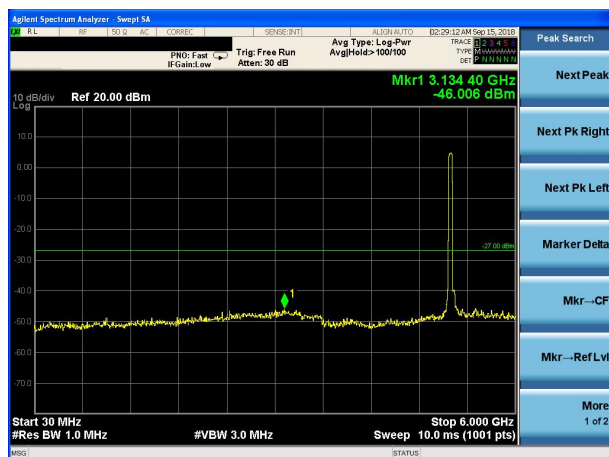
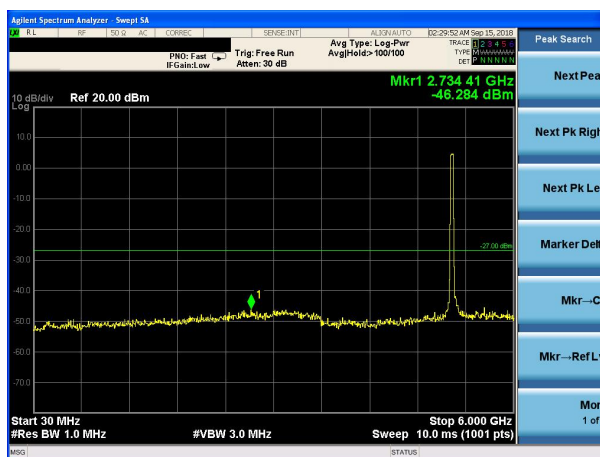


Test Plot

802.11n40 on channel 38



802.11n40 on channel 46



802.11n40 on channel 38

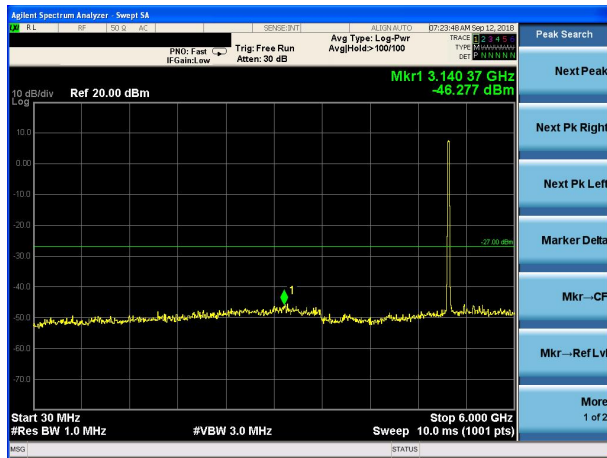


802.11n40 on channel 46

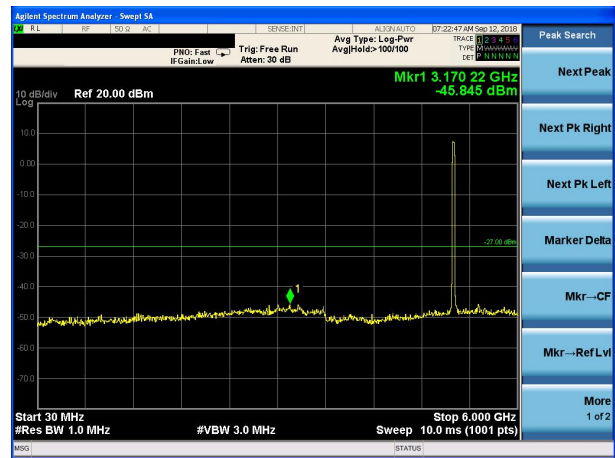


Test Plot

802.11ac20 on channel 36



802.11ac20 on channel 40



802.11ac20 on channel 36



802.11ac20 on channel 40

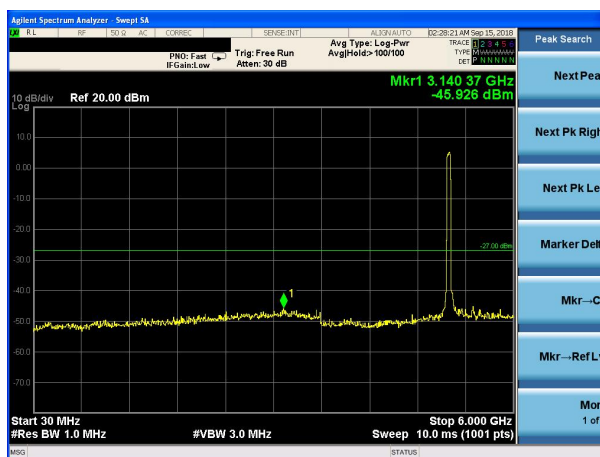


Test Plot

802.11ac20 on channel 48



802.11ac40 on channel 38



802.11ac20 on channel 48

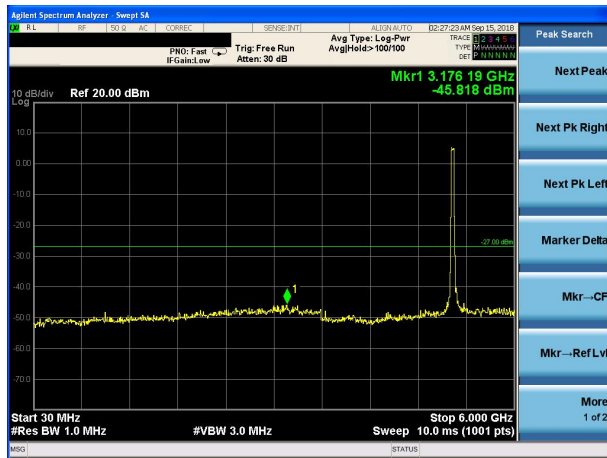


802.11ac40 on channel 38

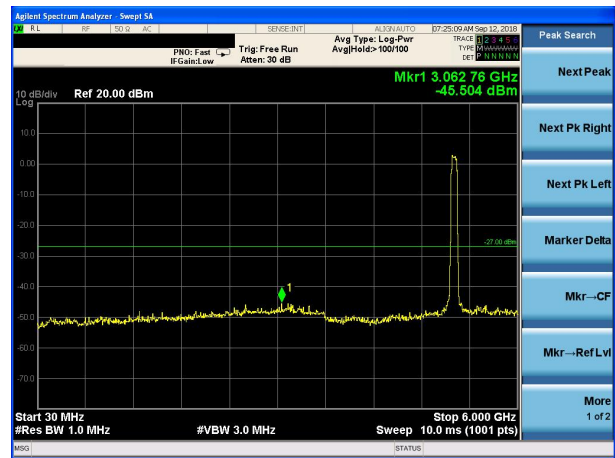


Test Plot

802.11ac40 on channel 46



802.11ac80 on channel 42



802.11 ac40 on channel 46



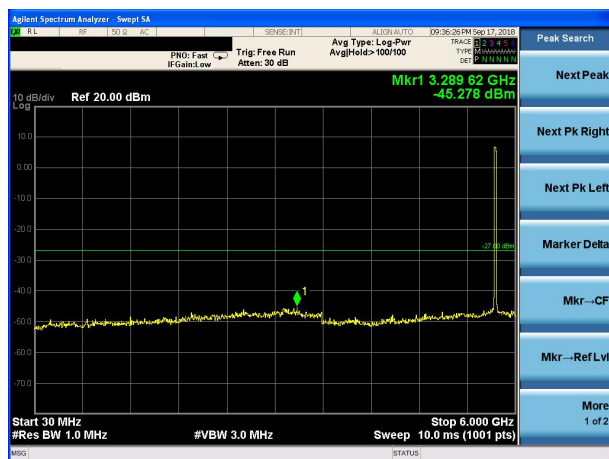
802.11ac80 on channel 42



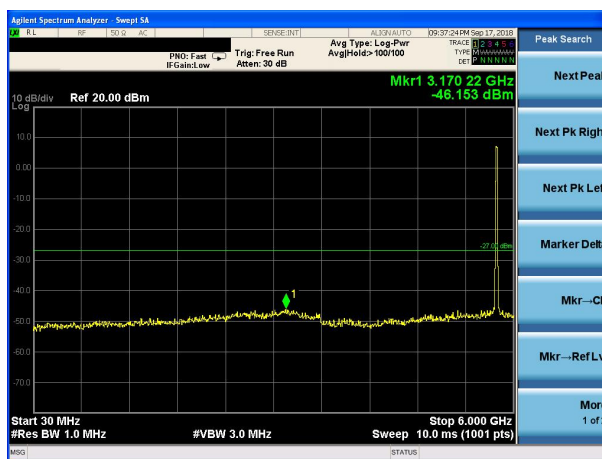
5.8G

Test Plot

802.11a on channel 149



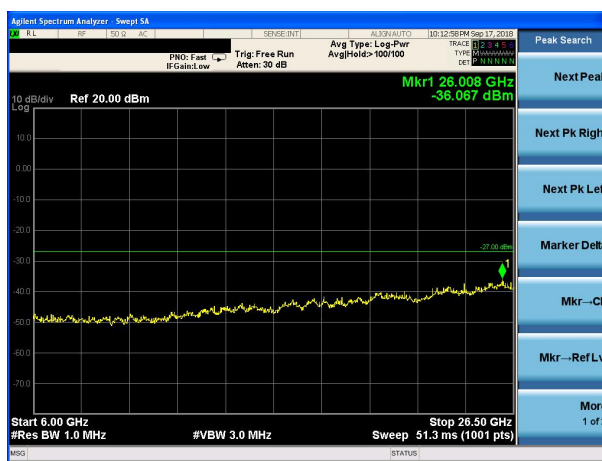
802.11a on channel 157



802.11a on channel 149

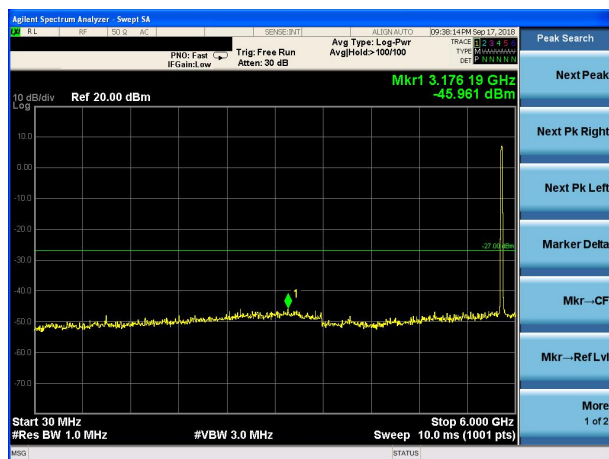


802.11a on channel 157



Test Plot

802.11a on channel 165



802.11n20 on channel 149



802.11a on channel 165

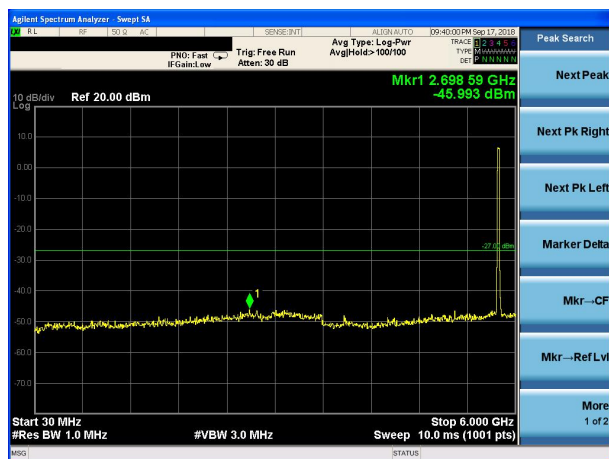


802.11n20 on channel 149

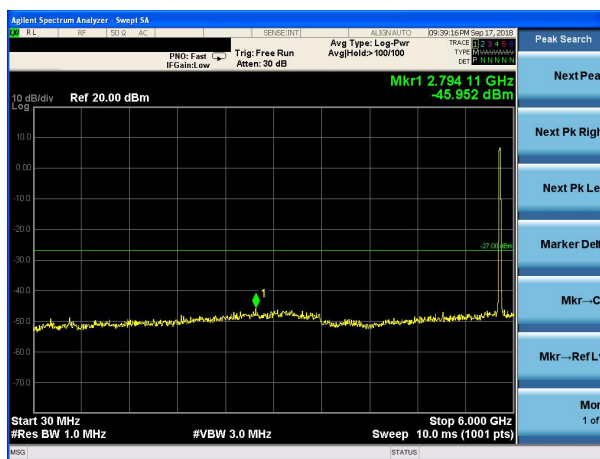


Test Plot

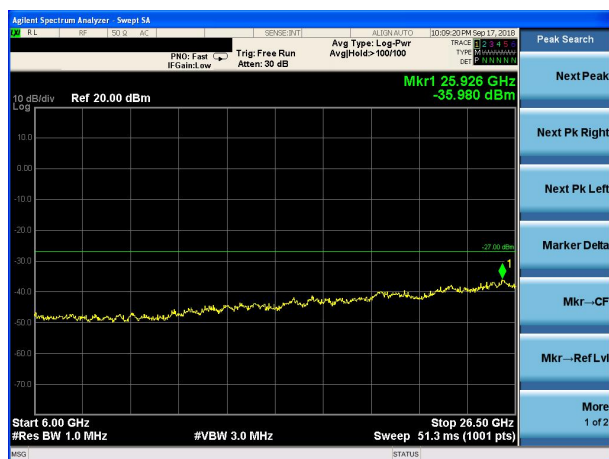
802.11n20 on channel 157



802.11n20 on channel 165



802.11n20 on channel 157



802.11n20 on channel 165

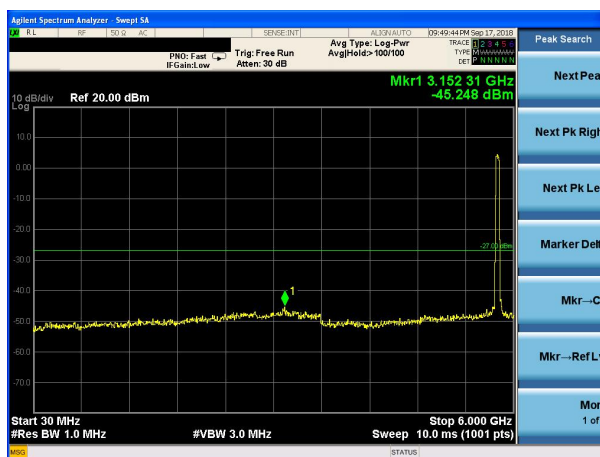


Test Plot

802.11n40 on channel 151



802.11n40 on channel 159



802.11n40 on channel 151



802.11n40 on channel 159

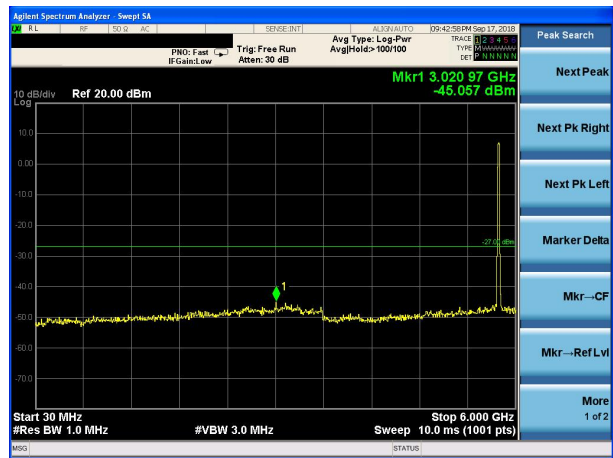


Test Plot

802.11ac20 on channel 149



802.11ac20 on channel 157



802.11ac20 on channel 149

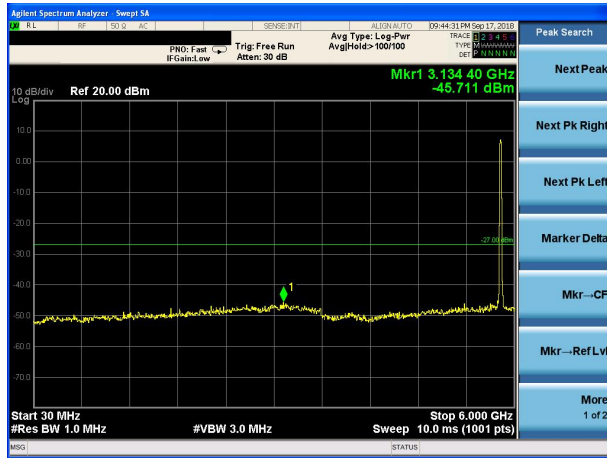


802.11ac20 on channel 157

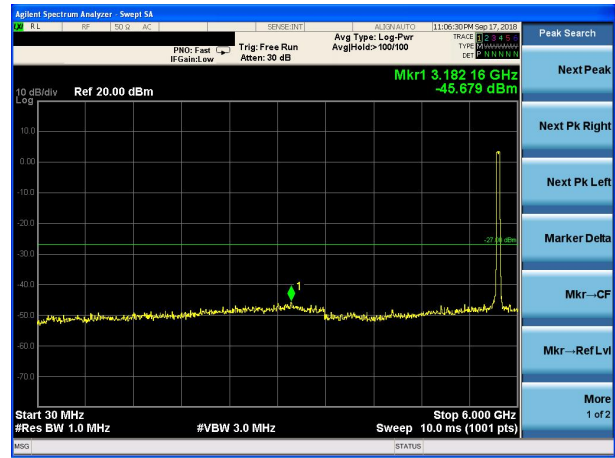


Test Plot

802.11ac20 on channel 165



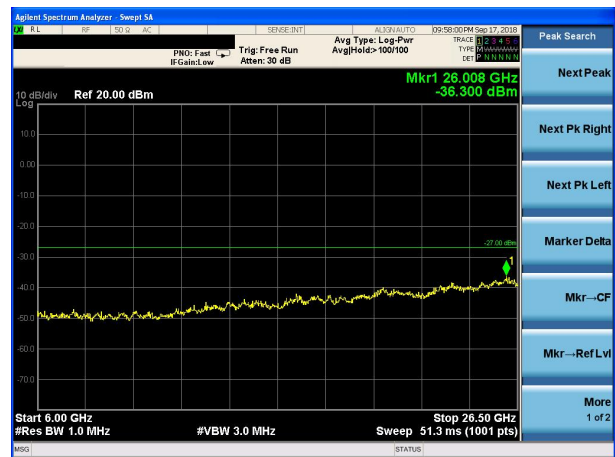
802.11ac40 on channel 151



802.11ac20 on channel 165

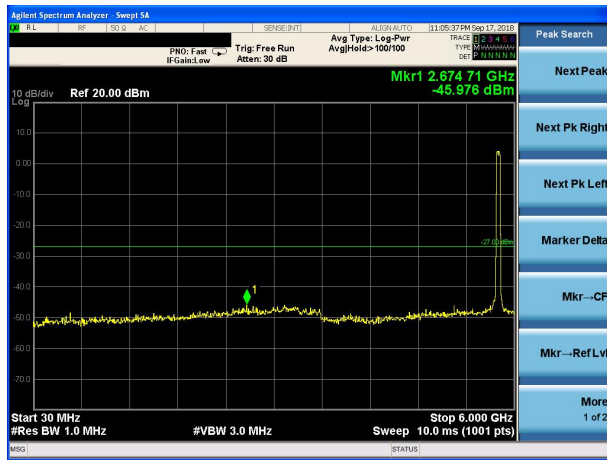


802.11ac40 on channel 151

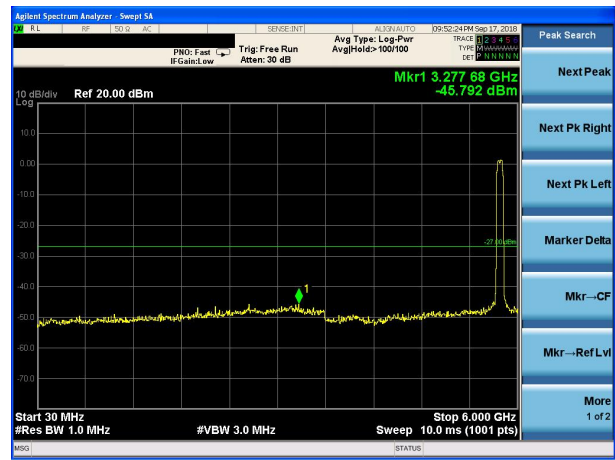


Test Plot

802.11ac40 on channel 159



802.11ac80 on channel 155



802.11 ac40 on channel 159



802.11ac80 on channel 155



10. Frequency Stability Measurement

10.1 LIMIT

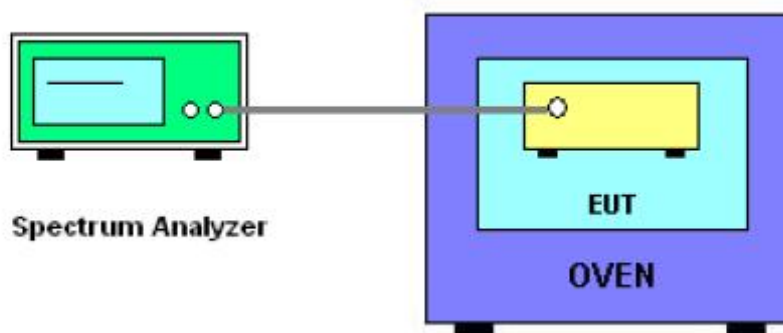
Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

10.2 TEST PROCEDURES

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. f_c is declaring of channel frequency. Then the frequency error formula is $(f_c - f)/f_c \times 10^6$ ppm and the limit is less than ± 20 ppm (IEEE 802.11n specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is $-20^\circ\text{C} \sim 70^\circ\text{C}$.

10.3 TEST SETUP LAYOUT



10.4 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously un-modulation transmitting mode.

10.5 TEST RESULTS

EUT :	Notebook	Model Name. :	G139
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 7.6V
Test Mode :	TX Frequency Band I (5150-5250MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	7.60	5180.0235	5180	0.0235	-4.5367
		V max (V)	8.74	5180.0153	5180	0.0153	-2.9537
		V min (V)	6.46	5180.0124	5180	0.0124	-2.3938
Limits				± 20 ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	-20	5180.0123	5180	0.0123	-2.3745
		T (°C)	-10	5180.0127	5180	0.0127	-2.4517
		T (°C)	0	5180.0265	5180	0.0265	-5.1158
		T (°C)	10	5180.0148	5180	0.0148	-2.8571
		T (°C)	20	5180.0132	5180	0.0132	-2.5483
		T (°C)	30	5180.0146	5180	0.0146	-2.8185
		T (°C)	40	5180.0129	5180	0.0129	-2.4903
		T (°C)	50	5180.0155	5180	0.0155	-2.9923
		T (°C)	60	5180.0173	5180	0.0173	-3.3398
		T (°C)	70	5180.0129	5180	0.0129	-2.4903
Limits				± 20 ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	7.60	5200.0169	5200	0.0169	-3.2500
		V max (V)	8.74	5200.0127	5200	0.0127	-2.4423
		V min (V)	6.46	5200.0145	5200	0.0145	-2.7885
Limits				± 20 ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	-20	5200.0324	5200	0.0324	-6.2308
		T (°C)	-10	5200.0136	5200	0.0136	-2.6154
		T (°C)	0	5200.0324	5200	0.0324	-6.2308
		T (°C)	10	5200.0219	5200	0.0219	-4.2115
		T (°C)	20	5200.0147	5200	0.0147	-2.8269
		T (°C)	30	5200.0134	5200	0.0134	-2.5769
		T (°C)	40	5200.0193	5200	0.0193	-3.7115
		T (°C)	50	5200.0185	5200	0.0185	-3.5577
		T (°C)	60	5200.0142	5200	0.0142	-2.7308
		T (°C)	70	5200.0135	5200	0.0135	-2.5962
Limits				± 20 ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	7.60	5240.0129	5240	0.0129	-2.4618
		V max (V)	8.74	5240.0186	5240	0.0186	-3.5496
		V min (V)	6.46	5240.0169	5240	0.0169	-3.2252
Limits				± 20 ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	-20	5240.0126	5240	0.0126	-2.4046
		T (°C)	-10	5240.0168	5240	0.0168	-3.2061
		T (°C)	0	5240.0166	5240	0.0166	-3.1679
		T (°C)	10	5240.0241	5240	0.0241	-4.5992
		T (°C)	20	5240.0137	5240	0.0137	-2.6145
		T (°C)	30	5240.0159	5240	0.0159	-3.0344
		T (°C)	40	5240.0189	5240	0.0189	-3.6069
		T (°C)	50	5240.0177	5240	0.0177	-3.3779
		T (°C)	60	5240.0139	5240	0.0139	-2.6527
		T (°C)	70	5240.0123	5240	0.0123	-2.3473
Limits				± 20 ppm			
Result				Complies			

EUT :	Notebook	Model Name. :	G139
Temperature :	25 °C	Relative Humidity :	56%
Pressure :	1012 hPa	Test Voltage :	DC 7.6V
Test Mode :	TX Frequency(5745-5825MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (° C)	20	V nom (V)	7.60	5745.00138	5745	0.00138	-0.2402
		V max (V)	8.74	5745.00840	5745	0.00840	-1.4622
		V min (V)	6.46	5745.00429	5745	0.00429	-0.7474
Limits				± 20 ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	-20	5745.01987	5745	0.01987	-3.4581
		T (°C)	-10	5745.01822	5745	0.01822	-3.1715
		T (°C)	0	5745.01176	5745	0.01176	-2.0470
		T (°C)	10	5745.01343	5745	0.01343	-2.3377
		T (°C)	20	5745.01101	5745	0.01101	-1.9158
		T (°C)	30	5745.01226	5745	0.01226	-2.1337
		T (°C)	40	5745.01653	5745	0.01653	-2.8773
		T (°C)	50	5745.01617	5745	0.01617	-2.8146
		T (°C)	60	5745.01476	5745	0.01476	-2.5692
		T (°C)	70	5745.01262	5745	0.01262	-2.1967
Limits				± 20 ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	7.60	5785.00106	5785	0.00106	-0.1829
		V max (V)	8.74	5785.00571	5785	0.00571	-0.9876
		V min (V)	6.46	5785.00555	5785	0.00555	-0.9589
Limits				± 20 ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	-20	5785.01313	5785	0.01313	-2.2704
		T (°C)	-10	5785.01530	5785	0.01530	-2.6453
		T (°C)	0	5785.01839	5785	0.01839	-3.1787
		T (°C)	10	5785.01148	5785	0.01148	-1.9846
		T (°C)	20	5785.01621	5785	0.01621	-2.8029
		T (°C)	30	5785.01287	5785	0.01287	-2.2255
		T (°C)	40	5785.01044	5785	0.01044	-1.8042
		T (°C)	50	5785.01464	5785	0.01464	-2.5307
		T (°C)	60	5785.01796	5785	0.01796	-3.1043
		T (°C)	70	5785.01774	5785	0.01774	-3.0672
Limits				± 20 ppm			
Result				Complies			

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	7.60	5825.00485	5825	0.00485	-0.8332
		V max (V)	8.74	5825.00213	5825	0.00213	-0.3663
		V min (V)	6.46	5825.00620	5825	0.00620	-1.0640
Limits				± 20 ppm			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	7.6	T (°C)	-20	5825.01156	5825	0.01156	-1.9853
		T (°C)	-10	5825.01709	5825	0.01709	-2.9341
		T (°C)	0	5825.01340	5825	0.01340	-2.3012
		T (°C)	10	5825.01054	5825	0.01054	-1.8090
		T (°C)	20	5825.01143	5825	0.01143	-1.9630
		T (°C)	30	5825.01922	5825	0.01922	-3.2996
		T (°C)	40	5825.01743	5825	0.01743	-2.9927
		T (°C)	50	5825.01150	5825	0.01150	-1.9746
		T (°C)	60	5825.01885	5825	0.01885	-3.2360
		T (°C)	70	5825.01594	5825	0.01594	-2.7359
Limits				± 20 ppm			
Result				Complies			

11. ANTENNA REQUIREMENT

11.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

11.2 EUT ANTENNA

The EUT antenna is permanent attached FPCB antenna(antenna gain:0.87dBi). It comply with the standard requirement.

END OF REPORT