Technical Note

RRC1130 (2nd Generation):
How to read Manufacturer Info Block

1. Scope

This document teaches you how to read the Manufacturer Info Block out of RRC1130 batteries using I2C communication. This document is valid for RRC1130 Generation 2 only, starting with part number 110019-12.

2. Procedure

You can read the serial number, the model code, or the revision number of your RRC1130 battery by accessing the so-called "Manufacturer Info Block".

The 7-bit I^2C address of the RRC1130 battery is 0x55. By appending a "0" for writing or a "1" for reading, the I^2C address becomes 0xaa or 0xab, respectively.

Description	7-bit Address	Write Address	Read Address
RRC1130 battery fuel gauge	1010 101 (0x55)	1010 1010 (0xaa)	1010 1011 (0xab)

Here are the steps to read the Manufacturer Info Block:

1. Write "0x01" to the DataFlashBlock() register 0x3f. This command shifts 32 Bit of Manufacturer Info out of the Flash into the BlockData() command space.
2. Read directly from the BlockData() (0x40…0x5f).

Byte #	Description
0 to 15	RRC internal use (unique for each battery)
16 to 20 (0x50 to 0x53)	Model code: 1130 for RRC1130 battery 0x50: 1 0x51: 1 0x52: 3 0x53: 0
21, 22 (0x54, 0x55)	Revision index of battery pack. For example: Revision index -13 is 0x54: 1 0x55: 3
23, 24 (0x56, 0x57)	Manufacturer code (RRC internal use) 0x56: Manufacturer 0x57: Production Line / Manufacturer Site
25, 26 (0x58, 0x59)	Overflow for serial number 0x00 to 0xFF, max. number 255
27 to 30 (0x5a to 0x5d)	Serial number 0x0000 to 0xFFFF, max. number 65535
31, 32	RRC internal use

3. Example

In this example, let's read the Bytes 16 to 30, containing the Model Code, the Revision Index, the Manufacturer Code, and the Serial Number. Here is a data log of the actual procedure:

Rd/Wr	Address	Register	Length	Data
Wr	aa	3f	1	01
Rd	aa	50	14	31 31 33 30 31 32 4D 31 30 30 30 32 45 35

First, we address the RRC1130 battery at 0xaa and set up the data, writing 0x01 in register 0x3f. Next, we can read 14 bytes of data, starting at register 0x50. The battery returns:

Raw Data (ASCII) 31 31 33 30 31 32 4D 31 30 30 30 32 45 35

Description	Data
Raw Data (ASCII)	31 31 33 30 31 32 4D 31 30 30 30 32 45 35
Decoded Data	1 1 3 0 1 2 M 1 0 0 0 2 E 5

The ASCII code translates to the following:

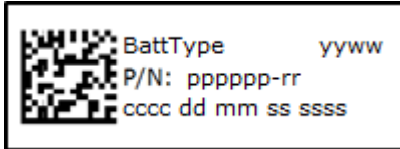|	
1130:	Model Code "1130", stands for RRC1130.
12:	Revision Index of battery pack: -12
M1:	Manufacturer Code: M1 (RRC internal use only)
00:	Overflow for Serial Number: 00
02E5:	Serial Number: 02E5

4. Comparison to the Battery label

You can find the same information on the battery label (compare to TN_How_to_Read_DataMatrix_Code_Label)

(The battery label contains even more information).

Placeholder	Content	Example
BattType	Battery Type	RRC1130
yyww	Manufacturing Date (Year & Calendar Week)	1950 (Year: 2019, Calendar Week: 50) 2005 (Year: 2020, Calendar Week: 05)
qqq	Quantity	030 (if there are 30 batteries in the Outer Packaging)
pppppp	RRC part number	110019 for RRC1130
-rr	Revision index of the battery pack	-12
cccc	Model code	1130 (for RRC1130)
dd	Revision index of battery pre-assembly	12
mm	Manufacturer code	M1
ss ssss	Sequential serial number (Format: Hex (Base-16). This serial number is reset to zero when the revision "dd" of the pre-assembly is increased.	00 0001 – FF FFFF e. g. 00 05BE corresponds to 1470.

5. Revision History

Revision	Valid from	Changes
A	21.12.2021	First released version

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Germany/Headquarters	USA	Hong Kong	China
RRC power solutions GmbH Technologiepark 1 66424 Homburg / Saar	RRC power solutions Inc. 18340 Yorba Linda Blvd., # 107-437 Yorba Linda, CA 92886	RRC power solutions Ltd. S-V,6/F, Valiant Industrial Centre 2-12 Au Pui Wan Street Fo Tan, N.T., Hong Kong	RRC power solutions Ltd. Room 1306, C Building, Tianan International building, Renmin South Road, Luohu District, Shenzhen 518021
Tel.: +49 6841 98090 Fax: +49 6841 9809280 Email: sales@rrc-ps.de Web: www.rrc-ps.com	Tel.: +1 714 777 3604 Fax: +1 714 777 3658 Email: usa@rrc-ps.com Web: www.rrc-ps.com	Tel.: +852 2376 0106 Fax: +852 2375 0107 Email: hkrrc@rrc-ps.cn Web: www.rrc-ps.cn	Tel.: +86 755 8374 1908 Fax: +86 755 8374 1861 Email: hkrrc@rrc-ps.cn Web: www.rrc-ps.cn

Headquaters & Warehouse

Elektrostraat 17
NL-7483 PG Haaksbergen
The Netherlands

T: +31 (0)53 573 33 33
E: info@texim-europe.com
Homepage: www.texim-europe.com

The Netherlands

Elektrostraat 17
NL-7483 PG Haaksbergen

T: +31 (0)53 573 33 33
E: nl@texim-europe.com

Belgium

Zuiderlaan 14, box 10
B-1731 Zellik

T: +32 (0)2 462 01 00
E: belgium@texim-europe.com

UK & Ireland

St Mary's House, Church Lane
Carlton Le Moorland
Lincoln LN5 9HS

T: +44 (0)1522 789 555
E: uk@texim-europe.com

Germany - North

Bahnhofstrasse 92
D-25451 Quickborn

T: +49 (0)4106 627 07-0
E: germany@texim-europe.com

Germany - South

Martin-Kollar-Strasse 9
D-81829 München

T: +49 (0)89 436 086-0
E: muenchen@texim-europe.com

Austria

Warwitzstrasse 9
A-5020 Salzburg

T: +43 (0)662 216 026
E: austria@texim-europe.com

Nordic

Søndre Jagtvej 12
DK-2970 Hørsholm

T: +45 88 20 26 30
E: nordic@texim-europe.com

Italy

Via Matteotti 43
IT-20864 Agrate Brianza (MB)

T: +39 (0)39 9713293
E: italy@texim-europe.com