

Deploying an End-to-End LoRaWAN Platform

Starting from September 2016, Saint-Joseph University of Beirut (USJ) will be deploying the first academic **LoRa** network in Lebanon. The network will support monitoring of micro-climate conditions in vineyards. Here below you can find a detailed description of the experimental platform implementing an end-to-end LoRaWAN solution.

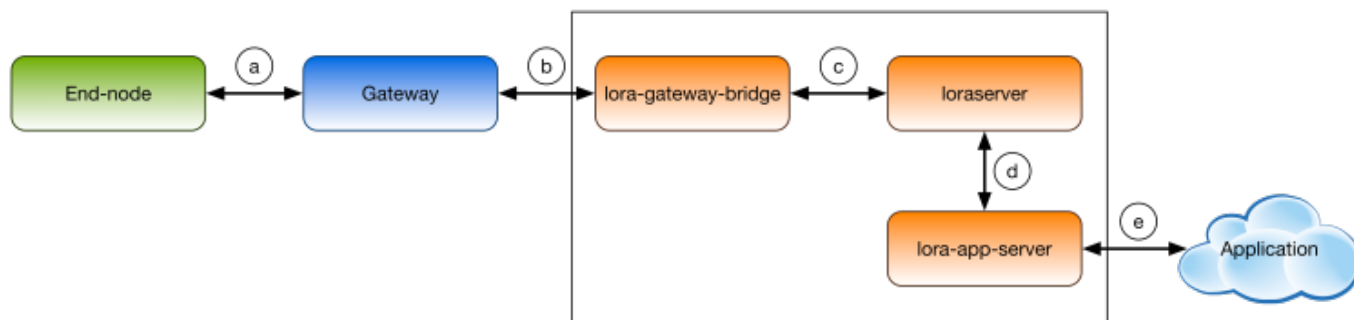


Figure 2. Architecture of the LoRaWAN Platform

- . End-nodes

- . Autonomo with LoRaBee

- . Arduino with Dragino Shield

- . Gateways

- . Single Channel Gateway

The single channel gateway includes a LoRa transmission module (the Dragino Shield) connected to a Raspberry Pi (2 or 3). The connection pins are identified in Figures 2 and 3. Communication is done on an SPI communication interface.

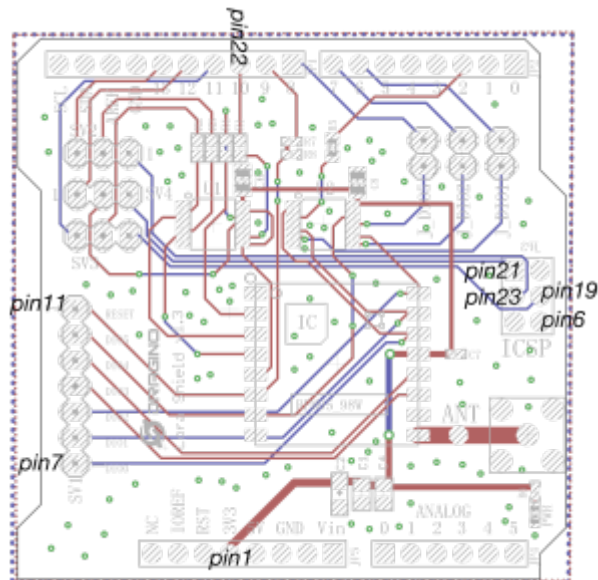


Figure 2. Dragino pin mapping

Pin#	NAME		NAME	Pin#
01	3.3v DC Power		DC Power 5v	02
03	GPIO02 (SDA1, I ² C)		DC Power 5v	04
05	GPIO03 (SCL1, I ² C)		Ground	06
07	GPIO04 (GPIO_GCLK)		(TXD0) GPIO14	08
09	Ground		(RXD0) GPIO15	10
11	GPIO17 (GPIO_GEN0)		(GPIO_GEN1) GPIO18	12
13	GPIO27 (GPIO_GEN2)		Ground	14
15	GPIO22 (GPIO_GEN3)		(GPIO_GEN4) GPIO23	16
17	3.3v DC Power		(GPIO_GEN5) GPIO24	18
19	GPIO10 (SPI_MOSI)		Ground	20
21	GPIO09 (SPI_MISO)		(GPIO_GEN6) GPIO25	22
23	GPIO11 (SPI_CLK)		(SPI_CE0_N) GPIO08	24
25	Ground		(SPI_CE1_N) GPIO07	26
27	ID_SD (I ² C ID EEPROM)		(I ² C ID EEPROM) ID_SC	28
29	GPIO05		Ground	30
31	GPIO06		GPIO12	32
33	GPIO13		Ground	34
35	GPIO19		GPIO16	36
37	GPIO26		GPIO20	38
39	Ground		GPIO21	40



Figure 3. Raspberry pi 3 pins

SPI needs to be enabled on the Raspberry Pi (use raspi-config) WiringPi: a GPIO access library written in C for the BCM2835 used in the Raspberry Pi. `sudo apt-get install wiringpi` see <http://wiringpi.com>
Run packet forwarder as root

-. Kerlink IoT Station

-. Backend

-. Loraserver

- . **The Things Network**

- . **Applications**

- . **MQTT spy**

- . **Emoncms**

From:

<http://wiki.lahoud.fr/> - **wikiroute**

Permanent link:

http://wiki.lahoud.fr/doku.php?id=deploying_lorawan&rev=1482228057

Last update: **2016/12/20 11:00**

