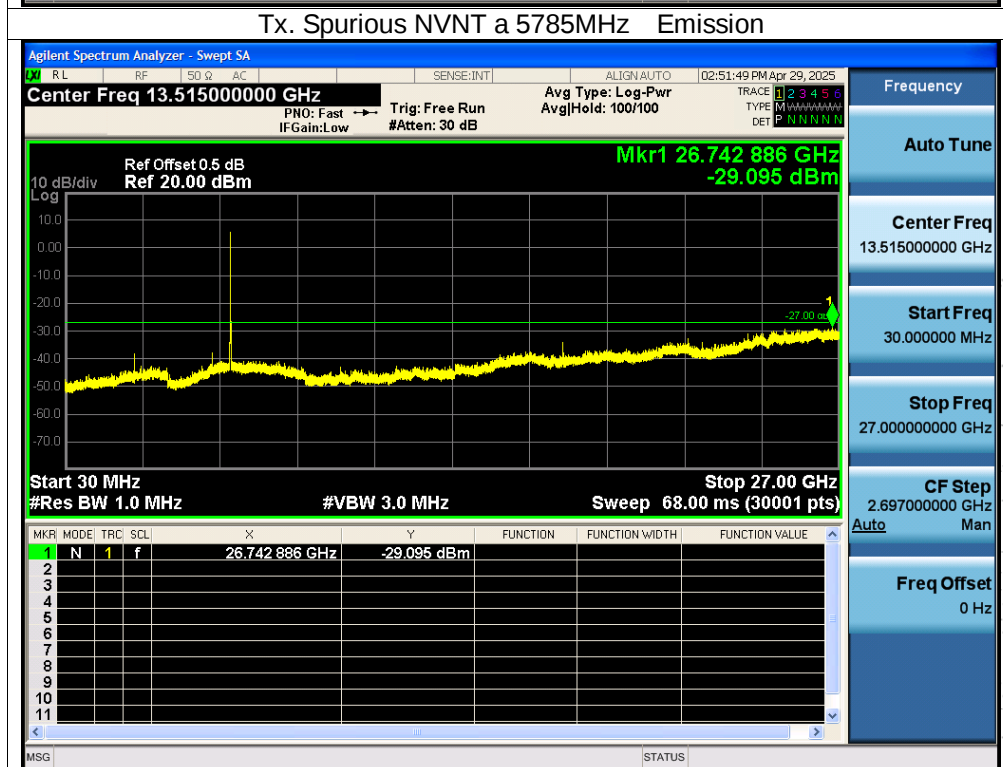
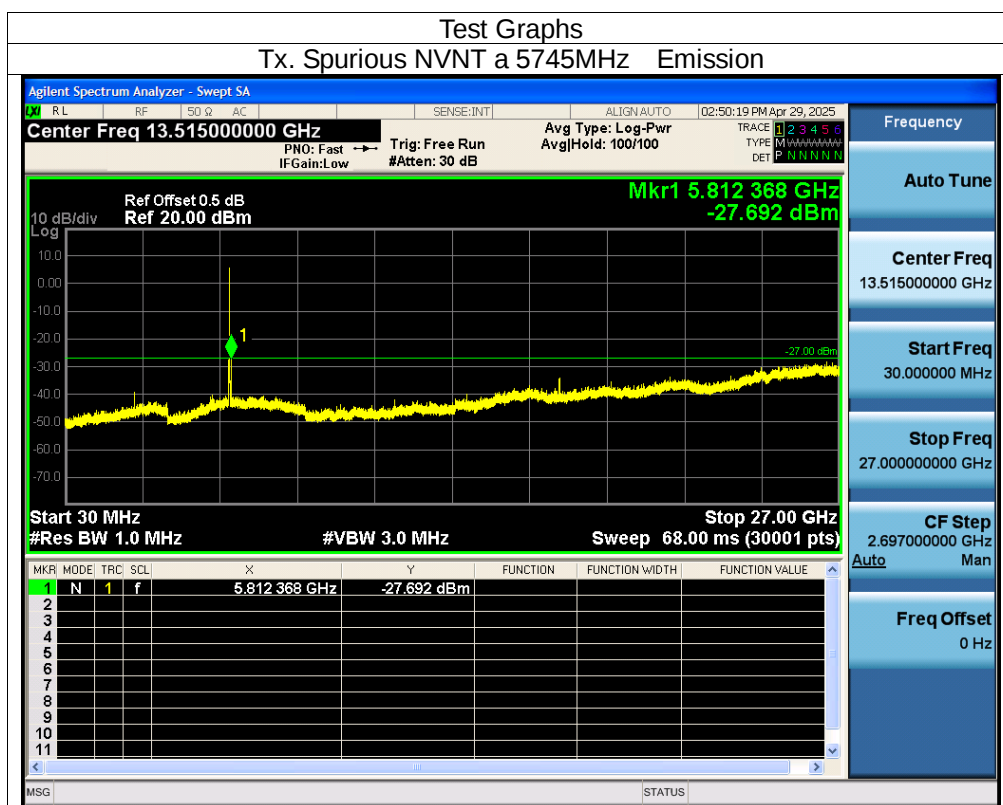
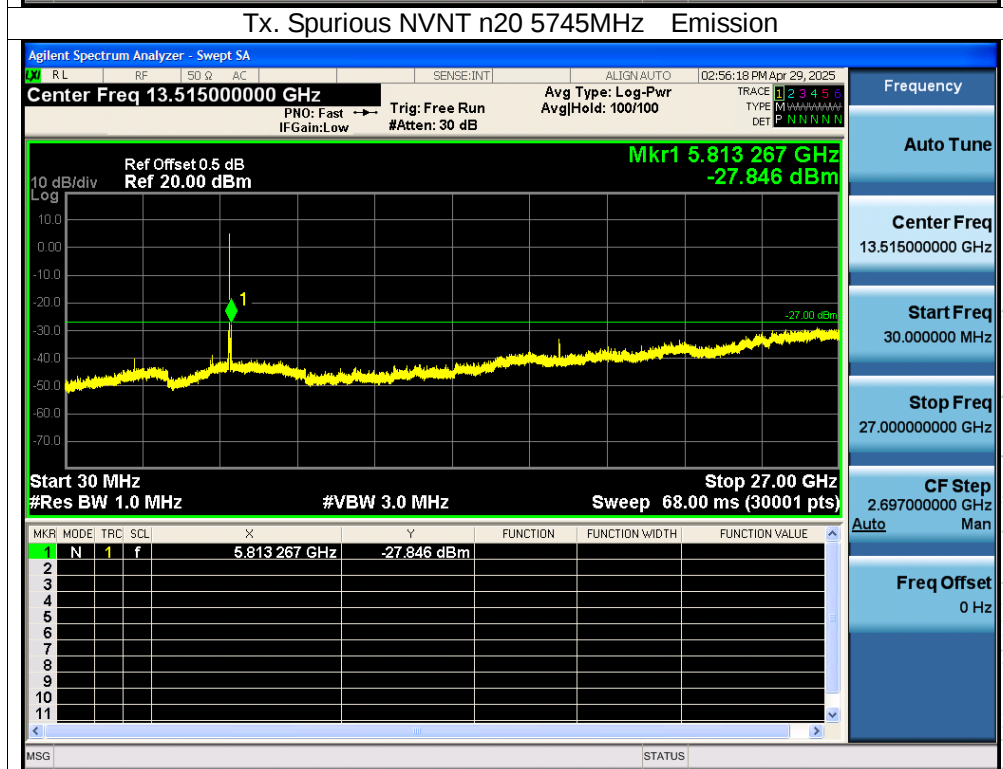
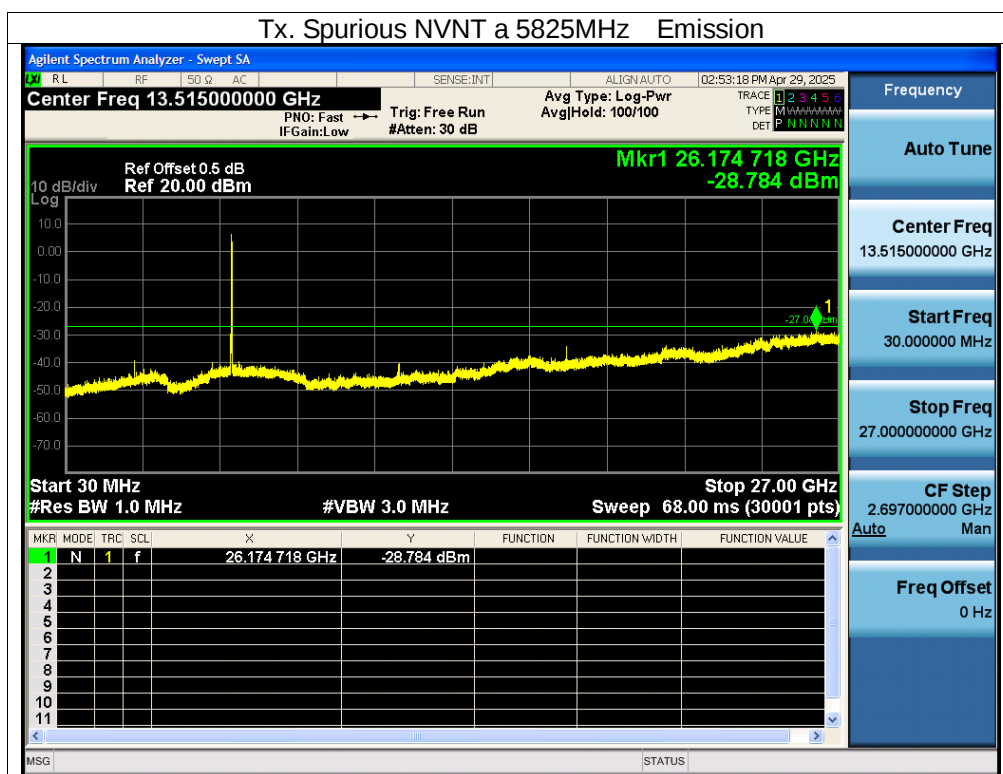
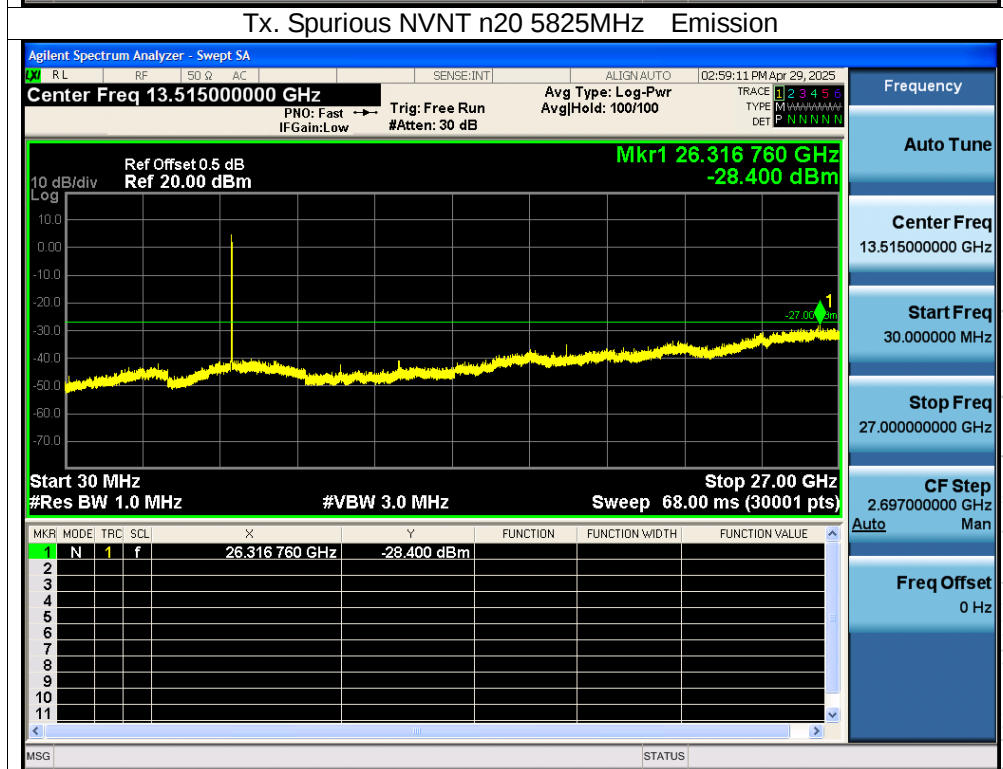
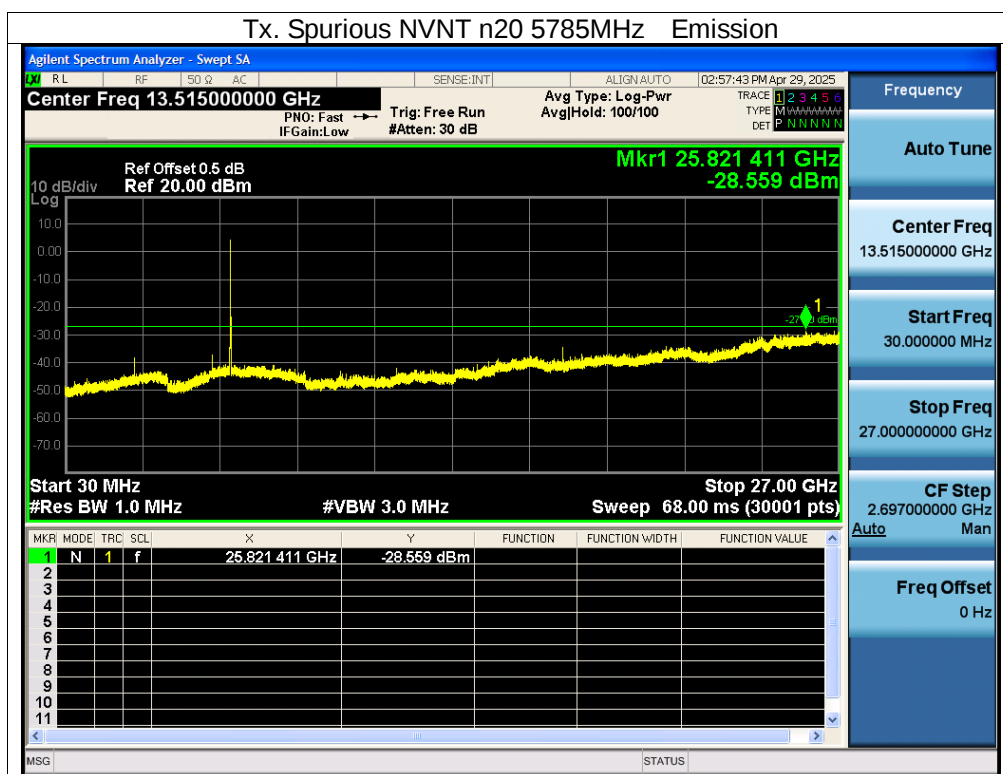
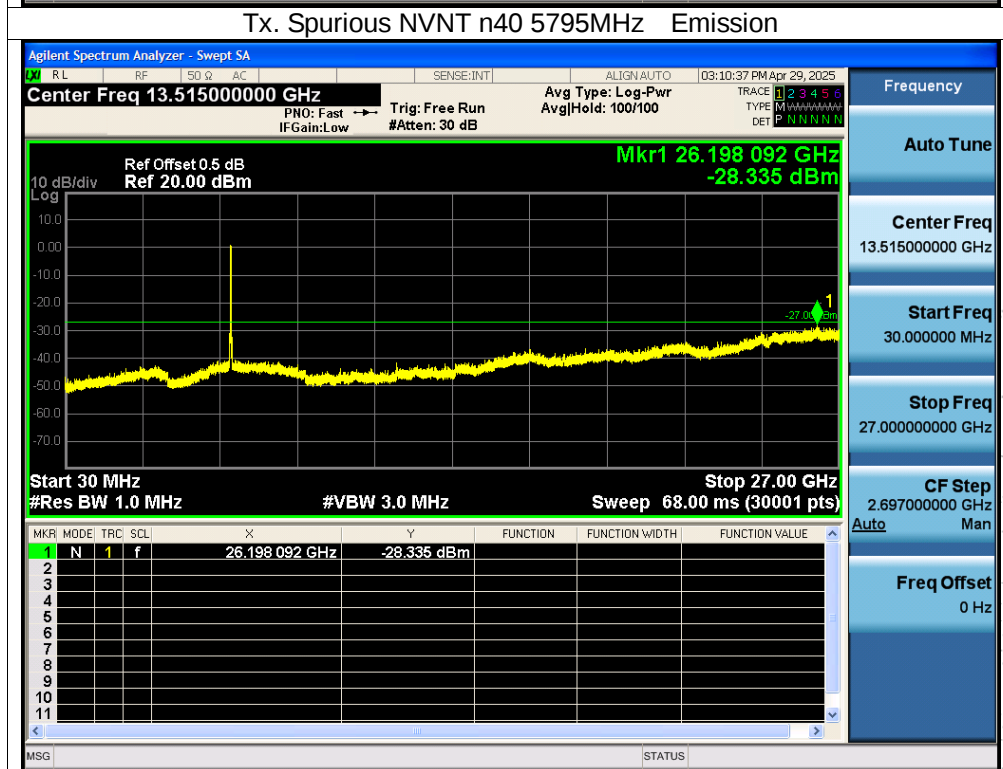
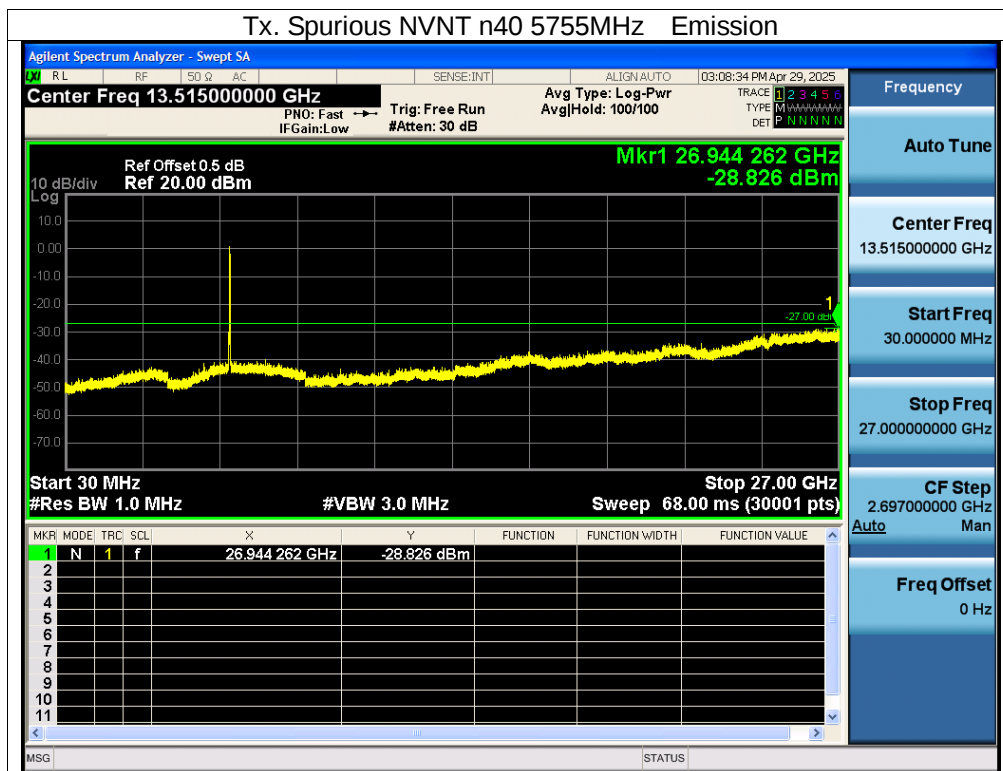
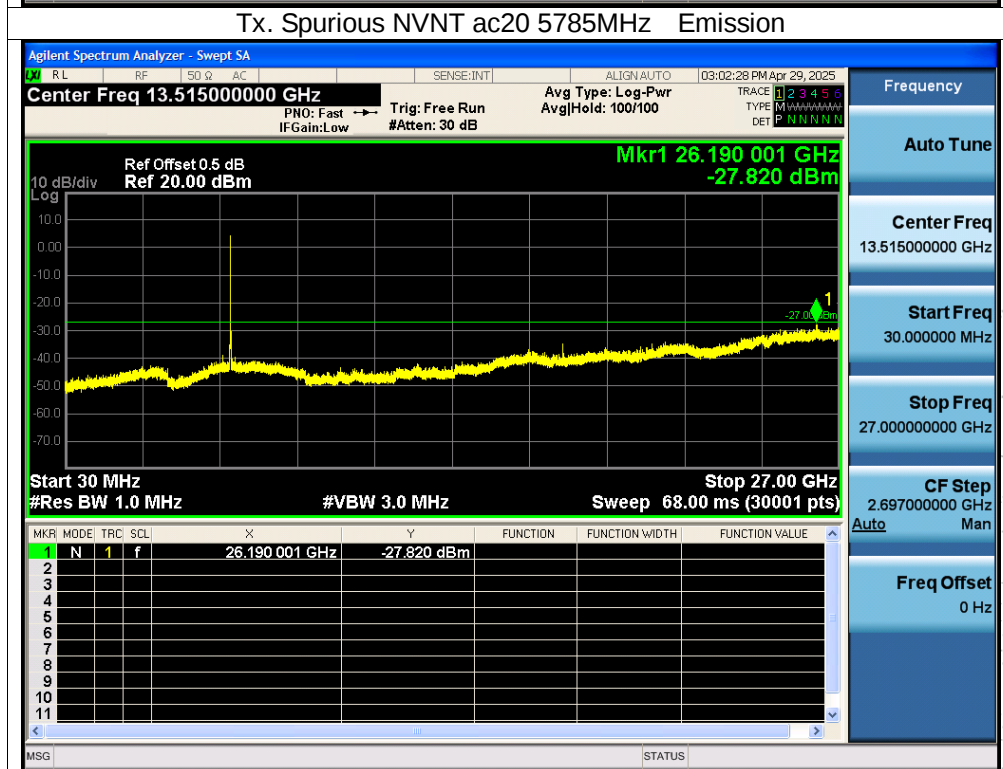
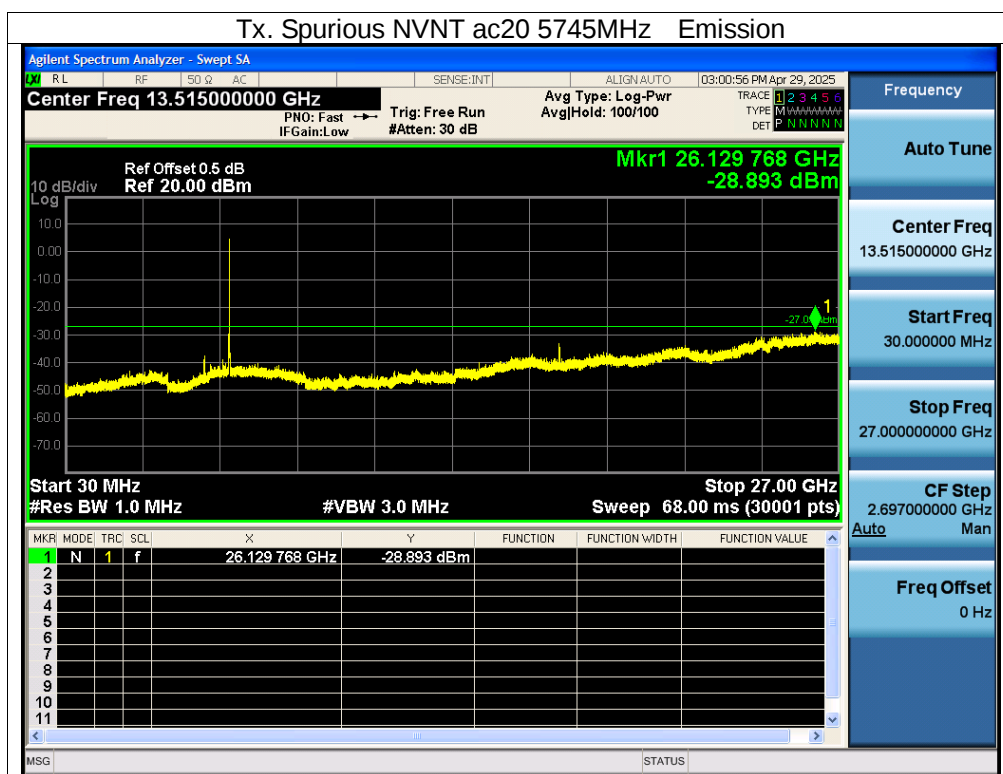


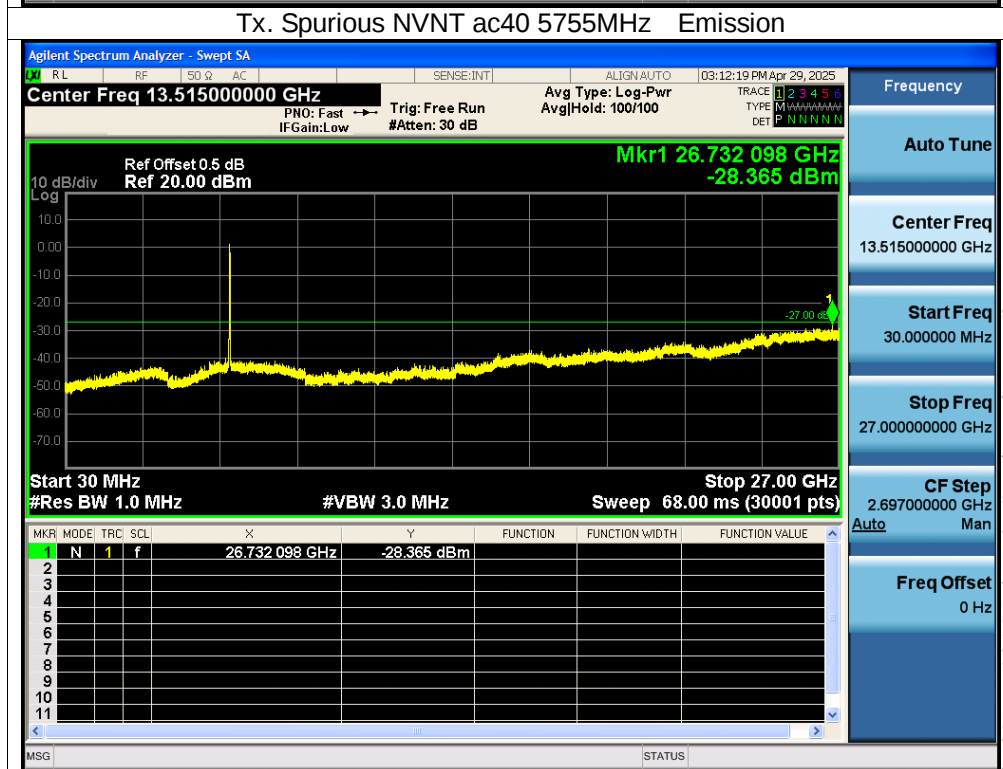
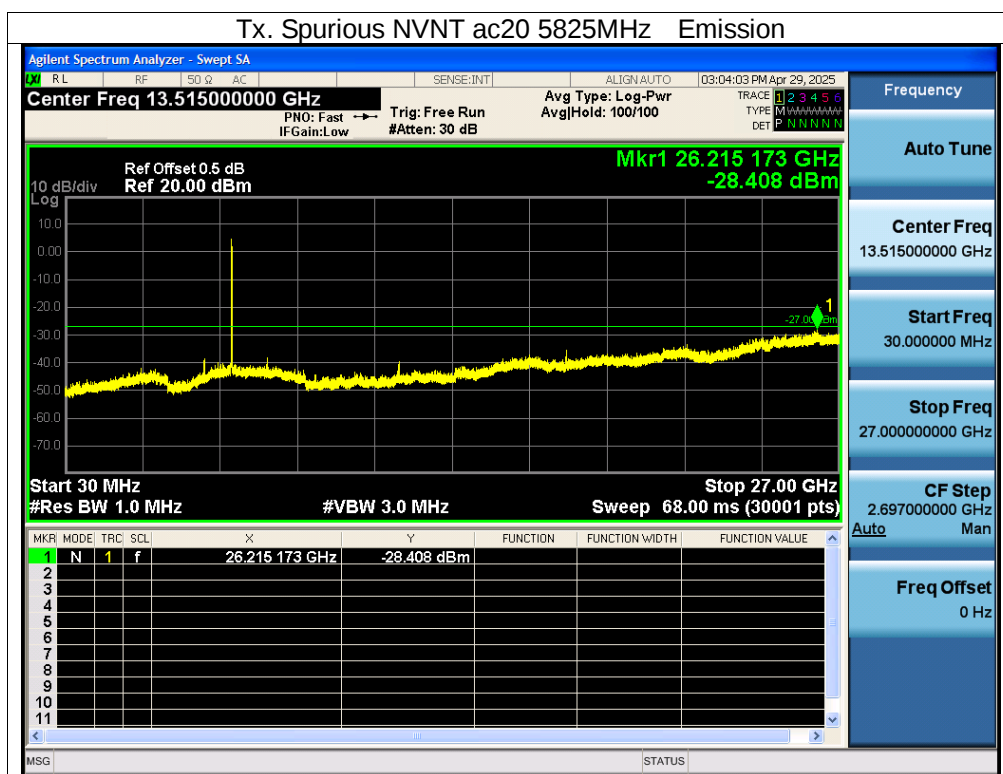




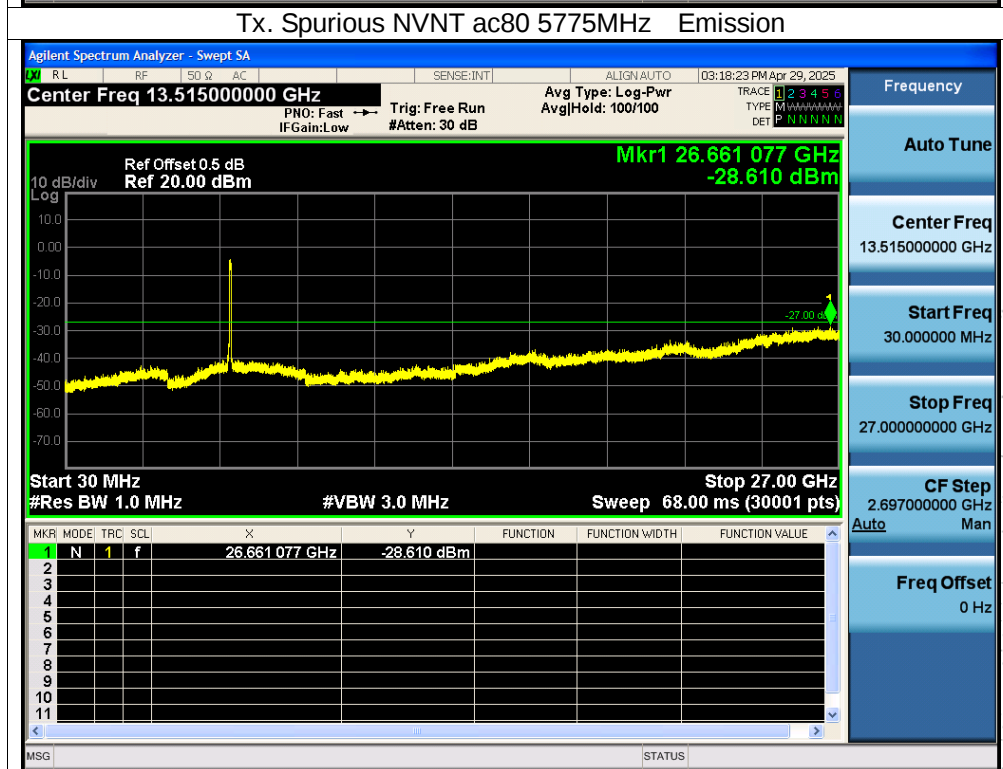
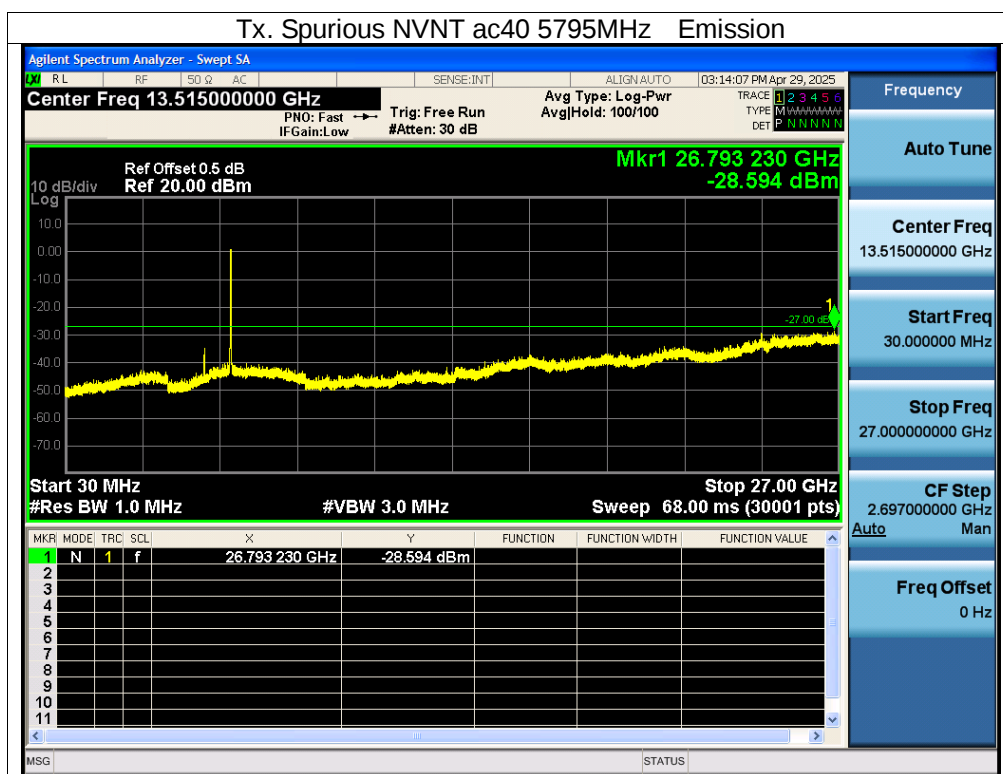








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13. Frequency Stability Measurement

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°C ~ 70°C .

13.4 Test Result

Temperature:	26 °C	Relative Humidity:	54%RH
Pressure:	101KPa	Test Voltage:	DC 12.8V
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)	18.00	5180.0076	5180	0.0076	1.4672
		V max (V)	20.70	5180.0034	5180	0.0034	0.6564
		V min (V)	15.30	5180.0038	5180	0.0038	0.7336
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)	120	T (°C)	-20	5180.0124	5180	0.0124	2.3938
		T (°C)	-10	5180.0064	5180	0.0064	1.2355
		T (°C)	0	5180.0026	5180	0.0026	0.5019
		T (°C)	10	5180.0069	5180	0.0069	1.3320
		T (°C)	20	5180.0121	5180	0.0121	2.3359
		T (°C)	30	5180.0037	5180	0.0037	0.7143
		T (°C)	40	5180.0125	5180	0.0125	2.4131
		T (°C)	50	5180.0063	5180	0.0063	1.2162
		T (°C)	60	5180.0036	5180	0.0036	0.6950
		T (°C)	70	5180.0074	5180	0.0074	1.4286
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)	18.00	5200.0054	5200	0.0054	1.0385
		V max (V)	20.70	5200.0128	5200	0.0128	2.4615
		V min (V)	15.30	5200.0076	5200	0.0076	1.4615
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)	120	T (°C)	-20	5200.0124	5200	0.0124	2.3846
		T (°C)	-10	5200.0051	5200	0.0051	0.9808
		T (°C)	0	5200.0113	5200	0.0113	2.1731
		T (°C)	10	5200.0070	5200	0.0070	1.3462
		T (°C)	20	5200.0044	5200	0.0044	0.8462
		T (°C)	30	5200.0070	5200	0.0070	1.3462
		T (°C)	40	5200.0094	5200	0.0094	1.8077
		T (°C)	50	5200.0054	5200	0.0054	1.0385
		T (°C)	60	5200.0094	5200	0.0094	1.8077
		T (°C)	70	5200.0081	5200	0.0081	1.5577
Limits				5150-5250 MHz			
Result				Complies			

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Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5240MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	18.00	5240.0081	5240	0.0081	1.5458
		V max (V)	20.70	5240.0075	5240	0.0075	1.4313
		V min (V)	15.30	5240.0103	5240	0.0103	1.9656
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)	120	T (°C)	-20	5240.0092	5240	0.0092	1.7557
		T (°C)	-10	5240.0118	5240	0.0118	2.2519
		T (°C)	0	5240.0095	5240	0.0095	1.8130
		T (°C)	10	5240.0044	5240	0.0044	0.8397
		T (°C)	20	5240.0025	5240	0.0025	0.4771
		T (°C)	30	5240.0115	5240	0.0115	2.1947
		T (°C)	40	5240.0019	5240	0.0019	0.3626
		T (°C)	50	5240.0011	5240	0.0011	0.2099
		T (°C)	60	5240.0086	5240	0.0086	1.6412
		T (°C)	70	5240.0028	5240	0.0028	0.5344
Limits				5150-5250 MHz			
Result				Complies			

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Temperature:	26 °C	Relative Humidity:	54%RH
Pressure:	101KPa	Test Voltage:	DC 18V
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)	18.00	5745.0135	5745	0.0135	2.3499
		V max (V)	20.70	5745.0126	5745	0.0126	2.1932
		V min (V)	15.30	5745.0042	5745	0.0042	0.7311
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)	120	T (°C)	-20	5745.0108	5745	0.0108	1.8799
		T (°C)	-10	5745.0100	5745	0.0100	1.7406
		T (°C)	0	5745.0006	5745	0.0006	0.1044
		T (°C)	10	5745.0015	5745	0.0015	0.2611
		T (°C)	20	5745.0056	5745	0.0056	0.9748
		T (°C)	30	5745.0130	5745	0.0130	2.2628
		T (°C)	40	5745.0112	5745	0.0112	1.9495
		T (°C)	50	5745.0120	5745	0.0120	2.0888
		T (°C)	60	5745.0022	5745	0.0022	0.3829
		T (°C)	70	5745.0106	5745	0.0106	1.8451
Limits				5725-5850 MHz			
Result				Complies			

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Voltage vs. Frequency Stability

TEST CONDITIONS				Reference Frequency: 5785MHz			
				f	fc	Max. Deviation (MHz)	Max. Deviation (ppm)
T nom (°C)	20	V nom (V)	18.00	5785.0005	5785	0.0005	0.0864
		V max (V)	20.70	5785.0019	5785	0.0019	0.3284
		V min (V)	15.30	5785.0023	5785	0.0023	0.3976
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)	120	T (°C)	-20	5785.0024	5785	0.0024	0.4149
		T (°C)	-10	5785.0028	5785	0.0028	0.4840
		T (°C)	0	5785.0098	5785	0.0098	1.6940
		T (°C)	10	5785.0043	5785	0.0043	0.7433
		T (°C)	20	5785.0074	5785	0.0074	1.2792
		T (°C)	30	5785.0045	5785	0.0045	0.7779
		T (°C)	40	5785.0117	5785	0.0117	2.0225
		T (°C)	50	5785.0039	5785	0.0039	0.6742
		T (°C)	60	5785.0050	5785	0.0050	0.8643
		T (°C)	70	5785.0027	5785	0.0027	0.4667
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)	18.00	5825.0005	5825	0.0005	0.0858
		V max (V)	20.70	5825.0118	5825	0.0118	2.0258
		V min (V)	15.30	5825.0013	5825	0.0013	0.2232
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)	120	T (°C)	-20	5825.0052	5825	0.0052	0.8927
		T (°C)	-10	5825.0127	5825	0.0127	2.1803
		T (°C)	0	5825.0010	5825	0.0010	0.1717
		T (°C)	10	5825.0131	5825	0.0131	2.2489
		T (°C)	20	5825.0030	5825	0.0030	0.5150
		T (°C)	30	5825.0048	5825	0.0048	0.8240
		T (°C)	40	5825.0022	5825	0.0022	0.3777
		T (°C)	50	5825.0015	5825	0.0015	0.2575
		T (°C)	60	5825.0122	5825	0.0122	2.0944
		T (°C)	70	5825.0028	5825	0.0028	0.4807
Limits				5725-5850 MHz			
Result				Complies			



14. Antenna Requirement

14.1 Limit

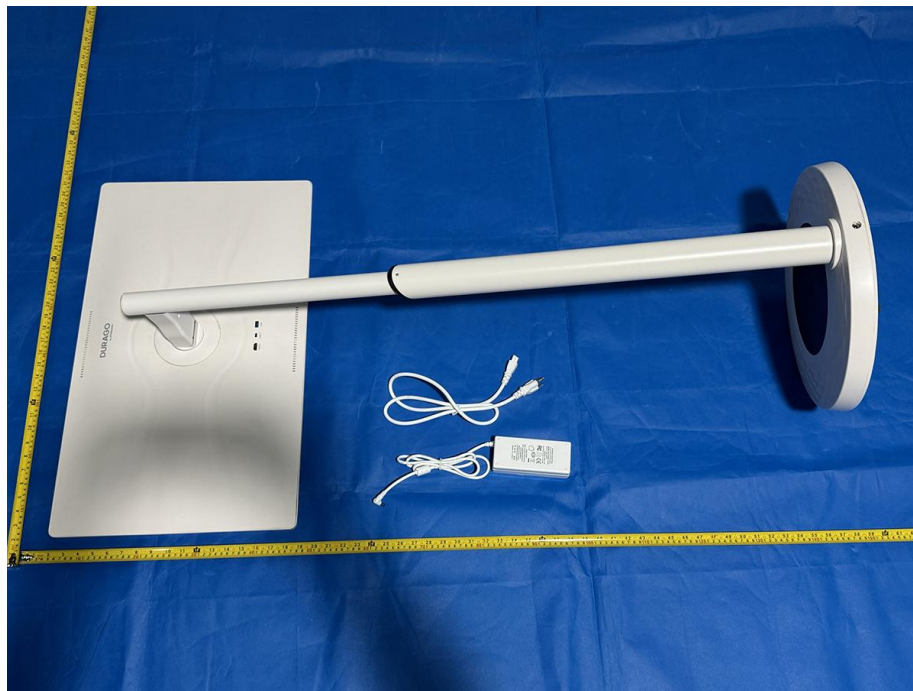
15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

14.2 Test Antenna

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

15. EUT Photographs

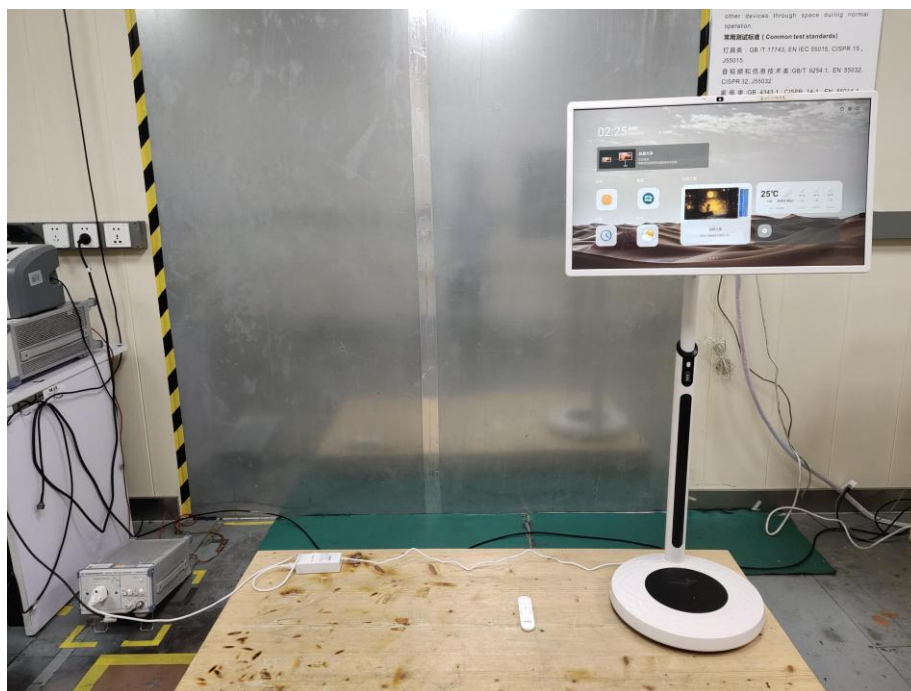
EUT Photo



NOTE: Appendix-Photographs Of EUT Constructional Details

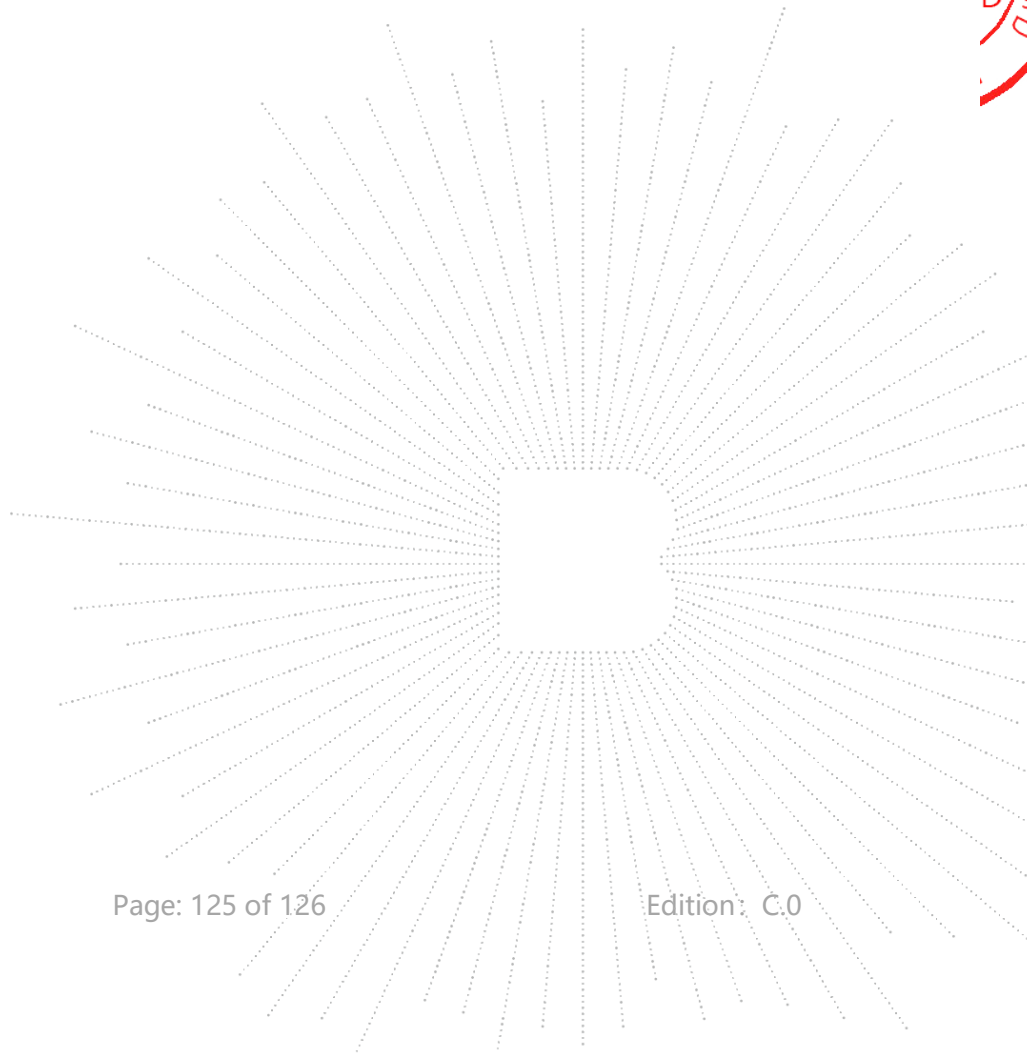
16. EUT Test Setup Photographs

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.

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>

Consultation E-mail: bctc@bctc-lab.com.cn

Complaint/Advice E-mail: advice@bctc-lab.com.cn

***** END *****