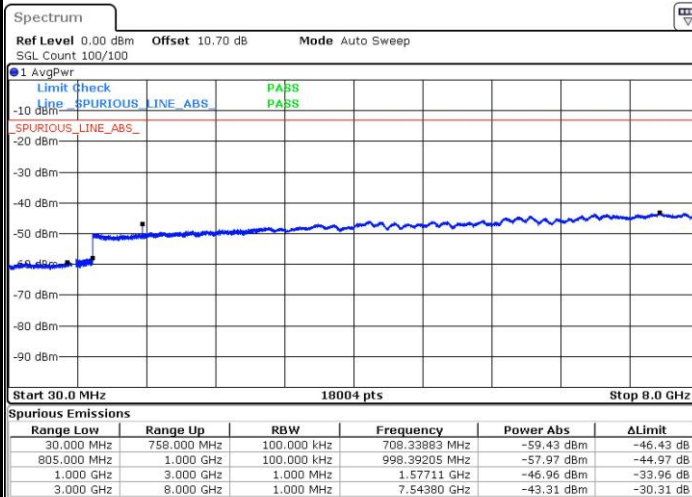




# Conducted Spurious Emission

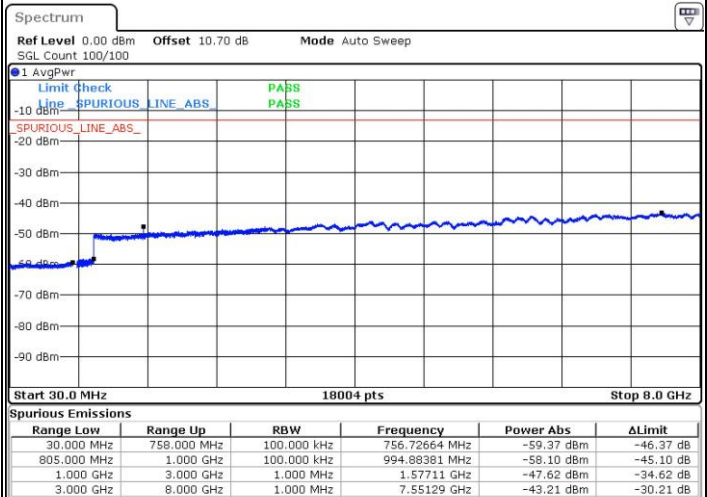
## LTE Band 14 / 5MHz

### Lowest Channel / QPSK



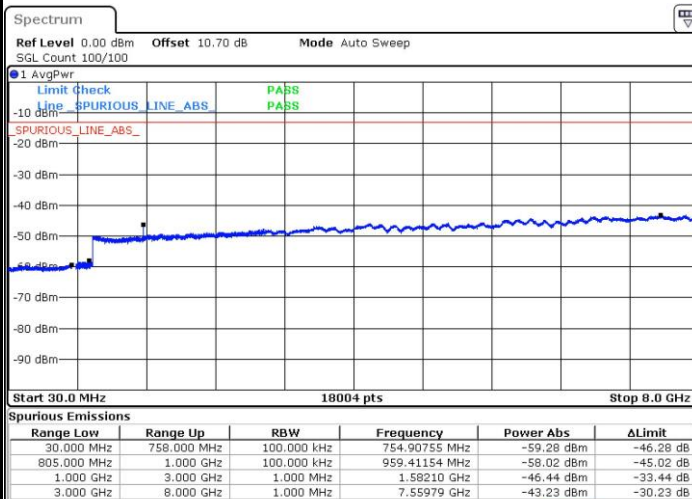
Date: 24.OCT.2018 18:35:07

### Lowest Channel / 16QAM



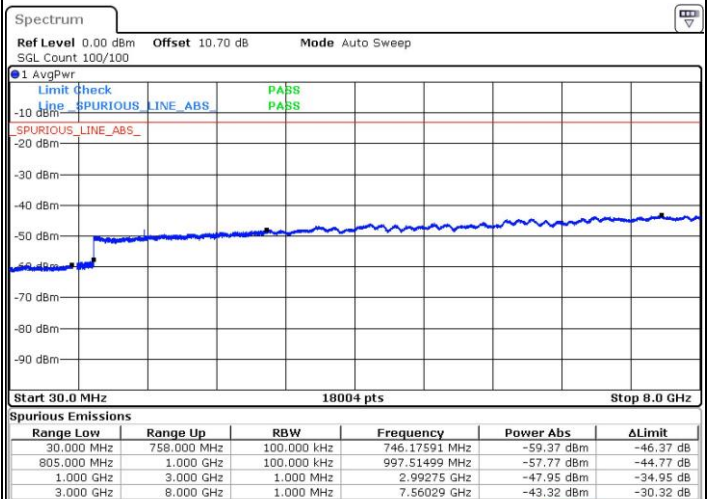
Date: 24.OCT.2018 18:35:47

### Middle Channel / QPSK



Date: 24.OCT.2018 18:37:06

### Middle Channel / 16QAM

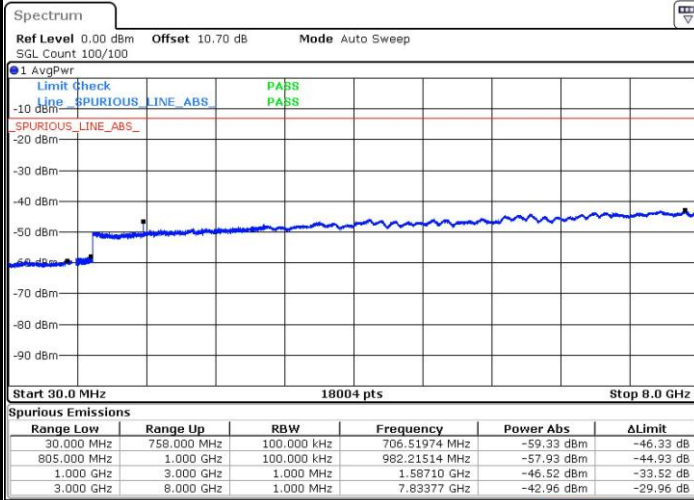


Date: 24.OCT.2018 18:36:26



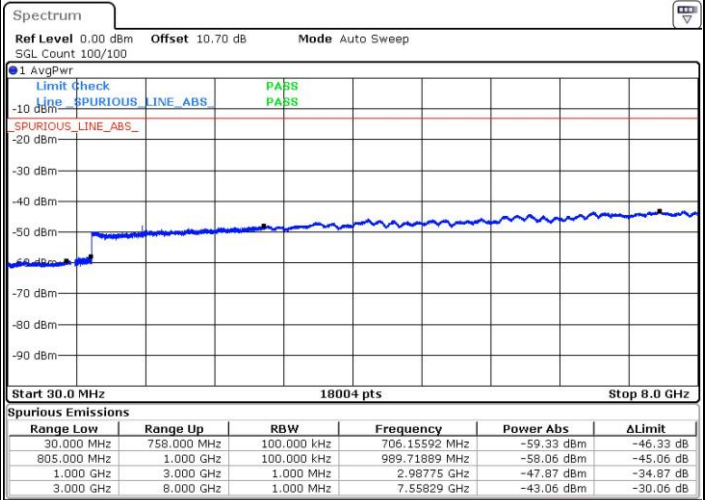
## LTE Band 14 / 5MHz

## Highest Channel / QPSK



Date: 24.OCT.2018 18:45:59

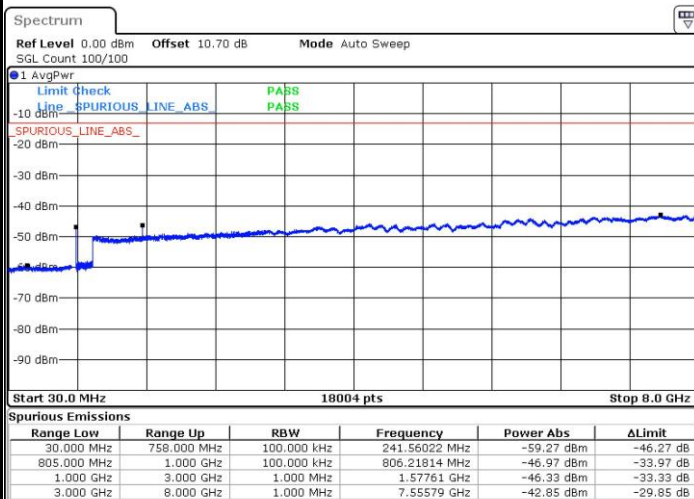
## Highest Channel / 16QAM



Date: 24.OCT.2018 18:46:39

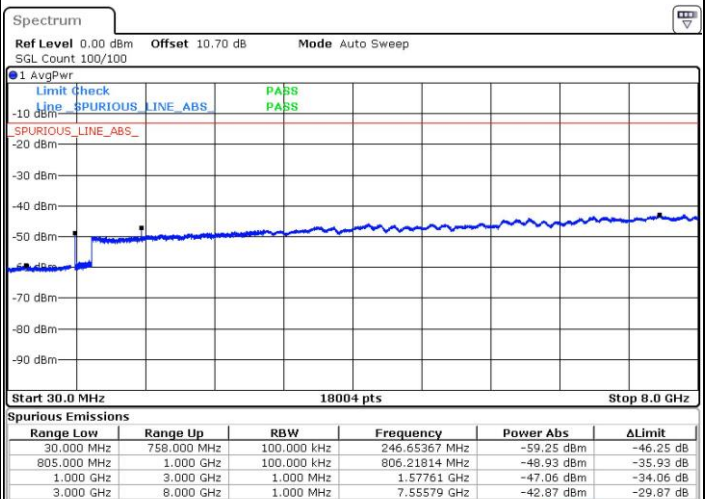
## LTE Band 14 / 10MHz

## Middle Channel / QPSK



Date: 24.OCT.2018 18:58:45

## Middle Channel / 16QAM

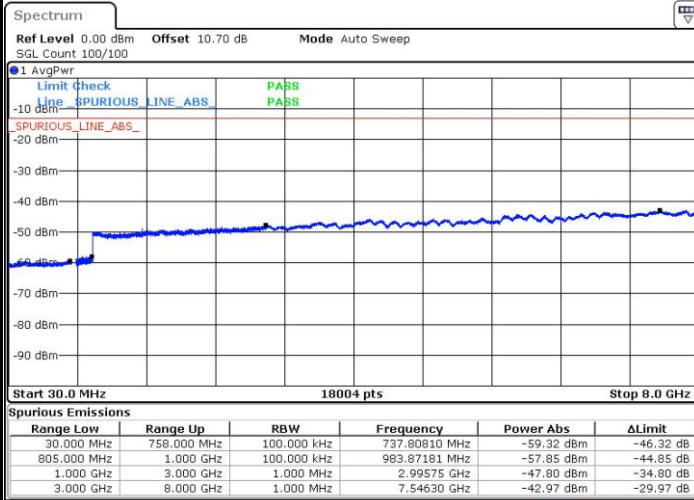


Date: 24.OCT.2018 18:58:05



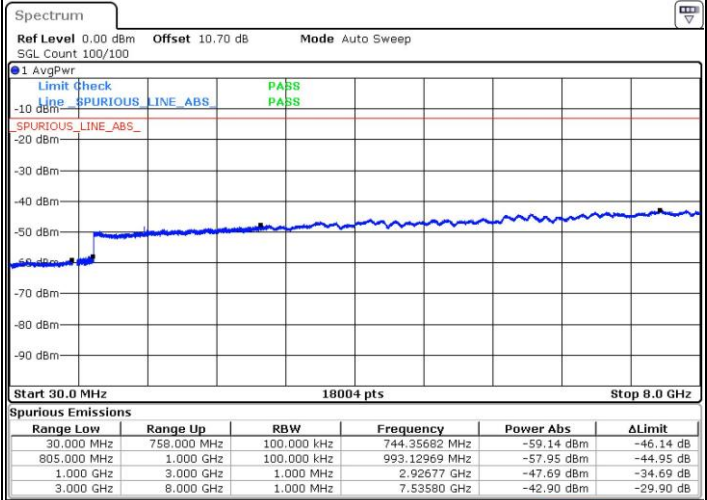
## LTE Band 14 / 5MHz

## Lowest Channel / 64QAM



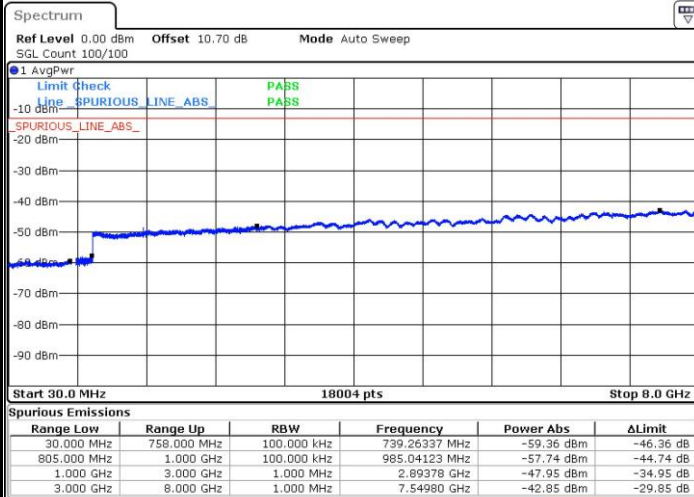
Date: 24.OCT.2018 19:09:41

## Middle Channel / 64QAM



Date: 24.OCT.2018 19:10:21

## Highest Channel / 64QAM

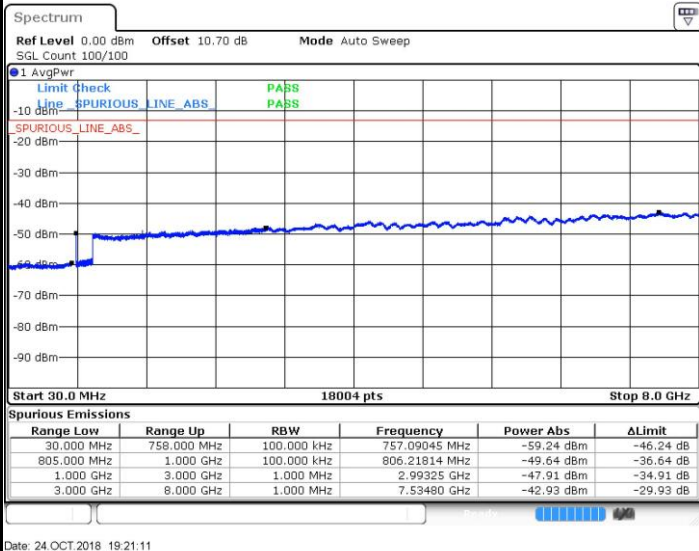


Date: 24.OCT.2018 19:15:07



## LTE Band 14 / 10MHz

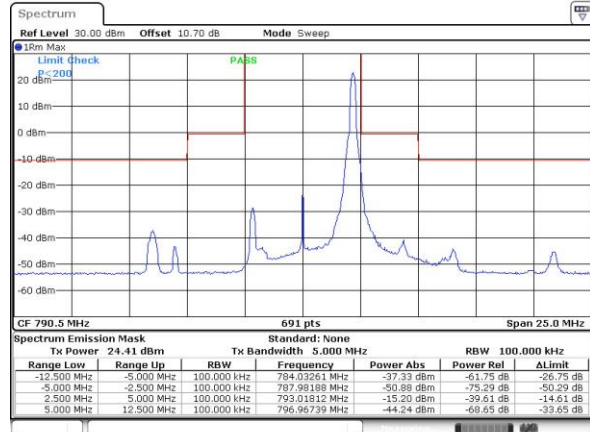
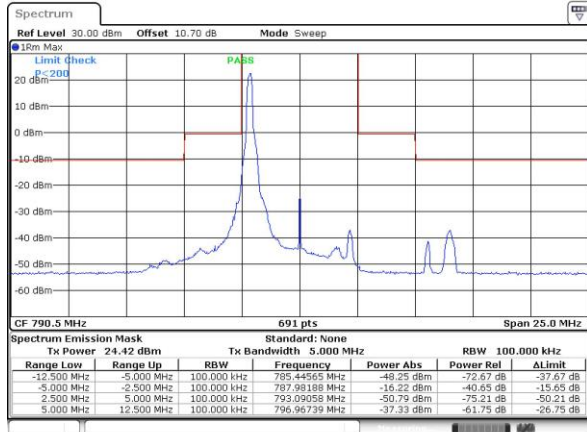
## Middle Channel / 64QAM



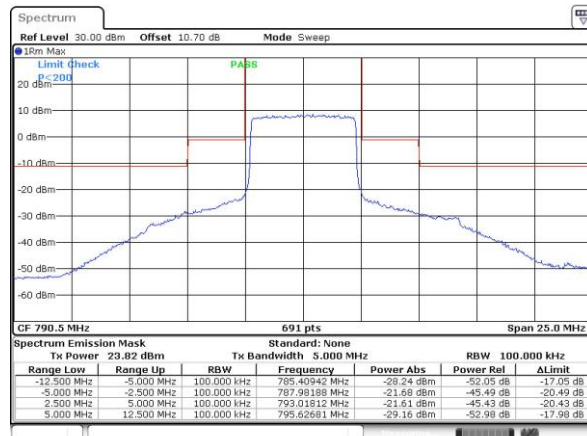
**Mask**

## LTE Band 14 / 5MHz / QPSK

### Lowest Channel / 1RB



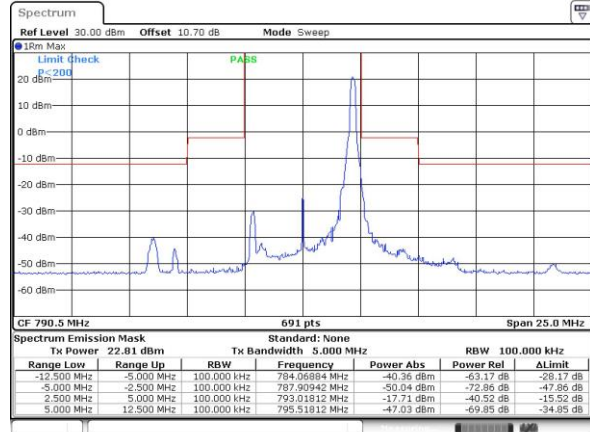
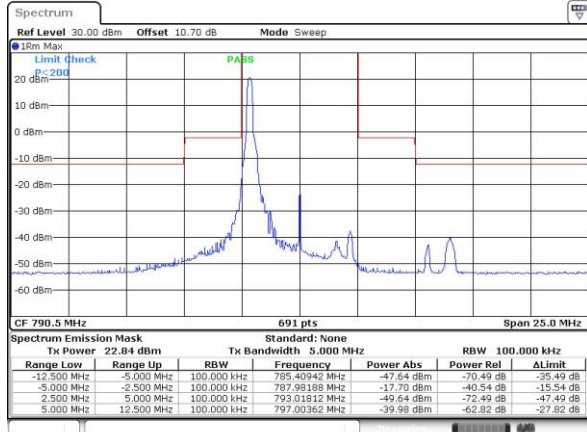
### Lowest Channel / Full RB



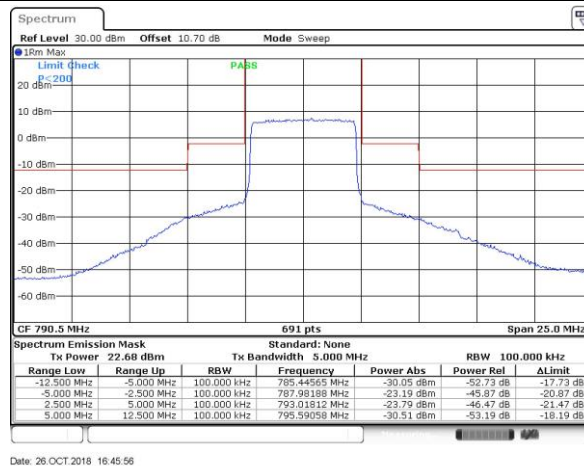


## LTE Band 14 / 5MHz / 16QAM

## Lowest Channel / 1RB

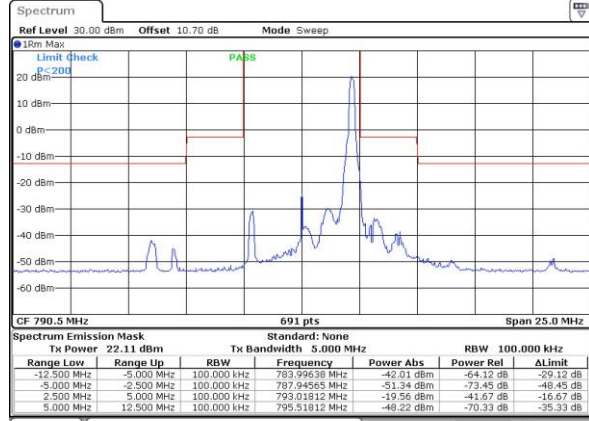
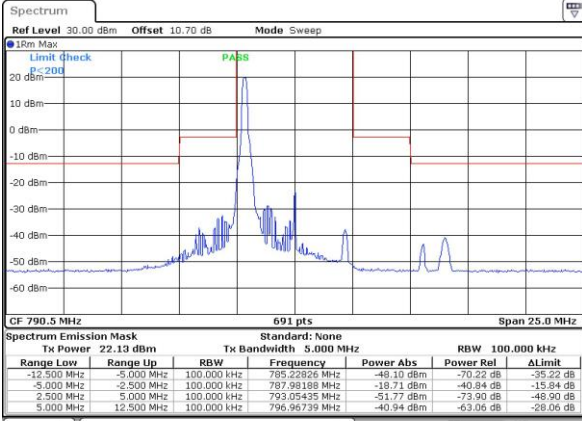


## Lowest Channel / Full RB

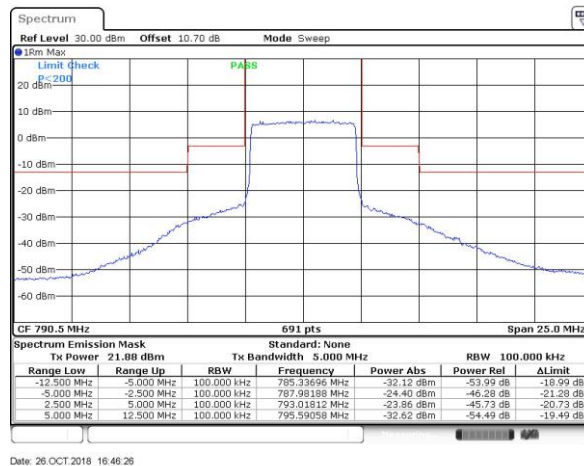


## LTE Band 14 / 5MHz / 64QAM

### Lowest Channel / 1RB



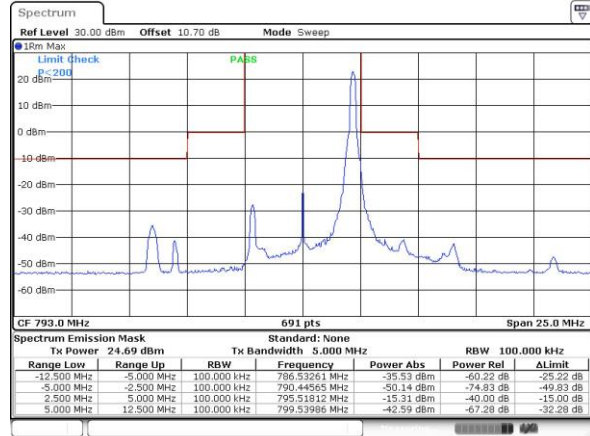
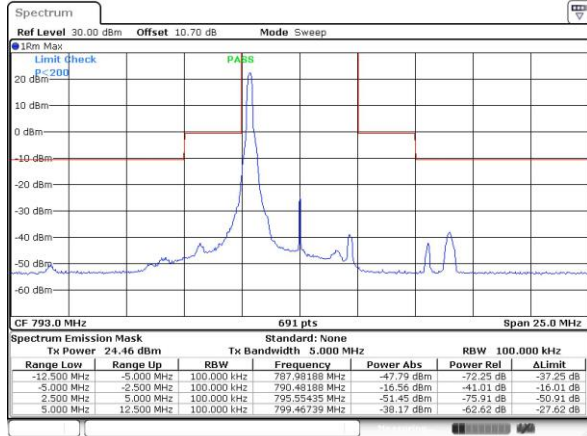
### Lowest Channel / Full RB



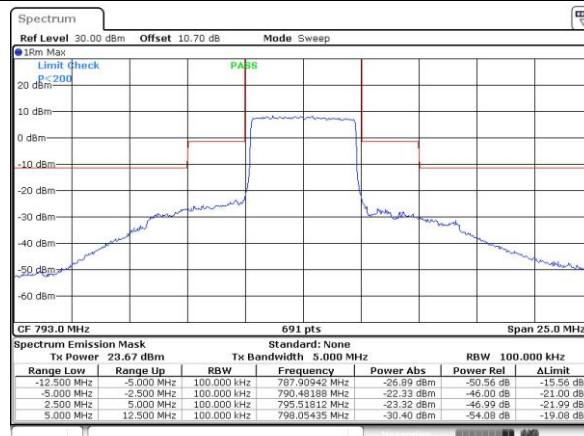


## LTE Band 14 / 5MHz / QPSK

## Middle Channel / 1RB



## Middle Channel / Full RB

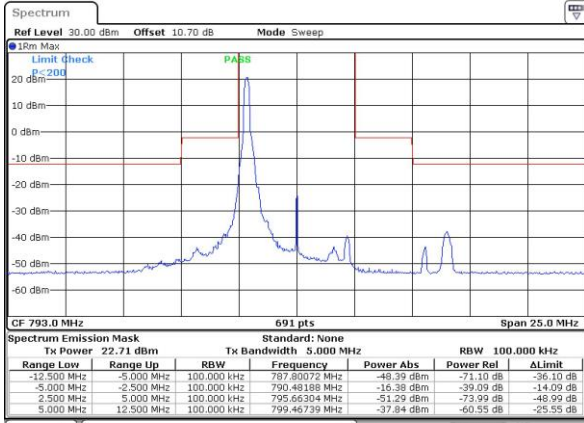




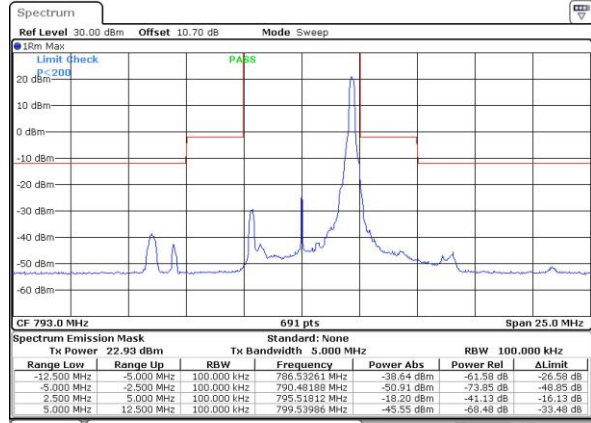


## LTE Band 14 / 5MHz / 16QAM

## Middle Channel / 1RB

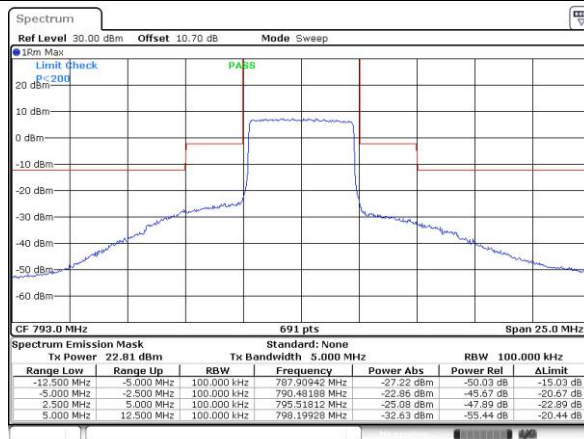


Date: 26 OCT 2018 16:51:53



Date: 26 OCT 2018 16:50:24

## Middle Channel / Full RB

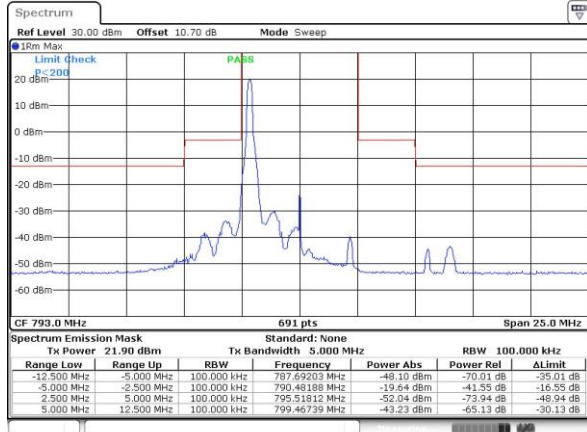


Date: 26 OCT 2018 16:53:21

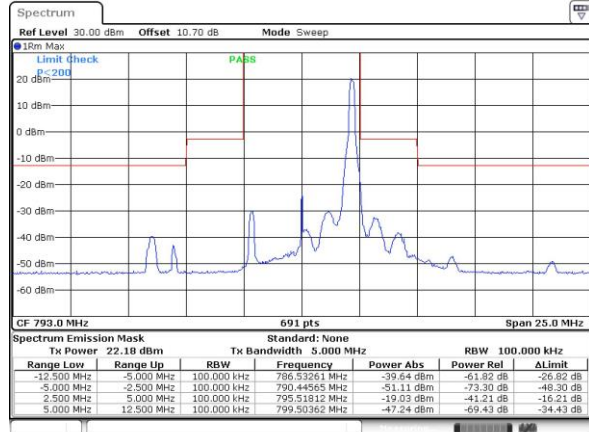


## LTE Band 14 / 5MHz / 64QAM

## Middle Channel / 1RB

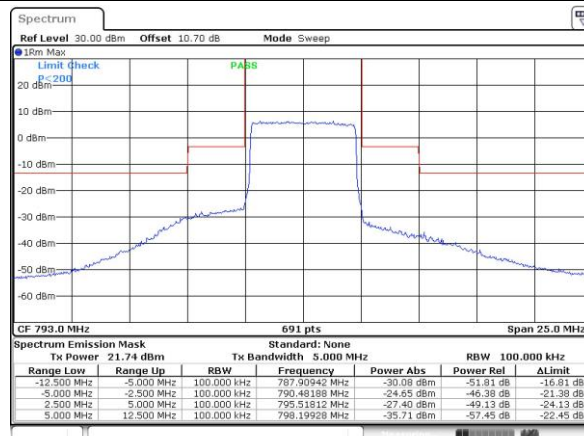


Date: 26 OCT 2018 16:52:22



Date: 26 OCT 2018 16:49:54

## Middle Channel / Full RB

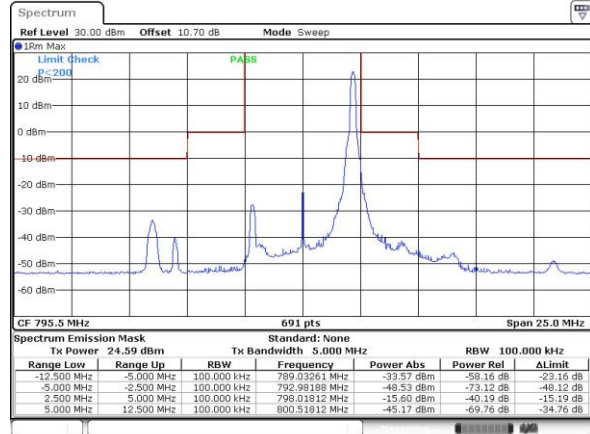
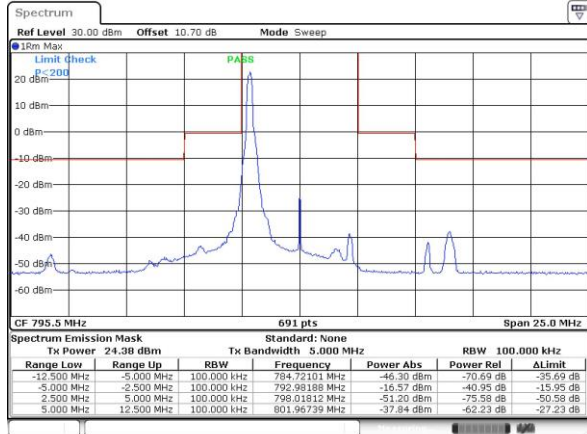


Date: 26 OCT 2018 16:52:52

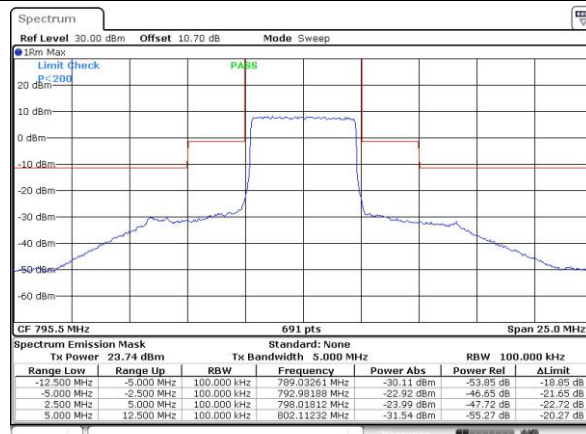


## LTE Band 14 / 5MHz / QPSK

## Highest Channel / 1RB



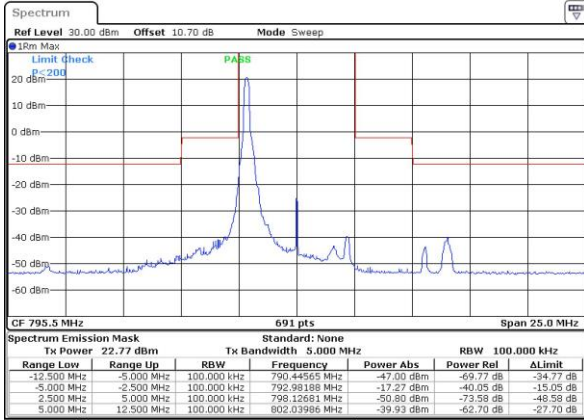
## Highest Channel / Full RB



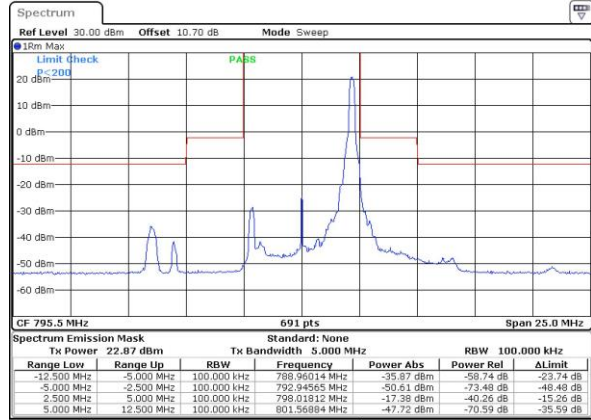


## LTE Band 14 / 5MHz / 16QAM

## Highest Channel / 1RB



Date: 26.OCT.2018 16:56:19



Date: 26.OCT.2018 16:57:47

## Highest Channel / Full RB

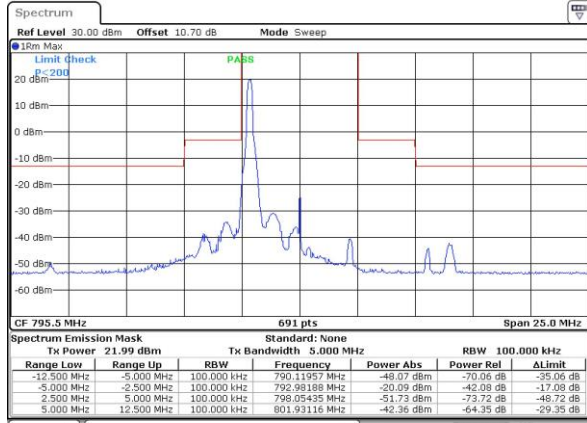


Date: 26.OCT.2018 16:54:50

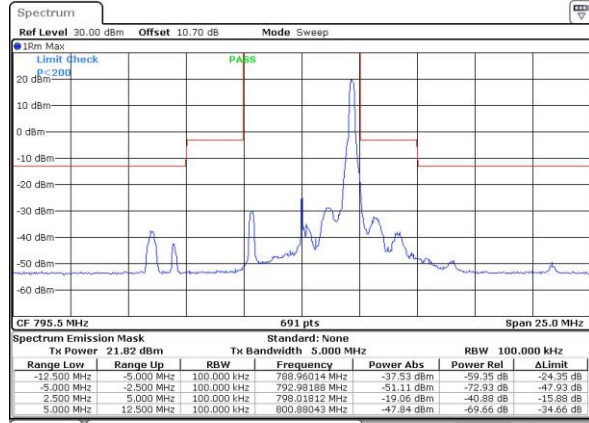


## LTE Band 14 / 5MHz / 64QAM

## Highest Channel / 1RB

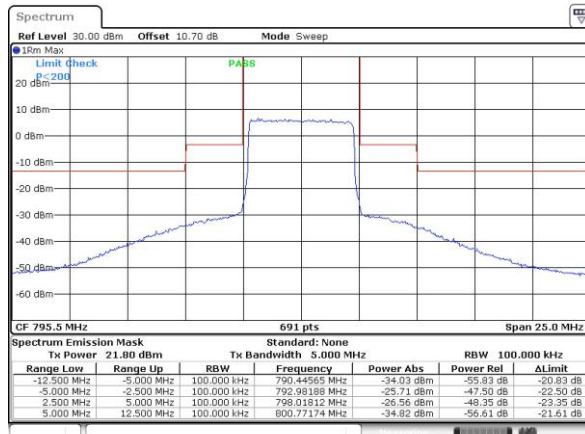


Date: 26 OCT.2018 16:55:49



Date: 26 OCT.2018 16:58:17

## Highest Channel / Full RB

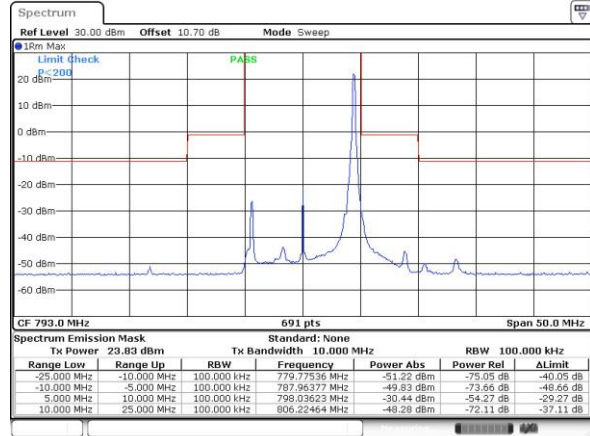
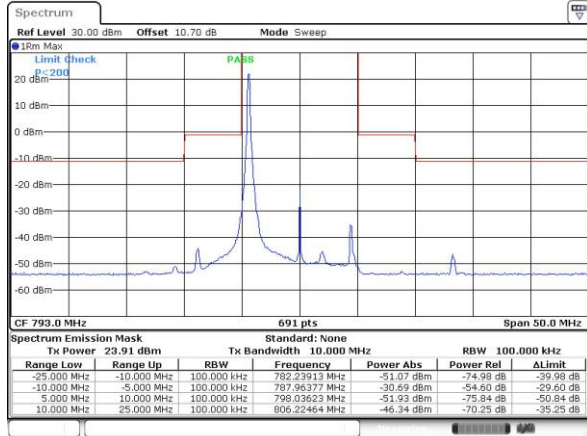


Date: 26 OCT.2018 16:55:20



## LTE Band 14 / 10MHz / QPSK

## Middle Channel / 1RB



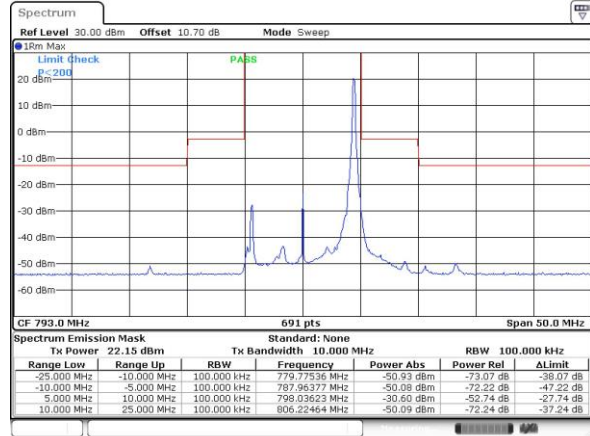
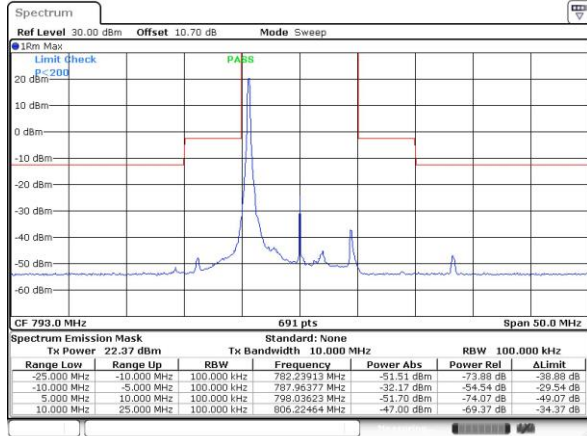
## Middle Channel / Full RB





## LTE Band 14 / 10MHz / 16QAM

## Middle Channel / 1RB



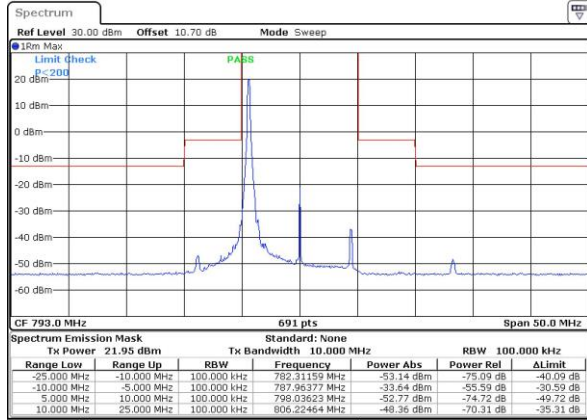
## Middle Channel / Full RB



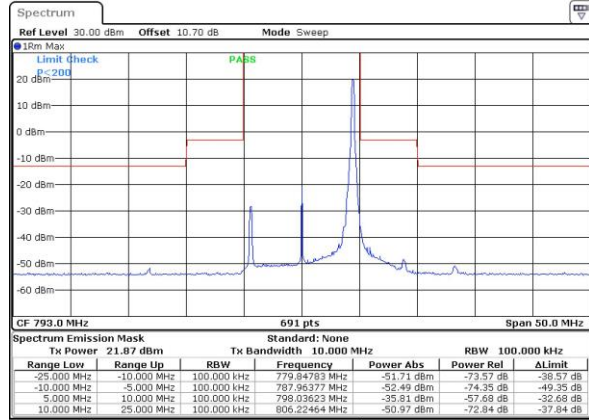


## LTE Band 14 / 10MHz / 64QAM

## Middle Channel / 1RB

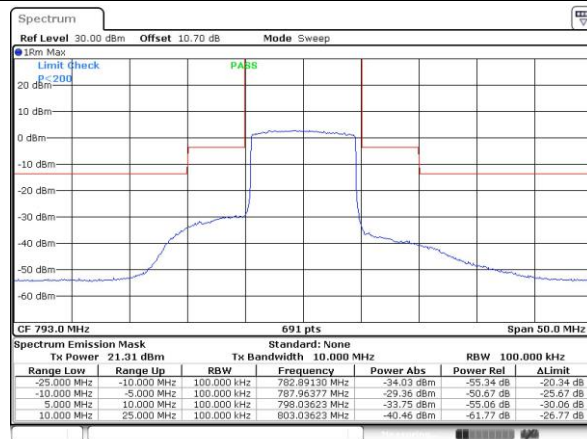


Date: 26 OCT 2018 17:01:14



Date: 26 OCT 2018 16:58:48

## Middle Channel / Full RB



Date: 26 OCT 2018 17:01:43



## Frequency Stability

Test Conditions		LTE Band 14 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0003	PASS
40	Normal Voltage	0.0071	
30	Normal Voltage	0.0054	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0019	
0	Normal Voltage	0.0071	
-10	Normal Voltage	0.0030	
-20	Normal Voltage	0.0058	
-30	Normal Voltage	0.0025	
20	Maximum Voltage	0.0005	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0055	

**Note:**

1. Normal Voltage =3.8 V. ; Battery End Point (BEP) =3.5 V. ; Maximum Voltage =4.2 V.
2. The frequency fundamental emissions stay within the authorized frequency block.

**Appendix B. Test Results of ERP/EIRP and Radiated Test****ERP/EIRP**

LTE Band 14 / 5MHz (Average) (GT - LC = -1.58 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	EIRP(dBm)	EIRP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	12	23.81	0.2404	20.08	0.1019
Middle		1	12	23.59	0.2286	19.86	0.0968
Highest		1	12	23.53	0.2254	19.80	0.0955
Lowest	16QAM	1	12	22.89	0.1945	19.16	0.0824
Middle		1	12	22.23	0.1671	18.50	0.0708
Highest		1	12	22.61	0.1824	18.88	0.0773
Lowest	64QAM	1	12	21.63	0.1455	17.90	0.0617
Middle		1	12	21.48	0.1406	17.75	0.0596
Highest		1	12	21.44	0.1393	17.71	0.0590
Limit	ERP < 3W			Result		PASS	

LTE Band 14 / 10MHz (Average) (GT - LC = -1.58 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	EIRP(dBm)	EIRP(W)	ERP(dBm)	ERP(W)
Lowest	QPSK	-	-	-	-	-	-
Middle		1	25	23.65	0.2317	19.92	0.0982
Highest		-	-	-	-	-	-
Lowest	16QAM	-	-	-	-	-	-
Middle		1	0	22.01	0.1589	18.28	0.0673
Highest		-	-	-	-	-	-
Lowest	64QAM	-	-	-	-	-	-
Middle		1	49	21.39	0.1377	17.66	0.0583
Highest		-	-	-	-	-	-
Limit	ERP < 3W			Result		PASS	

**Radiated Spurious Emission**

&lt;Sample 1&gt;

**Part 90R LTE Band 14**

LTE Band 14 / 5MHz / QPSK									
Channel	Frequency ( MHz )	ERP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	1584	-51.18	-42.15	-9.03	-63.01	-56.35	1.20	8.52	H
	2376	-45.16	-13	-32.16	-61.1	-51.99	1.42	10.40	H
	3952	-55.72	-13	-42.72	-73.74	-63.59	2.11	12.13	H
									H
									H
									H
									H
	1584	-51.92	-42.15	-9.77	-62.05	-57.09	1.20	8.52	V
	2376	-45.16	-13	-32.16	-60.09	-51.99	1.42	10.40	V
	3952	-57.40	-13	-44.40	-75.01	-65.27	2.11	12.13	V
									V
									V
									V
									V



LTE Band 14 / 5MHz / QPSK									
Channel	Frequency ( MHz )	ERP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1584	-54.72	-42.15	-12.57	-66.55	-59.89	1.20	8.52	H
	2376	-52.84	-13	-39.84	-68.78	-59.67	1.42	10.40	H
	3172	-58.66	-13	-45.66	-76.07	-66.32	1.60	11.42	H
									H
									H
									H
									H
	1584	-55.81	-42.15	-13.66	-65.94	-60.98	1.20	8.52	V
	2376	-52.96	-13	-39.96	-67.89	-59.79	1.42	10.40	V
	3172	-59.22	-13	-46.22	-76.14	-66.88	1.60	11.42	V
									V
									V
									V
									V
Highest	1592	-50.57	-42.15	-8.42	-62.41	-55.76	1.20	8.55	H
	2384	-46.68	-13	-33.68	-62.62	-53.52	1.42	10.41	H
	3182	-58.81	-13	-45.81	-76.23	-66.50	1.61	11.45	H
									H
									H
									H
									H
	1592	-53.39	-42.15	-11.24	-63.32	-58.58	1.20	8.55	V
	2384	-46.59	-13	-33.59	-61.52	-53.43	1.42	10.41	V
	3182	-59.22	-13	-46.22	-76.15	-66.91	1.61	11.45	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

**<Sample 2>**

LTE Band 14 / 5MHz / QPSK									
Channel	Frequency ( MHz )	ERP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Highest	1592	-63.44	-42.15	-21.29	-75.28	-68.63	1.20	8.55	H
	2386	-59.09	-13	-46.09	-75.03	-65.93	1.42	10.41	H
	3182	-60.00	-13	-47.00	-76.42	-67.69	1.61	11.45	H
									H
									H
									H
									H
	1592	-64.50	-42.15	-22.35	-74.43	-69.69	1.20	8.55	V
	2386	-60.51	-13	-47.51	-75.44	-67.35	1.42	10.41	V
	3182	-59.20	-13	-46.20	-76.13	-66.89	1.61	11.45	V
									V
									V
									V
									V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.