

TEST REPORT

Application No.: GZEM2505003438LM
Applicant: Shenzhen Chengxing Electronic Technology Co.,Ltd.
Address of Applicant: 1405-07, Block A, Jiahe Building, Shennan Middle Road, Huaqiangbei Street, Futian District, Shenzhen, China
Manufacturer: Shenzhen Chengxing Electronic Technology Co.,Ltd.
Address of Manufacturer: 1405-07, Block A, Jiahe Building, Shennan Middle Road, Huaqiangbei Street, Futian District, Shenzhen, China
Factory: Shenzhen Chengxing Electronic Technology Co.,Ltd.
Address of Factory: 1405-07, Block A, Jiahe Building, Shennan Middle Road, Huaqiangbei Street, Futian District, Shenzhen, China
Product Name: RGB LED STRIP LIGHTS
Model No.: Refer to page 2.
Standard(s) : 47 CFR Part 15, Subpart B
Date of Receipt: 2025-05-29
Date of Test: 2025-06-05 to 2025-06-06
Date of Issue: 2025-06-30

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.



Jerry Chan
Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch, EMC Testing Laboratory

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Model No.:

SF-30D5050RGB-WS2812B-IP20, SF-30D5050RGB-WS2812B-IP65,
SF-30D5050RGB-WS2812B-IP67, SF-60D5050RGB-WS2812B-IP20,
SF-60D5050RGB-WS2812B-IP65, SF-60D5050RGB-WS2812B-IP67,
SF-96D5050RGB-WS2812B-IP20, SF-96D5050RGB-WS2812B-IP65,
SF-96D5050RGB-WS2812B-IP67, SF-144D5050RGB-WS2812B-IP20,
SF-144D5050RGB-WS2812B-IP65, SF-144D5050RGB-WS2812B-IP67,
SF-30D5050RGB-WS2815B-IP20, SF-30D5050RGB-WS2815B-IP65,
SF-30D5050RGB-WS2815B-IP67, SF-60D5050RGB-WS2815B-IP20,
SF-60D5050RGB-WS2815B-IP65, SF-60D5050RGB-WS2815B-IP67,
SF-96D5050RGB-WS2815B-IP20, SF-96D5050RGB-WS2815B-IP65,
SF-96D5050RGB-WS2815B-IP67, SF-144D5050RGB-WS2815B-IP20,
SF-144D5050RGB-WS2815B-IP65, SF-144D5050RGB-WS2815B-IP67,
SF-60D2020RGB-WS2812B-IP20, SF-60D2020RGB-WS2812B-IP65,
SF-60D2020RGB-WS2812B-IP67, SF-120D2020RGB-WS2812B-IP20,
SF-120D2020RGB-WS2812B-IP65, SF-120D2020RGB-WS2812B-IP67,
SF-160D2020RGB-WS2812B-IP20, SF-160D2020RGB-WS2812B-IP65,
SF-160D2020RGB-WS2812B-IP67, SF-60D3535RGB-WS2812B-IP20,
SF-60D3535RGB-WS2812B-IP65, SF-60D3535RGB-WS2812B-IP67,
SF-96D3535RGB-WS2812B-IP20, SF-96D3535RGB-WS2812B-IP65,
SF-96D3535RGB-WS2812B-IP67, SF-144D3535RGB-WS2812B-IP20,
SF-144D3535RGB-WS2812B-IP65, SF-144D3535RGB-WS2812B-IP67,
SF-60D4020RGB-WS2812B-IP20, SF-60D4020RGB-WS2812B-IP65,
SF-60D4020RGB-WS2812B-IP67, SF-100D4020RGB-WS2812B-IP20,
SF-100D4020RGB-WS2812B-IP65, SF-100D4020RGB-WS2812B-IP67,
SF-144D4020RGB-WS2812B-IP20, SF-144D4020RGB-WS2812B-IP65,
SF-144D4020RGB-WS2812B-IP67, SF-60D4020RGB-SK6812-IP20,
SF-60D4020RGB-SK6812-IP65, SF-60D4020RGB-SK6812-IP67,
SF-100D4020RGB-SK6812-IP20, SF-100D4020RGB-SK6812-IP65,
SF-100D4020RGB-SK6812-IP67, SF-144D4020RGB-SK6812-IP20,
SF-144D4020RGB-SK6812-IP65, SF-144D4020RGB-SK6812-IP67 ♣

♣

Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.



Revision Record			
Version	Report No.	Date	Remark
01	GZEM250500343801	2025-06-30	Original

Authorized for issue by:			
		Key Liang	
		Key Liang/Project Engineer	
		Terry Lai	
		Terry Lai/Reviewer	



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2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart B	ANSI C63.4-2014	15.107(a);Class B	Pass
Radiated Emissions (30MHz-1GHz)		ANSI C63.4-2014	15.109(a);Class B	Pass

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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Model No.: SF-30D5050RGB-WS2812B-IP20, SF-30D5050RGB-WS2812B-IP65,
 SF-30D5050RGB-WS2812B-IP67, SF-60D5050RGB-WS2812B-IP20,
 SF-60D5050RGB-WS2812B-IP65, SF-60D5050RGB-WS2812B-IP67,
 SF-96D5050RGB-WS2812B-IP20, SF-96D5050RGB-WS2812B-IP65,
 SF-96D5050RGB-WS2812B-IP67, SF-144D5050RGB-WS2812B-IP20,
 SF-144D5050RGB-WS2812B-IP65, SF-144D5050RGB-WS2812B-IP67,
 SF-30D5050RGB-WS2815B-IP20, SF-30D5050RGB-WS2815B-IP65,
 SF-30D5050RGB-WS2815B-IP67, SF-60D5050RGB-WS2815B-IP20,
 SF-60D5050RGB-WS2815B-IP65, SF-60D5050RGB-WS2815B-IP67,
 SF-96D5050RGB-WS2815B-IP20, SF-96D5050RGB-WS2815B-IP65,
 SF-96D5050RGB-WS2815B-IP67, SF-144D5050RGB-WS2815B-IP20,
 SF-144D5050RGB-WS2815B-IP65, SF-144D5050RGB-WS2815B-IP67,
 SF-60D2020RGB-WS2812B-IP20, SF-60D2020RGB-WS2812B-IP65,
 SF-60D2020RGB-WS2812B-IP67, SF-120D2020RGB-WS2812B-IP20,
 SF-120D2020RGB-WS2812B-IP65, SF-120D2020RGB-WS2812B-IP67,
 SF-160D2020RGB-WS2812B-IP20, SF-160D2020RGB-WS2812B-IP65,
 SF-160D2020RGB-WS2812B-IP67, SF-60D3535RGB-WS2812B-IP20,
 SF-60D3535RGB-WS2812B-IP65, SF-60D3535RGB-WS2812B-IP67,
 SF-96D3535RGB-WS2812B-IP20, SF-96D3535RGB-WS2812B-IP65,
 SF-96D3535RGB-WS2812B-IP67, SF-144D3535RGB-WS2812B-IP20,
 SF-144D3535RGB-WS2812B-IP65, SF-144D3535RGB-WS2812B-IP67,
 SF-60D4020RGB-WS2812B-IP20, SF-60D4020RGB-WS2812B-IP65,
 SF-60D4020RGB-WS2812B-IP67, SF-100D4020RGB-WS2812B-IP20,
 SF-100D4020RGB-WS2812B-IP65, SF-100D4020RGB-WS2812B-IP67,
 SF-144D4020RGB-WS2812B-IP20, SF-144D4020RGB-WS2812B-IP65,
 SF-144D4020RGB-WS2812B-IP67, SF-60D4020RGB-SK6812-IP20,
 SF-60D4020RGB-SK6812-IP65, SF-60D4020RGB-SK6812-IP67,
 SF-100D4020RGB-SK6812-IP20, SF-100D4020RGB-SK6812-IP65,
 SF-100D4020RGB-SK6812-IP67, SF-144D4020RGB-SK6812-IP20,
 SF-144D4020RGB-SK6812-IP65, SF-144D4020RGB-SK6812-IP67

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference being the model name, rated power, circuit board width, LED quantity, outer decoration and color.

Model SF-60D5050RGB-WS2812B-IP20 is the max power.

Only the model **SF-60D5050RGB-WS2812B-IP20** was tested.



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4 General Information

4.1 Details of E.U.T.

Power supply: DC 5V
Test voltage: AC 120V powered by AC/DC adapter
Cable(s): None.

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
AC/DC Adapter	HUAWEI	Model: HW-110600C02; Input: AC 100-240V, 1.8A Max.50/60Hz; Output: DC 5V/2A, 10V/4A, 11V/6A Max.	JL28L4NBM03275

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at Mains Terminals (150kHz-30MHz)	3.22dB (150kHz to 30MHz)
Radiated Emissions (30MHz-1GHz)	5.14dB (30MHz-1GHz):3m; 4.90dB (30MHz-1GHz):10m
<p>Remark:</p> <p>The U_{lab} (lab Uncertainty) is less than U_{CISPR} (CISPR Uncertainty) or U_{ETSI} (ETSI Uncertainty).</p> <p>Emission decision rule:</p> <ul style="list-style-type: none"> – Compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit, marked as Pass in the report. – Non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit, marked as Fail in the report. <p>Immunity decision rule:</p> <ul style="list-style-type: none"> – Pass means the observation meets the Performance Criterion requirement. – Fail means the observation doesn't meet the Performance Criterion requirement. 	

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
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Guangdong, China 510663

Tel: +86 20 82155555

No tests were sub-contracted.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Coaxial Cable	HangTianXing	2m	EMC0107	2023-08-24	2025-08-23
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2022-10-16	2025-10-15
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2024-09-02	2025-09-01
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2024-12-04	2025-12-03
Test Software E3r	Audix	Ver.6.191211	GZE100-77	N/A	N/A

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2022-10-16	2025-10-15
Coaxial cable	Mirco-COAX UTIFLEX	311A	EMC0540	2024-08-19	2026-08-18
Amplifier (9kHz-1.3GHz)	HP	8447F	EMC2065	2024-12-04	2025-12-03
EMI Test Receiver (9kHz-7GHz)	Rohde & Schwarz	ESR7	EMC2220	2024-12-04	2025-12-03
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Trilog Broadband Antenna (25MHz-2GHz)	Schwarzbeck Mess-Elektronik	VULB 9168	EMC2174	2025-04-21	2027-04-20

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2024-06-13	2025-06-12



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6 Emission Test Results

6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement:	47 CFR Part 15, Subpart B
Test Method:	ANSI C63.4-2014
Limit:	
0.15MHz-0.5MHz:	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5MHz-5MHz:	56dB(μV) quasi-peak, 46dB(μV) average
5MHz-30MHz:	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

6.1.1 E.U.T. Operation

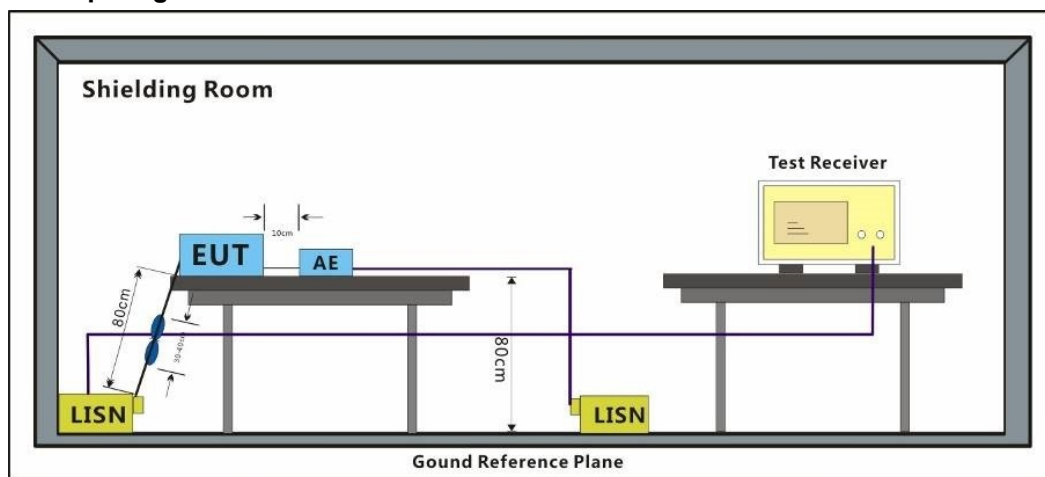
Operating Environment:

Temperature: 23.1 °C Humidity: 53.3 % RH Atmospheric Pressure: 1004 mbar

6.1.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	Test the EUT in lighting mode, setting at the maximum brightness.
Pre-scan 01	Test the EUT in lighting mode, setting at the medium brightness.
Pre-scan 02	Test the EUT in lighting mode, setting at the minimum brightness.

6.1.3 Test Setup Diagram

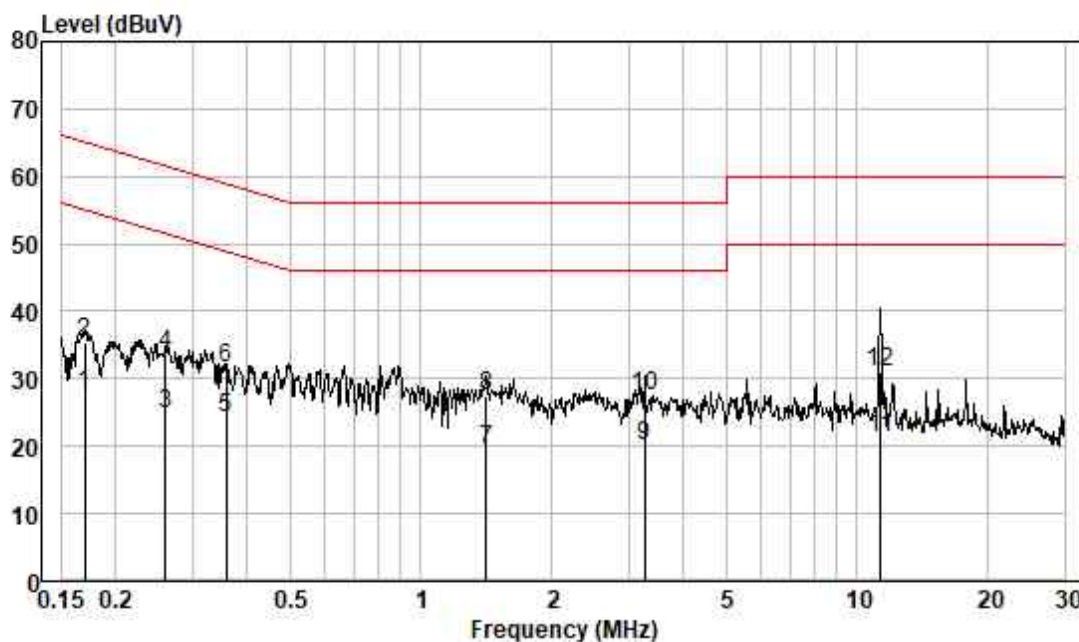


6.1.4 Measurement Procedure and Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

Remark : Level= Read Level+ Cable Loss+ LISN Factor

Test Mode: 00; Line: Live line

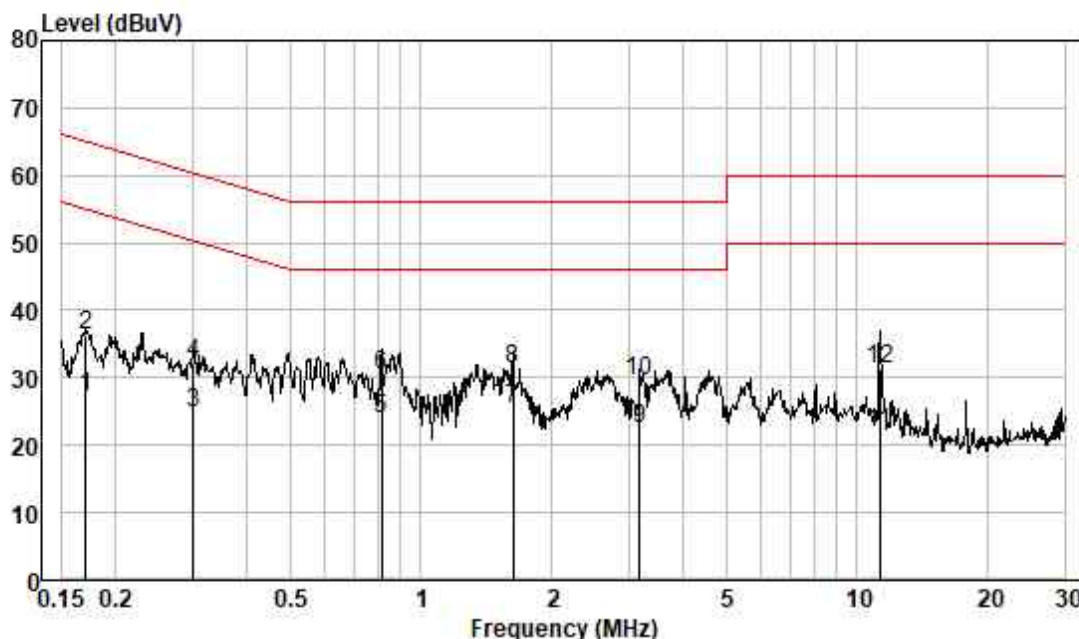


Pol : LINE
Mode :
Model :
Power :

	Freque	Read	Cable	LISN	Measured	Limit	Over	
	ncy	Level	Loss	Factor	Level	Line	Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.169	18.15	0.04	9.54	27.73	54.99	-27.26	Average
2	0.169	25.92	0.04	9.54	35.50	64.99	-29.49	QP
3	0.260	15.12	0.04	9.59	24.75	51.42	-26.67	Average
4	0.260	24.03	0.04	9.59	33.66	61.42	-27.76	QP
5	0.358	14.44	0.05	9.58	24.07	48.78	-24.71	Average
6	0.358	21.98	0.05	9.58	31.61	58.78	-27.17	QP
7	1.411	9.70	0.10	9.58	19.38	46.00	-26.62	Average
8	1.411	17.82	0.10	9.58	27.50	56.00	-28.50	QP
9	3.258	10.45	0.16	9.57	20.18	46.00	-25.82	Average
10	3.258	17.79	0.16	9.57	27.52	56.00	-28.48	QP
11	11.317	11.15	0.27	9.75	21.17	50.00	-28.83	Average
12	11.317	20.84	0.27	9.75	30.86	60.00	-29.14	QP



Test Mode: 00; Line: Neutral Line



Pol : NEUTRAL
Mode :
Model :
Power :

	Frequency MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.170	17.51	0.04	9.54	27.09	54.94	-27.85	Average
2	0.170	26.85	0.04	9.54	36.43	64.94	-28.51	QP
3	0.300	15.10	0.04	9.54	24.68	50.24	-25.56	Average
4	0.300	22.67	0.04	9.54	32.25	60.24	-27.99	QP
5	0.813	14.40	0.06	9.52	23.98	46.00	-22.02	Average
6	0.813	20.95	0.06	9.52	30.53	56.00	-25.47	QP
7	1.628	15.60	0.11	9.53	25.24	46.00	-20.76	Average
8	1.628	21.69	0.11	9.53	31.33	56.00	-24.67	QP
9	3.173	12.72	0.16	9.57	22.45	46.00	-23.55	Average
10	3.173	19.74	0.16	9.57	29.47	56.00	-26.53	QP
11	11.257	11.69	0.27	9.81	21.77	50.00	-28.23	Average
12	11.257	21.35	0.27	9.81	31.43	60.00	-28.57	QP



6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4-2014

Limit:

Class B

Test Distance: 10m

30MHz -88MHz 29.54 (dBμV/m) quasi-peak

88MHz-216MHz 33.06 (dBμV/m) quasi-peak

216MHz-960MHz 35.56 (dBμV/m) quasi-peak

960MHz-1000MHz 43.52 (dBμV/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30MHz to1000MHz

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22.4 °C

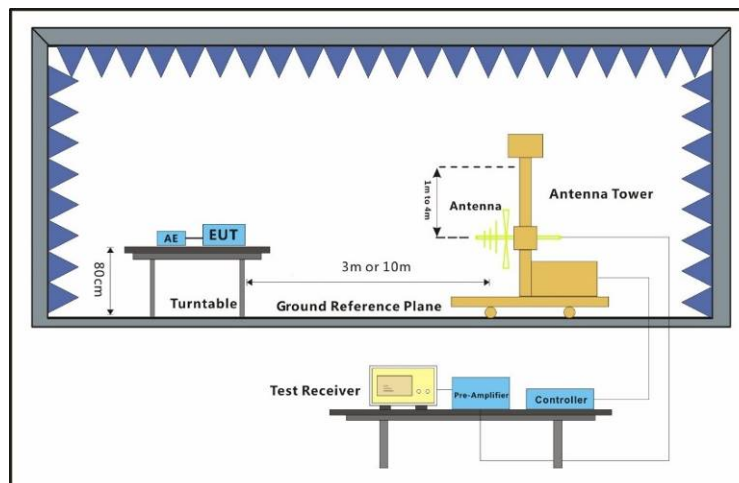
Humidity: 55.8 % RH

Atmospheric Pressure: 1004 mbar

6.2.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	Test the EUT in lighting mode, setting at the maximum brightness.
Pre-scan 01	Test the EUT in lighting mode, setting at the medium brightness.
Pre-scan 02	Test the EUT in lighting mode, setting at the minimum brightness.

6.2.3 Test Setup Diagram

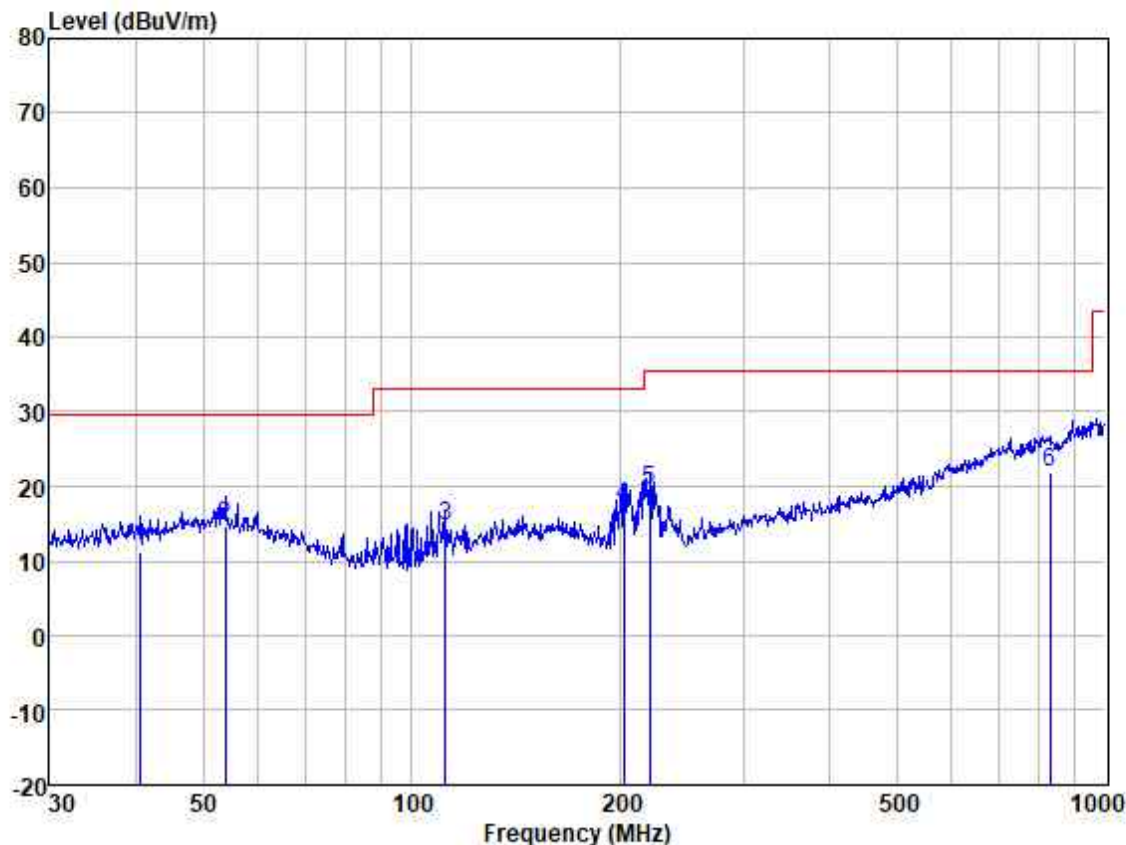


6.2.4 Measurement Procedure and Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Test Mode: 00; Polarity: Horizontal



Site : SGS
Model :
Power :
Test Mode :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Measured Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	40.559	24.79	13.58	0.69	27.98	11.08	29.54	-18.46	HORIZONTAL	QP
2	53.693	27.92	13.90	0.76	27.95	14.63	29.54	-14.91	HORIZONTAL	QP
3	111.738	31.21	10.49	0.87	27.79	14.78	33.06	-18.28	HORIZONTAL	QP
4	202.100	33.53	10.05	1.20	27.48	17.30	33.06	-15.76	HORIZONTAL	QP
5	219.845	35.57	10.03	1.34	27.36	19.58	35.56	-15.98	HORIZONTAL	QP
6	833.317	24.39	23.09	2.57	28.26	21.79	35.56	-13.77	HORIZONTAL	QP



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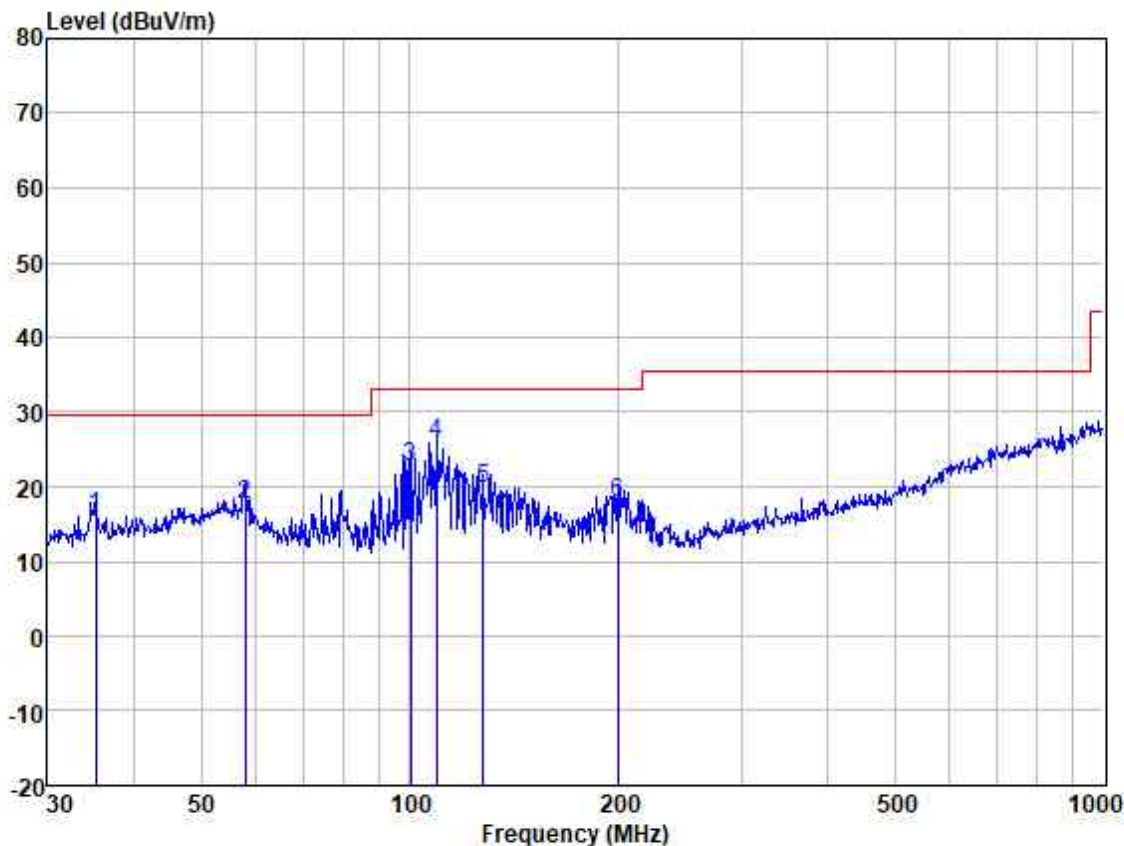
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Test Mode: 00; Polarity: Vertical



Site : SGS
Model :
Power :
Test Mode :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Measured Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	35.251	30.48	12.97	0.63	27.99	16.09	29.54	-13.45	VERTICAL	QP
2	57.796	31.08	13.56	0.77	27.93	17.48	29.54	-12.06	VERTICAL	QP
3	100.229	40.73	8.96	0.84	27.80	22.73	33.06	-10.33	VERTICAL	QP
4	109.029	42.59	10.27	0.86	27.79	25.93	33.06	-7.13	VERTICAL	QP
5	127.665	34.55	11.99	0.92	27.76	19.70	33.06	-13.36	VERTICAL	QP
6	199.286	34.18	10.07	1.19	27.50	17.94	33.06	-15.12	VERTICAL	QP



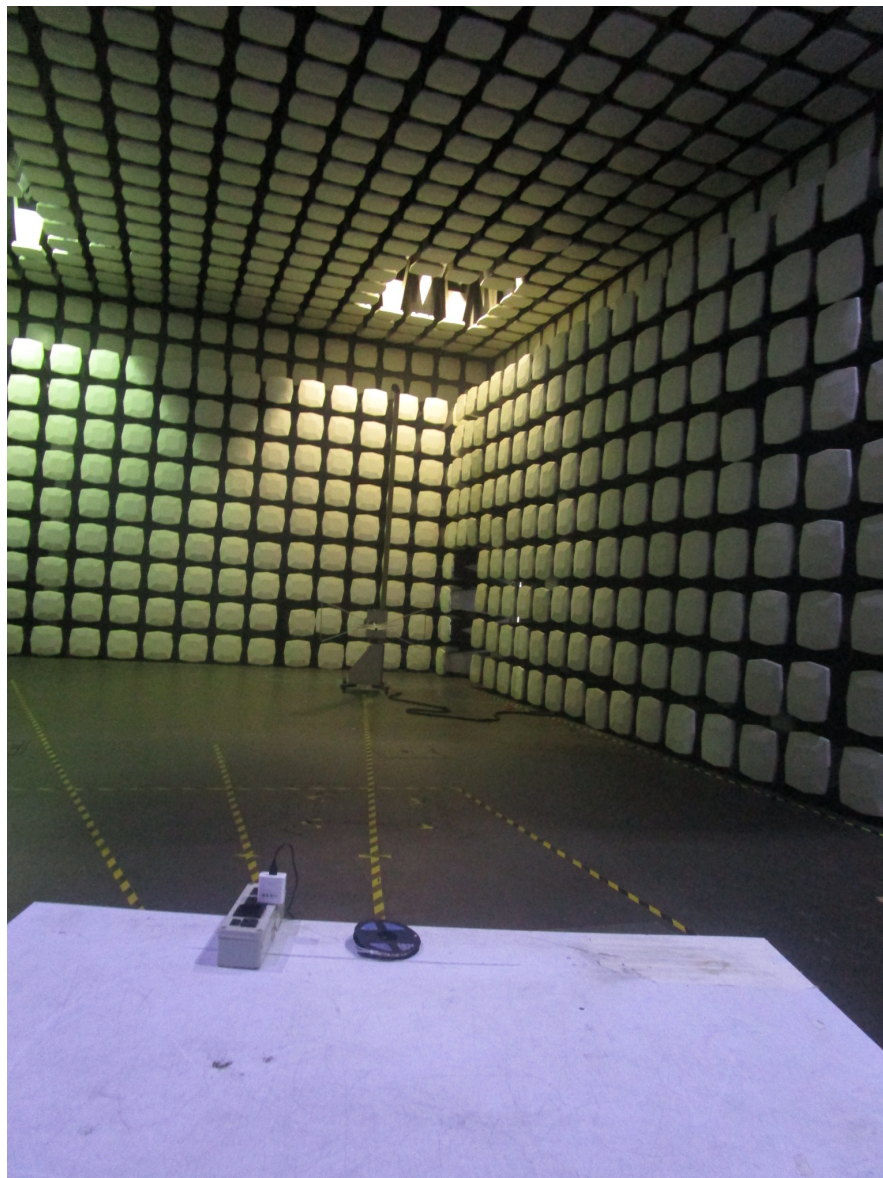
7 Test Setup Photo

Conducted Emissions at Mains Terminals (150kHz-30MHz)





Radiated Emissions (30MHz-1GHz)



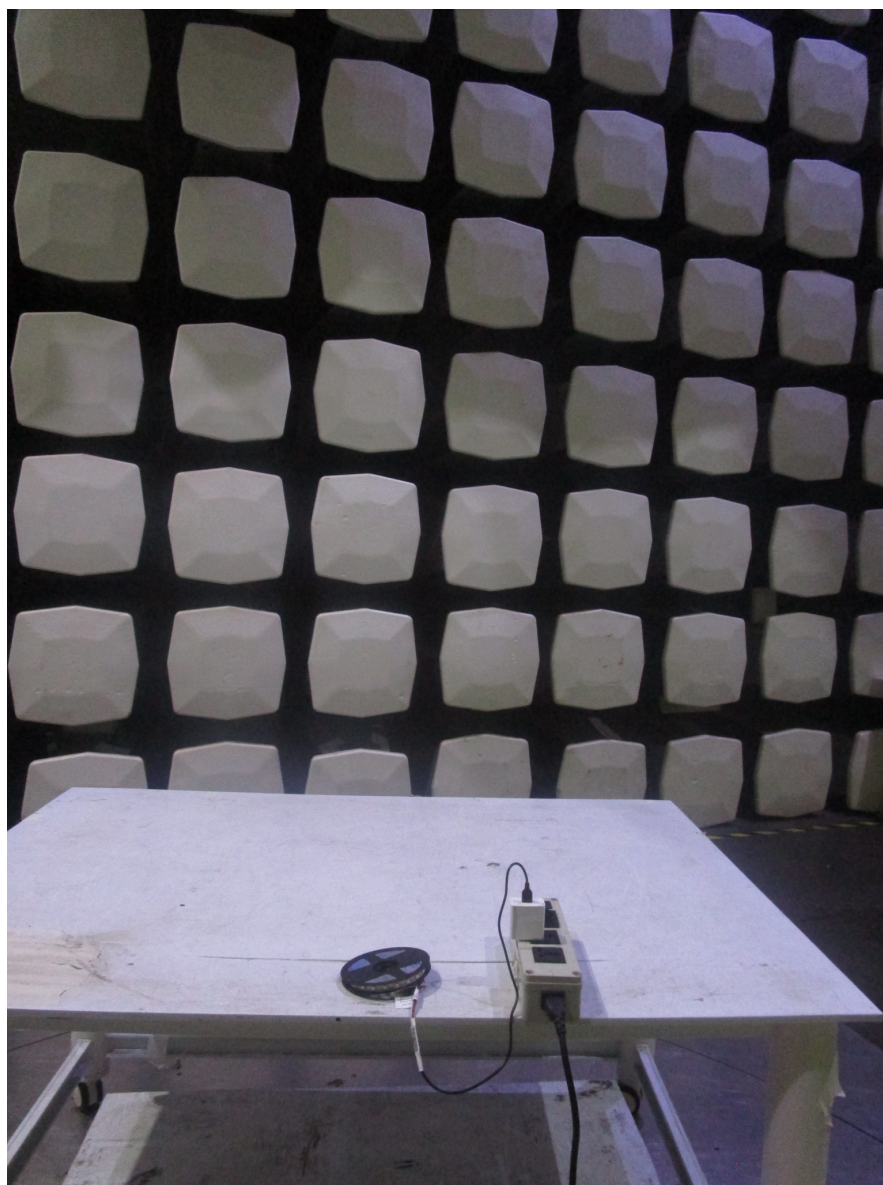
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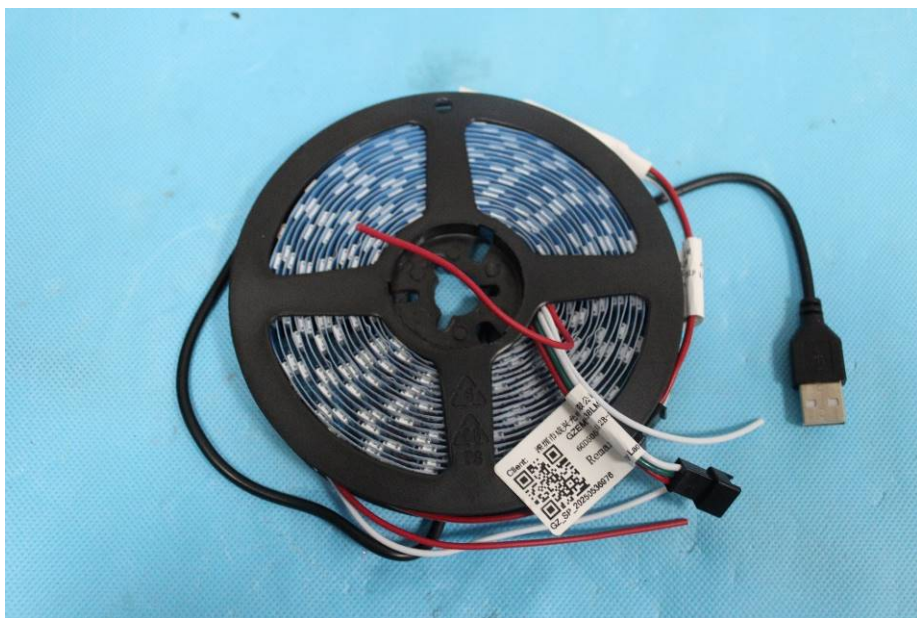
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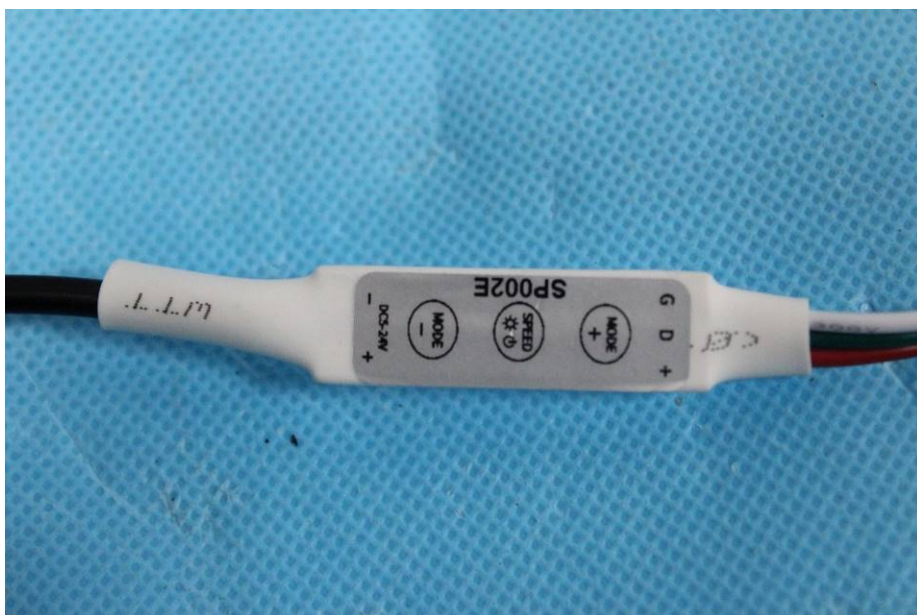
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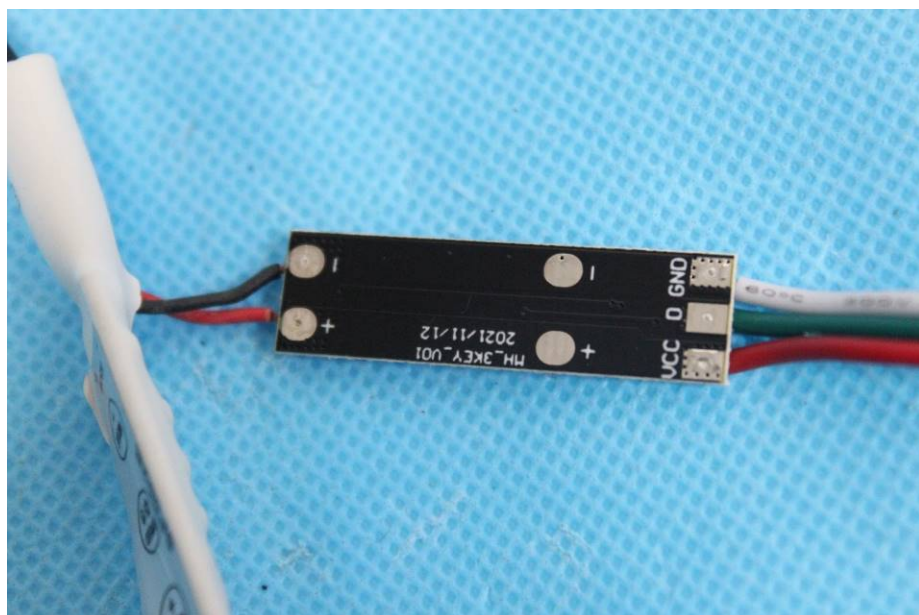
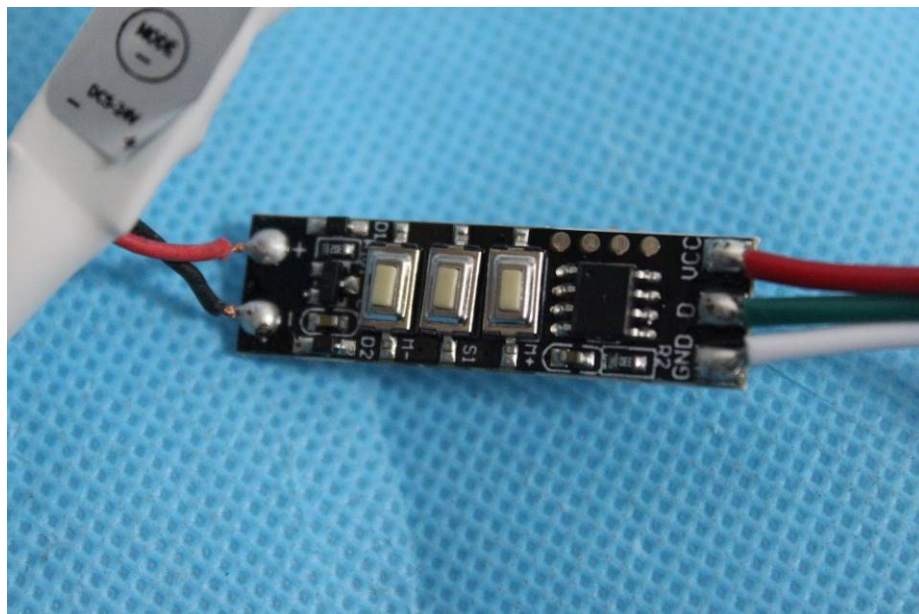
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8 EUT Constructional Details (EUT Photos)







- End of the Report -