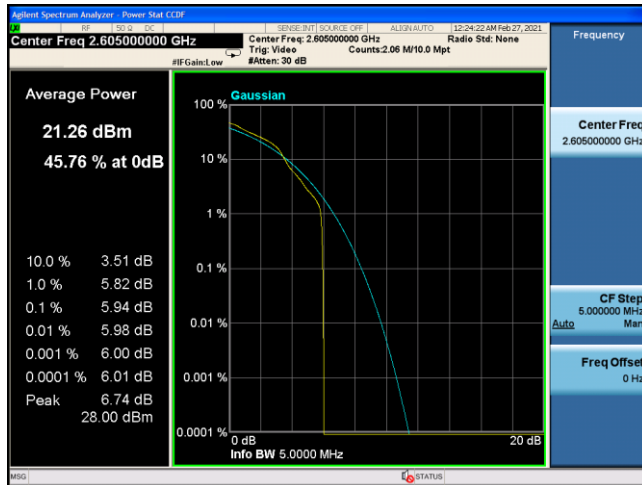
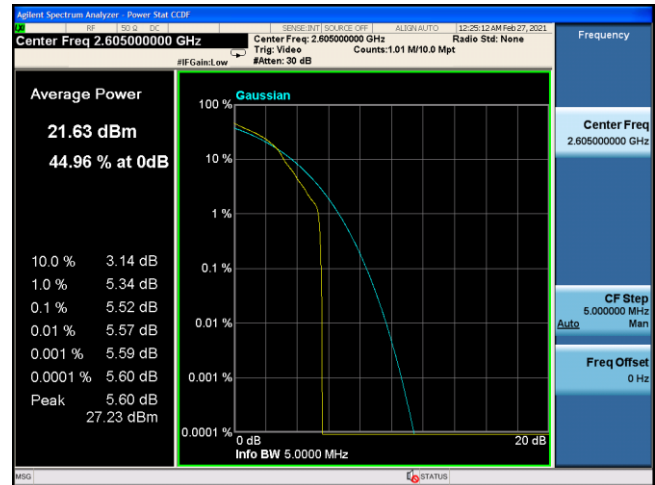


LTE Band 41 16QAM 15MHz CH40740 1RB#36



LTE Band 41 16QAM 20MHz CH40740 1RB#49



7.7. Frequency Stability Under Temperature & Voltage Variations

7.7.1 Test Limit

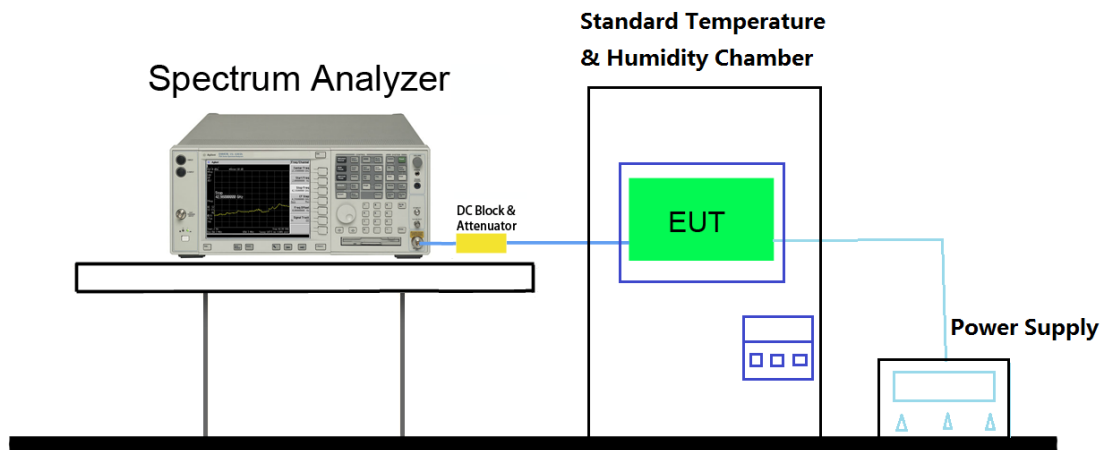
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Limit	$< \pm 2.5$ ppm
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7.7.2 Test Procedure

KDB 971168 D01v03r01 - Section 9.0 & ANSI/TIA-603-E-2016

7.7.3 Test Setup



7.7.4 Test Result

Operating Frequency	1880MHz
Channel	CH18900
Test Mode	LTE Band 2
Reference Voltage	DC 3.63V

Temperature vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	-30	1880	16.38	0.009	±2.5
		-20	1880	9.17	0.005	±2.5
		-10	1880	12.04	0.006	±2.5
		0	1880	11.82	0.006	±2.5
		10	1880	-3.18	-0.002	±2.5
		+ 20 (Ref)	1880	4.08	0.002	±2.5
		30	1880	10.54	0.006	±2.5
		40	1880	11.87	0.006	±2.5
		50	1880	13.85	0.007	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	20	1880	16.84	0.009	±2.5
115%	4.17V	20	1880	16.69	0.009	±2.5
85%	3.50V	20	1880	16.58	0.009	±2.5

Operating Frequency	1732.6MHz
Channel	CH20175
Test Mode	LTE Band 4
Reference Voltage	DC 3.63V

Temperature vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	-30	1732.5	16.77	0.010	±2.5
		-20	1732.5	-7.18	-0.004	±2.5
		-10	1732.5	18.30	0.011	±2.5
		0	1732.5	9.96	0.006	±2.5
		10	1732.5	9.28	0.005	±2.5
		+ 20 (Ref)	1732.5	9.47	0.005	±2.5
		30	1732.5	12.80	0.007	±2.5
		40	1732.5	11.72	0.007	±2.5
		50	1732.5	12.03	0.007	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	20	1732.5	-5.29	-0.003	±2.5
115%	4.17V	20	1732.5	13.09	0.008	±2.5
85%	3.50V	20	1732.5	4.81	0.003	±2.5

Operating Frequency	836.6MHz
Channel	CH20525
Test Mode	LTE Band 5
Reference Voltage	DC 3.63V

Temperature vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	-30	836.5	-4.55	-0.005	±2.5
		-20	836.5	-5.56	-0.007	±2.5
		-10	836.5	-5.39	-0.006	±2.5
		0	836.5	-3.15	-0.004	±2.5
		10	836.5	-6.49	-0.008	±2.5
		+ 20 (Ref)	836.5	-5.22	-0.006	±2.5
		30	836.5	-2.82	-0.003	±2.5
		40	836.5	-6.69	-0.008	±2.5
		50	836.5	-6.14	-0.007	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	20	836.5	-6.14	-0.007	±2.5
115%	4.17V	20	836.5	-4.63	-0.006	±2.5
85%	3.50V	20	836.5	2.70	0.003	±2.5

Operating Frequency	2535MHz
Channel	CH2110
Test Mode	LTE Band 7
Reference Voltage	DC 3.63V

Temperature vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	-30	2535	12.04	0.005	±2.5
		-20	2535	11.24	0.004	±2.5
		-10	2535	9.53	0.004	±2.5
		0	2535	6.41	0.003	±2.5
		10	2535	-8.13	-0.003	±2.5
		+ 20 (Ref)	2535	9.48	0.004	±2.5
		30	2535	-9.53	-0.004	±2.5
		40	2535	11.93	0.005	±2.5
		50	2535	8.81	0.003	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	20	2535	13.22	0.005	±2.5
115%	4.17V	20	2535	-8.57	-0.003	±2.5
85%	3.50V	20	2535	14.18	0.006	±2.5

Operating Frequency	710MHz
Channel	CH23790
Test Mode	LTE Band 17
Reference Voltage	DC 3.63V

Temperature vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	-30	710	8.27	0.012	±2.5
		-20	710	8.74	0.012	±2.5
		-10	710	6.31	0.009	±2.5
		0	710	4.35	0.006	±2.5
		10	710	3.99	0.006	±2.5
		+ 20 (Ref)	710	3.69	0.005	±2.5
		30	710	6.90	0.010	±2.5
		40	710	2.98	0.004	±2.5
		50	710	8.60	0.012	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	20	710	3.23	0.005	±2.5
115%	4.17V	20	710	6.17	0.009	±2.5
85%	3.50V	20	710	10.01	0.014	±2.5

Operating Frequency	2605MHz
Channel	CH40740
Test Mode	LTE Band 41
Reference Voltage	DC 3.63V

Temperature vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	-30	2605	11.46	0.004	±2.5
		-20	2605	9.71	0.004	±2.5
		-10	2605	14.79	0.006	±2.5
		0	2605	16.02	0.006	±2.5
		10	2605	10.14	0.004	±2.5
		+ 20 (Ref)	2605	17.48	0.007	±2.5
		30	2605	17.07	0.007	±2.5
		40	2605	18.01	0.007	±2.5
		50	2605	15.36	0.006	±2.5
Voltage vs. Frequency Stability						
Voltage (%)	Power (VDC)	Temp (°C)	Declared Frequency (MHz)	Measured Frequency (Hz)	Frequency Tolerance (ppm)	Limit (ppm)
100%	3.63V	20	2605	18.55	0.007	±2.5
115%	4.17V	20	2605	13.82	0.005	±2.5
85%	3.50V	20	2605	14.75	0.006	±2.5

The End