

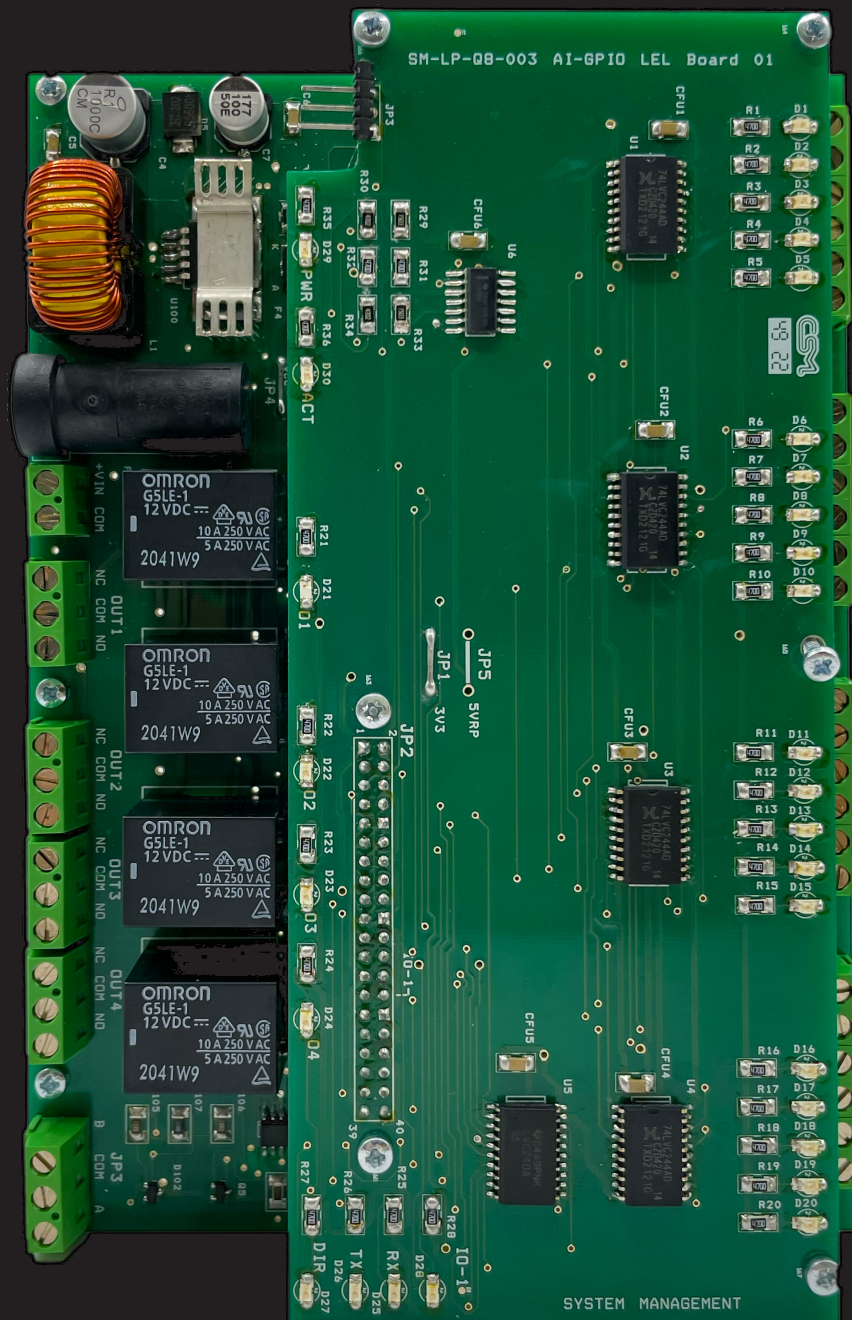
MADE.

*Getting Started Guide
for AWS IoT Greengrass*



MADE

Getting Started Guide for AWS IoT Greengrass



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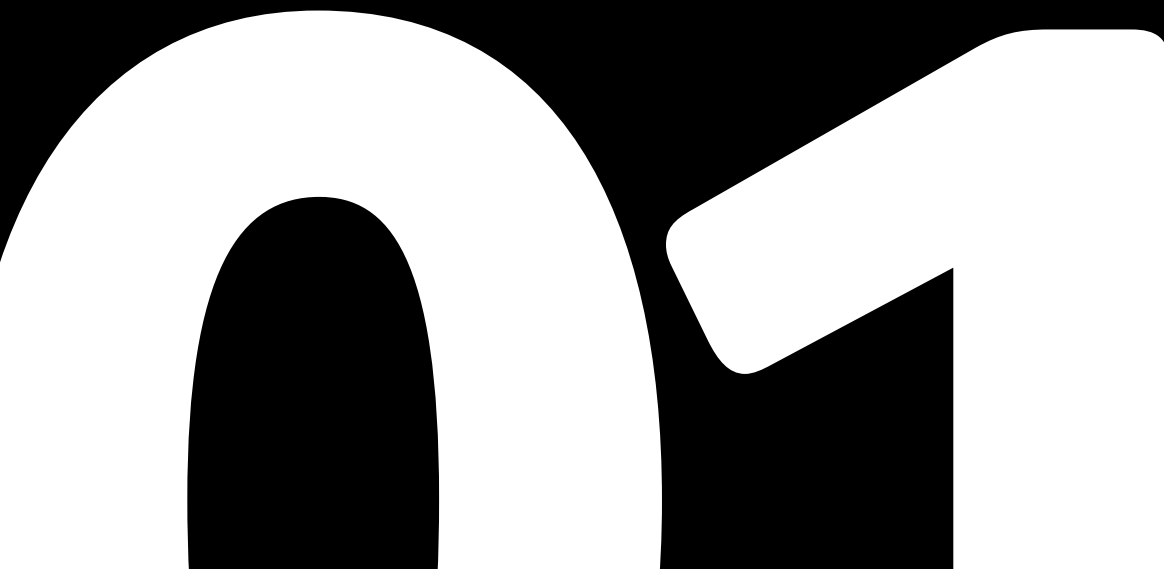
Document information

1.1 Document revision history

Date	Author	Revisor	Note
07/07/2023	C.De Rosa	V. Musone	First Draft
06/09/2023	V.Musone	F. Iannuzzi	Final Version
28/09/2023	F. Iannuzzi	F. Iannuzzi	Requested changes

1.2 Applicable operating systems for this guide

This guide refers to hosts with Unix-like operating system based on the Debian Linux distribution such as 64 bit Raspbian



Overview

MADE (Multi-Access Diffused Edge-node) is a concentrator module and device manager with two-way communication that hosts peripheral applications and software, integrated in the AWS cloud. It enables real-time control of low latency field devices, captures diagnostic information, and enables monitoring through alarm forwarding and event management.



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Hardware description

3.1 Datasheet

Parameter	Value	Unit	Note
Supply Voltage	12	V	Type: DC
Supply Current	2	A	
Operating temperature range	[0-50]	°C	The internal governor will throttle back both the CPU speed and voltage to make sure the CPU temperature never exceeds 85 °C
Power Relay	10	A	12 V DC

For more information, please refer to the online documentation <http://sysmanagement.it/made/>

3.2 Standard kit contents

MADÉ is supplied without debug kit or additional devices, it is possible to connect any type of sensor according to the details indicated and any type of 12 V, 2 A power supply can be used as indicated in the datasheet.

3.3 User provided items

None

3.4 3rd party purchasable items

None

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Set up your development environment

4.1 Tools installation (IDEs, Toolchains, SDKs)

None

05

Set up device hardware

5.1.1 Hardware specifications

Parameter	Value	Unit	Note
CPU	1.5	Ghz	Quad core 64-bit ARM-Cortex A72
RAM	2,4,8	GB	LPDDR4 RAM
Storage	16,32	GB	

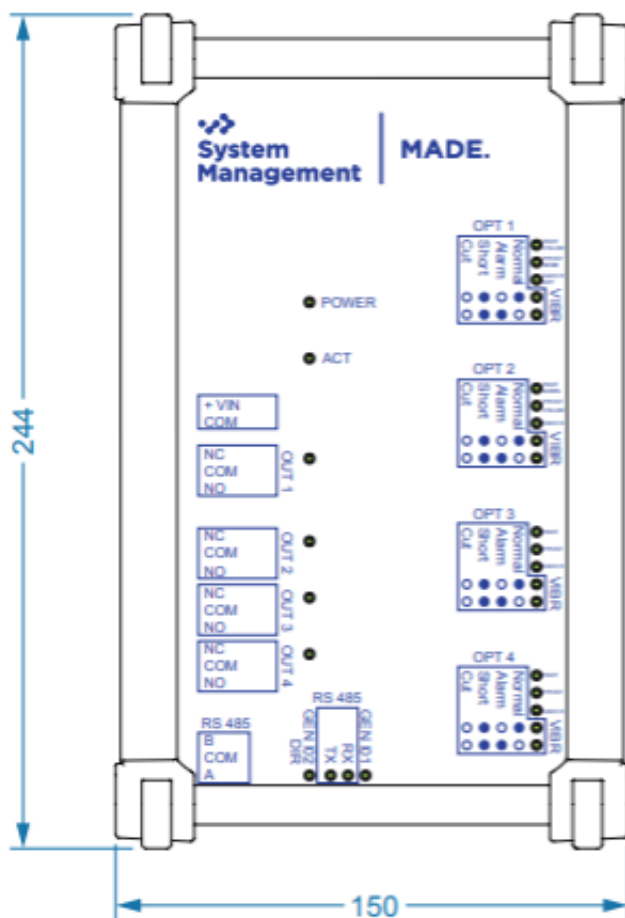
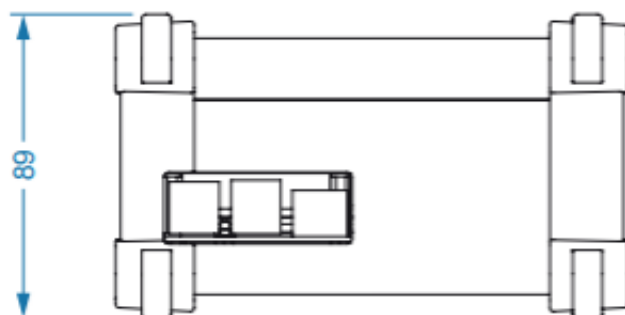
5.1.2 Communication interfaces

Parameter	Value	Note
Wireless LAN	802.11 b/g/n/ac	
Bluetooth	5.0	with BLE
micro-HDMI ports	2	supporting dual displays up to 4Kp60 resolution
USB - Serial	5	2 USB 2.0 and 2 USB 3.0 and 1 RS485 port
micro-HDMI ports	RJ-45 - 1 Gigabit	supports PoE with add-on PoE HAT
micro-HDMI ports	4	Relay outputs for low voltage actuation command.
micro-HDMI ports		12 inputs (3 per acceptor) are of the ON/OFF type, i.e. they discriminate the NORMAL / ALARM states (PANT,VOLUM,PPOST,MIST,-SACK,KEY) 4 inputs (1 per acceptor) are of the Supervised type, i.e. they are able to discriminate in addition to the NORMAL / ALARM states also the possible cutting of the connection wires or short-circuit of the sensors (VIBR)

Certification: Electromagnetic Compatibility

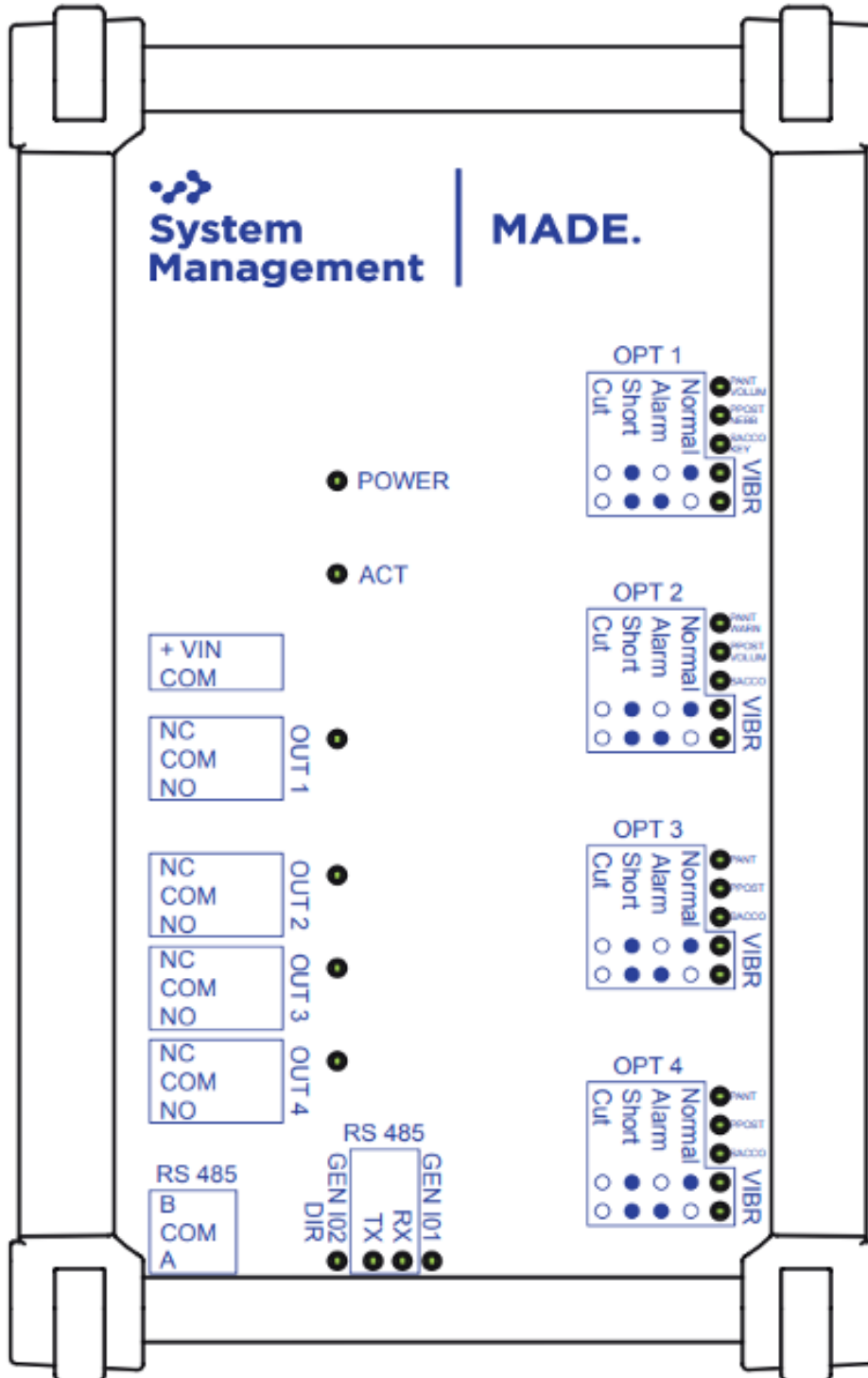
Reference standards: CISPR 32:2015 +A1:2019 / EN 55032:2015 + A1:2020 CISPR 35:2016 / EN 55035:2017+A11:2020

5.1.3 Technical references and dimensions *



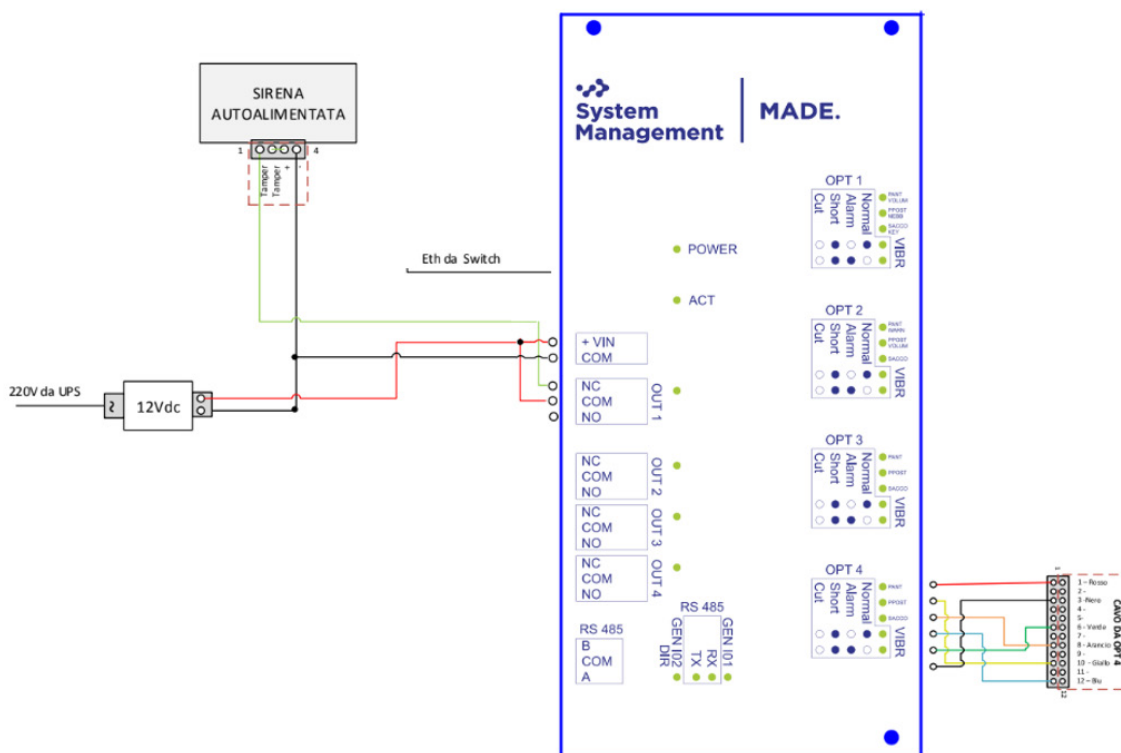
* in millimeters

Overview of the I/O interfaces



5.1.4 Wiring example

MADE allows real-time control of field devices with low latency, gathers diagnostic information, and enables monitoring through the forwarding of alarms and event management.



By connecting a limit switch sensor or any on/off sensor to one of the enabled inputs, it is possible to trigger an outgoing alarm, such as a siren, spotlight, or any device that can be activated by the control unit.

Note: The status LED legend is shown on the front screen printing of the device so that you have a clear and complete reading of the device's operation.

About AWS IoT Greengrass

Our product works on AWS IoT Greengrass v2, using some common modules (to better handle the logging functions and the devices fleet) and some custom modules, we implemented to read, send and store the sensors data.

All software components are already installed and working, so you can use it plugging in the first sensor.

To learn more about AWS IoT Greengrass, see [How AWS IoT Greengrass works](#) and What's new in [AWS IoT Greengrass Version 2](#).



Greengrass prerequisites

The board comes with Greengrass already installed and completely functional, so you don't need to do anything.

After the purchase we will send to you the credentials to access the AWS Dashboard to monitor your AWS Greengrass devices. We have also the possibility to setup your boards with your AWS accounts if you have one.

7.1 Build a Linux image with AWS IoT Greengrass prerequisites

The board already has a linux image complete with all the AWS IoT GreenGrass packages and prerequisites.



AWS IoT Greengrass

Greengrass is already included in the device image and running as a system service

If you want to change the default set-up, please follow the online guide to [Install with automatic provisioning](#). Refer to the instructions in the following steps:

- [Set up the device environment](#)
- [Provide AWS credentials to the device.](#)

For development environments, you can use the option “Use long-term credentials from an IAM User”.

An example of how to do this is shown below:

```
export AWS_ACCESS_KEY_ID=<the access key id for your user>  
export AWS_SECRET_ACCESS_KEY=<the secret access key for your user>
```

- [Download the AWS IoT Greengrass Core software](#)
- [Install the AWS IoT Greengrass Core software](#)



Create a “Hello World” component

Greengrass and all the components are already up and running on the board, thus giving the possibility to be used without the need to create any additional components.

If you want to add a new component, please refer to the following documentation.

9.1 Create the component on your edge device

Follow the instructions online under the section [Develop and test a component on your device](#) to create a simple component on your device.



9.2 Upload the “Hello World” component

Follow the instructions online at [Create your component in the AWS IoT Greengrass service](#) to upload your component to the cloud, where it can be deployed to other devices as needed.

9.3 Deploy your component

Follow the instructions online at [Deploy your component](#) to deploy and verify that your component is running.

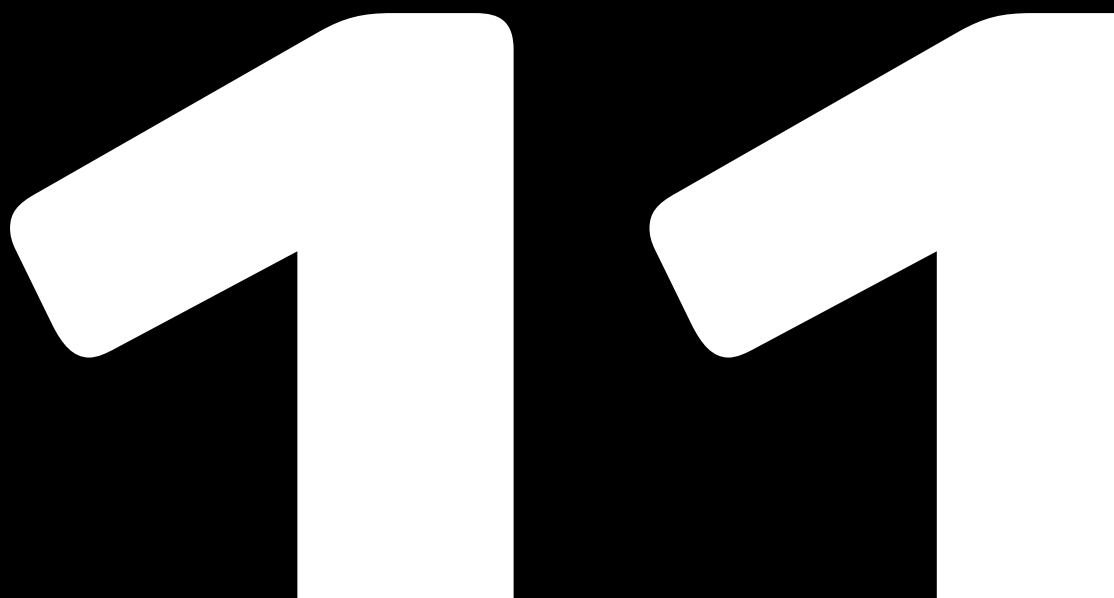
Debugging

The board is tested and checked in the verification and quality control phase before being shipped, no debugging phase is left to the customer who can contact our customer service for any other information.

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Troubleshooting

For more information, please contact us <http://sysmanagement.it/made/> or refer to the online documentation Troubleshooting Greengrass v2.





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