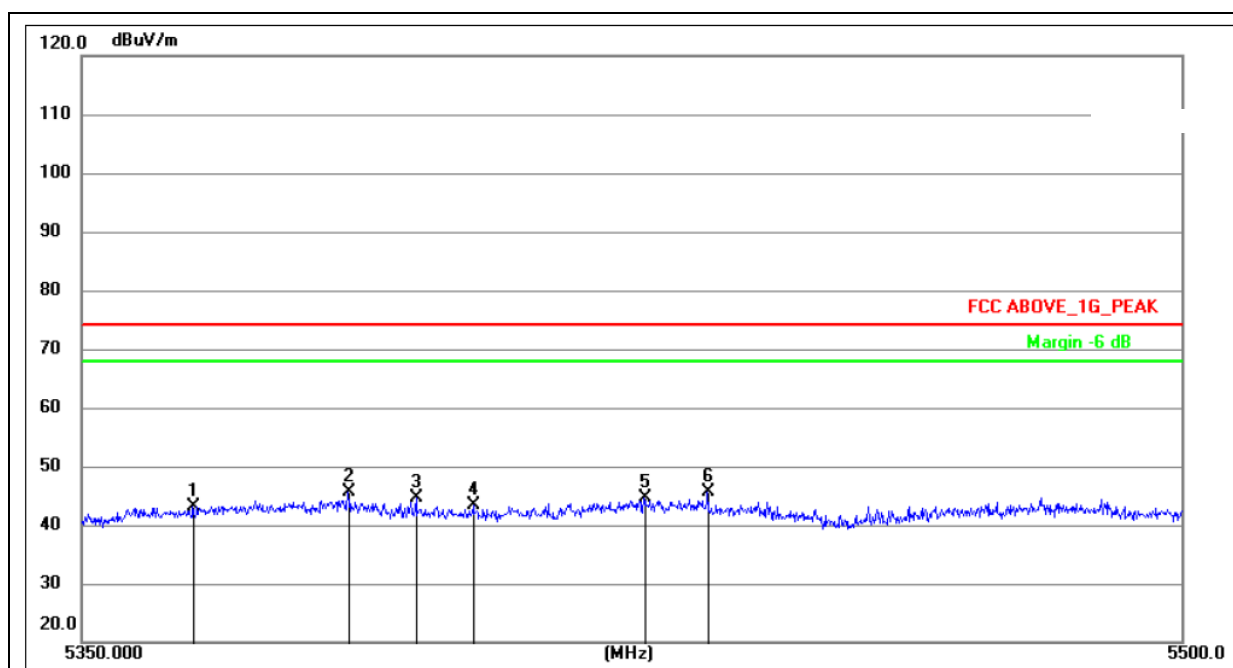


Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Vertical
Test Voltage :	DC 12V	Remark:	N/A



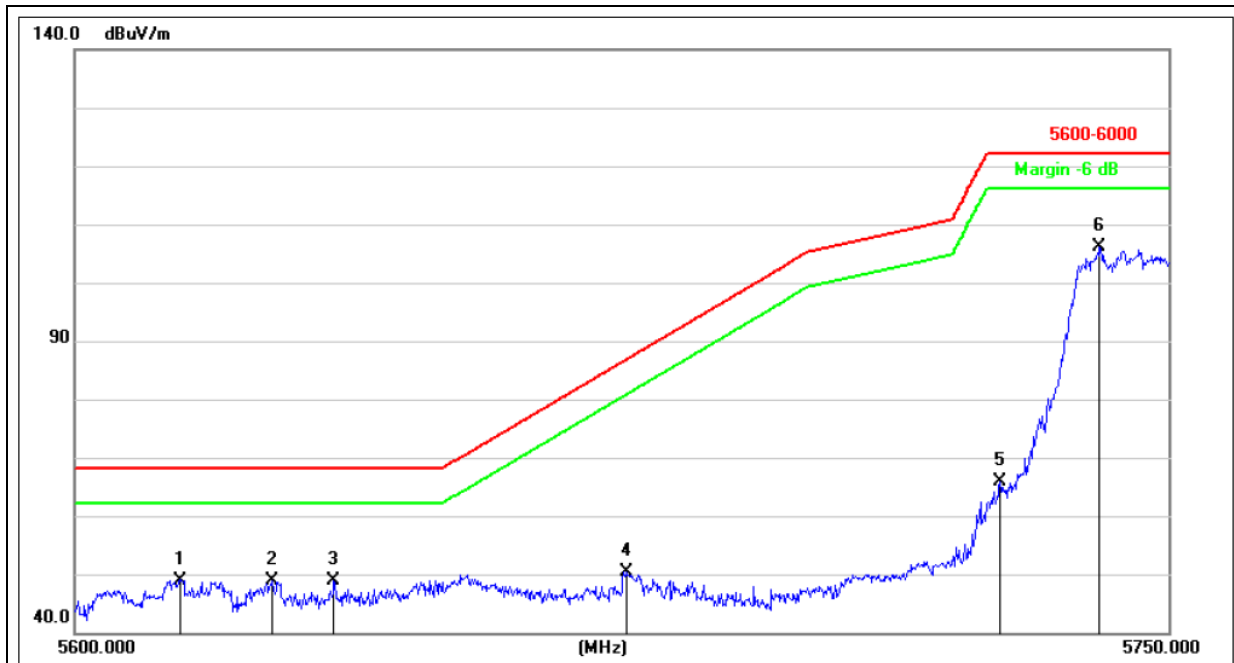
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5365.000	41.96	1.26	43.22	74.00	-30.78	peak
2	5386.000	44.27	1.35	45.62	74.00	-28.38	peak
3	5395.300	43.31	1.39	44.70	74.00	-29.30	peak
4	5402.950	42.00	1.42	43.42	74.00	-30.58	peak
5	5426.200	42.99	1.52	44.51	74.00	-29.49	peak
6	5434.900	43.96	1.56	45.52	74.00	-28.48	peak

Note:

1. This EUT was tested in 802.11a/n(HT20),n(HT40) mode and 802.11a Antenna A the worst case position data was reported.

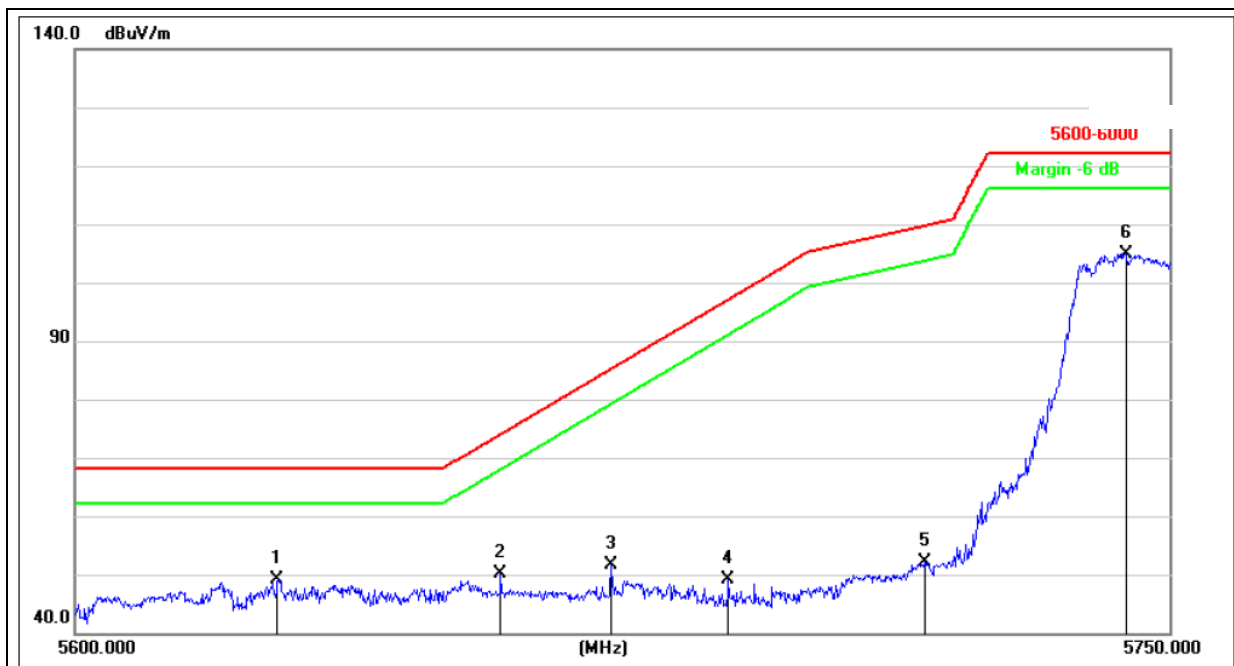
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Horizontal
Test Voltage :	DC 12V	Remark:	N/A



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5614.250	46.68	2.32	49.00	68.20	-19.20	peak
2	5627.000	46.54	2.37	48.91	68.20	-19.29	peak
3	5635.250	46.49	2.41	48.90	68.20	-19.30	peak
4	5675.300	47.84	2.58	50.42	86.96	-36.54	peak
5	5726.750	63.07	2.80	65.87	122.20	-56.33	peak
6	5740.550	103.20	2.86	106.06	122.20	-16.14	peak

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Vertical
Test Voltage :	DC 12V	Remark:	N/A



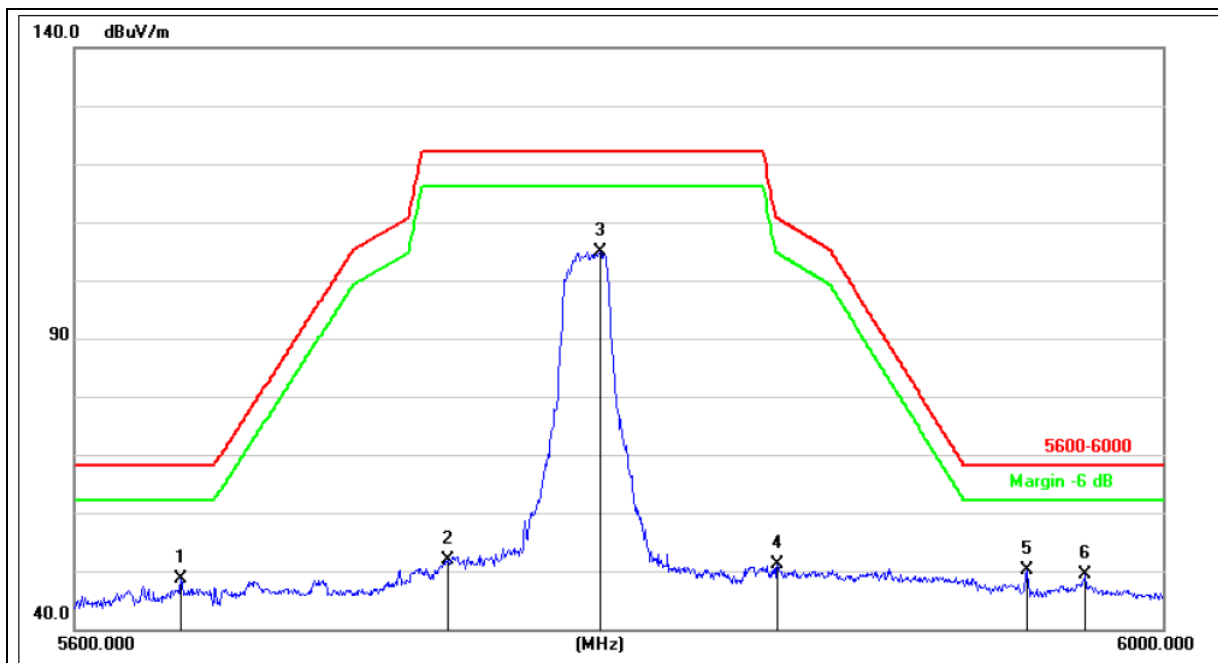
Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5627.600	46.63	2.38	49.01	68.20	-19.19	peak
2	5657.900	47.56	2.51	50.07	74.07	-24.00	peak
3	5673.050	49.12	2.57	51.69	85.30	-33.61	peak
4	5689.100	46.51	2.64	49.15	97.16	-48.01	peak
5	5716.100	49.44	2.75	52.19	109.71	-57.52	peak
6	5744.000	102.07	2.87	104.94	122.20	-17.26	peak

Note:

1. This EUT was tested in 802.11a/n(HT20),n(HT40),ac(HT20), ac(HT40), ac(HT80) mode and 802.11a Antenna A the worst case position data was reported.

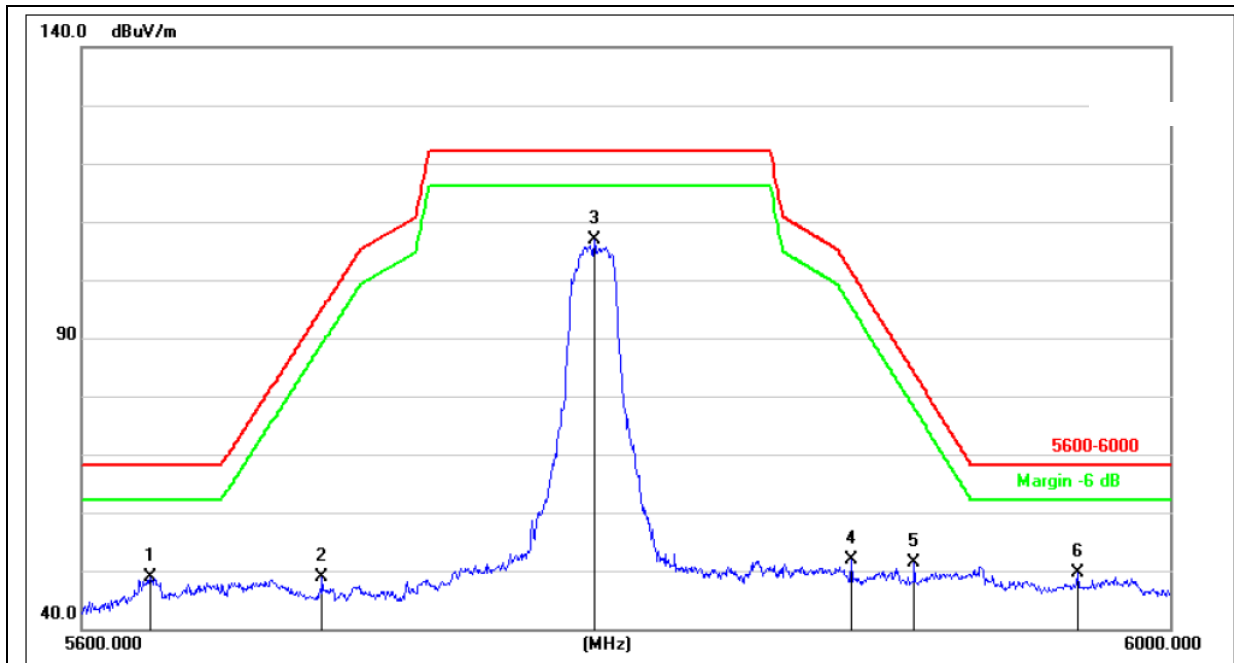
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Horizontal
Test Voltage :	DC 12V	Remark:	N/A



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5638.000	46.19	2.42	48.61	68.20	-19.59	peak
2	5734.400	48.98	2.83	51.81	122.20	-70.39	peak
3	5790.000	101.85	3.07	104.92	122.20	-17.28	peak
4	5855.600	47.69	3.35	51.04	110.63	-59.59	peak
5	5948.800	46.30	3.74	50.04	68.20	-18.16	peak
6	5970.800	45.58	3.84	49.42	68.20	-18.78	peak

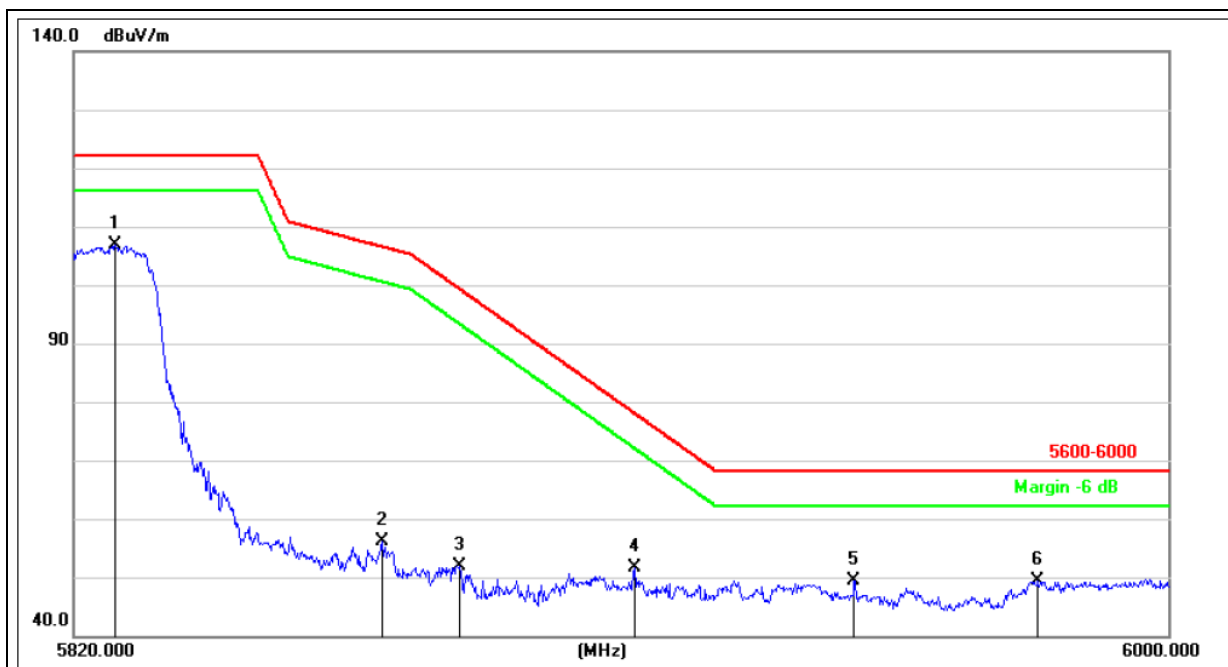
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Vertical
Test Voltage :	DC 12V	Remark:	N/A



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5624.400	46.42	2.36	48.78	68.20	-19.42	peak
2	5686.400	46.20	2.63	48.83	95.17	-46.34	peak
3	5785.200	103.80	3.05	106.85	122.20	-15.35	peak
4	5880.000	48.40	3.45	51.85	101.49	-49.64	peak
5	5903.600	47.90	3.55	51.45	84.00	-32.55	peak
6	5965.200	45.94	3.81	49.75	68.20	-18.45	peak

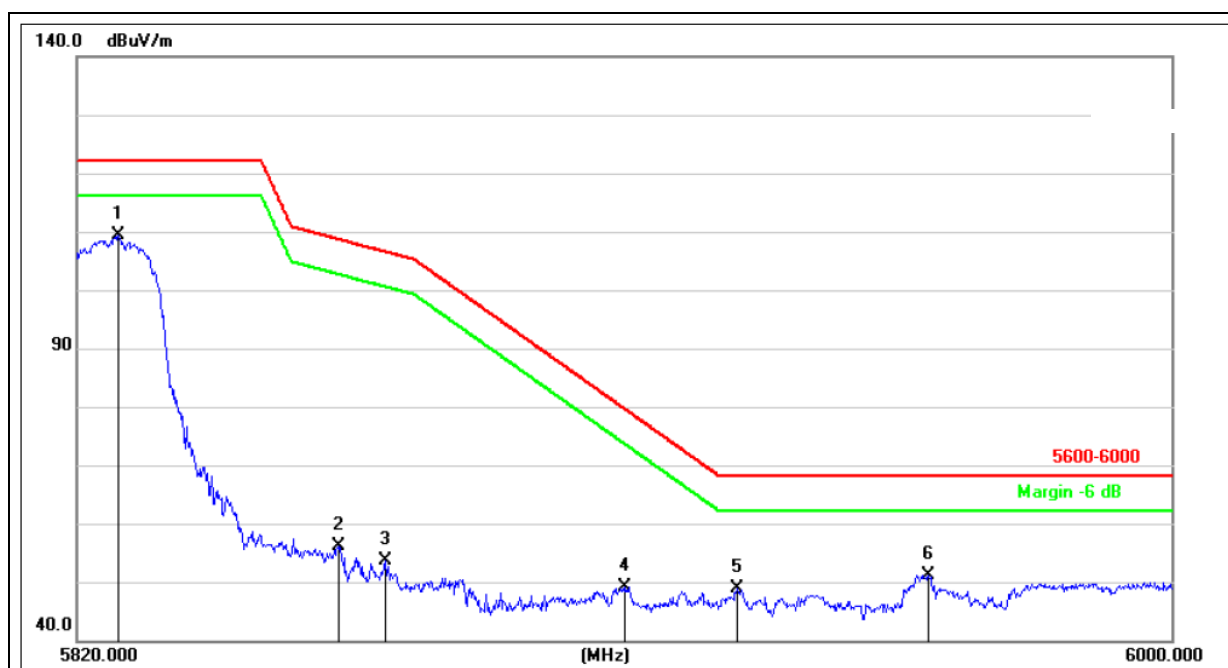
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Horizontal
Test Voltage :	DC 12V	Remark:	N/A



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5826.840	103.65	3.22	106.87	122.20	-15.33	peak
2	5870.220	52.61	3.41	56.02	106.54	-50.52	peak
3	5882.820	48.47	3.46	51.93	99.39	-47.46	peak
4	5911.800	47.96	3.59	51.55	77.94	-26.39	peak
5	5947.800	45.69	3.74	49.43	68.20	-18.77	peak
6	5978.400	45.60	3.87	49.47	68.20	-18.73	peak

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101 kPa	Polarization :	Vertical
Test Voltage :	DC 12V	Remark:	N/A



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5826.840	106.15	3.22	109.37	122.20	-12.83	peak
2	5862.660	52.85	3.38	56.23	108.65	-52.42	peak
3	5870.220	50.11	3.41	53.52	106.54	-53.02	peak
4	5909.640	45.64	3.58	49.22	79.53	-30.31	peak
5	5928.000	45.26	3.65	48.91	68.20	-19.29	peak
6	5959.680	47.37	3.79	51.16	68.20	-17.04	peak

Note:

1. This EUT was tested in 802.11a/n(HT20),n(HT40) mode and 802.11a Antenna A the worst case position data was reported.

12. SPURIOUS RF CONDUCTED EMISSIONS

12.1 Block Diagram Of Test Setup



12.2 Limit

Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.725-5.85 GHz band(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge..

12.3 Test procedure

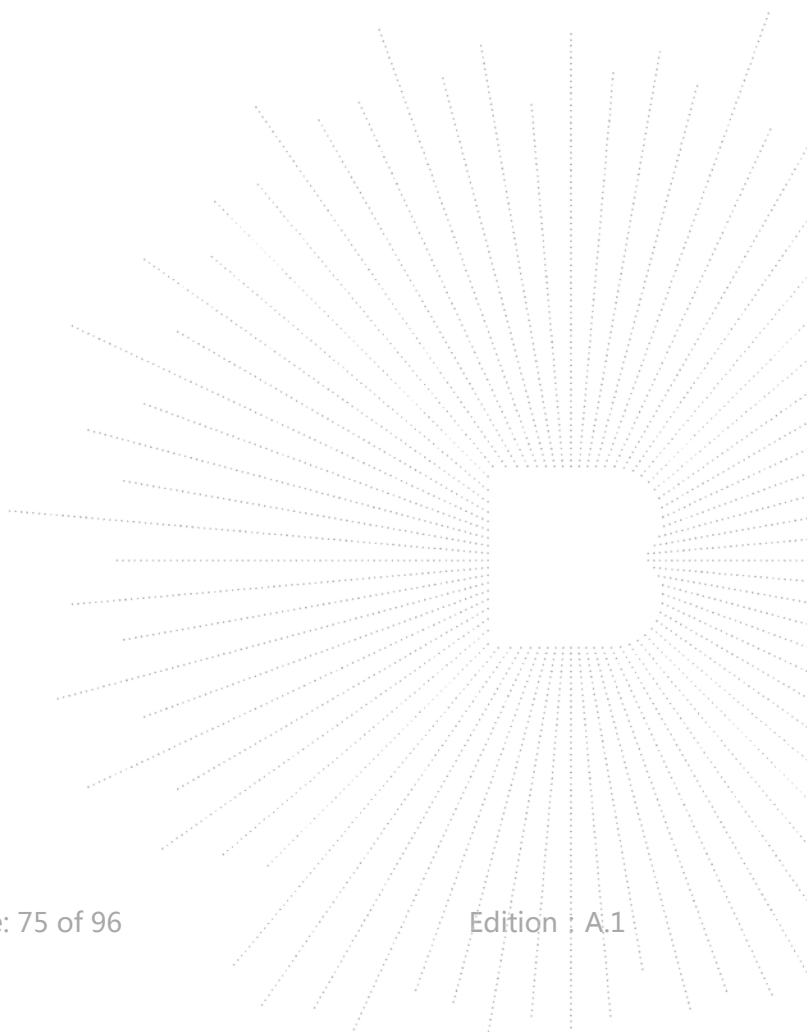
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

12.4 Test Result

Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandedge measurement data.

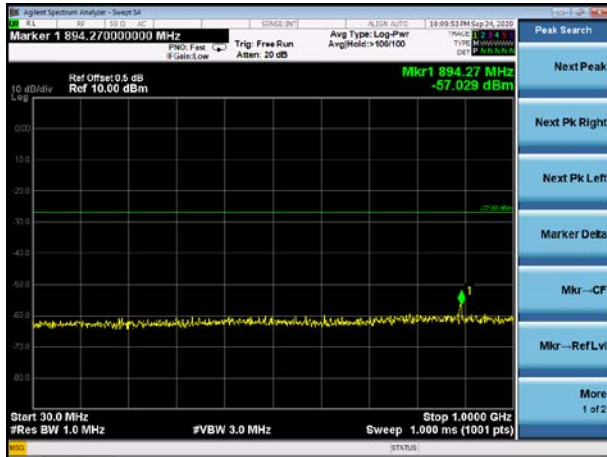
About:26.5GHz-40GHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B ,only shown Antenna B Plot.

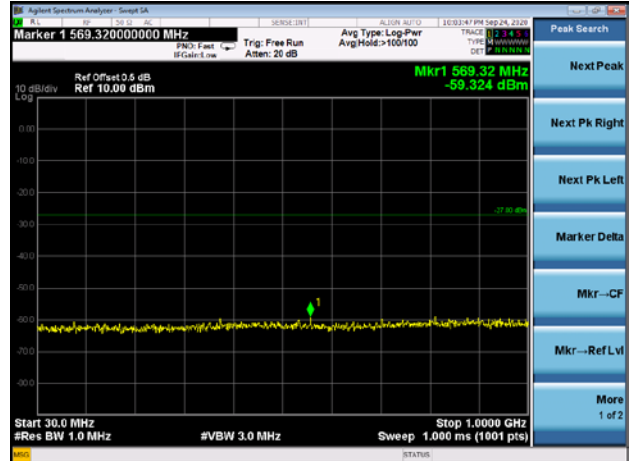


Test Plot

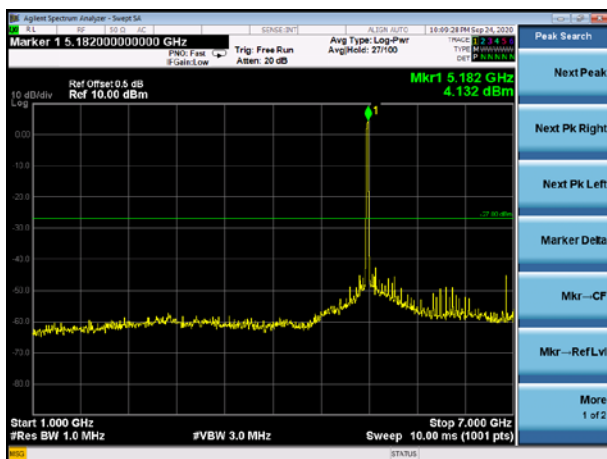
802.11a on channel 36



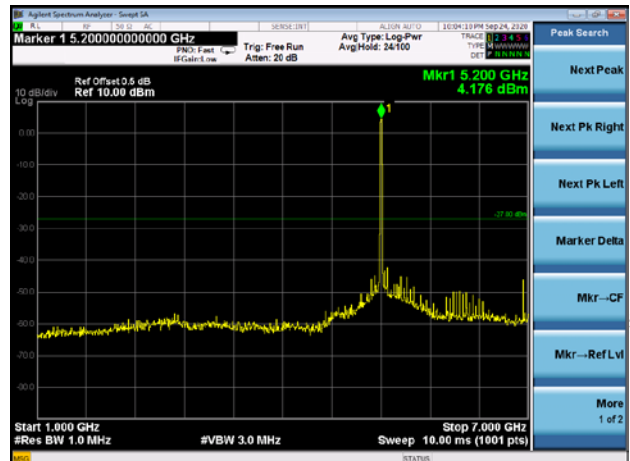
802.11a on channel 40



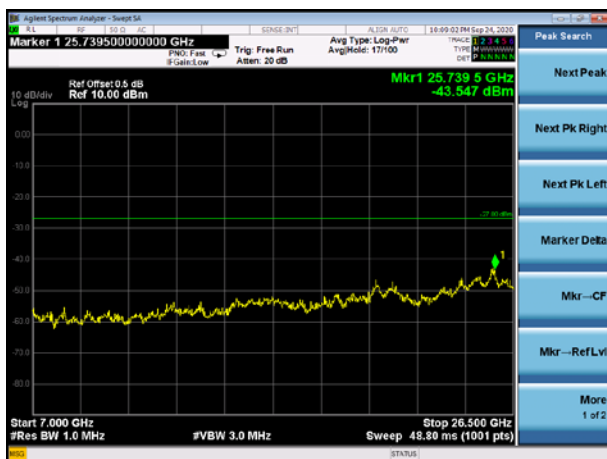
802.11a on channel 36



802.11a on channel 40



802.11a on channel 36

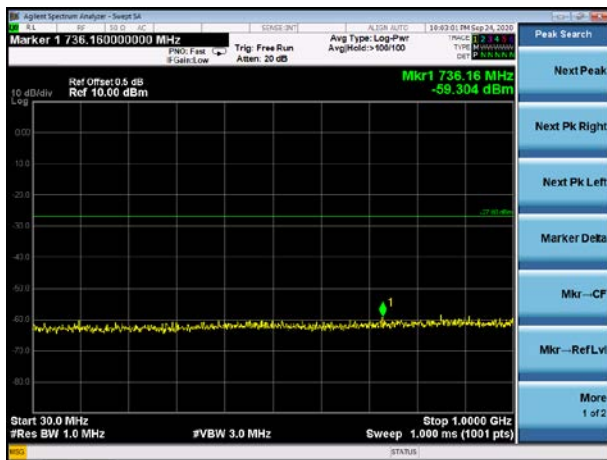


802.11a on channel 40

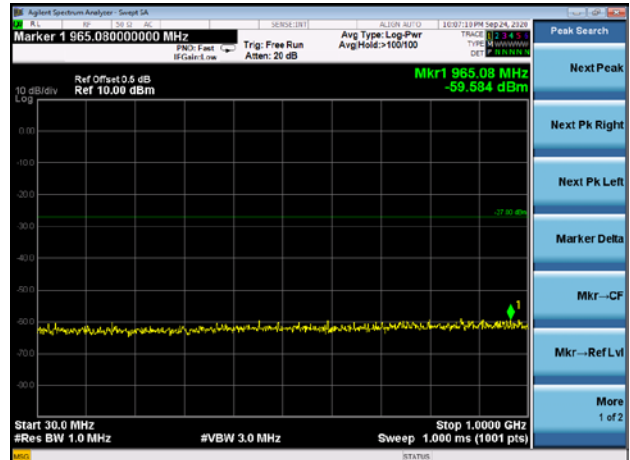


Test Plot

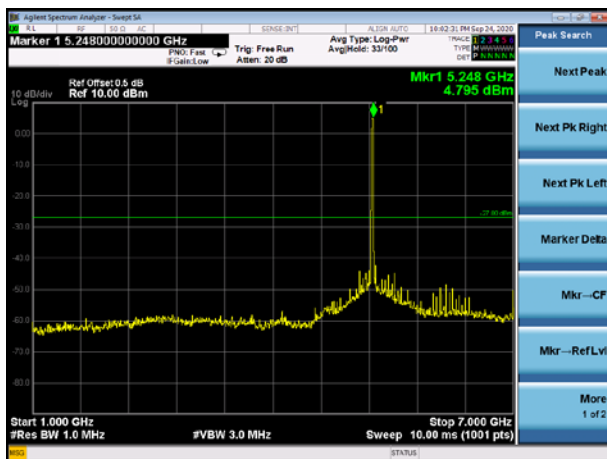
802.11a on channel 48



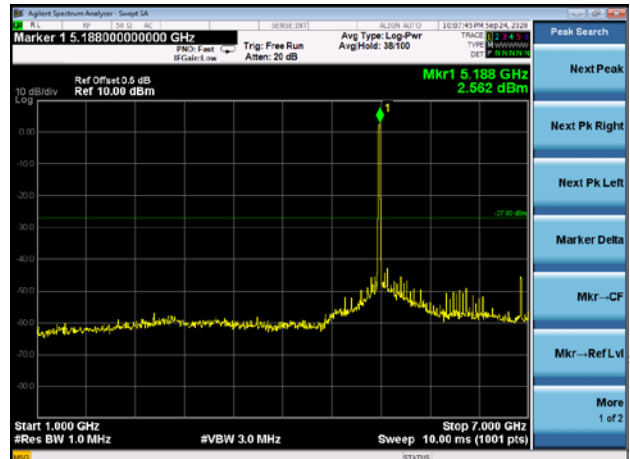
802.11n20 on channel 36



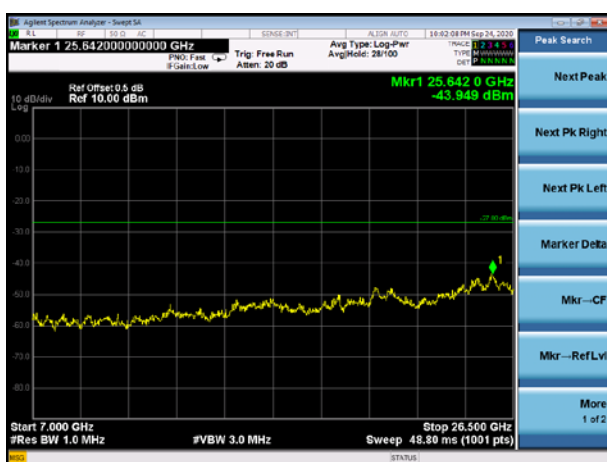
802.11a on channel 48



802.11n20 on channel 36



802.11a on channel 48

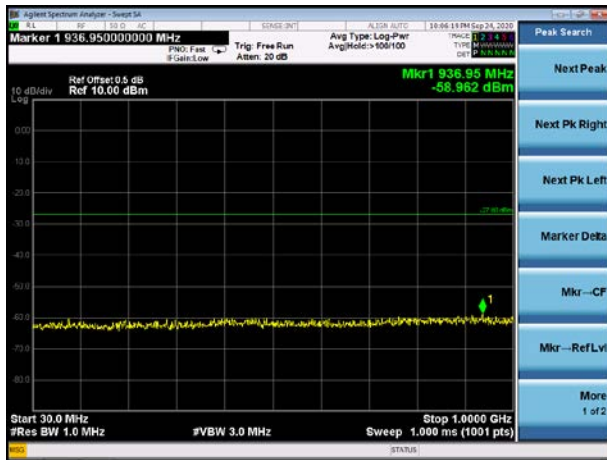


802.11n20 on channel 36

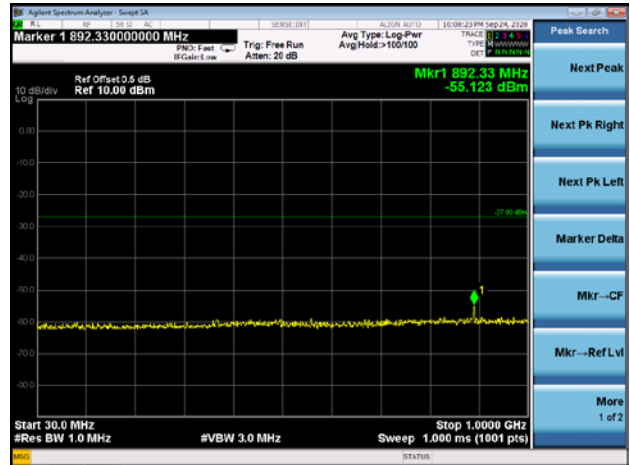


Test Plot

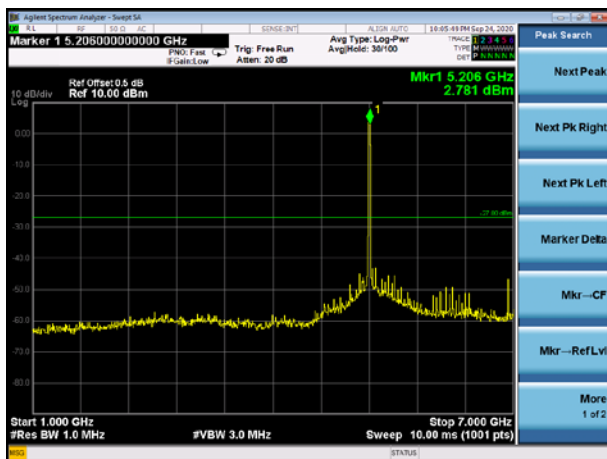
802.11n20 on channel 40



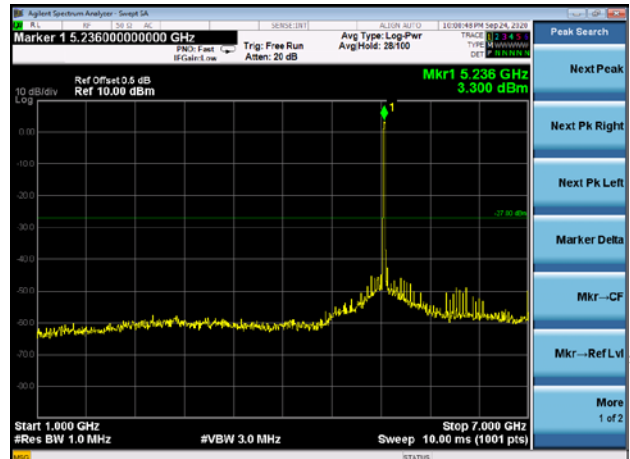
802.11n20 on channel 48



802.11n20 on channel 40



802.11n20 on channel 48



802.11n20 on channel 40

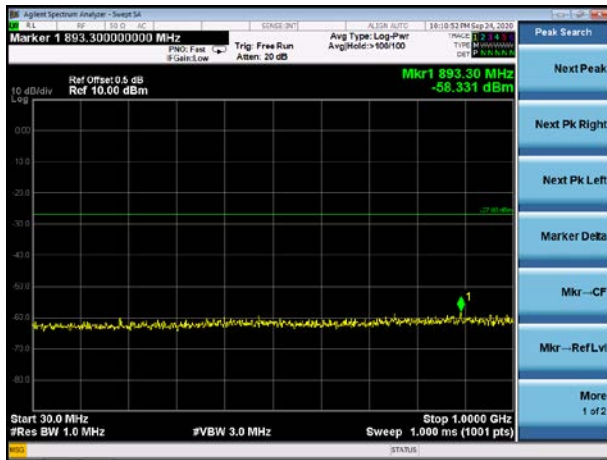


802.11n20 on channel 48

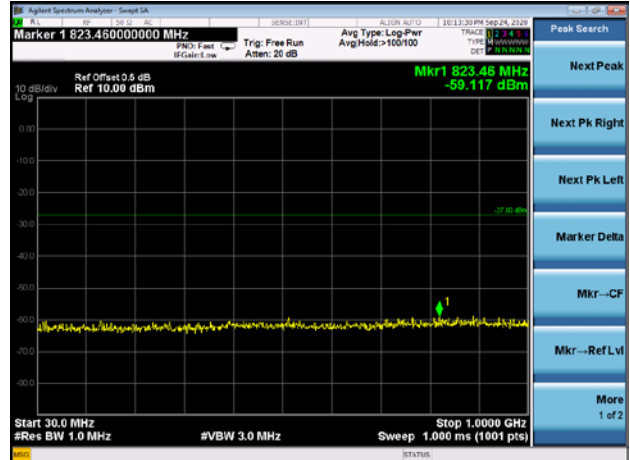


Test Plot

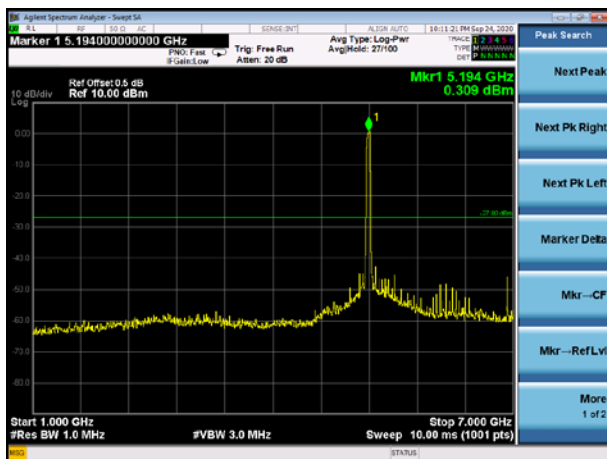
802.11n40 on channel 38



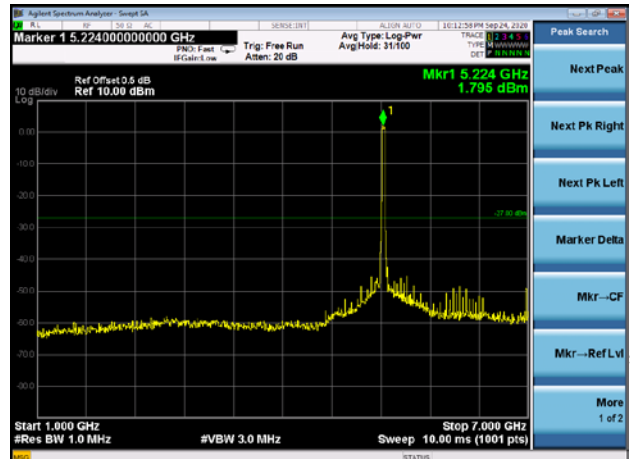
802.11n40 on channel 46



802.11n40 on channel 38



802.11n40 on channel 46



802.11n40 on channel 38

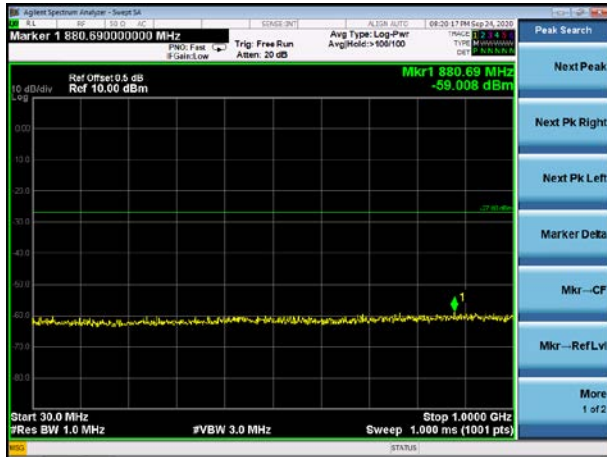


802.11n40 on channel 46

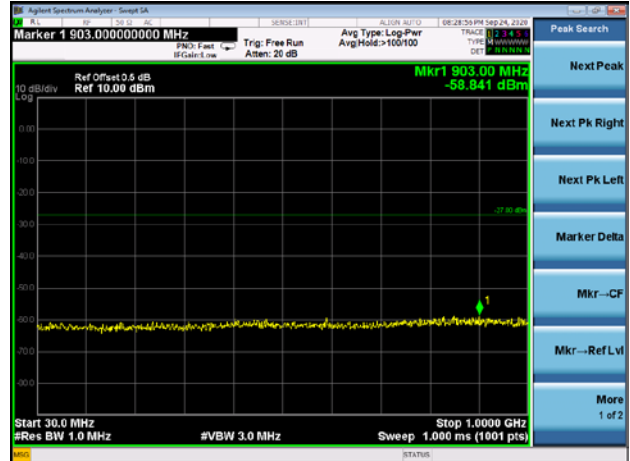


5.8G Test Plot

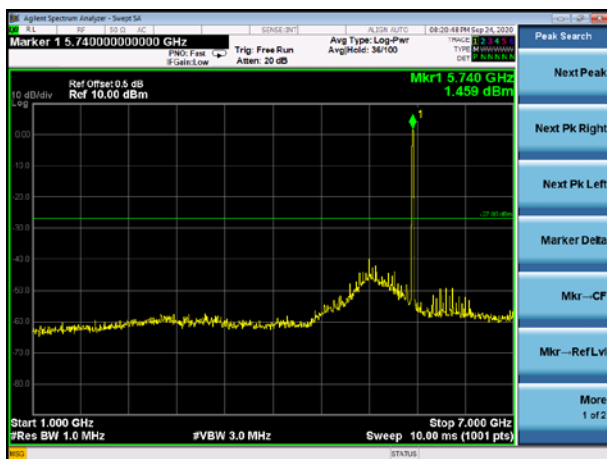
802.11a on channel 149



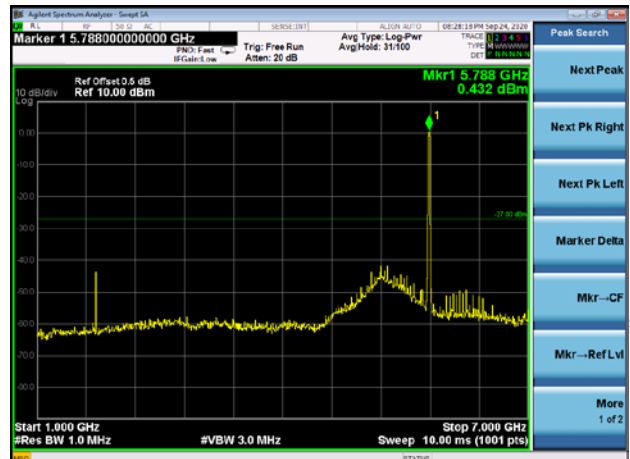
802.11a on channel 157



802.11a on channel 149



802.11a on channel 157



802.11a on channel 149

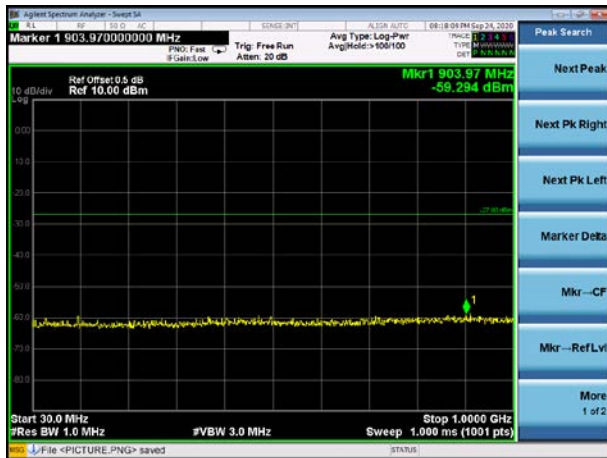


802.11a on channel 157

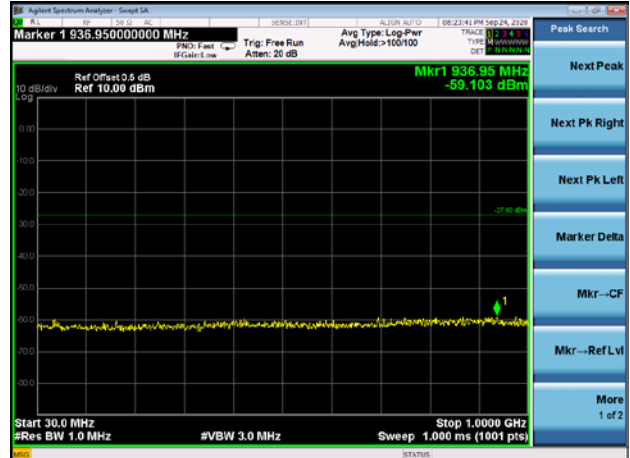


Test Plot

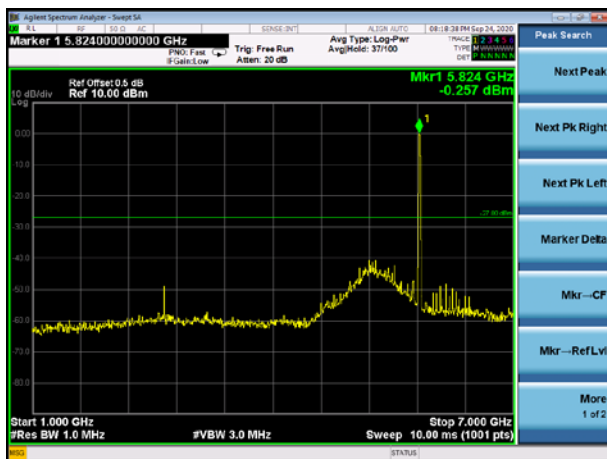
802.11a on channel 165



802.11n20 on channel 149



802.11a on channel 165



802.11n20 on channel 149



802.11a on channel 165



802.11n20 on channel 149

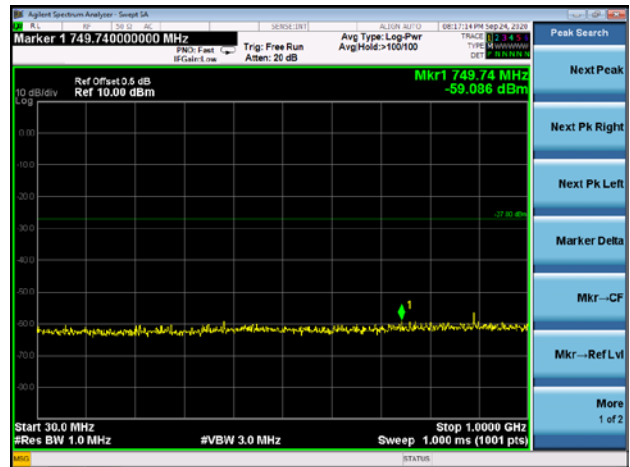


Test Plot

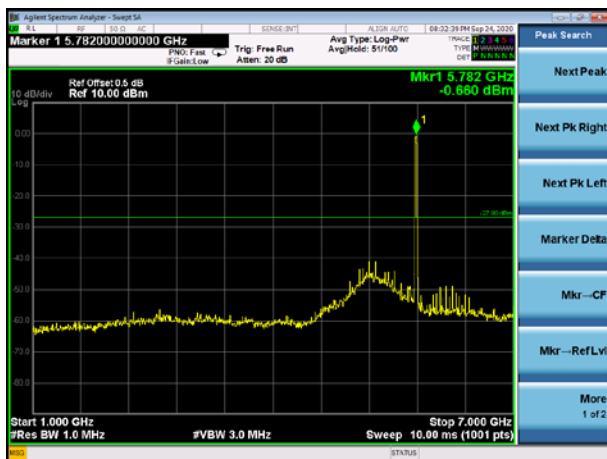
802.11n20 on channel 157



802.11n20 on channel 165



802.11n20 on channel 157



802.11n20 on channel 165



802.11n20 on channel 157

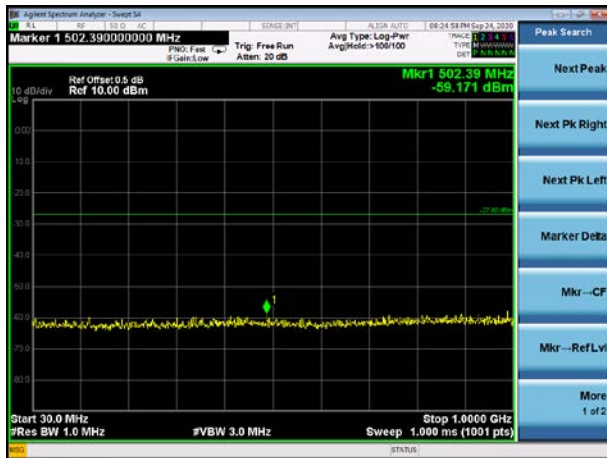


802.11n20 on channel 165

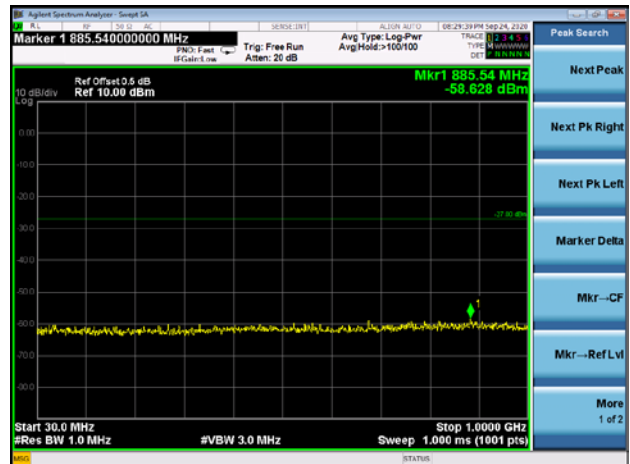


Test Plot

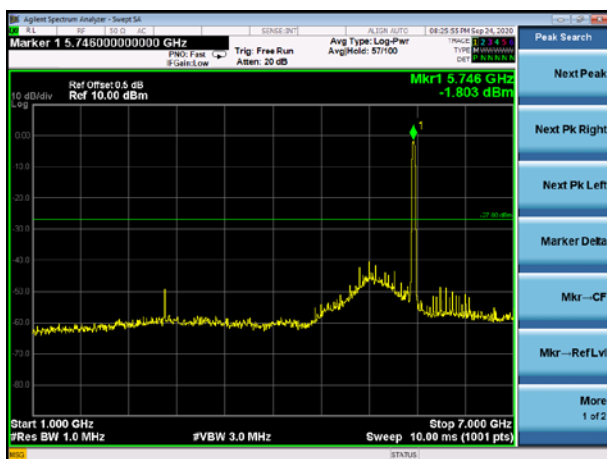
802.11n40 on channel 151



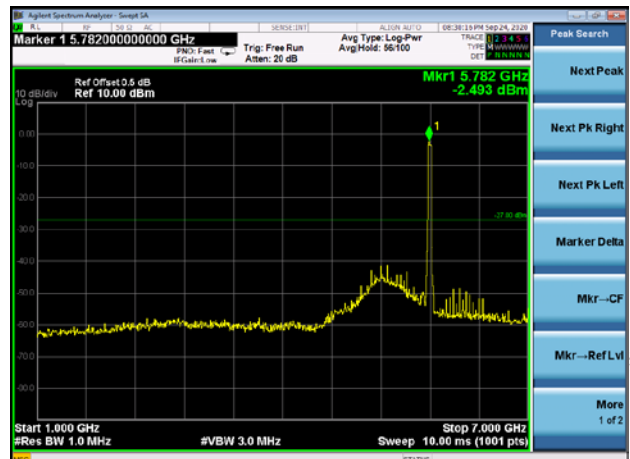
802.11n40 on channel 159



802.11n40 on channel 151



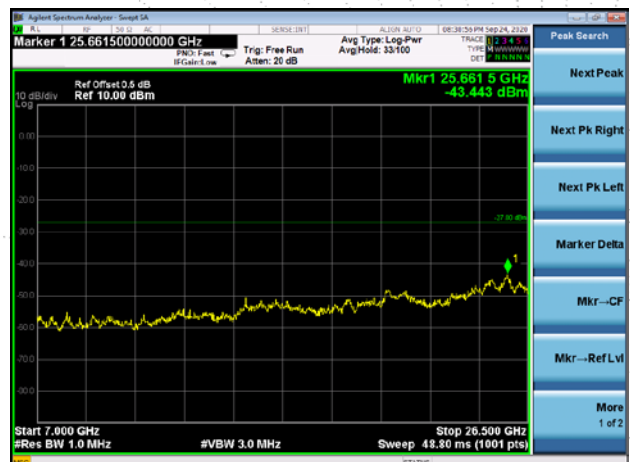
802.11n40 on channel 159



802.11n40 on channel 151



802.11n40 on channel 159



13. FREQUENCY STABILITY MEASUREMENT

13.1 Block Diagram Of Test Setup



13.2 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)..

13.3 Test procedure

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 he 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 $-20^\circ\text{C} \sim 70^\circ\text{C}$.

13.4 Test Result

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V
Test Mode :	TX Frequency U-NII-1 (5180-5240MHz)		

Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5180.0525	5180	0.0525	10.1351
		V max (V)	13.80	5180.0324	5180	0.0324	6.2548
		V min (V)	10.20	5180.0248	5180	0.0248	4.7876
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

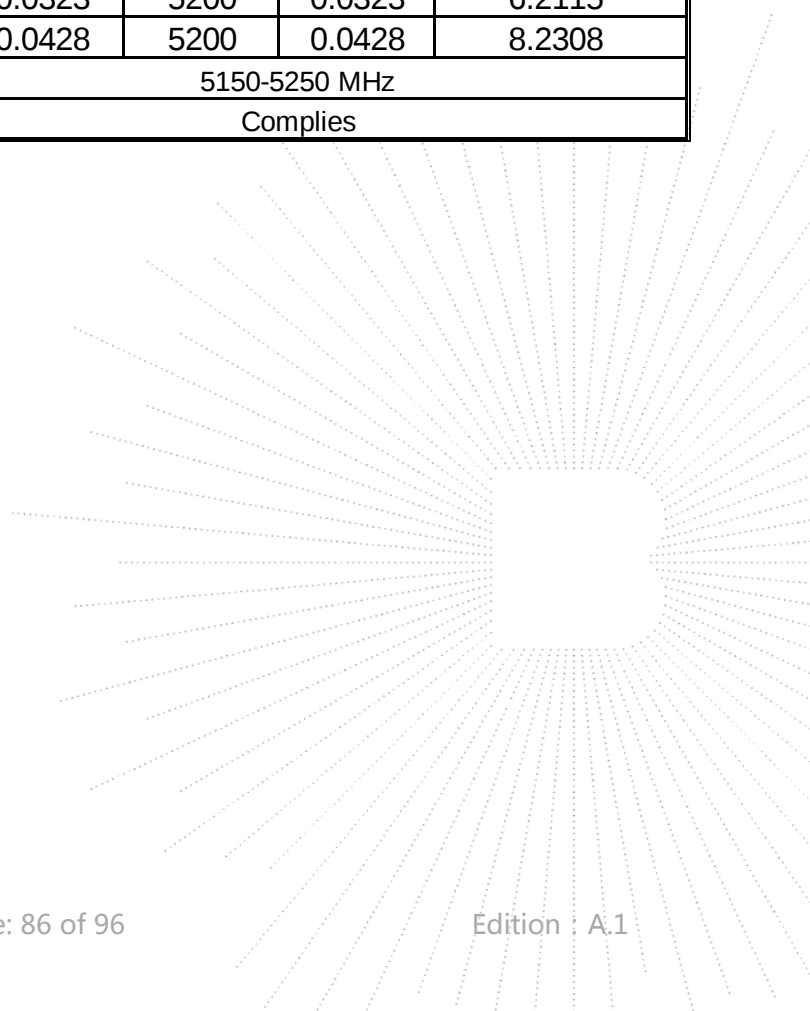
TEST CONDITIONS				Reference Frequency: 5180MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5180.0052	5180	0.0052	1.0039
		T (°C)	-10	5180.0108	5180	0.0108	2.0849
		T (°C)	0	5180.0328	5180	0.0328	6.3320
		T (°C)	10	5180.0381	5180	0.0381	7.3552
		T (°C)	20	5180.0292	5180	0.0292	5.6371
		T (°C)	30	5180.0218	5180	0.0218	4.2085
		T (°C)	40	5180.0124	5180	0.0124	2.3938
		T (°C)	50	5180.0093	5180	0.0093	1.7954
		T (°C)	60	5180.0417	5180	0.0417	8.0502
		T (°C)	70	5180.0694	5180	0.0694	13.3977
Limits				5150-5250 MHz			
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)	12.00	5200.0255	5200	0.0255	4.9038
		V max (V)	13.80	5200.0424	5200	0.0424	8.1538
		V min (V)	10.20	5200.0698	5200	0.0698	13.4231
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5200.0637	5200	0.0637	12.2500
		T (°C)	-10	5200.0525	5200	0.0525	10.0962
		T (°C)	0	5200.0432	5200	0.0432	8.3077
		T (°C)	10	5200.0923	5200	0.0923	17.7500
		T (°C)	20	5200.0638	5200	0.0638	12.2692
		T (°C)	30	5200.0121	5200	0.0121	2.3269
		T (°C)	40	5200.0732	5200	0.0732	14.0769
		T (°C)	50	5200.0412	5200	0.0412	7.9231
		T (°C)	60	5200.0323	5200	0.0323	6.2115
		T (°C)	70	5200.0428	5200	0.0428	8.2308
Limits				5150-5250 MHz			
Result				Complies			

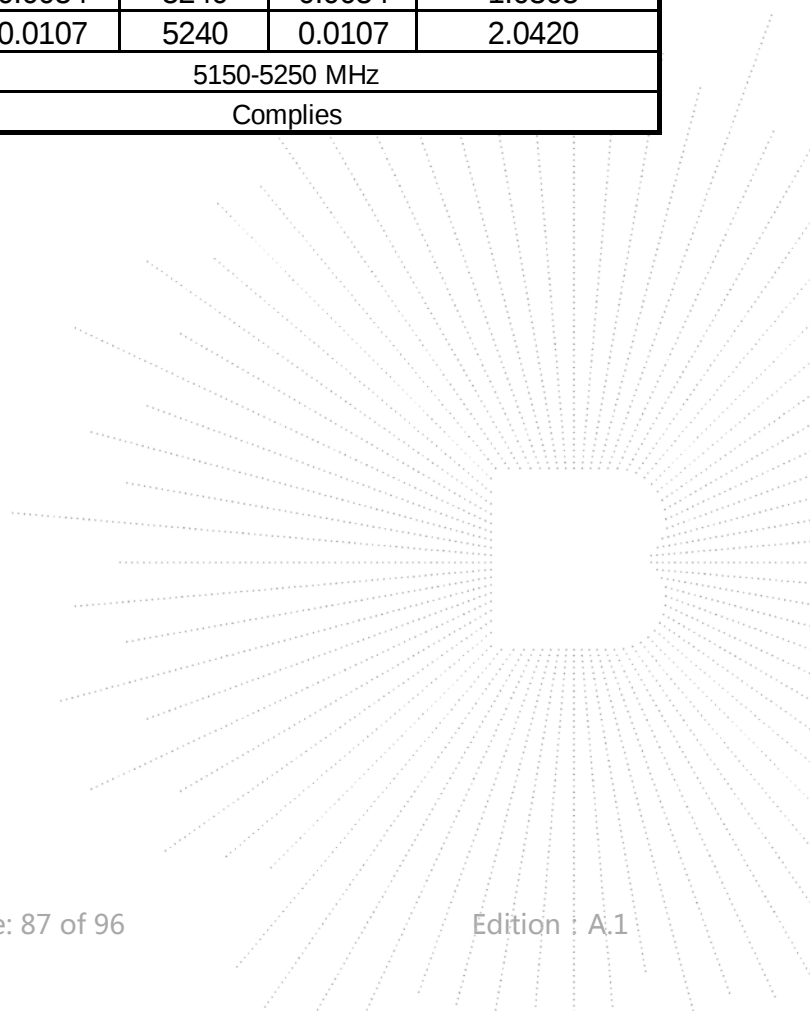


Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5240.0138	5240	0.0138	2.6336
		V max (V)	13.80	5240.0414	5240	0.0414	7.9008
		V min (V)	10.20	5240.0095	5240	0.0095	1.8130
Limits				5150-5250 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5240.0098	5240	0.0098	1.8702
		T (°C)	-10	5240.0034	5240	0.0034	0.6489
		T (°C)	0	5240.0148	5240	0.0148	2.8244
		T (°C)	10	5240.0851	5240	0.0851	16.2405
		T (°C)	20	5240.0118	5240	0.0118	2.2519
		T (°C)	30	5240.0125	5240	0.0125	2.3855
		T (°C)	40	5240.0067	5240	0.0067	1.2786
		T (°C)	50	5240.0075	5240	0.0075	1.4313
		T (°C)	60	5240.0054	5240	0.0054	1.0305
		T (°C)	70	5240.0107	5240	0.0107	2.0420
Limits				5150-5250 MHz			
Result				Complies			



Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V
Hzst Mode :	TX Frequency(5745-5825MHz)		

Voltage vs. Frequency Stabilit

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	12.00	5745.00002	5745	0.00002	0.0040
		V max (V)	13.80	5745.00858	5745	0.00858	1.4935
		V min (V)	10.20	5745.00758	5745	0.00758	1.3194
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5745MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5745.01062	5745	0.01062	1.8480
		T (°C)	-10	5745.00956	5745	0.00956	1.6641
		T (°C)	0	5745.00421	5745	0.00421	0.7335
		T (°C)	10	5745.01027	5745	0.01027	1.7883
		T (°C)	20	5745.00084	5745	0.00084	0.1469
		T (°C)	30	5745.00073	5745	0.00073	0.1277
		T (°C)	40	5745.00416	5745	0.00416	0.7234
		T (°C)	50	5745.00082	5745	0.00082	0.1426
		T (°C)	60	5745.00214	5745	0.00214	0.3724
		T (°C)	70	5745.00387	5745	0.00387	0.6729
Limits				5725-5850 MHz			
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)	12.00	5785.00233	5785	0.00233	0.4029
		V max (V)	13.80	5785.00088	5785	0.00088	0.1516
		V min (V)	10.20	5785.00610	5785	0.00610	1.0540
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5785.00070	5785	0.00070	0.1216
		T (°C)	-10	5785.00137	5785	0.00137	0.2361
		T (°C)	0	5785.00558	5785	0.00558	0.9641
		T (°C)	10	5785.00485	5785	0.00485	0.8378
		T (°C)	20	5785.00593	5785	0.00593	1.0252
		T (°C)	30	5785.00533	5785	0.00533	0.9216
		T (°C)	40	5785.00746	5785	0.00746	1.2903
		T (°C)	50	5785.00667	5785	0.00667	1.1529
		T (°C)	60	5785.01180	5785	0.01180	2.0391
		T (°C)	70	5785.01033	5785	0.01033	1.7848
Limits				5725-5850 MHz			
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)	12.00	5825.00857	5825	0.00857	1.4708
		V max (V)	13.80	5825.01090	5825	0.01090	1.8712
		V min (V)	10.20	5825.01312	5825	0.01312	2.2520
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5825MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	12	T (°C)	-20	5825.01245	5825	0.01245	2.1379
		T (°C)	-10	5825.01083	5825	0.01083	1.8598
		T (°C)	0	5825.01100	5825	0.01100	1.8888
		T (°C)	10	5825.00924	5825	0.00924	1.5859
		T (°C)	20	5825.00008	5825	0.00008	0.0142
		T (°C)	30	5825.00207	5825	0.00207	0.3550
		T (°C)	40	5825.00205	5825	0.00205	0.3514
		T (°C)	50	5825.00427	5825	0.00427	0.7330
		T (°C)	60	5825.00424	5825	0.00424	0.7275
		T (°C)	70	5825.00251	5825	0.00251	0.4304
Limits				5725-5850 MHz			
Result				Complies			

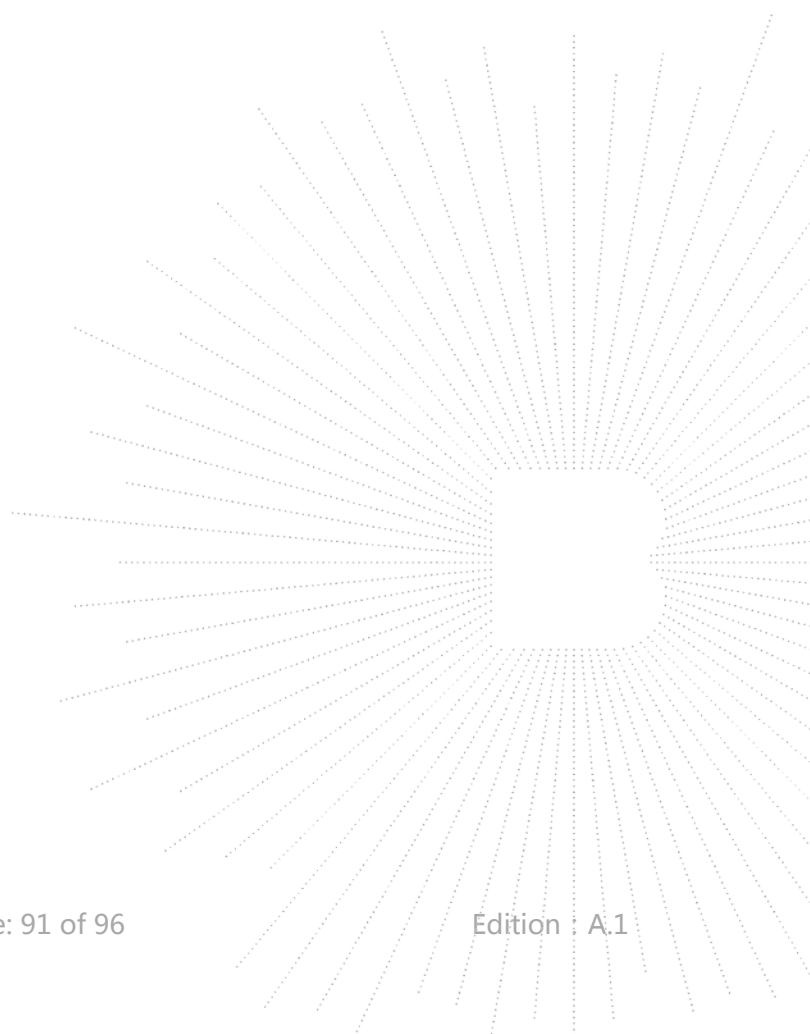
14. ANTENNA REQUIREMENT

14.1 Limit

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.

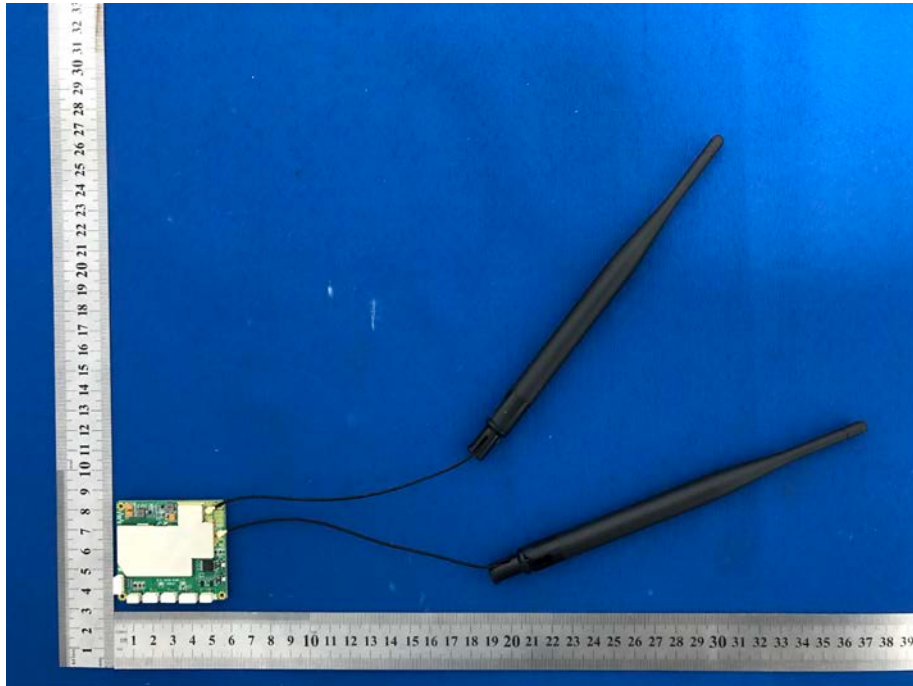
14.2 Test Result

The EUT antenna is External antenna (antenna gain (A): 5dBi; antenna gain (B) : 5dBi). It comply with the standard requirement.

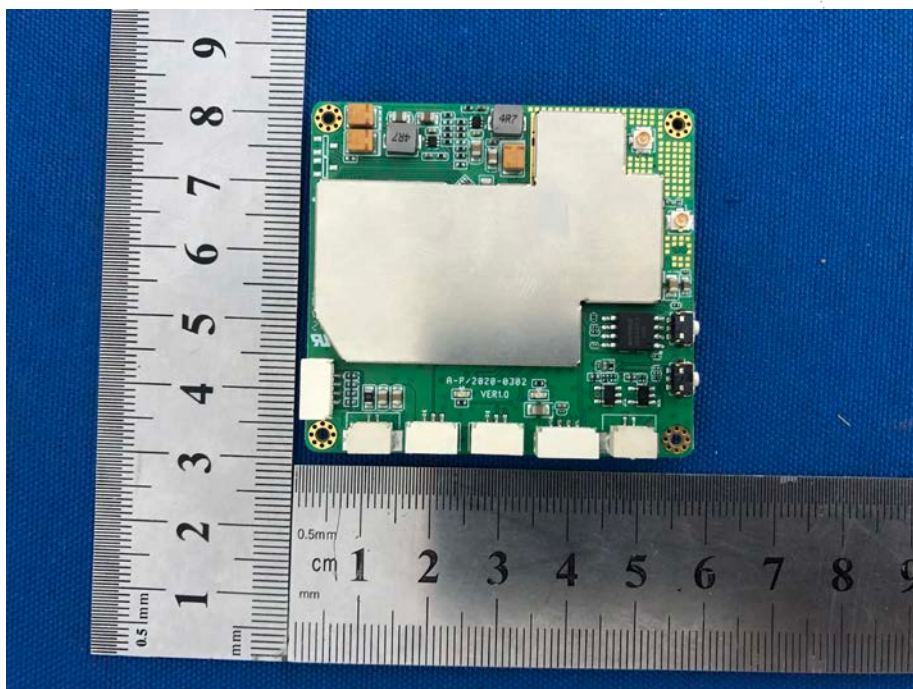


15. EUT PHOTOGRAPHS

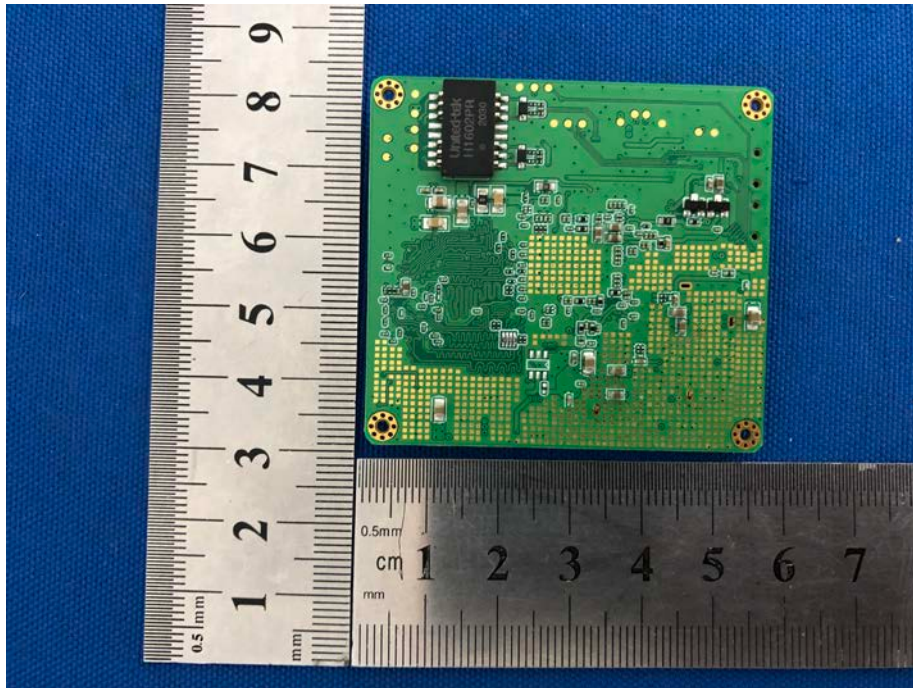
EUT Photo 1



EUT Photo 2



EUT Photo 3

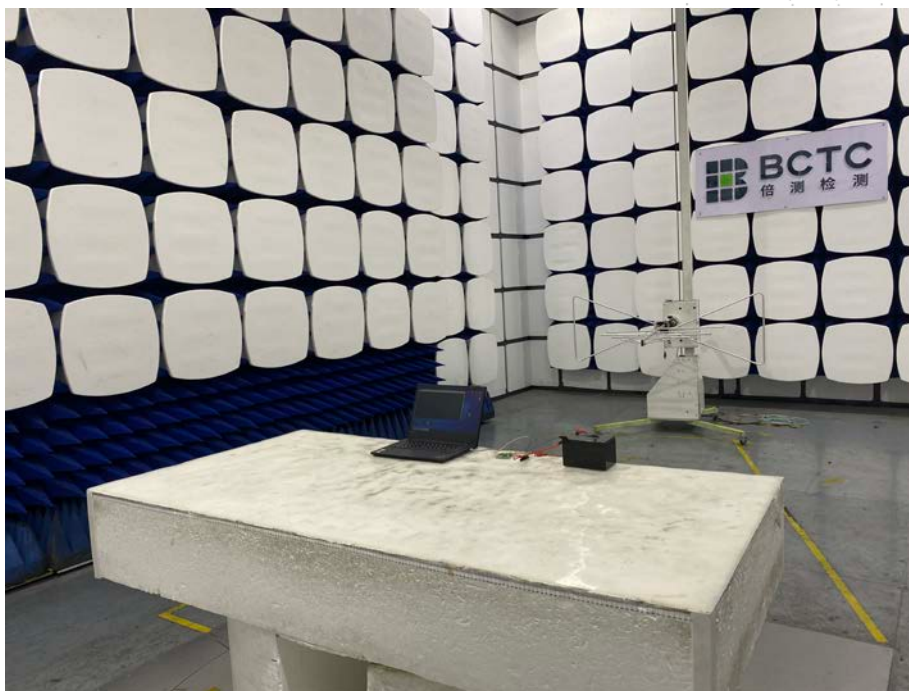


16. EUT TEST SETUP PHOTOGRAPHS

Conducted Emission



Radiated Measurement Photos





STATEMENT

- 1.The equipment lists are traceable to the national reference standards.
- 2.The test report can not be partially copied unless prior written approval is issued from our lab.
- 3.The test report is invalid without stamp of laboratory.
- 4.The test report is invalid without signature of person(s) testing and authorizing.
- 5.The test process and test result is only related to the Unit Under Test.
- 6.The quality system of our laboratory is in accordance with ISO/IEC17025.
- 7.If there is any objection to report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2F, East of B Building, Pengzhou Industrial Park, Fuyuan 1st Road, Qiaotou, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

TEL : 400-788-9558

P.C.: 518103

FAX : 0755-33229357

Website : <http://www.bctc-lab.com>

E-Mail : bctc@bctc-lab.com.cn

***** END *****