



FCC EMC TEST REPORT

JCBG(E)20220711003-2

Applicant : Hoymiles Power Electronics Inc.
No. 18 Kangjing Road, Hangzhou, Zhejiang Province,
P.R. China

Manufacturer : Hoymiles Power Electronics Inc.
No. 18 Kangjing Road, Hangzhou, Zhejiang Province,
P.R. China

Product Name : Data Transfer Unit

Type/Model : DTU-Pro-S

Test Result : PASS

SUMMARY

The equipment complies with the requirements according to the following standard(s):

FCC CFR 47 part15 B: Radio frequency devices

ANSI C63.4-2014: American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz.

ANSI C63.4a-2017: American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz.

ICES-003 Issue 7: Information Technology Equipment (Including Digital Apparatus) — Limits and Methods of Measurement

Date of issue : September 29, 2022

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Xi Wu

Haohui Qiu

Bing Cai





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1. GENERAL INFORMATION

1.1 Description of equipment under Test (EUT)

Product Name : Data Transfer Unit

Description of EUT : Available with WiFi or 4G connectivity, DTU provides dependable monitoring and data storage for your entire installation. From consumption and load monitoring in S-Miles Cloud to an external antenna for stronger, more reliable communication.

Test Model : DTU-Pro-S

Sample Identification No : EUT-1#:220829006-1

I/O Port : Power port; Ethernet port; DRM; RS485; USB

Category of EUT : Class B

Rating : DC5V

EUT type : ☒ Table top
☐ Floor standing

Highest operating frequency : 2.4GHz/1GHz

Sample received date : 2022.07.08

Date of test : 2022.08.03



1.2 Description of Client

Applicant : Hoymiles Power Electronics Inc.
No. 18 Kangjing Road, Hangzhou, Zhejiang Province, P.R.
China

Person of contact : Steven Zhang

Telephone : +8615088682210

E-mail : steven.zhang@hoymiles.com

Manufacturer : Hoymiles Power Electronics Inc.
No. 18 Kangjing Road, Hangzhou, Zhejiang Province, P.R.
China

1.3 Description of Test Facility

☒ Name Hangzhou TDT Technologies Co., Ltd.

Address Room 101, Building 3, No. 12, Binwen Road,
Xixing Street, Binjiang district, Hangzhou,
Zhejiang, China

Telephone +86571-88317620

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A2LA Certification number 4037.01

CNAS Certification number CNAS L7728

FCC Site registration number 645845



2. TEST SPECIFICATIONS

2.1 Standards

FCC CFR 47 part15 B: Radio frequency devices

ANSI C63.4-2014: American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz.

ANSI C63.4a-2017: American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz.

ICES-003 Issue 7: Information Technology Equipment (Including Digital Apparatus) — Limits and Methods of Measurement

2.2 Mode of operation during the test / Test peripherals used

2.2.1 Product Information Description

Available with WiFi or 4G connectivity, DTU provides dependable monitoring and data storage for your entire installation. From consumption and load monitoring in S-Miles Cloud to an external antenna for stronger, more reliable communication.

2.2.2 Description of Test modes

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of EUT operation TC1.

TC1			
Product Name	Data Transfer Unit	Model Name	DTU-Pro-S
Sample Number	EUT-1#	Highest operating frequency	2.4GHz/1GHz
Description of test mode	The data collector communicates with the micro-inverse via wireless and transmits the data to the server to realize the remote monitoring and control of the micro-inverse.		
PSU			
Manufacturer	FLYPOWER	Specification	Input: AC 100-240V, 50Hz/60Hz; Output: DC 5V, 2.0A
Model	PS10I050K2000UU	SN	-



2.2.3 Block of Test Configurations

The PC was connected to ancillary in order to simulate normal operating conditions (with reference to the guidance given in the standard for this type of equipment).



Figure 1 RE Test configuration

**2.3 Instrument list**

Test Item	Test Instrument	Model	Manufacturer	Serial No.	Next cal-Date
Radiated Emission (RE)	Chamber	9*6*6	Yu Cheng	4#	May.30, 2025
	EMI Test receiver	ESR26	R & S	101617	Oct.26, 2022
	Signal Analyzer	FSV40	R & S	101015	Jun.05, 2023
	PRE-AMPLIFIER (1GHz-18GHz)	AFS44-01001800-42-10P-44	MITEQ	1890161	Jun.05, 2023
	Bi-conical and log-periodic Antenna	AC220	COM-POWER	061068	Apr.11, 2023
	HORN Antenna	BBHA 9120D	SCHWARZBECK	1935	Dec.23, 2022
	Coaxial RF Cable	SUCOFLEX 106	Hubersuhner	NA	Jun.05, 2023
		3545-2.92J2.92J-8M-1#	Gore	NA	Jun.05, 2023
Conducted Emission (CE)	Shielded room	7.7*4.5*3.3m	Albatross projects	22603	Jan.15, 2024
	EMI Test receiver	ESI7	R & S	838496/015	Oct.26, 2022
	Artificial Mains Network	ENV216	R & S	101276	Jun.05, 2023
	ISN	ENY81	R & S	100183	Oct.26, 2022
	ISN	ISN T8-Cat6	R & S	43466	Oct.26, 2022
	Coaxial cable	SPARE 5M	Hubersuhner	1#	Jun.05, 2023
	Pulse Limiter with 10dB Attenuation	VTSD 9561-F N	Schwarzbedk	364	Jun.05, 2023
	50Ω Terminator	T50	/	CE0001	Jun.05, 2023

Auto Test Software Information

Test Item	Manufacturer	Model	Version
Radiated emission	TONSCEND	TS+	V4.0.0
Conducted emission	TONSCEND	TS+	V2.5.0.0



2.4. Test Summary

This report applies to tested sample only. This report shall not be reproduced in part without written approval of Hangzhou TDT Technologies Co., Ltd.

TEST ITEM	RESULT	NOTE
Radiated emission	PASS	-
Conducted disturbance voltage at mains terminals	PASS	-

Note 1: NA =Not Applicable

Note 2: This report applies to tested sample only. The test results have been compared directly with the limits, and the measurement uncertainty is recorded. This report shall not be reproduced in part without written approval of Hangzhou TDT Technologies Co., Ltd.



3. Conducted disturbance voltage at mains terminals

Test result: PASS

3.1 Limits

3.1.1 Limits for conducted disturbance voltage at the mains ports of class B device

Frequency range (MHz)	Limits dB(μ V)	
	Quasi-peak	Average
0.15~0.5	66~56	56~46
0.5~5.0	56	46
5.0~30	60	50

Note:

- 1.If the limit for the measurement with the average detector is met when using a receiver with a quasi-peak detector, the equipment under test shall be deemed to meet both limits and the measurement using the receiver with an average detector need not be carried out.
2. The limit requirements of FCC Part 15 Subpart B are the same with ICES-003, so it is also compliance with ICES-003 requirements whenever the test data show the FCC limit.



3.2 Test setup

☒ For table top equipment

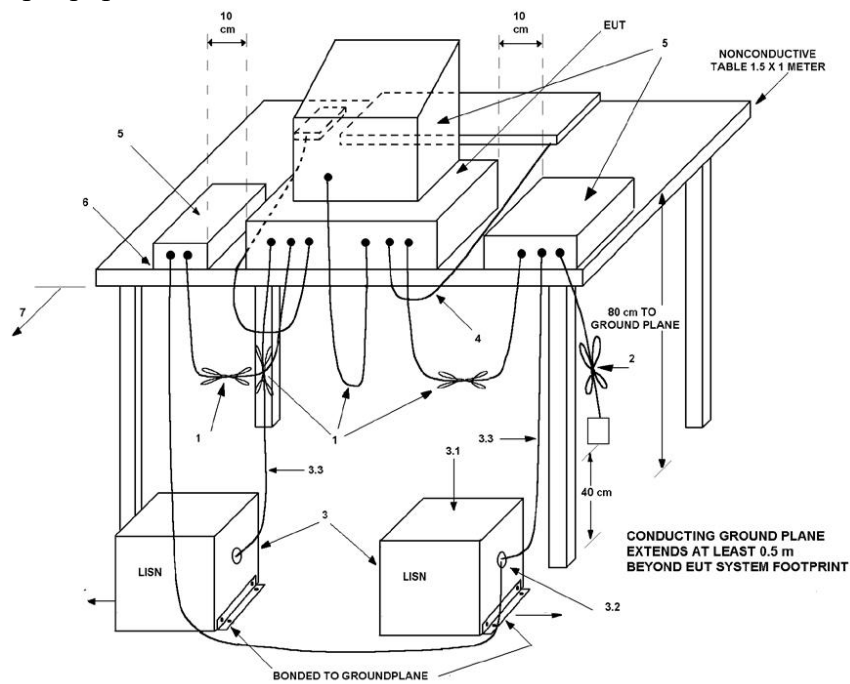


Figure 5

3.3 Test Setup and Test Procedure

Measurement was performed in shielded room, and instruments used were following clause 4 and clause 5 of ANSI C63.4-2014.

Detailed test procedure was following clause 7.2 of ANSI C63.4-2014.

EUT arrangement and operation conditions were according to clause 6 and clause 7 of ANSI C63.4-2014.

Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.



3.4 Test Protocol

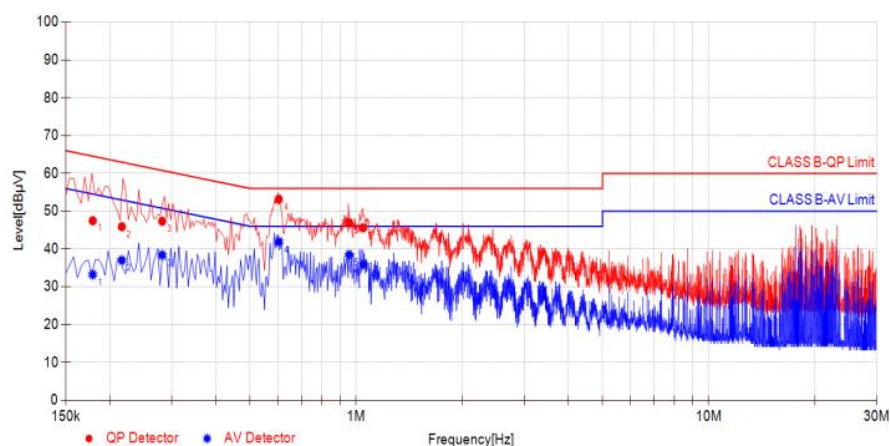
Temperature 25.0°C
Relative Humidity 60.0%RH
Atmospheric Pressure 100.1kPa

DTU-Pro-S-(0.15M-30M)Hz-DC5V-Power L

Test Report

Project Information			
Customer:	Hoymiles	EUT:	DTU-Pro-S
Model:	NA	SN:	NA
Mode:	NA	Voltage:	DC5V
Environment:	Temp: 25℃; Humi:60%	Engineer	zyj
Date:	2022-08-03 14:18:59	Note	NA
Remark	Level(dBuV)=Reading(dBuV)+Corr. (dB),Margin(dB)=Limit(dBuV)-Level(dBuV)		
Test standard: FCC PART 15B			

Test Graph



Final Data List

Final Data List												
NO.	Freq. [MHz]	Factor [dB]	QP Reading [dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Result	Type
1	0.1790	19.53	27.93	47.46	64.53	17.07	13.71	33.24	54.53	21.29	PASS	L
2	0.2165	19.52	26.37	45.89	62.95	17.06	17.48	37.00	52.95	15.95	PASS	L
3	0.2818	19.55	27.80	47.35	60.76	13.41	18.84	38.39	50.76	12.37	PASS	L
4	0.6035	19.71	33.45	53.16	56.00	2.84	22.18	41.89	46.00	4.11	PASS	L
5	0.9554	19.83	27.10	46.93	56.00	9.07	18.62	38.45	46.00	7.55	PASS	L
6	1.0473	19.86	25.73	45.59	56.00	10.41	16.02	35.88	46.00	10.12	PASS	L

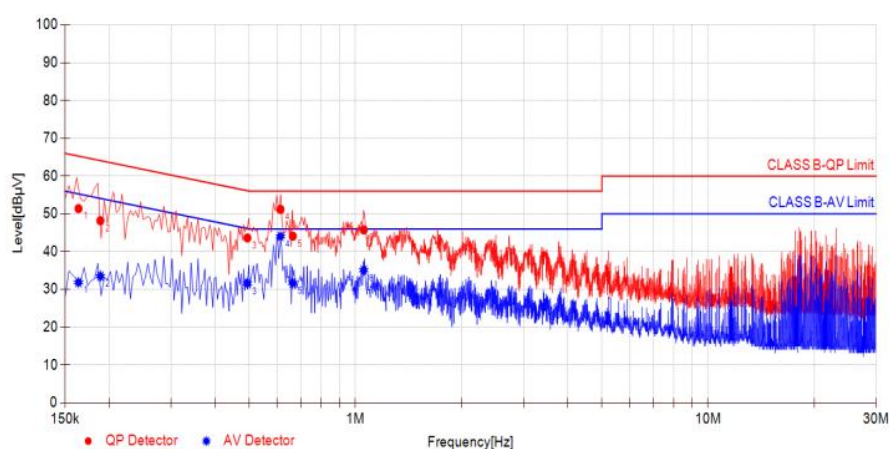


DTU-Pro-S-(0.15M-30M)Hz-DC5V-Power N

Test Report

Project Information			
Customer:	Hoymiles	EUT:	DTU-Pro-S
Model:	NA	SN:	NA
Mode:	NA	Voltage:	DC5V
Environment:	Temp: 25℃; Humi:60%	Engineer	zyj
Date:	2022-08-03 14:14:32	Note	NA
Remark	Level(dBuV)=Reading(dBuV)+Corr. (dB),Margin(dB)=Limit(dBuV)-Level(dBuV)		
Test standard: FCC PART 15B			

Test Graph



Final Data List

Final Data List												
NO.	Freq. [MHz]	Factor [dB]	QP Reading [dBμV]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Reading [dBμV]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Result	Type
1	0.1639	19.56	31.82	51.38	65.26	13.88	12.28	31.84	55.26	23.42	PASS	N
2	0.1891	19.60	28.59	48.19	64.08	15.89	13.90	33.50	54.08	20.58	PASS	N
3	0.4938	19.73	23.89	43.62	56.10	12.48	11.82	31.55	46.10	14.55	PASS	N
4	0.6129	19.73	31.44	51.17	56.00	4.83	24.29	44.02	46.00	1.98	PASS	N
5	0.6642	19.75	24.35	44.10	56.00	11.90	11.94	31.69	46.00	14.31	PASS	N
6	1.0557	19.84	25.92	45.76	56.00	10.24	15.26	35.10	46.00	10.90	PASS	N

Notes:

1. All possible modes of operation were investigated. Only the worst case emissions measured.



3.5 Measurement Uncertainty

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.

Measurement uncertainty at mains terminal: $\pm 2.66\text{dB}$.

The measurement uncertainty is given with a confidence of 95%, $k=2$.

The measurement uncertainty is traceable to internal procedure CXWJ22.





4. Radiated emission

Test result: PASS

4.1 Radiated emission limits

4.1.1 Limits for radiated disturbance of class B device

Frequency (MHz)	Permitted limit in dB μ V/m (Quasi-peak)
30 – 88	40
88 – 216	43.5
216 – 960	46
960 – 1000	54
Note: for the measurement distance other than 3m and 10m, the limit is varied according to 20dB/10 decades.	

Frequency (GHz)	Average limit (dB μ V/m) of Measurement Distance 3m	Peak limit (dB μ V/m) of Measurement Distance 3m
1 –18	54	74
Note: 1.For the measurement distance other than 3m and 10m, the limit is varied according to 20dB/10 decades. 2. The limit requirements of FCC Part 15 Subpart B are the same with ICES-003, so it is also compliance with ICES-003 requirements whenever the test data show the FCC limit.		



4.2 Block diagram and test set up

☒ For table top equipment

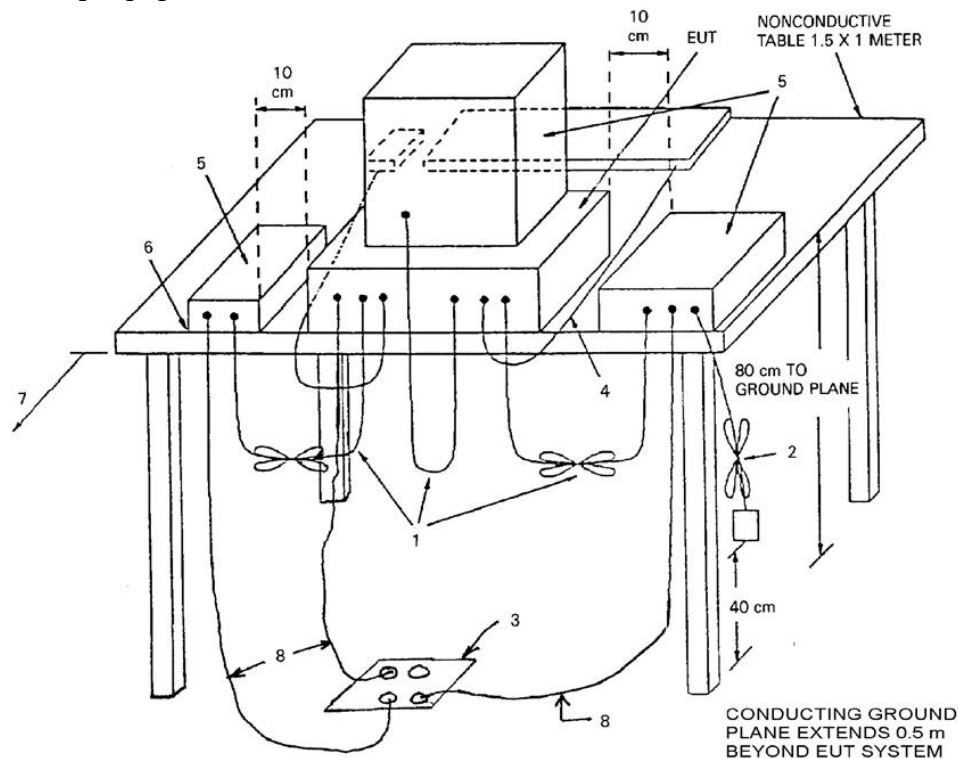


Figure 6

4.3 Test Setup and Test Procedure

The measurement was performed in a semi-anechoic chamber below 1GHz while performed in a full-anechoic chamber above 1GHz.

While testing for spurious emission higher than 1GHz, the pre-amplifier (and high pass filter if necessary) is equipped just at the output terminal of the antenna.

The distance from EUT to receiving antenna is 3 meter.

Measurement was performed according to clause 4 and clause 5 of ANSI C63.4-2014.

Test procedure was according to clause 8.3 of ANSI C63.4-2014.

EUT arrangement and operate condition were according to clause 6 and clause 8 of ANSI C63.4-2014.

The radiated emission was measured using the test receiver with the resolutions bandwidth set as:

RBW = 120 kHz, VBW = 300 kHz (30MHz~1GHz)

RBW = 1MHz, VBW = 3MHz (>1GHz for PK)

RBW = 1MHz, VBW = 1Hz (>1GHz for AV)



4.4 Test Protocol

Temperature 25.0°C
Relative Humidity 60.0 %RH
Atmospheric Pressure 100.1kPa

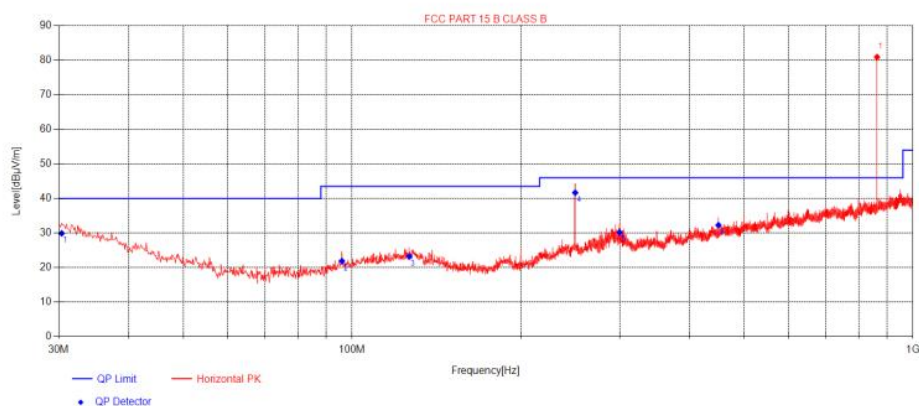
30MHz-1GHz (3m):
DTU-Pro-S-DC5V-(30MHz-1GHz)-Flat-H

Test Report

Project Information			
Customer:	Hoymiles	EUT:	DTU-Pro-S
Model:	NA	SN:	NA
Mode:	NA	Voltage:	DC5V
Environment:	Temp: 25℃; Humi:60%	Engineer:	SJZ
Remark:	862.970MHz is within the working frequency band of the device.		
Test Standard: FCC PART 15 B CLASS B			

Start of Test: 2022-08-03 15:39:25

Test Graph



Suspected Data List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	862.970	80.96	24.86	46.00	-34.96	100	117	Horizontal

Final Data List									
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	30.3638	21.18	29.89	40.00	10.11	100	331	Horizontal	PASS
2	95.9682	10.90	21.86	43.50	21.64	100	29	Horizontal	PASS
3	126.527	13.44	23.17	43.50	20.33	200	96	Horizontal	PASS
4	249.975	14.93	41.66	46.00	4.34	100	359	Horizontal	PASS
5	299.936	15.03	30.15	46.00	15.85	100	4	Horizontal	PASS
6	450.062	18.44	32.26	46.00	13.74	200	283	Horizontal	PASS



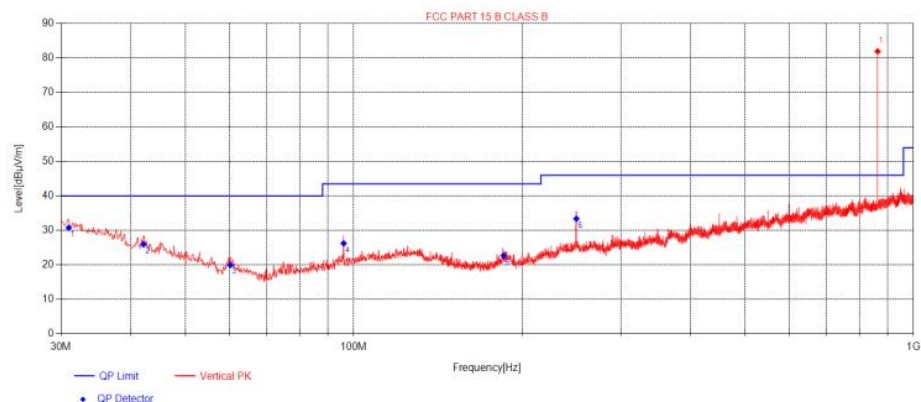
DTU-Pro-S-DC5V-(30MHz-1GHz)-Flat-V

Test Report

Project Information			
Customer:	Hoymiles	EUT:	DTU-Pro-S
Model:	NA	SN:	NA
Mode:	NA	Voltage:	DC5V
Environment:	Temp: 25°C; Humi:60%	Engineer:	SJZ
Remark:	863.091MHz is within the working frequency band of the device.		
Test Standard: FCC PART 15 B CLASS B			

Start of Test: 2022-08-03 15:37:34

Test Graph



Suspected Data List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	863.091	81.94	24.87	46.00	-35.94	100	320	Vertical

Final Data List									
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	30.9701	21.25	30.76	40.00	9.24	100	142	Vertical	PASS
2	42.1265	16.35	25.93	40.00	14.07	100	260	Vertical	PASS
3	60.195	9.43	19.95	40.00	20.05	100	290	Vertical	PASS
4	95.9682	10.90	26.24	43.50	17.26	100	250	Vertical	PASS
5	185.219	11.47	22.63	43.50	20.87	200	325	Vertical	PASS
6	249.975	14.93	33.37	46.00	12.63	200	206	Vertical	PASS



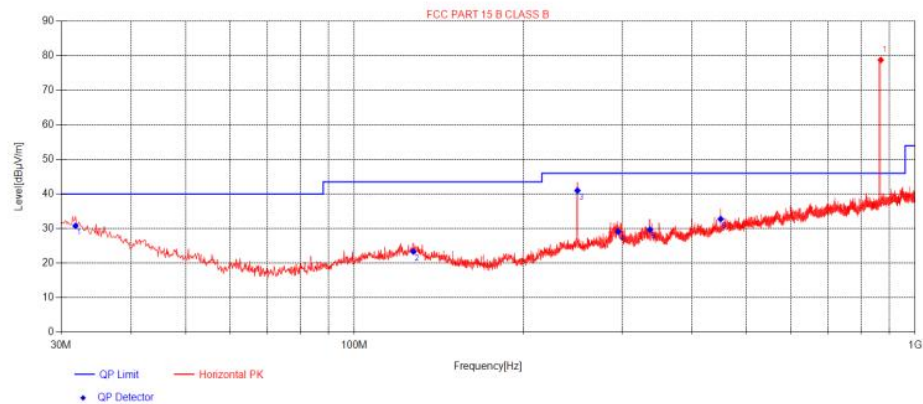
DTU-Pro-S-DC5V-(30MHz-1GHz)-Upright-H

Test Report

Project Information			
Customer:	Hoymiles	EUT:	DTU-Pro-S
Model:	NA	SN:	NA
Mode:	NA	Voltage:	DC5V
Environment:	Temp: 25°C; Humi:60%	Engineer:	SJZ
Remark:	868.306MHz is within the working frequency band of the device.		
Test Standard: FCC PART 15 B CLASS B			

Start of Test: 2022-08-03 15:50:17

Test Graph



Suspected Data List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	868.306	78.80	25.31	46.00	-32.80	200	58	Horizontal

Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	31.819	21.33	30.76	40.00	9.24	200	340	Horizontal	PASS
2	127.375	13.55	23.33	43.50	20.17	200	357	Horizontal	PASS
3	249.975	14.93	40.98	46.00	5.02	100	3	Horizontal	PASS
4	295.449	14.48	29.11	46.00	16.89	100	360	Horizontal	PASS
5	336.558	15.75	29.67	46.00	16.33	100	359	Horizontal	PASS
6	449.941	18.44	32.74	46.00	13.26	100	211	Horizontal	PASS

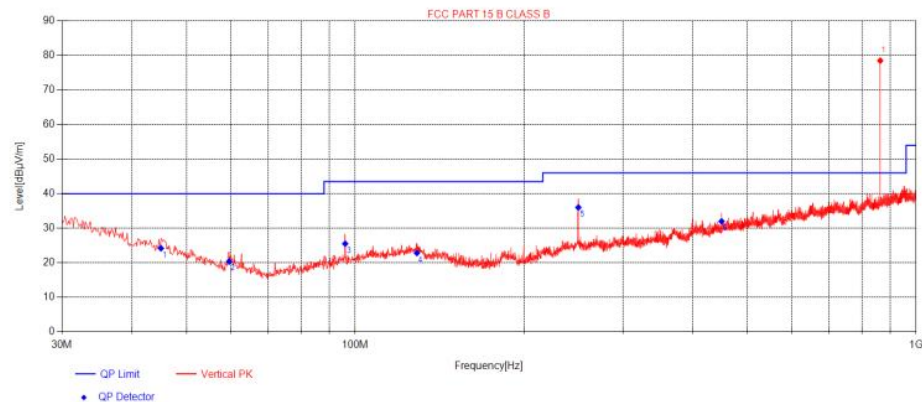
DTU-Pro-S-DC5V-(30MHz-1GHz)-Upright-V

Test Report

Project Information			
Customer:	Hoymiles	EUT:	DTU-Pro-S
Model:	NA	SN:	NA
Mode:	NA	Voltage:	DC5V
Environment:	Temp: 25°C; Humi:60%	Engineer:	SJZ
Remark:	863.091MHz is within the working frequency band of the device.		
Test Standard: FCC PART 15 B CLASS B			

Start of Test: 2022-08-03 15:48:28

Test Graph



Suspected Data List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	863.091	78.52	24.87	46.00	-32.52	200	0	Vertical

Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity	Verdict
1	45.0369	13.64	24.17	40.00	15.83	100	358	Vertical	PASS
2	59.5887	9.20	20.34	40.00	19.66	100	192	Vertical	PASS
3	95.9682	10.90	25.49	43.50	18.01	100	172	Vertical	PASS
4	128.831	13.73	22.80	43.50	20.70	100	52	Vertical	PASS
5	249.975	14.93	36.00	46.00	10.00	200	0	Vertical	PASS
6	449.941	18.44	31.97	46.00	14.03	200	152	Vertical	PASS



1GHz~18GHz(3m):

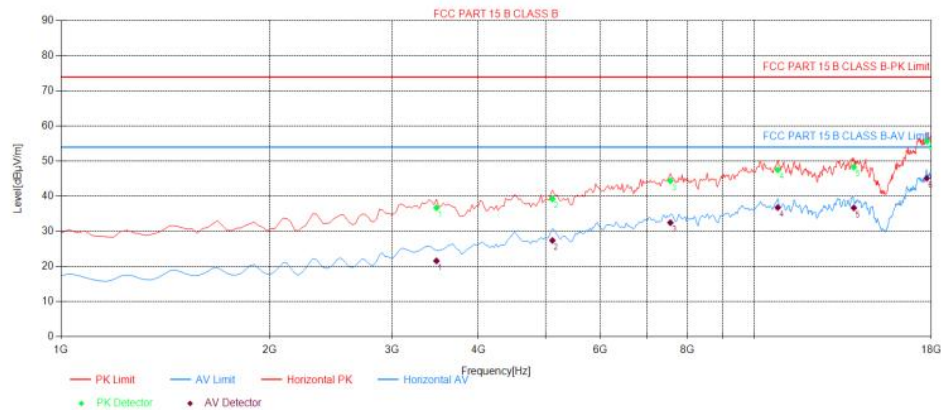
DTU-Pro-S-DC5V-(1GHz-18GHz)-Flat-H

Test Report

Project Information			
Customer:	Hoymiles	EUT:	DTU-Pro-S
Model:	NA	SN:	NA
Mode:	NA	Voltage:	DC5V
Environment:	Temp: 25℃; Humi:60%	Engineer:	SJZ
Remark:	NA		
Test Standard: FCC PART 15 B CLASS B			

Start of Test: 2022-08-03 17:10:08

Test Graph



PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3479.16	-11.94	36.69	74.00	37.31	100	130	Horizontal
2	5113.78	-5.19	39.24	74.00	34.76	100	244	Horizontal
3	7565.70	-0.22	44.38	74.00	29.62	100	303	Horizontal
4	10807.6	5.16	47.49	74.00	26.51	100	63	Horizontal
5	13913.4	8.00	48.30	74.00	25.70	200	153	Horizontal
6	17727.5	15.98	55.62	74.00	18.38	100	244	Horizontal

NO.	Freq. [MHz]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Detector	Height [cm]	Angle [°]	Polarity
1	3479.16	-11.94	21.57	54.00	32.43	AV	100	130	Horizontal
2	5113.78	-5.19	27.39	54.00	26.61	AV	100	244	Horizontal
3	7565.70	-0.22	32.46	54.00	21.54	AV	100	303	Horizontal
4	10807.6	5.16	36.78	54.00	17.22	AV	100	63	Horizontal
5	13913.4	8.00	36.68	54.00	17.32	AV	200	153	Horizontal
6	17727.5	15.98	45.12	54.00	8.88	AV	100	244	Horizontal



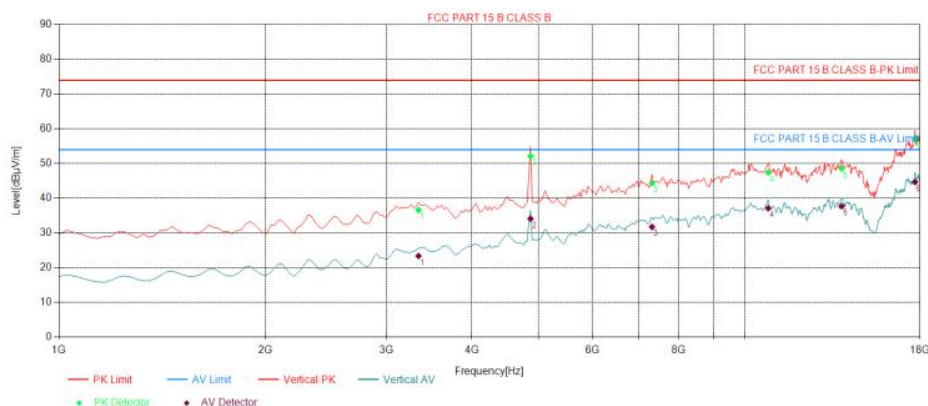
DTU-Pro-S-DC5V-(1GHz-18GHz)-Flat-V

Test Report

Project Information			
Customer:	Hoymiles	EUT:	DTU-Pro-S
Model:	NA	SN:	NA
Mode:	NA	Voltage:	DC5V
Environment:	Temp: 25℃; Humi:60%	Engineer:	SJZ
Remark:	NA		
Test Standard: FCC PART 15 B CLASS B			

Start of Test: 2022-08-03 17:08:17

Test Graph



PK Final Data List								
NO.	Freq. [MHz]	Factor [dB]	PK Value [dBµV/m]	PK Limit [dBµV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3342.94	-11.60	36.59	74.00	37.41	100	322	Vertical
2	4868.58	-6.82	52.13	74.00	21.87	100	41	Vertical
3	7320.51	-0.87	44.35	74.00	29.65	200	116	Vertical
4	10807.6	5.16	47.41	74.00	26.59	100	60	Vertical
5	13831.7	8.01	48.55	74.00	25.45	100	1	Vertical
6	17700.3	16.19	57.19	74.00	16.81	200	336	Vertical

NO.	Freq. [MHz]	Factor [dB]	AV Value [dBµV/m]	AV Limit [dBµV/m]	AV Margin [dB]	Detector	Height [cm]	Angle [°]	Polarity
1	3342.94	-11.60	23.35	54.00	30.65	AV	100	322	Vertical
2	4868.58	-6.82	34.09	54.00	19.91	AV	100	41	Vertical
3	7320.51	-0.87	31.71	54.00	22.29	AV	200	116	Vertical
4	10807.6	5.16	37.10	54.00	16.90	AV	100	60	Vertical
5	13831.7	8.01	37.66	54.00	16.34	AV	100	1	Vertical
6	17700.3	16.19	44.65	54.00	9.35	AV	200	336	Vertical



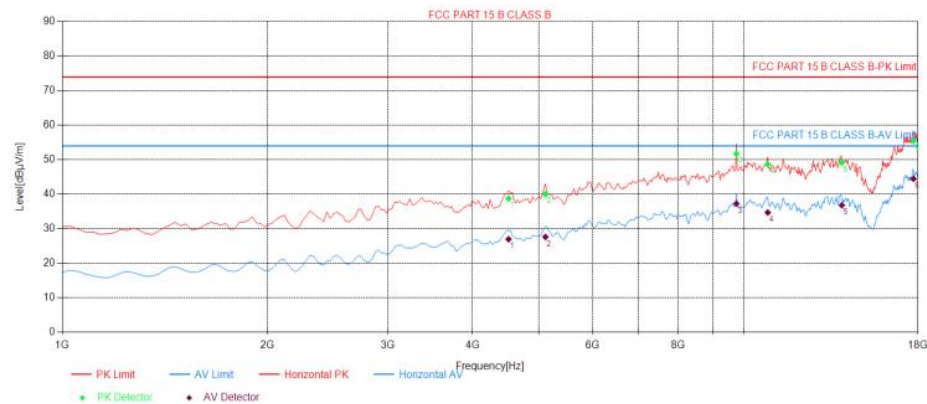
DTU-Pro-S-DC5V-(1GHz-18GHz)-Upright-H

Test Report

Project Information			
Customer:	Hoymiles	EUT:	DTU-Pro-S
Model:	NA	SN:	NA
Mode:	NA	Voltage:	DC5V
Environment:	Temp: 25℃; Humi:60%	Engineer:	SJZ
Remark:	NA		
Test Standard: FCC PART 15 B CLASS B			

Start of Test: 2022-08-03 17:22:29

Test Graph



PK Final Data List

NO.	Freq. [MHz]	Factor [dB]	PK Value [dBµV/m]	PK Limit [dBµV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4514.42	-8.10	38.74	74.00	35.26	100	197	Horizontal
2	5113.78	-5.19	39.98	74.00	34.02	200	29	Horizontal
3	9745.19	2.71	51.73	74.00	22.27	200	97	Horizontal
4	10834.9	4.98	48.67	74.00	25.33	100	130	Horizontal
5	13913.4	8.00	49.14	74.00	24.86	100	264	Horizontal
6	17727.5	15.98	55.48	74.00	18.52	100	0	Horizontal

NO.	Freq. [MHz]	Factor [dB]	AV Value [dBµV/m]	AV Limit [dBµV/m]	AV Margin [dB]	Detector	Height [cm]	Angle [°]	Polarity
1	4514.42	-8.10	26.93	54.00	27.07	AV	100	197	Horizontal
2	5113.78	-5.19	27.59	54.00	26.41	AV	200	29	Horizontal
3	9745.19	2.71	37.23	54.00	16.77	AV	200	97	Horizontal
4	10834.9	4.98	34.68	54.00	19.32	AV	100	130	Horizontal
5	13913.4	8.00	36.78	54.00	17.22	AV	100	264	Horizontal
6	17727.5	15.98	44.45	54.00	9.55	AV	100	0	Horizontal



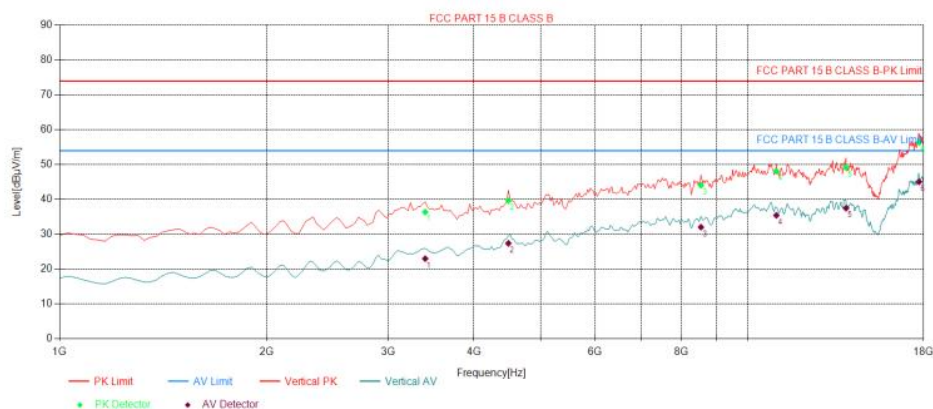
DTU-Pro-S-DC5V-(1GHz-18GHz)-Upright-V

Test Report

Project Information			
Customer:	Hoymiles	EUT:	DTU-Pro-S
Model:	NA	SN:	NA
Mode:	NA	Voltage:	DC5V
Environment:	Temp: 25℃; Humi:60%	Engineer:	SJZ
Remark:	NA		
Test Standard: FCC PART 15 B CLASS B			

Start of Test: 2022-08-03 17:20:37

Test Graph



PK Final Data List								
NO.	Freq. [MHz]	Factor [dB]	PK Value [dBμV/m]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3397.43	-11.04	36.36	74.00	37.64	100	276	Vertical
2	4487.17	-7.94	39.63	74.00	34.37	200	338	Vertical
3	8546.47	0.82	44.06	74.00	29.94	100	0	Vertical
4	10998.3	5.21	48.07	74.00	25.93	200	184	Vertical
5	13886.2	8.01	49.17	74.00	24.83	200	328	Vertical
6	17727.5	15.98	56.30	74.00	17.70	100	255	Vertical

NO.	Freq. [MHz]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Detector	Height [cm]	Angle [°]	Polarity
1	3397.43	-11.04	22.97	54.00	31.03	AV	100	276	Vertical
2	4487.17	-7.94	27.38	54.00	26.62	AV	200	338	Vertical
3	8546.47	0.82	32.01	54.00	21.99	AV	100	0	Vertical
4	10998.3	5.21	35.42	54.00	18.58	AV	200	184	Vertical
5	13886.2	8.01	37.47	54.00	16.53	AV	200	328	Vertical
6	17727.5	15.98	45.03	54.00	8.97	AV	100	255	Vertical



Remark:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. Margin value = Limit value - Emission level.

4.5 Measurement uncertainty

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.

Measurement uncertainty of semi-anechoic chamber radiated emission is: $\pm 6.28\text{dB}$.

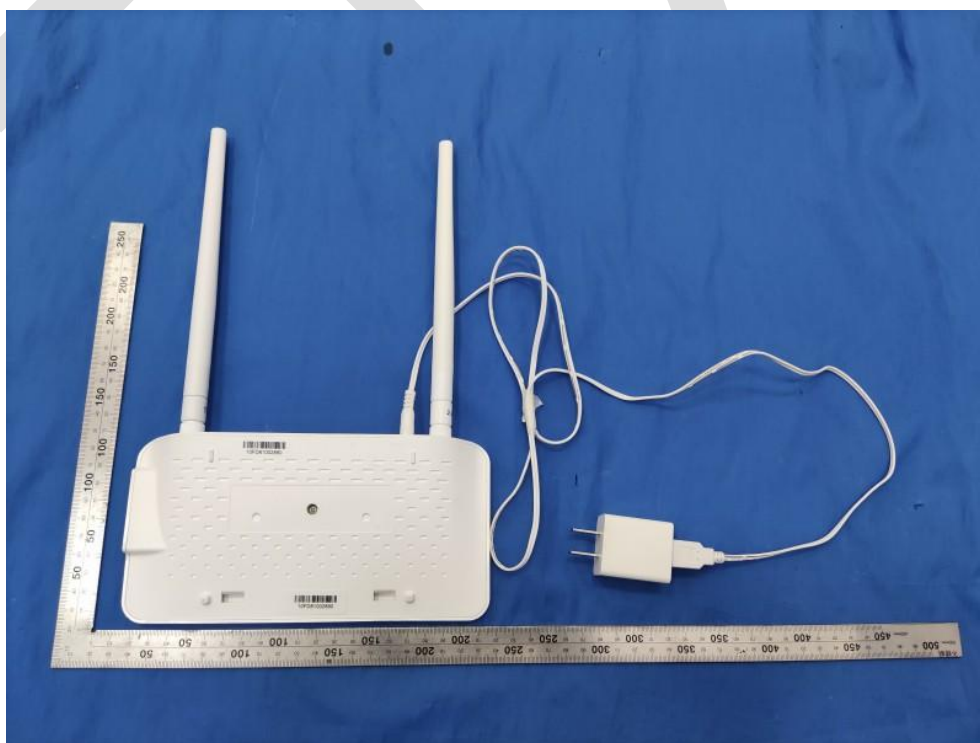
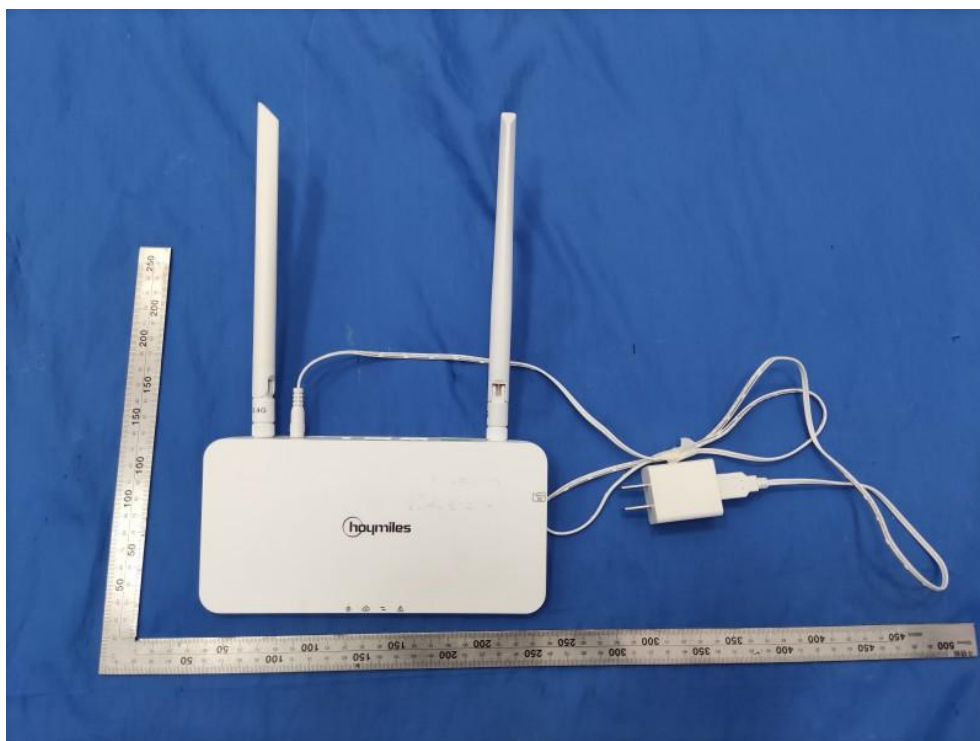
Measurement uncertainty of fully anechoic chamber(1G-18GHz) radiated emission is: $\pm 5.42\text{dB}$.

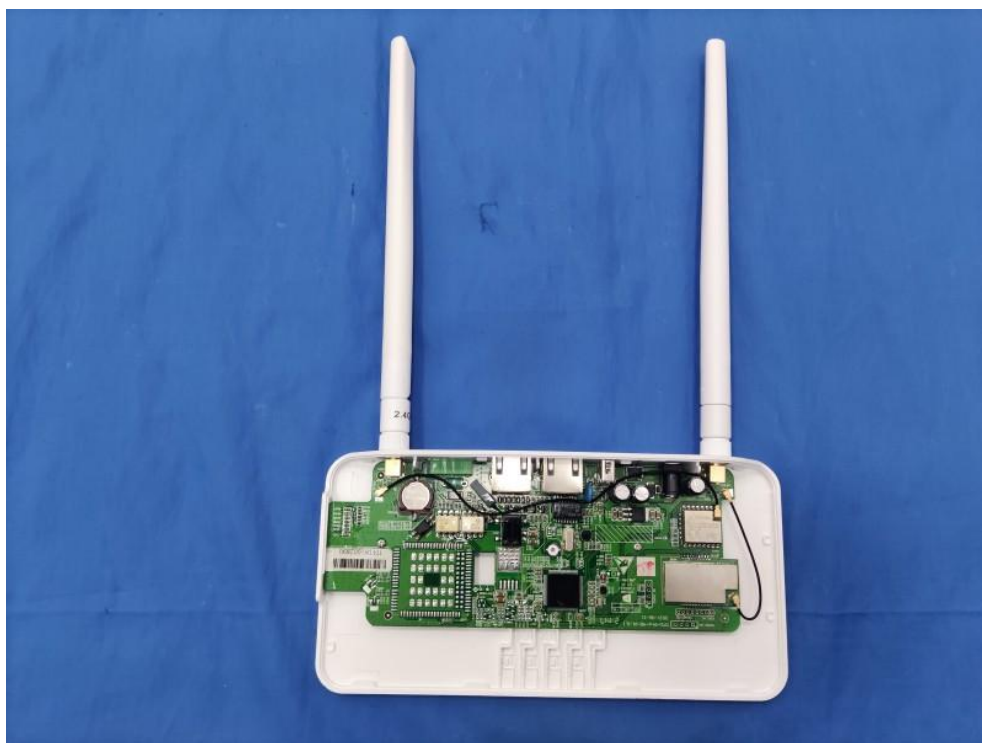
The measurement uncertainty is given with a confidence of 95%, $k=2$.

The measurement uncertainty is traceable to internal procedure CXWJ22.



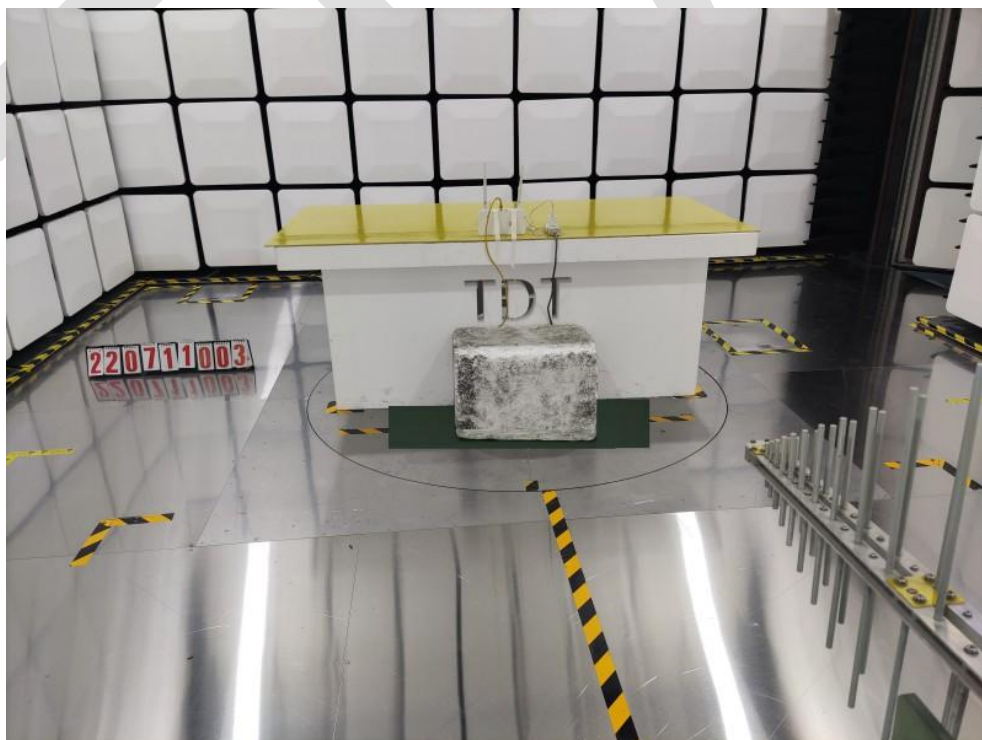
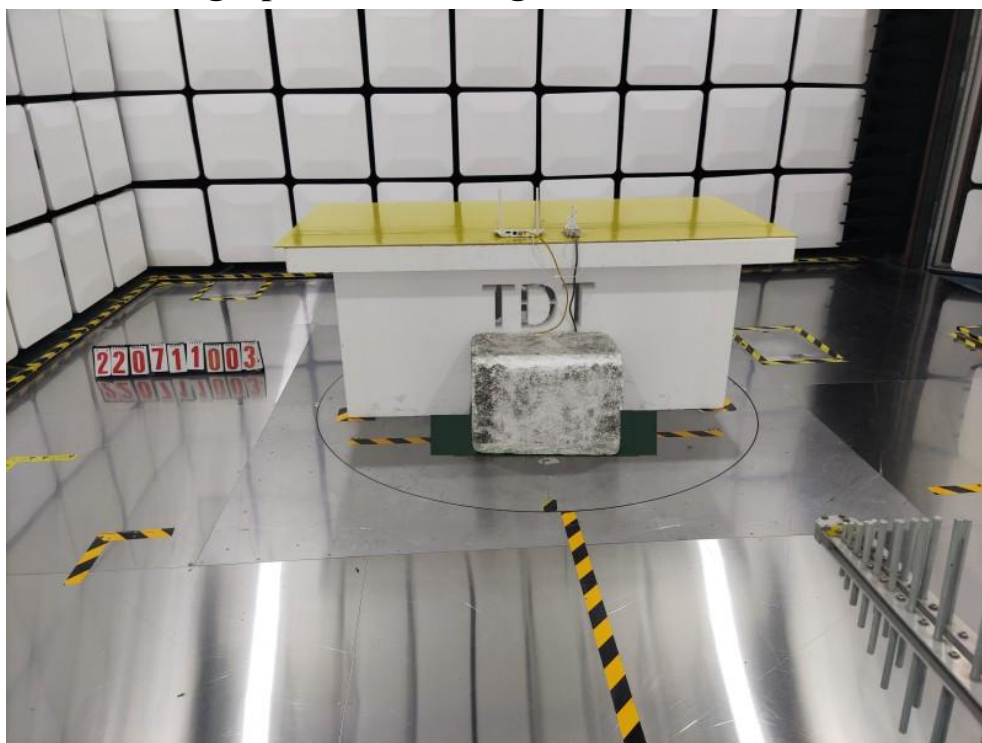
Appendix I: Photograph of EUT



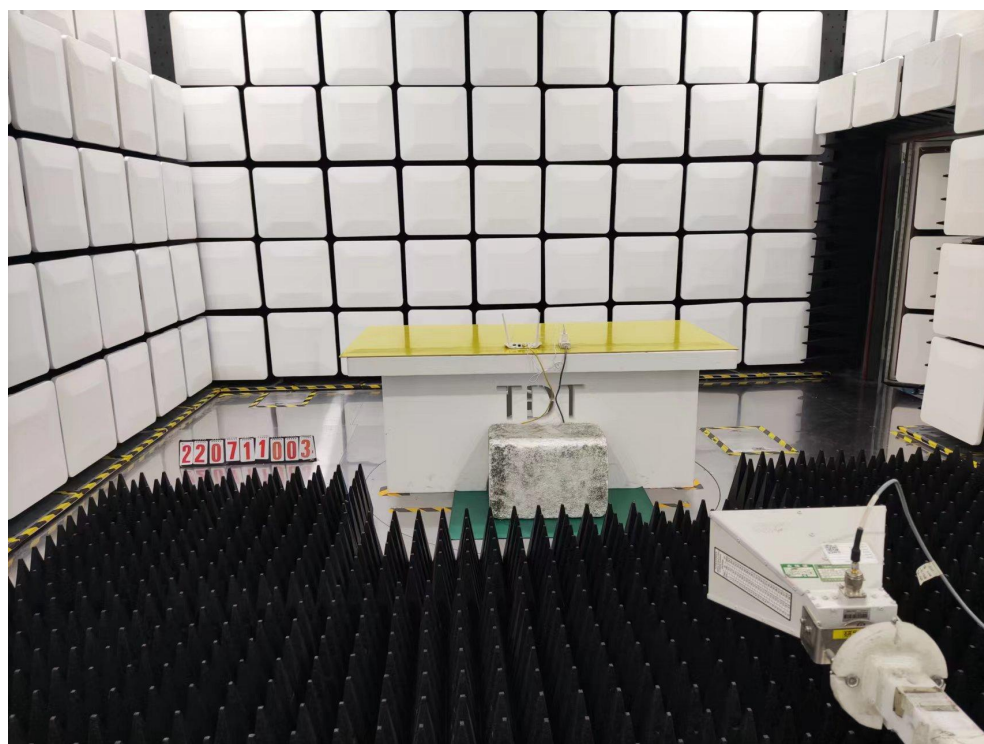




Appendix II: Photograph of test arrangement



Radiated emission(30M-1GHz)(3m)



Radiated emission (1GHz-18GHz)



CE



Appendix III: Revision history

Date	Versions	Revision content
2022.08.26	V1.0	First Draft.
-	-	-

END
