SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China
Telephone: +86 (0) 21 6191 5666
Fax: +86 (0) 21 6191 5678
Email: ee.shanghai@sgs.com

VERIFICATION OF COMPLIANCE

Verification No.:	SHEM180300169701PVC
Applicant:	BEIJING EPSOLAR TECHNOLOGY CO., LTD.
Address of Applicant:	NO. 228, BLOCK A, 2ND FLOOR, BLDG 1, NO. 3 STREET, SHANGDI XINXI CHANYE JIDI, HAIDIAN DISTRICT, BEIJING, CHINA
Product Description:	Modular MPPT solar charger controller
Model No.:	XTRA4415N-XDB1/XDS1/XDS2, XTRA3415N-XDB1/XDS1/XDS2, XTRA4215N-XDB1/XDS1/XDS2, XTRA3215N-XDB1/XDS1/XDS2, XTRA4210N-XDB1/XDS1/XDS2, XTRA3210N-XDB1/XDS1/XDS2, XTRA2210N-XDB1/XDS1/XDS2, XTRA2206N-XDB1/XDS1/XDS2, XTRA1210N-XDB1/XDS1/XDS2, XTRA1206N-XDB1/XDS1/XDS2

Sufficient samples of the product have been tested and found to be in conformity with

Test Standards:	EN 61000-6-3:2007 +A1:2011
	EN 61000-6-1:2007

As shown in the

Test Report Number(s):	SHEM180300169701

This verification of EMC Compliance has been granted to the applicant based on the results of the tests, performed by laboratory of SGS-CSTC Standards Technical Services Co., Ltd. on the sample of the above-mentioned product in accordance with the provisions of the relevant specific standards under Directive 2014/30/EU. The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.

Parlam Zhan
E&E Section Manager

Date: 2018-05-25

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China
Telephone: +86 (0) 21 6191 5666
Fax: +86 (0) 21 6191 5678
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VERIFICATION OF COMPLIANCE

Verification No.:	SHEM180300169801PVC
Applicant:	BEIJING EPSOLAR TECHNOLOGY CO., LTD.
Address of Applicant:	NO. 228, BLOCK A, 2ND FLOOR, BLDG 1, NO. 3 STREET, SHANGDI XINXI CHANYE JIDI, HAIDIAN DISTRICT, BEIJING, CHINA
Product Description:	Modular MPPT solar charger controller
Model No.:	XTRA4415N-XDB1/XDS1/XDS2, XTRA3415N-XDB1/XDS1/XDS2, XTRA4215N-XDB1/XDS1/XDS2, XTRA3215N-XDB1/XDS1/XDS2, XTRA4210N-XDB1/XDS1/XDS2, XTRA3210N-XDB1/XDS1/XDS2, XTRA2210N-XDB1/XDS1/XDS2, XTRA2206N-XDB1/XDS1/XDS2, XTRA1210N-XDB1/XDS1/XDS2, XTRA1206N-XDB1/XDS1/XDS2

Sufficient samples of the product have been tested and found to be in conformity with

Test Standards:	47 CFR Part 15, Subpart B
As shown in the	
Test Report Number(s):	SHEM180300169801

Parlam Zhan
E&E Section Manager

Date: 2018-05-25

VERIFICATION OF COMPLIANCE

No.:	LVD SHES180300213701PVC
Applicant:	BEIJING EPSOLAR TECHNOLOGY CO., LTD.
	NO.228, BLOCK A, 2ND FLOOR, BLDG 1, NO. 3 STREET, SHANGDI XINXI CHANYE JIDI, HAIDIAN DISTRICT, BEIJING, CHINA
Manufacturer:	BEIJING EPSOLAR TECHNOLOGY CO., LTD.
	NO.228, BLOCK A, 2ND FLOOR, BLDG 1, NO. 3 STREET, SHANGDI XINXI CHANYE JIDI, HAIDIAN DISTRICT, BEIJING, CHINA
Product Name:	Solar charge controller
Product Description:	Solar charge controller
Model No.:	Details see page 2
Trade Mark:	EPEVER
Rating:	Details see page 2
Protection against Electric Shock:	N/A
Additional Information:	None

Sufficient samples of the product have been tested and found to be in conformity with

Test Standard:	EN 62109-1: 2010
as shown in the	
Test Report Number(s):	SHES180300213771

This Verification of Compliance has been granted to the applicant based on the results of tests, performed by Laboratory of SGS-CSTC Standards Technical Services Co., Ltd. on sample of the above-mentioned product in accordance with the provisions of the relevant harmonized standards under the Low Voltage Directive 2014/35/EU. The CE marking as shown below can be affixed, under the responsibility of the manufacturer, after completion of an EC Declaration of Conformity and compliance with all relevant EC Directives. The affixing of the CE marking presumes in addition that the conditions in annexes III and IV of the Directive are fulfilled.

CE

Erin Lin
Laboratory Technical Manager
SGS-CSTC

2018-05-23

No.: LVD SHES180300213701PVC

Other information added:

Rating :

Model	Rating
XTRA1206N-XDB1, XTRA1206N-XDS1, XTRA1206N-XDS2	12/24VDC, 10A
XTRA2206N-XDB1, XTRA2206N-XDS1, XTRA2206N-XDS2	12/24VDC, 20A
XTRA1210N-XDB1, XTRA1210N-XDS1, XTRA1210N-XDS2	12/24VDC, 10A
XTRA2210N-XDB1, XTRA2210N-XDS1, XTRA2210N-XDS2	12/24VDC, 20A
XTRA3210N-XDB1, XTRA3210N-XDS1, XTRA3210N-XDS2	12/24VDC, 30A
XTRA4210N-XDB1, XTRA4210N-XDS1, XTRA4210N-XDS2	12/24VDC, 40A
XTRA3215N-XDB1, XTRA3215N-XDS1, XTRA3215N-XDS2	12/24VDC, 30A
XTRA4215N-XDB1, XTRA4215N-XDS1, XTRA4215N-XDS2	12/24VDC, 40A
XTRA3415N-XDB1, XTRA3415N-XDS1, XTRA3415N-XDS2	12/24/36/48VDC, 30A
XTRA4415N-XDB1, XTRA4415N-XDS1, XTRA4415N-XDS2	12/24/36/48VDC, 40A
XTRA1210N1-XDB1, XTRA1210N1-XDS1, XTRA1210N1-XDS2	12/24VDC, 10A
XTRA2210N1-XDB1, XTRA2210N1-XDS1, XTRA2210N1-XDS2	12/24VDC, 20A
XTRA3210N1-XDB1, XTRA3210N1-XDS1, XTRA3210N1-XDS2	12/24VDC, 30A
XTRA4210N1-XDB1, XTRA4210N1-XDS1, XTRA4210N1-XDS2	12/24VDC, 40A
XTRA3215N1-XDB1, XTRA3215N1-XDS1, XTRA3215N1-XDS2	12/24VDC, 30A
XTRA4215N1-XDB1, XTRA4215N1-XDS1, XTRA4215N1-XDS2	12/24VDC, 40A
XTRA3415N1-XDB1, XTRA3415N1-XDS1, XTRA3415N1-XDS2	12/24/36/48VDC, 30A
XTRA4415N1-XDB1, XTRA4415N1-XDS1, XTRA4415N1-XDS2	12/24/36/48VDC, 40A

Erin Lin
Laboratory Technical Manager
SGS-CSTC

2018-05-23

Report No.: RBJ180925050-03

IEC 60529:1989+A1:1999+A2:2013
EN 60529:1991+A1:2000+A2:2013

Measurement and Test Report

For

BEIJING EPSOLAR TECHNOLOGY CO.,LTD.

NO.228, BLOCK A, 2ND FLOOR, BLDG 1, NO. 3 STREET, SHANGDI XINXI CHANYE JIDI, HAIDIAN DISTRICT, BEIJING, CHINA

Model: XTRA4415N-XDS2, XTRA1206N-XDB1, XTRA1206N-XDS1, XTRA1206N-XDS2, XTRA2206N-XDB1, XTRA2206N-XDS1, XTRA2206N-XDS2, XTRA1210N-XDB1, XTRA1210N-XDS1, XTRA1210N-XDS2, XTRA2210N-XDB1, XTRA2210N-XDS1, XTRA2210N-XDS2, XTRA3210N-XDB1, XTRA3210N-XDS1, XTRA3210N-XDS2, XTRA4210N-XDB1, XTRA4210N-XDS1, XTRA4210N-XDS2, XTRA3215N-XDB1, XTRA3215N-XDS1, XTRA3215N-XDS2, XTRA4215N-XDB1, XTRA4215N-XDS1, XTRA4215N-XDS2, XTRA3415N-XDB1, XTRA3415N-XDS1, XTRA3415N-XDS2, XTRA4415N-XDB1, XTRA4415N-XDS1

This Report Concerns:	**Equipment Type:**
☒ Original Report	MPPT Solar Charge Controller

IP code: **IP33**

Compiled by: Engineer: Will Wang Will.Wang

Test Date: 2018-09-30

Approved by: Team Leader: Robin He Robin He

Prepared By: **Bay Area Compliance Laboratories Corp.(Dongguan)**
No.69, Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China

Note: The test data was only valid for the test sample(s). This test report is prepared for the customer shown above and for the specific product described herein. It **must not** be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

TEST REPORT

REPORT No.: R2BJ180702F0448E Date: July 19, 2018 Page 1 of 18

BEIJING EPSOLAR TECHNOLOGY CO., LTD
NO.228, BLOCK A, 2ND FLOOR, BLDG 1, NO.3 STREET, SHANGDI XINXI CHANYE JIDI, HAIDIAN DISTRICT, BEIJING, CHINA

Report on the submitted samples said to be:

Sample Name	:	MPPT Solar Charge Controller
Tested Style/ Items No.①	:	XTRA4415N-XDS1
Additional Styles/ Items No.②	:	XTRA4415N-XDB1/XTRA4415N-XDS2/XTRA1206N-XDB1/XTRA1206N-XDS1/ XTRA1206N-XDS2/XTRA2206N-XDB1/ XTRA2206N-XDS1/ XTRA2206N-XDS2/XTRA1210N-XDB1 /XTRA1210N-XDS1/ XTRA1210N-XDS2/XTRA2210N-XDB1 /XTRA2210N-XDS1/ XTRA2210N-XDS2/XTRA3210N-XDB1 /XTRA3210N-XDS1/ XTRA3210N-XDS2/XTRA4210N-XDB1 /XTRA4210N-XDS1/ XTRA4210N-XDS2/XTRA3215N-XDB1 /XTRA3215N-XDS1/ XTRA3215N-XDS2/XTRA4215N-XDB1 /XTRA4215N-XDS1/ XTRA4215N-XDS2/XTRA3415N-XDB1 /XTRA3415N-XDS1/ XTRA3415N-XDS2
Sample Receiving Date	:	July 2, 2018
Testing Period	:	From July 2, 2018 to July 19, 2018
Results	:	Please refer to next page(s).
Remark	:	①The tested Style/ Item No. is tested by the lab. ②The Additional Styles/ Items No. declared in the applicant's declaration are not tested, their materials are the same as the tested parts and the result of the test report is only responsible for the test sample.

Signed for and on behalf of BACL

Checked by: _____ Approved by: _____

Jane Xu
Technical Supervisor

William Wei
Laboratory Manager

1.0 Reference and Address			
Report Number	181102223SHA-001	Original Issued: 19-Jun-2019	Revised: 4-Sep-2020
Standard(s)	Inverters, Converters, Controllers And Interconnection System Equipment For Use With Distributed Energy Resources [UL 1741:2010 Ed.2+R:15Feb2018] Power Conversion Equipment [CSA C22.2#107.1:2016 Ed.4]		

Applicant	BEIJING EPSOLAR TECHNOLOGY CO., LTD.	Manufacturer	**HUIZHOU EPEVER TECHNOLOGY CO., LTD**
Address	NO.228, BLOCK A, 2ND FLOOR, BLDG 1, NO 3 STREET, SHANGDI XINXI CHANYE JIDI, HAIDIAN DISTRICT, BEIJING	Address	NO.103, DONGXING RD, CHENJIANG STREET ZHONGKAI HIGH-TECH ZONE, HUIZHOU
Country	China	Country	China
Contact	Hu juanjuan	Contact	Zhou xiangwu
Phone	010-82894896 - 6631	Phone	13534268706
FAX	-	FAX	-
Email	hujuanjuan@epever.com	Email	zhouxiangwu@epever.com

2.0 Product Description	
Product	MPPT Solar Charge Controller
Brand name	EPEVER
Description	The products covered by this report are a permanently-connected, in-door used solar charge controller. No isolated between PV input and battery part. The connection to the temperature sensor, the DC input, battery input/output and load output are terminal block. The charge controller are designed to auto measure the battery system voltage. And dont consider the protection of battery. The installation should be in pollution II environment and accordance with the National Electrical Code, NFPA 70 and and the Canadian Electrical Code.
Models	XTRA followed by 1210, 2210, 3210, 3215, 4210, 3415, 4215 or 4415; followed by N- or N1-; followed by XDB1, XDS1 or XDS2. XTRA followed by 1206, 2206; followed by N-; followed by XDB1, XDS1 or XDS2.
Model Similarity	XTRA****N**** series with power board, display board and communication board (with isolated), Except for XTRA1206N*** and XTRA2206N*** not with isolated for communication. because the Max. voltage is 60V DC. XTRA****N1**** series with power board, and display board. XDB1, XDS1 or XDS2 stand for different display board and screen. All models have same enclosure, heatsink, circuit diagram and PWB layout but with different power devices and ratings. All models have identical mechanical and electrical construction except some parameter of the software architecture in order to control the max output power and rating .
Ratings	Refer to section 7 Illustration 2, 2a, 2b - Ratings
Other Ratings	NA
Conditions of Acceptability	The products covered in this Report are incomplete in construction features or limited in performance capabilities and are intended for use and evaluation in other products. Consideration should be given to the following when the component is used in or with another product.
	(Typical Conditions of Acceptability to be consider for recognized component products follow:)
	1.The product not marked with " DC INPUT NOT ISOLATED FROM BATTERY CIRCUIT“. This should be consider in the end product.The protection of battery also should be conside in the end product.
	2.The functional of Temperature Compensation should be consider in the end product.
	3.Suitability of grounding means should be performed on this component when installed in the end product.
	4 The product maybe used as ungrounded system. The ground fault protection should be consider in the end product.
	5.No isolated between PV input and battery part. The safety protection should be consider at end product for temperature, PV input and battery part

3.0 Product Photographs

Photo 1 - External view

Photo 2 - External view

3.0 Product Photographs

Photo 3 - External view

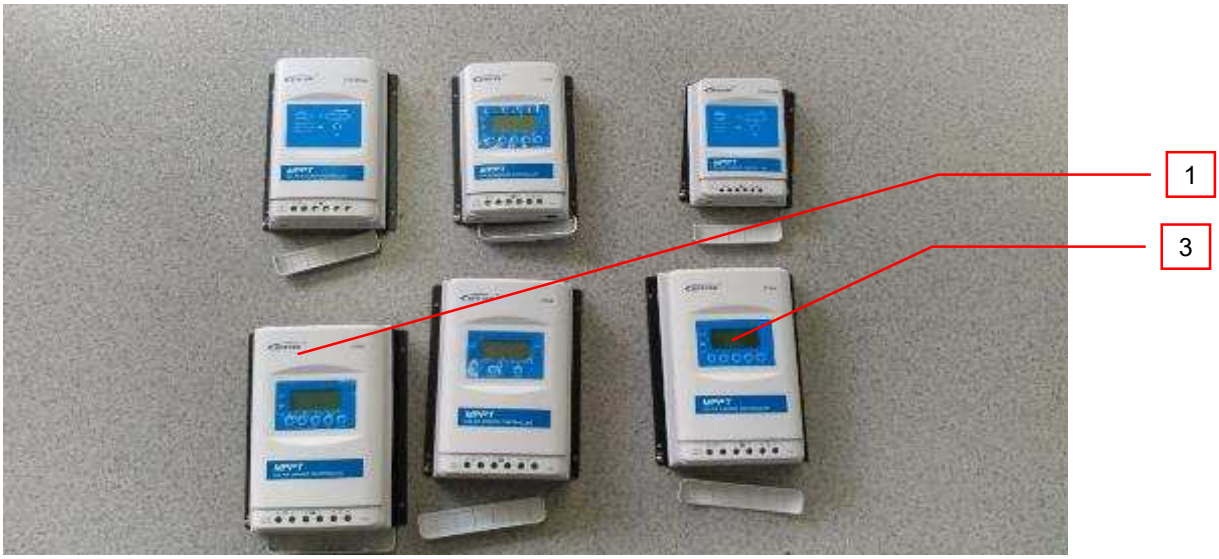
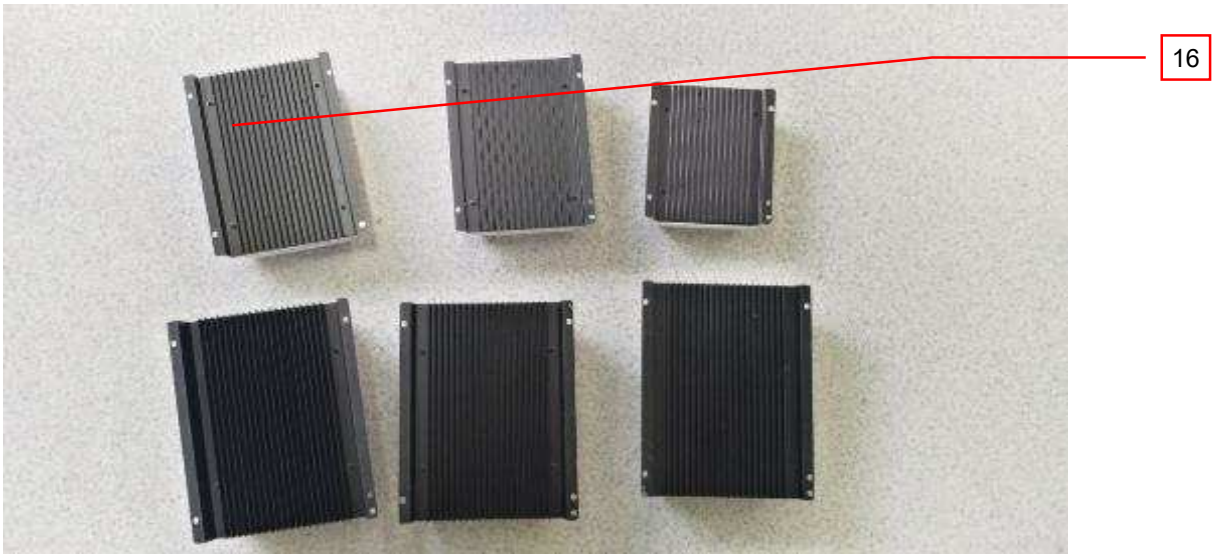


Photo 4 - External view



3.0 Product Photographs

Photo 5- Internal view

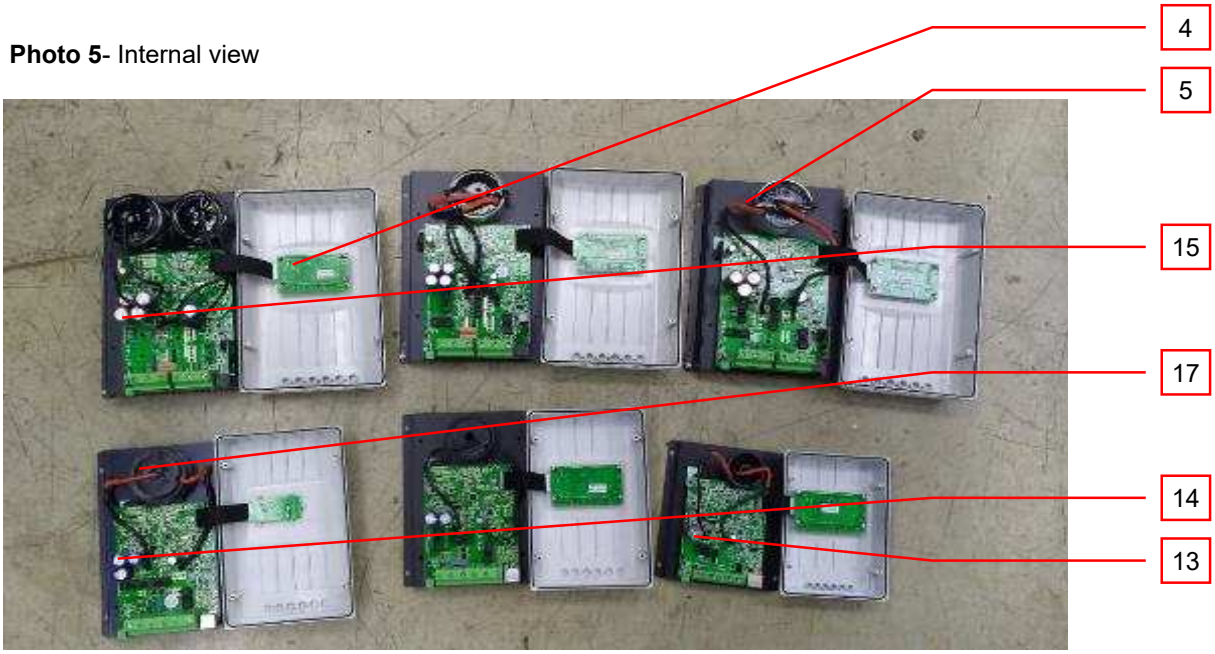
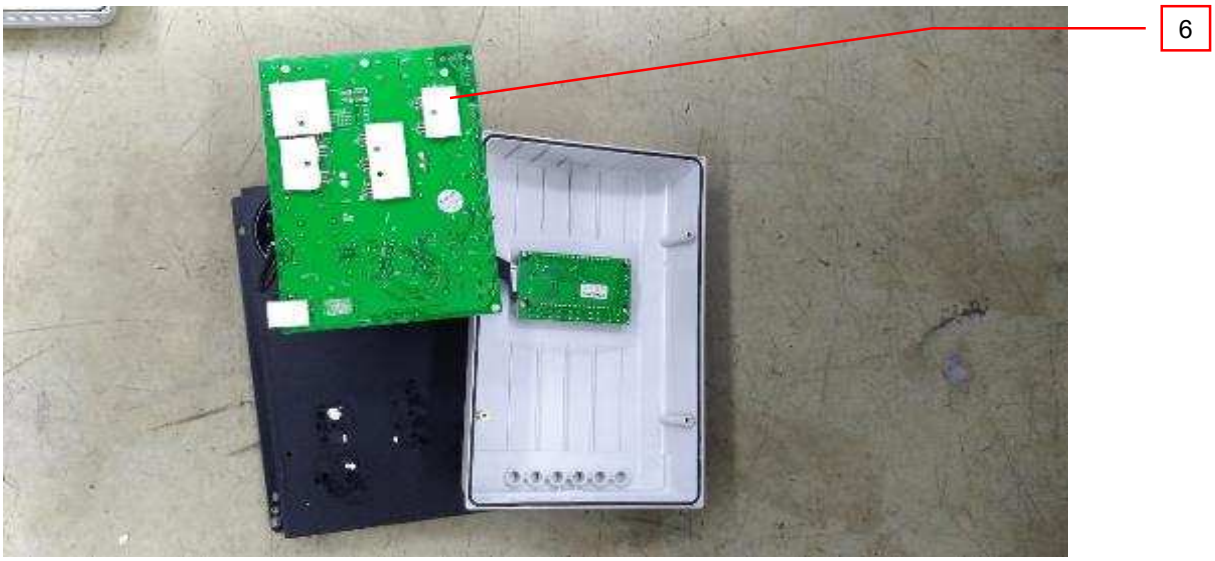


Photo 6- Internal view



3.0 Product Photographs

Photo 7- Internal view

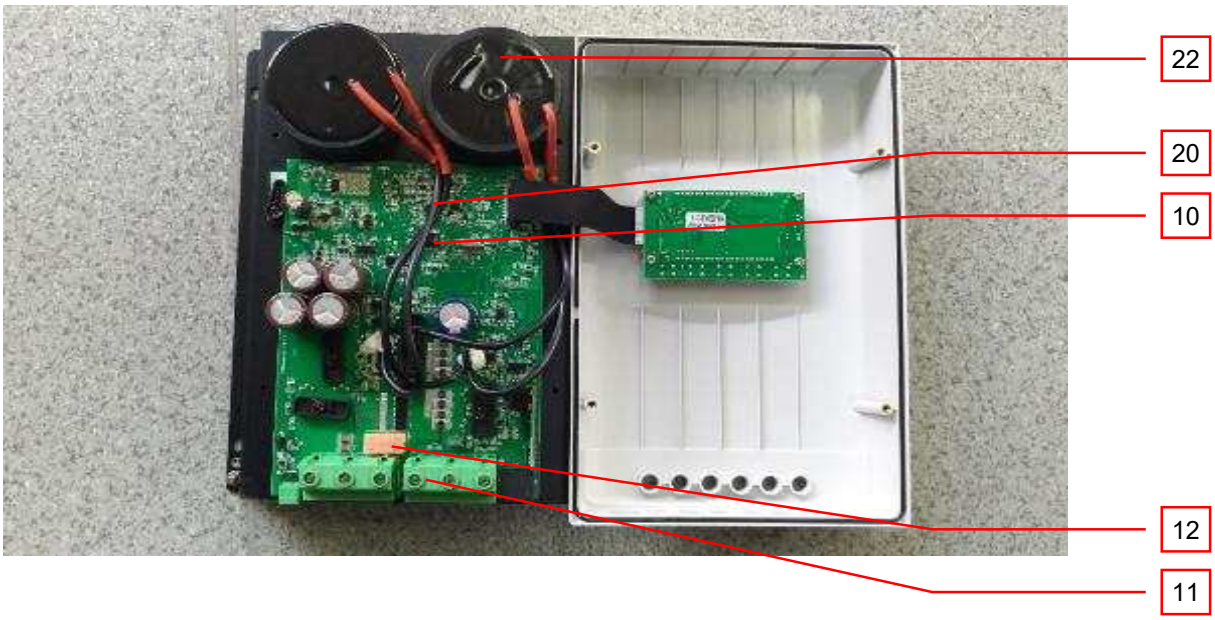
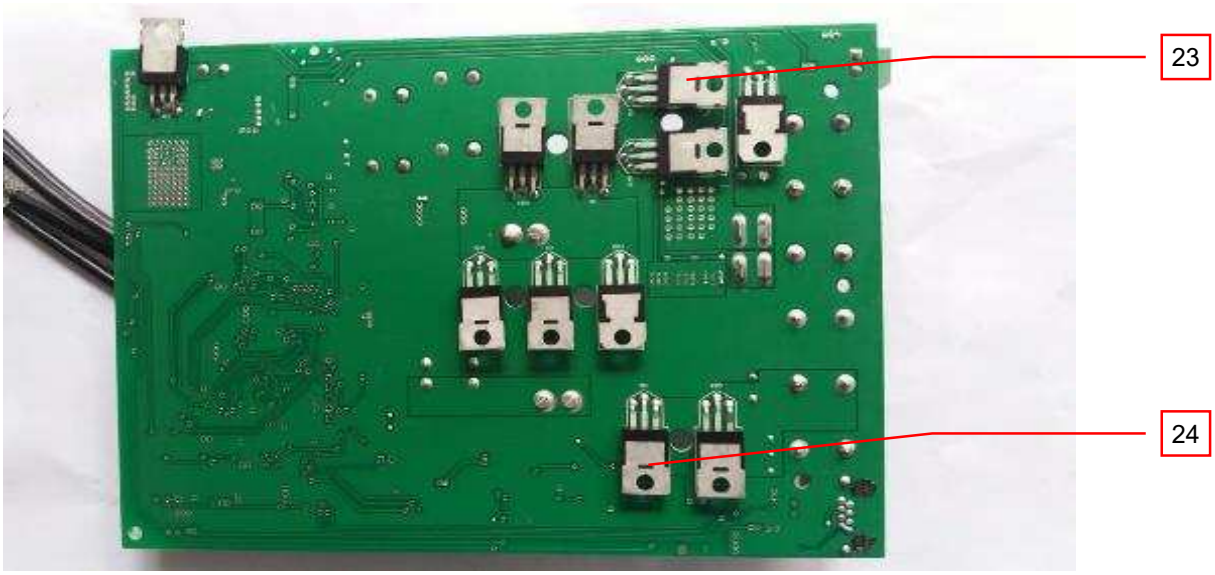


Photo 8- Internal view



3.0 Product Photographs

Photo 9- Internal view

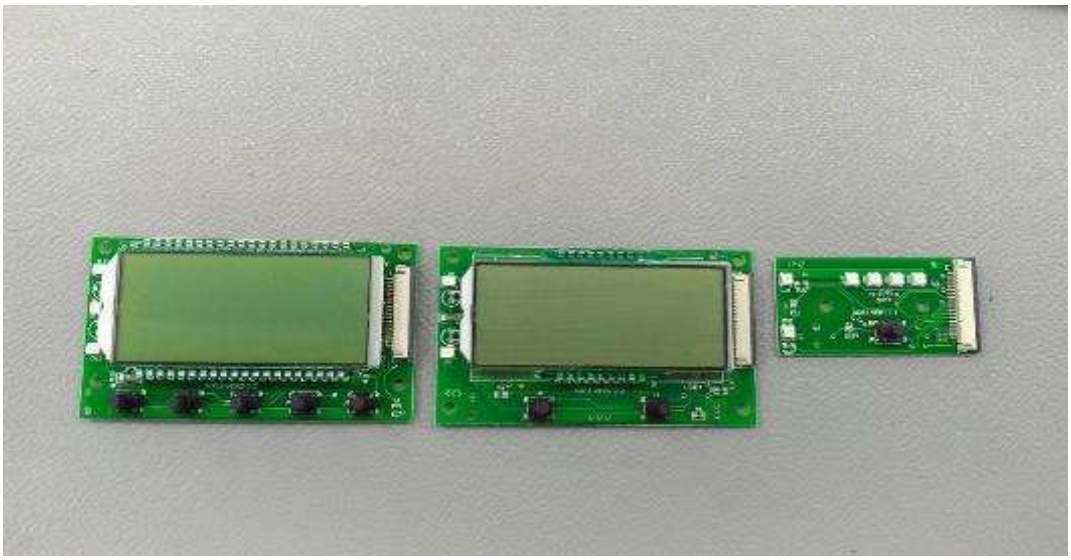
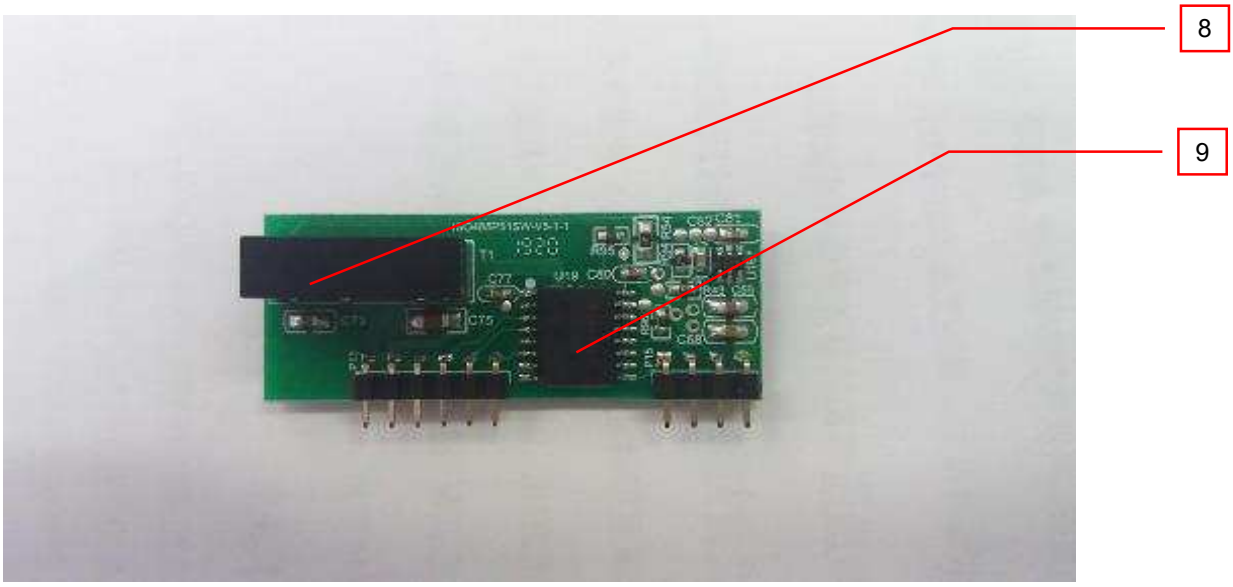


Photo 10- Internal view



3.0 Product Photographs

Photo 11- Internal view

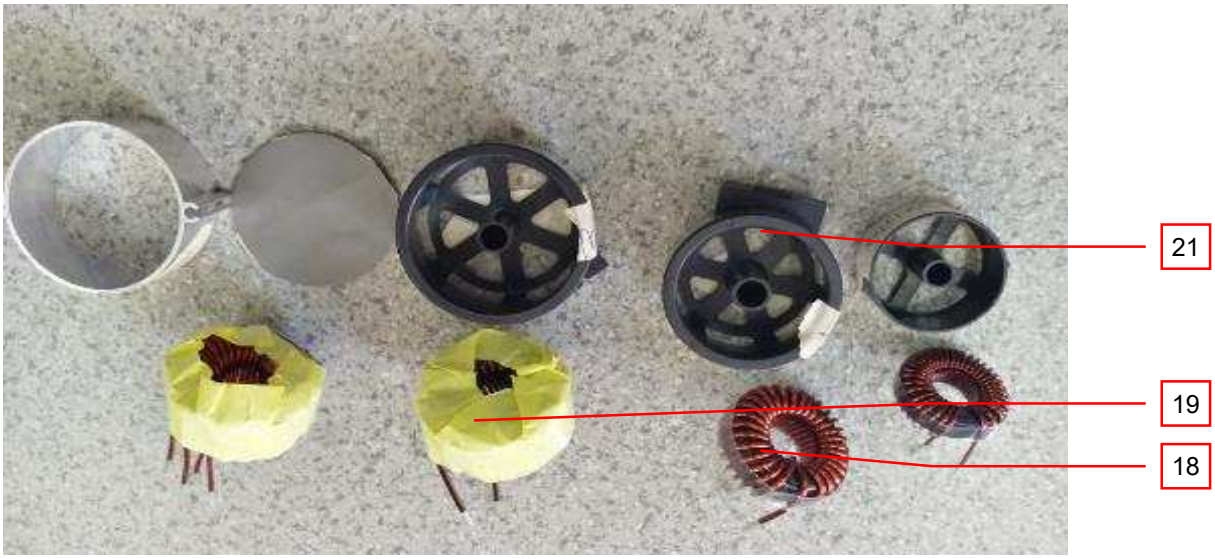
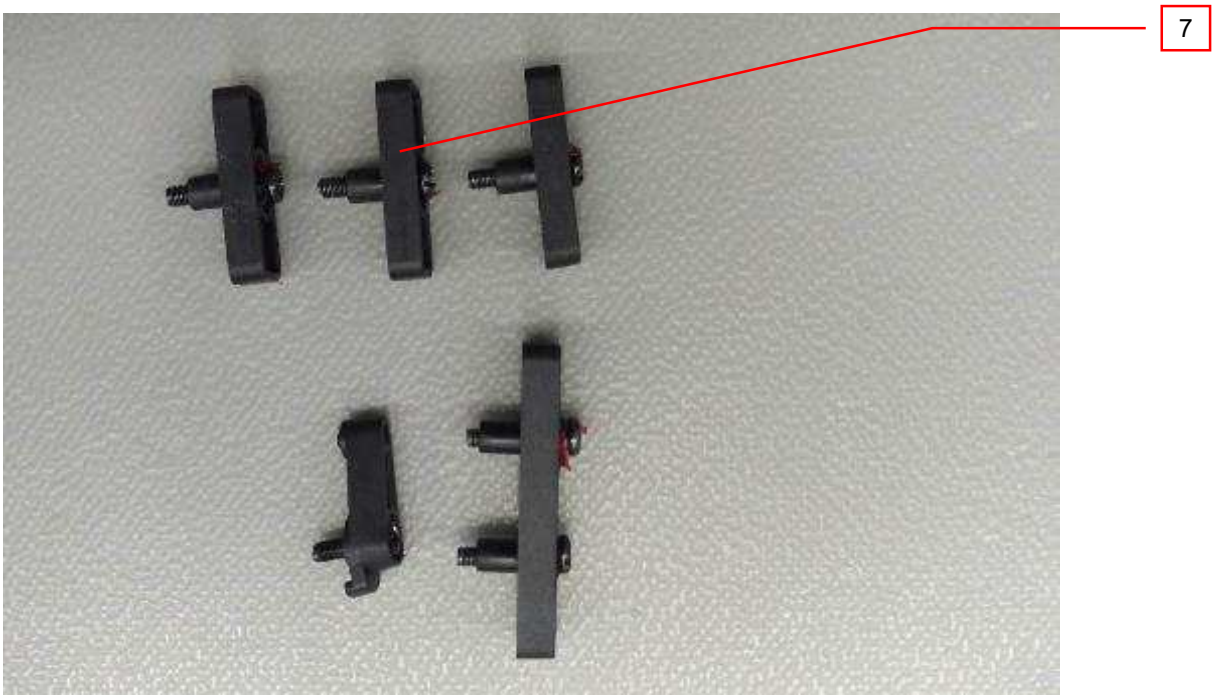


Photo 12- Internal view



4.0 Critical Components						
Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity[3]
3	1	Plastic Enclosure	CHI MEI CORPORATION (UL E56070)	PA-765A(+)	ABS, thickness:2.0mm. V-1, 85℃	cURus
3	2	Adhesive-Type Label (not shown)	ZHONGSHAN FUZHOU (UL MH30090)	TL-TA25, TL-SM25	indoor use,60°C, ABS surface,UL 969	cURus
3	3	Cover of LCD creen	Shenzhen Sanli Spectroscopic Optoelectronics Technology Co., Ltd..	TSE399-B	thickness:0.25mm.	NR
5	4	ALL PCB	Various	Various	V-0, 130°C. 1.6mm min,CTI: 0, totally covered with coating. Fully comply with UL 796.	cURus cETLus
5	5	heat shrink tube	Various	Various	150V ,125℃, VW-1	cURus cETLus
6	6	insulation sheet Under MOSfet	SHENZHEN GOLDLINK TONGDA ELECTRONICS CO LTD (UL E490055)	XK-P20	V-0, 105°C , 0.25mm	cURus
12	7	MOSFET pressure material	CHANG CHUN CHEMICAL (ZHANGZHOU) CO LTD (UL E304813)	56*	PBT , V-0,	cURus
10	8	DC/DC Converter	MORNSUN (UL E235235)	F0505S-1WR3	3K Viso DC, -40℃~+105℃	cURus
10	9	Nonoptical Isolating Devices For Communication board	TEXAS INSTRUMENTS (UL E181974)	ISO 3082	Single protection non-optical isolators at 4000 Vdc/2500 Vac isolation voltage ,85℃	cURus
			TEXAS INSTRUMENTS INCORPORATED (UL E181974)	ISO1410B	-40℃ ~ 125℃, 5000VDC	cURus
			Shanghai Chipanalog Microelectronics Co. Ltd. (UL E511335)	CA-IS3082W	-40℃ ~ 125℃, 5000VDC	cURus
7	10	CPU	STM	STM32F030C8 T6	64KB,48pin -40~85℃	NR
7	11	DC terminal	Degson (UL E228872)	DG136HT-15.24-03P-14-102AH	300Vmin ,-40℃~+105℃, 15.24mm	cURus
			Degson (UL E228872)	DG950-9.5-06P-14-00AH	300Vmin,-40℃~+105℃, 9.5mm	cURus
			Degson (UL E228872)	DG136HT-12.7-06P-14-02AH	300Vmin,-40℃~+105℃, 12.7mm	cURus

4.0 Critical Components						
Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity[3]
7	12	DC Fuse	DONGGUAN HONGDA ELECTRONIC TECHNOLOGY CO LTD (UL E318938)	HDSM series	19 x 4.9 x 19.7mm. interrupting1000A. HDSM030,32VDC,30A for model XTRA1206/10N、3210/15N HDSM035,32VDC,35A for model XTRA2206/10N HDSM040,32VDC,40A for model XTRA4210/15N	cURus
			WOGE PRECISION ELECTRICAL CO LTD (UL E360382)	AB series	Interrupting1000A. 32VDC Min, 30A for model XTRA1206/10N、3210/15N 32VDC Min, 35A for model XTRA2206/10N 32VDC Min, 40A for model XTRA4210/15N 58VDC Min, 30A for model XTRA3415N. 58VDC Min, 40A for model XTRA4415N.	cURus
			DONGGUAN HONGDA ELECTRONIC TECHNOLOGY CO LTD (UL E318938)	HDMM series	19 x 4.9 x 19.7mm. interrupting 1000A. HDMM030,58VDC,30A for model XTRA3415N. HDMM040,58VDC,40A for model XTRA4415N	cURus
			SHENZHEN VICTORS INDUSTRIAL CO LTD (UL E357828)	ATV	19.5 x 19 x 4.9mm. interrupting1000A. 60VDC,30A for model XTRA3415N 60VDC,40A for model XTRA4415N	cURus
5	13	Electrolytic capacitor	HUNAN AIHUA GROUP CO.,LTD.	RJ series	105℃, 390UF 63V for XTRA1206N, E1 270UF 100V for XTRA1210N,E1	NR
			NIPPON CHEMI-CON	KZN series	105℃ 390UF 63V for XTRA1206N, E1	NR
			RUBYCON CORPORATION	ZLH series	105℃, 390UF 63V for XTRA1206N ,E1 270UF 100V for XTRA1210N,E1	NR

4.0 Critical Components						
Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity[3]
5	14	Electrolytic capacitor	HUNAN AIHUA GROUP CO.,LTD.	RJ series	105℃, 35V, 470uF for XTRA2206/10N E3 35V, 470uF for XTRA4210N E3、E5 35V, 820uF for XTRA3210N E3 50V, 680uF for XTRA3215N E3	NR
			NIPPON CHEMI-CON	KZN series	105℃, 35V, 470uF for XTRA2206/10N E3 35V, 470uF for XTRA4210N E3、E5 50V, 680uF for XTRA3215N E3	NR
5	15	Electrolytic capacitor	HUNAN AIHUA GROUP CO.,LTD.	RS series	105℃, E3 560UF 100V for XTRA34/4415N 1000UF 50V for XTRA4215N E3	NR
			HUNAN AIHUA GROUP CO.,LTD.	RJ series	105℃, E3 1000UF 50V for XTRA4215N	NR
			RUBYCON CORPORATION	YXJ series	105℃, E3 1000UF 63V for XTRA4215N	NR
			RUBYCON CORPORATION	KZN series	105℃, E3 1000UF 63V for XTRA4215N	NR
4	16	Heat-sink	BEIJING EPSOLAR	XTRA1206N-LSRQ1-V1.10	172*143*9.5mm made of aluminum 6063.	NR
			BEIJING EPSOLAR	XTRA1210N-LSRQ1-V1.20	172*143*9.5mm made of aluminum 6063.	NR
			BEIJING EPSOLAR	XTRA2206N-LSRQ1-V1.10	214*158*13mm made of aluminum 6063.	NR
			BEIJING EPSOLAR	XTRA2210N-LSRQ1-V1.20	214*158*13mm made of aluminum 6063.	NR
			BEIJING EPSOLAR	XTRA3210N-LSRQ1-V1.20	227*165*18.5mm made of aluminum 6063.	NR
			BEIJING EPSOLAR	XTRA3215N-LSRQ1-V1.00	227*165*18.5mm made of aluminum 6063.	NR
			BEIJING EPSOLAR	XTRA3415N-LSRQ1-V1.10	252*187*27.2mm made of aluminum 6063.	NR
			BEIJING EPSOLAR	XTRA4210N-LSRQ1-V1.10	252*185*19.3mm made of aluminum 6063.	NR
			BEIJING EPSOLAR	XTRA4215N-LSRQ1-V1.00	252*187*27.2mm made of aluminum 6063.	NR
			BEIJING EPSOLAR	XTRA4415N-LSRQ1-V1.20	252*189*34.7mm made of aluminum 6063.	NR

4.0 Critical Components						
Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity[3]
5	17	DC inductor	BEIJING EPSOLAR	KS130-125A&A125-330-M1.5-34T--V1.1 147UH	147UH, 130℃ for XTRA1206/10N	NR
			BEIJING EPSOLAR	KS157-125A&A125-399-M2.2-29T-V1.1 141UH	141UH, 130℃ for XTRA2206/10N	NR
			BEIJING EPSOLAR	KA184-125A&A125-467-M2.6-24T-162uH-V1.3	162UH,130℃ for XTRA3210N	NR
			BEIJING EPSOLAR	KA184-125A&A125-467-M2X2-24T-162uH V1.1	162UH,130℃ for XTRA3215N	NR
			BEIJING EPSOLAR	KA200-125A&A125-508X2-M2X2-24T-175uH V1.2	175UH,130℃ forXTRA3415N	NR
			BEIJING EPSOLAR	KA184-125A&A125-467-M2.2X2-23T-148uH-V1.1	148UH,130℃ for XTRA4210N	NR
			BEIJING EPSOLAR	KA184-125A&A125-467-M2.3X2-24T-162uH V1.1	162UH,130℃ for XTRA4215N	NR
			BEIJING EPSOLAR	KS184-125A/A125-467/M2.4-35T-344uH-V1.4	344UH,130℃ for XTRA4415N	NR
11	18	Magnet Wire for Inductor	PACIFIC ELECTRIC WIRE&CABLE(SHENZHEN)CO LTD (UL E201757)	PEWN/U	MW 24-C, 155℃	cURus
11	19	Insulation tape for Inductor	SHENZHEN XINHUAHUI ADHESIVE TECHNOLOGY CO LTD (UL E328315)	HMT803	130℃., 0.055mm 4000V UL94V-0	cURus
7	20	wire of indcutor	SHENZHEN SEDATO CABLE CO.,LTD. (UL E483319)	1015	600V 105℃, 10-14AWG	cURus

4.0 Critical Components						
Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity[3]
11	21	Plastic material fixed inductor	CHANG CHUN CHEMICAL (ZHANGZHOU) CO LTD (UL E304813)	56*	PBT , V-0,	cURus
7	22	SILICONE RUBBER	SHANGHAI FUMING SEALING MATERIAL CO LTD (UL E350185)	FM-500	V-0, 135℃, FUR for AC and DC inductor	cURus
8	23	MOSFET module for PV circuit	ST	NMOS series	Tj Max 175℃ 70V,110A, for XTRA12/2206N Q5,Q7 100V,110A, for XTRA22/3210N Q5,Q7 100V,110A, XTRA4210N Q5, Q7, Q14, Q20	NR
			IR	IRFseries	Tj Max 175℃ 100V,97A min, for XTRA1210N Q5,Q7 150V,104A , for XTRA32/3415N、42/4415N Q5, Q7, Q14, Q20	NR
			Infineon	IPPseries	Tj Max 175℃ 100V,100A ,for XTRA22/3210N Q5,Q7 100V,100A , for XTRA4210N Q5, Q7, Q14, Q20 150V,100A , for XTRA32/3415N、42/4415N Q5, Q7, Q14, Q20	NR

4.0 Critical Components						
Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity[3]
8	24	MOSFET module for load circuit	ALPHA&OMEGA	AOB1608L (AOS)	Tj Max 175℃ , 60V，140A for XTRA1206/10N Q6	NR
			ALPHA&OMEGA	AOT1608L(AOS)	Tj Max 175℃ , 60V，110A for XTRA3215N、XTRA4210/15N Q6,Q18	NR
			IR	IRFseries	Tj Max 175℃ , 60V,140A for XTRA1206/10N ,Q6 55VMin,110A Min. , for XTRA2206/10N、3210N 100V,120A Min, for XTRA3415N XTRA4415N	NR

NOTES:

1) Not all item numbers are indicated (called out) in the photos, as their location is obvious.

2) “Various“ means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.

3) Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates Unlisted and only visual examination is necessary. "See 5.0" indicates Unlisted components or assemblies to be evaluated periodically refer to section 5.0 for details.

5.0 Critical Unlisted CEC Components

No Unlisted CEC components are used in this report.

6.0 Critical Features
Recognized Component - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability. Listed Component - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings. Unlisted Component - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition. Critical Features/Components - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the product standard.
Construction Details - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.
1. Spacing - between uninsulated live parts and the walls of the metal enclosure is 6.4 mm through air and 6.4 mm over surfaces Spacing - between a) uninsulated live parts of opposite polarity; b) uninsulated live parts and low voltage isolated circuits, uninsulated grounded parts other than the enclosure- 3.2 mm minimum spacing are maintained through air and 6.4 mm minimum spacing at field wiring termials.
2. Mechanical Assembly - Components such as switches, fuseholders, connectors, wiring terminals and display lamps are mounted and prevented from shifting or rotating by the use of lockwashers, starwashers, or other mounting format that prevents turning of the component.
3. Corrosion Protection - All ferrous metal parts are protected against corrosion by painting, plating or the equivalent.
4. Accessibility of Live Parts - All uninsulated live parts in primary circuitry are housed within a metal enclosure constructed with no openings other than those specifically described in Sections 4 and 5.
5. Grounding - All exposed dead-metal parts and all dead-metal parts within the enclosure that are exposed are connected to the the equipment grounding terminal.
6. Schematics - Refer to Illustration No.3 to No.3c. for schematics requiring verification during Field Representative Inspection Audits.
7. PCB layout - Refer to Illustration No.4 to No. 4g for PCB layout requiring verification during Field Representative Inspection Audits.
8. Markings - The product is marked on a labeling system as described in item No. 2 of Section 4.0 or by molding into polymeric enclosure as follows: applicant's name, brand name, model number, date of manufacturer, electrical ratings. Refer to Illustration No.1 for details.
9 Cautionary Markings - refer to Illustration 1 for details.
10 Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer. Refer to Illustration No.5 to No.5a for details.

7.0 Illustrations

Illustration 1 - Markings and Cautionary Markings

Note:
1. The heights of the letters of the words "WARNING", "CAUTION", "AVERTISSEMENT" and "ATTENTION" in cautionary markings are not less than 3.2mm, the heights of the remaining letters in cautionary markings are not lett than 1.6mm.
2. The other models (refer to 2.0 and illustration 2) have the same labels except the model number and ratings.
3. In the serial Number four to severn bit, 19= years ,01= month

7.0 Illustrations

Illustration 2- rating

Specification table				
Model	XTRA1206N- XDB1 XTRA1206N- XDS1 XTRA1206N- XDS2	XTRA1210N- XDB1 XTRA1210N- XDS1 XTRA1210N- XDS2 XTRA1210N1- XDB1 XTRA1210N1- XDS1 XTRA1210N1- XDS2	XTRA2206N- XDB1 XTRA2206N- XDS1 XTRA2206N- XDS2	XTRA2210N- XDB1 XTRA2210N- XDS1 XTRA2210N- XDS2 XTRA2210N1- XDB1 XTRA2210N1- XDS1 XTRA2210N1- XDS2
PV Input				
Vmax PV	60 VDC	100 VDC	60 VDC	100 VDC
Max. I sc PV	12.5A	12.5A	25A	25A
Max. PV Input Power	130W(12V) 260W(24V)	130W(12V) 260W(24V)	260W(12V) 520W(24V)	260W(12V) 520W(24V)
MPP Voltage range	V battery+2V to 36V	V battery+2V to 72V	V battery+2V to 36V	V battery+2V to 72V
Battery and load port				
Battery Nominal Voltage	12V/ 24VDC auto	12V/ 24VDC auto	12V/ 24VDC auto	12V/ 24VDC auto
Rated charge and discharge current	10A	10A	20A	20A
Max. output overcurrent protection	20A	20A	40A	40A
others				
LxWxH (mm)	175×143×48mm	175×143×48mm	217×158×56.5mm	217×158×56.5mm
Weight (kg)	0.57kg	0.57kg	0.96kg	0.96kg
Version	SV:054+HV:411			
Temperature(℃)	-25℃ to +50℃ (with LCD screen), -30℃ to +50℃(with LED screen)			
Protective class	Indoor use only			
Pollution degree	PD 2			
Overvoltage	OVC II (PV)			

7.0 Illustrations

Illustration 2a- rating

Specification table		
Model	XTRA3210N- XDB1 XTRA3210N- XDS1 XTRA3210N- XDS2 XTRA3210N1- XDB1 XTRA3210N1- XDS1 XTRA3210N1- XDS2	XTRA4210N- XDB1 XTRA4210N- XDS1 XTRA4210N- XDS2 XTRA4210N1- XDB1 XTRA4210N1- XDS1 XTRA4210N1- XDS2
PV Input		
Vmax PV	100 VDC	100 VDC
Max. I sc PV	37.5A	50 A
Max. PV Input Power	390W(12V) 780W(24V)	520W(12V) 1040W(24V)
MPP Voltage range	V battery+2V to 72V	V battery+2V to 72V
Battery and load port		
Battery Nominal Voltage	12V/ 24VDC auto	12V/ 24VDC auto
Rated charge and discharge current	30A	40A
Max. output overcurrent protection	60A	80A
others		
LxWxH (mm)	230×165×63mm	255×185×67.8mm
Weight (kg)	1.31kg	1.70kg
Version	SV:054+HV:411	
Temperature(℃)	-25℃ to +50℃ (with LCD screen), -30℃ to +50℃(with LED screen)	
Protective class	Indoor use only	
Pollution degree	PD 2	
Overvoltage	OVC II (PV)	

7.0 Illustrations

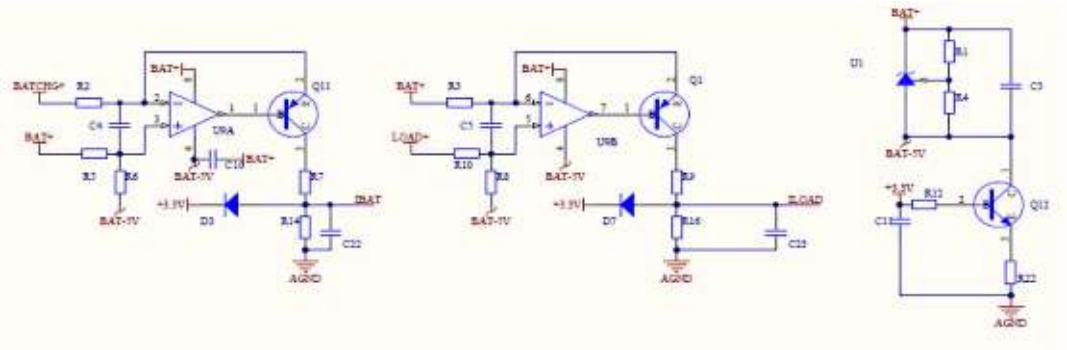
Illustration 2b- rating

Specification table				
Model	XTRA3215N- XDB1 XTRA3215N- XDS1 XTRA3215N- XDS2 XTRA3215N1- XDB1 XTRA3215N1- XDS1 XTRA3215N1- XDS2	XTRA4215N- XDB1 XTRA4215N- XDS1 XTRA4215N- XDS2 XTRA4215N1- XDB1 XTRA4215N1- XDS1 XTRA4215N1- XDS2	XTRA3415N- XDB1 XTRA3415N- XDS1 XTRA3415N- XDS2 XTRA3415N1- XDB1 XTRA3415N1- XDS1 XTRA3415N1- XDS2	XTRA4415N- XDB1 XTRA4415N- XDS1 XTRA4415N- XDS2 XTRA4415N1- XDB1 XTRA4415N1- XDS1 XTRA4415N1- XDS2
PV Input				
Vmax PV	150 VDC	150 VDC	150 VDC	150 VDC
Max. I sc PV	37.5A	50 A	37.5A	50 A
Max. PV Input Power	390W(12V) 780W(24V)	520W(12V) 1040W(24V)	390W(12V) 780W(24V) 1170W(36V) 1560W(48V)	520W(12V) 1040W(24V) 1560W(36V) 2080W(48V)
MPP Voltage range	V battery+2V to 108V	V battery+2V to 108V	V battery+2V to 108V	V battery+2V to 108V
Battery and load port				
Battery Nominal Voltage	12V/ 24VDC auto	12V/ 24VDC auto	12/ 24/36/48VDC auto	12/ 24/36/48VDC auto
Rated charge and discharge current	30A	40A	30A	40A
Max. output overcurrent protection	60A	80A	60A	80A
others				
LxWxH (mm)	255×185×67.8mm	255×187×75.7mm	255×187×75.7mm	255×189×83.2mm
Weight (kg)	1.70kg	2.07kg	2.07kg	2.47kg
Version	SV:054+HV:511			
Temperature(℃)	-25℃ to +45℃ (with LCD screen), -30℃ to +45℃(with LED screen)			
Protective class	Indoor use only			
Pollution degree	PD 2			
Overvoltage	OVC II (PV)			

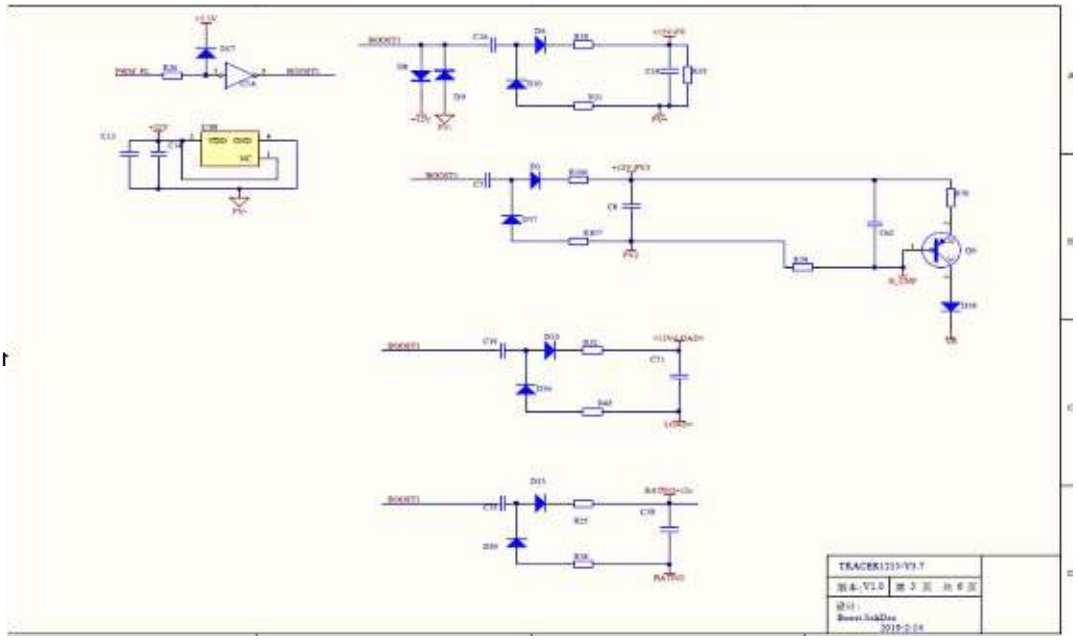
7.0 Illustrations

Illustration 3 - Schematics

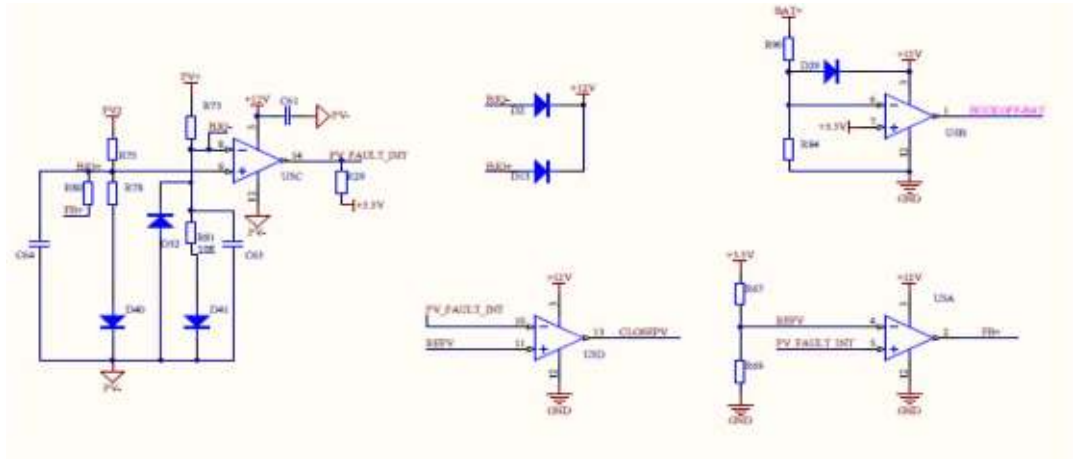
AnalogSignal



Boost



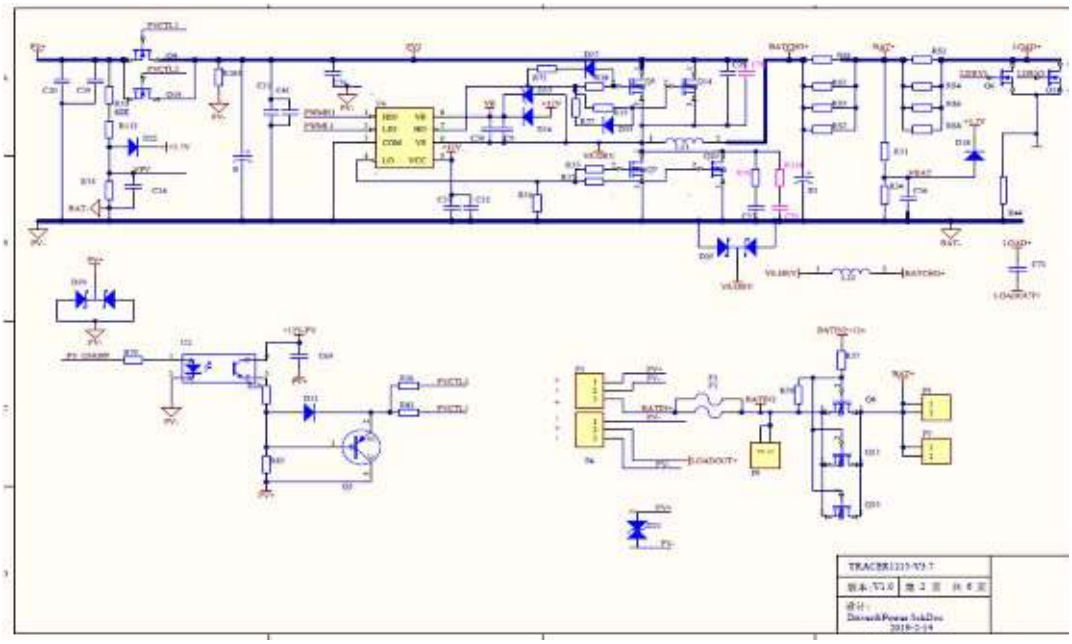
PVDRV&PROTECT



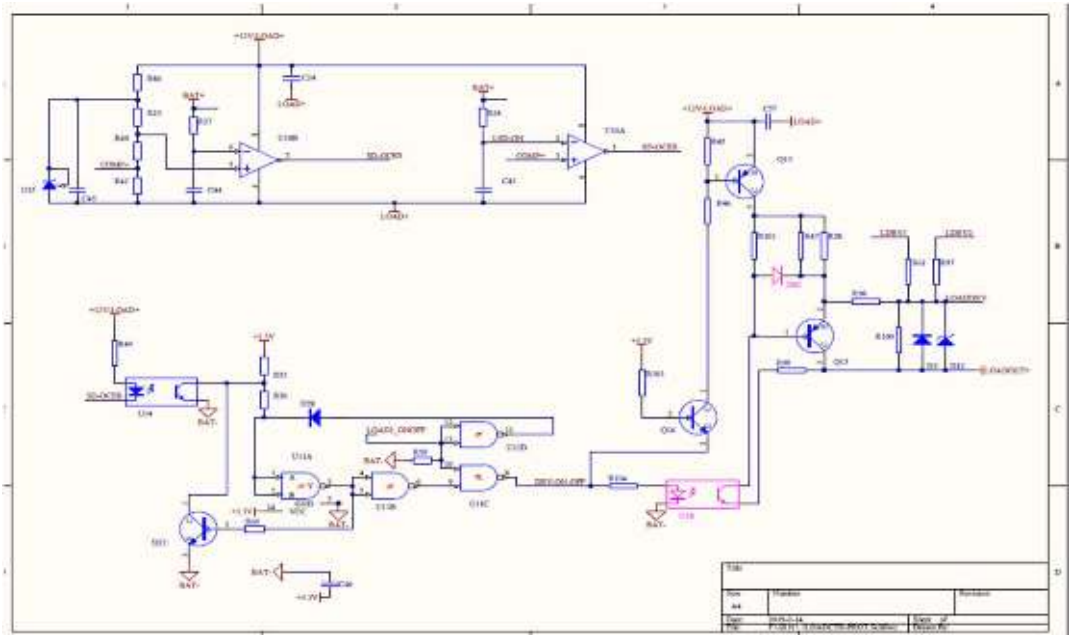
7.0 Illustrations

Illustration 3a - Schematics

Driver&Power



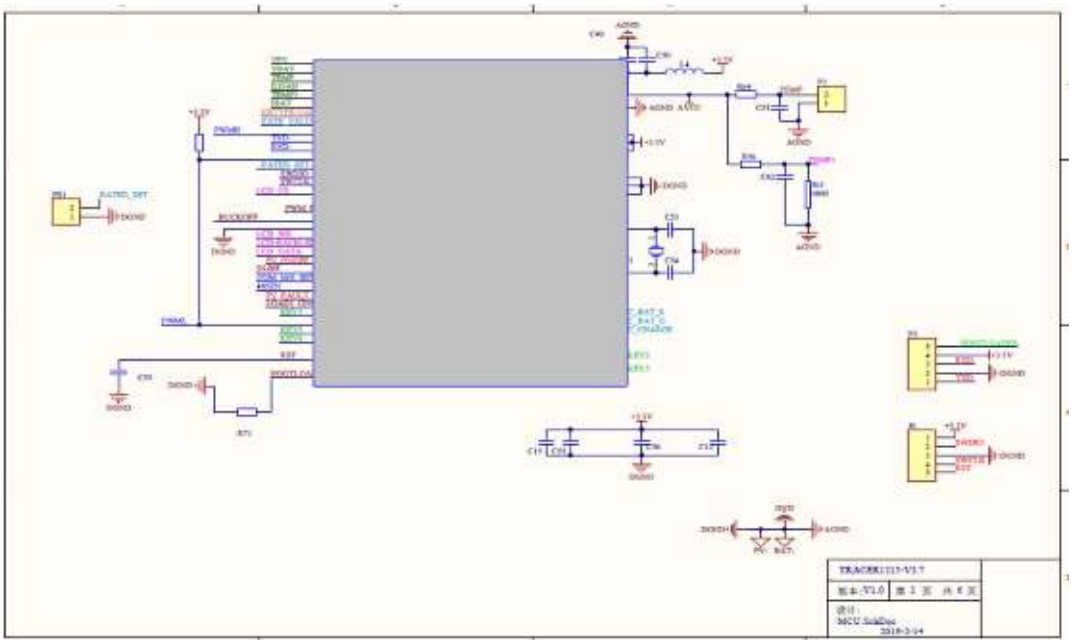
LOADCTR-PROT



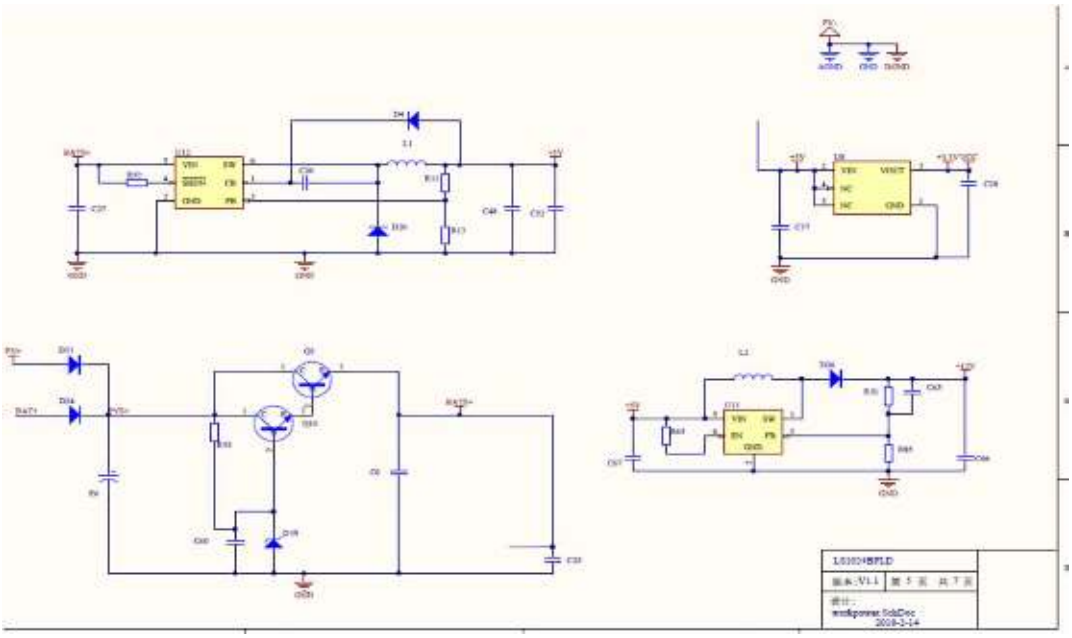
7.0 Illustrations

Illustration 3b - Schematics

MCU



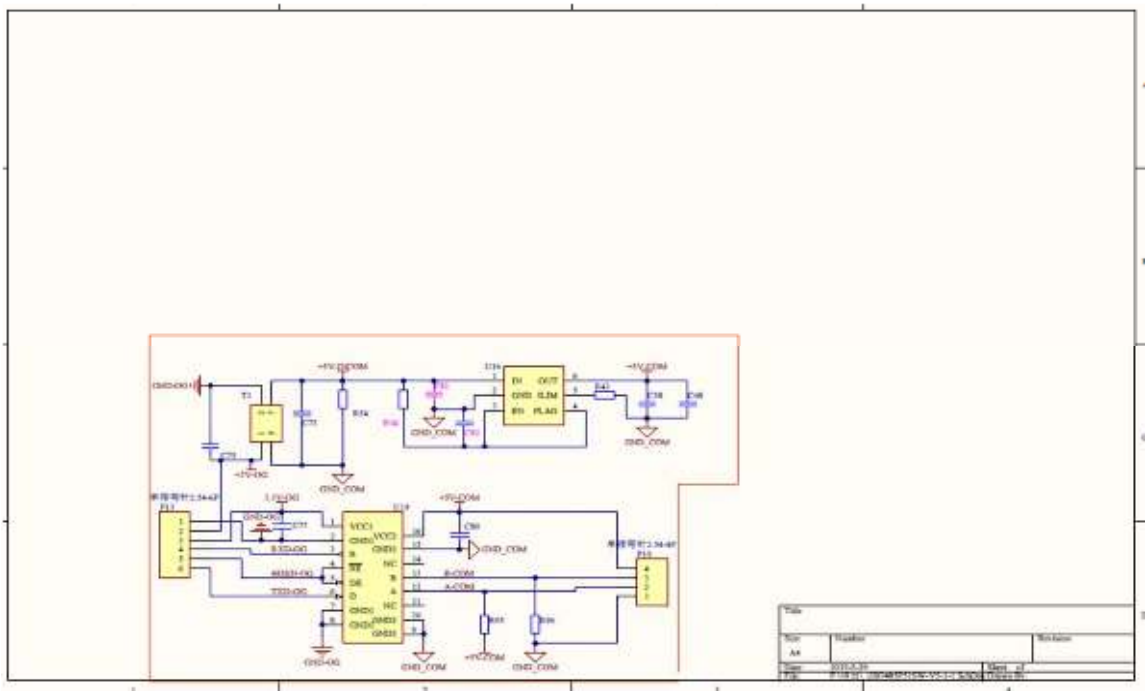
workpower



7.0 Illustrations

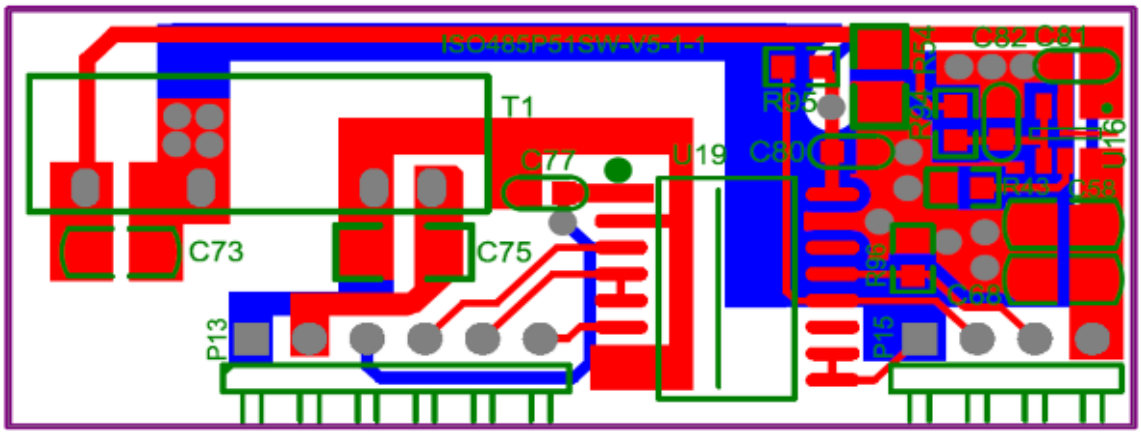
Illustration 3c - Schematics

ISO485P51SW-V5-1-1



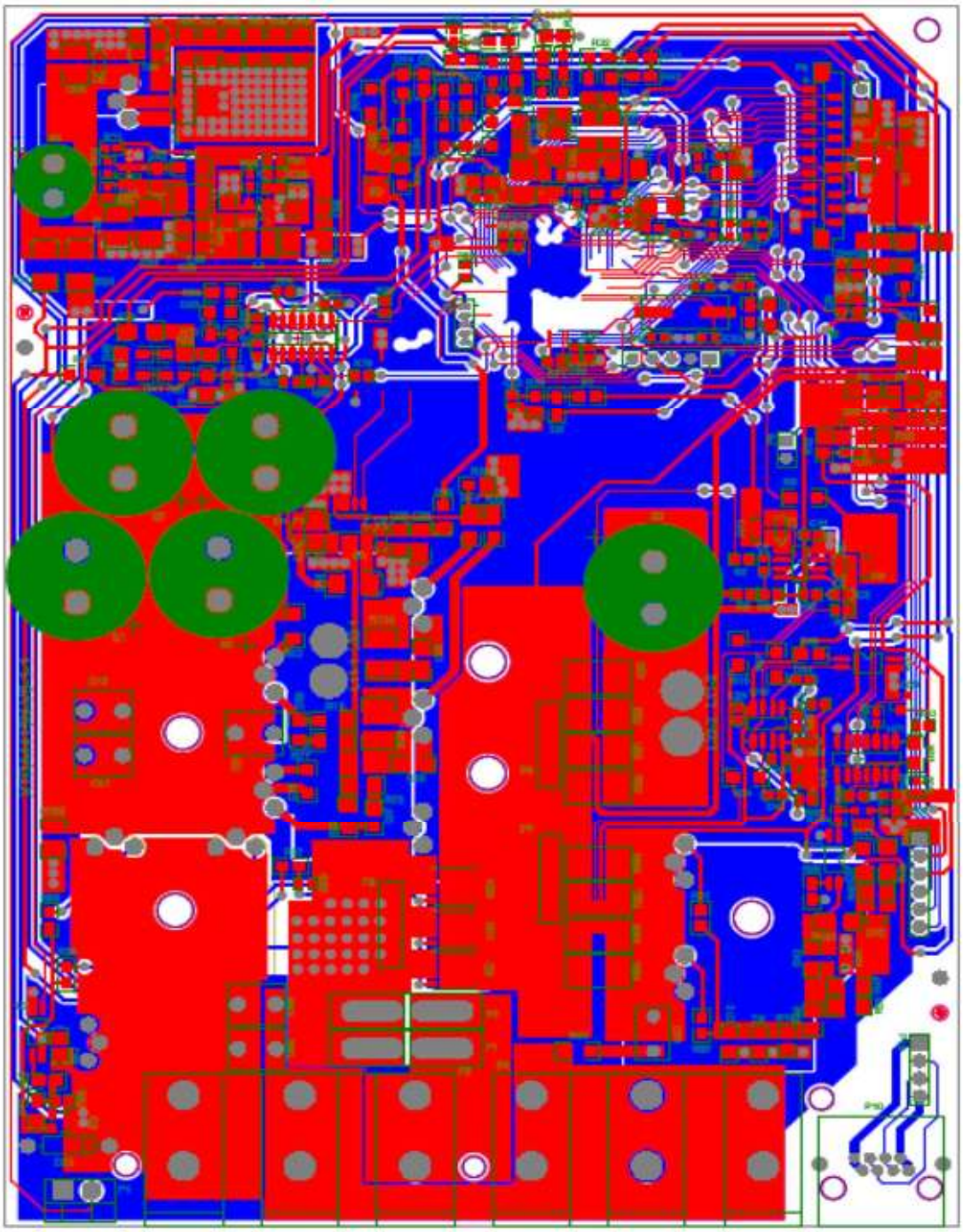
7.0 Illustrations

Illustration 4 - PCB
ISO485P51SW-V5-1-1



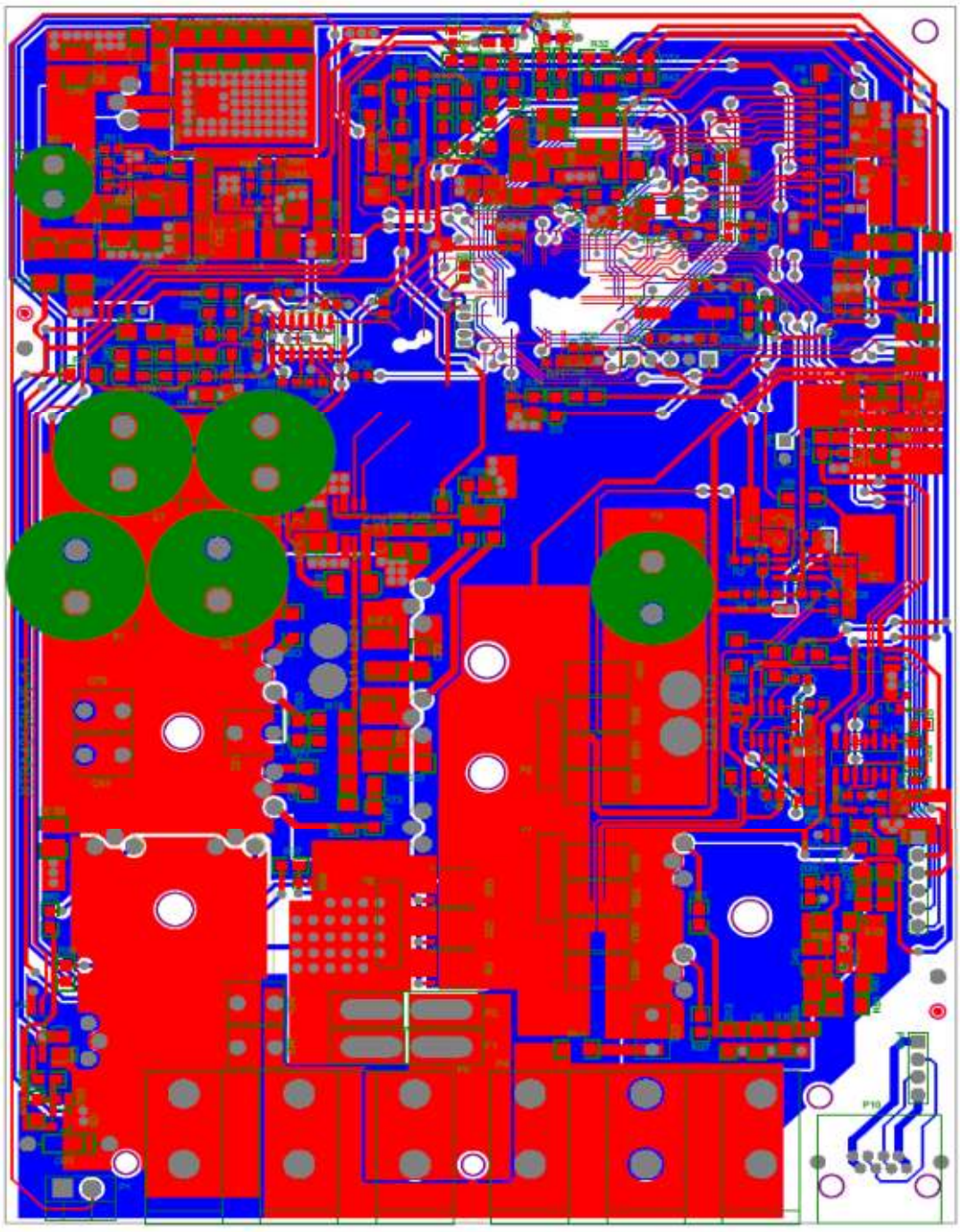
7.0 Illustrations

Illustration 4a - PCB
XTRA4415***** series



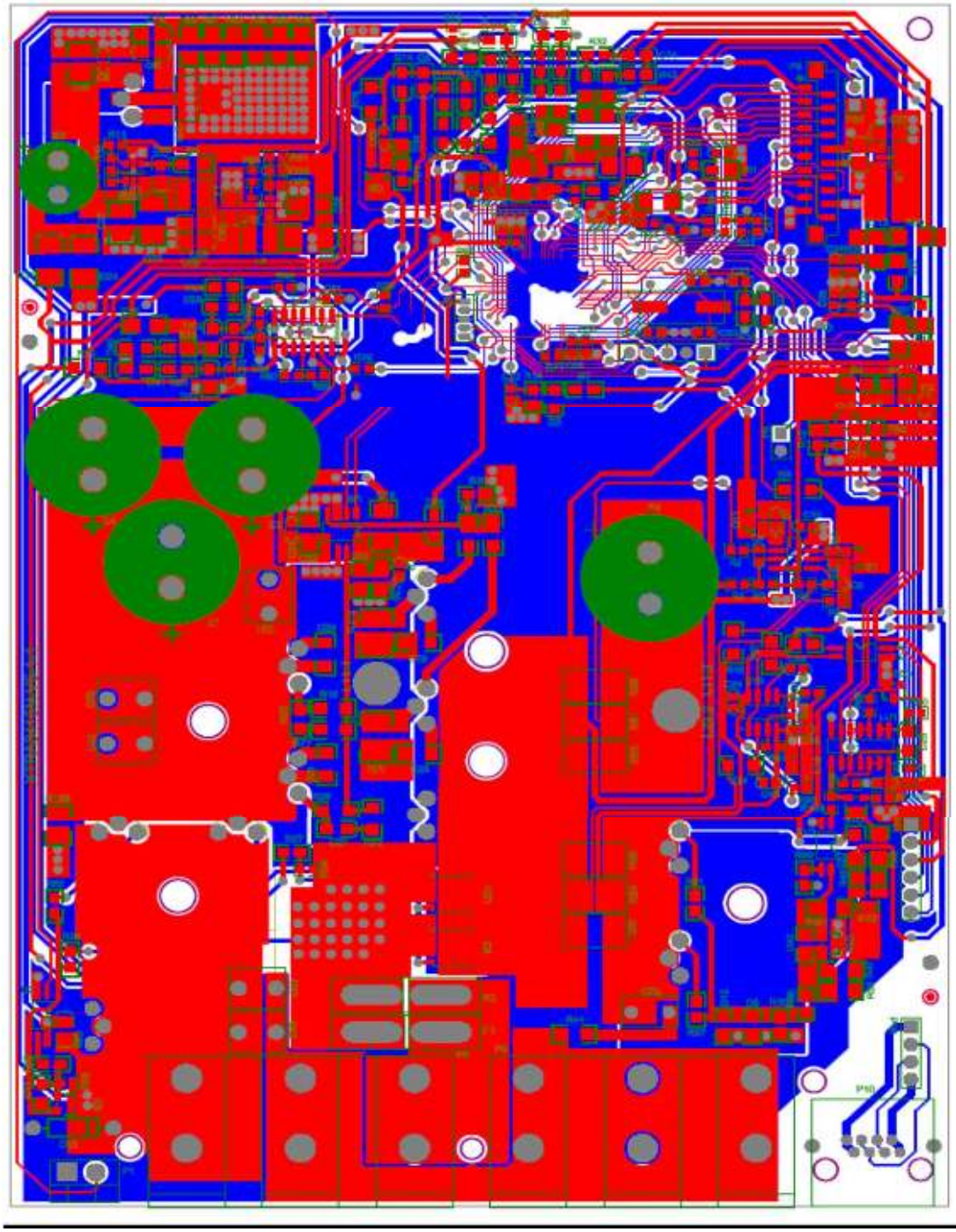
7.0 Illustrations

Illustration 4b - PCB
XTRA4215***** series



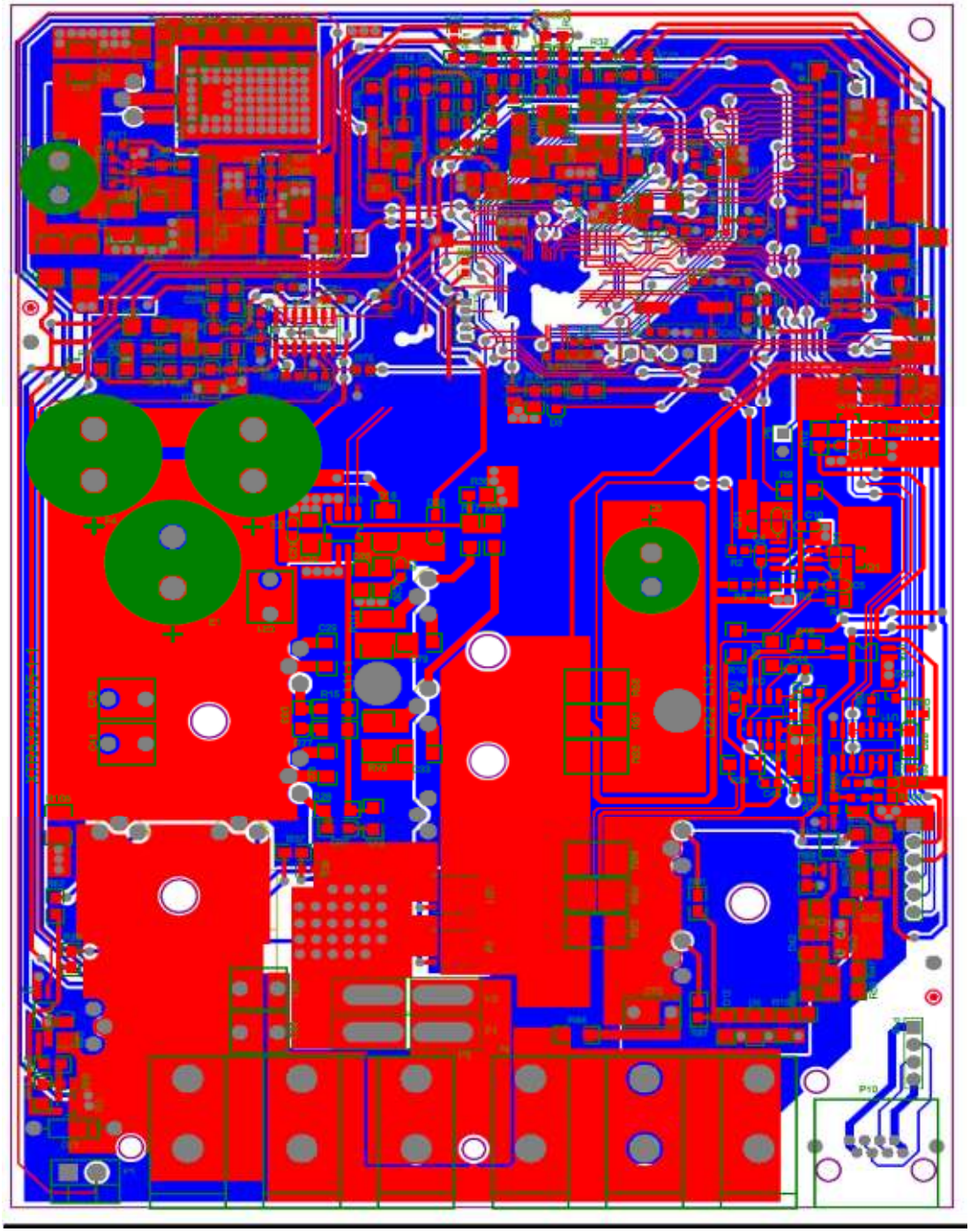
7.0 Illustrations

Illustration 4c - PCB
XTRA3415***** series



7.0 Illustrations

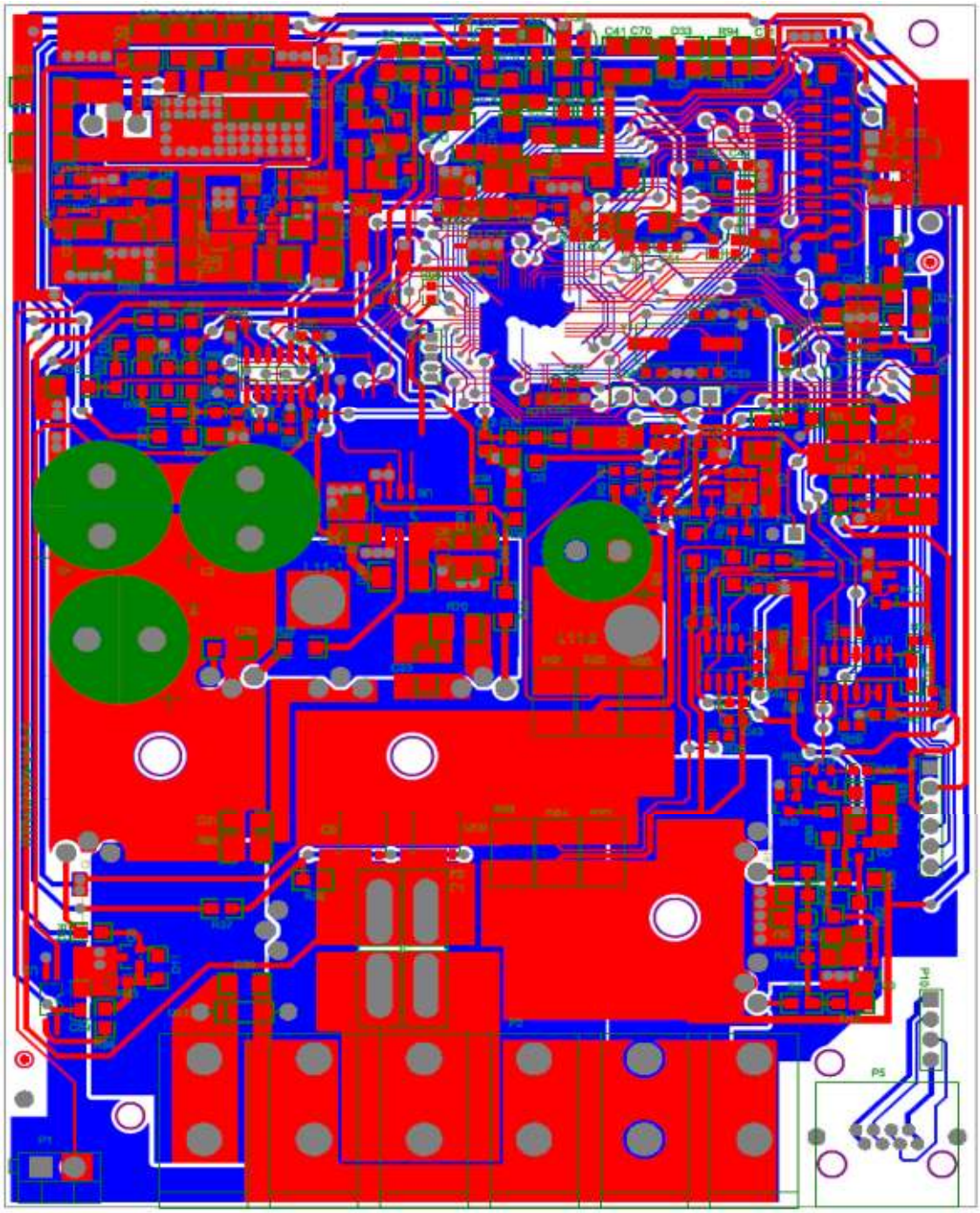
Illustration 4d- PCB
XTRA3215***** series



7.0 Illustrations

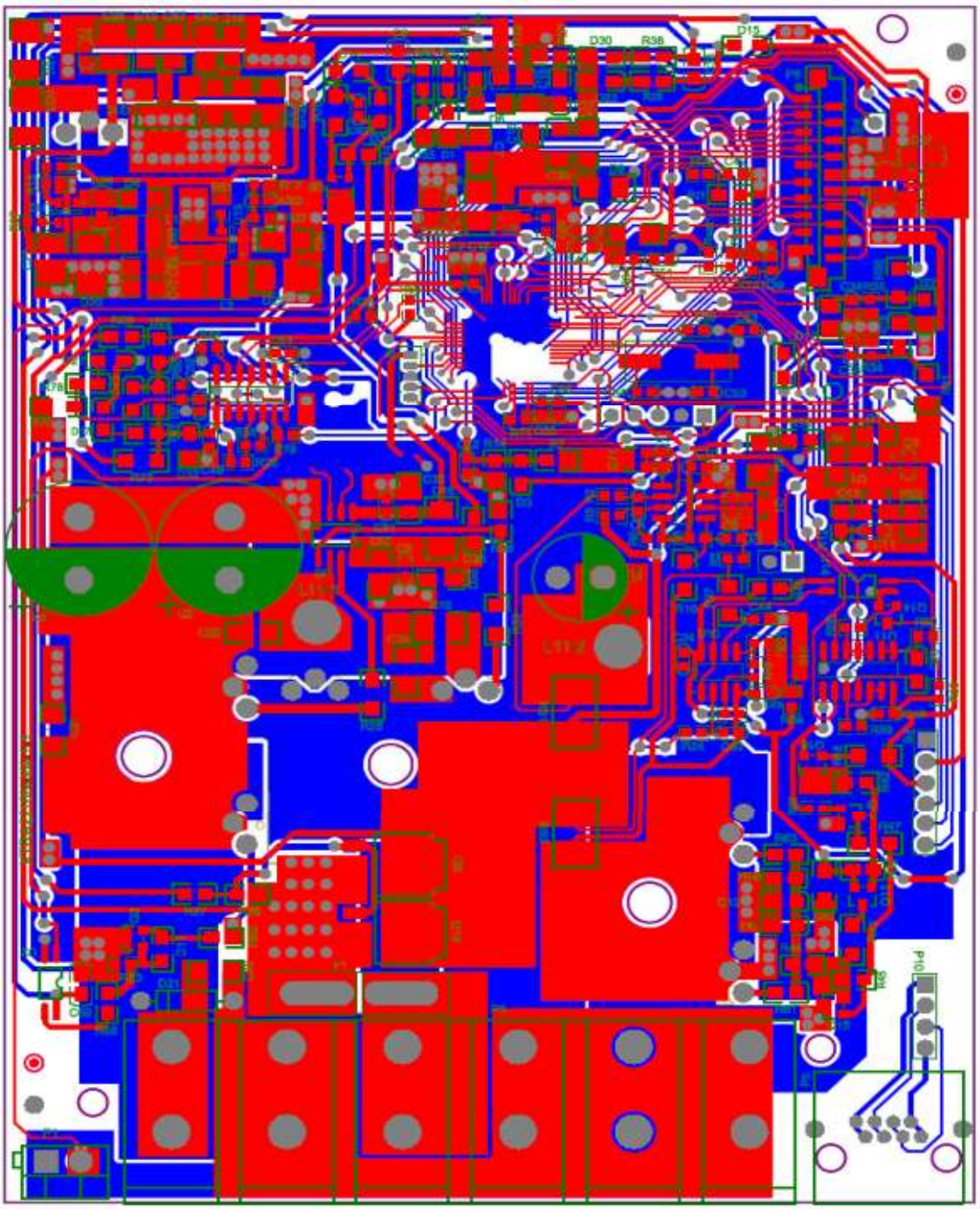
Illustration 4e - PCB

XTRA3210***** series



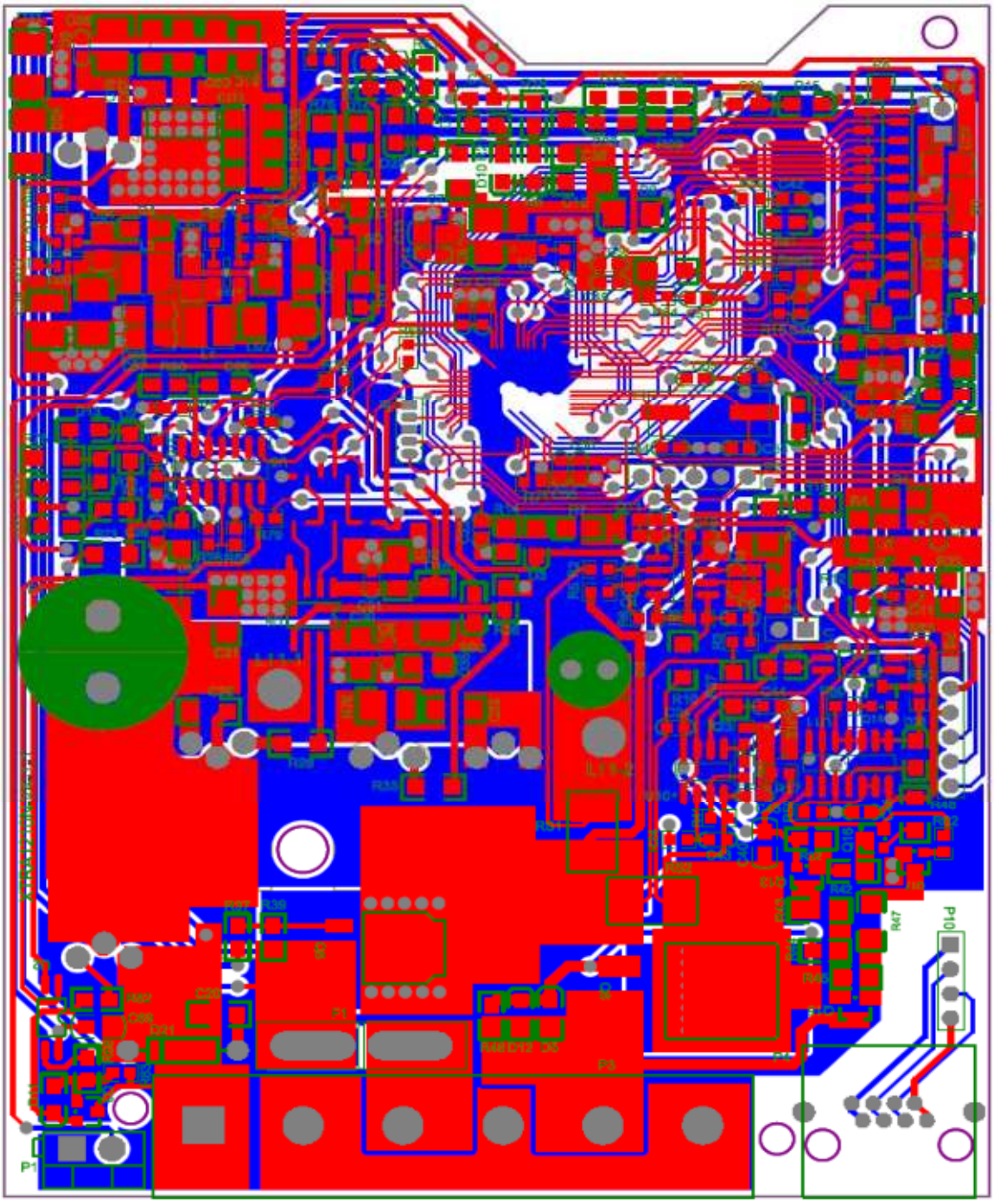
7.0 Illustrations

Illustration 4f - PCB
XTRA2210***** series



7.0 Illustrations

Illustration 4g- PCB
XTRA1210***** series



7.0 Illustrations

Illustration 5 - manual

EPEVER
EPSOLAR TECHNOLOGY

XTRA N Series

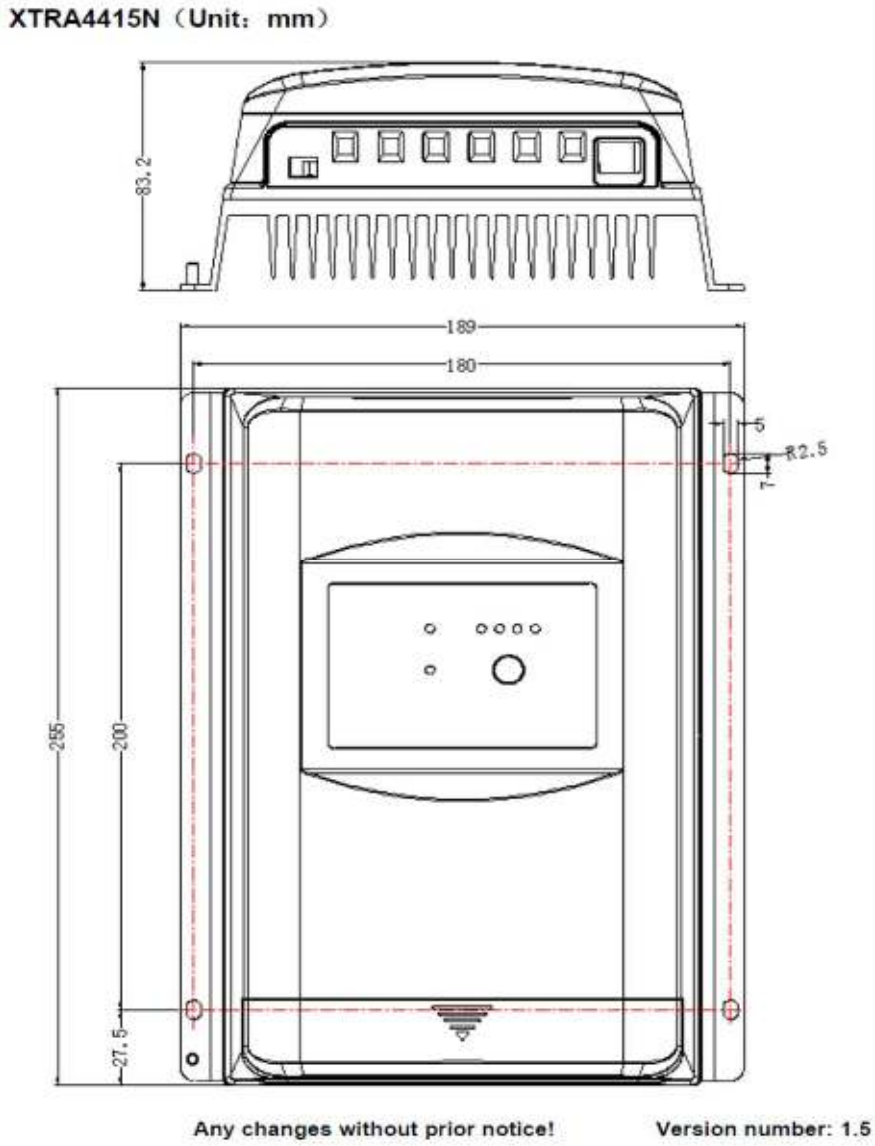
——MPPT Solar Charge Controller

User Manual

Models:
XTRA1206N/XTRA2206N
XTRA1210N/XTRA2210N
XTRA3210N/XTRA4210N
XTRA3215N/XTRA4215N
XTRA3415N/XTRA4415N

7.0 Illustrations

Illustration 5a - manual



8.0 Test Summary					
Evaluation Period	2018-12-24 to 2019-04-29			Project No.	18110223SHA
Sample Rec. Date	24-Dec-2018	Condition	Prototype	Sample ID.	2018-12-24-001~006
Test Location	Intertek Testing Services Shanghai				
Test Procedure	Testing Lab				
Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.					
The following tests were performed:					

Test Description	UL 1741:2010 Ed.2+R:15Feb2018	CSA C22.2#107.1:2016 Ed.4	
Maximum-Voltage Measurements	42	--	--
Temperature	43	6.3	--
Dielectric Voltage-Withstand Test	44	6.5	
Output Power Characteristics - Output Rating	45.2	6.2.3	--
Output Power Characteristics - DC Input Range &Rating	45.3	6.2.3	--
Abnormal Tests - Output Overload Test	47.2	6.7	--
Abnormal Tests - Short Circuit Test	47.3	13.4.2	--
Abnormal Tests - DC Input Miswiring Test	47.4	13.4.3	--
Abnormal Tests - Component Short and Open Circuit	47.6	14.3.7	--
Grounding Impedance Tests	48	4.23	--
Static Load	59	--	--
Normal Operations	72	15.3.2	--
Connection Sequence	75	--	--
Input and output faults	76.2	15.3.5	--
Charge controller miswiring	76.3	15.3.6	--
Low-voltage disconnectDisconnect	76.4	15.3.4	
Resistance to impact	--	6.12	--
Securement of components	--	6.16	--

8.1 Signatures			
A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.			
Completed by:	William Liu	Reviewed by:	Sleif Sui
Title:	Engineer	Title:	Reviewer
Signature:	*Signature on file*	Signature:	*Signature on file*

9.0 Correlation Page For Multiple Listings	
The following products, which are identical to those identified in this report except for model number and Listee name, are authorized to bear the ETL label under provisions of the Intertek Multiple Listing Program.	
BASIC LISTEE	BEIJING EPSOLAR TECHNOLOGY CO., LTD.
Address	NO.228, BLOCK A, 2ND FLOOR, BLDG 1, NO 3 STREET, SHANGDI XINXI CHANYE JIDI, HAIDIAN DISTRICT, BEIJING
Country	China
Product	MPPT Solar Charge Controller

MULTIPLE LISTEE 1	None
Address	
Country	
Brand Name	
ASSOCIATED MANUFACTURER	
Address	
Country	

MULTIPLE LISTEE 1 MODELS	BASIC LISTEE MODELS

MULTIPLE LISTEE 2	None
Address	
Country	
Brand Name	
ASSOCIATED MANUFACTURER	
Address	
Country	

MULTIPLE LISTEE 2 MODELS	BASIC LISTEE MODELS

MULTIPLE LISTEE 3	None
Address	
Country	
Brand Name	
ASSOCIATED MANUFACTURER	
Address	
Country	

MULTIPLE LISTEE 3 MODELS	BASIC LISTEE MODELS

10.0 General Information

The Applicant and Manufacturer have agreed to produce, test and label ETL Listed products in accordance with the requirements of this Report. The Manufacturer has also agreed to notify Intertek and to request authorization prior to using alternate parts, components or materials.

COMPONENTS

Components used shall be those itemized in this Intertek report covering the product, including any amendments and/or revisions.

LISTING MARK

The ETL Listing mark applied to the products shall either be separable in form, such as labels purchased from Intertek, or on a product nameplate or other media only as specifically authorized by Intertek. Use of the mark is subject to the control of Intertek.

The mark must include the following four items:

1) applicable country identifiers "US" and/or "C" or "US", "C" and "EU"
2) the word "Listed" or "Classified" or "Recognized Component" (whichever is appropriate)
3) a control number issue by Intertek
4) a product descriptor that identifies the standards used for certification. Example:

For US standards, the words, “Conforms to” shall appear with the standard number along with the word, “Standard” or “Std.” Example: “Conforms to ANSI/UL Std. XX.”

For Canadian standards, the words “Certified to CAN/CSA Standard CXX No. XX.” shall be used, or abbreviated, “Cert. to CAN/CSA Std. CXX No. XX.”

Can be used together when both standards are used.

Note: A facsimile must be submitted to Intertek, Attn: Follow-up Services for approval prior to use. The facsimile need not have a control number. A control number will be issued **after signed Certification Agreements** have been received by the Follow-up Services office, approval of the facsimile of your proposed Listing Mark, satisfactory completion of the Listing Report, and scheduling of a factory assessment in your facility.

MANUFACTURING AND PRODUCTION TESTS

Manufacturing and Production Tests shall be performed as required in this Report.

FOLLOW-UP SERVICE

Periodic unannounced audits of the manufacturing facility (and any locations authorized to apply the mark) shall be scheduled by Intertek. An audit report shall be issued after each visit. Special attention will be given to the following:

1. Conformance of the manufactured product to the descriptions in this Report.
2. Conformance of the use of the ETL mark with the requirements of this Report and the Certification Agreement.
3. Manufacturing changes.
4. Performance of specified Manufacturing and Production Tests.

In the event that the Intertek representative identifies non-conformance(s) to any provision of this Report, the Applicant shall take one or more of the following actions:

1. Correct the non-conformance.
2. Remove the ETL Mark from non-conforming product.
3. Contact the issuing product safety evaluation center for instructions.

10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation

Ship the samples to:
Intertek Testing Services Shanghai Limited
ETL Component Evaluation Center
Building No. 86, 1198 Qinzhou Road (North)
Shanghai 200233, China
Attn: Ms. Angela Han
Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return must accompany the initial component shipment.

11.0 Manufacturing and Production Tests

The manufacturer agrees to conduct the following Manufacturing and Production Tests as specified:

Required Tests

Dielectric Voltage Withstand Test

11.1 Dielectric Voltage Withstand Test

Method

One hundred percent of production of the products covered by this Report shall be subjected to a routine production line dielectric withstand test.

The test shall be conducted on products, which are fully assembled. Prior to applying the test potential, all switches, contactors, relays, etc., should be closed so that all primary circuits are energized by the test potential. If all primary circuits cannot be tested at one time, then separate applications of the test potential shall be made.

The test voltage specified below shall be applied between primary circuits and accessible dead-metal parts. The test voltage may be gradually increased to the specified value but must be maintained at the specified value for one second or one minute as required.

Test Equipment

The test equipment shall incorporate a transformer with an essentially sinusoidal output, a means to indicate the applied test potential, and an audible and/or visual indicator of dielectric breakdown.
The test equipment shall incorporate a voltmeter in the output circuit to indicate directly the applied test potential if the rated output of the test equipment is less than 500VA.
If the rated output of the test equipment is 500VA or more, the applied test potential may be indicated by either:
1 - a voltmeter in the primary circuit;
2 - a selector switch marked to indicate the test potential; or
3 - a marking in a readily visible location to indicate the test potential for test equipment having a single test potential output.
In cases 2 and 3, the test equipment shall include a lamp or other visual means to indicate that the test potential is present at the test equipment output. All test equipment shall be maintained in current calibration.

Products Requiring Dielectric Voltage Withstand Test:

Product	Test Voltage	Test Time
All products covered by this Report.	1300Vac	60 s
Between PV& battery part to communication part (only for isolated product) or	or	
PV& battery part to enclosure	1714Vdc	60 s

12.0 Revision Summary				
The following changes are in compliance with the declaration of Section 8.1:				
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Item	Description of Change
21-Oct-2019	William Liu	1	-	Correction the standard " UL 1741 " from " Inverters, Converters, Controllers And Interconnection System Equipment For Use With Distributed Energy Resources [UL 1741:2010 Ed.2(Supplement SA)+R:15Feb2018] " to " Inverters, Converters, Controllers And Interconnection System Equipment For Use With Distributed Energy Resources [UL 1741:2010 Ed.2+R:15Feb2018] ". No evaluation to the standards needed.
190901670SHA	Sleif Sui	1	-	Change the address of the Applicant from " NO.228,BLOCK A,2ND FLOOR,BLDG 1,NO 3 STREET, SHANGDIXINXI CHANYEJIDI, HAIDIAN, BEIJING" to " NO.228, BLOCK A, 2ND FLOOR, BLDG 1, NO 3 STREET, SHANGDI XINXI CHANYE JIDI, HAIDIAN DISTRICT, BEIJING ". No evaluation to the standards needed.
		1	-	Change the name of the Manufacturer from " BEIJING EPSOLAR TECHNOLOGY CO., LTD. SHENZHEN BRANCH " to " HUIZHOU EPEVER TECHNOLOGY CO., LTD. ". No evaluation to the standards needed.
		1	-	Change the address of the Manufacturer from " BLDG. A3, NO.18, FOURTH INDUSTRIAL PARK, ZHULONGTIAN ROAD, SHUITIAN COMMUNITY, SHIYAN STREET, BAOAN DISTRICT, SHENZHEN, GUANGDONG PROVINCE " to " NO.103, DONGXING RD, CHENJIANG STREET ZHONGKAI HIGH-TECH ZONE, HUIZHOU ". No evaluation to the standards needed.
		1	-	Change the contact, phone, email of the Manufacturer from " Kuang Ping, 13798324580, kuangping@epever.com " to " Zhou xiangwu, 13534268706, zhouxiangwu@epever.com ". No evaluation to the standards needed.
4-Sep-2020	William Liu	4	9	Add a new model ISO1410B of Nonoptical Isolating Devices For Communication board, manufactured by TEXAS INSTRUMENTS INCORPORATED. No evaluation to the standards needed.
200801963SHA	Sleif Sui	4	9	Add a new model CA-IS3082W of Nonoptical Isolating Devices For Communication board, manufactured by Shanghai Chipanalog Microelectronics Co. Ltd. No evaluation to the standards needed.

12.0 Revision Summary				
The following changes are in compliance with the declaration of Section 8.1:				
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Item	Description of Change
		4	12	Update the fuse model from "AB19" to "AB series" and the technical data and securement means from " 19.0 x 18.8 x 5.1mm. interrupting1000A. 32VDC, 30A for model XTRA1206/10N、3210/15N 32VDC, 35A for model XTRA2206/10N 32VDC, 40A for model XTRA4210/15N " to " Interrupting1000A. 32VDC Min, 30A for model XTRA1206/10N、3210/15N 32VDC Min, 35A for model XTRA2206/10N 32VDC Min, 40A for model XTRA4210/15N 58VDC Min, 30A for model XTRA3415N. 58VDC Min, 40A for model XTRA4415N " No evaluation to the standards needed.
		6	8	Change the markings from " manufacturer's name " to " applicant's name." No evaluation to the standards needed.
		6	10	Delete " When products saled on Canada market, French user manual shall be provided. " No evaluation to the standards needed.