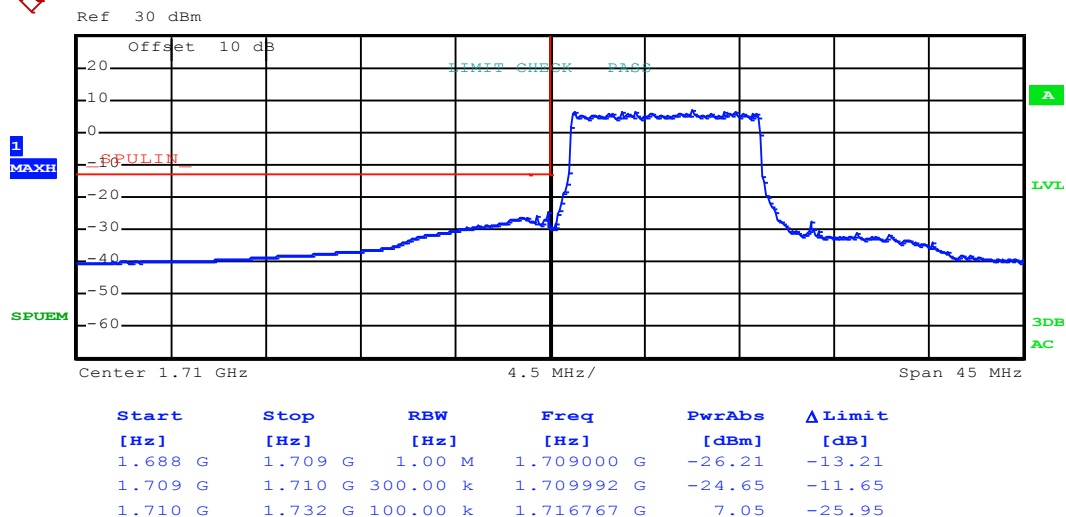
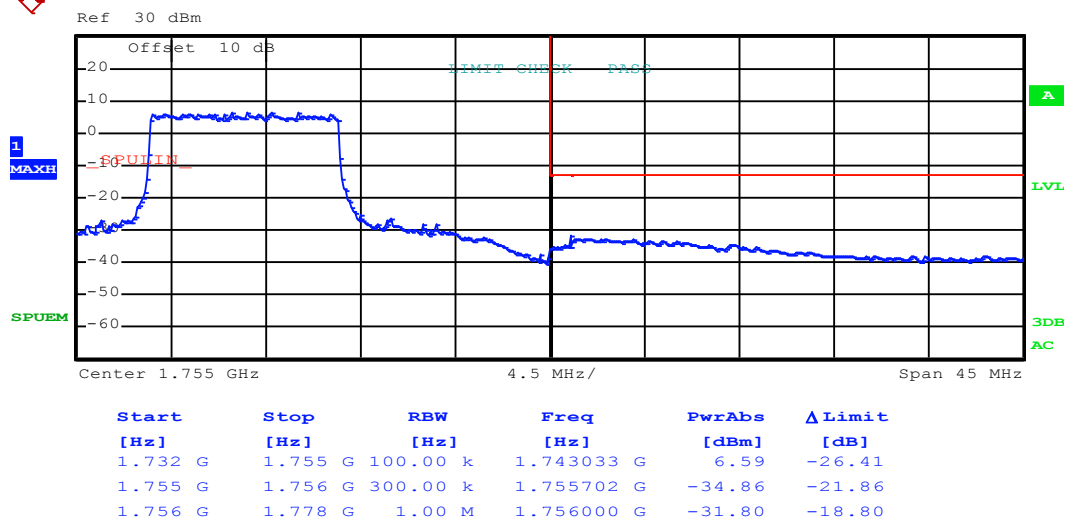


Test Mode:

LTE band 4(16QAM RB Size 50 & RB Offset 0)



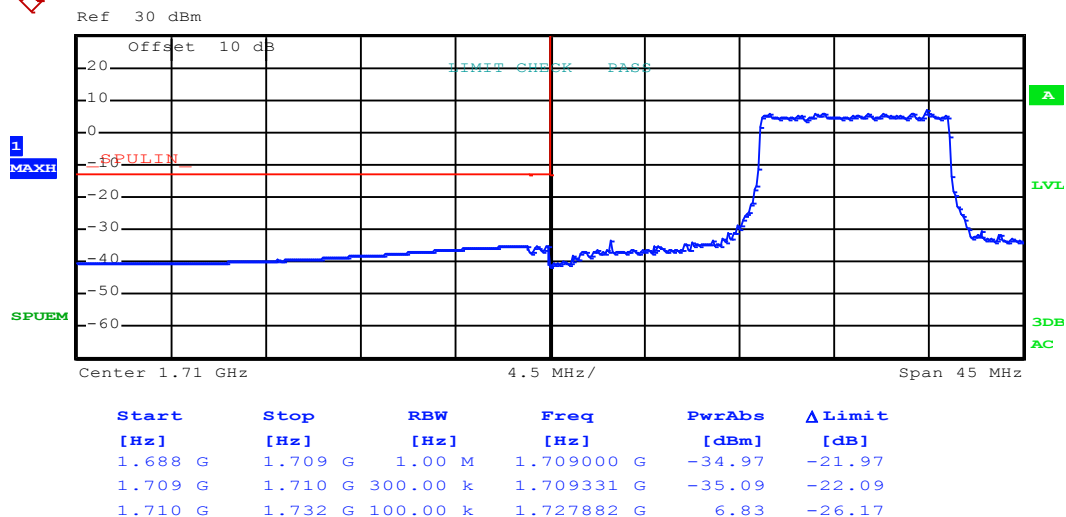
Lowest channel



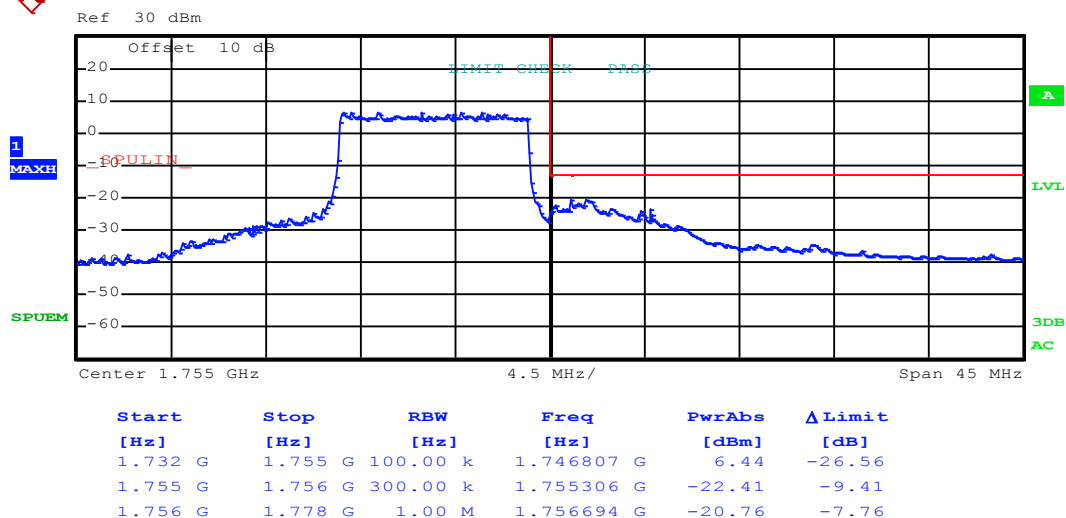
Highest channel

Test Mode:

LTE band 4(16QAM RB Size 50 & RB Offset 49)



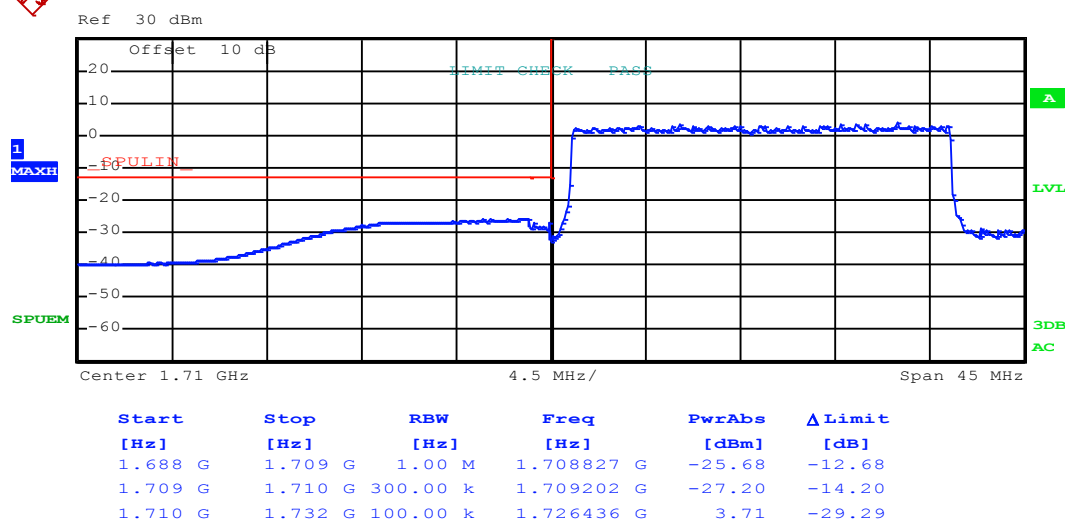
Lowest channel



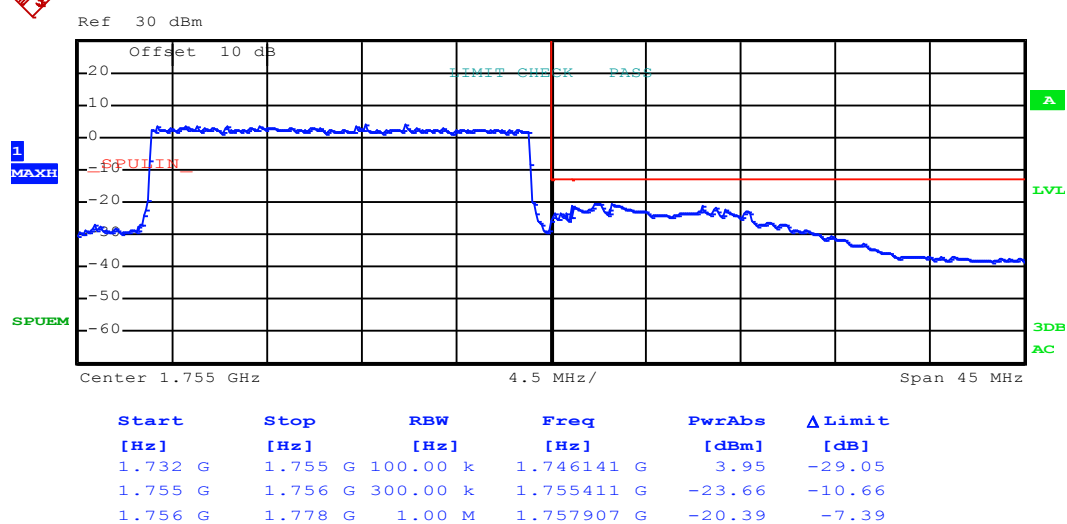
Highest channel

Test Mode:

LTE band 4(16QAM RB Size 100 & RB Offset 0)



Lowest channel

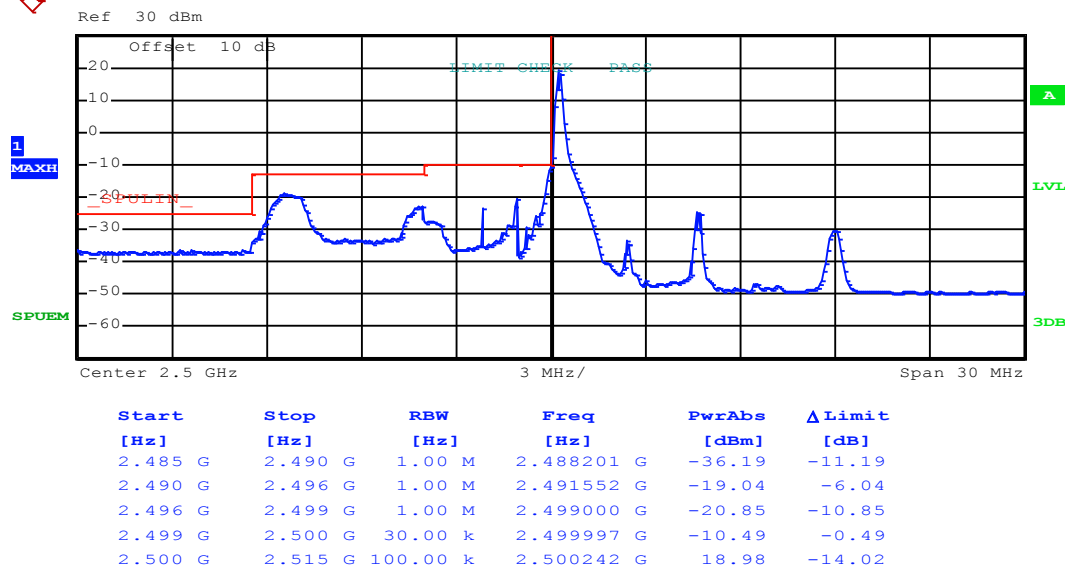


Highest channel

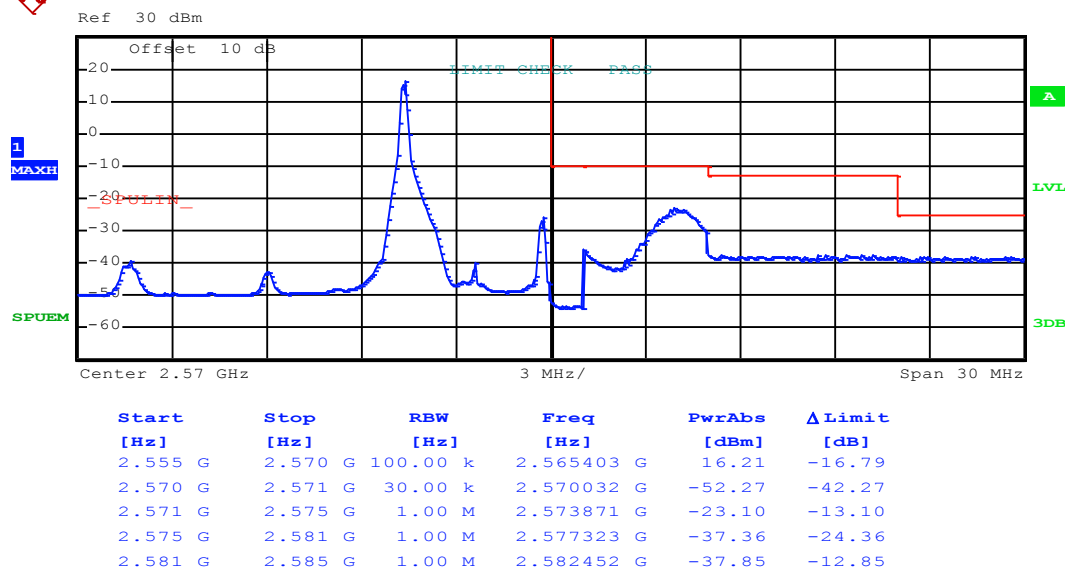
LTE band 7 part:

5MHz:

Test Mode:	LTE band 7(QPSK RB Size 1 & RB Offset 0)
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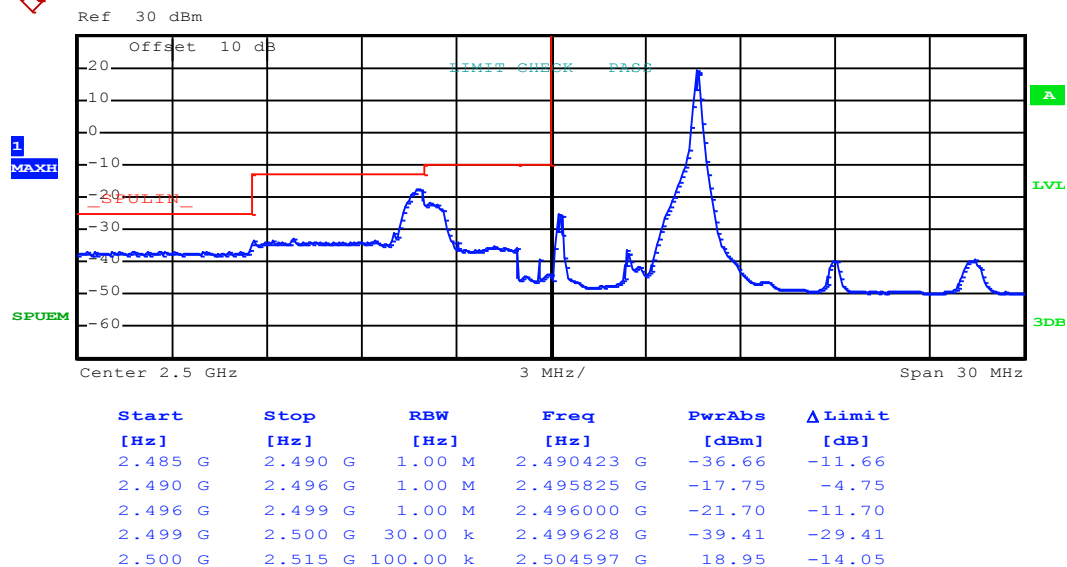
Lowest channel



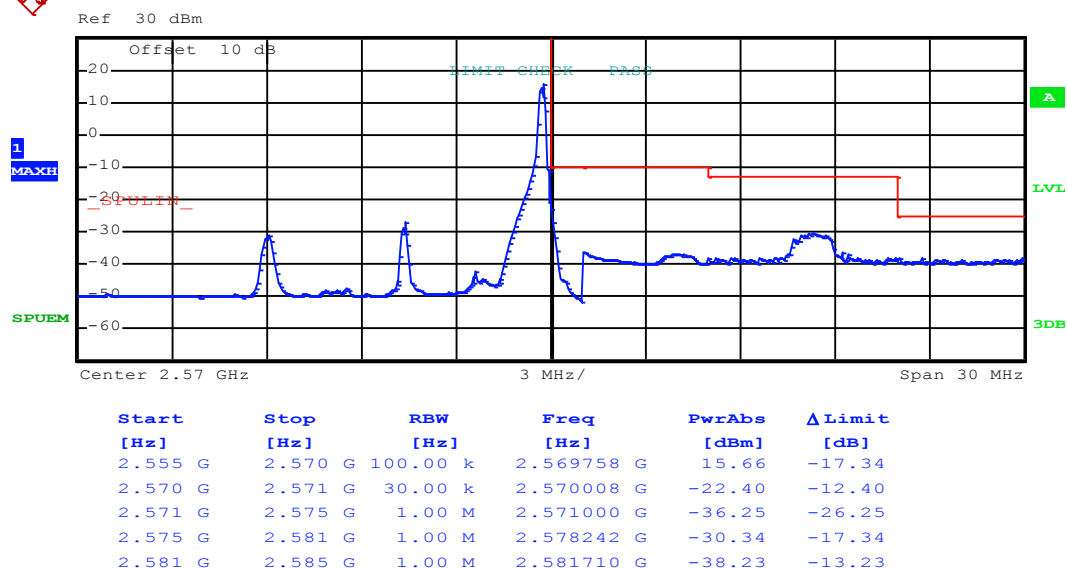
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 24)



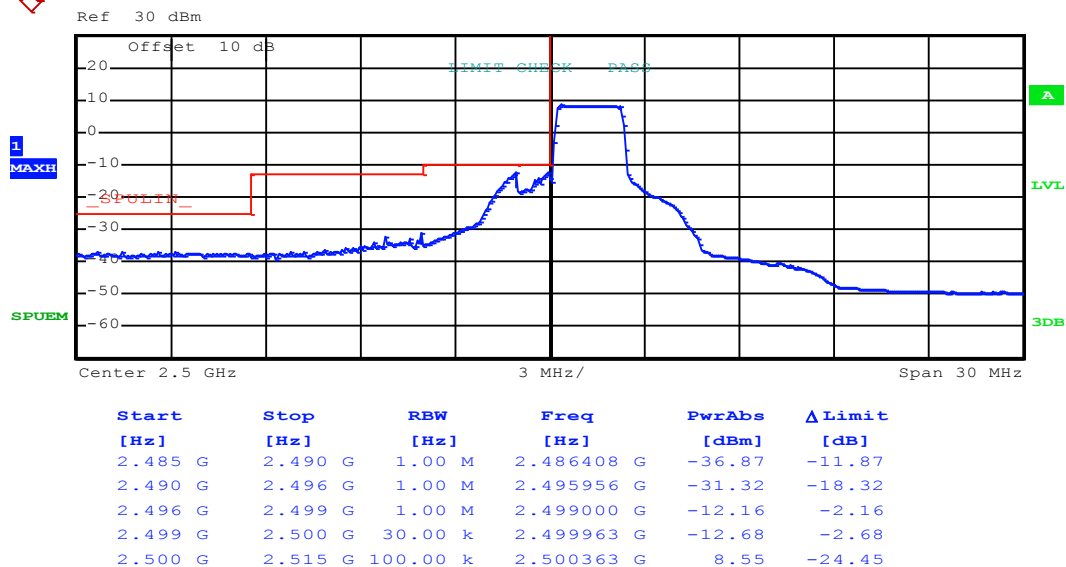
Lowest channel



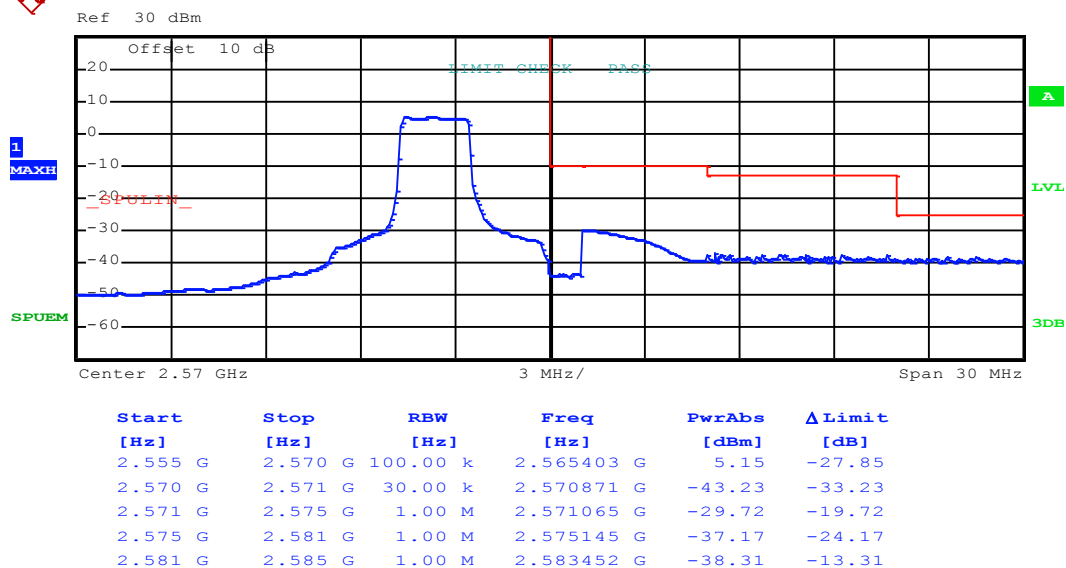
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 12 & RB Offset 0)



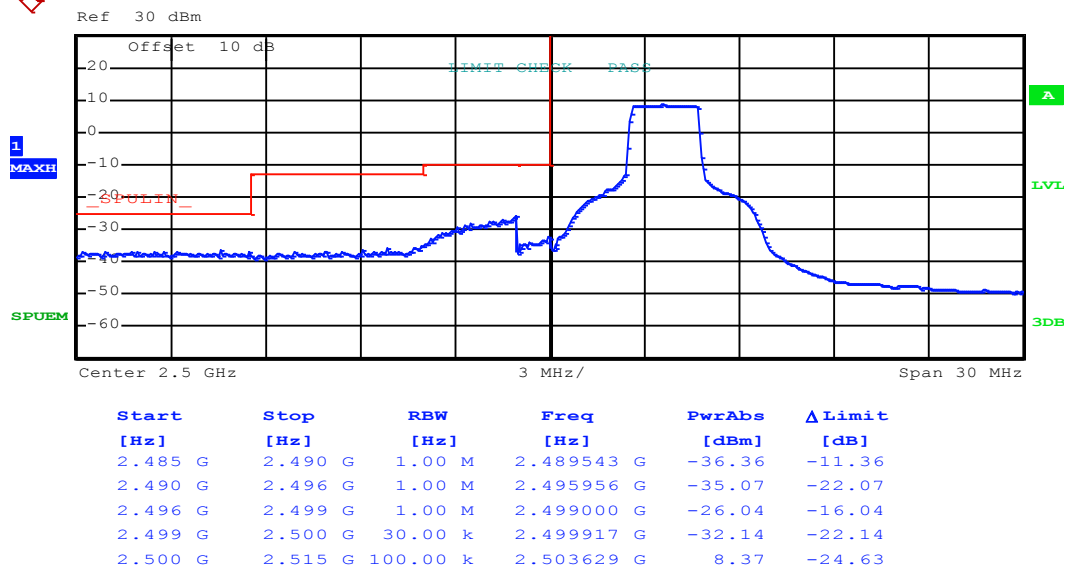
Lowest channel



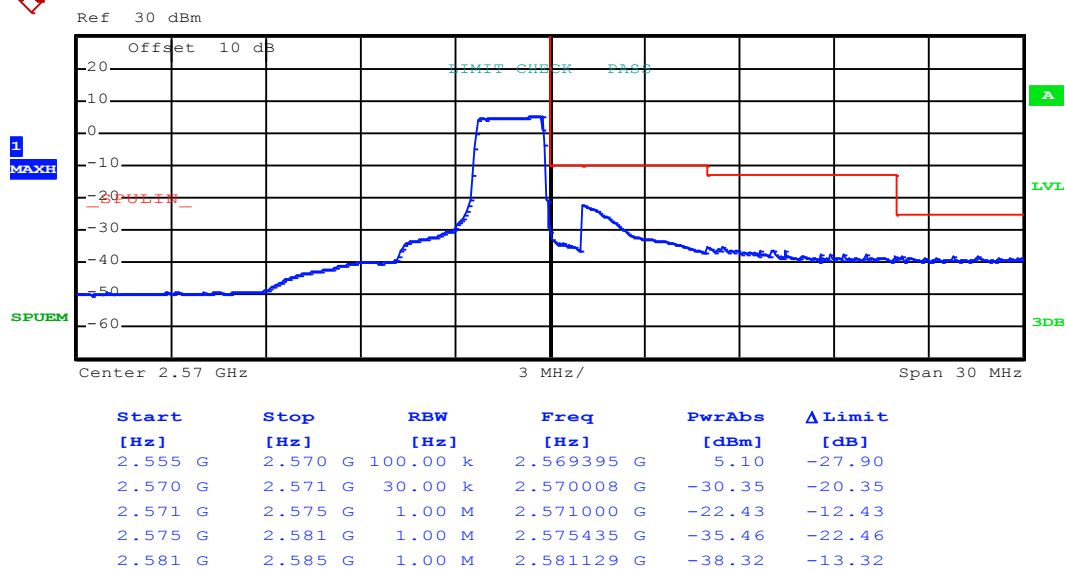
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 12 & RB Offset 11)



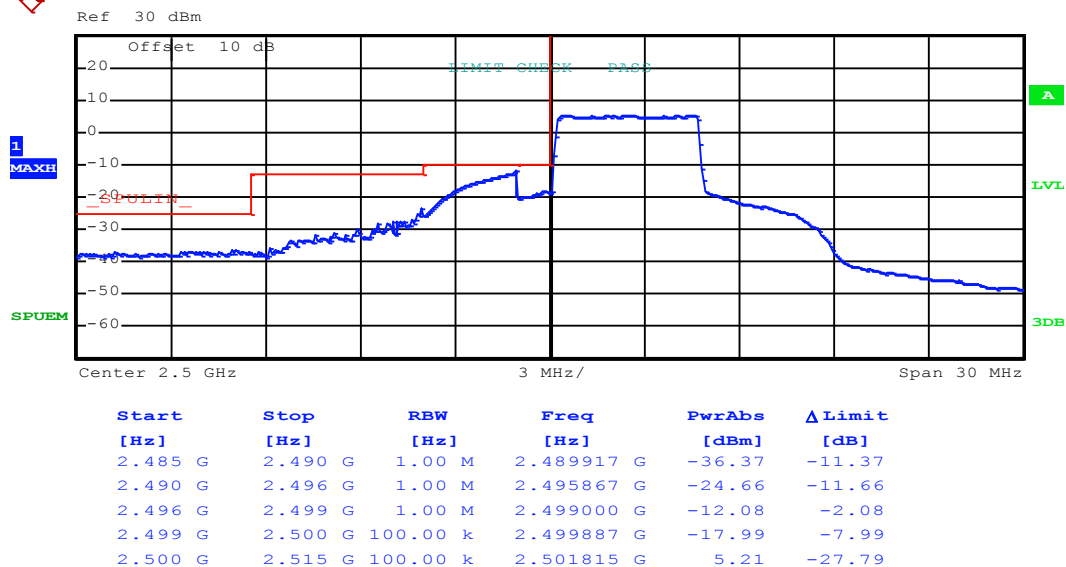
Lowest channel



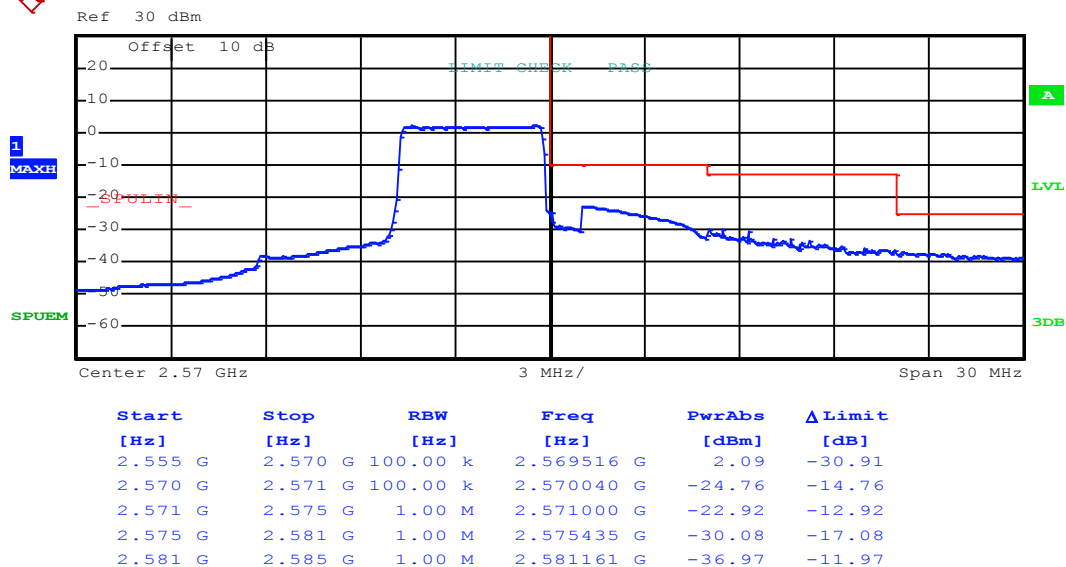
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 25 & RB Offset 0)



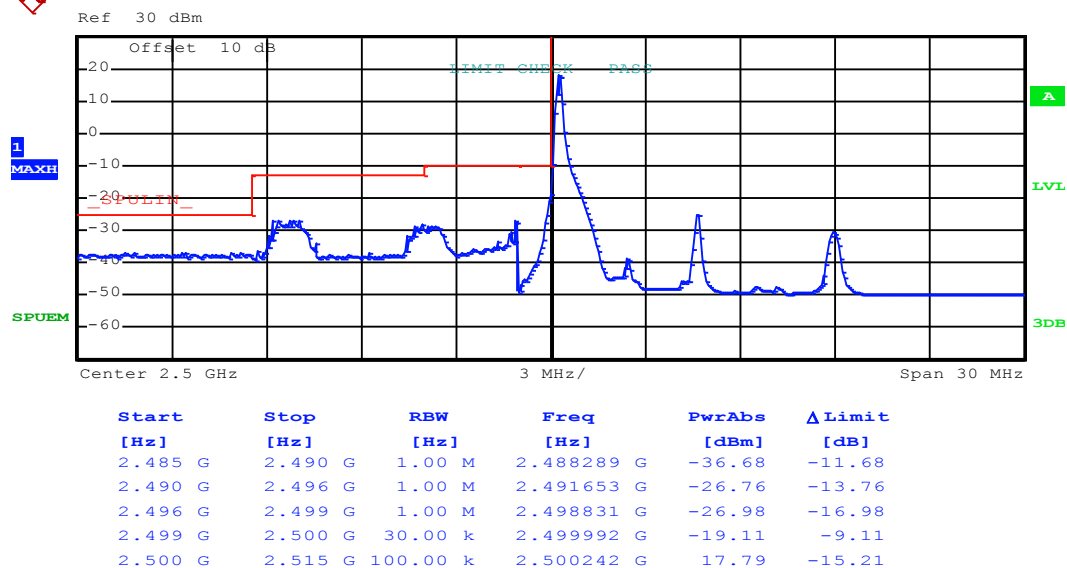
Lowest channel



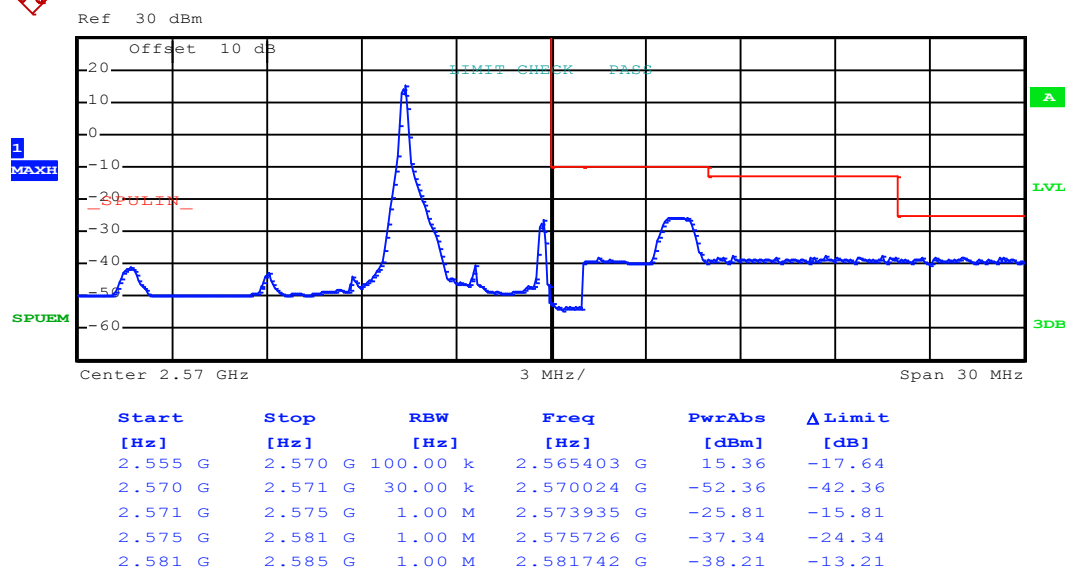
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 0)



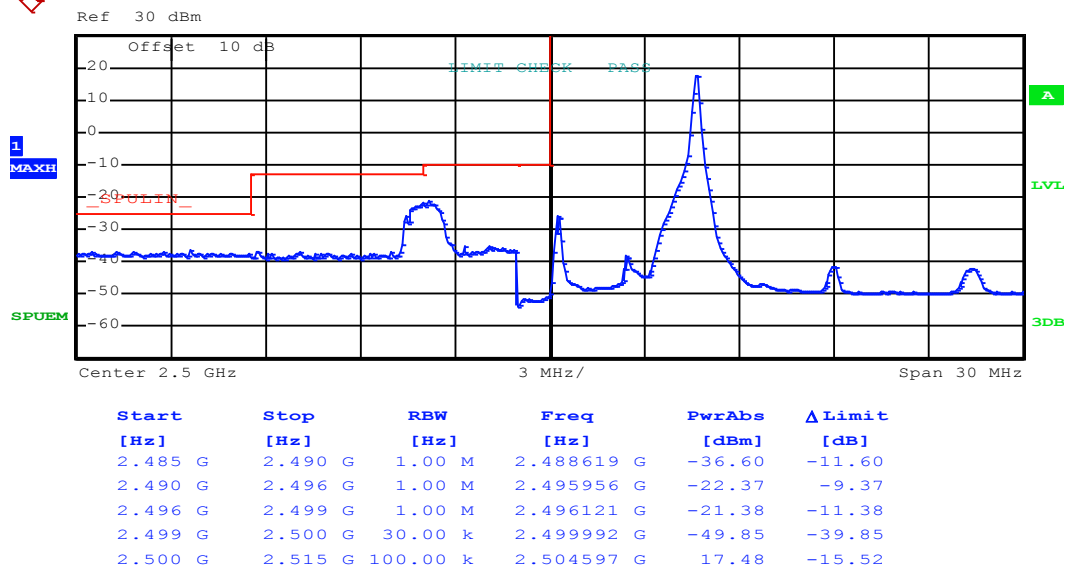
Lowest channel



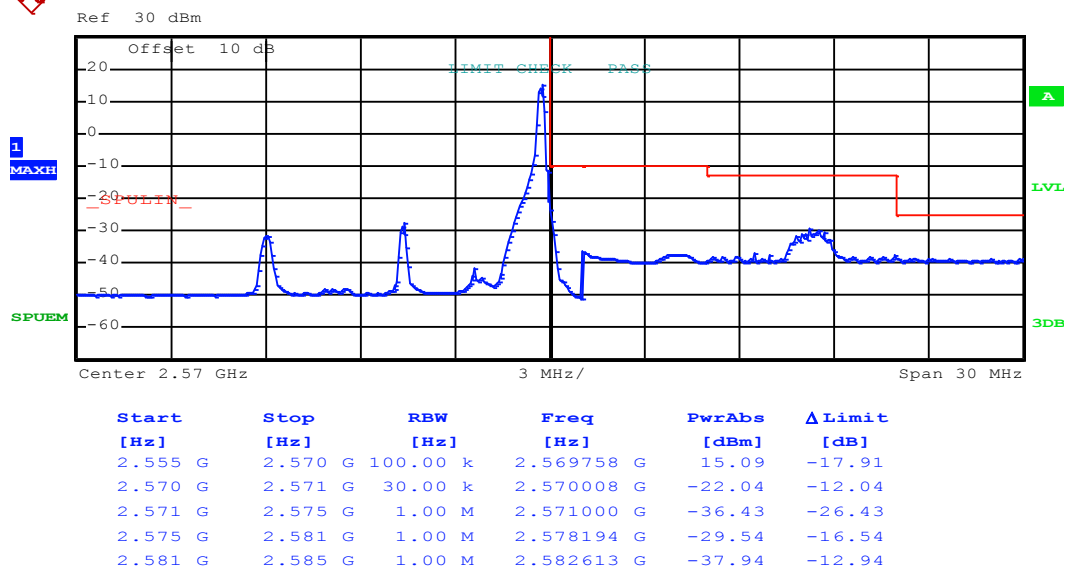
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 24)



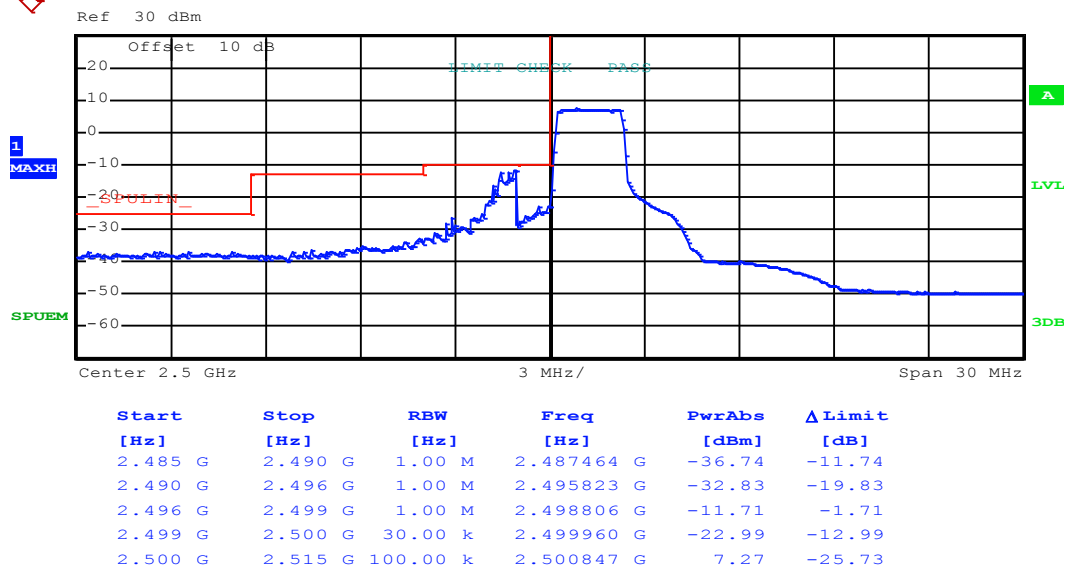
Lowest channel



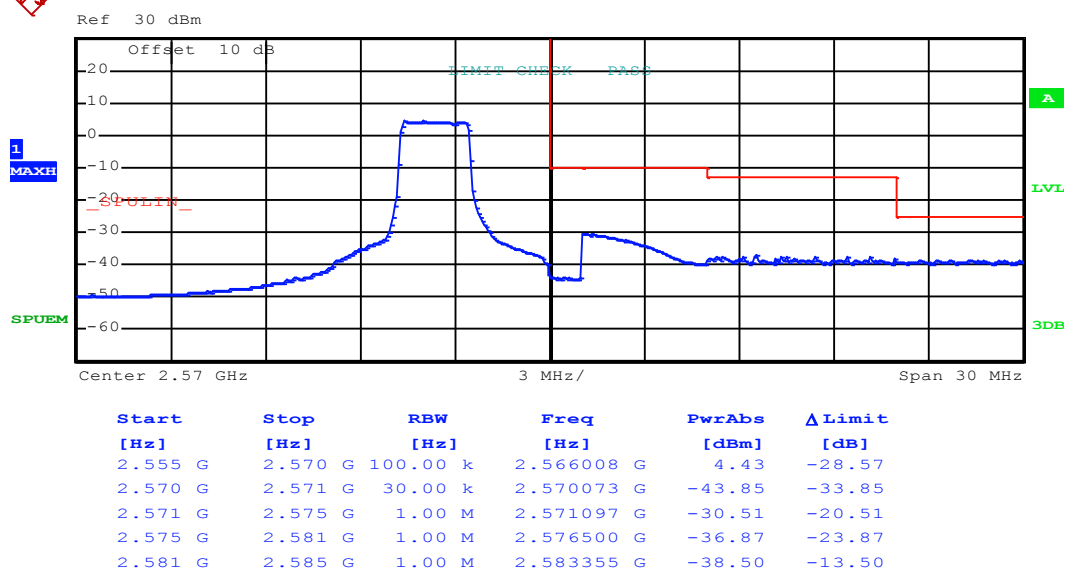
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 12 & RB Offset 0)



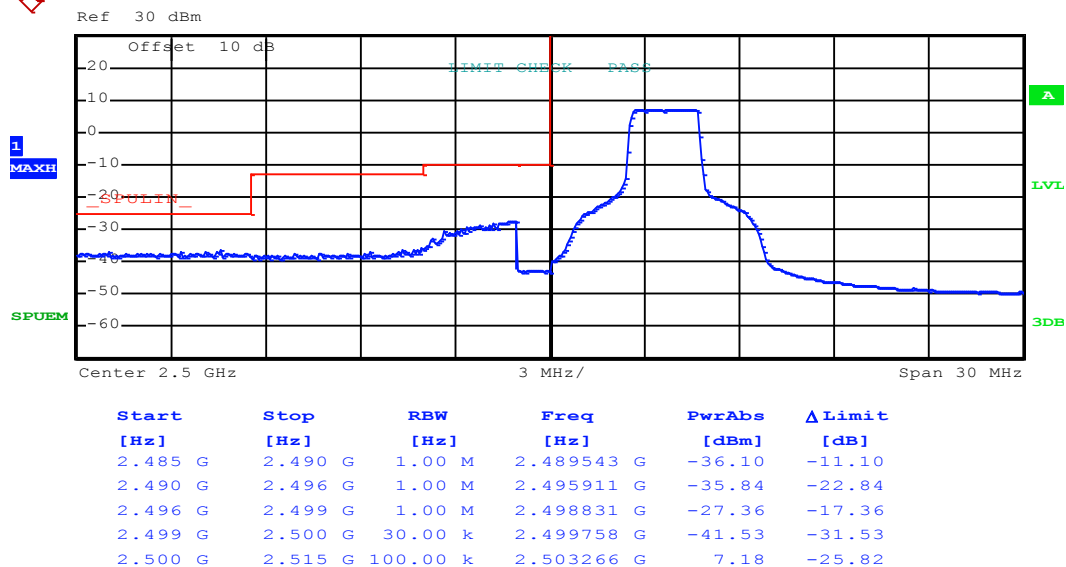
Lowest channel



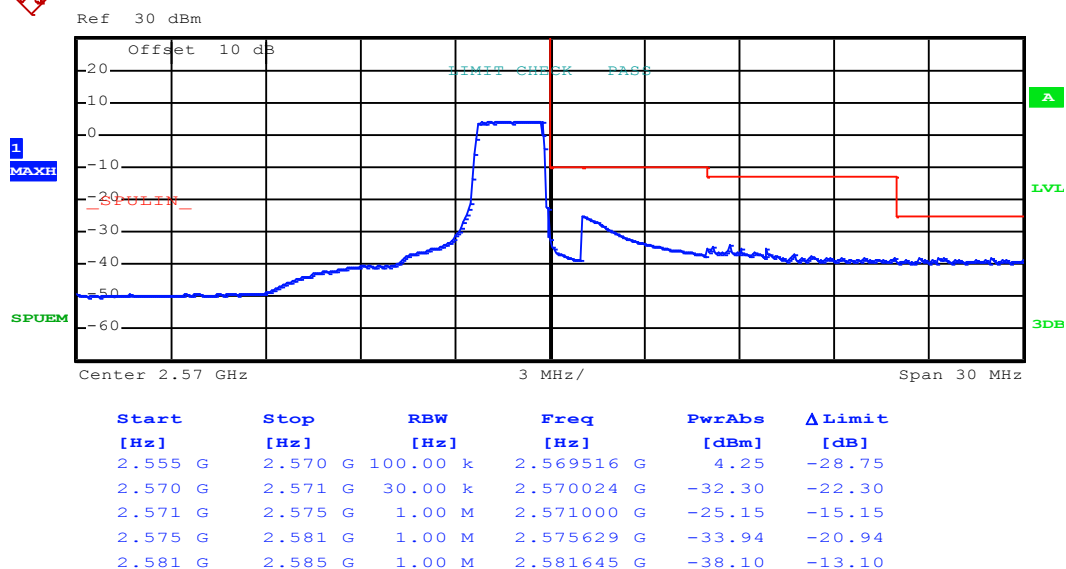
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 12 & RB Offset 11)



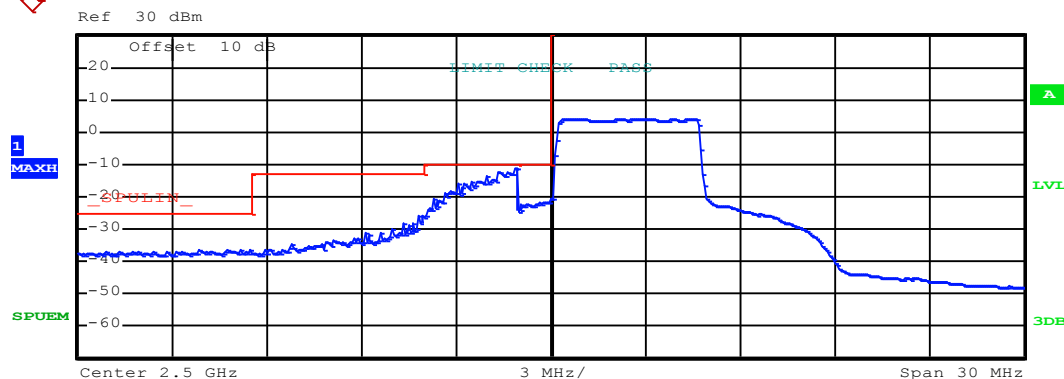
Lowest channel



Highest channel

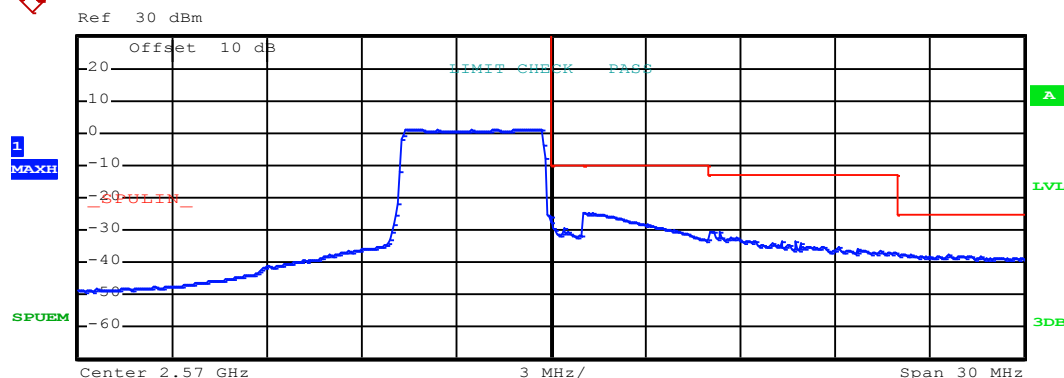
Test Mode:

LTE band 7(16QAM RB Size 25 & RB Offset 0)



Start	Stop	RBW	Freq	PwrAbs	Δ Limit
[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]
2.485 G	2.490 G	1.00 M	2.490126 G	-36.22	-11.22
2.490 G	2.496 G	1.00 M	2.495734 G	-26.10	-13.10
2.496 G	2.499 G	1.00 M	2.498952 G	-11.26	-1.26
2.499 G	2.500 G	100.00 k	2.499992 G	-21.07	-11.07
2.500 G	2.515 G	100.00 k	2.502298 G	4.07	-28.93

Lowest channel

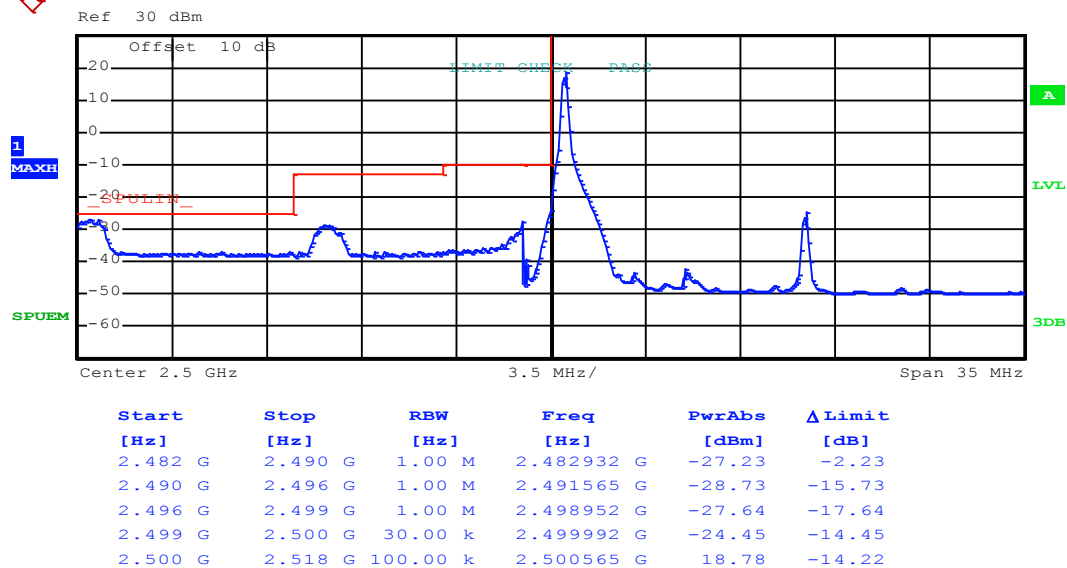


Start	Stop	RBW	Freq	PwrAbs	Δ Limit
[Hz]	[Hz]	[Hz]	[Hz]	[dBm]	[dB]
2.555 G	2.570 G	100.00 k	2.569395 G	1.23	-31.77
2.570 G	2.571 G	100.00 k	2.570024 G	-28.12	-18.12
2.571 G	2.575 G	1.00 M	2.571032 G	-24.63	-14.63
2.575 G	2.581 G	1.00 M	2.575097 G	-30.42	-17.42
2.581 G	2.585 G	1.00 M	2.581194 G	-37.26	-12.26

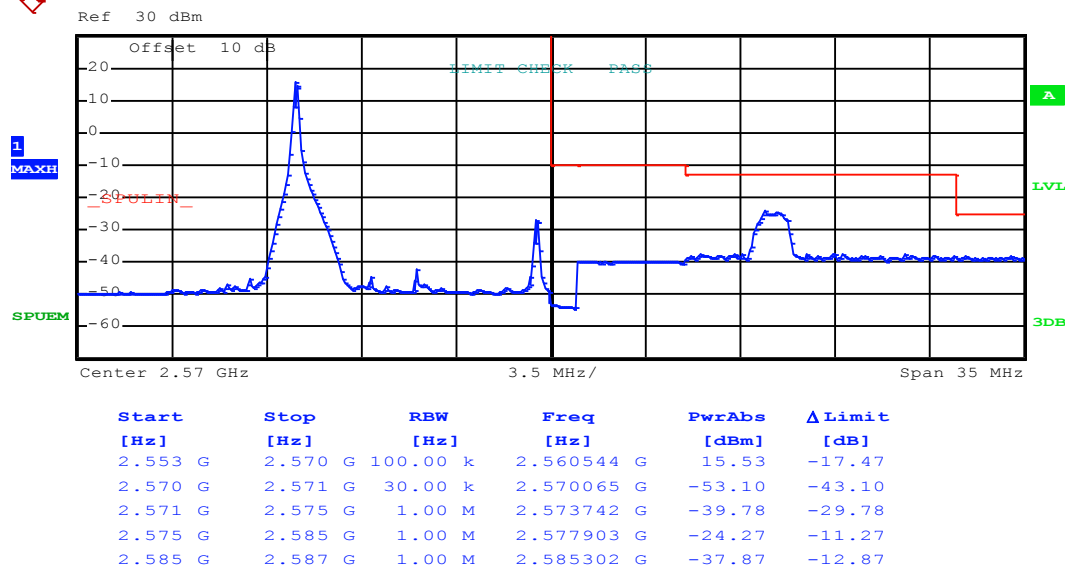
Highest channel

10MHz:

Test Mode:	LTE band 7(QPSK RB Size 1 & RB Offset 0)
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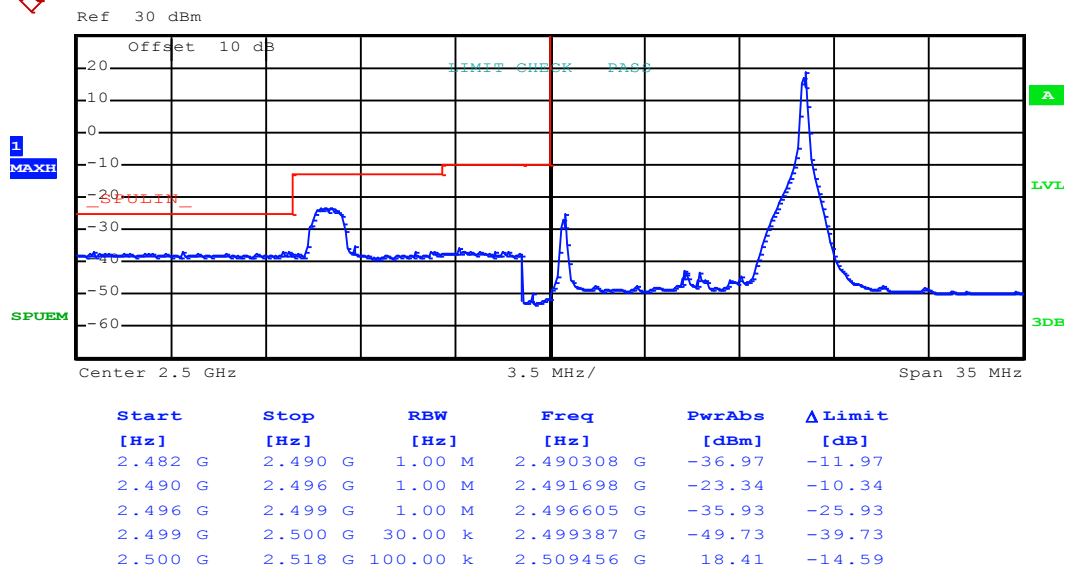
Lowest channel



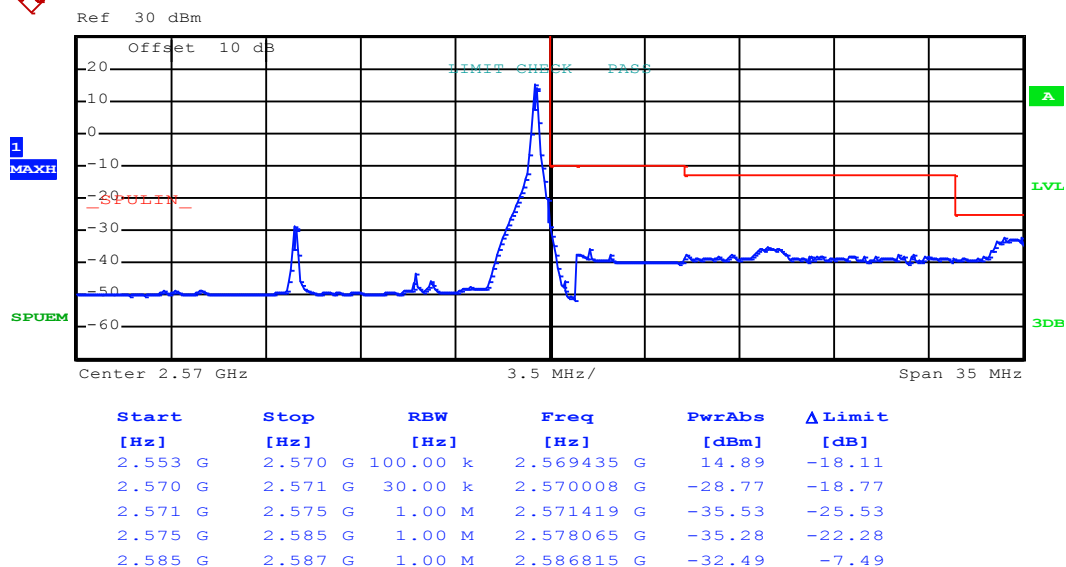
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 49)



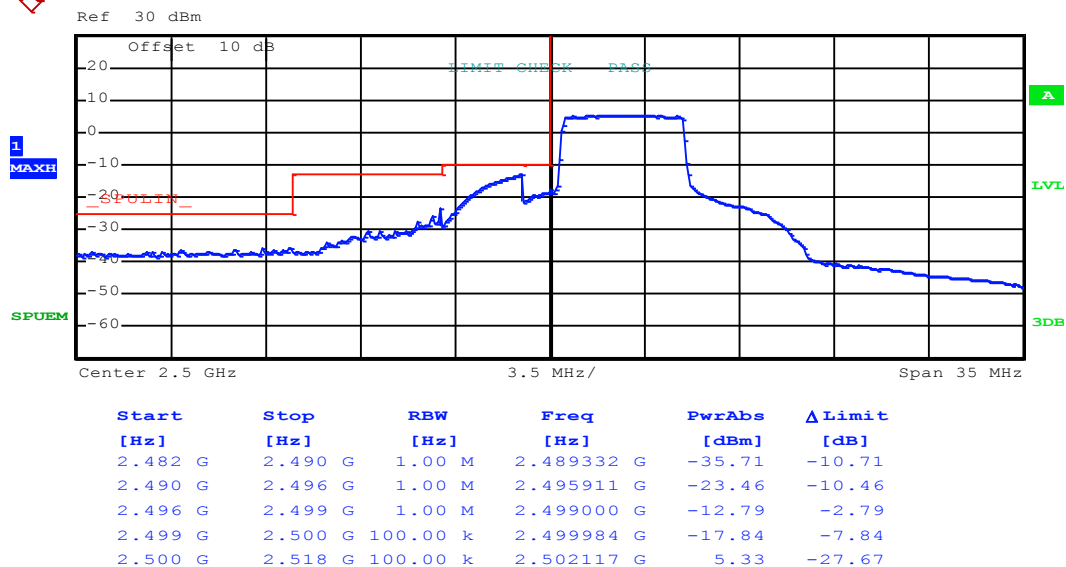
Lowest channel



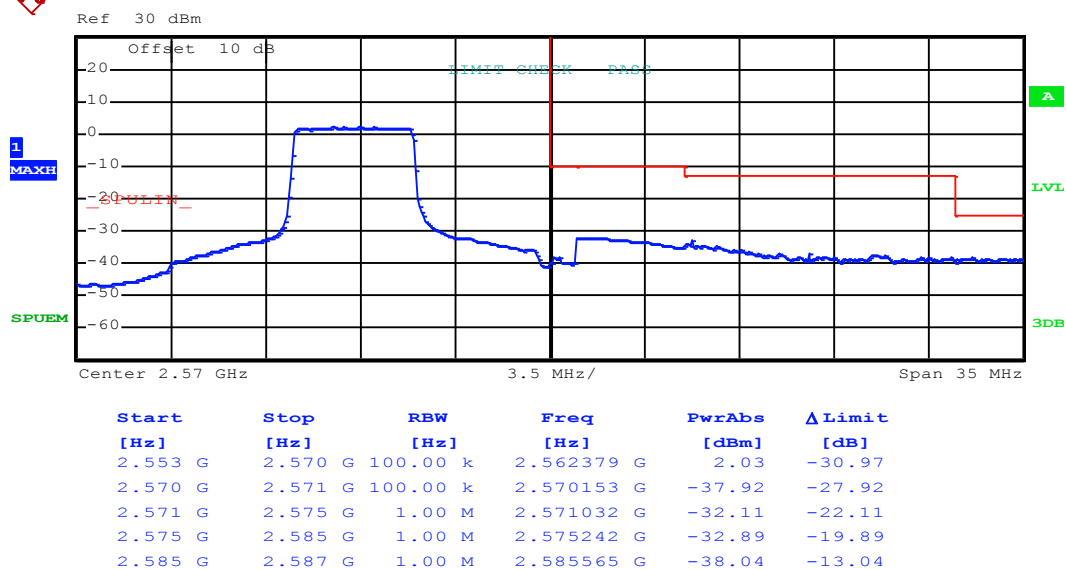
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 25 & RB Offset 0)



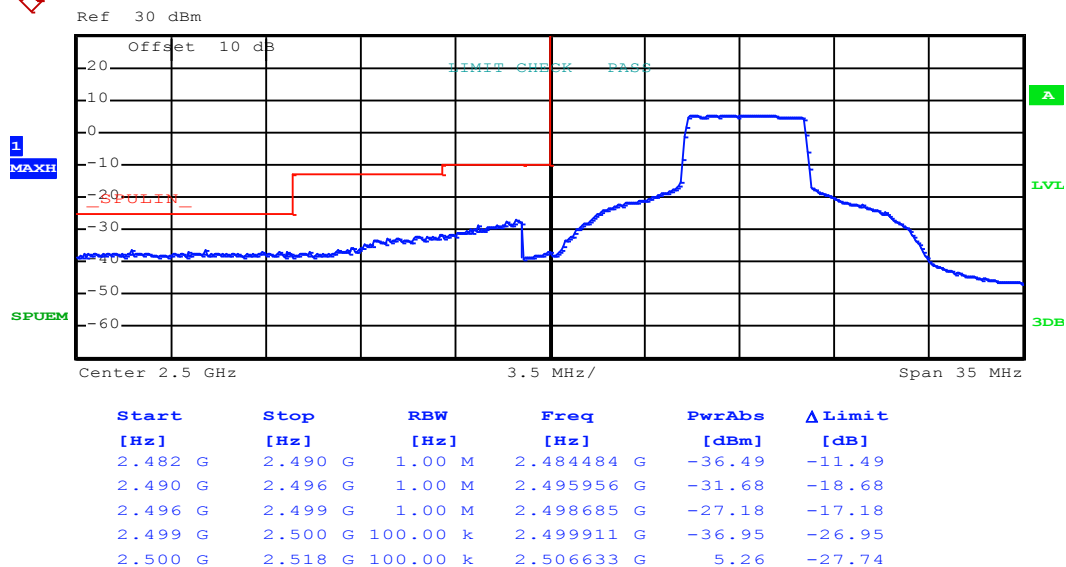
Lowest channel



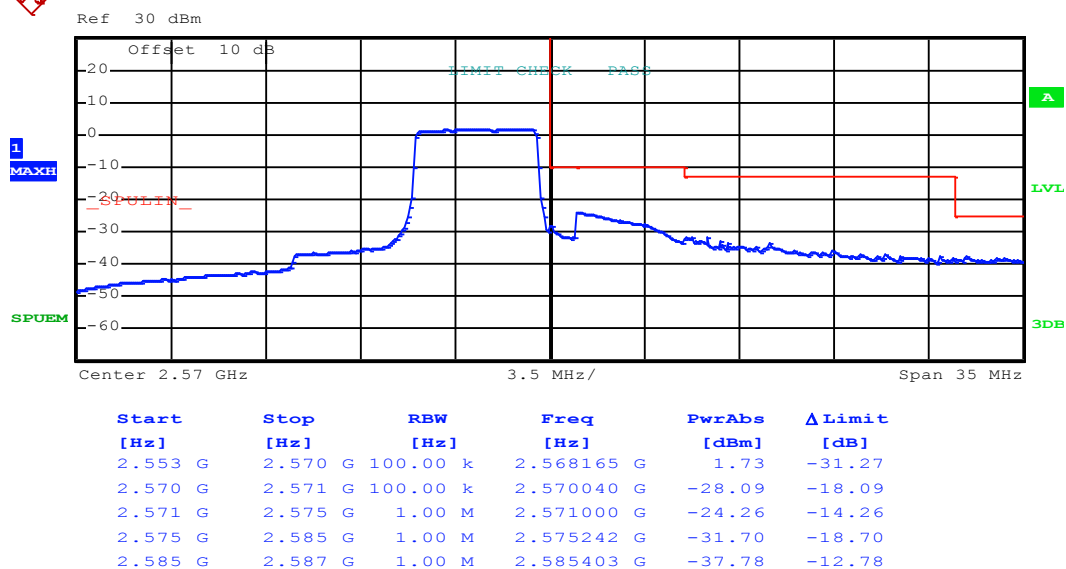
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 25 & RB Offset 24)



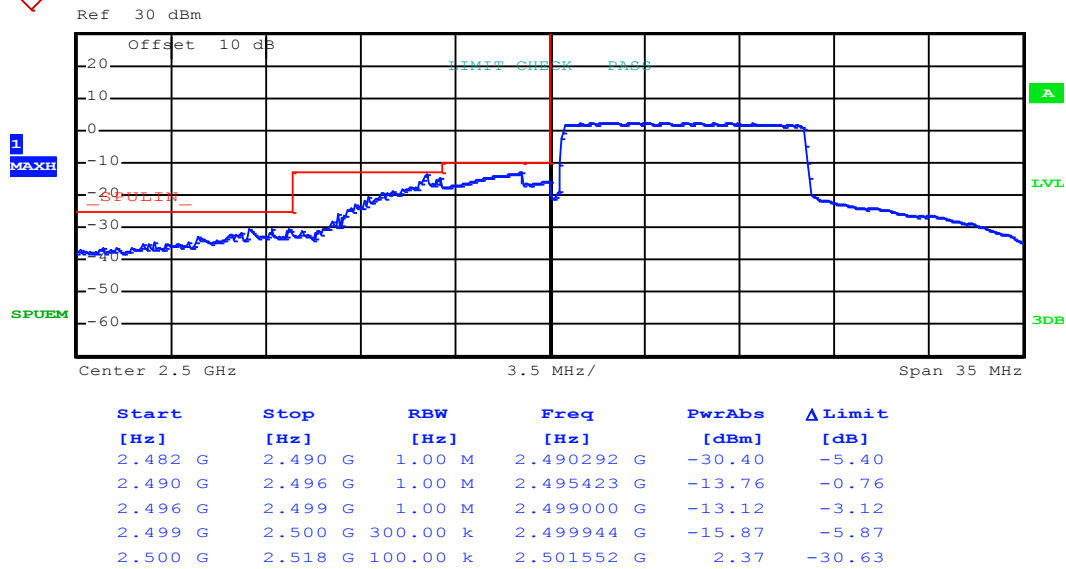
Lowest channel



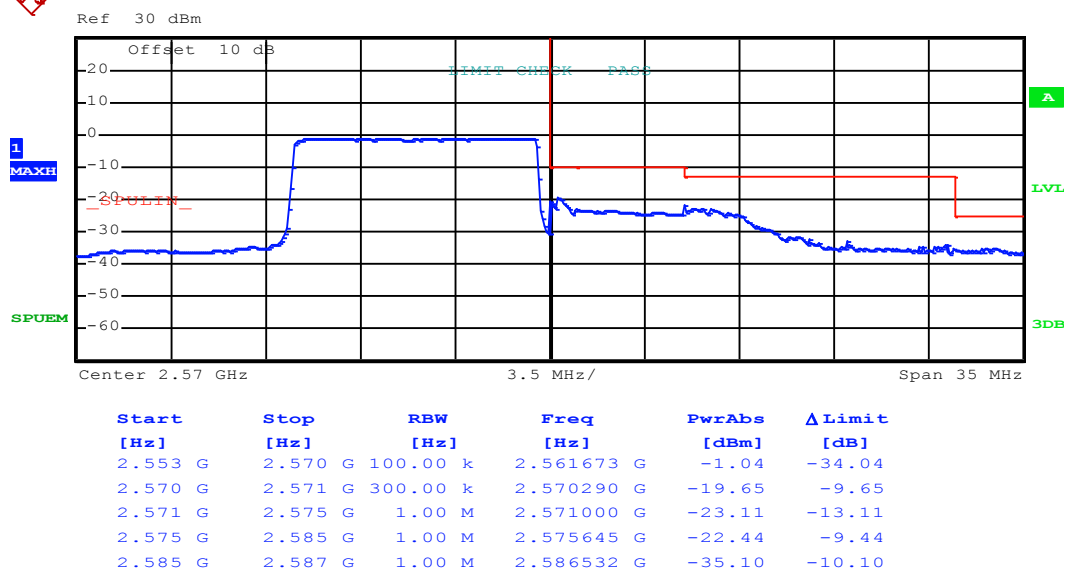
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 50 & RB Offset 0)



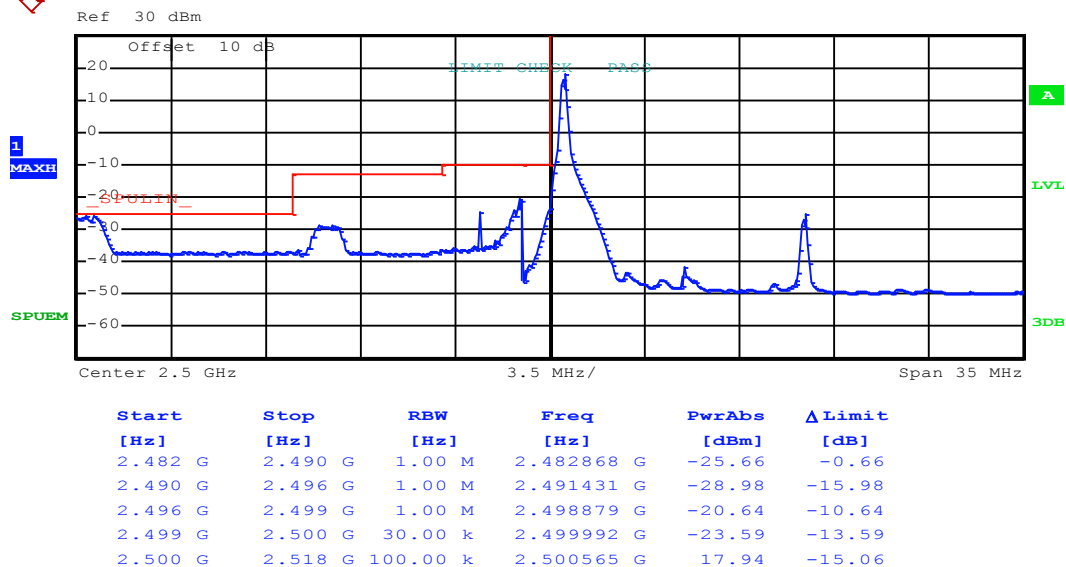
Lowest channel



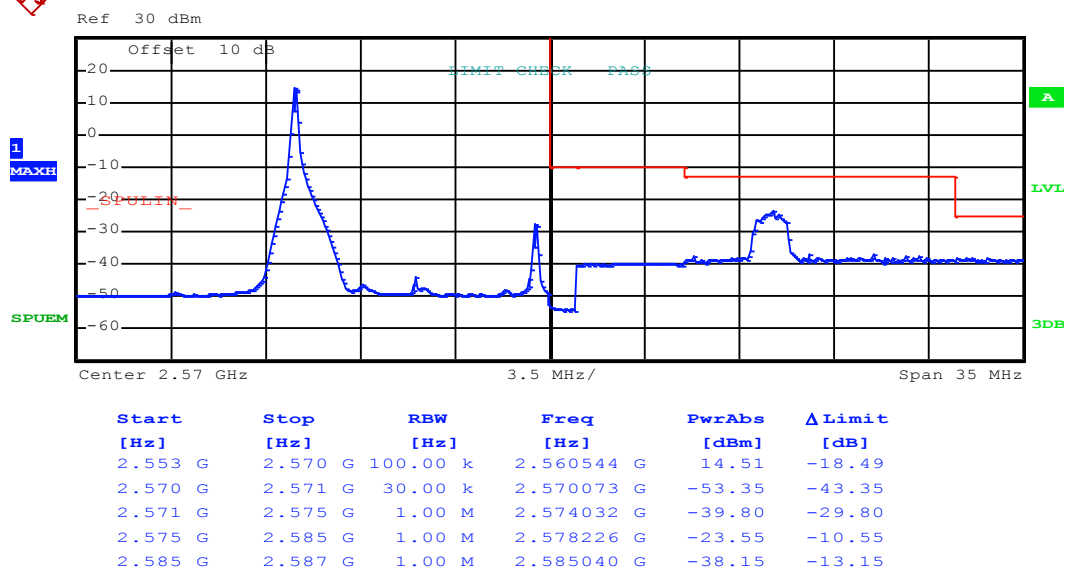
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 0)



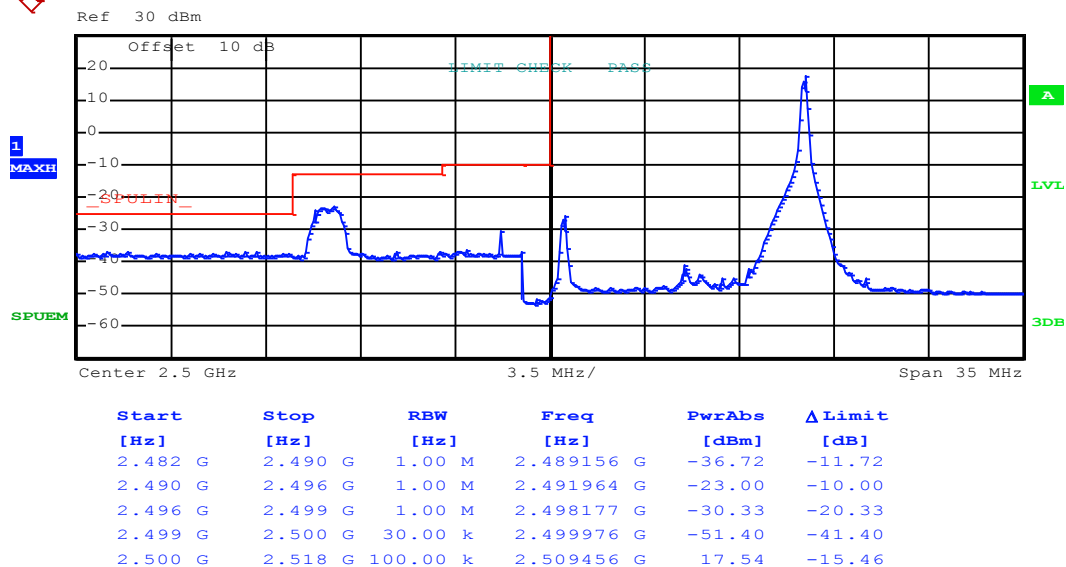
Lowest channel



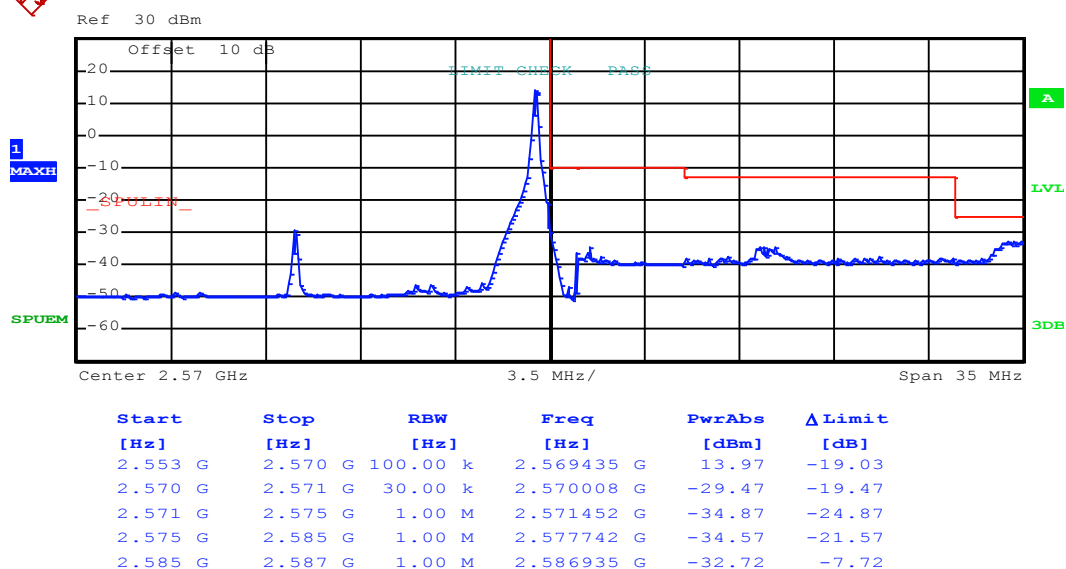
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 49)



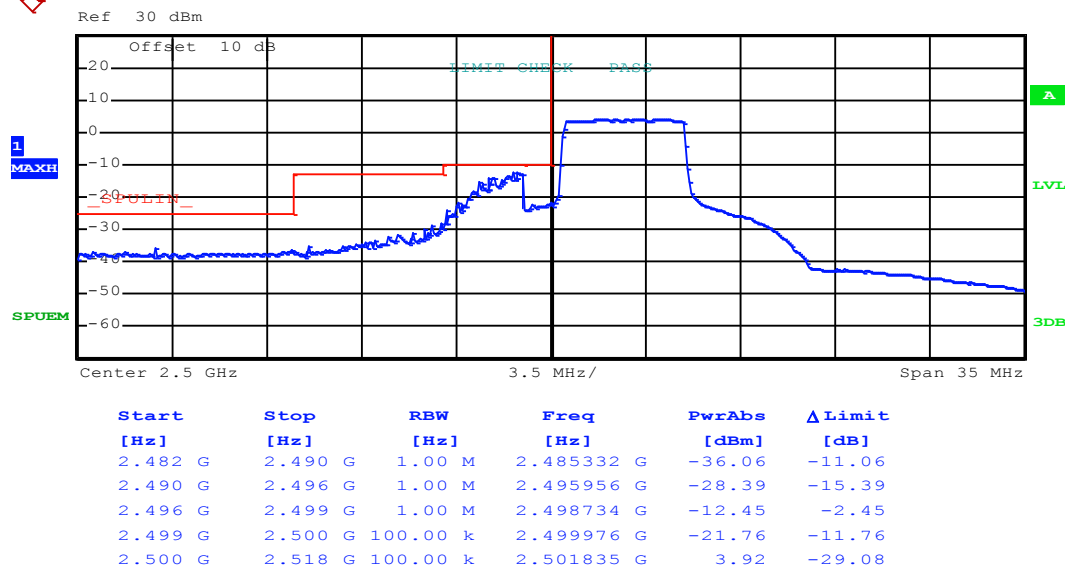
Lowest channel



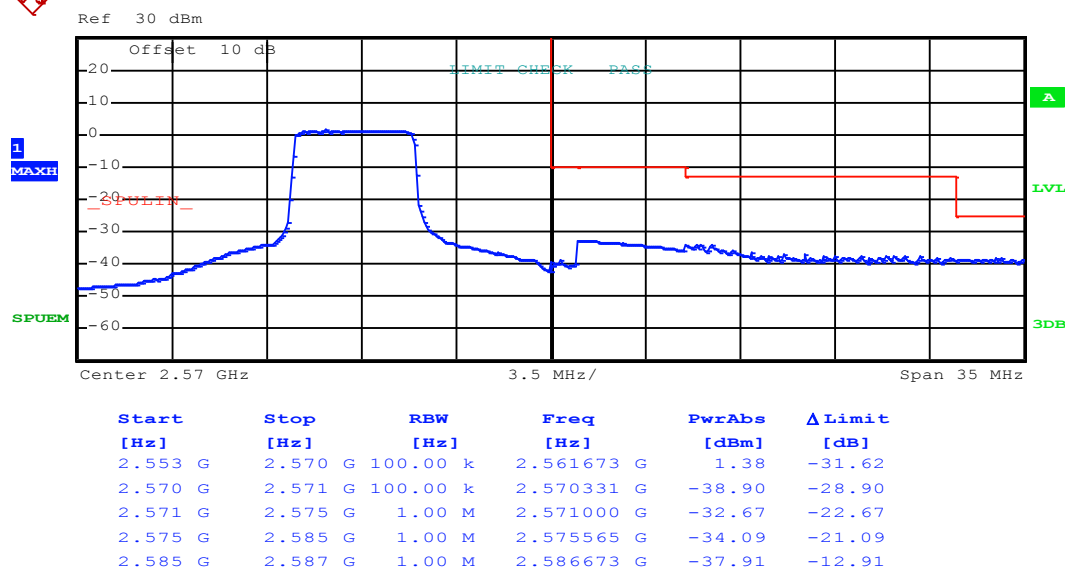
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 25 & RB Offset 0)



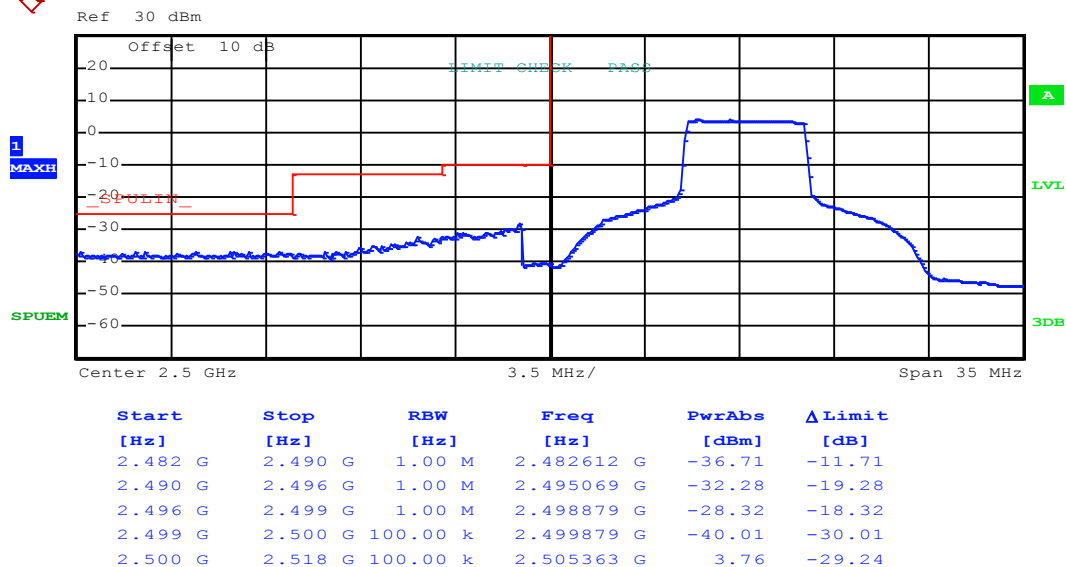
Lowest channel



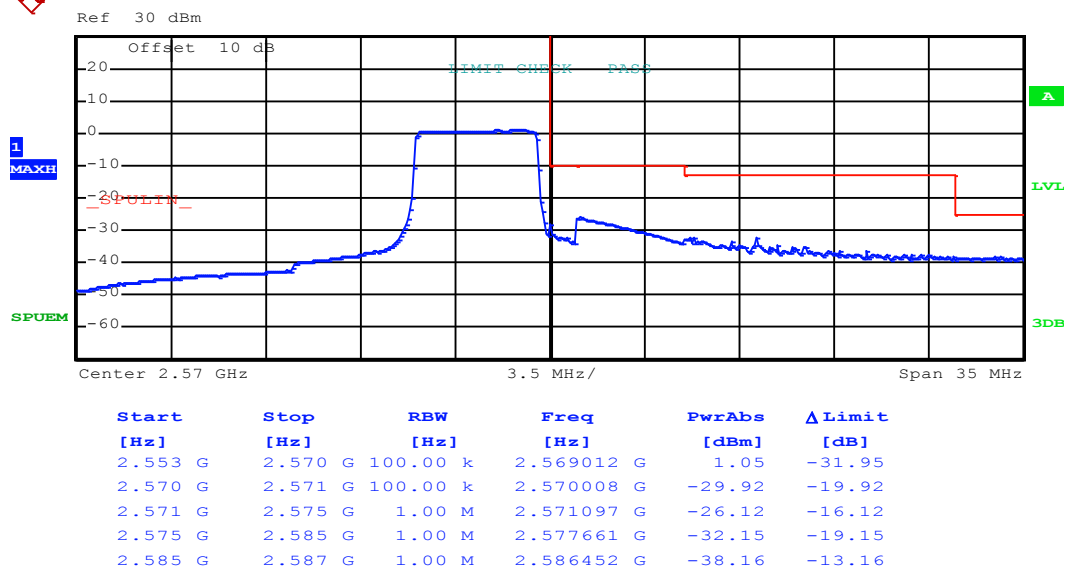
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 25 & RB Offset 24)



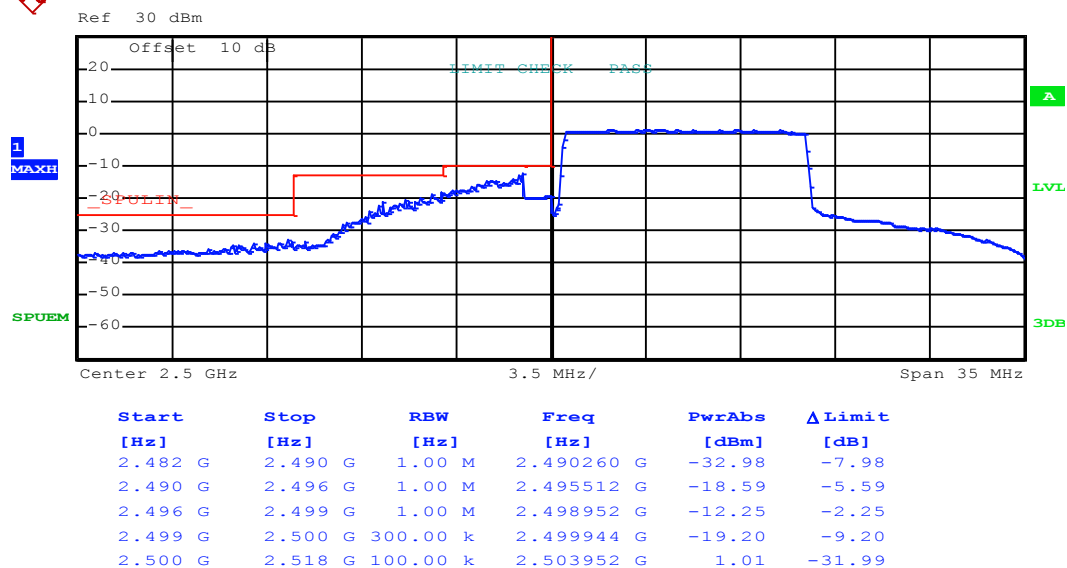
Lowest channel



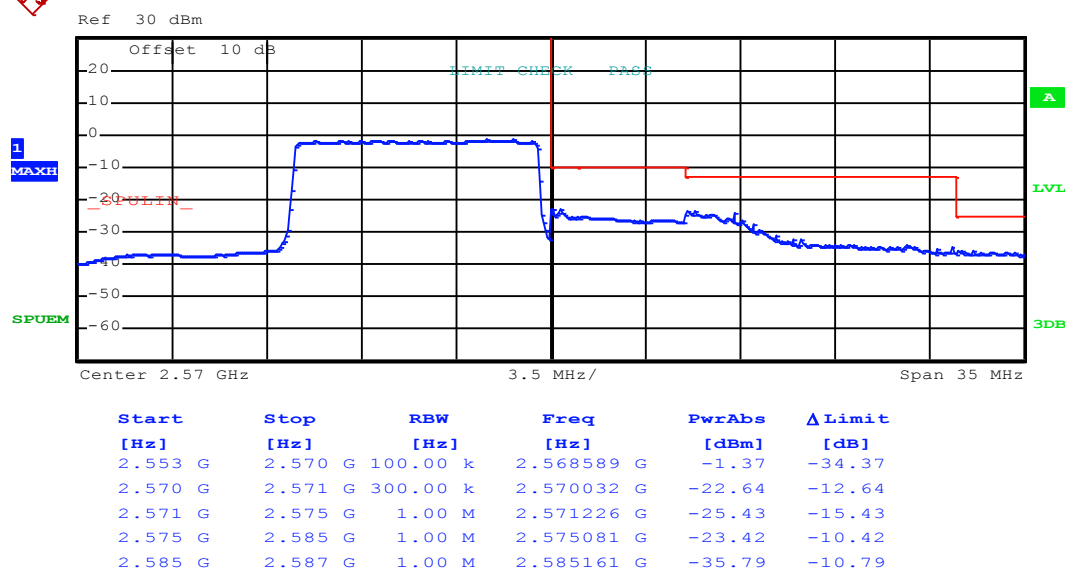
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 50 & RB Offset 0)



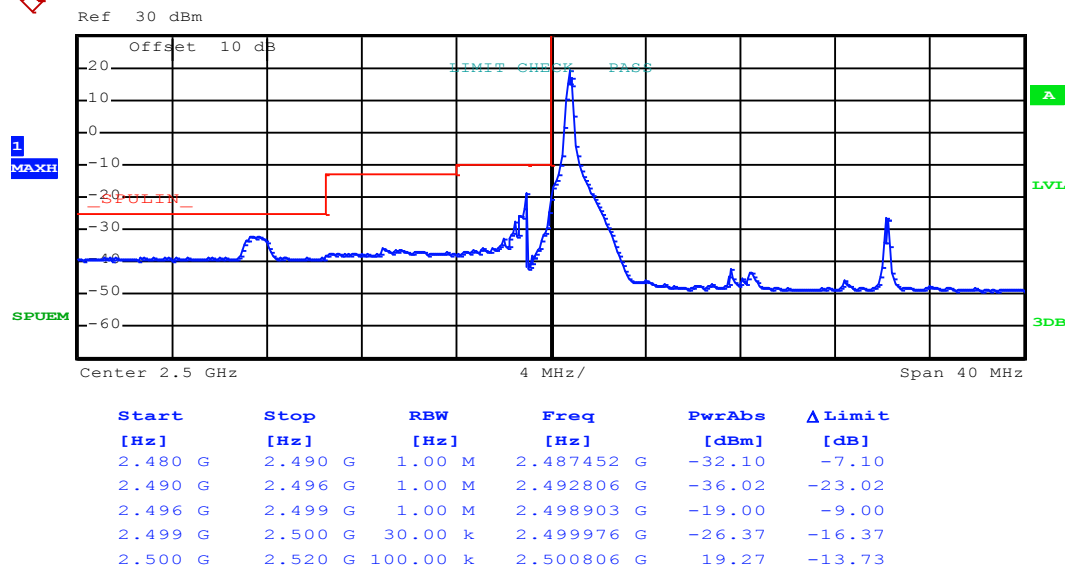
Lowest channel



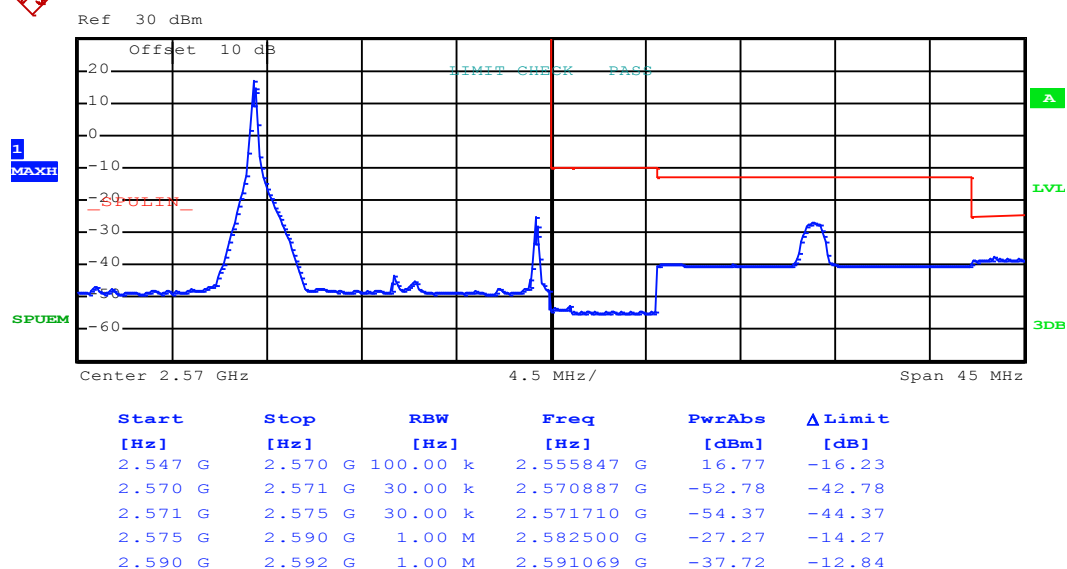
Highest channel

15MHz:

Test Mode:	LTE band 7(QPSK RB Size 1 & RB Offset 0)
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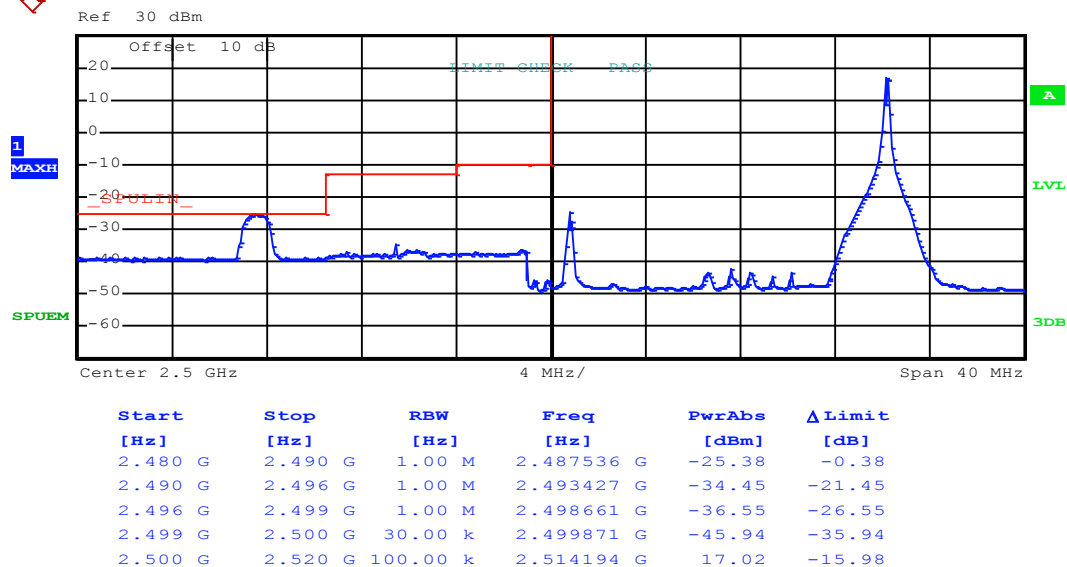
Lowest channel



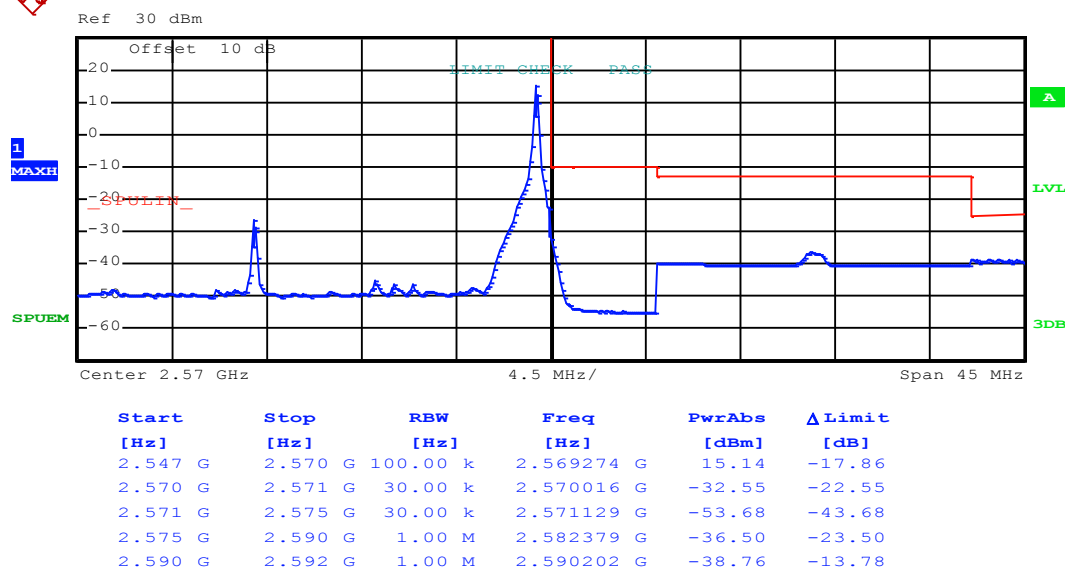
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 74)



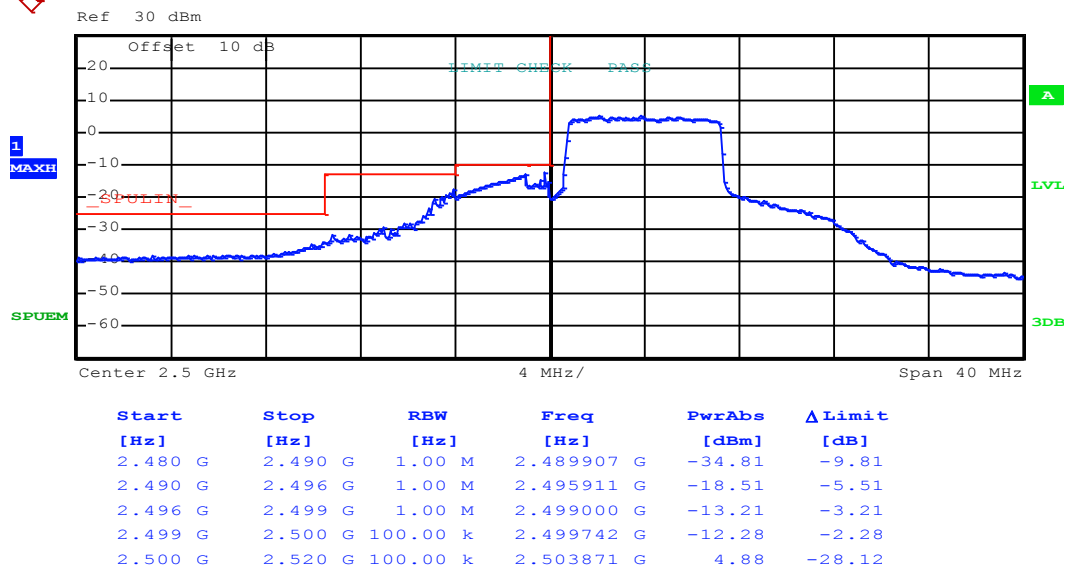
Lowest channel



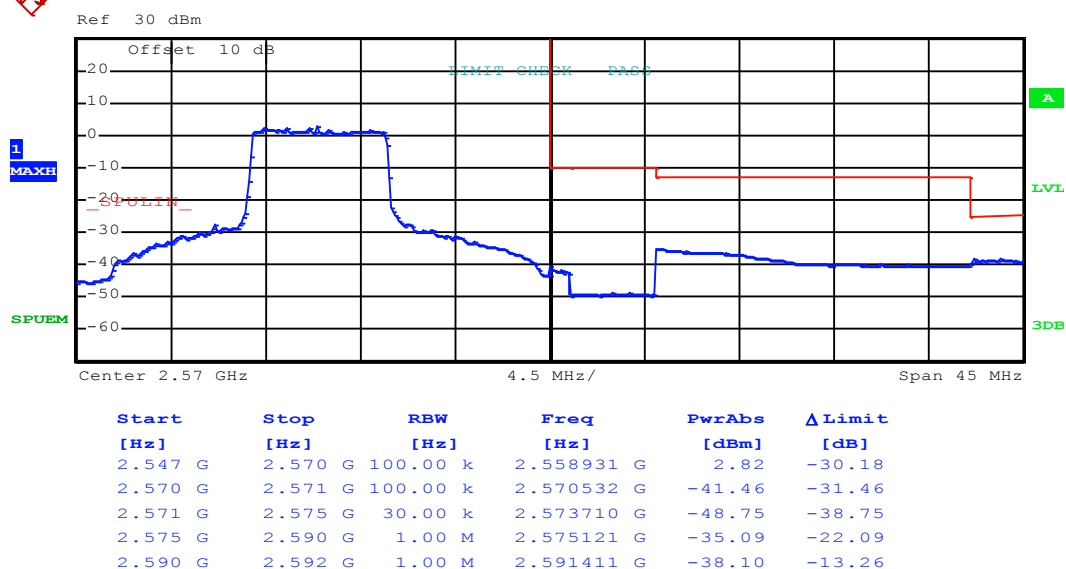
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 36 & RB Offset 0)



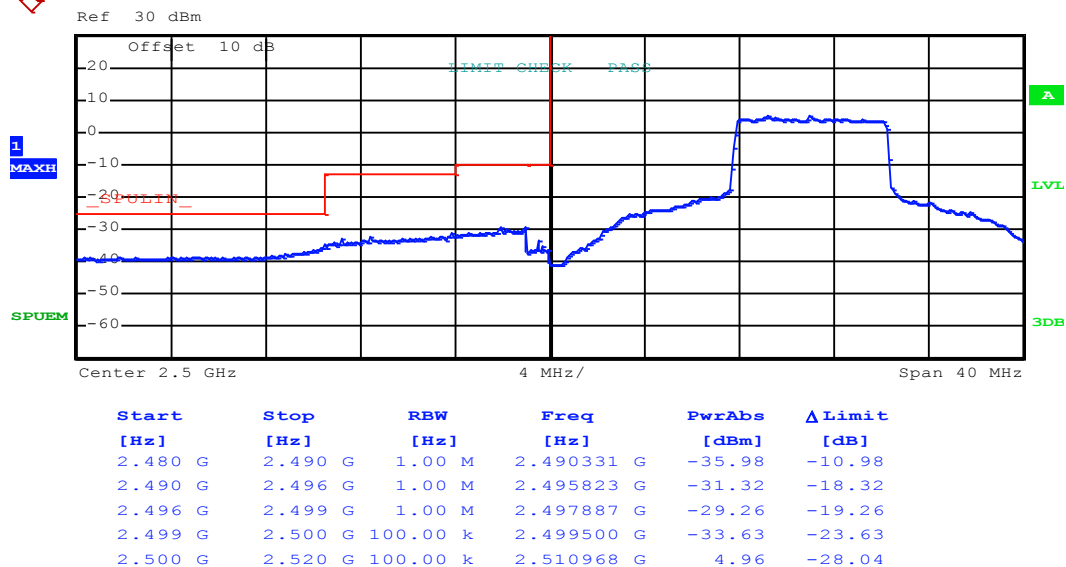
Lowest channel



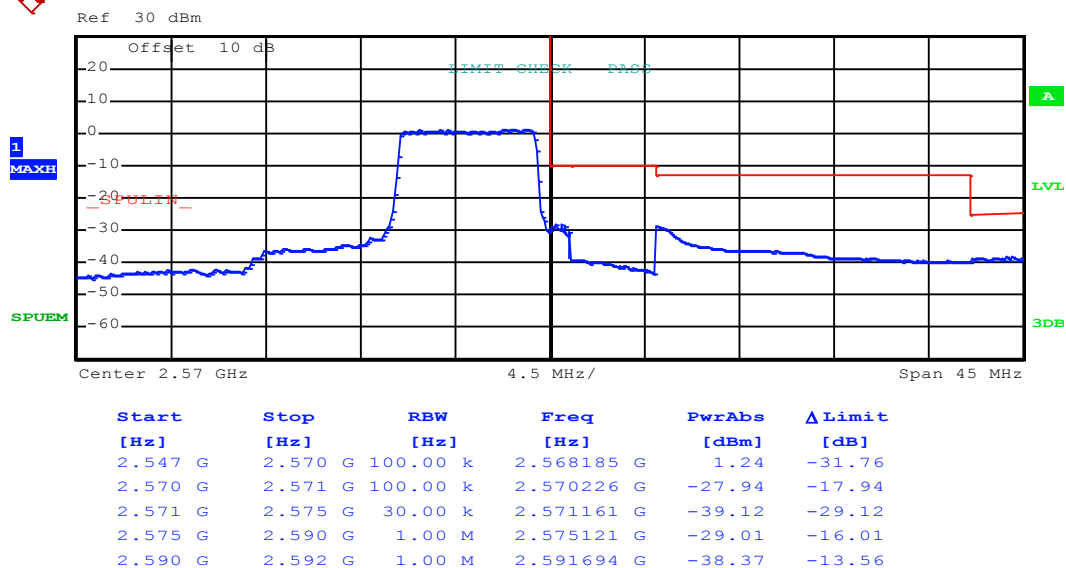
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 36 & RB Offset 37)



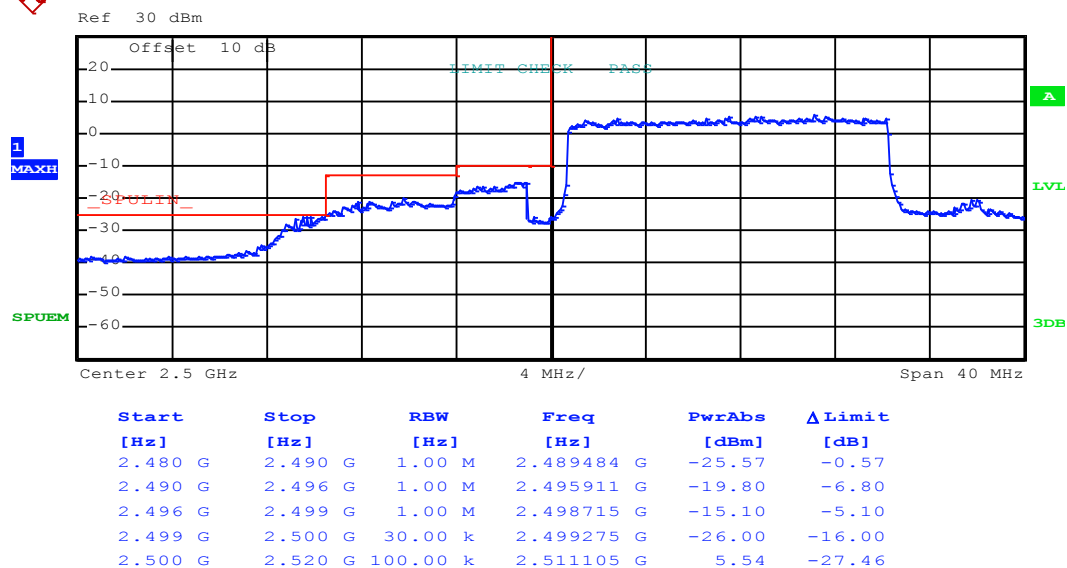
Lowest channel



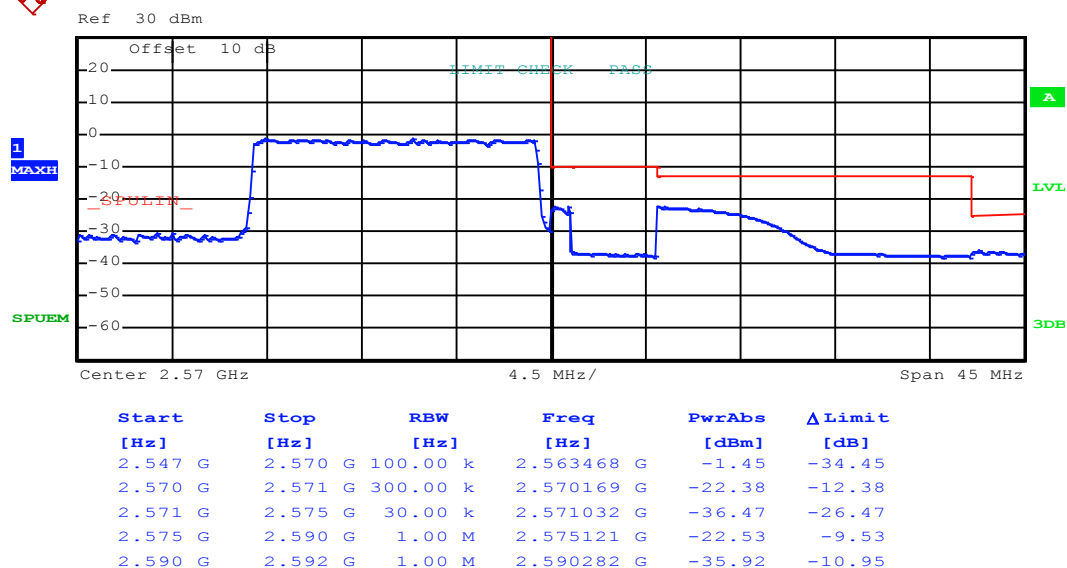
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 75 & RB Offset 0)



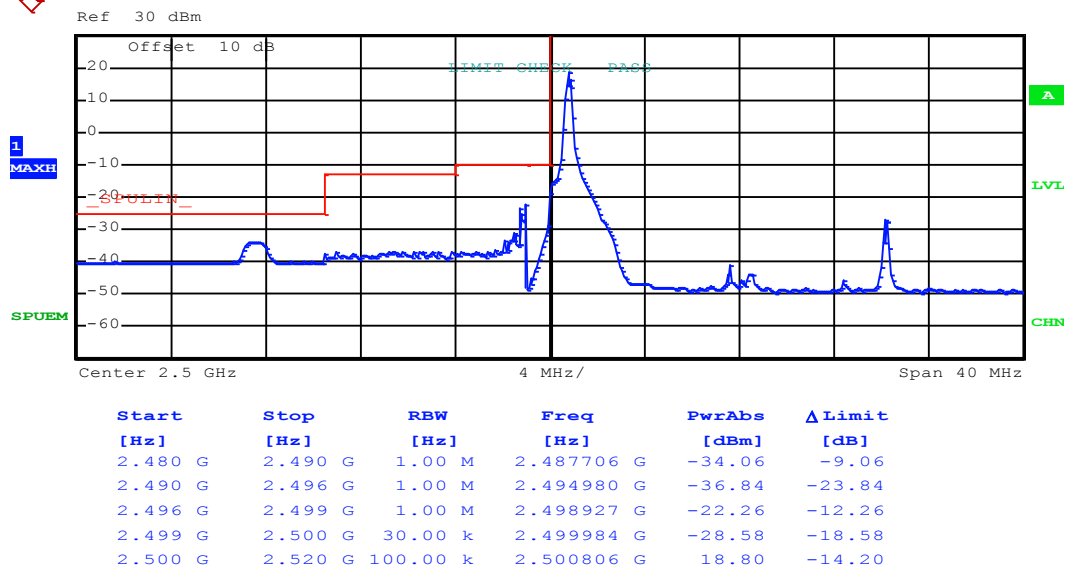
Lowest channel



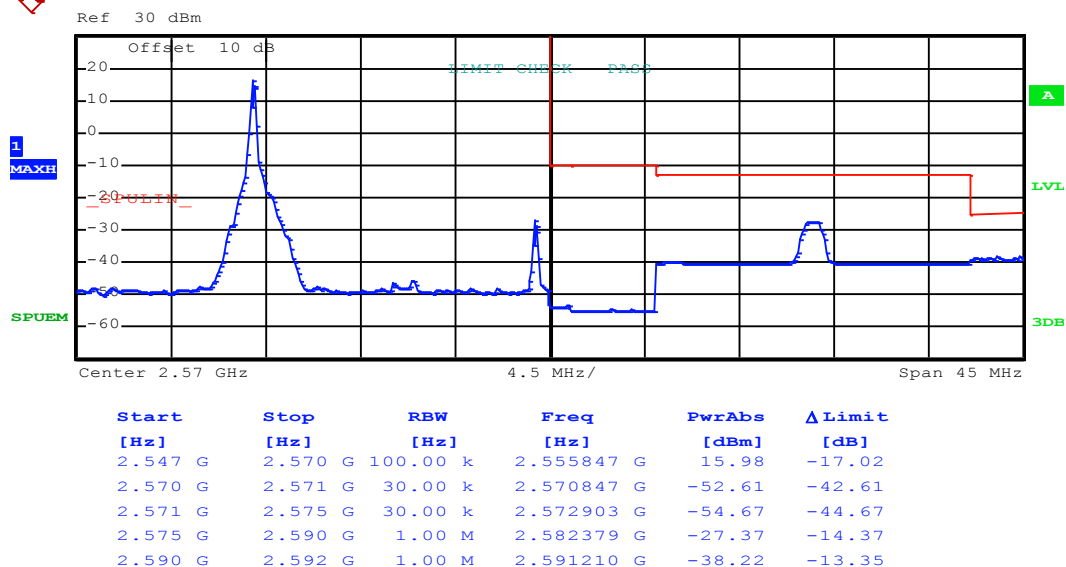
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 0)



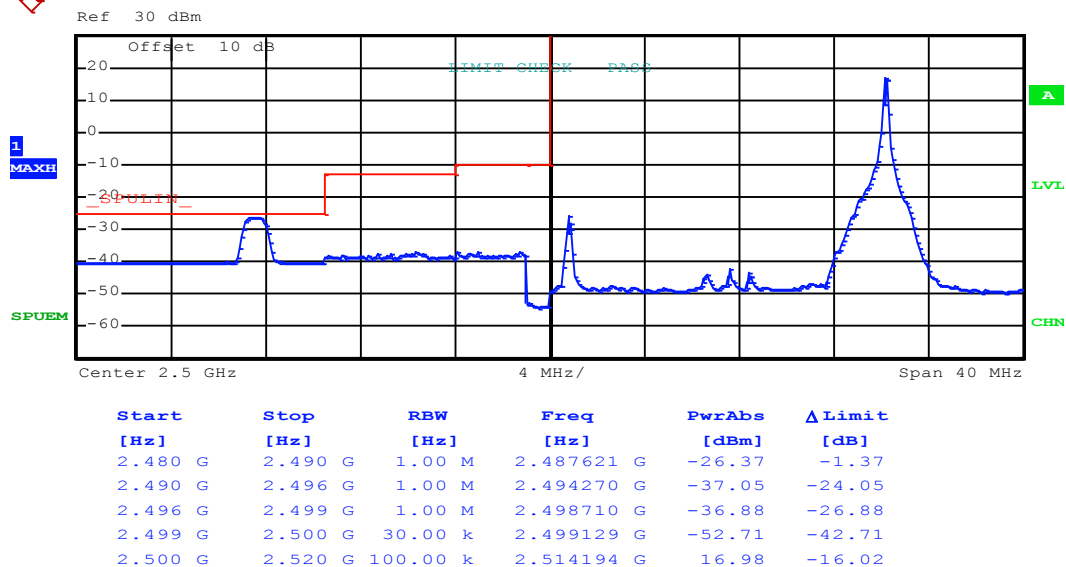
Lowest channel



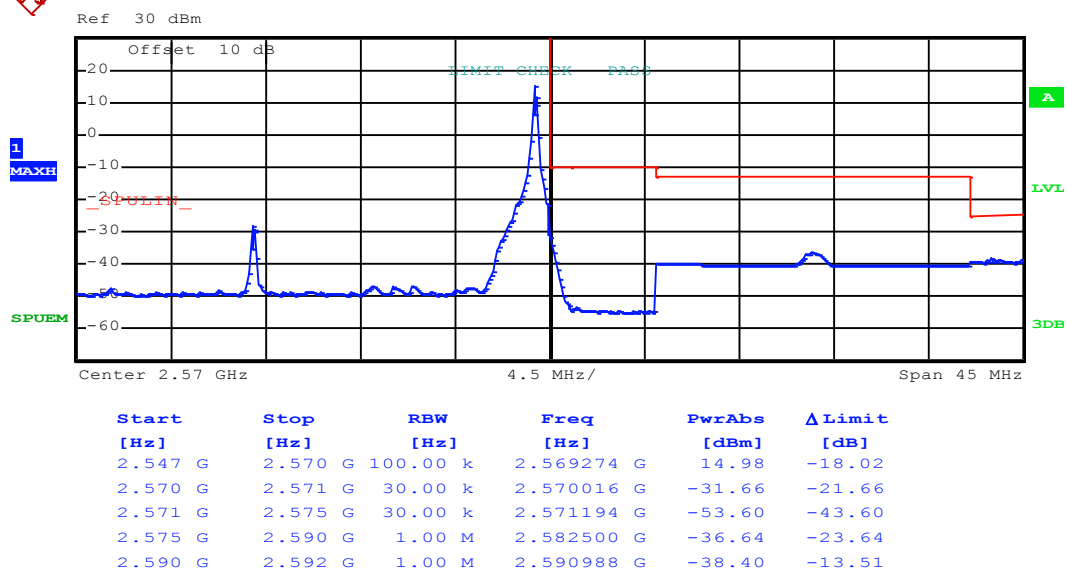
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 74)



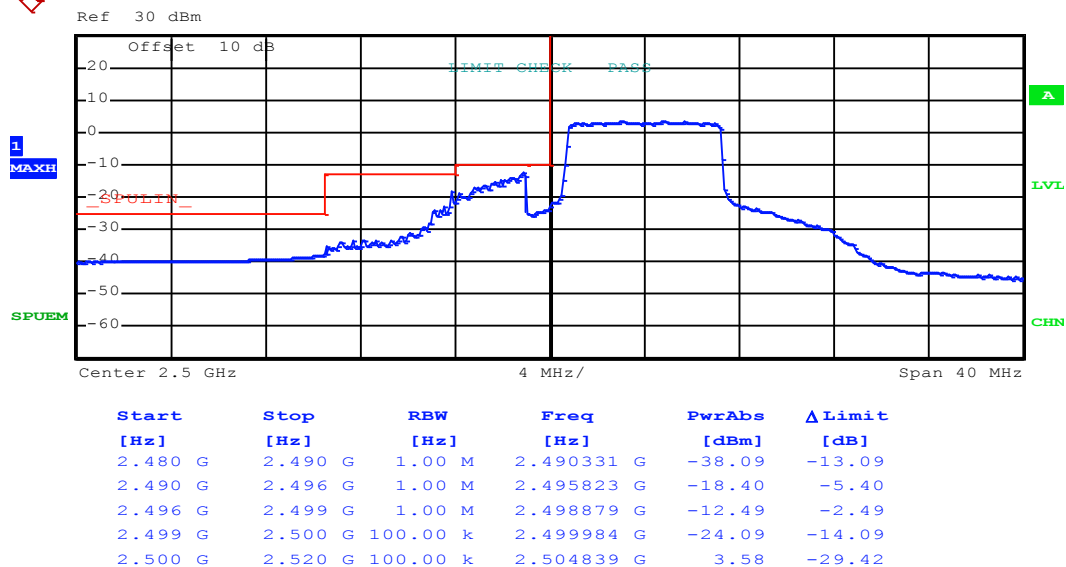
Lowest channel



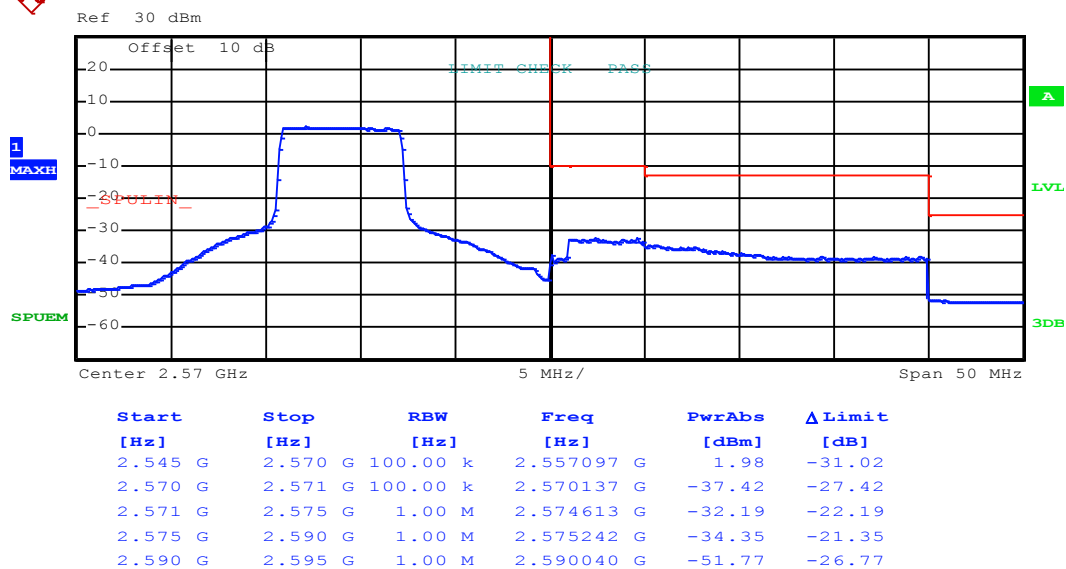
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 36 & RB Offset 0)



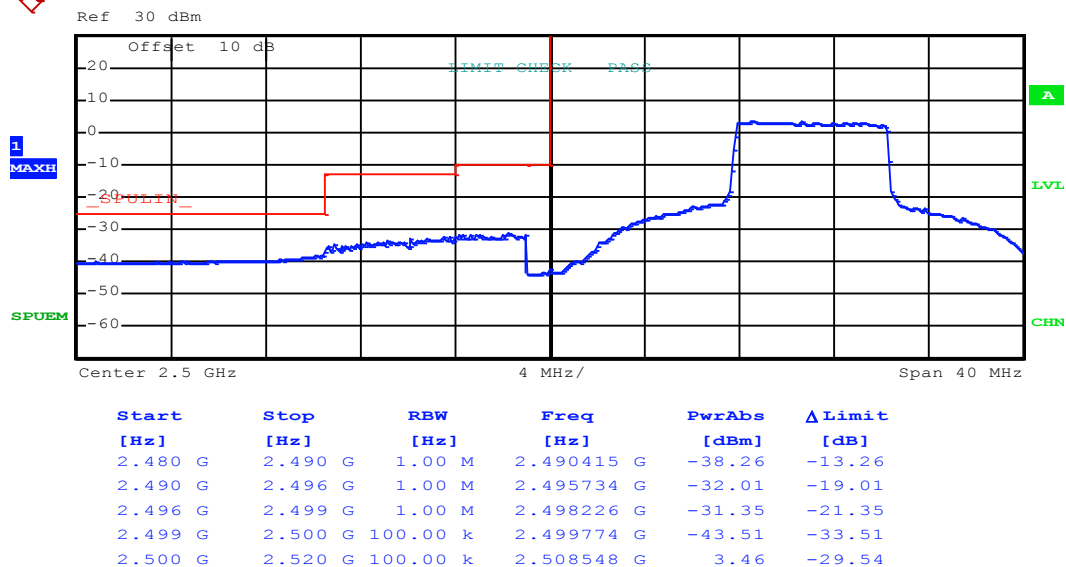
Lowest channel



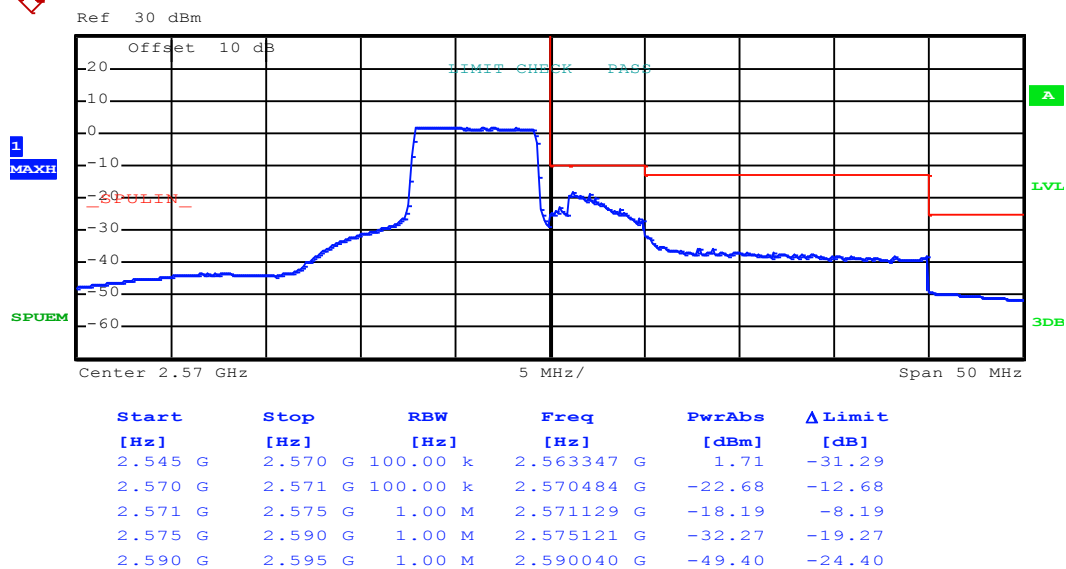
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 36 & RB Offset 37)



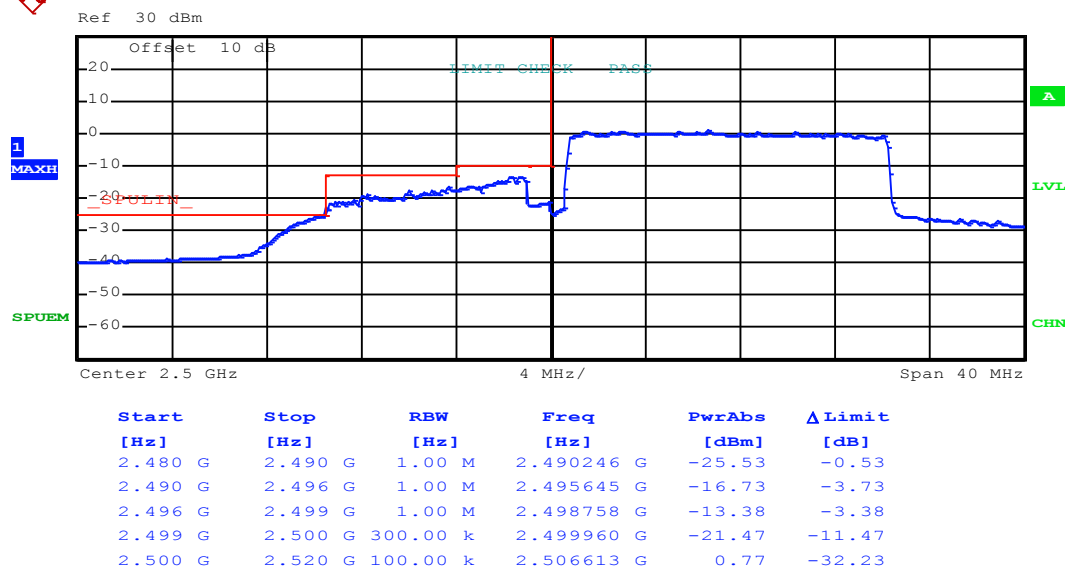
Lowest channel



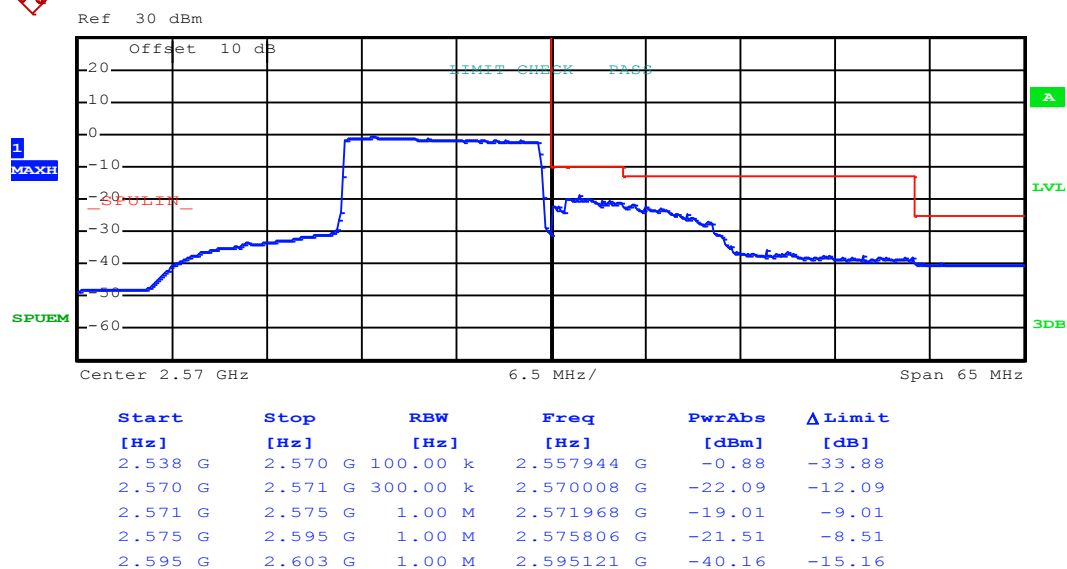
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 75 & RB Offset 0)



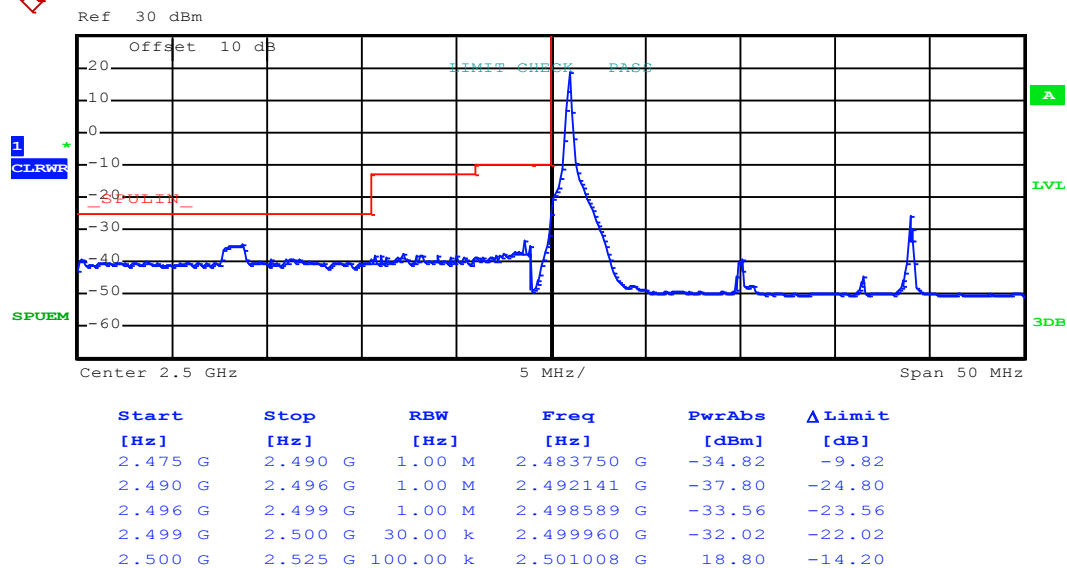
Lowest channel



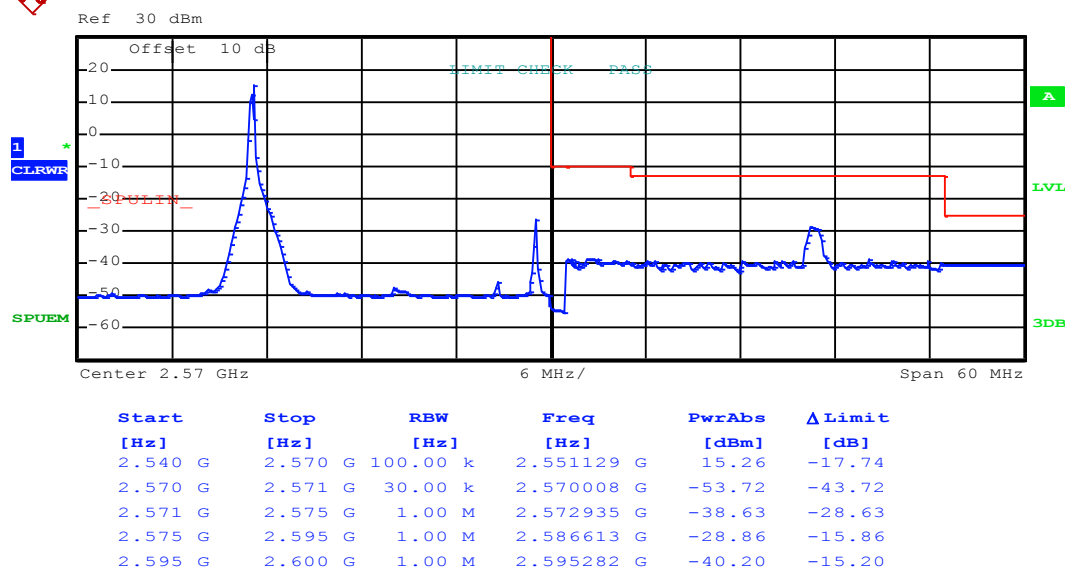
Highest channel

20MHz:

Test Mode:	LTE band 7(QPSK RB Size 1 & RB Offset 0)
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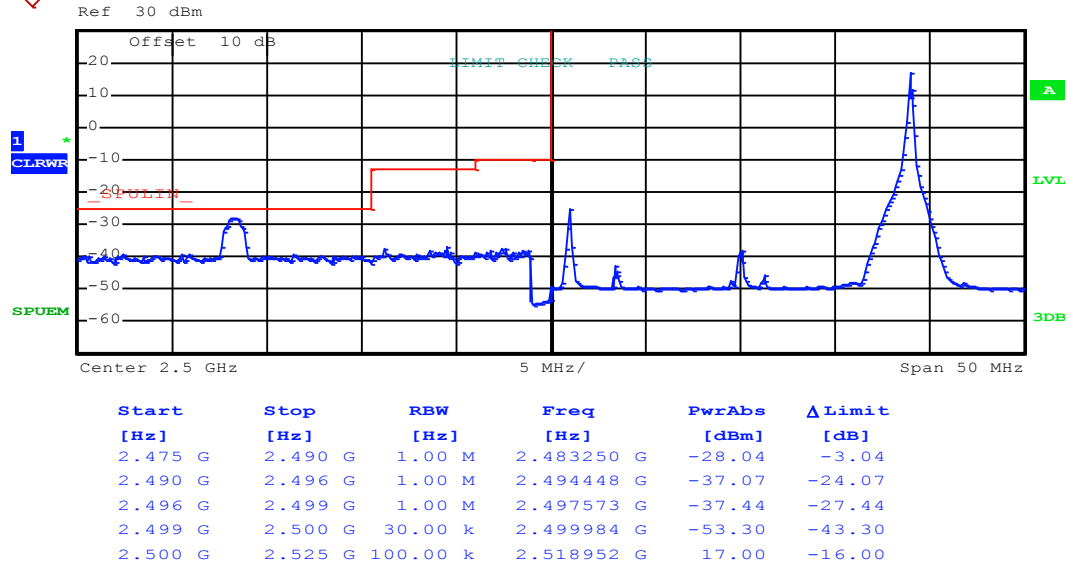
Lowest channel



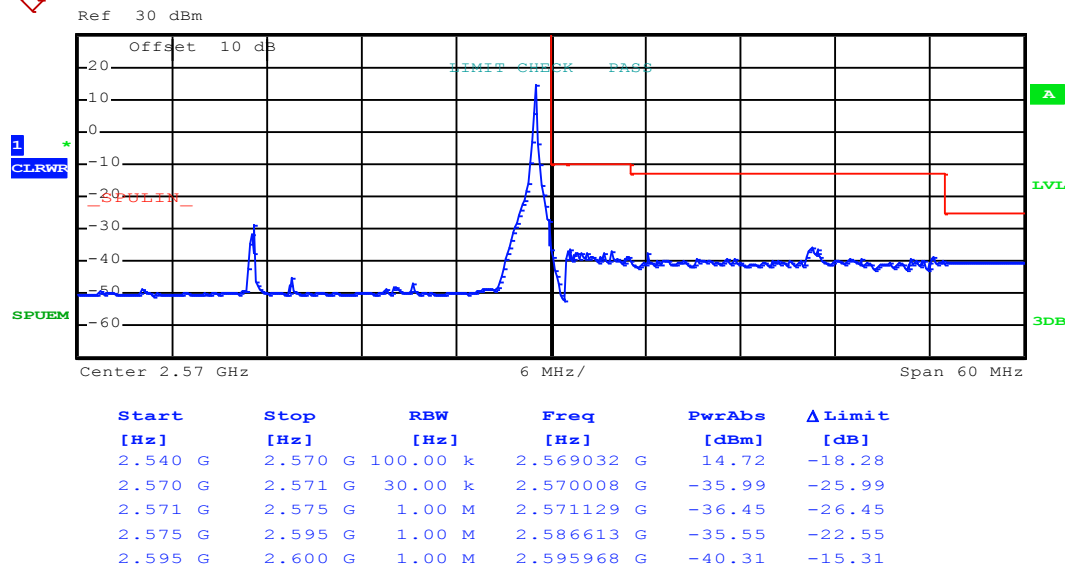
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 1 & RB Offset 99)



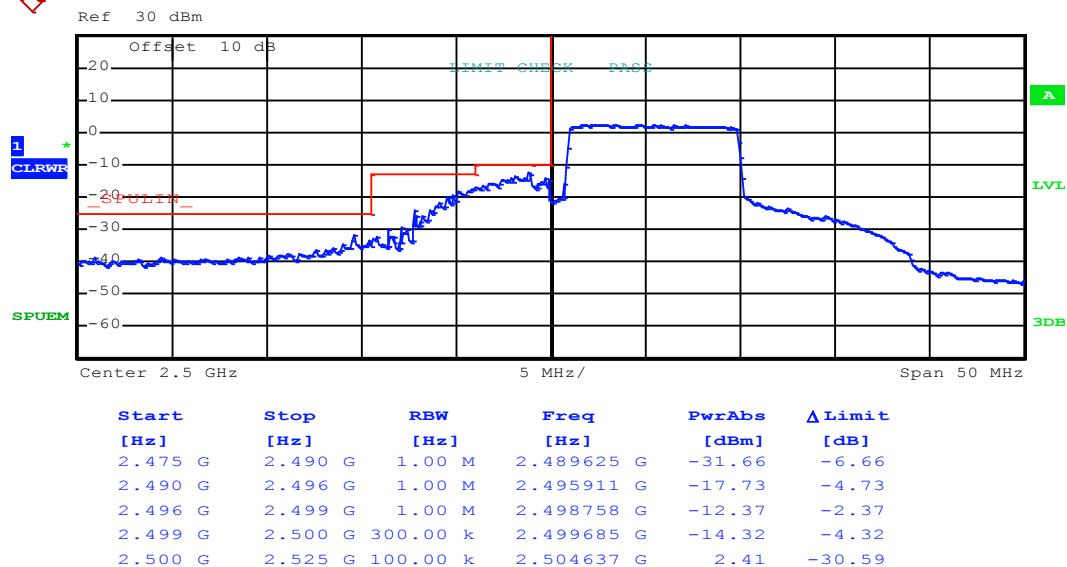
Lowest channel



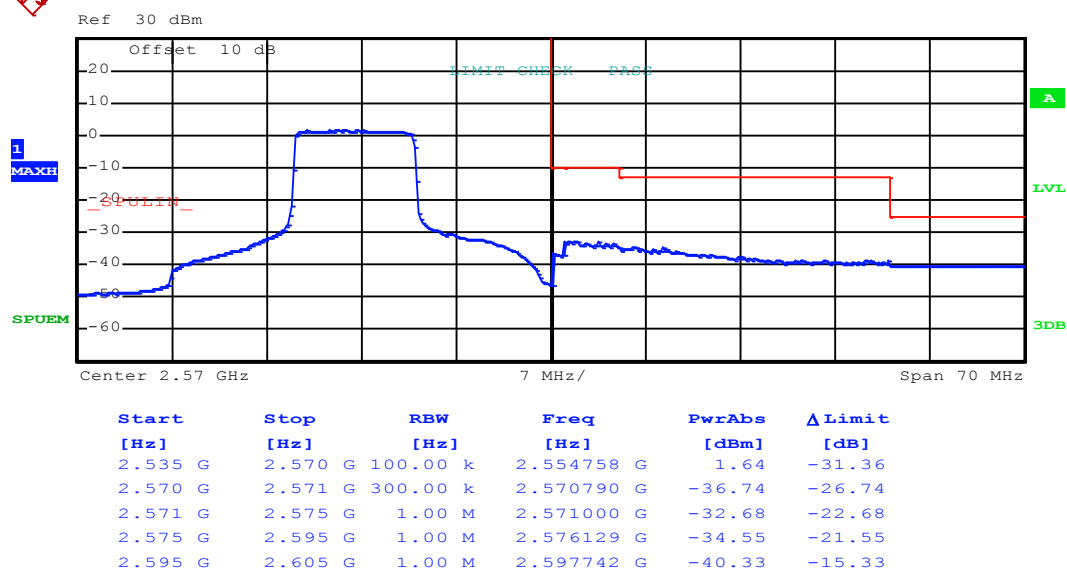
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 50 & RB Offset 0)



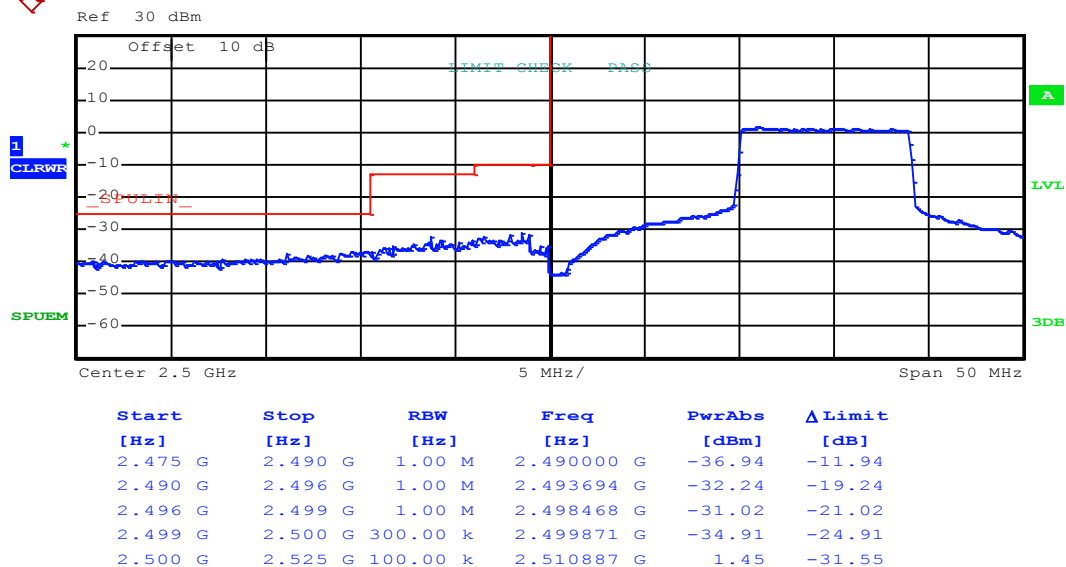
Lowest channel



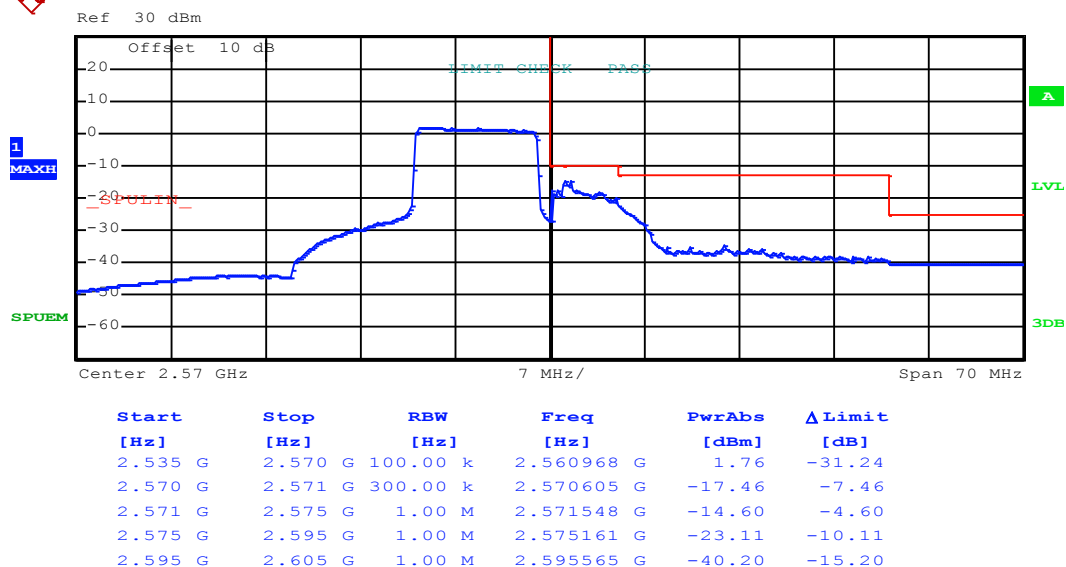
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 50 & RB Offset 49)



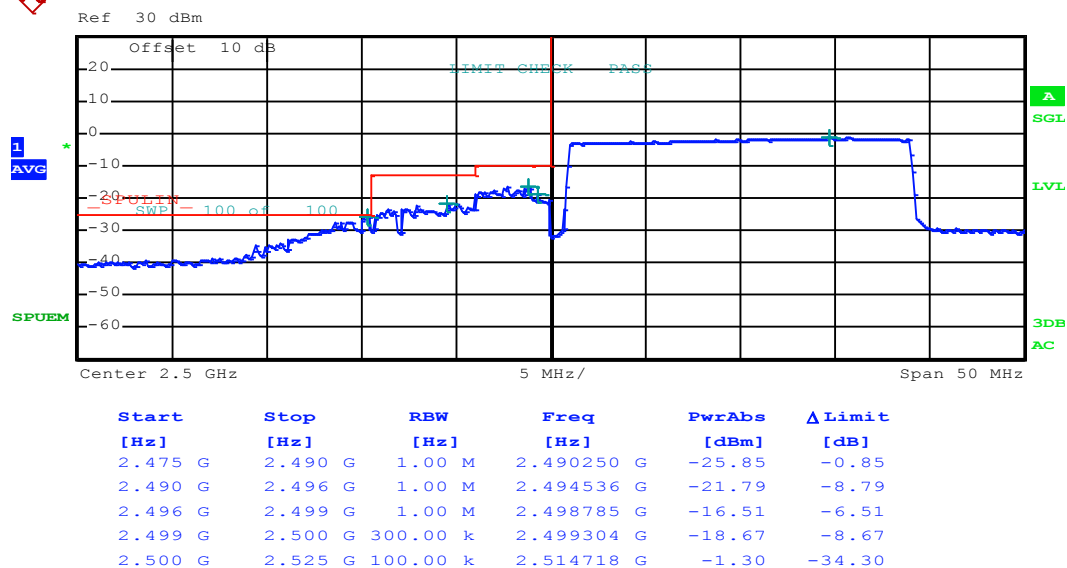
Lowest channel



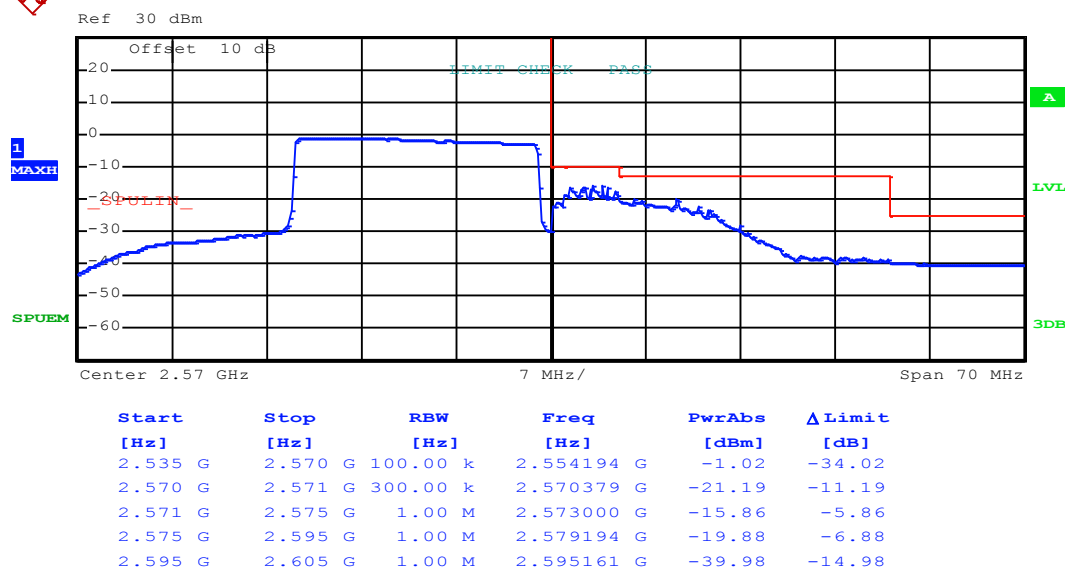
Highest channel

Test Mode:

LTE band 7(QPSK RB Size 100 & RB Offset 0)



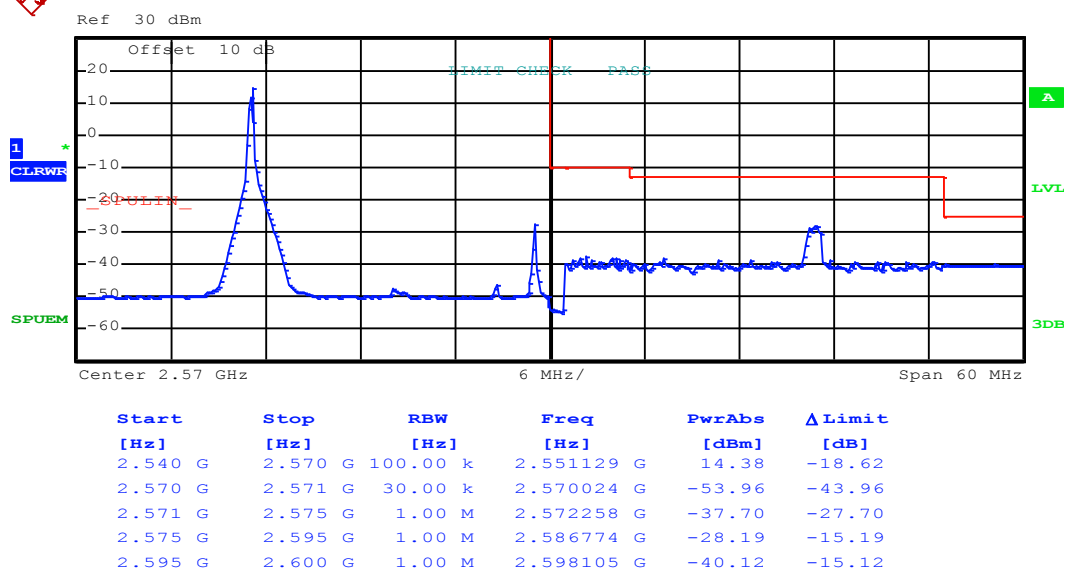
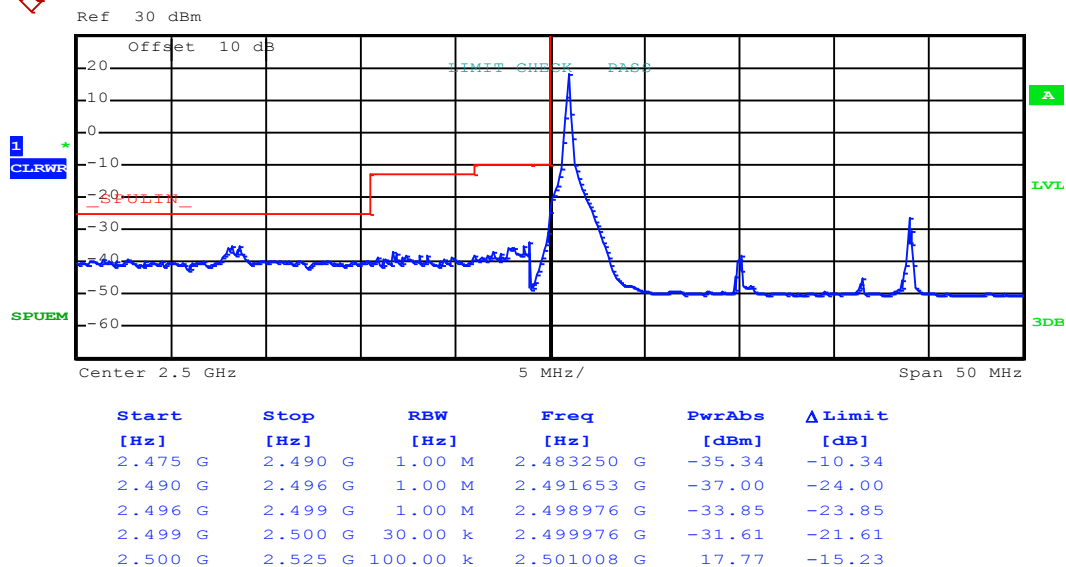
Lowest channel



Highest channel

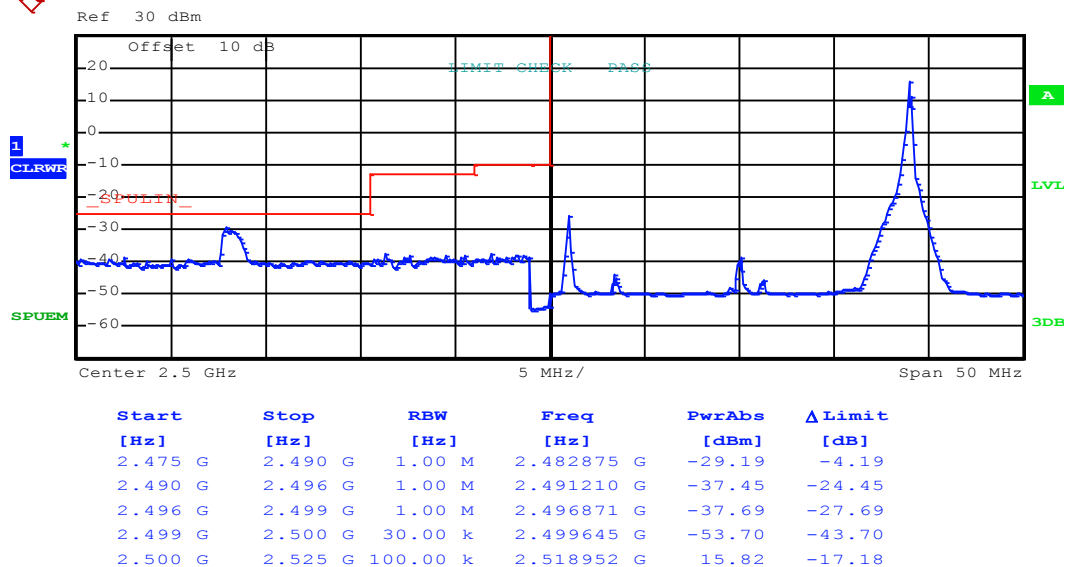
Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 0)

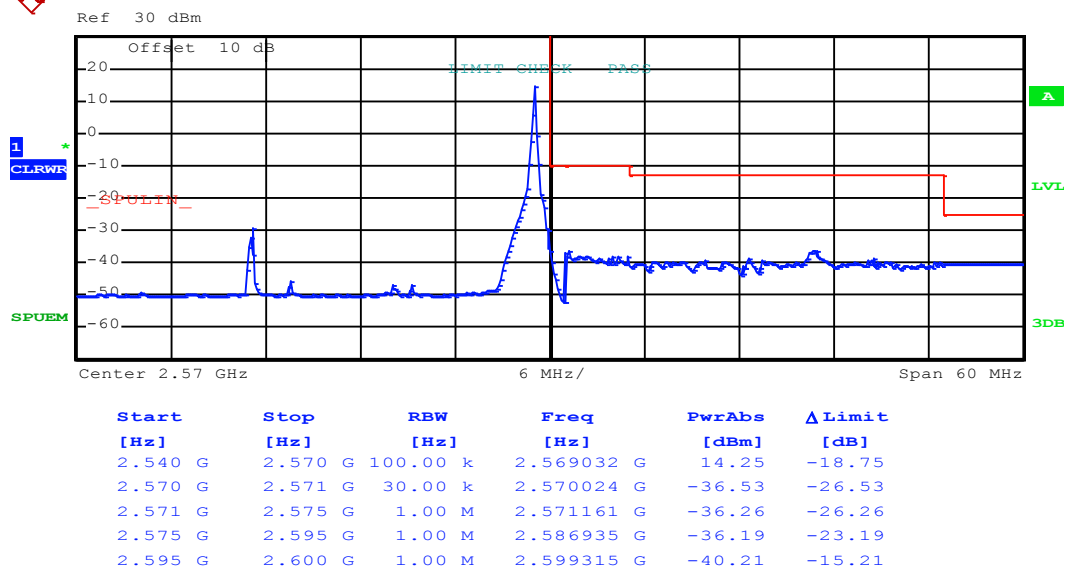


Test Mode:

LTE band 7(16QAM RB Size 1 & RB Offset 99)



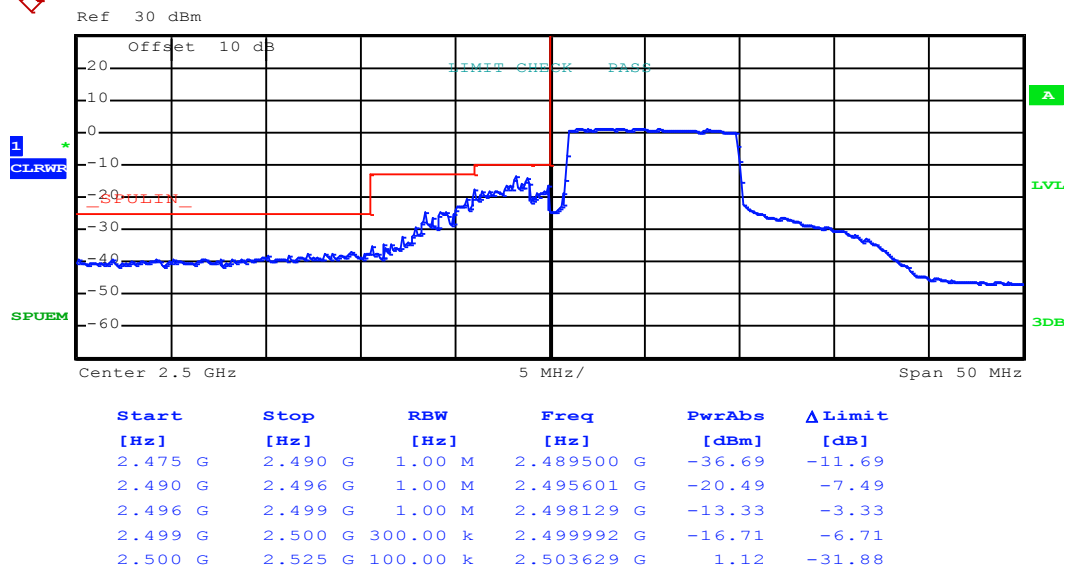
Lowest channel



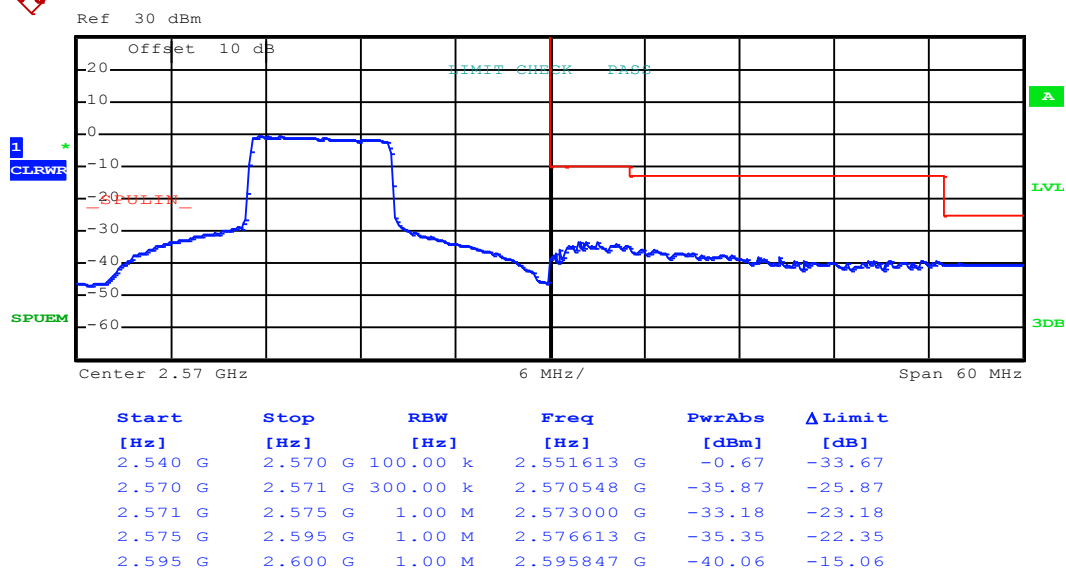
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 50 & RB Offset 0)



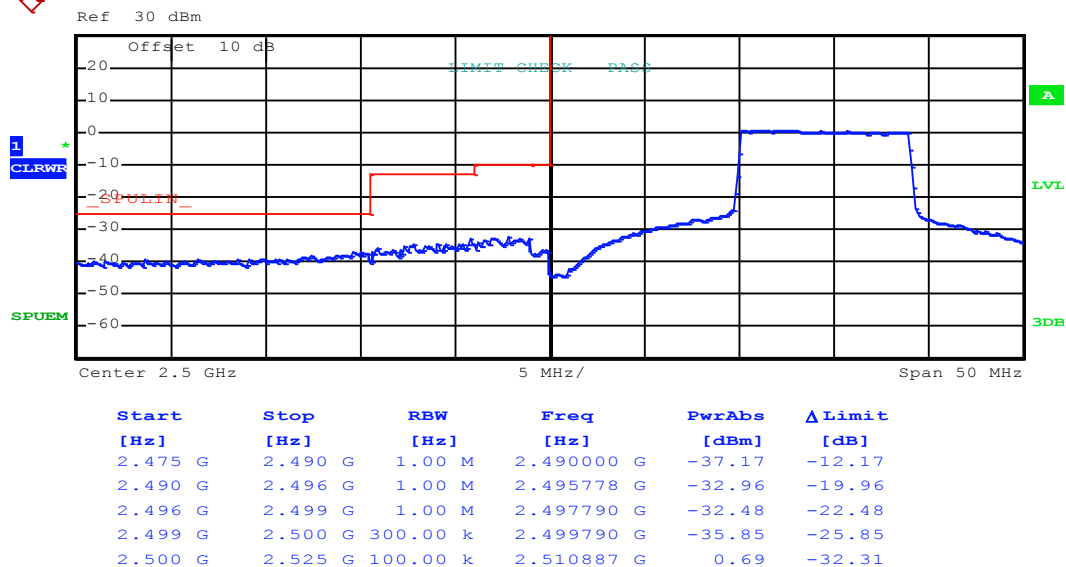
Lowest channel



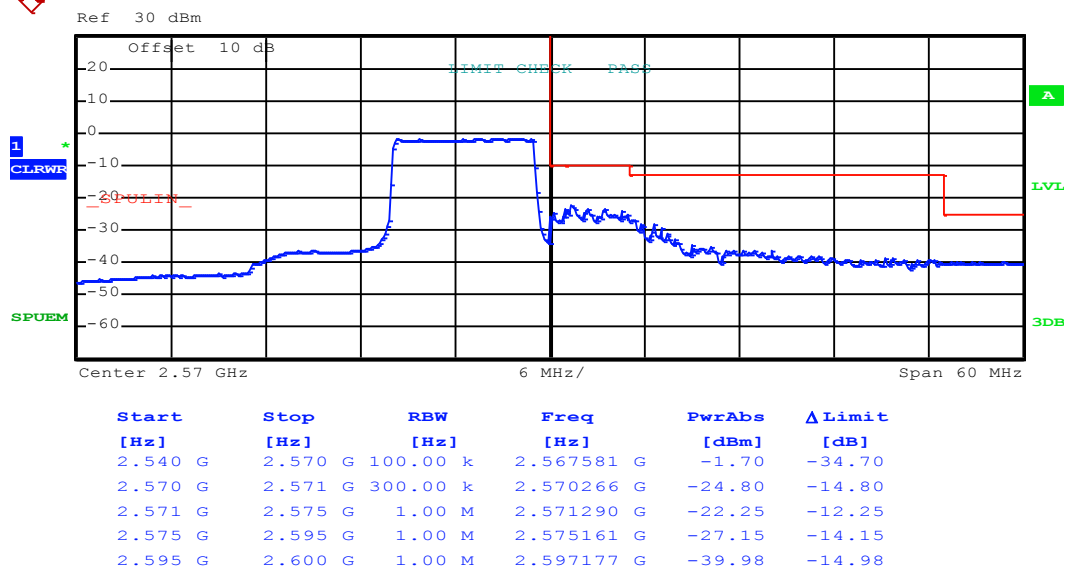
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 50 & RB Offset 49)



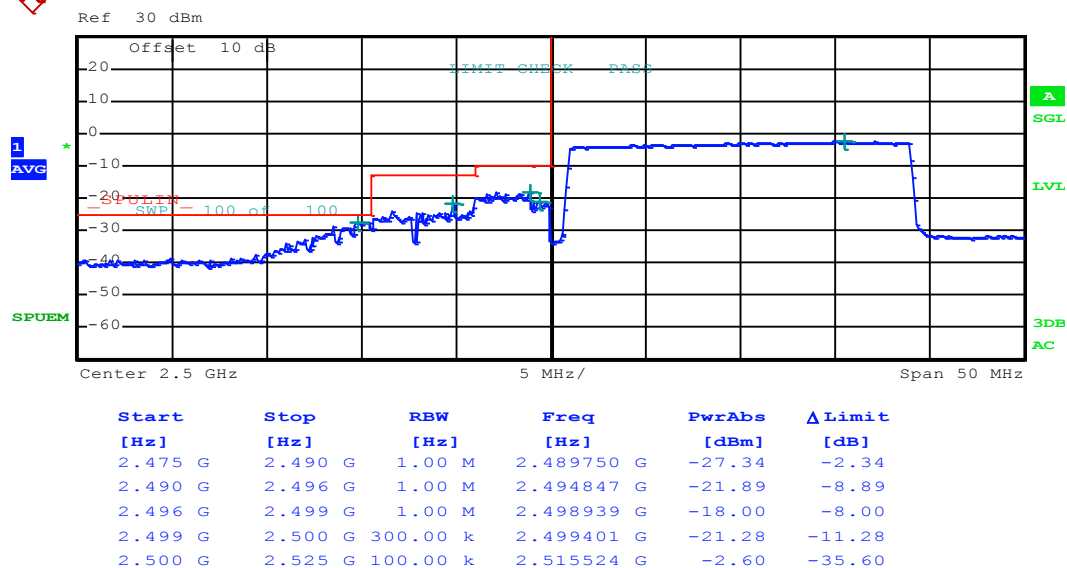
Lowest channel



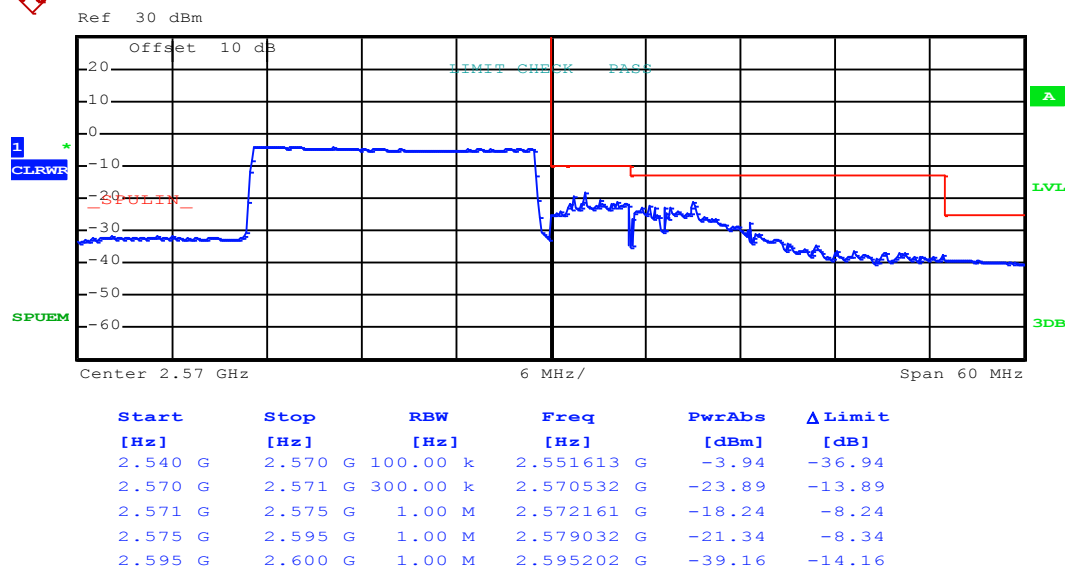
Highest channel

Test Mode:

LTE band 7(16QAM RB Size 100 & RB Offset 0)

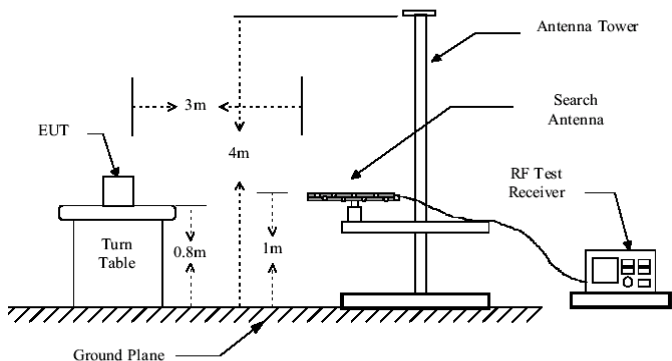
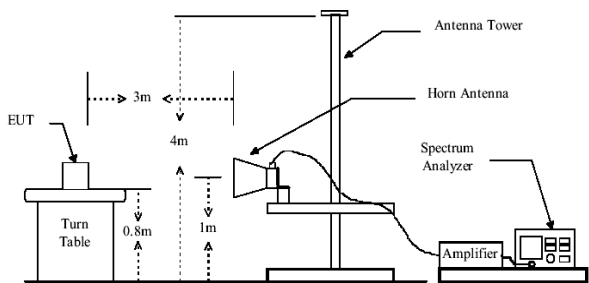
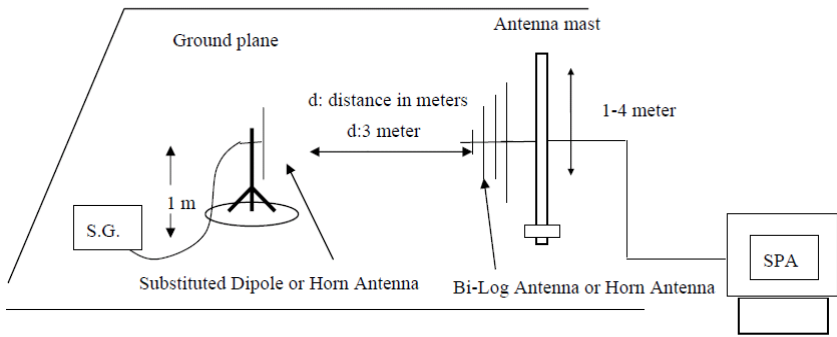


Lowest channel



Highest channel

6.10 ERP, EIRP Measurement

Test Requirement:	FCC part 24.232 (c), part 27.50(c), part 27.50(d)
Test Method:	FCC part 2.1046
Limit:	LTE Band 2: 2W EIRP LTE Band 4: 1W EIRP LTE Band 7: 2W EIRP
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 

Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated. 3. EIRP in frequency band 1850.7 –1909.3MHz, 1710.7-1754.3 MHz and 706.5-713..5 MHz were measured using a substitution method. The EUT was replaced by or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows: $\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$ 4. The worse case was relating to the conducted output power.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data (worst case)

LTE band 2 part

Lowest channel

Lowest channel								
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
1850.70	18607	QPSK	1.4	H	V	23.71	33.00	Pass
					H	15.00		
1850.70	18607	16QAM	1.4	H	V	23.11		
					H	18.27		
1.4MHz(RB size 3 & RB offset 0)								
1850.70	18607	QPSK	1.4	H	V	23.79	33.00	Pass
					H	15.21		
1850.70	18607	16QAM	1.4	H	V	23.50		
					H	17.89		
1.4MHz(RB size 6 & RB offset 0)								
1850.70	18607	QPSK	1.4	H	V	24.00	33.00	Pass
					H	18.36		
1850.70	18607	16QAM	1.4	H	V	18.20		
					H	18.70		

Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
1880.00	18900	QPSK	1.4	H	V	23.06	33.00	Pass
					H	16.73		
1880.00	18900	16QAM	1.4	H	V	22.83		
					H	22.81		
1.4MHz(RB size 3 & RB offset 0)								
1880.00	18900	QPSK	1.4	H	V	23.47	33.00	Pass
					H	17.08		
1880.00	18900	16QAM	1.4	H	V	21.37		
					H	20.75		
1.4MHz(RB size 6 & RB offset 0)								
1880.00	18900	QPSK	1.40	H	V	23.74	33.00	Pass
					H	17.46		
1880.00	18900	16QAM	1.40	H	V	20.42		
					H	21.25		

Highest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
1909.30	19193	QPSK	1.4	H	V	18.44	33.00	Pass
					H	18.35		
1909.30	19193	16QAM	1.4	H	V	16.94		
					H	14.71		
1.4MHz(RB size 3 & RB offset 0)								
1909.30	19193	QPSK	1.4	H	V	17.75	33.00	Pass
					H	15.98		
1909.30	19193	16QAM	1.4	H	V	19.48		
					H	16.77		
1.4MHz(RB size 6 & RB offset 0)								
1909.30	19193	QPSK	1.4	H	V	18.69	33.00	Pass
					H	16.56		
1909.30	19193	16QAM	1.4	H	V	19.15		
					H	16.85		

Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
1860.00	18700	QPSK	20	H	V	23.13	33.00	Pass
					H	18.34		
1860.00	18700	16QAM	20	H	V	21.89		
					H	13.40		
20MHz(RB size 50 & RB offset 0)								
1860.00	18700	QPSK	20	H	V	23.20	33.00	Pass
					H	15.60		
1860.00	18700	16QAM	20	H	V	9.25		
					H	19.36		
20MHz(RB size 100 & RB offset 0)								
1860.00	18700	QPSK	20	H	V	20.17	33.00	Pass
					H	13.98		
1860.00	18700	16QAM	20	H	V	20.92		
					H	15.55		

Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
1880.00	18900	QPSK	20	H	V	25.96	33.00	Pass
					H	18.86		
1880.00	18900	16QAM	20	H	V	25.85		
					H	19.30		
20MHz(RB size 50 & RB offset 0)								
1880.00	18900	QPSK	20	H	V	23.06	33.00	Pass
					H	18.82		
1880.00	18900	16QAM	20	H	V	23.03		
					H	19.49		
20MHz(RB size 100 & RB offset 0)								
1880.00	18900	QPSK	20	H	V	21.22	33.00	Pass
					H	17.38		
1880.00	18900	16QAM	20	H	V	21.46		
					H	18.29		

Highest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
1900.00	19100	QPSK	20	H	V	25.32	33.00	Pass
					H	18.62		
1900.00	19100	16QAM	20	H	V	24.84		
					H	18.00		
20MHz(RB size 50 & RB offset 0)								
1900.00	19100	QPSK	20	H	V	22.08	33.00	Pass
					H	17.66		
1900.00	19100	16QAM	20	H	V	21.72		
					H	18.06		
20MHz(RB size 100 & RB offset 0)								
1900.00	19100	QPSK	20	H	V	21.97	33.00	Pass
					H	16.51		
1900.00	19100	16QAM	20	H	V	22.37		
					H	17.21		

LTE band 4 part

Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
1710.70	19957	QPSK	1.4	H	V	19.53	30.00	Pass
					H	13.41		
1710.70	19957	16QAM	1.4	H	V	19.60		
					H	13.70		
1.4MHz(RB size 3 & RB offset 0)								
1710.70	19957	QPSK	1.4	H	V	19.01	30.00	Pass
					H	13.08		
1710.70	19957	16QAM	1.4	H	V	18.81		
					H	13.82		
1.4MHz(RB size 6 & RB offset 0)								
1710.70	19957	QPSK	1.4	H	V	19.42	30.00	Pass
					H	13.32		
1710.70	19957	16QAM	1.4	H	V	19.65		
					H	13.99		

Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
1732.50	20175	QPSK	1.4	H	V	21.66	30.00	Pass
					H	15.57		
1732.50	20175	16QAM	1.4	H	V	15.59		
					H	16.23		
1.4MHz(RB size 3 & RB offset 0)								
1732.50	20175	QPSK	1.4	H	V	15.56	30.00	Pass
					H	21.32		
1732.50	20175	16QAM	1.4	H	V	15.48		
					H	21.85		
1.4MHz(RB size 6 & RB offset 0)								
1732.50	20175	QPSK	1.4	H	V	20.47	30.00	Pass
					H	15.62		
1732.50	20175	16QAM	1.4	H	V	21.95		
					H	15.50		

Highest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
1.4MHz(RB size 1 & RB offset 0)								
1754.30	20393	QPSK	1.4	H	V	22.40	30.00	Pass
					H	17.01		
1754.30	20393	16QAM	1.4	H	V	22.08		
					H	17.49		
1.4MHz(RB size 3 & RB offset 0)								
1754.30	20393	QPSK	1.4	H	V	22.43	30.00	Pass
					H	16.87		
1754.30	20393	16QAM	1.4	H	V	21.39		
					H	16.69		
1.4MHz(RB size 6 & RB offset 0)								
1754.30	20393	QPSK	1.4	H	V	22.68	30.00	Pass
					H	17.50		
1754.30	20393	16QAM	1.4	H	V	22.90		
					H	17.33		

Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
1720.00	20050	QPSK	20	H	V	18.38	30.00	Pass
					H	12.32		
1720.00	20050	16QAM	20	H	V	19.16		
					H	12.29		
20MHz(RB size 50 & RB offset 0)								
1720.00	20050	QPSK	20	H	V	17.18	30.00	Pass
					H	12.79		
1720.00	20050	16QAM	20	H	V	17.30		
					H	14.07		
20MHz(RB size 100 & RB offset 0)								
1720.00	20050	QPSK	20	H	V	16.23	30.00	Pass
					H	12.29		
1720.00	20050	16QAM	20	H	V	16.77		
					H	13.26		

Middle channel

Mid-band channel								
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
1732.50	20175	QPSK	20	H	V	17.53	30.00	Pass
					H	13.34		
1732.50	20175	16QAM	20	H	V	17.89		
					H	14.01		
20MHz(RB size 50 & RB offset 0)								
1732.50	20175	QPSK	20	H	V	18.40	30.00	Pass
					H	14.83		
1732.50	20175	16QAM	20	H	V	19.47		
					H	15.62		
20MHz(RB size 100 & RB offset 0)								
1732.50	20175	QPSK	20	H	V	28.39	30.00	Pass
					H	13.18		
1732.50	20175	16QAM	20	H	V	27.49		
					H	14.53		

High channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
1745.00	20300	QPSK	20	H	V	20.37	30.00	Pass
					H	15.28		
1745.00	20300	16QAM	20	H	V	18.75		
					H	14.29		
20MHz(RB size 50 & RB offset 0)								
1745.00	20300	QPSK	20	H	V	20.30	30.00	Pass
					H	15.12		
1745.00	20300	16QAM	20	H	V	20.40		
					H	16.12		
20MHz(RB size 100 & RB offset 0)								
1745.00	20300	QPSK	20	H	V	18.88	30.00	Pass
					H	13.67		
1745.00	20300	16QAM	20	H	V	19.37		
					H	14.29		

LTE band 7 part

Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
2502.50	20775	QPSK	5	H	V	12.27	33.00	Pass
					H	13.56		
2502.50	20775	16QAM	5	H	V	15.01		
					H	13.46		
5MHz(RB size 12 & RB offset 0)								
2502.50	20775	QPSK	5	H	V	15.05	33.00	Pass
					H	8.10		
2502.50	20775	16QAM	5	H	V	14.49		
					H	8.05		
5MHz(RB size 25 & RB offset 0)								
2502.50	20775	QPSK	5	H	V	15.33	33.00	Pass
					H	8.74		
2502.50	20775	16QAM	5	H	V	15.09		
					H	8.89		

Middle channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
2535.00	21100	QPSK	5	H	V	12.25	33.00	Pass
					H	9.60		
2535.00	21100	16QAM	5	H	V	11.90		
					H	8.69		
5MHz(RB size 12 & RB offset 0)								
2535.00	21100	QPSK	5	H	V	15.54	33.00	Pass
					H	8.13		
2535.00	21100	16QAM	5	H	V	11.92		
					H	8.12		
5MHz(RB size 25 & RB offset 0)								
2535.00	21100	QPSK	5	H	V	15.79	33.00	Pass
					H	9.42		
2535.00	21100	16QAM	5	H	V	15.72		
					H	8.81		

Highest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
5MHz(RB size 1 & RB offset 0)								
2567.50	21425	QPSK	5	H	V	15.36	33.00	Pass
					H	8.39		
2567.50	21425	16QAM	5	H	V	15.70		
					H	7.83		
5MHz(RB size 12 & RB offset 0)								
2567.50	21425	QPSK	5	H	V	14.67	33.00	Pass
					H	8.35		
2567.50	21425	16QAM	5	H	V	12.94		
					H	7.07		
5MHz(RB size 25 & RB offset 0)								
2567.50	21425	QPSK	5	H	V	13.62	33.00	Pass
					H	10.58		
2567.50	21425	16QAM	5	H	V	12.20		
					H	10.89		

Lowest channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
2510.00	20850	QPSK	20	H	V	12.94	33.00	Pass
					H	12.83		
2510.00	20850	16QAM	20	H	V	14.41		
					H	12.32		
20MHz(RB size 50 & RB offset 0)								
2510.00	20850	QPSK	20	H	V	14.39	33.00	Pass
					H	12.59		
2510.00	20850	16QAM	20	H	V	14.26		
					H	12.95		
20MHz(RB size 100 & RB offset 0)								
2510.00	20850	QPSK	20	H	V	13.51	33.00	Pass
					H	11.86		
2510.00	20850	16QAM	20	H	V	13.47		
					H	12.67		

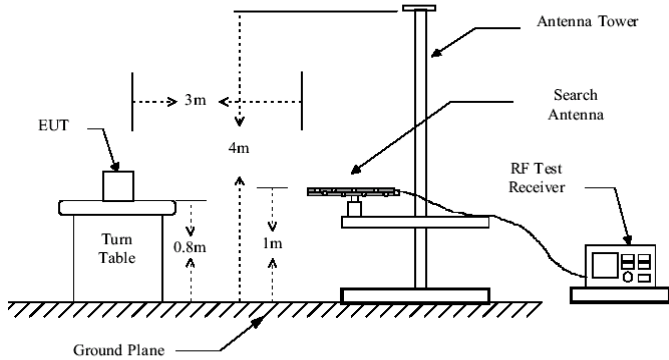
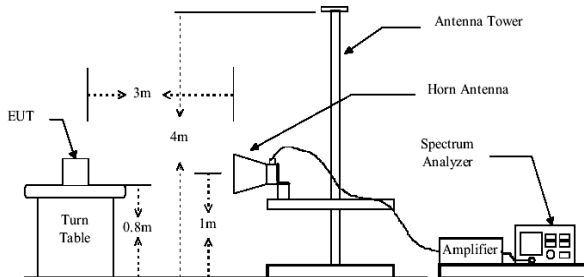
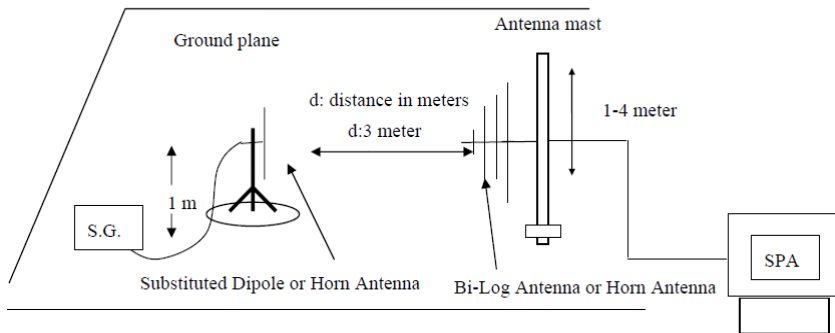
Middle channel

Mid-band channel								
Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
2535.00	21100	QPSK	20	H	V	13.14	33.00	Pass
					H	11.55		
2535.00	21100	16QAM	20	H	V	9.17		
					H	12.36		
20MHz(RB size 50 & RB offset 0)								
2535.00	21100	QPSK	20	H	V	13.79	33.00	Pass
					H	12.19		
2535.00	21100	16QAM	20	H	V	12.96		
					H	12.83		
20MHz(RB size 100 & RB offset 0)								
2535.00	21100	QPSK	20	H	V	12.10	33.00	Pass
					H	10.77		
2535.00	21100	16QAM	20	H	V	11.56		
					H	11.26		

High channel

Frequency (MHz)	UL Channel	Modulation	BW (MHz)	EUT Pol.	Antenna Pol.	EIRP(dBm)	Limit (dBm)	Result
20MHz(RB size 1 & RB offset 0)								
2560.00	21350	QPSK	20	H	V	12.49	33.00	Pass
					H	10.50		
2560.00	21350	16QAM	20	H	V	11.28		
					H	9.32		
20MHz(RB size 50 & RB offset 0)								
2560.00	21350	QPSK	20	H	V	11.32	33.00	Pass
					H	8.77		
2560.00	21350	16QAM	20	H	V	10.88		
					H	9.16		
20MHz(RB size 100 & RB offset 0)								
2560.00	21350	QPSK	20	H	V	9.23	33.00	Pass
					H	7.20		
2560.00	21350	16QAM	20	H	V	9.45		
					H	7.86		

6.11 Field strength of spurious radiation measurement

Test Requirement:	FCC Part 24.238 (a), part 27.53(g), part 27.53(h)
Test Method:	FCC part 2.1053
Limit:	LTE Band 2 & LTE Band 4: -13 dBm, LTE Band 7 -25dBm
Test setup:	Below 1GHz  Above 1GHz  Substituted method: 
Test Procedure:	1. The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer. 2. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations. 3. The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method. 4. The spurious emissions attenuation was calculated as the difference

	between radiated power at the fundamental frequency and the spurious emissions frequency. $ERP / EIRP = S.G. \text{ output (dBm)} + \text{Antenna Gain(dB/dBi)} - \text{Cable Loss (dB)}$
Test Uncertainty:	±4.88dB
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details.
Test results:	Passed

Measurement Data (worst case)**Below 1GHz:**

The emission levels of below 1 GHz are 20 dB lower than the limit so not show in this report.

Above 1GHz

For above 1 GHz, all test modes were performed, and just the worst case shown in the report.

LTE band 2 part:

1.4MHz(RB size 1 & RB offset 0) for QPSK

1.4MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3701.40	Vertical	-43.51	-13.00	Pass
5552.10	V	-17.30		
7402.00	V	-34.16		
3701.40	Horizontal	-42.72		
5552.10	H	-14.69		
7402.00	H	-31.69		
Middle				
3760.00	Vertical	-41.86	-13.00	Pass
5640.00	V	-30.11		
7520.00	V	-33.10		
3760.00	Horizontal	-45.83		
5640.00	H	-30.44		
7520.00	H	-34.38		
Highest				
3816.60	Vertical	-38.72	-13.00	Pass
5724.90	V	-21.66		
7633.20	V	-34.52		
3816.60	Horizontal	-42.86		
5724.90	H	-21.46		
7633.20	H	-32.35		

3MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3703.00	Vertical	-43.61	-13.00	Pass
5554.50	V	-16.57		
7406.00	V	-33.26		
3703.00	Horizontal	-35.27		
5554.50	H	-18.67		
7406.00	H	-31.46		
Middle				
3760.00	Vertical	-45.79	-13.00	Pass
5640.00	V	-23.59		
7520.00	V	-35.01		
3760.00	Horizontal	-43.67		
5640.00	H	-23.14		
7520.00	H	-35.67		
Highest				
3817.00	Vertical	-43.16	-13.00	Pass
5725.50	V	-25.79		
7634.00	V	-35.67		
3817.00	Horizontal	-42.16		
5725.50	H	-26.59		
7634.00	H	-35.17		

5MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3705.00	Vertical	-42.59	-13.00	Pass
5557.50	V	-16.37		
7410.00	V	-35.79		
3705.00	Horizontal	-41.79		
5557.50	H	-14.32		
7410.00	H	-32.49		
Middle				
3760.00	Vertical	-41.56	-13.00	Pass
5640.00	V	-30.59		
7520.00	V	-33.67		
3760.00	Horizontal	-45.81		
5640.00	H	-30.46		
7520.00	H	-34.16		
Highest				
3815.00	Vertical	-39.76	-13.00	Pass
5722.50	V	-20.56		
7630.00	V	-35.61		
3815.00	Horizontal	-42.35		
5722.50	H	-22.03		
7630.00	H	-32.86		

10MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3710.00	Vertical	-41.37	-13.00	Pass
5565.00	V	-18.79		
7420.00	V	-32.46		
3710.00	Horizontal	-44.51		
5565.00	H	-19.34		
7420.00	H	-32.64		
Middle				
3760.00	Vertical	-45.79	-13.00	Pass
5640.00	V	-23.64		
7520.00	V	-35.19		
3760.00	Horizontal	-43.74		
5640.00	H	-21.47		
7520.00	H	-34.62		
Highest				
3810.00	Vertical	-43.01	-13.00	Pass
5715.00	V	-26.35		
7620.00	V	-35.97		
3810.00	Horizontal	-42.16		
5715.00	H	-26.47		
7620.00	H	-35.67		

15MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3715.00	Vertical	-43.16	-13.00	Pass
5572.50	V	-16.74		
7430.00	V	-36.41		
3715.00	Horizontal	-41.57		
5572.50	H	-15.87		
7430.00	H	-31.29		
Middle				
3760.00	Vertical	-41.79	-13.00	Pass
5640.00	V	-30.24		
7520.00	V	-33.67		
3760.00	Horizontal	-45.29		
5640.00	H	-30.01		
7520.00	H	-34.27		
Highest				
3805.00	Vertical	-38.54	-13.00	Pass
5707.50	V	-20.46		
7610.00	V	-34.57		
3805.00	Horizontal	-42.51		
5707.50	H	-22.34		
7610.00	H	-32.76		

20MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3720.00	Vertical	-42.94	-13.00	Pass
5580.00	V	-17.43		
7440.00	V	-32.90		
3720.00	Horizontal	-44.80		
5580.00	H	-17.95		
7440.00	H	-32.22		
Middle				
3760.00	Vertical	-45.14	-13.00	Pass
5640.00	V	-23.92		
7520.00	V	-35.06		
3760.00	Horizontal	-43.85		
5640.00	H	-22.46		
7520.00	H	-35.75		
Highest				
3800.00	Vertical	-43.64	-13.00	Pass
5700.00	V	-25.74		
7600.00	V	-35.13		
3800.00	Horizontal	-42.64		
5700.00	H	-26.83		
7600.00	H	-35.24		

LTE Band 4 Part:

1.4MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3421.40	Vertical	-42.62	-13.00	Pass
5132.10	V	-24.04		
6842.80	V	-35.34		
3421.40	Horizontal	-43.82		
5132.10	H	-21.06		
6842.80	H	-37.70		
Middle				
3465.00	Vertical	-44.69	-13.00	Pass
5197.50	V	-22.68		
6930.00	V	-35.51		
3465.00	Horizontal	-44.00		
5197.50	H	-23.84		
6930.00	H	-36.85		
Highest				
3508.60	Vertical	-44.17	-13.00	Pass
5262.90	V	-20.46		
7017.20	V	-34.84		
3508.60	Horizontal	-44.33		
5262.90	H	-25.63		
7017.20	H	-34.88		
3MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3423.00	Vertical	-43.16	-13.00	Pass
5134.50	V	-21.47		
6846.00	V	-36.74		
3423.00	Horizontal	-46.86		
5134.50	H	-19.65		
6846.00	H	-35.74		
Middle				
3465.00	Vertical	-41.34	-13.00	Pass
5197.50	V	-25.67		
6930.00	V	-34.62		
3465.00	Horizontal	-43.61		
5197.50	H	-46.32		
6930.00	H	-22.10		

Highest				
3507.00	Vertical	-45.97	-13.00	Pass
5260.50	V	-19.34		
7014.00	V	-36.34		
3507.00	Horizontal	-46.10		
5260.50	H	-18.37		
7014.00	H	-38.69		
5MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3425.00	Vertical	-43.13	-13.00	Pass
5137.50	V	-25.67		
6850.00	V	-35.14		
3425.00	Horizontal	-52.74		
5137.50	H	-20.34		
6850.00	H	-37.41		
Middle				
3465.00	Vertical	-43.16	-13.00	Pass
5197.50	V	-21.34		
6930.00	V	-34.52		
3465.00	Horizontal	-43.01		
5197.50	H	-22.47		
6930.00	H	-35.78		
Highest				
3505.00	Vertical	-43.16	-13.00	Pass
5257.50	V	-19.41		
7010.00	V	-35.46		
3505.00	Horizontal	-43.65		
5257.50	H	-26.37		
7010.00	H	-33.67		
10MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3430.00	Vertical	-76.38	-13.00	Pass
5145.00	V	-19.74		
6860.00	V	-34.16		
3430.00	Horizontal	-45.89		
5145.00	H	-19.69		
6860.00	H	-35.64		

Middle				
3465.00	Vertical	-42.67	-13.00	Pass
5197.50	V	-29.74		
6930.00	V	-34.14		
3465.00	Horizontal	-45.61		
5197.50	H	-24.36		
6930.00	H	-39.64		
Highest				
3500.00	Vertical	-45.74	-13.00	Pass
5250.00	V	-29.34		
7000.00	V	-35.63		
3500.00	Horizontal	-46.61		
5250.00	H	-20.36		
7000.00	H	-37.61		
15MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3435.00	Vertical	-43.16	-13.00	Pass
5152.50	V	-25.67		
6870.00	V	-34.79		
3435.00	Horizontal	-46.00		
5152.50	H	-20.34		
6870.00	H	-37.98		
Middle				
3465.00	Vertical	-43.67	-13.00	Pass
5197.50	V	-21.34		
6930.00	V	-36.25		
3465.00	Horizontal	-46.71		
5197.50	H	-22.45		
6930.00	H	-35.79		
Highest				
3495.00	Vertical	-43.67	-13.00	Pass
5242.50	V	-19.47		
6990.00	V	-35.69		
3495.00	Horizontal	-43.61		
5242.50	H	-24.67		
6990.00	H	-35.69		

20MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
3440.00	Vertical	-42.67	-13.00	Pass
5160.00	V	-20.24		
6880.00	V	-35.67		
3440.00	Horizontal	-44.17		
5160.00	H	-20.49		
6880.00	H	-34.38		
Middle				
3465.00	Vertical	-42.70	-13.00	Pass
5197.50	V	-26.35		
6930.00	V	-33.57		
3465.00	Horizontal	-44.55		
5197.50	H	-23.74		
6930.00	H	-40.03		
Highest				
3490.00	Vertical	-45.32	-13.00	Pass
5235.00	V	-20.62		
6980.00	V	-36.35		
3490.00	Horizontal	-45.20		
5235.00	H	-19.38		
6980.00	H	-37.07		

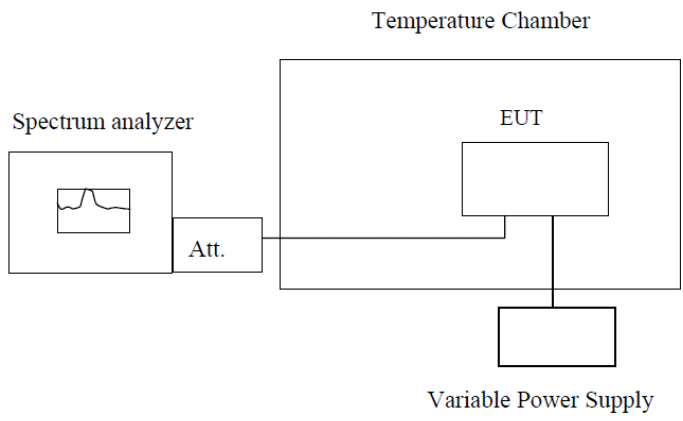
LTE Band 7 Part:

5MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
5005.00	Vertical	-28.02	-25.00	Pass
7507.50	V	-28.87		
10010.00	V	-34.67		
5005.00	Horizontal	-29.00		
7507.50	H	-31.00		
10010.00	H	-35.97		
Middle				
5070.00	Vertical	-29.59	-25.00	Pass
7605.00	V	-28.49		
10140.00	V	-34.89		
5070.00	Horizontal	-29.36		
7605.00	H	-30.29		
10140.00	H	-35.96		
Highest				
5135.00	Vertical	-30.01	-25.00	Pass
7702.50	V	-29.29		
10270.00	V	-34.97		
5135.00	Horizontal	-27.84		
7702.50	H	-28.71		
10270.00	H	-35.67		
10MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
5010.00	Vertical	-29.55	-25.00	Pass
7515.00	V	-28.69		
10020.00	V	-39.64		
5010.00	Horizontal	-26.97		
7515.00	H	-27.84		
10020.00	H	-40.21		
Middle				
5070.00	Vertical	-31.76	-25.00	Pass
7605.00	V	-30.09		
10140.00	V	-39.56		
5070.00	Horizontal	-30.56		
7605.00	H	-29.13		
10140.00	H	-38.17		

Highest				
5130.00	Vertical	-27.28	-25.00	Pass
7695.00	V	-28.70		
10260.00	V	-40.15		
5130.00	Horizontal	-26.24		
7695.00	H	-27.94		
10260.00	H	-39.67		
15MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
5015.00	Vertical	-25.69	-25.00	Pass
7522.50	V	-26.34		
10030.00	V	-38.97		
5015.00	Horizontal	-26.34		
7522.50	H	-27.46		
10030.00	H	-37.24		
Middle				
5070.00	Vertical	-25.16	-25.00	Pass
7605.00	V	-26.97		
10140.00	V	-37.81		
5070.00	Horizontal	-26.94		
7605.00	H	-27.03		
10140.00	H	-38.65		
Highest				
5125.00	Vertical	-26.03	-25.00	Pass
7687.50	V	-25.48		
10250.00	V	-38.61		
5125.00	Horizontal	-27.64		
7687.50	H	-26.98		
10250.00	H	-39.64		
20MHz(RB size 1 & RB offset 0) for QPSK				
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
Lowest				
5020.00	Vertical	-25.94	-25.00	Pass
7530.00	V	-26.52		
10040.00	V	-37.52		
5020.00	Horizontal	-25.97		
7530.00	H	-26.80		
10040.00	H	-38.61		

Middle				
5070.00	Vertical	-29.04	-25.00	Pass
7605.00	V	-28.28		
10140.00	V	-37.84		
5070.00	Horizontal	-27.25		
7605.00	H	-28.76		
10140.00	H	-38.61		
Highest				
5120.00	Vertical	-25.81	-25.00	Pass
7680.00	V	-26.68		
10240.00	V	-37.65		
5120.00	Horizontal	-25.38		
7680.00	H	-26.46		
10240.00	H	-38.20		

6.12 Frequency stability V.S. Temperature measurement

Test Requirement:	FCC Part 2.1055(a)(1)(b)
Test Method:	FCC Part 2.1055(a)(1)(b)
Limit:	±2.5 ppm
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test procedure:	1. The equipment under test was connected to an external DC power supply and input rated voltage. 2. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. 3. The EUT was placed inside the temperature chamber. 4. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. 5. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. 6. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	All three channels of all modulations have been tested, but only the worst channel and the worst modulation show in this test item.

Measurement Data (the worst channel):

LTE Band 2(QPSK):

Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	197	0.104787	±2.5	Pass
	-20	152	0.080851		
	-10	58	0.030851		
	0	87	0.046277		
	10	73	0.038830		
	20	113	0.060106		
	30	125	0.066489		
	40	132	0.070213		
	50	110	0.058511		
Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	148	0.078723	±2.5	Pass
	-20	125	0.066489		
	-10	151	0.080319		
	0	82	0.043617		
	10	73	0.038830		
	20	94	0.050000		
	30	113	0.060106		
	40	122	0.064894		
	50	132	0.070213		
Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	69	0.036702	±2.5	Pass
	-20	74	0.039362		
	-10	95	0.050532		
	0	53	0.028191		
	10	110	0.058511		
	20	35	0.018617		
	30	115	0.061170		
	40	74	0.039362		
	50	97	0.051596		

Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	81	0.043085	±2.5	Pass
	-20	41	0.021809		
	-10	66	0.035106		
	0	98	0.052128		
	10	46	0.024468		
	20	78	0.041489		
	30	39	0.020745		
	40	61	0.032447		
	50	95	0.050532		
Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	78	0.041489	±2.5	Pass
	-20	84	0.044681		
	-10	66	0.035106		
	0	91	0.048404		
	10	58	0.030851		
	20	85	0.045213		
	30	46	0.024468		
	40	67	0.035638		
	50	94	0.050000		
Reference Frequency: LTE Band 2(20MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	110	0.058511	±2.5	Pass
	-20	122	0.064894		
	-10	35	0.018617		
	0	57	0.030319		
	10	136	0.072340		
	20	124	0.065957		
	30	112	0.059574		
	40	72	0.038298		
	50	95	0.050532		

LTE Band 2(16QAM):

Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	137	0.072872	±2.5	Pass
	-20	111	0.059043		
	-10	105	0.055851		
	0	95	0.050532		
	10	96	0.051064		
	20	68	0.036170		
	30	110	0.058511		
	40	75	0.039894		
	50	64	0.034043		
Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	101	0.053723	±2.5	Pass
	-20	115	0.061170		
	-10	114	0.060638		
	0	116	0.061702		
	10	98	0.052128		
	20	109	0.057979		
	30	104	0.055319		
	40	45	0.023936		
	50	84	0.044681		
Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	134	0.071277	±2.5	Pass
	-20	125	0.066489		
	-10	126	0.067021		
	0	128	0.068085		
	10	134	0.071277		
	20	95	0.050532		
	30	101	0.053723		
	40	42	0.022340		
	50	83	0.044149		

Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	84	0.044681	±2.5	Pass
	-20	61	0.032447		
	-10	45	0.023936		
	0	78	0.041489		
	10	84	0.044681		
	20	96	0.051064		
	30	107	0.056915		
	40	105	0.055851		
	50	107	0.056915		
Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	121	0.064362	±2.5	Pass
	-20	135	0.071809		
	-10	125	0.066489		
	0	103	0.054787		
	10	101	0.053723		
	20	94	0.050000		
	30	75	0.039894		
	40	41	0.021809		
	50	55	0.029255		
Reference Frequency: LTE Band 2(20MHz) Middle channel=18900 channel=1880.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	67	0.035638	±2.5	Pass
	-20	88	0.046809		
	-10	91	0.048404		
	0	75	0.039894		
	10	116	0.061702		
	20	115	0.061170		
	30	106	0.056383		
	40	118	0.062766		
	50	129	0.068617		

LTE Band 4(QPSK):

Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	87	0.050216	±2.5	Pass
	-20	65	0.037518		
	-10	96	0.055411		
	0	115	0.066378		
	10	124	0.071573		
	20	118	0.068110		
	30	117	0.067532		
	40	112	0.064646		
	50	105	0.060606		
Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	141	0.081385	±2.5	Pass
	-20	122	0.070418		
	-10	105	0.060606		
	0	96	0.055411		
	10	103	0.059452		
	20	97	0.055988		
	30	64	0.036941		
	40	41	0.023665		
	50	72	0.041558		
Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	147	0.084848	±2.5	Pass
	-20	125	0.072150		
	-10	144	0.083117		
	0	112	0.064646		
	10	154	0.088889		
	20	111	0.064069		
	30	95	0.054834		
	40	98	0.056566		
	50	71	0.040981		

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	51	0.029437	±2.5	Pass
	-20	44	0.025397		
	-10	76	0.043867		
	0	94	0.054257		
	10	97	0.055988		
	20	103	0.059452		
	30	114	0.065801		
	40	147	0.084848		
	50	102	0.058874		
Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	117	0.067532	±2.5	Pass
	-20	105	0.060606		
	-10	141	0.081385		
	0	105	0.060606		
	10	94	0.054257		
	20	75	0.043290		
	30	126	0.072727		
	40	134	0.077345		
	50	128	0.073882		
Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	164	0.094661	±2.5	Pass
	-20	122	0.070418		
	-10	134	0.077345		
	0	142	0.081962		
	10	95	0.054834		
	20	104	0.060029		
	30	86	0.049639		
	40	124	0.071573		
	50	108	0.062338		

LTE Band 4(16QAM):

Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	117	0.067532	±2.5	Pass
	-20	131	0.075613		
	-10	122	0.070418		
	0	95	0.054834		
	10	103	0.059452		
	20	85	0.049062		
	30	98	0.056566		
	40	97	0.055988		
	50	89	0.051371		
Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	107	0.061760	±2.5	Pass
	-20	121	0.069841		
	-10	115	0.066378		
	0	43	0.024820		
	10	74	0.042713		
	20	65	0.037518		
	30	68	0.039250		
	40	69	0.039827		
	50	54	0.031169		
Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	148	0.085426	±2.5	Pass
	-20	131	0.075613		
	-10	135	0.077922		
	0	124	0.071573		
	10	102	0.058874		
	20	104	0.060029		
	30	98	0.056566		
	40	89	0.051371		
	50	61	0.035209		

Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	131	0.075613	±2.5	Pass
	-20	114	0.065801		
	-10	95	0.054834		
	0	129	0.074459		
	10	81	0.046753		
	20	75	0.043290		
	30	74	0.042713		
	40	56	0.032323		
	50	97	0.055988		
Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	114	0.065801	±2.5	Pass
	-20	131	0.075613		
	-10	125	0.072150		
	0	106	0.061183		
	10	54	0.031169		
	20	98	0.056566		
	30	82	0.047330		
	40	85	0.049062		
	50	68	0.039250		
Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	149	0.086003	±2.5	Pass
	-20	134	0.077345		
	-10	85	0.049062		
	0	43	0.024820		
	10	116	0.066955		
	20	94	0.054257		
	30	97	0.055988		
	40	75	0.043290		
	50	131	0.075613		

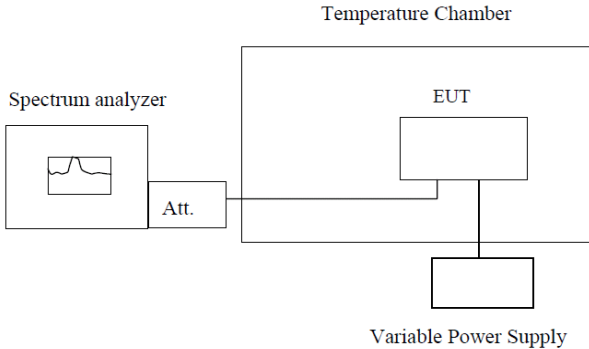
LTE Band 7(QPSK):

Reference Frequency: LTE Band 7(5MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	154	0.060750	±2.5	Pass
	-20	91	0.035897		
	-10	124	0.048915		
	0	125	0.049310		
	10	147	0.057988		
	20	75	0.029586		
	30	86	0.033925		
	40	65	0.025641		
	50	118	0.046548		
Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	99	0.039053	±2.5	Pass
	-20	81	0.031953		
	-10	85	0.033531		
	0	107	0.042209		
	10	147	0.057988		
	20	135	0.053254		
	30	112	0.044181		
	40	85	0.033531		
	50	64	0.025247		
Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	159	0.062722	±2.5	Pass
	-20	144	0.056805		
	-10	75	0.029586		
	0	93	0.036686		
	10	113	0.044576		
	20	124	0.048915		
	30	118	0.046548		
	40	67	0.026430		
	50	78	0.030769		
Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	158	0.062327	±2.5	Pass
	-20	131	0.051677		
	-10	82	0.032347		
	0	96	0.037870		
	10	64	0.025247		
	20	105	0.041420		
	30	64	0.025247		
	40	86	0.033925		
	50	41	0.016174		

LTE Band 7(16QAM):

Reference Frequency: LTE Band 7(5MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	91	0.035897	±2.5	Pass
	-20	37	0.014596		
	-10	81	0.031953		
	0	75	0.029586		
	10	112	0.044181		
	20	135	0.053254		
	30	114	0.044970		
	40	144	0.056805		
	50	83	0.032742		
Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	57	0.022485	±2.5	Pass
	-20	99	0.039053		
	-10	35	0.013807		
	0	87	0.034320		
	10	112	0.044181		
	20	104	0.041026		
	30	125	0.049310		
	40	98	0.038659		
	50	87	0.034320		
Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	87	0.034320	2.5	Pass
	-20	68	0.026824		
	-10	115	0.045365		
	0	122	0.048126		
	10	122	0.048126		
	20	135	0.053254		
	30	127	0.050099		
	40	119	0.046943		
	50	107	0.042209		
Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz					
Power supplied (Vdc)	Temperature (°C)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
3.80	-30	147	0.057988	2.5	Pass
	-20	99	0.039053		
	-10	91	0.035897		
	0	95	0.037475		
	10	44	0.017357		
	20	67	0.026430		
	30	115	0.045365		
	40	102	0.040237		
	50	127	0.050099		

6.13 Frequency stability V.S. Voltage measurement

Test Requirement:	FCC Part 2.1055(d)(1)(2)
Test Method:	FCC Part 2.1055(d)(1)(2)
Limit:	$\pm 2.5\text{ppm}$
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test procedure:	1. Set chamber temperature to 25°C. Use a variable DC power source to power the EUT and set the voltage to rated voltage. 2. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency. 3. Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details, and all channels have been tested, only shows the worst channel data in this report.
Test results:	Passed

Measurement Data (the worst channel):

LTE Band 2(QPSK):

Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	87	0.046277	±2.5	Pass
	3.80	66	0.035106		
	3.40	94	0.050000		
Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	48	0.025532	±2.5	Pass
	3.80	81	0.043085		
	3.40	95	0.050532		
Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	58	0.030851	±2.5	Pass
	3.80	84	0.044681		
	3.40	45	0.023936		
Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	96	0.051064	±2.5	Pass
	3.80	112	0.059574		
	3.40	85	0.045213		
Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	94	0.050000	±2.5	Pass
	3.80	86	0.045745		
	3.40	115	0.061170		
Reference Frequency: LTE Band 2(20MHz) Middle channel=20175 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	96	0.051064	±2.5	Pass
	3.80	57	0.030319		
	3.40	88	0.046809		

LTE Band 2(16QAM):

Reference Frequency: LTE Band 2(1.4MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	109	0.057979	±2.5	Pass
	3.80	75	0.039894		
	3.40	66	0.035106		
Reference Frequency: LTE Band 2(3MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	91	0.048404	±2.5	Pass
	3.80	85	0.045213		
	3.40	56	0.029787		
Reference Frequency: LTE Band 2(5MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	77	0.040957	±2.5	Pass
	3.80	98	0.052128		
	3.40	96	0.051064		
Reference Frequency: LTE Band 2(10MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	84	0.044681	±2.5	Pass
	3.80	65	0.034574		
	3.40	76	0.040426		
Reference Frequency: LTE Band 2(15MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	78	0.041489	±2.5	Pass
	3.80	95	0.050532		
	3.40	94	0.050000		
Reference Frequency: LTE Band 2(20MHz) Middle channel=18900 channel=1880.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	94	0.050000	±2.5	Pass
	3.80	95	0.050532		
	3.40	66	0.035106		

LTE Band 4(QPSK):

Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	61	0.035209	±2.5	Pass
	3.80	75	0.043290		
	3.40	94	0.054257		
Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	63	0.036364	±2.5	Pass
	3.80	52	0.030014		
	3.40	42	0.024242		
Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	54	0.031169	±2.5	Pass
	3.80	55	0.031746		
	3.40	46	0.026551		
Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	84	0.048485	±2.5	Pass
	3.80	85	0.049062		
	3.40	46	0.026551		
Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	57	0.032900	±2.5	Pass
	3.80	58	0.033478		
	3.40	99	0.057143		
Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	87	0.050216	±2.5	Pass
	3.80	75	0.043290		
	3.40	76	0.043867		

LTE Band 4(16QAM):

Reference Frequency: LTE Band 4(1.4MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	66	0.038095	±2.5	Pass
	3.80	54	0.031169		
	3.40	46	0.026551		
Reference Frequency: LTE Band 4(3MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	71	0.040981	±2.5	Pass
	3.80	85	0.049062		
	3.40	85	0.049062		
Reference Frequency: LTE Band 4(5MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	65	0.037518	±2.5	Pass
	3.80	66	0.038095		
	3.40	58	0.033478		
Reference Frequency: LTE Band 4(10MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	88	0.050794	±2.5	Pass
	3.80	97	0.055988		
	3.40	59	0.034055		
Reference Frequency: LTE Band 4(15MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	61	0.035209	±2.5	Pass
	3.80	42	0.024242		
	3.40	73	0.042136		
Reference Frequency: LTE Band 4(20MHz) Middle channel=20175 channel=1732.50MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	55	0.031746	±2.5	Pass
	3.80	66	0.038095		
	3.40	52	0.030014		

LTE Band 7(QPSK):

Reference Frequency: LTE Band 7(5MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	91	0.035897	±2.5	Pass
	3.80	62	0.024458		
	3.40	85	0.033531		
Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	76	0.029980	±2.5	Pass
	3.80	44	0.017357		
	3.40	65	0.025641		
Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	93	0.036686	±2.5	Pass
	3.80	65	0.025641		
	3.40	81	0.031953		
Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	48	0.018935	±2.5	Pass
	3.80	69	0.027219		
	3.40	84	0.033136		

LTE Band 7(16QAM):

Reference Frequency: LTE Band 7(5MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	92	0.036292	±2.5	Pass
	3.80	95	0.037475		
	3.40	34	0.013412		
Reference Frequency: LTE Band 7(10MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	73	0.028797	±2.5	Pass
	3.80	95	0.037475		
	3.40	44	0.017357		
Reference Frequency: LTE Band 7(15MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	68	0.026824	±2.5	Pass
	3.80	61	0.024063		
	3.40	95	0.037475		
Reference Frequency: LTE Band 7(20MHz) Middle channel=21100 Frequency=2535.00MHz					
Temperature (°C)	Power supplied (Vdc)	Frequency error		Limit (ppm)	Result
		Hz	ppm		
25	4.25	98	0.038659	±2.5	Pass
	3.80	67	0.026430		
	3.40	42	0.016568		

-----End of report-----