



Test Report

No.: CTL1903042101-R

Date: Mar. 15, 2019

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Applicant: ShenZhen Fiberroad Technology CO., Limited

Address: 2F, Building 15, Longbi Industrial Park, Dafa Road, Bantian, Longgang District, 518129, Shenzhen, P.R.China

Manufacturer: ShenZhen Fiberroad Technology CO., Limited

Address: 2F, Building 15, Longbi Industrial Park, Dafa Road, Bantian, Longgang District, 518129, Shenzhen, P.R.China

Sample Name: Industrial Switch

Model No: FR-7M3416, FR-7N1XXX-(P), FR-7N2XXX-(P), FR-7N3XXX-(P), FR-7M1XXX-(P), FR-7M2XXX-(P), FR-7M3XXX-(P), FR-7M2XCXX-(P), FR-7M3XCXX-(P)

Trade Mark: Fiberroad

Test period: Mar. 06, 2019 to Mar. 15, 2019

Test requested: RoHS Directive 2011/65/EU Annex II and its amendment Directive EU 2015/863.

Test Method: IEC 62321-7-2:2017method: Regulated Substances Content of test process with Electrical & Electronic Products

- (1)With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.
- (2)With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.
- (3)With reference to IEC 62321-4:2013+A1:2017, determination of Mercury by ICP-OES.
- (4)With reference to IEC 62321-7-2:2017, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis and/or with reference to IEC 62321-5:2013, determination of Chromium by ICP-OES.
- (5)With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.
- (6)With reference to IEC 62321-8:2017, determination of phthalates by GC-MS

Written by: *Lylcam Ceri*

Approved by:



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Test Results:

Part No.	Part Name	Restricted Substances	Unit	Results	Reference report No.
1	Metal shell	Cd	mg/kg	N.D.	SGS Report No.: CANEC161855237524
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
2	Insulating paint	Cd	mg/kg	N.D.	SGS Report No.: CANEC162724245
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	
3	Metal screw	Cd	mg/kg	N.D.	SGS Report No.: CANEC16152752420
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	

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Part No.	Part Name	Restricted Substances	Unit	Results	Reference report No.
4	Fiber optic interface	Cd	mg/kg	N.D.	SGS Report No.: CANEC161520452042
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
5	RJ45 interface	Cd	mg/kg	N.D.	SGS Report No.: CANEC164240453
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
6	LED	Cd	mg/kg	N.D.	SGS Report No.: CANEC16424520457
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	

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Part No.	Part Name	Restricted Substances	Unit	Results	Reference report No.
7	Solder	Cd	mg/kg	N.D.	SGS Report No.: CANEC160452452
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	
8	PCB	Cd	mg/kg	N.D.	SGS Report No.: CANEC16424524
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	
9	Chip Capacitance	Cd	mg/kg	N.D.	SGS Report No.: CANEC16044524524
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	

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Part No.	Part Name	Restricted Substances	Unit	Results	Reference report No.
10	Chip Resistance	Cd	mg/kg	N.D.	SGS Report No.: CANEC16002452043
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	
11	Chip Inductance	Cd	mg/kg	N.D.	SGS Report No.: CANEC164545323
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	
12	Diode	Cd	mg/kg	N.D.	SGS Report No.: CANEC165452452
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	

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Part No.	Part Name	Restricted Substances	Unit	Results	Reference report No.
13	IC	Cd	mg/kg	N.D.	SGS Report No.: CANEC16134524524
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	
14	Crystal oscillator	Cd	mg/kg	N.D.	SGS Report No.: CANEC1644524241
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	
15	Key	Cd	mg/kg	N.D.	SGS Report No.: CANEC1625245245
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	

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Part No.	Part Name	Restricted Substances	Unit	Results	Reference report No.
16	Metal stud	Cd	mg/kg	N.D.	SGS Report No.: CANEC1620453454
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
17	Thermal adhesive	Cd	mg/kg	N.D.	SGS Report No.: CANEC1620453242
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	
18	Heat sink	Cd	mg/kg	N.D.	SGS Report No.: CANEC1624524
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	

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Part No.	Part Name	Restricted Substances	Unit	Results	Reference report No.
19	Common mode inductance	Cd	mg/kg	N.D.	SGS Report No.: CANEC1620542782
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	
20	Label	Cd	mg/kg	N.D.	SGS Report No.: CANEC162075245
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	
21	Plastic	Cd	mg/kg	N.D.	SGS Report No.: CANEC162527525
		Pb	mg/kg	N.D.	
		Hg	mg/kg	N.D.	
		Cr ⁶⁺	mg/kg	N.D.	
		PBBs	mg/kg	N.D.	
		PBDEs	mg/kg	N.D.	
		DBP	mg/kg	N.D.	
		BBP	mg/kg	N.D.	
		DEHP	mg/kg	N.D.	
		DIBP	mg/kg	N.D.	

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ROHS Requirement

Restricted substances	MDL	Limits
Lead(Pb)	5	0.1%(1000 ppm)
Cadmium(Cd)	5	0.01%(100 ppm)
Chromium(VI)(Cr6+)	5	0.1%(1000 ppm)
Mercury(Hg)	5	0.1%(1000 ppm)
Polybrominated biphenyls(PBBs)	5	0.1%(1000 ppm)
Polybrominated diphenyl ethers(PBDEs)	5	0.1%(1000 ppm)
Dibutyl Phthalate (DBP)	5	0.1%(1000 ppm)
Benzylbutyl Phthalate (BBP)	5	0.1%(1000 ppm)
Bis-(2-ethylhexyl) Phthalate (DEHP).	5	0.1%(1000 ppm)
Diiso butyl Phthalate (DIBP)	5	0.1%(1000 ppm)

Note:

_mg/kg=ppm=0.0001%

-MDL=Method Detection Limit

-N.D. =not detected (<MDL)

-Photo is included

-Test results are from other testing organizations. Shenzhen CTL Testing Technology Co., Ltd. has no liability to assume the verification of the authenticity of the above test reports results.

Shenzhen CTL Testing Technology Co., Ltd.

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Photographs of Sample:



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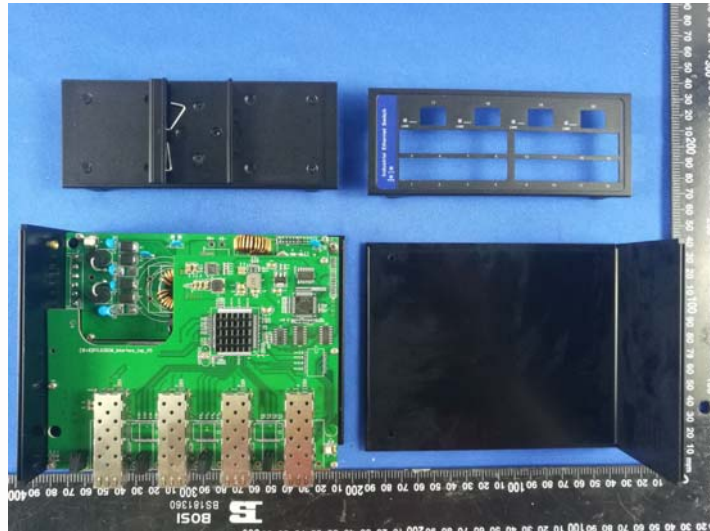


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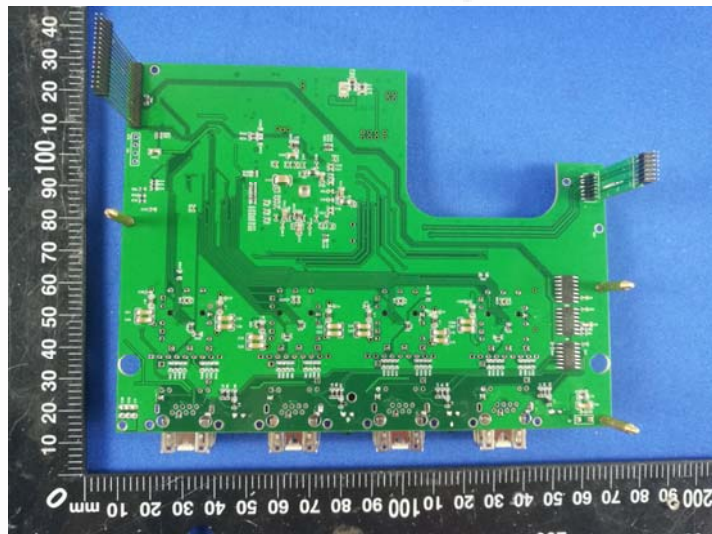
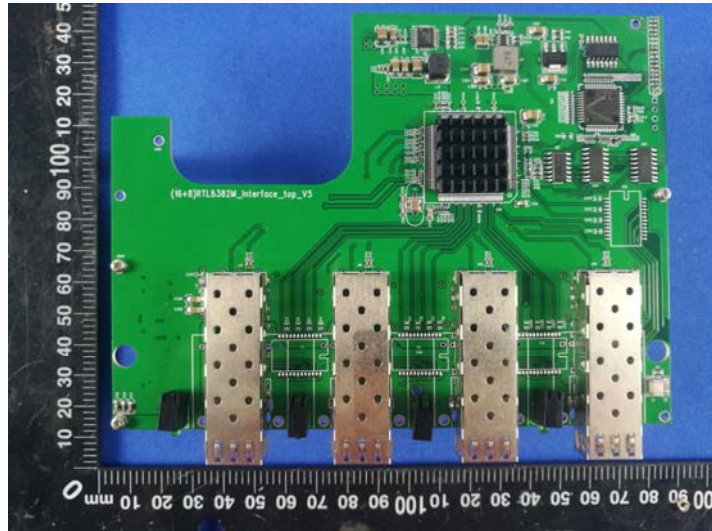


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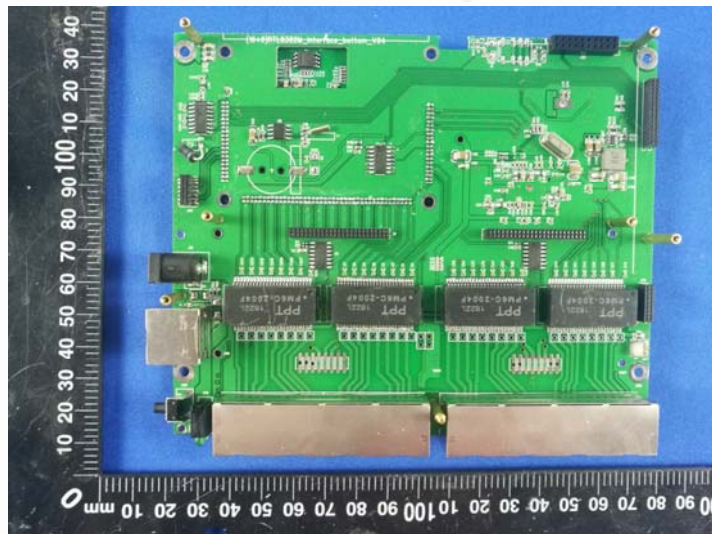
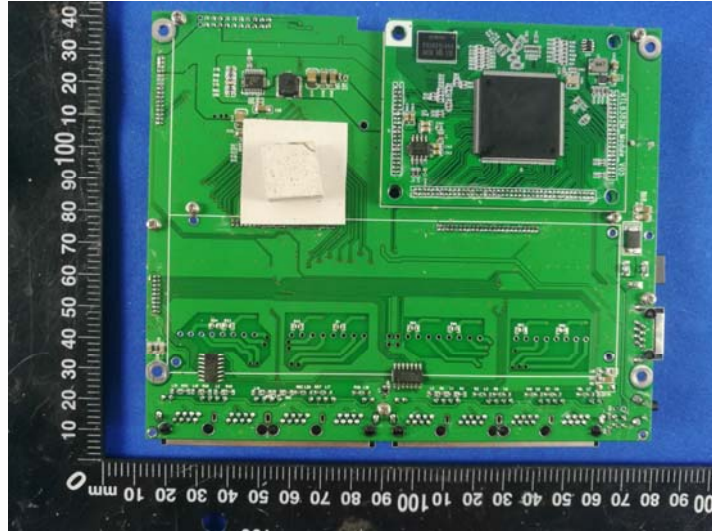


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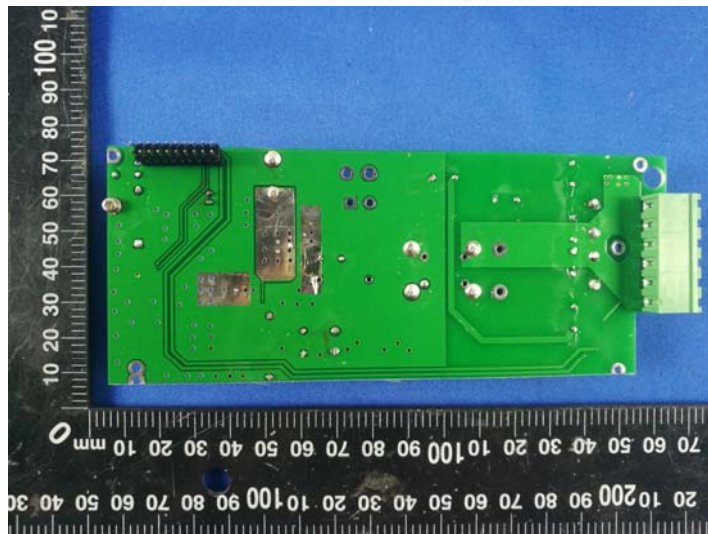
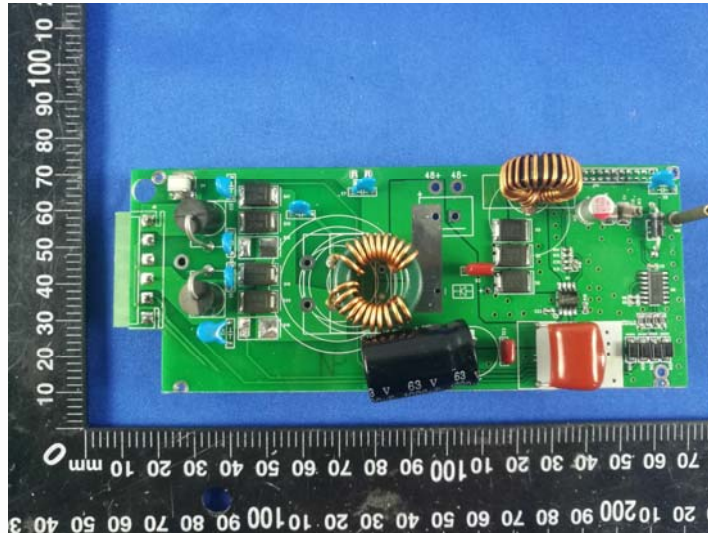


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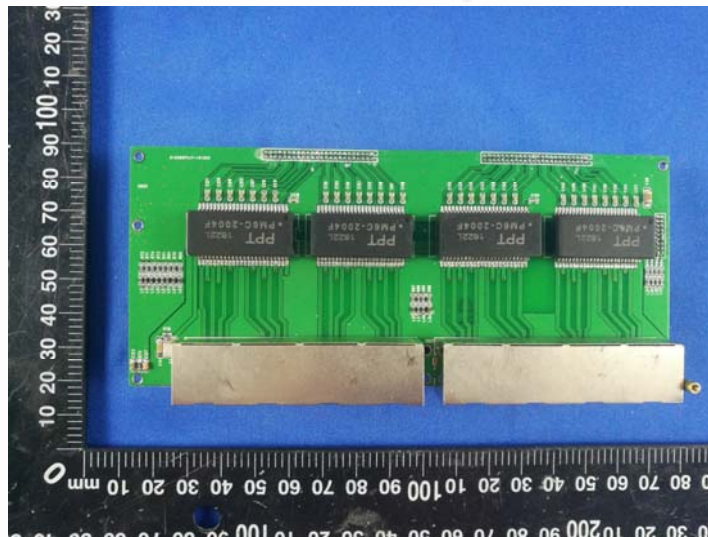
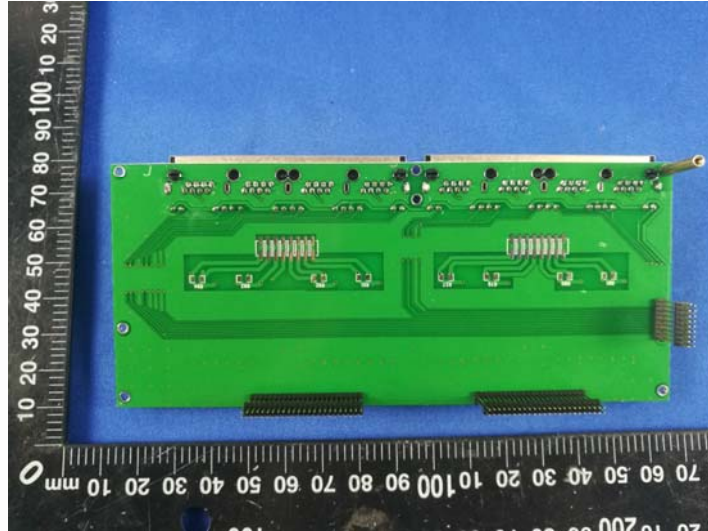


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