



CTS (Dongguan) Testing Technology Co., Ltd.

Building 1, No.1 Baima Xianfeng Erlu, Nancheng Subdistrict, Dongguan City,
Guangdong Province, China

TEST REPORT

FCC 47 CFR Part 18

Industrial – Scientific – Medical Equipment – Limits and methods of measurement

Report Reference No.....:	CTSE25051306
Data of issue.....:	2025-05-14
Testing Laboratory Name.....:	CTS (Dongguan) Testing Technology Co., Ltd.
Address.....:	Building 1, No.1 Baima Xianfeng Erlu, Nancheng Subdistrict, Dongguan City, Guangdong Province, China
Tested by.....:	Marx Zhou <i>Marx Zhou</i>
(Testing Engineer)	
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(Testing Engineer)	
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Applicant's name.....:	Guangzhou wangkong Ltd.
Address.....:	Room 207, Building C, #3 Yangmeiling Street, KeMulang, Tianhe district, Guangzhou, Guangdong, China
Manufacture's name.....:	Guangzhou wangkong Ltd.
Address.....:	Room 207, Building C, #3 Yangmeiling Street, KeMulang, Tianhe district, Guangzhou, Guangdong, China
Test specification:	
Standard.....:	47 CFR FCC Part 18 / FCC MP-5 (February 1986)
Receiver Date.....:	2025-04-09
Test Period.....:	2025-04-09 to 2025-04-16
Test item description.....:	Digital/Analog Inputs/Outputs Monitor
Trade Mark.....:	MONIGEAR, WANGKONG
Model/Type reference.....:	MN-NIO
Listed Models.....:	N/A
Ratings.....:	12Vdc/PoE
Result.....:	PASS
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TEST REPORT

Equipment under Test : Digital/Analog Inputs/Outputs Monitor

Model /Type : MN-NIO

Listed Models : N/A

Model different : N/A

Applicant : Guangzhou wangkong Ltd.

Address : Room 207, Building C, #3 Yangmeiling Street, KeMulang, Tianhe district, Guangzhou, Guangdong, China

Manufacture : Guangzhou wangkong Ltd.

Address : Room 207, Building C, #3 Yangmeiling Street, KeMulang, Tianhe district, Guangzhou, Guangdong, China

Test Result	PASS
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The above equipment has been tested by CTS (Dongguan) Testing Technology Co., Ltd., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

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1. TEST SUMMARY

Emission			
Standard	Item	Verdict	Remark
FCC 47 CFR PART 18	Conducted Emission	PASS	Meet Class B limit
FCC 47 CFR PART 18	Radiated Emission	PASS	Meet Class B limit

The test results of this report was related only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

2. EUT INFORMATION

2.1 I/O Port Description

I/O Port Types	Q'TY	Test Description
1). /	/	/

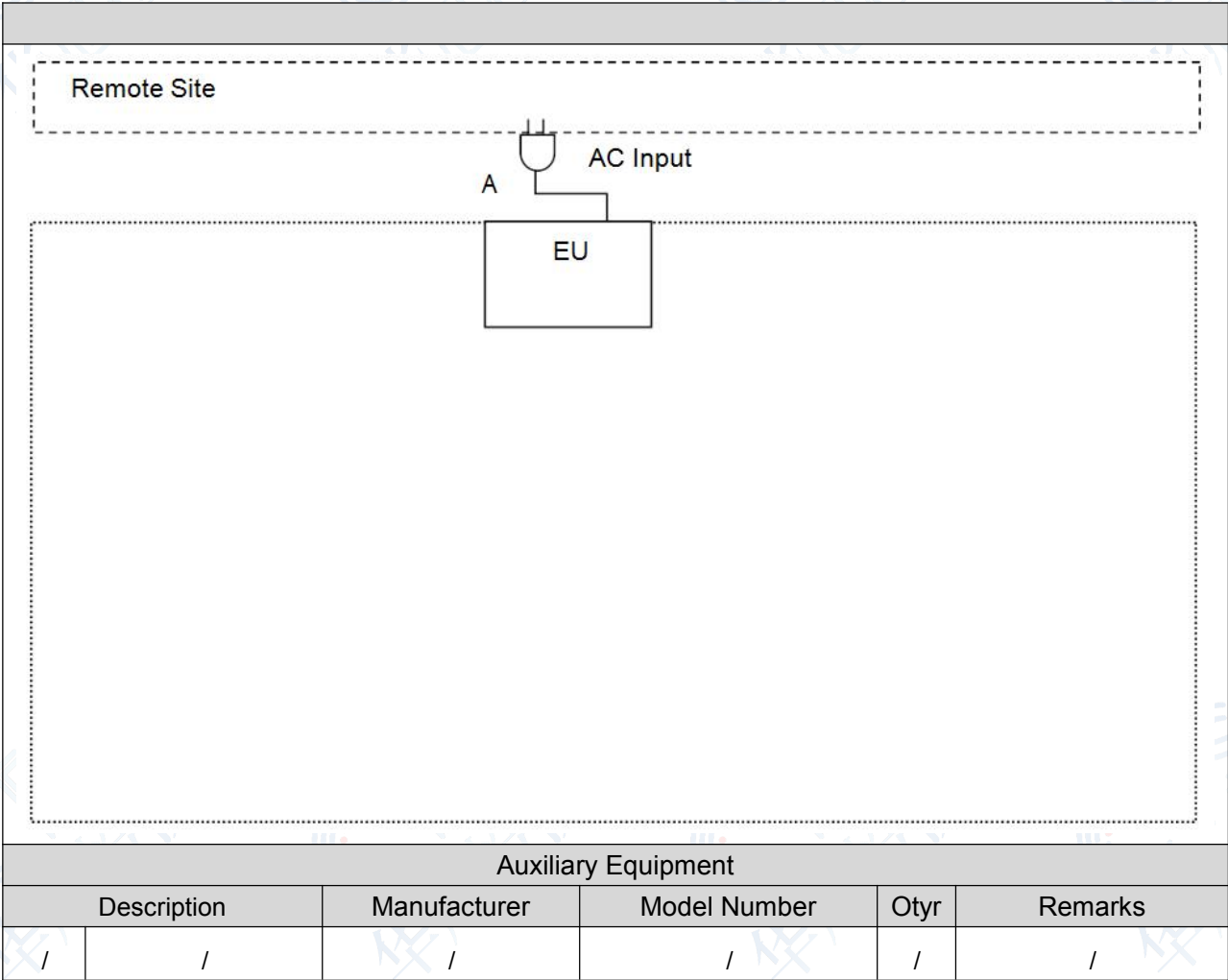
2.2 EUT operation mode

Pre-Test Mode	Mode 1: Full Load		
Final Test Mode	Conducted Emission		Mode 1
	Radiates	Below 1GHz	Mode 1
	Emission	Above 1GHz	N/A, The EUT Frequency<108MHz, Don't need to test.

Then, the above highest emission mode of the configuration of the EUT and cable was chosen for all final test items.

2.3 EUT configuration

The following peripheral devices and interface cables were connected during the measurement:



Auxiliary Equipment					
Description		Manufacturer	Model Number	Otyr	Remarks
/	/	/	/	/	/

3. TEST ENVIRONMENT

3.1 Address of the test laboratory

CTS (Dongguan) Testing Technology Co., Ltd

Building 1, No.1 Baima Xianfeng Erlu, Nancheng Subdistrict, Dongguan City, Guangdong Province, China

3.2 Test Facility

The test facility is recognized,certified:

CTS (Dongguan) Testing Technology Co., Ltd.

3.3 Test Software

Measurement Software			
No.	Description	Software	Version
1	Conducted Emission	JS32-RE	Ver 2.5
2	Radiated Emission _ Below 1GHz	JS32-RE	Ver 2.5.1.8
3	Radiated Emission _ Above 1GHz	JS32-RE	Ver 2.5.1.8

3.4 Statement of the measurement uncertainty

Test Item	Test Site	Frequency Range		Uncertainty (dB)
Conducted Emission AC Power Port	Conductive Shielding Room	9 kHz ~ 150 kHz		2.7
		150 kHz ~ 30 MHz		2.7
Radiated Emission	966	30 MHz ~ 1000 MHz	Horizontal	5.6
			Vertical	6.0
		1000 MHz ~ 40000 MHz		5.2

Note: The Vertical and Horizontal measurement uncertainty of 1GHz to 40GHz is evaluated and choose which polarity is worst value.

3.5 Test Site Environmental

Test Item	Required (IEC 60068-1)		Actual
Conducted Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	60
	Barometric pressure (mbar)	860-1060	950
Radiated Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	60
	Barometric pressure (mbar)	860-1060	950

3.6 Test Instruments

Conducted Emission test site					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Test Receiver	R&S	ESPI	101841	07/17/2024	1 year
Transient Limiter	CYBERTEK	EM5010A	E1950100106	07/17/2024	1 year
LISN	R&S	ESH2-Z5	893606/008	07/17/2024	1 year
LISN	CYBERTEK	EM5040A	E1850400105	07/17/2024	1 year
ISN	SCHWARZBECK	CAT 3	066	09/11/2024	1 year
ISN	SCHWARZBECK	CAT 5	121	09/11/2024	1 year
ISN	SCHWARZBECK	NTFM	102	09/11/2024	1 year
Test Site	XINJU	Conductive Shielding Room	N/A	N.C.R.	----

966 Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Amplifier	SCHWARZBECK MESS-ELEKTRONIK	BBV 9743	202	07/17/2024	1 year
Amplifier	YIAN	TRLA- 010180G50B	980355	07/17/2024	1 year
Test Receiver	R&S	ESCI 7	101102	09/19/2024	1 year
Spectrum Analyzer	R&S	FSV40-N	101800	07/17/2024	1 year
Broadband Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB 9163	00976	08/08/2024	1 year
Double Ridged Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	01622	09/19/2024	1 year
Test Site	XINJU	966	N/A	12/29/2018	----

4. TEST CONDITIONS AND RESULTS

4.1 Conducted Emission

4.1.1 Limits

For cooking ranges and ultrasonic equipment:

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.009 - 0.05	110	-
0.05 - 0.15	90-80	-
0.15 - 0.5	66-56	56-46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

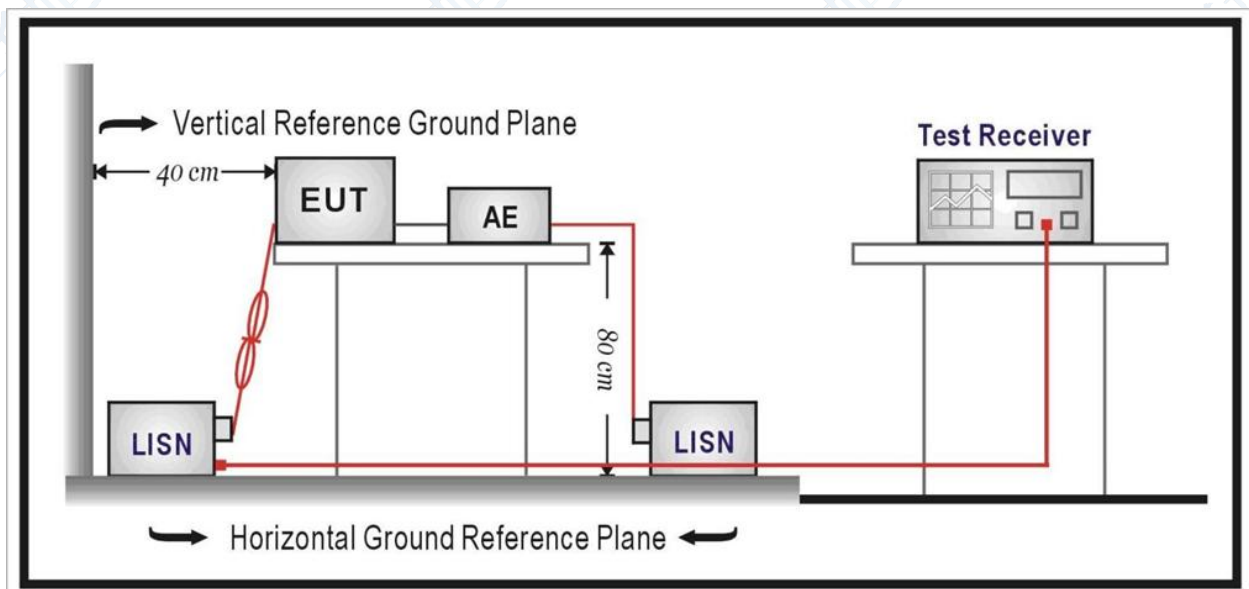
For all other part 18 consumer devices:

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15 - 0.5	66-56	56-46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Note: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

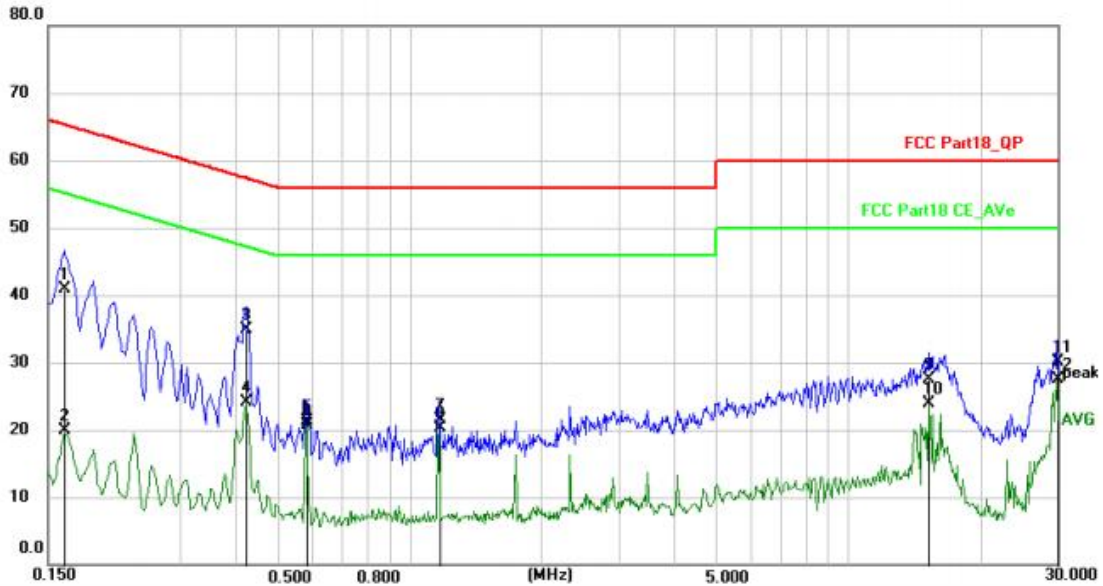
4.1.2 Test Configuration



If the reading of the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the higher reading shall be recorded with the exception of any brief isolated high reading which shall be ignored.

4.1.4 Test Results

Test Standard:	FCC Part 18	Power Line:	L1
Test Mode:	Mode 1	Test Power:	AC 120V / 60Hz
Remark:	DC 12V		

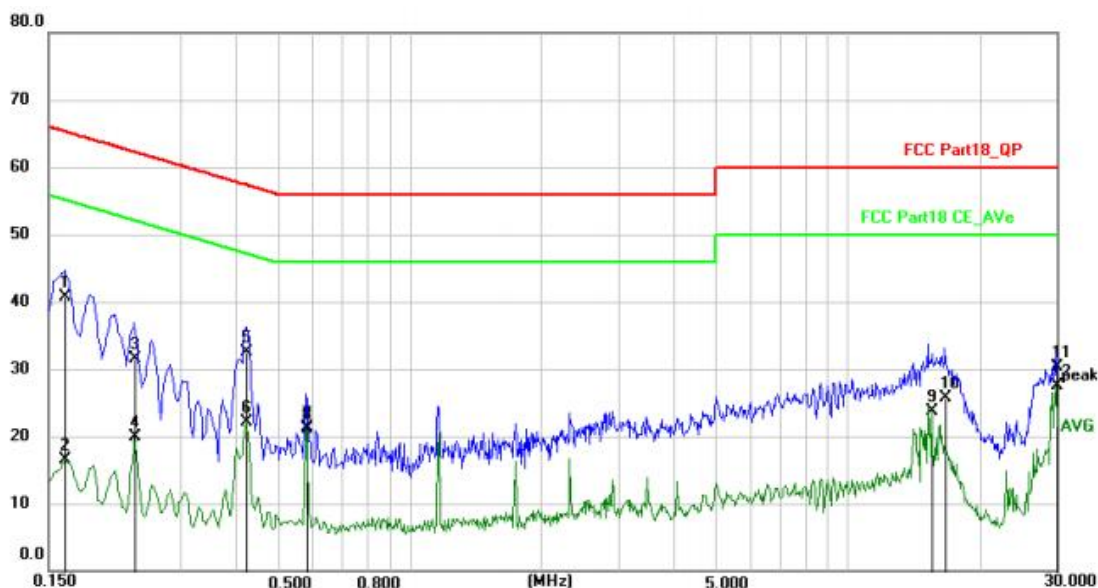


No.	Mk.	Freq. MHz	Reading Level dBμV	Correct Factor dB	Measure- ment dBμV	Limit dBμV	Margin dB	Detector	Comment
1		0.1635	31.17	9.83	41.00	65.28	-24.28	QP	
2		0.1635	10.03	9.83	19.86	55.28	-35.42	AVG	
3	*	0.4245	25.21	9.79	35.00	57.36	-22.36	QP	
4		0.4245	14.23	9.79	24.02	47.36	-23.34	AVG	
5		0.5820	11.55	9.78	21.33	56.00	-34.67	QP	
6		0.5820	10.92	9.78	20.70	46.00	-25.30	AVG	
7		1.1670	11.66	9.80	21.46	56.00	-34.54	QP	
8		1.1670	10.52	9.80	20.32	46.00	-25.68	AVG	
9		15.2520	17.52	9.90	27.42	60.00	-32.58	QP	
10		15.2520	13.98	9.90	23.88	50.00	-26.12	AVG	
11		29.9670	20.15	9.97	30.12	60.00	-29.88	QP	
12		29.9670	17.62	9.97	27.59	50.00	-22.41	AVG	

Note: 1. Result (dBμV) = Reading (dBμV) + Factor (dB)

2. Factor (dB) = Cable loss (dB) + LISN Factor (dB).

Test Standard:	FCC Part 18	Power Line:	N
Test Mode:	Mode 1	Test Power:	AC 120V / 60Hz
Remark:	DC 12V		

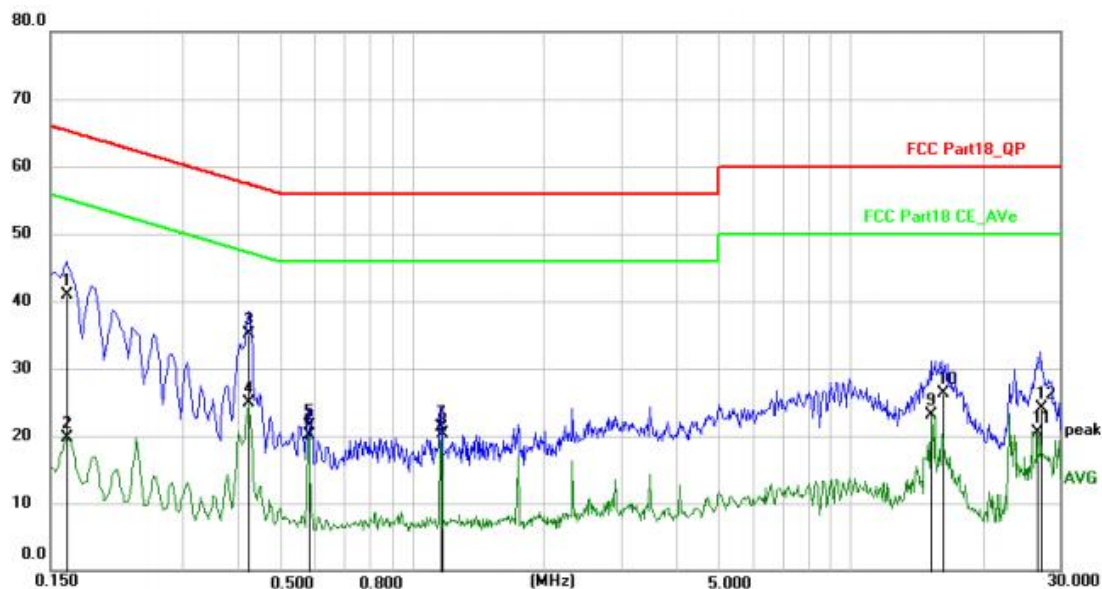


No.	Mk.	Freq. MHz	Reading Level dBμV	Correct Factor dB	Measure- ment dBμV	Limit dBμV	Margin dB	Detector	Comment
1		0.1635	31.08	9.70	40.78	65.28	-24.50	QP	
2		0.1635	6.80	9.70	16.50	55.28	-38.78	AVG	
3		0.2355	21.86	9.73	31.59	62.25	-30.66	QP	
4		0.2355	10.10	9.73	19.83	52.25	-32.42	AVG	
5		0.4245	22.72	9.81	32.53	57.36	-24.83	QP	
6		0.4245	12.39	9.81	22.20	47.36	-25.16	AVG	
7		0.5820	11.46	9.86	21.32	56.00	-34.68	QP	
8		0.5820	11.24	9.86	21.10	46.00	-24.90	AVG	
9		15.6165	13.80	9.92	23.72	50.00	-26.28	AVG	
10		16.6740	15.78	9.94	25.72	60.00	-34.28	QP	
11		29.9670	20.02	10.23	30.25	60.00	-29.75	QP	
12	*	29.9670	17.22	10.23	27.45	50.00	-22.55	AVG	

Note: 1. Result (dBμV) = Reading (dBμV) + Factor (dB)

2. Factor (dB) = Cable loss (dB) + LISN Factor (dB).

Test Standard:	FCC Part 18	Power Line:	L1
Test Mode:	Mode 1	Test Power:	AC 120V / 60Hz
Remark:	DC 12V+PoE power supply		

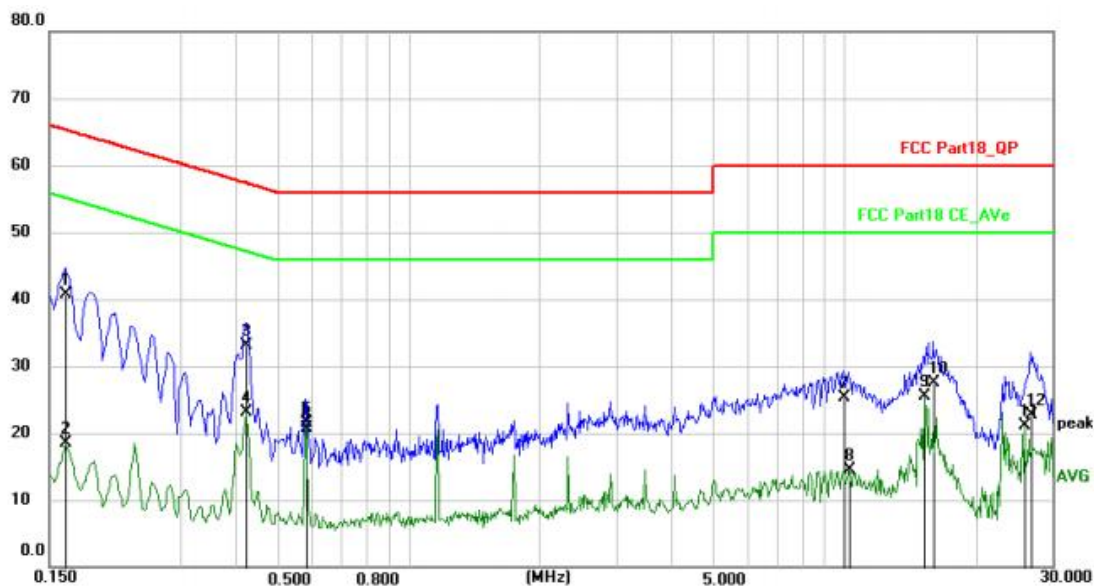


No.	Mk.	Freq. MHz	Reading Level dBμV	Correct Factor dB	Measure- ment dBμV	Limit dBμV	Margin dB	Detector	Comment
1		0.1641	31.02	9.83	40.85	65.25	-24.40	QP	
2		0.1641	9.97	9.83	19.80	55.25	-35.45	AVG	
3	*	0.4245	25.22	9.79	35.01	57.36	-22.35	QP	
4		0.4245	15.14	9.79	24.93	47.36	-22.43	AVG	
5		0.5820	11.73	9.78	21.51	56.00	-34.49	QP	
6		0.5820	10.36	9.78	20.14	46.00	-25.86	AVG	
7		1.1625	11.54	9.80	21.34	56.00	-34.66	QP	
8		1.1670	10.60	9.80	20.40	46.00	-25.60	AVG	
9		15.2520	13.29	9.90	23.19	50.00	-26.81	AVG	
10		16.1655	16.38	9.91	26.29	60.00	-33.71	QP	
11		26.6100	10.54	10.00	20.54	50.00	-29.46	AVG	
12		27.1590	14.15	10.00	24.15	60.00	-35.85	QP	

Note: 1. Result (dBμV) = Reading (dBμV) + Factor (dB)

2. Factor (dB) = Cable loss (dB) + LISN Factor (dB).

Test Standard:	FCC Part 18	Power Line:	N
Test Mode:	Mode 1	Test Power:	AC 120V / 60Hz
Remark:	DC 12V+PoE power supply		



No.	Mk.	Freq. MHz	Reading Level dBμV	Correct Factor dB	Measure- ment dBμV	Limit dBμV	Margin dB	Detector	Comment
1		0.1635	31.06	9.70	40.76	65.28	-24.52	QP	
2		0.1635	8.74	9.70	18.44	55.28	-36.84	AVG	
3		0.4245	23.30	9.81	33.11	57.36	-24.25	QP	
4	*	0.4245	13.39	9.81	23.20	47.36	-24.16	AVG	
5		0.5820	11.72	9.86	21.58	56.00	-34.42	QP	
6		0.5820	10.94	9.86	20.80	46.00	-25.20	AVG	
7		9.9510	15.32	9.90	25.22	60.00	-34.78	QP	
8		10.2345	4.57	9.90	14.47	50.00	-35.53	AVG	
9		15.2520	15.61	9.92	25.53	50.00	-24.47	AVG	
10		15.9855	17.61	9.94	27.55	60.00	-32.45	QP	
11		25.8765	10.88	10.19	21.07	50.00	-28.93	AVG	
12		26.7540	12.56	10.19	22.75	60.00	-37.25	QP	

Note: 1. Result (dBμV) = Reading (dBμV) + Factor (dB)

2. Factor (dB) = Cable loss (dB) + LISN Factor (dB).

4.2 Radiated Emission

4.2.1 Limit

According to FCC Part 18.305 and FCC Part 18.309:

Equipment	Operating frequency	RF Power generated by equipment (watts)	Field strength limit (uV/m)	Distance (meters)
Any type unless otherwise specified (miscellaneous)	Any ISM frequency	Below 500 500 or more	25 25 × SQRT(power/500)	300 1300
	Any non-ISM frequency	Below 500 500 or more	15 15 × SQRT(power/500)	300 1300
Industrial heaters and RF stabilized arc welders	On or below 5,725 MHz Above 5,725 MHz	Any Any	10 (²)	1,600 (²)
Medical diathermy	Any ISM frequency Any non-ISM frequency	Any Any	25 15	300 300
Ultrasonic	Below 490 kHz	Below 500 500 or more	2,400/F(kHz) 2,400/F(kHz) × SQRT(power/500)	300 3300
	490 to 1,600 kHz Above 1,600 kHz	Any Any	24,000/F(kHz) 15	30 30
Induction cooking ranges	Below 90 kHz On or above 90 kHz	Any Any	1,500 300	430 430

Remark: 1. The EUT is a Ultrasonic equipment and operating frequency is 2.4MHz

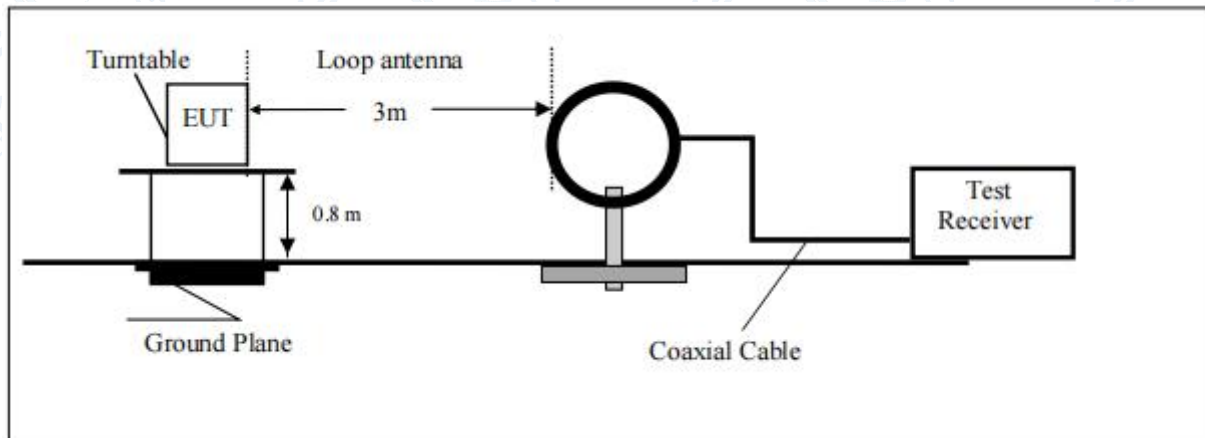
- Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)

According to FCC Part 18.309, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

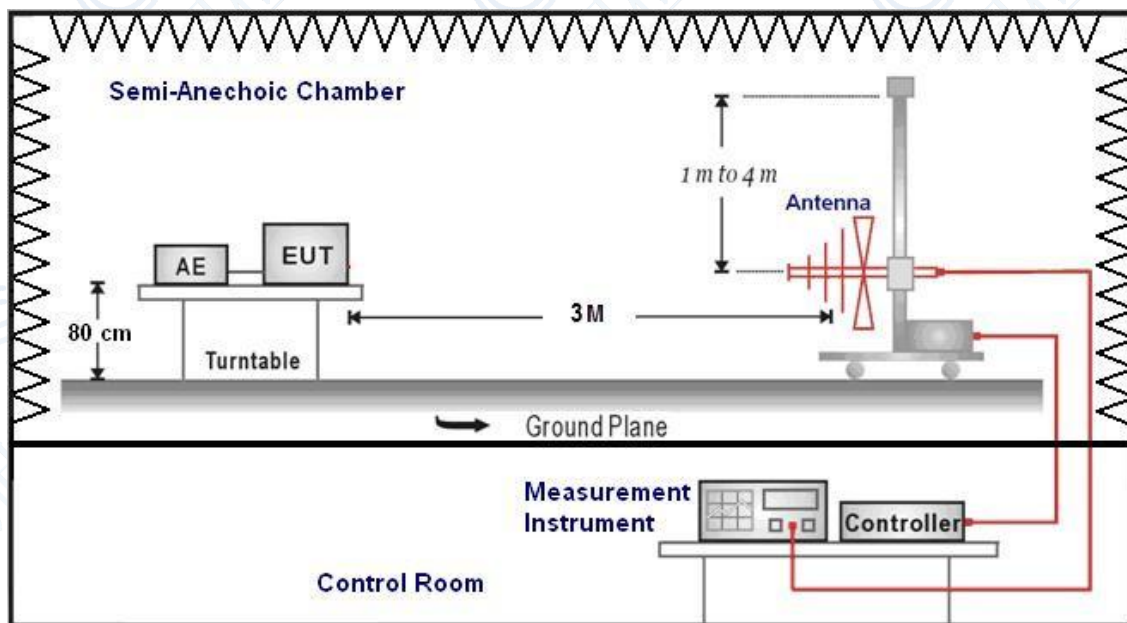
Frequency band in which device operates (MHz)	Range of frequency measurements	
	Lowest frequency	Highest frequency
Below 1.705	Lowest frequency generated in the device, but not lower than 9 kHz	30 MHz.
1.705 to 30	Lowest frequency generated in the device, but not lower than 9 kHz	400 MHz.
30 to 500	Lowest frequency generated in the device or 25 MHz, whichever is lower	Tenth harmonic or 1,000 MHz, whichever is higher.
500 to 1,000	Lowest frequency generated in the device or 100 MHz, whichever is lower	Tenth harmonic.
Above 1,000do	Tenth harmonic or highest detectable emission.

4.2.2 Test Configuration

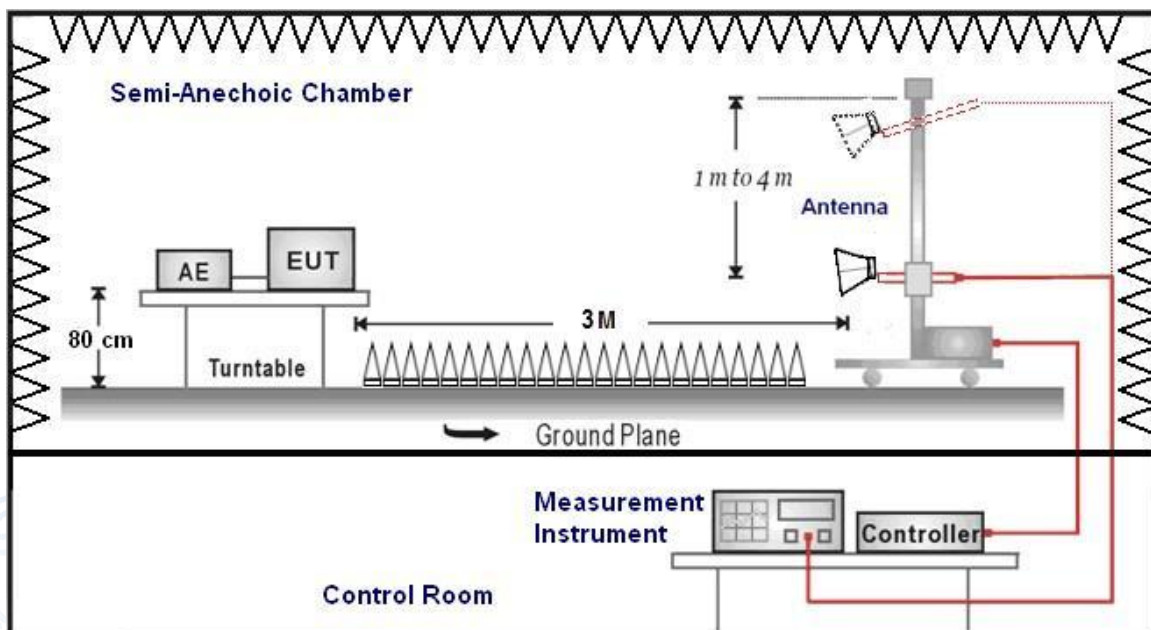
■ Frequency range 9 KHz - 30MHz



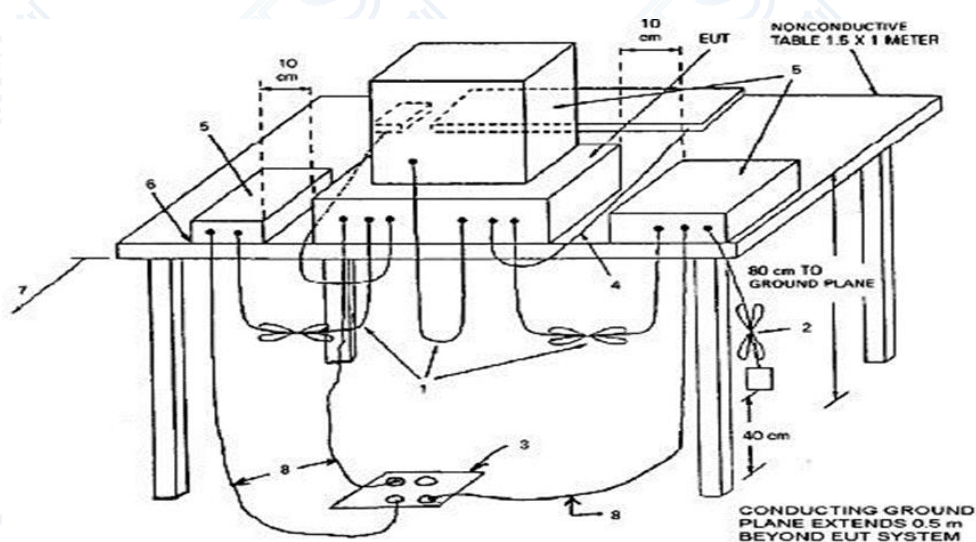
■ Below 1GHz



■ Above 1GHz



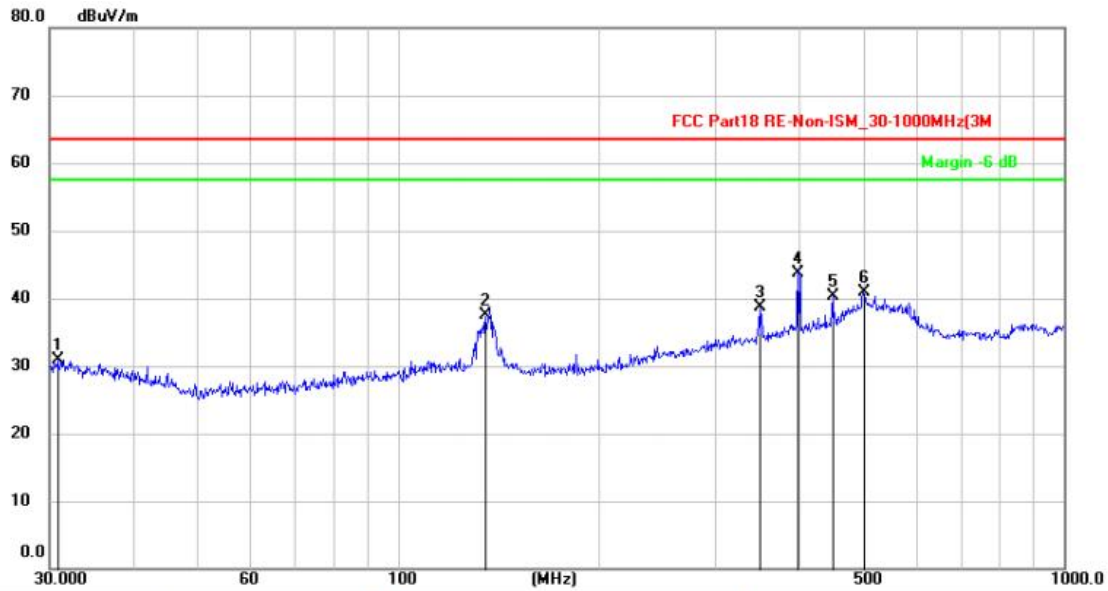
Test arrangement for radiated emissions of tabletop equipment.



Radiated emissions were applied to above 1 GHz using a resolution bandwidth of 1 MHz and measured by the peak and average detector which antenna to the EUT distance was 3 meters. If the EUT was meet both limits and measurement with the average detector receiver is unnecessary.

4.2.4 Test Results

Test Standard:	FCC Part 18	Test Distance:	3m
Test Mode:	Mode 1	Test Power:	AC 120V / 60Hz
Measurement Range:	30 MHz~1 GHz	Ant. Ploar	Horizontal
Remark:	DC 12V		

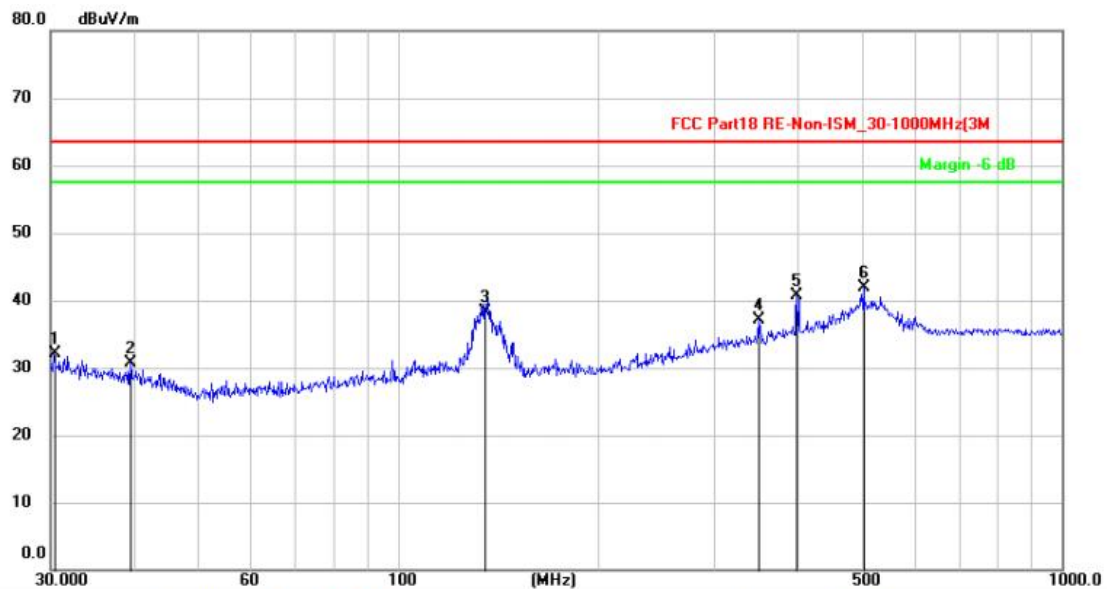


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Antenna Height cm	Table Degree	Comment
1		30.8535	17.78	13.17	30.95	63.50	-32.55	QP 400	273	
2		135.1622	24.72	12.86	37.58	63.50	-25.92	QP 100	166	
3		349.2500	22.38	16.23	38.61	63.50	-24.89	QP 100	234	
4	*	398.4152	25.86	17.82	43.68	63.50	-19.82	QP 400	334	
5		449.5558	21.51	18.78	40.29	63.50	-23.21	QP 100	323	
6		499.4247	19.56	21.27	40.83	63.50	-22.67	QP 100	234	

Note: 1. Result (dBμV/m) = Reading (dBμV/m) + Factor (dB) .

2. Factor (dB) = Antenna Factor (dB) + Cable loss (dB) – Pre Amplifier gain (dB).

Test Standard:	FCC Part 18	Test Distance:	3m
Test Mode:	Mode 1	Test Power:	AC 120V / 60Hz
Measurement Range:	30 MHz~1 GHz	Ant. Ploar	Vertical
Remark:	DC 12V		

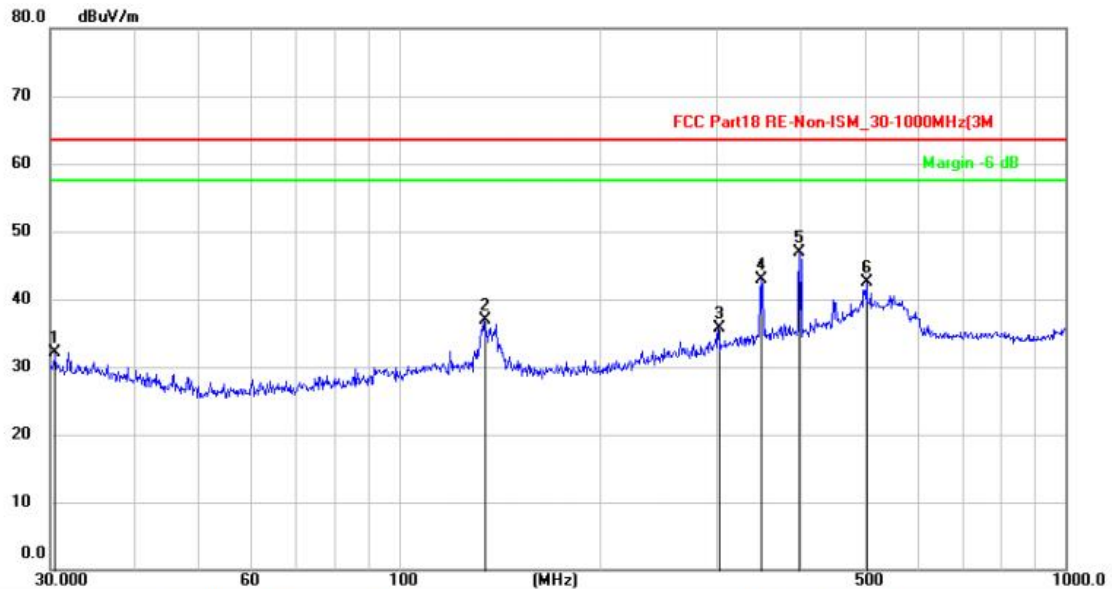


No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	Comment
			dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	
1		30.3173	18.76	13.26	32.02	63.50	-31.48	QP	100	125
2		39.5757	18.98	11.74	30.72	63.50	-32.78	QP	100	204
3		135.1618	25.44	12.86	38.30	63.50	-25.20	QP	100	7
4		349.2500	20.91	16.23	37.14	63.50	-26.36	QP	100	66
5		399.0302	22.85	17.84	40.69	63.50	-22.81	QP	100	76
6	*	502.9395	20.66	21.30	41.96	63.50	-21.54	QP	100	358

Note: 1. Result (dBuV/m) = Reading (dBuV/m) + Factor (dB) .

2. Factor (dB) = Antenna Factor (dB) + Cable loss (dB) – Pre Amplifier gain (dB).

Test Standard:	FCC Part 18	Test Distance:	3m
Test Mode:	Mode 1	Test Power:	AC 120V / 60Hz
Measurement Range:	30 MHz~1 GHz	Ant. Ploar	Horizontal
Remark:	DC 12V+PoE power supply		

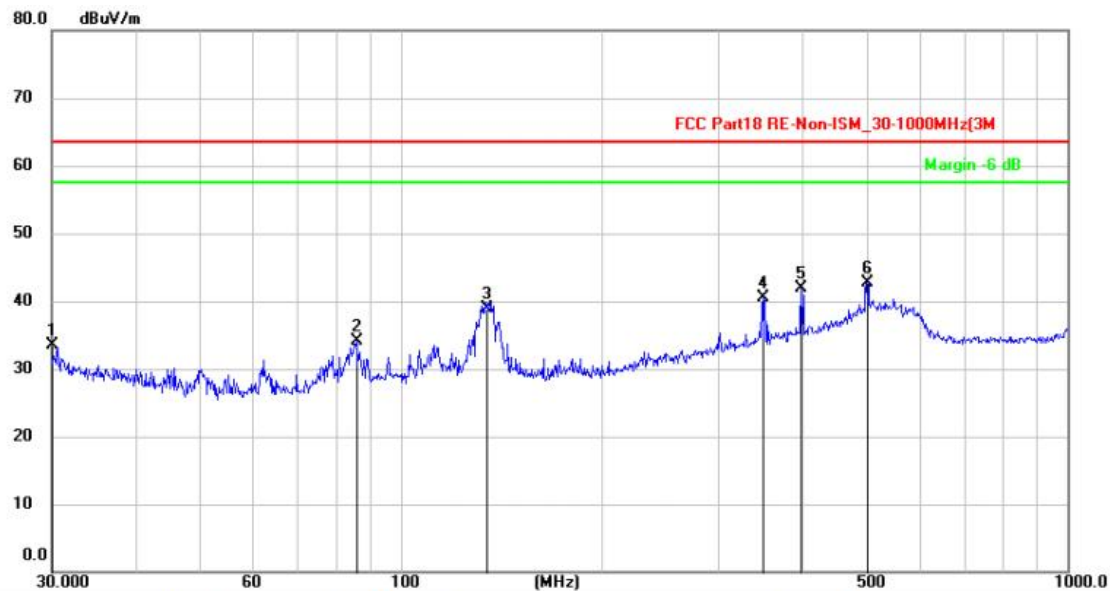


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Antenna Height cm	Table Degree	Comment
1		30.5306	18.83	13.22	32.05	63.50	-31.45	QP	400	352	
2		134.0882	24.12	12.85	36.97	63.50	-26.53	QP	400	76	
3		301.4224	20.27	15.41	35.68	63.50	-27.82	QP	100	97	
4		349.2500	26.72	16.23	42.95	63.50	-20.55	QP	100	77	
5	*	399.0300	29.05	17.84	46.89	63.50	-16.61	QP	400	28	
6		502.9395	21.27	21.30	42.57	63.50	-20.93	QP	100	28	

Note: 1. Result (dBμV/m) = Reading (dBμV/m) + Factor (dB) .

2. Factor (dB) = Antenna Factor (dB) + Cable loss (dB) – Pre Amplifier gain (dB).

Test Standard:	FCC Part 18	Test Distance:	3m
Test Mode:	Mode 1	Test Power:	AC 120V / 60Hz
Measurement Range:	30 MHz~1 GHz	Ant. Ploar	Vertical
Remark:	DC 12V+PoE power supply		



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	Comment
			dBuV	dB/m	dBuV/m	dBuV/m	dB	cm	degree	
1		30.0000	20.28	13.31	33.59	63.50	-29.91	QP 100	76	
2		85.8984	23.27	10.91	34.18	63.50	-29.32	QP 100	106	
3		134.5491	26.13	12.86	38.99	63.50	-24.51	QP 100	331	
4		349.2500	24.37	16.23	40.60	63.50	-22.90	QP 100	115	
5		399.0302	24.08	17.84	41.92	63.50	-21.58	QP 100	135	
6	*	499.4247	21.46	21.27	42.73	63.50	-20.77	QP 100	17	

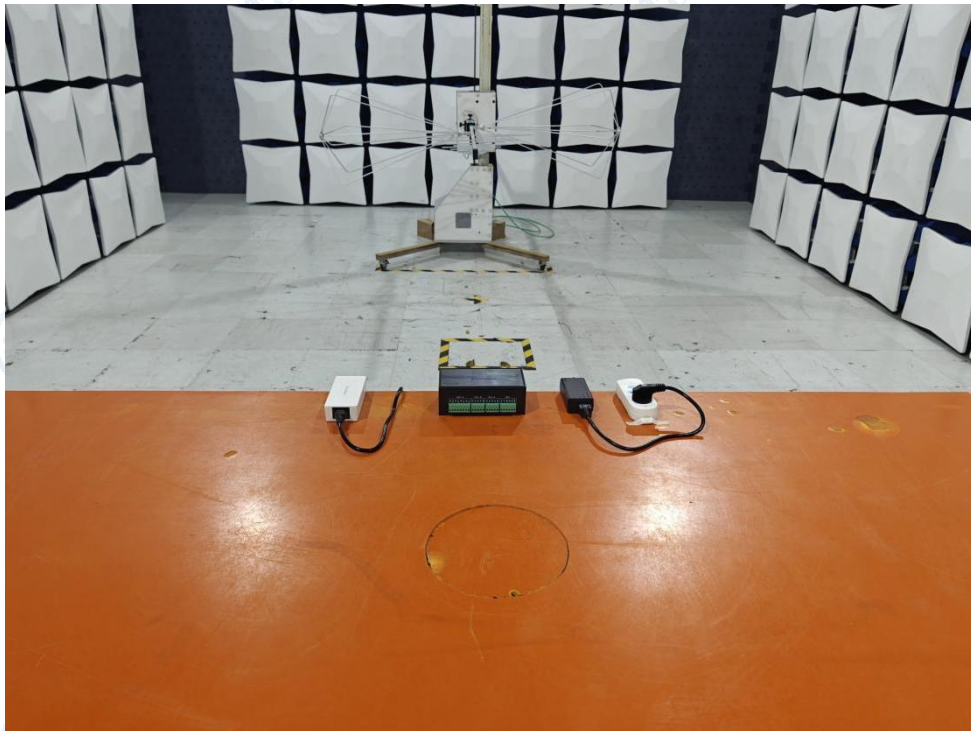
Note: 1. Result (dBμV/m) = Reading (dBμV/m) + Factor (dB) .
2. Factor (dB) = Antenna Factor (dB) + Cable loss (dB) – Pre Amplifier gain (dB).

5. TEST SETUP PHOTOS OF THE EUT

Conducted Emission



Radiated Emission



6. EXTERNAL AND INTERNAL PHOTOS OF THE EUT

6.1 External photos of the EUT

Photo 1 External View

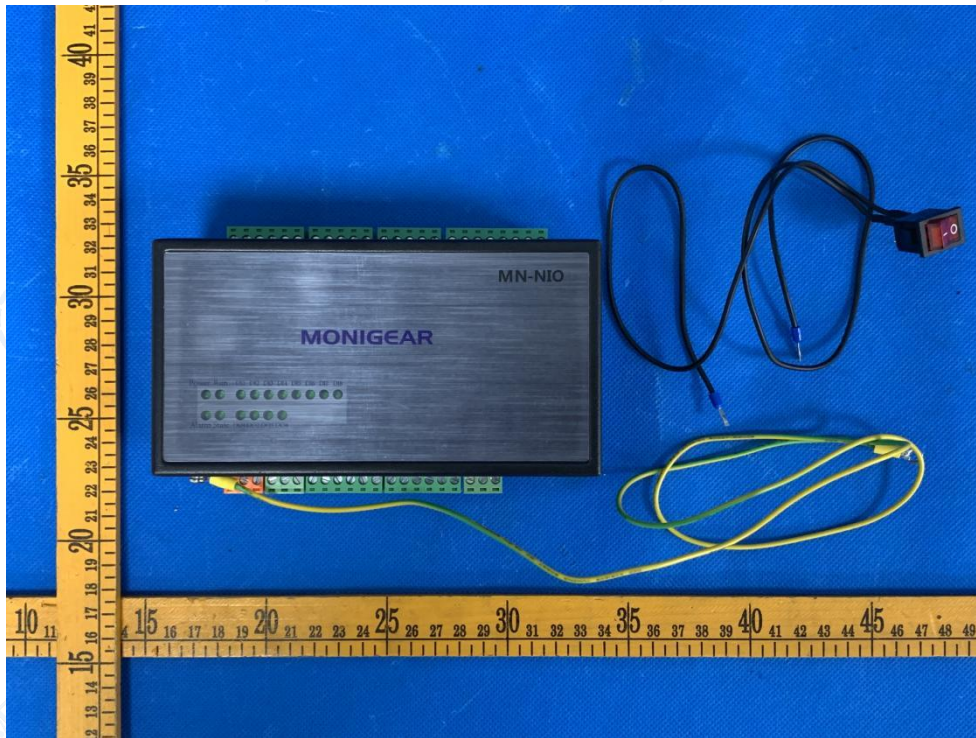


Photo 2 External View

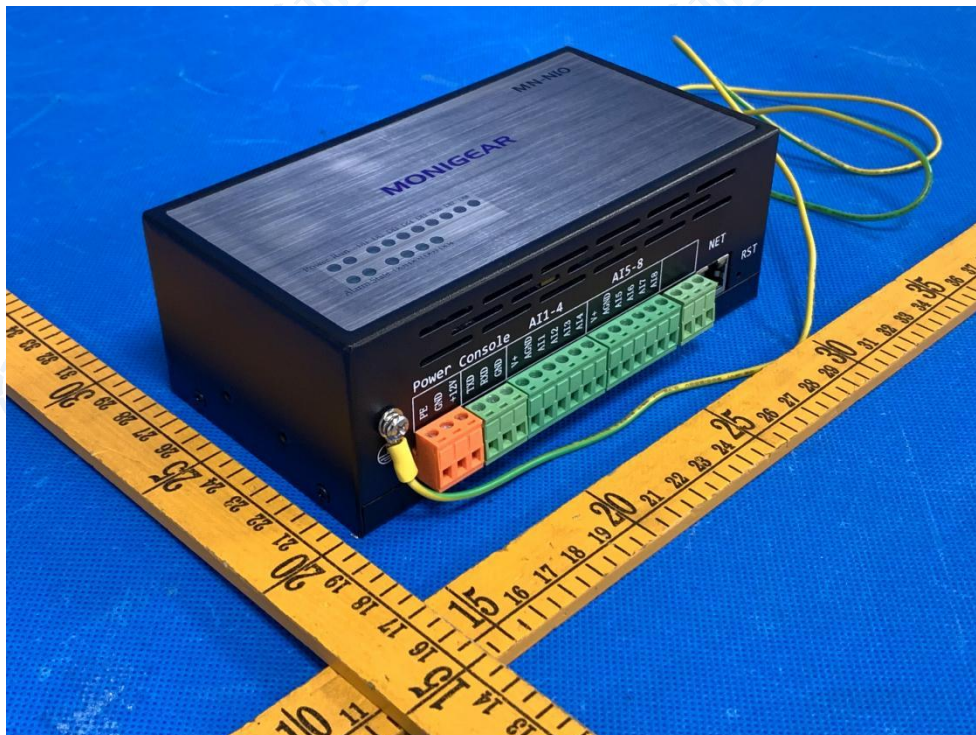
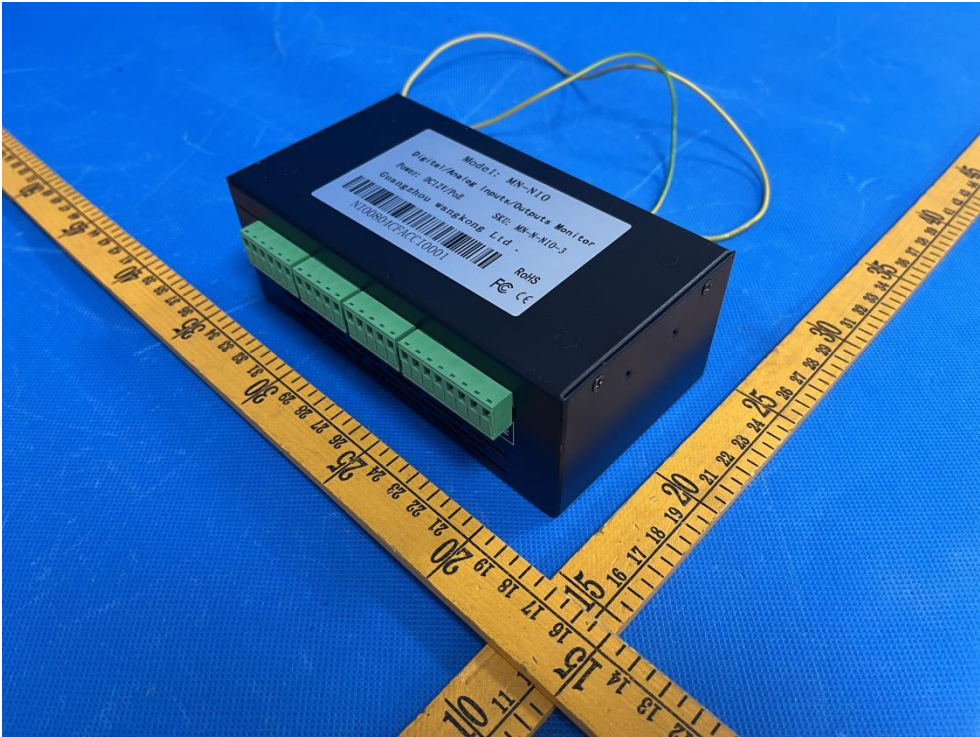


Photo 3 External View



6.2 Internal Photos of the EUT

Photo 1 Internal View

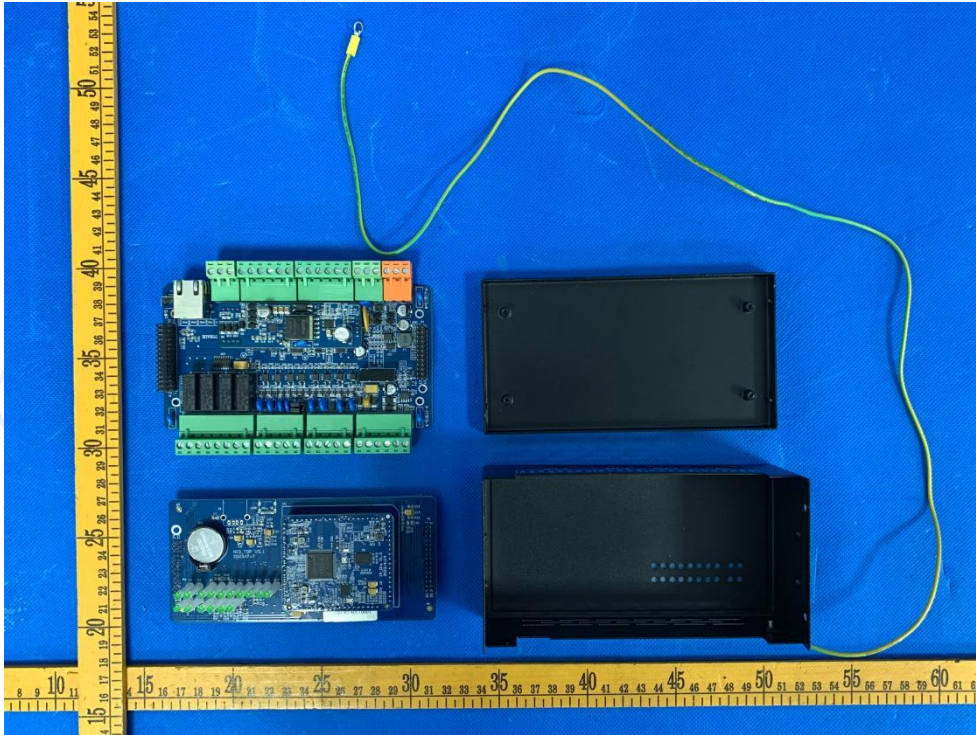


Photo 2 PCB View

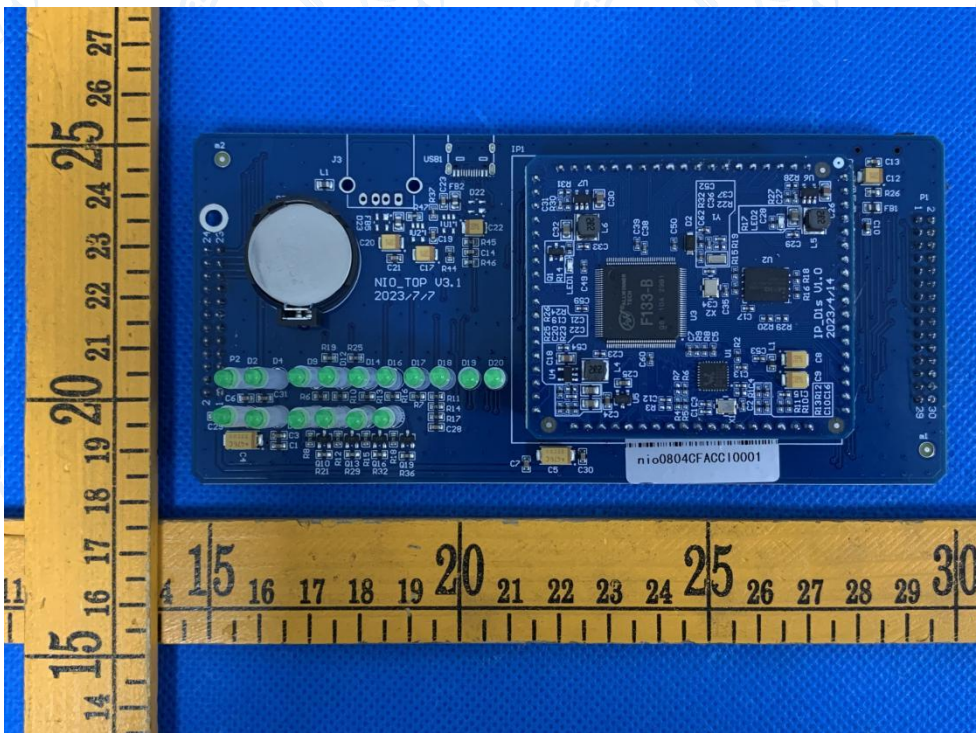


Photo 3 PCB View

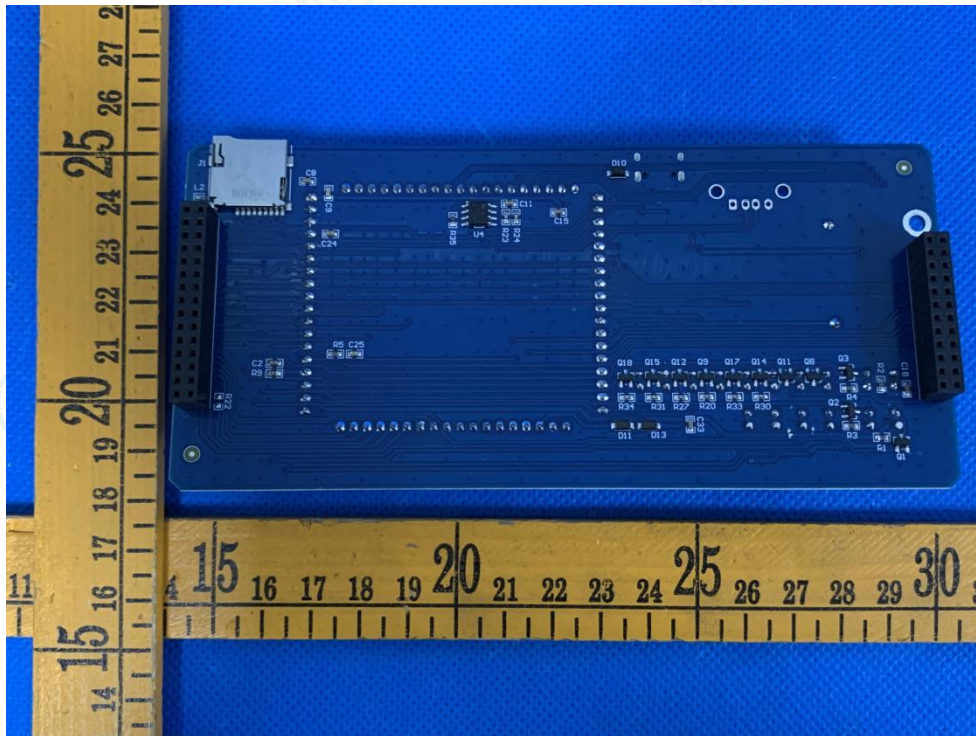


Photo 4 PCB View

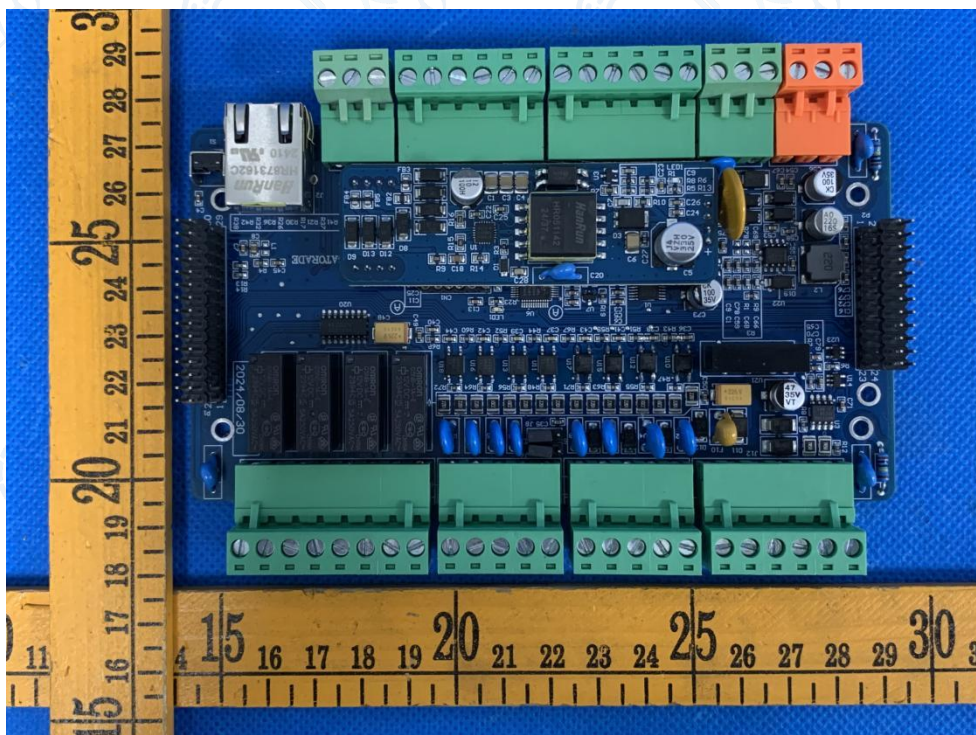
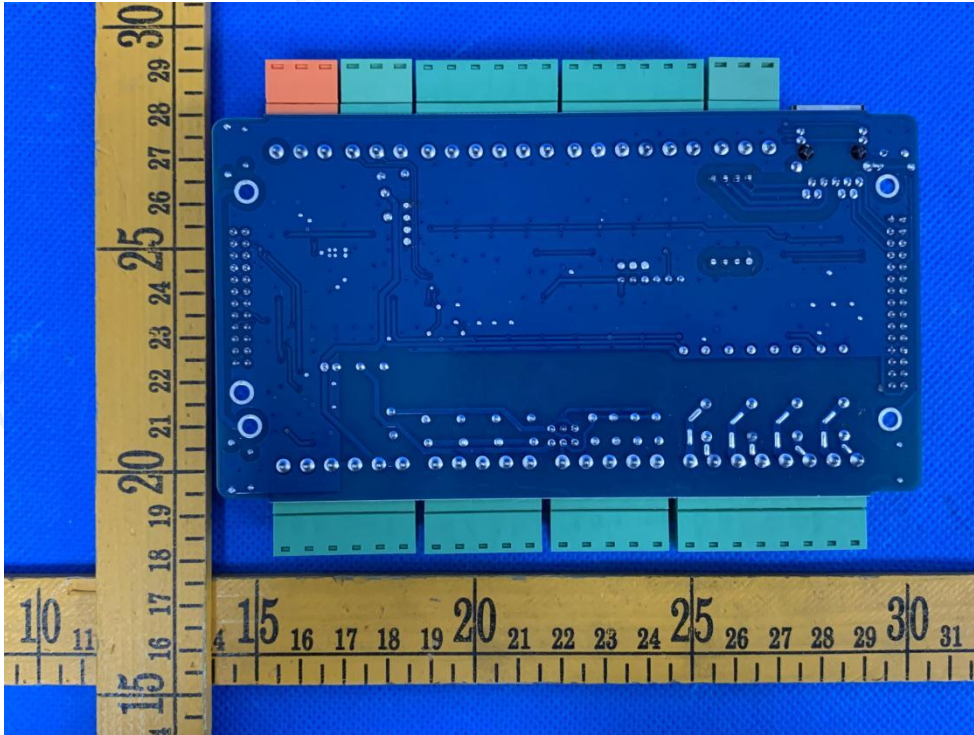


Photo 5 PCB View



.....End of Report.....