GRAND-DUCHÉ DE LUXEMBOURG

Ministère du Développement durable et des Infrastructures
Département des Transports

L-2938 Luxembourg

SOCIÉTÉ NATIONALE DE CERTIFICATION ET D'HOMOLOGATION
s.à r.l.
Registre de Commerce: B 27180

L-5201 Sandweiler

Référence: E13*10R05/01*14602*00

Annexes: - Rapport Technique
- Fiche de Renseignements du constructeur

Luxembourg, le 28 février 2018

Communication concernant:(2)
Communication concerning:

- **la délivrance d'une homologation**
  approval granted
- ~~**l'extension d'homologation**~~
  ~~approval extended~~
- ~~**le refus d'homologation**~~
  ~~approval refused~~
- ~~**le retrait d'homologation**~~
  ~~approval withdrawn~~
- ~~**l'arrêt définitif de la production**~~
  ~~production definitely discontinued~~

d'un type de sous-ensemble ~~électrique~~/électronique(2) en ce qui concerne le Règlement N° 10
of a type of ~~electrical~~/electronic sub-assembly with regard to Regulation N° 10

Numéro d'homologation par type:
Approval number: E13*10R05/01*14602*00

Marque d'homologation:
Approval mark: E13 10R - 05 14602

1. **Fabricant: (marque commerciale du constructeur):**
Make (trade name of manufacturer): STERLING POWER
(for LOGO refer to Test Report)

2. **Type:**
Type: BBC1225

Dénomination(s) commerciale(s) générale(s):
General commercial description(s): Battery to Battery Charger

3.	**Moyens d'identification du type, s'ils sont marqués sur le ~~véhicule~~ / composant / ~~entité technique~~[(2)]:** Means of identification of type, if marked on the ~~vehicle~~ / component / ~~separate technical unit~~:	BBC1225
3.1.	**Emplacement de ce marquage:** Location of that marking:	On the housing of the main units
4.	**Catégorie du véhicule:** Category of vehicle:	Not applicable
5.	**Nom et adresse du constructeur:** Name and address of manufacturer:	Alitech Co., Ltd. 4F-4, No. 94, Baozhong Rd., Xindian Dist., New Taipei City 231, Taiwan, R.O.C.
6.	**Dans le cas de composants ou d'entités techniques, emplacement et procédé de fixation de la marque de réception CEE:** In the case of components and separate technical units, location and method of affixing of the ECE approval mark:	Label fixed on the housing of the main units
7.	**Adresse(s) de l' (des) usine(s) d'assemblage:** Address(es) of assembly plant(s):	Alitech Co., Ltd. 4F-4, No. 94, Baozhong Rd., Xindian Dist., New Taipei City 231, Taiwan, R.O.C.
8.	**Informations supplémentaires (s'il y a lieu):** Additional informations (where applicable):	See appendix below
9.	***Autorité déléguée:*** *Assigned authority:*	*Société Nationale de Certification et d'Homologation* *L-5201 Sandweiler*
	Service technique responsable de l'exécution des essais: Technical service responsible for carrying out the tests:	TÜV Rheinland Luxemburg GmbH 2a, Kalchesbruck L-1852 Luxembourg
10.	**Date du rapport d'essai:** Date of test report:	02.02.2018
11.	**Numéro du rapport d'essai:** Number of test report:	84-R10-01320/17-00
12.	**Remarques (s'il y a lieu):** Remarks (if any):	See appendix below

13. **Lieu:** Luxembourg
Place:

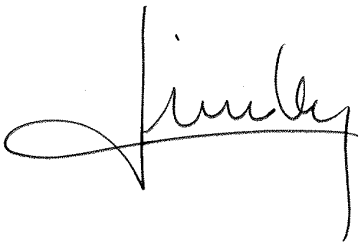
14. **Date:** 28 février 2018
Date:

15. **Signature:**
Signature:

Pour le Ministre du Développement durable et des Infrastructures

Marco FELTES
Inspecteur Principal 1er en rang

Pour la SNCH



Laurent LINDEN
Attaché de Direction

16. **L'index de l'ensemble des renseignements déposé chez l'autorité de réception, qui peut être obtenu sur demande, est joint.**
The index to the information package lodged with the approval authority, which may be obtained on request, is attached.

See index to type-approval report

17. **Raison(s) de l'extension:** Not applicable
Reason(s) for extension:

[2] **Biffer la mention inutile**
Strike out what does not apply

Appendice
Appendix

au certificat d'homologation par type N° E13*10R05/01*14602*00
to type-approval certificate N° E13*10R05/01*14602*00
concernant l'homologation par type d'un sous ensemble électrique/électronique selon le Règlement N° 10.
concerning the type-approval of an electrical/electronic sub-assembly under Regulation N° 10.

1.	**Informations supplémentaires.** Additional information.	
1.1.	**Tension nominale du système électrique [V]:** Electrical system rated voltage [V]:	12V DC
	Masse: Ground:	Negative / ~~Positive~~ (2)
1.2.	**Ce SEEE peut être utilisé sur n'importe quel type de véhicule avec les restrictions suivantes:** This ESA can be used on any vehicle type with the following restrictions:	Not applicable
1.2.1.	**Conditions d'installation, s'il y a lieu:** Installation conditions, if any:	Not applicable
1.3.	**CE SEEE peut seulement être utilisé sur les types de véhicules suivants:** This ESA can be used only on the following vehicle types:	Not applicable
1.3.1.	**Conditions d'installation, s'il y a lieu:** Installation conditions, if any:	Not applicable
1.4.	**La (les) méthode(s) spécifique(s) d'essais utilisée(s) et les bandes de fréquences couvertes pour déterminer l'immunité étai(ent): (indiquez s'il vous plaît à partir de l'annexe 9 la méthode précise utilisée).** The specific test method(s) used and the frequency ranges covered to determine immunity were: (Please specify precise method used from annex 9).	Not applicable
1.5.	**Laboratoire accrédité au titre de la norme ISO 17025 et reconnu par l'autorité d'homologation chargé d'effectuer les essais:** Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests:	Not applicable
2.	**Commentaires:** Remarks:	Not applicable

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L-5201 Sandweiler

Référence: E13*10R05/01*14602*00

Annexes: - Rapport Technique
- Fiche de Renseignements du constructeur

Luxembourg, le 28 février 2018

Index du dossier d'homologation

Index to type-approval report

Numéro d'homologation: Approval number:	E13*10R05/01*14602*00
Révision: Revision:	00
Marque de fabrique ou de commerce: *Trade name or mark:*	*STERLING POWER* *(for LOGO refer to Test Report)*
Type: *Type:*	*BBC1225*

1.	**Procès-verbal d'essai:** Test report:	N° 84-R10-01320/17-00
	- Test report:	Page 1 to 7
	- Technical information:	Appendix L - Page 8 & 9
	- List of modifications:	Appendix 0 - Page 10
2.	**Dossier du constructeur:** Report of the manufacturer:	N° BBC1225-00
	- Information document:	Page 1 & 2
	- List of Annexes:	Page 2
	- Annexes:	Refer to Page 2
3.	**Autres documents annexés:** Other documents annexed:	Not applicable
4.	**Date de délivrance de l'homologation initiale:** Date of issue of initial type approval:	28.02.2018
5.	**Date de la dernière délivrance de pages révisées:** Date of last issue of revised pages:	Not applicable
6.	**Date de la dernière délivrance d'une homologation révisée:** Date of last extension:	Not applicable

TEST REPORT

according to ECE-Regulation

Uniform provisions concerning the approval of vehicles with regard to electromagnetic compatibility

No.: **ECE-R10**

including

No.: **05 series of amendments, suppl. 01**

Previously granted		
ECE-type approval	:	E13*10R05/01*14602*00 (reserved)

Structure of report:

0. General information
1. Test object(s) and general test information
2. Test minutes
3. Remark concerning tested object(s)
4. Appendices
5. Statement of conformity

0. General information

0.1.	Trade mark or trade name of type	: STERLING POWER
0.2.	Manufacturer's name for the type of the ESA	: BBC1225
0.3.	Name and address of manufacturer	: Alitech Co., Ltd. 4F-4, No. 94, Baozhong Rd., Xindian Dist., New Taipei City 231, Taiwan, R.O.C.
0.4.	Name and address of authorised representative, if any	: Not applicable
0.5.	No. of information document date of issue date of last amendment	: BBC1225-00 : December 5, 2017 : --

E13*10R05/01*14602*00
Société Nationale de Certification et d'Homologation

1. Test object(s) and general test information

1.1. Test object(s)

Identification no.	: Not applicable
Model	: BBC1225
Remark	: Battery to Battery Charger

1.2. General test information

1.2.1	Order issued by (if different from manufacturer)	: --
1.2.2	Test object received on	: --
1.2.3	Test date	: October 27 to November 13, 2017
1.2.4	Test site	: Sporton International Inc., Lin-Kou, Taiwan and International Standards Laboratory, Long-Tan, Taiwan
1.2.5	Remark	: The results of the test refer exclusively to the objects mentioned under point 1.1. of this report.

2. Test minutes

2.1. Test facilities : The measurement equipment used was in compliance with the test requirements.

2.2. Technical data for the tested ESA : See Appendix L

2.3. Type approval tests conducted : Radiated narrowband electromagnetic emissions
Radiated broadband electromagnetic emissions
~~Immunity to electromagnetic radiation~~
Immunity to transient disturbances
Emission of transient conducted disturbances

2.4. Test results : ~~The type has been examined according to the amendments mentioned in appendix 0.~~

The performance of the ESA has been tested under 12V input mode.

2.4.1. Radiated narrowband electromagnetic emissions : Antenna position horizontal and vertical (Average detector)

No.	frequency [MHz]		measured data[dB(µV)]		correction factor[dB(1/m)]		corrected data[dBµV/m)]		limit value [dB(µV/m)]	
	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.
1	31.1	30.5	24.7	31.9	-5.8	-5.7	18.9	26.2	51.6	51.8
2	44.3	43.8	33.9	39.3	-12.9	-12.4	21.0	26.9	47.7	47.9
3	48.1	46.2	36.1	36.4	-14.3	-13.6	21.8	22.8	46.8	47.3
4	68.6	75.9	40.1	35.6	-16.9	-16.6	23.2	19.0	43.0	42.1
5	99.1	89.1	31.7	37.4	-13.4	-14.5	18.3	22.9	43.8	43.1
6	125.9	124.5	32.6	38.3	-11.3	-11.2	21.3	27.1	45.4	45.3
7	142.1	142.1	35.0	36.5	-11.5	-11.6	23.5	24.9	46.2	46.2
8	172.3	201.2	29.5	35.1	-13.4	-13.5	16.1	21.6	47.5	48.5
9	283.3	230.6	28.7	34.3	-9.4	-12.0	19.3	22.3	50.7	49.4
10	316.1	377.7	27.8	27.2	-8.7	-7.3	19.1	19.9	51.5	52.6
11	512.1	508.6	26.2	28.0	-4.4	-4.5	21.8	23.5	53.0	53.0
12	685.0	559.7	27.1	26.8	-1.9	-2.6	25.2	24.2	53.0	53.0
13	813.8	820.1	26.7	26.1	0.5	0.8	27.2	26.9	53.0	53.0
14	965.0	959.4	26.4	26.1	3.7	3.5	30.1	29.6	53.0	53.0

2.4.2. Radiated broadband electromagnetic emissions : Antenna position horizontal and vertical (Quasi-peak detector)

No.	frequency [MHz]		measured data[dB(µV)]		correction factor[dB(1/m)]		corrected data[dBµV/m)]		limit value [dB(µV/m)]	
	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.	horiz.	vertic.
1	31.1	30.5	25.2	33.9	-5.7	-5.7	19.5	28.2	61.6	61.8
2	43.8	43.8	34.0	39.6	-12.4	-12.3	21.6	27.3	57.9	57.9
3	51.1	45.9	37.4	37.7	-15.5	-13.3	21.9	24.4	56.2	57.4
4	69.4	72.7	40.7	37.0	-16.8	-16.8	23.9	20.2	52.8	52.3
5	98.9	88.1	35.4	34.1	-13.5	-14.8	21.9	19.3	53.8	53.1
6	128.0	124.8	33.7	38.7	-11.3	-11.1	22.4	27.6	55.5	55.3
7	142.1	142.9	36.6	37.8	-11.6	-11.5	25.0	26.3	56.2	56.2
8	199.3	220.6	29.2	36.4	-13.6	-13.1	15.6	23.3	58.4	59.1
9	290.8	230.6	28.8	35.4	-9.1	-12.1	19.7	23.3	60.9	59.4
10	307.0	372.1	28.4	28.8	-8.7	-7.4	19.7	21.4	61.3	62.5
11	520.5	463.8	27.6	29.2	-4.4	-5.2	23.2	24.0	63.0	63.0
12	688.5	676.6	27.3	27.4	-1.8	-2.0	25.5	25.4	63.0	63.0
13	794.2	844.6	27.9	26.4	-0.2	1.5	27.7	27.9	63.0	63.0
14	981.8	968.5	26.7	26.9	4.1	3.8	30.8	30.7	63.0	63.0

2.4.3. Immunity Test : Not applicable. The ESA is the battery to battery charger which belongs to the non- immunity related functions device (para. 2.12).

Test method : ~~Absorber chamber test~~

Specified frequency range : ~~20 - 2000 MHz~~

Tested frequency points : ~~27/45/65/90/120/150/190/230/280/380/450/600/750/900/1300/1800 MHz~~

Field strength : ~~30 V/m~~

~~At the above mentioned frequency points the ESA did not exhibit any malfunction which would cause any degradation of performance which could cause confusion to other road users or any degradation in the driver's direct control of a vehicle fitted with the system which could be observed by the driver or other road user.~~

E13*10R05/01*14602*00
Société Nationale de Certification et d'Homologation

2.4.4. Immunity to transient disturbances : The tests were conducted by the method according to ISO 7637-2 (second edition 2004) as described in Annex 10, and the functional status of the ESA after the tests complied with the levels shown in Table 2 of Paragraph 6.

Test pulse number	Immunity test level	Functional status for systems			
		~~Related to immunity-related functions~~	Not related to immunity-related functions	Test results	
				12V	~~24V~~
1	III	~~C~~	D	C	--
2a	III	~~B~~	D	A	--
2b	III	~~C~~	D	C	--
3a	III	~~A~~	D	A	--
3b	III	~~A~~	D	A	--
4	III	~~C~~	D	C	--

2.4.5. Emission of transient conducted disturbances : The tests were conducted by the method according to ISO 7637-2 (second edition 2004) as described in Annex 10, and the pulse amplitudes were within the limits specified in Table 1 of Paragraph 6.

Polarity of pulse amplitude	Maximum allowed pulse amplitude for vehicles with systems		Test results			
			Slow pulses		Fast pulses	
	12V	~~24V~~	12V	~~24V~~	12V	~~24V~~
Positive	+75	~~+150~~	1.3	--	2.0	--
Negative	-100	~~-450~~	-14.8	--	-35.1	--

2.4.6. Markings : The approval mark is marked clearly legible and indelible on the housing of the main units.

2.5. Variants and components : Not applicable

E13*10R05/01*14602*00
Société Nationale de Certification et d'Homologation

3. Remark concerning tested object(s)

All versions of the ESA type as stated in the information document are covered with the tested version(s) and test object(s) respectively.

4. Appendices

L Technical information about the electrical/electronic sub-assembly (ESA) according to Annex 3B of the communication concerning the ECE-type approval

0 List of modifications

Information Document No. (excluding apps.) : BBC1225-00 (2 pages)

5. Statement of conformity

The above mentioned information folder and the type described in that comply with the requirements mentioned on page 1.

Engineering Cernter Shanghai, February 02, 2018
KWU/JYW/CHENROW

Kevin Wu
Expert Technical Service

E13*10R05/01*14602*00
Société Nationale de Certification et d'Homologation

Technical information about the electrical/electronic sub-assembly (ESA) Appendix L according to Annex 3B of the communication concerning the ECE-type approval

1.	**Make (trade name of manufacturer)**	: STERLING POWER
2.	**Type and general commercial description(s)**	: BBC1225 Battery to Battery Charger
3.	**Means of identification of type, if marked on the ~~vehicle~~/component/~~separate technical unit~~**	: BBC1225
3.1.	Location of that marking	: On the housing of the main units
4.	**Category of vehicle**	: Not applicable
5.	**Name and address of manufacturer**	: Alitech Co., Ltd. 4F-4, No. 94, Baozhong Rd., Xindian Dist., New Taipei City 231, Taiwan, R.O.C.
6.	**In the case of components and separate technical units, location and method of affixing of the approval mark**	: Label affixed on the housing of the main units
7.	**Address(es) of the assembly plant(s)**	: Alitech Co., Ltd. 4F-4, No. 94, Baozhong Rd., Xindian Dist., New Taipei City 231, Taiwan, R.O.C.
8.	**Additional information**	: See appendix below
9.	**Technical Service responsible for carrying out the tests**	: TÜV Rheinland Luxemburg GmbH 2a, Kalchesbruck L-1852 Luxemburg
10.	**Date of test report**	: February 02, 2018
11.	**No. of test report**	: 84-R10-01320/17-00
12.	**Remarks (if any)**	: See appendix

E13*10R05/01*14602*00
Société Nationale de Certification et d'Homologation

16.	**The index to the information package lodged with the Approval authority, which may be obtained on request, is attached**	: Not applicable
17.	**Reasons for extension**	: Not applicable

Appendix to type-approval communication form No. E13*10R05/01*14602*00 concerning the type-approval of an electrical/electronic sub-assembly under Regulation No. 10

1. Additional information

1.1.	Electrical system rated voltage	: 12V DC, ~~pos.~~/neg. ground
1.2.	This ESA can be used on any vehicle type with the following restrictions	: Not applicable
1.2.1.	Installation conditions, if any	: Not applicable.
1.3.	This ESA can be used only on the following vehicle types	: Not applicable
1.3.1.	Installation conditions, if any	: Not applicable
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)	: Not applicable
1.5.	Approved/recognised laboratory (for the purpose of this Regulation) responsible for carrying out the test	: Not applicable

2. Remarks : Not applicable

List of modifications

Appendix 0

Correction of : --

Modification of : --

Addition of : --

Deletion of : --

Information Document No.: BBC1225-00 for type approval of an ESA with respect to electromagnetic compatibility according to the ECE Regulation R10,05 series of amendments

Date: December 5, 2017

1.	Make (trade name of manufacturer)	: STERLING POWER
2.	Type	: BBC1225
3.	Means of identification of type, if marked on the component / ~~separate technical unit~~	: BBC1225
3.1.	Location of that marking	: On the housing of the main units
4.	Name and address of manufacturer	: Alitech Co., Ltd. 4F-4, No. 94, Baozhong Rd., Xindian Dist., New Taipei City 231, Taiwan, R.O.C.
	Name and Address of authorized representative, if any	: Not applicable
5.	In the case of components and separate technical units, location and method of affixing of the approval mark	: Label affixed on the housing of the main units
6.	Address(es) of the assembly plant(s)	: Alitech Co., Ltd. 4F-4, No. 94, Baozhong Rd., Xindian Dist., New Taipei City 231, Taiwan, R.O.C.
7.	This ESA shall be approved as a	: Component/ ~~STU~~
8.	Any restrictions of use and conditions for fitting	: Not applicable
9.	Electrical system rated voltage	: 12V DC, ~~positive/~~ negative ground

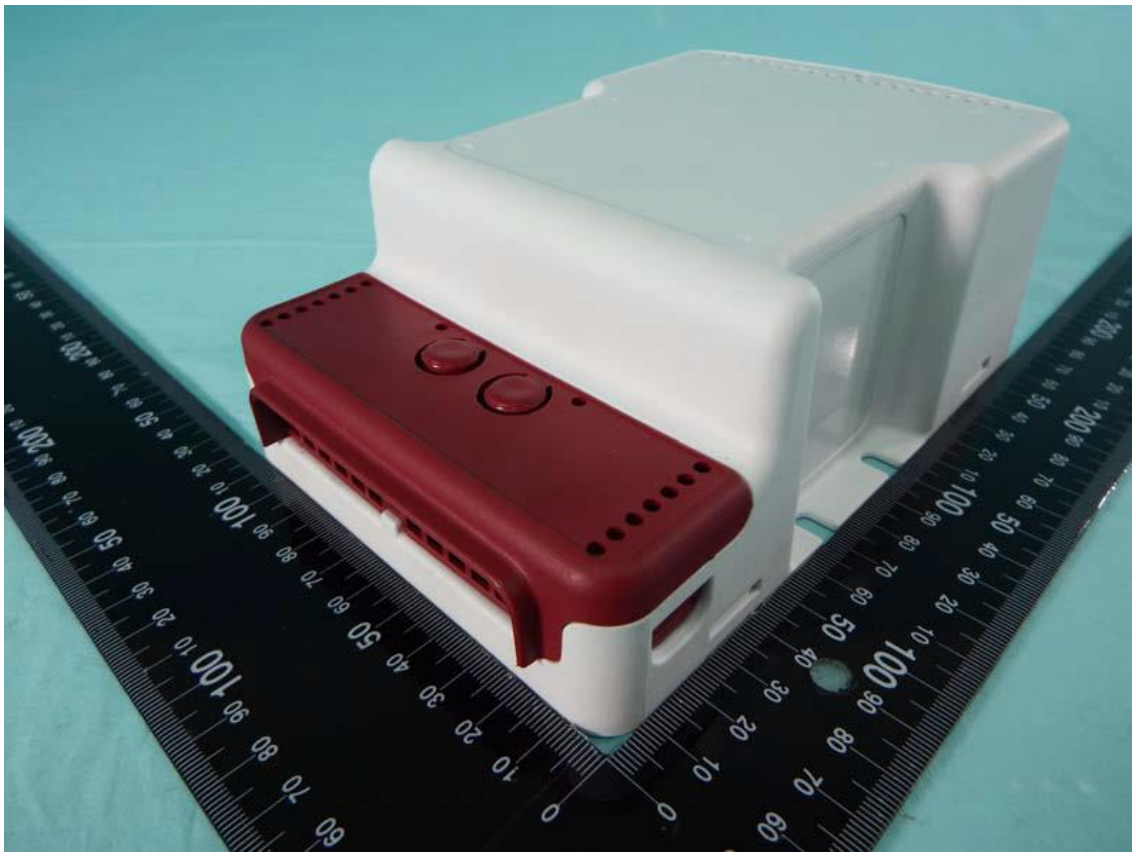
Only applicable for charging systems:

10.	Charger: on board / external	: Not applicable
11.	Charging current	: Not applicable

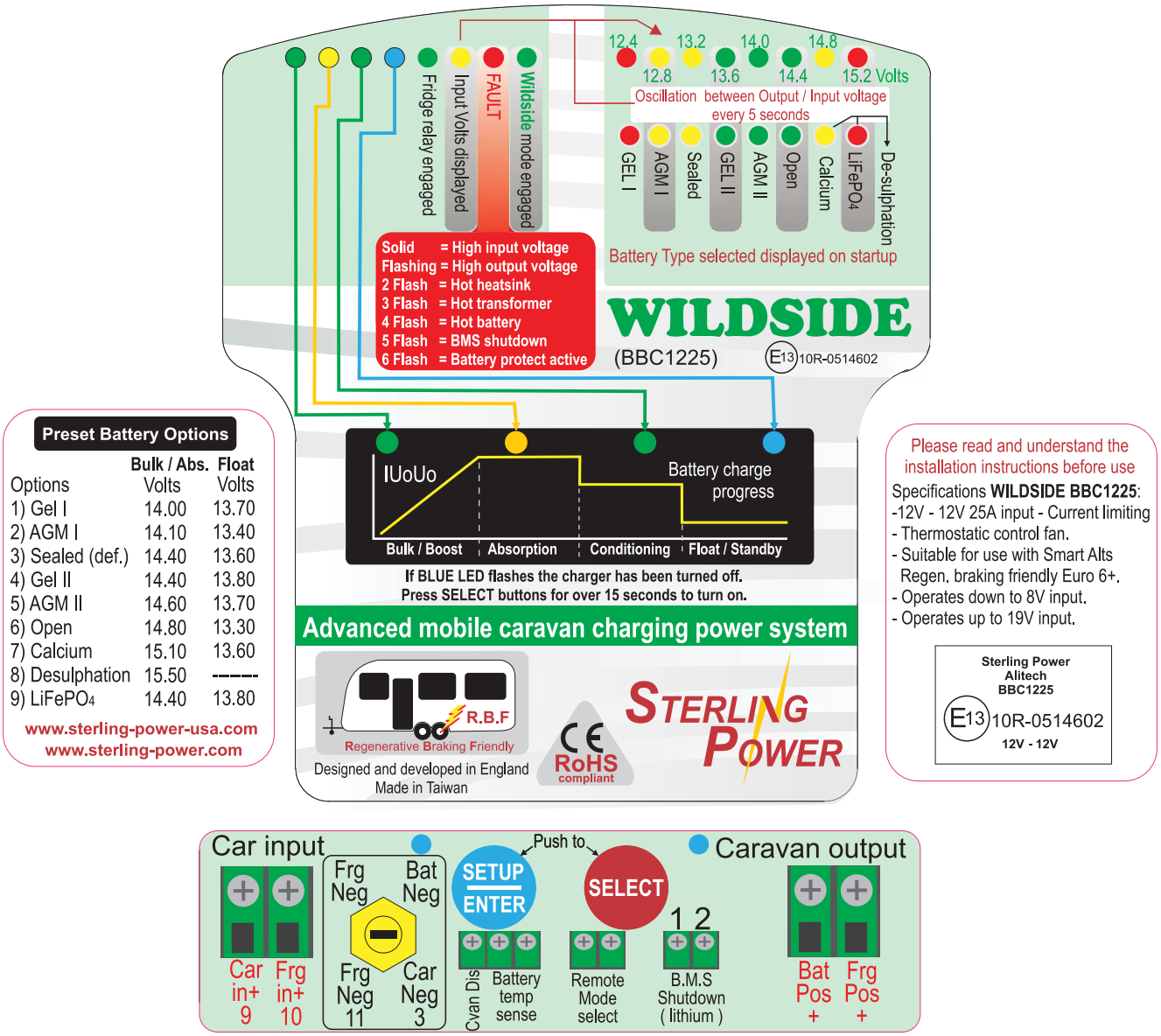
12.	Maximal nominal current (in each mode if neccessary)	: Not applicable
13.	Nominal Charging voltage	: Not applicable
14.	Basic ESA interface functions	: Not applicable
15.	Minimum R_{sce} value (see paragraph 7.11. of this Regulation)	: Not applicable

List of Annexes

ESA Photo



Wildside Charging Article For Caravanners



Preset Battery Options

Options	Bulk / Abs. Volts	Float Volts
1) Gel I	14.00	13.70
2) AGM I	14.10	13.40
3) Sealed (def.)	14.40	13.60
4) Gel II	14.40	13.80
5) AGM II	14.60	13.70
6) Open	14.80	13.30
7) Calcium	15.10	13.60
8) Desulphation	15.50	-----
9) $LiFePO_4$	14.40	13.80

www.sterling-power-usa.com
www.sterling-power.com

Please read and understand the installation instructions before use

Specifications **WILDSIDE BBC1225**:
-12V - 12V 25A input - Current limiting
- Thermostatic control fan.
- Suitable for use with Smart Alts Regen. braking friendly Euro 6+.
- Operates down to 8V input.
- Operates up to 19V input.

Sterling Power
Alitech
BBC1225
E13 10R-0514602
12V - 12V

*Only model BBC1225 is applicable for E-mark approval.

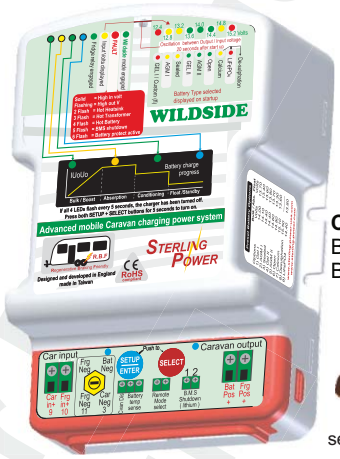
STERLING POWER

WILDSIDE (BBC)

Battery to Battery Charger (Caravan Model)
USERS MANUAL.

The Wildside BBC

- Designed specifically for caravan operation.
- Fast charges your caravan battery and runs fridge while towing. 10-20 times charging improvement.
- At least 2 times more useful power available from you batteries due to correct 4 step battery charging
- Increases battery life again due to correct battery charging curves employed
- Combats the inherently high voltage drop across long and poor cable runs.
- Prevents current back feeding from caravan battery to the towing vehicle's starter battery when driving Euro 6.
- No need to upgrade your existing charging cables or plug and socket from your towing vehicle.
- Ideal use with the new Euro 6+ alternator's voltage characteristic, fixes all problems associated with Euro 6.
- Charges your caravan / mover battery when driving.
- BBC works down to 8V on the input and shall still maintain 14-15V output charging profile at your caravan batteries (dependent on battery type selected).



Code:
BBC1225
BBC1240

battery temp sensor (optional)

Pre-installation checks

- What is the running current of your onboard fridge? Is the instantaneous current different from the hourly capacity average.
- typically - 2-4Ah for compressor fridge per hour.
- typically - 10-16Ah for absorption fridge per hour.

If you have a compressor fridge or an absorption fridge about 10-12A then the BBC1225 will be more than enough to supplement the fridge and provide a good charge to your caravan batteries.

The BBC1240 shall likely be better suited for those with absorption fridges over 12 - 18A as the demand is higher.
What is the lowest voltage your fridge operates at?

Can the fridge operate down to 11V?
Does it work via a voltage sensitive relay (at 13.3V) and only when the caravan is being towed?

For off site camping you need to ensure your compressor fridge operates down to 11V - It needs to be able to operate from the caravan battery.

Do not use absorption fridges for off site camping (wildside) if you are running the fridge from the battery electrics.

Fridge determines model selection

BBC1225 model suitable for fridges up to about 12A
BBC1240 model suitable for fridges up to about 18A
The above recommendations are assuming you also want sufficient surplus power to charge the battery.
The higher the fridge consumption the less effective the battery charging will be.

Realistic BBC performance CE

Many variables affect the BBC's performance:

- Cable thickness, thicker the better.
- Quality of connectors across the entire length from tower's starter battery to the caravan battery (cleaner and newer the better).
- Alternator's voltage, highly variable with Euro 6.
- Standard caravan towing cables are 1.5 mm2 for vehicle running lights and 2.5 mm2 for caravan power cables (the ones we use)

BBC1225 performance table

Input Current	Alternator Voltage	BBC input Voltage	BBC total output voltage | current
25A	12.4V *	10.7V	14.4V @15.5A
25A	14.0V	12.4V	14.4V @17.6A
25A	15.0V *	13.4V	14.4V @ 19.0A

* Voltages under regen. braking system

BBC1240 performance table

Input Current	Alternator Voltage	BBC input Voltage	BBC total output voltage | current
40A	12.4V *	9.7V	14.4V @ 24.8A
40A	14.0V	11.3V	14.4V @ 28.2A
40A	15.0V *	12.5V	14.4V @ 30.4A

* 12.4V and 15V are typical Euro 6 (regen. braking) alternator voltage swings. The performance figures are worse at lower input voltage. This is only an immediate problem - the BBC charging shall apply an additional load on the alternator / starter and shall 'kick' the alternator's voltage up to 14-15V.

BBC's quiescent current is 1mA (unit on sleep mode)

E13*10R05/01*14602*00
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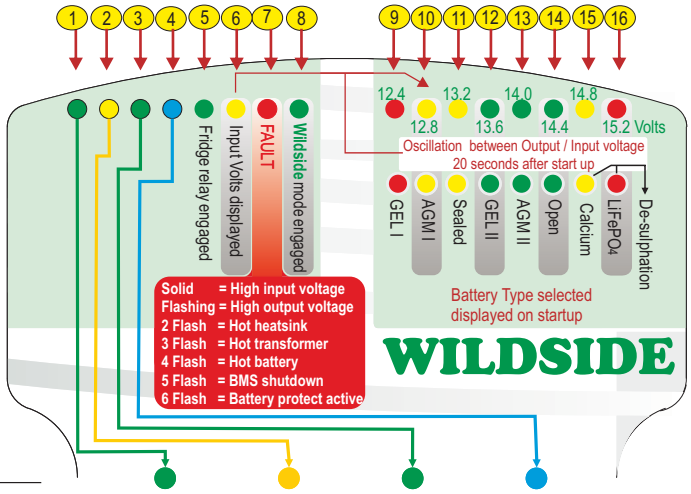


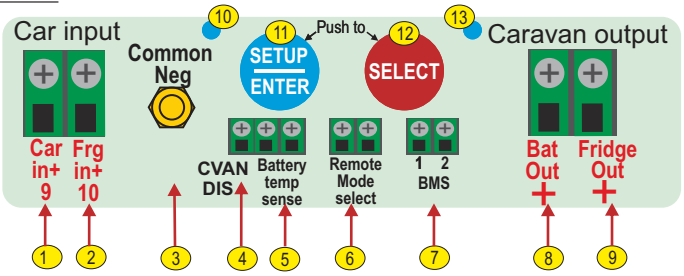
Front Panel

1) Bulk / boost LED - if on, charger is in first stage of charging cycle. Constant current - voltage not yet met.
2) Absorption LED - if on, charger is in the second stage of the charging cycle. Constant voltage - voltage met.
3) Conditioning LED - if on, charger is in the third stage of the charging cycle. Constant lower voltage.
4) Float LED - if on, charger is in the fourth stage of the charging cycle. Constant even lower voltage.
5) Fridge relay engaged. If LED on, fridge connector is on.
6) Input Volts displayed. If this yellow LED is on the voltmeter (9-16) displays input voltage. When this LED is off, the voltmeter is displaying output voltage.

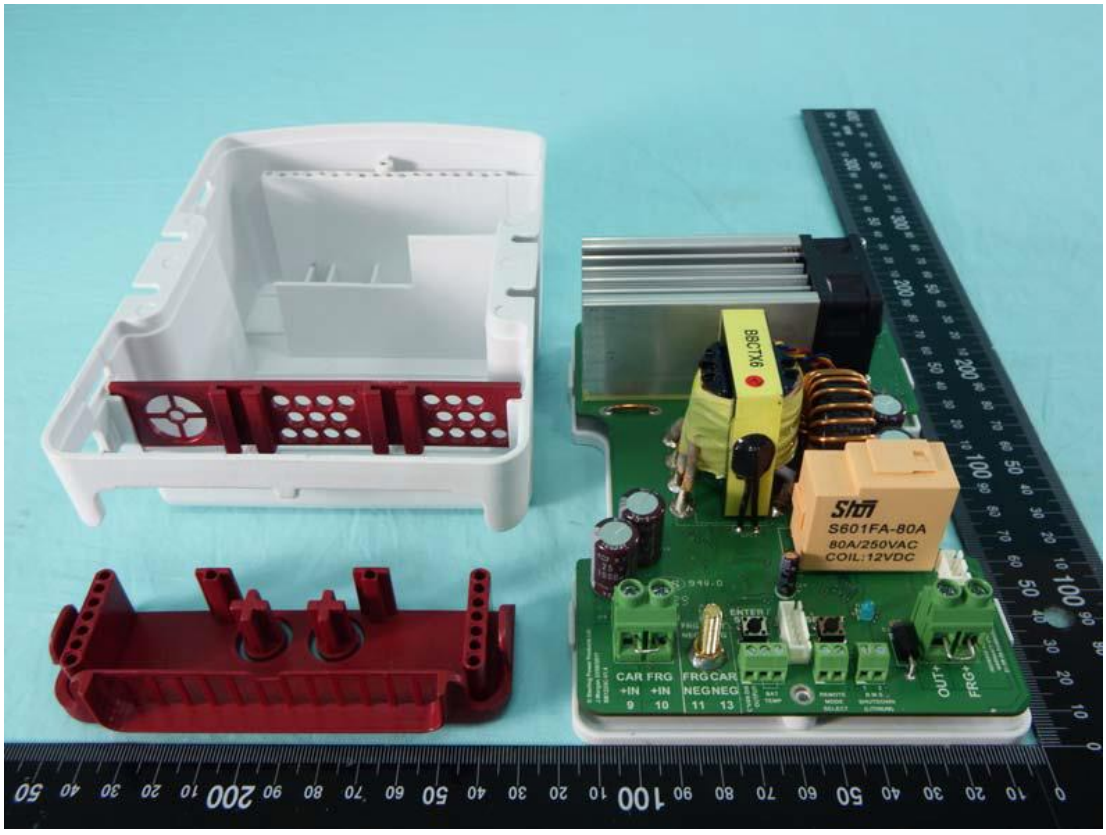
7) FAULT RED LED: Unit Trips off,
Solid = input voltage, too high (must be <19.5V)
Flashing = high output voltage (must be <15.5V)
2 flash = Hot heatsink (exceeded 90 Deg C)
3 flash = Hot transformer (exceeded 90 Deg C)
4 flash = Hot battery (exceeded 55 DegC)
5 flash = BMS shutdown (refer to page 9 for trip status)
6 flash = Battery protect active (caravan battery's voltage has dropped below 10.5V, charge caravan battery to above 12.6V).

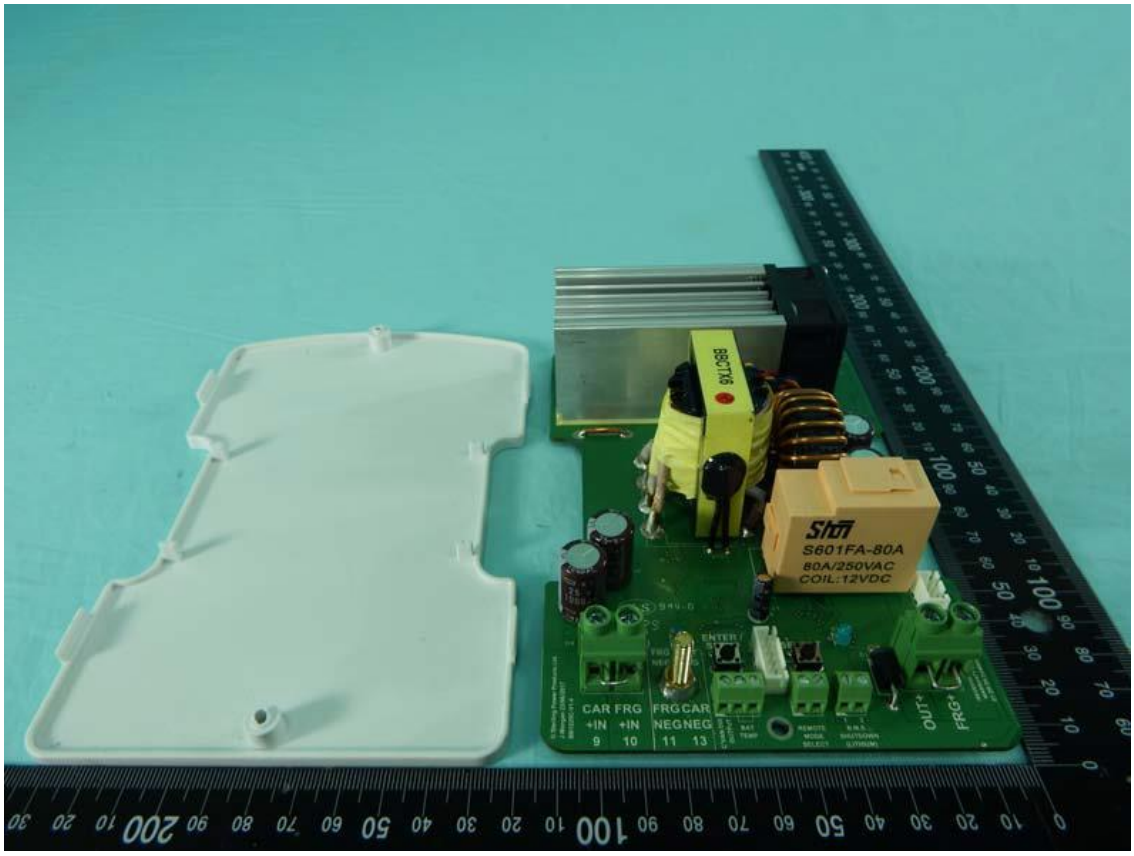
8) WILDSIDE mode engaged LED. If on, fridge shall be connected even when towing vehicle is off / disconnected.
9-16) Voltmeter - toggles between input and output voltmeter. On start up for first few seconds these LEDs double up as battery chemistry types, as depicted. They also have multiple functions during advanced forms of customisation.

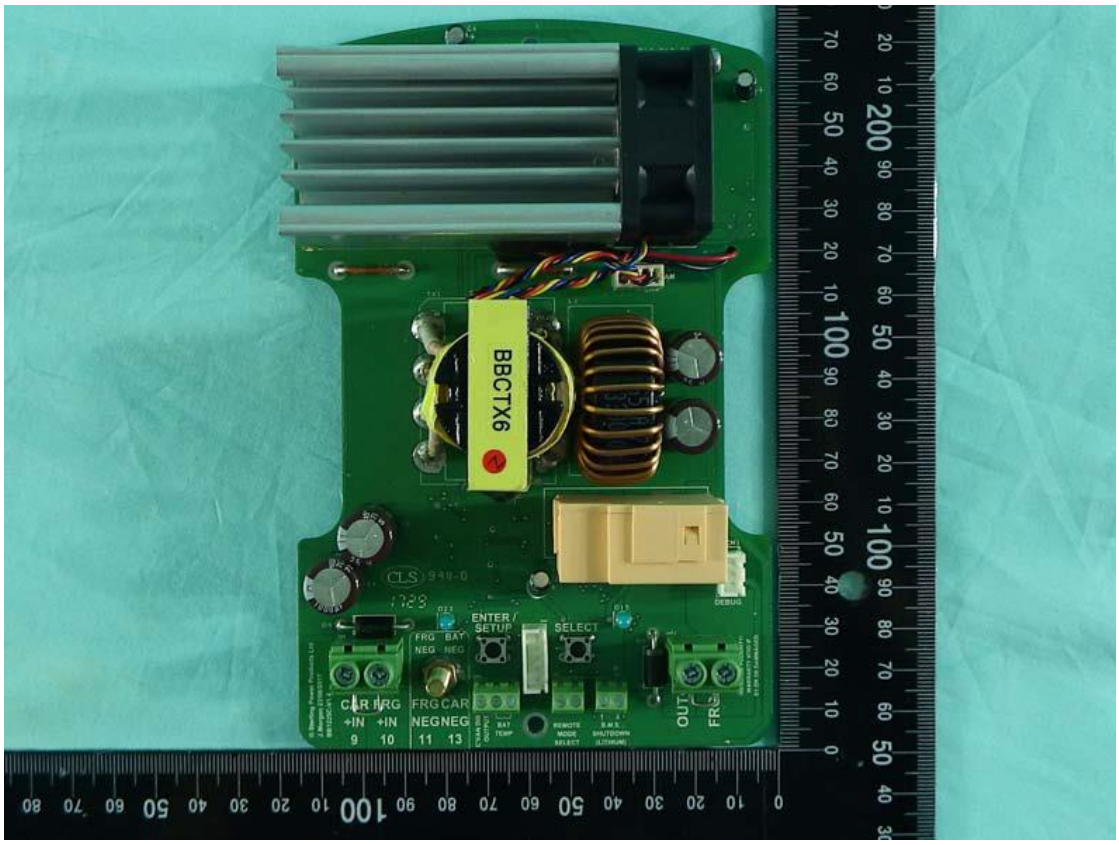
Under the lid

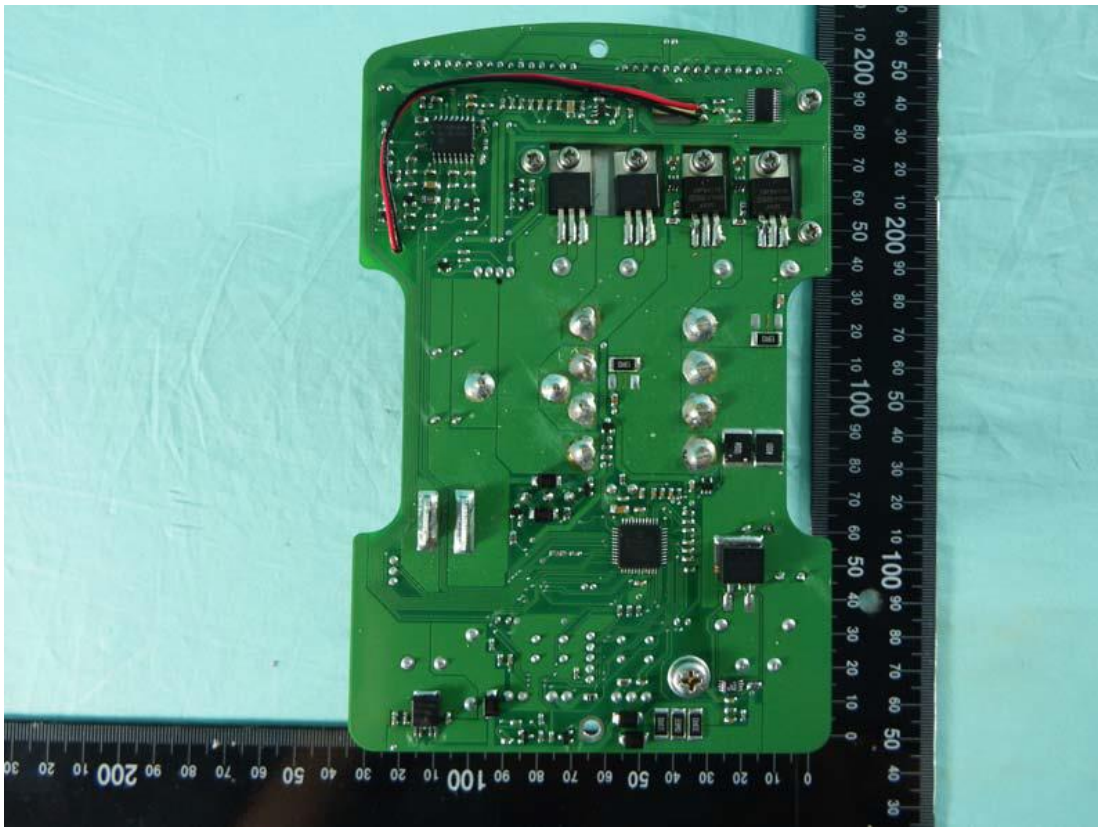


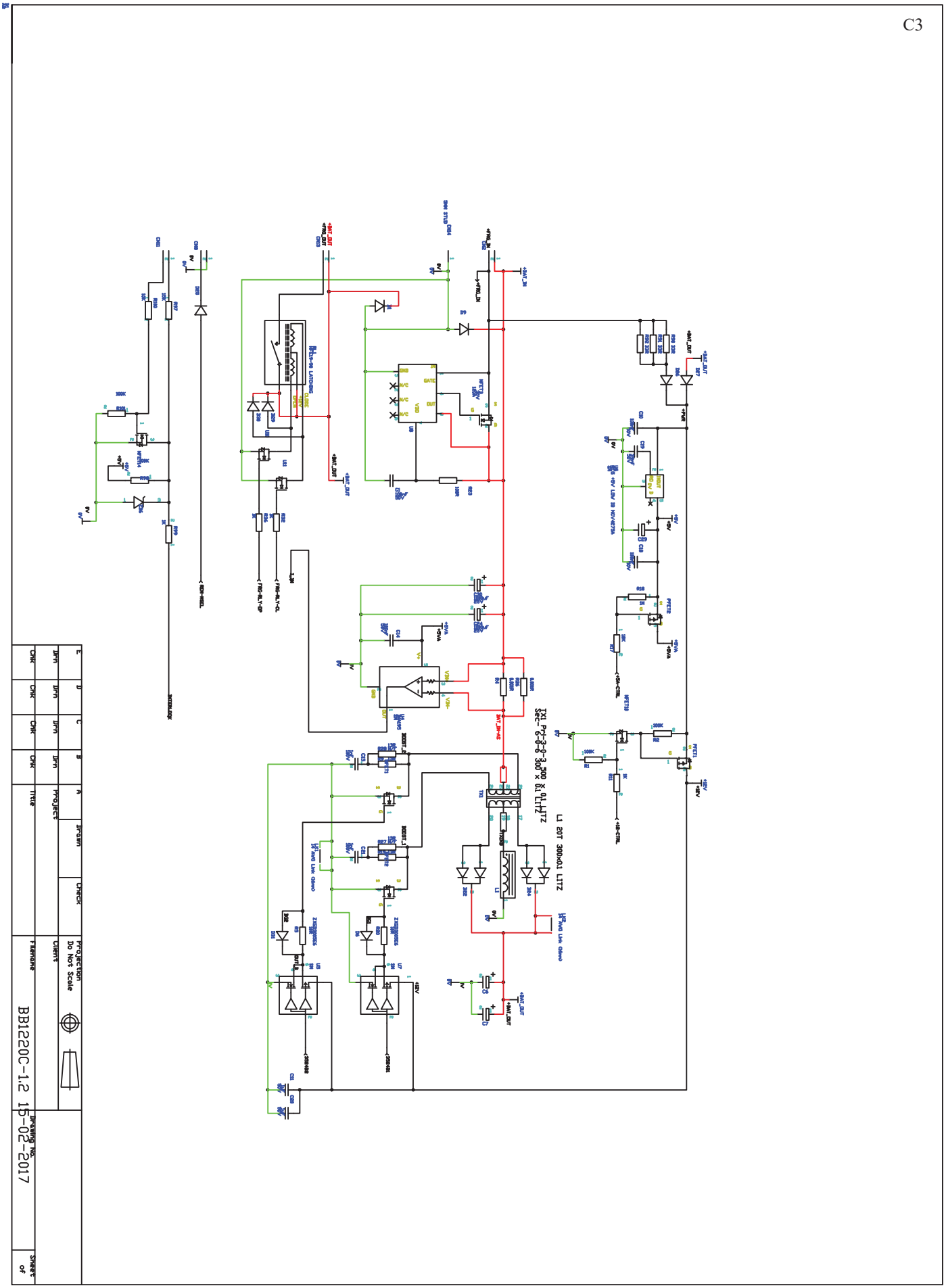
1) Car positive from car tow cable (port 9)
2) Fridge positive from car tow cable (port 10)
3) Common Negative: Connection for Fridge negative, Car negative connector, battery negative, chassis connection, caravan battery.
4) CVAN DIS: **Cara**van power **Dis**connect, this gives a 12V signal to the onboard caravan DC power relay - If the caravan's DC power requires to be disconnected when the towing when the vehicle engine is on.
5) Battery temperature sensor (optional extra - TSAY)
6) Remote option select mode (if required) see instructions, 99% installations not used.
7) BMS, lithium shut down connectors, if required.
BMS 1 - if your BMS trips to ground (0V) use this.
BMS 2 - if your BMS trips to +ve voltage (2-18V) use.
8) Caravan domestic battery output.
9) Fridge positive output
10) Blue LED denoting SETUP button activity.
11) SETUP button for adjusting functions.
12) SELECT button for adjusting functions.
13) Blue LED denoting SELECT button activity.


BBCTX6
S601FA-80A
80A/250VAC
COIL:12VDC
CAR FRG FRG CAR
+IN +IN NEG NEG
9 10 11 13
OUT+
FRG+

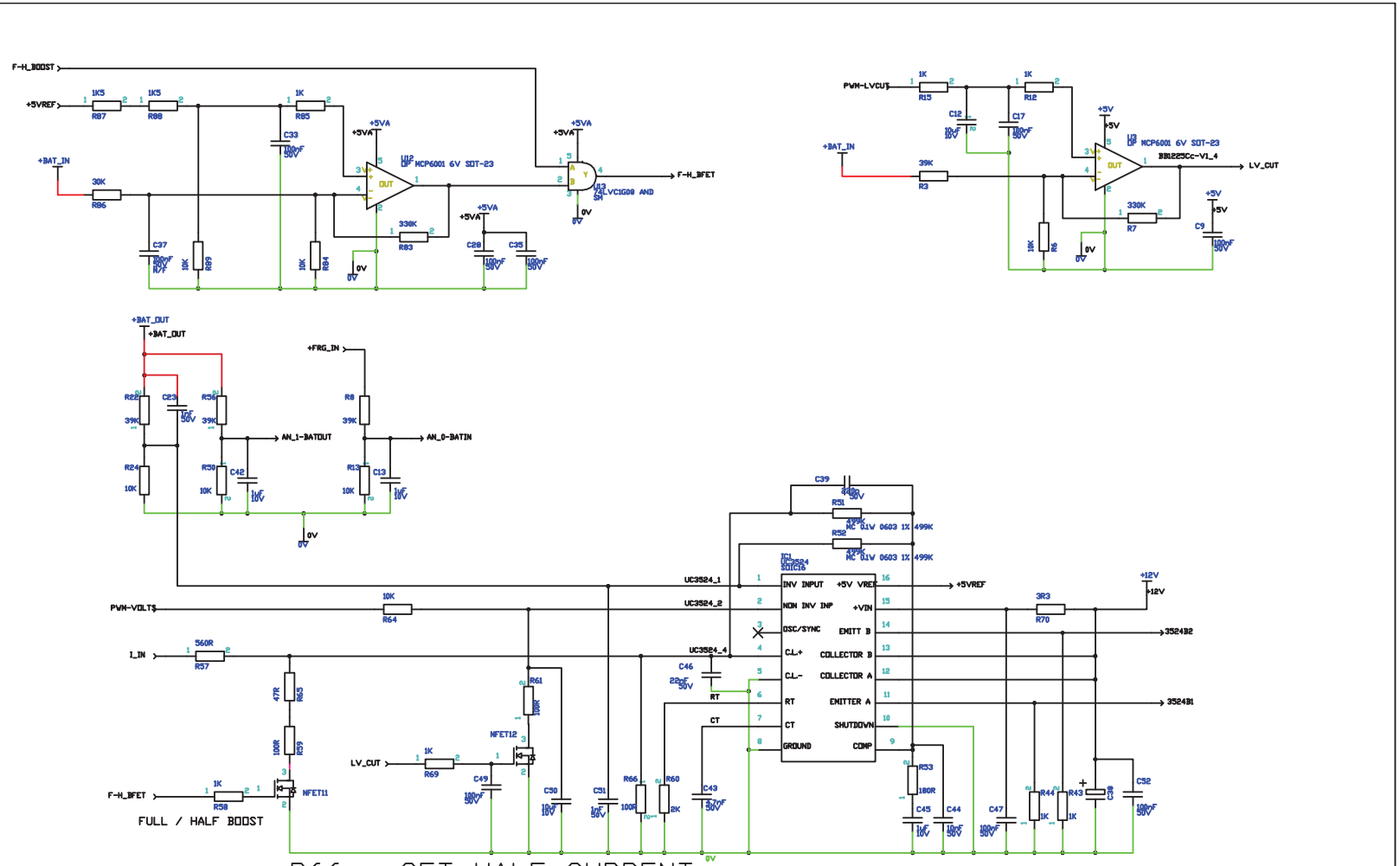

BBCTX6
S601FA-80A
80A/250VAC
COIL:12VDC
CAR FRG FRG CAR
+IN +IN NEG NEG
9 10 11 13
OUT+
FRG+


BBCTX6
ENTER / SETUP
SELECT
CLR FRG
+IN +IN
9 10
FRG CAR
NEG NEG
11 13
OUT
FRG




IXL-Pri-2-8-3.00 x 01 LTZ
L1 207 300-01 LTZ
BB1220C-1.2
15-02-2017
PROJECTION
Do Not Scale

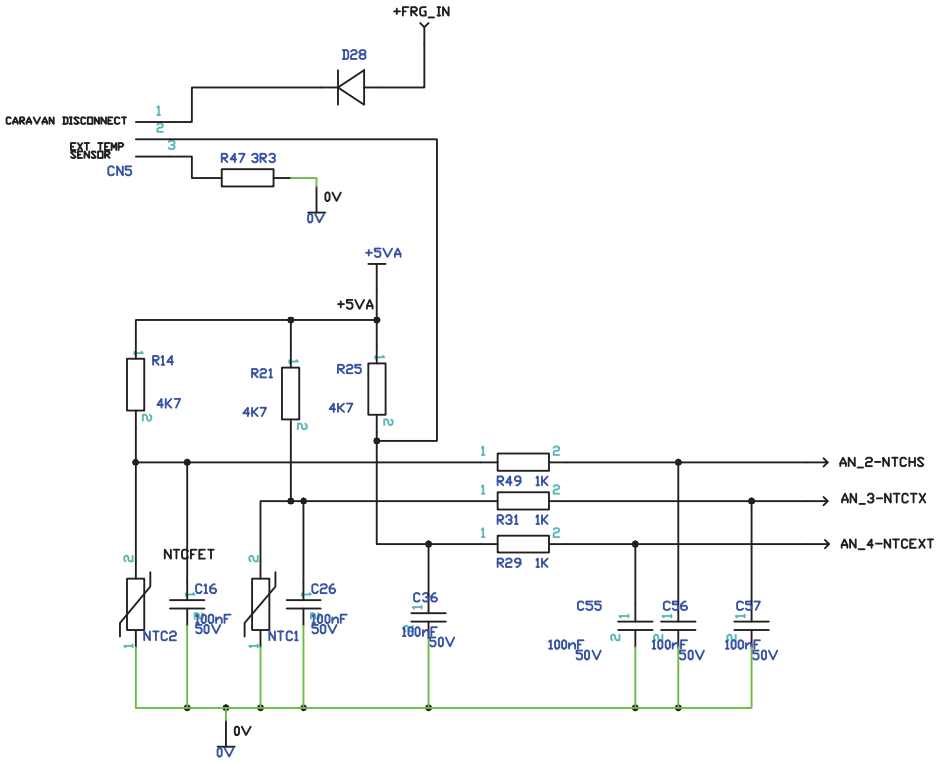
C4

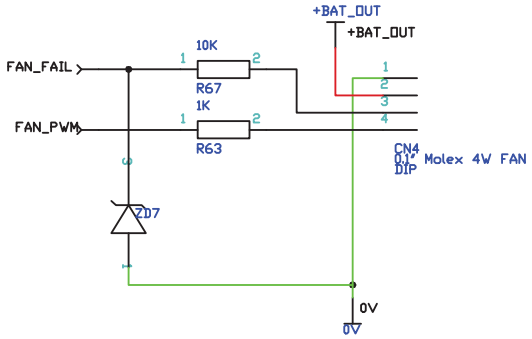


R66 - SET HALF CURRENT
R59 R65 - SET FULL CURRENT (AFTER HALF CURRENT SET)

E	D	C	B	A	Drawn	Check	Projection Do Not Scale	STERLING POWER LTD
Drn	Drn	Drn	Drn	Project			Client	
Chk	Chk	Chk	Chk	Title			Filename BB1220C-1.2 15-02-2017	Drawing No. / Sheet of

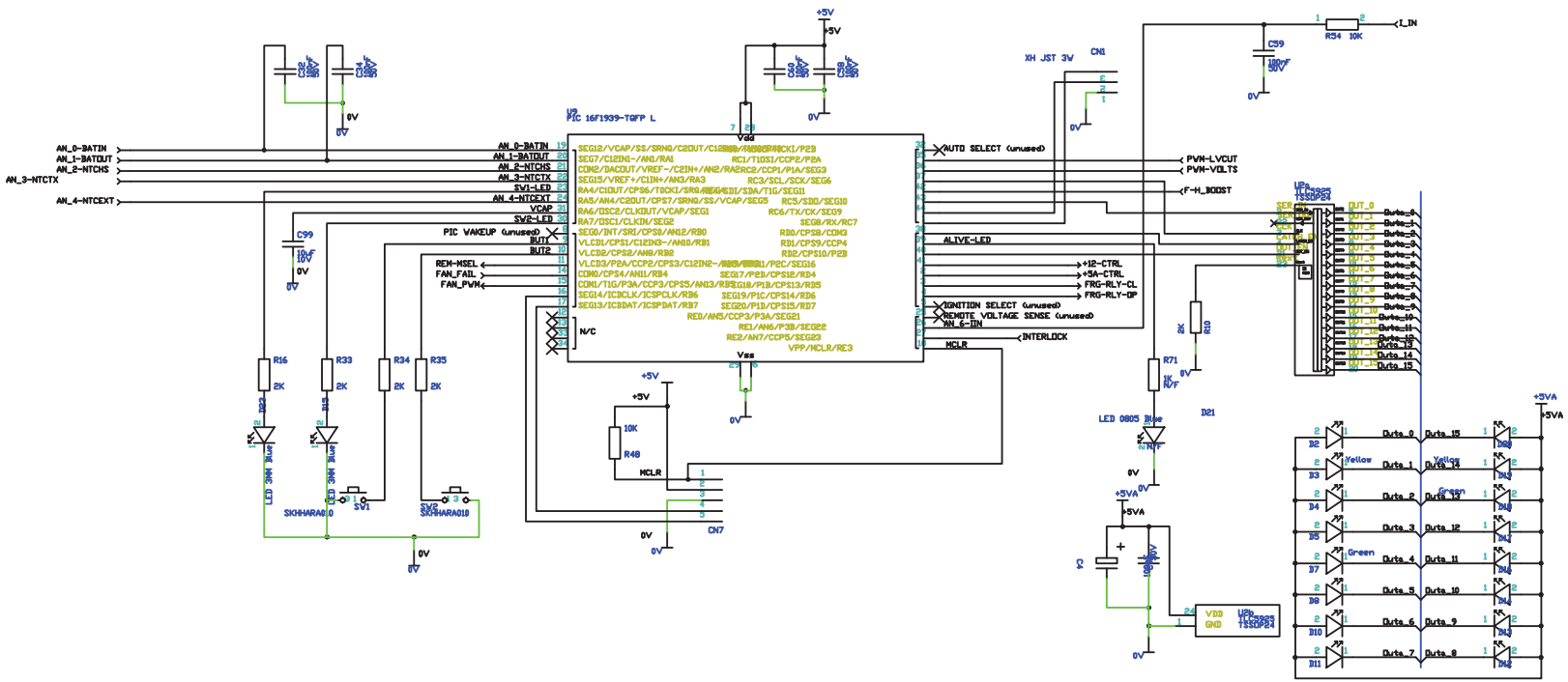
C5





E	D	C	B	A	Drawn	Check	Projection Do Not Scale	
Drn	Drn	Drn	Drn	Project			Client	
Chk	Chk	Chk	Chk	Title			Filename BB1220C-1.2 15-02-2017	Drawing No. / Sheet of

C6



E	D	C	B	A	Drawn	Check	Projection Do Not Scale	STERLING POWER LTD
Drn	Drn	Drn	Drn	Project			Client	
Chk	Chk	Chk	Chk	Title			Filename BB1220C-1.2 15-02-2017	Drawing No. / Sheet of