LTE Band7 (Mid Channel)							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	EIRP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH21100 / 2535MHz, Bandwidth 5MHz							
2535	H	16.09	1.15	5.73	20.67	33	-12.33
2535	V	11.83	1.15	5.73	16.41	33	-16.59
QPSK, CH21100 / 2535MHz, Bandwidth 10MHz							
2535	H	16.90	1.15	5.73	21.48	33	-11.52
2535	V	12.14	1.15	5.73	16.72	33	-16.28
QPSK, CH21100 / 2535MHz, Bandwidth 15MHz							
2535	H	16.22	1.15	5.73	20.80	33	-12.20
2535	V	11.63	1.15	5.73	16.21	33	-16.79
QPSK, CH21100 / 2535MHz, Bandwidth 20MHz							
2535	H	14.99	1.15	5.73	19.57	33	-13.43
2535	V	10.19	1.15	5.73	14.77	33	-18.23
16QAM, CH21100 / 2535MHz, Bandwidth 5MHz							
2535	H	15.89	1.15	5.73	20.47	33	-12.53
2535	V	11.74	1.15	5.73	16.32	33	-16.68
16QAM, CH21100 / 2535MHz, Bandwidth 10MHz							
2535	H	16.74	1.15	5.73	21.32	33	-11.68
2535	V	12.00	1.15	5.73	16.58	33	-16.42
16QAM, CH21100 / 2535MHz, Bandwidth 15MHz							
2535	H	16.11	1.15	5.73	20.69	33	-12.31
2535	V	11.53	1.15	5.73	16.11	33	-16.89
16QAM, CH21100 / 2535MHz, Bandwidth 20MHz							
2535	H	14.80	1.15	5.73	19.38	33	-13.62
2535	V	9.94	1.15	5.73	14.52	33	-18.48

NOTES:

1. ERP (dBm) / EIRP (dBm)=

   SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd/dBi)
2. This unit was tested with its standard adapter.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning.

LTE Band7 (High Channel)							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	EIRP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH21425 / 2567.5MHz, Bandwidth 5MHz							
2567.5	H	16.86	1.15	5.78	21.49	33	-11.51
2567.5	V	11.34	1.15	5.78	15.97	33	-17.03
QPSK, CH21400 / 2565MHz, Bandwidth 10MHz							
2565	H	16.21	1.15	5.78	20.84	33	-12.16
2565	V	11.64	1.15	5.78	16.27	33	-16.73
QPSK, CH21375 / 2562.5MHz, Bandwidth 15MHz							
2562.5	H	16.23	1.15	5.78	20.86	33	-12.14
2562.5	V	10.46	1.15	5.78	15.09	33	-17.91
QPSK, CH21350 / 2560MHz, Bandwidth 20MHz							
2560	H	14.99	1.15	5.78	19.62	33	-13.38
2560	V	8.70	1.15	5.78	13.33	33	-19.67
16QAM, CH21425 / 2567.5MHz, Bandwidth 5MHz							
2567.5	H	16.75	1.15	5.78	21.38	33	-11.62
2567.5	V	11.21	1.15	5.78	15.84	33	-17.16
16QAM, CH21400 / 2565MHz, Bandwidth 10MHz							
2565	H	16.14	1.15	5.78	20.77	33	-12.23
2565	V	11.53	1.15	5.78	16.16	33	-16.84
16QAM, CH21375 / 2562.5MHz, Bandwidth 15MHz							
2562.5	H	16.14	1.15	5.78	20.77	33	-12.23
2562.5	V	10.31	1.15	5.78	14.94	33	-18.06
16QAM, CH21350 / 2560MHz, Bandwidth 20MHz							
2560	H	14.85	1.15	5.78	19.48	33	-13.52
2560	V	8.58	1.15	5.78	13.21	33	-19.79

NOTES:

1. ERP (dBm) / EIRP (dBm)=

   SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd/dBi)
2. This unit was tested with its standard adapter.
3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning.

Radiated Spurious Emission

LTE Band2							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	EIRP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH18900 / 1880MHz, Bandwidth 1.4MHz							
3760	H	-57.14	1.36	7.95	-50.55	-13	-37.55
5640	H	-66.25	1.79	10.10	-57.94	-13	-44.94
7520	H	-63.88	1.72	11.72	-53.88	-13	-40.88
3760	V	-55.36	1.36	7.95	-48.77	-13	-35.77
5640	V	-65.89	1.79	10.10	-57.58	-13	-44.58
7520	V	-64.02	1.72	11.72	-54.02	-13	-41.02
QPSK, CH18900 / 1880MHz, Bandwidth 3MHz							
3760	H	-56.72	1.36	7.95	-50.13	-13	-37.13
5640	H	-65.97	1.79	10.10	-57.66	-13	-44.66
7520	H	-63.66	1.72	11.72	-53.66	-13	-40.66
3760	V	-55.47	1.36	7.95	-48.88	-13	-35.88
5640	V	-65.94	1.79	10.10	-57.63	-13	-44.63
7520	V	-64.03	1.72	11.72	-54.03	-13	-41.03
QPSK, CH18900 / 1880MHz, Bandwidth 5MHz							
3760	H	-56.90	1.36	7.95	-50.31	-13	-37.31
5640	H	-66.17	1.79	10.10	-57.86	-13	-44.86
7520	H	-63.73	1.72	11.72	-53.73	-13	-40.73
3760	V	-55.54	1.36	7.95	-48.95	-13	-35.95
5640	V	-66.06	1.79	10.10	-57.75	-13	-44.75
7520	V	-64.18	1.72	11.72	-54.18	-13	-41.18

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. EIRP or ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

LTE Band2							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	EIRP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH18900 / 1880MHz, Bandwidth 10MHz							
3760	H	-57.25	1.36	7.95	-50.66	-13	-37.66
5640	H	-66.25	1.79	10.10	-57.94	-13	-44.94
7520	H	-63.89	1.72	11.72	-53.89	-13	-40.89
3760	V	-55.58	1.36	7.95	-48.99	-13	-35.99
5640	V	-66.15	1.79	10.10	-57.84	-13	-44.84
7520	V	-64.33	1.72	11.72	-54.33	-13	-41.33
QPSK, CH18900 / 1880MHz, Bandwidth 15MHz							
3760	H	-57.04	1.36	7.95	-50.45	-13	-37.45
5640	H	-66.12	1.79	10.10	-57.81	-13	-44.81
7520	H	-63.69	1.72	11.72	-53.69	-13	-40.69
3760	V	-55.37	1.36	7.95	-48.78	-13	-35.78
5640	V	-66.00	1.79	10.10	-57.69	-13	-44.69
7520	V	-64.02	1.72	11.72	-54.02	-13	-41.02
QPSK, CH18900 / 1880MHz, Bandwidth 20MHz							
3760	H	-57.16	1.36	7.95	-50.57	-13	-37.57
5640	H	-65.80	1.79	10.10	-57.49	-13	-44.49
7520	H	-63.59	1.72	11.72	-53.59	-13	-40.59
3760	V	-55.37	1.36	7.95	-48.78	-13	-35.78
5640	V	-65.86	1.79	10.10	-57.55	-13	-44.55
7520	V	-64.29	1.72	11.72	-54.29	-13	-41.29

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. EIRP or ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

LTE Band5							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	ERP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH20525 / 836.5MHz, Bandwidth 1.4MHz							
1673	H	-63.45	1.05	5.02	-59.48	-13	-46.48
2509.5	H	-55.15	1.14	5.64	-50.65	-13	-37.65
3346	H	-50.75	1.32	7.12	-44.95	-13	-31.95
1673	V	-62.69	1.05	5.02	-58.72	-13	-45.72
2509.5	V	-51.79	1.14	5.64	-47.29	-13	-34.29
3346	V	-51.75	1.32	7.12	-45.95	-13	-32.95
QPSK, CH20525 / 836.5MHz, Bandwidth 3MHz							
1673	H	-63.26	1.05	5.02	-59.29	-13	-46.29
2509.5	H	-54.94	1.14	5.64	-50.44	-13	-37.44
3346	H	-50.47	1.32	7.12	-44.67	-13	-31.67
1673	V	-62.56	1.05	5.02	-58.59	-13	-45.59
2509.5	V	-51.81	1.14	5.64	-47.31	-13	-34.31
3346	V	-51.47	1.32	7.12	-45.67	-13	-32.67

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. EIRP or ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

LTE Band5							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	ERP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH20525 / 836.5MHz, Bandwidth 5MHz							
1673	H	-63.18	1.05	5.02	-59.21	-13	-46.21
2509.5	H	-54.89	1.14	5.64	-50.39	-13	-37.39
3346	H	-50.60	1.32	7.12	-44.80	-13	-31.80
1673	V	-62.46	1.05	5.02	-58.49	-13	-45.49
2509.5	V	-51.67	1.14	5.64	-47.17	-13	-34.17
3346	V	-51.63	1.32	7.12	-45.83	-13	-32.83
QPSK, CH20525 / 836.5MHz, Bandwidth 10MHz							
1673	H	-63.39	1.05	5.02	-59.42	-13	-46.42
2509.5	H	-55.06	1.14	5.64	-50.56	-13	-37.56
3346	H	-50.29	1.32	7.12	-44.49	-13	-31.49
1673	V	-62.58	1.05	5.02	-58.61	-13	-45.61
2509.5	V	-51.89	1.14	5.64	-47.39	-13	-34.39
3346	V	-51.48	1.32	7.12	-45.68	-13	-32.68

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. EIRP or ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

LTE Band7							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	EIRP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH21100 / 2535MHz, Bandwidth 5MHz							
5070	H	-63.08	1.52	9.83	-54.77	-25	-29.77
7605	H	-53.97	1.78	11.79	-43.96	-25	-18.96
10140	H	-58.55	2.36	12.40	-48.51	-25	-23.51
5070	V	-63.10	1.52	9.83	-54.79	-25	-29.79
7605	V	-59.47	1.78	11.79	-49.46	-25	-24.46
10140	V	-58.80	2.36	12.40	-48.76	-25	-23.76
QPSK, CH21100 / 2535MHz, Bandwidth 10MHz							
5070	H	-62.84	1.52	9.83	-54.53	-25	-29.53
7605	H	-53.59	1.78	11.79	-43.58	-25	-18.58
10140	H	-58.81	2.36	12.40	-48.77	-25	-23.77
5070	V	-63.19	1.52	9.83	-54.88	-25	-29.88
7605	V	-59.72	1.78	11.79	-49.71	-25	-24.71
10140	V	-58.66	2.36	12.40	-48.62	-25	-23.62

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. EIRP or ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

LTE Band7							
Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Ant Gain (dBi)	EIRP Measure (dBm)	Limit (dBm)	Margin (dB)
QPSK, CH21100 / 2535MHz, Bandwidth 15MHz							
5070	H	-62.66	1.52	9.83	-54.35	-25	-29.35
7605	H	-53.86	1.78	11.79	-43.85	-25	-18.85
10140	H	-58.84	2.36	12.40	-48.80	-25	-23.80
5070	V	-63.25	1.52	9.83	-54.94	-25	-29.94
7605	V	-59.66	1.78	11.79	-49.65	-25	-24.65
10140	V	-59.02	2.36	12.40	-48.98	-25	-23.98
QPSK, CH21100 / 2535MHz, Bandwidth 20MHz							
5070	H	-62.45	1.52	9.83	-54.14	-25	-29.14
7605	H	-53.27	1.78	11.79	-43.26	-25	-18.26
10140	H	-58.43	2.36	12.40	-48.39	-25	-23.39
5070	V	-62.86	1.52	9.83	-54.55	-25	-29.55
7605	V	-59.50	1.78	11.79	-49.49	-25	-24.49
10140	V	-58.65	2.36	12.40	-48.61	-25	-23.61

Note:

1. Spurious emissions within 30-1000MHz & Other harmonic were found more than 20dB below limit line.
2. EIRP or ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

7.6. Peak-Average Ratio

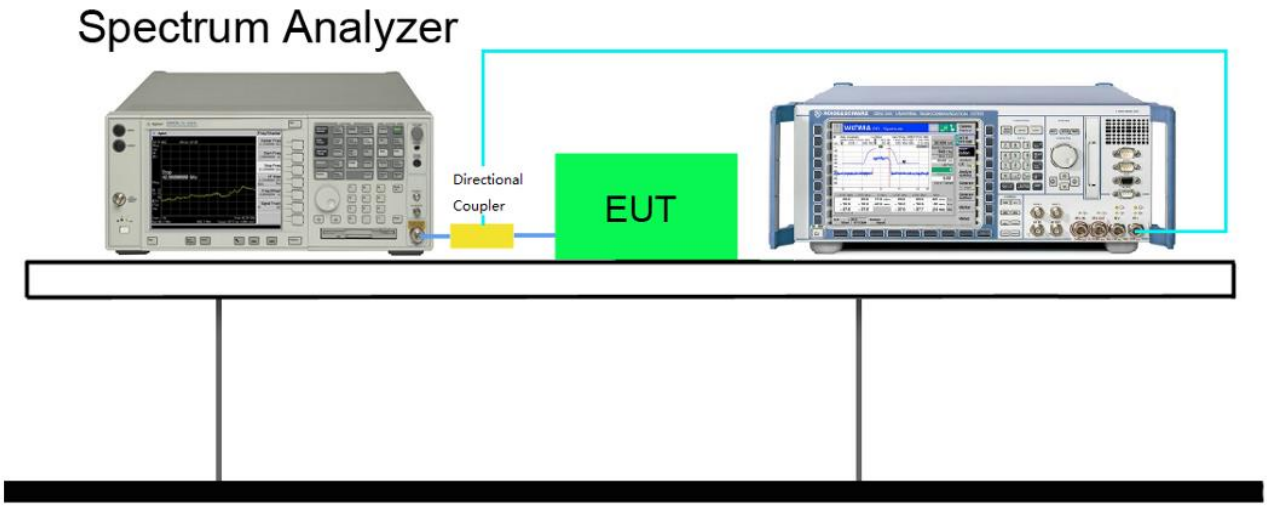
7.6.1 Test Limit

The transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

7.6.2 Test Procedure

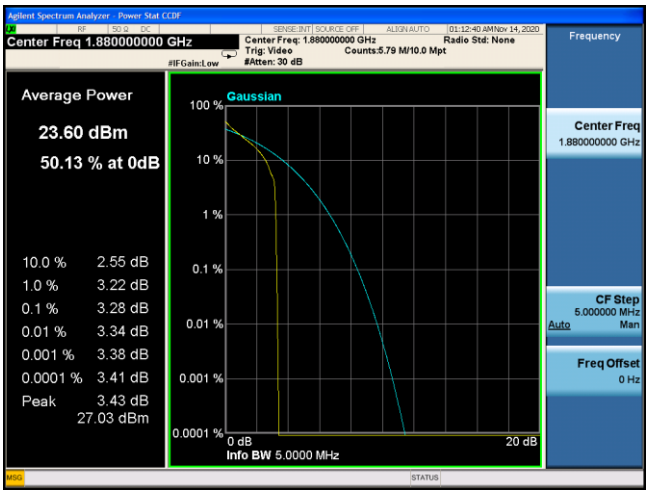
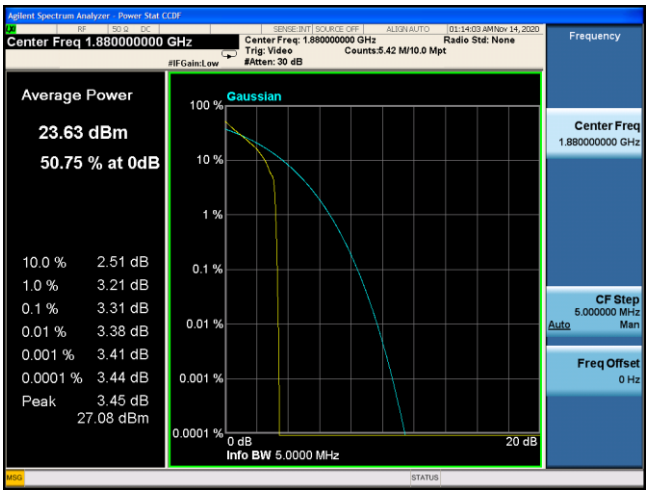
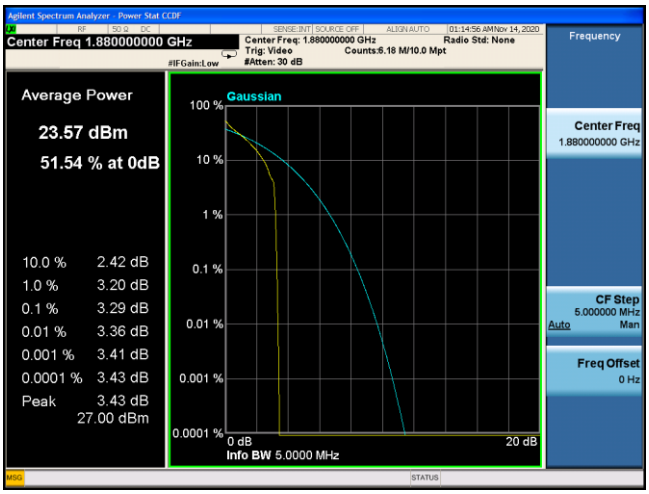
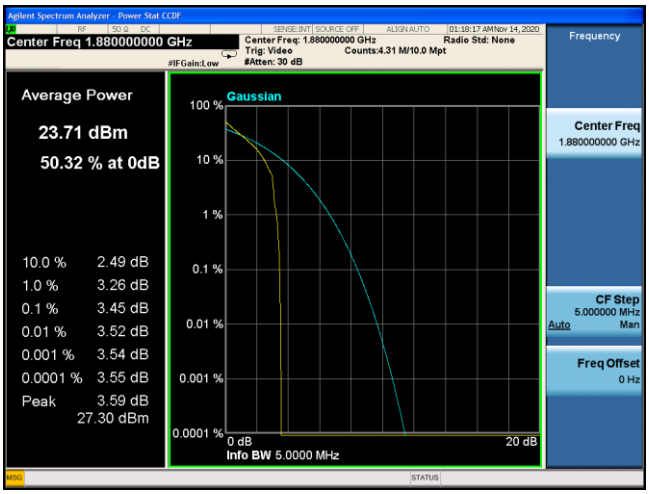
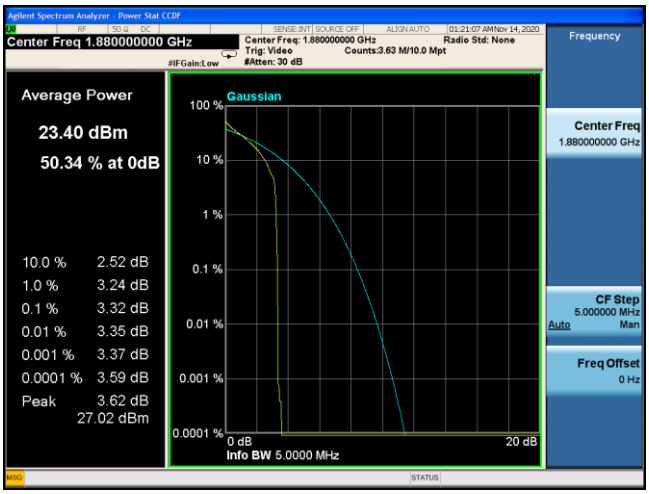
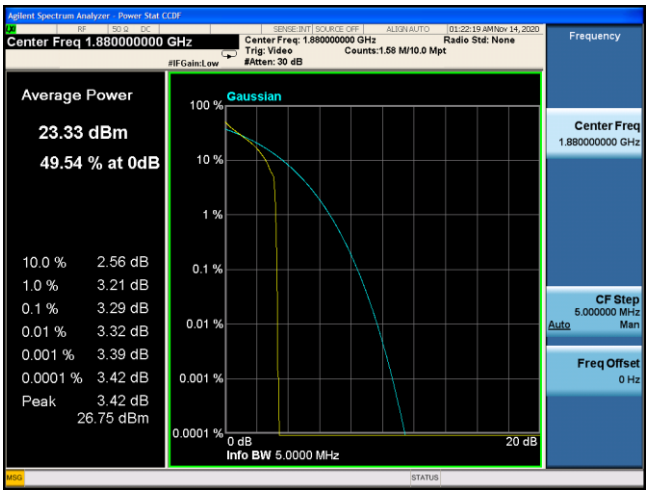
KDB 971168 D01v03r01 - Section 5.7 & ANSI/TIA-603-E-2016

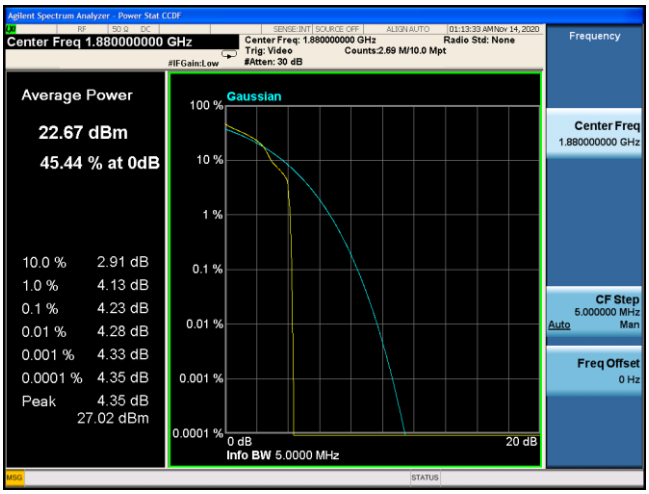
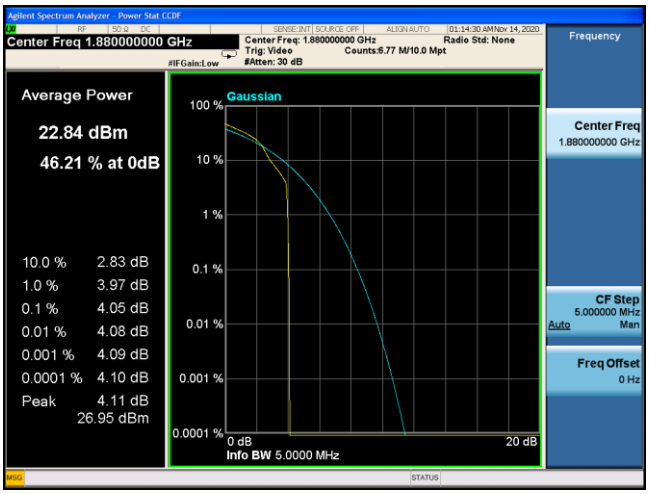
7.6.3 Test Setup



7.6.4 Test Result

Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Test Result
LTE Band 2	QPSK	CH18900/1880MHz	1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass
			15	1	36	Pass
			20	1	49	Pass
	16QAM		1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass
			15	1	36	Pass
			20	1	49	Pass

LTE Band 2 QPSK 1.4MHz CH18900 1RB#2	LTE Band 2 QPSK 3MHz CH18900 1RB#7
	
LTE Band 2 QPSK 5MHz CH18900 1RB#12	**LTE Band 2 QPSK 10MHz CH18900 1RB#25**
	
LTE Band 2 QPSK 15MHz CH18900 1RB#36	**LTE Band 2 QPSK 20MHz CH18900 1RB#49**
	

LTE Band 2 16QAM 1.4MHz CH18900 1RB#2	LTE Band 2 16QAM 3MHz CH18900 1RB#7
	
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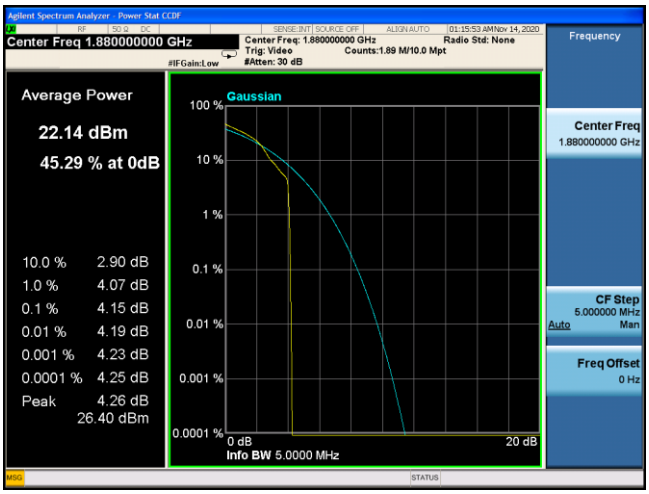	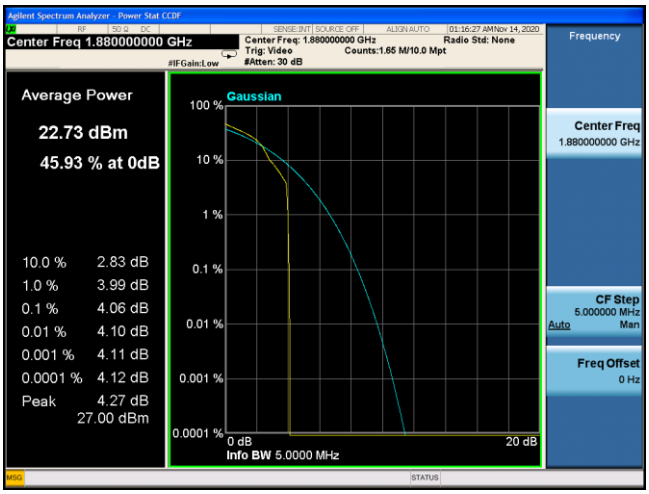
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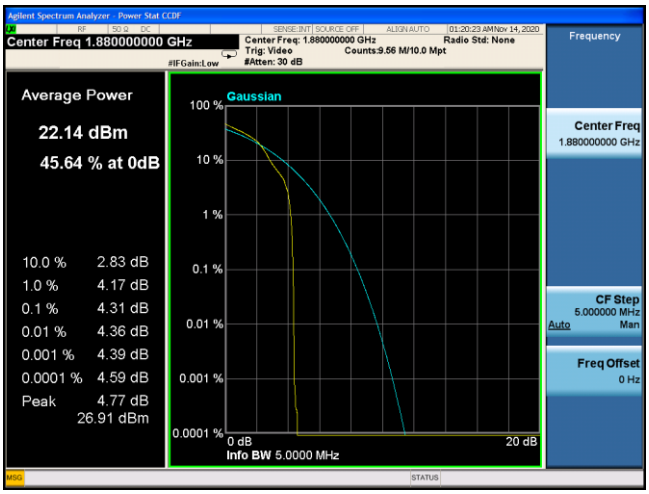
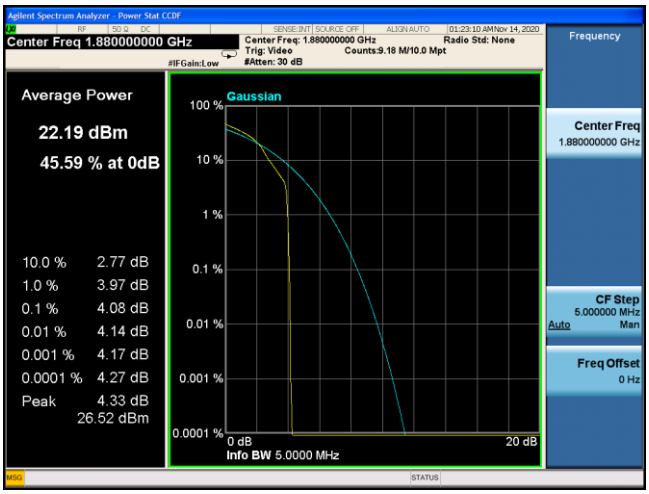
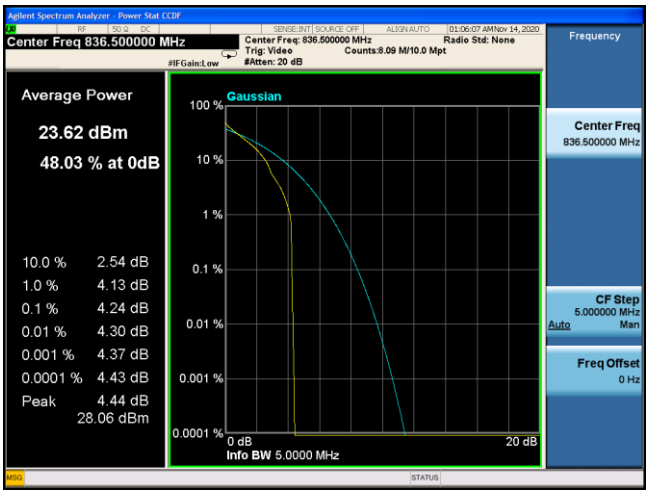
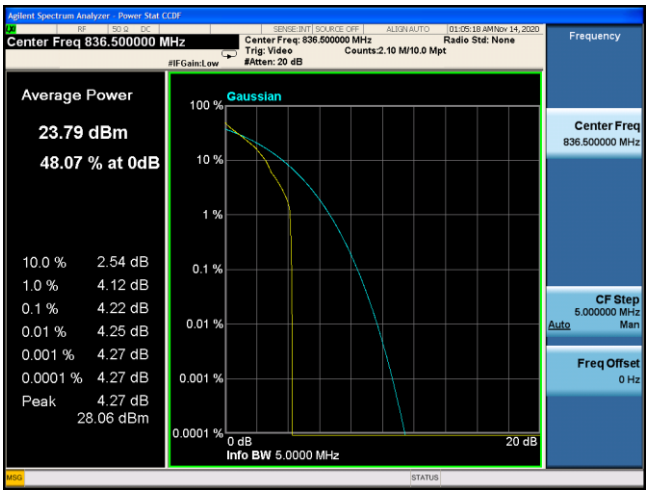
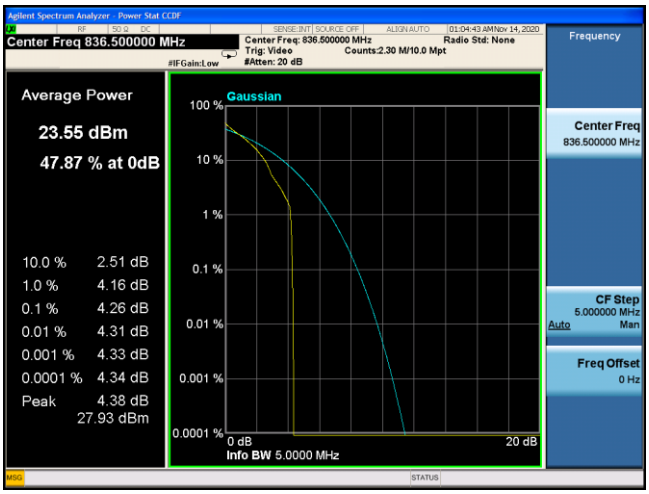
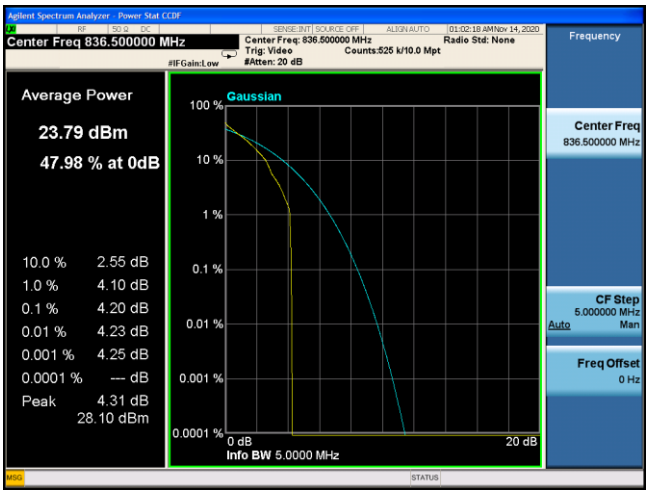
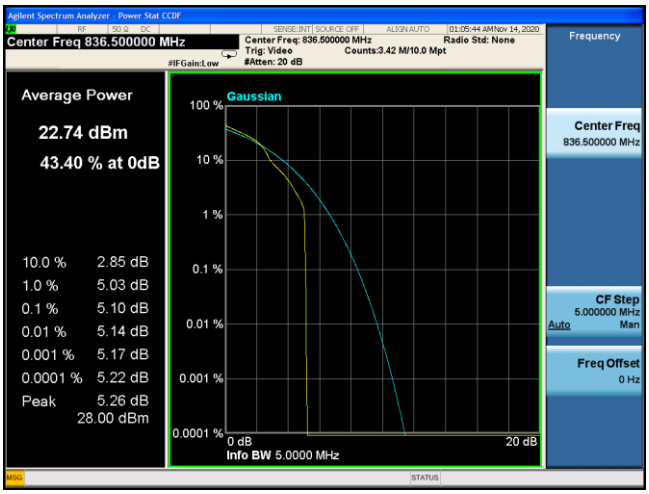
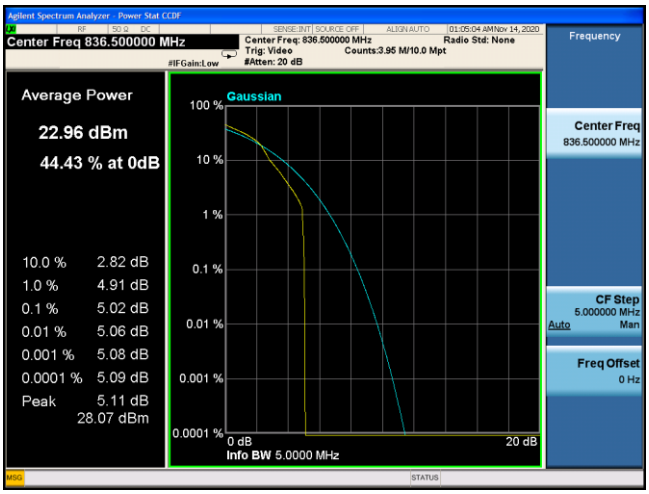
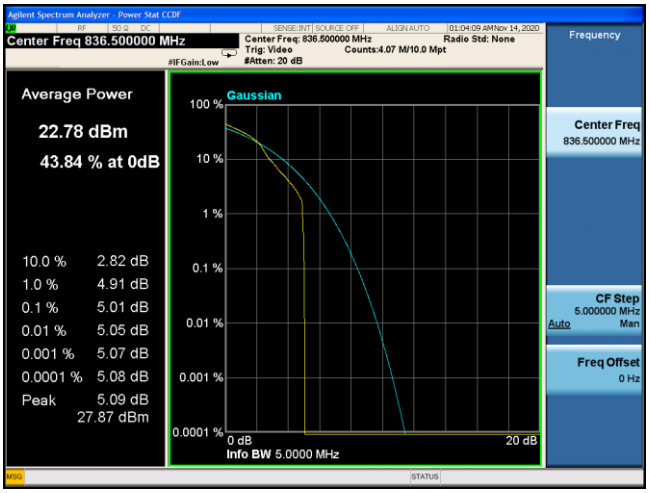
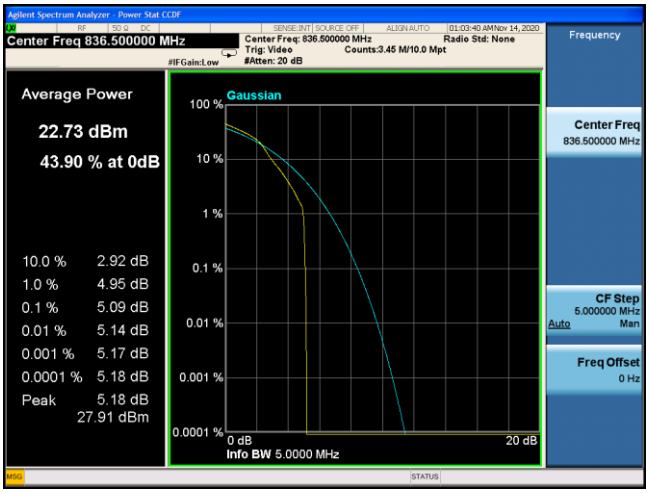
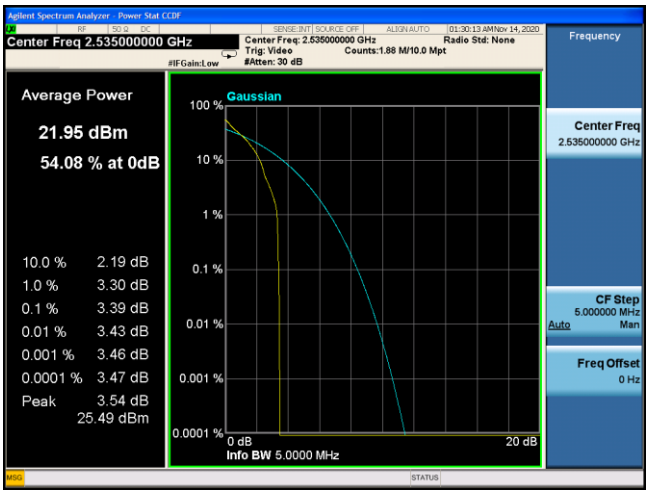
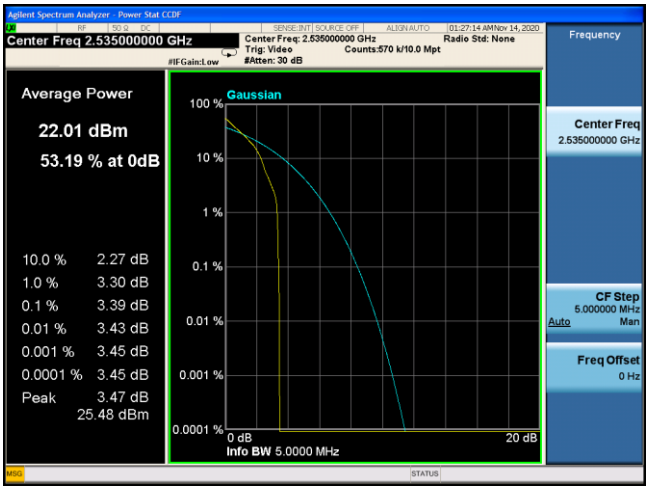
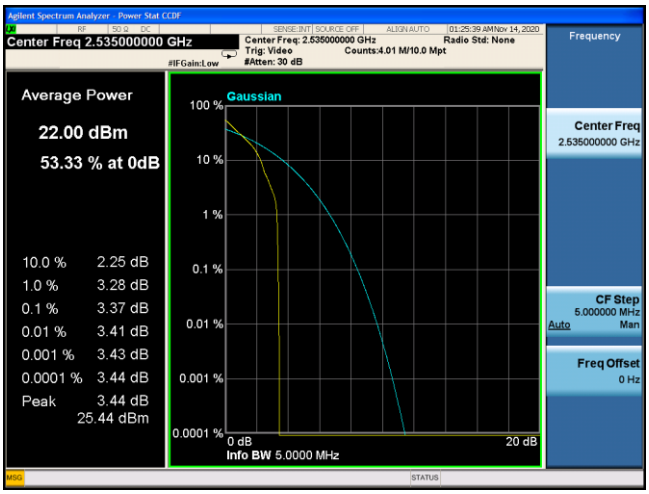
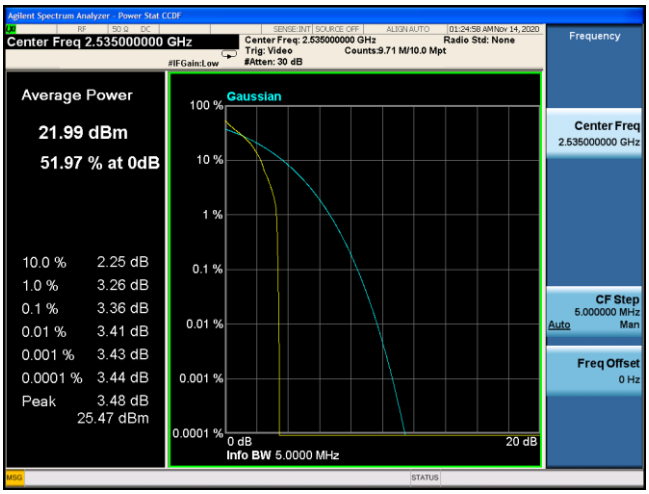
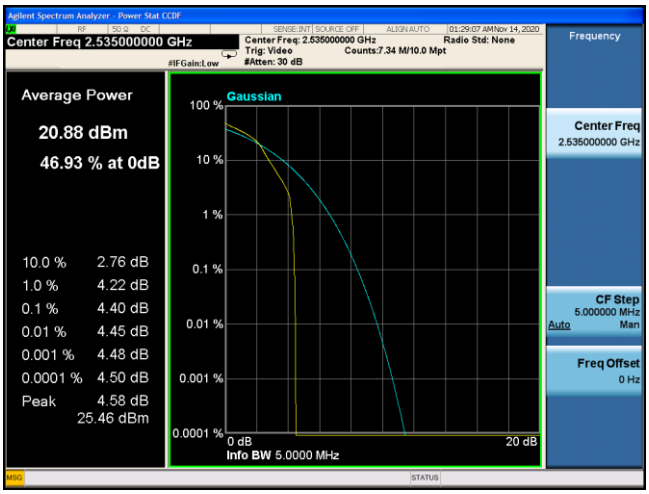
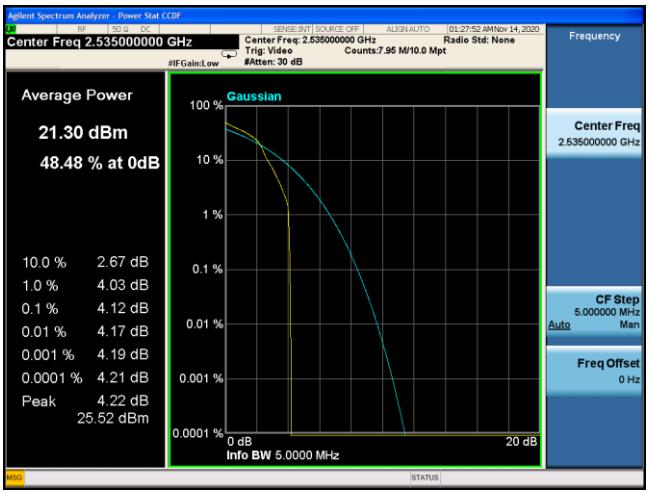
	

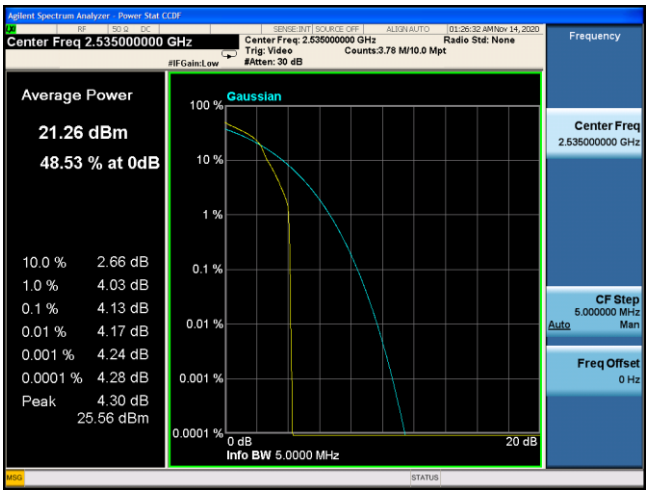
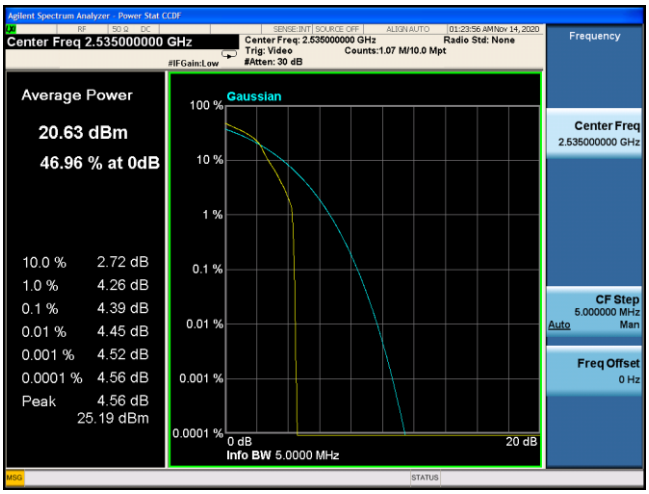
Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Test Result
LTE Band 5	QPSK	CH20525 / 836.5MHz	1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass
	16QAM		1.4	1	2	Pass
			3	1	7	Pass
			5	1	12	Pass
			10	1	25	Pass

LTE Band 5 QPSK 1.4MHz CH20525 1RB#2	LTE Band 5 QPSK 3MHz CH20525 1RB#7
	
LTE Band 5 QPSK 5MHz CH20525 1RB#12	**LTE Band 5 QPSK 10MHz CH20525 1RB#25**
	
LTE Band 5 16QAM 1.4MHz CH20525 1RB#2	**LTE Band 5 16QAM 3MHz CH20525 1RB#7**
	

LTE Band 5 16QAM 5MHz CH20525 1RB#12	LTE Band 5 16QAM 10MHz CH20525 1RB#25
	

Test Mode	Modulation	Channel/ Frequency (MHz)	Bandwidth (MHz)	RB Size	RB Offset	Test Result
LTE Band 7	QPSK	CH21100 / 2535MHz	5	1	12	Pass
			10	1	25	Pass
			15	1	36	Pass
			20	1	49	Pass
	16QAM		5	1	12	Pass
			10	1	25	Pass
			15	1	36	Pass
			20	1	49	Pass

LTE Band 7 QPSK 5MHz CH21100 1RB#12	LTE Band 7 QPSK 10MHz CH21100 1RB#25
	
LTE Band 7 QPSK 15MHz CH21100 1RB#36	**LTE Band 7 QPSK 20MHz CH21100 1RB#49**
	
LTE Band 7 16QAM 5MHz CH21100 1RB#12	**LTE Band 7 16QAM 10MHz CH21100 1RB#25**
	

LTE Band 7 16QAM 15MHz CH21100 1RB#36	LTE Band 7 16QAM 20MHz CH21100 1RB#49
	

7.7. Frequency Stability Under Temperature & Voltage Variations

7.7.1 Test Limit

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Limit	< ± 2.5 ppm

7.7.2 Test Procedure

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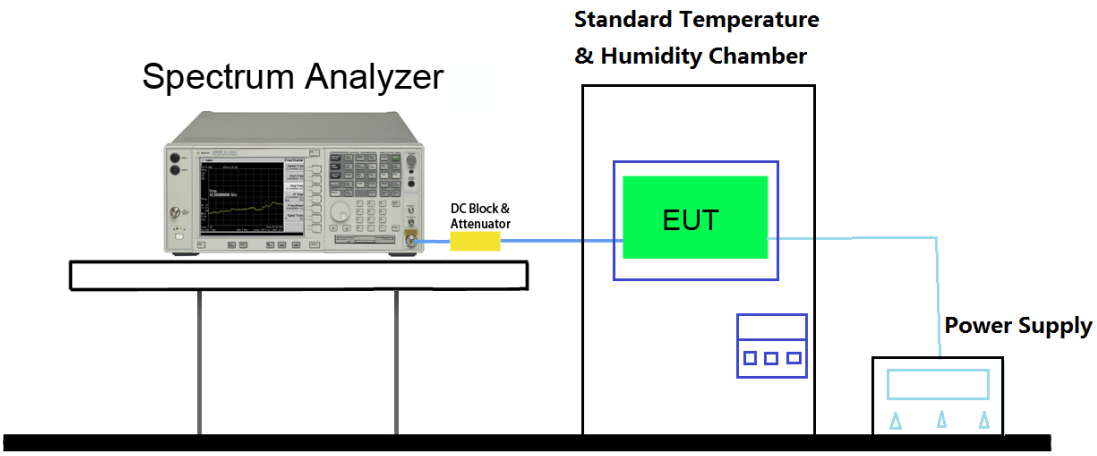
7.7.3 Test Setup



7.7.4 Test Result

Operating Frequency	1880MHz
Channel	CH18900
Test Mode	LTE Band 2
Reference Voltage	AC 120V/60Hz

Temperature vs. Frequency Stability						
Voltage (%)	Power (VAC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	120V/60Hz	-30	1880	-8.80	-0.005	±2.5
		-20	1880	-8.94	-0.005	±2.5
		-10	1880	-7.71	-0.004	±2.5
		0	1880	-7.95	-0.004	±2.5
		10	1880	-11.97	-0.006	±2.5
		+ 20 (Ref)	1880	-9.80	-0.005	±2.5
		30	1880	-7.80	-0.004	±2.5
		40	1880	-9.08	-0.005	±2.5
		50	1880	-8.47	-0.005	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VAC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	120V/60Hz	20	1880	-7.01	-0.004	±2.5
115%	138V/60Hz	20	1880	-9.80	-0.005	±2.5
85%	102V/60Hz	20	1880	-9.30	-0.005	±2.5

Operating Frequency	836.6MHz
Channel	CH20525
Test Mode	LTE Band 5
Reference Voltage	AC 120V/60Hz

Temperature vs. Frequency Stability						
Voltage (%)	Power (VAC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	120V/60Hz	-30	836.6	-3.20	-0.004	±2.5
		-20	836.6	3.02	0.004	±2.5
		-10	836.6	-2.57	-0.003	±2.5
		0	836.6	-3.26	-0.004	±2.5
		10	836.6	-3.10	-0.004	±2.5
		+ 20 (Ref)	836.6	-3.52	-0.004	±2.5
		30	836.6	-5.01	-0.006	±2.5
		40	836.6	-2.60	-0.003	±2.5
		50	836.6	-4.13	-0.005	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VAC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	120V/60Hz	20	836.6	3.52	0.004	±2.5
115%	138V/60Hz	20	836.6	-2.32	-0.003	±2.5
85%	102V/60Hz	20	836.6	-2.95	-0.004	±2.5

Operating Frequency	2535MHz
Channel	CH2110
Test Mode	LTE Band 7
Reference Voltage	AC 120V/60Hz

Temperature vs. Frequency Stability						
Voltage (%)	Power (VAC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	120V/60Hz	-30	2535	-14.82	-0.006	±2.5
		-20	2535	-13.35	-0.005	±2.5
		-10	2535	-12.76	-0.005	±2.5
		0	2535	-11.16	-0.004	±2.5
		10	2535	-10.80	-0.004	±2.5
		+ 20 (Ref)	2535	-12.06	-0.005	±2.5
		30	2535	-11.47	-0.005	±2.5
		40	2535	-10.51	-0.004	±2.5
		50	2535	-8.04	-0.003	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VAC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	120V/60Hz	20	2535	-9.57	-0.004	±2.5
115%	138V/60Hz	20	2535	-10.31	-0.004	±2.5
85%	102V/60Hz	20	2535	-12.39	-0.005	±2.5

The End