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# FCC Test Report

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Report No.: AGC00174210102FE03A

**FCC ID** : XPYNORAB1

**APPLICATION PURPOSE** : Class II Equipment

**PRODUCT DESIGNATION** : NORA-B1

**BRAND NAME** : u-blox

**MODEL NAME** : NORA-B100, NORA-B101, NORA-B106

**APPLICANT** : u-blox AG

**DATE OF ISSUE** : Sep. 13, 2021

**STANDARD(S)** : FCC Part 15.247

**REPORT VERSION** : V1.0



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### REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Sep. 13, 2021	Valid	Initial Release

**Note:**

The original test report Ref. No. AGC00174210102FE03 dated Jun. 09, 2021, was modified on Sep. 13, 2021 to include the following changes:

- The high channel frequency changes due to software changes.
- So the high channel data had been tested for the Class II permissive change.

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## 1. VERIFICATION OF COMPLIANCE

<b>Applicant</b>	u-blox AG
<b>Address</b>	Zuercherstrasse 68, Thalwil 8800, Switzerland
<b>Manufacturer</b>	u-blox AG
<b>Address</b>	Zuercherstrasse 68, Thalwil 8800, Switzerland
<b>Product Designation</b>	NORA-B1
<b>Brand Name</b>	u-blox
<b>Test Model</b>	NORA-B100
<b>Series Model</b>	NORA-B101, NORA-B106
<b>Difference description</b>	All the series models are the same as the test model except for the model names and antenna type. NORA-B100 - u.FL connector; NORA-B101 - Antenna pin; NORA-B106 - PCB Trace antenna.
<b>Date of test</b>	Sep. 01, 2021 to Sep. 13, 2021
<b>Deviation</b>	No any deviation from the test method
<b>Condition of Test Sample</b>	Normal
<b>Test Result</b>	Pass
<b>Report Template</b>	AGCRT-US-BLE/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC part 15.247.

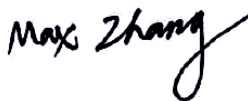
Prepared By



John Zeng  
(Project Engineer)

Sep. 13, 2021

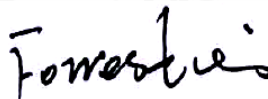
Reviewed By



Max Zhang  
(Reviewer)

Sep. 13, 2021

Approved By



Forrest Lei  
(Authorized Officer)

Sep. 13, 2021

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## 2. GENERAL INFORMATION

### 2.1. PRODUCT DESCRIPTION

The EUT is designed as a “NORA-B1”. It is designed by way of utilizing the O-QPSK technology to achieve the system operation.

A major technical description of EUT is described as following

<b>Operation Frequency</b>	2.405 GHz to 2.480GHz
<b>RF Output Power</b>	2.871dBm (Max)
<b>Modulation</b>	O-QPSK
<b>Number of channels</b>	16 Channels
<b>Antenna Designation</b>	See section 2.9 of the report (Comply with requirements of the FCC part 15.203)
<b>Antenna Gain</b>	See section 2.8 of the report
<b>Hardware Version</b>	A
<b>Software Version</b>	V1.1
<b>Power Supply</b>	DC 3.3V

### 2.2. TABLE OF CARRIER FREQUENCIES

Frequency Band	Channel Number	Frequency
2400~2483.5MHz	0	2405 MHz
	1	2410 MHz
	:	:
	14	2475 MHz
	15	2480 MHz

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### 2.3. RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for **FCC ID: XPNORAB1** filing to comply with the FCC Part 15.247 requirements.

### 2.4. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

### 2.5. SPECIAL ACCESSORIES

Refer to section 5.2.

### 2.6. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

### 2.7. ANTENNA REQUIREMENT

This intentional radiator is designed with a permanently attached antenna of an antenna to ensure that no antenna other than that furnished by the responsible party shall be used with the device. For more information of the antenna, please refer to the APPENDIX B: PHOTOGRAPHS OF EUT.

### 2.8. DESCRIPTION OF AVAILABLE ANTENNAS

Model No.: NORA-B100

Bluetooth Dedicated Antenna		
Antenna Type	Frequency Band (GHz)	Max Peak Gain (dBi)
Monopole antenna	2400 ~ 2500	5.3
Flexible PCB Antenna	2400 ~ 2500	-0.5

Model No.: NORA-B101

Bluetooth Dedicated Antenna		
Antenna Type	Frequency Band (GHz)	Max Peak Gain (dBi)
Monopole antenna	2400 ~ 2500	5.3
Flexible PCB Antenna	2400 ~ 2500	-0.5

Model No.: NORA-B106

Bluetooth Internal Antenna		
Antenna Type	Frequency Band (GHz)	Max Peak Gain (dBi)
PCB Antenna	2400 ~ 2483.5	2.0

Note : The manufacturer of NORA-101's module ANT PIN claims that the gain is 0 dBi

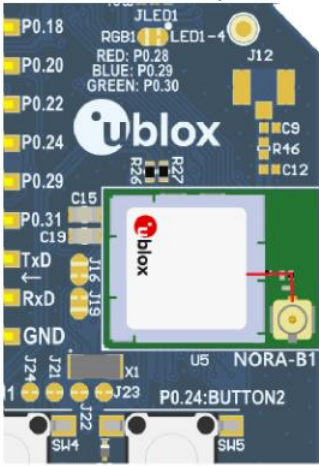
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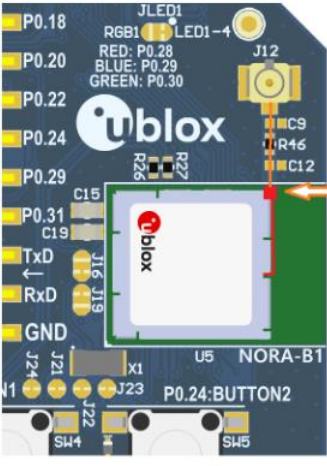


## 2.9. DESCRIPTION OF ANTENNA RF PORT

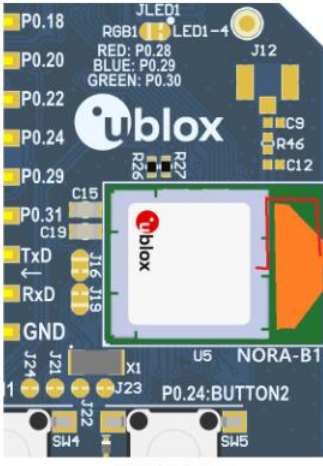
Antenna RF Port			
--	Bluetooth (NORA-B100)	Bluetooth (NORA-B101)	Bluetooth (NORA-B106)
Software Control Port	U.FL	ANT PIN+U.FL	As shown below



NORA-B100



NORA-B101



NORA-B106

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### 3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95%.

- Uncertainty of Conducted Emission,  $U_c = \pm 3.1$  dB
- Uncertainty of Radiated Emission below 1GHz,  $U_c = \pm 4.0$  dB
- Uncertainty of Radiated Emission above 1GHz,  $U_c = \pm 4.8$  dB
- Uncertainty of total RF power, conducted,  $U_c = \pm 0.8$  dB
- Uncertainty of RF power density, conducted,  $U_c = \pm 2.6$  dB
- Uncertainty of spurious emissions, conducted,  $U_c = \pm 2.7$  dB
- Uncertainty of Occupied Channel Bandwidth:  $U_c = \pm 2$  %

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#### 4. DESCRIPTION OF TEST MODES

NO.	TEST MODE DESCRIPTION
1	Low channel TX(2405MHz)
2	Middle channel TX(2440MHz)
3	High channel TX(2480MHz)

**Note:**

1. Only the result of the worst case was recorded in the report, if no other cases.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
3. For Conducted Test method, a temporary antenna connector is provided by the manufacture.
4. The EUT enters the fixed frequency state through the pressing Button 1 (increment mode) and Button 2 (decrement mode) on the control board.

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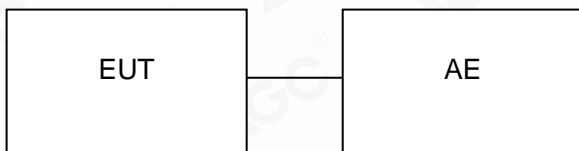
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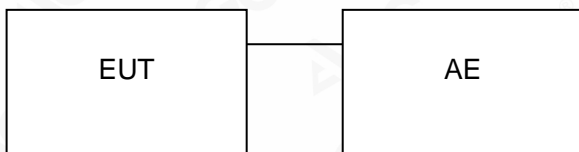
## 5. SYSTEM TEST CONFIGURATION

### 5.1. CONFIGURATION OF TESTED SYSTEM

Radiated Emission Configure:



Conducted Emission Configure:



### 5.2. EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	NORA-B1	NORA-B100	XPYNORAB1	EUT
2	Mobile phone	TCL	J326T	AE
3	PC 1	DELL E40	N/A	AE
4	PC 2	HUAWEI MATEBOOK	N/A	AE
5	Control board	C3	DC 3.3V	AE

### 5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
15.247 (b)(3)	Peak Output Power	Compliant
15.247 (a)(2)	6 dB Bandwidth	Compliant
15.247 (d)	Conducted Spurious Emission	Compliant
15.247 (e)	Maximum Conducted Output Power Density	Compliant
15.209	Radiated Emission	Compliant

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## 6. TEST FACILITY

<b>Test Site</b>	Attestation of Global Compliance (Shenzhen) Co., Ltd
<b>Location</b>	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
<b>Designation Number</b>	CN1259
<b>FCC Test Firm Registration Number</b>	975832
<b>A2LA Cert. No.</b>	5054.02
<b>Description</b>	Attestation of Global Compliance (Shenzhen) Co., Ltd is accredited by A2LA

### TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	May 15, 2021	May 14, 2022
LISN	R&S	ESH2-Z5	100086	Jun. 09, 2021	Jun. 08, 2022
Test software	R&S	ES-K1(Ver.V1.71)	N/A	N/A	N/A

### TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2021	May 14, 2022
EXA Signal Analyzer	Agilent	N9010A	MY53470504	Dec. 07, 2020	Dec. 06, 2021
2.4GHz Filter	EM Electronics	2400-2500MHz	N/A	Mar. 23, 2020	Mar. 22, 2022
Attenuator	ZHINAN	E-002	N/A	Sep. 03, 2020	Sep. 02, 2022
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 21, 2019	Sep. 20, 2021
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2020	May 21, 2022
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Apr. 23, 2021	Apr. 22, 2022
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 03, 2020	Sep. 02, 2022
ANTENNA	SCHWARZBECK	VULB9168	494	Sep. 20, 2019	Sep. 19, 2021
Test software	FARA	EZ-EMC (Ver RA-03A)	N/A	N/A	N/A

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## 7. PEAK OUTPUT POWER

### 7.1. MEASUREMENT PROCEDURE

For peak power test:

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2.  $RBW \geq DTS$  bandwidth
3.  $VBW \geq 3 * RBW$ .
4.  $SPAN \geq VBW$ .
5. Sweep: Auto.
6. Detector function: Peak.
7. Trace: Max hold.

Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power, after any corrections for external attenuators and cables.

### 7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

#### PEAK POWER TEST SETUP



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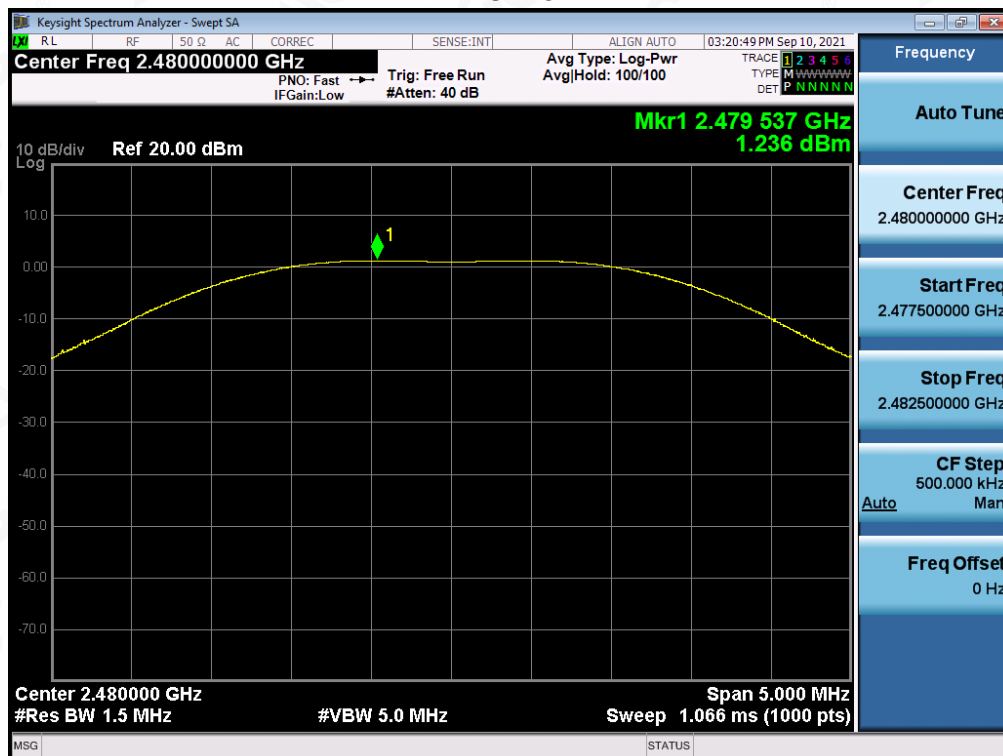
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### 7.3. LIMITS AND MEASUREMENT RESULT

PEAK OUTPUT POWER MEASUREMENT RESULT FOR GFSK MOUDULATION			
Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.480	1.236	30	Pass

CH15



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## 8. 6 DB BANDWIDTH

### 8.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 kHz, VBW $\geq 3 \times$  RBW.
4. Set SPA Trace 1 Max hold, then View.

**Note:** The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

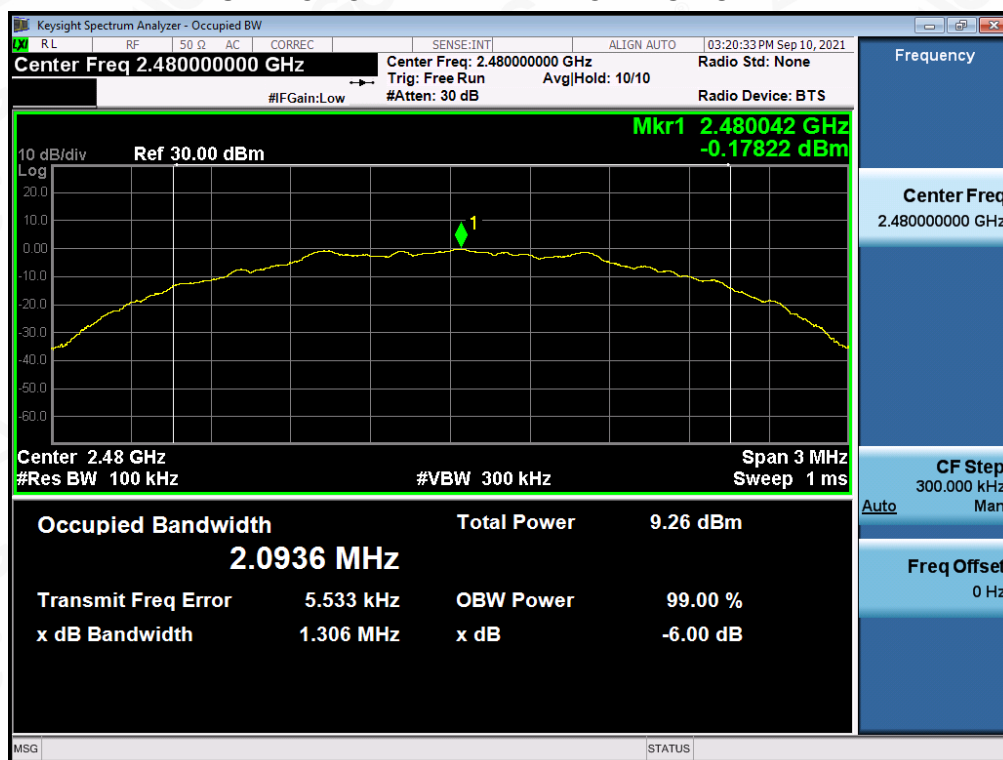
### 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

### 8.3. LIMITS AND MEASUREMENT RESULTS

LIMITS AND MEASUREMENT RESULT			
Applicable Limits	Applicable Limits		
	Test Data (kHz)		Criteria
>500KHZ	High Channel	1306	PASS

TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



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## 9. CONDUCTED SPURIOUS EMISSION

### 9.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Trace 1 Max hold, then View.

**Note:** The EUT was tested according to ANSI C63.10 for compliance to FCC PART 15.247 requirements.

### 9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 7.2.

### 9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.

### 9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT		
Applicable Limits	Measurement Result	
	Test Data	Criteria
In any 100 kHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power.	At least -20dBc than the reference level	PASS

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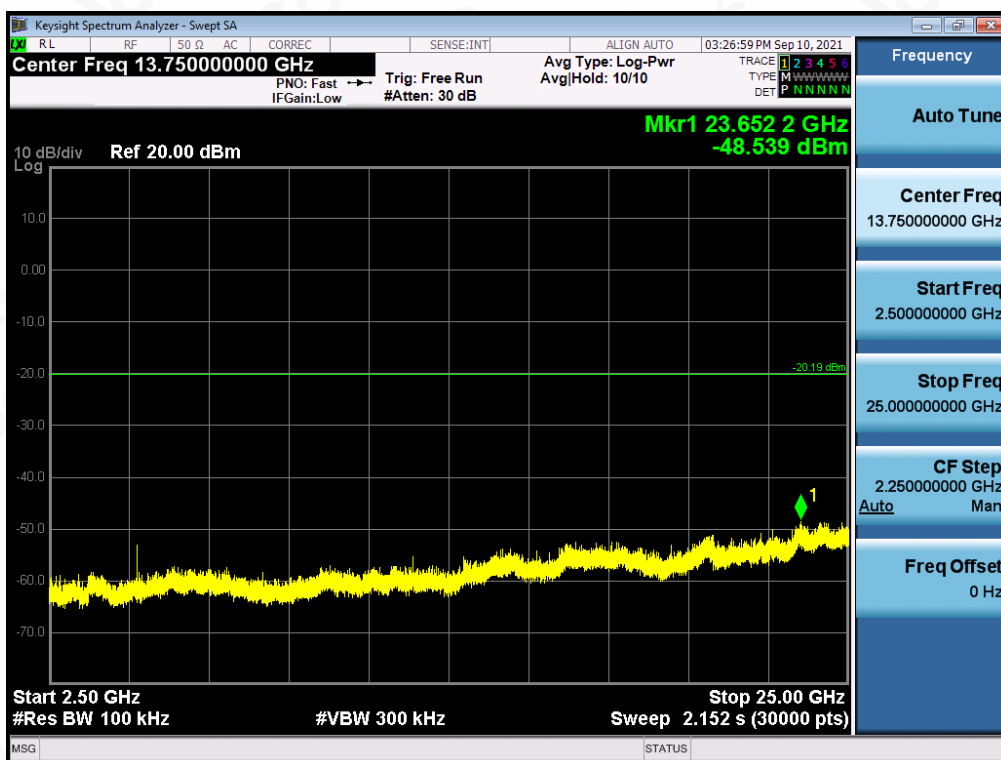
## TEST RESULT FOR ENTIRE FREQUENCY RANGE O-QPSK MODULATION IN HIGH CHANNEL



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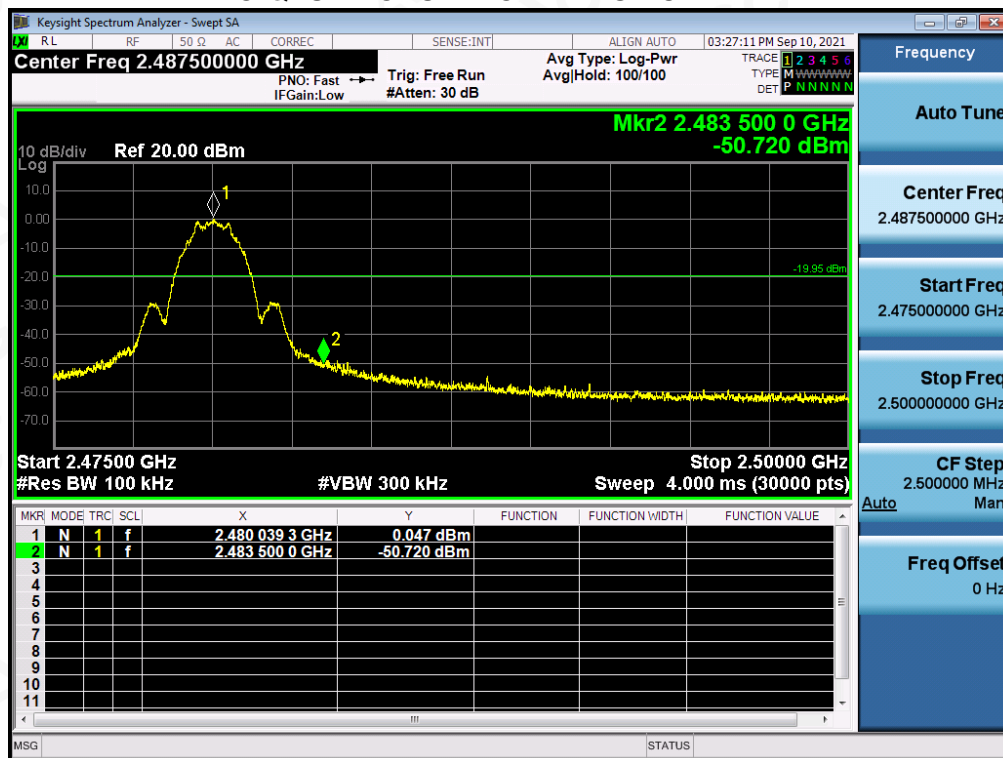
Note: The peak emissions without marker on the above plots are fundamental wave and need not to compare with the limit.

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### TEST RESULT FOR BAND EDGE O-QPSK MODULATION IN HIGH CHANNEL



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## 10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

### 10.1. MEASUREMENT PROCEDURE

- (1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- (2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- (3). Set the SPA Trace 1 Max hold, then View.

Note: The method of PKPSD in the KDB 558074 item 10.2 was used in this testing.

### 10.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer to Section 7.2.

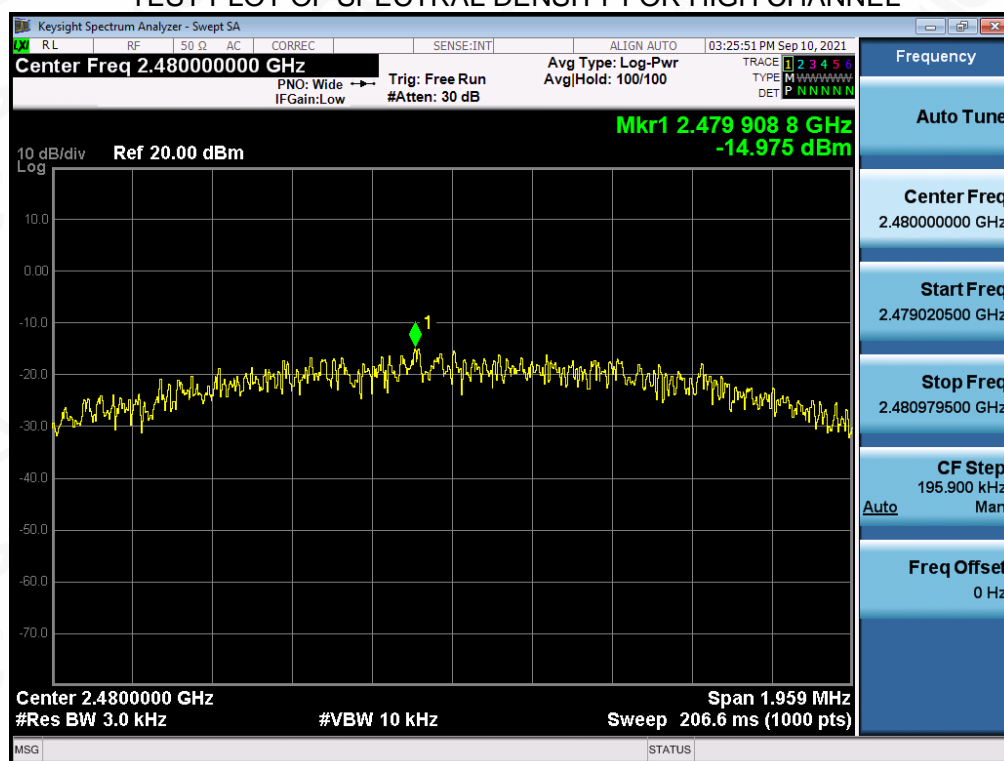
### 10.3. MEASUREMENT EQUIPMENT USED

Refer to Section 6.

### 10.4. LIMITS AND MEASUREMENT RESULT

Channel No.	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
High Channel	-14.975	8	Pass

TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



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## 11. RADIATED EMISSION

### 11.1. MEASUREMENT PROCEDURE

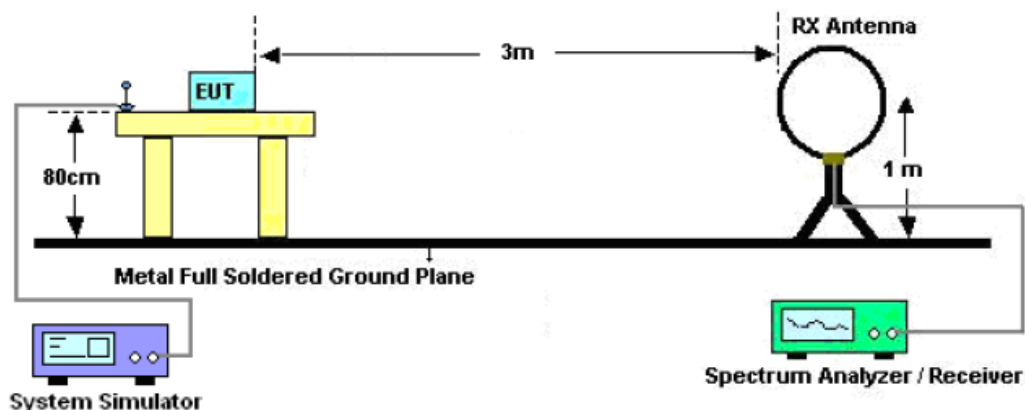
1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

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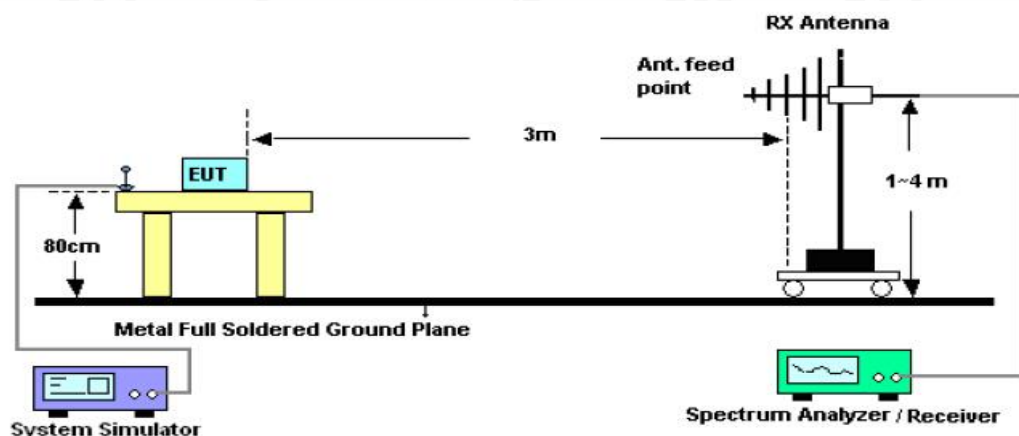


## 11.2. TEST SETUP

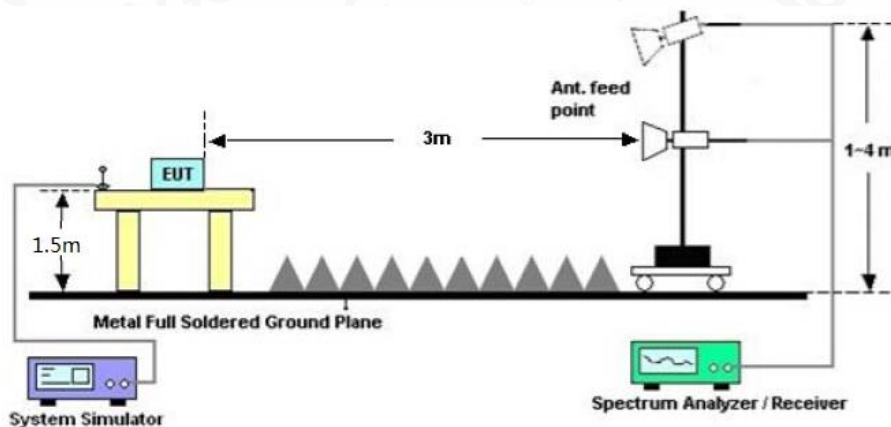
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



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### 11.3. LIMITS AND MEASUREMENT RESULT

15.209 Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Note: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

### 11.4. TEST RESULT

#### RADIATED EMISSION BELOW 30MHz

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

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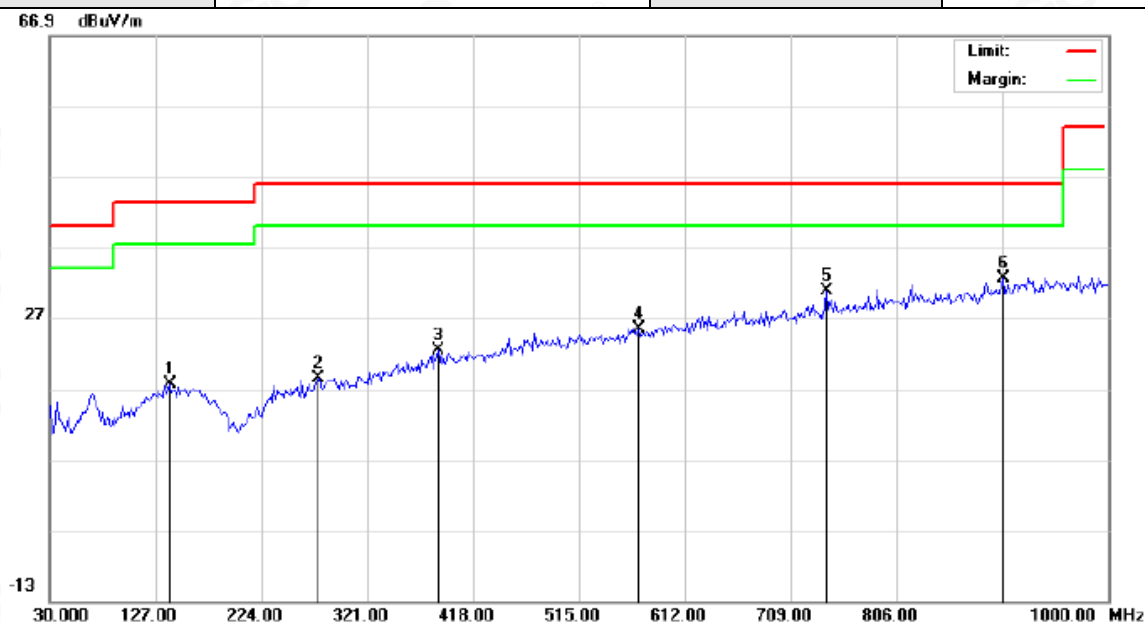
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### RADIATED EMISSION BELOW 1GHZ

#### Antenna 1

EUT	NORA-B1	Model Name	NORA-B100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		139.9333	-1.59	19.23	17.64	43.50	-25.86	peak
2		275.7333	-1.18	19.59	18.41	46.00	-27.59	peak
3		385.6666	-0.17	22.48	22.31	46.00	-23.69	peak
4		569.9667	-0.86	26.36	25.50	46.00	-20.50	peak
5		741.3333	1.63	29.08	30.71	46.00	-15.29	peak
6	*	903.0000	0.92	31.73	32.65	46.00	-13.35	peak

**RESULT: PASS**

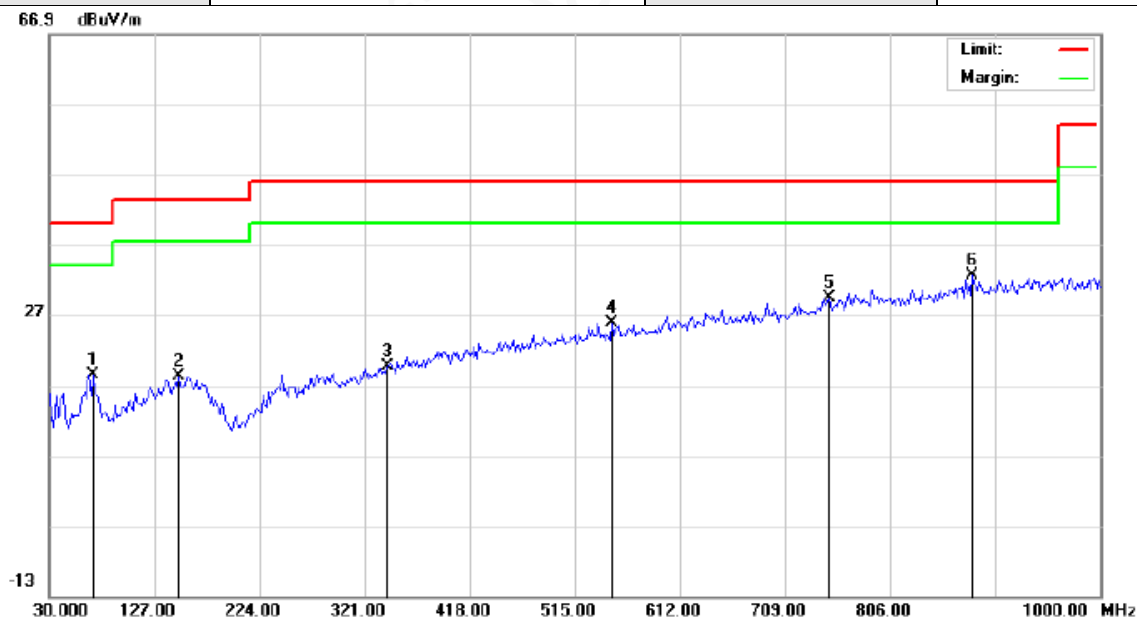
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EUT	NORA-B1	Model Name	NORA-B100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		70.4167	1.45	17.02	18.47	40.00	-21.53	peak
2		149.6333	-1.00	19.21	18.21	43.50	-25.29	peak
3		342.0167	-1.43	20.94	19.51	46.00	-26.49	peak
4		548.9500	-0.10	25.95	25.85	46.00	-20.15	peak
5		749.4167	0.12	29.27	29.39	46.00	-16.61	peak
6	*	881.9833	1.09	31.47	32.56	46.00	-13.44	peak

**RESULT: PASS**

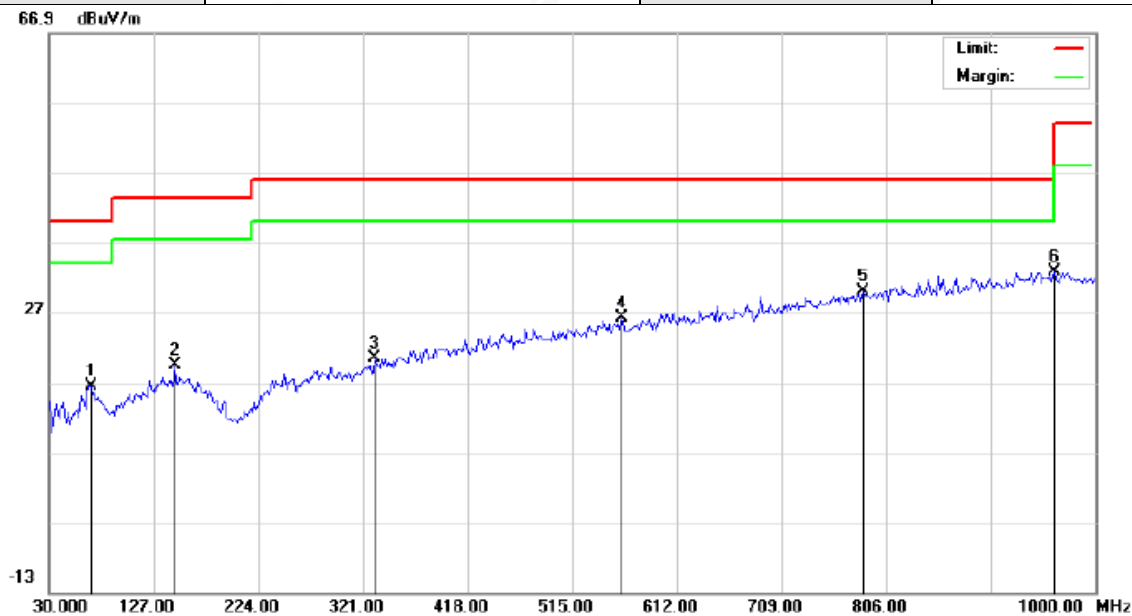
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### Antenna 2

EUT	NORA-B1	Model Name	NORA-B100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		68.8000	-0.55	16.96	16.41	40.00	-23.59	peak
2		146.4000	0.15	19.22	19.37	43.50	-24.13	peak
3		332.3167	-0.24	20.60	20.36	46.00	-25.64	peak
4		560.2667	0.04	26.17	26.21	46.00	-19.79	peak
5	*	784.9833	-0.16	30.07	29.91	46.00	-16.09	peak
6		961.2000	0.48	32.23	32.71	54.00	-21.29	peak

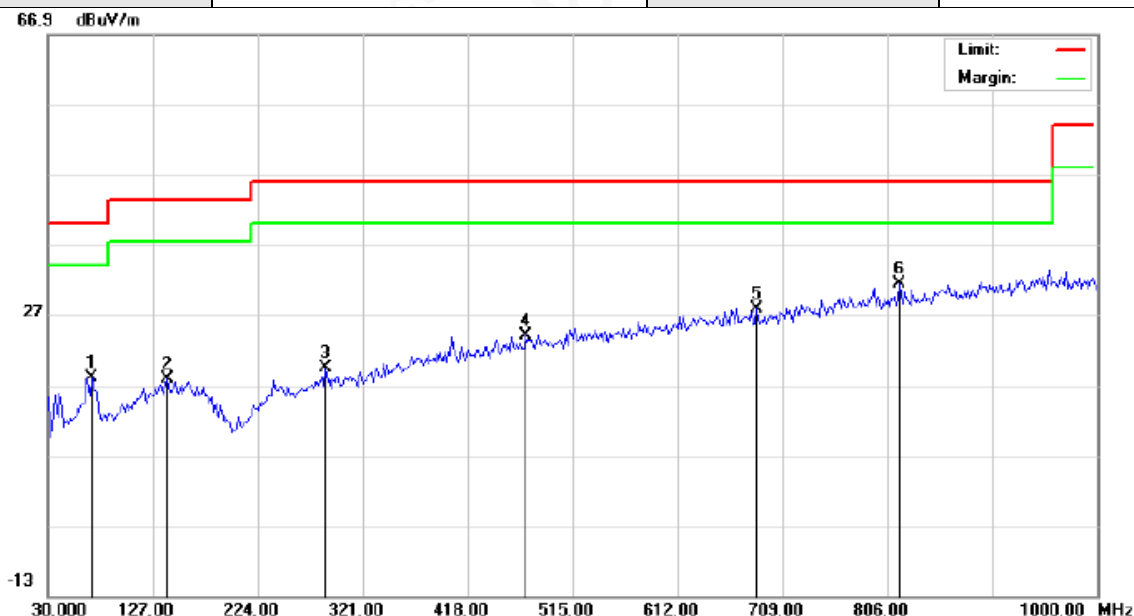
**RESULT: PASS**

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EUT	NORA-B1	Model Name	NORA-B100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		70.4167	0.95	17.02	17.97	40.00	-22.03	peak
2		139.9333	-1.45	19.23	17.78	43.50	-25.72	peak
3		287.0500	-0.41	19.77	19.36	46.00	-26.64	peak
4		471.3500	-0.31	24.41	24.10	46.00	-21.90	peak
5		684.7500	-0.19	27.97	27.78	46.00	-18.22	peak
6	*	817.3167	0.70	30.63	31.33	46.00	-14.67	peak

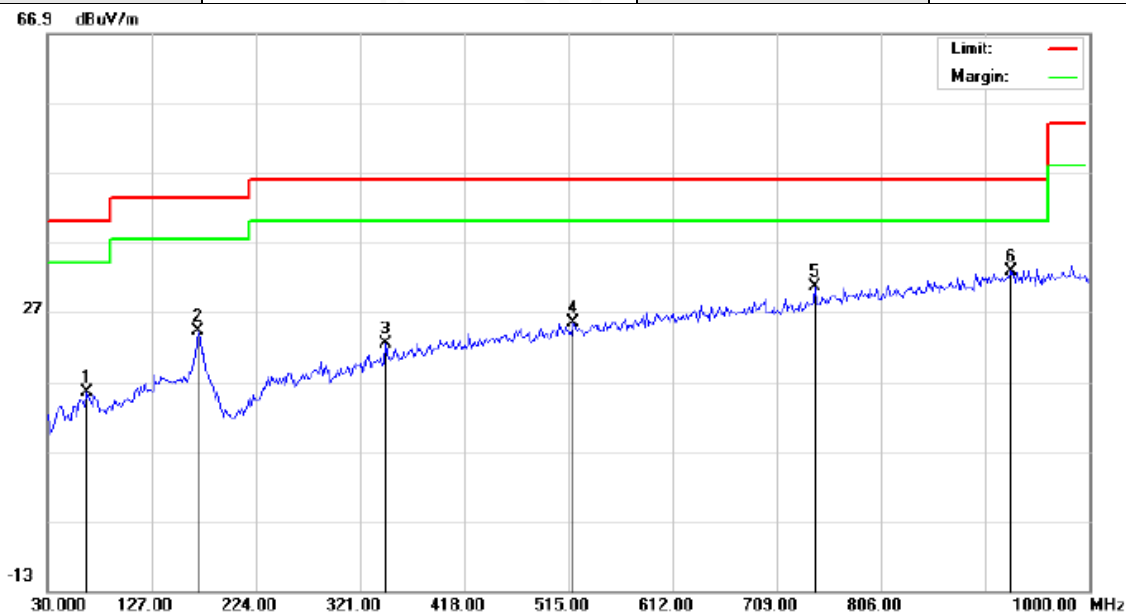
**RESULT: PASS**

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EUT	NORA-B1	Model Name	NORA-B106
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		67.1833	-1.33	16.76	15.43	40.00	-24.57	peak
2		170.6500	6.18	18.09	24.27	43.50	-19.23	peak
3		345.2500	1.33	21.06	22.39	46.00	-23.61	peak
4		519.8500	0.00	25.38	25.38	46.00	-20.62	peak
5		744.5666	1.44	29.16	30.60	46.00	-15.40	peak
6	*	927.2500	0.94	31.93	32.87	46.00	-13.13	peak

**RESULT: PASS**

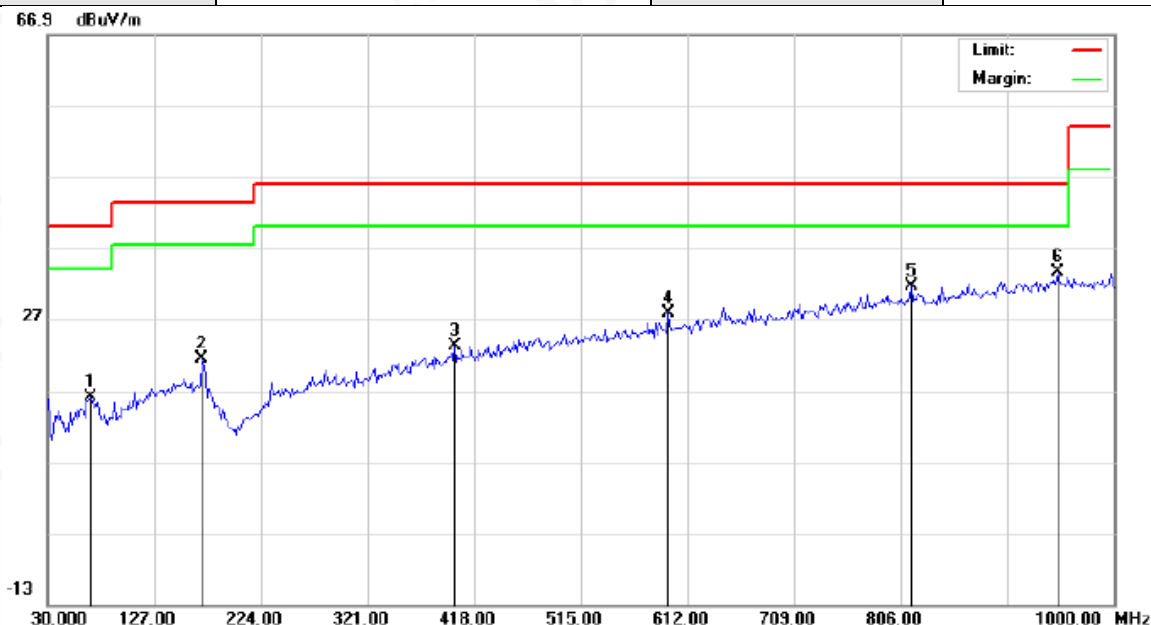
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EUT	NORA-B1	Model Name	NORA-B106
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		68.7999	-1.01	16.96	15.95	40.00	-24.05	peak
2		170.6500	3.34	18.09	21.43	43.50	-22.07	peak
3		400.2167	0.26	22.98	23.24	46.00	-22.76	peak
4		594.2166	0.90	26.84	27.74	46.00	-18.26	peak
5		815.7000	0.92	30.61	31.53	46.00	-14.47	peak
6	*	948.2667	1.54	32.12	33.66	46.00	-12.34	peak

# **RESULT: PASS**

## **Note:**

1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

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### RADIATED EMISSION ABOVE 1GHZ

#### Antenna 1

<b>EUT</b>	NORA-B1	<b>Model Name</b>	NORA-B100
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4960.000	46.23	0.22	46.45	74	-27.55	peak
4960.000	35.82	0.22	36.04	54	-17.96	AVG
7440.000	41.43	2.64	44.07	74	-29.93	peak
7440.000	30.67	2.64	33.31	54	-20.69	AVG

Remark:

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

<b>EUT</b>	NORA-B1	<b>Model Name</b>	NORA-B100
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4960.000	46.25	0.22	46.47	74	-27.53	peak
4960.000	36.84	0.22	37.06	54	-16.94	AVG
7440.000	40.15	2.64	42.79	74	-31.21	peak
7440.000	30.67	2.64	33.31	54	-20.69	AVG

Remark:

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

**RESULT: PASS**

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### Antenna 2

<b>EUT</b>	NORA-B1	<b>Model Name</b>	NORA-B100
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4960.000	45.16	0.22	45.38	74	-28.62	peak
4960.000	36.47	0.22	36.69	54	-17.31	AVG
7440.000	40.15	2.64	42.79	74	-31.21	peak
7440.000	31.97	2.64	34.61	54	-19.39	AVG

Remark:

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

<b>EUT</b>	NORA-B1	<b>Model Name</b>	NORA-B100
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4960.000	47.62	0.22	47.84	74	-26.16	peak
4960.000	36.54	0.22	36.76	54	-17.24	AVG
7440.000	42.91	2.64	45.55	74	-28.45	peak
7440.000	32.83	2.64	35.47	54	-18.53	AVG

Remark:

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

**RESULT: PASS**

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<b>EUT</b>	NORA-B1	<b>Model Name</b>	NORA-B106
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4960.000	45.18	0.22	45.4	74	-28.6	peak
4960.000	35.91	0.22	36.13	54	-17.87	AVG
7440.000	40.87	2.64	43.51	74	-30.49	peak
7440.000	31.09	2.64	33.73	54	-20.27	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

<b>EUT</b>	NORA-B1	<b>Model Name</b>	NORA-B106
<b>Temperature</b>	25° C	<b>Relative Humidity</b>	55.4%
<b>Pressure</b>	960hPa	<b>Test Voltage</b>	Normal Voltage
<b>Test Mode</b>	Mode 3	<b>Antenna</b>	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4960.000	46.23	0.22	46.45	74	-27.55	peak
4960.000	36.87	0.22	37.09	54	-16.91	AVG
7440.000	41.24	2.64	43.88	74	-30.12	peak
7440.000	32.97	2.64	35.61	54	-18.39	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

## RESULT: PASS

### Note:

1. The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.
2. Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.
3. The "Factor" value can be calculated automatically by software of measurement system.
4. The prototypes of all antenna specifications are tested. Antenna 1 and antenna 2 are detachable antennas. The antennas of the model NORA-B100 and NORA-B101 are detachable antennas, the antenna pins are slightly different, and the others are not different. The report only reflects the data of NORA-B100 as the worst. NORA-B101 meets the requirements by default, and the data is not Record in the report. The corresponding prototype model NORA-B100 reflects radiation and radiation spurious and sidebands. The data that reflects the specifications of the two antennas is the worst data. The model NORA-B106 is an integrated antenna, and has recorded the data in the report

Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "Dedicated Testing/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGC. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuance of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



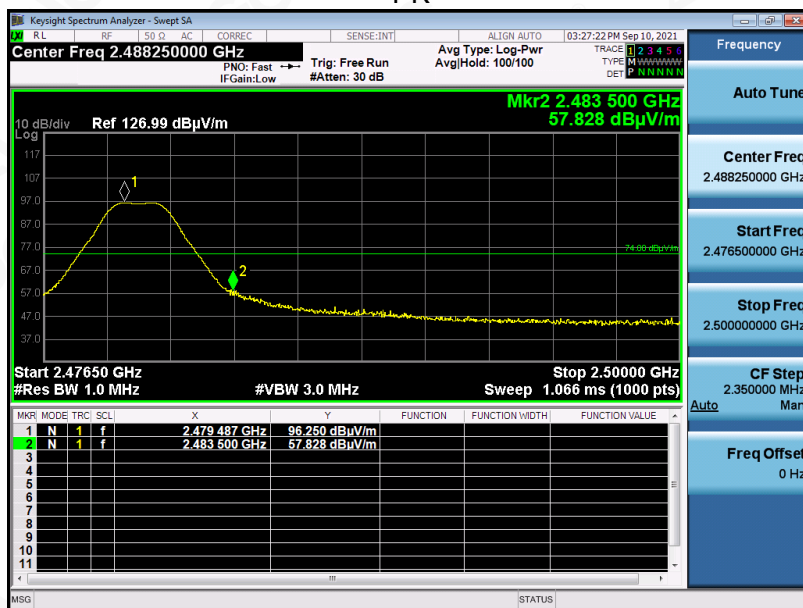


## TEST RESULT FOR RESTRICTED BANDS REQUIREMENTS

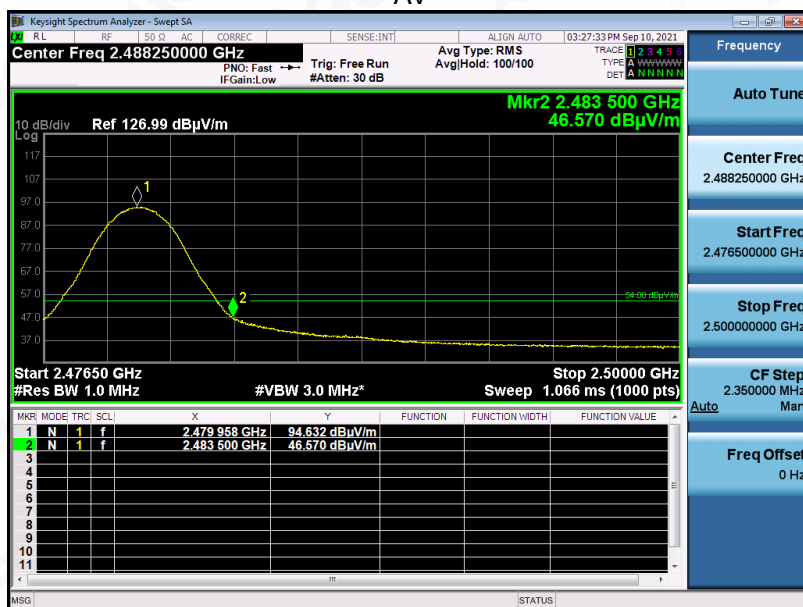
### Antenna 1

EUT	NORA-B1	Model Name	NORA-B100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

PK



AV



RESULT: PASS

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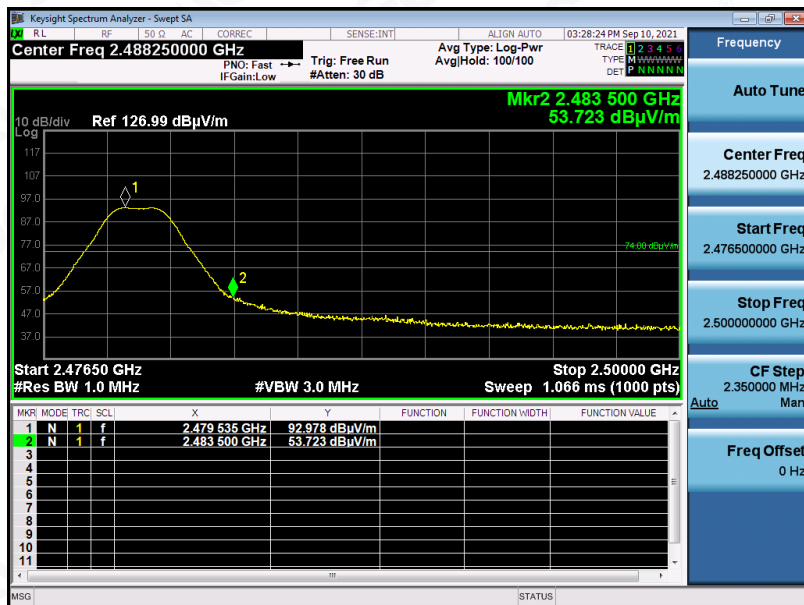
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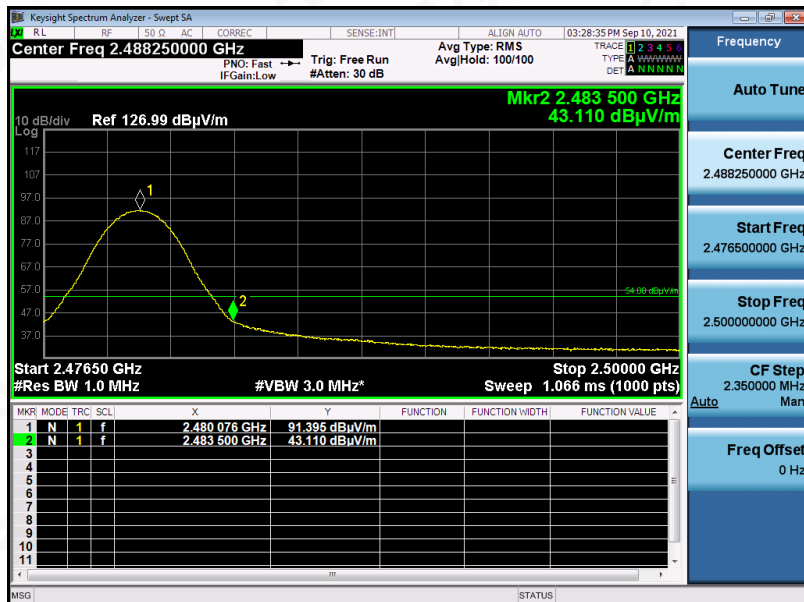


EUT	NORA-B1	Model Name	NORA-B100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

PK



AV



RESULT: PASS

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## Antenna 2

EUT	NORA-B1	Model Name	NORA-B100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

PK



AV



**RESULT: PASS**

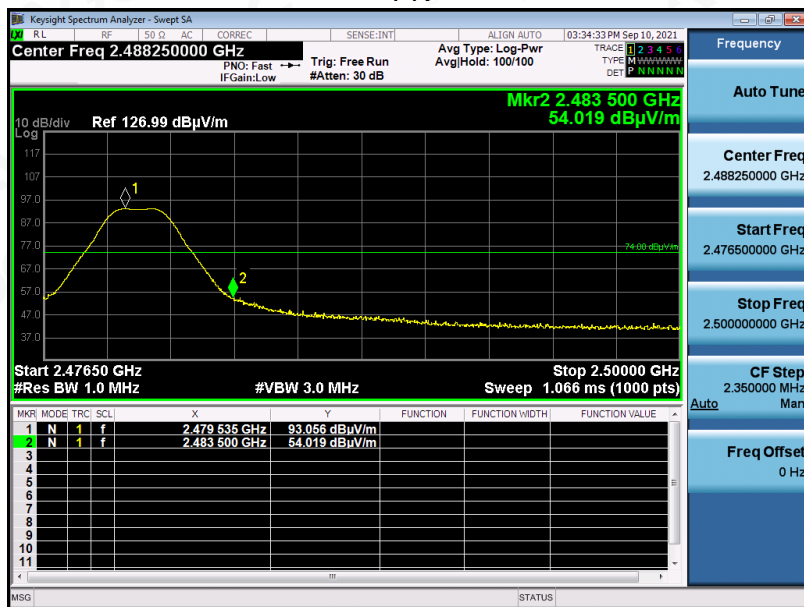
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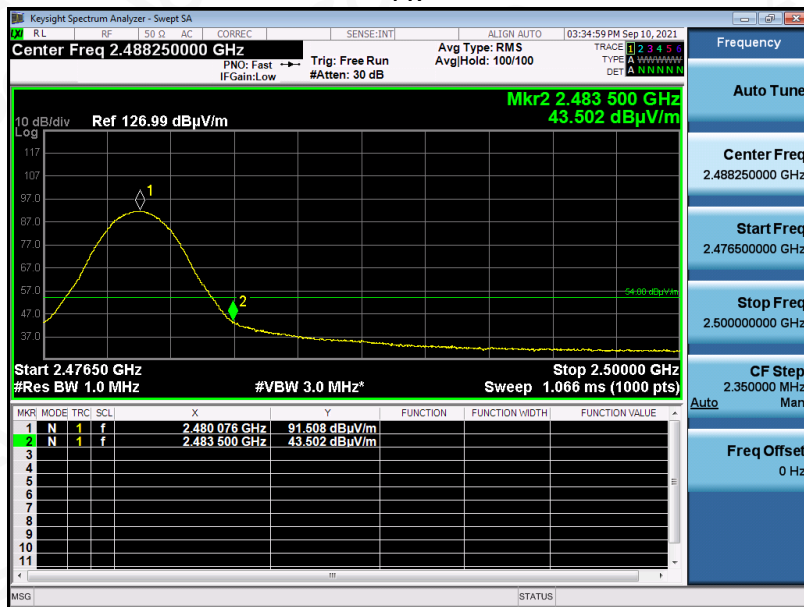


EUT	NORA-B1	Model Name	NORA-B100
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

PK



AV



RESULT: PASS

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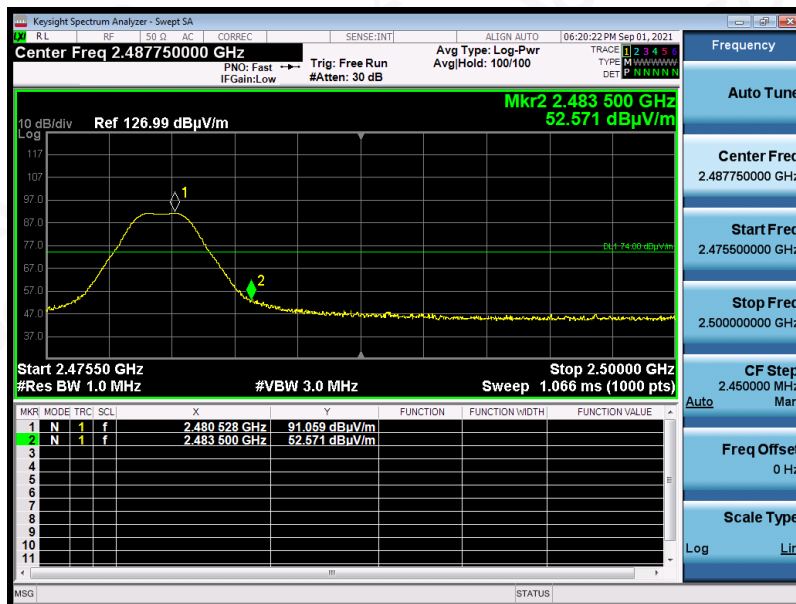
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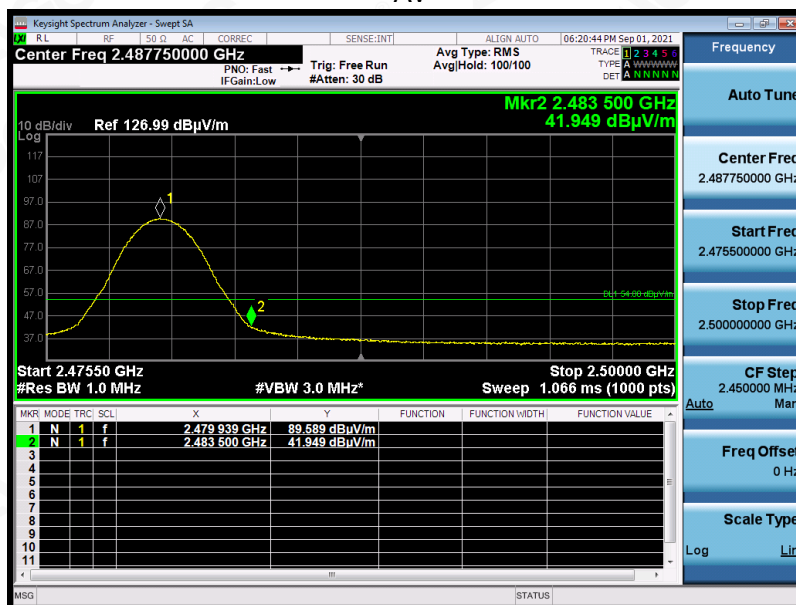


EUT	NORA-B1	Model Name	NORA-B106
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

PK



AV



RESULT: PASS

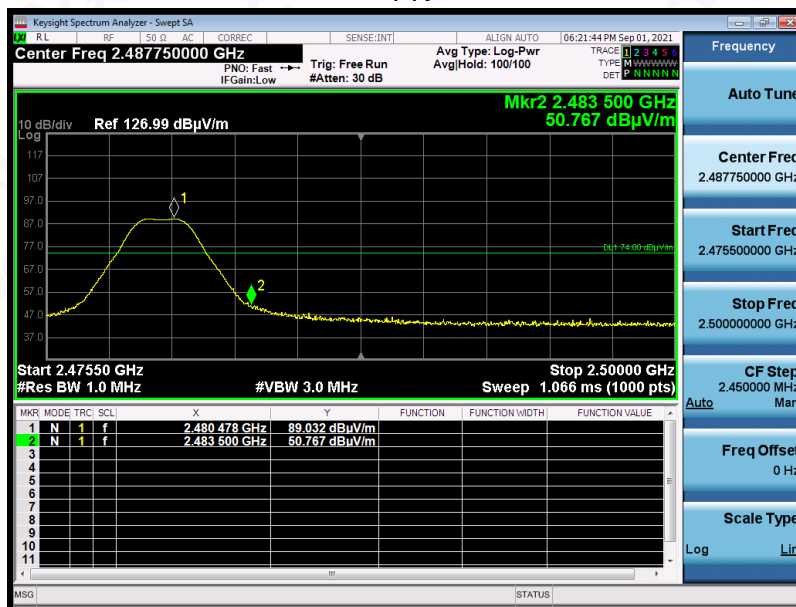
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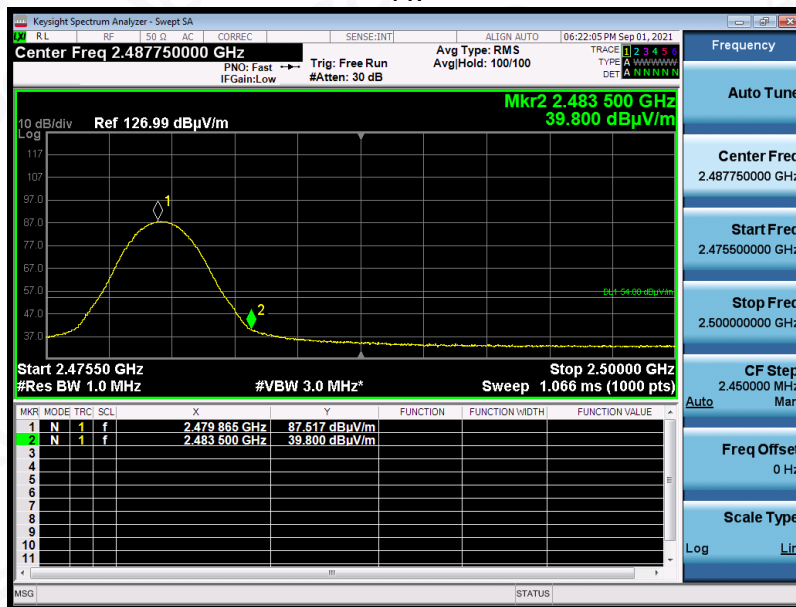


EUT	NORA-B1	Model Name	NORA-B106
Temperature	25° C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

PK



AV



RESULT: PASS

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**Note:**

1. The factor had been edited in the “Input Correction” of the Spectrum Analyzer.
2. The prototypes of all antenna specifications are tested. Antenna 1 and antenna 2 are detachable antennas. The antennas of the model NORA-B100 and NORA-B101 are detachable antennas, the antenna pins are slightly different, and the others are not different. The report only reflects the data of NORA-B100 as the worst. NORA-B101 meets the requirements by default, and the data is not Record in the report. The corresponding prototype model NORA-B100 reflects radiation and radiation spurious and sidebands. The data that reflects the specifications of the two antennas is the worst data. The model NORA-B106 is an integrated antenna, and has recorded the data in the report

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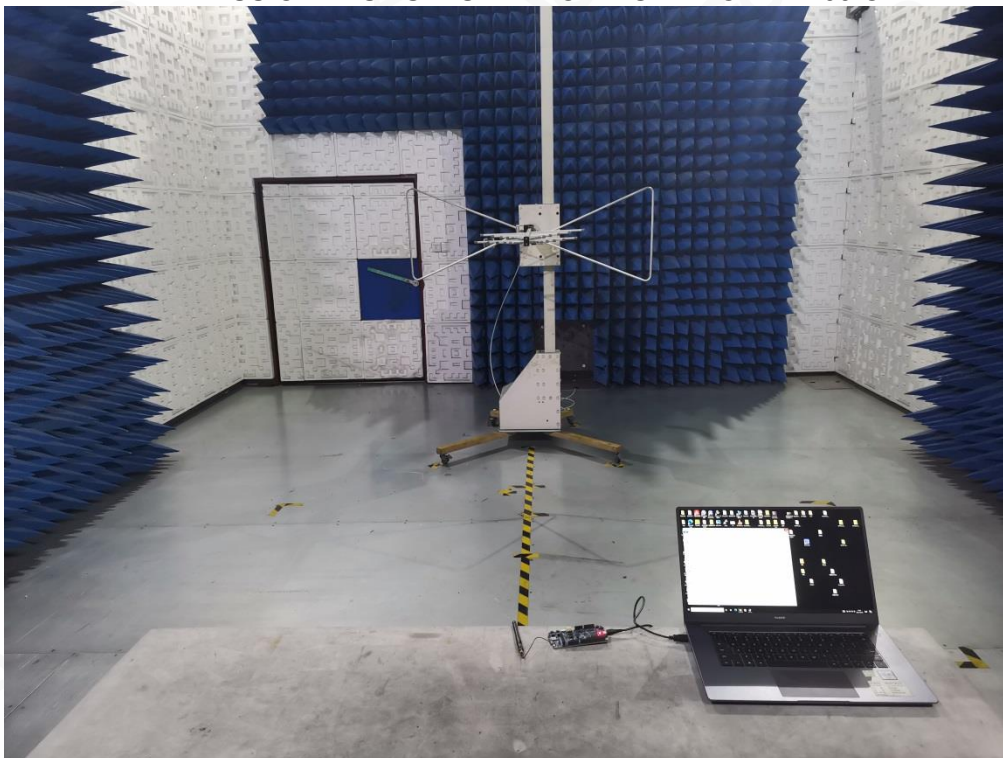
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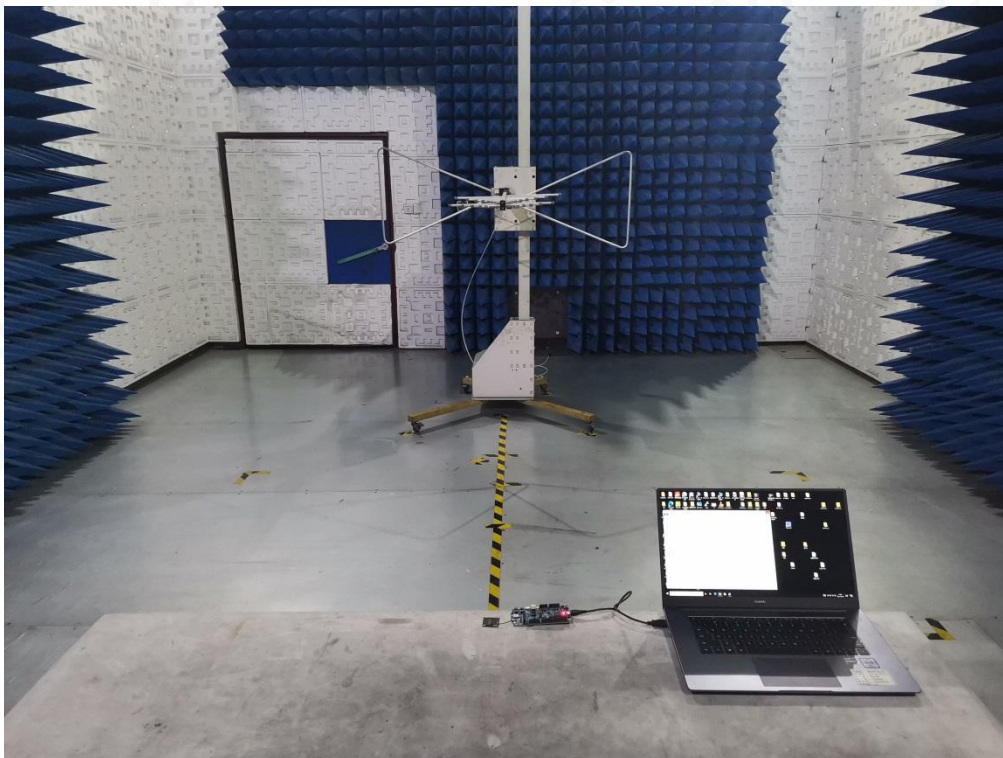


## APPENDIX A: PHOTOGRAPHS OF TEST SETUP

### RADIATED EMISSION TEST SETUP BELOW 1GHZ-NORA-B100 OF ANT 1



### RADIATED EMISSION TEST SETUP BELOW 1GHZ-NORA-B100 OF ANT 2



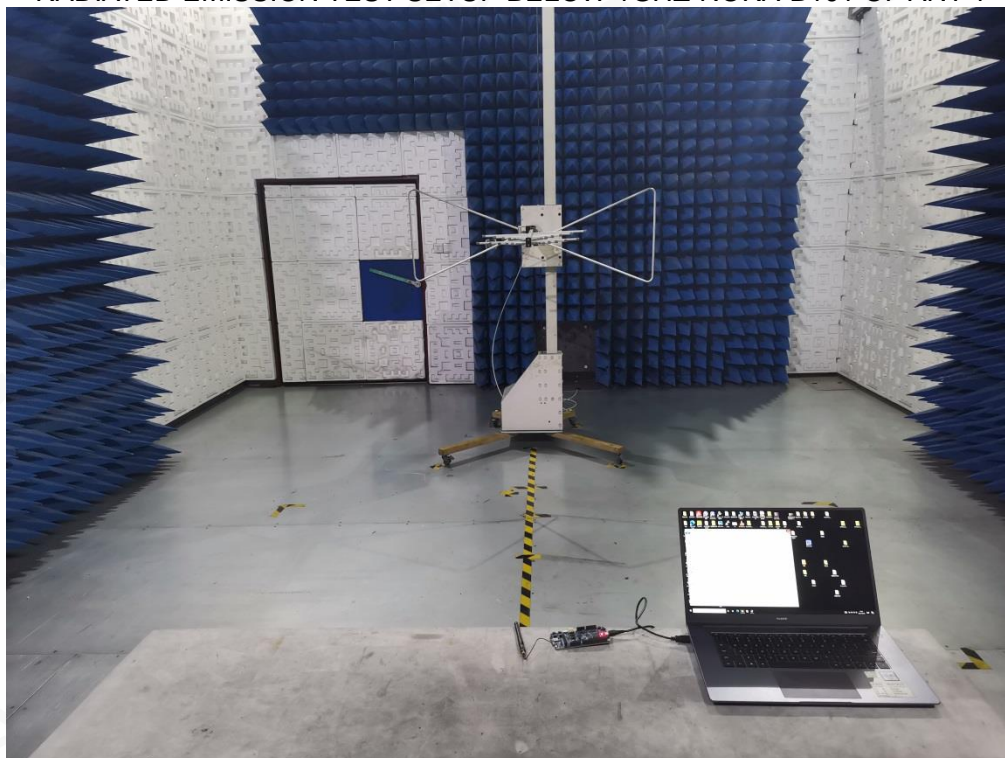
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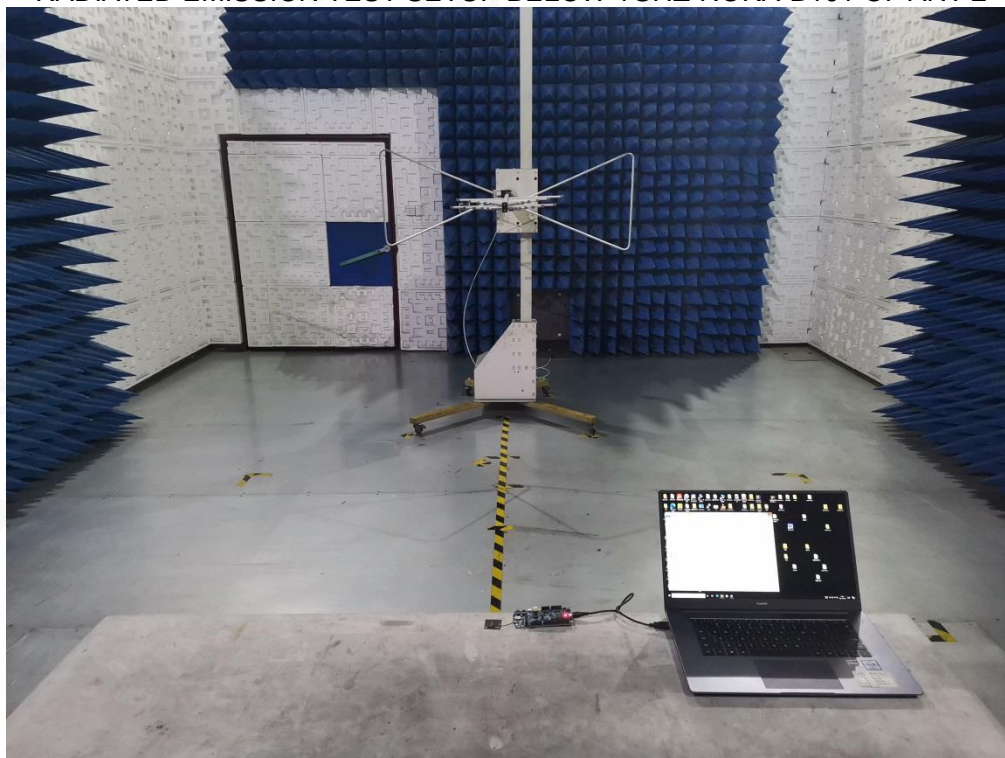




### RADIATED EMISSION TEST SETUP BELOW 1GHZ-NORA-B101 OF ANT 1



### RADIATED EMISSION TEST SETUP BELOW 1GHZ-NORA-B101 OF ANT 2



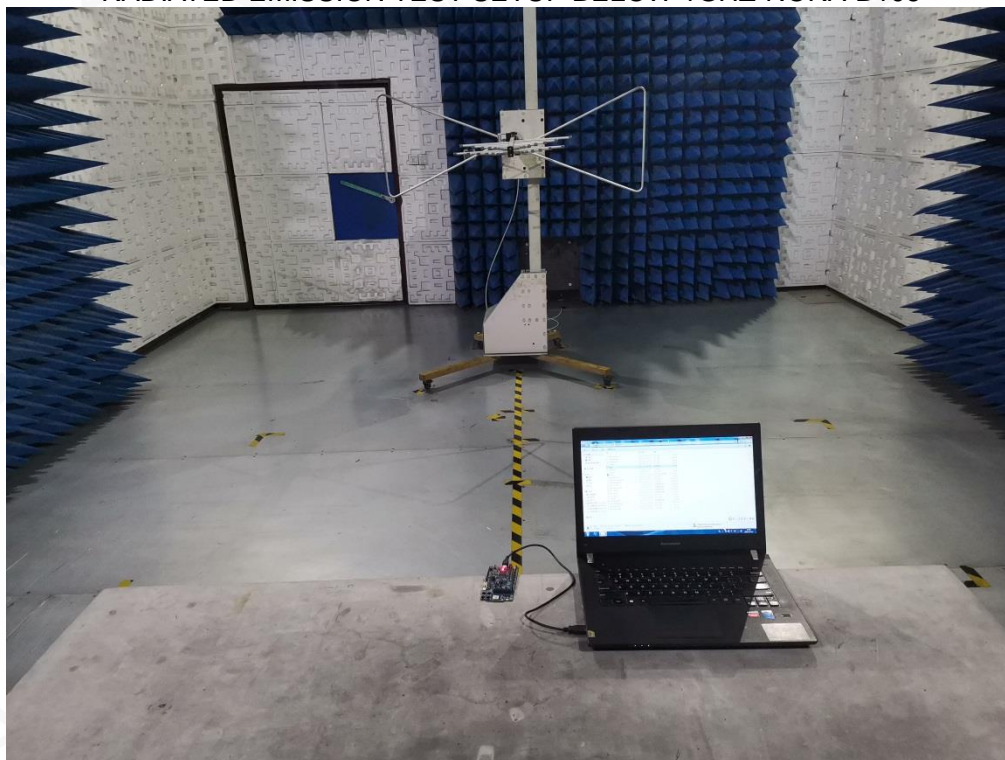
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### RADIATED EMISSION TEST SETUP BELOW 1GHZ-NORA-B106



### RADIATED EMISSION TEST SETUP ABOVE 1GHZ-NORA-B100 OF ANT 1



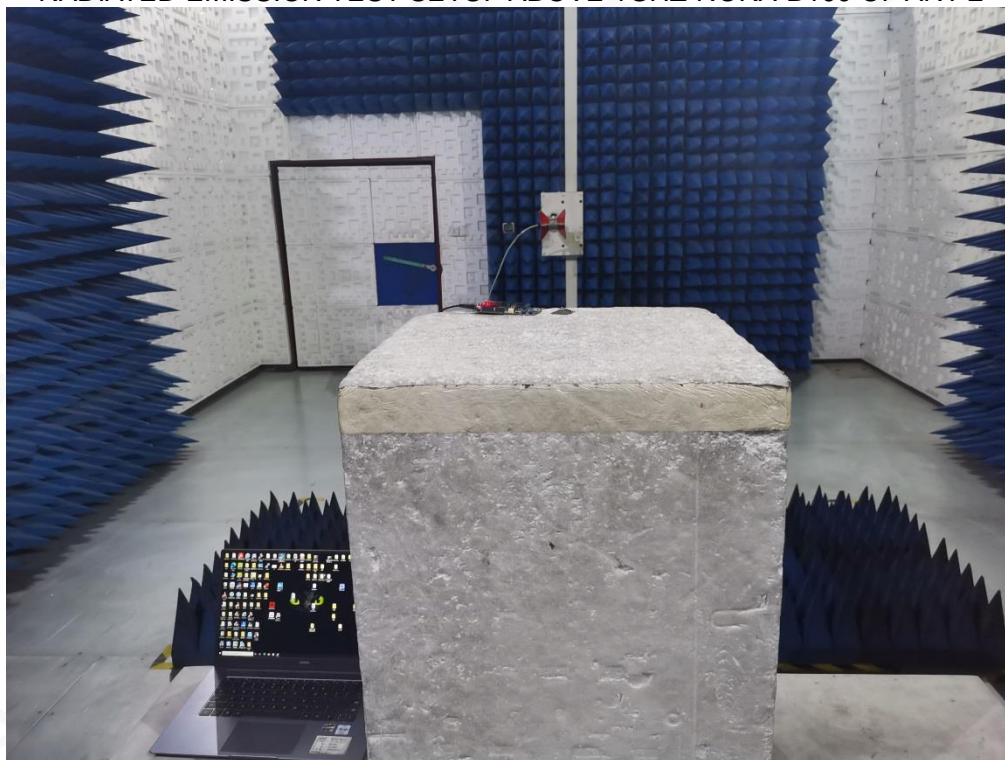
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**RADIATED EMISSION TEST SETUP ABOVE 1GHZ-NORA-B100 OF ANT 2**



**RADIATED EMISSION TEST SETUP ABOVE 1GHZ-NORA-B101 OF ANT 1**



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**RADIATED EMISSION TEST SETUP ABOVE 1GHZ-NORA-B101 OF ANT 2**



**RADIATED EMISSION TEST SETUP ABOVE 1GHZ-NORA-B106**



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## APPENDIX B: PHOTOGRAPHS OF EUT

Refer to the Report No.: AGC00174210102AP01

----END OF REPORT----

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1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the “Company”) solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the “Clients”).
2. Any report issued by Company as a result of this application for testing services (the “Report”) shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.
3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.
4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.
5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.
6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.
7. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.
8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.
9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

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