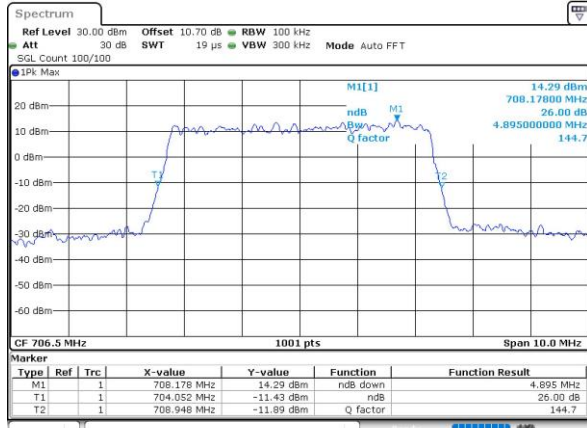


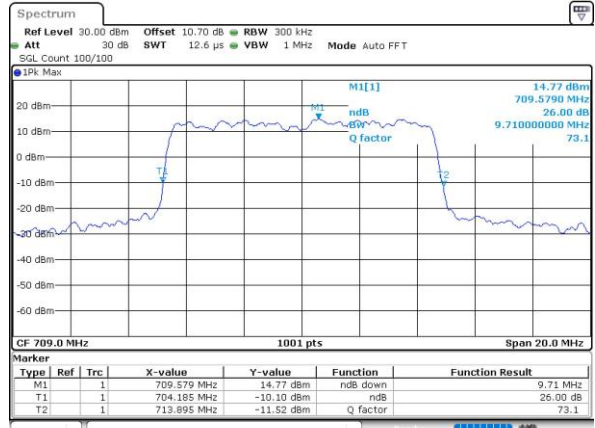


LTE Band 17

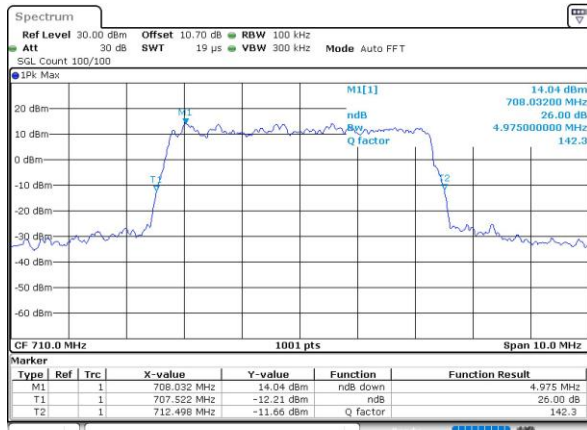
Lowest Channel / 5MHz / 64QAM



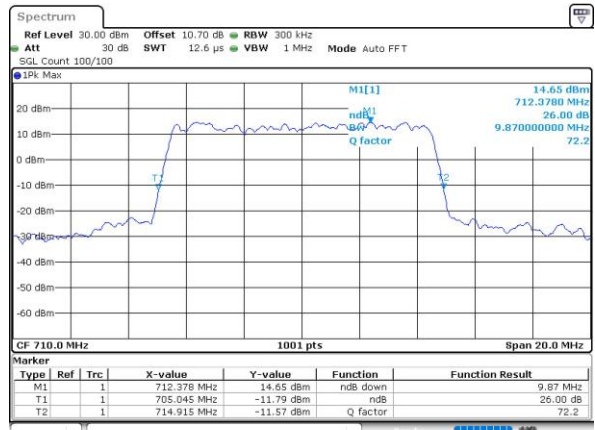
Lowest Channel / 10MHz / 64QAM



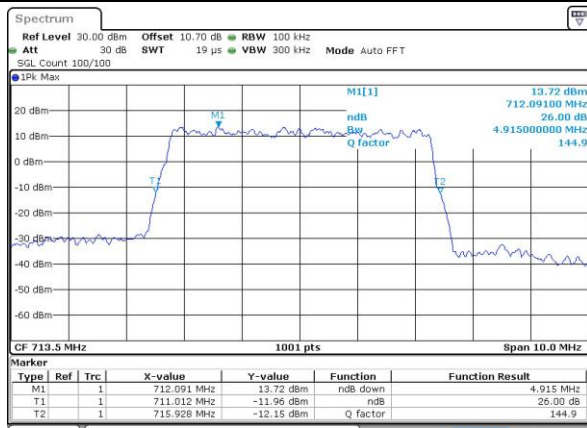
Middle Channel / 5MHz / 64QAM



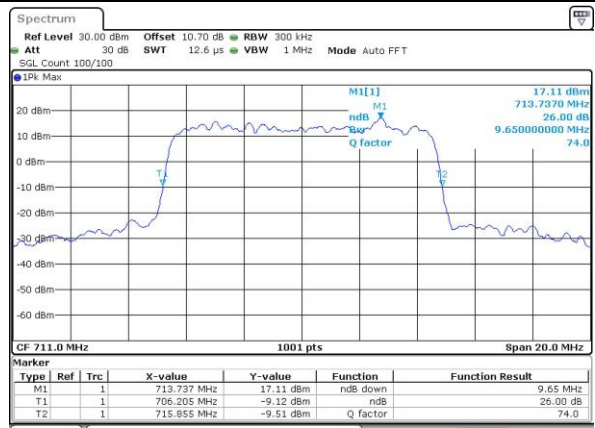
Middle Channel / 10MHz / 64QAM



Highest Channel / 5MHz / 64QAM



Highest Channel / 10MHz / 64QAM



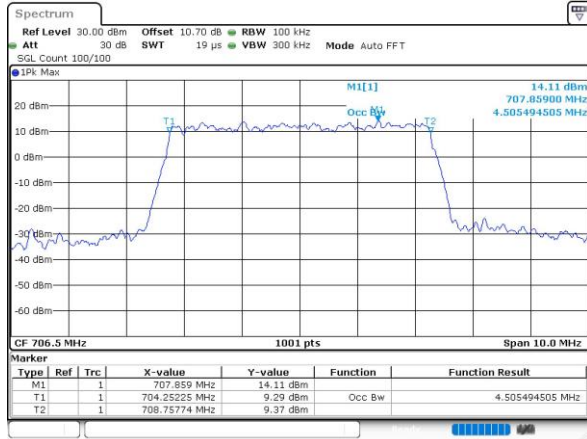
**Occupied Bandwidth**

Mode BW Mod.	LTE Band 17 : 99%OBW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	4.51	4.48	9.07	9.03	-	-	-	-
Middle CH	-	-	-	-	4.51	4.49	8.97	9.01	-	-	-	-
Highest CH	-	-	-	-	4.5	4.5	9.01	8.99	-	-	-	-
Mode BW Mod.	LTE Band 17 : 99%OBW(MHz)											
	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	4.48	-	9.01	-	-	-	-	-
Middle CH	-	-	-	-	4.47	-	9.01	-	-	-	-	-
Highest CH	-	-	-	-	4.50	-	8.97	-	-	-	-	-

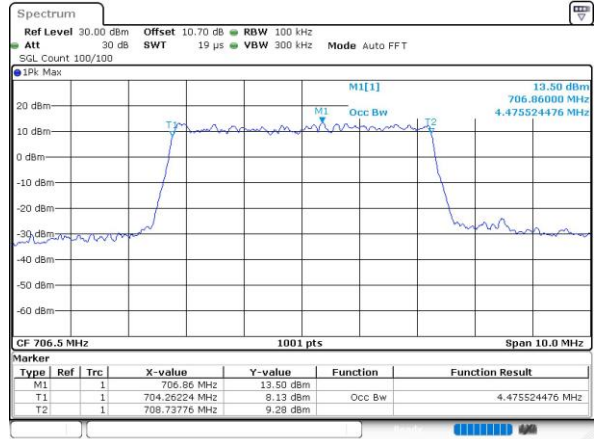


LTE Band 17

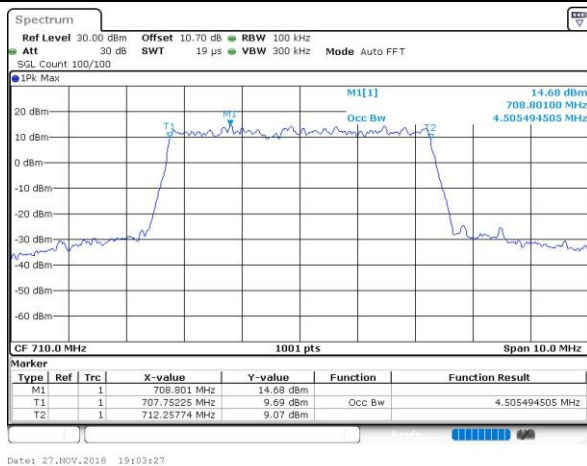
Lowest Channel / 5MHz / QPSK



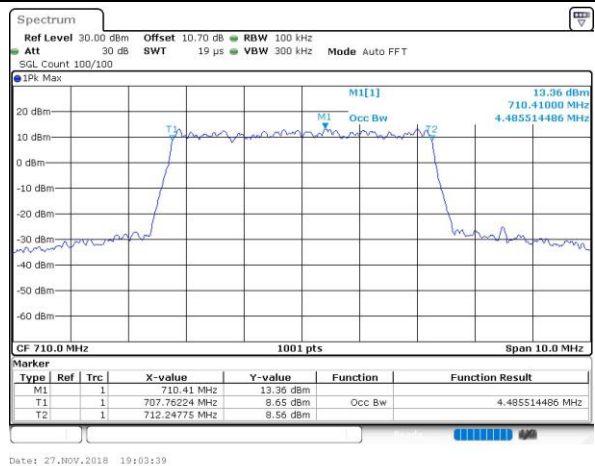
Lowest Channel / 5MHz / 16QAM



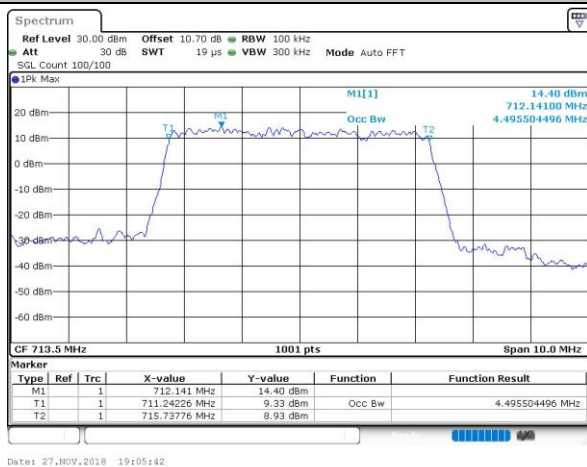
Middle Channel / 5MHz / QPSK



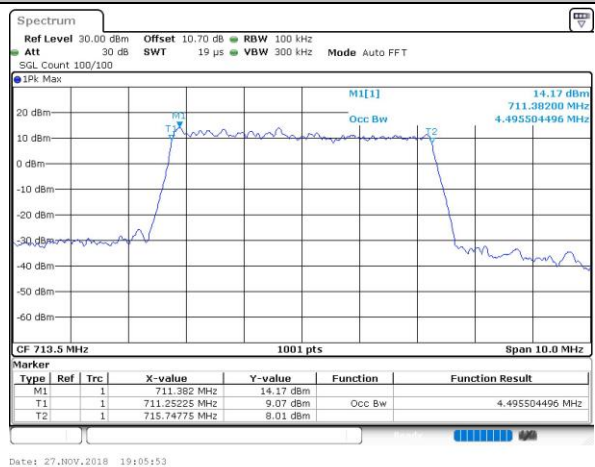
Middle Channel / 5MHz / 16QAM



Highest Channel / 5MHz / QPSK



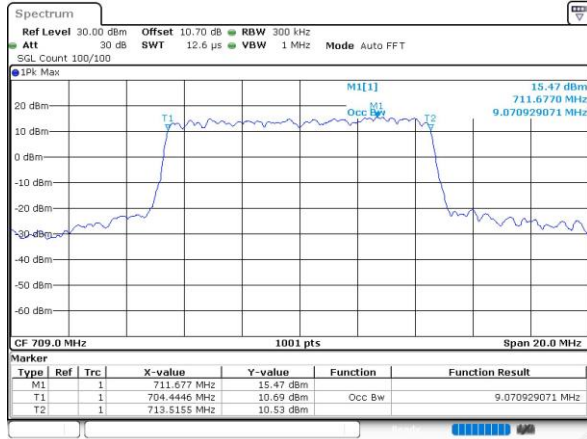
Highest Channel / 5MHz / 16QAM



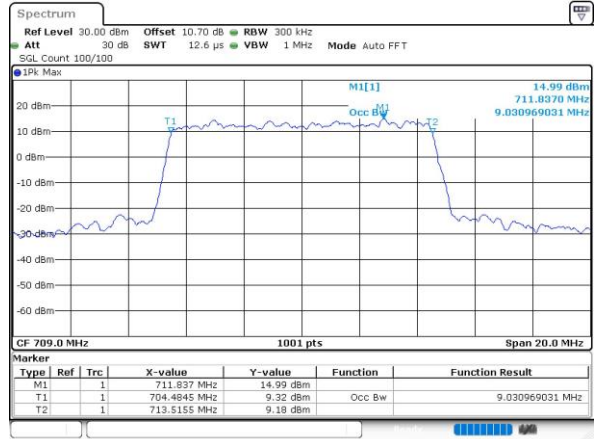


LTE Band 17

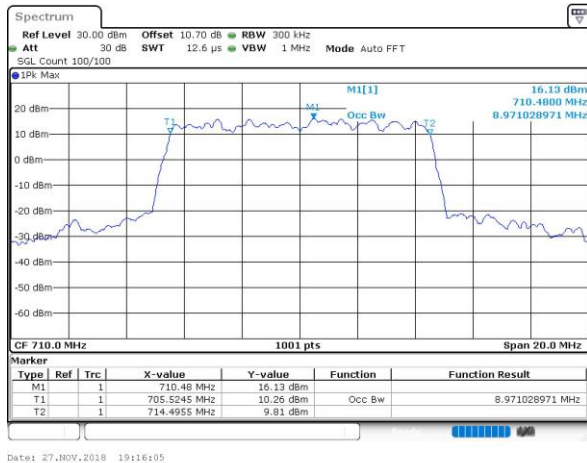
Lowest Channel / 10MHz / QPSK



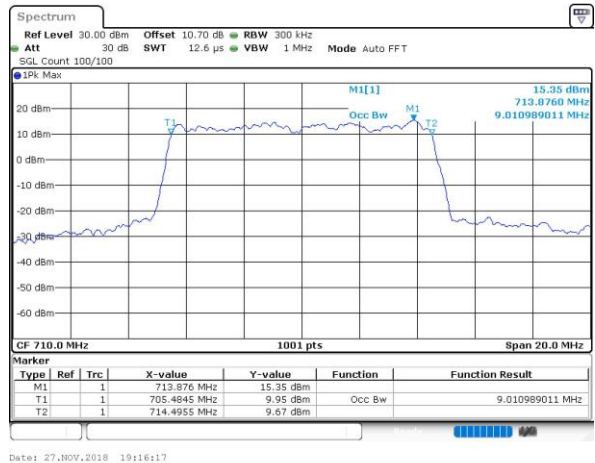
Lowest Channel / 10MHz / 16QAM



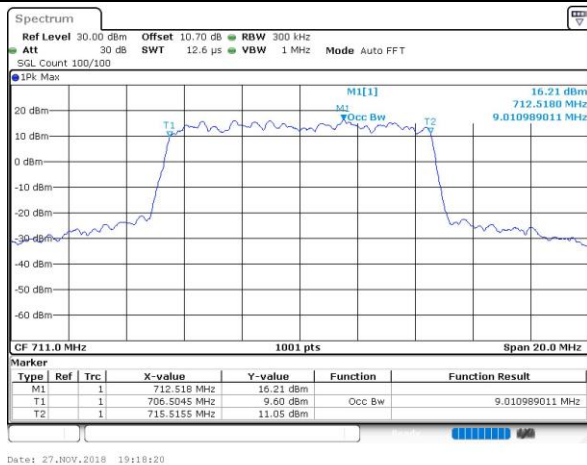
Middle Channel / 10MHz / QPSK



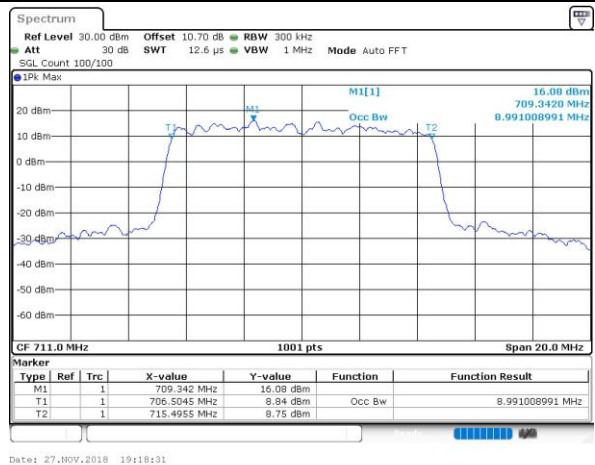
Middle Channel / 10MHz / 16QAM



Highest Channel / 10MHz / QPSK



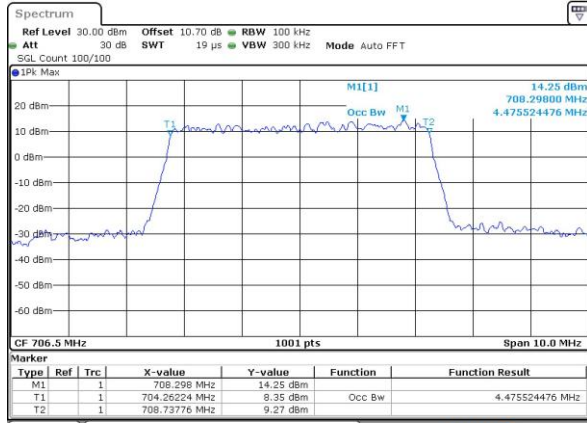
Highest Channel / 10MHz / 16QAM



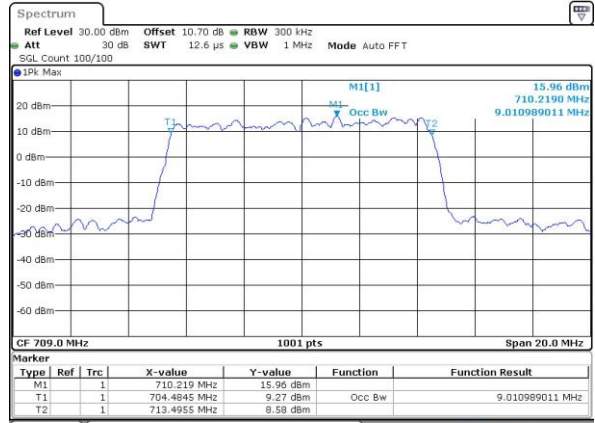


LTE Band 17

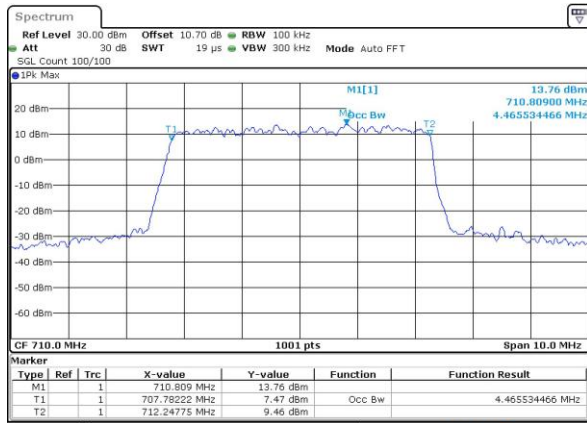
Lowest Channel / 5MHz / 64QAM



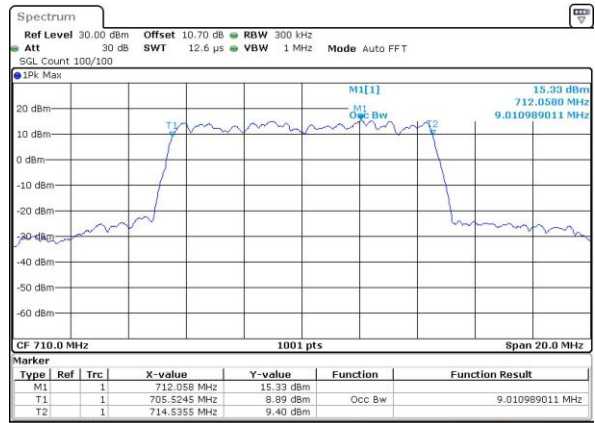
Lowest Channel / 10MHz / 64QAM



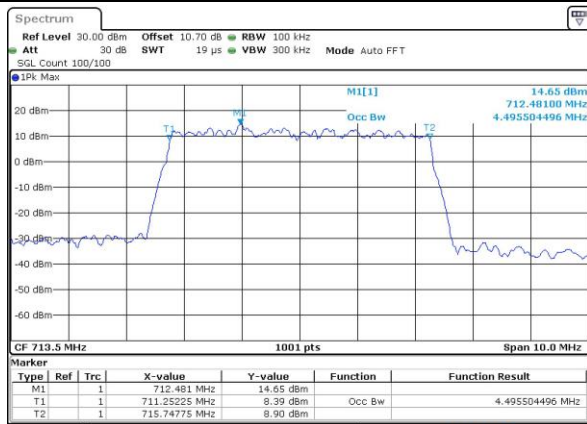
Middle Channel / 5MHz / 64QAM



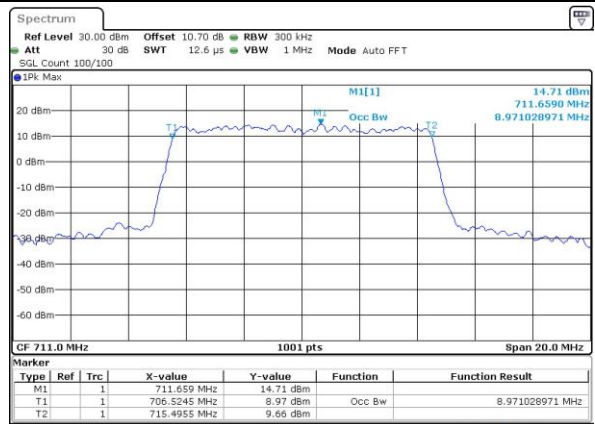
Middle Channel / 10MHz / 64QAM

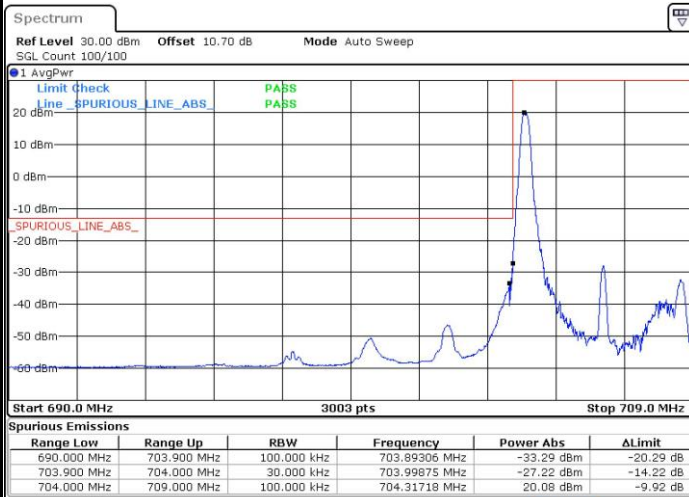
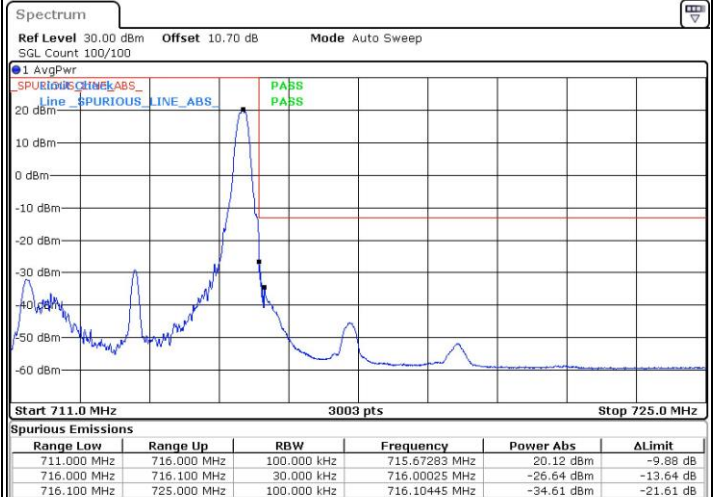
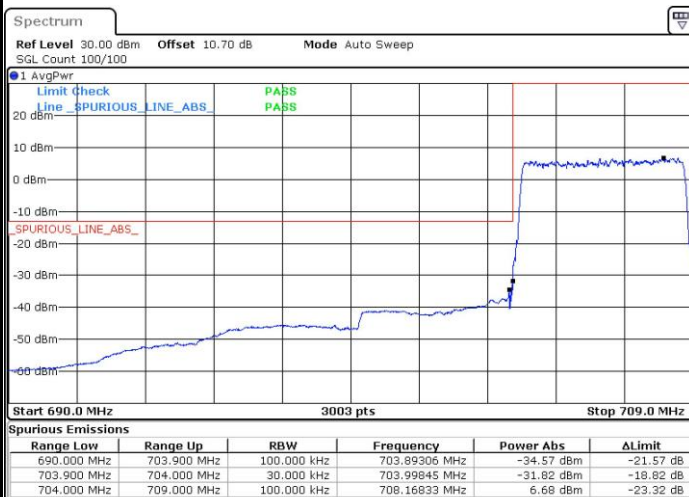
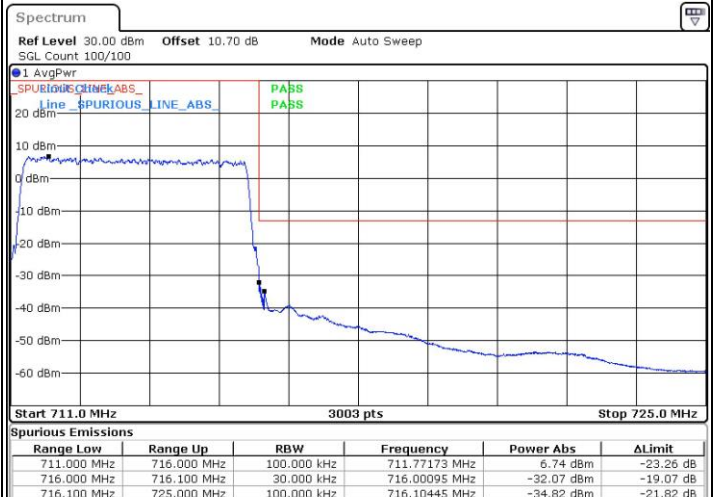


Highest Channel / 5MHz / 64QAM



Highest Channel / 10MHz / 64QAM

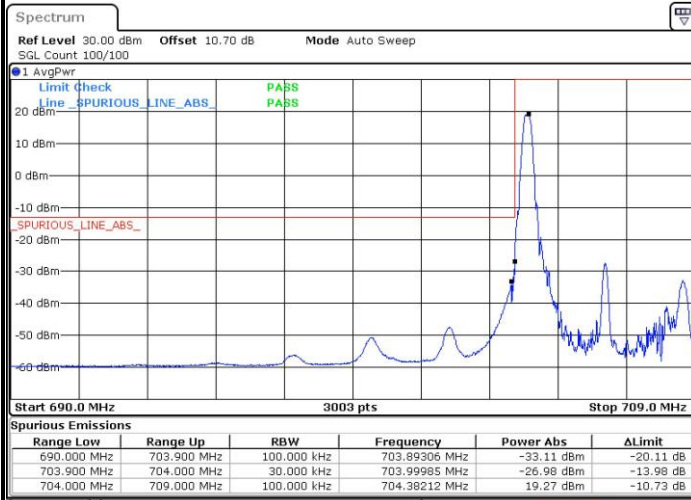


**Conducted Band Edge****LTE Band 17 / 5MHz / QPSK****Lowest Band Edge / 1 RB****Highest Band Edge / 1 RB****Lowest Band Edge / Full RB****Highest Band Edge / Full RB**



LTE Band 17 / 5MHz / 16QAM

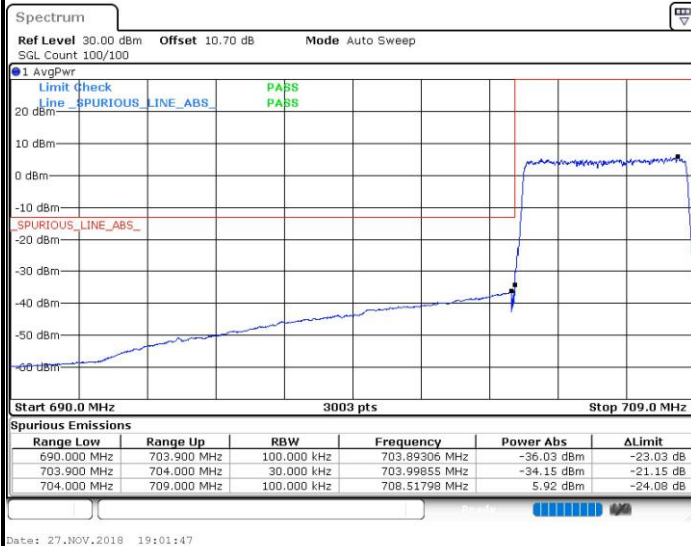
Lowest Band Edge / 1 RB



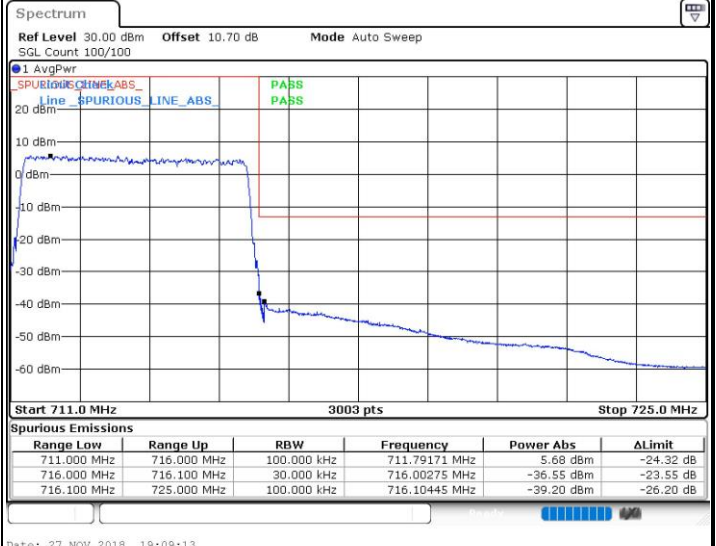
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



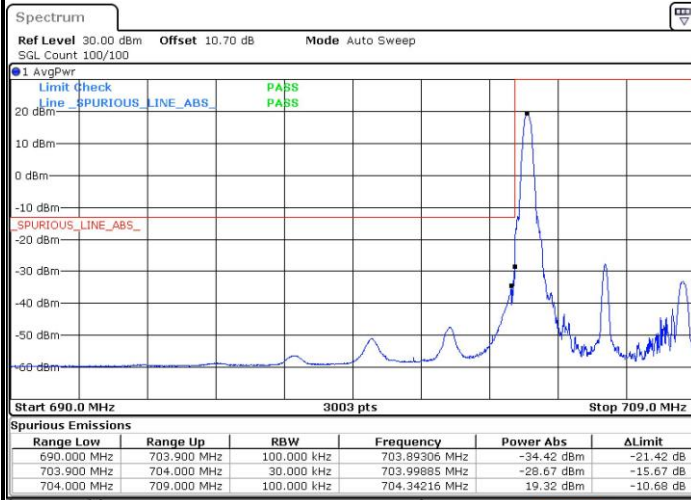
Highest Band Edge / Full RB



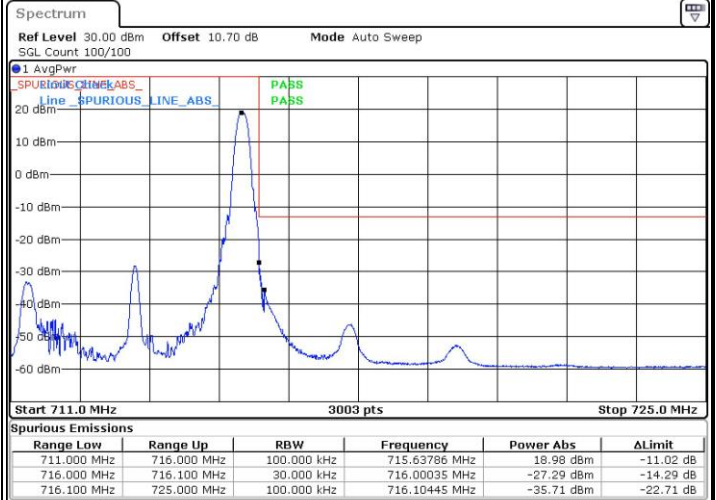


LTE Band 17 / 5MHz / 64QAM

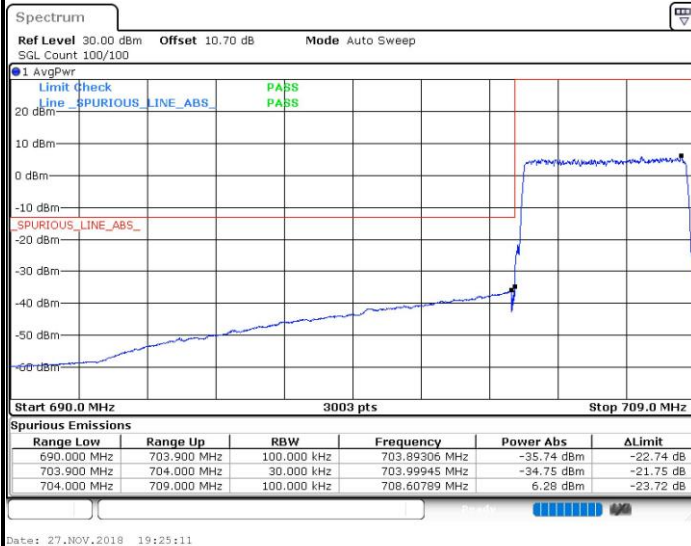
Lowest Band Edge / 1 RB



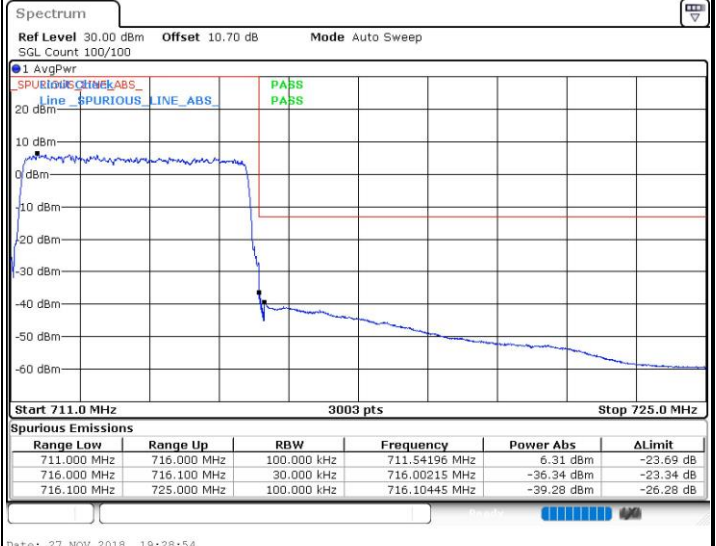
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



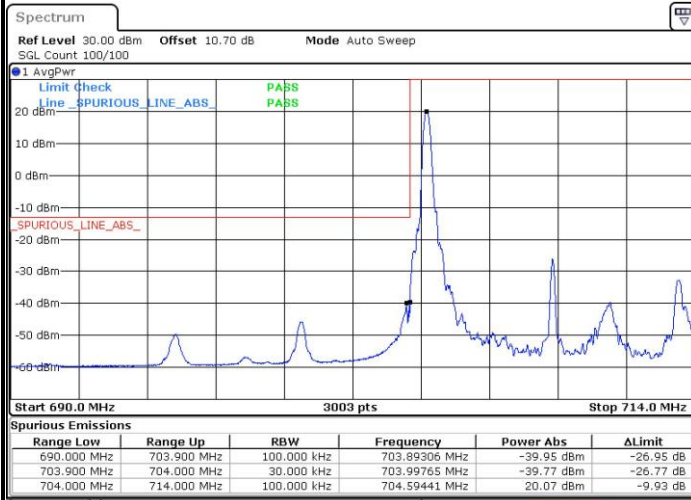
Highest Band Edge / Full RB



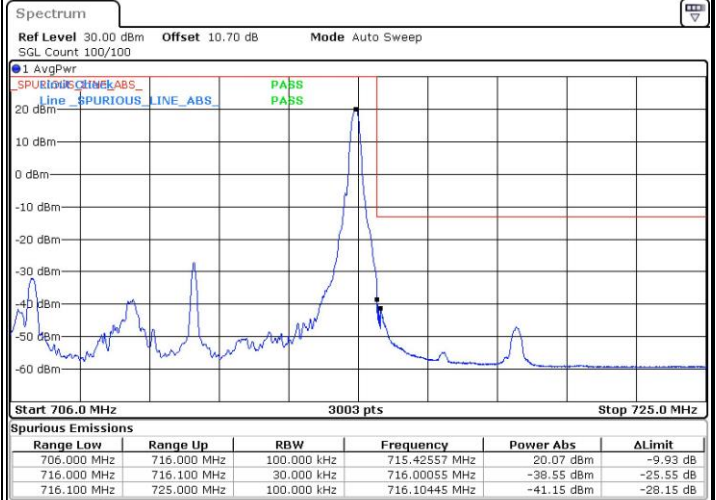


LTE Band 17 / 10MHz / QPSK

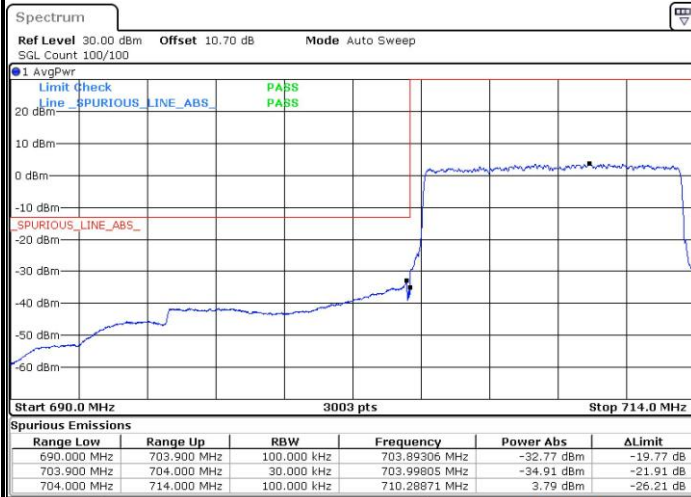
Lowest Band Edge / 1 RB



Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



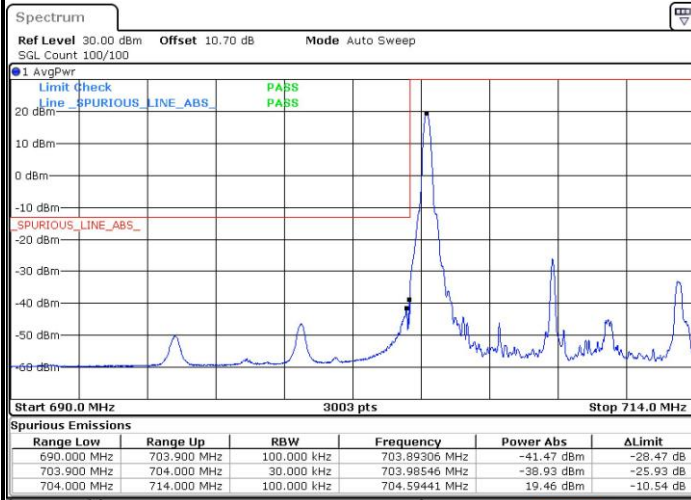
Highest Band Edge / Full RB



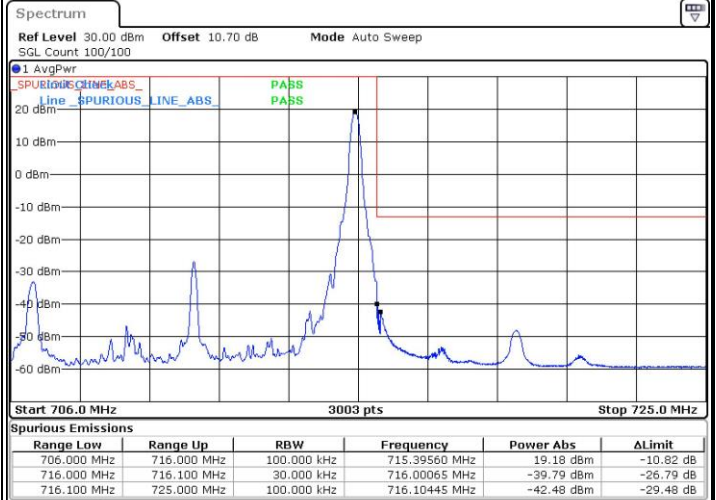


LTE Band 17 / 10MHz / 16QAM

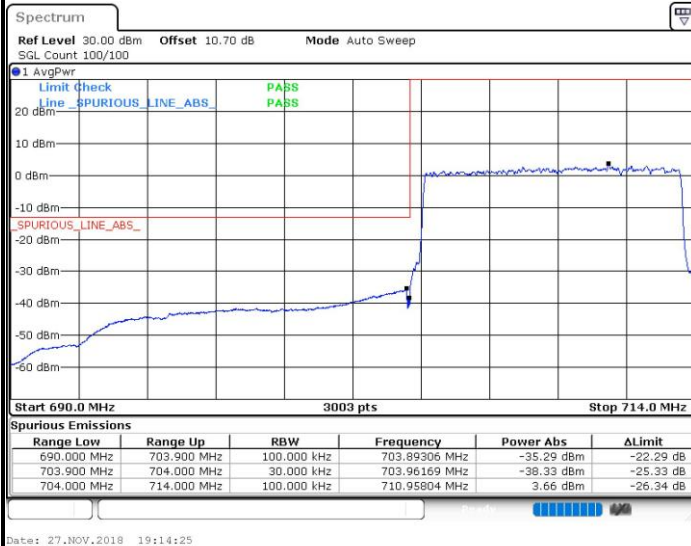
Lowest Band Edge / 1 RB



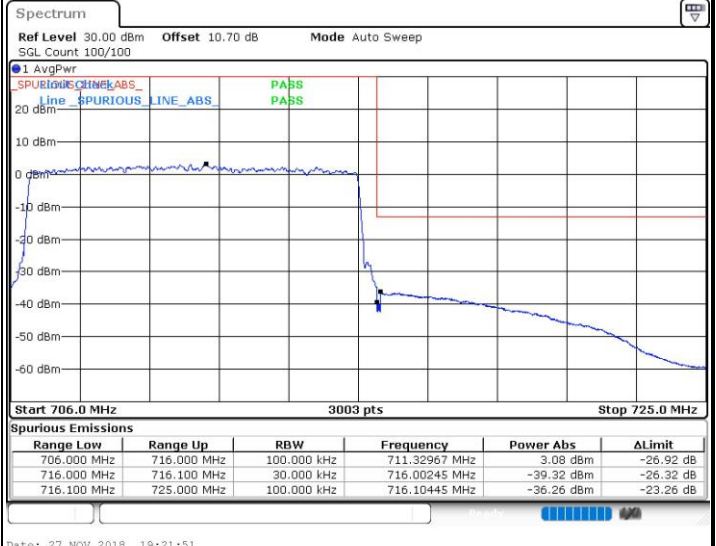
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



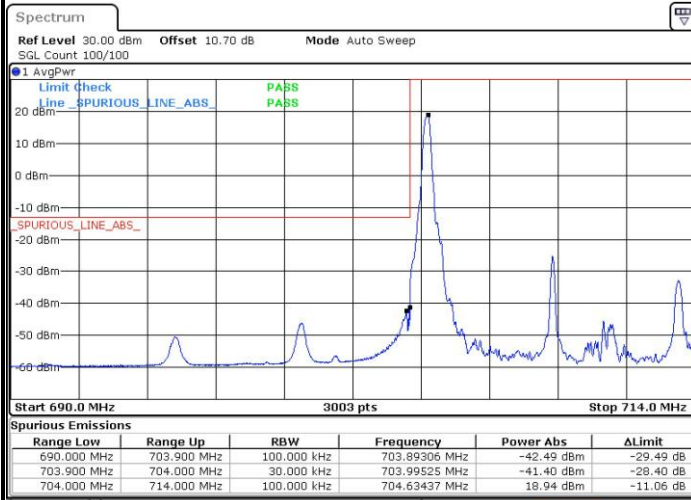
Highest Band Edge / Full RB



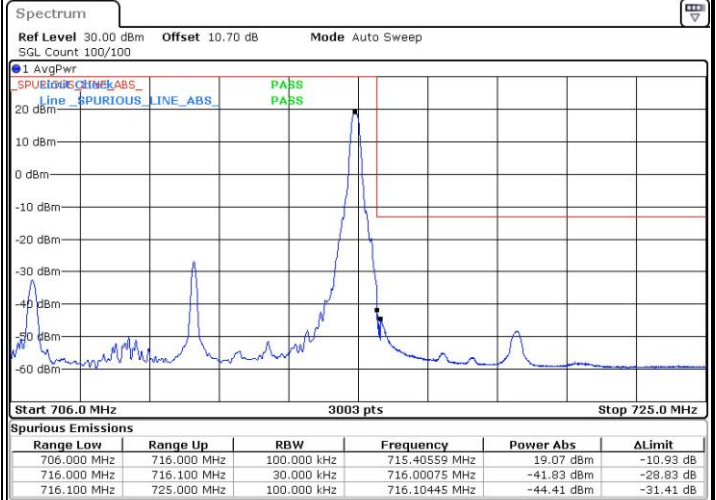


LTE Band 17 / 10MHz / 64QAM

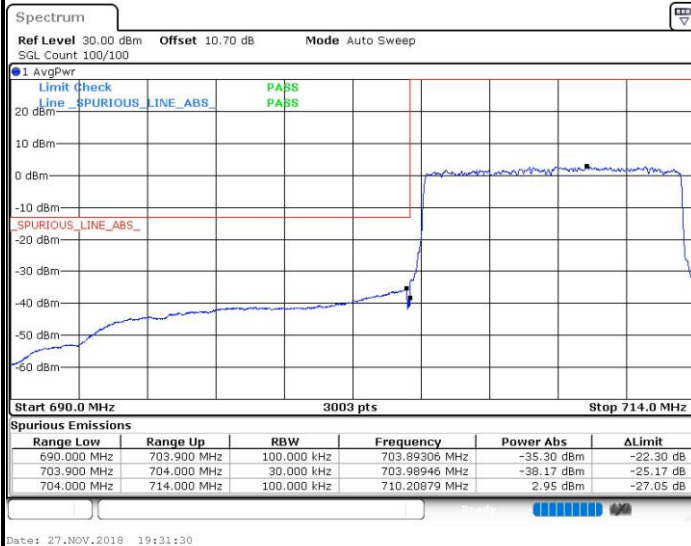
Lowest Band Edge / 1 RB



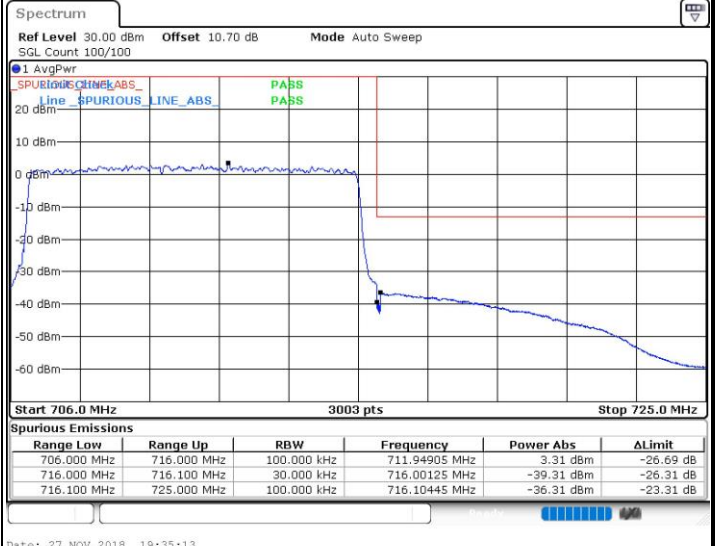
Highest Band Edge / 1 RB

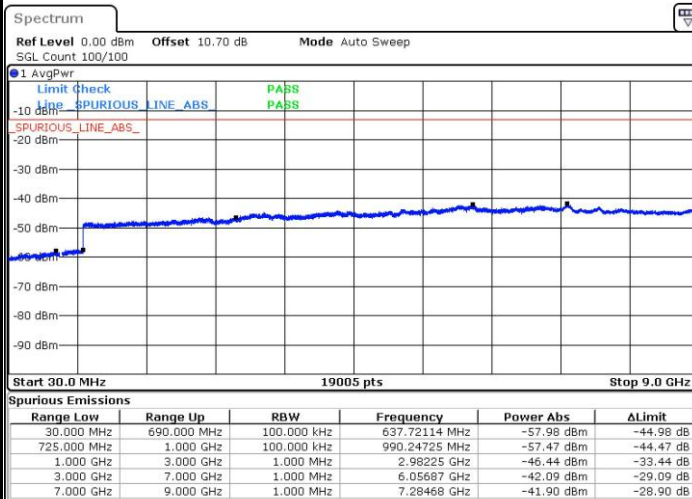


Lowest Band Edge / Full RB

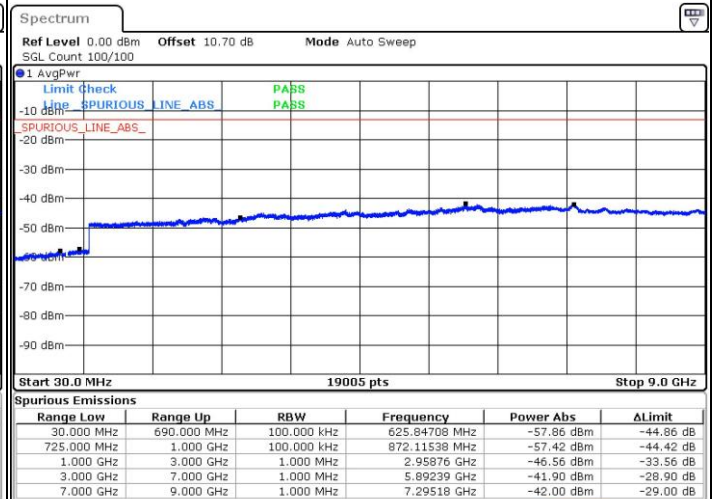


Highest Band Edge / Full RB

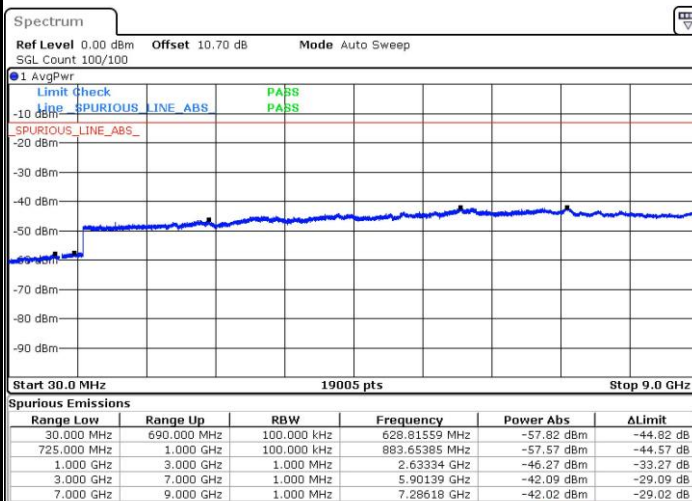


**Conducted Spurious Emission****LTE Band 17 / 5MHz****Lowest Channel / QPSK**

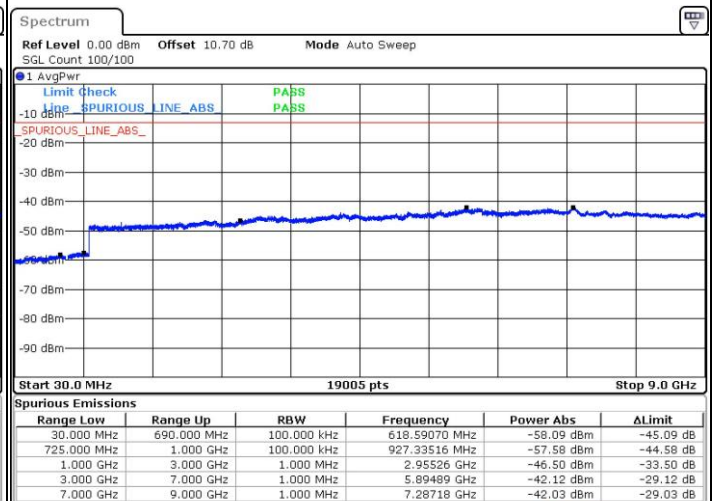
Date: 27.NOV.2018 19:02:32

Lowest Channel / 16QAM

Date: 27.NOV.2018 19:03:16

Middle Channel / QPSK

Date: 27.NOV.2018 19:04:46

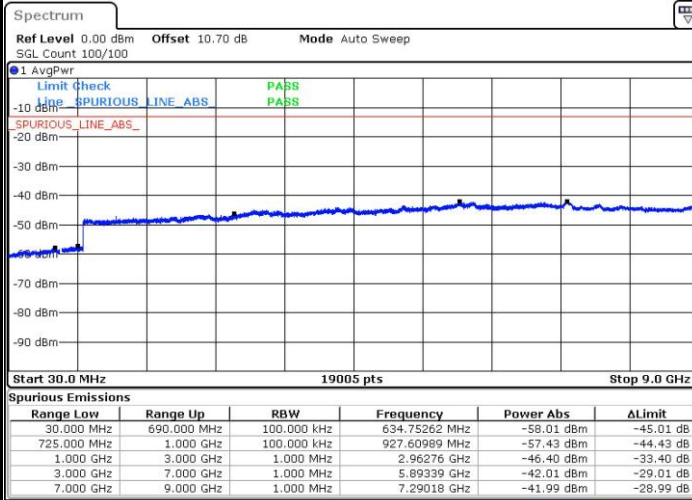
Middle Channel / 16QAM

Date: 27.NOV.2018 19:05:31



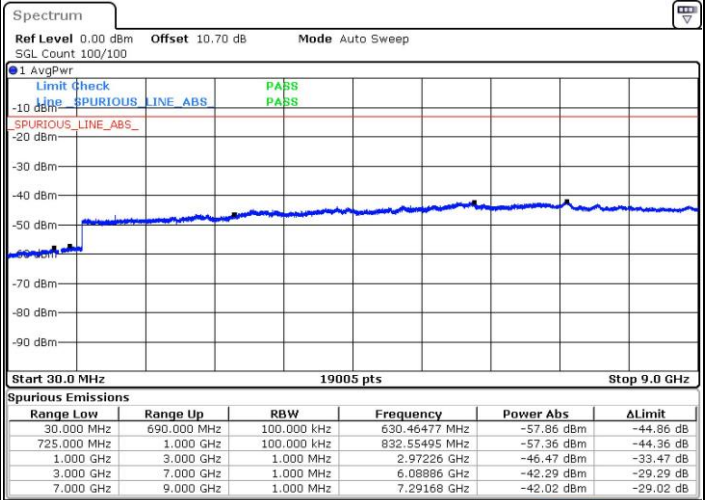
LTE Band 17 / 5MHz

Highest Channel / QPSK



Date: 27.NOV.2018 19:09:58

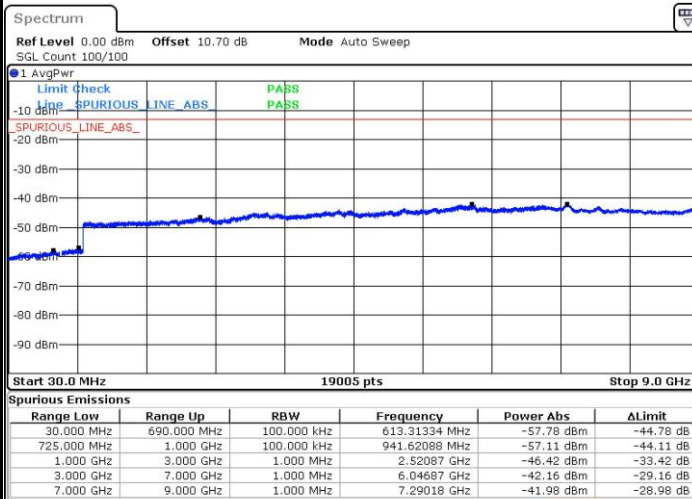
Highest Channel / 16QAM



Date: 27.NOV.2018 19:10:42

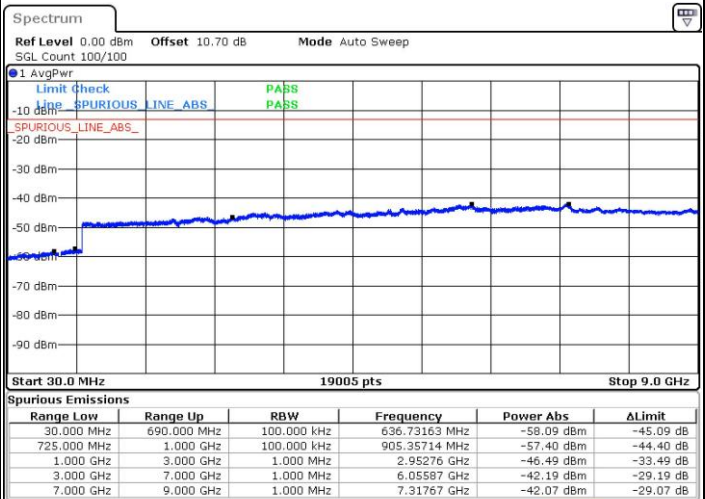
LTE Band 17 / 10MHz

Lowest Channel / QPSK



Date: 27.NOV.2018 19:15:09

Lowest Channel / 16QAM

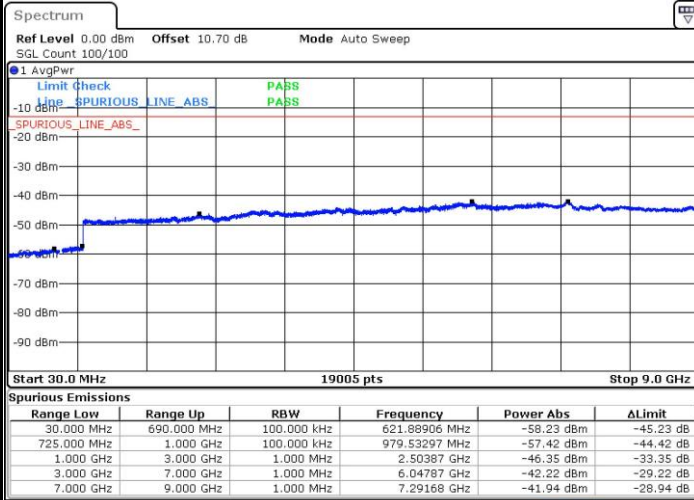


Date: 27.NOV.2018 19:15:54



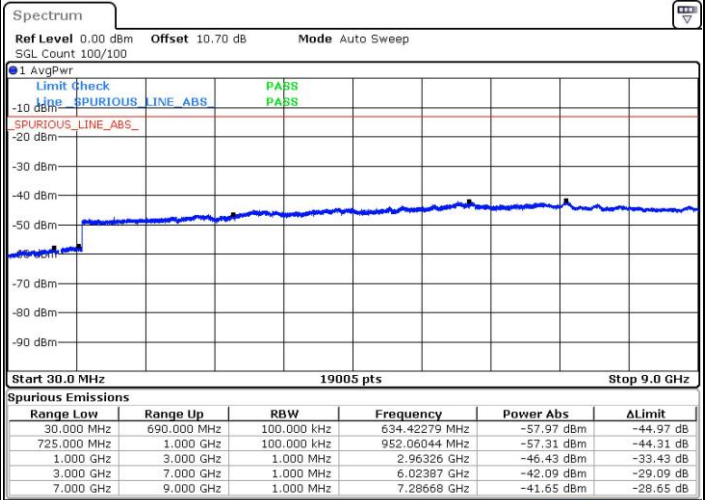
LTE Band 17 / 10MHz

Middle Channel / QPSK



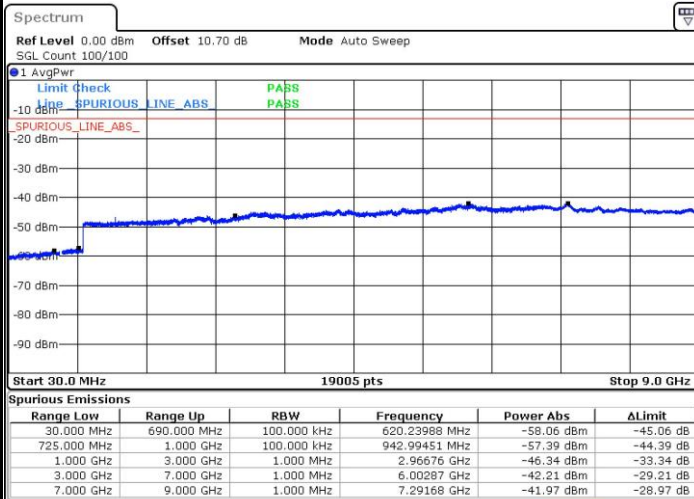
Date: 27.NOV.2018 19:17:24

Middle Channel / 16QAM



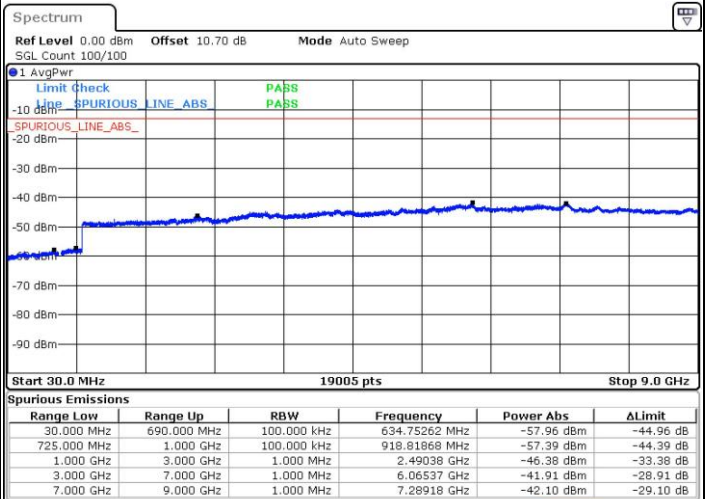
Date: 27.NOV.2018 19:18:08

Highest Channel / QPSK



Date: 27.NOV.2018 19:22:36

Highest Channel / 16QAM

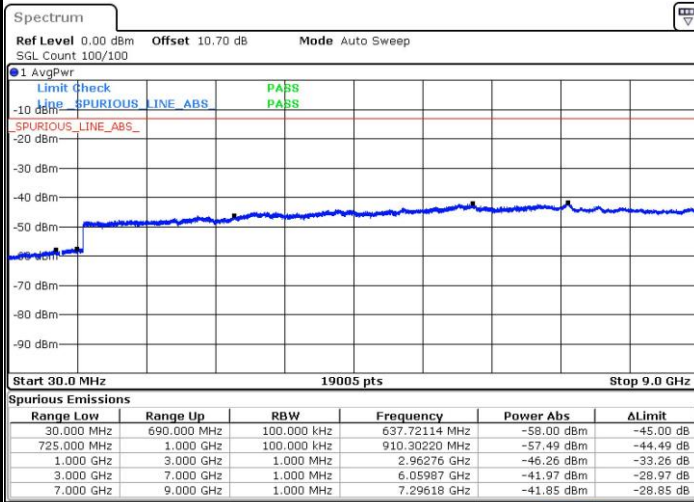


Date: 27.NOV.2018 19:23:20



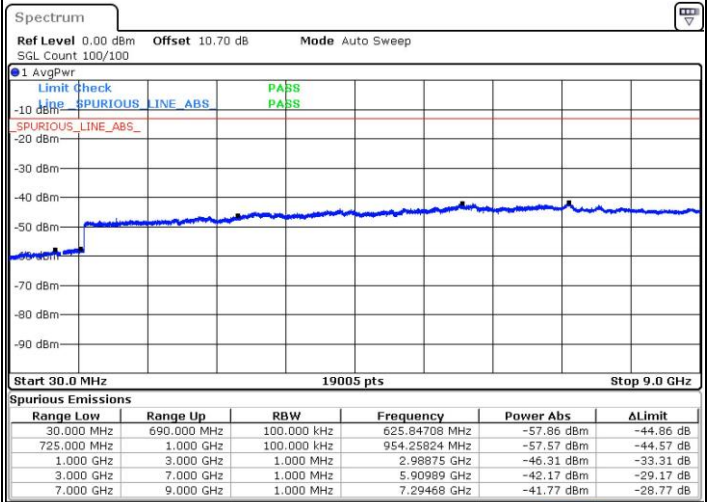
LTE Band 17 / 5MHz

Lowest Channel / 64QAM



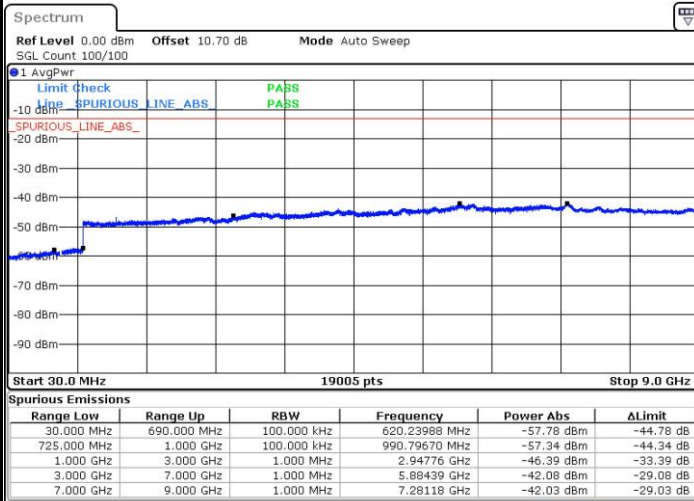
Date: 27.NOV.2018 19:25:56

Middle Channel / 64QAM



Date: 27.NOV.2018 19:27:03

Highest Channel / 64QAM

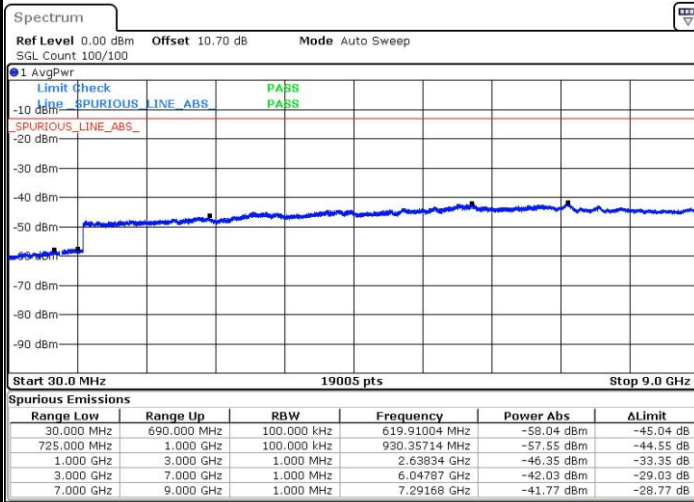


Date: 27.NOV.2018 19:29:39



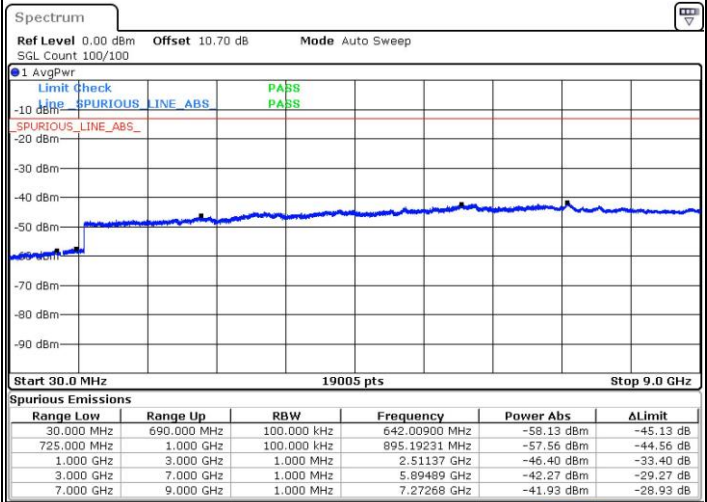
LTE Band 17 / 10MHz

Lowest Channel / 64QAM



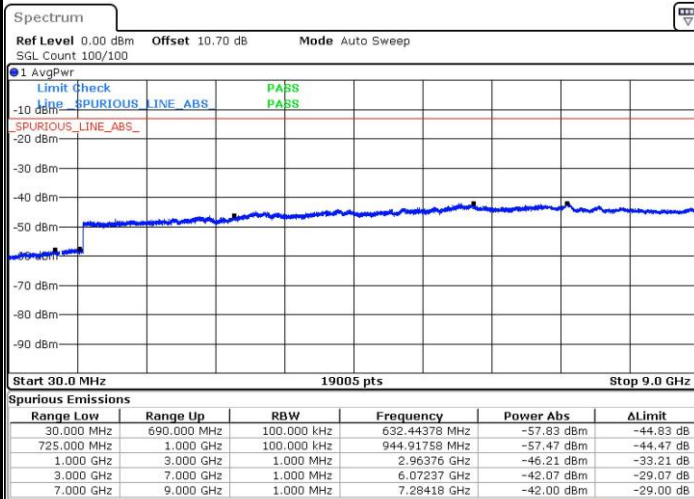
Date: 27.NOV.2018 19:32:15

Middle Channel / 64QAM



Date: 27.NOV.2018 19:33:22

Highest Channel / 64QAM



Date: 27.NOV.2018 19:35:58

Frequency Stability

Test Conditions		LTE Band 17 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0063	PASS
40	Normal Voltage	0.0092	
30	Normal Voltage	0.0014	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0072	
0	Normal Voltage	0.0006	
-10	Normal Voltage	0.0137	
-20	Normal Voltage	0.0075	
-30	Normal Voltage	0.0004	
20	Maximum Voltage	0.0086	
20	Normal Voltage	0.0000	
20	Battery End Point	0.0058	

Note:

1. Normal Voltage =3.85 V. ; Battery End Point (BEP) =3.65 V. ; Maximum Voltage =4.25 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



Appendix A. Test Results of ERP and Radiated Test

ERP

LTE Band 5 / 1.4MHz (Average) (GT - LC = -2.3 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	3	22.96	0.1977	18.51	0.0710
Middle		1	3	22.97	0.1982	18.52	0.0711
Highest		1	3	23.15	0.2065	18.70	0.0741
Lowest	16QAM	1	3	22.16	0.1644	17.71	0.0590
Middle		1	3	22.27	0.1687	17.82	0.0605
Highest		1	3	22.44	0.1754	17.99	0.0630
Lowest	64QAM	1	3	21.13	0.1297	16.68	0.0466
Middle		1	3	21.17	0.1309	16.72	0.0470
Highest		1	3	21.32	0.1355	16.87	0.0486
Limit	ERP < 7W			Result		PASS	

LTE Band 5 / 3MHz (Average) (GT - LC = -2.3 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	22.98	0.1986	18.53	0.0713
Middle		1	0	22.96	0.1977	18.51	0.0710
Highest		1	0	23.18	0.2080	18.73	0.0746
Lowest	16QAM	1	8	22.21	0.1663	17.76	0.0597
Middle		1	8	22.24	0.1675	17.79	0.0601
Highest		1	8	22.51	0.1782	18.06	0.0640
Lowest	64QAM	1	8	21.16	0.1306	16.71	0.0469
Middle		1	8	21.24	0.1330	16.79	0.0478
Highest		1	8	21.38	0.1374	16.93	0.0493
Limit	ERP < 7W			Result		PASS	

LTE Band 5 / 5MHz (Average) (GT - LC = -2.3 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	12	23.04	0.2014	18.59	0.0723
Middle		1	12	23.00	0.1995	18.55	0.0716
Highest		1	12	23.18	0.2080	18.73	0.0746
Lowest	16QAM	1	12	22.36	0.1722	17.91	0.0618
Middle		1	12	22.30	0.1698	17.85	0.0610
Highest		1	12	22.48	0.1770	18.03	0.0635
Lowest	64QAM	1	24	21.29	0.1346	16.84	0.0483
Middle		1	24	21.25	0.1334	16.80	0.0479
Highest		1	24	21.40	0.1380	16.95	0.0495
Limit	ERP < 7W			Result		PASS	



LTE Band 5 / 10MHz (Average) (GT - LC = -2.3 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	23.10	0.2042	18.65	0.0733
Middle		1	0	23.03	0.2009	18.58	0.0721
Highest		1	0	23.19	0.2084	18.74	0.0748
Lowest	16QAM	1	25	22.39	0.1734	17.94	0.0622
Middle		1	25	22.32	0.1706	17.87	0.0612
Highest		1	25	22.46	0.1762	18.01	0.0632
Lowest	64QAM	1	25	21.31	0.1352	16.86	0.0485
Middle		1	25	21.18	0.1312	16.73	0.0471
Highest		1	25	21.38	0.1374	16.93	0.0493
Limit	ERP < 7W			Result		PASS	



LTE Band 12 / 1.4MHz (Average) (GT - LC = -4.3 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	3	22.80	0.1905	16.35	0.0432
Middle		1	3	22.79	0.1901	16.34	0.0431
Highest		1	3	23.31	0.2143	16.86	0.0485
Lowest	16QAM	1	3	22.17	0.1648	15.72	0.0373
Middle		1	3	22.14	0.1637	15.69	0.0371
Highest		1	3	22.55	0.1799	16.10	0.0407
Lowest	64QAM	1	3	21.07	0.1279	14.62	0.0290
Middle		1	3	21.00	0.1259	14.55	0.0285
Highest		1	3	21.51	0.1416	15.06	0.0321
Limit	ERP < 3W			Result		PASS	

LTE Band 12 / 3MHz (Average) (GT - LC = -4.3 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	22.93	0.1963	16.48	0.0445
Middle		1	0	22.68	0.1854	16.23	0.0420
Highest		1	0	23.27	0.2123	16.82	0.0481
Lowest	16QAM	1	14	22.12	0.1629	15.67	0.0369
Middle		1	14	22.14	0.1637	15.69	0.0371
Highest		1	14	22.55	0.1799	16.10	0.0407
Lowest	64QAM	1	14	21.04	0.1271	14.59	0.0288
Middle		1	14	21.06	0.1276	14.61	0.0289
Highest		1	14	21.54	0.1426	15.09	0.0323
Limit	ERP < 3W			Result		PASS	

LTE Band 12 / 5MHz (Average) (GT - LC = -4.3 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	22.92	0.1959	16.47	0.0444
Middle		1	0	22.73	0.1875	16.28	0.0425
Highest		1	0	23.27	0.2123	16.82	0.0481
Lowest	16QAM	1	0	22.25	0.1679	15.80	0.0380
Middle		1	0	21.98	0.1578	15.53	0.0357
Highest		1	0	22.56	0.1803	16.11	0.0408
Lowest	64QAM	1	24	20.98	0.1253	14.53	0.0284
Middle		1	24	21.03	0.1268	14.58	0.0287
Highest		1	24	21.52	0.1419	15.07	0.0321
Limit	ERP < 3W			Result		PASS	



LTE Band 12 / 10MHz (Average) (GT - LC = -4.3 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	23.25	0.2113	16.80	0.0479
Middle		1	0	23.07	0.2028	16.62	0.0459
Highest		1	0	23.32	0.2148	16.87	0.0486
Lowest	16QAM	1	0	22.39	0.1734	15.94	0.0393
Middle		1	0	22.15	0.1641	15.70	0.0372
Highest		1	0	22.26	0.1683	15.81	0.0381
Lowest	64QAM	1	0	21.28	0.1343	14.83	0.0304
Middle		1	0	21.05	0.1274	14.60	0.0288
Highest		1	0	21.26	0.1337	14.81	0.0303
Limit	ERP < 3W			Result		PASS	



LTE Band 17 / 5MHz (Average) (GT - LC = -4.3 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	12	22.85	0.1928	16.40	0.0437
Middle		1	12	22.91	0.1954	16.46	0.0443
Highest		1	12	22.84	0.1923	16.39	0.0436
Lowest	16QAM	1	12	22.23	0.1671	15.78	0.0378
Middle		1	12	22.23	0.1671	15.78	0.0378
Highest		1	12	22.20	0.1660	15.75	0.0376
Lowest	64QAM	1	0	20.96	0.1247	14.51	0.0282
Middle		1	0	21.12	0.1294	14.67	0.0293
Highest		1	0	21.10	0.1288	14.65	0.0292
Limit	ERP < 3W			Result		PASS	

LTE Band 17 / 10MHz (Average) (GT - LC = -4.3 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	QPSK	1	0	22.93	0.1963	16.48	0.0445
Middle		1	0	22.91	0.1954	16.46	0.0443
Highest		1	0	22.89	0.1945	16.44	0.0441
Lowest	16QAM	1	0	22.11	0.1626	15.66	0.0368
Middle		1	0	22.28	0.1690	15.83	0.0383
Highest		1	0	22.21	0.1663	15.76	0.0377
Lowest	64QAM	1	25	21.18	0.1312	14.73	0.0297
Middle		1	25	21.15	0.1303	14.70	0.0295
Highest		1	25	20.97	0.1250	14.52	0.0283
Limit	ERP < 3W			Result		PASS	

**Radiated Spurious Emission****LTE Band 5**

LTE Band 5 / 10MHz / 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	1648	-62.47	-13	-49.47	-74.94	-64.23	0.98	4.89	H
	2472	-59.44	-13	-46.44	-77.1	-61.32	1.28	5.32	H
	3296	-58.34	-13	-45.34	-77.97	-61.75	1.54	7.10	H
									H
									H
									H
									H
	1648	-60.13	-13	-47.13	-73	-61.89	0.98	4.89	V
	2472	-58.91	-13	-45.91	-77.05	-60.79	1.28	5.32	V
	3296	-57.94	-13	-44.94	-77.98	-61.35	1.54	7.10	V
									V
									V
									V
									V



Middle	1664	-62.72	-13	-49.72	-75.28	-64.43	0.98	4.84	H
	2496	-59.41	-13	-46.41	-77.05	-61.36	1.29	5.39	H
	3328	-58.28	-13	-45.28	-78.15	-61.82	1.55	7.24	H
									H
									H
									H
									H
	1664	-59.38	-13	-46.38	-72.5	-61.09	0.98	4.84	V
	2496	-59.21	-13	-46.21	-77.3	-61.16	1.29	5.39	V
	3328	-57.71	-13	-44.71	-77.76	-61.25	1.55	7.24	V
									V
									V
									V
									V
Highest	1680	-62.51	-13	-49.51	-75.31	-64.16	0.99	4.80	H
	2520	-59.89	-13	-46.89	-77.56	-61.86	1.30	5.42	H
	3352	-58.46	-13	-45.46	-78.46	-62.1	1.56	7.35	H
									H
									H
									H
									H
	1680	-61.52	-13	-48.52	-74.79	-63.17	0.99	4.80	V
	2520	-59.15	-13	-46.15	-77.32	-61.12	1.30	5.42	V
	3352	-58.05	-13	-45.05	-78.26	-61.69	1.56	7.35	V
									V
									V
									V
									V

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

**LTE Band 12**

LTE Band 12 / 10MHz / 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	1400	-57.15	-13	-44.15	-67.89	-58.81	0.87	4.68	H
	2096	-61.26	-13	-48.26	-77.07	-62.13	1.16	4.19	H
	2792	-60.05	-13	-47.05	-78.1	-62.15	1.38	5.63	H
									H
									H
									H
									H
	1400	-55.68	-13	-42.68	-66.93	-57.34	0.87	4.68	V
	2096	-60.81	-13	-47.81	-77	-61.68	1.16	4.19	V
	2792	-59.35	-13	-46.35	-78.1	-61.45	1.38	5.63	V
									V
									V
									V
									V
Middle	1408	-59.82	-13	-46.82	-70.66	-61.53	0.87	4.73	H
	2104	-61.34	-13	-48.34	-77.26	-62.24	1.17	4.21	H
	2808	-59.87	-13	-46.87	-77.87	-61.98	1.39	5.65	H
									H
									H
									H
									H
	1408	-58.61	-13	-45.61	-69.84	-60.32	0.87	4.73	V
	2104	-60.83	-13	-47.83	-77.07	-61.73	1.17	4.21	V
	2808	-58.91	-13	-45.91	-77.68	-61.02	1.39	5.65	V
									V
									V
									V
									V



Highest	1416	-58.79	-13	-45.79	-69.65	-60.54	0.87	4.78	H
	2120	-60.67	-13	-47.67	-76.58	-61.61	1.17	4.26	H
	2824	-59.74	-13	-46.74	-77.64	-61.86	1.39	5.66	H
									H
									H
									H
									H
	1416	-56.84	-13	-43.84	-68.2	-58.59	0.87	4.78	V
	2120	-60.78	-13	-47.78	-77.06	-61.72	1.17	4.26	V
	2824	-58.93	-13	-45.93	-77.77	-61.05	1.39	5.66	V
									V
									V
									V
									V

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

**LTE Band 17**

LTE Band 17 / 10MHz / 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	1408	-60.08	-13	-47.08	-70.84	-61.79	0.87	4.73	H
	2112	-61.61	-13	-48.61	-77.42	-62.53	1.17	4.24	H
	2816	-60.17	-13	-47.17	-78.04	-62.28	1.39	5.65	H
									H
									H
									H
									H
	1408	-59.71	-13	-46.71	-70.9	-61.42	0.87	4.73	V
	2112	-61.13	-13	-48.13	-77.41	-62.05	1.17	4.24	V
	2816	-59.32	-13	-46.32	-78.09	-61.43	1.39	5.65	V
									V
									V
									V
									V
Middle	1408	-59.12	-13	-46.12	-69.79	-60.83	0.87	4.73	H
	2112	-61.65	-13	-48.65	-77.52	-62.57	1.17	4.24	H
	2824	-59.89	-13	-46.89	-77.87	-62.01	1.39	5.66	H
									H
									H
									H
									H
	1408	-57.06	-13	-44.06	-68.26	-58.77	0.87	4.73	V
	2112	-61.33	-13	-48.33	-77.53	-62.25	1.17	4.24	V
	2824	-58.89	-13	-45.89	-77.62	-61.01	1.39	5.66	V
									V
									V
									V
									V



Highest	1416	-59.79	-13	-46.79	-70.66	-61.54	0.87	4.78	H
	2120	-61.25	-13	-48.25	-77.17	-62.19	1.17	4.26	H
	2824	-59.76	-13	-46.76	-77.74	-61.88	1.39	5.66	H
									H
									H
									H
									H
	1416	-57.21	-13	-44.21	-68.46	-58.96	0.87	4.78	V
	2120	-60.74	-13	-47.74	-77	-61.68	1.17	4.26	V
	2824	-58.89	-13	-45.89	-77.71	-61.01	1.39	5.66	V
									V
									V
									V
									V

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

————THE END————