Repubblica di San Marino

Autorità per l'Omologazione

Republic of San Marino

Authority for Homologation

Via Consiglio dei Sessanta, 99
47891 Dogana - Repubblica di San Marino

Comunicazione
Communication

E57	Concernente [2/] *Concerning [2/]*	**Il rilascio dell'omologazione** ***Approval granted*** ~~L'estensione dell'omologazione~~ ~~*Approval extended*~~ ~~Il rifiuto dell'omologazione~~ ~~*Approval refused*~~ ~~La revoca dell'omologazione~~ ~~*Approval withdrawn*~~ ~~La cessazione definitiva della produzione~~ ~~*Production definitively discontinued*~~

of a type of road illumination devices (lamps) and systems for power-driven vehicles with regard to regulation no. 149.00

Omologazione N. ***Approval No.***	**E57*149R00/08*1206**	**Estensione N.** ***Extension No.***	**00**

Marchio di omologazione ***Approval mark***	E57 **149R - 001206**

1. Make (trade name of manufacturer): LOBOO

2. Type and general commercial description(s): L18S, High&Low Beam AuxiliaryLight

2.1. Variants: L18, L18Pro, L18Q, L18D

3. Means of identification of type, if marked on the ~~vehicle~~/component~~/separate technical unit~~ [(2)]

3.1. Location of that marking: On the housing

4. Category of vehicle: L, M, N, O

5.	Name and address of manufacturer:	Shenzhen LOBOO Motor Accessories Co., Ltd. 301, No. 30-10 Laiyin Road, Xinsheng Community, Longgang Street, Longgang District, Shenzhen
6.	In the case of components and separate technical units, location and method of affixing of the approval mark:	N/A
7.	Address(es) of assembly plant(s):	Shenzhen LOBOO Motor Accessories Co., Ltd. 301, No. 30-10 Laiyin Road, Xinsheng Community, Longgang Street, Longgang District, Shenzhen
8.	Additional information (where applicable):	See appendix below
9.	Technical service responsible for carrying out the tests:	**AUTOMOTIVE TECHNICAL SERVICE S.r.l.** Via Consiglio dei Sessanta, 99 47891 – DOGANA Repubblica di San Marino
10.	Date of test report:	19/02/2025
11.	No. of test report:	ATS-SM-IR-149-11036
12.	Any remarks:	See appendix below
13.	Place:	DOGANA – Repubblica di San Marino
14.	Date:	26/02/2025
15.	Signature:	AUTORITA' PER L'OMOLOGAZIONE * Repubblica di San Marino * E57 Ing. Marco CONTI Direttore Generale General Director

16. The list of documents deposited with the Type Approval Authority which has granted approval is annexed to this communication and may be obtained on request

17. Reason for extension: Not Applicable

(1) Strike out what does not apply.

APPENDIX

to type-approval communication form No. E57*149R00/08*1206*00
concerning the type-approval of road illumination devices (lamps) and systems for power-driven vehicles under Regulation No. 149.00

1. Additional information:

1.1. Electrical system rated voltage:	12V DC, ~~pos.~~ / neg. ground[1]
1.2. This ESA can be used on any vehicle type with the following restrictions:	N/A
1.2.1. Installation conditions, if any:	N/A
1.3. Vehicle equipped with 24 GHz short-range radar equipment:	N/A
1.3.1. Installation conditions, if any:	N/A
1.4. The specific test method(s) used and the frequency ranges covered to determine immunity were: (Please specify precise method used from Annex 9):	See Test Report No. ATS-SM-IR-149-11036
1.5. Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests:	**Dach Science and Technology (Guangzhou) Co., Ltd. (DACH)**

2. Remarks:

(1) Strike out what does not apply.

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Allegato *Enclosure*				
Al certificato di omologazione ECE N. *To ECE approval certificate No.*		**E57*149R00/08*1206*00**		
Indice del fascicolo di omologazione *Index to the information package*				
Data *Date of issue*	**26/02/2025**		**Data ultima modifica** *Last amendment date*	--
1.	**Clausole di garanzia e istruzioni sul diritto di presentare ricorso** *Collateral clauses and instruction on right to appeal*			
2.	**Rapporto(i) Finale di Ispezione N.** *Inspection report(s) No.*	**ATS-SM-IR-149-11036**	**Data** *Date*	**19/02/2025**
3.	**Scheda informativa N.** *Information document No.*	**L18S-00**	**Data** *Date*	**17/02/2025**
			Data ultima modifica *Last amendment date*	--

E57*149R00/08*1206*00

Clausole di garanzia e istruzioni sul diritto di presentare ricorso

Clausole di garanzia

La produzione in serie deve essere esattamente conforme ai documenti di omologazione. Le variazioni di produzione in serie sono consentite solo con il consenso espresso del **Autorità per l'Omologazione**.

Le variazioni del nome della società, l'indirizzo e lo stabilimento di produzione, nonché una delle parti che hanno l'autorità alla consegna o eventuali rappresentanti nominati al momento del rilascio dell'omologazione, devono essere immediatamente comunicate al **Autorità per l'Omologazione**. La violazione di queste regole può portare al ritiro dell'omologazione ed inoltre può essere legalmente perseguita.

L'omologazione decade se viene restituita o ritirata o se il tipo omologato non è più conforme ai requisiti di legge. La revoca può essere fatta se non esistono più i requisiti richiesti per il rilascio e la continuazione dell'omologazione, se il titolare dell'omologazione viola gli obblighi dettati dall'omologazione, anche nel caso in cui gli obblighi derivino dalle condizioni assegnate all'interno dell'omologazione, o se è accertato che il tipo approvato non è conforme ai requisiti di sicurezza del traffico e di tutela dell'ambiente.

L'**Autorità per l'Omologazione** può verificare la corretta applicazione della delega conferita rilasciata nella presente omologazione, in qualsiasi momento. In particolare, questo include la verifica della produzione, che sia conforme, nonché le misure di controllo di conformità della produzione. Per questo, possono essere presi dei campioni dalla produzione. I dipendenti o rappresentanti dell'**Autorità per l'Omologazione** possono avere accesso senza ostacoli agli impianti di produzione e stoccaggio.

La delega conferita contenuta nella presente omologazione non è trasferibile. I diritti del marchio di terzi non sono interessati da questa omologazione.

Istruzione su diritto di ricorso

Questa omologazione è appellabile entro un mese dalla notifica. Il ricorso deve essere presentato per iscritto o come una domanda inviata all' **Autorità per l'Omologazione** - Via Consiglio dei Sessanta, 99 - 47891 Dogana - Repubblica di San Marino.

********** **********

Collateral clauses and instruction on right to appeal

Collateral clauses

*The individual production of serial fabrication must be in exact accordance with the approval documents. Changes in the individual production are only allowed with express consent of the **Authority for Homologation**.*

*Changes in the name of the company, the address and the manufacturing plant as well as one of the parties given the authority to delivery or authorized representative named when the approval was granted is to be immediately disclosed to the **Authority for Homologation**. Breach of this regulation can lead to recall of the approval and moreover can be legally prosecuted.*

The approval expires if it is returned or withdrawn or if the type approved no longer complies with the legal requirements. The revocation can be made if the demanded requirements for issuance and the continuance of the approval no longer exist, if the holder of the approval violates the duties involved in the approval, also to the extent that they result from the assigned conditions to this approval, or if it is determined that the approved type does not comply with the requirements of traffic safety or environmental protection.

*The **Authority for Homologation** may check the proper exercise of the conferred authority taken from this approval at any time. In particular this means the compliant production as well as the measures for conformity of production. For this purpose samples can be taken or have taken. The employees or the representatives of the **Authority for Homologation** may get unhindered access to the production and storage facilities.*

The conferred authority contained with issuance of this approval is not transferable. Trade mark rights of third parties are not affected with this approval.

Instruction on right to appeal

*This approval can be appealed within one month after notification. The appeal is to be filed in writing or as a transcript at the **Authority for Homologation** - Via Consiglio dei Sessanta, 99 - 47891 Dogana - Repubblica di San Marino.*

Inspection Report No.:	ATS-SM-IR-149-11036
Of:	19.02.2025
Type:	L18S
Manufacturer:	Shenzhen LOBOO Motor Accessories Co., Ltd.

Inspection Report

No. ATS-SM-IR-149-11036

Inspection concerning ~~vehicles~~ / components with regard to:

Uniform provisions concerning the approval of road illumination devices (lamps) and systems for power-driven vehicles:

- **Headlamps**
- ~~**Adaptive front-lighting systems**~~
- ~~**Front fog lamps**~~
- ~~**Cornering lamps**~~

(strike out what does not apply)

performed according to

ECE Regulation No. 149

as last amended by

00 series of amendments 08

of the Economic Commission for Europe

Approval status	
ECE	**Number of approval**
	E57*149R00/08*1206

0. General information

0.1.	Make (trade name of manufacturer):	LOBOO
0.2.	Type:	L18S
0.2.1.	Variant(s):	L18, L18Pro, L18Q, L18D
0.3.	Name and address of manufacturer:	Shenzhen LOBOO Motor Accessories Co., Ltd. 301, No. 30-10 Laiyin Road, Xinsheng Community, Longgang Street, Longgang District, Shenzhen
0.3.1	Name and address of manufacturer's authorized representative:	N/A
0.3.2.	Production plant(s) address(es):	Shenzhen LOBOO Motor Accessories Co., Ltd. 301, No. 30-10 Laiyin Road, Xinsheng Community, Longgang Street, Longgang District, Shenzhen
0.4.	No. of the information document:	L18S-00 Date: 17/02/2025
0.5.	Position of the approval mark:	On the housing
0.6	Vehicle category(ies) (or, if not applicable, vehicle categories which the component(s) is (are) suitable for):	L, M, N, O

1. Test conditions

1.1.	Test sample:	Two samples of type: L18S Marking: Sample No. 1, Sample No. 2
1.1.1.	Technical data from the manufacturer:	Testing laboratory does not bear any responsibility for possibly incorrect values provided by the manufacturer and for test results found out based on these values.
1.2.	Test procedures used:	According to UN Regulations No. 149.00
1.3.	Measuring and test equipment:	Full automatic photometric test system for automobile lamps EVERFINE PHOTO-E-INFO CO., LTD. Type GO-HD5
1.4.	Worst case evaluation:	Single case – no variant. This paragraph is required by the Type Approval Authority.
1.5.	Test track or site:	Dach Science and Technology (Guangzhou) Co., Ltd. (DACH)

2. Test results

2.1. Headlamp (Passing beam) – UN Regulation No. 149.00

2.1.1. Intensity of light emitted

2.1.1.1. Sample No. 1, test voltage 13.5V

No.	Point of the measurement	Limits [cd]	Measured values [cd]	
			1 min.	After stability
1	(3.5R - 0.86D)	2000～13750	2216.381	2230.42
2	(H - 0.86D)	2450 MIN	2824.283	2842.167
3	(3.5L - 0.86D)	2000～13750	3299.207	3320.095
4	(1.5L - 0.5U)	900 MAX	328.283	330.38
5	(1.5R - 0.5U)	900 MAX	237.597	239.12
6	(15R - 2D)	550 MIN	3281.21	3301.984
7	(15L - 2D)	550 MIN	2172.899	2235.218
8	(20L - 4D)	150 MIN	2006.414	2019.125
9	(20R - 4D)	150 MIN	565.245	568.841
10	(H - V)	1700 MAX	383.974	386.423
11	Line 1	1350 MIN	4602.577	4631.709
12	(8L - 4U)	700 MAX	163.909	164.966
13	(H - 4U)	700 MAX	221.2	222.62
14	(8R - 4U)	700 MAX	173.608	174.727
15	(4L - 2U)	900 MAX	263.393	265.08
16	(H - 2U)	900 MAX	233.198	234.694
17	(4R - 2U)	900 MAX	740.716	745.422
18	(8L - V)	50 MIN	420.268	422.947
19	(8R - V)	50 MIN	333.264	338.668
20	(4L - V)	100～900	419.168	421.84
21	(4R - V)	100～900	431.611	436.364
22	Zone 1	900 MAX	419.868	422.544
23	Zone 2	700 MAX	220.5	221.915
			Complies	

2.1.1.2. Sample No. 2, test voltage 13.5V

No.	Point of the measurement	Limits [cd]	Measured values [cd]	
			1 min.	After stability
1	(3.5R - 0.86D)	2000～13750	3734.719	3859.634
2	(H - 0.86D)	2450 MIN	4763.555	4922.838
3	(3.5L - 0.86D)	2000～13750	5765.394	5958.144
4	(1.5L - 0.5U)	900 MAX	754.497	779.857
5	(1.5R - 0.5U)	900 MAX	540.431	558.641
6	(15R - 2D)	550 MIN	7013.194	7247.626
7	(15L - 2D)	550 MIN	7147.704	7234.011
8	(20L - 4D)	150 MIN	4469.602	4619.066
9	(20R - 4D)	150 MIN	1327.206	1371.698
10	(H - V)	1700 MAX	851.381	879.978
11	Line 1	1350 MIN	10772.888	11132.913
12	(8L - 4U)	700 MAX	379.057	391.876
13	(H - 4U)	700 MAX	517.135	534.566
14	(8R - 4U)	700 MAX	421.65	435.892
15	(4L - 2U)	900 MAX	614.419	635.1
16	(H - 2U)	900 MAX	561.927	580.855
17	(4R - 2U)	900 MAX	1726.141	1783.959
18	(8L - V)	50 MIN	581.124	600.693
19	(8R - V)	50 MIN	588.466	596.562
20	(4L - V)	100～900	767.195	792.98
21	(4R - V)	100～900	779.279	788.182
22	Zone 1	900 MAX	845.482	873.882
23	Zone 2	700 MAX	516.535	533.946
			Complies	

2.1.2. Colour – White

	Measured values			Limits
	Sample	x	y	W12 green boundary: y = 0.150 + 0.640 x W23 yellowish green boundary: y = 0.440 W34 yellow boundary: x = 0.500 W45 reddish purple boundary: y = 0.382 W56 purple boundary: y = 0.050 + 0.750 x W61 blue boundary: x = 0.310
After 1 minute	No. 1	0.3127	0.3204	Complies
	No. 2	0.3219	0.3245	Complies
After stability	No. 1	0.3195	0.3208	Complies
	No. 2	0.3267	0.3288	Complies

2.1.3. Headlamp (Driving beam) – UN Regulation No. 149.00

2.1.4. Intensity of light emitted

2.1.5. Sample No. 1, test voltage 13.5V

No.	Point of the measurement	Limits [cd]	Measured values [cd]	
			1 min.	After stability
1	H - V	20000 MIN	28812.904	29502.794
2	2.5R - H	10000 MIN	27783.064	28448.298
3	2.5L - H	10000 MIN	27073.184	27721.422
4	5R - H	3500 MIN	20554.224	21046.387
5	5L - H	3500 MIN	18444.564	18886.218
6	9R - H	2000 MIN	6344.498	6496.456
7	9L - H	2000 MIN	5642.61	5777.763
8	12R - H	600 MIN	2837.059	2905.043
9	12L - H	600 MIN	2638.091	2701.311
10	H - 2U	1000 MIN	27633.094	28294.737
11	MAXIMUM	25000～215000	31477.974	32231.67
			Complies	

2.1.5.1. Sample No. 2, test voltage 13.5V

No.	Point of the measurement	Limits [cd]	Measured values [cd]	
			1 min.	After stability
1	H - V	20000 MIN	56766.219	58295.979
2	2.5R - H	10000 MIN	55686.399	57187.062
3	2.5L - H	10000 MIN	51207.109	52587.072
4	5R - H	3500 MIN	43918.279	45101.836
5	5L - H	3500 MIN	32220.149	33088.486
6	9R - H	2000 MIN	14407.999	14796.366
7	9L - H	2000 MIN	9584.774	9843.174
8	12R - H	600 MIN	6153.323	6319.258
9	12L - H	600 MIN	4674.56	4800.648
10	H - 2U	1000 MIN	53806.699	55256.711
11	MAXIMUM	25000～215000	61860.549	63527.582
			Complies	

2.1.6. Colour – White

	Measured values			Limits
	Sample	x	y	W12 green boundary: y = 0.150 + 0.640 x W23 yellowish green boundary: y = 0.440 W34 yellow boundary: x = 0.500 W45 reddish purple boundary: y = 0.382 W56 purple boundary: y = 0.050 + 0.750 x W61 blue boundary: x = 0.310
After 1 minute	No. 1	0.3268	0.3235	Complies
	No. 2	0.3173	0.3209	Complies
After stability	No. 1	0.3207	0.3287	Complies
	No. 2	0.3185	0.3249	Complies

2.2. Test record of different traffic condition (after stability), sample No. 1 and No. 2, test voltage 13.5V

No.	Point of the measurement	X [º]	Y [º]	Limits [cd]		Measured values [cd]	
				Min.	Max.	Sample No. 1	Sample No. 2
1	0.86D-1.72L	-1.72	-0.86	2500.00	-	6234.21	6359.24
2	0.57U-3.43R	3.43	0.57	-	880.00	308.16	284.43

2.3. Test record of the photometric measurement in different positions, sample No. 1 and No. 2, test voltage 13.5V

2.3.1. Passing beam (+2°)

No.	Point of the measurement	X [º]	Y [º]	Limits [cd]		Measured values [cd]	
				Min.	Max.	Sample No. 1	Sample No. 2
1	B50L	-3.43	0.57	-	350.00	203.18	236.48
2	75R	1.15	-0.57	10100.00	-	8037.72	8012.58

2.3.2. Passing beam (-2°)

No.	Point of the measurement	X [º]	Y [º]	Limits [cd]		Measured values [cd]	
				Min.	Max.	Sample No. 1	Sample No. 2
1	B50L	-3.43	0.57	-	350.00	215.28	199.89
2	75R	1.15	-0.57	10100.00	-	7883.94	7996.48

2.3.3. Driving beam (+2°)

No.	Point of the measurement	X [º]	Y [º]	Limits [cd]		Measured values [cd]	
				Min.	Max.	Sample No. 1	Sample No. 2
1	I_{max}	-	-	40500.00	215000.00	72304.86	72234.51
2	HV	0	0	0.8 Imax	-	75492.32	76302.87

2.3.4. Driving beam (-2°)

No.	Point of the measurement	X [º]	Y [º]	Limits [cd]		Measured values [cd]	
				Min.	Max.	Sample No. 1	Sample No. 2
1	I_{max}	-	-	40500.00	215000.00	75663.71	76125.42
2	HV	0	0	0.8 Imax	-	75430.75	77041.93

2.5. Tests for stability of photometric performance of headlamps in operation – Annex 7 of UN R149.00

2.5.1. Test for stability of photometric performance - Sample No. 1

No.	Point of the measurement		X [º]	Y [º]	Limit change	Measured values [cd]		
					Δ ± 10%	Clean – prior to test	Clean – after 12 hours	Dirty – after 1 hour
1	Passing beam	HV	0	0	7.07%	514.12	522.75	558.38
2		B50L*	3.43	0.57	15.80cd	201.25	214.48	254.27
3		25L	-9.00	-1.72	2.79%	6253.86	6213.65	6197.32
4		50R	1.15	-0.86	1.81%	7714.64	7137.84	6423.61
5	Driving beam	$I_{max.}$	-	-	0.50%	6461.74	6192.64	5691.46

*The value measured at Point B50L shall not exceed the photometric value measured prior to the test by more than 170cd.

2.5.2. Test for change in vertical position of the cut-off line under influence of heat

No.	Measurement values		
	Change	Limits	Conclusion
1	0.15 mrad	~~Upwards < 1.0 mrad~~ Downwards < 2.0 mrad	Complies

2.5.3. Tests for lamps incorporating lenses of plastic material – Annex 8 of UN R149.00

2.8.3.1.	Test report for plastic material of the lens attached to the manufacturer's information document.

2.5.4. Test of the complete headlamp – resistance to mechanical deterioration of the lens surface

2.5.4.1. Sample No. 1

No.	Point of the measurement	X [°]	Y [°]	Limits [cd]		Measured values [cd]
				Minimum	Maximum	
1	HV	0	0	-	812.50	615.11
2	B50L	-3.43	0.57	-	455.00	294.52
3	75R	1.15	-0.57	9090.00	-	28063.32

2.5.5 Test of the complete headlamp – test of adherence of coatings

2.5.5.1.	Sample No. 2	No appreciable impairment of the gridded area – complies

2.6. Test record of LED modules

2.6.1. Test voltage 13.5V

2.6.1.1. Red Content

	Limit	Measured	Conclusion
Passing beam	$K_{red} \geq 0.05$	0.0884	Complies
Driving beam	$K_{red} \geq 0.05$	0.0863	Complies

2.6.1.2. UV-radiation

	Limit	Measured	Conclusion
Passing beam	$K_{UV} \leq 10^{-5}$ W/lm	5.11×10^{-6}	Complies
Driving beam	$K_{UV} \leq 10^{-5}$ W/lm	5.34×10^{-6}	Complies

2.6.1.3. Objective Luminous Flux

	Limit		Measured	Conclusion
	Minimum	Maximum		
Passing beam	1000 lm	---	1402.30 lm	Complies
Driving beam	---	---	2399.15 lm	Complies

3. Other information

Place of testing:	Dach Science and Technology (Guangzhou) Co., Ltd. (DACH)	
Date of testing:	10/02/2025	
Technical service representative:	**Senior Inspector** Nancy Deng	**Junior Inspector (if applicable)** /
Manufacturer's representative:	N/A	
Remarks:	N/A	

3.1 Appendix

1. List of modifications

3.2 Enclosures

Information Folder

4. Statement of conformity

The information document as given in paragraph 0.4 and the type described there are in compliance with the test specification mentioned above.

With regard to the required level of performance to be achieved, the tested items were representative for the type to be approved.

The tests were carried out in accordance with the relevant requirements of EN ISO/IEC 17025 and EN ISO/IEC 17020 / R149-00 ECE/UN.

The inspection Report comprises pages 1 to 13.

It shall not be reproduced except in full, without written approval of the laboratory.

Dogana, Repubblica di San Marino, 19.02.2025

Number of project and protocol	***Originality Check*** (*) **ATS-SM-PR-11036**	**Automotive Technical Service S.r.l.** ***Inspector*** (Nancy Deng) **Automotive Technical Service S.r.l.** ***Deputy Technical Director*** (Ing. Bogdan Domnescu)	AUTOMOTIVE TECHNICAL SERVICE S.r.l. · 47891 RSM · Via Consiglio dei Sessanta, 99 · ATS Technical Service RSMAO-01

(*) To check the originality of documents, scan the QR Code or connect to the site https://www.ats-srl.org/originality-control-atp-adr-tyapp/ and follow the instruction in it.

Appendix 1

List of modifications **~~Applicable~~ / Not Applicable** **Appendix 1**

More details for application of: **Date :**

Correction of : -

Modification of : -

Addition of : -

Deletion of : -

Shenzhen LOBOO Motor Accessories Co., Ltd.
301, No. 30-10 Laiyin Road, Xinsheng
Community, Longgang Street, Longgang
District, Shenzhen

February 17, 2025

Dear Sirs,

We would like to apply for the type approval according to ECE.

Function	**ECE approval number**
Head lamp	E57*149R00/08*XXXXX*00

Trade name or mark	:	LOBOO
Manufacturer's name for type of device	:	L18S
Name and address of manufacturer	:	Shenzhen LOBOO Motor Accessories Co., Ltd. 301, No. 30-10 Laiyin Road, Xinsheng Community, Longgang Street, Longgang District, Shenzhen

We confirm that the above mentioned application has not been submitted to any other EC member state nor has any other member state granted a corresponding approval.

Sincerely

Shenzhen LOBOO Motor Accessories Co., Ltd.

Information folder No. :	L18S-00
First application date :	February 17, 2025

1. Specification data

Type		L18S	
Function		High&Low Beam AuxiliaryLight	
Color		White / Yellow	
Rated	Voltage	12V	
	Wattage	Low beam mode	High and low beam mode
		165W	210W
Application Regulation ECE		R149.00 Class B RHT	
Location of marking	Number and category of light source	6*LEDs	
		Non-replaceable light source	
	Trade mark		
		Marked on housing	
	Approval mark	Marked on housing	
	Variant(s)	L18, L18Pro, L18Q, L18D	

2. Construction and material

Construction	Material	Remark
Lens	Glass	Colour: Clear
Housing	Aluminum alloy	Colour: Black
Electrical Wiring	Copper covered with insulation	--

3. Name and address of manufacturer	:	Shenzhen LOBOO Motor Accessories Co., Ltd. 301, No. 30-10 Laiyin Road, Xinsheng Community, Longgang Street, Longgang District, Shenzhen
4. Name and address of the assembly plant	:	Shenzhen LOBOO Motor Accessories Co., Ltd. 301, No. 30-10 Laiyin Road, Xinsheng Community, Longgang Street, Longgang District, Shenzhen
5. Name and address of the manufacturer's representative	:	N/A

Information folder No. :	L18S-00
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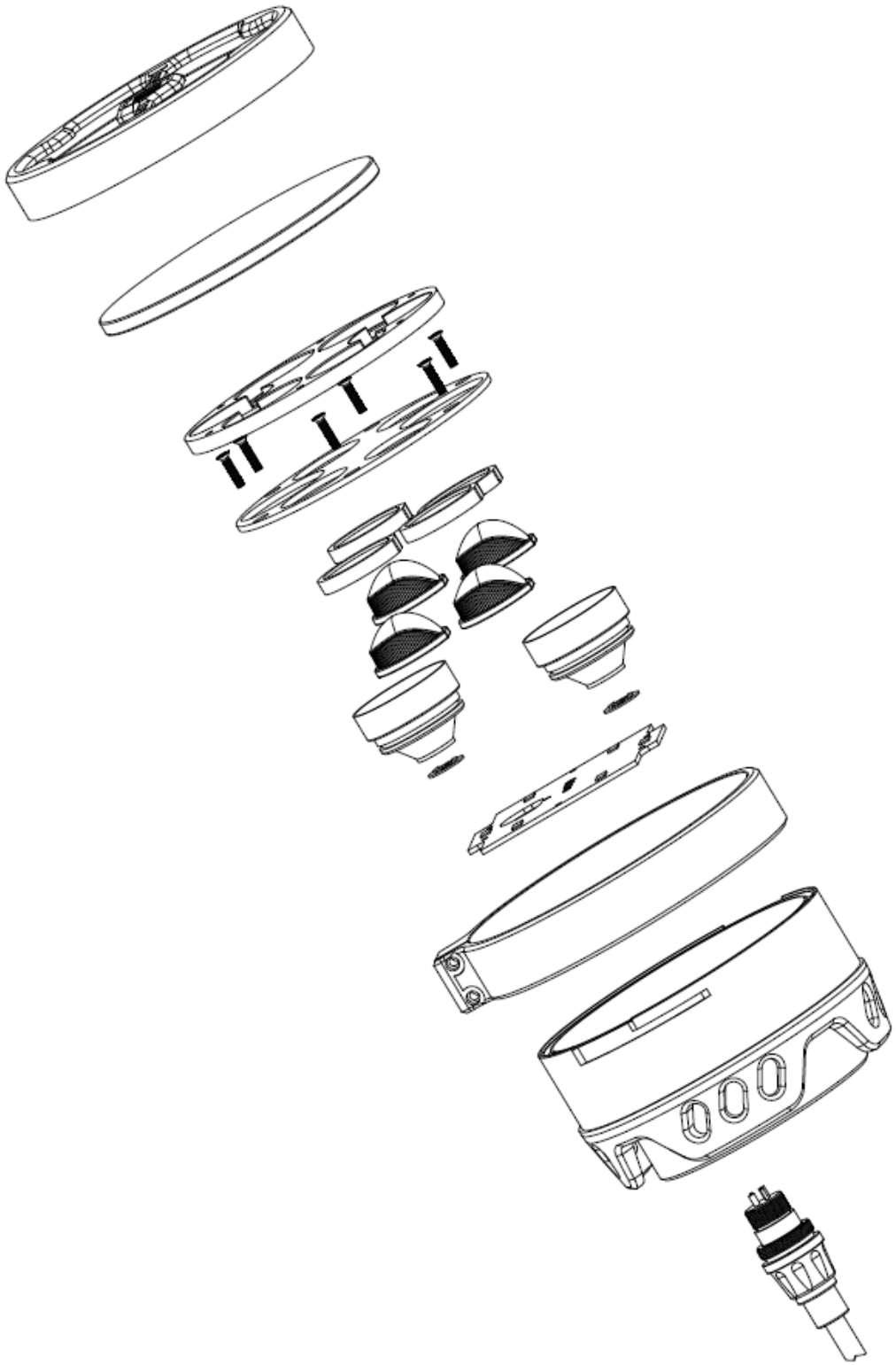

General assembly drawing

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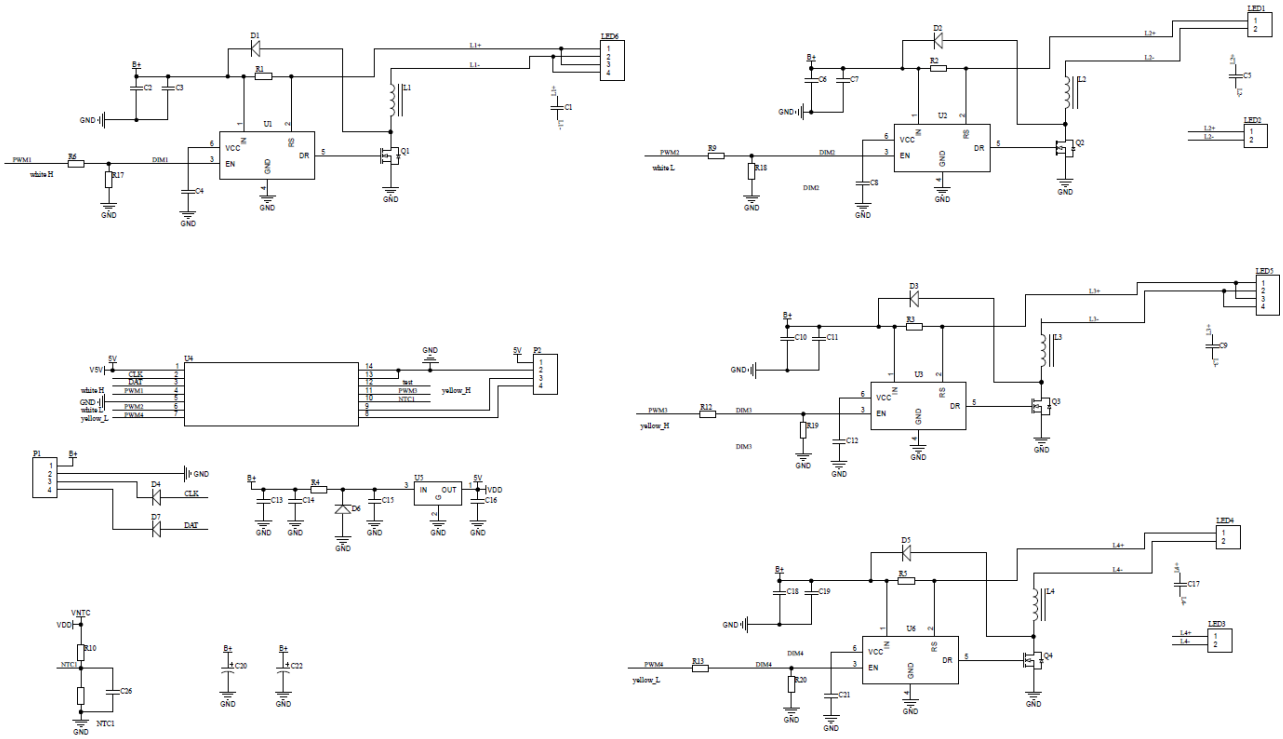

Key board Circuit diagram

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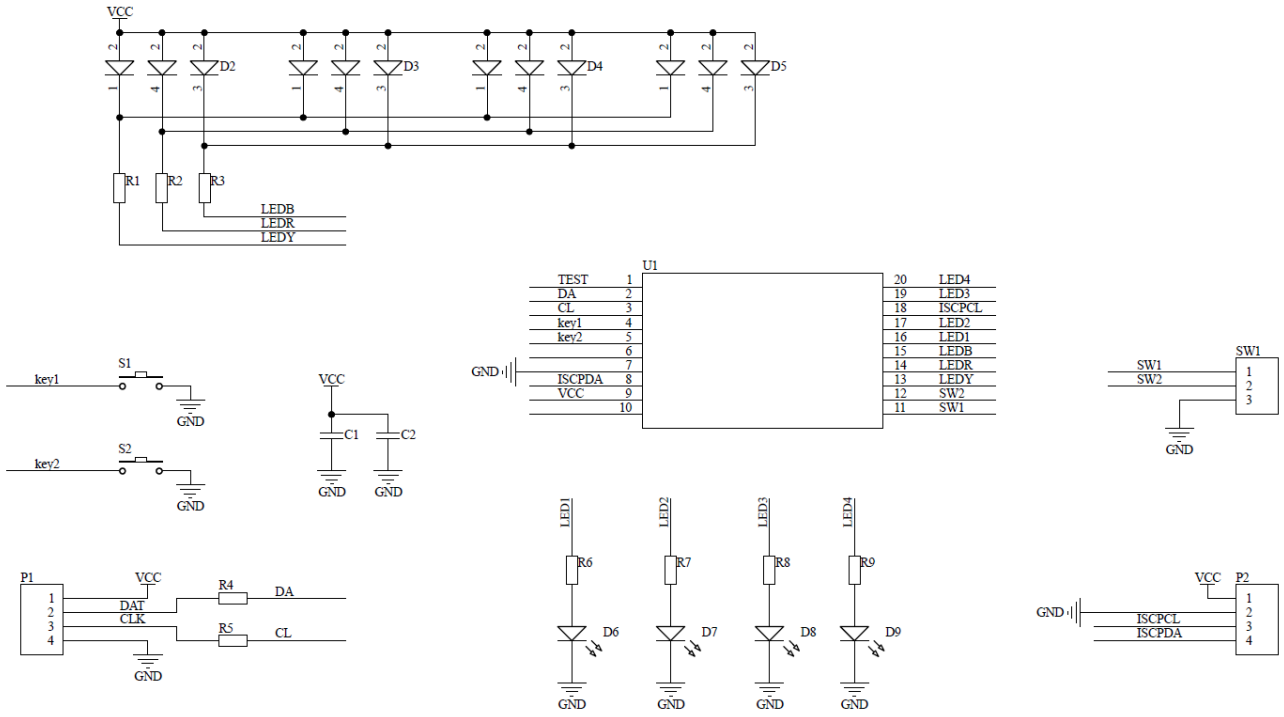

LED board Circuit diagram

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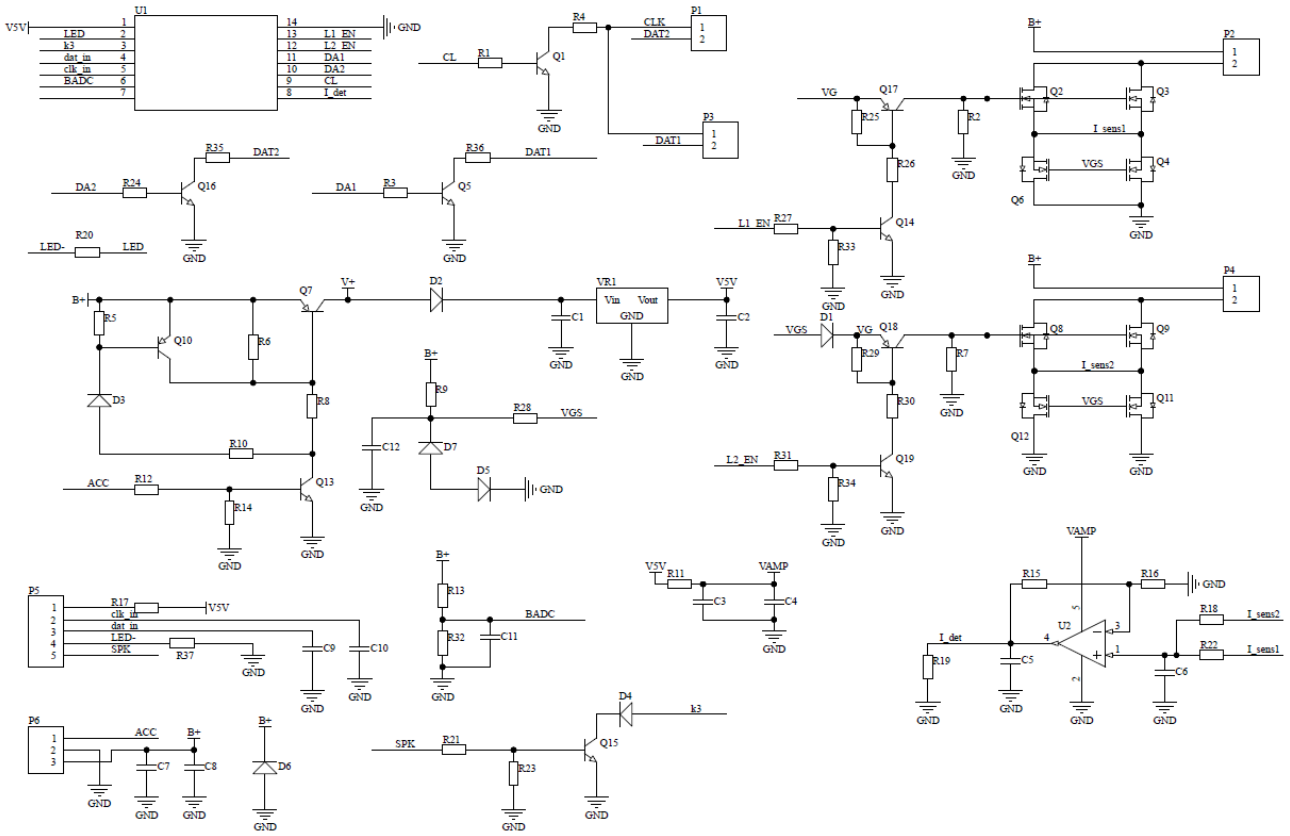

Main board Circuit diagram

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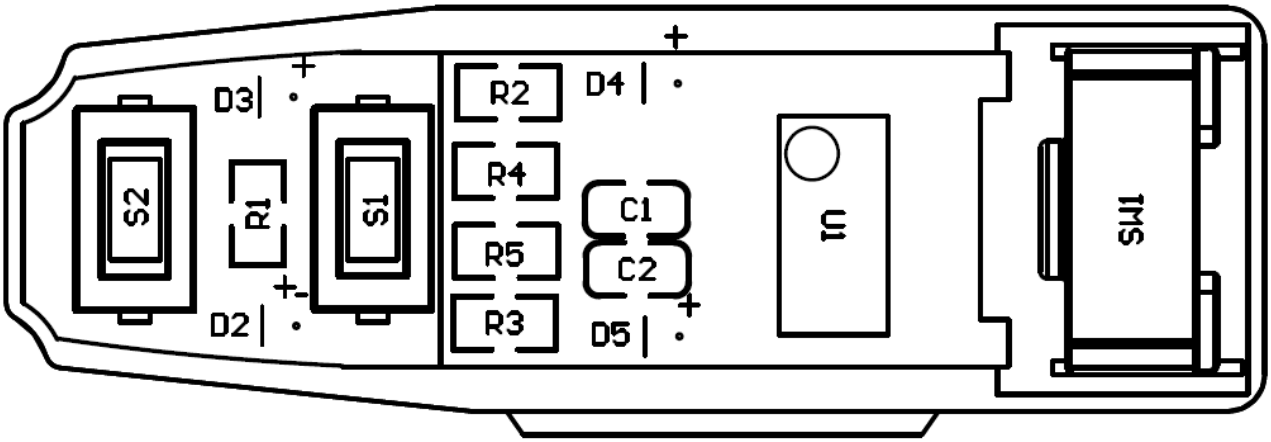

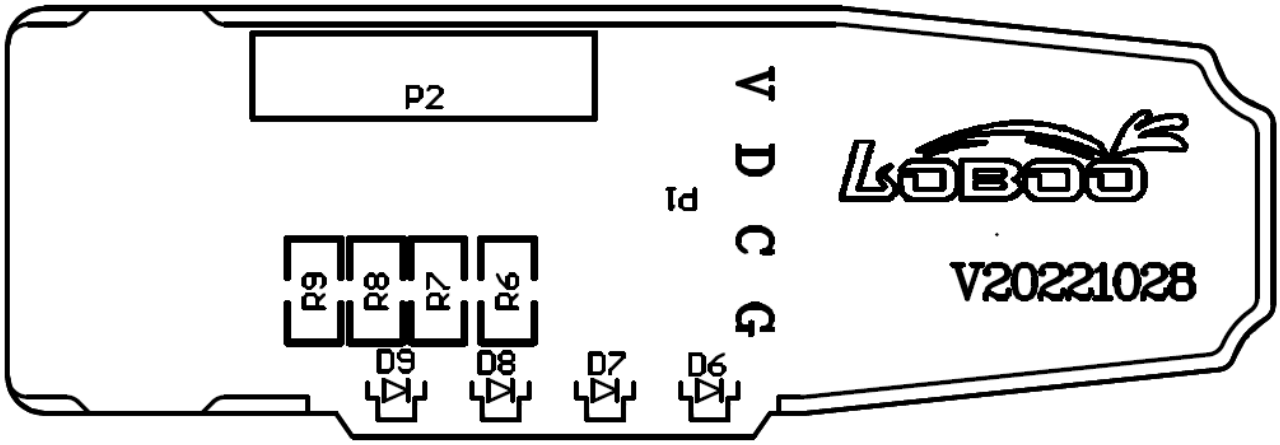

Key board Assembly Drawings

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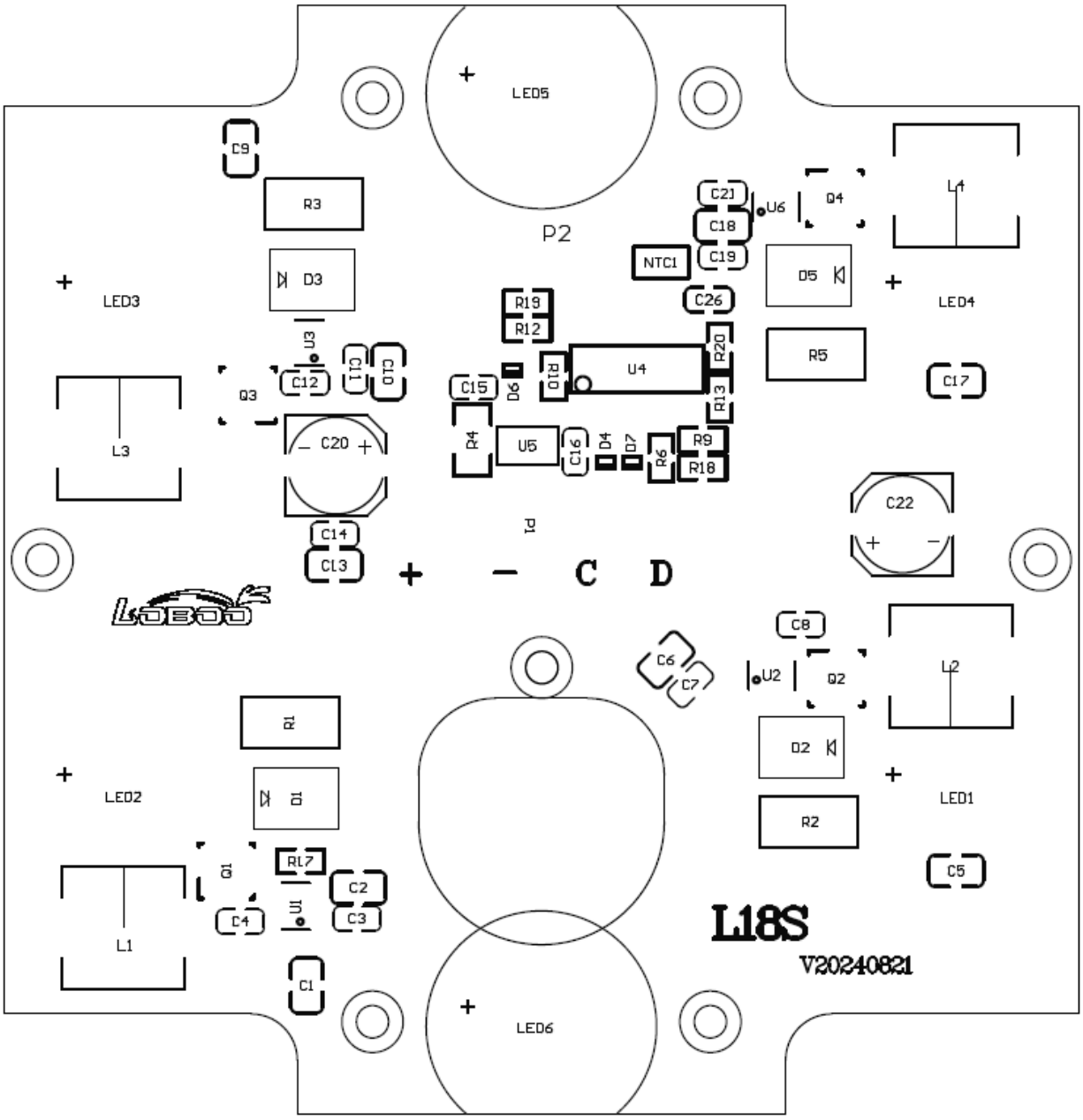

LED board Assembly Drawings

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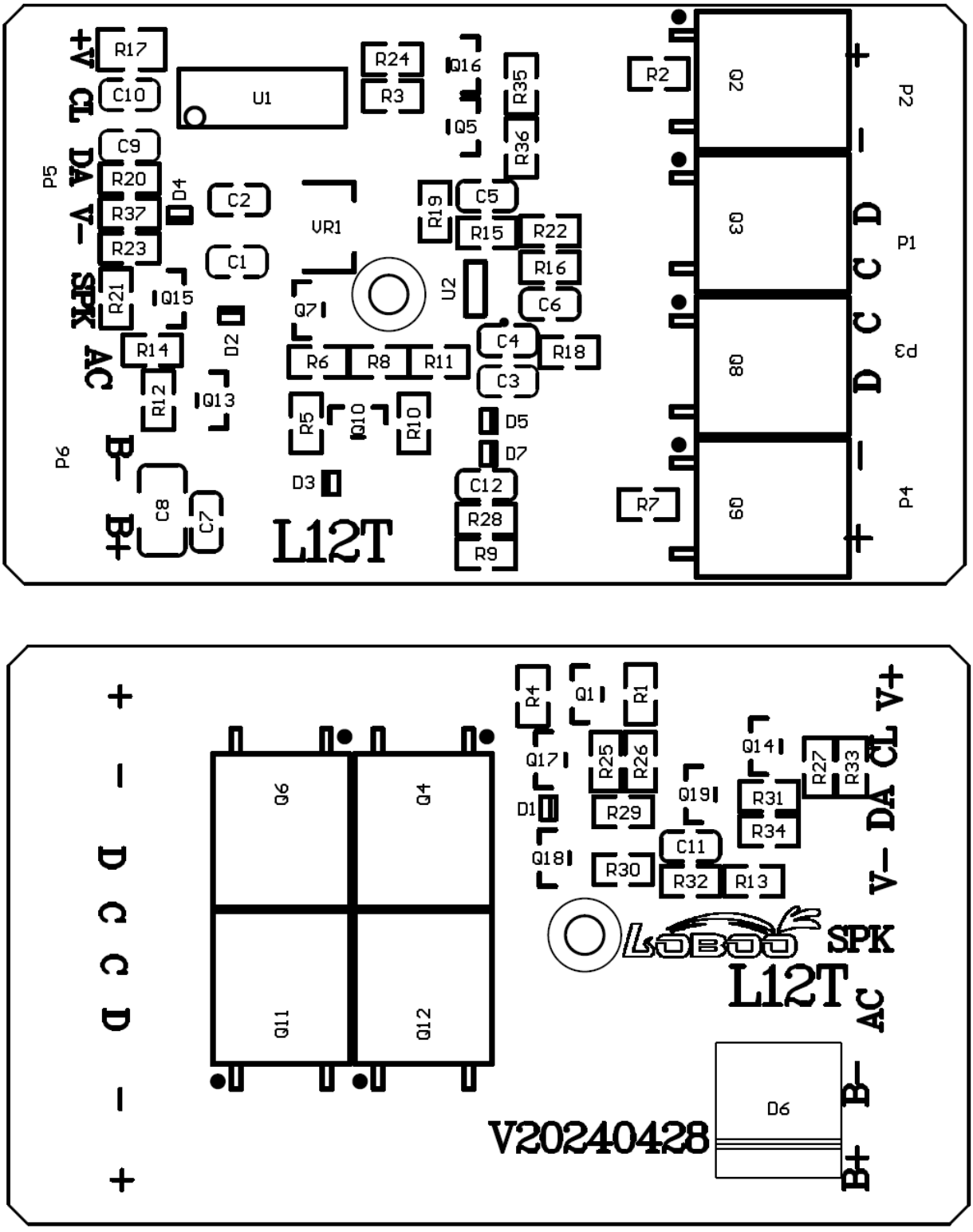

Main board Assembly Drawings

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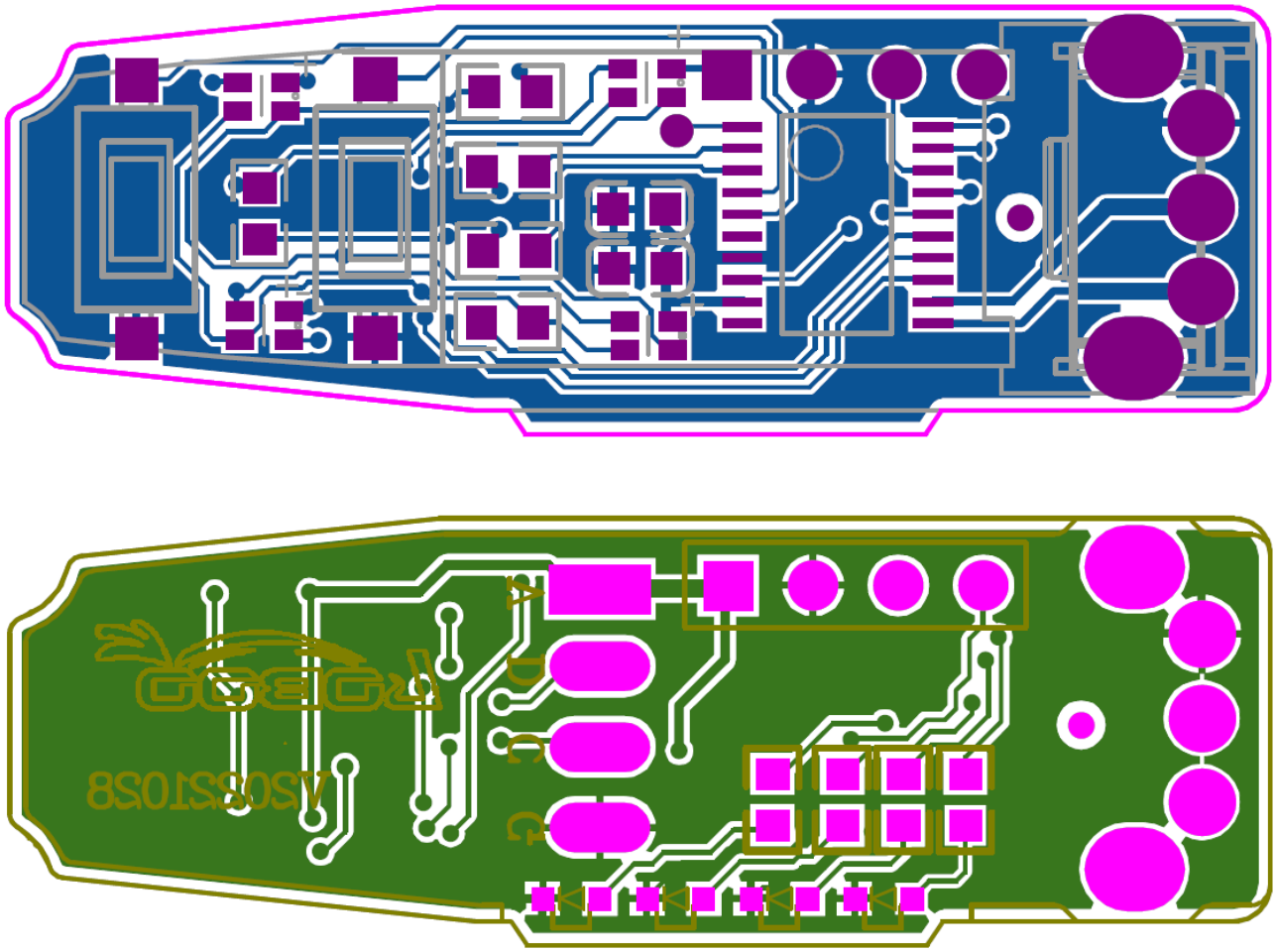
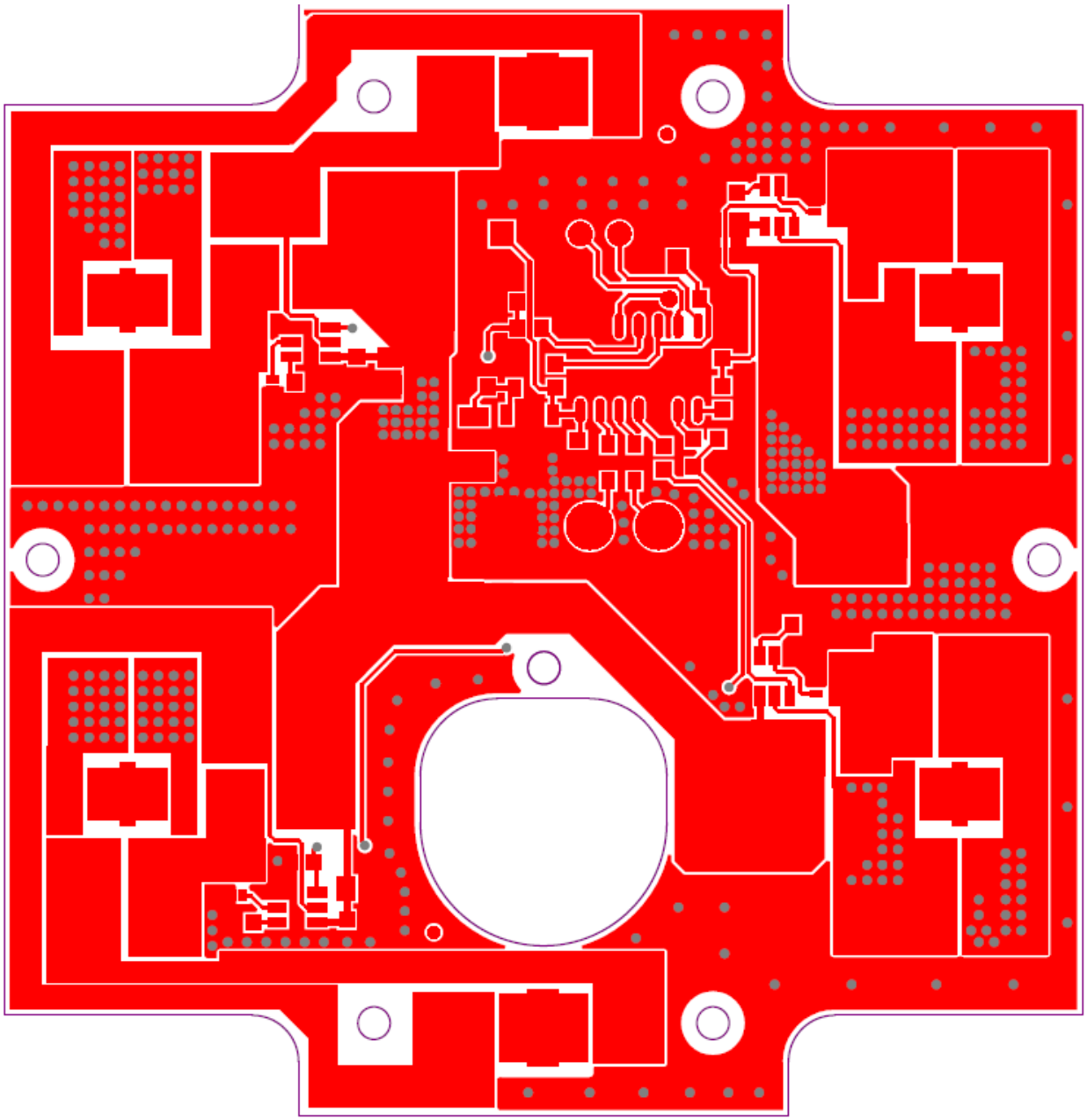


Key board PCB layout



LED board PCB layout

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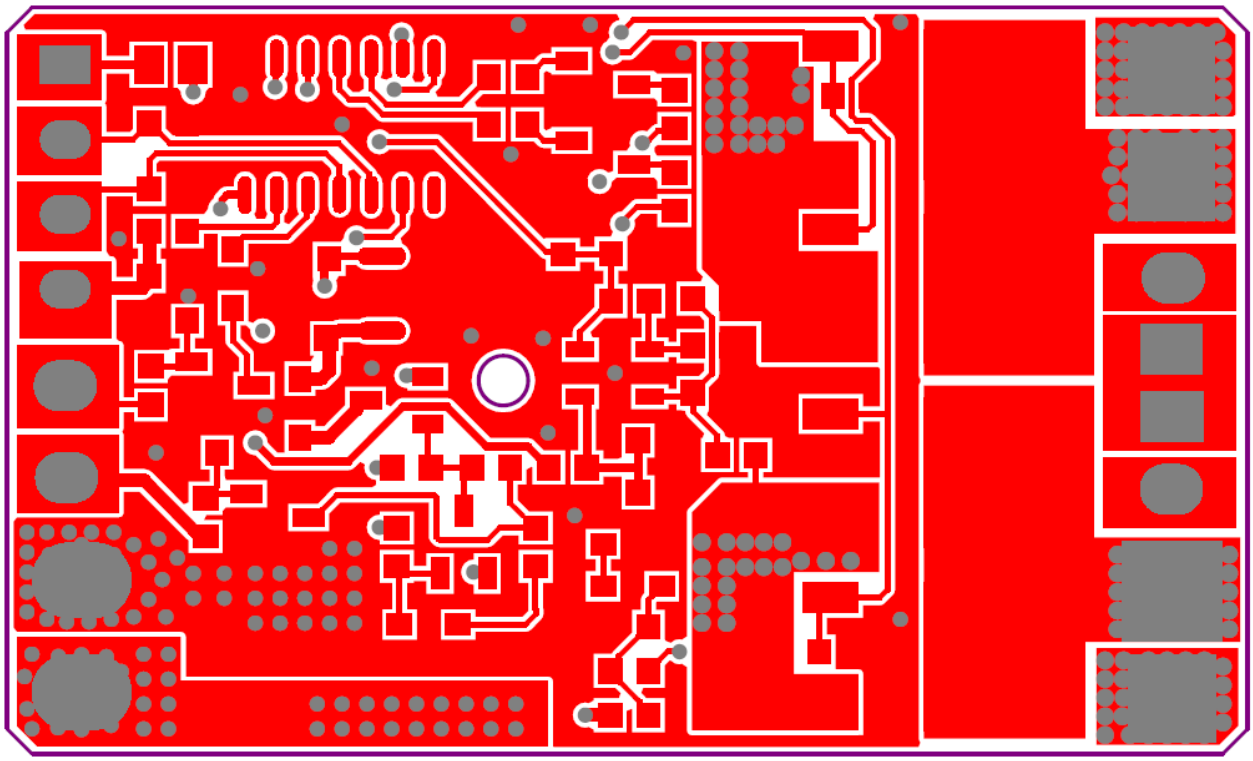

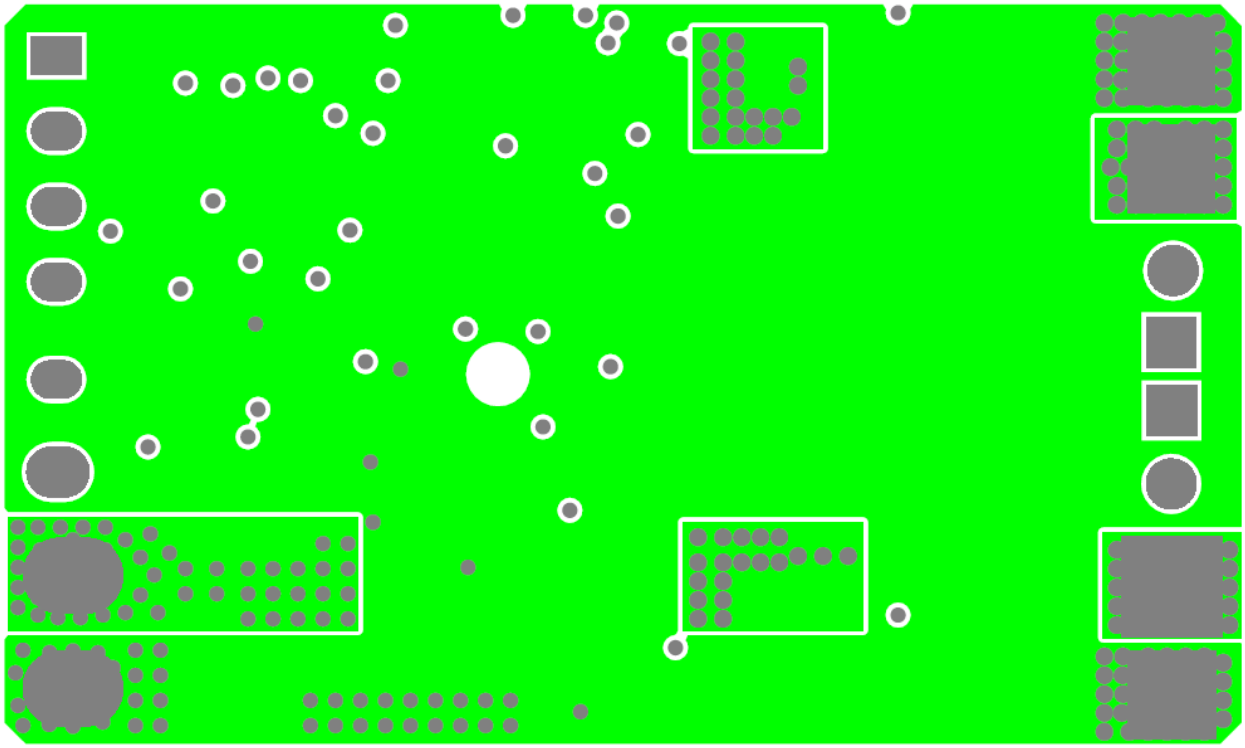

Main board PCB layout

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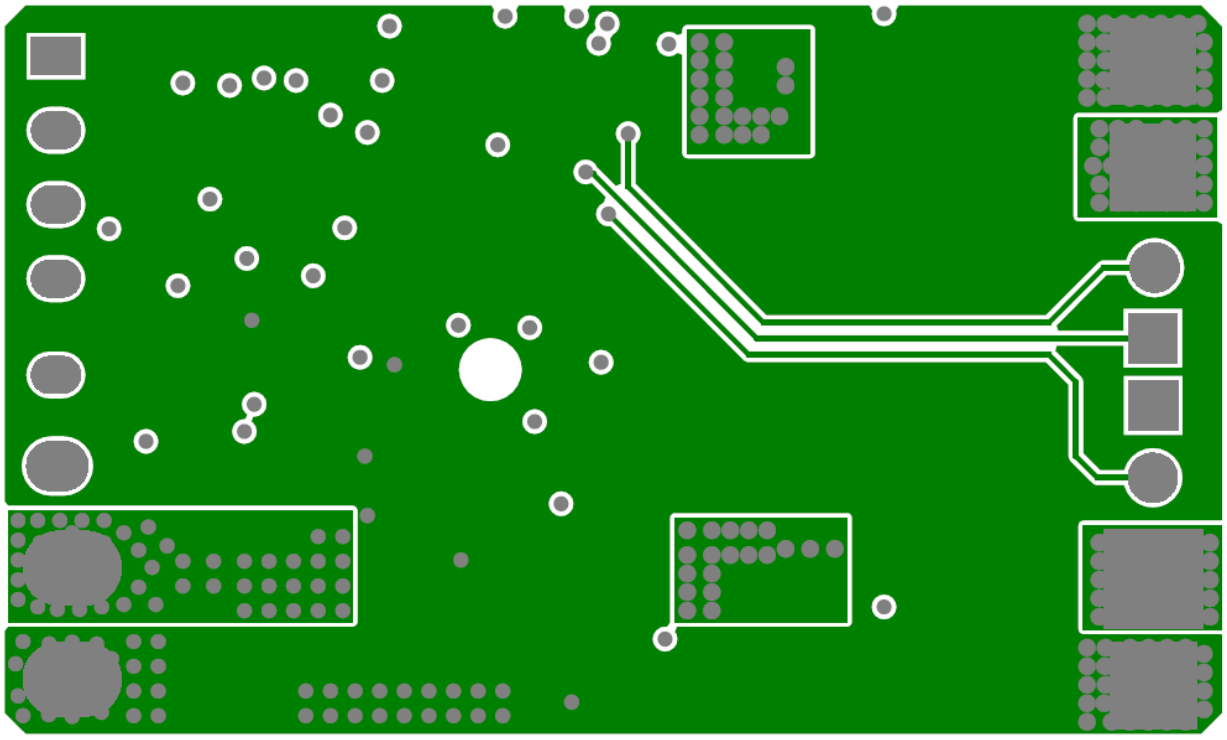

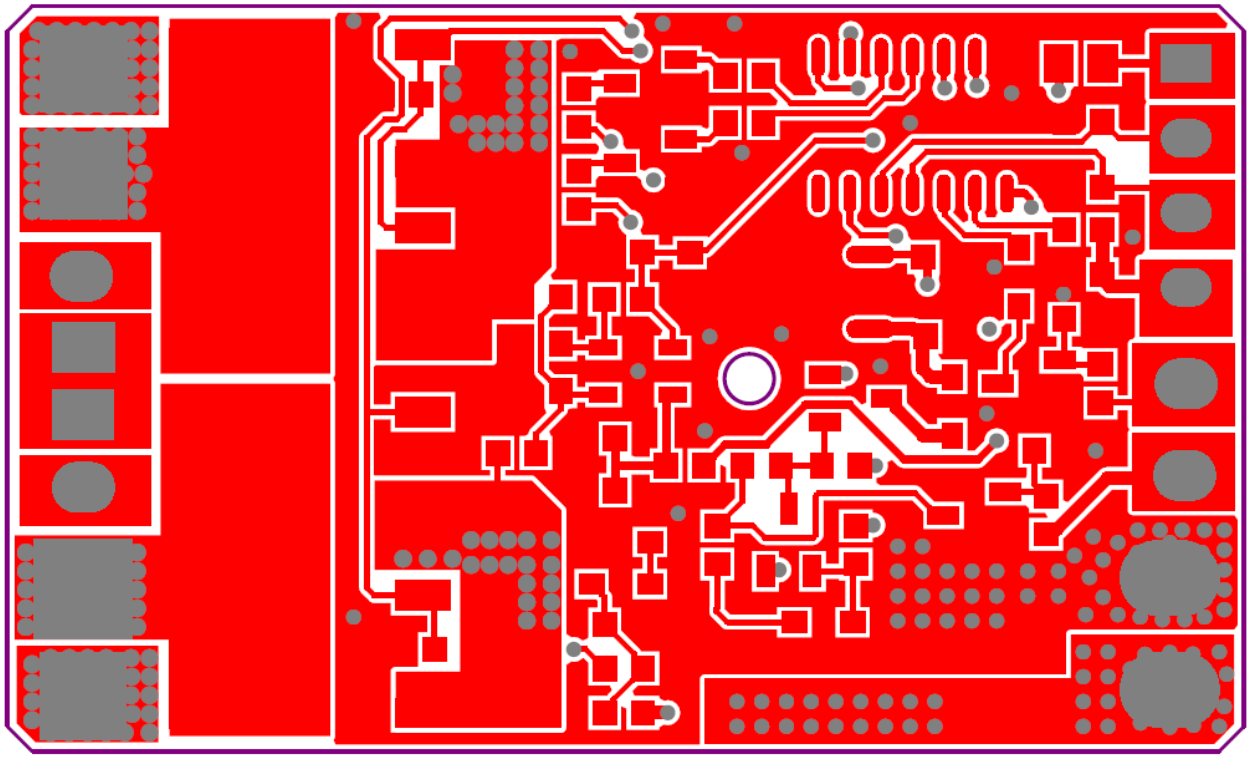

Main board PCB layout

List of main component					
Bill of material					
Items	Description	Value	Position	Quantity	units
1	SMD resistor	33R 5%	R4, R5	2	PCS
2	SMD resistor	200R 5%	R2	1	PCS
3	SMD resistor	1k 5%	R6, R7, R8, R9	4	PCS
4	SMD resistor	100R 5%	R1, R3	2	PCS
5	SMD capacitor	10u 10V	C2	1	PCS
6	SMD capacitor	100n 50V	C1	1	PCS
7	Surface mount button	3x6x5 180g	S1, S2	2	PCS
8	SMD LED	Blue side LED	D9	1	PCS
9	SMD LED	White side LED	D6, D7, D8	3	PCS
10	SMD LED	LED_RYB	D2, D3, D4, D5	4	PCS
11	SMD IC	MCU	U1	1	PCS
12	Plugin encoder	ES09-8L	SW1	1	PCS
13	PCB	Double-sided board	/	1	PCS
14	SMD resistor	2k	R10	1	PCS
15	SMD resistor	200R	R6, R9, R12, R13	4	PCS
16	SMD resistor	10k 1%	R17, R18, R19, R20	4	PCS
17	SMD resistor	100R	R4	1	PCS
18	SMD resistor	0R	R7, R8, R15, R16	4	PCS
19	SMD capacitor	2.2u 25V	C3, C7, C11, C15, C19	5	PCS
20	SMD capacitor	1u 50v Samsung	C1, C5, C9, C17	4	PCS
21	SMD capacitor	1u 10V Samsung	C4, C8, C12, C21	4	PCS
22	SMD capacitor	10u 25V Samsung	C2, C6, C10, C13, C18	5	PCS
23	SMD capacitor	10u 10V Samsung	C16	1	PCS
24	SMD capacitor	100n 50V Samsung	C14, C26	2	PCS
25	SMD resistor	R045 alloy resistance	R2, R5	2	PCS
26	SMD resistor	R04 alloy resistance	R1, R3	2	PCS
27	SMD capacitor	Solid state capacitor 47u/35V	C20, C22	2	PCS
28	SMD inductance	10uH	L1, L2, L3, L4	4	PCS
29	SMD NTC	10k B 3950	NTC1	1	PCS
30	SMD MOS	HYG160N06LS1C1	Q1, Q2, Q3, Q4	4	PCS
31	SMD diode	SR1045	D1, D2, D3, D5	4	PCS
32	SMD diode	1N4148 T4	D4, D7	2	PCS
33	SMD voltage regulator	24V	D6	1	PCS
34	SMD LED	Y25W yellow	LED3, LED4	2	PCS
35	SMD LED	W25W white	LED1, LED2,	2	PCS

36	SMD LED	Y50W yellow	LED5	1	PCS
37	SMD LED	W50W white	LED6	1	PCS
38	SMD IC	SL8311A	U1, U2, U3, U6	4	PCS
39	SMD IC	MCU	U4	1	PCS
40	SMD IC	78L05 CJ	U5	1	PCS
41	PCB	Single copper substrate	/	1	PCS
42	SMD resistor	0R	R37	1	PCS
43	SMD resistor	47k	R18, R22, R26, R30	4	PCS
44	SMD resistor	4.7k	R8	1	PCS
45	SMDresistor	33k	R5, R6	2	PCS
46	SMD resistor	220R	R4, R35, R36	3	PCS
47	SMD resistor	22k	R10	1	PCS
48	SMD resistor	2.2k	R14	1	PCS
49	SMD resistor	1k	R9, R16, R23, R27, R31, R1, R3, R24	8	PCS
50	SMD resistor	10R	R11,R28	2	PCS
51	SMD resistor	10R	R17	1	PCS
52	SMD resistor	10k 1%	R12, R15, R19, R21, R25, R29, R32, R33, R34	9	PCS
53	SMD resistor	100k 1%	R2, R7, R13	3	PCS
54	SMD capacitor	2.2u 25V X7R Samsung	C1	1	PCS
55	SMD capacitor	1nF 25V X7R Samsung	C6	1	PCS
56	SMD capacitor	10uF 50V X5R Samsung	C8	1	PCS
57	SMD capacitor	10uF 10V X5R Samsung	C2 C3	2	PCS
58	SMD capacitor	100P 25V X7R Samsung	C9, C10	2	PCS
59	SMDp capacitor	100n 50V X7R Samsung	C4, C5, C11, C12 C7	4	PCS
60	SMD voltage regulator	24V JD	D3	1	PCS
61	SMD voltage regulator	15V JD	D7	1	PCS
62	SMD transistor	MMBT5551 G1 DIOS	Q1, Q5, Q13, Q15, Q16, Q19, Q14	7	PCS
63	SMD transistor	MMBT5401 2L DIOS	Q7, Q10, Q17, Q18	4	PCS
64	SMD diode	TVS 58V BGG JD	D6	1	PCS
65	SMD transistor	1N4148 T4 JD	D1, D2, D4, D5	4	PCS
66	SMD MOS	MT6808D	Q2, Q3, Q4, Q6, Q8, Q9, Q11, Q12	8	PCS
67	SMD IC	LMV321	U2	1	PCS
68	SMD IC	L18S main MCU	U1	1	PCS
69	SMD IC	78L05 CJ	VR1	1	PCS

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DUT Photos