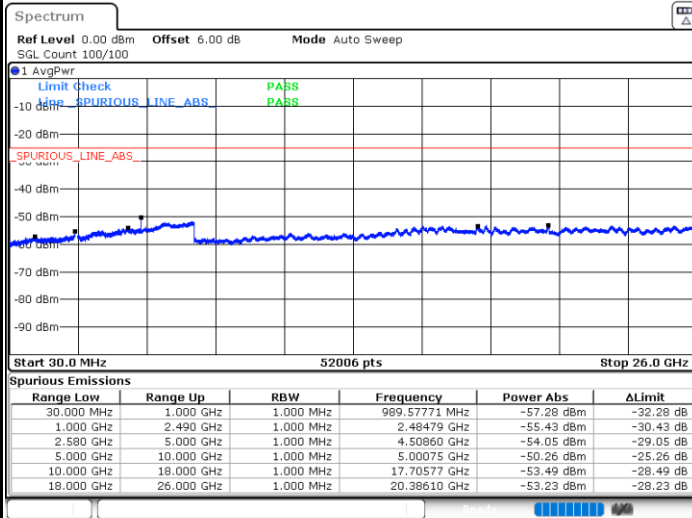




Conducted Spurious Emission

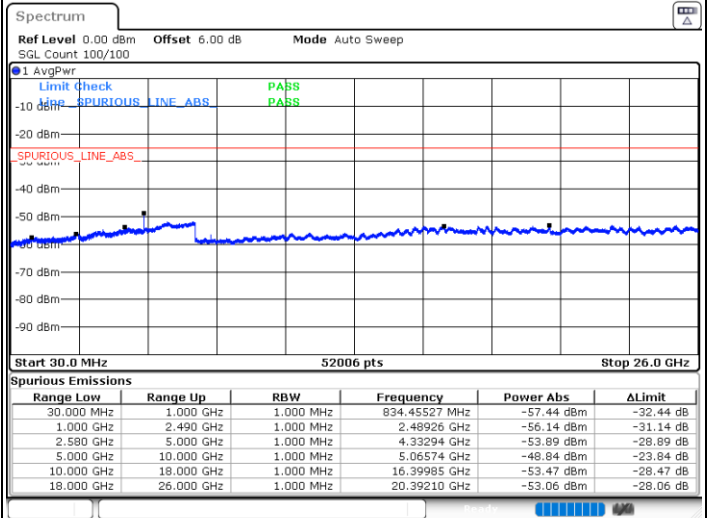
LTE Band 7 / 5MHz

Lowest Channel / QPSK



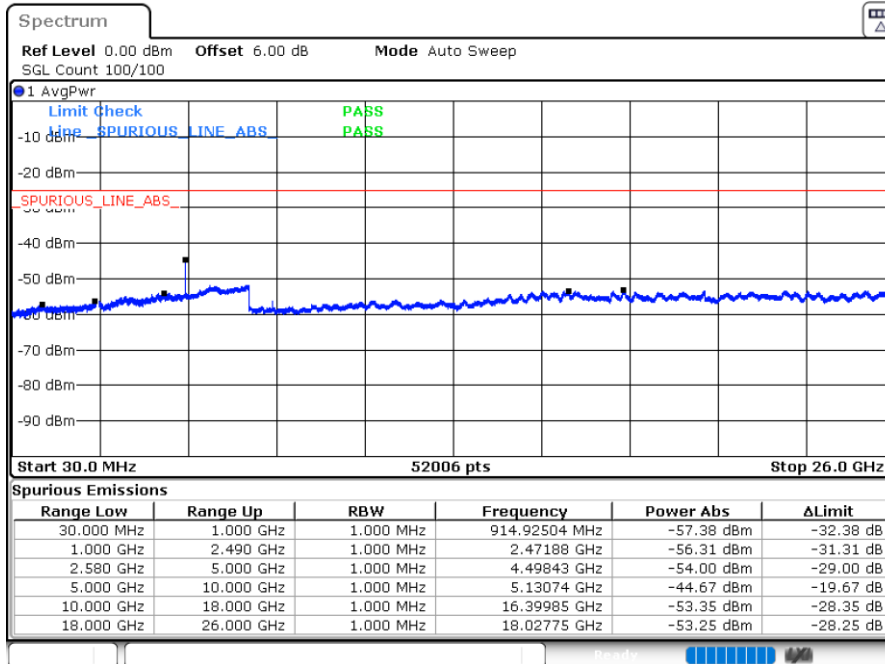
Date: 6.AUG.2024 22:24:05

Middle Channel / QPSK



Date: 6.AUG.2024 22:29:35

Highest Channel / QPSK

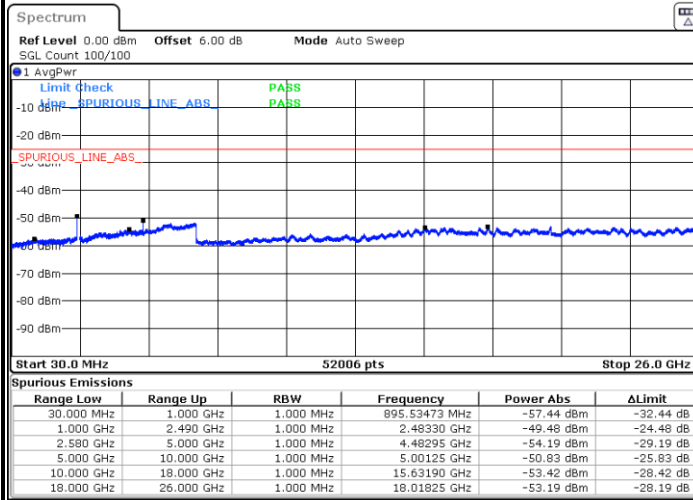


Date: 6.AUG.2024 22:30:59



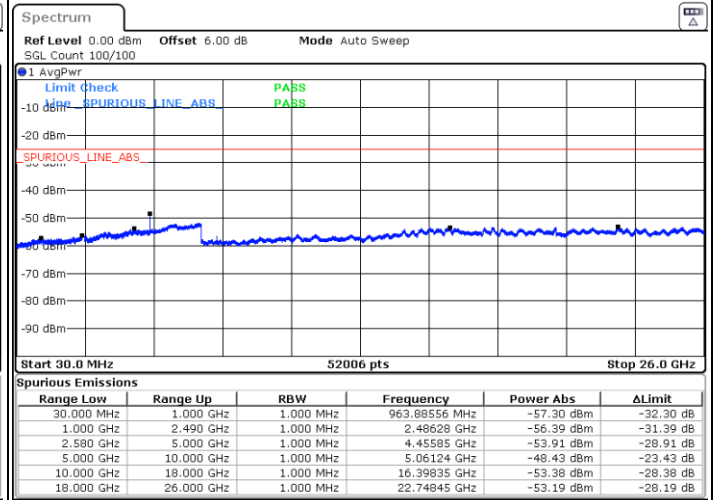
LTE Band 7 / 10MHz

Lowest Channel / QPSK



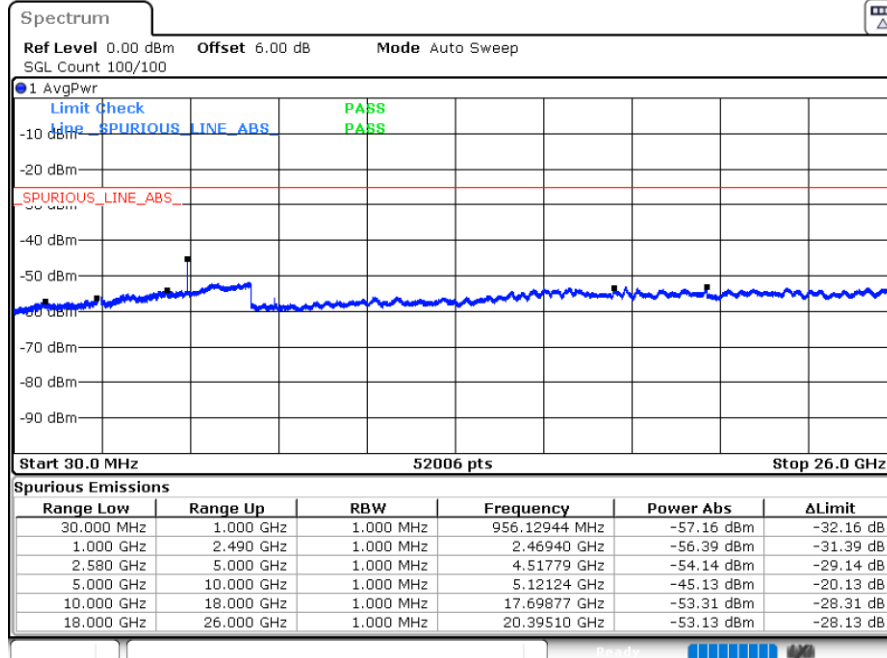
Date: 6.AUG.2024 22:35:05

Middle Channel / QPSK



Date: 6.AUG.2024 22:40:34

Highest Channel / QPSK

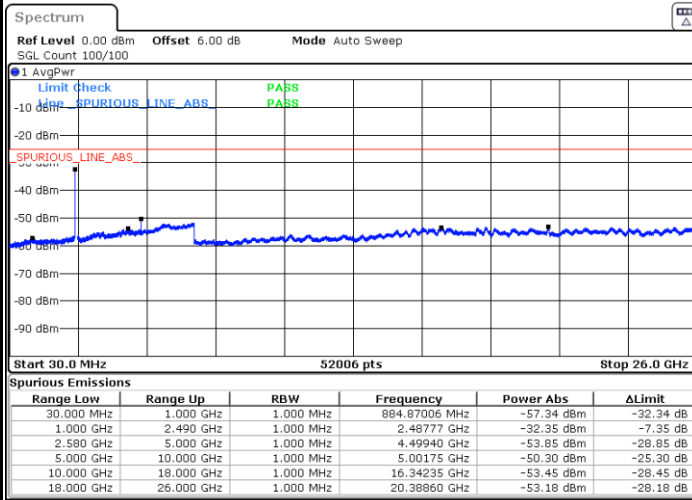


Date: 6.AUG.2024 22:41:58



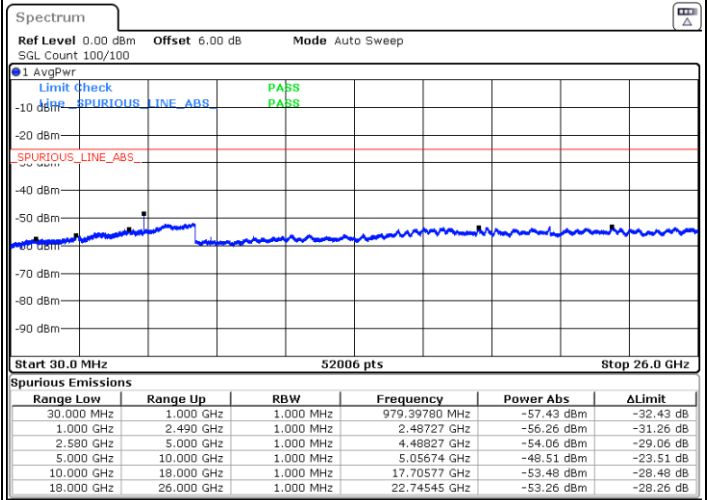
LTE Band 7 / 15MHz

Lowest Channel / QPSK



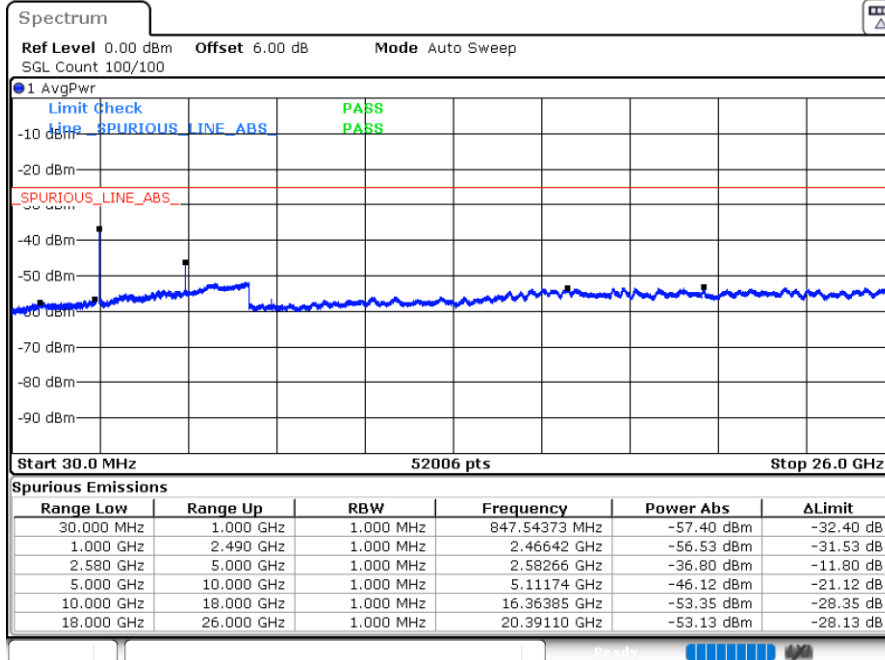
Date: 7.AUG.2024 00:33:07

Middle Channel / QPSK



Date: 6.AUG.2024 22:51:33

Highest Channel / QPSK

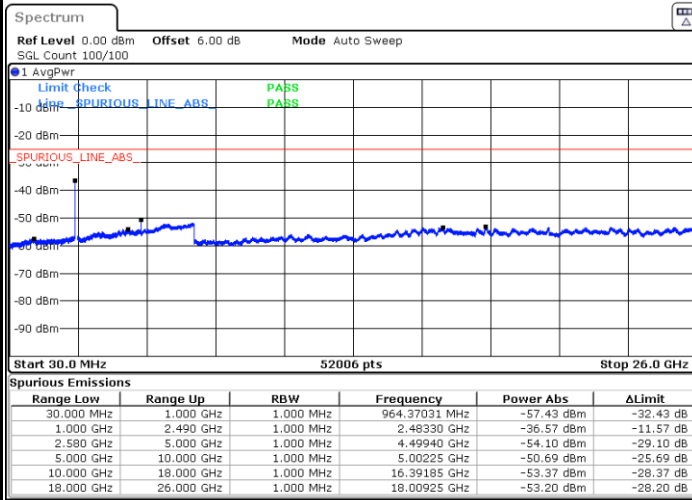


Date: 6.AUG.2024 22:52:57



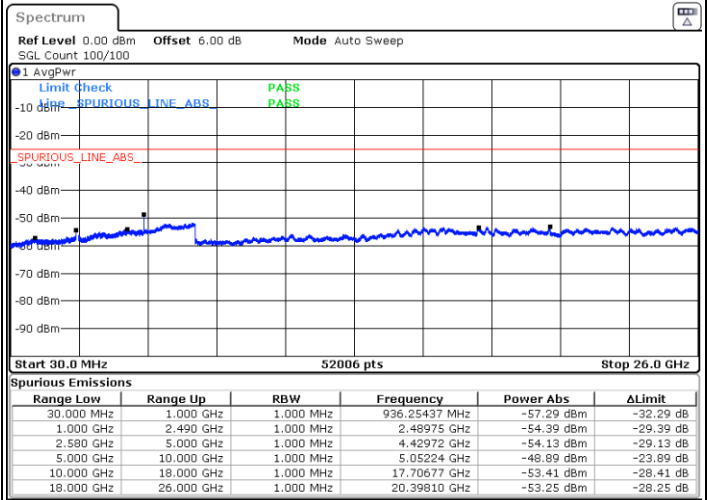
LTE Band 7 / 20MHz

Lowest Channel / QPSK



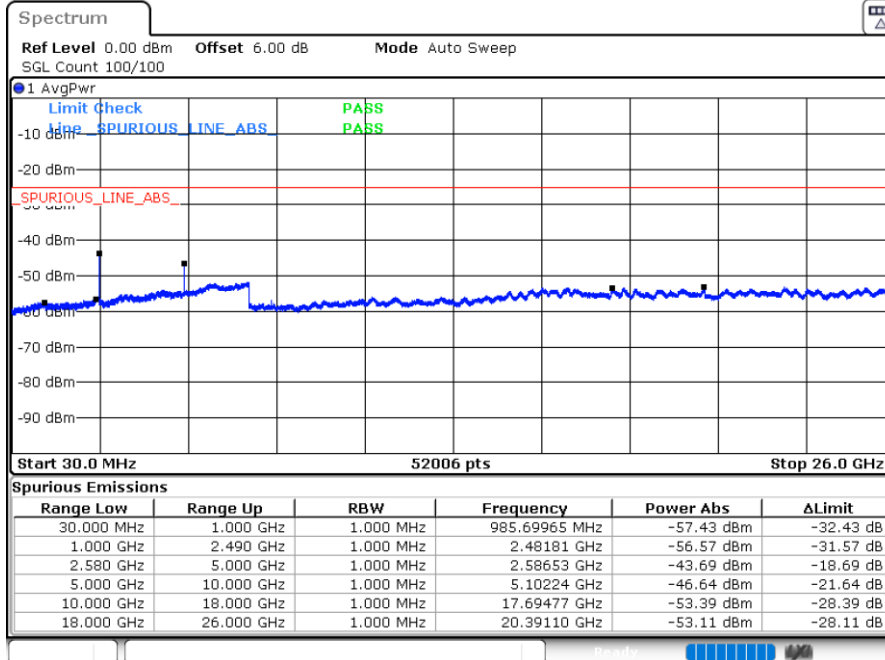
Date: 6.AUG.2024 22:57:03

Middle Channel / QPSK



Date: 6.AUG.2024 23:01:09

Highest Channel / QPSK



Date: 6.AUG.2024 23:02:33

Frequency Stability

Test Conditions		LTE Band 7 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0035	PASS
40	Normal Voltage	0.0014	
30	Normal Voltage	0.0023	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0078	
0	Normal Voltage	0.0066	
-10	Normal Voltage	0.0052	
-20	Normal Voltage	0.0079	
-30	Normal Voltage	0.0008	
20	Maximum Voltage	0.0012	
20	Normal Voltage	0.0000	
20	Minimum Voltage	0.0037	

Note:

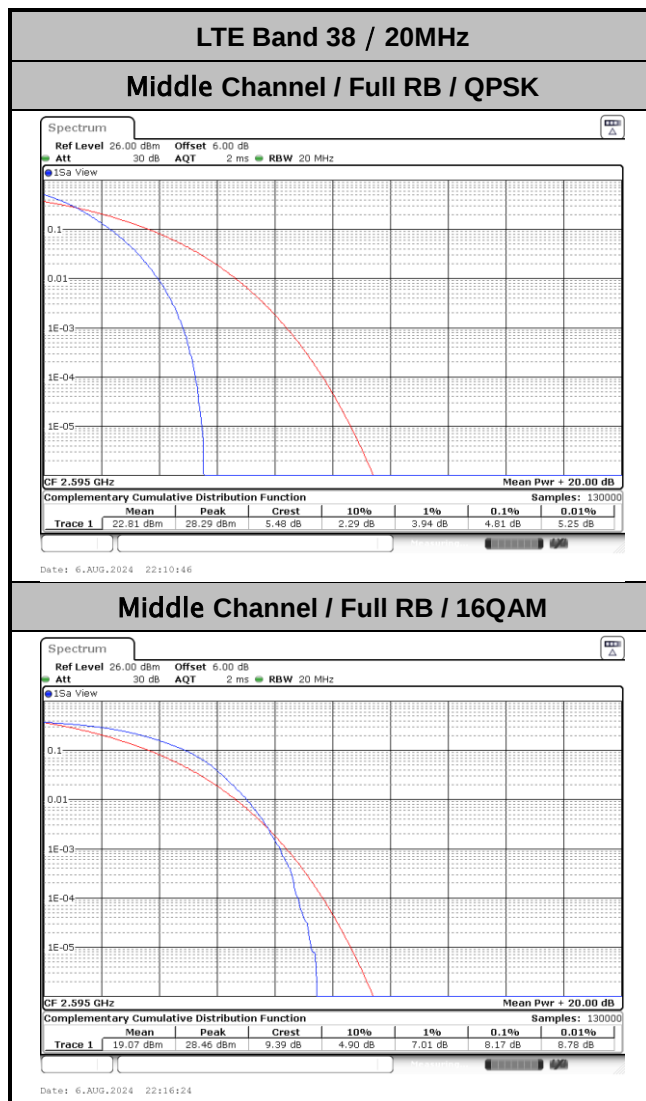
1. Normal Voltage =3.8 V. ; Minimum Voltage (BEP) =3.55 V. ; Maximum Voltage =4.4 V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



LTE Band 38

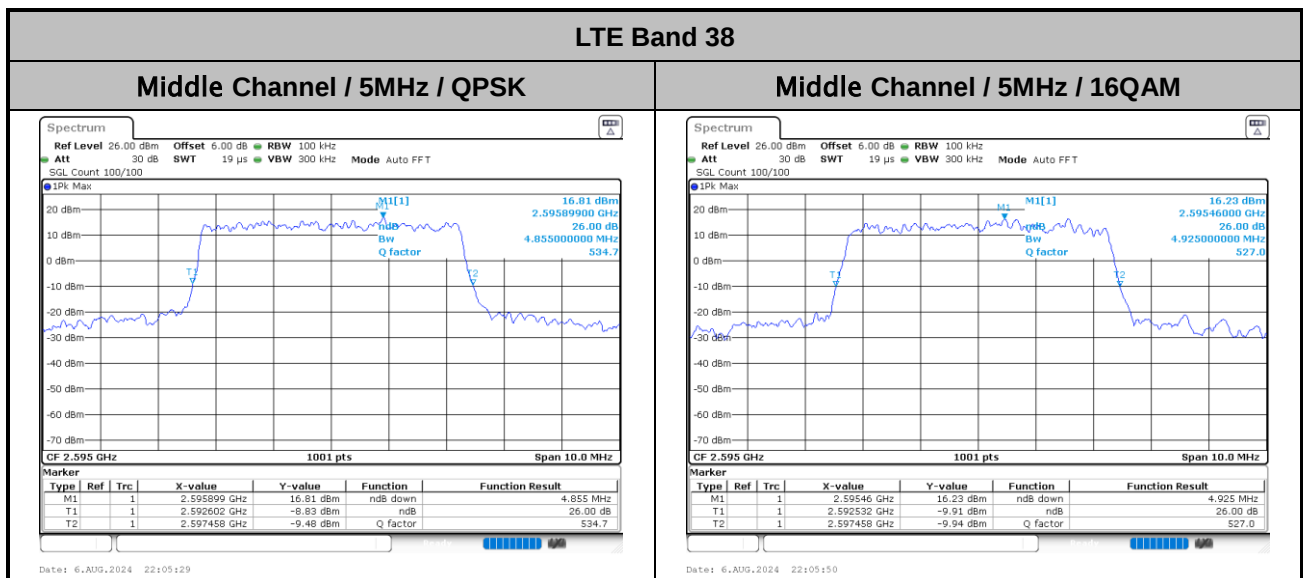
Peak-to-Average Ratio

Mode	LTE Band 38 / 20MHz			
Mod.	QPSK	16QAM		Limit: 13dB
RB Size	Full RB	Full RB		Result
Middle CH	4.81	8.17		PASS



**26dB Bandwidth**

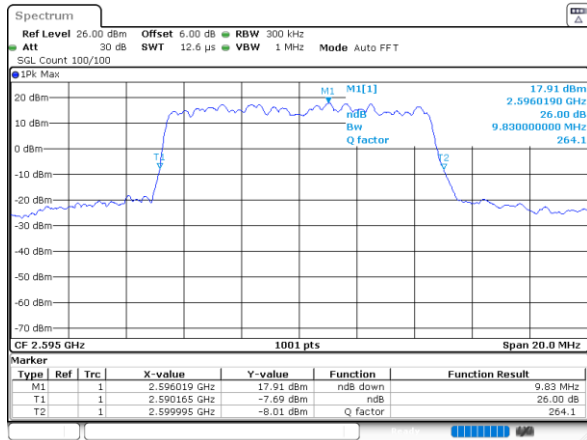
Mode	LTE Band 38 : 26dB BW(MHz)	
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.86	4.93
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	9.83	9.77
BW	15MHz	
Mod.	QPSK	16QAM
Middle CH	14.15	14.39
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	18.74	19.06





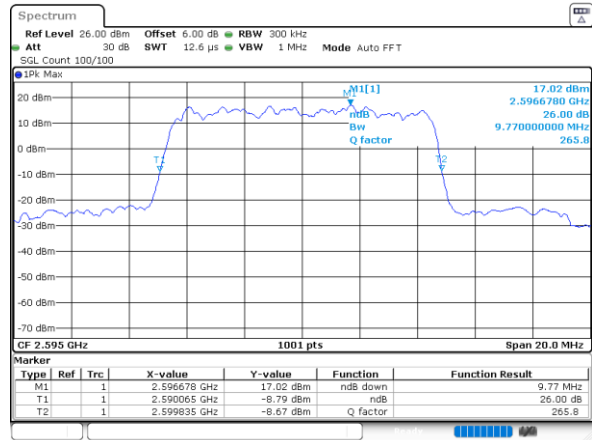
LTE Band 38

Middle Channel / 10MHz / QPSK



Date: 6.AUG.2024 22:06:54

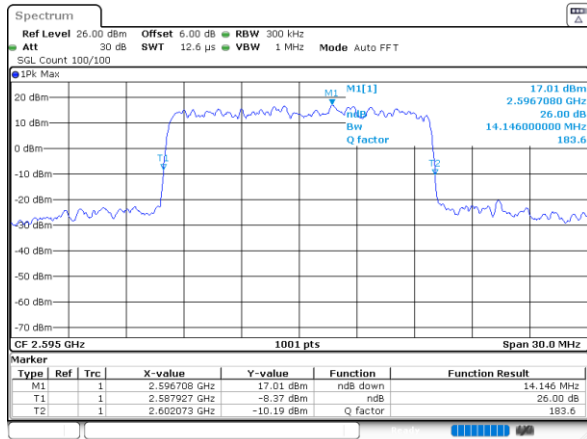
Middle Channel / 10MHz / 16QAM



Date: 6.AUG.2024 22:07:15

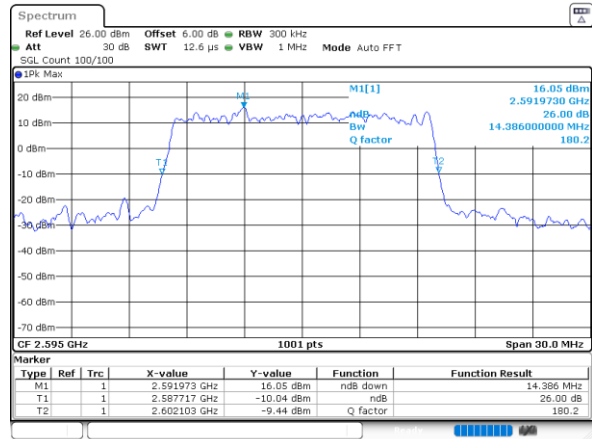
LTE Band 38

Middle Channel / 15MHz / QPSK



Date: 6.AUG.2024 22:08:17

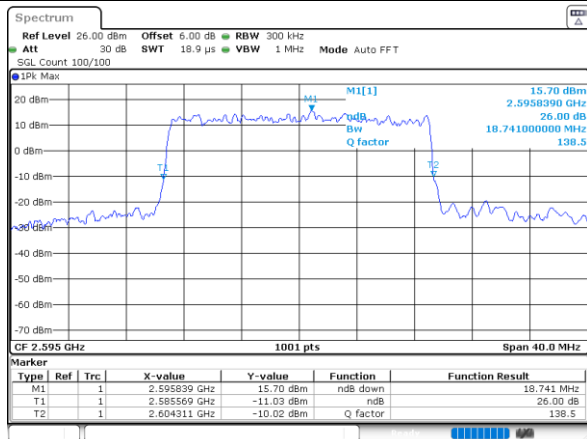
Middle Channel / 15MHz / 16QAM



Date: 6.AUG.2024 22:08:38

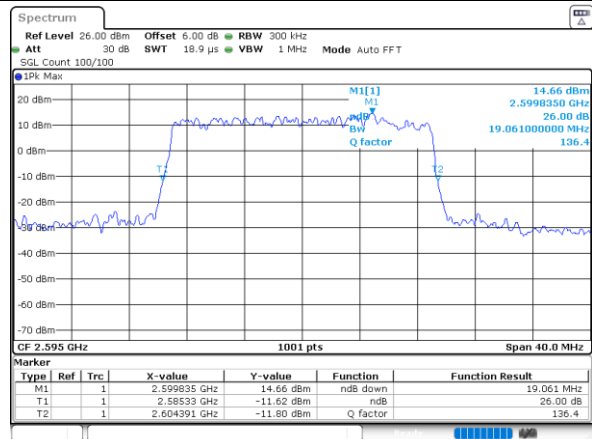
LTE Band 38

Middle Channel / 20MHz / QPSK



Date: 6.AUG.2024 22:09:42

Middle Channel / 20MHz / 16QAM

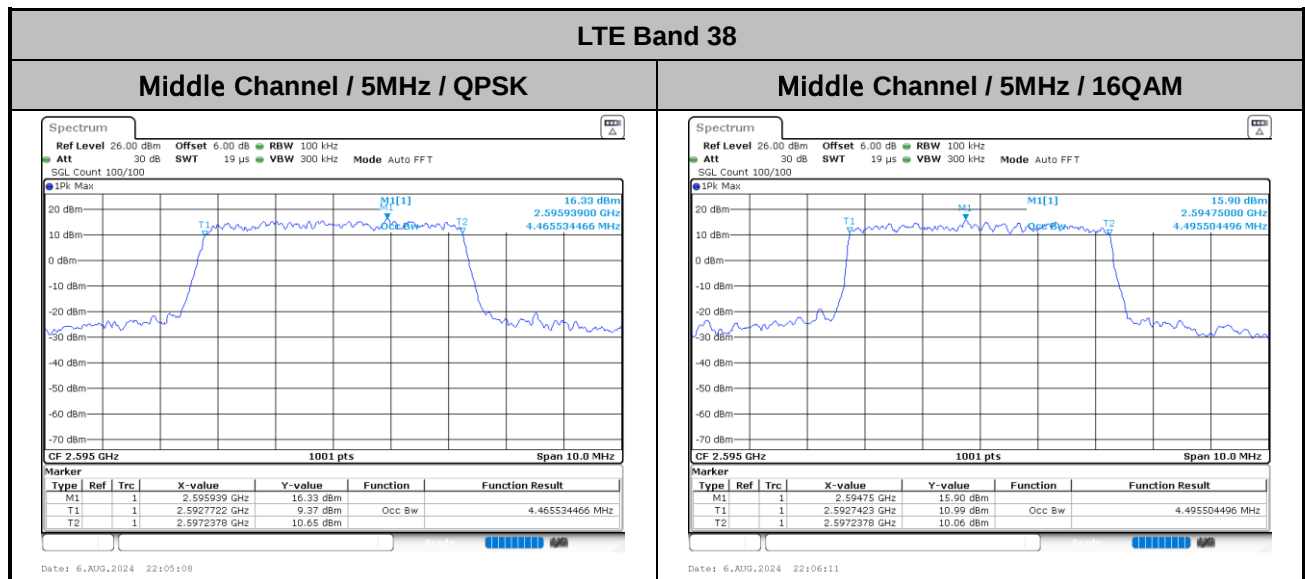


Date: 6.AUG.2024 22:10:03



Occupied Bandwidth

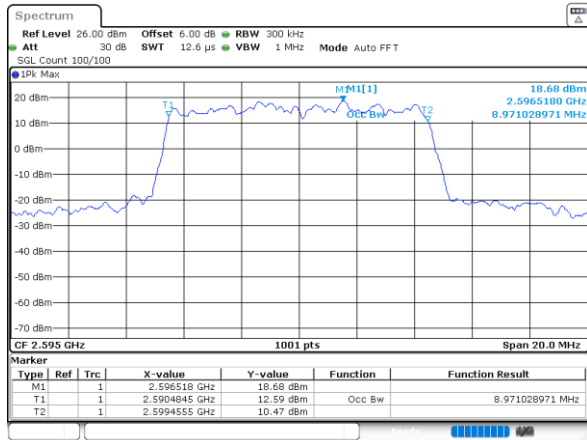
Mode	LTE Band 38 : 99%OBW(MHz)	
BW	5MHz	
Mod.	QPSK	16QAM
Middle CH	4.47	4.50
BW	10MHz	
Mod.	QPSK	16QAM
Middle CH	8.97	9.03
BW	15MHz	
Mod.	QPSK	16QAM
Middle CH	13.43	13.43
BW	20MHz	
Mod.	QPSK	16QAM
Middle CH	17.82	17.82



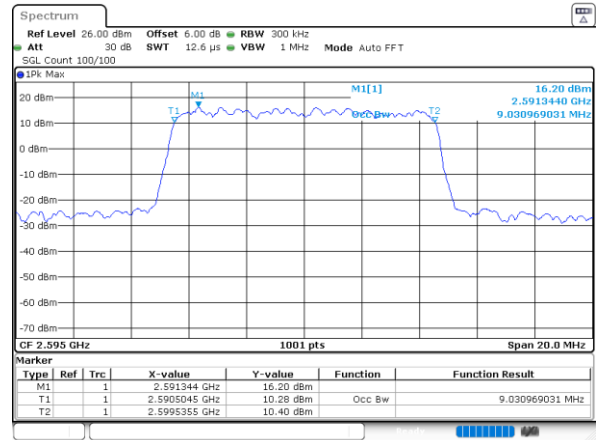


LTE Band 38

Middle Channel / 10MHz / QPSK

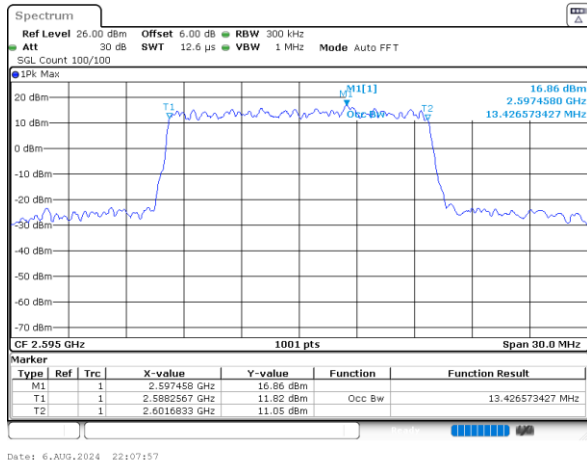


Middle Channel / 10MHz / 16QAM

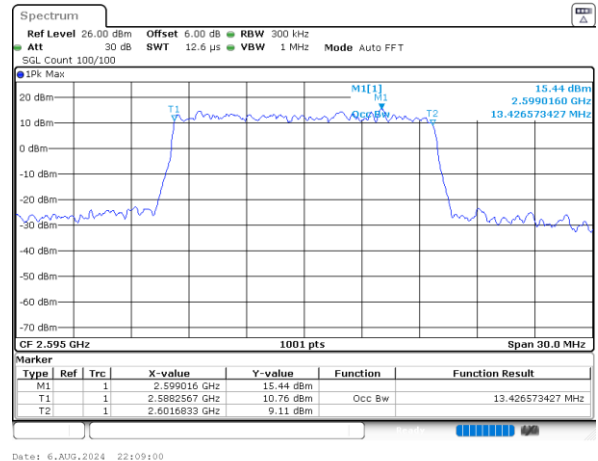


LTE Band 38

Middle Channel / 15MHz / QPSK

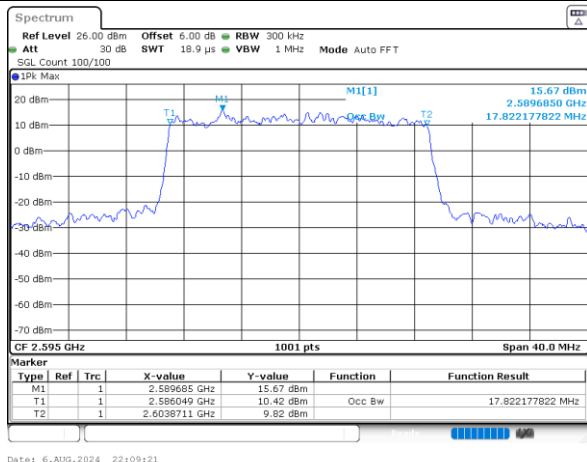


Middle Channel / 15MHz / 16QAM

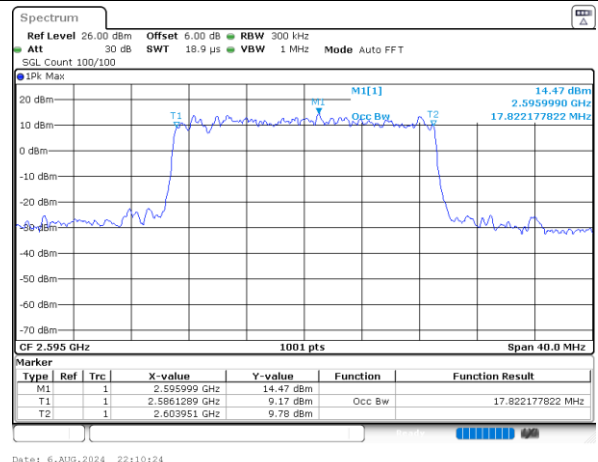


LTE Band 38

Middle Channel / 20MHz / QPSK



Middle Channel / 20MHz / 16QAM

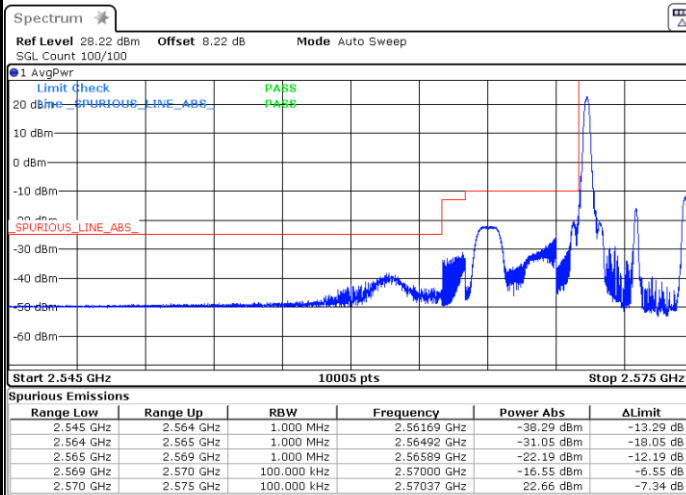




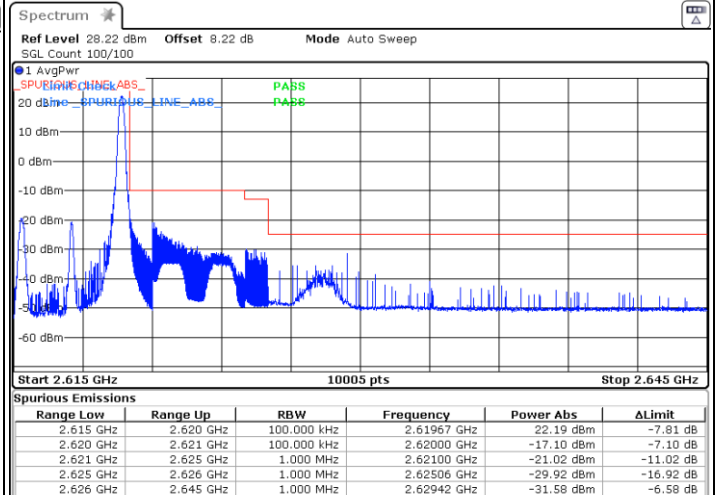
Conducted Band Edge

LTE Band 38 / 5MHz / QPSK

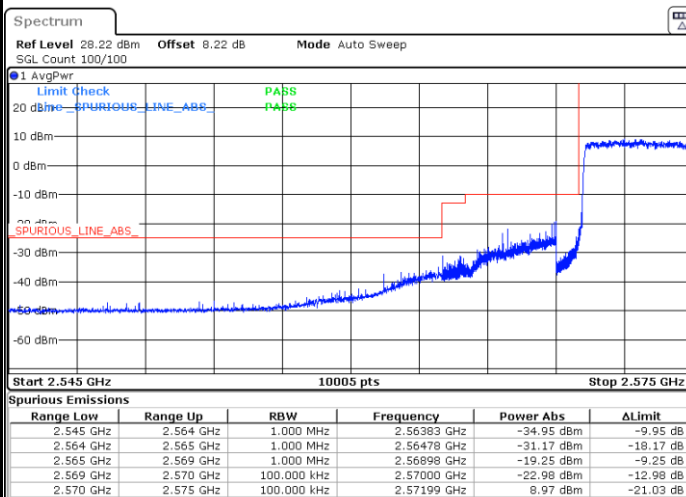
Lowest Band Edge / 1 RB



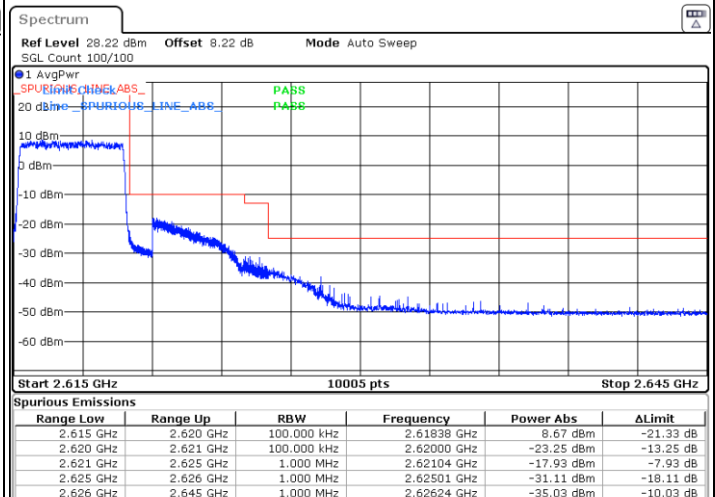
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



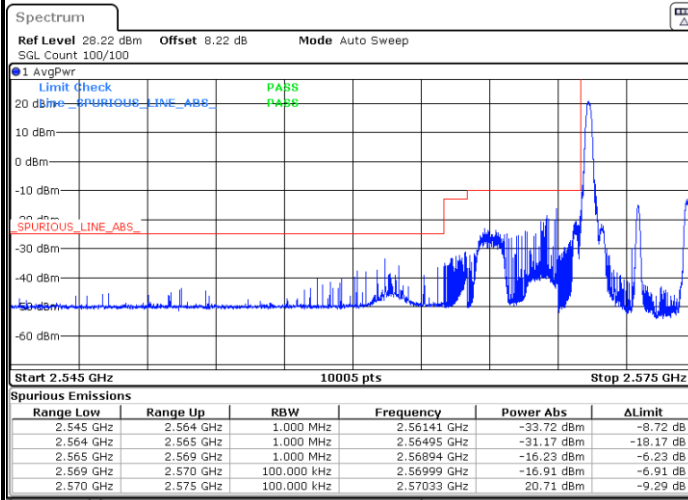
Highest Band Edge / Full RB



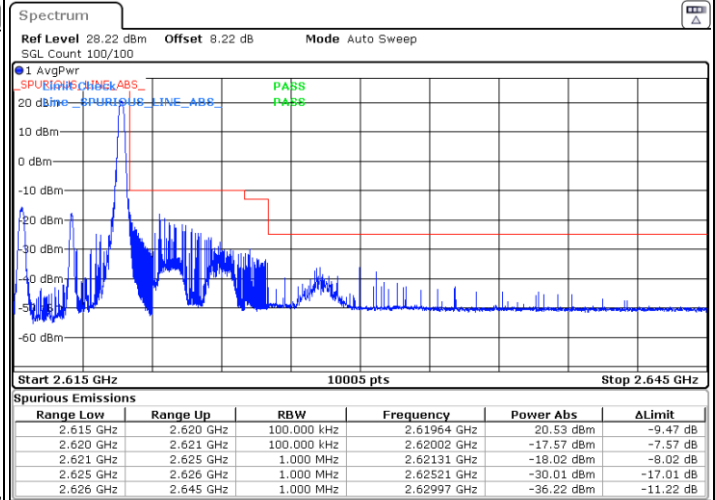


LTE Band 38 / 5MHz / 16QAM

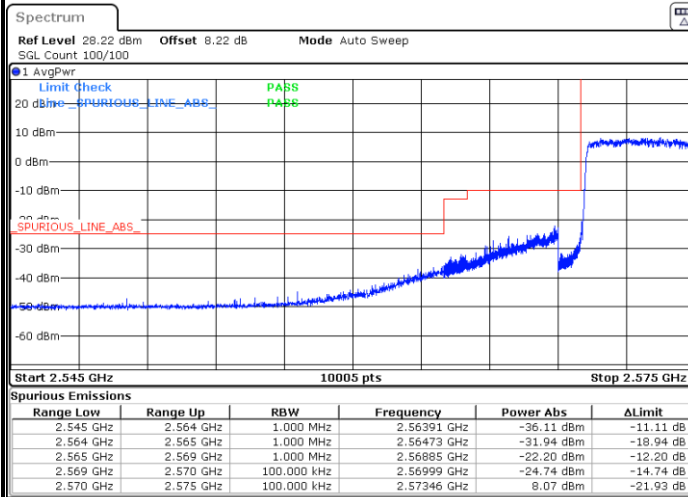
Lowest Band Edge / 1RB



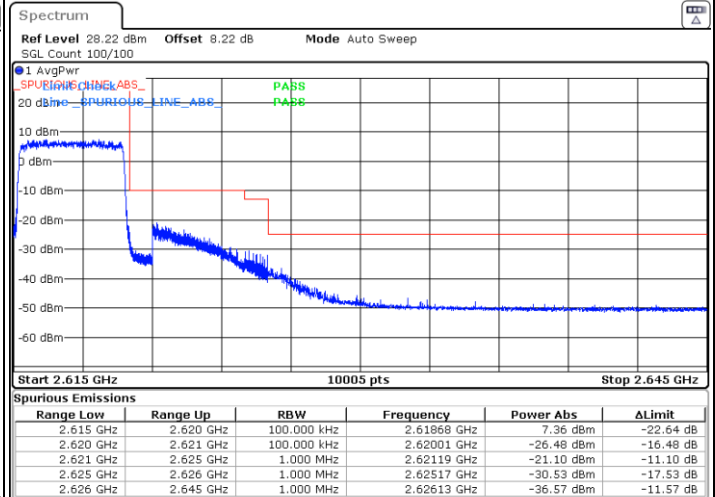
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



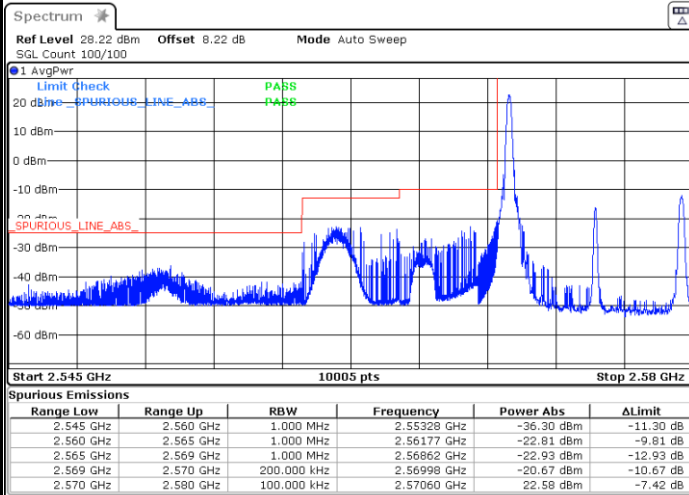
Highest Band Edge / Full RB



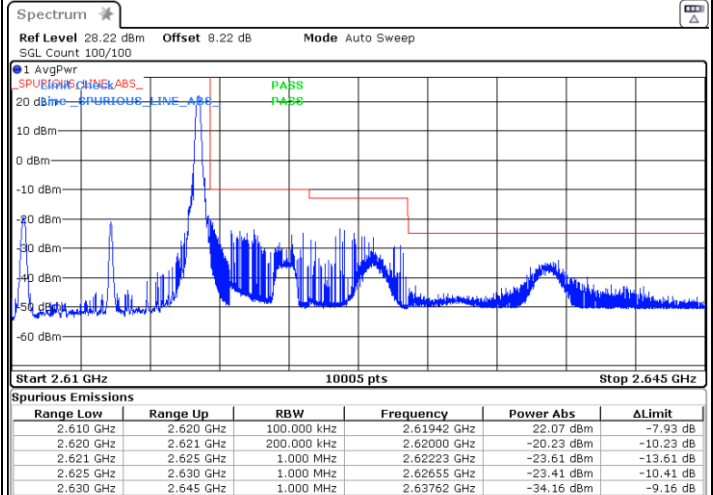


LTE Band 38 / 10MHz / QPSK

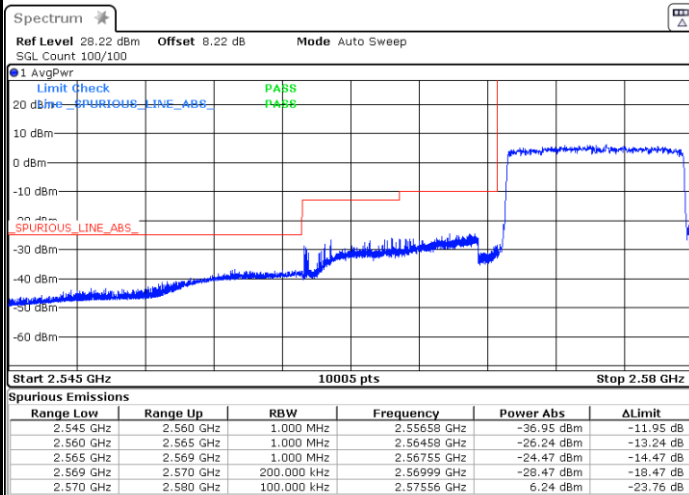
Lowest Band Edge / 1 RB



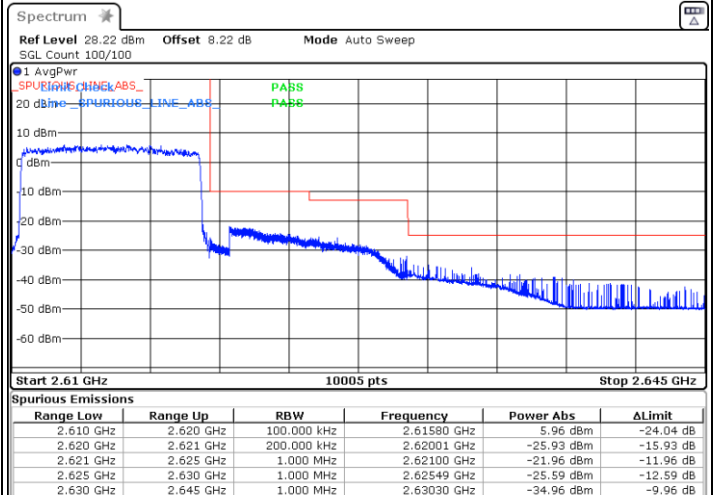
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



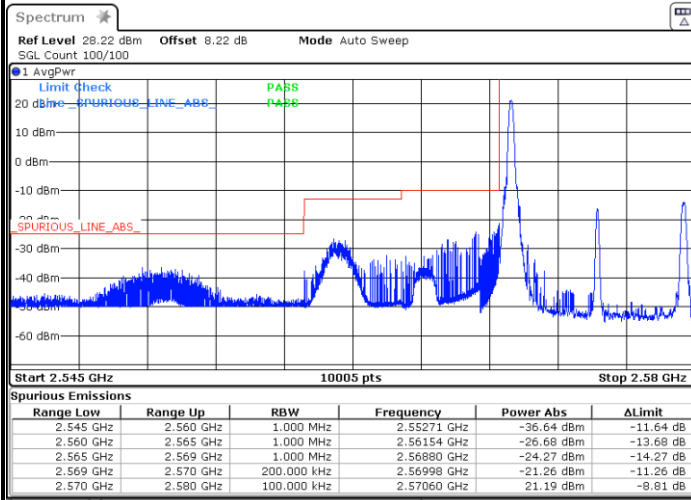
Highest Band Edge / Full RB



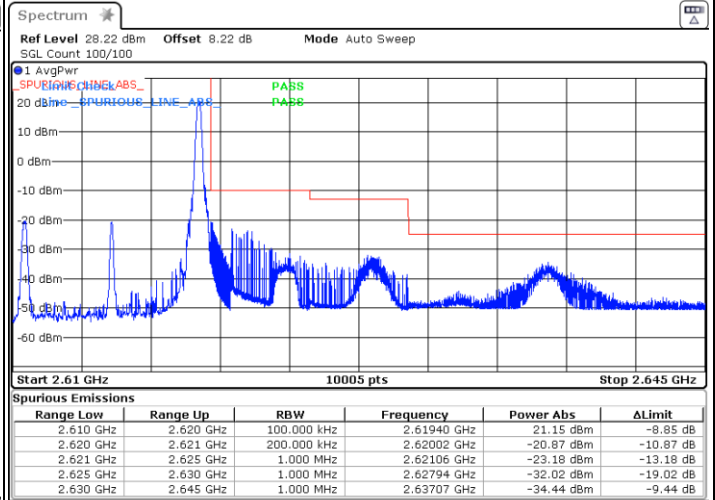


LTE Band 38 / 10MHz / 16QAM

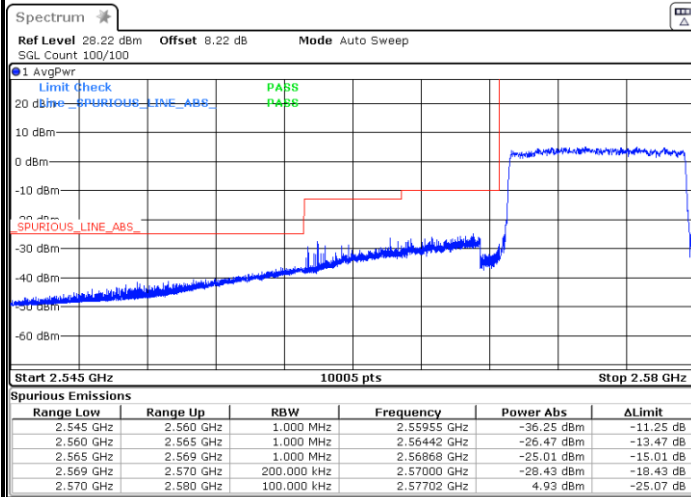
Lowest Band Edge / 1 RB



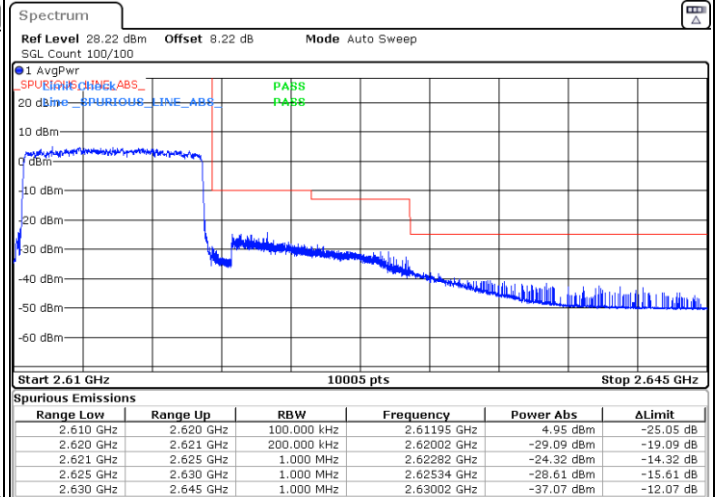
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



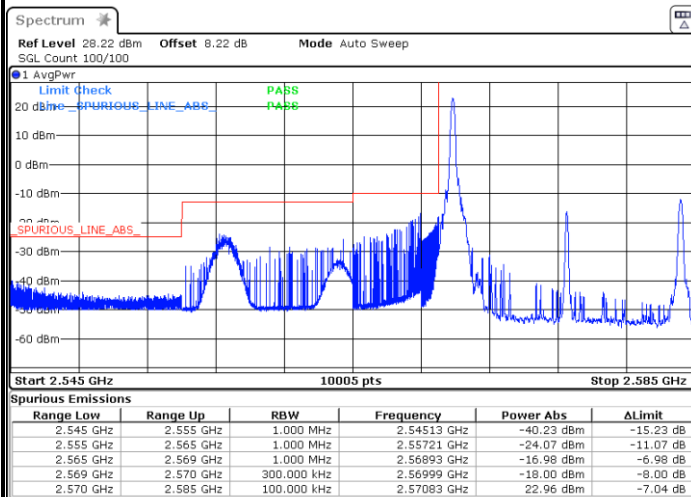
Highest Band Edge / Full RB



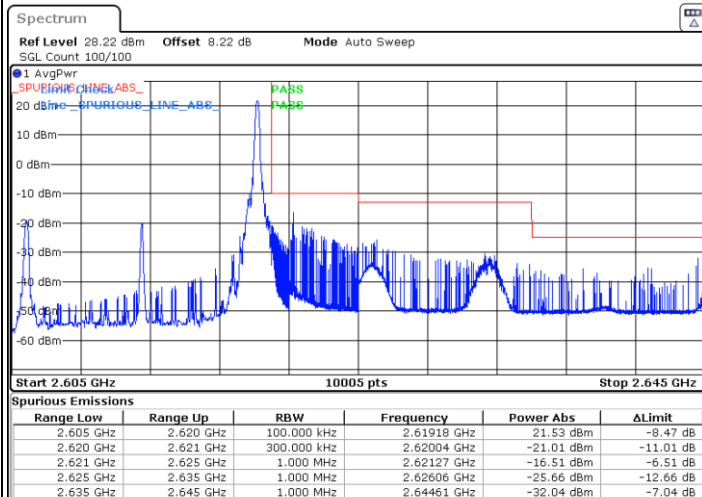


LTE Band 38 / 15MHz / QPSK

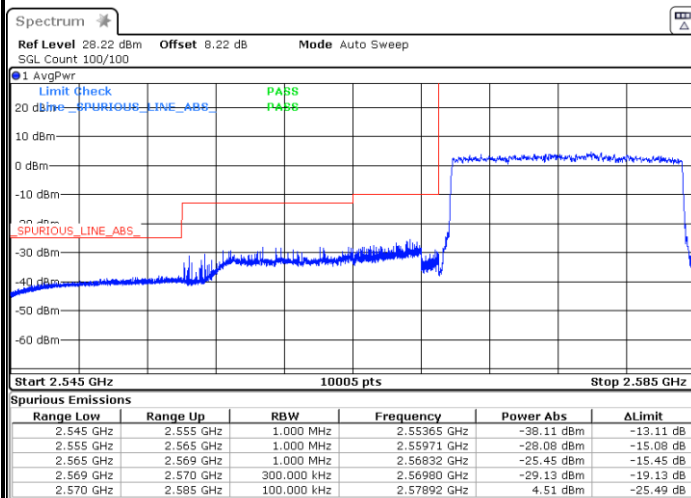
Lowest Band Edge / 1 RB



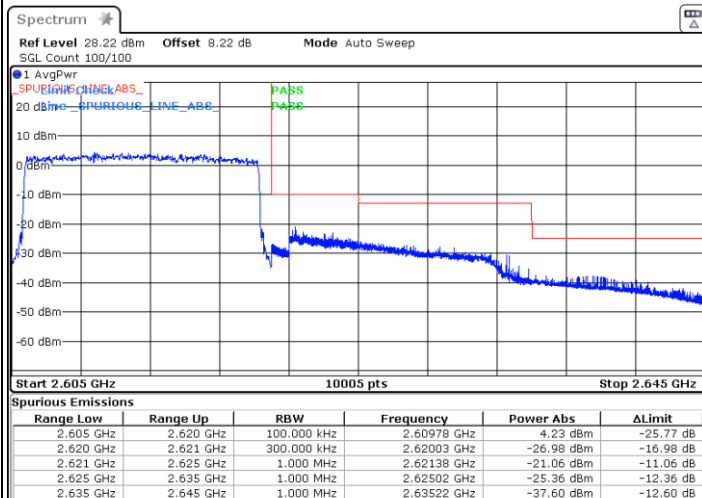
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



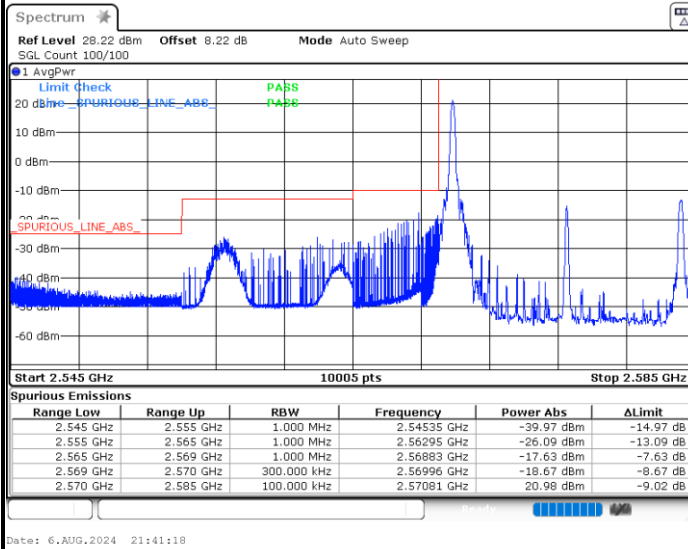
Highest Band Edge / Full RB



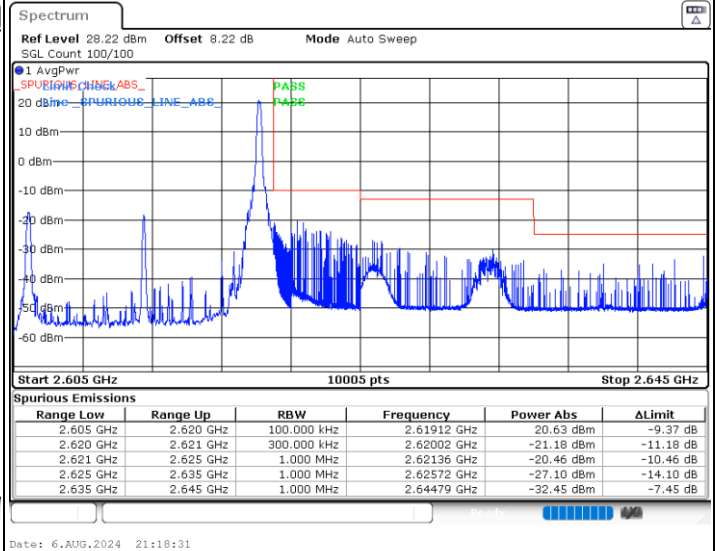


LTE Band 38 / 15MHz / 16QAM

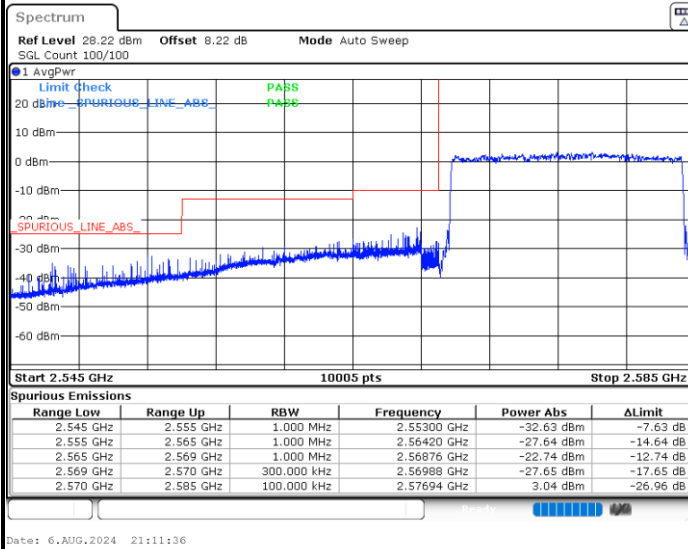
Lowest Band Edge / 1 RB



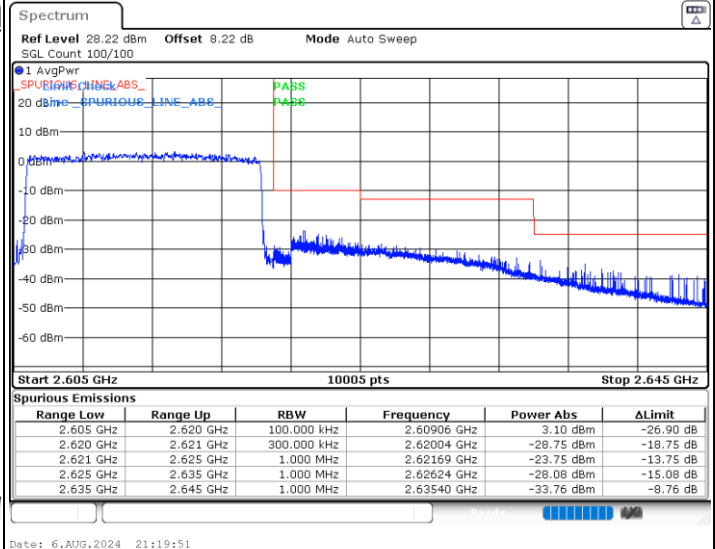
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



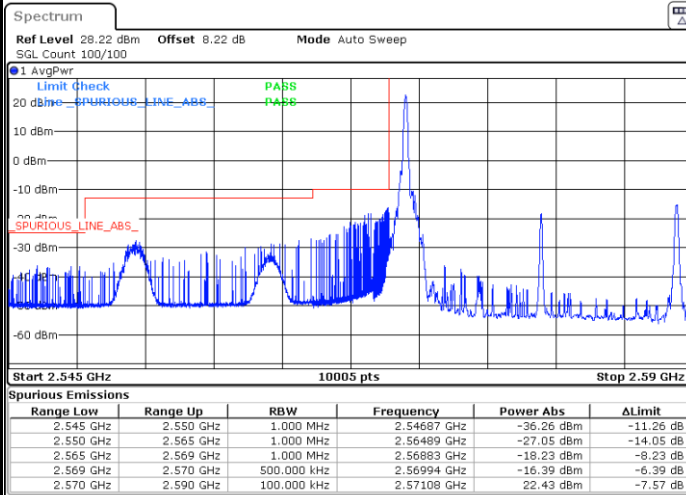
Highest Band Edge / Full RB



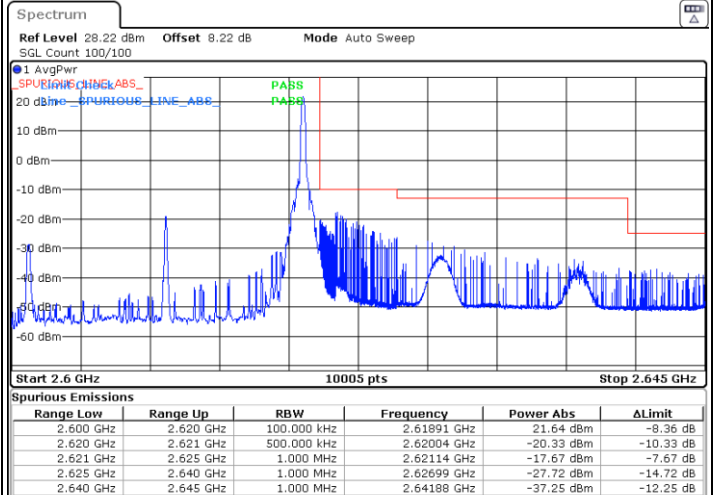


LTE Band 38 / 20MHz / QPSK

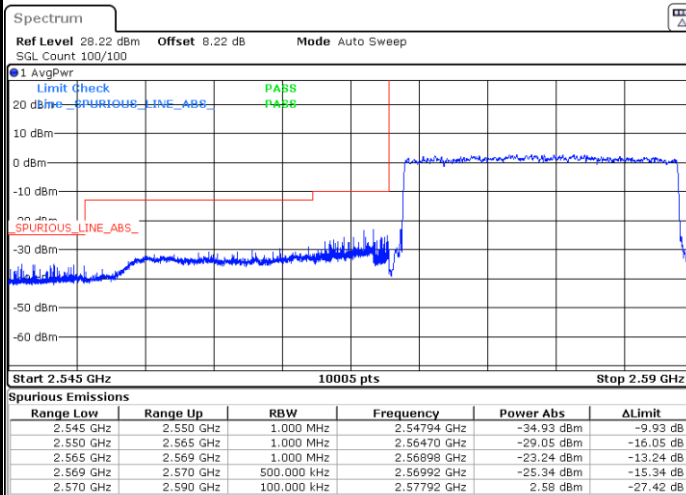
Lowest Band Edge / 1 RB



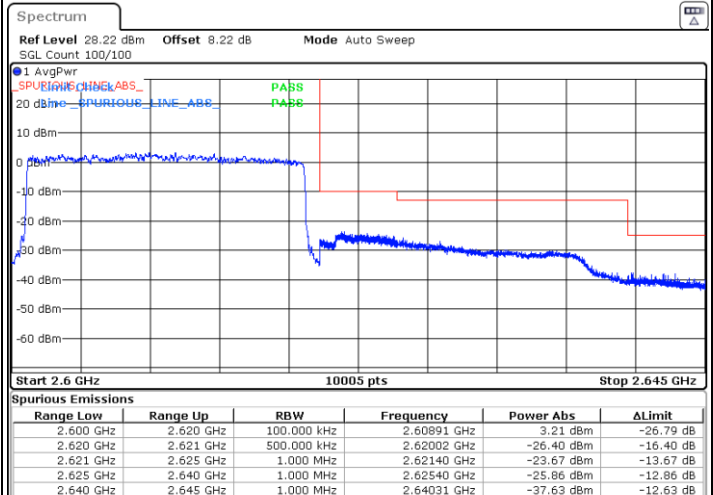
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



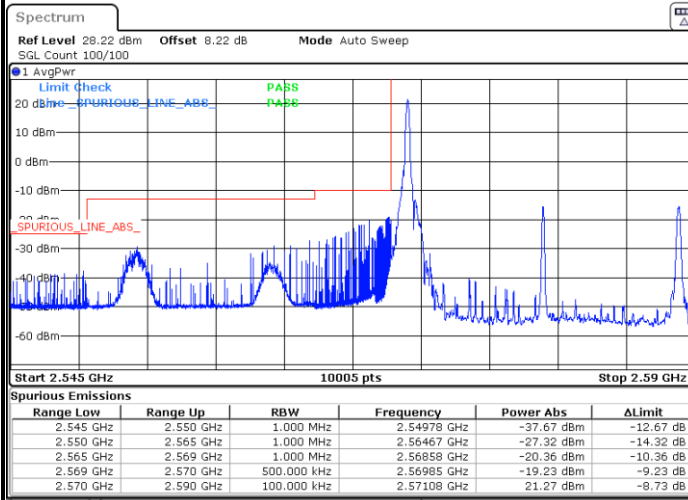
Highest Band Edge / Full RB



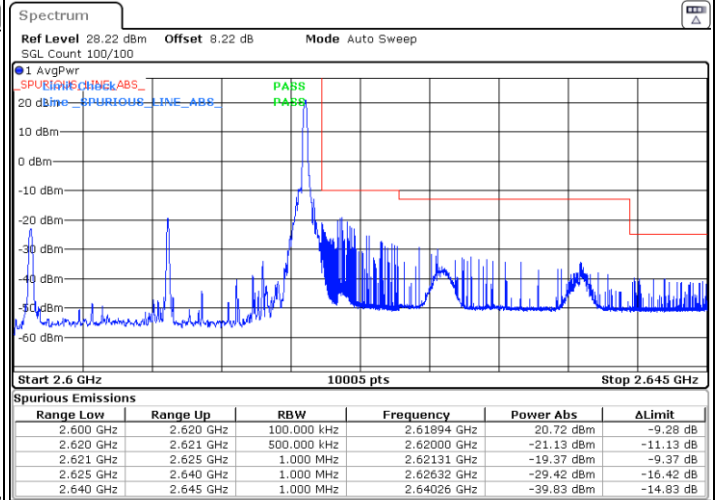


LTE Band 38 / 20MHz / 16QAM

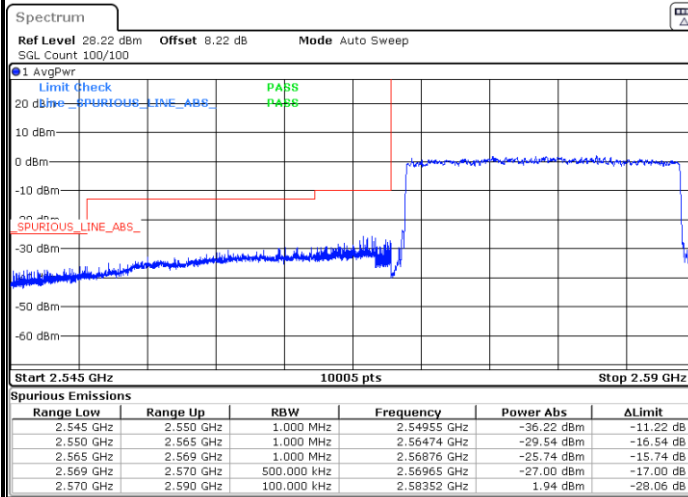
Lowest Band Edge / 1 RB



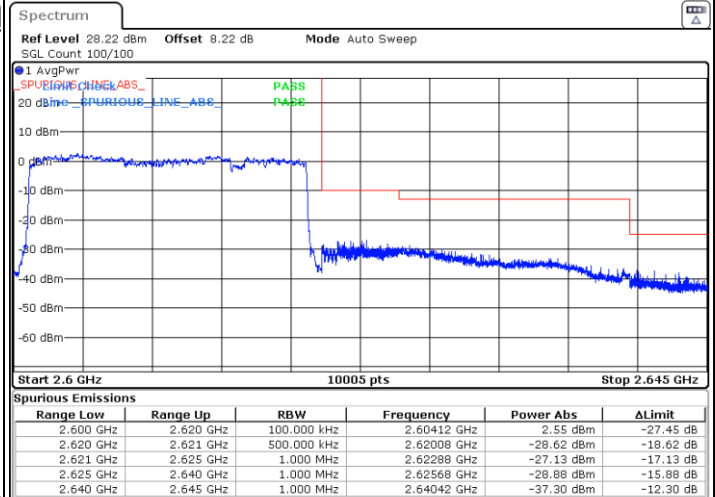
Highest Band Edge / 1 RB



Lowest Band Edge / Full RB



Highest Band Edge / Full RB

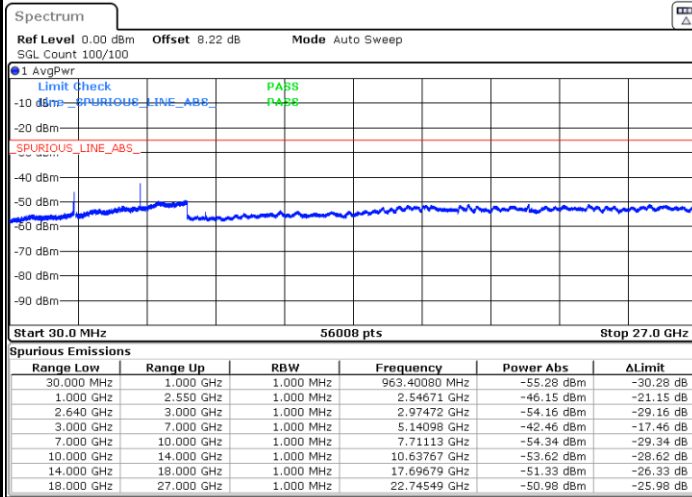




Conducted Spurious Emission

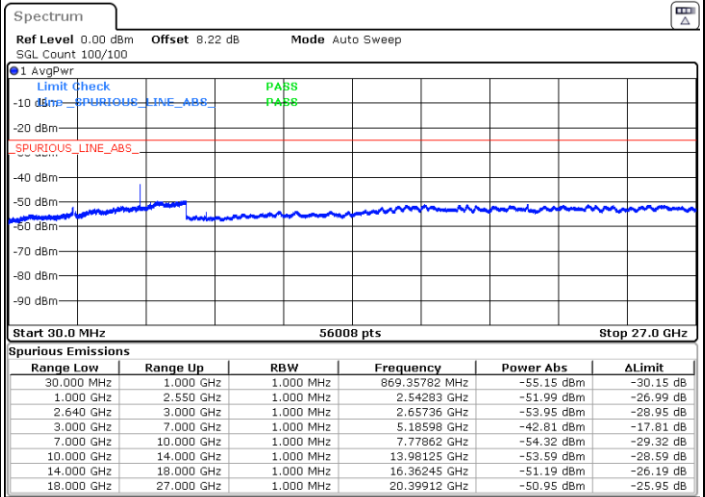
LTE Band 38 / 5MHz

Lowest Channel / QPSK



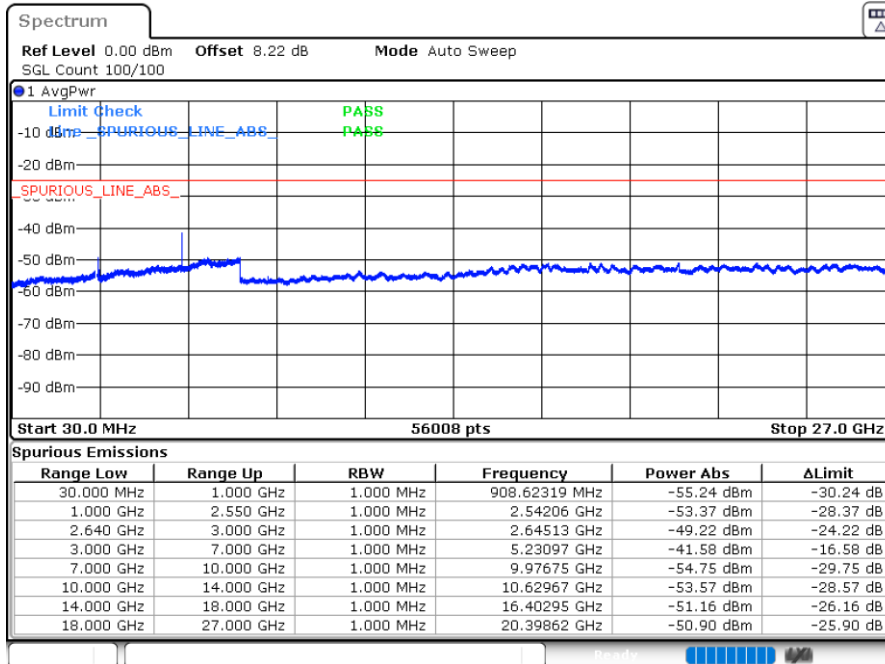
Date: 6.AUG.2024 20:55:09

Middle Channel / QPSK



Date: 6.AUG.2024 20:56:33

Highest Channel / QPSK

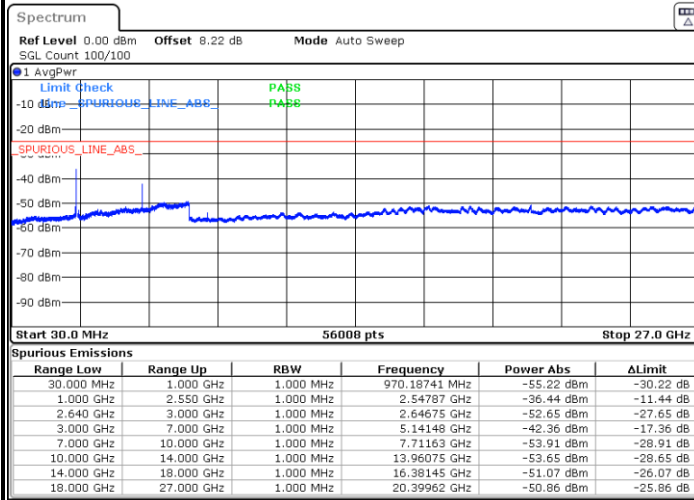


Date: 6.AUG.2024 20:57:58



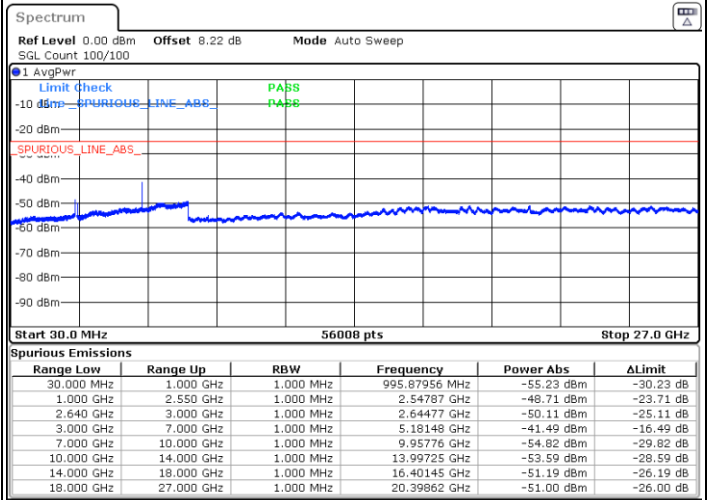
LTE Band 38 / 10MHz

Lowest Channel / QPSK



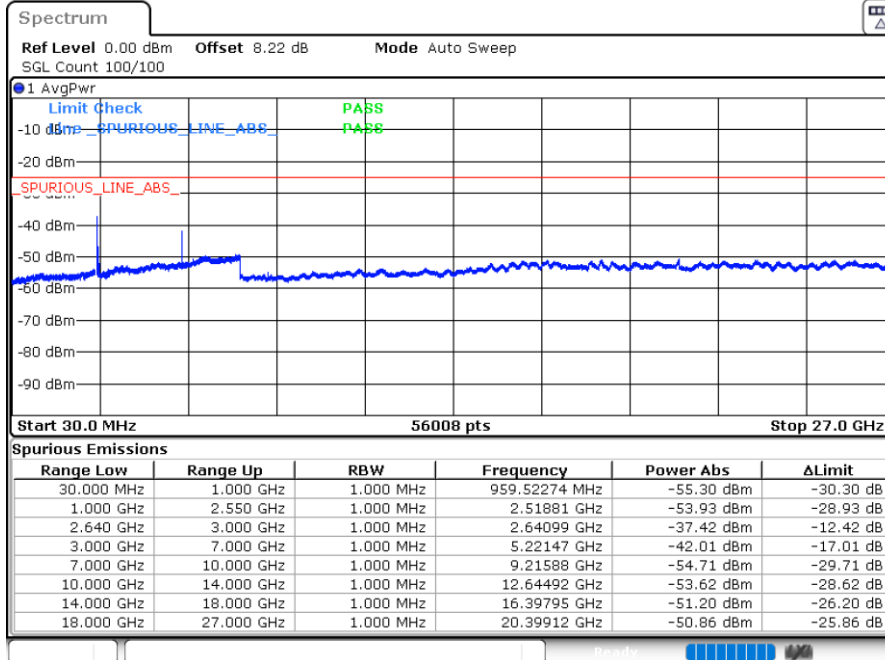
Date: 6.AUG.2024 21:04:45

Middle Channel / QPSK



Date: 6.AUG.2024 21:06:10

Highest Channel / QPSK

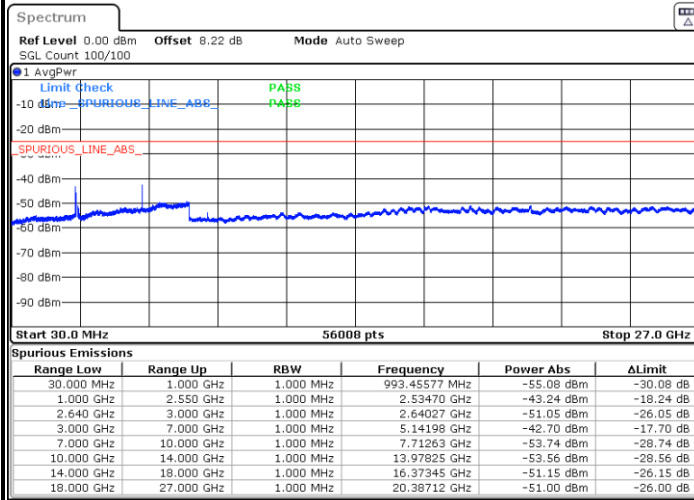


Date: 6.AUG.2024 21:07:34



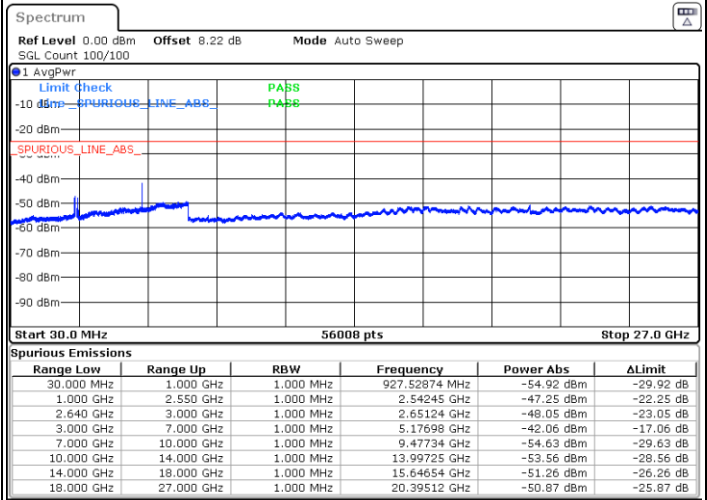
LTE Band 38 / 15MHz

Lowest Channel / QPSK



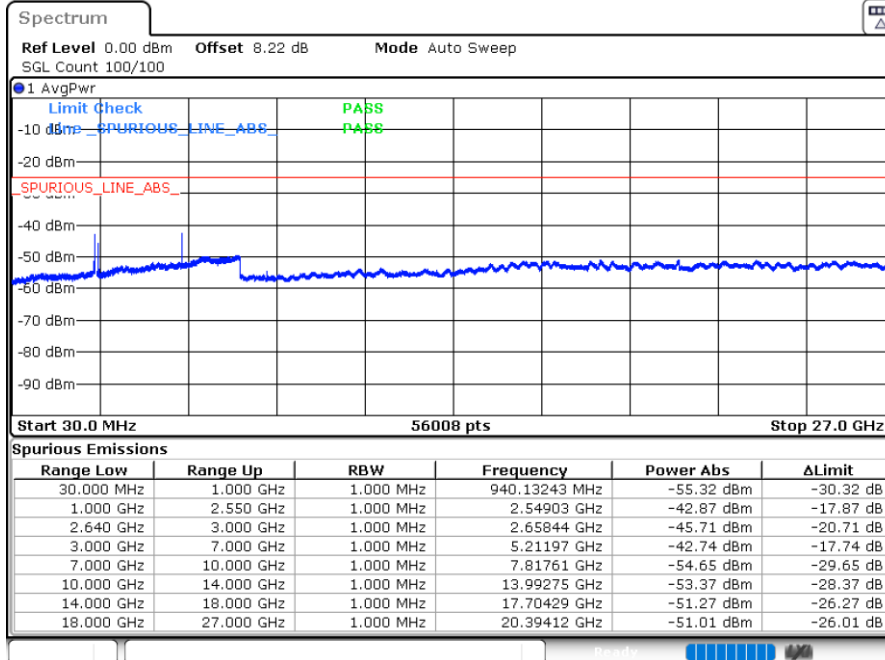
Date: 6.AUG.2024 21:14:21

Middle Channel / QPSK



Date: 6.AUG.2024 21:15:46

Highest Channel / QPSK

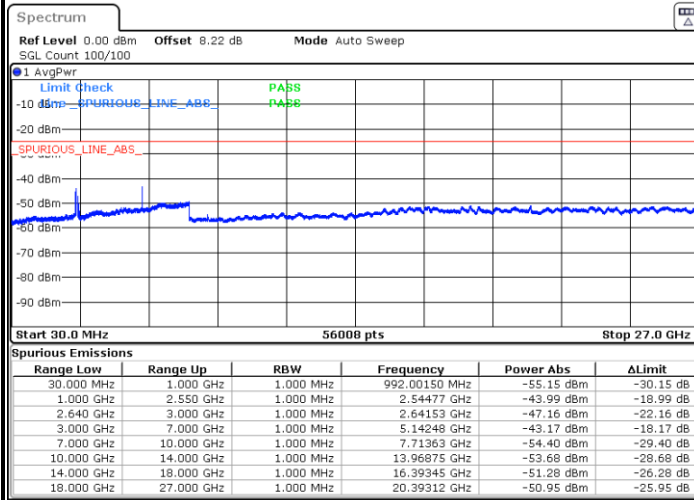


Date: 6.AUG.2024 21:17:11



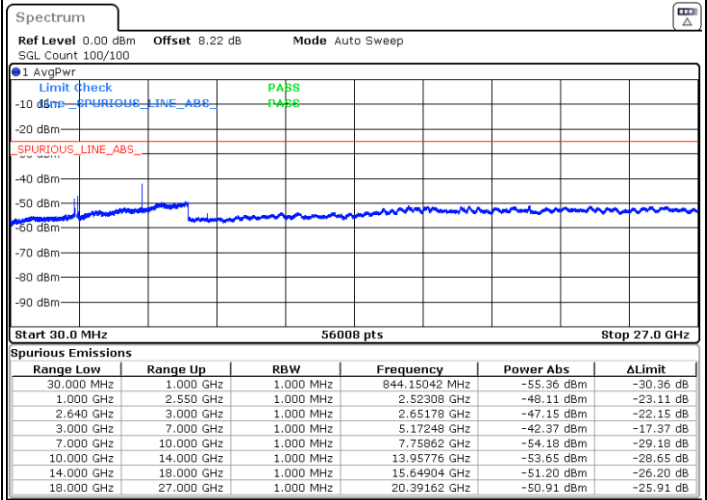
LTE Band 38 / 20MHz

Lowest Channel / QPSK



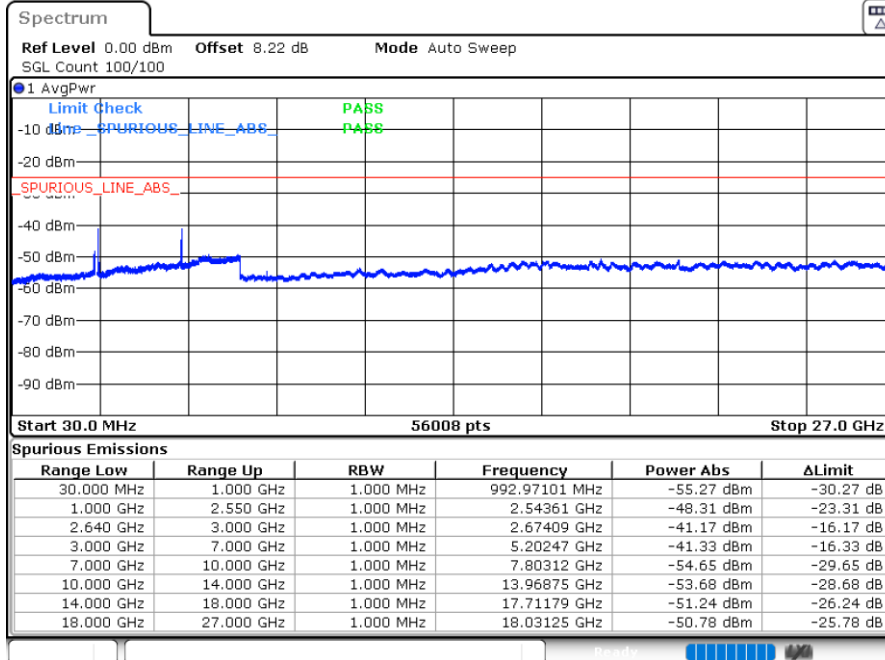
Date: 6.AUG.2024 21:23:57

Middle Channel / QPSK



Date: 6.AUG.2024 21:25:22

Highest Channel / QPSK



Date: 6.AUG.2024 21:26:46

Frequency Stability

Test Conditions		LTE Band 38 (QPSK) / Middle Channel	Limit
Temperature (°C)	Voltage (Volt)	BW 10MHz	Note 2.
		Deviation (ppm)	Result
50	Normal Voltage	0.0012	PASS
40	Normal Voltage	0.0017	
30	Normal Voltage	0.0008	
20(Ref.)	Normal Voltage	0.0000	
10	Normal Voltage	0.0006	
0	Normal Voltage	0.0024	
-10	Normal Voltage	0.0054	
-20	Normal Voltage	0.0072	
-30	Normal Voltage	0.0083	
20	Maximum Voltage	0.0069	
20	Normal Voltage	0.0000	
20	Minimum Voltage	0.0061	

Note:

1. Normal Voltage =3.8 V. ; Minimum Voltage (BEP) =3.55 V. ; Maximum Voltage =4.4V.
2. Note: The frequency fundamental emissions stay within the authorized frequency block.



Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	Bruce	Temperature :	23~25°C
		Relative Humidity :	51~52%

LTE Band 2 / 20MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3735	-52.98	-13	-39.98	-65.24	2.64	14.90	H
	5610	-52.29	-13	-39.29	-64.15	2.94	14.80	H
	7485	-54.27	-13	-41.27	-64.04	3.39	13.16	H
	3735	-53.10	-13	-40.10	-65.36	2.64	14.90	V
	5610	-53.01	-13	-40.01	-64.87	2.94	14.80	V
	7485	-53.70	-13	-40.70	-63.47	3.39	13.16	V

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

LTE Band 4 / 20MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3450	-41.07	-13	-28.07	-51.81	2.604	13.34	H
	5175	-34.63	-13	-21.63	-45.14	3.011	13.52	H
	6900	-55.41	-13	-42.41	-65.61	3.271	13.47	H
	3450	-39.58	-13	-26.58	-50.32	2.604	13.34	V
	5175	-38.50	-13	-25.50	-49.01	3.011	13.52	V
	6900	-53.81	-13	-40.81	-64.01	3.271	13.47	V

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

LTE Band 5 / 10MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1664	-59.42	-13	-46.42	-66.39	1.58	10.70	H
	2496	-61.80	-13	-48.80	-70.05	2.102	12.50	H
	3328	-60.47	-13	-47.47	-69.36	2.856	13.90	H
	1664	-63.70	-13	-50.70	-70.67	1.58	10.70	V
	2496	-60.43	-13	-47.43	-68.68	2.10	12.50	V
	3328	-60.96	-13	-47.96	-69.85	2.86	13.90	V

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

LTE Band 7 / 20MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5050	-42.14	-25	-17.14	-52.35	3.03	13.24	H
	7584	-61.88	-25	-36.88	-71.33	3.56	13.01	H
	10104	-63.12	-25	-38.12	-72.64	3.92	13.44	H
	5050	-41.03	-25	-16.03	-51.24	3.03	13.24	V
	7584	-61.51	-25	-36.51	-70.96	3.56	13.01	V
	10104	-63.30	-25	-38.30	-72.82	3.92	13.44	V

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

LTE Band 38 / 20MHz / QPSK								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5176	-45.86	-25	-20.86	-56.07	3.03	13.24	H
	7752	-58.61	-25	-33.61	-68.06	3.56	13.01	H
	10342	-57.46	-25	-32.46	-66.98	3.92	13.44	H
	5176	-44.93	-25	-19.93	-55.14	3.03	13.24	V
	7752	-49.30	-25	-24.30	-58.75	3.56	13.01	V
	10342	-45.78	-25	-20.78	-55.30	3.92	13.44	V

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