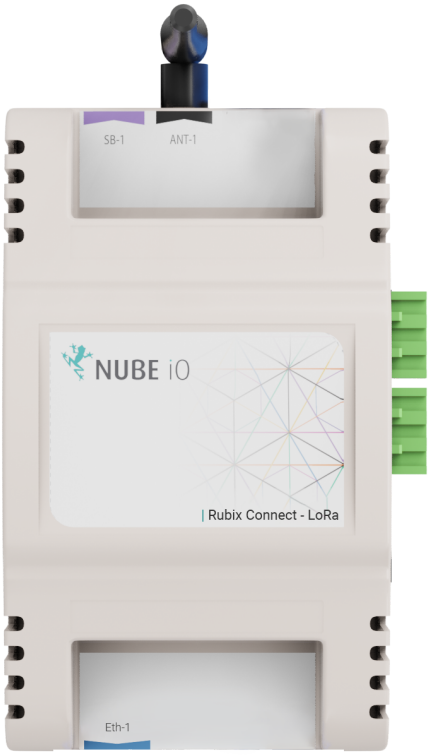
NUBE iO

User and Installation Menu

Rubix Compute LoRa WAN Receiver



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1. Introduction

The purpose of this document is to provide an outline of our installation of the Nube iO IO-LoRaWAN Connect Module.

1.1 Document Availability

Please email support to request a copy
orders@nube-io.com

1.2 Abbreviated Term and Definitions

Name/Code	Explanation	External Reference
Edge Gateway / Device	Edge Gateway	Link
GCP	Google Cloud Platform	Link
Edge	Edge computing is a distributed computing paradigm	Link
IO (Input/Output)	Communication process between a computer or device	Link
VPN	A virtual private network (VPN) extends a private network across a public network	Link
BACnet	BACnet is a building automation protocol	Link
MQTT	A lightweight messaging protocol for small sensors	Link
Modbus	Modbus is a building automation protocol	Link
NB-IoT	Low Power Wide Area Network (LPWAN) radio technology	Link
LoRa	LoRa is a long range, low power wireless chipset and protocol	Link
LoRaWan	LoRaWan is the network layer on LoRa	Link
Haystack	Standardize semantic data models for IoT data	Link
API	Application programming interface	Link

2. Overview

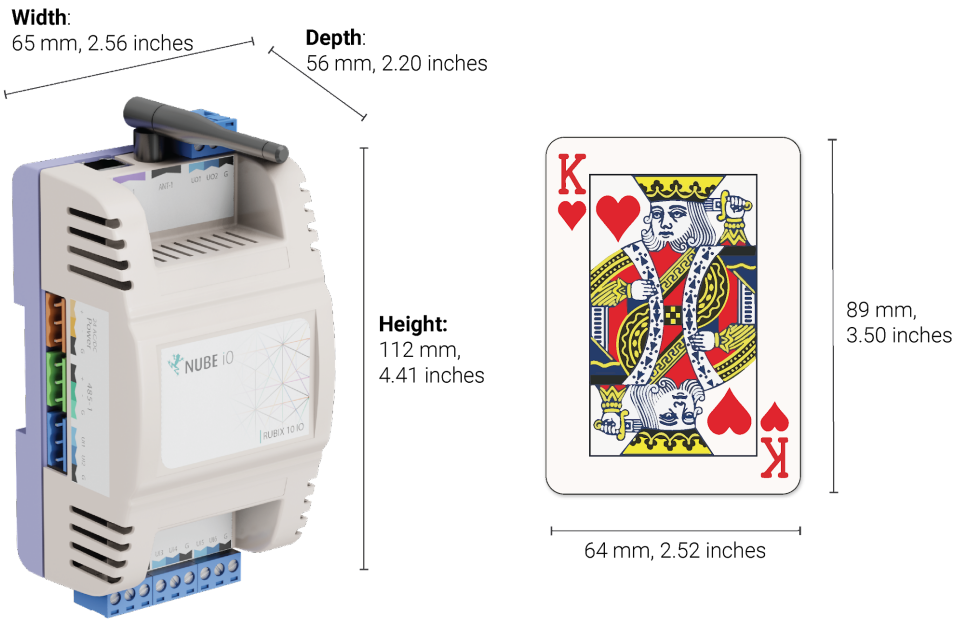
The RC-LW-CON-1 is an add-on module to the Nube iO Rubix-Compute. Once plugged into the Rubix Compute this enables the Rubix Compute to run as a loraWAN server.

Part Number:
RC-LW-CON-1

2.1 Power Requirements

Power Options and Requirements:	
Power Via Terminal	Power Supply: 5VDC supplied through the RJ12 cable from the rubix compute S-BUS

2.2 Physical Size

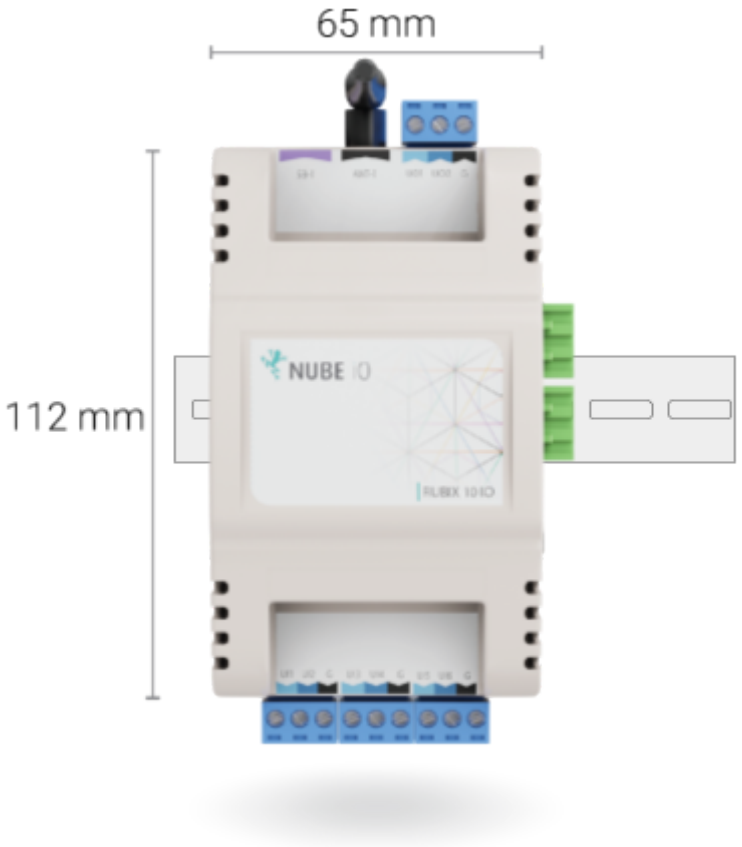


2.3 Communication Options

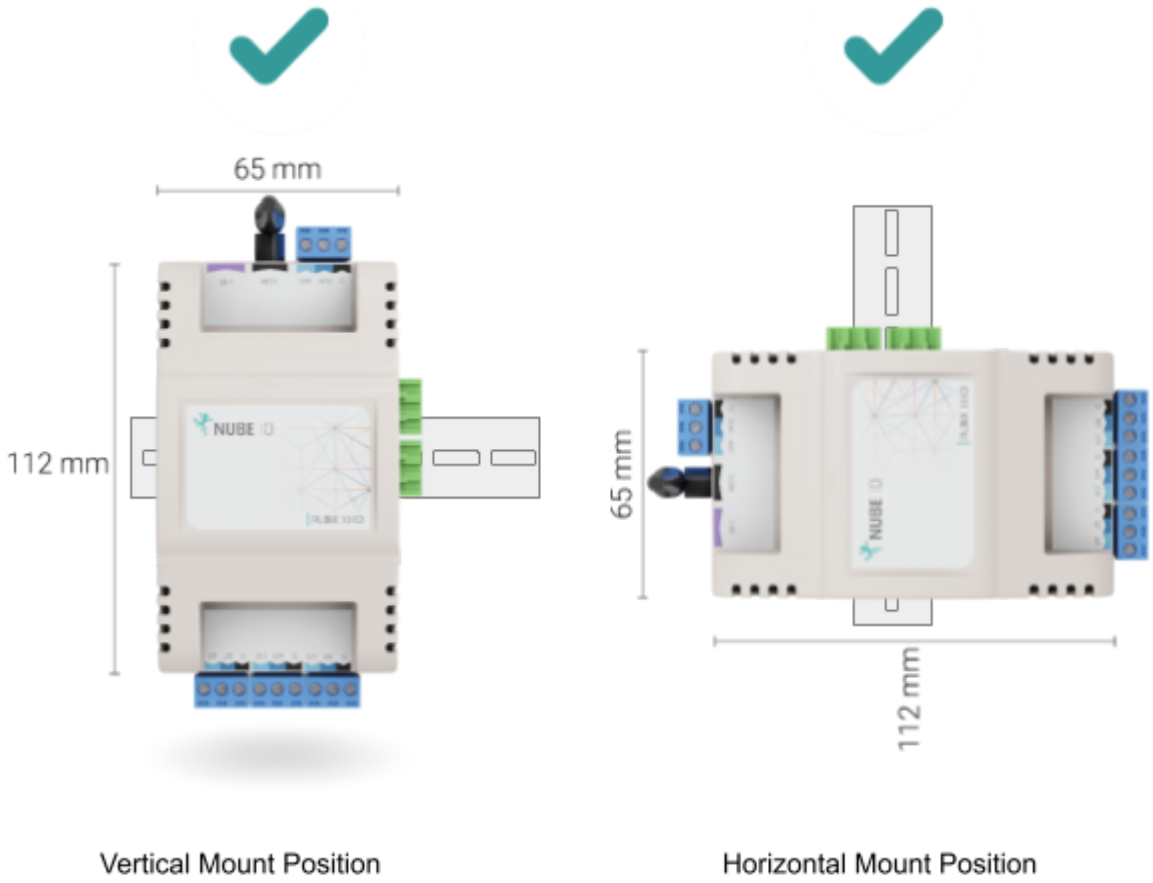
Communication Options:	Part	Comms
RJ12	N/A	**Edge Connect R12 interface** Provides power and breakout for USB, UART for add-on modules
LoRaWAN	**RAK**	**Add in radio model** **Supported Frequencies:** AU915-928 **Spreading Factor:** 6-12 **Bandwidth:** 7.8 - 500 kHz **Effective Bitrate:** 018 - 37.5 kbps **Est. Sensitivity:** -111 to -148 dBm

3. Mounting and Size

3.1 Dimensions



3.2 Mounting



Vertical Mount Position

Horizontal Mount Position

4. Power Connection

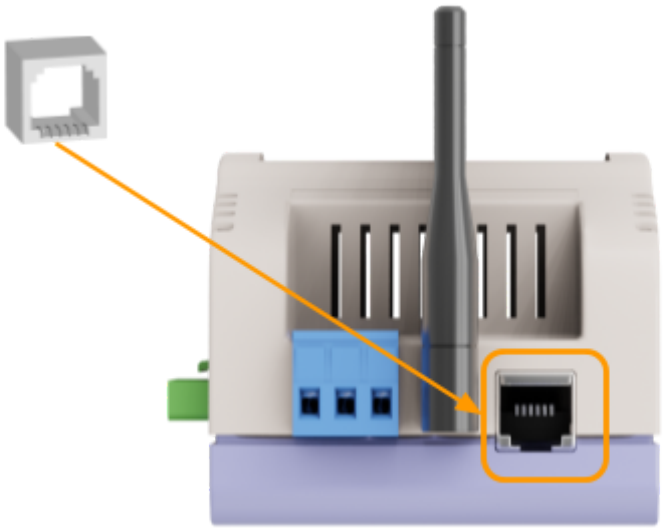
The LoRaWAN is powered through the RJ12 cable.

5. RJ12 Service Port

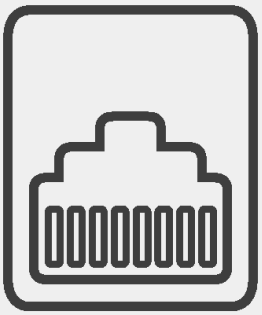
The RJ12 port is used for the following;

➔ Used in conjunction with the Nube iO Edge Compute for IO expansion. (When used for input IO expansion the bus from the Edge Compute can power the LoRaWAN module)

5.1 RJ12 Drawing



5.2 RJ12 Cable Selection

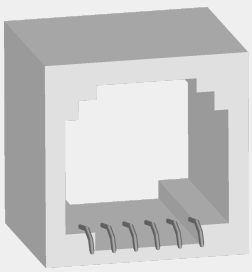


RJ12 cable can be used.

Addinally the RJ12 connector could supply power to the LoRaWAN module

RJ11 will not provide power to the module but can provide comms.

5.3 Pin Connections



Pin 1	Power (5V dc)
Pin 2	Enable (EN)
Pin 3	USB Data-
Pin 4	USB Data+
Pin 5	Ground (GND)
Pin 6	Ground (GND)

6. Regulatory Compliance

Regulatory	
LoRa end node radio	• **FCC:** Class B 3M Radiated