This is a very alpha release of a LoRa shield for Arduino and compatibles. It has been designed to be mechanically and pinout compatible with Arduino Uno, but for voltage levels of 3.3 volt. Then, as is, can not be used directly on Arduino Uno, but only on compatibles like UDOO NEO or Intel Galileo, using same pinout, but running at 3.3 volt.
Beware ! On Intel Galileo voltage level can be selected between 5 and 3.3 using a jumper. Check the correct jumper position or the LoRa chip will be destroyed !
The shield can be used on Arduino Due, using 3.3 volt, but is not mechanically compatible, and must be connected using DuPont cables.
A version, including level shifters, to be used directly on the large amount of existing 5V Arduino Uno, will come soon.
LoRa breakout boards, available on the net by chinese producers, are many, with slightly different pinouts.
The board chosen, and his pinout, are shown in the picture.
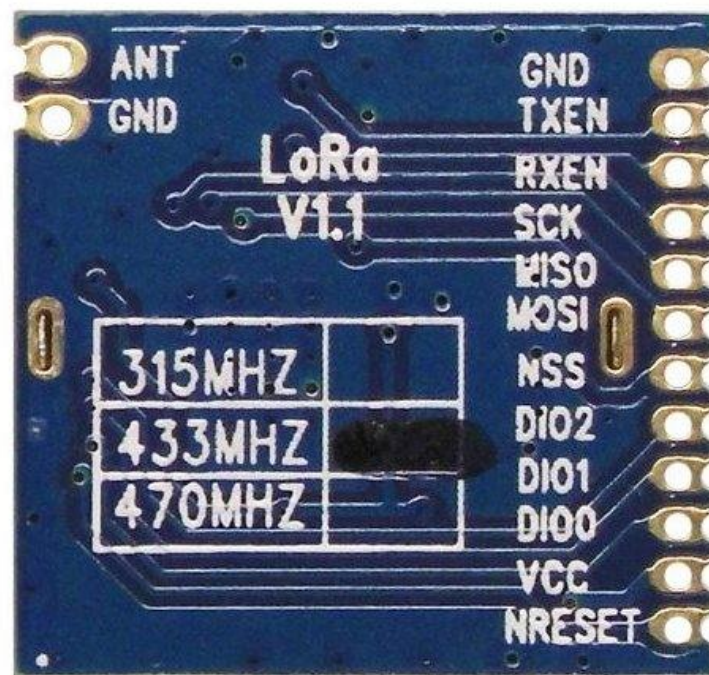
Pin pitch is 0.05" (1.27 mm). The board can be directly soldered on the main PCB, or using the intermediate of a pin strip of the same pitch. For the first test a pin strip has been soldered on the board, and a socket has been soldered on the main shield PCB.
VCC must be 3.3 volt, no voltage regulator on this board.

The shield PCB, shown without supplementary ground planes, for better understanding, is in this picture.
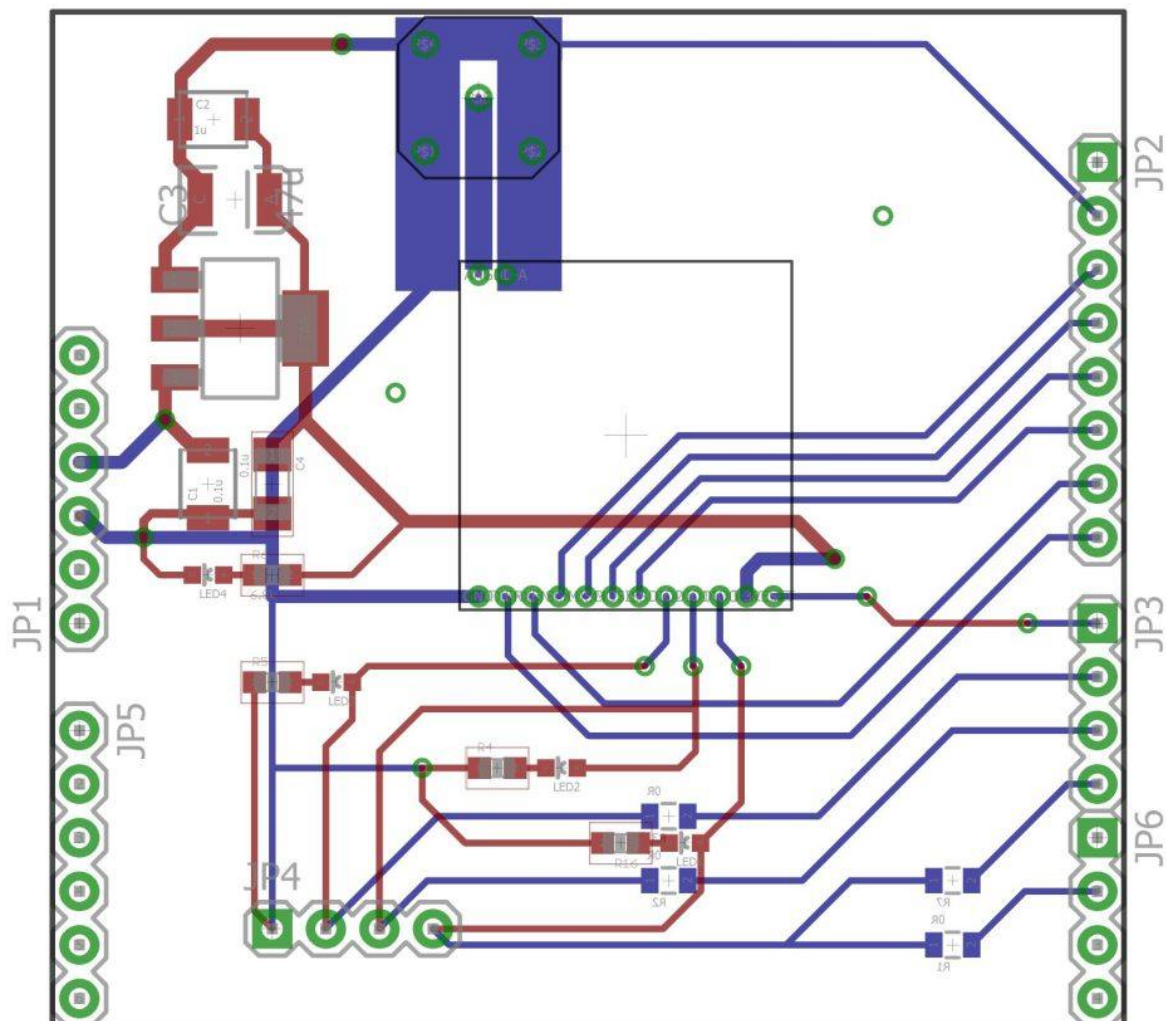
All conectors are to be soldered on the bottom (blue) side, avoiding need of holes metallization, difficult for hobbist. There is a 3.3 volt L1117 voltage regulator, sinking from 5v of Arduino, and some obvious capacitors, ceramic and tantalum. There are a 0603 LED and his load resistor showing power on.
Antenna connector is a PCB SMA connector, but, if you like, a coax can be soldered in the same holes, for a far position of the antenna.
SPI and power supply connections are obvious.
More complex is connection of DIO0, DIO1,DIO2 pins of LoRa. Their use (input, output, interrupt) depends on the software running on Arduino, then no fixed connectin has

been chosen. They are only routed directly to a supplementary connector, four pins including ground. It can be soldered or not.
Alternatively they can drive LEDs, pads are included.
Finally they can be connected to Arduino pins, there are pads for 0805 0R shorts.
DIO2 can be connected to Arduino 5, DIO3 to Arduino 6. Test software does not make use of them, and connection is not necessary.
For DIO0 two options are possible: Arduino 2 or Arduino 4. Test software uses Arduino 4 in poll mode, and connection is required. For software in interrupt mode, on compatibles only Arduino 2 is guaranteed, and must be used.
In the next release a jumper will be introduced.
Pin 2 can be used in poll mode as well, but it is better to leave it free for use in real application software.

For the beginning, have fun, and

<p style="color:red; text-align:center">beware of voltages !</p>

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