	PASS
Band41	10MHz	QPSK	39700	1RB#0	22.62	26.62	33.00	PASS
Band41	10MHz	QPSK	39700	1RB#24	22.82	26.82	33.00	PASS
Band41	10MHz	QPSK	39700	1RB#49	22.55	26.55	33.00	PASS
Band41	10MHz	QPSK	39700	25RB#0	21.95	25.95	33.00	PASS
Band41	10MHz	QPSK	39700	25RB#12	21.96	25.96	33.00	PASS
Band41	10MHz	QPSK	39700	25RB#25	21.84	25.84	33.00	PASS
Band41	10MHz	QPSK	39700	50RB#0	21.79	25.79	33.00	PASS
Band41	10MHz	QPSK	40620	1RB#0	22.52	26.52	33.00	PASS
Band41	10MHz	QPSK	40620	1RB#24	22.50	26.50	33.00	PASS
Band41	10MHz	QPSK	40620	1RB#49	22.22	26.22	33.00	PASS
Band41	10MHz	QPSK	40620	25RB#0	21.49	25.49	33.00	PASS
Band41	10MHz	QPSK	40620	25RB#12	21.62	25.62	33.00	PASS
Band41	10MHz	QPSK	40620	25RB#25	21.49	25.49	33.00	PASS
Band41	10MHz	QPSK	40620	50RB#0	21.52	25.52	33.00	PASS
Band41	10MHz	QPSK	41540	1RB#0	22.50	26.50	33.00	PASS
Band41	10MHz	QPSK	41540	1RB#24	22.56	26.56	33.00	PASS
Band41	10MHz	QPSK	41540	1RB#49	22.45	26.45	33.00	PASS
Band41	10MHz	QPSK	41540	25RB#0	21.64	25.64	33.00	PASS
Band41	10MHz	QPSK	41540	25RB#12	21.74	25.74	33.00	PASS
Band41	10MHz	QPSK	41540	25RB#25	21.72	25.72	33.00	PASS
Band41	10MHz	QPSK	41540	50RB#0	21.71	25.71	33.00	PASS
Band41	10MHz	16QAM	39700	1RB#0	22.05	26.05	33.00	PASS
Band41	10MHz	16QAM	39700	1RB#24	22.00	26.00	33.00	PASS
Band41	10MHz	16QAM	39700	1RB#49	21.93	25.93	33.00	PASS
Band41	10MHz	16QAM	39700	25RB#0	20.98	24.98	33.00	PASS
Band41	10MHz	16QAM	39700	25RB#12	21.03	25.03	33.00	PASS
Band41	10MHz	16QAM	39700	25RB#25	20.84	24.84	33.00	PASS
Band41	10MHz	16QAM	39700	50RB#0	20.93	24.93	33.00	PASS
Band41	10MHz	16QAM	40620	1RB#0	21.66	25.66	33.00	PASS
Band41	10MHz	16QAM	40620	1RB#24	21.72	25.72	33.00	PASS
Band41	10MHz	16QAM	40620	1RB#49	21.67	25.67	33.00	PASS
Band41	10MHz	16QAM	40620	25RB#0	20.49	24.49	33.00	PASS
Band41	10MHz	16QAM	40620	25RB#12	20.61	24.61	33.00	PASS
Band41	10MHz	16QAM	40620	25RB#25	20.52	24.52	33.00	PASS
Band41	10MHz	16QAM	40620	50RB#0	20.59	24.59	33.00	PASS
Band41	10MHz	16QAM	41540	1RB#0	21.79	25.79	33.00	PASS
Band41	10MHz	16QAM	41540	1RB#24	21.78	25.78	33.00	PASS
Band41	10MHz	16QAM	41540	1RB#49	21.84	25.84	33.00	PASS
Band41	10MHz	16QAM	41540	25RB#0	20.73	24.73	33.00	PASS

Band41	10MHz	16QAM	41540	25RB#12	20.80	24.80	33.00	PASS
Band41	10MHz	16QAM	41540	25RB#25	20.83	24.83	33.00	PASS
Band41	10MHz	16QAM	41540	50RB#0	20.73	24.73	33.00	PASS
Band41	15MHz	QPSK	39725	1RB#0	22.18	26.18	33.00	PASS
Band41	15MHz	QPSK	39725	1RB#38	22.33	26.33	33.00	PASS
Band41	15MHz	QPSK	39725	1RB#74	22.00	26.00	33.00	PASS
Band41	15MHz	QPSK	39725	36RB#0	21.68	25.68	33.00	PASS
Band41	15MHz	QPSK	39725	36RB#18	21.73	25.73	33.00	PASS
Band41	15MHz	QPSK	39725	36RB#39	21.82	25.82	33.00	PASS
Band41	15MHz	QPSK	39725	75RB#0	21.73	25.73	33.00	PASS
Band41	15MHz	QPSK	40620	1RB#0	22.11	26.11	33.00	PASS
Band41	15MHz	QPSK	40620	1RB#38	22.27	26.27	33.00	PASS
Band41	15MHz	QPSK	40620	1RB#74	21.90	25.90	33.00	PASS
Band41	15MHz	QPSK	40620	36RB#0	21.40	25.40	33.00	PASS
Band41	15MHz	QPSK	40620	36RB#18	21.62	25.62	33.00	PASS
Band41	15MHz	QPSK	40620	36RB#39	21.57	25.57	33.00	PASS
Band41	15MHz	QPSK	40620	75RB#0	21.60	25.60	33.00	PASS
Band41	15MHz	QPSK	41515	1RB#0	22.08	26.08	33.00	PASS
Band41	15MHz	QPSK	41515	1RB#38	22.36	26.36	33.00	PASS
Band41	15MHz	QPSK	41515	1RB#74	21.83	25.83	33.00	PASS
Band41	15MHz	QPSK	41515	36RB#0	21.57	25.57	33.00	PASS
Band41	15MHz	QPSK	41515	36RB#18	21.66	25.66	33.00	PASS
Band41	15MHz	QPSK	41515	36RB#39	21.72	25.72	33.00	PASS
Band41	15MHz	QPSK	41515	75RB#0	21.56	25.56	33.00	PASS
Band41	15MHz	16QAM	39725	1RB#0	21.51	25.51	33.00	PASS
Band41	15MHz	16QAM	39725	1RB#38	21.72	25.72	33.00	PASS
Band41	15MHz	16QAM	39725	1RB#74	21.24	25.24	33.00	PASS
Band41	15MHz	16QAM	39725	36RB#0	20.78	24.78	33.00	PASS
Band41	15MHz	16QAM	39725	36RB#18	20.82	24.82	33.00	PASS
Band41	15MHz	16QAM	39725	36RB#39	20.89	24.89	33.00	PASS
Band41	15MHz	16QAM	39725	75RB#0	20.73	24.73	33.00	PASS
Band41	15MHz	16QAM	40620	1RB#0	21.08	25.08	33.00	PASS
Band41	15MHz	16QAM	40620	1RB#38	21.75	25.75	33.00	PASS
Band41	15MHz	16QAM	40620	1RB#74	21.17	25.17	33.00	PASS
Band41	15MHz	16QAM	40620	36RB#0	20.46	24.46	33.00	PASS
Band41	15MHz	16QAM	40620	36RB#18	20.74	24.74	33.00	PASS
Band41	15MHz	16QAM	40620	36RB#39	20.66	24.66	33.00	PASS
Band41	15MHz	16QAM	40620	75RB#0	20.61	24.61	33.00	PASS
Band41	15MHz	16QAM	41515	1RB#0	21.21	25.21	33.00	PASS
Band41	15MHz	16QAM	41515	1RB#38	21.67	25.67	33.00	PASS
Band41	15MHz	16QAM	41515	1RB#74	20.99	24.99	33.00	PASS
Band41	15MHz	16QAM	41515	36RB#0	20.60	24.60	33.00	PASS
Band41	15MHz	16QAM	41515	36RB#18	20.74	24.74	33.00	PASS
Band41	15MHz	16QAM	41515	36RB#39	20.86	24.86	33.00	PASS

Band41	15MHz	16QAM	41515	75RB#0	20.76	24.76	33.00	PASS
Band41	20MHz	QPSK	39750	1RB#0	22.44	26.44	33.00	PASS
Band41	20MHz	QPSK	39750	1RB#49	22.54	26.54	33.00	PASS
Band41	20MHz	QPSK	39750	1RB#99	21.97	25.97	33.00	PASS
Band41	20MHz	QPSK	39750	50RB#0	21.55	25.55	33.00	PASS
Band41	20MHz	QPSK	39750	50RB#25	21.68	25.68	33.00	PASS
Band41	20MHz	QPSK	39750	50RB#50	21.46	25.46	33.00	PASS
Band41	20MHz	QPSK	39750	100RB#0	21.58	25.58	33.00	PASS
Band41	20MHz	QPSK	40620	1RB#0	22.17	26.17	33.00	PASS
Band41	20MHz	QPSK	40620	1RB#49	22.41	26.41	33.00	PASS
Band41	20MHz	QPSK	40620	1RB#99	21.92	25.92	33.00	PASS
Band41	20MHz	QPSK	40620	50RB#0	21.44	25.44	33.00	PASS
Band41	20MHz	QPSK	40620	50RB#25	21.56	25.56	33.00	PASS
Band41	20MHz	QPSK	40620	50RB#50	21.36	25.36	33.00	PASS
Band41	20MHz	QPSK	40620	100RB#0	21.47	25.47	33.00	PASS
Band41	20MHz	QPSK	41490	1RB#0	21.80	25.80	33.00	PASS
Band41	20MHz	QPSK	41490	1RB#49	22.18	26.18	33.00	PASS
Band41	20MHz	QPSK	41490	1RB#99	21.82	25.82	33.00	PASS
Band41	20MHz	QPSK	41490	50RB#0	21.45	25.45	33.00	PASS
Band41	20MHz	QPSK	41490	50RB#25	21.57	25.57	33.00	PASS
Band41	20MHz	QPSK	41490	50RB#50	21.54	25.54	33.00	PASS
Band41	20MHz	QPSK	41490	100RB#0	21.48	25.48	33.00	PASS
Band41	20MHz	16QAM	39750	1RB#0	21.70	25.70	33.00	PASS
Band41	20MHz	16QAM	39750	1RB#49	21.78	25.78	33.00	PASS
Band41	20MHz	16QAM	39750	1RB#99	21.16	25.16	33.00	PASS
Band41	20MHz	16QAM	39750	50RB#0	20.62	24.62	33.00	PASS
Band41	20MHz	16QAM	39750	50RB#25	20.76	24.76	33.00	PASS
Band41	20MHz	16QAM	39750	50RB#50	20.54	24.54	33.00	PASS
Band41	20MHz	16QAM	39750	100RB#0	20.63	24.63	33.00	PASS
Band41	20MHz	16QAM	40620	1RB#0	21.25	25.25	33.00	PASS
Band41	20MHz	16QAM	40620	1RB#49	21.68	25.68	33.00	PASS
Band41	20MHz	16QAM	40620	1RB#99	21.14	25.14	33.00	PASS
Band41	20MHz	16QAM	40620	50RB#0	20.49	24.49	33.00	PASS
Band41	20MHz	16QAM	40620	50RB#25	20.66	24.66	33.00	PASS
Band41	20MHz	16QAM	40620	50RB#50	20.42	24.42	33.00	PASS
Band41	20MHz	16QAM	40620	100RB#0	20.53	24.53	33.00	PASS
Band41	20MHz	16QAM	41490	1RB#0	20.94	24.94	33.00	PASS
Band41	20MHz	16QAM	41490	1RB#49	21.63	25.63	33.00	PASS
Band41	20MHz	16QAM	41490	1RB#99	21.06	25.06	33.00	PASS
Band41	20MHz	16QAM	41490	50RB#0	20.52	24.52	33.00	PASS
Band41	20MHz	16QAM	41490	50RB#25	20.67	24.67	33.00	PASS
Band41	20MHz	16QAM	41490	50RB#50	20.60	24.60	33.00	PASS
Band41	20MHz	16QAM	41490	100RB#0	20.58	24.58	33.00	PASS

Remark:

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

$$\text{ERP [dBm]} = \text{Conducted Power [dBm]} + \text{Gain [dBd]}$$

$$\text{EIRP [dBm]} = \text{Conducted Power [dBm]} + \text{Gain [dBi]}$$

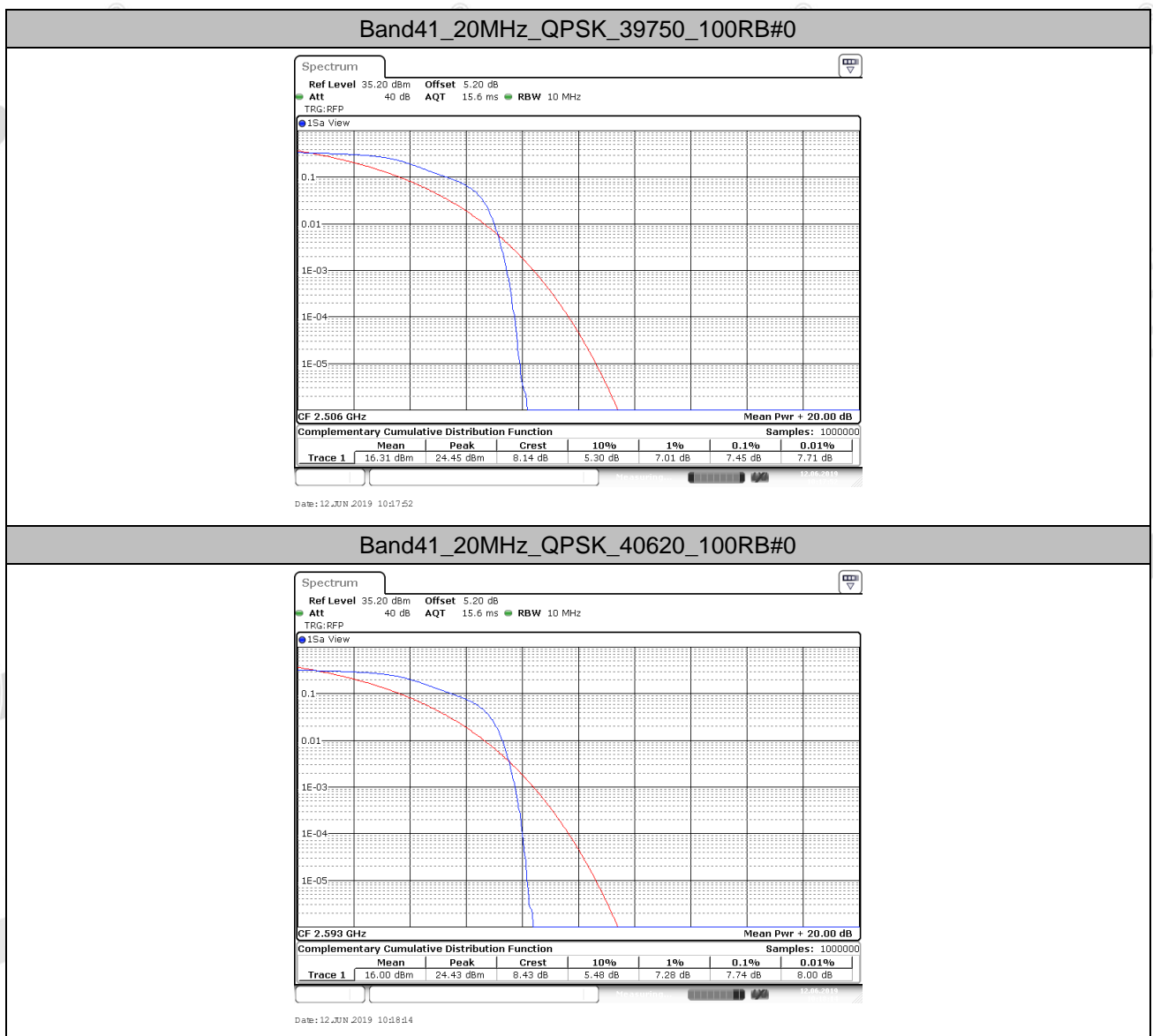


## 4. Peak-to-Average Ratio(CCDF)

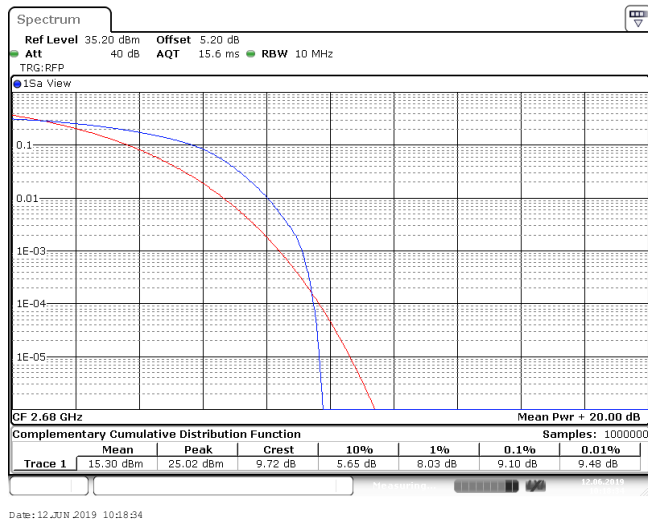
### 4.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band41	20MHz	QPSK	39750	100RB#0	7.45	13	PASS
Band41	20MHz	QPSK	40620	100RB#0	7.74	13	PASS
Band41	20MHz	QPSK	41490	100RB#0	9.10	13	PASS
Band41	20MHz	16QAM	39750	100RB#0	7.45	13	PASS
Band41	20MHz	16QAM	40620	100RB#0	9.10	13	PASS
Band41	20MHz	16QAM	41490	100RB#0	9.28	13	PASS

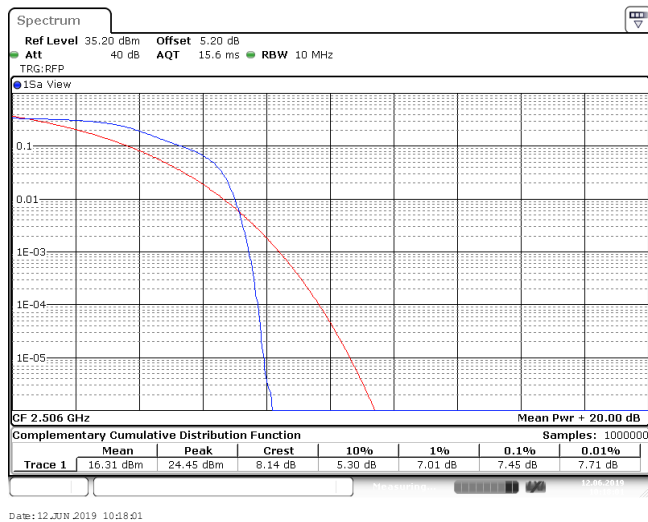
### 4.2. Test Plots



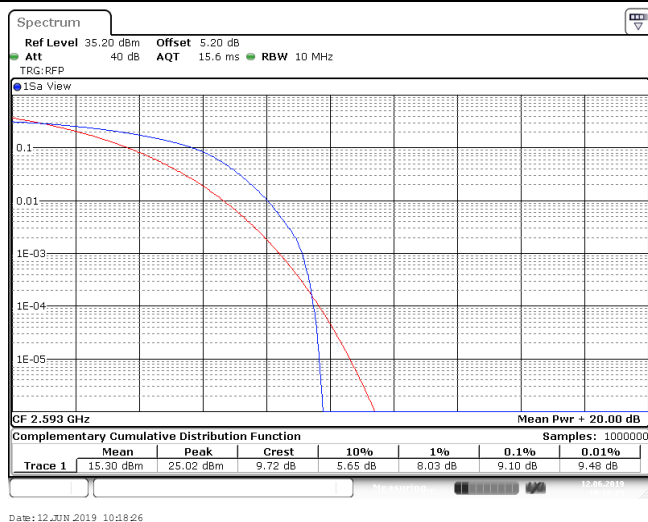
Band41\_20MHz\_QPSK\_41490\_100RB#0



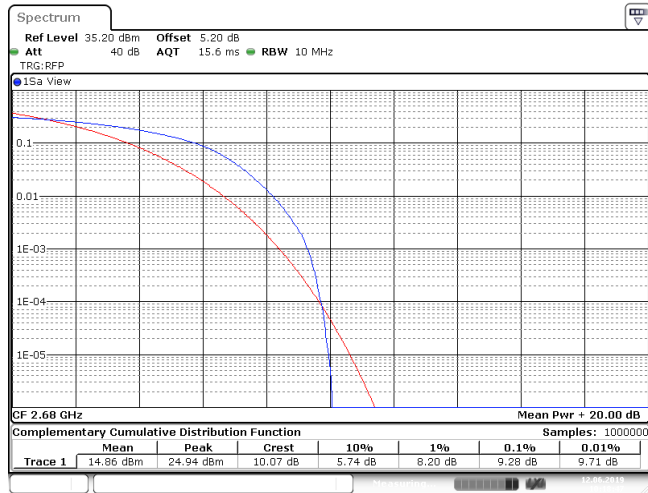
Band41\_20MHz\_16QAM\_39750\_100RB#0



Band41\_20MHz\_16QAM\_40620\_100RB#0



Band41\_20MHz\_16QAM\_41490\_100RB#0



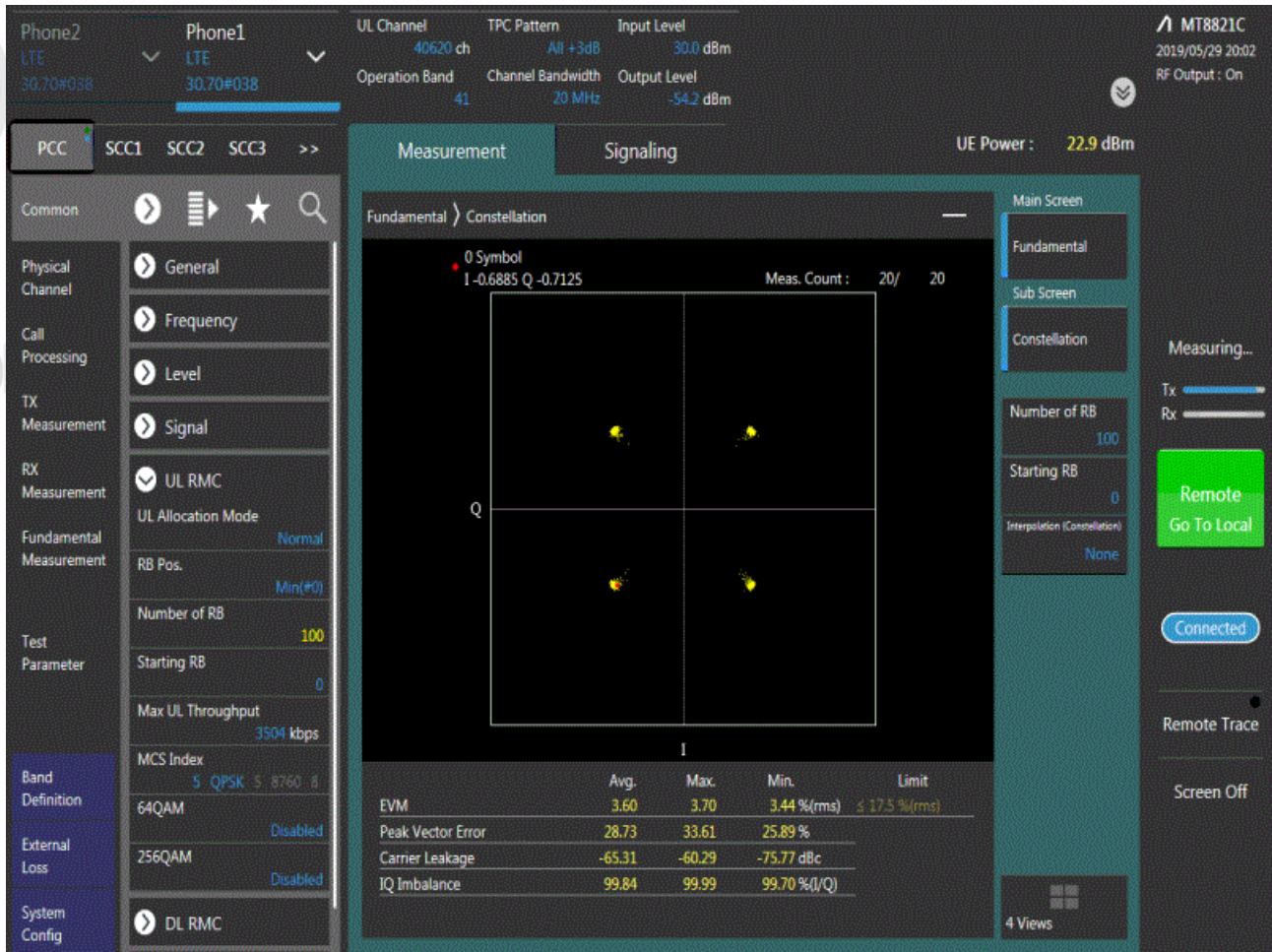
Date: 12 JUN 2019 10:18:48

## 5. Modulation Characteristics

### 5.1. Test BAND = LTE Band 41

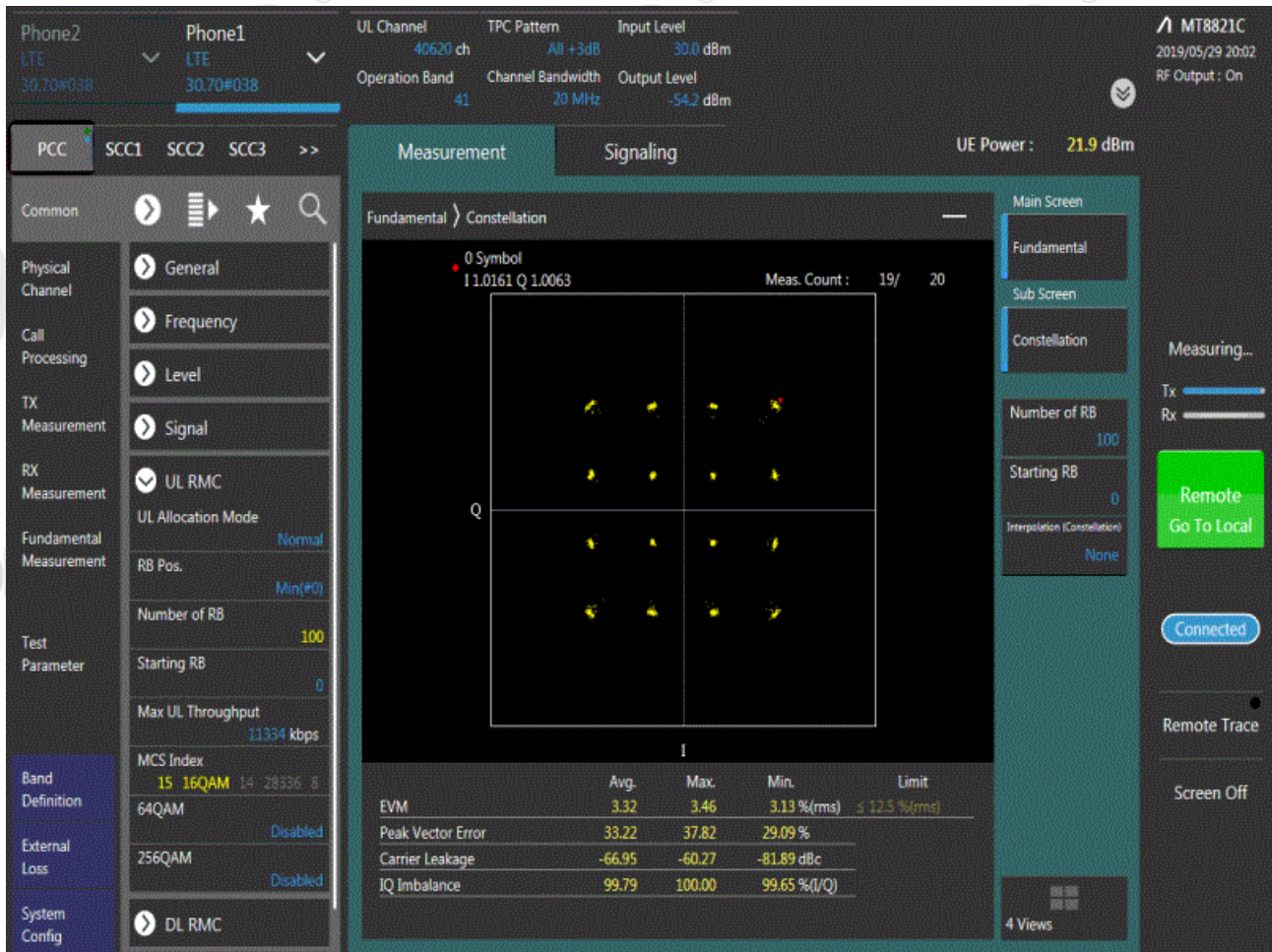
### 5.2. Test Mode = LTE /TM1 20MHz

### 5.2.1. Test Channel = MCH



### 5.3. Test Mode = LTE /TM2 20MHz

#### 5.3.1. Test Channel = MCH

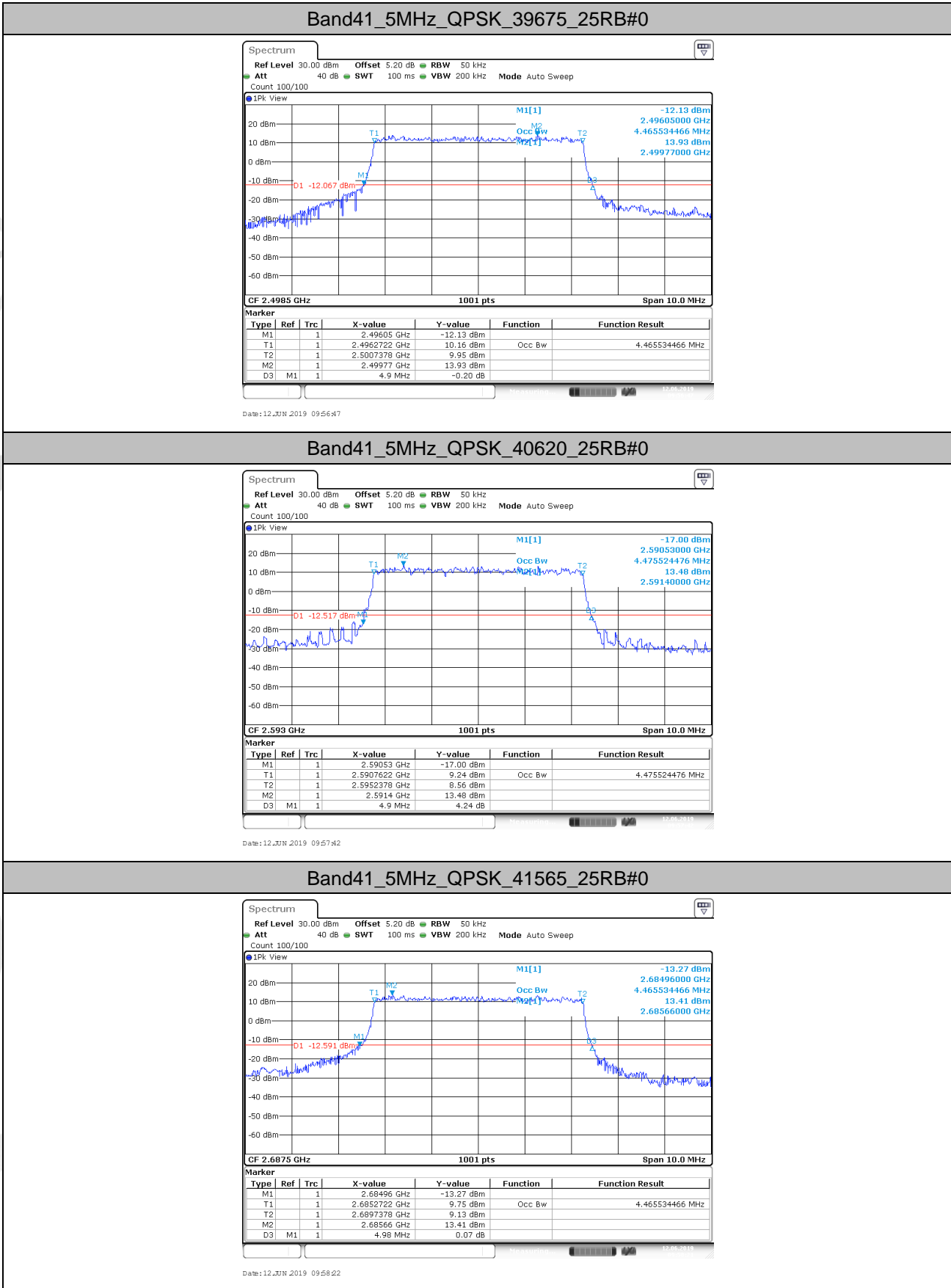


## 6. 26dB Bandwidth and Occupied Bandwidth

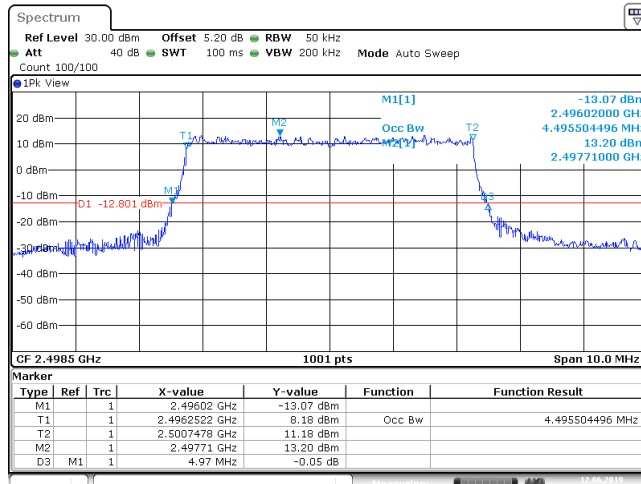
### 6.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band41	5MHz	QPSK	39675	25RB#0	4.466	4.900	PASS
Band41	5MHz	QPSK	40620	25RB#0	4.476	4.900	PASS
Band41	5MHz	QPSK	41565	25RB#0	4.466	4.980	PASS
Band41	5MHz	16QAM	39675	25RB#0	4.496	4.970	PASS
Band41	5MHz	16QAM	40620	25RB#0	4.496	4.840	PASS
Band41	5MHz	16QAM	41565	25RB#0	4.476	4.930	PASS
Band41	10MHz	QPSK	39700	50RB#0	8.911	9.680	PASS
Band41	10MHz	QPSK	40620	50RB#0	8.891	9.740	PASS
Band41	10MHz	QPSK	41540	50RB#0	8.911	9.720	PASS
Band41	10MHz	16QAM	39700	50RB#0	8.911	9.720	PASS
Band41	10MHz	16QAM	40620	50RB#0	8.911	9.680	PASS
Band41	10MHz	16QAM	41540	50RB#0	8.911	9.840	PASS
Band41	15MHz	QPSK	39725	75RB#0	13.487	15.420	PASS
Band41	15MHz	QPSK	40620	75RB#0	13.457	15.510	PASS
Band41	15MHz	QPSK	41515	75RB#0	13.457	15.750	PASS
Band41	15MHz	16QAM	39725	75RB#0	13.457	15.180	PASS
Band41	15MHz	16QAM	40620	75RB#0	13.457	15.630	PASS
Band41	15MHz	16QAM	41515	75RB#0	13.457	15.510	PASS
Band41	20MHz	QPSK	39750	100RB#0	17.942	19.800	PASS
Band41	20MHz	QPSK	40620	100RB#0	17.902	19.840	PASS
Band41	20MHz	QPSK	41490	100RB#0	17.942	19.880	PASS
Band41	20MHz	16QAM	39750	100RB#0	17.862	19.360	PASS
Band41	20MHz	16QAM	40620	100RB#0	17.862	19.320	PASS
Band41	20MHz	16QAM	41490	100RB#0	17.902	19.320	PASS

### 6.2. Test Plots

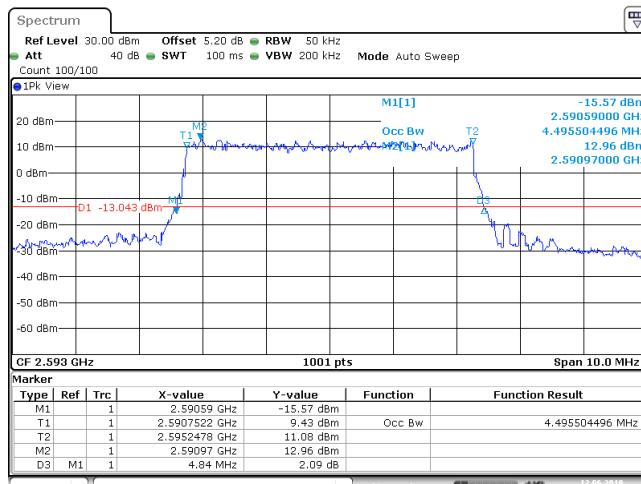


Band41\_5MHz\_16QAM\_39675\_25RB#0



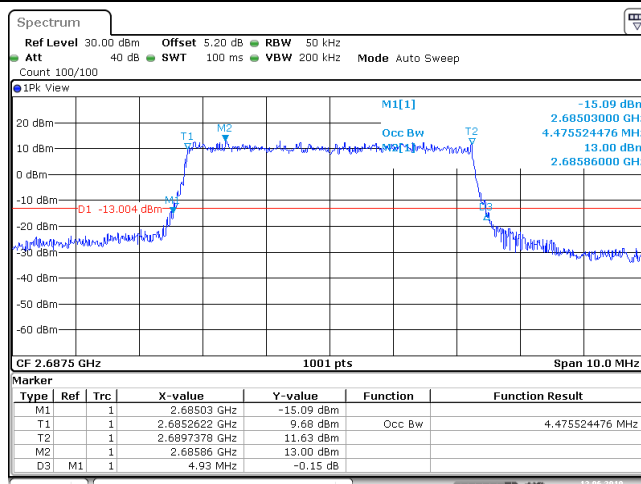
Date: 12 JUN 2019 09:57:11

Band41\_5MHz\_16QAM\_40620\_25RB#0



Date: 12 JUN 2019 09:58:02

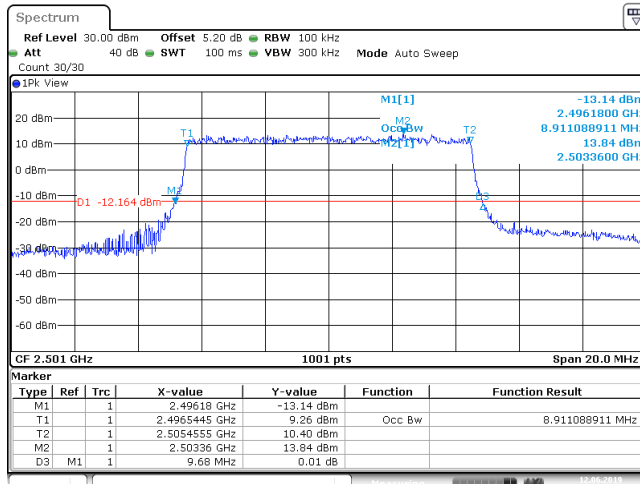
Band41\_5MHz\_16QAM\_41565\_25RB#0



Date: 12 JUN 2019 09:58:41

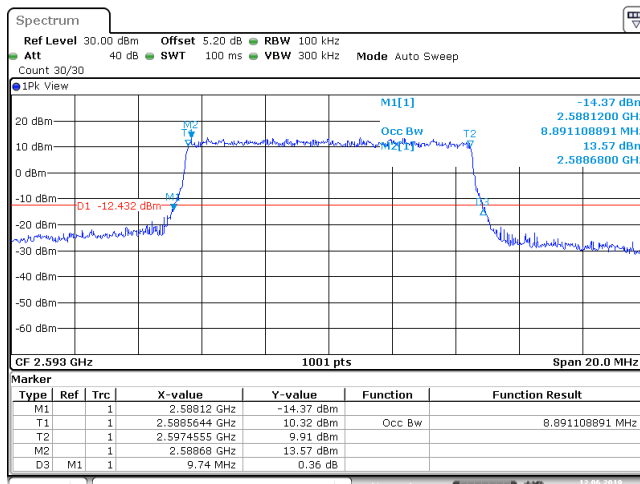


Band41\_10MHz\_QPSK\_39700\_50RB#0



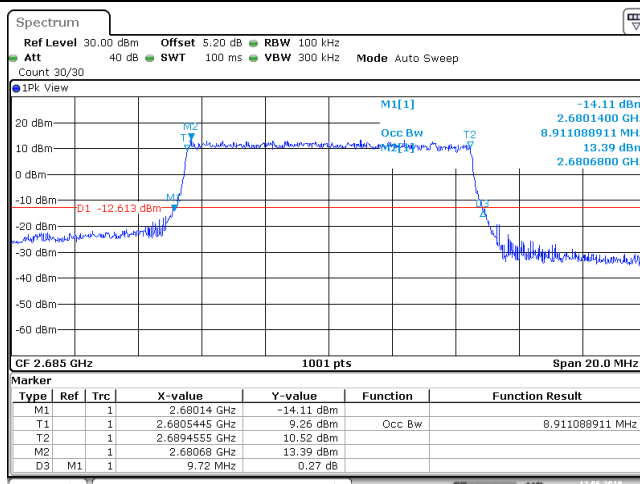
Date: 12 JUN 2019 09:58:56

Band41\_10MHz\_QPSK\_40620\_50RB#0



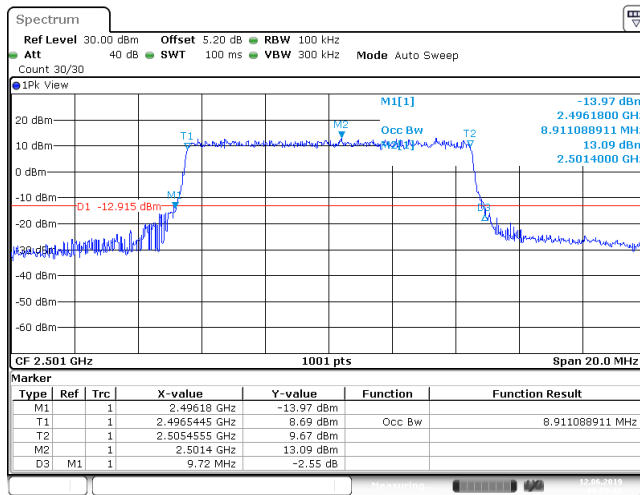
Date: 12 JUN 2019 09:59:22

Band41\_10MHz\_QPSK\_41540\_50RB#0



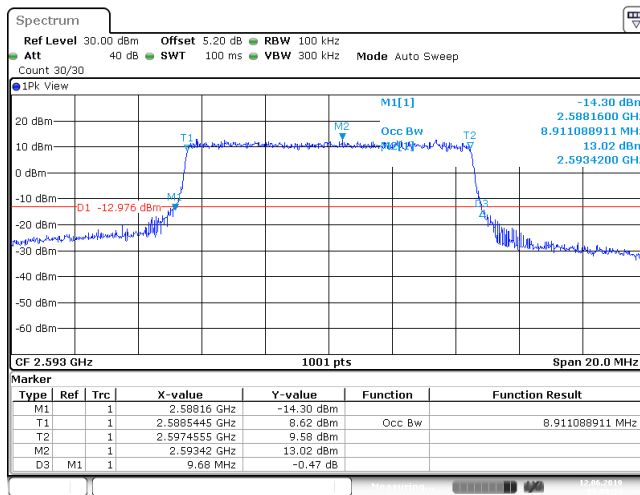
Date: 12 JUN 2019 09:59:47

Band41\_10MHz\_16QAM\_39700\_50RB#0



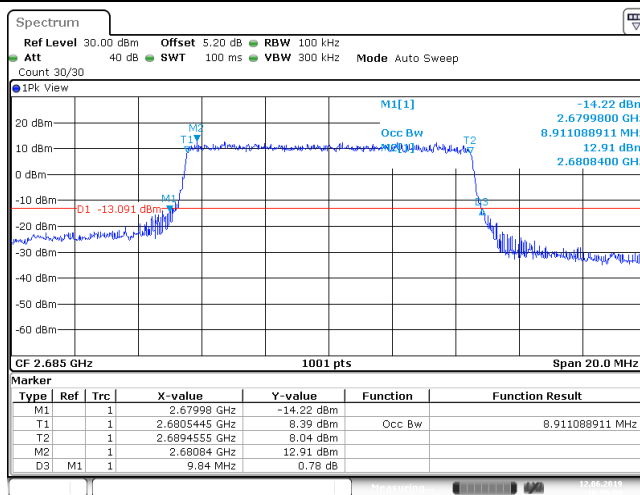
Date: 12 JUN 2019 09:59:09

Band41\_10MHz\_16QAM\_40620\_50RB#0



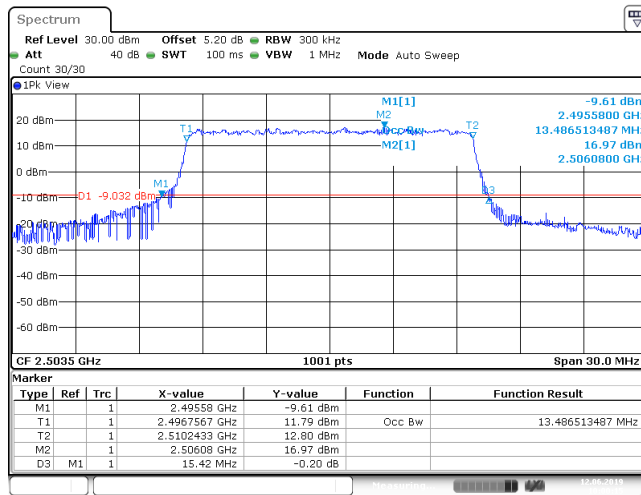
Date: 12 JUN 2019 09:59:34

Band41\_10MHz\_16QAM\_41540\_50RB#0



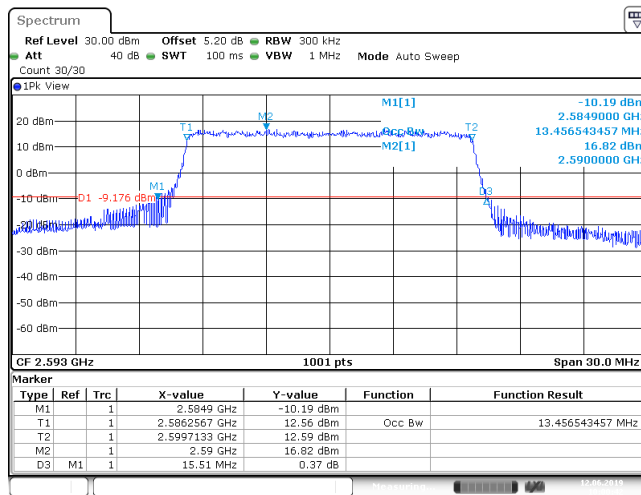
Date: 12 JUN 2019 10:00:00

Band41\_15MHz\_QPSK\_39725\_75RB#0



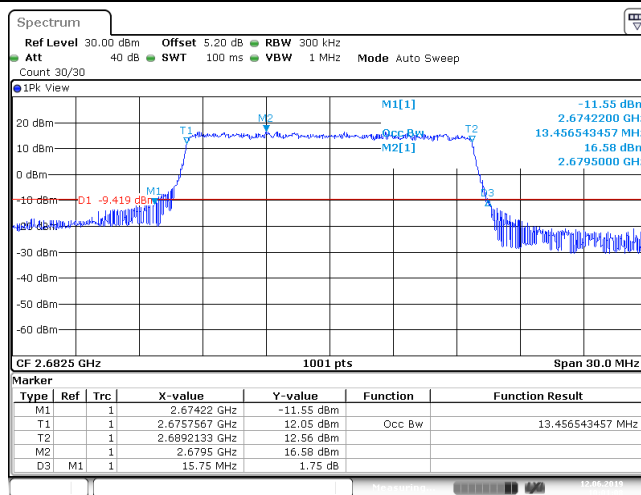
Date:12 JUN 2019 10:00:15

Band41\_15MHz\_QPSK\_40620\_75RB#0



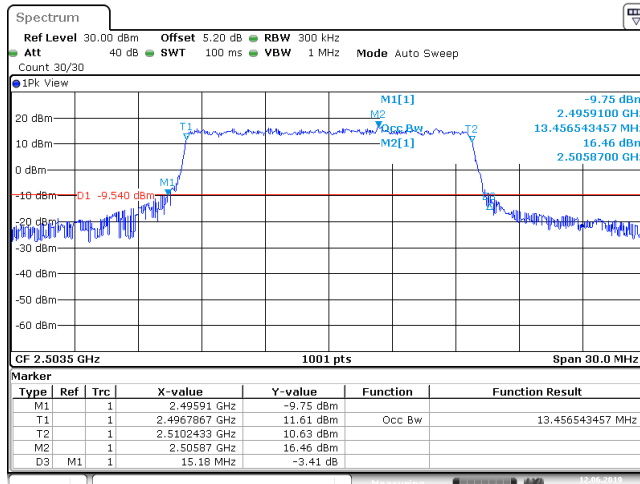
Date:12 JUN 2019 10:00:42

Band41\_15MHz\_QPSK\_41515\_75RB#0



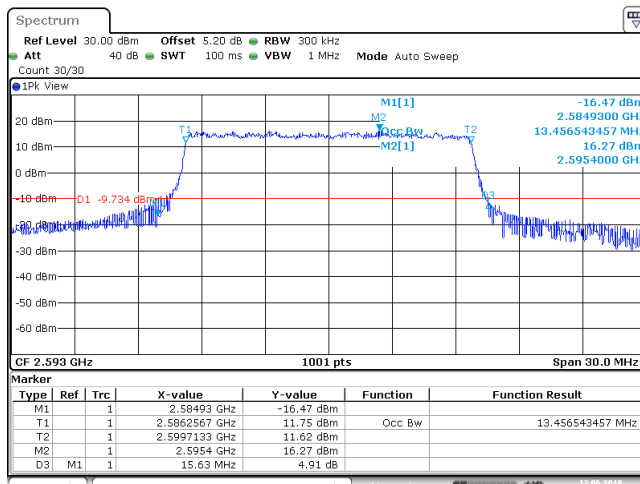
Date:12 JUN 2019 10:01:08

Band41\_15MHz\_16QAM\_39725\_75RB#0



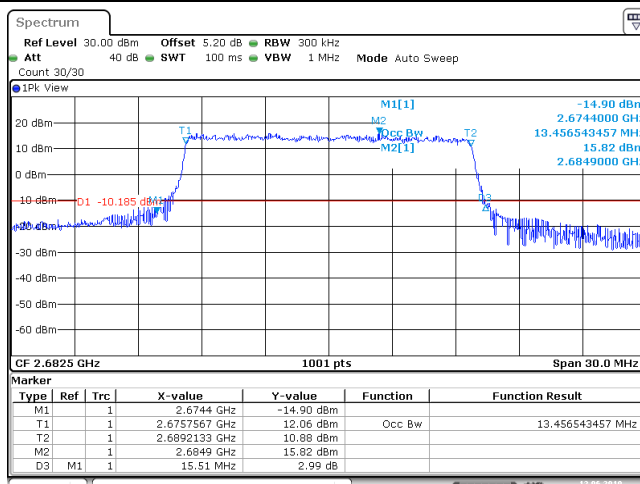
Date: 12 JUN 2019 10:00:30

Band41\_15MHz\_16QAM\_40620\_75RB#0



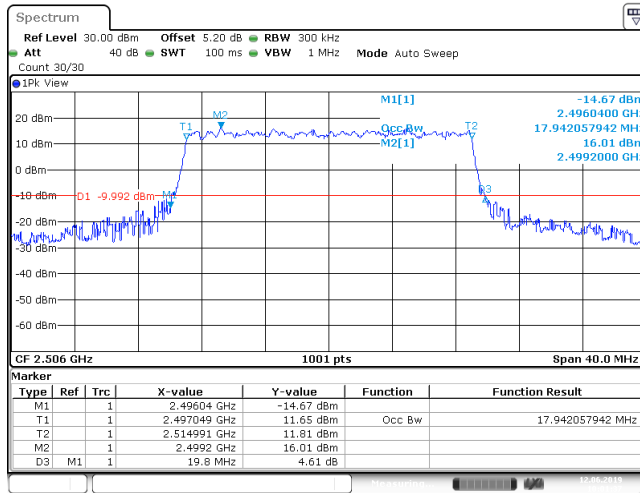
Date: 12 JUN 2019 10:00:55

Band41\_15MHz\_16QAM\_41515\_75RB#0

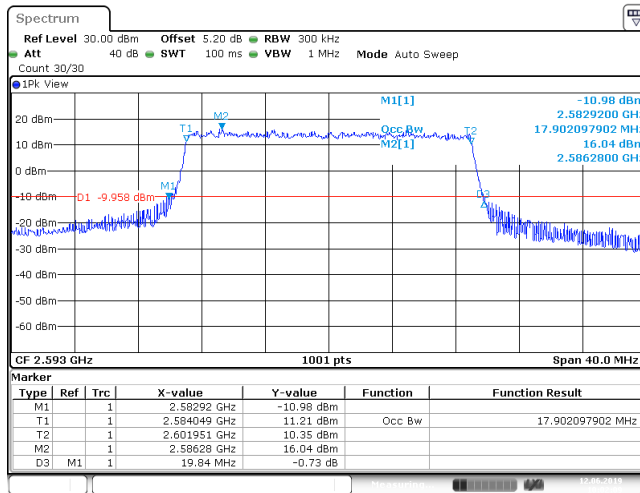


Date: 12 JUN 2019 10:01:21

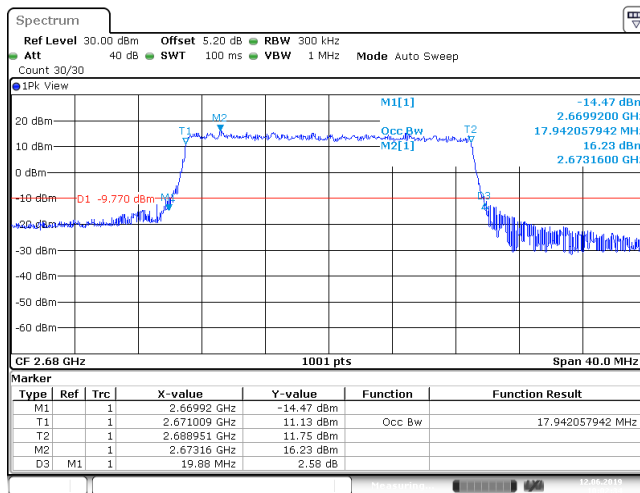
Band41\_20MHz\_QPSK\_39750\_100RB#0



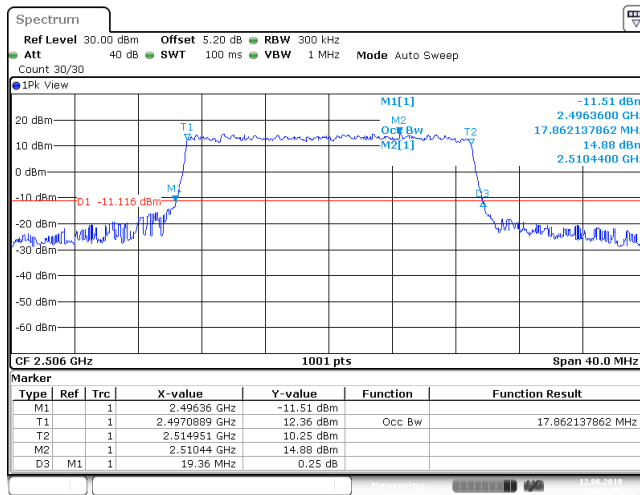
Band41\_20MHz\_QPSK\_40620\_100RB#0



Band41\_20MHz\_QPSK\_41490\_100RB#0

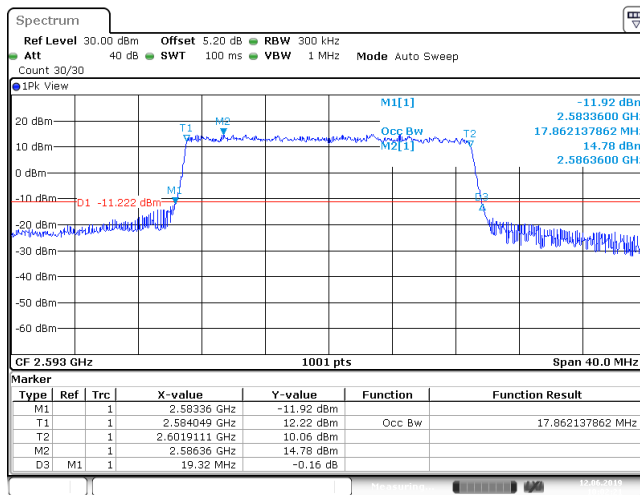


Band41\_20MHz\_16QAM\_39750\_100RB#0



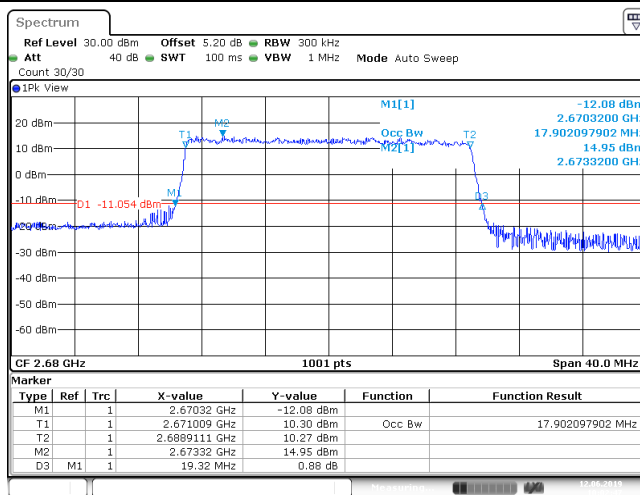
Date: 12 JUN 2019 10:01:56

Band41\_20MHz\_16QAM\_40620\_100RB#0



Date: 12 JUN 2019 10:02:21

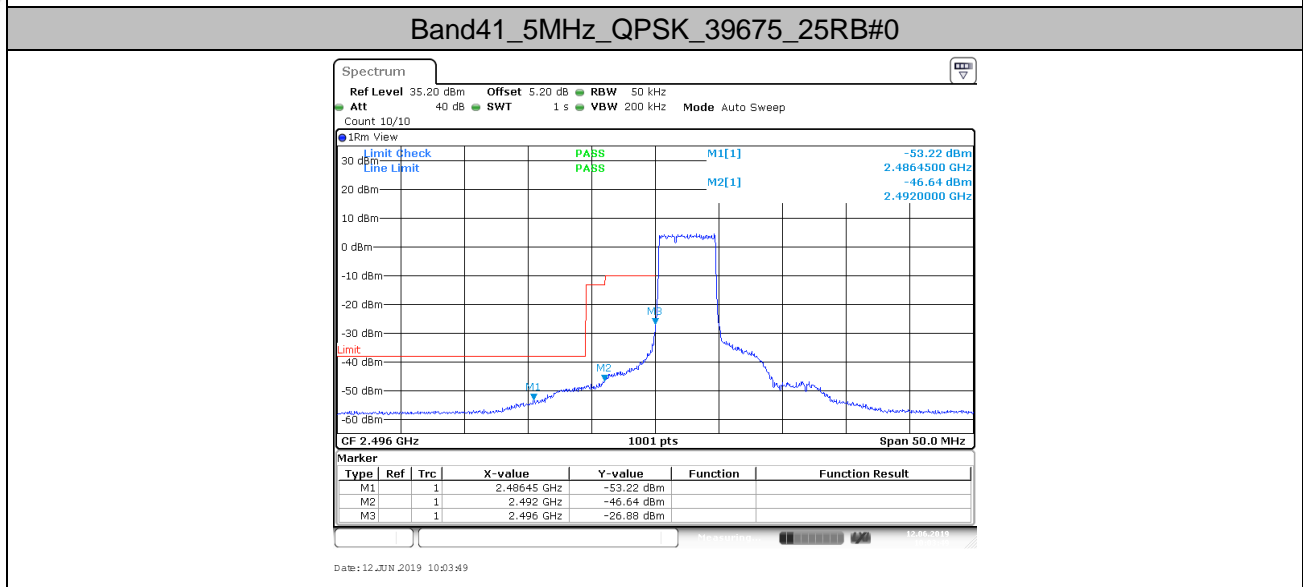
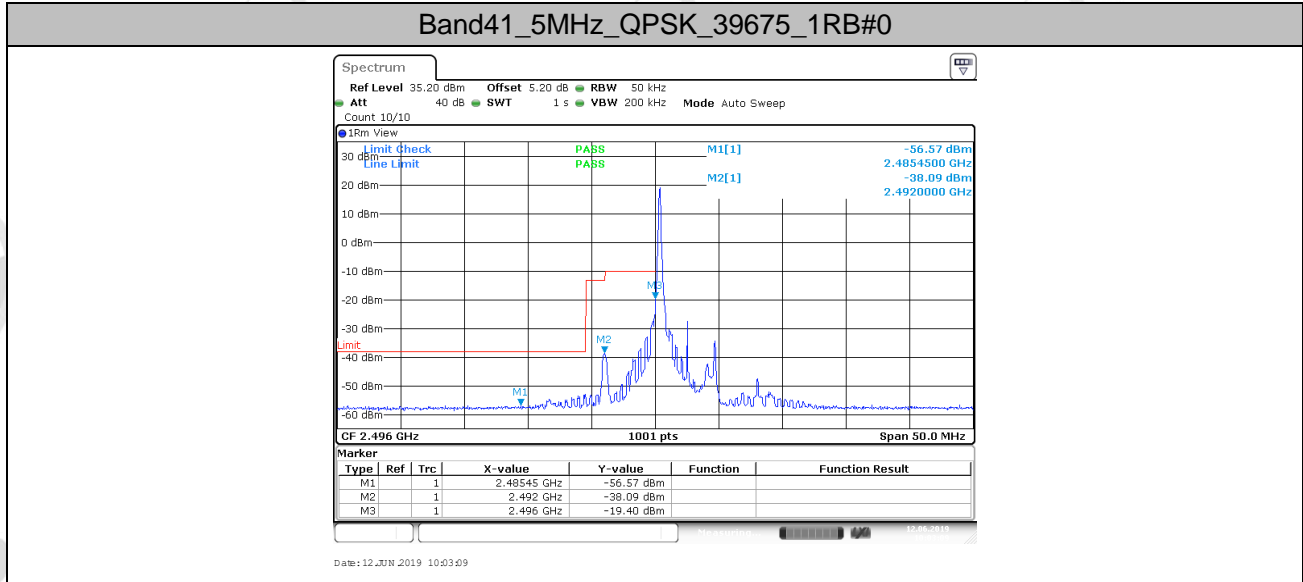
Band41\_20MHz\_16QAM\_41490\_100RB#0



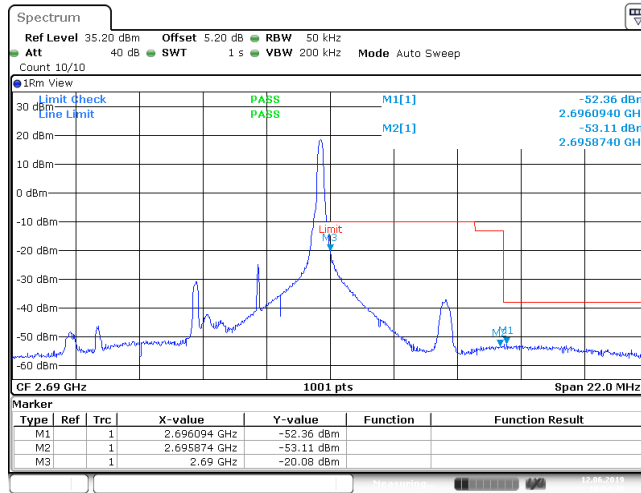
Date: 12 JUN 2019 10:02:47

## 7. Band Edge Compliance

### 7.1. Test Plots

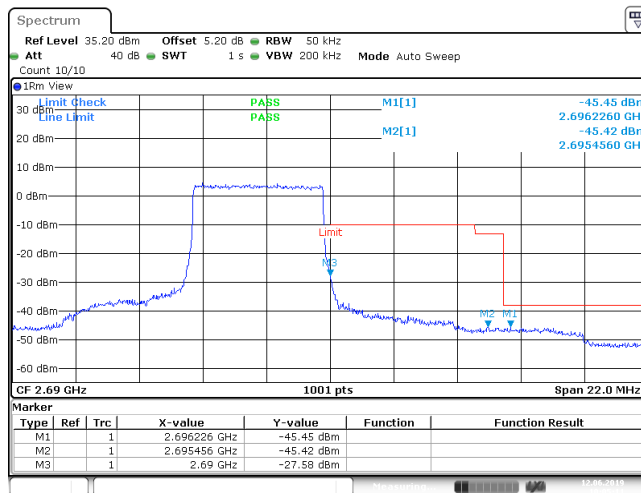


Band41\_5MHz\_QPSK\_41565\_1RB#24



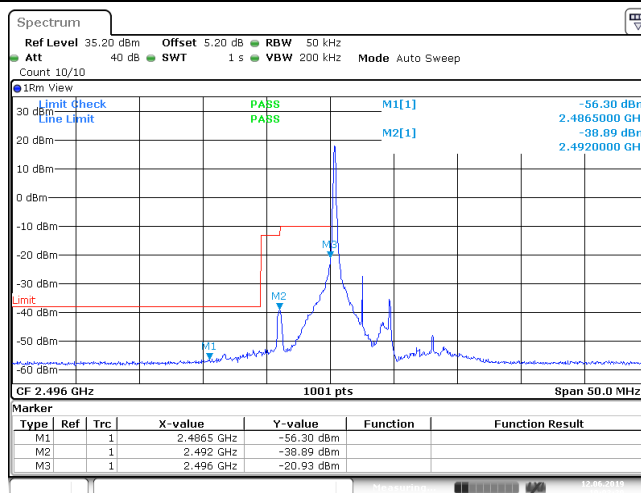
Date: 12 JUN 2019 10:04:31

Band41\_5MHz\_QPSK\_41565\_25RB#0



Date: 12 JUN 2019 10:05:11

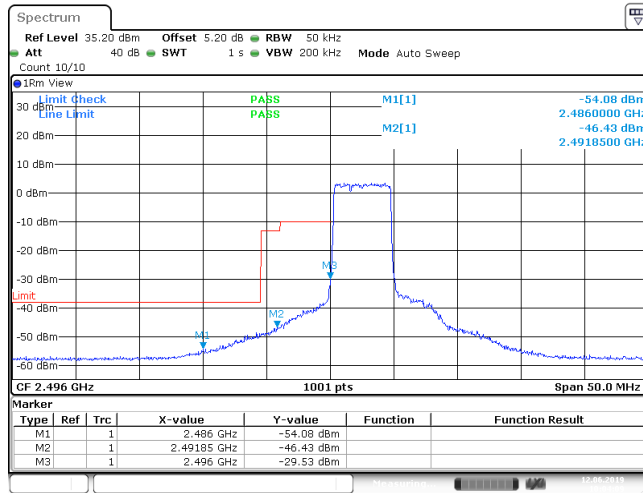
Band41\_5MHz\_16QAM\_39675\_1RB#0



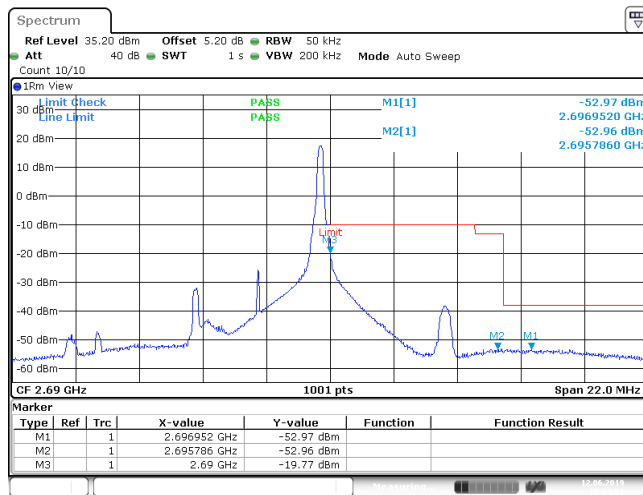
Date: 12 JUN 2019 10:03:29



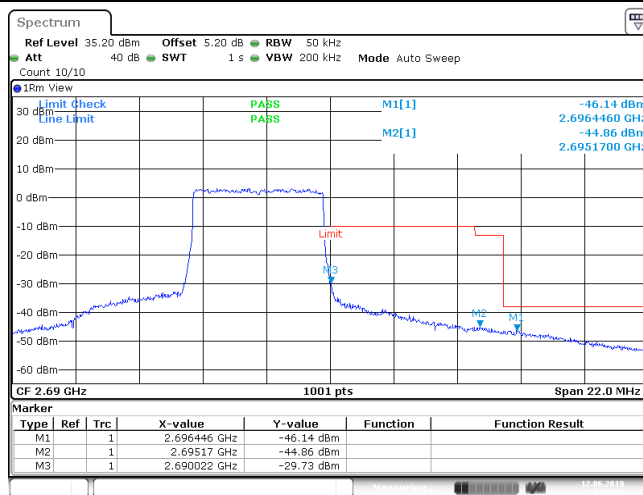
Band41\_5MHz\_16QAM\_39675\_25RB#0



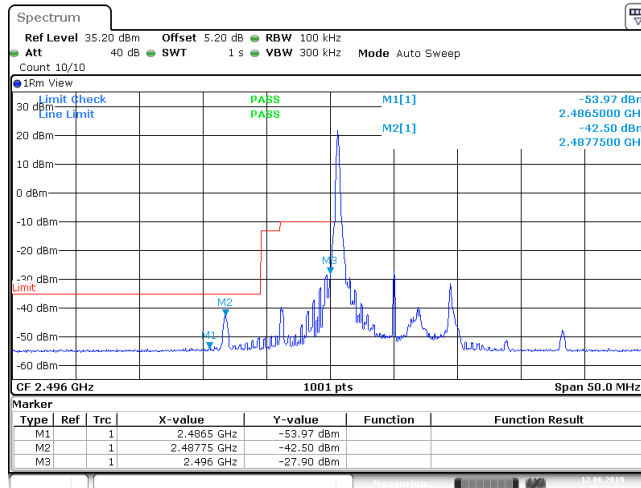
Band41\_5MHz\_16QAM\_41565\_1RB#24



Band41\_5MHz\_16QAM\_41565\_25RB#0

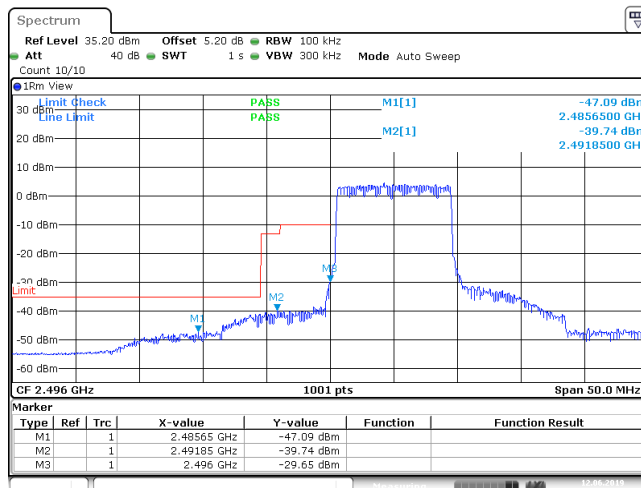


Band41\_10MHz\_QPSK\_39700\_1RB#0



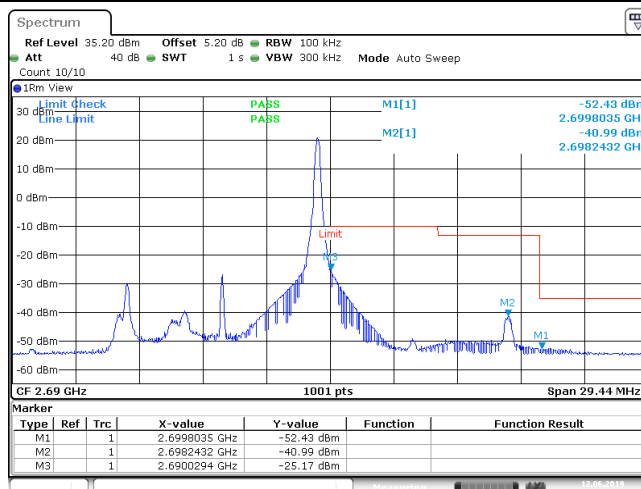
Date: 12 JUN 2019 10:05:54

Band41\_10MHz\_QPSK\_39700\_50RB#0



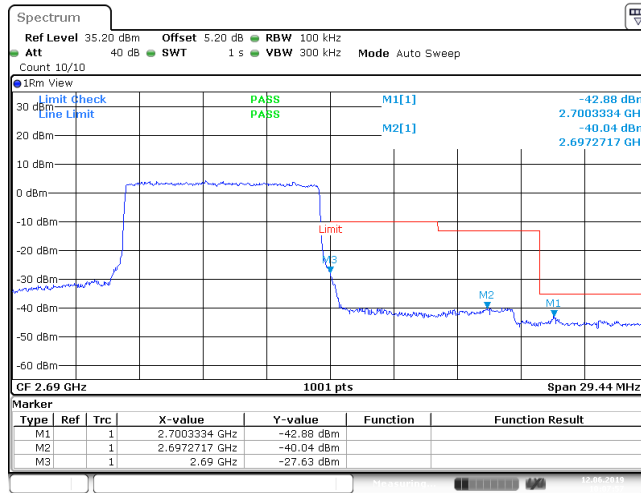
Date: 12 JUN 2019 10:06:34

Band41\_10MHz\_QPSK\_41540\_1RB#49



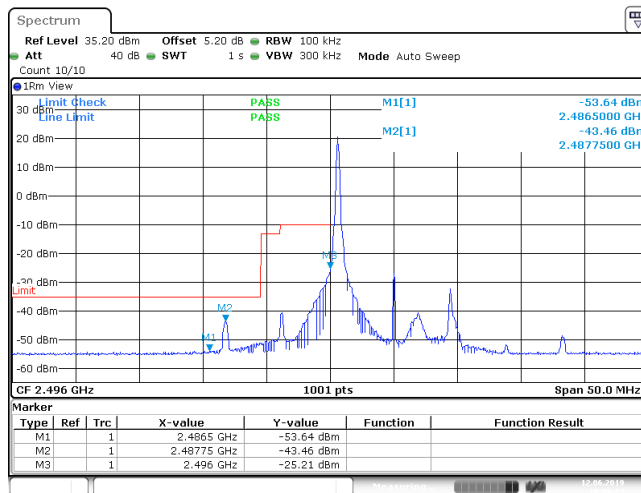
Date: 12 JUN 2019 10:07:17

Band41\_10MHz\_QPSK\_41540\_50RB#0



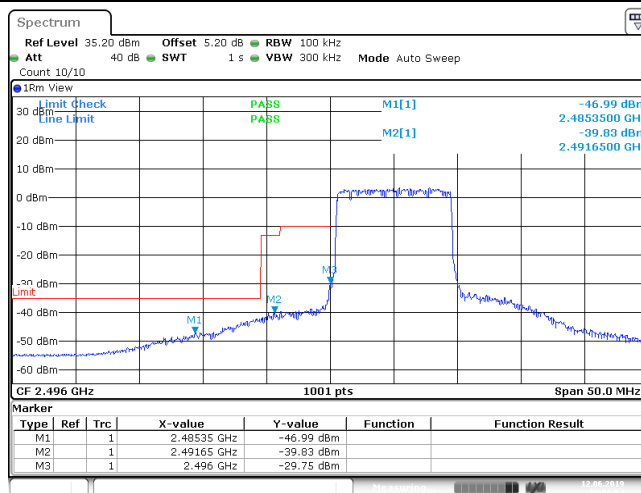
Date: 12 JUN 2019 10:07:57

Band41\_10MHz\_16QAM\_39700\_1RB#0



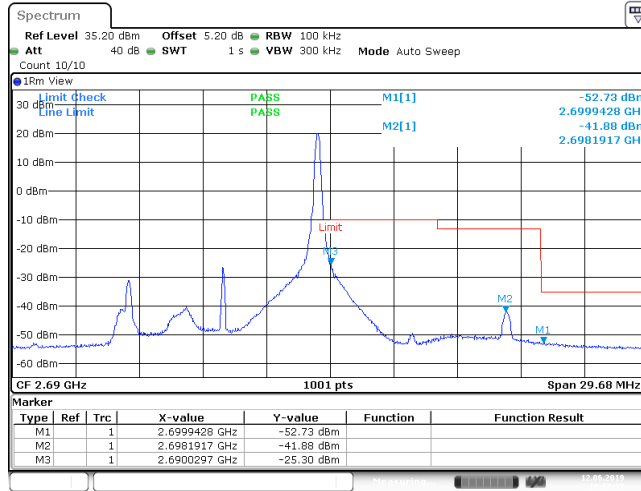
Date: 12 JUN 2019 10:06:14

Band41\_10MHz\_16QAM\_39700\_50RB#0



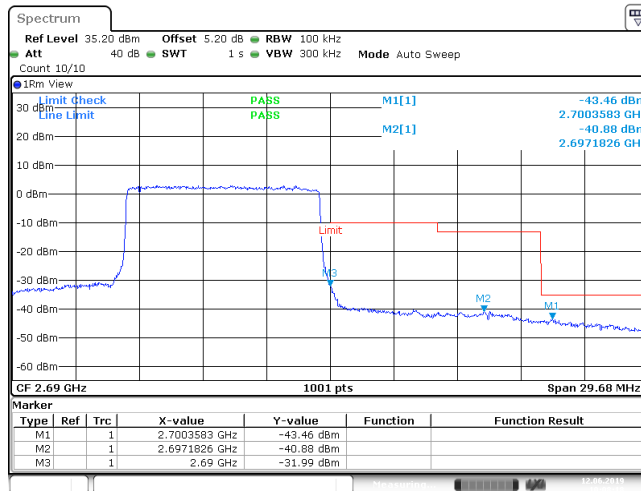
Date: 12 JUN 2019 10:06:55

Band41\_10MHz\_16QAM\_41540\_1RB#49



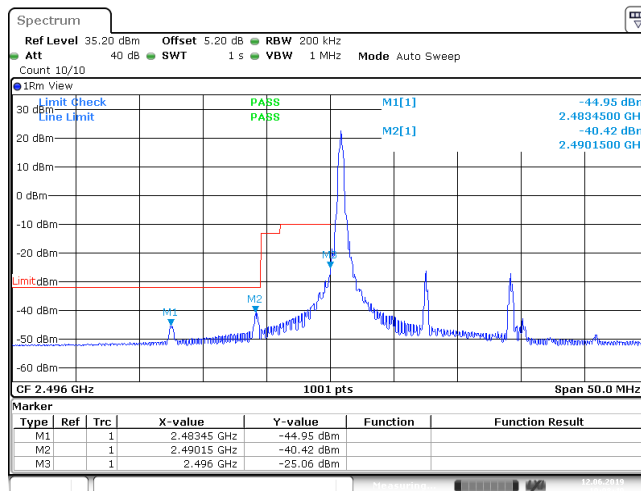
Date: 12 JUN 2019 10:07:37

Band41\_10MHz\_16QAM\_41540\_50RB#0



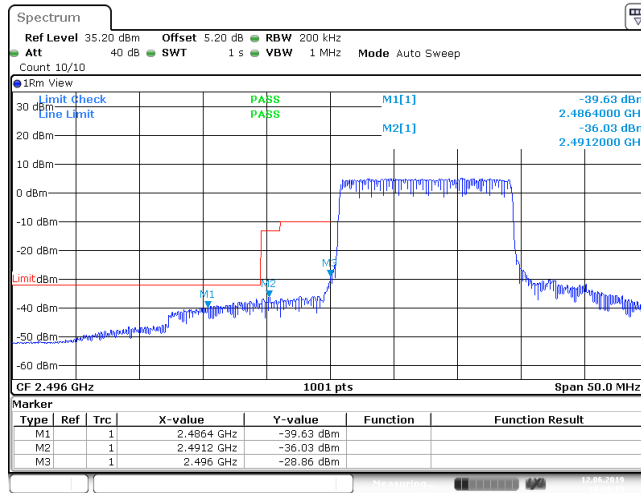
Date: 12 JUN 2019 10:08:18

Band41\_15MHz\_QPSK\_39725\_1RB#0



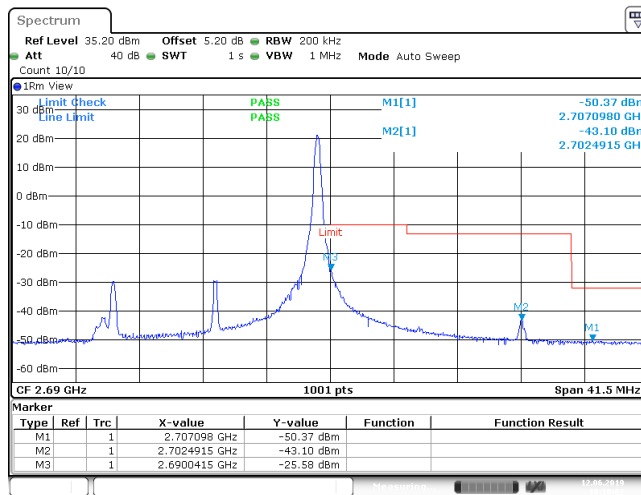
Date: 12 JUN 2019 10:08:40

Band41\_15MHz\_QPSK\_39725\_75RB#0



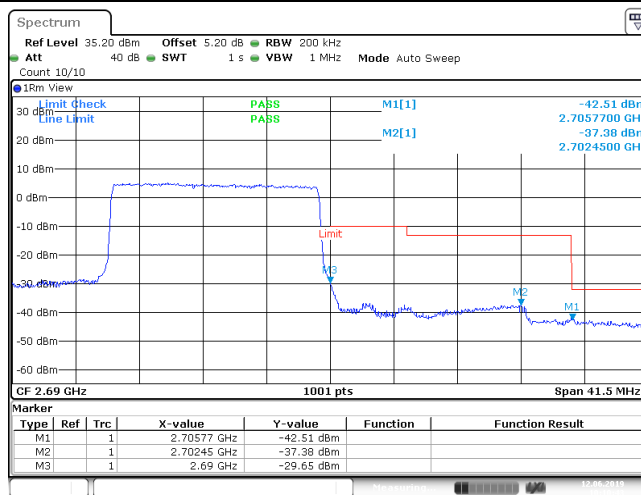
Date: 12 JUN 2019 10:09:20

Band41\_15MHz\_QPSK\_41515\_1RB#74



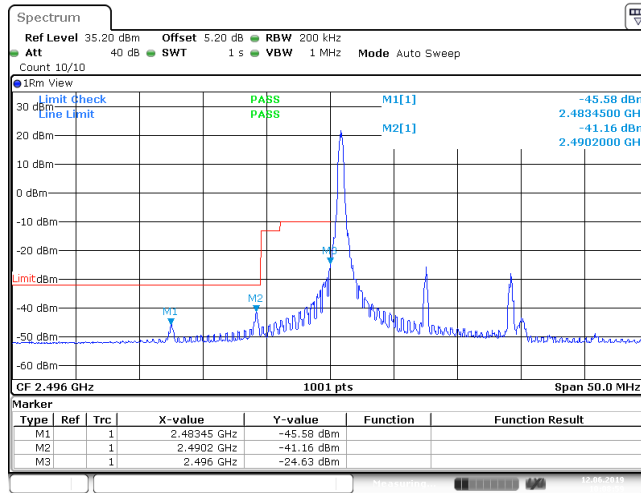
Date: 12 JUN 2019 10:10:02

Band41\_15MHz\_QPSK\_41515\_75RB#0



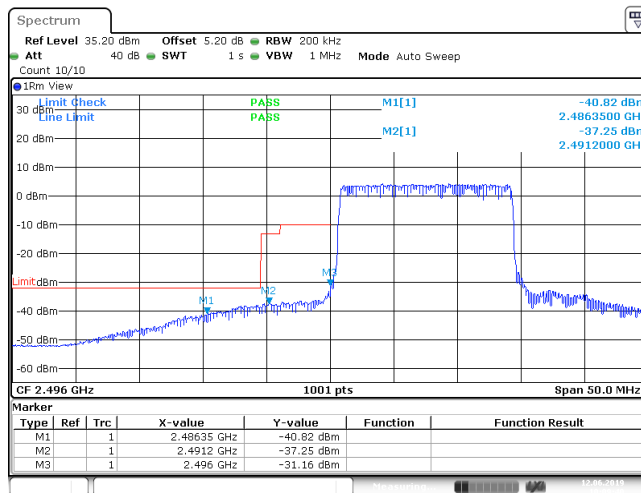
Date: 12 JUN 2019 10:10:42

Band41\_15MHz\_16QAM\_39725\_1RB#0



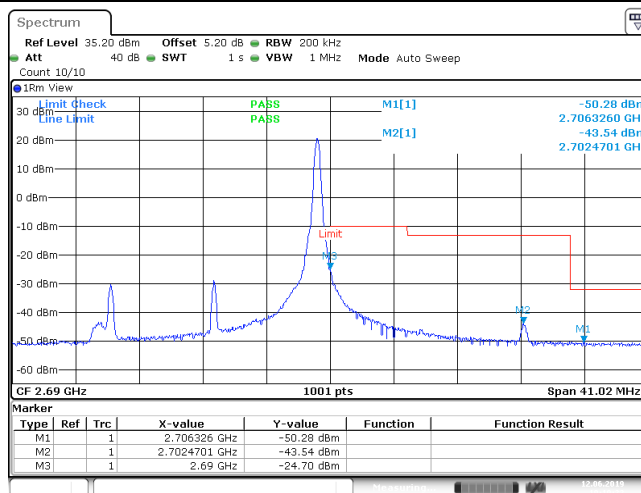
Date: 12 JUN 2019 10:09:00

Band41\_15MHz\_16QAM\_39725\_75RB#0



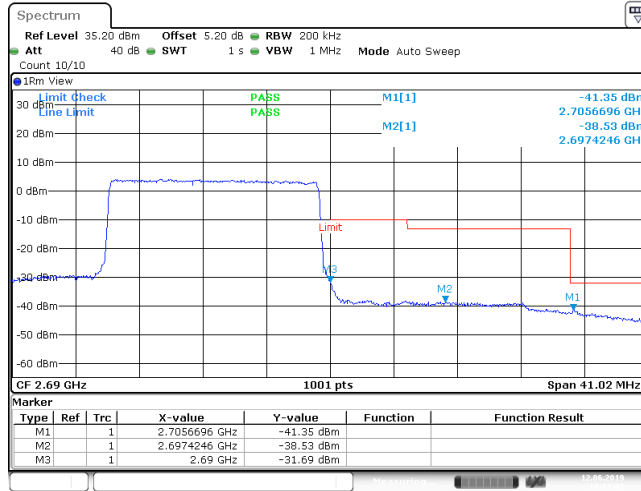
Date: 12 JUN 2019 10:09:00

Band41\_15MHz\_16QAM\_41515\_1RB#74



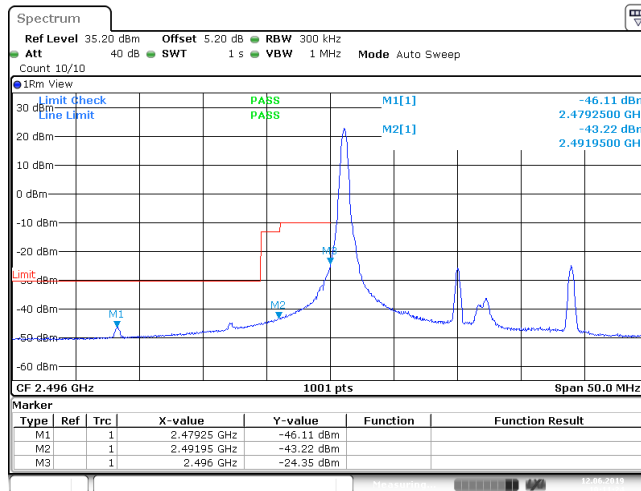
Date: 12 JUN 2019 10:10:22

Band41\_15MHz\_16QAM\_41515\_75RB#0



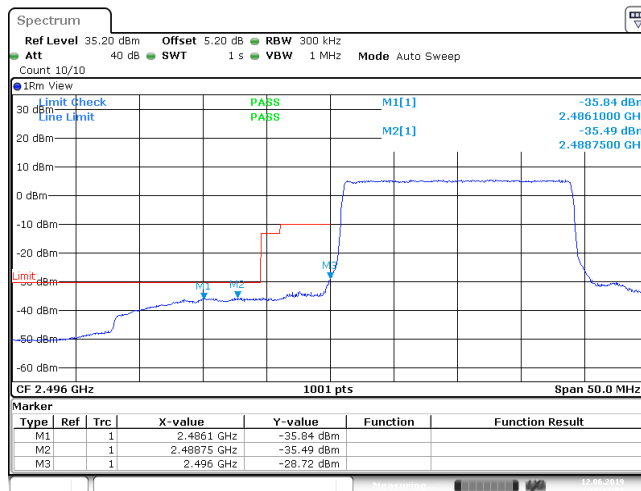
Date: 12 JUN 2019 10:11:03

Band41\_20MHz\_QPSK\_39750\_1RB#0



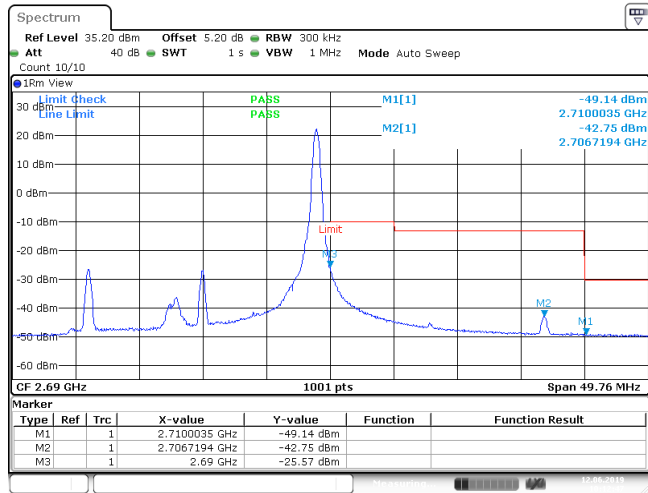
Date: 12 JUN 2019 10:11:25

Band41\_20MHz\_QPSK\_39750\_100RB#0



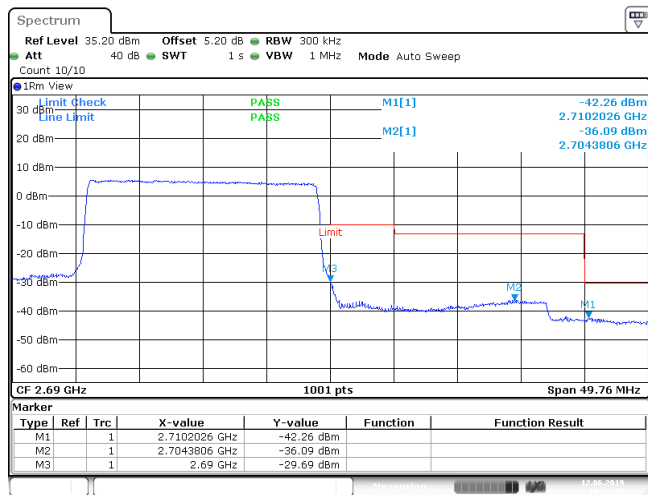
Date: 12 JUN 2019 10:12:05

Band41\_20MHz\_QPSK\_41490\_1RB#99



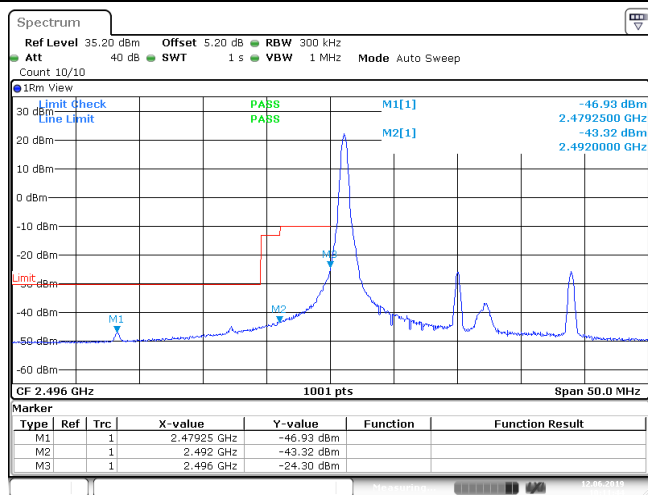
Date: 12 JUN 2019 10:12:47

Band41\_20MHz\_QPSK\_41490\_100RB#0



Date: 12 JUN 2019 10:13:28

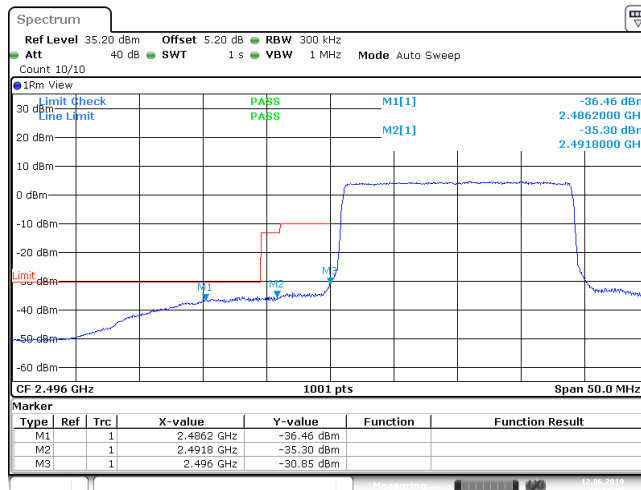
Band41\_20MHz\_16QAM\_39750\_1RB#0



Date: 12 JUN 2019 10:11:45

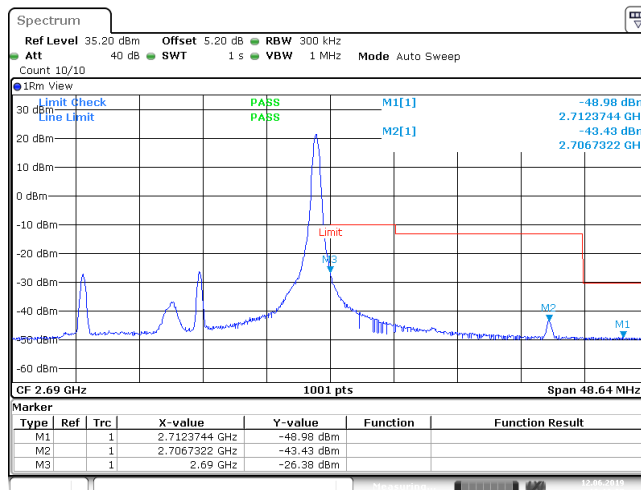


Band41\_20MHz\_16QAM\_39750\_100RB#0



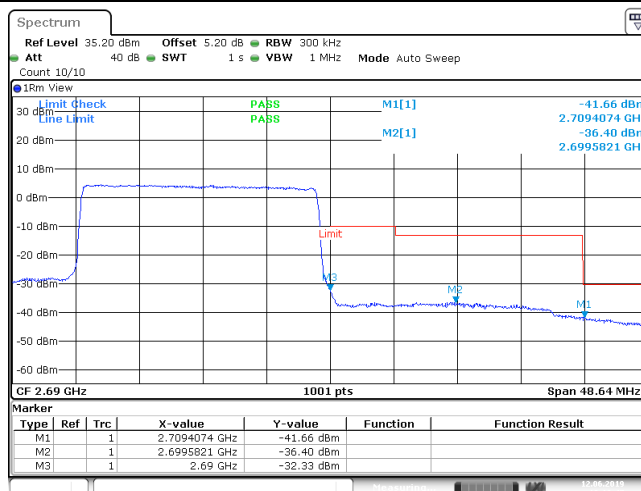
Date: 12 JUN 2019 10:12:25

Band41\_20MHz\_16QAM\_41490\_1RB#99



Date: 12 JUN 2019 10:13:07

Band41\_20MHz\_16QAM\_41490\_100RB#0



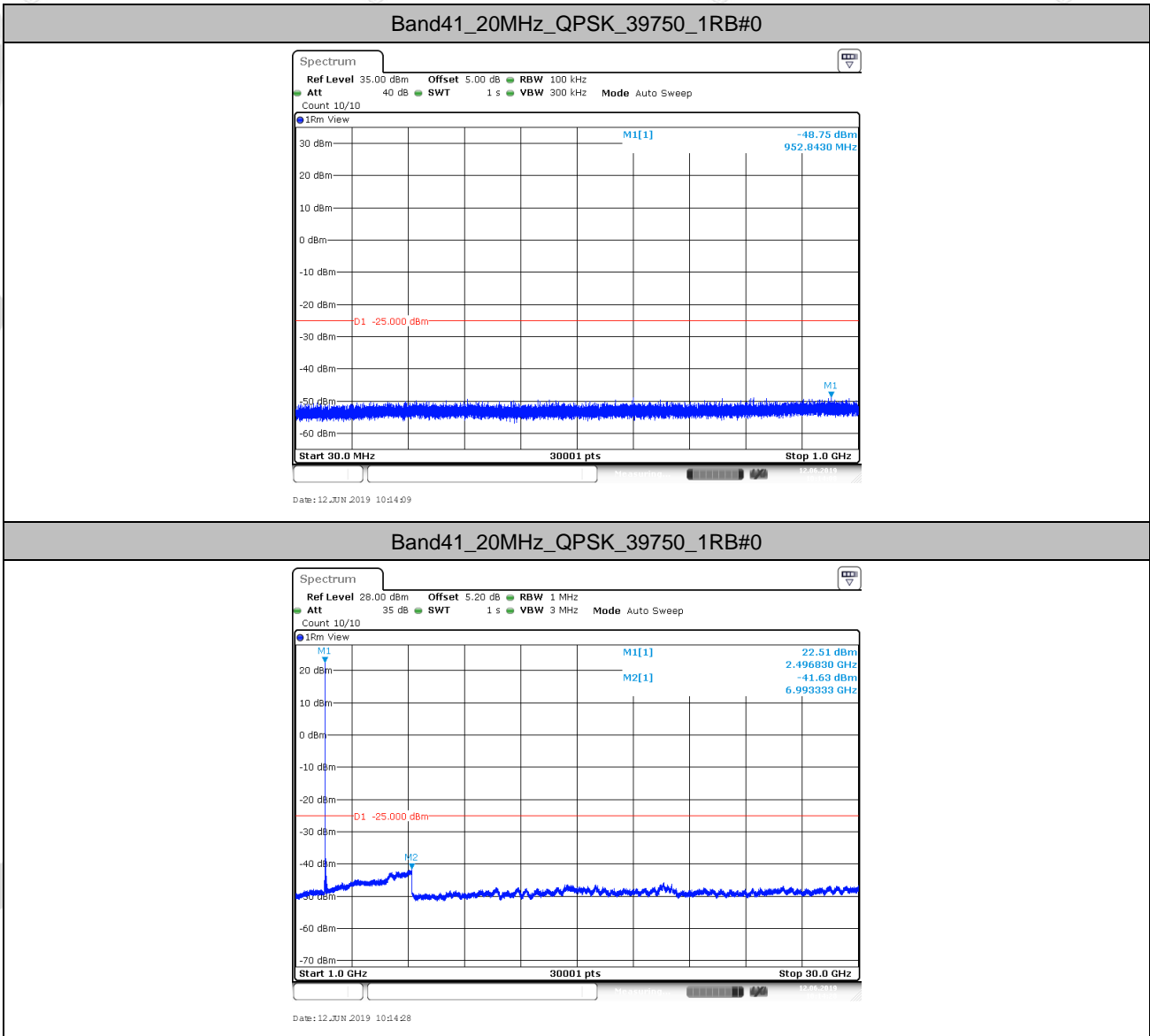
Date: 12 JUN 2019 10:13:48

### 8. Spurious Emission at Antenna Terminal

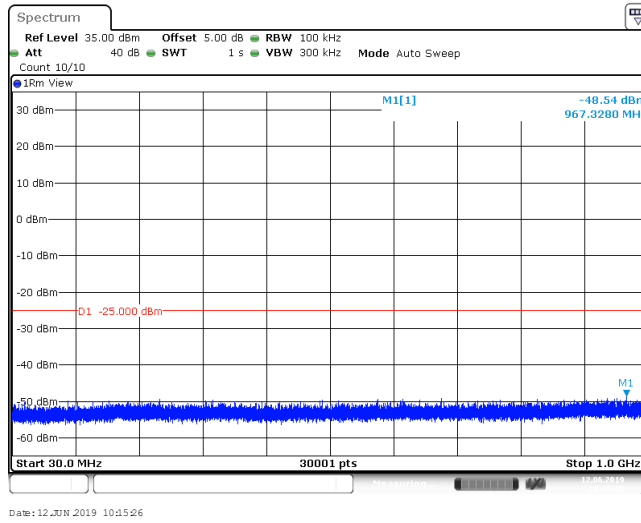
Remark1: For the averaged unwanted emissions measurements, the measurement points in each sweep is greater than twice the Span/RBW in order to ensure bin-to-bin spacing of < RBW/2 so that narrowband signals are not lost between frequency bins. As to the present test item, the "Measurement Points = k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

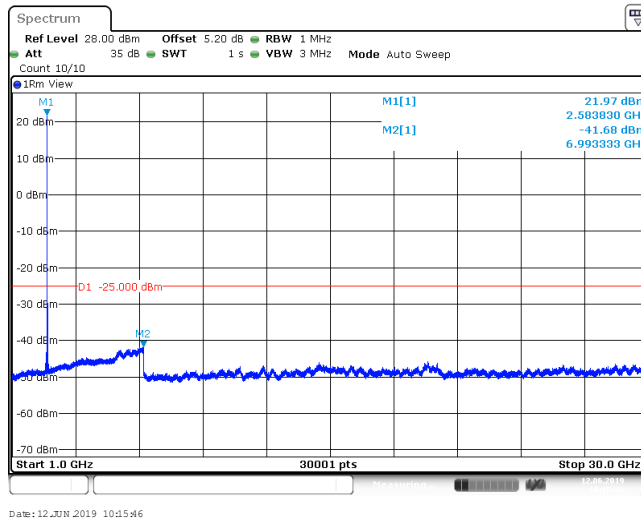
#### 8.1. Test Plots



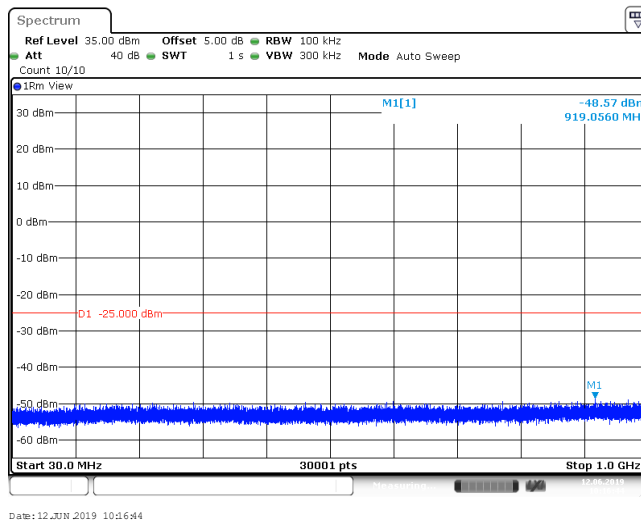
Band41\_20MHz\_QPSK\_40620\_1RB#0



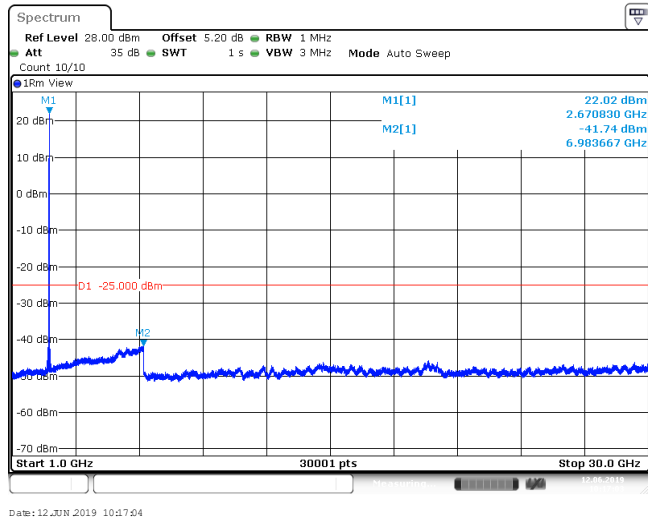
Band41\_20MHz\_QPSK\_40620\_1RB#0



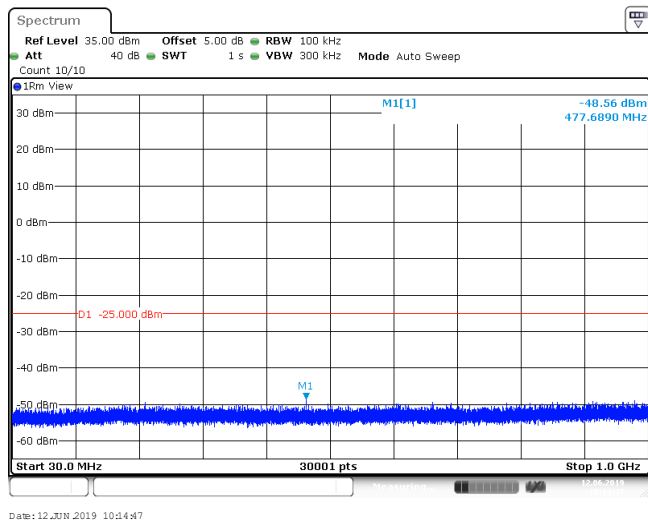
Band41\_20MHz\_QPSK\_41490\_1RB#0



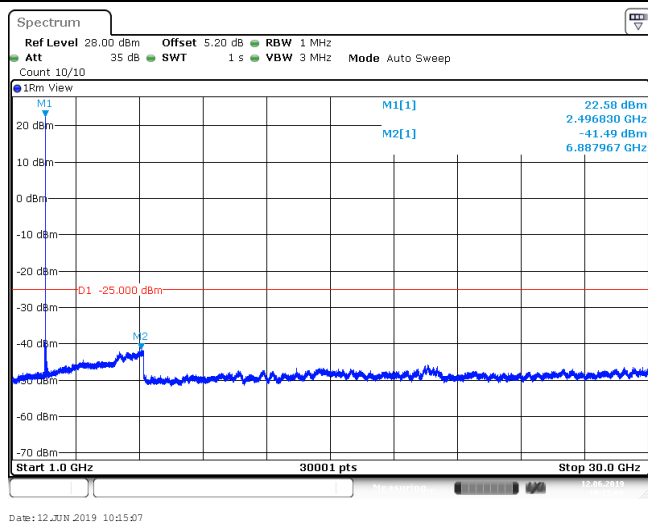
### Band41\_20MHz\_QPSK\_41490\_1RB#0



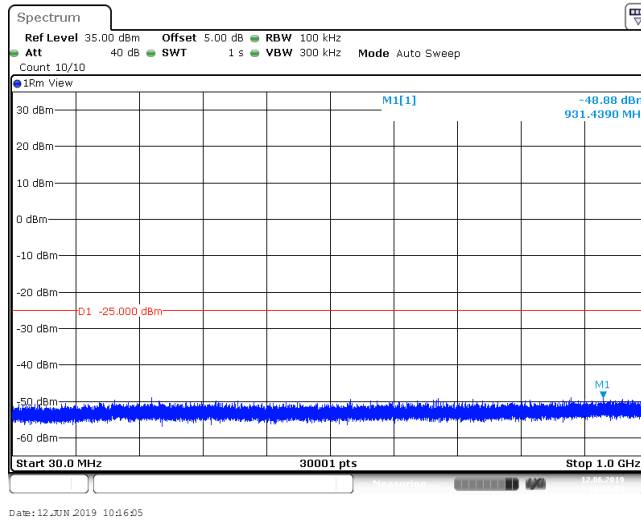
### Band41\_20MHz\_16QAM\_39750\_1RB#0



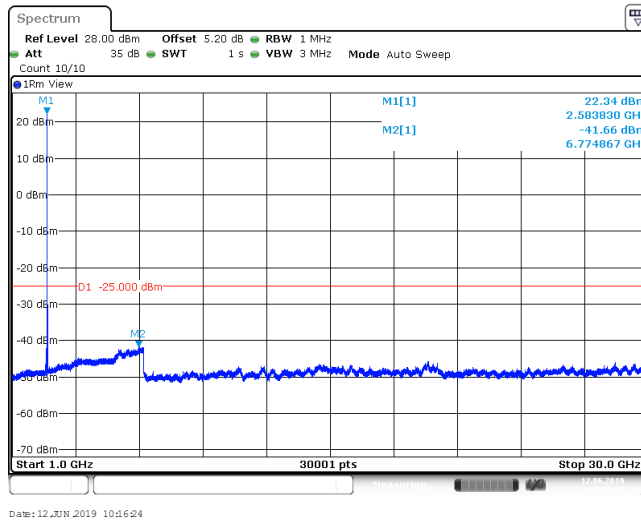
### Band41\_20MHz\_16QAM\_39750\_1RB#0



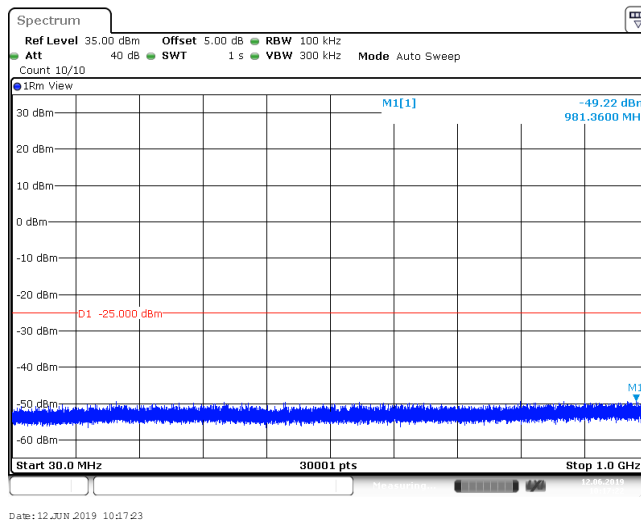
Band41\_20MHz\_16QAM\_40620\_1RB#0

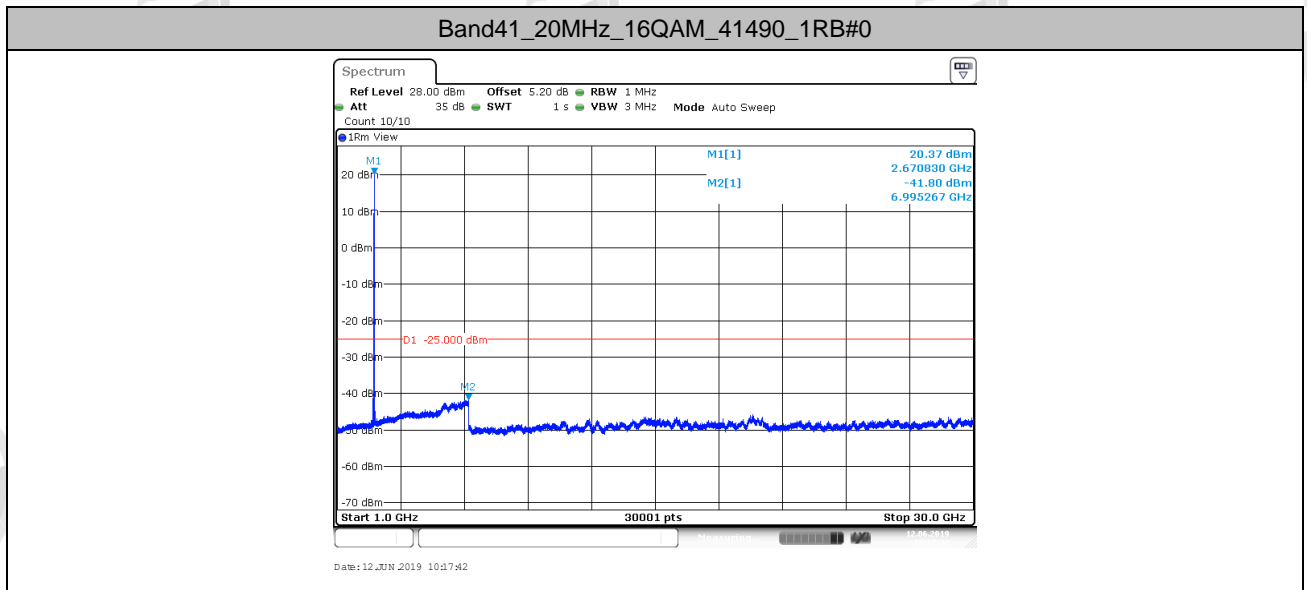


Band41\_20MHz\_16QAM\_40620\_1RB#0



Band41\_20MHz\_16QAM\_41490\_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
Band41	20MHz	QPSK	39750	100RB#0	VL	NT	-1.70	-0.000678	±2.5	PASS
Band41	20MHz	QPSK	39750	100RB#0	VN	NT	-1.10	-0.000439	±2.5	PASS
Band41	20MHz	QPSK	39750	100RB#0	VH	NT	-5.90	-0.002354	±2.5	PASS
Band41	20MHz	QPSK	40620	100RB#0	VL	NT	-1.70	-0.000656	±2.5	PASS
Band41	20MHz	QPSK	40620	100RB#0	VN	NT	-2.60	-0.001003	±2.5	PASS
Band41	20MHz	QPSK	40620	100RB#0	VH	NT	-5.40	-0.002083	±2.5	PASS
Band41	20MHz	QPSK	41490	100RB#0	VL	NT	-4.20	-0.001567	±2.5	PASS
Band41	20MHz	QPSK	41490	100RB#0	VN	NT	-6.40	-0.002388	±2.5	PASS
Band41	20MHz	QPSK	41490	100RB#0	VH	NT	-2.50	-0.000933	±2.5	PASS
Band41	20MHz	16QAM	39750	100RB#0	VL	NT	-5.60	-0.002235	±2.5	PASS
Band41	20MHz	16QAM	39750	100RB#0	VN	NT	-1.20	-0.000479	±2.5	PASS
Band41	20MHz	16QAM	39750	100RB#0	VH	NT	-6.80	-0.002713	±2.5	PASS
Band41	20MHz	16QAM	40620	100RB#0	VL	NT	-1.50	-0.000578	±2.5	PASS
Band41	20MHz	16QAM	40620	100RB#0	VN	NT	-1.90	-0.000733	±2.5	PASS
Band41	20MHz	16QAM	40620	100RB#0	VH	NT	-2.60	-0.001003	±2.5	PASS
Band41	20MHz	16QAM	41490	100RB#0	VL	NT	0.60	0.000224	±2.5	PASS
Band41	20MHz	16QAM	41490	100RB#0	VN	NT	-1.40	-0.000522	±2.5	PASS
Band41	20MHz	16QAM	41490	100RB#0	VH	NT	-5.80	-0.002164	±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
Band41	20MHz	QPSK	39750	100RB#0	NV	-30	-0.80	-0.000319	±2.5	PASS
Band41	20MHz	QPSK	39750	100RB#0	NV	-20	-4.50	-0.001796	±2.5	PASS
Band41	20MHz	QPSK	39750	100RB#0	NV	0	-4.60	-0.001836	±2.5	PASS
Band41	20MHz	QPSK	39750	100RB#0	NV	10	-5.10	-0.002035	±2.5	PASS
Band41	20MHz	QPSK	39750	100RB#0	NV	20	-0.30	-0.000120	±2.5	PASS
Band41	20MHz	QPSK	39750	100RB#0	NV	30	-5.90	-0.002354	±2.5	PASS
Band41	20MHz	QPSK	39750	100RB#0	NV	40	-3.20	-0.001277	±2.5	PASS
Band41	20MHz	QPSK	39750	100RB#0	NV	50	-0.50	-0.000200	±2.5	PASS
Band41	20MHz	QPSK	40620	100RB#0	NV	-30	-5.90	-0.002275	±2.5	PASS
Band41	20MHz	QPSK	40620	100RB#0	NV	-20	-1.80	-0.000694	±2.5	PASS
Band41	20MHz	QPSK	40620	100RB#0	NV	0	-0.40	-0.000154	±2.5	PASS
Band41	20MHz	QPSK	40620	100RB#0	NV	10	-3.70	-0.001427	±2.5	PASS
Band41	20MHz	QPSK	40620	100RB#0	NV	20	-1.00	-0.000386	±2.5	PASS
Band41	20MHz	QPSK	40620	100RB#0	NV	30	-1.70	-0.000656	±2.5	PASS
Band41	20MHz	QPSK	40620	100RB#0	NV	40	-3.10	-0.001196	±2.5	PASS
Band41	20MHz	QPSK	40620	100RB#0	NV	50	-1.60	-0.000617	±2.5	PASS
Band41	20MHz	QPSK	41490	100RB#0	NV	-30	0.00	0.000000	±2.5	PASS
Band41	20MHz	QPSK	41490	100RB#0	NV	-20	-4.40	-0.001642	±2.5	PASS
Band41	20MHz	QPSK	41490	100RB#0	NV	0	1.00	0.000373	±2.5	PASS
Band41	20MHz	QPSK	41490	100RB#0	NV	10	-4.40	-0.001642	±2.5	PASS
Band41	20MHz	QPSK	41490	100RB#0	NV	20	-1.10	-0.000410	±2.5	PASS
Band41	20MHz	QPSK	41490	100RB#0	NV	30	-3.70	-0.001381	±2.5	PASS
Band41	20MHz	QPSK	41490	100RB#0	NV	40	0.00	0.000000	±2.5	PASS
Band41	20MHz	QPSK	41490	100RB#0	NV	50	-1.20	-0.000448	±2.5	PASS
Band41	20MHz	16QAM	39750	100RB#0	NV	-30	-1.10	-0.000439	±2.5	PASS
Band41	20MHz	16QAM	39750	100RB#0	NV	-20	-1.80	-0.000718	±2.5	PASS
Band41	20MHz	16QAM	39750	100RB#0	NV	0	-5.30	-0.002115	±2.5	PASS
Band41	20MHz	16QAM	39750	100RB#0	NV	10	0.40	0.000160	±2.5	PASS
Band41	20MHz	16QAM	39750	100RB#0	NV	20	-2.10	-0.000838	±2.5	PASS
Band41	20MHz	16QAM	39750	100RB#0	NV	30	-4.70	-0.001875	±2.5	PASS
Band41	20MHz	16QAM	39750	100RB#0	NV	40	-2.20	-0.000878	±2.5	PASS
Band41	20MHz	16QAM	39750	100RB#0	NV	50	-6.50	-0.002594	±2.5	PASS
Band41	20MHz	16QAM	40620	100RB#0	NV	-30	-0.60	-0.000231	±2.5	PASS
Band41	20MHz	16QAM	40620	100RB#0	NV	-20	-1.60	-0.000617	±2.5	PASS
Band41	20MHz	16QAM	40620	100RB#0	NV	0	-5.50	-0.002121	±2.5	PASS
Band41	20MHz	16QAM	40620	100RB#0	NV	10	-2.30	-0.000887	±2.5	PASS
Band41	20MHz	16QAM	40620	100RB#0	NV	20	-6.30	-0.002430	±2.5	PASS
Band41	20MHz	16QAM	40620	100RB#0	NV	30	-0.30	-0.000116	±2.5	PASS
Band41	20MHz	16QAM	40620	100RB#0	NV	40	-5.90	-0.002275	±2.5	PASS



Band41	20MHz	16QAM	40620	100RB#0	NV	50	-6.80	-0.002622	±2.5	PASS
Band41	20MHz	16QAM	41490	100RB#0	NV	-30	-6.60	-0.002463	±2.5	PASS
Band41	20MHz	16QAM	41490	100RB#0	NV	-20	0.20	0.000075	±2.5	PASS
Band41	20MHz	16QAM	41490	100RB#0	NV	0	-1.00	-0.000373	±2.5	PASS
Band41	20MHz	16QAM	41490	100RB#0	NV	10	-6.90	-0.002575	±2.5	PASS
Band41	20MHz	16QAM	41490	100RB#0	NV	20	-4.50	-0.001679	±2.5	PASS
Band41	20MHz	16QAM	41490	100RB#0	NV	30	-1.90	-0.000709	±2.5	PASS
Band41	20MHz	16QAM	41490	100RB#0	NV	40	-0.70	-0.000261	±2.5	PASS
Band41	20MHz	16QAM	41490	100RB#0	NV	50	-2.90	-0.001082	±2.5	PASS

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The End