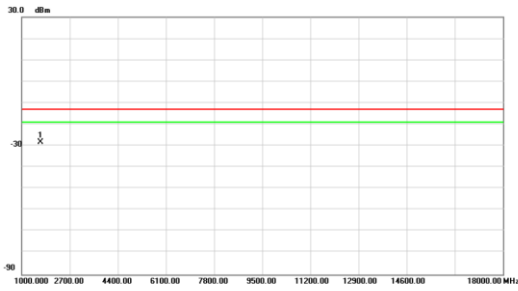


Test Mode : GSM850\_TX CH190\_GPRS

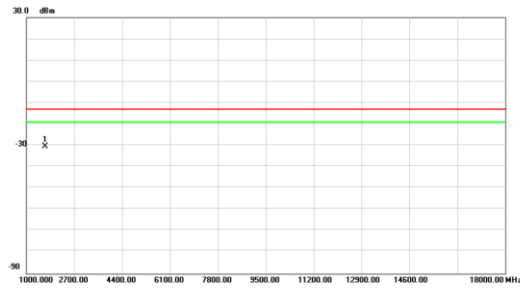
Test Mode : GSM850\_TX CH190\_GPRS

### Vertical



No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measurement dBm	Limit dBm	Margin dB	Detector	Comment
1 *	1671.500	-34.97	6.58	-28.39	-13.00	-15.39	peak	

### Horizontal

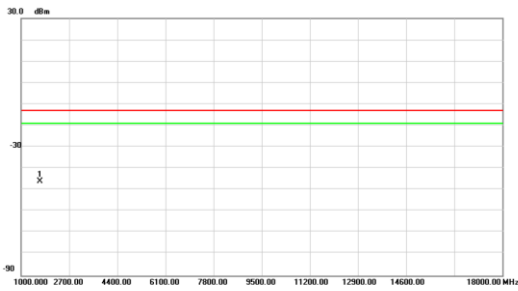


No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measurement dBm	Limit dBm	Margin dB	Detector	Comment
1 *	1671.500	-37.07	6.58	-30.49	-13.00	-17.49	peak	

Test Mode : WCDMA Band V\_TX CH4182

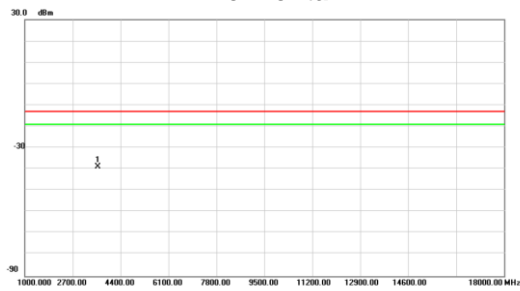
Test Mode : WCDMA Band V\_TX CH4182

### Vertical



No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measurement dBm	Limit dBm	Margin dB	Detector	Comment
1 *	1671.500	-52.68	6.58	-46.10	-13.00	-33.10	peak	

### Horizontal

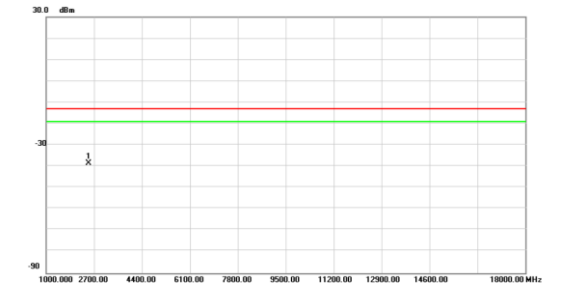


No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measurement dBm	Limit dBm	Margin dB	Detector	Comment
1 *	3601.000	-51.54	12.70	-38.84	-13.00	-25.84	peak	

Test Mode : LTE Band 5\_TX CH20525\_1.4MHz

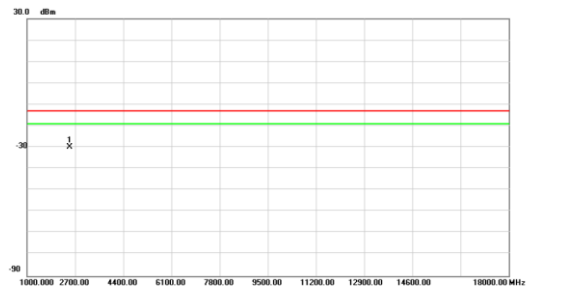
Test Mode : LTE Band 5\_TX CH20525\_1.4MHz

**Vertical**



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBm	dB	dBm	dBm	dB		
1 *	2504.500	-48.76	10.11	-38.65	-13.00	-25.65	peak	

**Horizontal**

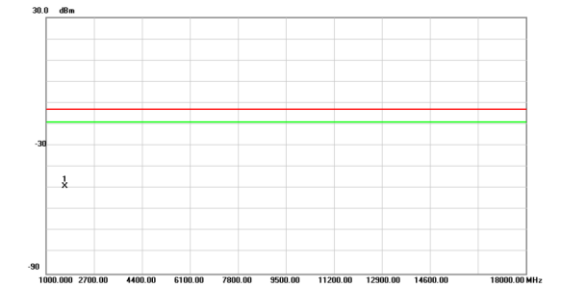


No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBm	dB	dBm	dBm	dB		
1 *	2504.500	-39.82	10.11	-29.71	-13.00	-16.71	peak	

Test Mode : LTE Band 5\_TX CH20525\_5MHz

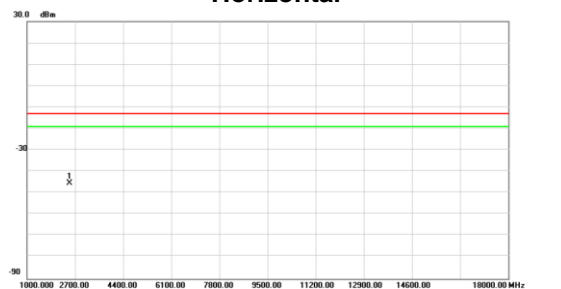
Test Mode : LTE Band 5\_TX CH20525\_5MHz

**Vertical**



No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBm	dB	dBm	dBm	dB		
1 *	1671.500	-55.73	6.58	-49.15	-13.00	-36.15	peak	

**Horizontal**

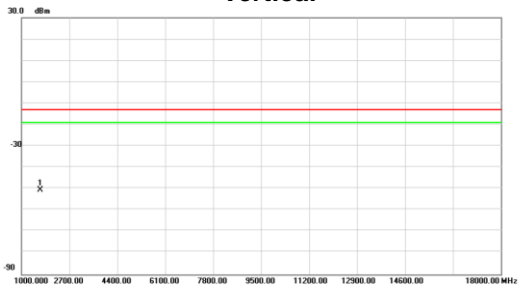


No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBm	dB	dBm	dBm	dB		
1 *	2513.000	-55.43	10.12	-45.31	-13.00	-32.31	peak	

Test Mode : LTE Band 5\_TX CH20525\_10MHz

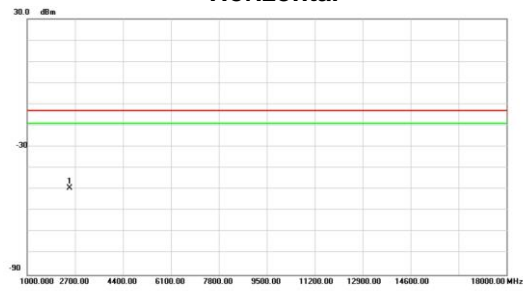
Test Mode : LTE Band 5\_TX CH20525\_10MHz

**Vertical**



No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measurement dBm	Limit dBm	Margin dB	Detector	Comment
1 *	1671.500	-57.05	6.58	-50.47	-13.00	-37.47	peak	

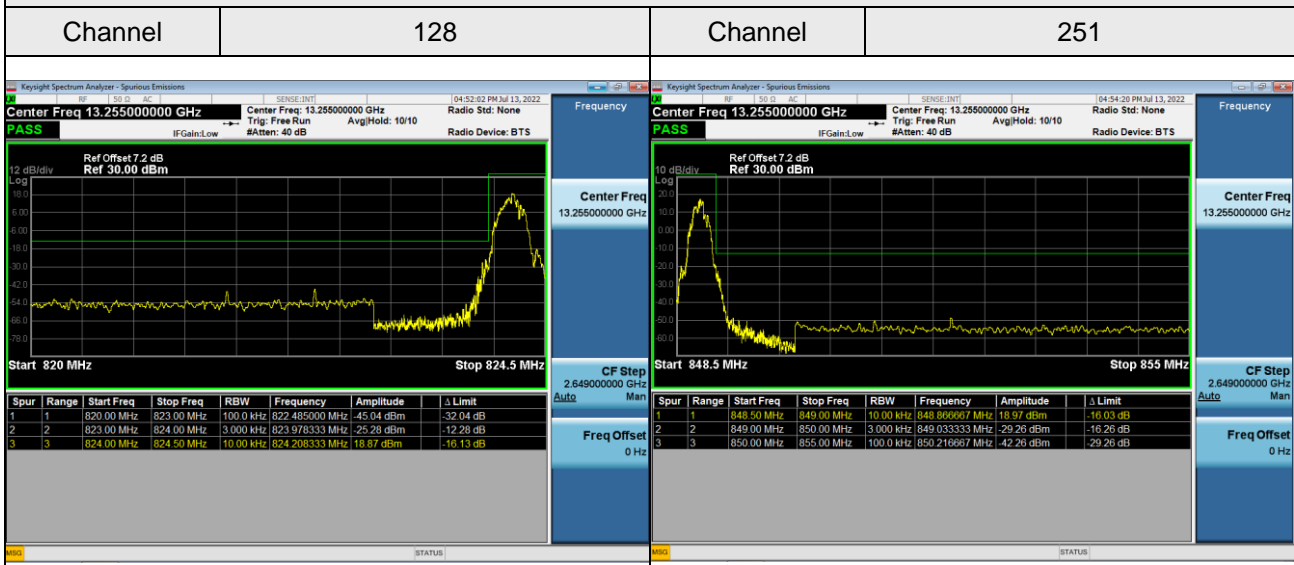
**Horizontal**



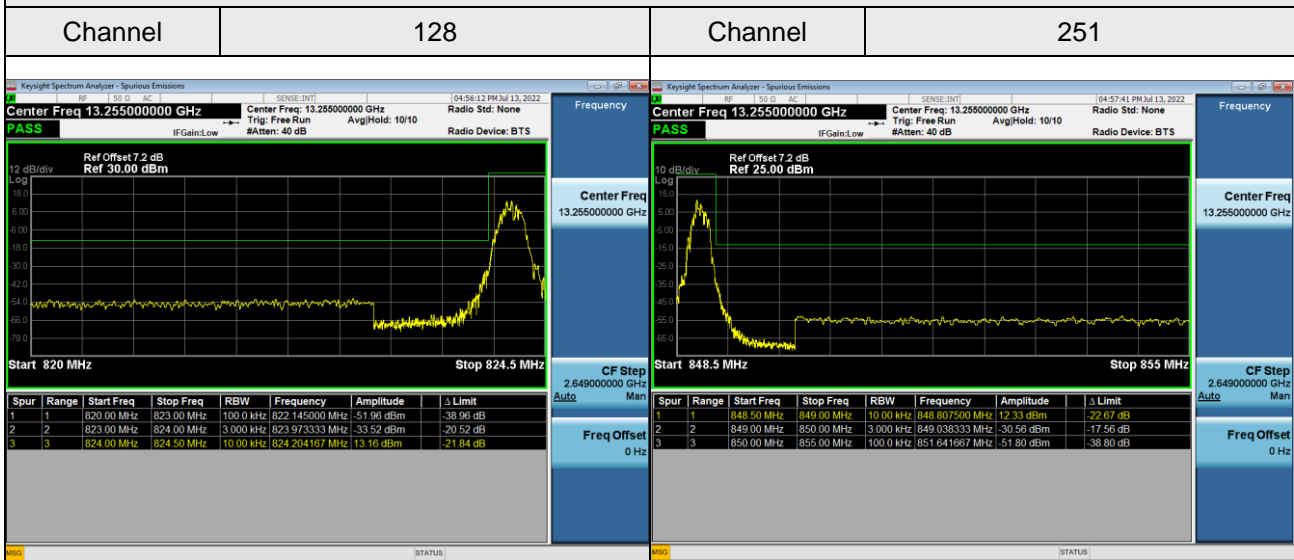
No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measurement dBm	Limit dBm	Margin dB	Detector	Comment
1 *	2513.000	-59.50	10.12	-49.38	-13.00	-36.38	peak	

## APPENDIX G - BAND EDGE

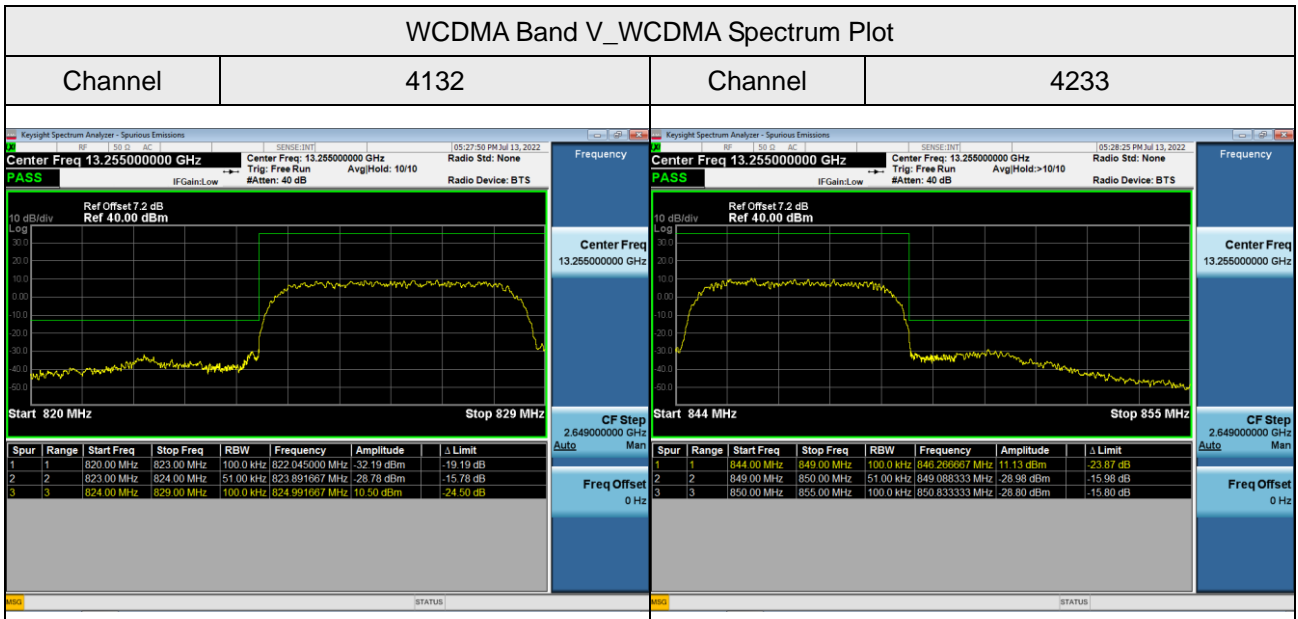
## GSM850\_GPRS Spectrum Plot



## GSM850\_EDGE Spectrum Plot



## WCDMA Band V\_WCDMA Spectrum Plot



### LTE Band 5\_1.4MHz Spectrum Plot

1RB#0

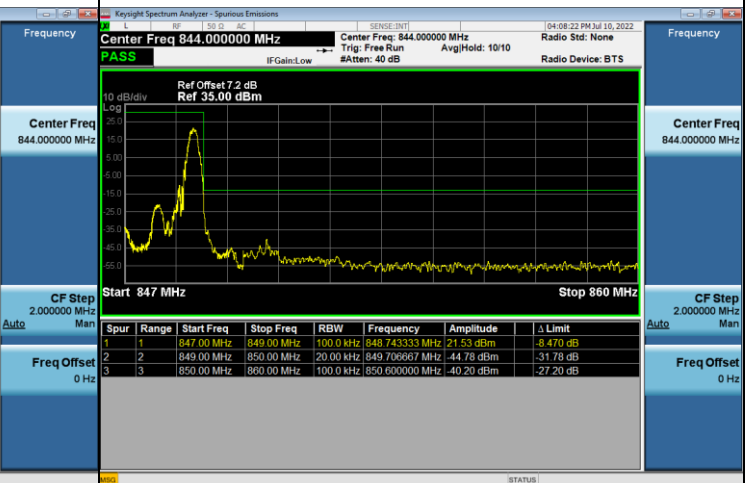
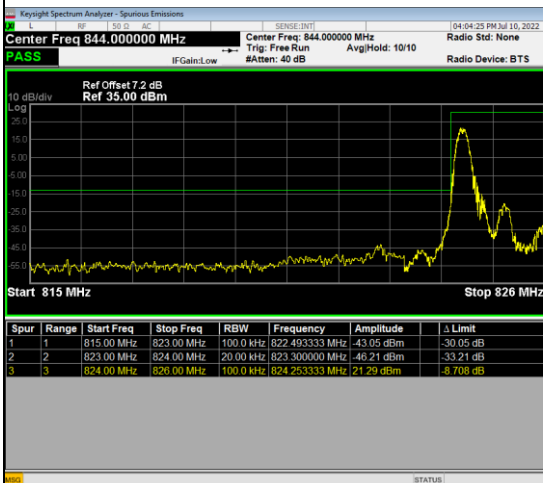
1RB#5

Channel

20407

Channel

20643



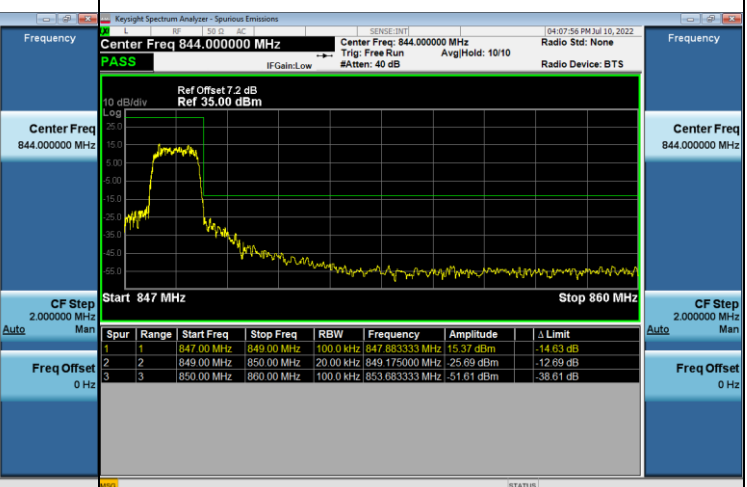
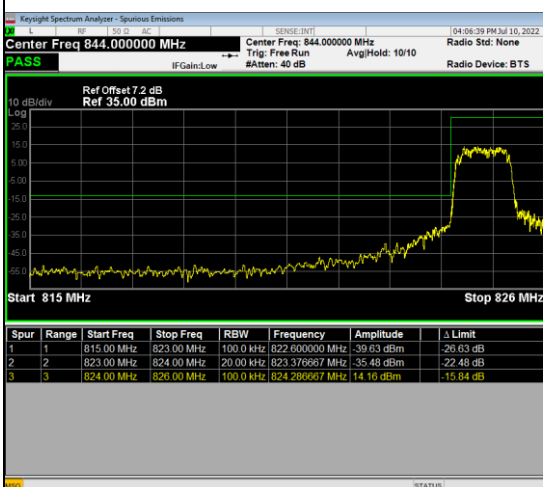
### 6RB#0

Channel

20407

Channel

20643



LTE Band 5\_3MHz Spectrum Plot

1RB#0

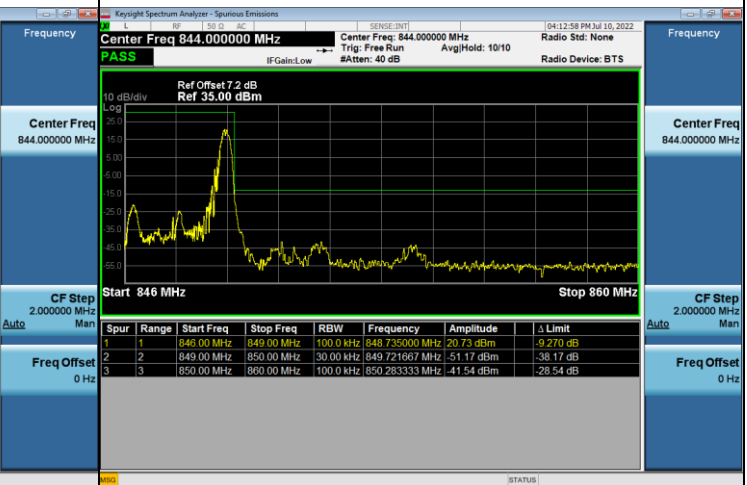
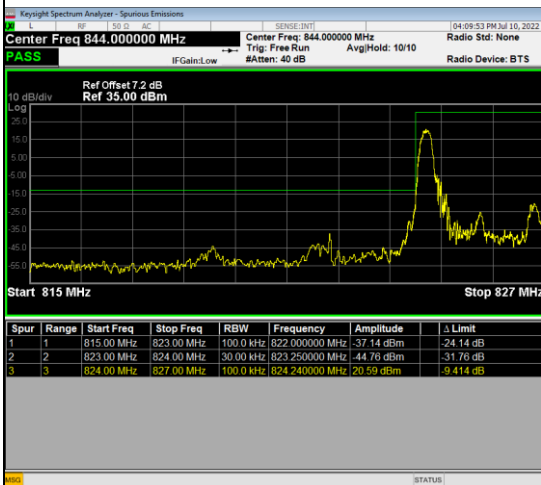
1RB#14

Channel

20415

Channel

20635



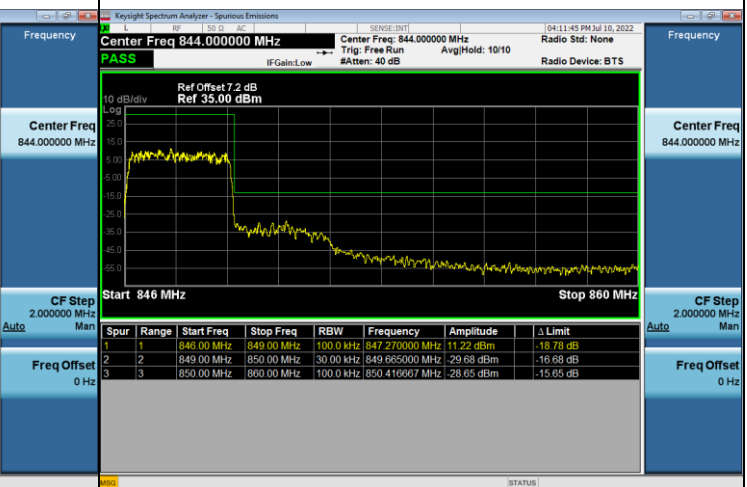
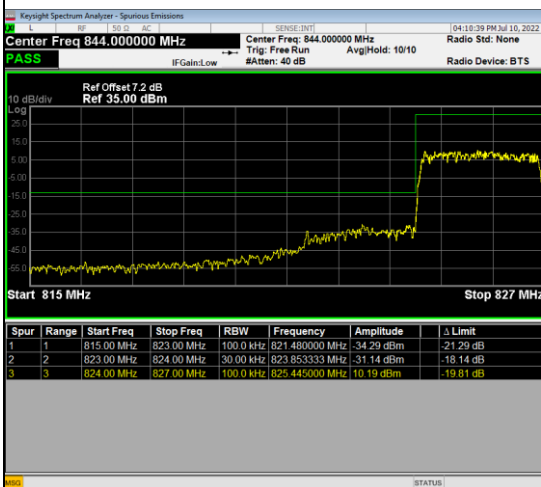
15RB#0

Channel

20415

Channel

20635





### LTE Band 5\_5MHz Spectrum Plot

1RB#0

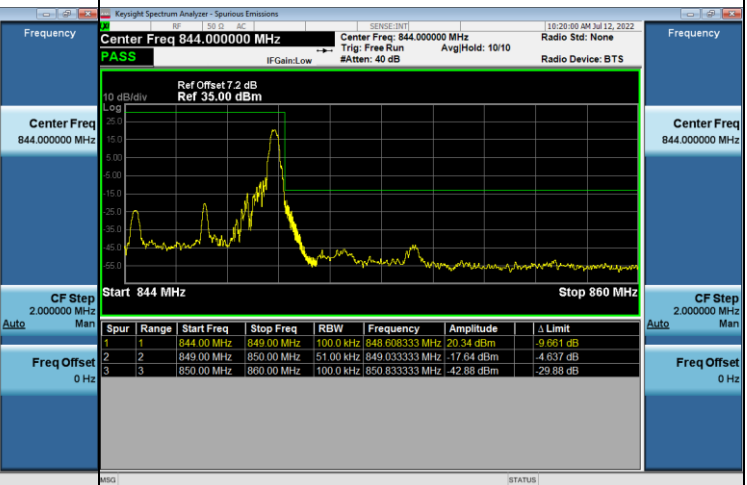
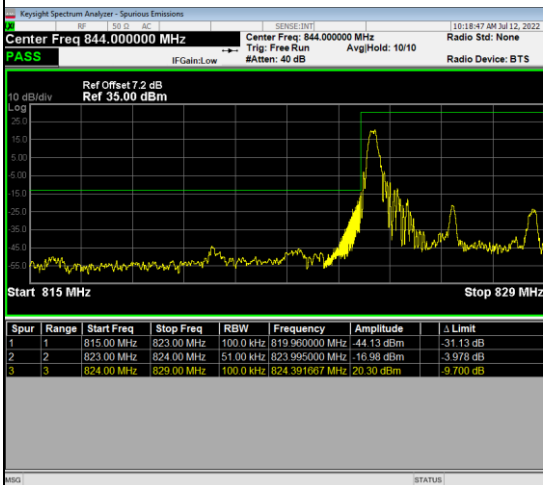
1RB#24

Channel

20425

Channel

20625



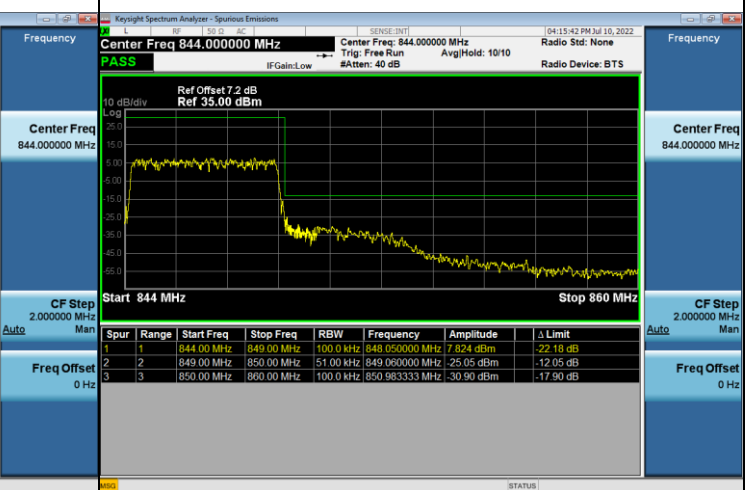
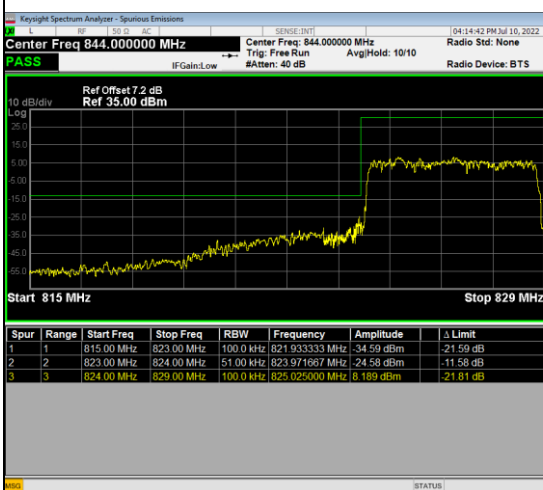
### 25RB#0

Channel

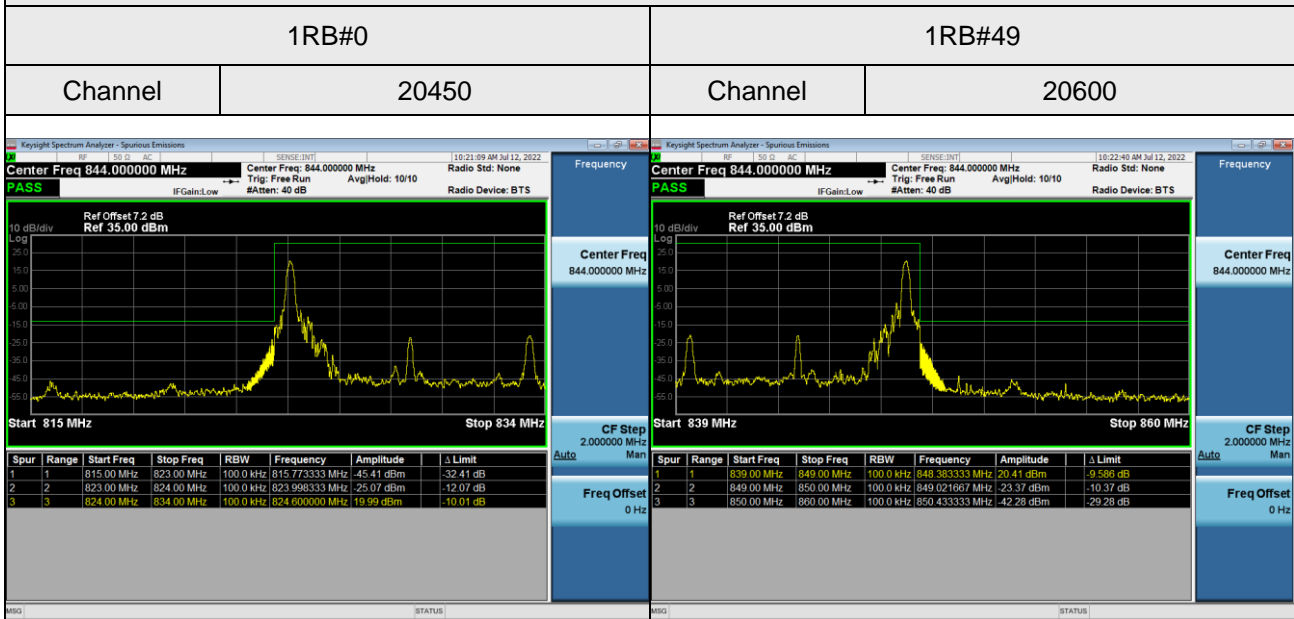
20425

Channel

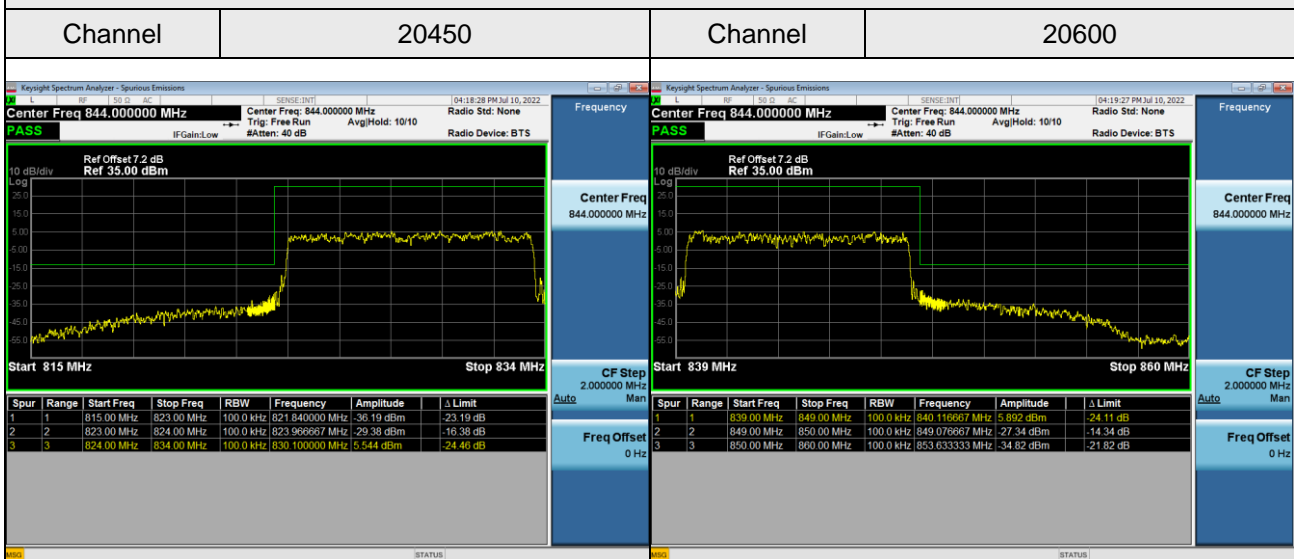
20625



### LTE Band 5\_10MHz Spectrum Plot



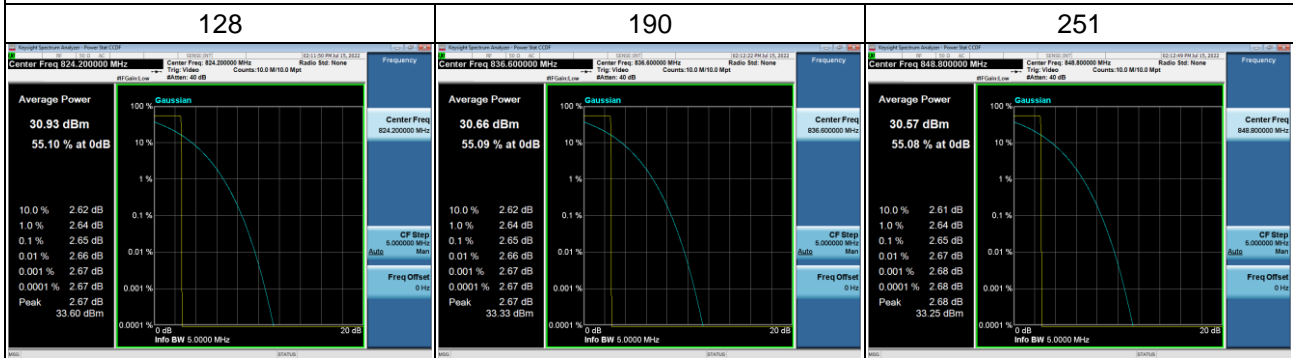
### 50RB#0



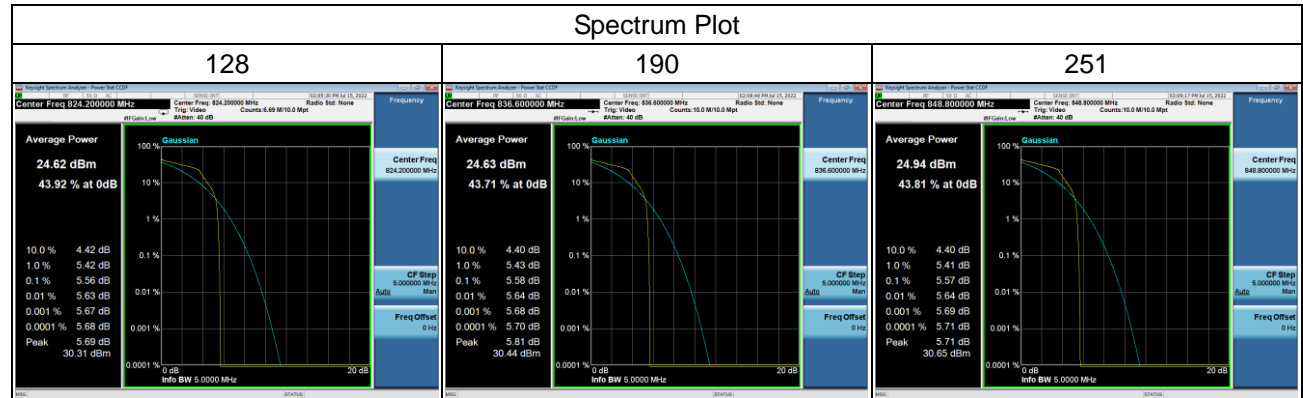
## APPENDIX H - PEAK TO AVERAGE RATIO

GSM 850_GPRS					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Max. Limit (dB)	Result
		QPSK			
128	824.2	2.65		13	Pass
190	836.6	2.65		13	Pass
251	848.8	2.65		13	Pass

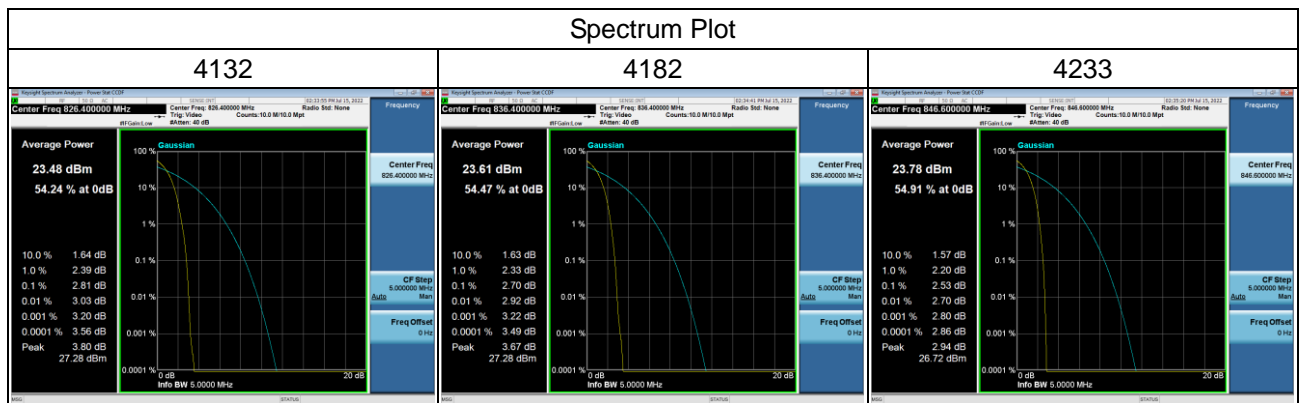
## Spectrum Plot



GSM 850_EDGE					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Max. Limit (dB)	Result
		QPSK			
128	824.2	5.56		13	Pass
190	836.6	5.58		13	Pass
251	848.8	5.57		13	Pass



WCDMA Band V_WCDMA					
Channel	Frequency (MHz)	Peak To Average Ratio (dB)		Max. Limit (dB)	Result
		QPSK			
4132	826.4	2.81		13	Pass
4182	836.4	2.70		13	Pass
4233	846.6	2.53		13	Pass



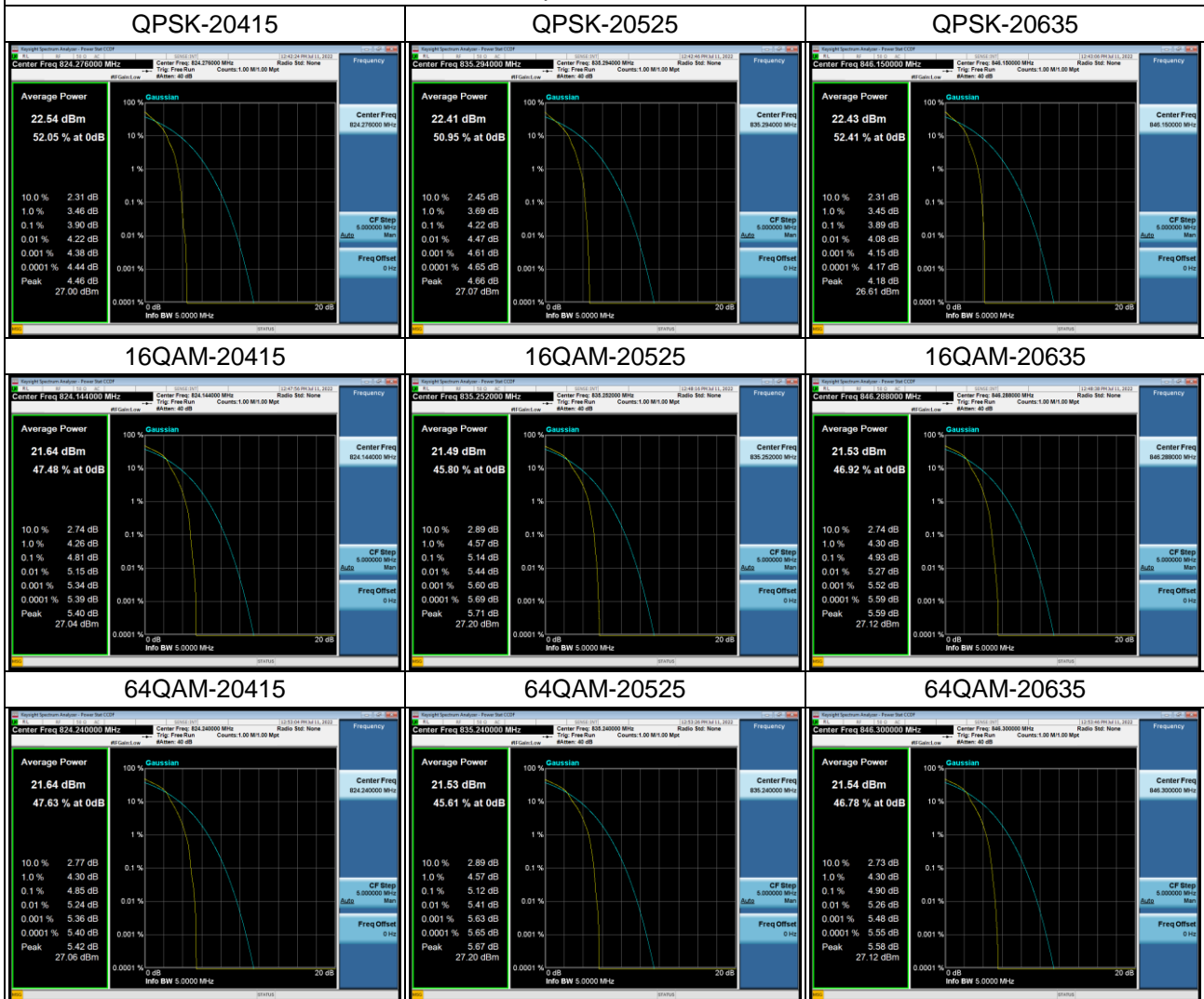
LTE Band 5_1.4MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			Max. Limit (dB)	Result
		QPSK	16QAM	64QAM		
20407	824.7	4.01	4.79	4.77	13	Pass
20525	836.5	4.14	5.22	5.24	13	Pass
20643	848.3	3.88	4.89	4.92	13	Pass

## Spectrum Plot



LTE Band 5_3MHz							
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			Max. Limit (dB)	Result	
		QPSK	16QAM	64QAM			
20415	825.5	3.90	4.81	4.85	13	Pass	
20525	836.5	4.22	5.14	5.12	13	Pass	
20635	847.5	3.89	4.93	4.90	13	Pass	

## Spectrum Plot





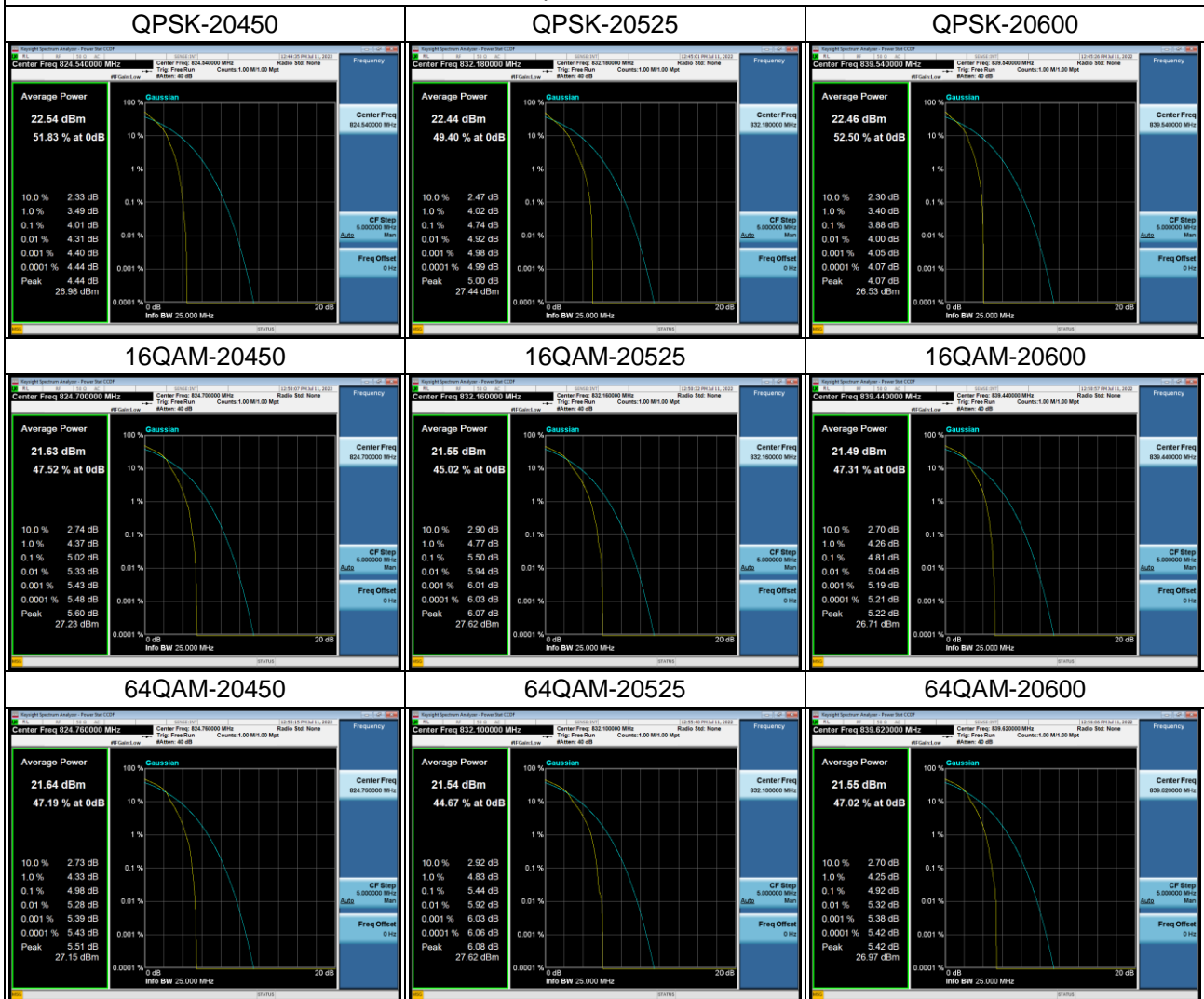
LTE Band 5_5MHz							
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			Max. Limit (dB)	Result	
		QPSK	16QAM	64QAM			
20425	826.5	3.95	4.97	4.98	13	Pass	
20525	836.5	4.62	5.60	5.49	13	Pass	
20625	846.5	4.00	5.01	5.06	13	Pass	

## Spectrum Plot



LTE Band 5_10MHz						
Channel	Frequency (MHz)	Peak To Average Ratio (dB)			Max. Limit (dB)	Result
		QPSK	16QAM	64QAM		
20450	829.0	4.01	5.02	4.98	13	Pass
20525	836.5	4.74	5.50	5.44	13	Pass
20600	844.0	3.88	4.81	4.92	13	Pass

## Spectrum Plot



## APPENDIX I - FREQUENCY STABILITY

Test Mode	GSM850_CH190
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Frequency error versus temperature and supply voltage			
Temperature (°C)	Frequency error (Hz)	ppm	Limit
50	-65.14	-0.0779	±2.5ppm
40	-62.22	-0.0744	
30	-66.15	-0.0791	
20	-65.62	-0.0784	
10	-60.12	-0.0719	
0	-63.05	-0.0754	
-10	-61.35	-0.0733	
-20	-62.74	-0.0750	
-30	-64.16	-0.0767	
Minimum voltage	-63.21	-0.0756	
Maximum voltage	-60.25	-0.0720	
Nominal voltage	-64.15	-0.0767	

Note: Nominal voltage= 3.7V, Maximum voltage= 4.2V, Minimum voltage= 3.5V.

Test Mode	WCDMA Band V_CH4182
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Frequency error versus temperature and supply voltage			
Temperature (°C)	Frequency error (Hz)	ppm	Limit
50	-4.79	-0.0057	±2.5ppm
40	-6.51	-0.0078	
30	-8.86	-0.0106	
20	-1.53	-0.0018	
10	-2.32	-0.0028	
0	-3.84	-0.0046	
-10	-4.92	-0.0059	
-20	-7.27	-0.0087	
-30	-11.52	-0.0138	
Minimum voltage	-9.87	-0.0118	
Maximum voltage	-10.64	-0.0127	
Nominal voltage	-10.5	-0.0126	

Note: Nominal voltage= 3.7V, Maximum voltage= 4.2V, Minimum voltage= 3.5V.

Test Mode	LTE Band 5_CH20525_10MHz
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Frequency error versus temperature and supply voltage			
Temperature (°C)	Frequency error (Hz)	ppm	Limit
50	-47.58	-0.0569	±2.5ppm
40	-58.63	-0.0701	
30	-51.24	-0.0613	
20	-50.26	-0.0601	
10	-54.52	-0.0652	
0	-56.87	-0.0680	
-10	-49.75	-0.0595	
-20	-45.63	-0.0545	
-30	-60.52	-0.0723	
Minimum voltage	-54.83	-0.0655	
Maximum voltage	-52.17	-0.0624	
Nominal voltage	-50.62	-0.0605	

Note: Nominal voltage= 3.7V, Maximum voltage= 4.2V, Minimum voltage= 3.5V.

**End of Test Report**