Product datasheet
Characterstics

NORVI Expansion
NORVI-EX-LR4XX

REYAX RYLR896 | 868 / 915 Mhz
REYAX RYLR406 | 426 / 433 / 470 Mhz

Interface with controller
AT commands via UART

Semtech SX1276 Engine

High efficiency Power Amplifier

127 dB Dynamic Range RSSI

Built-in and external antenna options

Main

Range of product	NORVI Expansion
Product type	Expansion Module
Rated supply voltage	12 - 24V DC
Field of Application	LoRa Communication
Applicable Devices	NORVI IIOT / NORVI Arita
RF Band	868 / 915 MHZ Type A and 426/433/470 Type B
RF Output power	-4 dBm to 15 dBm
RF Sensitivity	-148 dBm
Communication Range	4.5 km to 15 km

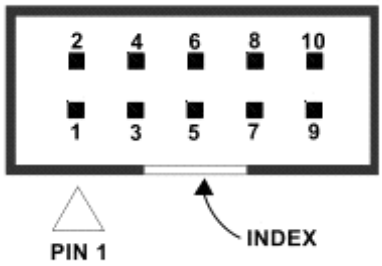
Complementary

Local signalling	1 LED green for PWR 1 LED green for Communication
Electrical connection	Removable screw terminal block for inputs and outputs (pitch 5.08 mm)
Mounting support	Top hat type TH35-15 rail conforming to IEC 60715 Top hat type TH35-7.5 rail conforming to IEC 60715
Height	86.00 mm
Depth	59.00 mm
Width	35.00 mm
Product weight	0.91 Kg

Environment

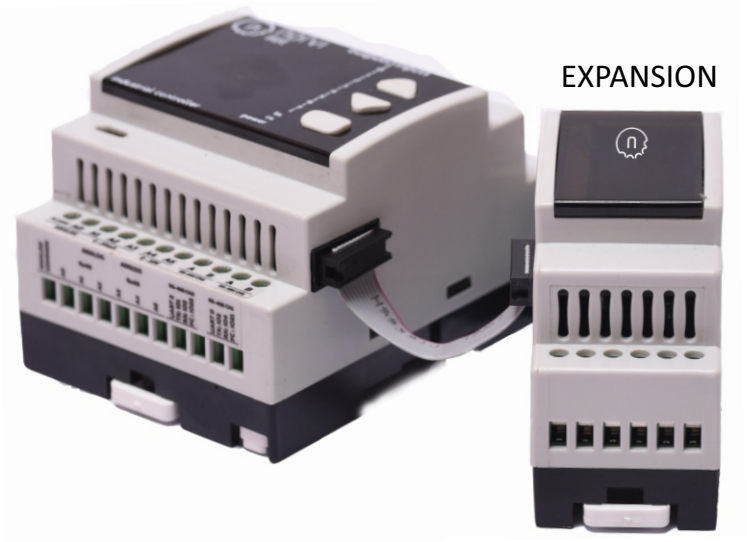
Relative humidity	10....95% without condensation in operation
IP degree of protection	IP20
Operating altitude	0...2000m
Storage altitude	0...3000m
Shock resistance	15 gn for 11 ms
Operating temperature	-40 to +85 'C

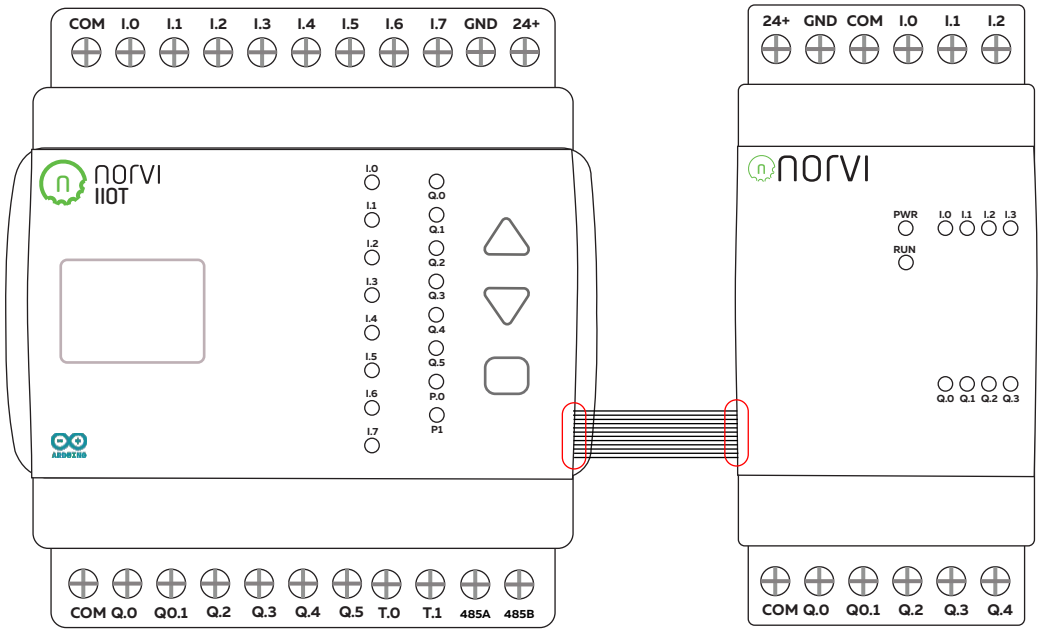
Expansion port pin map



PIN	ESP32 Connection
1	TXD0
2	IO33
3	RXD0
4	Not Connected
5	IO32
6	BOOT IO0
7	SCL IO17
8	Not Connected
9	SDA IO16
10	Ground

CONTROLLER





Main Controller **Expansion Module**

Main Controller		LoRa module
RXD	→	TXD
TXD	→	RXD
NRST	→	NRST
GND	→	GND

REYAX Module communication

Module Type	RLYR894 | RLYR406 (Order depending on regional regulations)
Communication	UART
Module Address	NA
Command set	AT
Connection	NORVI IIOT : UART0 (RXD0, TXD0) / NORVI ARITA : UART2(RXD2,TXD2)

THE SEQUENCE OF USING AT COMMAND

1. Use "**AT+ADDRESS**" to set ADDRESS. The ADDRESS is regard as the identification of transmitter or specified receiver.

2. Use "**AT+NETWORKID**" to set the ID of Lora network. This is a Group function. Only by setting the same NETWORKID can the modules communicate with each other. If the ADDRESS of specified receiver is belong to different group, it is not able to communicate with each other.
   The recommend value: 1~15

3. Use" **AT+BAND**" to set the center frequency of wireless band. The transmitter and the receiver are required to use the same frequency to communicate with each other.

4. Use" **AT+PARAMETER**" to set the RF wireless parameters. The transmitter and the receiver are required to set the same parameters to communicate with each other. The parameters of which as follows:

[1] <Spreading Factor>: The larger the SF is, the better the sensitivity is. But the transmission time will take longer.

[2] <Bandwidth>: The smaller the bandwidth is, the better the sensitivity is. But the transmission time will take longer.

[3] <Coding Rate>: The coding rate will be the fastest if setting it as 1.

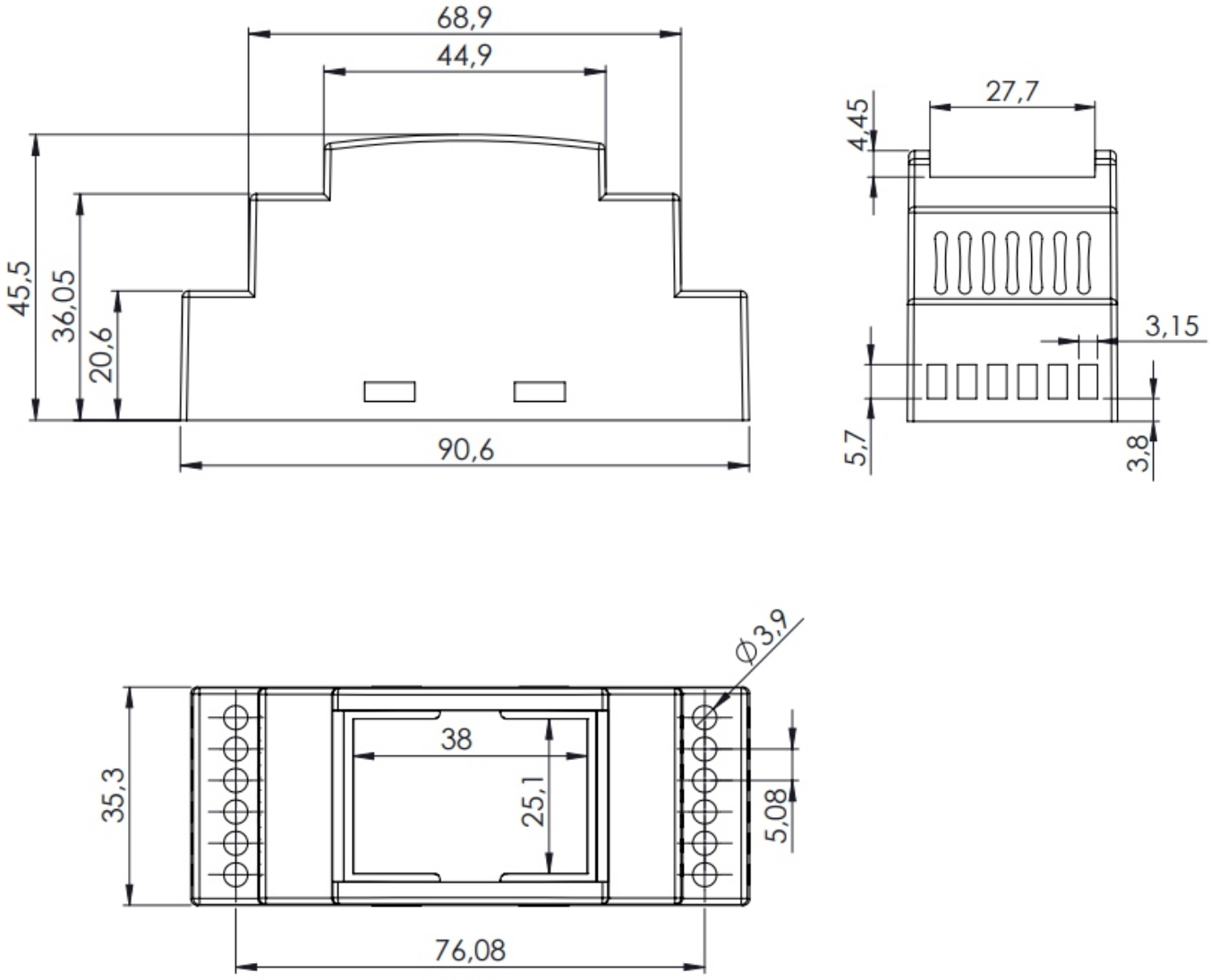
[4] <Programmed Preamble>: Preamble code. If the preamble code is bigger, it will result in the less opportunity of losing data. Generally preamble code can be set above 10 if under the permission of the transmission time.
Communication within 3 km: Recommend to set "**AT + PARAMETER = 10,7,1,7**"
More than 3 km: Recommend to set " **AT + PARAMETER = 12,3,1,7**"

5. Use "**AT+SEND**" to send data to the specified ADDRESS. Please use "Lora Modem Calculator Tool" to calculate the transmission time. Due to the program used by the module, the payload part will increase more 8 bytes than the actual data length.

From REYAX RLYR Datasheet

Refer REYAX AT Command guide for detailed AT Command Set
http://reyax.com/products/rylr896/

Dimensions


68,9
44,9
45,5
36,05
20,6
90,6
27,7
4,45
3,15
5,7
3,8
Ø3,9
38
25,1
35,3
5,08
76,08

Reach-Us

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