

ECE TYPE-APPROVAL CERTIFICATE



Concerning:²

Approval granted Approval extended Approval refused Approval withdrawn Production definitively discontinued

Of a type of vehicle/component/separate technical unit² with regard to Regulation No. 10. Of a type of electrical/electronic sub-assembly² with regard to Regulation No.10.

Approval No: <u>E24*10R06/02*6155*00</u>

Reason for extension:

- 1. Make (trade name of manufacturer):
- 2. Type and general commercial description:
- 3. Means of identification of type, if marked on the vehicle/ component/separate technical unit²:
- 3.1 Location of that marking:
- 4. Category of vehicle:
- 5. Name and address of manufacturer:
- 6. In the case of components and separate technical units, location and method of affixing of the approval mark:
- 7. Address(es) of assembly plant(s):

-*N/A*



12.8V310AH

Lithium iron phosphate battery

Approval Mark

Stuck on the enclosure, See Drawings of the ESA

N/A



Stuck on the enclosure, See Drawings of the ESA





- 8. Additional information (where applicable):
- 9. Technical service responsible for carrying out the tests:
- 10. Date of test report:
- 11. Number of test report:
- 12. Remarks (if any):
- 13. Place:
- 14. Date:
- 15. Signature:

Dall

See appendix below

CETOC Technical Service srl

22.07.2024

CN-112-17-260-COM24-15967-IR

See Appendix below

Dublin

14th October, 2024



16. The index to the information package lodged with the approval authority, which may be obtained on Request, is attached.

1. Distinguishing number of the country which issued/extended/refused or withdrawn approval. (see Regulation, provisions on approval).

^{2.} Strike out what does not apply.



Appendix

To type-approval communication concerning the type approval of an electrical/electronic sub-assembly under Regulation No.10.

1. Additional information

1.1.	Electrical system rated voltage:	DC 12V, negative ground		
1.2.	This ESA can be used on any vehicle type with the following restrictions:	See manufacturer's specifications.		
1.2.1	Installation conditions, if any:	See manufacturer's specifications.		
1.3.	This ESA can only be used on the following vehicle types:	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:	Bulk Current Injection Method: Frequency: (20 – 400 MHz) Free Field Testing Method: Frequency: (400 – 2000 MHz)		
1.5.	Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests:	CETOC Technical Service srl		
2.	Remarks:	N/A		
	Appendix to type-approval communication concer type approval of a vehicle under Regulation No	ning the 0.10.		
1.	Additional information			
2.	Electrical system rated voltage:	N/A		
3.	Type of bodywork:	N/A		
4.	List of electronic systems installed in the tested vehicle(s) not limited to the items in the information document:	N/A		
4.1.	Vehicle equipped with 24 GHz short-range radar equipment (yes/no/optional) ² :	N/A		
5.	Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the tests:	N/A		
6.	Remarks:	N/A		



Index to the Information Package

	Date of issue:	14 th October, 2024
	Date of latest amendment:	N/A
	Reason for extension/revision:	N/A
1.	Additional conditions, and advisory notes on legal alternatives.	
2.	Test report(s)	
	- numbers(s):	CN-112-17-260-COM24-15967-IR
	- date of issue:	22.07.2024
	- date of latest amendment:	N/A
3.	Information document	
	- number(s):	12.8V310AH-00
	- date of issue:	17.07.2024
	- date of latest amendment:	N/A
	Documentation:	27 Pages



Appendix: Additional conditions, and advisory notes on legal alternatives

A: Additional conditions:

- 1. The attached technical report, with any of its attachments, forms part of this Type Approval certificate.
- 2. Each device from series production shall be to the measurements specified in the attached drawings, and shall be manufactured only from the materials specified in the Approval documents.
- 3. Changes in the type are permitted only with the explicit permission of NSAI. Breaches of this requirement will lead to a withdrawal of the Type Approval, and in addition may be subject to criminal prosecution.
- 4. At regular intervals, any tests or associated checks prescribed by the applicable legislation to verify continued conformity with the approved type shall be carried out. The manufacturer shall demonstrate compliance with this by submitting to NSAI evidence of adequate arrangements and documented control plans for each type approved.
- 5. Any set of samples or test pieces showing evidence of non-conformity shall give rise to further sampling and testing and all steps shall be taken to restore conformity of production.
- 6. This Type Approval will expire when it is surrendered by the holder, or withdrawn by NSAI, or when the approved type no longer conforms to legal requirements. The recall of the Type Approval can be issued by NSAI when the conditions required for the issuing or continuation of the Type Approval are no longer current, or when the Approval holder is in breach of the duties attached to the Type Approval, or when it is established that the approved type no longer meets the requirements of traffic safety.
- 7. Changes in the company name, address or manufacturing site, as well as in any of the sales or other agents specified in the issuing of the approval must immediately be notified to NSAI.
- 8. The duties imposed by the issuing of this certificate are not transferable. The legal protection of third parties is not affected by this certificate.
- 9. When the manufacture or sale of the system, component or separate technical unit has not been started within one year of the date of issue of this certificate, then NSAI is to be informed. This requirement also applies when the manufacture or sale has been halted for more than one year, or when it ought to have been halted for more than one year. The initial commencement of manufacture or sale, or the resumption of manufacture or sale, shall then be notified to NSAI within one month of commencement or resumption.

B: Legal Options:

Any objection to the requirements set out in this certificate shall be made within one month of the date of issue. The objection shall be made, in writing, to NSAI in Dublin.





ISP Nº 0184 F

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CETOC Technical Service srl Via della Bufalotta, 374, 00139 Roma

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Electromagnetic Compatibility – ESA

No attendance

Xiaoli Li

19/06/2024

ANTARION

12.8V310AH

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0.1. Requirements accord	ling	to
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UNECE Regulation 10.06 to Supplement 2

New approval / Extension of approval / Test report only / COP

Room 206A, 2F, 4# Plant, No.63 Punan Road, Huangpu District,

GuangZhou ShunTai Quality Technical Service Co., Ltd.

1. General

- 1.1. Reason for Inspection Report
- 1.2. Manufacturer's Representative(s)
- 1.3. CETOC TS Representative(s)
- 1.4. Location of Test
- 1.5. Data of test

2. **Manufacturer Details**

- 2.1. Make
- 2.2. Type
- 2.3. Variant/Version
- 2.4. **Commercial Name**
- 2.5. Category
- 2.6. Name and Address of manufacturer

3. **Conclusion:**

- 3.1. Final conclusion of the inspection:
- The above mentioned type was tested in accordance with the above mentioned legislation and was found to comply in all respects. This Inspection report relates only to the items tested.

Xiaoli Li

Xiaoli Li

Name : Position : Type Approval Engineer Guangzhou, 22/07/2024 Place and date :

allong To

Marco Pagliari Tech. Mgr. Roma, 22/07/2024

4. List of appendixes:

Appendix Nr.	Page Nr.		Subject	
Appendix 1	2	:	Test report history	
Appendix 2	2	:	General specification	
Appendix 3	4	:	Inspection results	
Appendix 4	12	:	Test results	

Signature

See information document Lithium iron phosphate battery

ANTARION

Component

Legislation:

Guangzhou, China, 510760





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APPENDIX 1 - TEST REPORT HISTORY

List this report and previous reports, with extension details.

Inspection Report Number	Reason for Extension	Date of Issue
CN-112-17-260-COM24-15967-IR	N/A	22/07/2024

APPENDIX 2 – GENERAL SPECIFICATION

1.	Worst Case Rationale :	All variants hav component list model name al Model 12.8V31	re the same el for each PCB nd appearance 0AH was test	ectronic circuit design and the same , the difference among them is the e. ed.
2.	Significant Interpretations, : Alternative Test Methods, New Technologies	N/A		
3. 3.1.	Summary of test results Applicability :	PASS	FAIL	N/A
4.	Radiated Emissions: Radiated Immunity: BCI Immunity: Free Field Immunity: 150 mm Stripline Immunity: 800 mm Stripline Immunity: Transient Testing: Component Specification			
	Component Part Number:	12.8V310AH		
5. 5.1. 5.2	Facility and Equipment ChecksCalibration certificates checked and valid, recorded in the following tableAll instruments are equipped with identification label	Conform Yes		
	Calibration certificates are complete	Yes		

5.3 of calibration-chain with detailed information regarding primary used.
Is the anechoic/semi-anechoic · Yes chamber correctly set up in all its electrical/mechanical parts to ensure the validity of the measurements?





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Equipment	Serial / Certificate No.	Calibration due*
ALSE ROOM	CN J202206020680B-0006	20/07/2025
Injection probe	J202406171781A-0015	21/06/2025
L.I.S.N.	J202406171781A-0012	21/06/2025
L.I.S.N.	J202406171781A-0014	21/06/2025
Biconical antenna	CN 1GA23062713337-0068	05/07/2025
Log-periodic antenna	CN J202307040840-0003-G1	27/08/2024
Supply Voltage Change Simulator	J202406171781A-0001	21/06/2025
Load dump wave simulator	J202406171781A-0002	21/06/2025
Transient pulse disturbance simulator	J202406171781A-0003	21/06/2025
Scanning receiver	J202406171781A-0021	21/06/2025
Digital phosphor oscilloscope	J202406171781A-0004	21/06/2025

*Specify calibrated date + (interval) or calibration due date.



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APPENDIX 3 – INSPECTION RESULTS

		PASS	FAIL	N/A
	Radiated Emissions			
CISPR25, 4.5.	Measuring equipment complies with CISPR 16-1-4 (2010).	\boxtimes		
	Test Location			
Ann 7, 3.1. Ann 7, 3.3.	Test performed in: - A.L.S.E (Absorber-lined Shielded Enclosure)* - O.A.T.S (Open Area Test Site)* *Strikethrough, as appropriate.			
Ann 7, 3.3.	O.A.T.S level is a clear area, free from electromagnetic reflecting surfaces, within a circle of 15 m minimum radius.			\boxtimes
Ann 7, 3.3.	Measuring equipment is outside 15 m minimum radius circle.			\boxtimes
Ann 7, 3.4.	Ambient noise is at least 6 dB below reference limits, in either case.	\boxtimes		
	Test Arrangements			
CISPR25, 4.4.2.	EUT and antenna are more than 2 m from the walls and ceiling, and 1 m from the nearest absorber material.	\boxtimes		
CISPR25, 6.1.1.	Ground plane is 900 \pm 50 mm high and made from 0.5 mm thick copper, brass or galvanised steel.	\boxtimes		
CISPR25, 6.1.1.	Ground plane is at least 2,000 mm length x 1,000 mm width.	\boxtimes		
CISPR25, 6.4.2.3.	ESA and harness are supported at 50 \pm 5 mm above the ground plane on low relative permittivity material.	\boxtimes		
CISPR25, 6.4.2.3.	Face of the ESA is within 200 mm \pm 10 mm from the edge of the ground plane.	\boxtimes		
CISPR25, 6.4.2.4.	Length of test harness, parallel to the front of the ground plane, is 1,500 \pm 75 mm and does not exceed 2,000 mm.	\boxtimes		
CISPR25, 6.4.2.4.	Long segment of test harness is located parallel to the edge of the ground plane, facing the antenna at a distance of 100 ± 10 mm from the edge.	\boxtimes		
CISPR25, 6.1.2.	Power supply is Artificial Network (AN) rated at 5 $\Omega/50~\mu H.$	\boxtimes		
CISPR25, 6.1.2.	 EUT is: Remotely grounded (vehicle power return line longer than 200 mm): two artificial networks are required, one for the positive supply line and one for the power return line* Locally grounded (vehicle power return line 200 mm or shorter): one artificial network is required for the positive supply* *Strikethrough, as appropriate. 			
CISPR25, 6.1.2.	Case of the ESA is: - Grounded, simulating actual vehicle configuration* - Not grounded, simulating actual vehicle configuration* *Strikethrough as appropriate			
CISPR25, 6.1.2.	AN is electrically bonded to the ground plane.	\boxtimes		



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Antenna

CISPR25, 6.4.2.6.	Height of the phase centre is 100 ± 10 mm above the ground plane.	\bigotimes	
CISPR25, 6.4.2.6.	No part of any antenna radiating element is closer than 250 mm to the floor.	\boxtimes	
CISPR25, 6.4.2.6.	Radiating elements of the measuring antenna are not closer than 1,000 mm to any absorber material, except that used on the floor, and are not closer than 2,000 mm to the walls or ceiling of the shielded enclosure.		
CISPR25, 6.4.2.6.	Phase centre (for biconical) or tip (for log-periodic) is $1,000 \pm 50$ mm from the harness.		
CISPR25, 6.4.2.6.	Antenna calibrated for this distance to correct measuring point (phase centre or tip).		
CISPR25, 6.4.2.6.	Phase centre of the antenna is in line with the centre of the longitudinal part of the wiring harness.		
Ann 7, Ann 8, 4.3.	Pre-test sweep supplied to show compliance throughout frequency range 30 to 1,000 MHz.		
Ann 7, Ann 8, 4.3.	Test frequencies chosen from pre-test data.	\boxtimes	
	Narrowband Test Results		
Ann 8, 2.	Operational mode of ESA:		
App 8 4 2	Detector used and bandwidth:	\boxtimes	
AIIII 0, 4.2.	Average, 120kHz		
6.6.2.	ESA meets narrowband emissions limits, with both vertical and horizontal polarisations.		
	Broadband Test Results		
Ann 7, 2.	Operational mode of ESA:		
Ann 7. 4.2.	Detector used and bandwidth:	\boxtimes	
,	Peak, 120kHz	\boxtimes	
<i>6.5.2</i> .	ESA meets broadband emissions limits, with both vertical and horizontal polarisations.		
	Radiated Immunity		
	Test Method(s) used and Frequency Range(s)		
ISO11452-4	BCI frequency range between 20 and 400 MHz:		
ISO11452-2	Free field frequency range between 400 and 2,000 MHz:		
ISO11452-3	TEM cell frequency range between 20 and 200 MHz:		
ISO11452-5	150 mm stripline frequency range between 20 and 400 MHz:		
ISO11452-5	800 mm stripline frequency range between 20 and 2,000 MHz:		





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Maximum frequency step sizes do not exceed:

Frequency Band (MHz)	Linear Steps (MHz)	Log Steps (%)	Actual Steps Used
20 - 200	5	5	5%
200 - 400	10	5	5%
400 - 1000	20	2	2%
1000 - 2000	40	2	2%

Test Arrangements (General)

Ann 9, 2.2.	Operational mode of ESA:	\bowtie	
	Normal operation		
Ann 9, 2.3.	Extraneous equipment in place during calibration.	\boxtimes	
Ann 9, 2.4.	Test equipment used is the same as for calibration.	\boxtimes	
Ann 9, 2.5.	Loads and actuators are as realistic as possible.	\bowtie	
Ann 9, 2.5.	Case of ESA is: Grounded, simulating actual vehicle configuration* Not grounded, simulating actual vehicle configuration* *Strikethrough, as appropriate.		
Ann 9, 3.1.	Test frequency range is 20 to 2,000 MHz.	\boxtimes	
Ann 9, 3.1.	Test signal is R.F. sine wave amplitude, modulated by a 1 kHz sine wave at a modulation depth of 0.8 \pm 0.04, in the 20 - 800 MHz band and pulse modulation (time on 577 μ s, period 4,600 μ s) in the 800 – 2,000 MHz band.		
6.8.2.1.	Pre-test sweep supplied to show compliance throughout frequency range 20 to 2,000 MHz.	\bowtie	
Ann 9, 3.2.	Test frequencies chosen from pre-test data.	\boxtimes	
6.8.2.2.	No degradation of immunity related functions during the tests.	\bowtie	
	BCI Immunity		
ISO11452-4, 5.	Shielded area used: Yes	\boxtimes	
ISO11452-4, 8.3.2.1.	Forward power used to achieve specified current.	\boxtimes	
	Installation of ESA under Test		
Ann 9, 4.3.2.	Current probe located 150 \pm 10 mm from ESA connectors.	\boxtimes	
Ann 9, 4.3.2.	ESA installed: - In a vehicle, as per ISO 11451-4* - On a ground plane, as per ISO 11452-4* *Strikethrough, as appropriate.		
ISO11452-4, 7.1.	Ground plane is made from at least 0.5 mm thick copper, brass or galvanised steel.	\boxtimes	
ISO11452-4, 7.1.	Minimum width of the ground plane is 1,000 mm and the minimum length is 1,500 mm, or length of the entire underneath of equipment plus 200 mm,	\boxtimes	





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ISO11452-4, 7.1.	Height of the ground plane is 900 \pm 100 mm.	\bigotimes	\square	
ISO11452-4, 7.1.	Ground plane is bonded to the shielded enclosure, with the straps at a distance no greater than 300 mm apart.			
ISO11452-4, 7.2.	 ESA remotely grounded (vehicle power return line longer than 200 mm): two artificial networks are required, one for the positive supply line and one for the power return line)* ESA locally grounded (vehicle power return line 200 mm or shorter): one artificial network is required, for the positive supply* 			
19011152 1 72	Power supply is Artificial Network (AN) roted at 50 0/5 uH	\boxtimes		
13011432-4, 7.2.		\boxtimes		
ISO11452-4, 7.3.	relative permittivity material.			
ISO11452-4, 7.3.	Face of the ESA within 100 mm from the edge of the ground plane.			
ISO11452-4, 7.3.	Distance of at least 500 mm between ESA and any metal parts, such as the walls of the shielded enclosure (exception is ground plane).		_	
ISO11452-4, 7.4.	Length of test harness is 1,700 + 300 mm, unless specified.	\boxtimes		
	BCI Test Results			
6.8.2.1.	No malfunction at 60 mA.			
	Free Field Immunity			
ISO11452-2, 8.3.1.	Test field defined by:			
	 Forward power* Another parameter, directly related* 			
	*Strikethrough, as appropriate.	\boxtimes		
ISO11452-2, 8.3.2.	Antenna is at a distance of $1,000 \pm 10$ mm from the reference point.			
ISO11452-2, 8 3 2	Reference point is 150 ± 10 mm above the ground plane.			
ISO11452-2.	Reference point is 100 ± 10 mm from the edge of the ground plane	\boxtimes		
8.3.2.		\boxtimes		
ISO11452-2, 8.3.2.	For frequencies from 80 - 1,000 MHz, the reference point is in the centre of the harness.			
ISO11452-2, 8.3.2.	For frequencies from 1,000 - 2,000 MHz, the reference point is in line with the ESA.			
	Test Arrangements			
ISO11452-2, 7.1.	Ground plane is made from at least 0.5 mm thick copper, brass or galvanised steel.			
ISO11452-2, 7.1.	Minimum width of the ground plane is 1,000 mm and the minimum length is 2,000 mm.	\bowtie		
ISO11452-2, 7.1.	Height of the ground plane is 900 ± 100 mm.	\boxtimes		



CETOC Technical Service srl

Via della Bufalotta, 374, 00139 Roma Inspection Report Nr.:CN-112-17-260-COM24-15967-IR Manufacturer: Dongguan Rongke New Energy Technology Co., Ltd Type: 12.8V310AH

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ISO11452-2, 7.1.	Bonding straps are at a distance no greater than 300 mm apart.	\ge	P	П
ISO11452-2, 7.2.	Power supply is Artificial Network (AN) rated at 50 $\Omega/5~\mu H.$			
ISO11452-2, 7.2.	 ESA remotely grounded (vehicle power return line longer than 200 mm): two artificial networks are required, one for the positive supply line and one for the power return line)* ESA locally grounded (vehicle power return line 200 mm or shorter): one artificial network is required, for the positive supply* *Strikethrough as appropriate 			
ISO11452-2, 7.3.	AN mounted directly on the ground plane and cases bonded to the ground plane	\boxtimes		
ISO11452-2, 7.3.	ESA and harness supported 50 \pm 5 mm above table, on low relative permittivity material.			
ISO11452-2, 7.3.	Face of the ESA located 200 \pm 10 mm from the edge of the ground plane.			
ISO11452-2, 7.4.	Test harness parallel to the front edge of the ground plane.			
ISO11452-2, 7.4.	Total length of harness does not exceed 2,000 mm.	\boxtimes		
	Actual wiring harness length: N/A m			\boxtimes
ISO11452-2, 7.4.	or Length is 1,500 \pm 75 mm between ECU and AN.	\boxtimes		
ISO11452-2, 7.4.	Harness is at a distance of 100 ± 10 mm from the edge of the ground plane.			
ISO11452-2, Fig 1	Front face of ESA is at least 1.0 m from all other conductive structures.			
ISO11452-2, Fig 1	ESA harness is at least 2.0 m forward from the chamber wall.			
	Antenna Type(s) and Frequency Range(s)			
Ann 9, 4.1.2.	Antenna is vertically polarised.			
ISO11452-2, 7.6.	Antenna is in the same position as the calibration.			
ISO11452-2, 7.6.	Phase centre is 100 \pm 10 mm above the ground plane.			
ISO11452-2, 7.6.	Antenna elements are no closer than 250 mm to the floor of the facility, no closer than 0.5 m to any radio absorbent material, and no closer than 1.5 m to the wall of the facility.			
ISO11452-2, 7.6.	Distance between wiring harness and antenna is $1,000 \text{ mm} \pm 10 \text{ mm}$, measured from the phase-centre of the biconical antenna, or the nearest	\boxtimes		
Ann 9, 3.1.	Test signal modulation is: - AM, 1 kHz modulation, 80 % depth in 20 - 800 MHz frequency range; - PM, ton 577 μ s, period 4,600 μ s in 800 - 2,000 MHz frequency range.			
	Free Field Immunity Test Results			
6.8.2.	No malfunction at 30 V/m.	Ä		
	150 mm Stripline Immunity			\boxtimes

ISO11452-5, Stripline housed in a shielded room. *5.3.1.*



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ISO11452-5, 6.2.2.	Test field defined by:			\boxtimes
	- Forward power*			
	*Strikethrough, as appropriate.			
ISO11452-5, 6.2.3.	Field probe in the centre of stripline.			
	Installation of ESA under Test			
ISO11452-5, 5.3.1.	ESA is 200 + 20 - 0 mm from the edge of the active conductor.			
ISO11452-5, 5.3.1.	Peripherals are a minimum of 200 mm from the edge of the active conductor.			
ISO11452-5, 5.3.1.	Harness supported 50 mm above the ground plane and is placed in the centre of the stripline.			
	Actual wiring harness length: N/A m			\times
ISO11452-5, 5.3.1.	or Minimum length under stripling is 1,000 mm			\boxtimes
				\bowtie
ISO11452-5, 5.3.1.	All wires in the harness are terminated or open, according to the vehicle application.	_	_	_
ISO11452-5, 5.3.1.	Device and peripherals connected to the ground plane, as specified by the vehicle installation.			
ISO11452-5, 5.3.1.	Power supply is Artificial Network (AN) rated at 50 $\Omega/5~\mu H.$			\boxtimes
ISO11452-5, 5.3.1.	 ESA remotely grounded (vehicle power return line longer than 200 mm): two artificial networks are required, one for the positive supply line and one for the power return line)* -ESA locally grounded (vehicle power return line 200 mm or shorter): one artificial network is required, for the positive supply* *Strikethrough, as appropriate. 			
	150 mm Stripline Test Results			
6.8.2.	No malfunction at 50 V/m.			\boxtimes
	800 mm Stripline Immunity			
Ann 9, 4.5.2.1.	Stripline housed in a screened room.			
Ann 9, 4.5.2.1.	Stripline positioned a minimum of 2,000 mm from the walls or metallic enclosure.			
Ann 9, 4.5.2.1.	Stripline placed on non-conducting supports at least 400 mm above the floor.			
Ann 9, 4.5.2.2.	Field probe positioned within the central one-third of the longitudinal, vertical and transverse dimensions of the space between the parallel plates, with the system under test absent.			
Ann 9, 4.5.2.2.	Test field defined by:			\boxtimes
	 Forward power* Another parameter, directly related* *Strikethrough, as appropriate 			
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	Installation of ESA under Test		
Ann 9, 4.5.2.3.	ESA is within the central one-third of the stripline.		\ge
Ann 9, 4.5.2.3.	ESA is supported on non-conducting material.		\boxtimes
Ann 9, 4.5.2.4.	Wiring loom is arranged as per Appendix 1, Figure 3.		
Ann 9, 4.5.2.4.	Associated equipment is a minimum of 1,000 mm from stripline.		\boxtimes

800 mm Stripline Test Results

Frequency	Frequenc	у	Forward	Power		Output Level			Field St	rength
Suggested	(MHz)	Ca	Cal. Test			Cal.	Tes	st .	(V/ı	n)
	NI/A	(W	^)	(W)			(dBr	n) \	NI/	٨
		N/	Δ				N/A		N/	Δ
14/74	10/7		~	14/74		14/74	107		1 1/	· ·
6.8.2.	No malfun	iction at 12.5	V/m.							\boxtimes
	Transient	Testing								
	Case of E	SA is:						\boxtimes		
	- Grounde	ed, simulating	actual v	ehicle confi al vabiala a	guration*	*				
	*Strikethrou	unded, sintula ugh, as appropri	ing actu ate.	ai venicie co	oringuratic	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
	Transient	Immunity								
6.9.1.	Test set up according to ISO 7637-2 (second edition 2004 and Amd.1:2008).					\boxtimes				
Ann 10, 2.	Supply lines and other lines, which may be connected to supply lines, are \square									
	Test voltage and time parameters are within allowed envelopes. $igsqcup$									
	Test pulse	es and duration	n accordi	ing to the fo	llowing:			\boxtimes		
			Fund	tional Statu	is for Svst	ems		7		
	Test Pulse	Immunity Test Level	Rela Immun Fur	ated to ity-related actions	Not Rela Immu relat	ated to nity- ied	Test Duration			
	1			С	D		5000 pulses	-		
	2a	III		В	D		5000 pulses	_		
	2b	III		С	D		10 pulses			
	3a	III		А	D		1 hour			
	3b			А	D		1 hour			
			(for ES	B SA, which Ist be						
	4	111	during	g engine	D		r puise			

ESA operational after the tests, according to the above classification.

start, or C, for other ESA)





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Emission of Conducted Disturbances

6.9.1. Test set up according to ISO 7637-2.

Ann 10, 3. Supply lines and other lines, which may be connected to supply lines, are tested.

Slow pulses and fast pulses tested on both powering up and powering down.

Polarity of Pulse	Maximum Allowed	Pulse Amplitude
Amplitude	Vehicles with 12 V	Vehicles with 24 V
	systems	system
Positive	+ 75 V	+ 150 V
Negative	- 100 V	- 450 V

Remarks

None

Note: CETOC TS apply measurement uncertainty to calibrated items but not test results.



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APPENDIX 4 – TEST RESULTS

APPENDIX 4.1 Radiated Emissions charging mode

Vehicles with 12V systems



PK Detector
 AV Detector
 AV Detector

PK

- AV





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discharging mode

Vehicles with 12V systems









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Vertical Polarisation 30MHz to 1GHz ECE R10(Vertical) 100 90 80 70 60 Level[dBµV/m] 50 40 30 20 15 10 10 0 -10 -20 30M 40M 50M 70M 90M 200M 300M PK - AV Frequency[Hz] - PK Limit - QP Limit PK Detector · AV Detector AV Limit ٠



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APPENDIX 4.2 Radiated Immunity

charging mode

Frequency	Level				Test Result		
(MHz)	(V/m)	Modulation	Polarity	Accept Status	Vehicles with 12V systems	Vehicles with 24V systems	
400-800	30	AM (1kHz,80%)	V	I	А	N/A	
800-1000	30	PM	V	I	А	N/A	
1000-2000	30	PM	V	I	А	N/A	

discharging mode

Frequency	Level			A	Test Result		
(MHz)	(V/m)	Modulation	Polarity	Accept Status	Vehicles with 12V systems	Vehicles with 24V systems	
400-800	30	AM (1kHz,80%)	V	I	А	N/A	
800-1000	30	PM	V	I	А	N/A	
1000-2000	30	PM	V	I	А	N/A	

APPENDIX 4.3 BCI Immunity

charging mode

Frequency (MHz) Le		Modulation		Test Result		
	Level (mA)		Injection place	Vehicles with 12V systems	Vehicles with 24V systems	
20-400	60	AM (1kHz,80%)	150mm	А	N/A	

discharging mode

Frequency (MHz)	Level (mA)	Madulation	Injustion place	Test Result		
		Modulation	Injection place	Vehicles with 12V systems	Vehicles with 24V systems	
20-400	60	AM (1kHz,80%)	150mm	A	N/A	





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APPENDIX 4.4 Transient Immunity

charging mode

		Functional Stat	us for Systems	Test r	results
Test Pulse	Immunity Test Level	Related to Immunity- related Functions	Not Related to Immunity related Functions	Vehicles with 12V systems	Vehicles with 24V systems
1	III	С	Ð	С	N/A
2a	III	В	Ð	А	N/A
2b	III	С	Ð	С	N/A
3a	III	А	Ð	А	N/A
3b	III	A	Ð	A	N/A
4	III	С	Ð	С	N/A

discharging mode

		Functional Stat	us for Systems	Test results	
Test Pulse	Immunity Test Level	Related to Immunity- related Functions	Not Related to Immunity related Functions	Vehicles with 12V systems	Vehicles with 24V systems
1		С	Ð	С	N/A
2a		В	Ð	A	N/A
2b		С	Ð	С	N/A
3a		А	Ð	A	N/A
3b		A	Ð	A	N/A
4	III	С	Ð	С	N/A



RFD

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APPENDIX 4.5 Emission of Conducted Disturbances

Vehicles with 12V systems













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Information document no. 12.8V310AH-00 relating to type-approval of an electronic subassembly with respect to electromagnetic compatibility (ECE Regulation 10.06 to Supplement 2)

Туре	:	12.8V310AH
Manufacturer	:	Dongguan Rongke New Energy Technology Co., Ltd
Date	:	2024/07/17

Information document No.	: 12.8V310AH-00
Manufacturer	: Dongguan Rongke New Energy Technology Co., Ltd
Regulation	: R10.06 to Supplement 2

INDEX

- 2 Index
- 3 General
- 5 Drawings of the ESA
- 7 Electronic block diagram
- 8 List of components constituting the ESA

Information document No.	: 12.8V310AH-00
Manufacturer	: Dongguan Rongke New Energy Technology Co., Ltd
Regulation	: R10.06 to Supplement 2

GENERAL

1. Make (trade name of manufacturer):

ANTARION

2. Type: **12.8V310AH**

ANTARION

Type 12.8V310AH has variants as below: 12.8V100AH, 12.8V105AH, 12.8V120AH, 12.8V125AH, 12.8V150AH, 12.8V160AH, 12.8V167AH, 12.8V170AH, 12.8V200AH, 12.8V210AH, 12.8V230AH, 12.8V280AH, 12.8V310AH

All variants have the same electronic circuit design and the same component list for each PCB, the difference among them are the model name and appearance.

General commercial description(s): Lithium iron phosphate battery

- Means of identification of type, if marked on the component/separate technical unit ⁽¹⁾:
 Approval mark
- 3.1 Location of that marking:Stuck on the enclosure, See Drawings of the ESA
- Name and address of manufacturer: Dongguan Rongke New Energy Technology Co., Ltd Room 902, Building 1, Songhu Zhigu Science Innovation Center, No.7, Liaobu Yanhe North Road, Liaobu Town, Dongguan City, Guangdong Province

Name and address of authorised representative, if any:**N/A**

- In the case of components and separate technical units, location and method of affixing of the approval mark:
 Stuck on the enclosure, See Drawings of the ESA.
- Address(es) of assembly plant(s):
 Dongguan Rongke New Energy Technology Co., Ltd Room 902, Building 1, Songhu Zhigu Science Innovation Center, No.7, Liaobu Yanhe North Road, Liaobu Town, Dongguan City, Guangdong Province

Page 3 of 8

Information document No.	: 12.8V310AH-00
Manufacturer	: Dongguan Rongke New Energy Technology Co., Ltd
Regulation	: R10.06 to Supplement 2

- 7. This ESA shall be approved as a component/ STU^2 .
- Any restrictions of use and conditions for fitting: N/A
- Electrical system rated voltage: DC 12V, positive/negative² ground.

Appendix 1: Description of the ESA chosen to represent the type (electronic block diagram and list of main component constituting the ESA (e.g. make and type of microprocessor, crystal, etc.).

See electronic block diagram and list of main component constituting the ESA for details.

Appendix 2: Relevant test report(s) supplied by the manufacturer from a test laboratory accredited to ISO 17025 and recognized by the Type Approval Authority for the purpose of drawing up the type approval certificate.

N/A

Only applicable for charging systems: N/A

- 10. Charger: N/A
- 11. Charging current: N/A
- 12. Maximal nominal current (in each mode if necessary) : N/A
- Nominal charging voltage:
 N/A
- 14. Basic ESA interface functions: N/A
- 15. Minimum R_{sce} value (see paragraph 7.11. of this Regulation): N/A

1. If the means of identification of type contains characters not relevant to describe the component or separate technical unit types covered by this information document, such characters shall be represented in the documentation by the symbol "?" (e.g. ABC??123??).

Page 4 of 8

^{2.} Delete where not applicable.

Information document No.	: 12.8V310AH-00
Manufacturer	: Dongguan Rongke New Energy Technology Co., Ltd
Regulation	: R10.06 to Supplement 2

Drawings of the ESA

Location of the ECE approval mark



Information document No.

: 12.8V310AH-00

: Dongguan Rongke New Energy Technology Co., Ltd

Regulation

Manufacturer

: R10.06 to Supplement 2

variants	Picture
12.8V100AH, 12.8V105AH	350.6 350.6 189 189 189 000000000000000000000000000000000000
12.8V120AH, 12.8V125AH, 12.8V150AH, 12.8V160AH, 12.8V167AH, 12.8V170AH	350 350 175 ¹⁸⁹ 175 ¹⁸⁹ 175 ¹⁰ 175 ¹⁰
12.8V280AH, 12.8V310AH	521 230 430 230 C C C C C C C C C C C C C C C C C C C
12.8V200AH, 12.8V210AH, 12.8V230AH	Sasa Jacobia Sas

Information document No.	: 12.8V310AH-00
Manufacturer	: Dongguan Rongke New Energy Technology Co., Ltd
Regulation	: R10.06 to Supplement 2

Electronic Block Diagram



Information document No.	: 12.8V310AH-00
Manufacturer	: Dongguan Rongke New Energy Technology Co., Ltd
Regulation	: R10.06 to Supplement 2

List of main component constituting the ESA

Name	Specification	Qty.
Protection IC (U1)	Overcharge Detection Voltage: Over-discharge Detection Voltage: Operating temperature range: -40~ 85°C	1
MCU (U2)	Overcharge Detection Voltage: Over-discharge Detection Voltage: Operating temperature range: -30~ 100°C	1
MOSFET (MH1, MH3)	Id: 120A Vds: 85 V Operating temperature range: -55~ 150°C	2
MOSFET (MC1, MC2, MC3, MC4, MC5, MC6, MC7, MC8, MC9, MC10, MC11, MC12, MC13, MC14, MC15, MD1, MD2, MD3, MD4, MD5, MD6, MD7, MD8, MD9, MD10, MD11, MD12, MD13, MD14, MD15)	Id: 180A Vds: 100 V Operating temperature range: -55~ 150°C	30
NTC(RT2, RT3)	Resistance at 25°C: 10 KΩ±1% Tmax: 300°C	2
PCB	Fire rating: V-0 Max temperature: 130°C	1