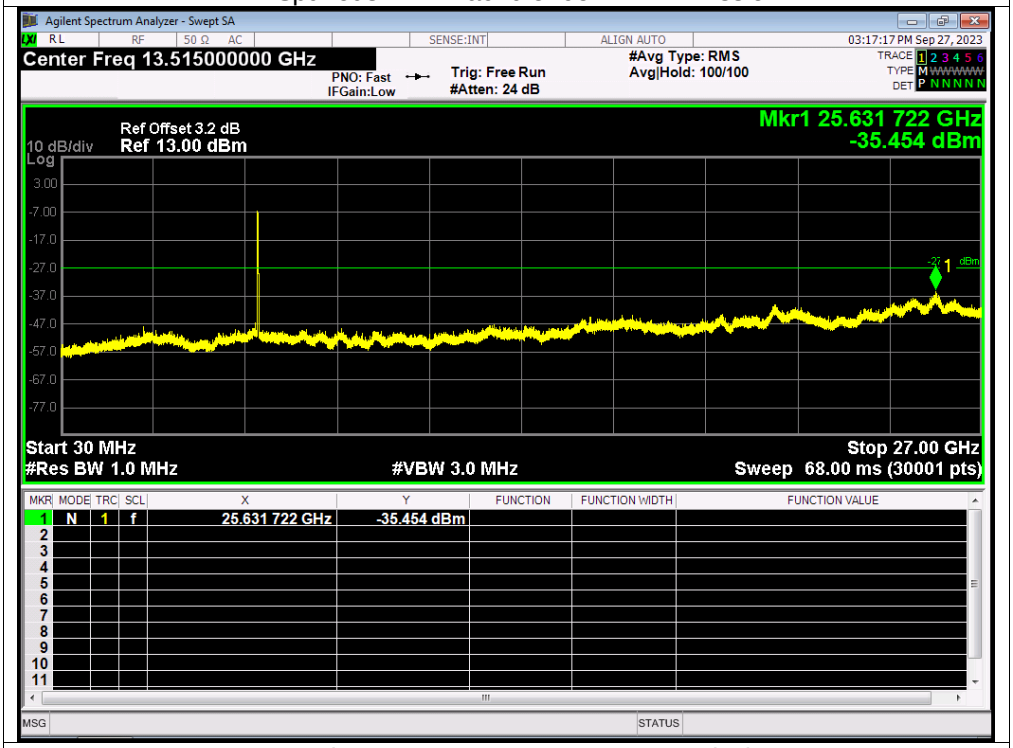
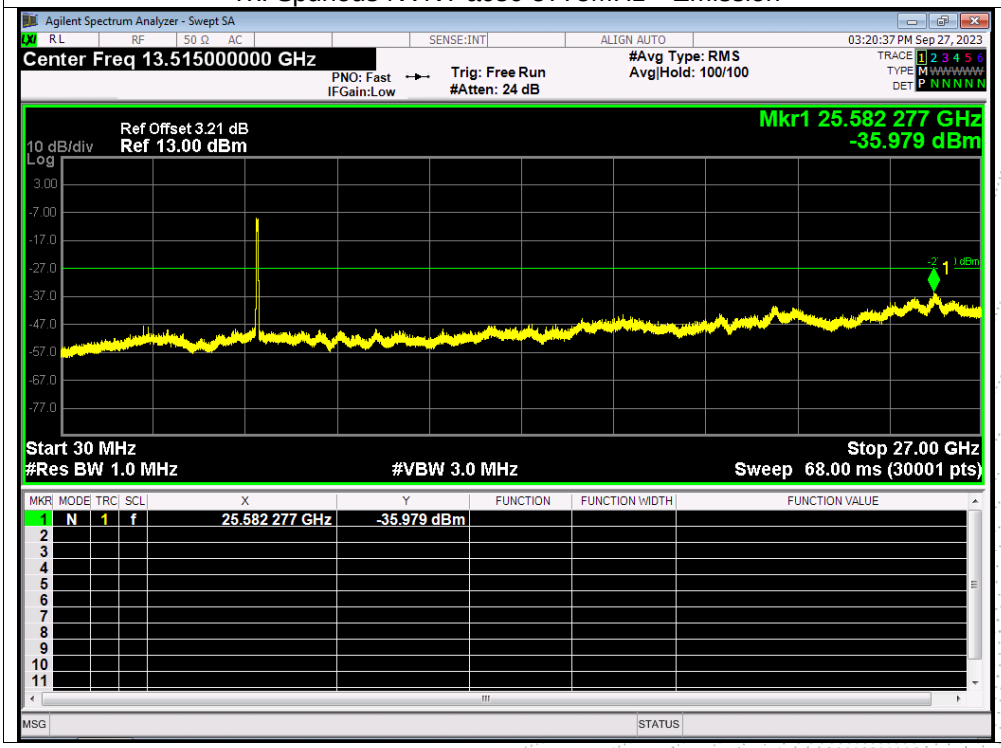
Tx. Spurious NVNT ac40 5795MHz Emission

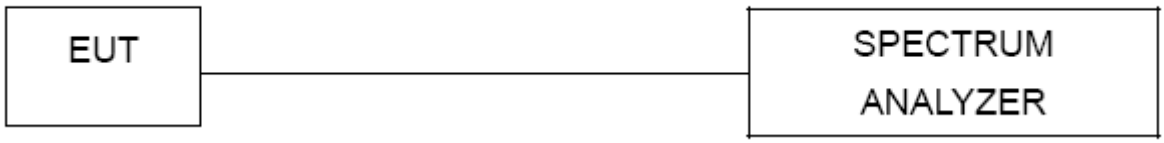


Tx. Spurious NVNT ac80 5775MHz Emission



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. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and he limit is less than ±20ppm (IEEE 802.11nspecification).
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°C~70°C.

13.4 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX (5.1G) Mode 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)	120	5180.0183	5180	0.0183	3.5380
		V max (V)	138	5180.0098	5180	0.0098	1.8924
		V min (V)	102	5180.0071	5180	0.0071	1.3790
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)	5V	T (°C)	-20	5180.0003	5180	0.0003	0.0644
		T (°C)	-10	5180.0006	5180	0.0006	0.1155
		T (°C)	0	5180.0008	5180	0.0008	0.1612
		T (°C)	10	5180.0068	5180	0.0068	1.3119
		T (°C)	20	5180.0029	5180	0.0029	0.5539
		T (°C)	30	5180.0069	5180	0.0069	1.3312
		T (°C)	40	5180.0042	5180	0.0042	0.8133
		T (°C)	50	5180.0011	5180	0.0011	0.2126
		T (°C)	60	5180.0094	5180	0.0094	1.8226
		T (°C)	70	5180.0043	5180	0.0043	0.8207
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)	120	5200.0085	5200	0.0085	1.6377
		V max (V)	138	5200.0050	5200	0.0050	0.9522
		V min (V)	102	5200.0055	5200	0.0055	1.0625
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency:5200MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	5V	T (°C)	-20	5200.00040	5200	0.00040	0.0777
		T (°C)	-10	5200.01181	5200	0.01181	2.2705
		T (°C)	0	5200.00259	5200	0.00259	0.4984
		T (°C)	10	5200.01021	5200	0.01021	1.9638
		T (°C)	20	5200.00286	5200	0.00286	0.5494
		T (°C)	30	5200.00203	5200	0.00203	0.3913
		T (°C)	40	5200.00155	5200	0.00155	0.2990
		T (°C)	50	5200.00872	5200	0.00872	1.6767
		T (°C)	60	5200.00661	5200	0.00661	1.2705
		T (°C)	70	5200.00615	5200	0.00615	1.1825
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)	120	5240.0073	5240	0.0073	1.4008
		V max (V)	138	5240.0003	5240	0.0003	0.0602
		V min (V)	102	5240.0115	5240	0.0115	2.2008
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)	5V	T (°C)	-20	5240.0125	5240	0.0125	2.3819
		T (°C)	-10	5240.0027	5240	0.0027	0.5144
		T (°C)	0	5240.0038	5240	0.0038	0.7194
		T (°C)	10	5240.0107	5240	0.0107	2.0412
		T (°C)	20	5240.0116	5240	0.0116	2.2231
		T (°C)	30	5240.0007	5240	0.0007	0.1307
		T (°C)	40	5240.0054	5240	0.0054	1.0210
		T (°C)	50	5240.0107	5240	0.0107	2.0486
		T (°C)	60	5240.0103	5240	0.0103	1.9704
		T (°C)	70	5240.0132	5240	0.0132	2.5236
Limits				5150-5250 MHz			
Result				Complies			

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz
Test Mode:	TX (5.8G) Mode Frequency U-NII-3 (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)	120	5745.00761	5745	0.00761	1.3246
		V max (V)	138	5745.01032	5745	0.01032	1.7961
		V min (V)	102	5745.00340	5745	0.00340	0.5924
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)	5V	T (°C)	-20	5745.01081	5745	0.01081	1.8822
		T (°C)	-10	5745.00208	5745	0.00208	0.3622
		T (°C)	0	5745.00247	5745	0.00247	0.4302
		T (°C)	10	5745.01260	5745	0.01260	2.1937
		T (°C)	20	5745.00965	5745	0.00965	1.6797
		T (°C)	30	5745.00276	5745	0.00276	0.4811
		T (°C)	40	5745.00125	5745	0.00125	0.2177
		T (°C)	50	5745.01057	5745	0.01057	1.8398
		T (°C)	60	5745.00499	5745	0.00499	0.8686
		T (°C)	70	5745.00892	5745	0.00892	1.5532
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)	120	5785.01058	5785	0.01058	1.8291
		V max (V)	138	5785.00043	5785	0.00043	0.0743
		V min (V)	102	5785.00416	5785	0.00416	0.7186
Limits				5725-5850 MHz			
Result				Complies			

Temperature vs. Frequency Stability

TEST CONDITIONS				Reference Frequency:5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
V nom (V)	5V	T (°C)	-20	5785.00666	5785	0.00666	1.1519
		T (°C)	-10	5785.00423	5785	0.00423	0.7306
		T (°C)	0	5785.00317	5785	0.00317	0.5483
		T (°C)	10	5785.01120	5785	0.01120	1.9357
		T (°C)	20	5785.00591	5785	0.00591	1.0215
		T (°C)	30	5785.00709	5785	0.00709	1.2257
		T (°C)	40	5785.01319	5785	0.01319	2.2801
		T (°C)	50	5785.00470	5785	0.00470	0.8133
		T (°C)	60	5785.00738	5785	0.00738	1.2752
		T (°C)	70	5785.00603	5785	0.00603	1.0427
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)	120	5825.00069	5825	0.00069	0.1191
		V max (V)	138	5825.00415	5825	0.00415	0.7127
		V min (V)	102	5825.01034	5825	0.01034	1.7751
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)	5V	T (°C)	-20	5825.00822	5825	0.00822	1.4117
		T (°C)	-10	5825.00990	5825	0.00990	1.7000
		T (°C)	0	5825.01274	5825	0.01274	2.1865
		T (°C)	10	5825.00924	5825	0.00924	1.5857
		T (°C)	20	5825.00284	5825	0.00284	0.4871
		T (°C)	30	5825.00787	5825	0.00787	1.3509
		T (°C)	40	5825.01075	5825	0.01075	1.8448
		T (°C)	50	5825.00174	5825	0.00174	0.2987
		T (°C)	60	5825.00207	5825	0.00207	0.3548
		T (°C)	70	5825.01280	5825	0.01280	2.1981
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 Antenna

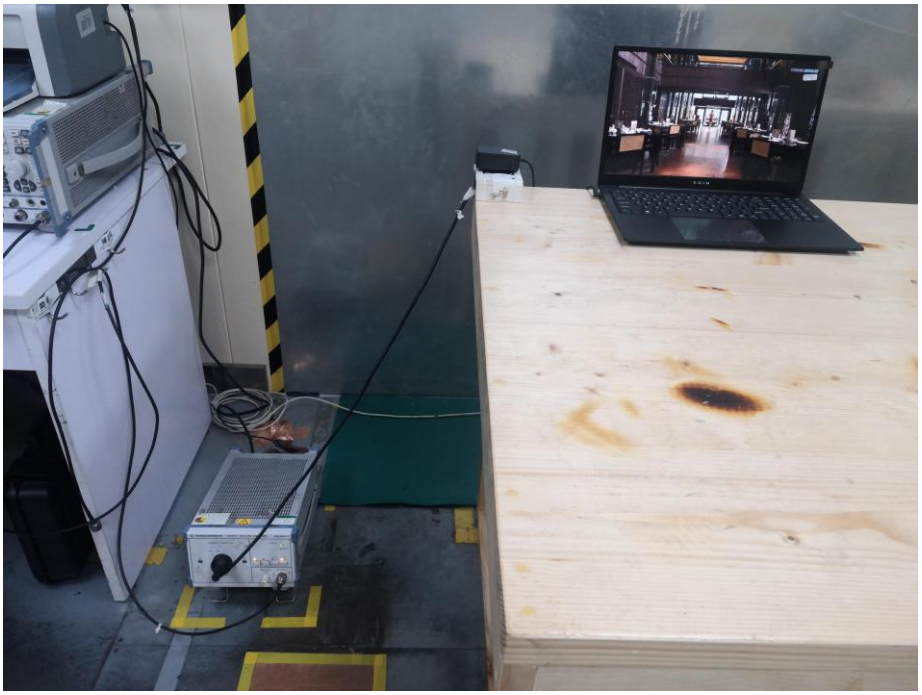
The EUT antenna is Internal antenna. It comply with the standard requirement.

15. EUT Photographs

Appendix-Photographs Of EUT Constructional Details

16. EUT Test Setup Photographs

Conducted emissions



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 the "special seal for inspection and testing".

4. The test report is invalid without the signature of the approver.

5. The test process and test result is only related to the Unit Under Test.

6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.

7. The quality system of our laboratory is in accordance with ISO/IEC17025.

8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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