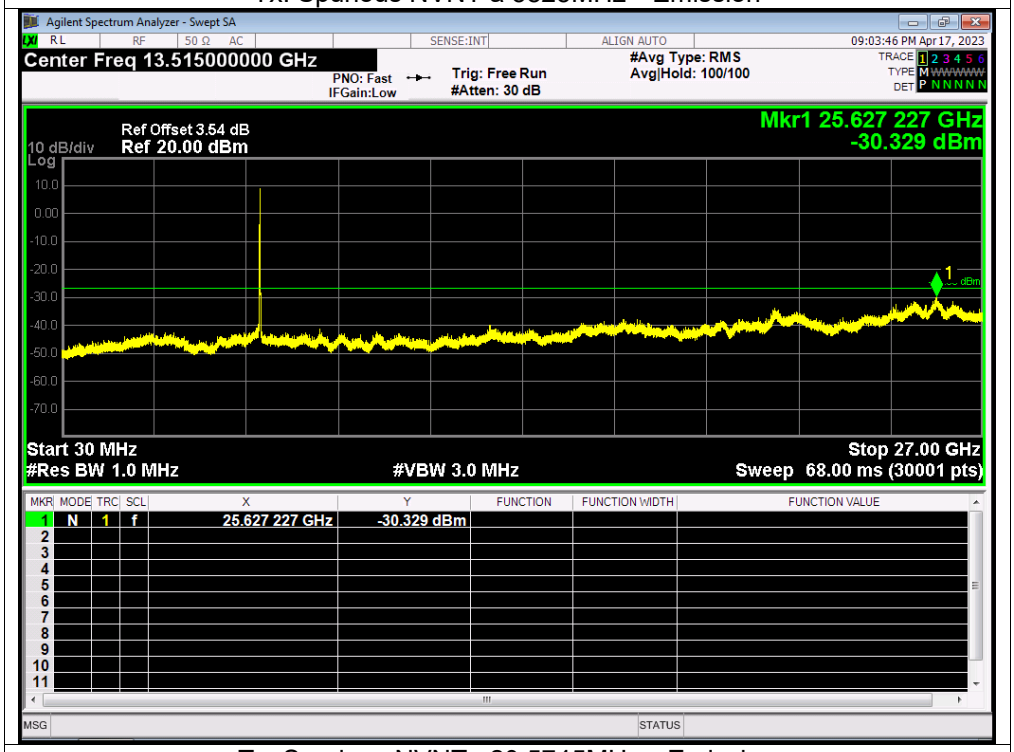
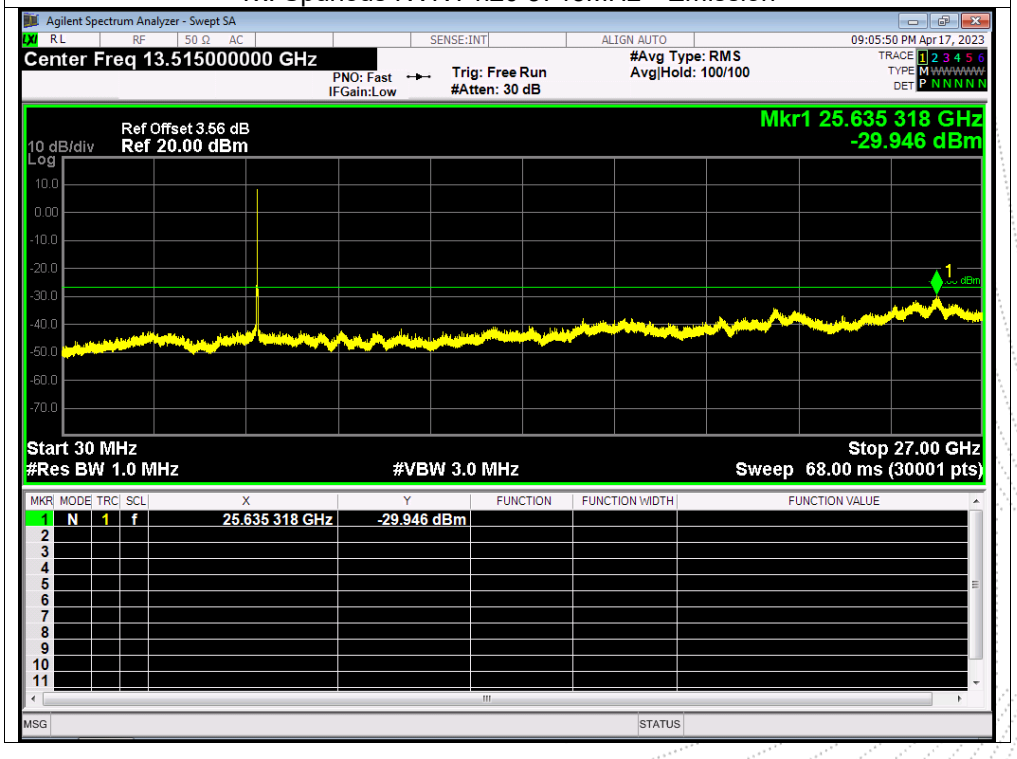
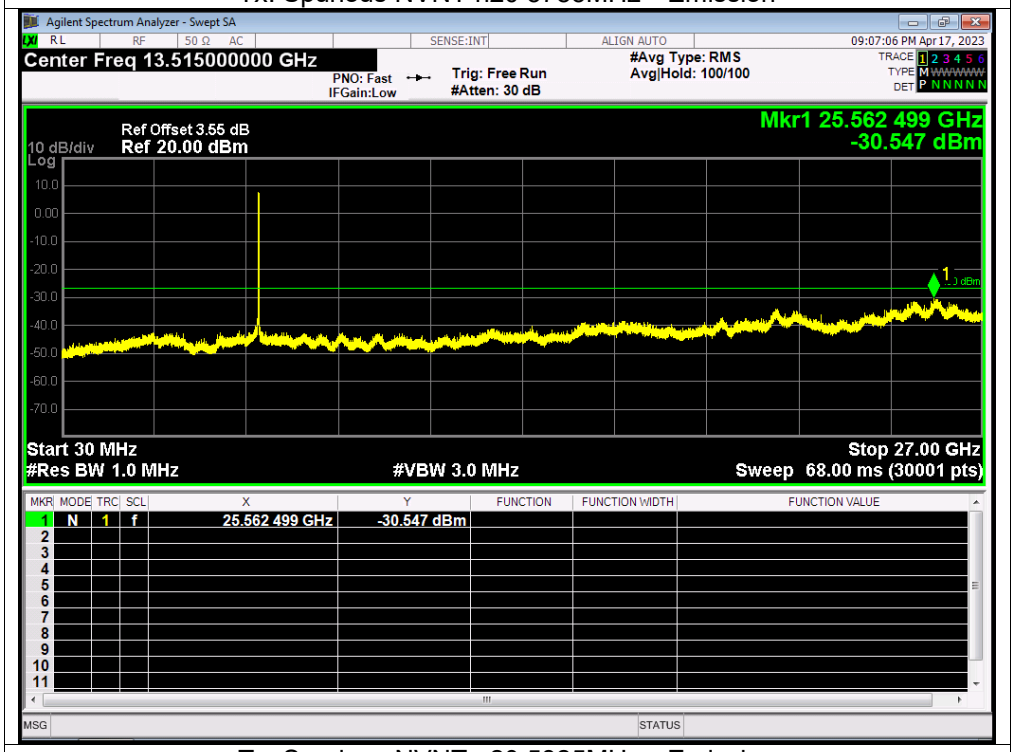
Tx. Spurious NVNT a 5825MHz Emission



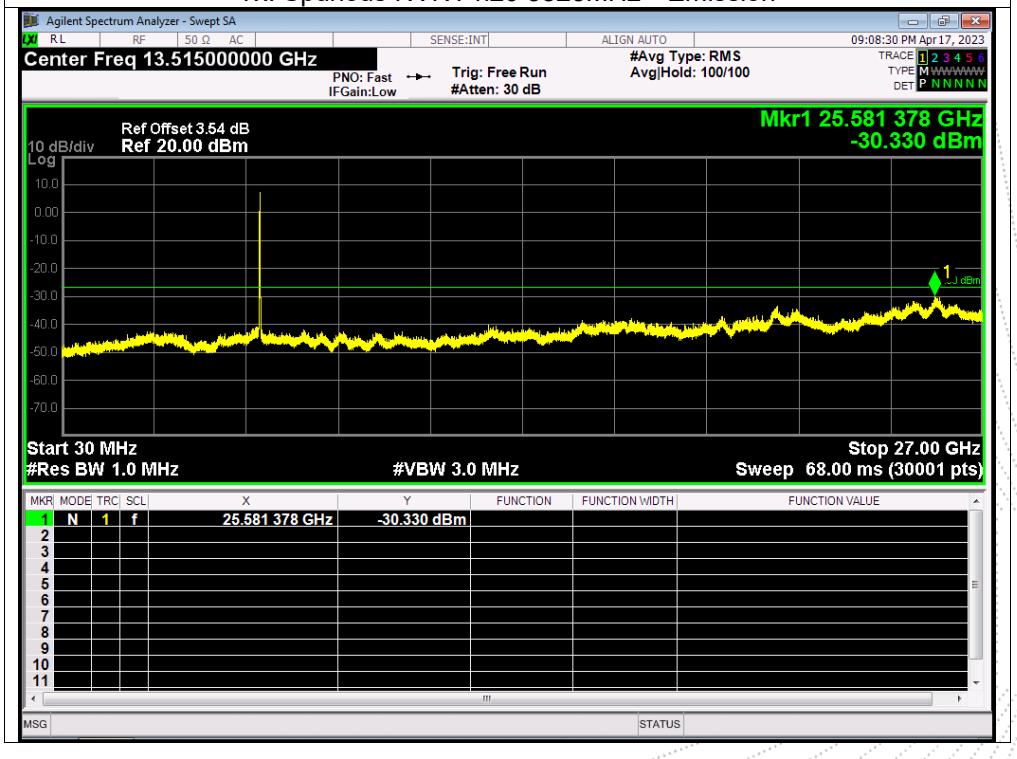
Tx. Spurious NVNT n20 5745MHz Emission



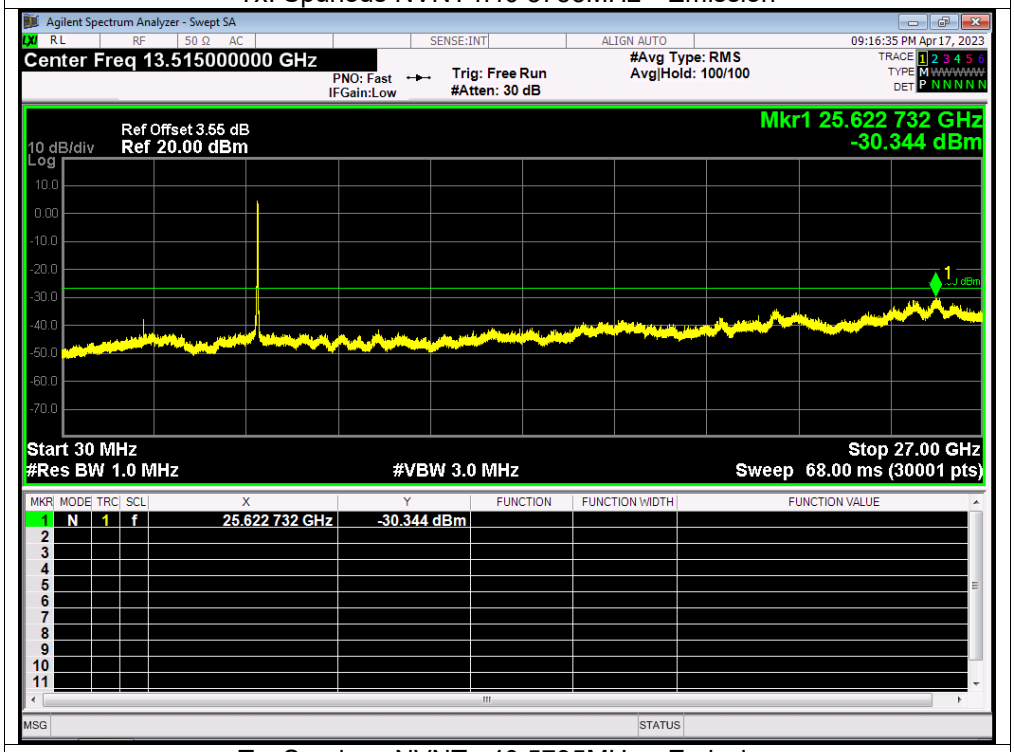
Tx. Spurious NVNT n20 5785MHz Emission



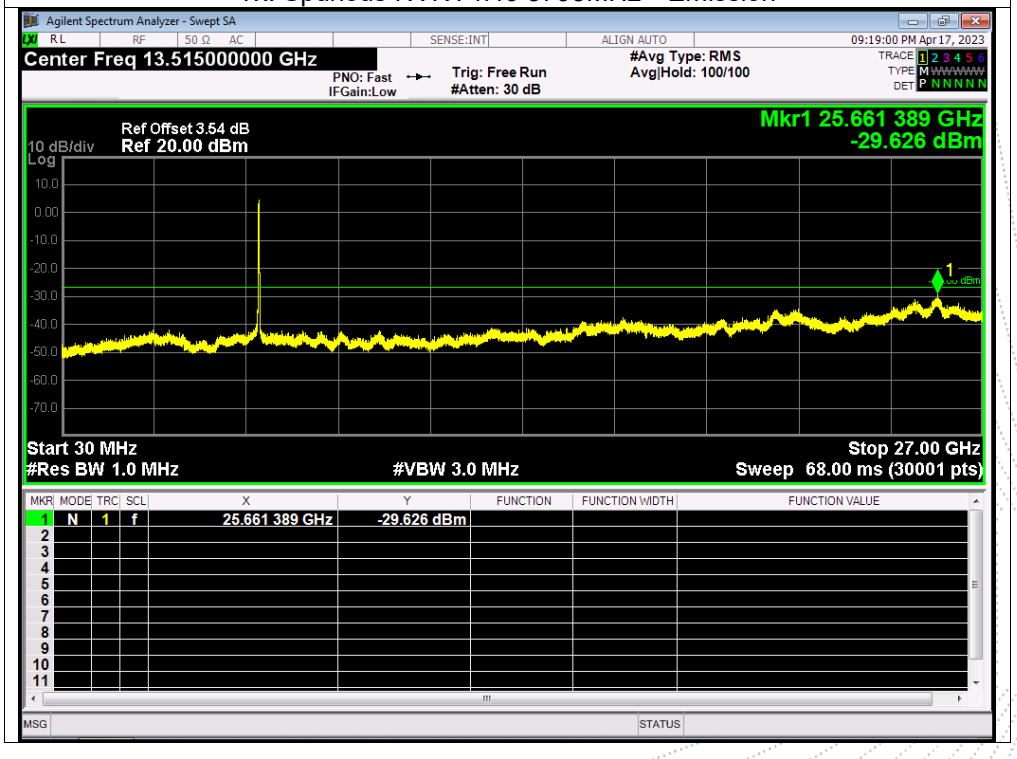
Tx. Spurious NVNT n20 5825MHz Emission



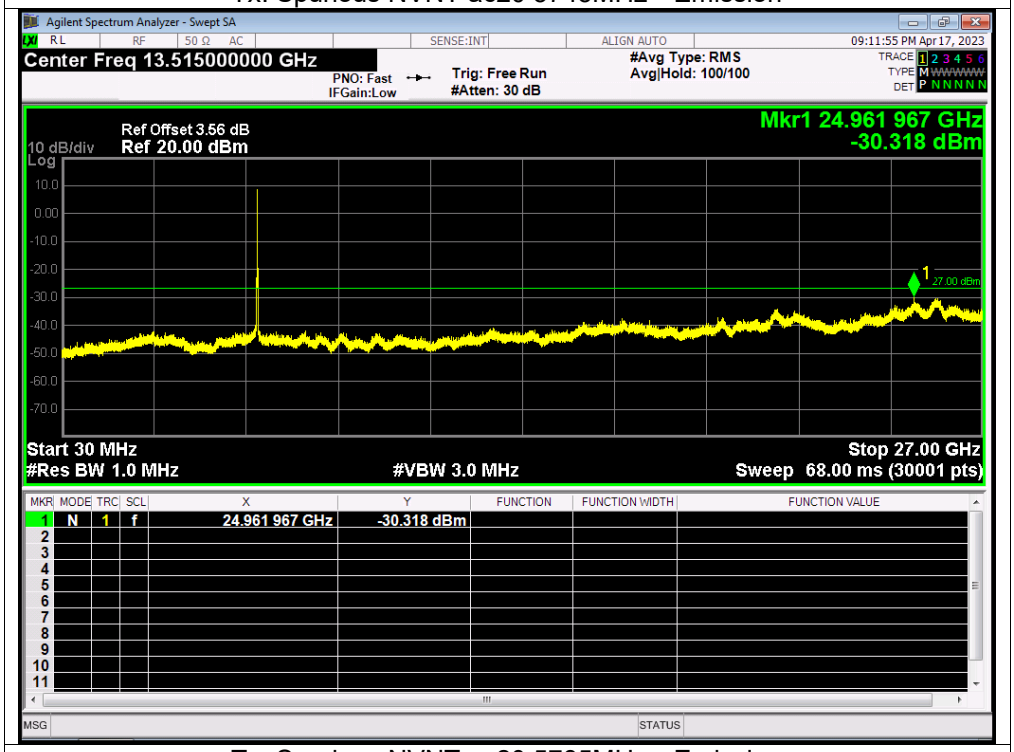
Tx. Spurious NVNT n40 5755MHz Emission



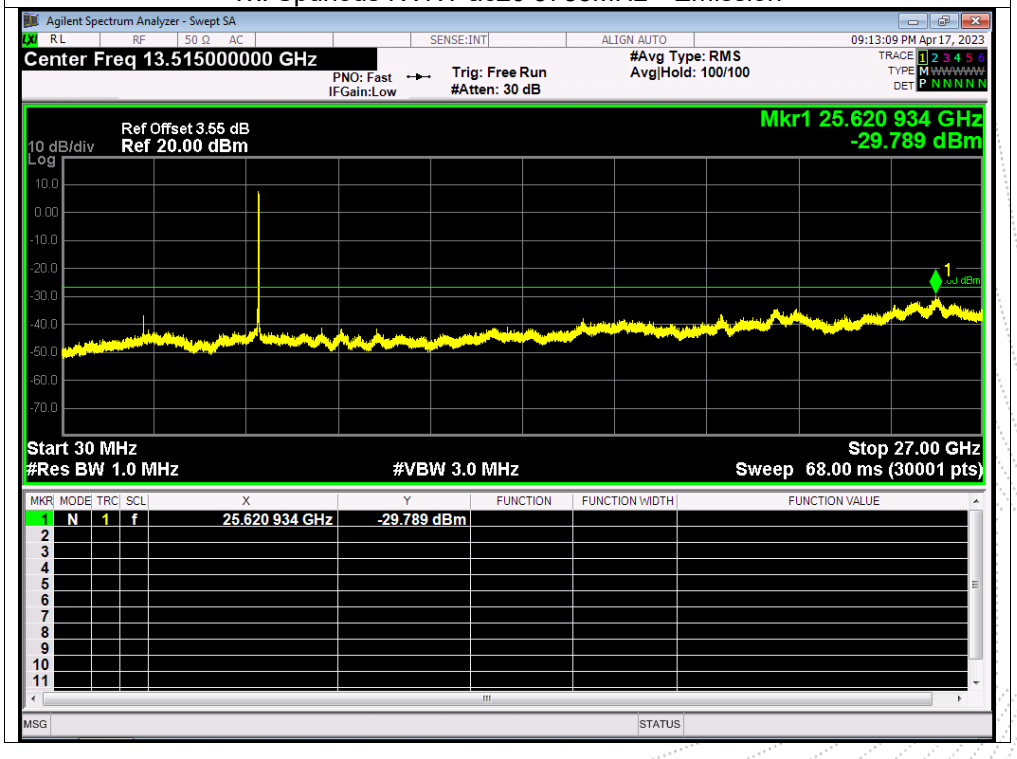
Tx. Spurious NVNT n40 5795MHz Emission



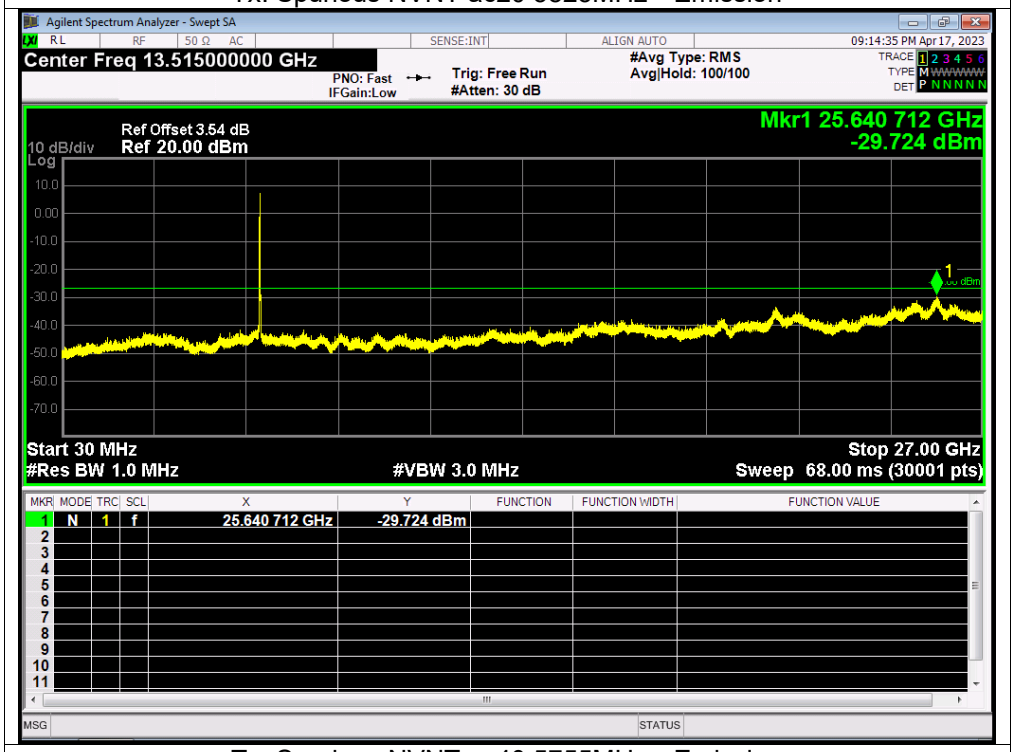
Tx. Spurious NVNT ac20 5745MHz Emission



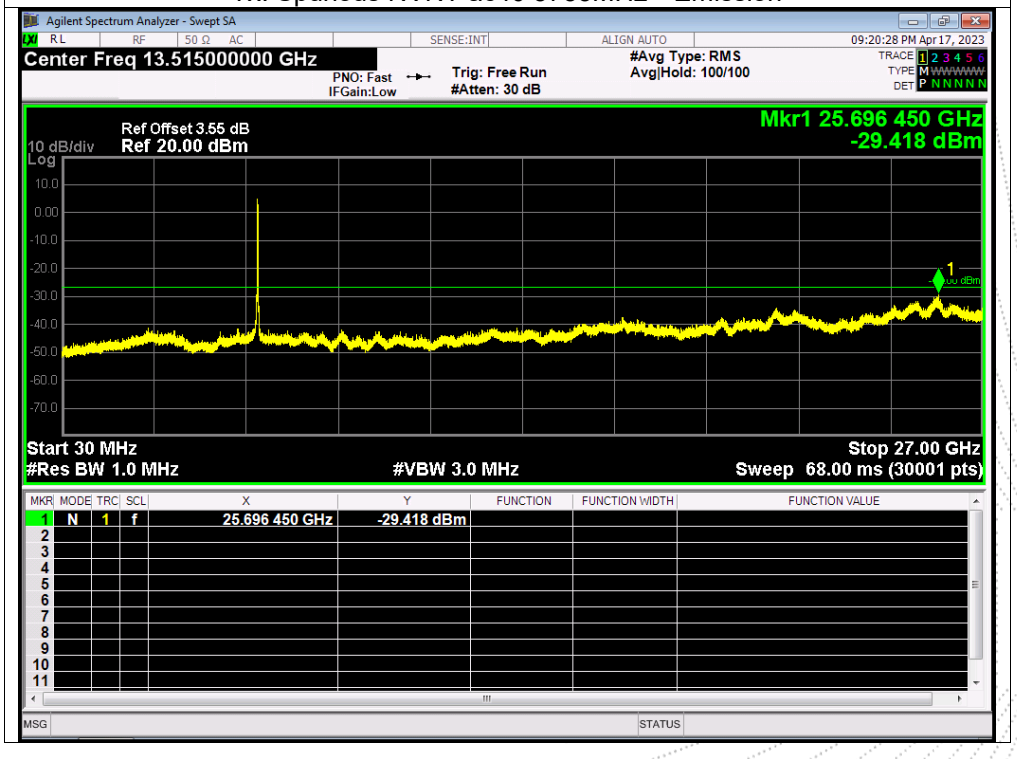
Tx. Spurious NVNT ac20 5785MHz Emission



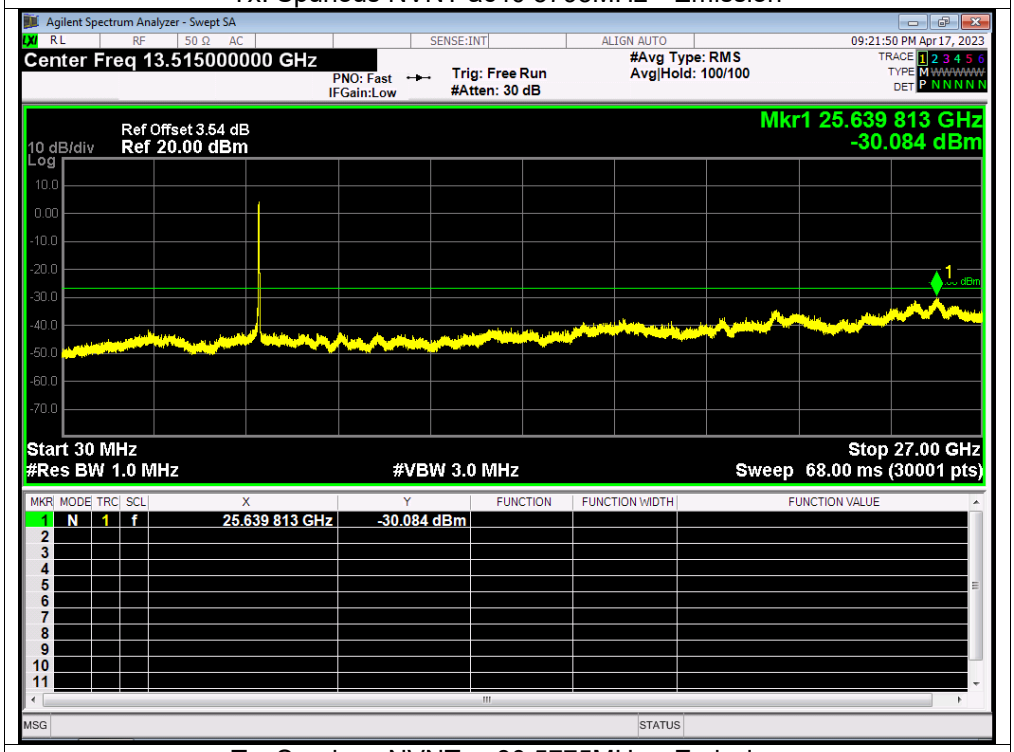
Tx. Spurious NVNT ac20 5825MHz Emission



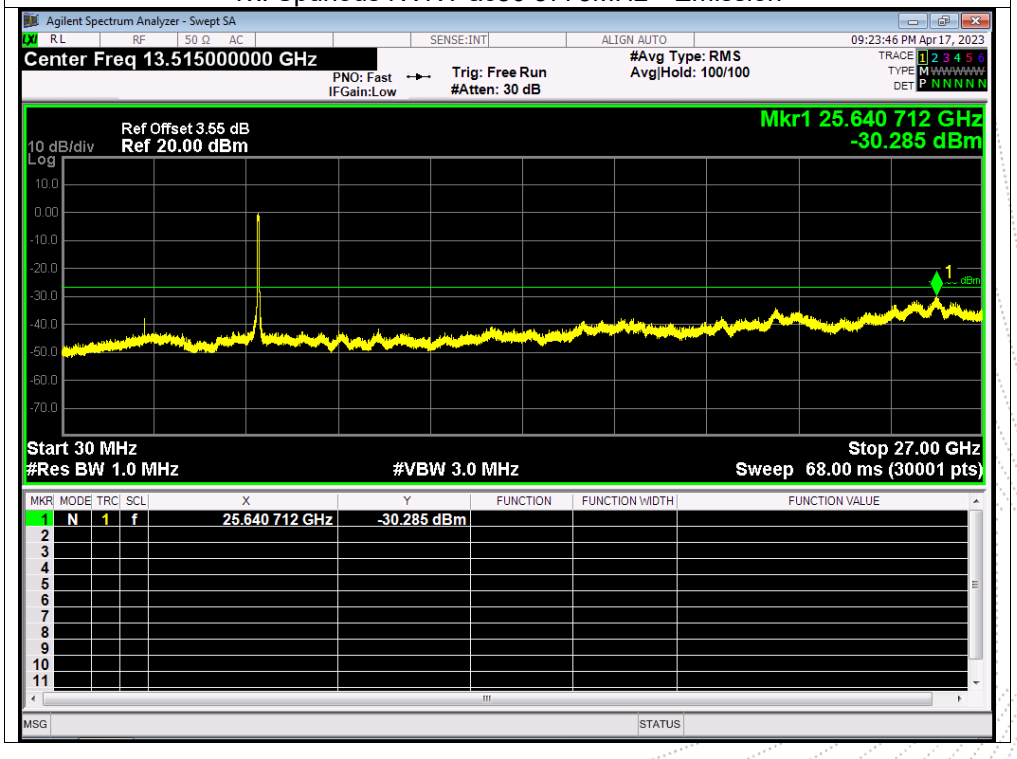
Tx. Spurious NVNT ac40 5755MHz Emission



Tx. Spurious NVNT ac40 5795MHz Emission

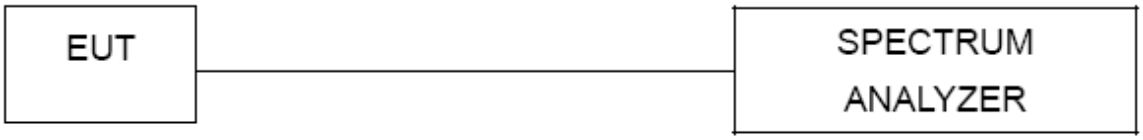


Tx. Spurious NVNT ac80 5775MHz Emission



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 ：	DC 5V
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)	5.00	5180.0065	5180	0.0065	1.2609
		V max (V)	5.75	5180.0170	5180	0.0170	3.2810
		V min (V)	4.25	5180.0129	5180	0.0129	2.4825
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)	DC 5V	T (°C)	-20	5180.0118	5180	0.0118	2.2853
		T (°C)	-10	5180.0083	5180	0.0083	1.5966
		T (°C)	0	5180.0100	5180	0.0100	1.9259
		T (°C)	10	5180.0094	5180	0.0094	1.8131
		T (°C)	20	5180.0098	5180	0.0098	1.8936
		T (°C)	30	5180.0043	5180	0.0043	0.8243
		T (°C)	40	5180.0005	5180	0.0005	0.0906
		T (°C)	50	5180.0116	5180	0.0116	2.2391
		T (°C)	60	5180.0049	5180	0.0049	0.9388
		T (°C)	70	5180.0007	5180	0.0007	0.1436
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)	5.00	5200.0042	5200	0.0042	0.8116
		V max (V)	5.75	5200.0108	5200	0.0108	2.0804
		V min (V)	4.25	5200.0022	5200	0.0022	0.4322
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)	DC 5V	T (°C)	-20	5200.00577	5200	0.00577	1.1105
		T (°C)	-10	5200.00084	5200	0.00084	0.1615
		T (°C)	0	5200.00066	5200	0.00066	0.1272
		T (°C)	10	5200.00834	5200	0.00834	1.6031
		T (°C)	20	5200.00555	5200	0.00555	1.0665
		T (°C)	30	5200.01199	5200	0.01199	2.3065
		T (°C)	40	5200.00968	5200	0.00968	1.8617
		T (°C)	50	5200.01130	5200	0.01130	2.1728
		T (°C)	60	5200.00667	5200	0.00667	1.2834
		T (°C)	70	5200.00786	5200	0.00786	1.5109
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)	5.00	5240.0041	5240	0.0041	0.7901
		V max (V)	5.75	5240.0066	5240	0.0066	1.2562
		V min (V)	4.25	5240.0010	5240	0.0010	0.1996
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)	DC 5V	T (°C)	-20	5240.0007	5240	0.0007	0.1352
		T (°C)	-10	5240.0009	5240	0.0009	0.1665
		T (°C)	0	5240.0096	5240	0.0096	1.8416
		T (°C)	10	5240.0040	5240	0.0040	0.7717
		T (°C)	20	5240.0022	5240	0.0022	0.4222
		T (°C)	30	5240.0069	5240	0.0069	1.3127
		T (°C)	40	5240.0075	5240	0.0075	1.4286
		T (°C)	50	5240.0131	5240	0.0131	2.5063
		T (°C)	60	5240.0046	5240	0.0046	0.8777
		T (°C)	70	5240.0032	5240	0.0032	0.6073
Limits				5150-5250 MHz			
Result				Complies			

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101kPa	Test Voltage ：	DC 5V
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)	5.00	5745.00175	5745	0.00175	0.3043
		V max (V)	5.75	5745.00198	5745	0.00198	0.3442
		V min (V)	4.25	5745.00572	5745	0.00572	0.9956
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)	DC 5V	T (°C)	-20	5745.01115	5745	0.01115	1.9404
		T (°C)	-10	5745.00672	5745	0.00672	1.1704
		T (°C)	0	5745.00740	5745	0.00740	1.2885
		T (°C)	10	5745.00589	5745	0.00589	1.0253
		T (°C)	20	5745.00883	5745	0.00883	1.5378
		T (°C)	30	5745.00543	5745	0.00543	0.9445
		T (°C)	40	5745.00212	5745	0.00212	0.3691
		T (°C)	50	5745.01090	5745	0.01090	1.8969
		T (°C)	60	5745.01063	5745	0.01063	1.8499
		T (°C)	70	5745.00624	5745	0.00624	1.0855
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)	5.00	5785.01014	5785	0.01014	1.7529
		V max (V)	5.75	5785.00547	5785	0.00547	0.9452
		V min (V)	4.25	5785.01219	5785	0.01219	2.1069
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)	DC 5V	T (°C)	-20	5785.01256	5785	0.01256	2.1704
		T (°C)	-10	5785.01261	5785	0.01261	2.1802
		T (°C)	0	5785.01164	5785	0.01164	2.0123
		T (°C)	10	5785.00970	5785	0.00970	1.6774
		T (°C)	20	5785.01173	5785	0.01173	2.0273
		T (°C)	30	5785.00503	5785	0.00503	0.8701
		T (°C)	40	5785.00502	5785	0.00502	0.8680
		T (°C)	50	5785.00105	5785	0.00105	0.1810
		T (°C)	60	5785.01173	5785	0.01173	2.0276
		T (°C)	70	5785.01258	5785	0.01258	2.1745
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)	5.00	5825.00406	5825	0.00406	0.6970
		V max (V)	5.75	5825.01027	5825	0.01027	1.7638
		V min (V)	4.25	5825.00859	5825	0.00859	1.4744
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)	DC 5V	T (°C)	-20	5825.01056	5825	0.01056	1.8135
		T (°C)	-10	5825.00287	5825	0.00287	0.4925
		T (°C)	0	5825.00877	5825	0.00877	1.5063
		T (°C)	10	5825.00261	5825	0.00261	0.4475
		T (°C)	20	5825.00991	5825	0.00991	1.7010
		T (°C)	30	5825.00778	5825	0.00778	1.3363
		T (°C)	40	5825.00819	5825	0.00819	1.4061
		T (°C)	50	5825.00984	5825	0.00984	1.6892
		T (°C)	60	5825.01294	5825	0.01294	2.2212
		T (°C)	70	5825.00530	5825	0.00530	0.9106
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.

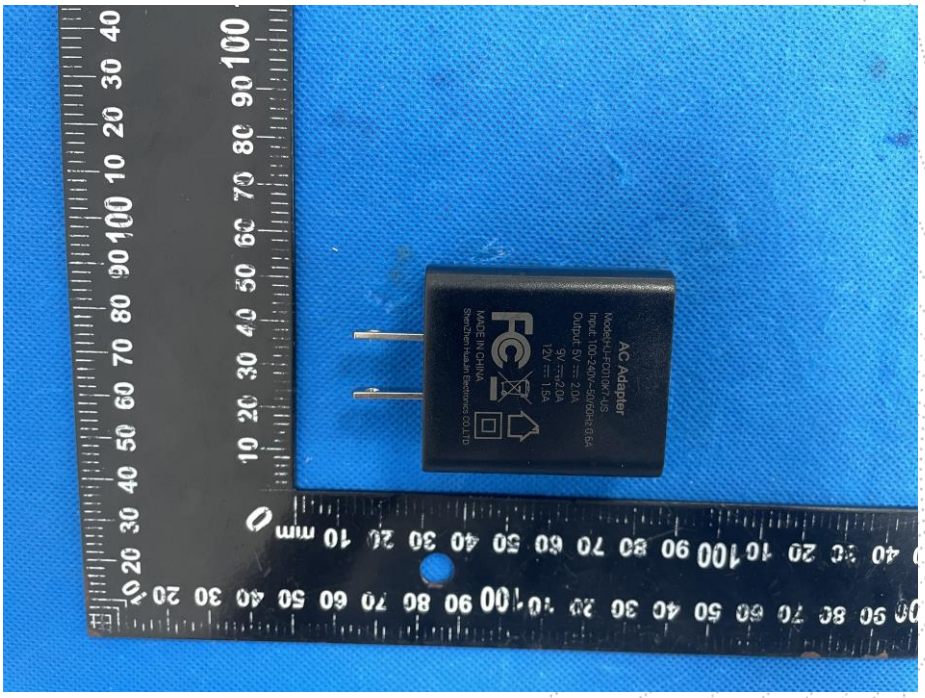
14.2 Test Result

The EUT antenna is Internal antenna (antenna gain: -0.15 dBi). It comply with the standard requirement.

15. EUT Photographs

EUT Photo 1

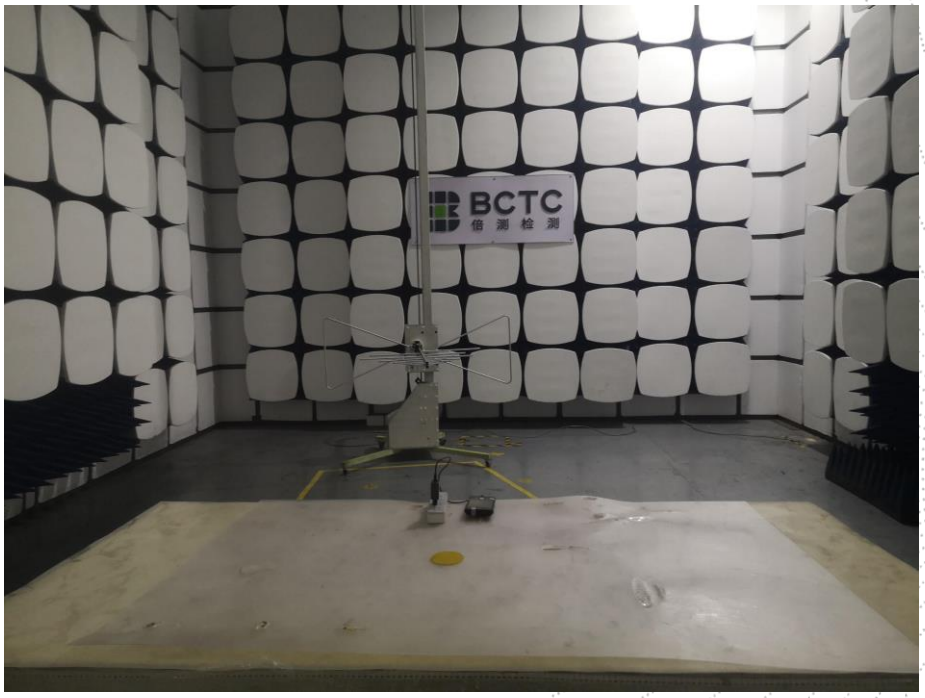
EUT Photo 2

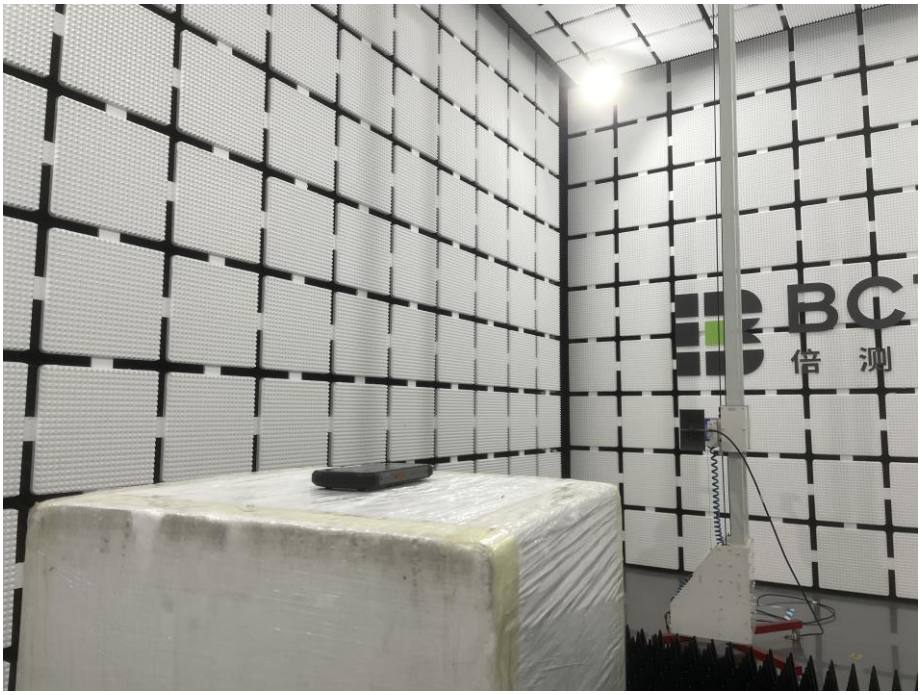


16. EUT Test Setup Photographs

Conducted Measurement Photo

Radiated Measurement Photos




BC
倍 测

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 test report without CMA mark is only used for scientific research, teaching, enterprise product development and internal quality control purposes.

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

9. 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.

Address:
1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL：400-788-9558

P.C.: 518103

FAX：0755-33229357

Website：http://www.chnbctc.com

E-Mail：bctc@bctc-lab.com.cn

※※※※※ **END** ※※※※※