



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 14ATEX5062X** Issue: **5**

4 Equipment: **Gecma COM module RT**

5 Applicant: **Eaton Electric Limited**

6 Address: Great Marlings  
Butterfield  
Luton LU2 8DL  
UK

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2012      EN 60079-11:2012      EN 60079-18:2015      EN 60079-28:2015

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

**Fibre:**



II 2(2)G

Ex mb [ib] op is IIC T4 Gb

Ta = -30°C to +75°C

LT\* Ta = -40°C to +75°C

\* Low Temperature Version

**Class I fibre universal:**



II 2(2)G

Ex mb [ib] IIC T4 Gb

Ta = -30°C to +75°C

Ta = -40°C to +75°C

**Copper**

II 2(2)G

Ex mb [ib] IIC T4 Gb

Ta = -30°C to +75°C

Ta = -40°C to +75°C

Project Number 80003013

  
N Jones  
Certification Manager

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**SCHEDULE**

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**13 DESCRIPTION OF EQUIPMENT**

The Gecma COM Module RT receives its power from a Gecma PSU Module (IECEX SIR 14.0030X, Sira 14ATEX5061X) and also connects to a Gecma Display Module (IECEX SIR 14.0032X, Sira 14ATEX5063X). The Gecma COM Module RT also has outputs for connection to suitably-certified devices, e.g. keyboard, pointing device.

The Gecma COM Module RT contains a motherboard and daughter boards, fully encapsulated within an aluminium alloy enclosure. The only unencapsulated parts are the intrinsically safe terminals, which have the entity parameters shown below.

	RS232 port	USB port 1	USB port 2	USB port 3	USB port 4	External keyboard port	External pointing device port	LVDS (to Display Module)	Ethernet
Ui	12 V	0	0	0	0	0	0	4.935 V	3.3 V
Ii	-	-	-	-	-	-	-	3.275 A	1.778 A
Pi	-	-	-	-	-	-	-	3.927 W	1.467 W
Ci	0	11 nF	11 nF	11 nF	11 nF	0	0	0	0.24 µF
Li	0	0	0	0	0	0	0	0	0
Uo	6.015 V	5.355 V	5.355 V	5.355 V	5.355 V	5.5 V	5.5 V	4.935 V	2.94 V
Io	26 mA	972 mA	972 mA	972 mA	972 mA	267 mA	126 mA	3.266 A	1.584 A
Po	39 mW	1.676 W	1.676 W	1.676 W	1.676 W	613 mW	264 mW	3.917 W	1.165 W
Co	37 µF	57.9 µF	57.9 µF	57.9 µF	57.9 µF	58 µF	58 µF	100 µH	99 µF
Lo	52 mH	37 µH	37 µH	37 µH	37 µH	498 µH	2239 µH	3.3 µH	3.1 µH
Lo/Ro									13.5 µH/Ω

Note: All outputs shall be assessed as separate intrinsically safe circuits

**Variation 1** - This variation introduced the following changes:

- i. Introduction of the "Gecma RT COM Module – Copper" model, with a copper Ethernet interface as an alternative to the optical interface, with the introduction of a new certification code Ex mb[ib] IIC T4 Gb and the addition of entity parameters to the product description.
- ii. Amendment to a Specific Condition of Use relating to the external enclosure and the introduction of a new Specific Condition of Use relating to equipotential earthing.
- iii. Corrections to drawing CI6812-621 were recognised.

**Variation 2** - This variation introduced the following changes:

- i. Change of manufacturer's name from Measurement Technology Limited to Eaton Electric Limited.
- ii. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-18:2009 and EN 60079-28:2007 were replaced by EN 60079-18:2015 and EN 60079-28:2015; the Condition of Manufacture is revised accordingly.



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**Variation 3** - This variation introduced the following changes:

- i. Change of alternative manufacturer's name from 'Gecma Components GmbH' to 'Gecma Components electronic GmbH'.
- ii. Increase in the resistance at the external keyboard port with a corresponding change to the entity parameters; updates to entity parameters at the USB and external pointing device ports as follows:

Original entity parameters:

	RS232 port	USB port 1	USB port 2	USB port 3	USB port 4	External keyboard port	External pointing device port	LVDS (to Display Module)	Ethernet
Ui	12 V	0	0	0	0	0	0	4.935 V	3.3 V
Ii	-	-	-	-	-	-	-	3.275 A	1.778 A
Pi	-	-	-	-	-	-	-	3.927 W	1.467 W
Ci	0	11 nF	11 nF	11 nF	11 nF	0	0	0	0.24 µF
Li	0	0	0	0	0	0	0	0	0
Uo	6.015 V	5.355 V	5.355 V	5.355 V	5.355 V	5.5 V	5.5 V	4.935 V	2.94 V
Io	26 mA	972 mA	972 mA	972 mA	972 mA	267 mA	126 mA	3.266 A	1.584 A
Po	39 mW	1.676 W	1.676 W	1.676 W	1.676 W	613 mW	264 mW	3.917 W	1.165 W
Co	37 µF	57.9 µF	57.9 µF	57.9 µF	57.9 µF	58 µF	58 µF	100 µH	99 µF
Lo	52 mH	37 µH	37 µH	37 µH	37 µH	498 µH	2239 µH	3.3 µH	3.1 µH
Lo/Ro									13.5 µH/Ω

Amended entity parameters (italics):

	RS232 port	USB port 1	USB port 2	USB port 3	USB port 4	External keyboard port	External pointing device port	LVDS (to Display Module)	Ethernet
Ui	12 V	0	0	0	0	0	0	4.935 V	3.3 V
Ii	-	-	-	-	-	-	-	3.275 A	1.778 A
Pi	-	-	-	-	-	-	-	3.927 W	1.467 W
Ci	0	11 nF	11 nF	11 nF	11 nF	0	0	0	0.24 µF
Li	0	0	0	0	0	0	0	0	0
Uo	6.015 V	5.355 V	5.355 V	5.355 V	5.355 V	<i>5.355 V</i>	<i>5.355 V</i>	4.935 V	2.94 V
Io	26 mA	972 mA	972 mA	972 mA	972 mA	<i>248 mA</i>	126 mA	3.266 A	1.584 A
Po	39 mW	1.676 W	1.676 W	1.676 W	1.676 W	<i>567 mW</i>	264 mW	3.917 W	1.165 W
Co	37 µF	<i>64.9 µF</i>	<i>64.9 µF</i>	<i>64.9 µF</i>	<i>64.9 µF</i>	<i>65 µF</i>	<i>65 µF</i>	100 µH	99 µF
Lo	52 mH	37 µH	37 µH	37 µH	37 µH	<i>578 µH</i>	2239 µH	3.3 µH	3.1 µH
Lo/Ro									13.5 µH/Ω

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**Variation 4** - This variation introduced the following changes:

- i. Increase in the maximum ambient temperature of the module to +75°C to give a new ambient temperature range of -30°C to +75°C.
- ii. The introduction of a new low temperature version of the module that had a temperature range of -40°C to +75°C.
- iii. Changes to the design that include removal of a p.c.b. assembly and replacement of an existing p.c.b. assembly with a different version of this p.c.b. assembly.
- iv. Introduction of a new 'MTL Gecma RT COM module – Class I fibre universal' version of module that has optical outputs that complies with Class 1 limits in accordance with IEC 60825-1 and as such is not marked 'op is'.

**Variation 5** - This variation introduced the following changes:

- i. Change of Ethernet barrier resistor values (for MTL Gecma RT COM module – copper) - reduced from 15Ω to 5.6Ω in COM module.
- ii. Updated drawing (CI6820-621) as a result of the change above.
- iii. Updated marking label (CI6812-625) due to the removal of the low temperature option for copper version.
- iv. As a result of the change above, change to the entity parameters as follows (bold):

Original entity parameters:

	RS232 port	USB port 1	USB port 2	USB port 3	USB port 4	External keyboard port	External pointing device port	LVDS (to Display Module)	Ethernet
Ui	12 V	0	0	0	0	0	0	4.935 V	3.3 V
Ii	-	-	-	-	-	-	-	3.275 A	1.778 A
Pi	-	-	-	-	-	-	-	3.927 W	1.467 W
Ci	0	11 nF	11 nF	11 nF	11 nF	0	0	0	0.24 μF
Li	0	0	0	0	0	0	0	0	0
Uo	6.015 V	5.355 V	5.355 V	5.355 V	5.355 V	5.5 V	5.5 V	4.935 V	2.94 V
Io	26 mA	972 mA	972 mA	972 mA	972 mA	267 mA	126 mA	3.266 A	1.584 A
Po	39 mW	1.676 W	1.676 W	1.676 W	1.676 W	613 mW	264 mW	3.917 W	1.165 W
Co	37 μF	57.9 μF	57.9 μF	57.9 μF	57.9 μF	58 μF	58 μF	100 μH	99 μF
Lo	52 mH	37 μH	37 μH	37 μH	37 μH	498 μH	2239 μH	3.3 μH	3.1 μH
Lo/Ro									13.5 μH/Ω

Amended entity parameters:

	RS232 port	USB port 1	USB port 2	USB port 3	USB port 4	External keyboard port	External pointing device port	LVDS (to Display Module)	<b>Ethernet</b>
Ui	12 V	0	0	0	0	0	0	4.935 V	<b>3.3 V</b>
Ii	-	-	-	-	-	-	-	3.275 A	<b>2.986 A</b>
Pi	-	-	-	-	-	-	-	3.927 W	<b>2.463 W</b>
Ci	0	11 nF	11 nF	11 nF	11 nF	0	0	0	<b>0.24 μF</b>

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**Sira Certification Service**

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	RS232 port	USB port 1	USB port 2	USB port 3	USB port 4	External keyboard port	External pointing device port	LVDS (to Display Module)	Ethernet
Li	0	0	0	0	0	0	0	0	<b>0</b>
Uo	6.015 V	5.355 V	5.355 V	5.355 V	5.355 V	5.5 V	5.5 V	4.935 V	<b>2.94 V</b>
Io	26 mA	972 mA	972 mA	972 mA	972 mA	267 mA	126 mA	3.266 A	<b>2.66 A</b>
Po	39 mW	1.676 W	1.676 W	1.676 W	1.676 W	613 mW	264 mW	3.917 W	<b>1.955 W</b>
Co	37 µF	57.9 µF	57.9 µF	57.9 µF	57.9 µF	58 µF	58 µF	100 µH	<b>99 µF</b>
Lo	52 mH	37 µH	37 µH	37 µH	37 µH	498 µH	2239 µH	3.3 µH	<b>1.12 µH</b>
Lo/Ro									<b>8.07 µH/Ω</b>

#### 14 DESCRIPTIVE DOCUMENTS

##### 14.1 Drawings

Refer to Certificate Annexe.

##### 14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	28 October 2014	R70005200B	The release of the prime certificate.
1	17 June 2016	R70070445A	This Issue covers the following changes: <ul style="list-style-type: none"><li>• EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. (In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)</li><li>• The introduction of Variation 1.</li></ul>
2	16 December 2016	R70096537B	The introduction of Variation 2.
3	30 June 2017	R70123076A	The introduction of Variation 3.
4	18 April 2019	R70203365B	The introduction of Variation 4.
5	17 May 2019	R80003013A	The introduction of Variation 5.

#### 15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

15.1 The Gecma COM module RT shall only be powered from a Gecma PSM Module, Sira 14ATEX5061X

15.2 The LVDS connector shall only be connected to a Gecma Display Module, Sira 14ATEX5063X.

15.3 The Gecma COM module RT shall be housed in an enclosure that provides protection against damage to the cables and additionally protects the exposed casting compound at the filling hole from impact and direct exposure to ultra-violet light

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- 15.4 The enclosure is manufactured from aluminium alloy. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation.
- 15.5 The intrinsically safe circuit is not isolated from the enclosure; this shall be considered during installation.
- 15.6 When the 'Gecma COM module RT – Copper' is connected to another device via an Ethernet cable, the two devices at each end of the Ethernet cable shall be connected to the same equipotential earth.
- 15.7 The installation of the low temperature version of the COM Module RT (ambient temperature range of -40°C to +75°C) shall ensure that apertures that are in the top of enclosure are not exposed to moisture.
- 16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)**
- The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.
- 17 **CONDITIONS OF MANUFACTURE**
- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.
- 17.3 In accordance with EN/IEC 60079-18:2015 clause 9.1, each manufactured unit shall be subjected to a visual inspection. No damage shall be evident, such as cracks in the compound, exposure of the encapsulated parts, flaking, inadmissible shrinkage, swelling, decomposition and failure of adhesion or softening.

# Certificate Annexe



**Certificate Number:** Sira 14ATEX5062X  
**Equipment:** Gecma COM module RT  
**Applicant:** Eaton Electric Limited

## Issue 0

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
11-500476	1 to 15	03	16 Sep 14	COM module, motherboard artwork
CI6812-620	1 to 9	A.1	16 Sep 14	COM module, motherboard schematic and sector diagram
CI6812-621	1 to 2	A.5	16 Sep 14	COM module, critical component list
CI6812-624	1 to 4	A.1	16 Sep 14	COM module, general assembly
CI6812-625	1 of 1	A.2	16 Sep 14	COM module, marking

## Issue 1

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
CI6812-621	1 to 2	1	6 Jun 16	COM module - fibre, critical component list
CI6812-625	1 to 2	1	11 Apr 16	COM module, marking
CI6812-627	1 to 4	1	11 Apr 16	COM module - copper, general assembly
CI6820-620	1 of 1	1	18 Apr 16	COM module – copper, Ethernet interface, schematic
CI6820-621	1 of 1	1	21 Apr 16	COM module – copper, Ethernet interface, critical component list
CI6820-622	1 of 1	1	11 Apr 16	COM module – copper, Ethernet interface, artwork
CI6820-623	1 to 2	1	11 Apr 16	COM module – copper, Ethernet interface, component layout

## Issue 2

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
CI6812-625	1 to 2	2	01 Dec 16	COM module, marking

## Issue 3

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
CI6812-620	1 to 10	1	23 May 17	COM module, motherboard schematic and sector diagram
CI6812-621	1 to 2	2	23 May 17	COM module - fibre, critical component list

## Issue 4

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
CI6812-624	1 to 5	1.1	16 Apr 19	GA Comms Assy – Fiber Gecma RT
CI6812-627	1 to 5	2.1	16 Apr 19	GA Comms Assy – Copper Gecma RT
CI6812-625	1 to 3	3	16 Apr 19	Gecma RT COM Module – Certification Label Details - Sira

## Issue 5

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
CI6820-621	1 of 1	2	09 May 19	COM module – copper, Ethernet interface, critical component list
CI6812-625	1 to 3	4	09 May 19	Gecma RT COM Module – Certification Label Details - Sira

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