



# Appendix B

## E-UTRA BAND 17





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## 1. Effective (Isotropic) Radiated Power

### 1.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	ERP (dBm)	limit (dBm)	Verdict
Band17	5MHz	QPSK	23755	1RB#0	23.40	12.55	34.77	PASS
Band17	5MHz	QPSK	23755	1RB#12	22.96	12.11	34.77	PASS
Band17	5MHz	QPSK	23755	1RB#24	23.44	12.59	34.77	PASS
Band17	5MHz	QPSK	23755	12RB#0	22.44	11.59	34.77	PASS
Band17	5MHz	QPSK	23755	12RB#6	22.40	11.55	34.77	PASS
Band17	5MHz	QPSK	23755	12RB#13	22.51	11.66	34.77	PASS
Band17	5MHz	QPSK	23755	25RB#0	22.39	11.54	34.77	PASS
Band17	5MHz	QPSK	23790	1RB#0	23.47	12.62	34.77	PASS
Band17	5MHz	QPSK	23790	1RB#12	22.99	12.14	34.77	PASS
Band17	5MHz	QPSK	23790	1RB#24	23.49	12.64	34.77	PASS
Band17	5MHz	QPSK	23790	12RB#0	22.61	11.76	34.77	PASS
Band17	5MHz	QPSK	23790	12RB#6	22.52	11.67	34.77	PASS
Band17	5MHz	QPSK	23790	12RB#13	22.51	11.66	34.77	PASS
Band17	5MHz	QPSK	23790	25RB#0	22.51	11.66	34.77	PASS
Band17	5MHz	QPSK	23825	1RB#0	23.57	12.72	34.77	PASS
Band17	5MHz	QPSK	23825	1RB#12	23.01	12.16	34.77	PASS
Band17	5MHz	QPSK	23825	1RB#24	23.64	12.79	34.77	PASS
Band17	5MHz	QPSK	23825	12RB#0	22.63	11.78	34.77	PASS
Band17	5MHz	QPSK	23825	12RB#6	22.57	11.72	34.77	PASS
Band17	5MHz	QPSK	23825	12RB#13	22.67	11.82	34.77	PASS
Band17	5MHz	QPSK	23825	25RB#0	22.57	11.72	34.77	PASS
Band17	5MHz	64QAM	23755	1RB#0	21.56	10.71	34.77	PASS
Band17	5MHz	64QAM	23755	1RB#12	21.27	10.42	34.77	PASS
Band17	5MHz	64QAM	23755	1RB#24	21.64	10.79	34.77	PASS
Band17	5MHz	64QAM	23755	12RB#0	20.38	9.53	34.77	PASS
Band17	5MHz	64QAM	23755	12RB#6	20.30	9.45	34.77	PASS
Band17	5MHz	64QAM	23755	12RB#13	20.39	9.54	34.77	PASS
Band17	5MHz	64QAM	23755	25RB#0	20.34	9.49	34.77	PASS
Band17	5MHz	64QAM	23790	1RB#0	21.60	10.75	34.77	PASS
Band17	5MHz	64QAM	23790	1RB#12	21.43	10.58	34.77	PASS
Band17	5MHz	64QAM	23790	1RB#24	21.59	10.74	34.77	PASS
Band17	5MHz	64QAM	23790	12RB#0	20.52	9.67	34.77	PASS



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Band17	5MHz	64QAM	23790	12RB#6	20.44	9.59	34.77	PASS
Band17	5MHz	64QAM	23790	12RB#13	20.42	9.57	34.77	PASS
Band17	5MHz	64QAM	23790	25RB#0	20.43	9.58	34.77	PASS
Band17	5MHz	64QAM	23825	1RB#0	21.70	10.85	34.77	PASS
Band17	5MHz	64QAM	23825	1RB#12	21.35	10.5	34.77	PASS
Band17	5MHz	64QAM	23825	1RB#24	21.75	10.9	34.77	PASS
Band17	5MHz	64QAM	23825	12RB#0	20.54	9.69	34.77	PASS
Band17	5MHz	64QAM	23825	12RB#6	20.44	9.59	34.77	PASS
Band17	5MHz	64QAM	23825	12RB#13	20.61	9.76	34.77	PASS
Band17	5MHz	64QAM	23825	25RB#0	20.41	9.56	34.77	PASS
Band17	5MHz	16QAM	23755	1RB#0	22.64	11.79	34.77	PASS
Band17	5MHz	16QAM	23755	1RB#12	22.09	11.24	34.77	PASS
Band17	5MHz	16QAM	23755	1RB#24	22.67	11.82	34.77	PASS
Band17	5MHz	16QAM	23755	12RB#0	21.36	10.51	34.77	PASS
Band17	5MHz	16QAM	23755	12RB#6	21.37	10.52	34.77	PASS
Band17	5MHz	16QAM	23755	12RB#13	21.43	10.58	34.77	PASS
Band17	5MHz	16QAM	23755	25RB#0	21.33	10.48	34.77	PASS
Band17	5MHz	16QAM	23790	1RB#0	22.64	11.79	34.77	PASS
Band17	5MHz	16QAM	23790	1RB#12	22.41	11.56	34.77	PASS
Band17	5MHz	16QAM	23790	1RB#24	22.64	11.79	34.77	PASS
Band17	5MHz	16QAM	23790	12RB#0	21.48	10.63	34.77	PASS
Band17	5MHz	16QAM	23790	12RB#6	21.42	10.57	34.77	PASS
Band17	5MHz	16QAM	23790	12RB#13	21.55	10.7	34.77	PASS
Band17	5MHz	16QAM	23790	25RB#0	21.40	10.55	34.77	PASS
Band17	5MHz	16QAM	23825	1RB#0	22.75	11.9	34.77	PASS
Band17	5MHz	16QAM	23825	1RB#12	22.10	11.25	34.77	PASS
Band17	5MHz	16QAM	23825	1RB#24	22.67	11.82	34.77	PASS
Band17	5MHz	16QAM	23825	12RB#0	21.57	10.72	34.77	PASS
Band17	5MHz	16QAM	23825	12RB#6	21.46	10.61	34.77	PASS
Band17	5MHz	16QAM	23825	12RB#13	21.64	10.79	34.77	PASS
Band17	5MHz	16QAM	23825	25RB#0	21.47	10.62	34.77	PASS
Band17	10MHz	QPSK	23780	1RB#0	23.37	12.52	34.77	PASS
Band17	10MHz	QPSK	23780	1RB#24	23.55	12.7	34.77	PASS
Band17	10MHz	QPSK	23780	1RB#49	23.63	12.78	34.77	PASS
Band17	10MHz	QPSK	23780	25RB#0	22.47	11.62	34.77	PASS
Band17	10MHz	QPSK	23780	25RB#12	22.48	11.63	34.77	PASS
Band17	10MHz	QPSK	23780	25RB#25	22.46	11.61	34.77	PASS
Band17	10MHz	QPSK	23780	50RB#0	22.39	11.54	34.77	PASS



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Band17	10MHz	QPSK	23790	1RB#0	23.41	12.56	34.77	PASS
Band17	10MHz	QPSK	23790	1RB#24	23.59	12.74	34.77	PASS
Band17	10MHz	QPSK	23790	1RB#49	23.67	12.82	34.77	PASS
Band17	10MHz	QPSK	23790	25RB#0	22.47	11.62	34.77	PASS
Band17	10MHz	QPSK	23790	25RB#12	22.50	11.65	34.77	PASS
Band17	10MHz	QPSK	23790	25RB#25	22.56	11.71	34.77	PASS
Band17	10MHz	QPSK	23790	50RB#0	22.45	11.6	34.77	PASS
Band17	10MHz	QPSK	23800	1RB#0	23.39	12.54	34.77	PASS
Band17	10MHz	QPSK	23800	1RB#24	23.60	12.75	34.77	PASS
Band17	10MHz	QPSK	23800	1RB#49	23.69	12.84	34.77	PASS
Band17	10MHz	QPSK	23800	25RB#0	22.54	11.69	34.77	PASS
Band17	10MHz	QPSK	23800	25RB#12	22.53	11.68	34.77	PASS
Band17	10MHz	QPSK	23800	25RB#25	22.47	11.62	34.77	PASS
Band17	10MHz	QPSK	23800	50RB#0	22.46	11.61	34.77	PASS
Band17	10MHz	64QAM	23780	1RB#0	21.59	10.74	34.77	PASS
Band17	10MHz	64QAM	23780	1RB#24	21.40	10.55	34.77	PASS
Band17	10MHz	64QAM	23780	1RB#49	21.80	10.95	34.77	PASS
Band17	10MHz	64QAM	23780	25RB#0	20.36	9.51	34.77	PASS
Band17	10MHz	64QAM	23780	25RB#12	20.44	9.59	34.77	PASS
Band17	10MHz	64QAM	23780	25RB#25	20.41	9.56	34.77	PASS
Band17	10MHz	64QAM	23780	50RB#0	20.30	9.45	34.77	PASS
Band17	10MHz	64QAM	23790	1RB#0	21.55	10.7	34.77	PASS
Band17	10MHz	64QAM	23790	1RB#24	21.51	10.66	34.77	PASS
Band17	10MHz	64QAM	23790	1RB#49	21.88	11.03	34.77	PASS
Band17	10MHz	64QAM	23790	25RB#0	20.37	9.52	34.77	PASS
Band17	10MHz	64QAM	23790	25RB#12	20.41	9.56	34.77	PASS
Band17	10MHz	64QAM	23790	25RB#25	20.41	9.56	34.77	PASS
Band17	10MHz	64QAM	23790	50RB#0	20.40	9.55	34.77	PASS
Band17	10MHz	64QAM	23800	1RB#0	21.49	10.64	34.77	PASS
Band17	10MHz	64QAM	23800	1RB#24	21.46	10.61	34.77	PASS
Band17	10MHz	64QAM	23800	1RB#49	21.78	10.93	34.77	PASS
Band17	10MHz	64QAM	23800	25RB#0	20.51	9.66	34.77	PASS
Band17	10MHz	64QAM	23800	25RB#12	20.40	9.55	34.77	PASS
Band17	10MHz	64QAM	23800	25RB#25	20.39	9.54	34.77	PASS
Band17	10MHz	64QAM	23800	50RB#0	20.35	9.5	34.77	PASS
Band17	10MHz	16QAM	23780	1RB#0	22.52	11.67	34.77	PASS
Band17	10MHz	16QAM	23780	1RB#24	22.57	11.72	34.77	PASS
Band17	10MHz	16QAM	23780	1RB#49	22.71	11.86	34.77	PASS



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Band17	10MHz	16QAM	23780	25RB#0	21.31	10.46	34.77	PASS
Band17	10MHz	16QAM	23780	25RB#12	21.38	10.53	34.77	PASS
Band17	10MHz	16QAM	23780	25RB#25	21.44	10.59	34.77	PASS
Band17	10MHz	16QAM	23780	50RB#0	21.31	10.46	34.77	PASS
Band17	10MHz	16QAM	23790	1RB#0	22.55	11.7	34.77	PASS
Band17	10MHz	16QAM	23790	1RB#24	22.55	11.7	34.77	PASS
Band17	10MHz	16QAM	23790	1RB#49	22.81	11.96	34.77	PASS
Band17	10MHz	16QAM	23790	25RB#0	21.41	10.56	34.77	PASS
Band17	10MHz	16QAM	23790	25RB#12	21.41	10.56	34.77	PASS
Band17	10MHz	16QAM	23790	25RB#25	21.49	10.64	34.77	PASS
Band17	10MHz	16QAM	23790	50RB#0	21.33	10.48	34.77	PASS
Band17	10MHz	16QAM	23800	1RB#0	22.53	11.68	34.77	PASS
Band17	10MHz	16QAM	23800	1RB#24	22.55	11.7	34.77	PASS
Band17	10MHz	16QAM	23800	1RB#49	22.89	12.04	34.77	PASS
Band17	10MHz	16QAM	23800	25RB#0	21.53	10.68	34.77	PASS
Band17	10MHz	16QAM	23800	25RB#12	21.47	10.62	34.77	PASS
Band17	10MHz	16QAM	23800	25RB#25	21.41	10.56	34.77	PASS
Band17	10MHz	16QAM	23800	50RB#0	21.37	10.52	34.77	PASS

Remark:

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

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

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

b: SGP=Signal Generator Level



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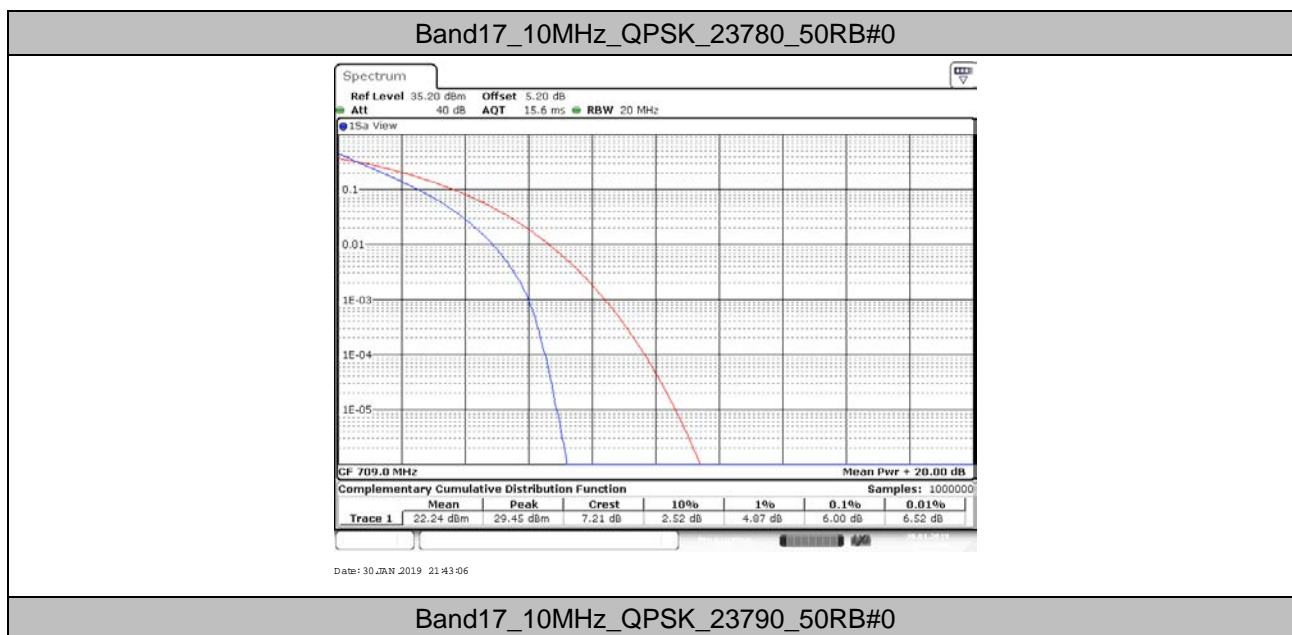


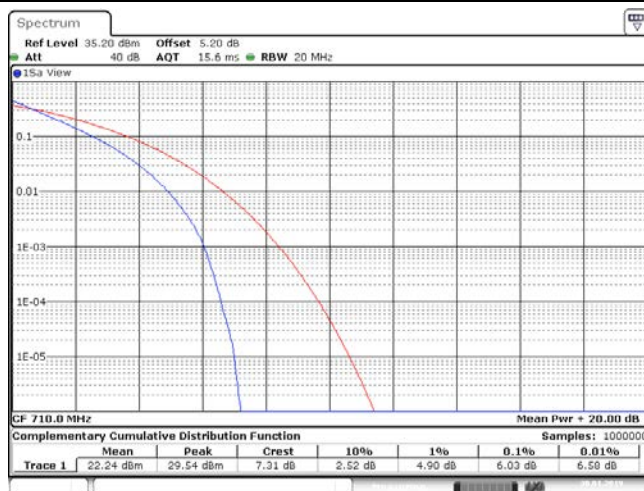
## 2. Peak-to-Average Ratio(CCDF)

### 2.1. Test Result

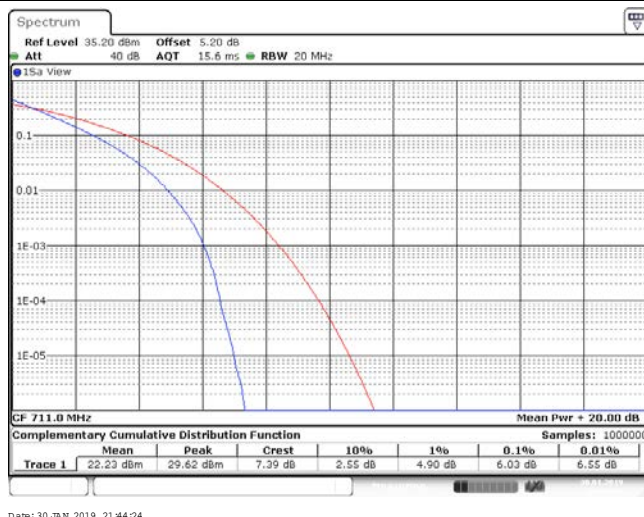
BAND	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
Band17	10MHz	QPSK	23780	50RB#0	6.00	13	PASS
Band17	10MHz	QPSK	23790	50RB#0	6.03	13	PASS
Band17	10MHz	QPSK	23800	50RB#0	6.03	13	PASS
Band17	10MHz	64QAM	23780	50RB#0	6.70	13	PASS
Band17	10MHz	64QAM	23790	50RB#0	6.93	13	PASS
Band17	10MHz	64QAM	23800	50RB#0	6.67	13	PASS
Band17	10MHz	16QAM	23780	50RB#0	6.64	13	PASS
Band17	10MHz	16QAM	23790	50RB#0	6.72	13	PASS
Band17	10MHz	16QAM	23800	50RB#0	6.75	13	PASS

### 2.2. Test Plots



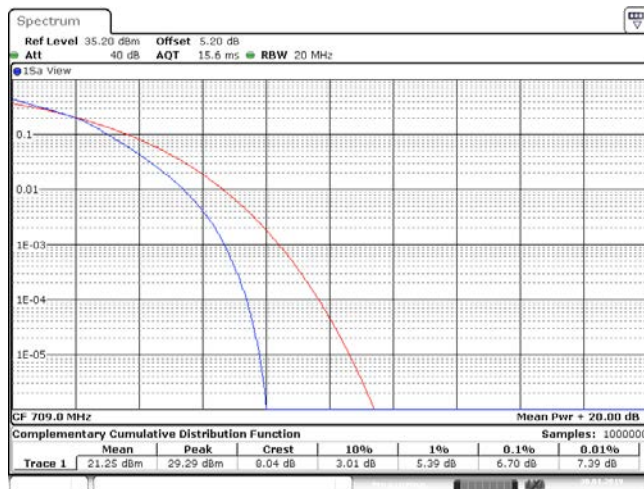


Band17\_10MHz\_QPSK\_23800\_50RB#0



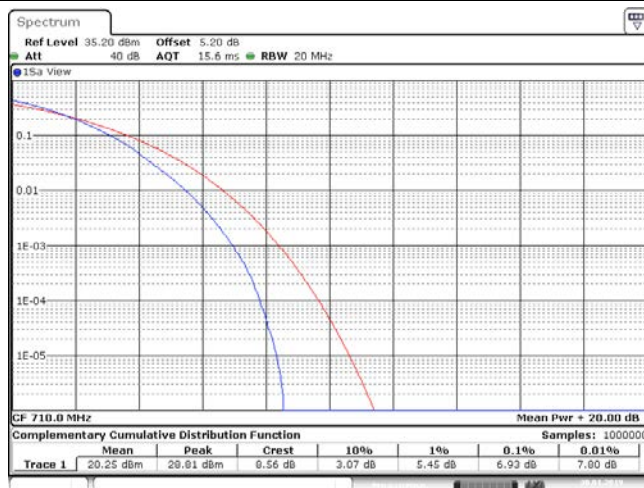
Band17\_10MHz\_64QAM\_23780\_50RB#0





Date: 30 JAN 2019 21:42:41

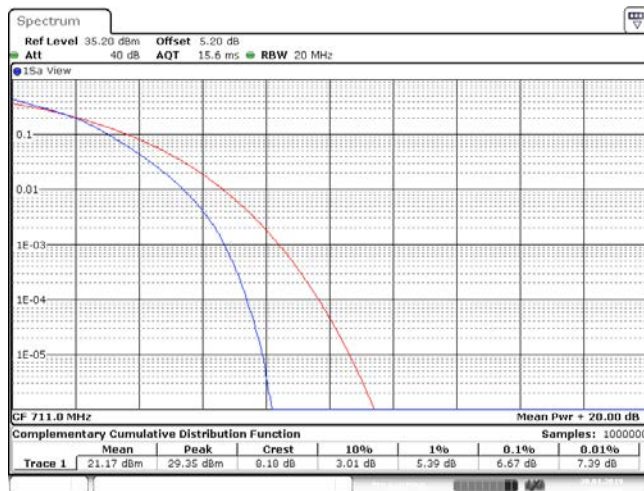
## Band17\_10MHz\_64QAM\_23790\_50RB#0



Date: 30 JAN 2019 21:43:19

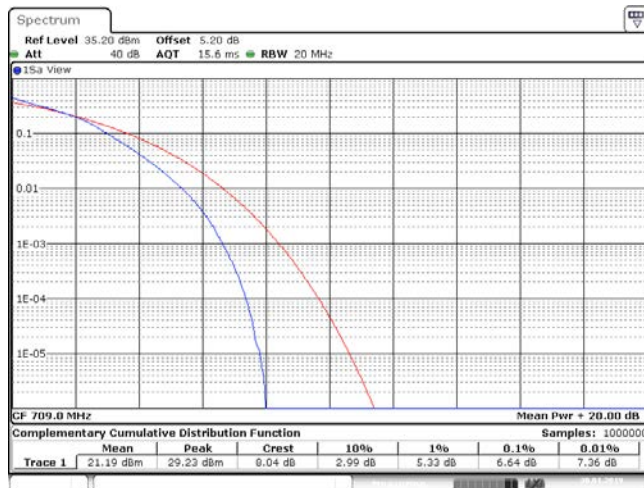
## Band17\_10MHz\_64QAM\_23800\_50RB#0





Date: 30 JAN 2019 21:43:58

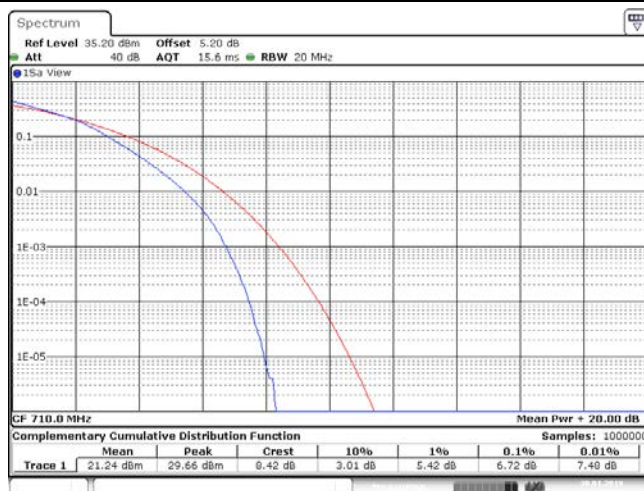
## Band17\_10MHz\_16QAM\_23780\_50RB#0



Date: 30 JAN 2019 21:42:54

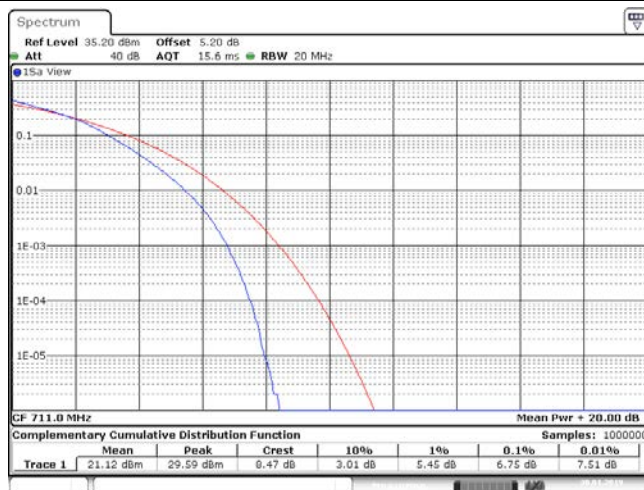
## Band17\_10MHz\_16QAM\_23790\_50RB#0





Date: 30 JAN 2019 21:43:02

## Band17\_10MHz\_16QAM\_23800\_50RB#0



Date: 30 JAN 2019 21:44:11

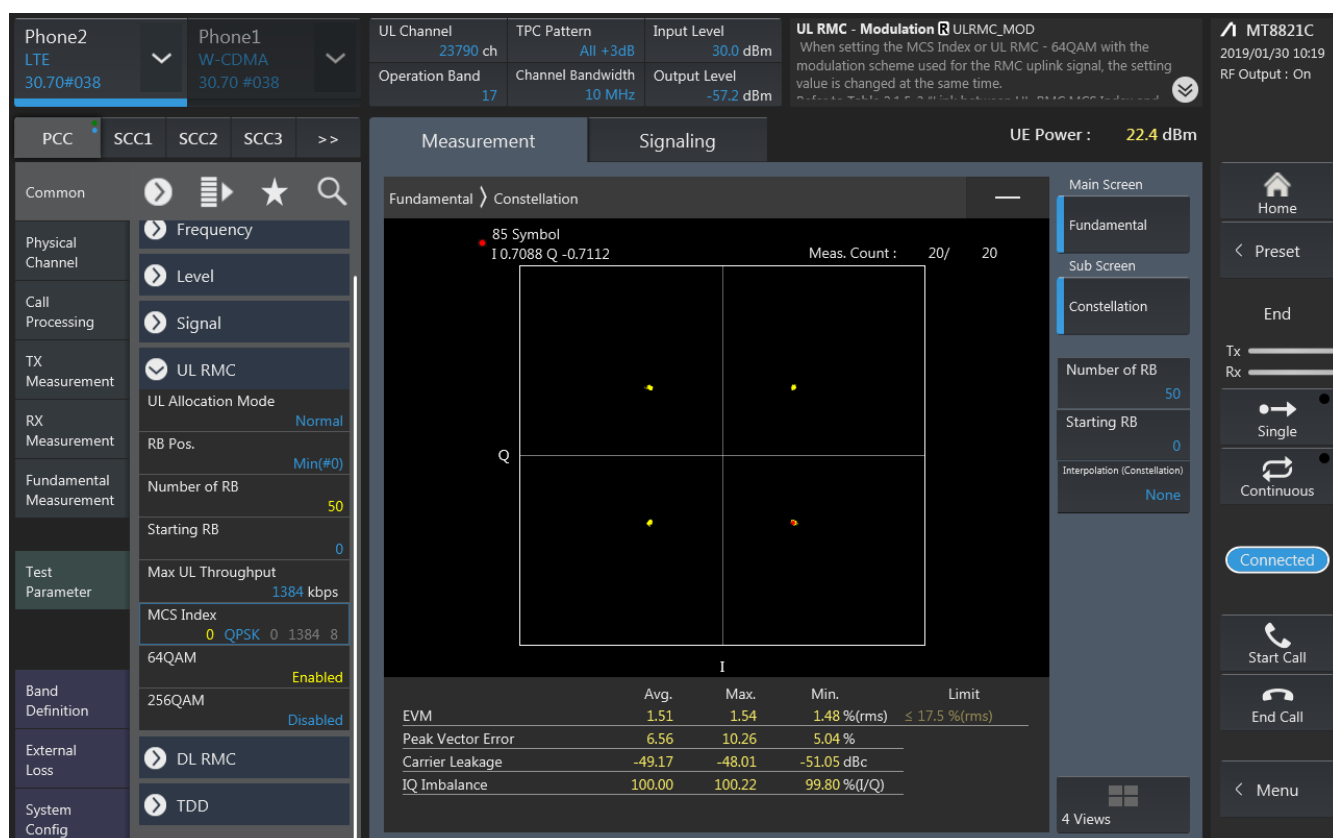


### 3. Modulation Characteristics

#### 3.1. Test BAND = LTE BAND17

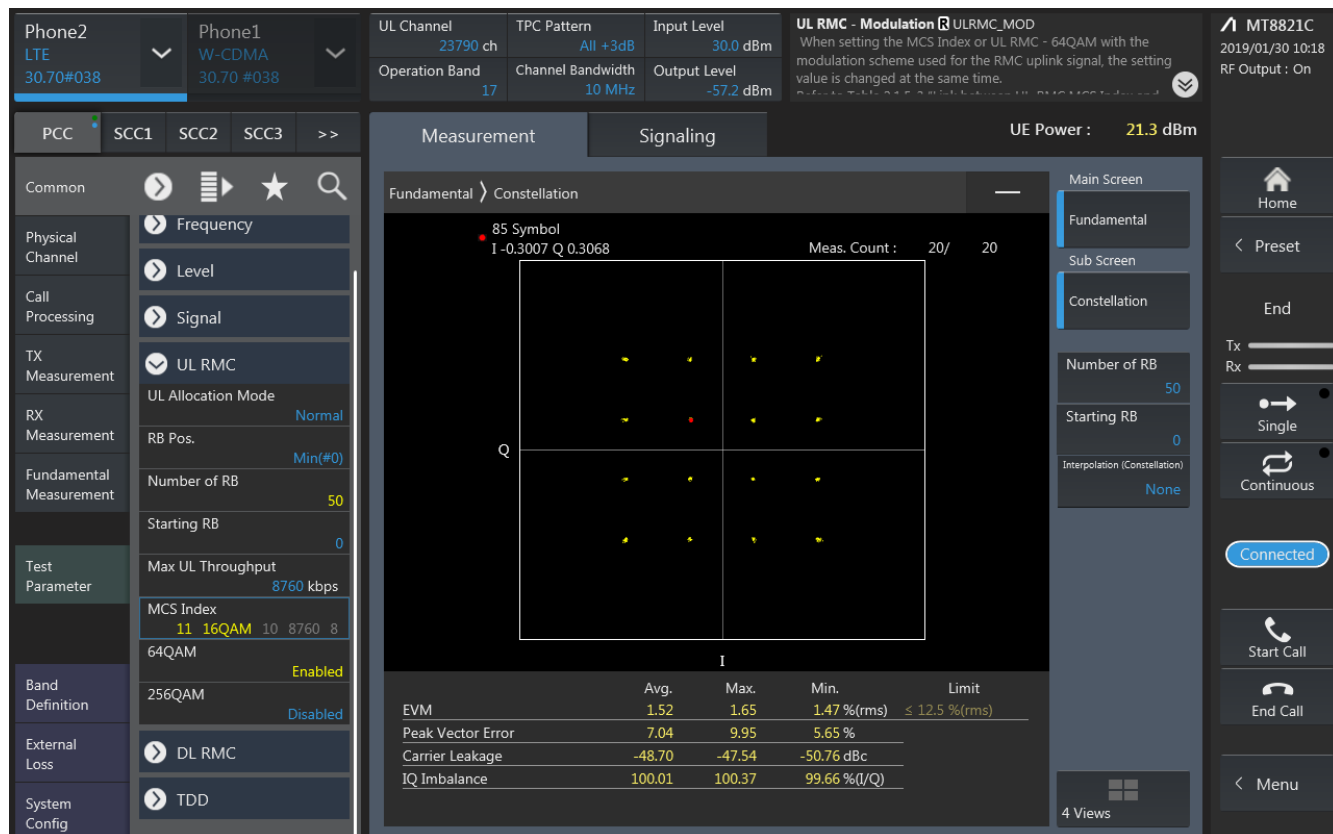
##### 3.1.1. Test Mode = LTE /TM1 10MHz

##### 3.1.1.1. Test Channel = MCH



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

#### 3.1.2.1. Test Channel = MCH



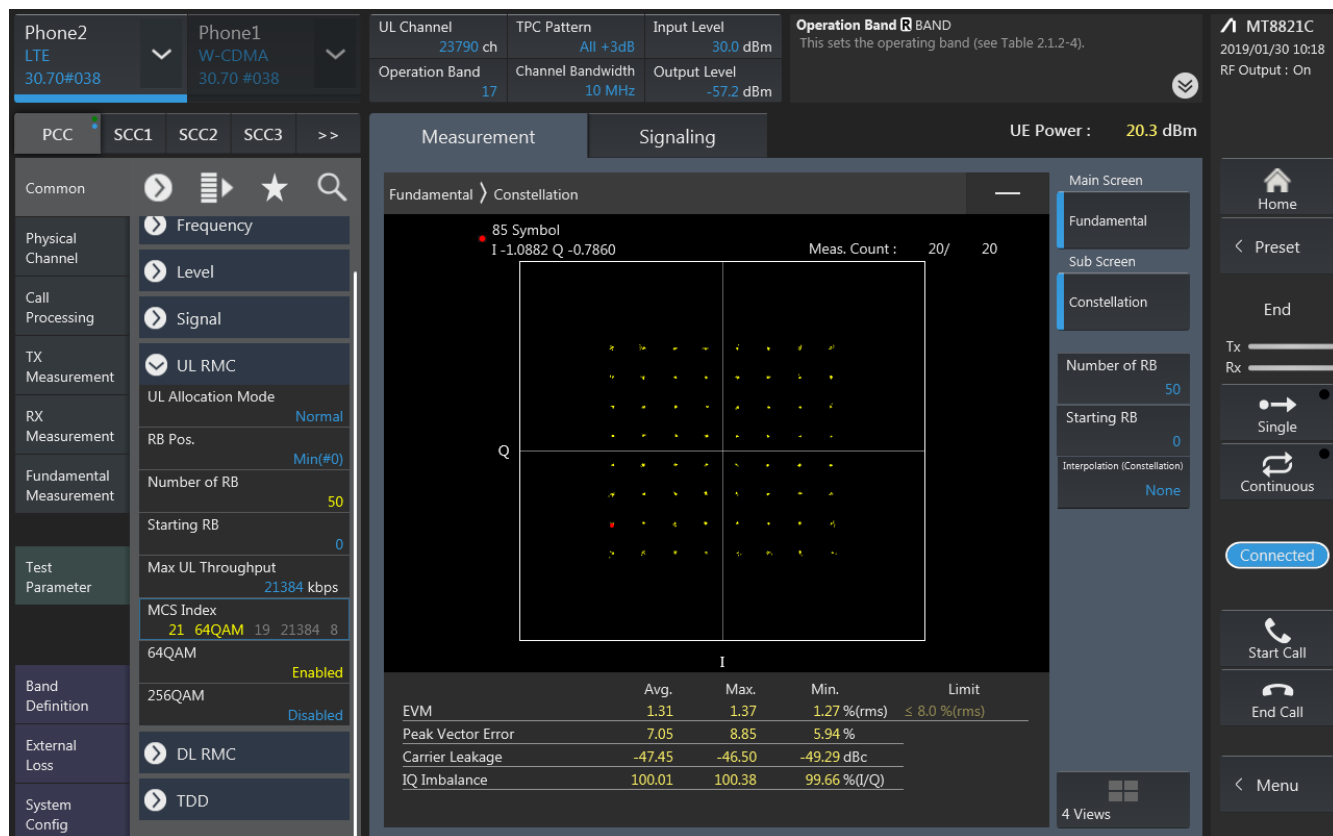
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Shenzhen Branch

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn  
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

### 3.1.3. Test Mode = LTE /TM3 20MHz

#### 3.1.3.1. Test Channel = MCH





## 4. 26dB Bandwidth and Occupied Bandwidth

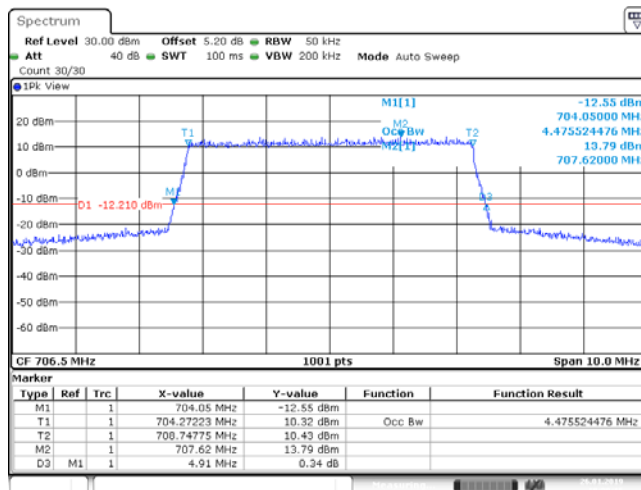
### 4.1. Test Result

BAND	Bandwidth	Modulation	Channel	RB Configuration	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)	Verdict
Band17	5MHz	QPSK	23755	25RB#0	4.476	4.910	PASS
Band17	5MHz	QPSK	23790	25RB#0	4.476	4.910	PASS
Band17	5MHz	QPSK	23825	25RB#0	4.486	4.890	PASS
Band17	5MHz	64QAM	23755	25RB#0	4.466	4.900	PASS
Band17	5MHz	64QAM	23790	25RB#0	4.476	4.880	PASS
Band17	5MHz	64QAM	23825	25RB#0	4.486	4.930	PASS
Band17	5MHz	16QAM	23755	25RB#0	4.486	4.880	PASS
Band17	5MHz	16QAM	23790	25RB#0	4.476	4.900	PASS
Band17	5MHz	16QAM	23825	25RB#0	4.476	4.890	PASS
Band17	10MHz	QPSK	23780	50RB#0	8.931	9.740	PASS
Band17	10MHz	QPSK	23790	50RB#0	8.931	9.700	PASS
Band17	10MHz	QPSK	23800	50RB#0	8.931	9.720	PASS
Band17	10MHz	64QAM	23780	50RB#0	8.911	9.700	PASS
Band17	10MHz	64QAM	23790	50RB#0	8.931	9.740	PASS
Band17	10MHz	64QAM	23800	50RB#0	8.931	9.760	PASS
Band17	10MHz	16QAM	23780	50RB#0	8.931	9.800	PASS
Band17	10MHz	16QAM	23790	50RB#0	8.931	9.780	PASS
Band17	10MHz	16QAM	23800	50RB#0	8.951	9.740	PASS

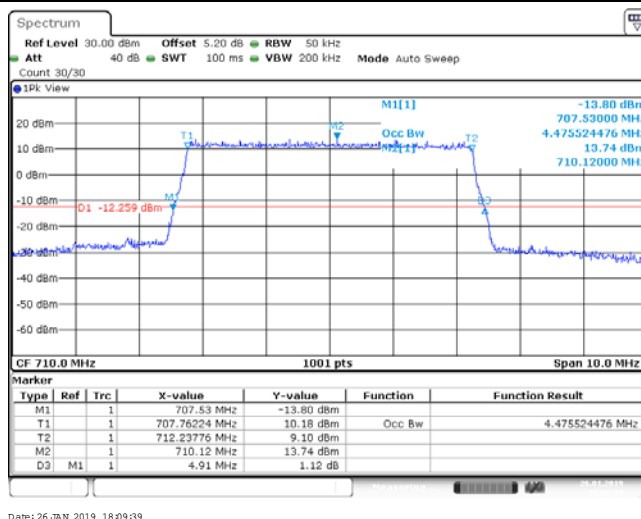


## 4.2. Test Plots

Band17\_5MHz\_QPSK\_23755\_25RB#0

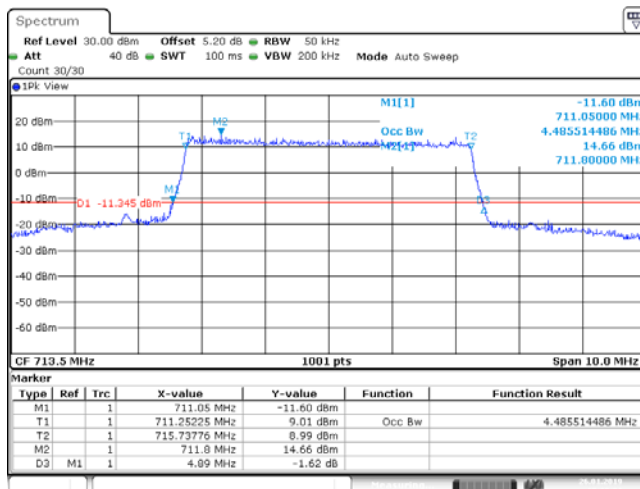


Band17\_5MHz\_QPSK\_23790\_25RB#0



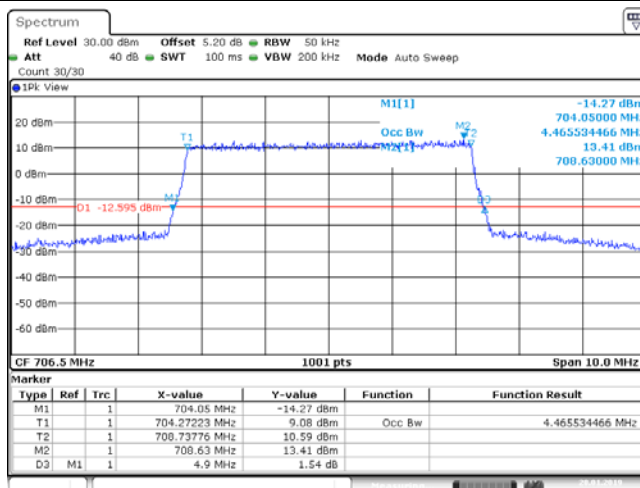
Band17\_5MHz\_QPSK\_23825\_25RB#0





Date: 26 JAN 2019 18:10:02

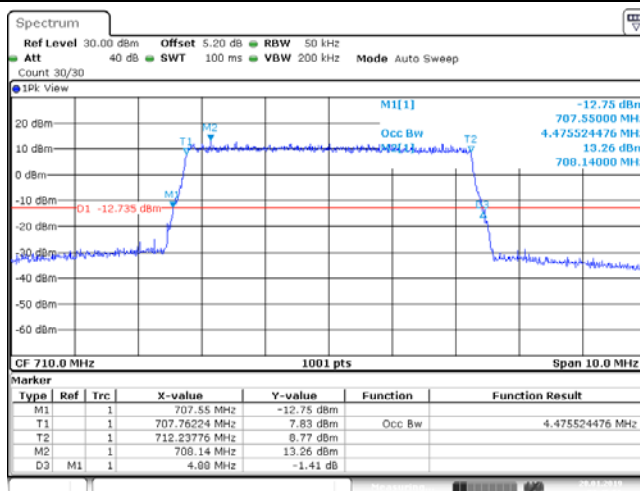
## Band17\_5MHz\_64QAM\_23755\_25RB#0



Date: 28 JAN 2019 22:45:43

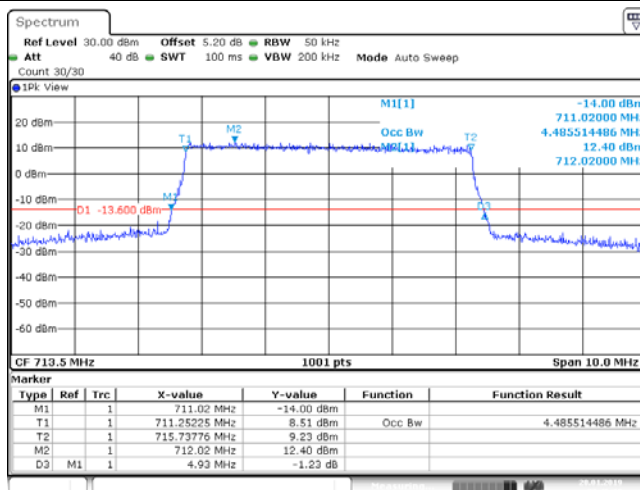
## Band17\_5MHz\_64QAM\_23790\_25RB#0





Date: 28 JAN 2019 22:45:57

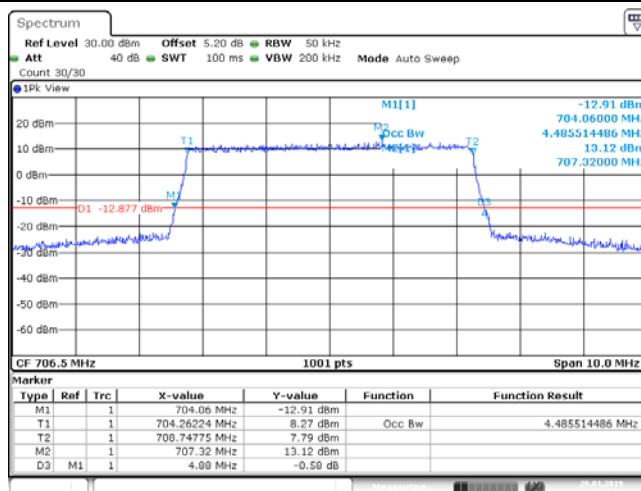
## Band17\_5MHz\_64QAM\_23825\_25RB#0



Date: 28 JAN 2019 22:46:00

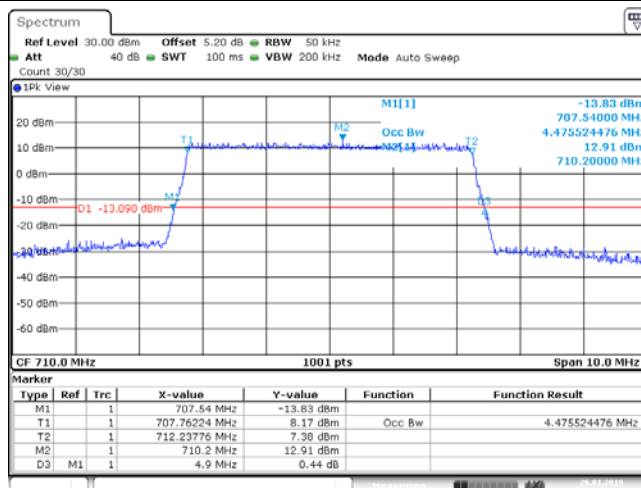
## Band17\_5MHz\_16QAM\_23755\_25RB#0





Date: 26 JAN 2019 18:09:26

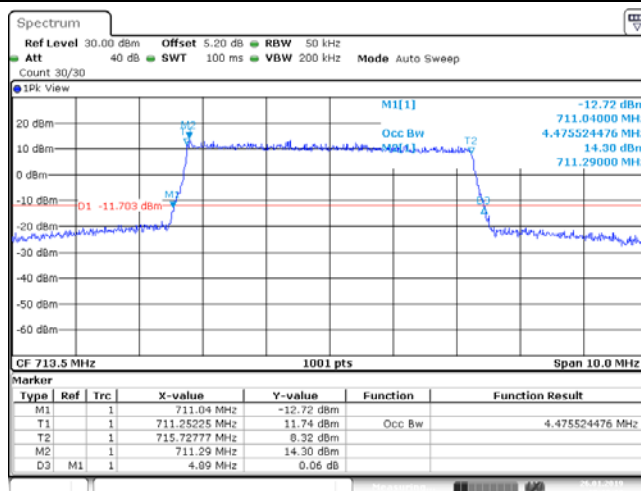
## Band17\_5MHz\_16QAM\_23790\_25RB#0



Date: 26 JAN 2019 18:09:49

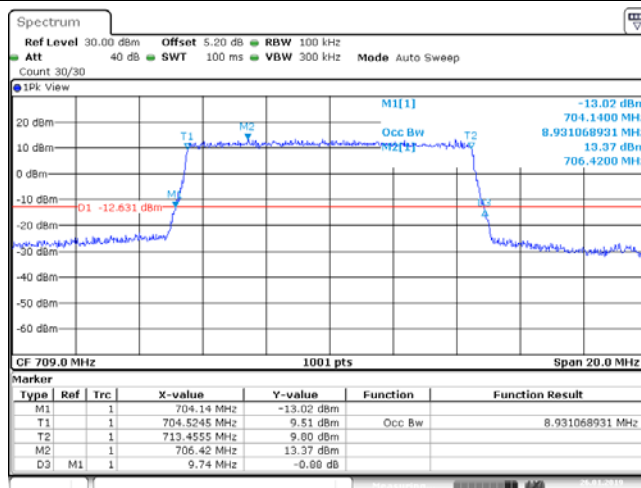
## Band17\_5MHz\_16QAM\_23825\_25RB#0





Date: 26 JAN 2019 18:10:12

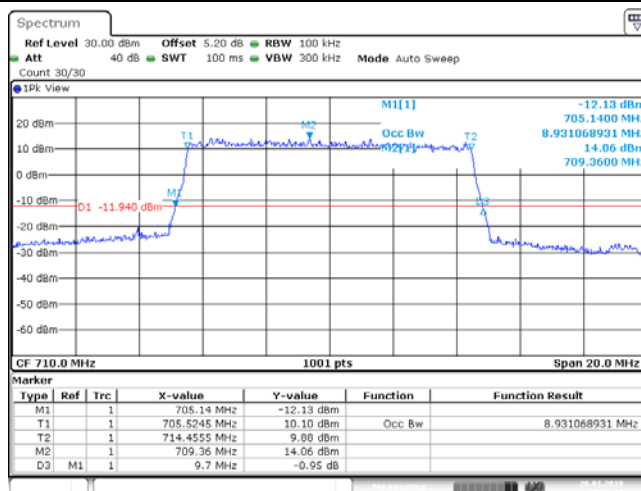
## Band17\_10MHz\_QPSK\_23780\_50RB#0



Date: 26 JAN 2019 18:11:08

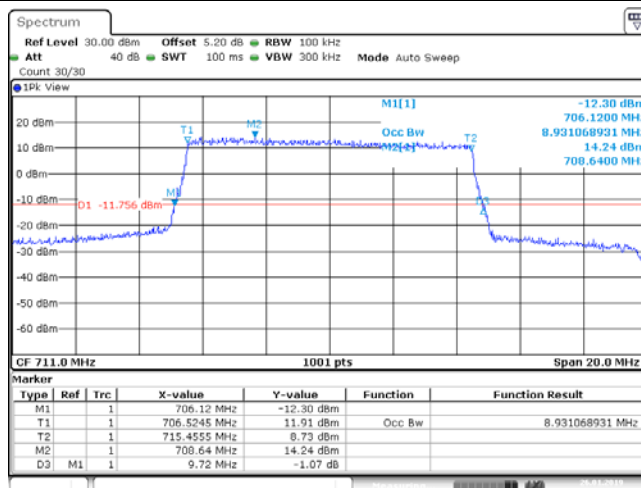
## Band17\_10MHz\_QPSK\_23790\_50RB#0





Date: 26 JAN 2019 18:11:32

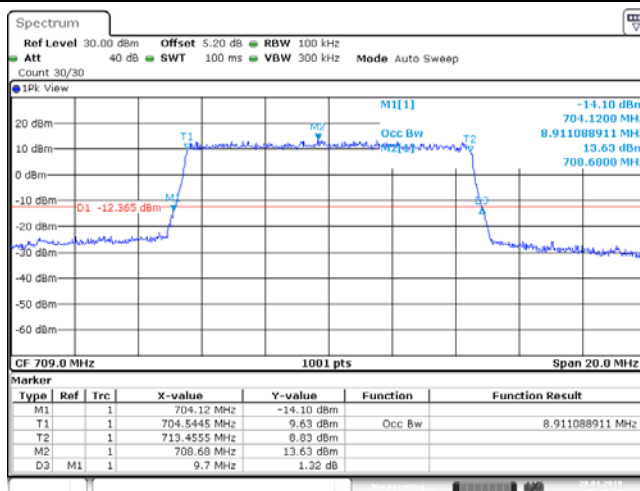
## Band17\_10MHz\_QPSK\_23800\_50RB#0



Date: 26 JAN 2019 18:11:55

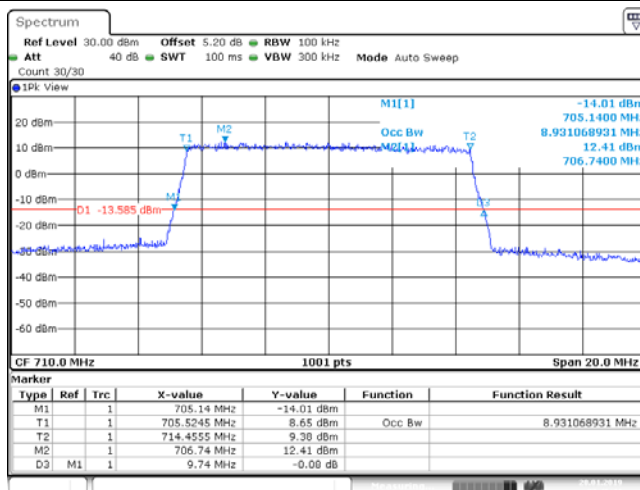
## Band17\_10MHz\_64QAM\_23780\_50RB#0





Date: 28 JAN 2019 22:46:28

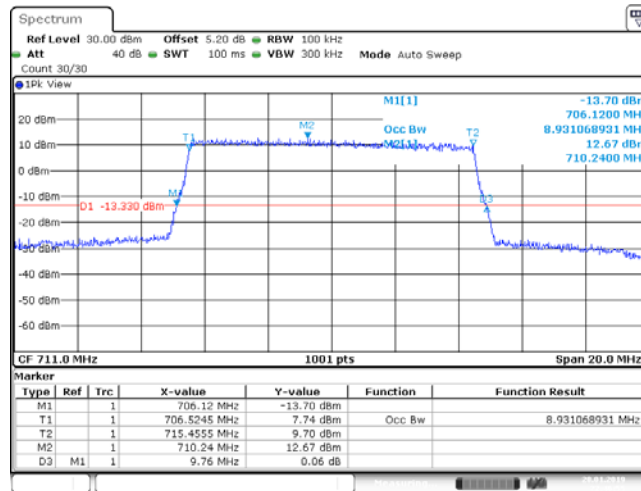
## Band17\_10MHz\_64QAM\_23790\_50RB#0



Date: 28 JAN 2019 22:46:42

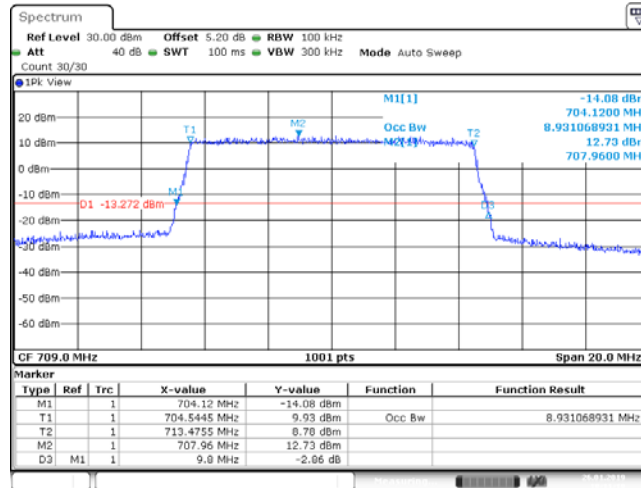
## Band17\_10MHz\_64QAM\_23800\_50RB#0





Date: 28 JAN 2019 22:46:55

## Band17\_10MHz\_16QAM\_23780\_50RB#0



Date: 26 JAN 2019 18:11:19

## Band17\_10MHz\_16QAM\_23790\_50RB#0

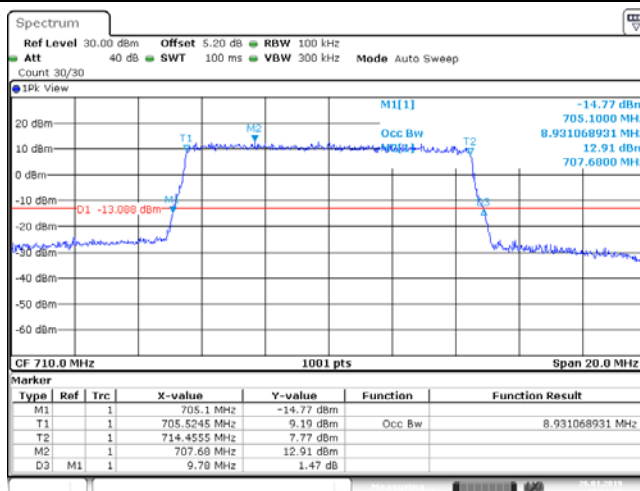


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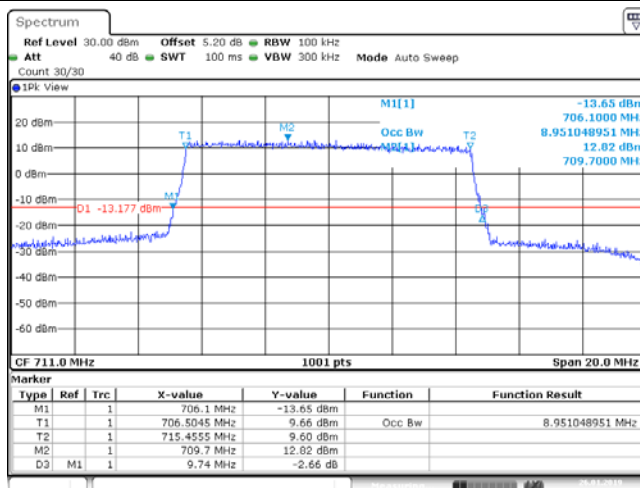
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Date: 26 JAN 2019 18:11:42

## Band17\_10MHz\_16QAM\_23800\_50RB#0



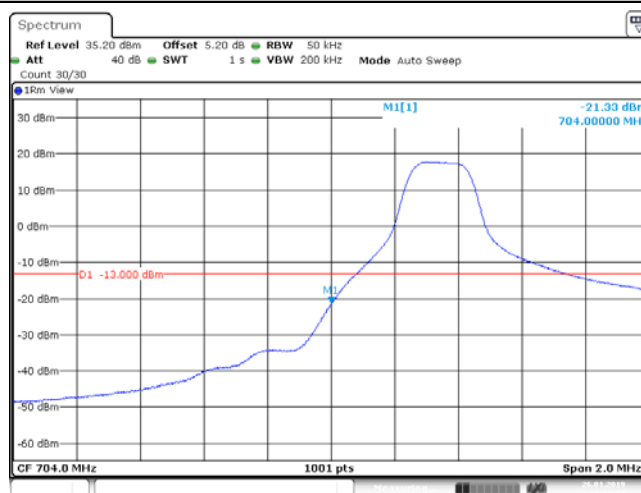
Date: 26 JAN 2019 18:12:05



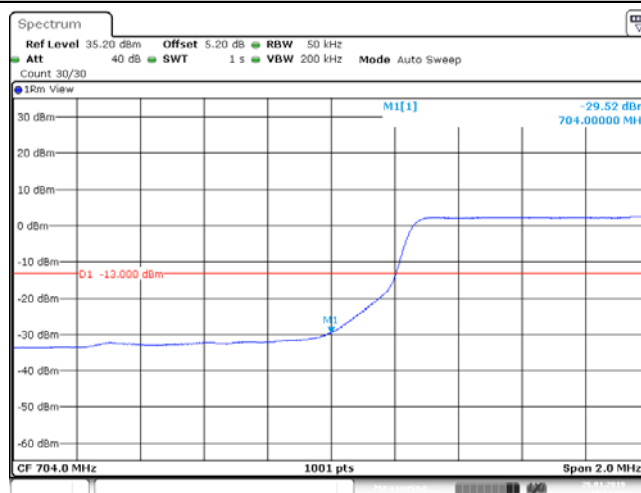
## 5. Band Edge Compliance

### 5.1. Test Plots

Band17\_5MHz\_QPSK\_23755\_1RB#0

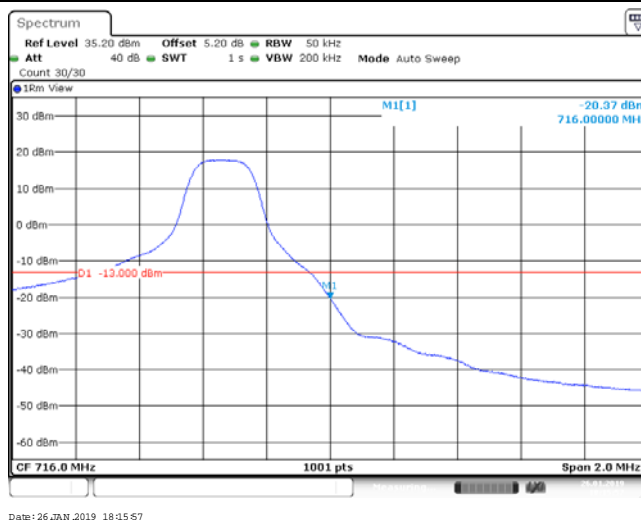


Band17\_5MHz\_QPSK\_23755\_25RB#0

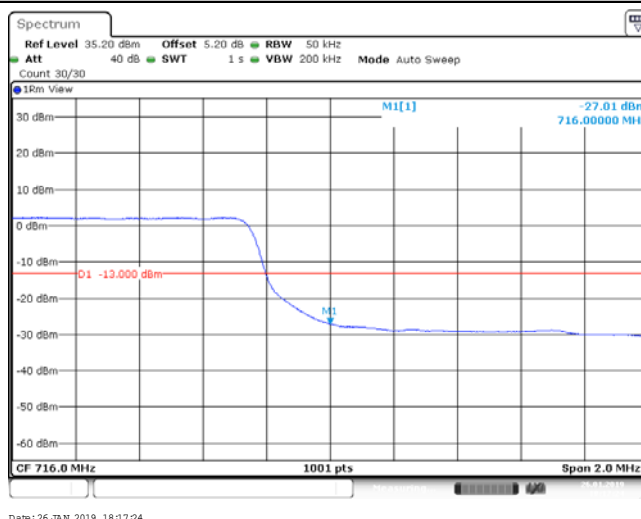


Band17\_5MHz\_QPSK\_23825\_1RB#24



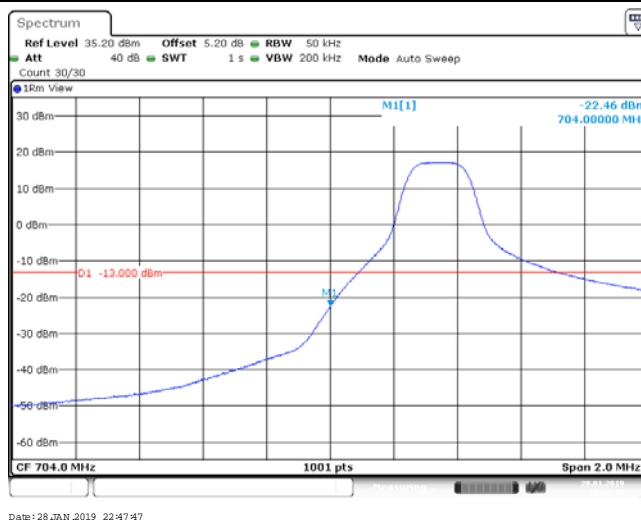


Band17\_5MHz\_QPSK\_23825\_25RB#0

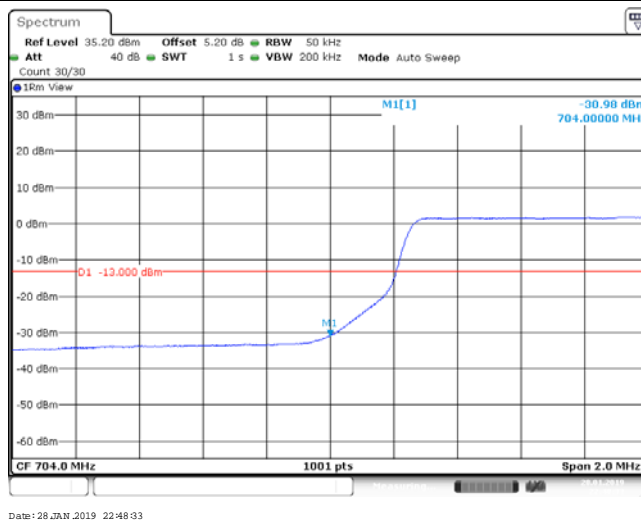


Band17\_5MHz\_64QAM\_23755\_1RB#0



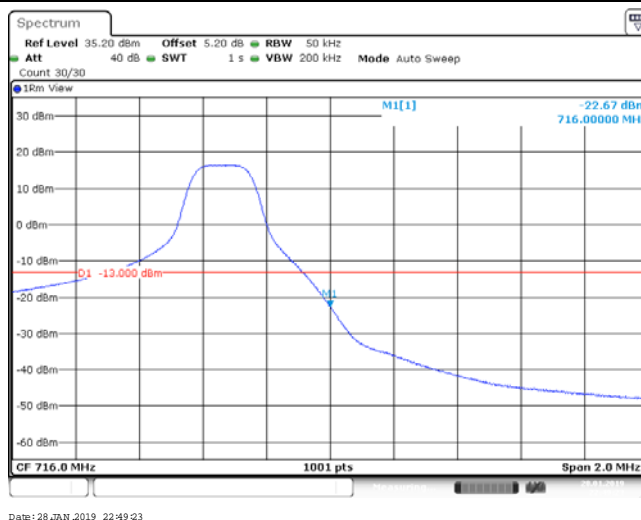


Band17\_5MHz\_64QAM\_23755\_25RB#0

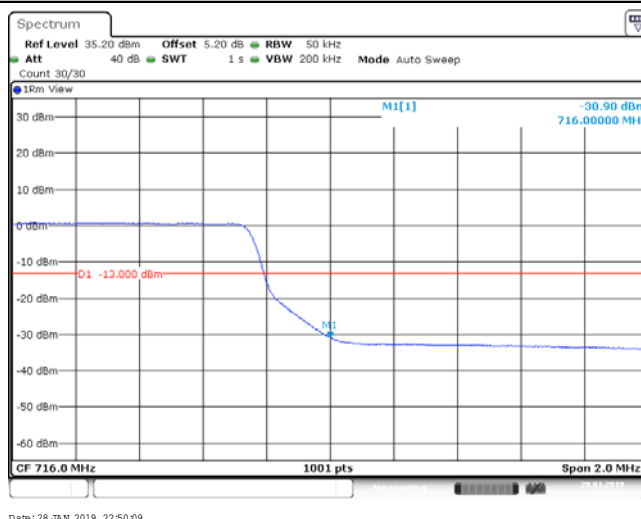


Band17\_5MHz\_64QAM\_23825\_1RB#24



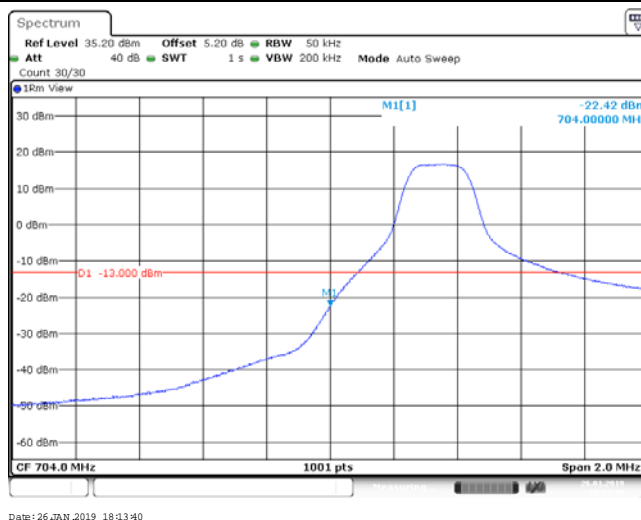


Band17\_5MHz\_64QAM\_23825\_25RB#0

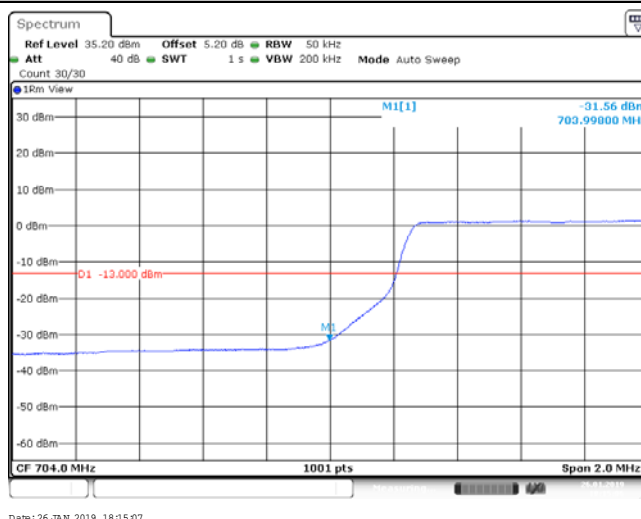


Band17\_5MHz\_16QAM\_23755\_1RB#0



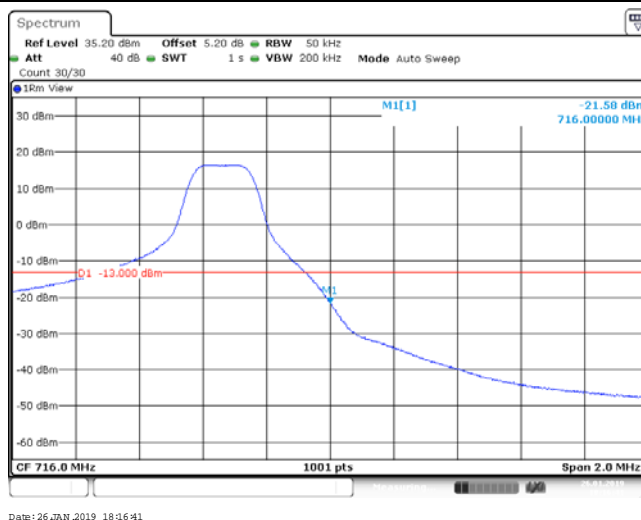


Band17\_5MHz\_16QAM\_23755\_25RB#0



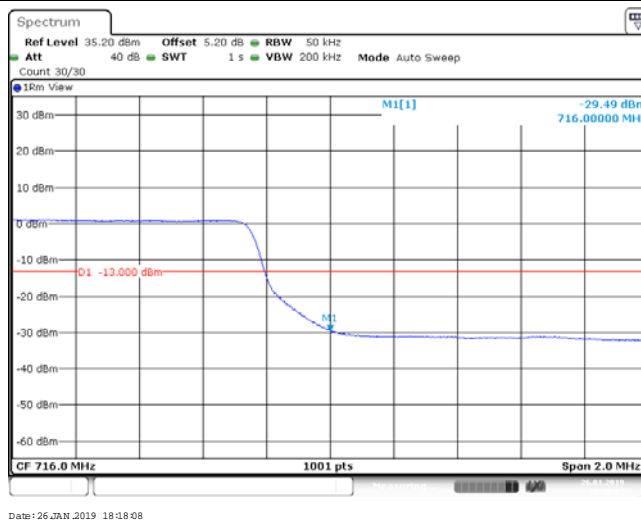
Band17\_5MHz\_16QAM\_23825\_1RB#24





Date: 26 JAN 2019 18:16:41

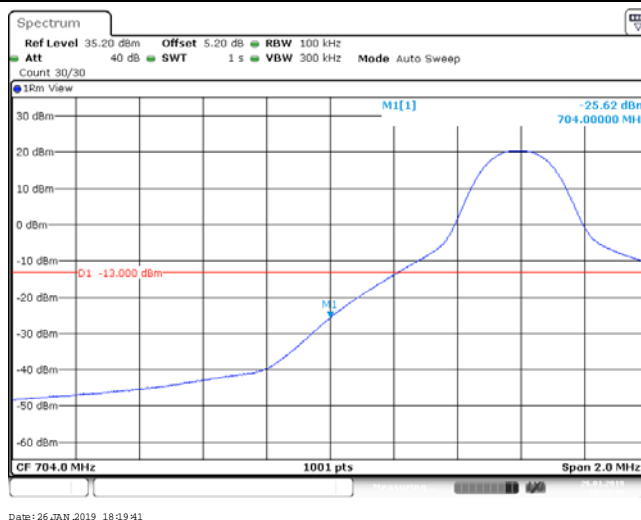
Band17\_5MHz\_16QAM\_23825\_25RB#0



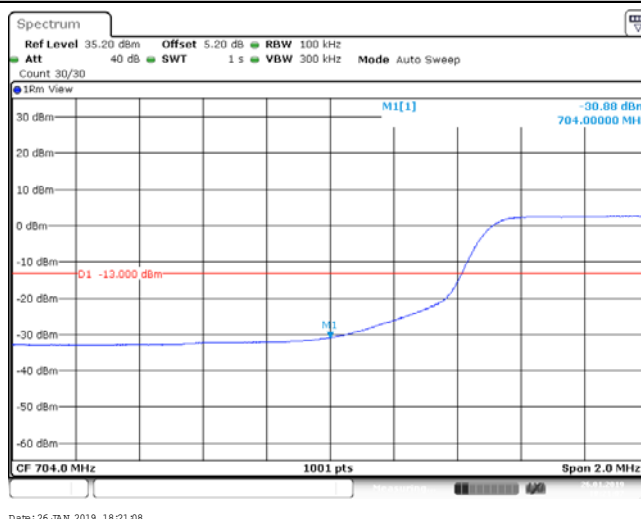
Date: 26 JAN 2019 18:18:08

Band17\_10MHz\_QPSK\_23780\_1RB#0



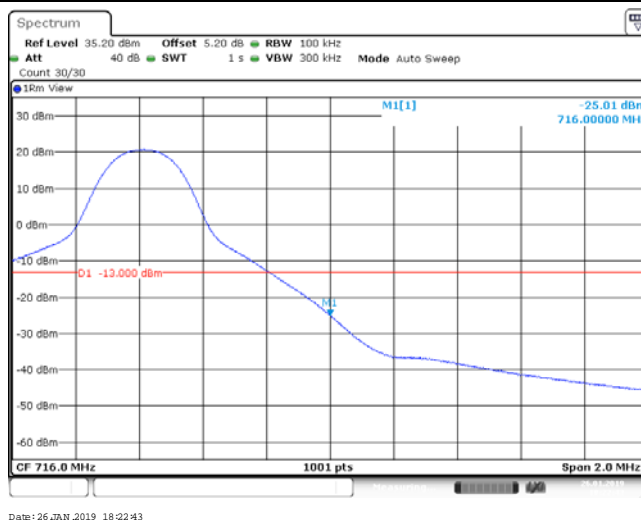


Band17\_10MHz\_QPSK\_23780\_50RB#0

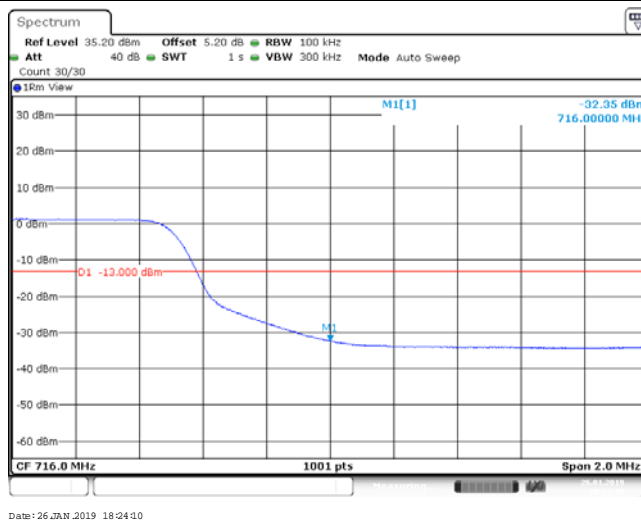


Band17\_10MHz\_QPSK\_23800\_1RB#49



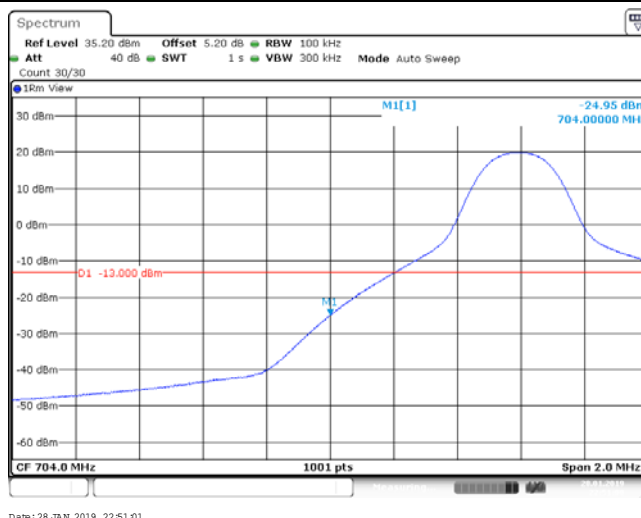


Band17\_10MHz\_QPSK\_23800\_50RB#0



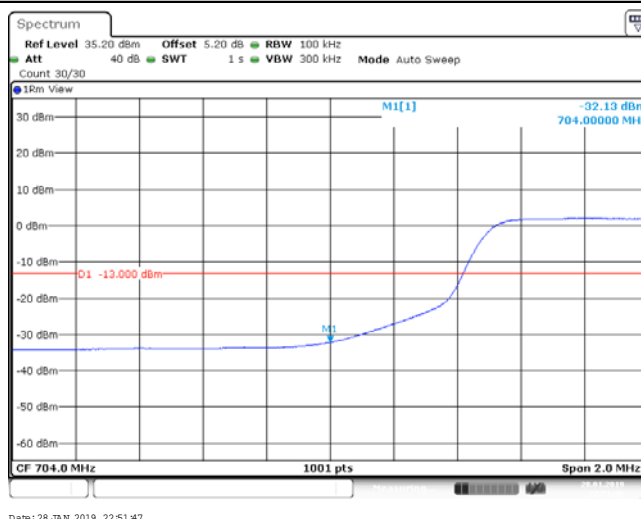
Band17\_10MHz\_64QAM\_23780\_1RB#0





Date: 28 JAN 2019 22:51:01

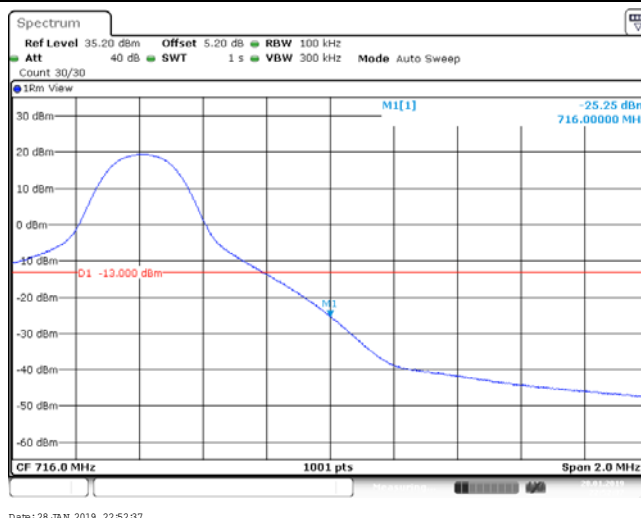
Band17\_10MHz\_64QAM\_23780\_50RB#0



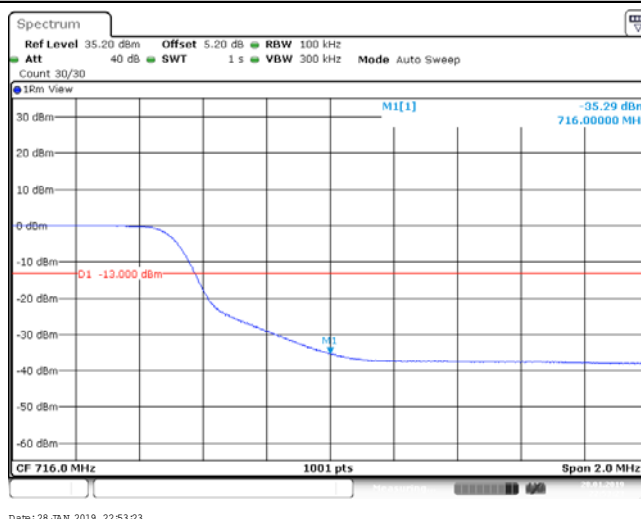
Date: 28 JAN 2019 22:51:47

Band17\_10MHz\_64QAM\_23800\_1RB#49



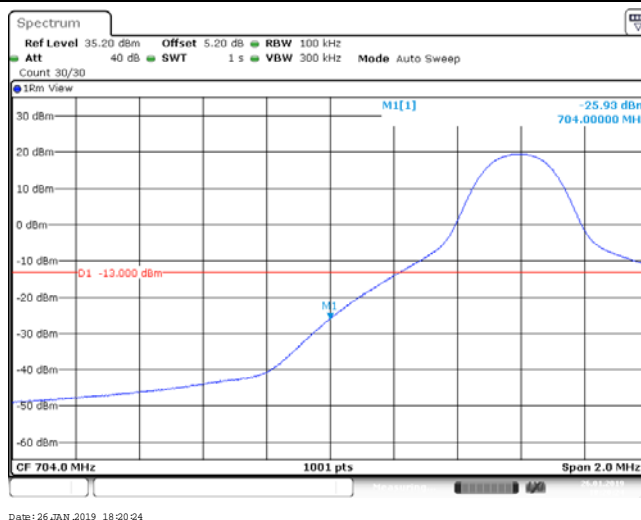


Band17\_10MHz\_64QAM\_23800\_50RB#0

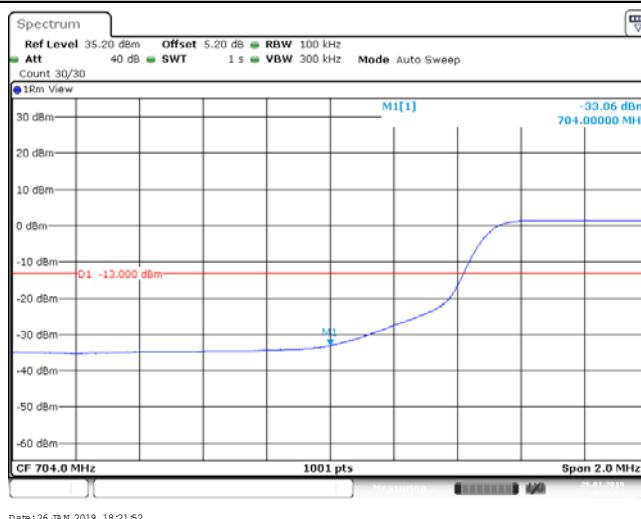


Band17\_10MHz\_16QAM\_23780\_1RB#0



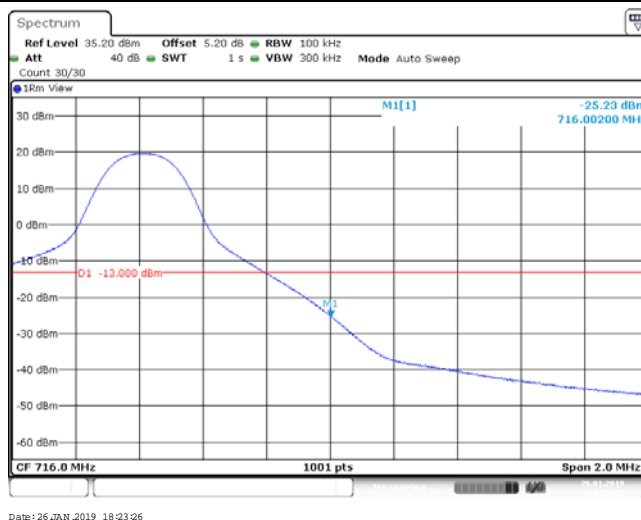


Band17\_10MHz\_16QAM\_23780\_50RB#0

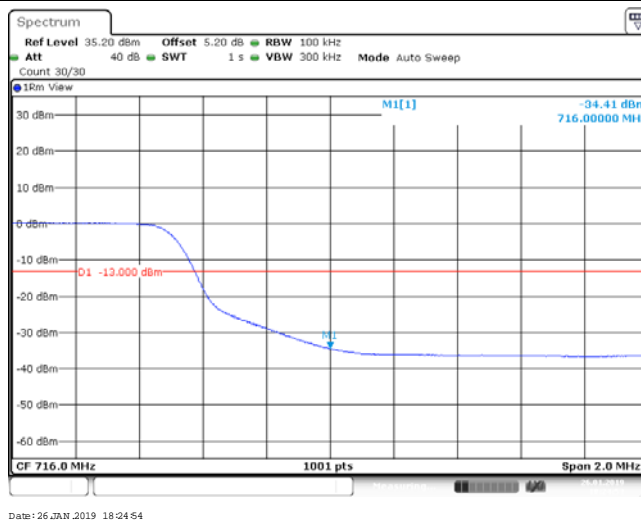


Band17\_10MHz\_16QAM\_23800\_1RB#49





## Band17\_10MHz\_16QAM\_23800\_50RB#0



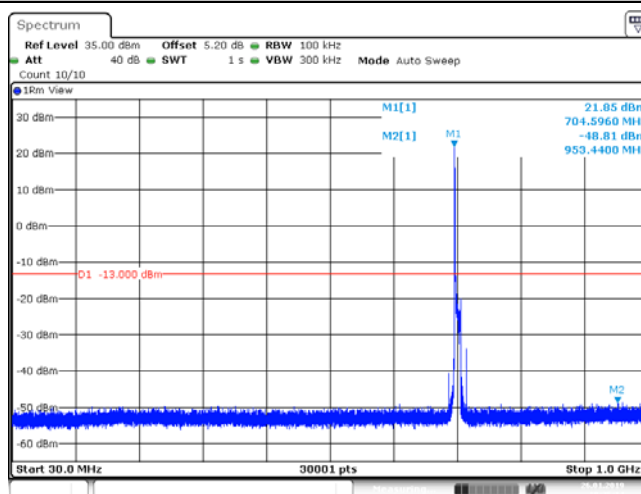
## 6. Spurious Emission at Antenna Terminal

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.

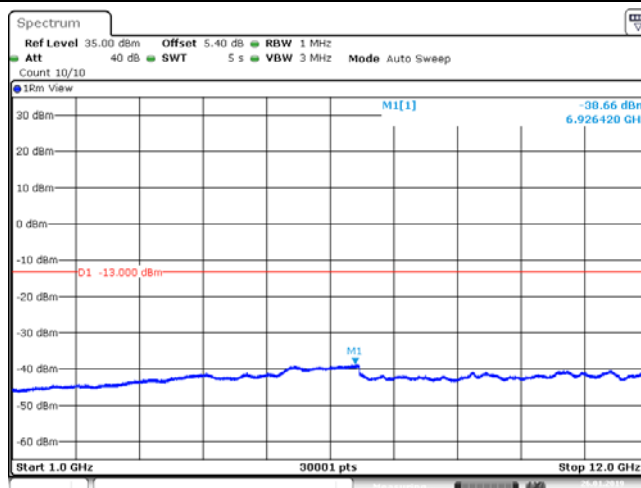
### 6.1. Test Plots

Band17\_10MHz\_QPSK\_23780\_1RB#0



Date: 26 JAN 2019 18:25:14

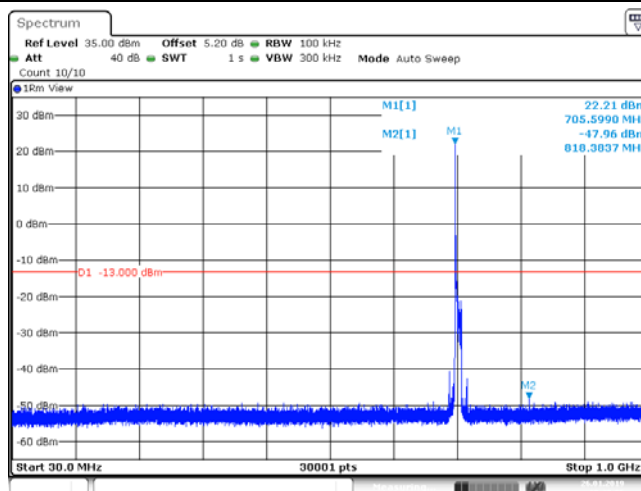
Band17\_10MHz\_QPSK\_23780\_1RB#0



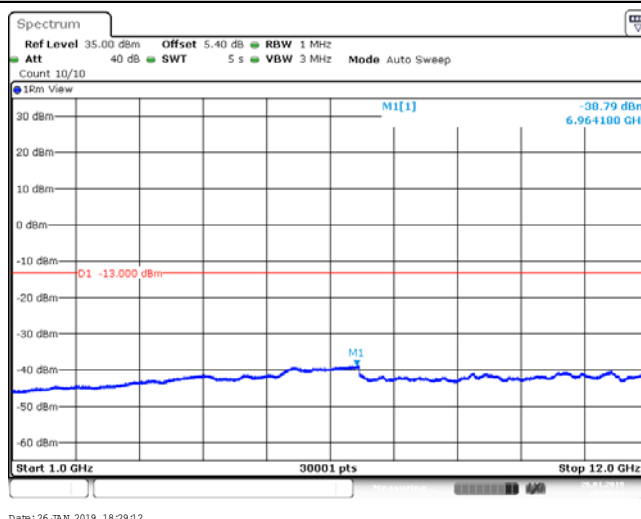
Date: 26 JAN 2019 18:26:21

Band17\_10MHz\_QPSK\_23790\_1RB#0



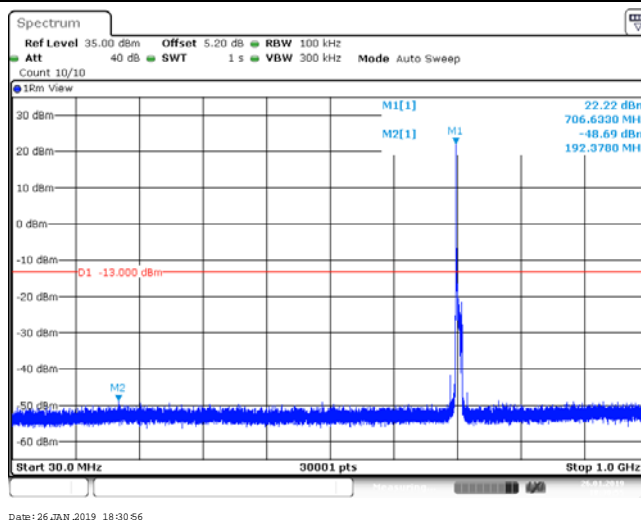


Band17\_10MHz\_QPSK\_23790\_1RB#0

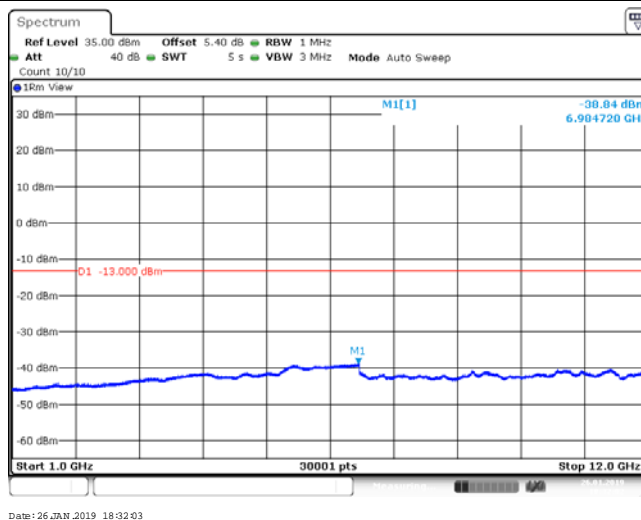


Band17\_10MHz\_QPSK\_23800\_1RB#0



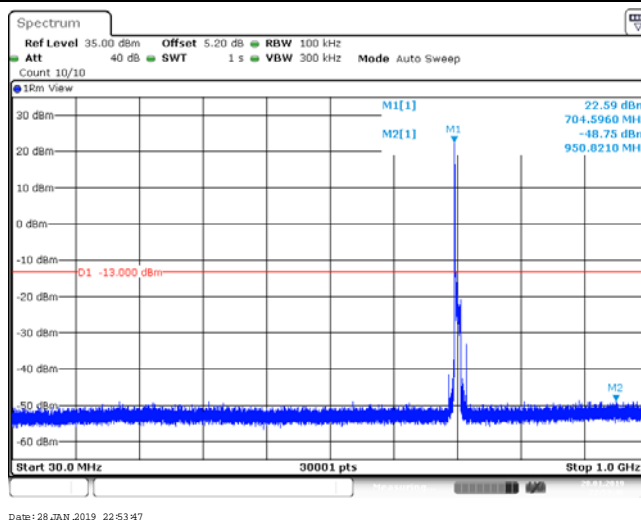


Band17\_10MHz\_QPSK\_23800\_1RB#0

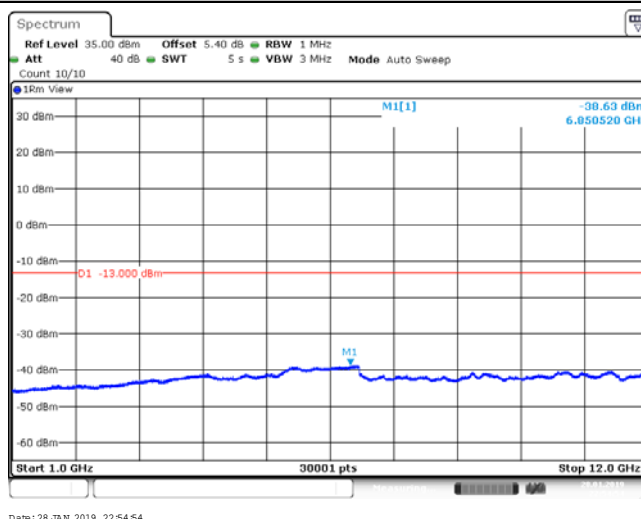


Band17\_10MHz\_64QAM\_23780\_1RB#0



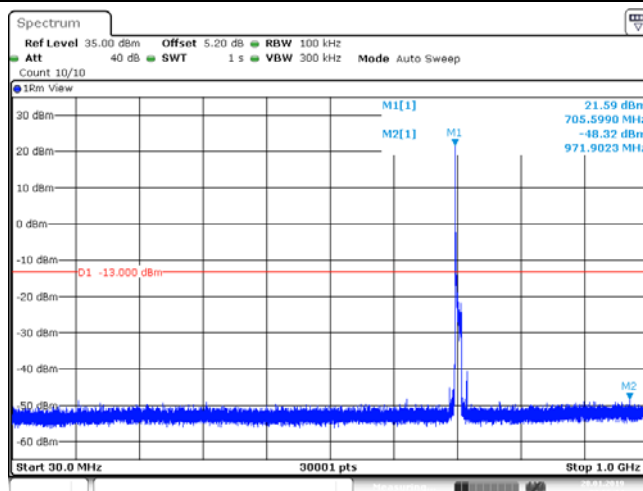


Band17\_10MHz\_64QAM\_23780\_1RB#0



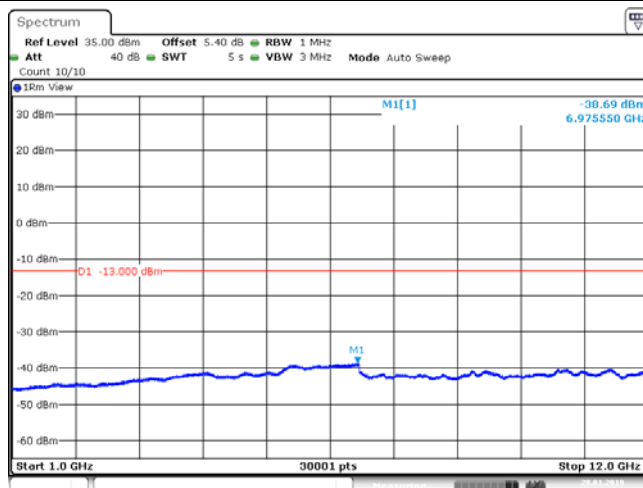
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Date: 28 JAN 2019 22:55:14

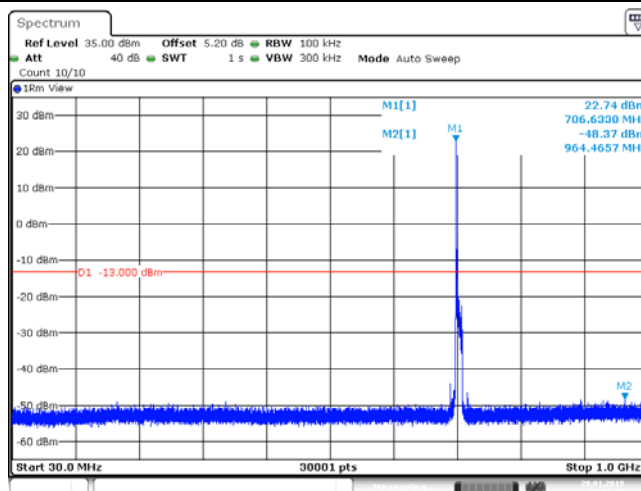
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Date: 28 JAN 2019 22:56:22

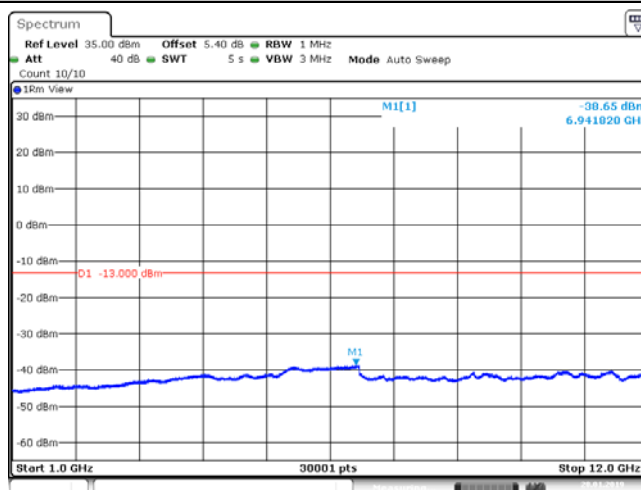
Band17\_10MHz\_64QAM\_23800\_1RB#0





Date: 28 JAN 2019 22:56:41

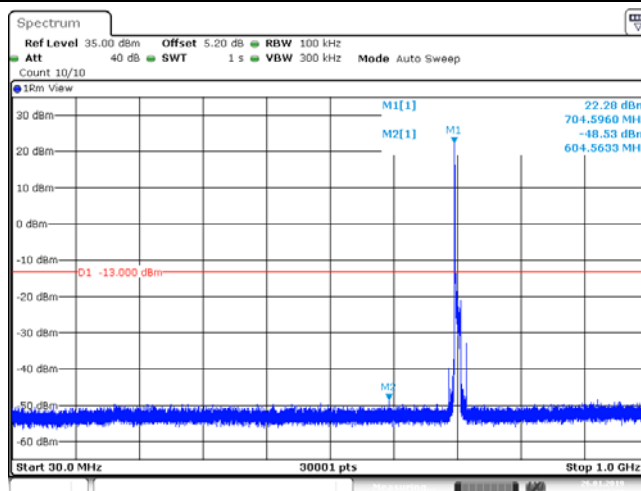
Band17\_10MHz\_64QAM\_23800\_1RB#0



Date: 28 JAN 2019 22:57:49

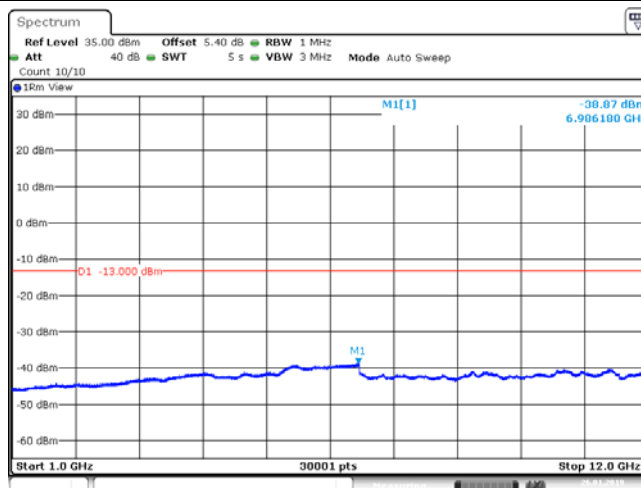
Band17\_10MHz\_16QAM\_23780\_1RB#0





Date: 26 JAN 2019 18:26:38

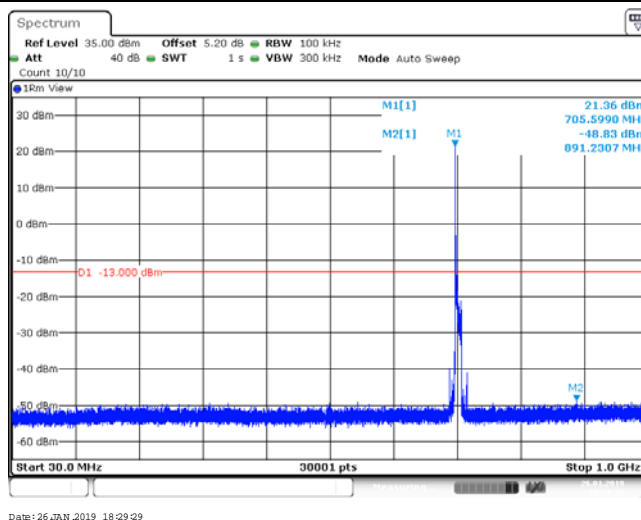
Band17\_10MHz\_16QAM\_23780\_1RB#0



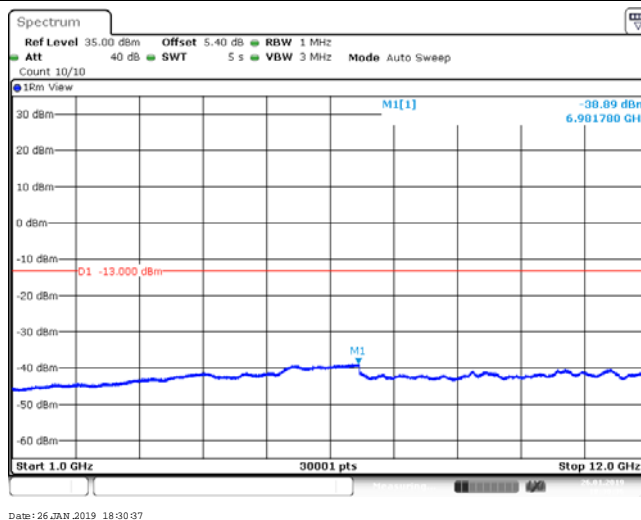
Date: 26 JAN 2019 18:27:46

Band17\_10MHz\_16QAM\_23790\_1RB#0



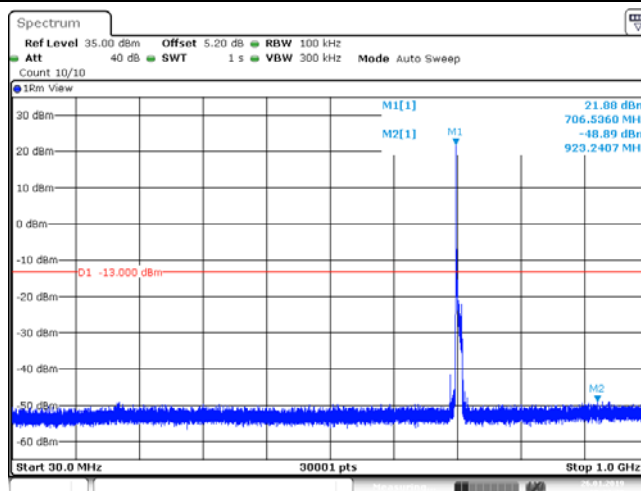


Band17\_10MHz\_16QAM\_23790\_1RB#0



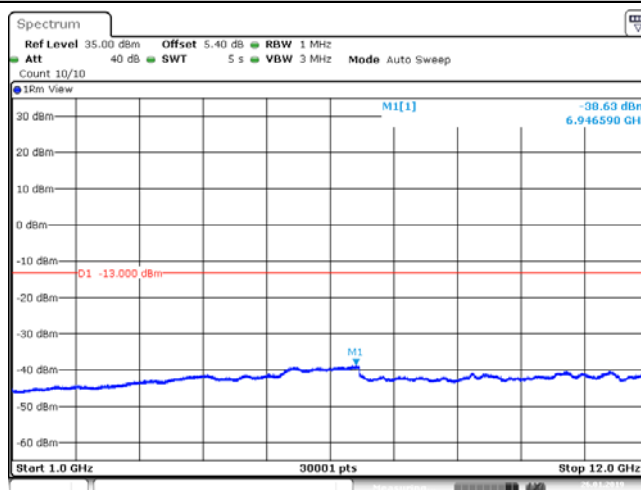
Band17\_10MHz\_16QAM\_23800\_1RB#0





Date: 26 JAN 2019 18:32:20

## Band17\_10MHz\_16QAM\_23800\_1RB#0



Date: 26 JAN 2019 18:33:27



## 7. Field Strength of Spurious Radiation

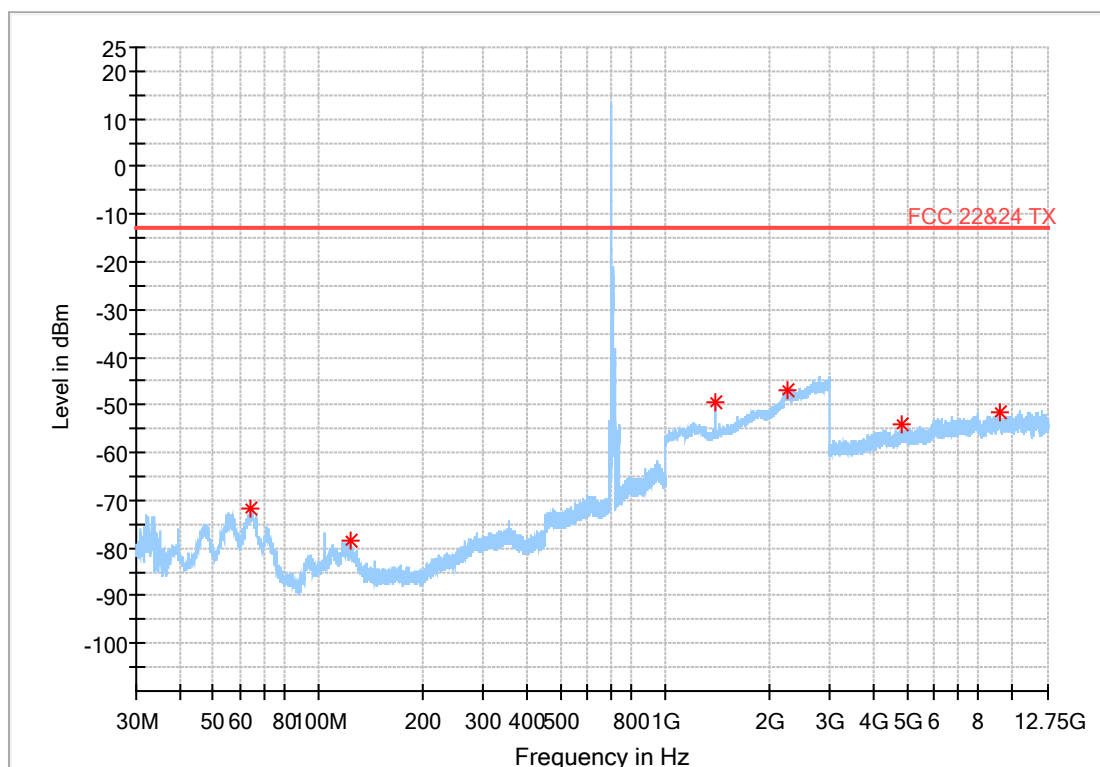
### 7.1. Main Antenna

#### 7.1.1. Test BAND = LTE BAND 17

##### 7.1.1.1. Test Mode =LTE/TM1

##### 7.1.1.1.1. LCH-Vertical

Full Spectrum



### Critical\_Freqs

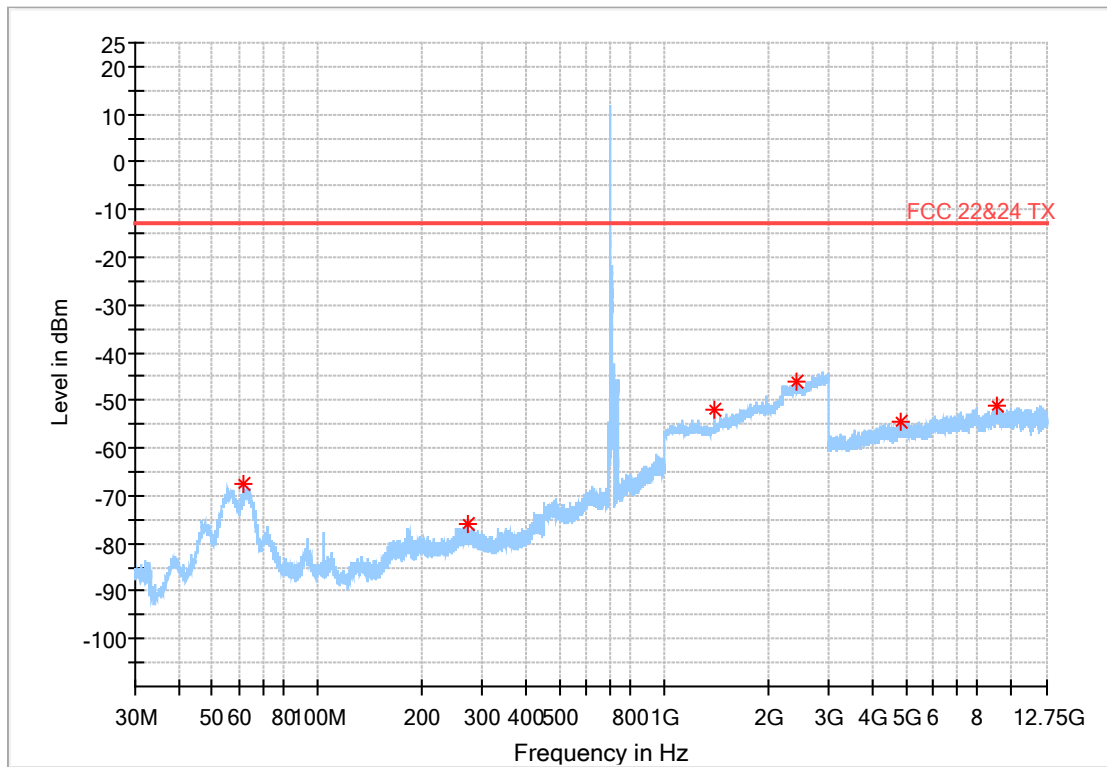
Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
64.393333	-71.85	-13.00	58.85	---	---	200.0	V	312.0	-99.9
124.920000	-78.35	-13.00	65.35	---	---	200.0	V	264.0	-103.7
1409.000000	-49.63	-13.00	36.63	---	---	200.0	V	141.0	-89.6
2256.000000	-46.82	-13.00	33.82	---	---	200.0	V	286.0	-81.4
4843.075000	-54.20	-13.00	41.20	---	---	200.0	V	0.0	-101.9
9309.225000	-51.50	-13.00	38.50	---	---	200.0	V	0.0	-97.0





#### 7.1.1.1.2. LCH-Horizontal

Full Spectrum



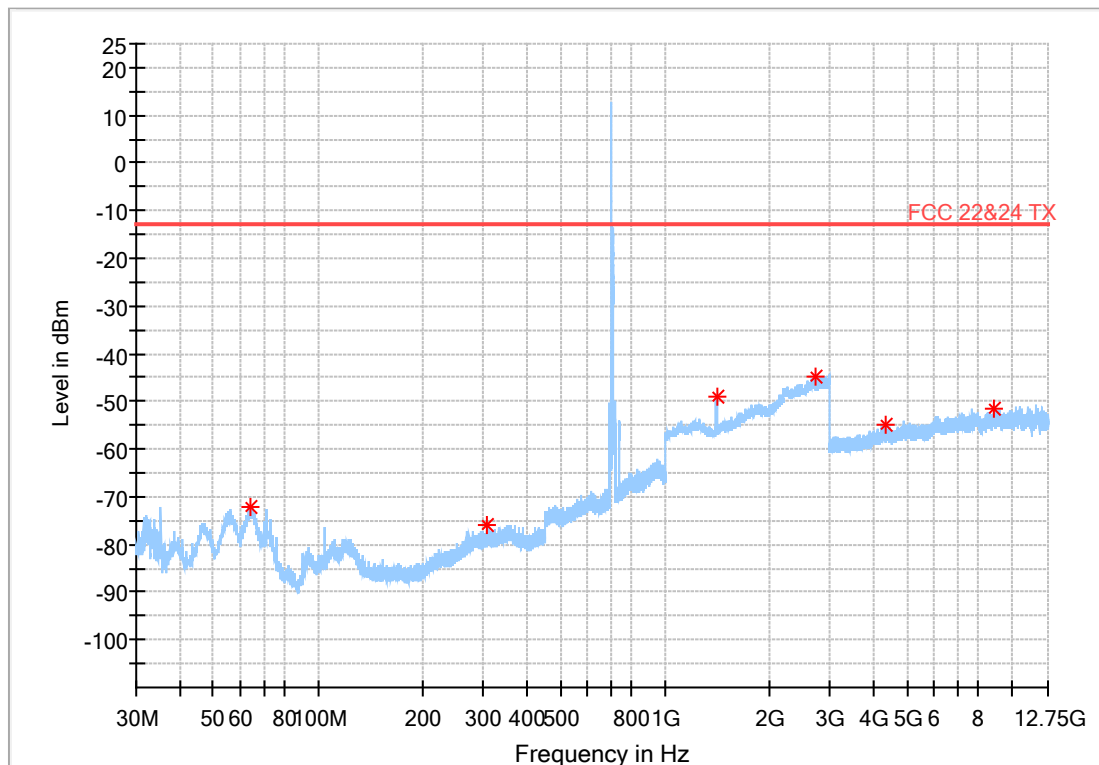
#### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
61.780000	-67.33	-13.00	54.33	---	---	200.0	H	0.0	-95.0
274.673333	-75.78	-13.00	62.78	---	---	200.0	H	0.0	-102.5
1409.000000	-52.14	-13.00	39.14	---	---	200.0	H	284.0	-89.5
2432.000000	-46.23	-13.00	33.23	---	---	200.0	H	0.0	-80.9
4825.200000	-54.61	-13.00	41.61	---	---	200.0	H	0.0	-101.9
9103.825000	-51.20	-13.00	38.20	---	---	200.0	H	0.0	-97.0



## 7.1.1.1.3. MCH-Vertical

## Full Spectrum



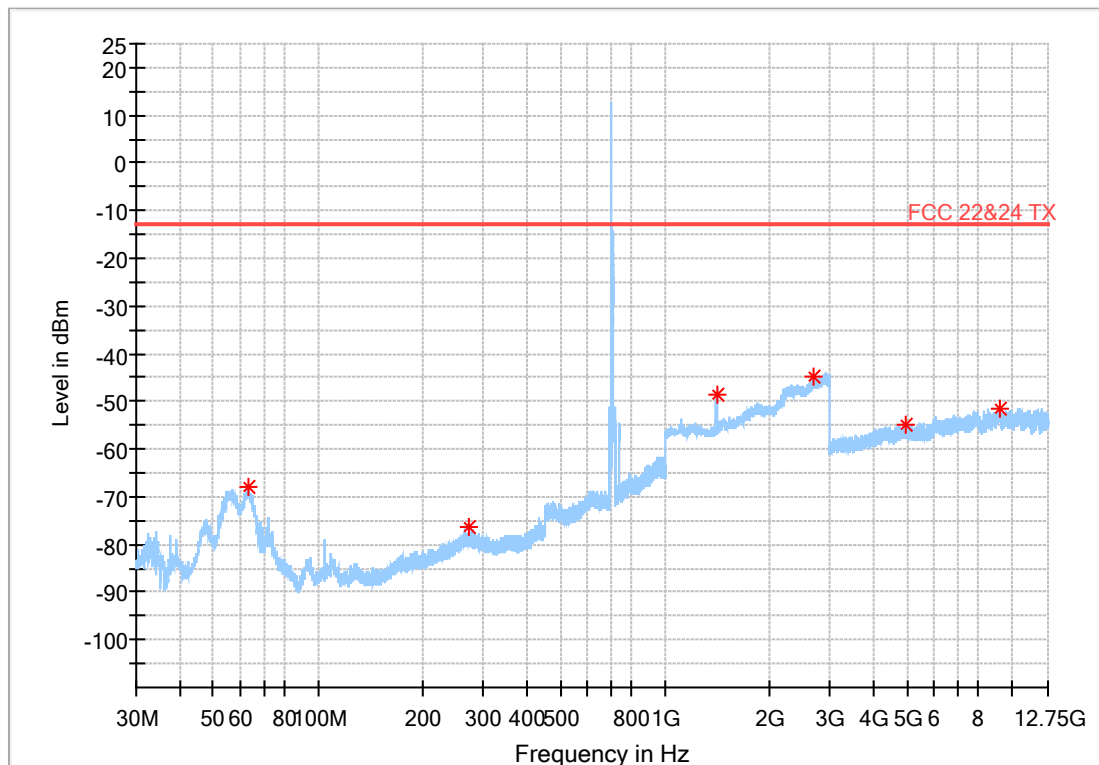
## Critical\_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
63.973333	-72.08	-13.00	59.08	---	---	200.0	V	100.0	-100.0
306.593333	-76.14	-13.00	63.14	---	---	200.0	V	334.0	-102.2
1411.000000	-48.84	-13.00	35.84	---	---	200.0	V	142.0	-89.6
2723.000000	-44.99	-13.00	31.99	---	---	200.0	V	358.0	-79.2
4364.025000	-54.88	-13.00	41.88	---	---	200.0	V	0.0	-102.9
8957.900000	-51.43	-13.00	38.43	---	---	200.0	V	0.0	-96.9



#### 7.1.1.1.4. MCH-Horizontal

##### Full Spectrum



#### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
63.133333	-68.01	-13.00	55.01	---	---	200.0	H	52.0	-95.8
271.173333	-76.28	-13.00	63.28	---	---	200.0	H	146.0	-102.4
1411.000000	-48.79	-13.00	35.79	---	---	200.0	H	142.0	-89.4
2689.000000	-44.98	-13.00	31.98	---	---	200.0	H	104.0	-79.0
4947.400000	-54.96	-13.00	41.96	---	---	200.0	H	212.0	-101.5
9217.900000	-51.73	-13.00	38.73	---	---	200.0	H	0.0	-96.9

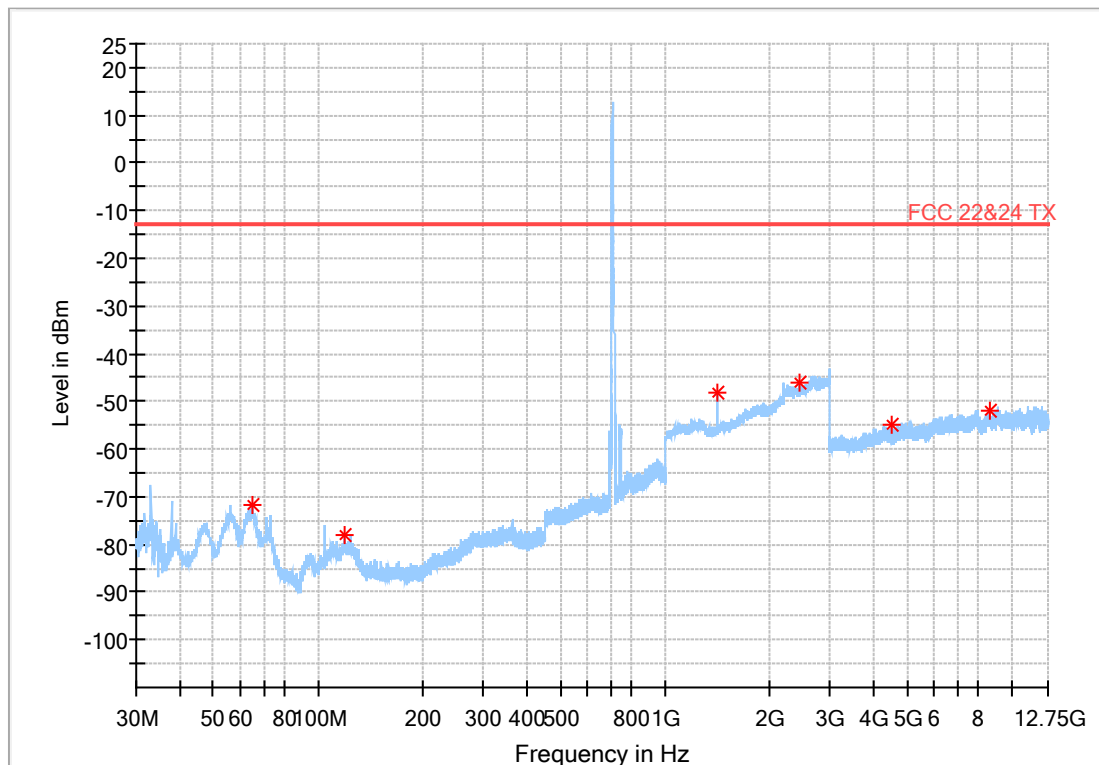


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## 7.1.1.1.5. HCH-Vertical

## Full Spectrum



## Critical\_Freqs

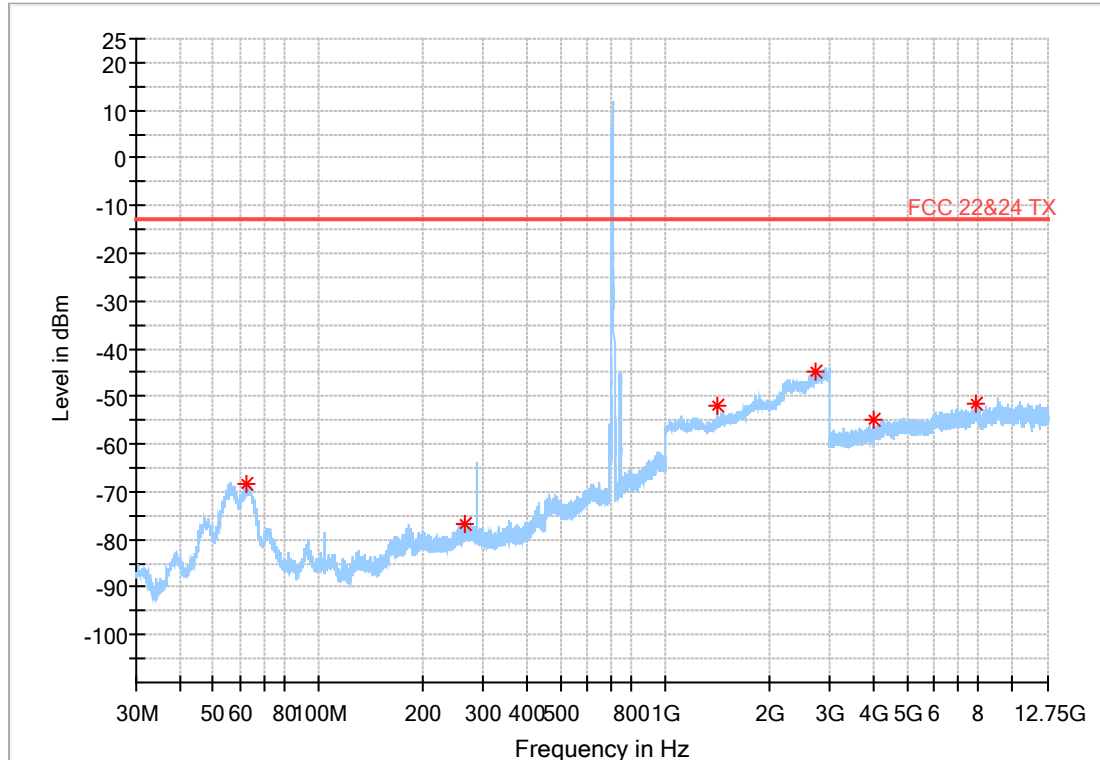
Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
64.813333	-71.85	-13.00	58.85	---	---	200.0	V	0.0	-99.8
119.833333	-77.94	-13.00	64.94	---	---	200.0	V	171.0	-103.8
1413.500000	-48.24	-13.00	35.24	---	---	200.0	V	142.0	-89.6
2454.500000	-45.99	-13.00	32.99	---	---	200.0	V	178.0	-80.9
4505.075000	-54.86	-13.00	41.86	---	---	200.0	V	212.0	-103.0
8643.950000	-51.79	-13.00	38.79	---	---	200.0	V	0.0	-97.6





#### 7.1.1.1.6. HCH-Horizontal

##### Full Spectrum



#### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
62.340000	-68.28	-13.00	55.28	---	---	200.0	H	288.0	-95.0
267.346667	-76.78	-13.00	63.78	---	---	200.0	H	219.0	-102.3
1413.000000	-51.87	-13.00	38.87	---	---	200.0	H	283.0	-89.4
2708.500000	-44.91	-13.00	31.91	---	---	200.0	H	249.0	-79.0
4004.575000	-55.11	-13.00	42.11	---	---	200.0	H	0.0	-103.6
7851.275000	-51.65	-13.00	38.65	---	---	200.0	H	2.0	-97.9



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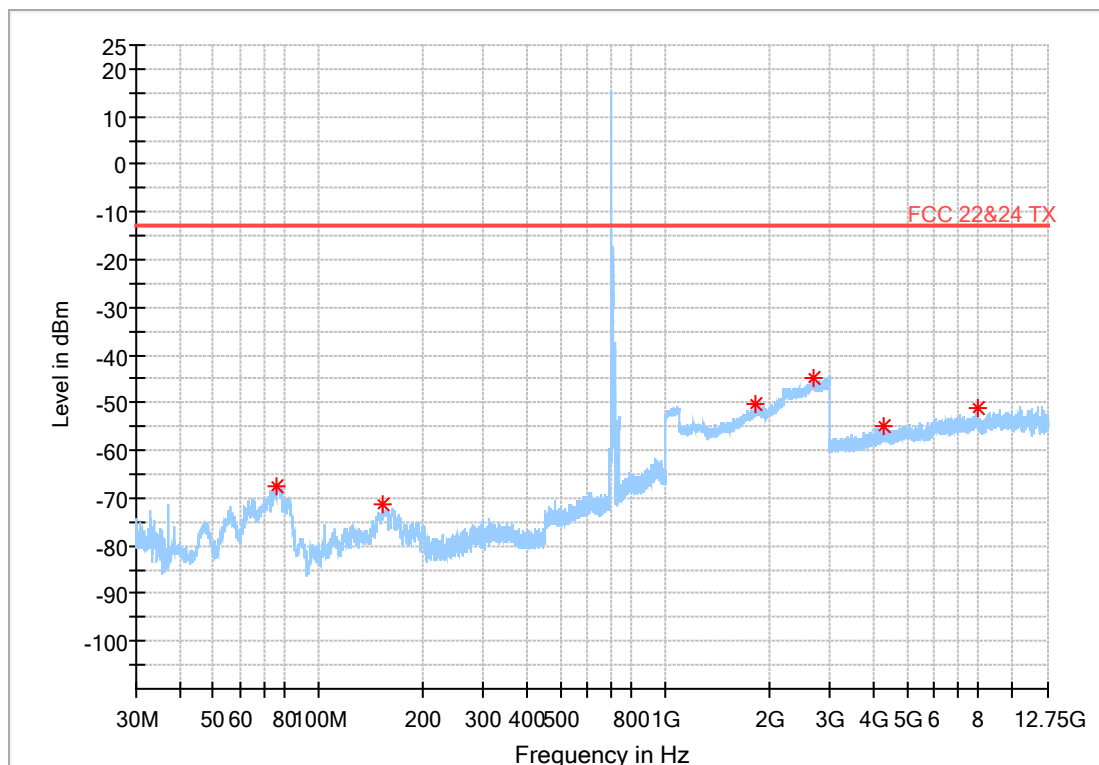
## 7.2. Secondary Antenna

### 7.2.1. Test BAND = LTE BAND 17

#### 7.2.1.1. Test Mode =LTE/TM1

##### 7.2.1.1.1. LCH-Vertical

Full Spectrum



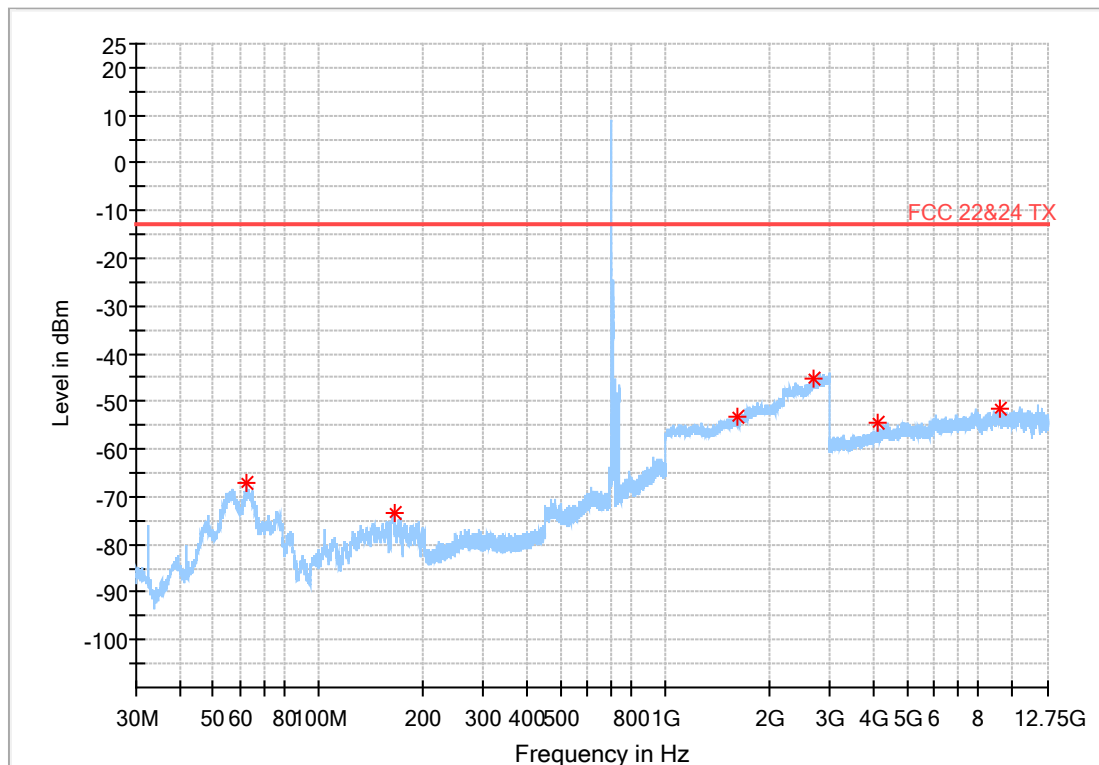
## Critical\_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
76.200000	-67.48	-13.00	54.48	---	---	200.0	V	311.0	-107.4
153.853333	-71.44	-13.00	58.44	---	---	200.0	V	78.0	-108.9
1824.500000	-50.30	-13.00	37.30	---	---	200.0	V	284.0	-85.6
2697.000000	-44.75	-13.00	31.75	---	---	200.0	V	285.0	-78.9
4307.962500	-55.03	-13.00	42.03	---	---	200.0	V	210.0	-102.7
7963.237500	-51.32	-13.00	38.32	---	---	200.0	V	1.0	-98.2



## 7.2.1.1.2. LCH-Horizontal

## Full Spectrum



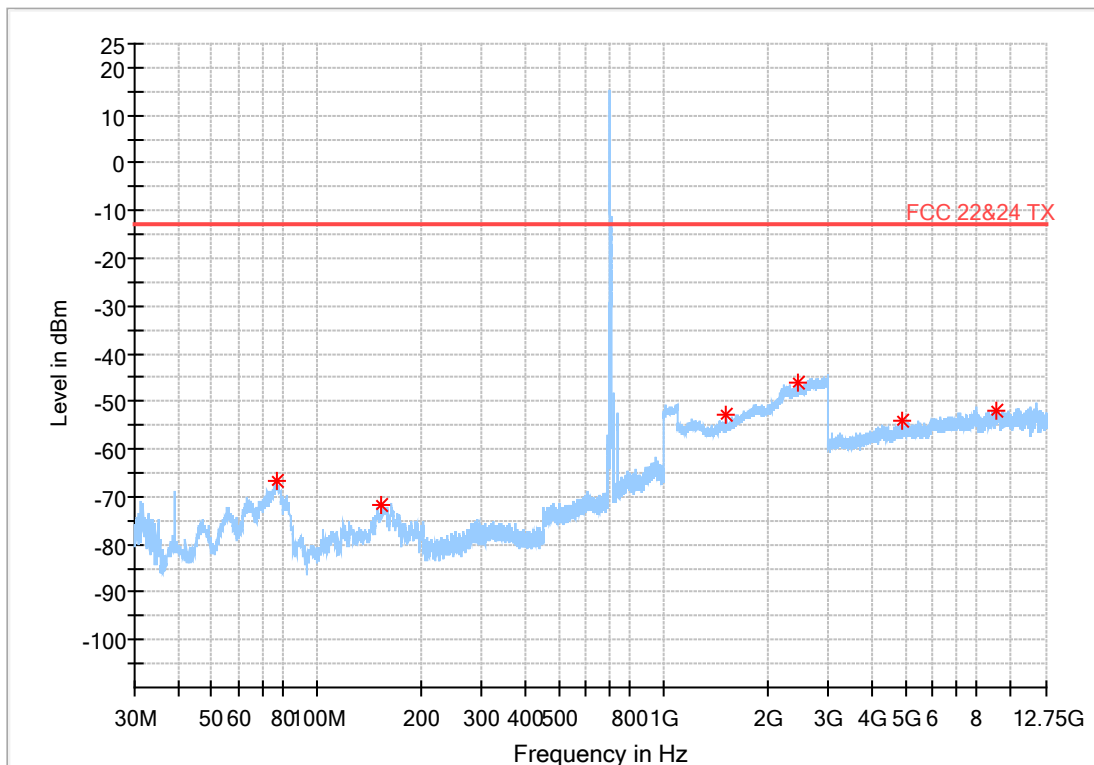
## Critical\_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
62.620000	-67.22	-13.00	54.22	---	---	200.0	H	0.0	-95.3
165.986667	-73.28	-13.00	60.28	---	---	200.0	H	195.0	-107.4
1624.500000	-53.17	-13.00	40.17	---	---	200.0	H	214.0	-87.7
2676.500000	-45.41	-13.00	32.41	---	---	200.0	H	104.0	-79.1
4125.637500	-54.39	-13.00	41.39	---	---	200.0	H	2.0	-103.3
9215.137500	-51.71	-13.00	38.71	---	---	200.0	H	0.0	-96.9



### 7.2.1.1.3. MCH-Vertical

#### Full Spectrum



### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
76.760000	-66.77	-13.00	53.77	---	---	200.0	V	312.0	-107.8
154.040000	-71.59	-13.00	58.59	---	---	200.0	V	78.0	-108.9
1528.000000	-53.00	-13.00	40.00	---	---	200.0	V	1.0	-88.6
2447.000000	-46.17	-13.00	33.17	---	---	200.0	V	178.0	-80.9
4880.775000	-54.09	-13.00	41.09	---	---	200.0	V	0.0	-101.8
9162.000000	-51.94	-13.00	38.94	---	---	200.0	V	0.0	-97.0

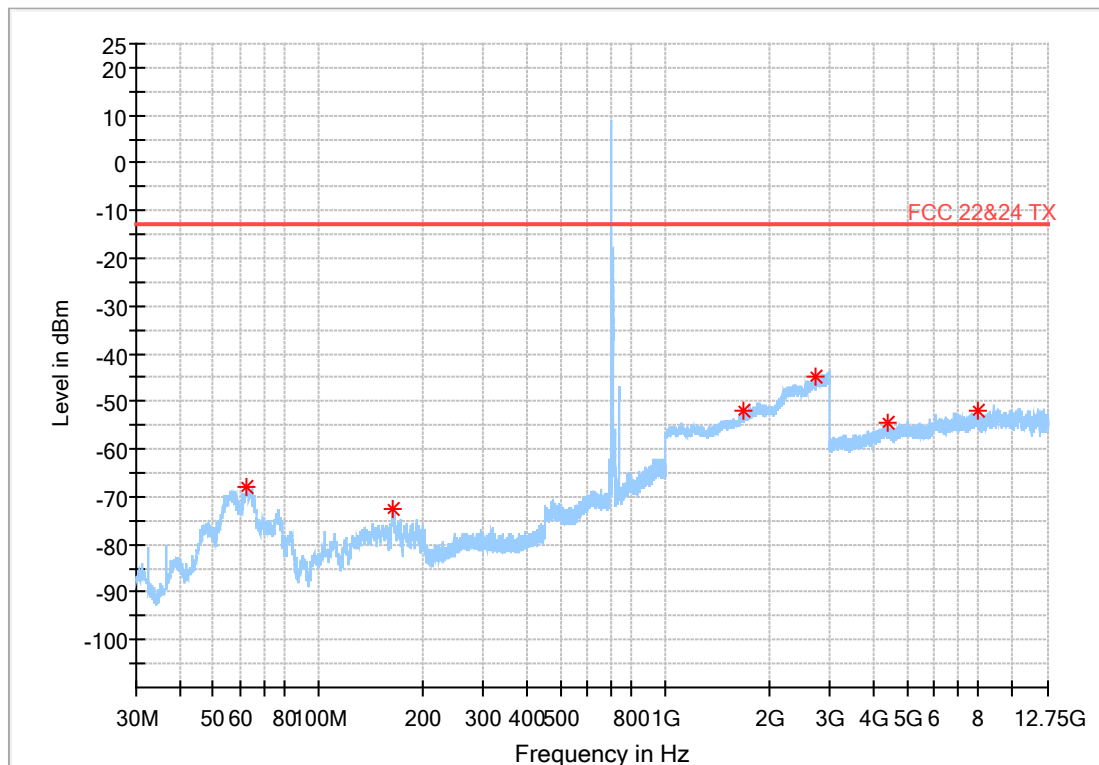


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## 7.2.1.1.4. MCH-Horizontal

## Full Spectrum



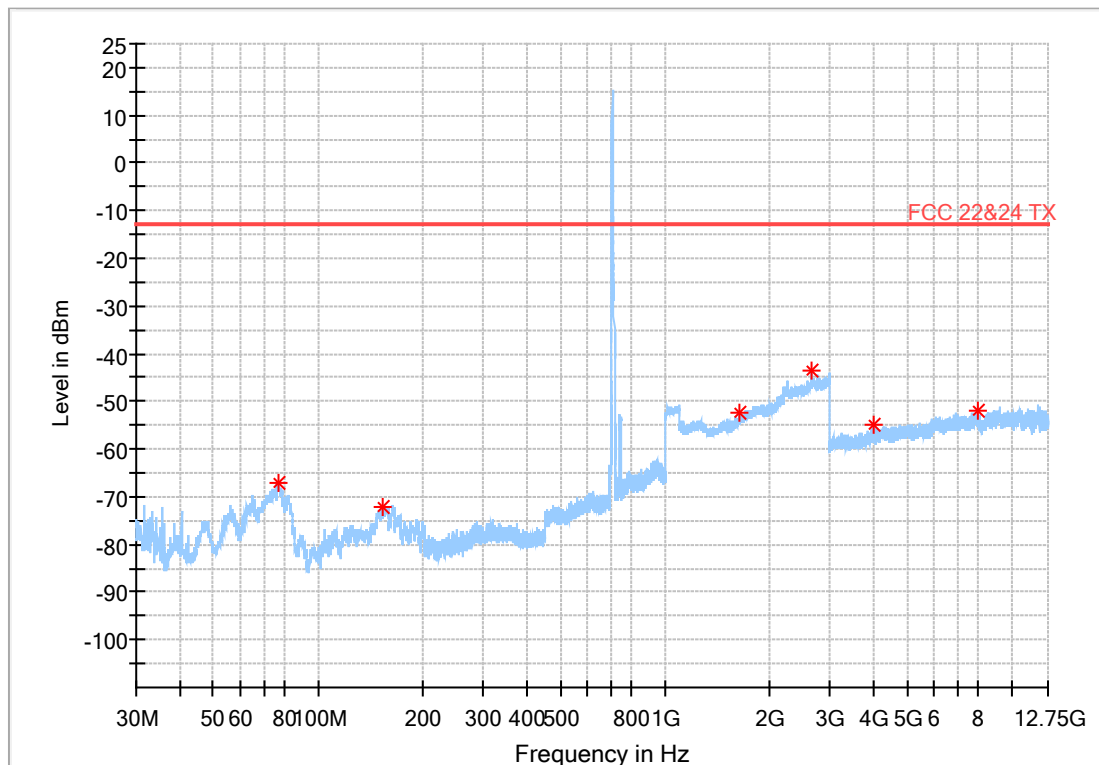
## Critical\_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
62.433333	-67.78	-13.00	54.78	---	---	200.0	H	335.0	-95.1
165.520000	-72.76	-13.00	59.76	---	---	200.0	H	194.0	-107.4
1695.500000	-52.07	-13.00	39.07	---	---	200.0	H	282.0	-87.0
2710.000000	-44.89	-13.00	31.89	---	---	200.0	H	0.0	-79.0
4415.212500	-54.57	-13.00	41.57	---	---	200.0	H	0.0	-102.7
7984.200000	-52.05	-13.00	39.05	---	---	200.0	H	0.0	-98.3



## 7.2.1.1.5. HCH-Vertical

## Full Spectrum



## Critical\_Freqs

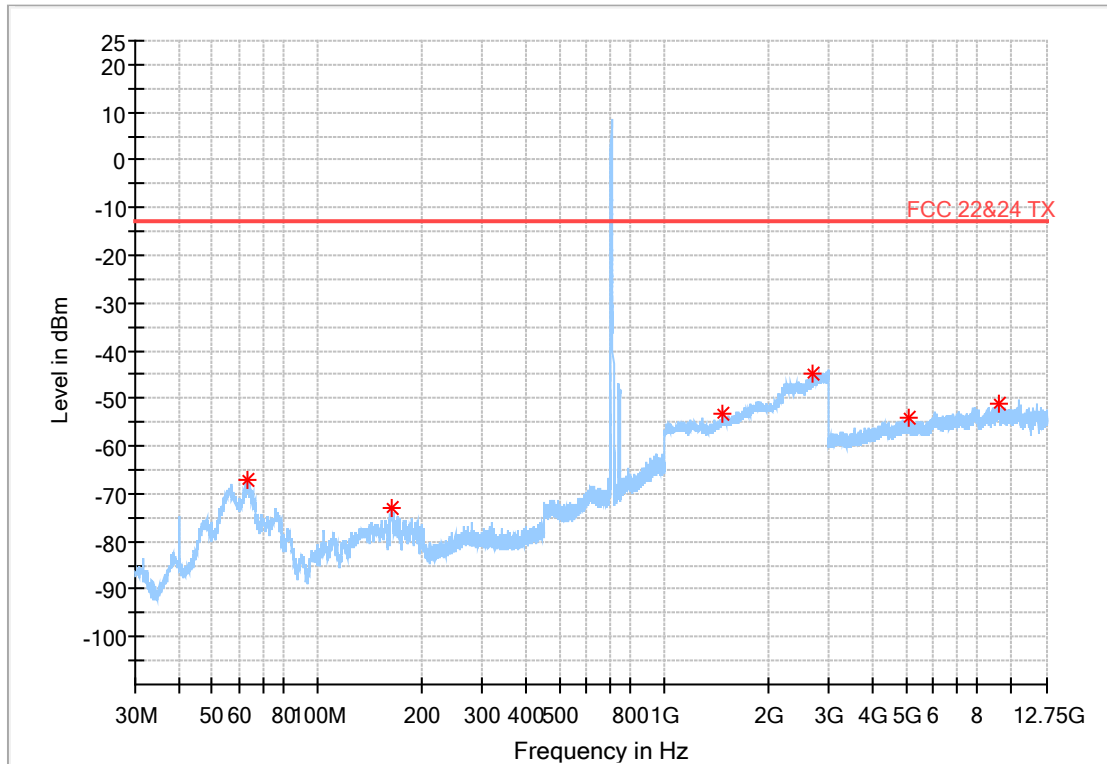
Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
77.180000	-67.03	-13.00	54.03	---	---	200.0	V	288.0	-108.2
154.133333	-71.96	-13.00	58.96	---	---	200.0	V	78.0	-108.9
1642.500000	-52.34	-13.00	39.34	---	---	200.0	V	354.0	-87.4
2641.500000	-43.63	-13.00	30.63	---	---	200.0	V	70.0	-79.5
4028.625000	-55.00	-13.00	42.00	---	---	200.0	V	211.0	-103.5
7981.275000	-52.07	-13.00	39.07	---	---	200.0	V	0.0	-98.3





#### 7.2.1.1.6. HCH-Horizontal

##### Full Spectrum



#### Critical\_Freqs

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
62.806667	-67.03	-13.00	54.03	---	---	200.0	H	335.0	-95.5
165.053333	-72.94	-13.00	59.94	---	---	200.0	H	218.0	-107.5
1480.500000	-53.41	-13.00	40.41	---	---	200.0	H	141.0	-88.1
2682.500000	-44.77	-13.00	31.77	---	---	200.0	H	0.0	-79.1
5065.537500	-54.17	-13.00	41.17	---	---	200.0	H	1.0	-101.5
9239.512500	-51.02	-13.00	38.02	---	---	200.0	H	1.0	-96.9

#### Remark:

- 1) The disturbance below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the worst case data 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
Band17	10MHz	QPSK	23780	50RB#0	VL	NT	-0.50	-0.000705	±2.5	PASS
Band17	10MHz	QPSK	23780	50RB#0	VN	NT	0.30	0.000423	±2.5	PASS
Band17	10MHz	QPSK	23780	50RB#0	VH	NT	-0.20	-0.000282	±2.5	PASS
Band17	10MHz	QPSK	23790	50RB#0	VL	NT	0.60	0.000845	±2.5	PASS
Band17	10MHz	QPSK	23790	50RB#0	VN	NT	0.60	0.000845	±2.5	PASS
Band17	10MHz	QPSK	23790	50RB#0	VH	NT	0.50	0.000704	±2.5	PASS
Band17	10MHz	QPSK	23800	50RB#0	VL	NT	0.30	0.000422	±2.5	PASS
Band17	10MHz	QPSK	23800	50RB#0	VN	NT	-0.20	-0.000281	±2.5	PASS
Band17	10MHz	QPSK	23800	50RB#0	VH	NT	0.70	0.000985	±2.5	PASS
Band17	10MHz	64QAM	23780	50RB#0	VL	NT	-0.10	-0.000141	±2.5	PASS
Band17	10MHz	64QAM	23780	50RB#0	VN	NT	-1.00	-0.001410	±2.5	PASS
Band17	10MHz	64QAM	23780	50RB#0	VH	NT	-0.30	-0.000423	±2.5	PASS
Band17	10MHz	64QAM	23790	50RB#0	VL	NT	0.80	0.001127	±2.5	PASS
Band17	10MHz	64QAM	23790	50RB#0	VN	NT	0.60	0.000845	±2.5	PASS
Band17	10MHz	64QAM	23790	50RB#0	VH	NT	0.10	0.000141	±2.5	PASS
Band17	10MHz	64QAM	23800	50RB#0	VL	NT	0.10	0.000141	±2.5	PASS
Band17	10MHz	64QAM	23800	50RB#0	VN	NT	-0.20	-0.000281	±2.5	PASS
Band17	10MHz	64QAM	23800	50RB#0	VH	NT	0.50	0.000703	±2.5	PASS
Band17	10MHz	16QAM	23780	50RB#0	VL	NT	0.00	0.000000	±2.5	PASS
Band17	10MHz	16QAM	23780	50RB#0	VN	NT	-0.40	-0.000564	±2.5	PASS
Band17	10MHz	16QAM	23780	50RB#0	VH	NT	-0.40	-0.000564	±2.5	PASS
Band17	10MHz	16QAM	23790	50RB#0	VL	NT	0.70	0.000986	±2.5	PASS
Band17	10MHz	16QAM	23790	50RB#0	VN	NT	1.10	0.001549	±2.5	PASS
Band17	10MHz	16QAM	23790	50RB#0	VH	NT	0.50	0.000704	±2.5	PASS
Band17	10MHz	16QAM	23800	50RB#0	VL	NT	-0.10	-0.000141	±2.5	PASS
Band17	10MHz	16QAM	23800	50RB#0	VN	NT	-0.10	-0.000141	±2.5	PASS
Band17	10MHz	16QAM	23800	50RB#0	VH	NT	0.60	0.000844	±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
Band17	10MHz	QPSK	23780	50RB#0	NV	-30	-0.20	-0.000282	±2.5	PASS
Band17	10MHz	QPSK	23780	50RB#0	NV	-20	-0.40	-0.000564	±2.5	PASS
Band17	10MHz	QPSK	23780	50RB#0	NV	0	-0.20	-0.000282	±2.5	PASS
Band17	10MHz	QPSK	23780	50RB#0	NV	10	-0.20	-0.000282	±2.5	PASS
Band17	10MHz	QPSK	23780	50RB#0	NV	20	0.00	0.000000	±2.5	PASS
Band17	10MHz	QPSK	23780	50RB#0	NV	30	0.10	0.000141	±2.5	PASS



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Band17	10MHz	QPSK	23780	50RB#0	NV	40	-1.20	-0.001693	±2.5	PASS
Band17	10MHz	QPSK	23780	50RB#0	NV	50	-0.20	-0.000282	±2.5	PASS
Band17	10MHz	QPSK	23790	50RB#0	NV	-30	0.50	0.000704	±2.5	PASS
Band17	10MHz	QPSK	23790	50RB#0	NV	-20	0.60	0.000845	±2.5	PASS
Band17	10MHz	QPSK	23790	50RB#0	NV	0	0.80	0.001127	±2.5	PASS
Band17	10MHz	QPSK	23790	50RB#0	NV	10	-0.10	-0.000141	±2.5	PASS
Band17	10MHz	QPSK	23790	50RB#0	NV	20	1.00	0.001408	±2.5	PASS
Band17	10MHz	QPSK	23790	50RB#0	NV	30	0.50	0.000704	±2.5	PASS
Band17	10MHz	QPSK	23790	50RB#0	NV	40	0.20	0.000282	±2.5	PASS
Band17	10MHz	QPSK	23790	50RB#0	NV	50	0.10	0.000141	±2.5	PASS
Band17	10MHz	QPSK	23800	50RB#0	NV	-30	-0.40	-0.000563	±2.5	PASS
Band17	10MHz	QPSK	23800	50RB#0	NV	-20	-0.10	-0.000141	±2.5	PASS
Band17	10MHz	QPSK	23800	50RB#0	NV	0	0.20	0.000281	±2.5	PASS
Band17	10MHz	QPSK	23800	50RB#0	NV	10	0.00	0.000000	±2.5	PASS
Band17	10MHz	QPSK	23800	50RB#0	NV	20	0.00	0.000000	±2.5	PASS
Band17	10MHz	QPSK	23800	50RB#0	NV	30	-0.60	-0.000844	±2.5	PASS
Band17	10MHz	QPSK	23800	50RB#0	NV	40	0.40	0.000563	±2.5	PASS
Band17	10MHz	QPSK	23800	50RB#0	NV	50	-0.40	-0.000563	±2.5	PASS
Band17	10MHz	64QAM	23780	50RB#0	NV	-30	-0.40	-0.000564	±2.5	PASS
Band17	10MHz	64QAM	23780	50RB#0	NV	-20	-0.40	-0.000564	±2.5	PASS
Band17	10MHz	64QAM	23780	50RB#0	NV	0	-0.50	-0.000705	±2.5	PASS
Band17	10MHz	64QAM	23780	50RB#0	NV	10	-0.30	-0.000423	±2.5	PASS
Band17	10MHz	64QAM	23780	50RB#0	NV	20	-0.10	-0.000141	±2.5	PASS
Band17	10MHz	64QAM	23780	50RB#0	NV	30	0.10	0.000141	±2.5	PASS
Band17	10MHz	64QAM	23780	50RB#0	NV	40	-0.50	-0.000705	±2.5	PASS
Band17	10MHz	64QAM	23780	50RB#0	NV	50	-0.20	-0.000282	±2.5	PASS
Band17	10MHz	64QAM	23790	50RB#0	NV	-30	-0.10	-0.000141	±2.5	PASS
Band17	10MHz	64QAM	23790	50RB#0	NV	-20	0.10	0.000141	±2.5	PASS
Band17	10MHz	64QAM	23790	50RB#0	NV	0	0.30	0.000423	±2.5	PASS
Band17	10MHz	64QAM	23790	50RB#0	NV	10	0.90	0.001268	±2.5	PASS
Band17	10MHz	64QAM	23790	50RB#0	NV	20	1.20	0.001690	±2.5	PASS
Band17	10MHz	64QAM	23790	50RB#0	NV	30	1.30	0.001831	±2.5	PASS
Band17	10MHz	64QAM	23790	50RB#0	NV	40	0.30	0.000423	±2.5	PASS
Band17	10MHz	64QAM	23790	50RB#0	NV	50	0.40	0.000563	±2.5	PASS
Band17	10MHz	64QAM	23800	50RB#0	NV	-30	-0.20	-0.000281	±2.5	PASS
Band17	10MHz	64QAM	23800	50RB#0	NV	-20	-0.30	-0.000422	±2.5	PASS
Band17	10MHz	64QAM	23800	50RB#0	NV	0	-0.20	-0.000281	±2.5	PASS
Band17	10MHz	64QAM	23800	50RB#0	NV	10	0.20	0.000281	±2.5	PASS
Band17	10MHz	64QAM	23800	50RB#0	NV	20	0.10	0.000141	±2.5	PASS
Band17	10MHz	64QAM	23800	50RB#0	NV	30	-0.20	-0.000281	±2.5	PASS
Band17	10MHz	64QAM	23800	50RB#0	NV	40	0.40	0.000563	±2.5	PASS
Band17	10MHz	64QAM	23800	50RB#0	NV	50	-0.20	-0.000281	±2.5	PASS
Band17	10MHz	16QAM	23780	50RB#0	NV	-30	0.10	0.000141	±2.5	PASS
Band17	10MHz	16QAM	23780	50RB#0	NV	-20	-0.90	-0.001269	±2.5	PASS
Band17	10MHz	16QAM	23780	50RB#0	NV	0	-0.20	-0.000282	±2.5	PASS
Band17	10MHz	16QAM	23780	50RB#0	NV	10	-0.20	-0.000282	±2.5	PASS
Band17	10MHz	16QAM	23780	50RB#0	NV	20	-0.30	-0.000423	±2.5	PASS



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Band17	10MHz	16QAM	23780	50RB#0	NV	30	-0.10	-0.000141	±2.5	PASS
Band17	10MHz	16QAM	23780	50RB#0	NV	40	-0.50	-0.000705	±2.5	PASS
Band17	10MHz	16QAM	23780	50RB#0	NV	50	0.00	0.000000	±2.5	PASS
Band17	10MHz	16QAM	23790	50RB#0	NV	-30	0.40	0.000563	±2.5	PASS
Band17	10MHz	16QAM	23790	50RB#0	NV	-20	0.80	0.001127	±2.5	PASS
Band17	10MHz	16QAM	23790	50RB#0	NV	0	0.30	0.000423	±2.5	PASS
Band17	10MHz	16QAM	23790	50RB#0	NV	10	1.10	0.001549	±2.5	PASS
Band17	10MHz	16QAM	23790	50RB#0	NV	20	0.80	0.001127	±2.5	PASS
Band17	10MHz	16QAM	23790	50RB#0	NV	30	1.90	0.002676	±2.5	PASS
Band17	10MHz	16QAM	23790	50RB#0	NV	40	-0.20	-0.000282	±2.5	PASS
Band17	10MHz	16QAM	23790	50RB#0	NV	50	0.60	0.000845	±2.5	PASS
Band17	10MHz	16QAM	23800	50RB#0	NV	-30	0.10	0.000141	±2.5	PASS
Band17	10MHz	16QAM	23800	50RB#0	NV	-20	0.30	0.000422	±2.5	PASS
Band17	10MHz	16QAM	23800	50RB#0	NV	0	0.00	0.000000	±2.5	PASS
Band17	10MHz	16QAM	23800	50RB#0	NV	10	0.70	0.000985	±2.5	PASS
Band17	10MHz	16QAM	23800	50RB#0	NV	20	0.40	0.000563	±2.5	PASS
Band17	10MHz	16QAM	23800	50RB#0	NV	30	0.50	0.000703	±2.5	PASS
Band17	10MHz	16QAM	23800	50RB#0	NV	40	0.40	0.000563	±2.5	PASS
Band17	10MHz	16QAM	23800	50RB#0	NV	50	-0.40	-0.000563	±2.5	PASS

The End



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