LoRa iL-LoRa1272 Module

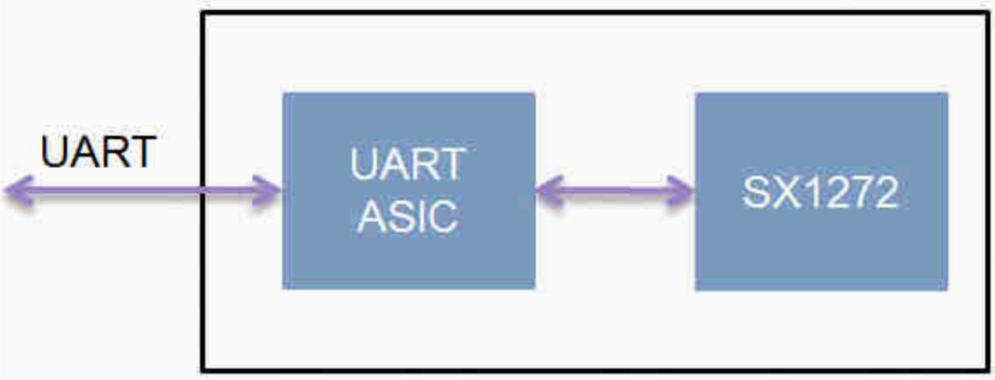
Description

iL-LoRa1272 transceiver module is development by Semtech SX1272 solution, for the detail IC specification please visit Semtech wabite as below to download data sheet www.semtech.com

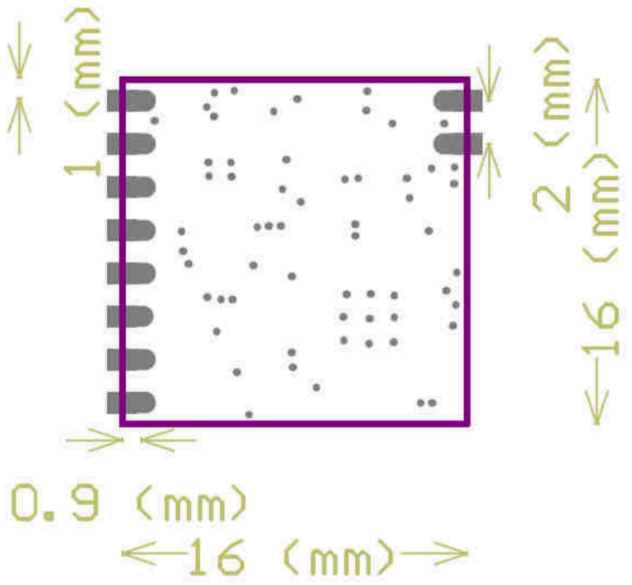
Feature:

- Frequency Range: 868/900/915MHz
- Modulation: FSK/GFSK/MSK/LoRa
- SPI Data Interface Sensitivity: -137dBm
- Output Power: +20dBm Data Rate: <300 kbps 127dB dynamic Range RSSI Excellent blocking immunity Preamble detection Automatic RF sense and CAD monitor Built-in bit synchronizer for clock recovery Packet engine up to 256 bytes with CRC
- Working Temperature: -40°C ~+80°C Build-in temperature sensor
- Standby current: ≤ 1uA
- Supply voltage: 1.8~3.6V
- 10 Pin Stamp Pad for PCB SMT mounting
- Interface: UART

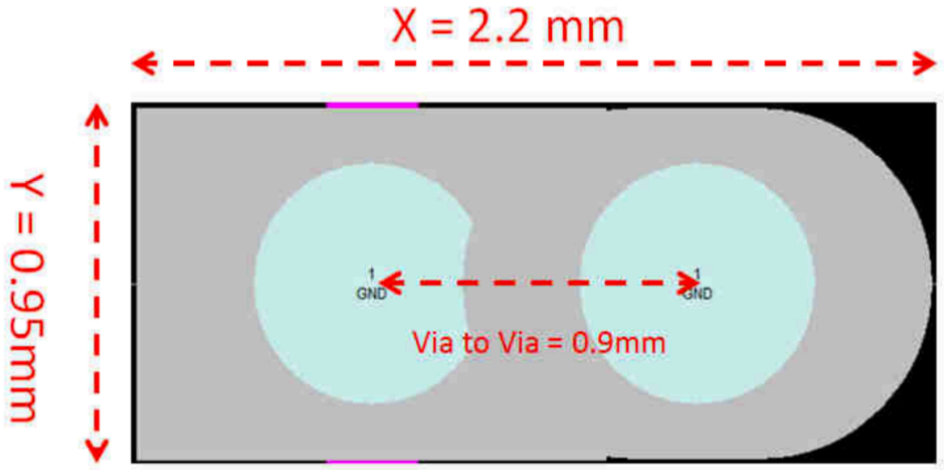
Block Diagram



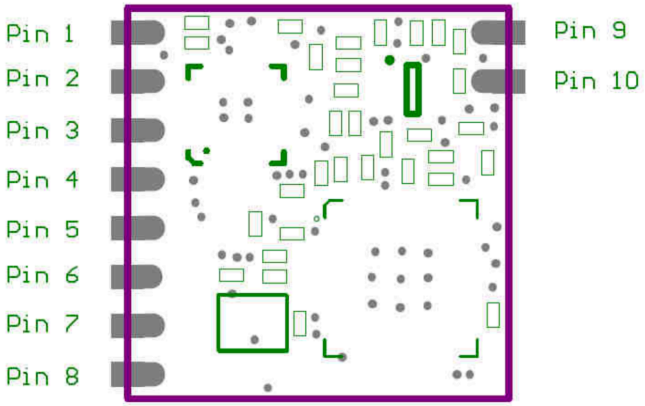
Module Dimension



Pad Dimension



Pin information



Pin Name	Pin Type	Description
Pin 1	GND	
Pin 2	Host_IRQ	For RX mode Data ready → high level No data → low level (Note 1)
Pin 3	VDD	
Pin 4	EICK	NC (Note 2)
Pin 5	EIDA	NC (Note 2)
Pin 6	GND	
Pin 7	UART_TX	UTX: UART transmit output pin
Pin 8	UART_RX	URX: UART receive input pin
Pin 9	Antenna	External antenna connected pad
Pin 10	GND	

Note 1: Host_IRQ is always high level when RX data ready & it will change to low after Host read data.

Note 2: For F/W ISP (In System Program) & please reserve test pad.

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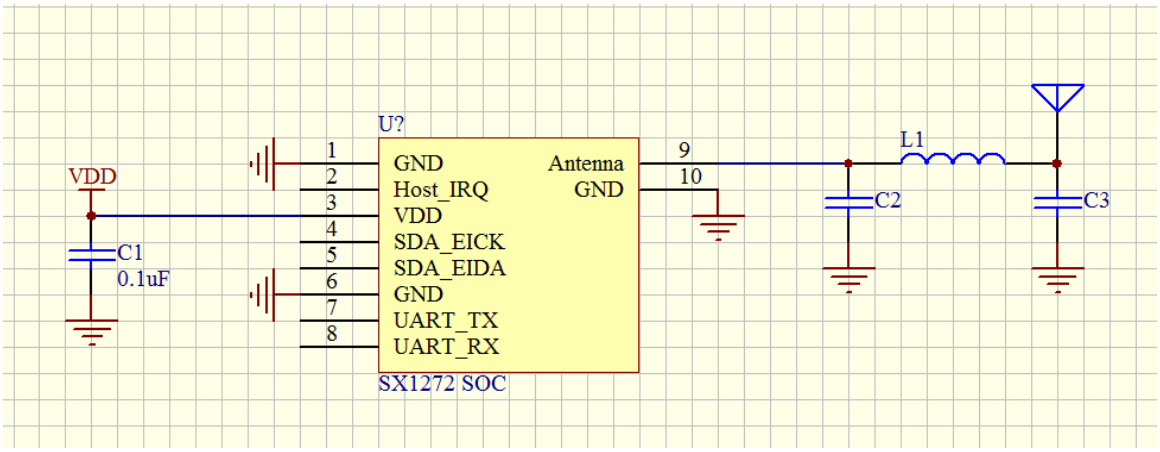
Reference circuit



UART command table

2017.06.13 Ver : 0.5 | Headr Code | SX1272 0xC1 | SX1276 0xC2 | | 115200 | 8,n,1

	BYTE-1	BYTE-2	BYTE-3	BYTE-4	BYTE-5	BYTE-6	BYTE-7	BYTE-8	BYTE-9	BYTE-10	BYTE-11	... ...	... ...	BYTE-35	BYTE-36	
	Headr Code	Command	len	Data-1	Data-2	Data-3	Data-4	Data-5	Data-6	Data-7	Data-8	... ...	... ...			
讀取F/W版本及Chip ID																
PC -> MCU	0x80	0x00	0x00	CRC												SW Version
PC <- MCU	0x80	0x80	0x06	Chip	FW_Ver	MID[4]				CRC						Chip：Sx1272(0xC1)、Sx1276(0xC2)、FW_Version：0x06
重置 & 初始化																
PC -> MCU	0xC1 0xC2	0x01	0x00	CRC												Reset (Lora Mode Default)
PC <- MCU	0xC1 0xC2	0xAA	0x01	0x55	CRC											MCU收到資料回ACK
讀取設定狀態																
PC -> MCU	0xC1 0xC2	0x02	0x00	CRC												RF Chip 設定值
PC <- MCU	0xC1 0xC2	0x82	0x08	Mode	Freq[3] 注1			Power 注2	BW	CR	SF	CRC				Mode：Sleep(0x00)、StandBy(0x01)、Tx(0x02)、Rx(0x03)、Default StandBy BW:125k(0x01)、250k(0x2)、500k(0x3)、Default 500K CR:4/5(0x1)、4/6(0x2)、4/7(0x3)、4/8(0x4)、Default 4/5 SF:6(0x1)、7(0x2)、8(0x3)、9(0x4)、10(0x5)、11(0x6)、12(0x7)、Default 9
設定模式與頻率																
PC -> MCU	0xC1 0xC2	0x03	0x05	Mode	Freq[3] 注1			Power 注2	CRC							Mode：Sleep(0x00)、StandBy(0x01)、Tx(0x02)、Rx(0x03)
PC <- MCU	0xC1 0xC2	0xAA	0x01	0x55	CRC											MCU收到資料回ACK
設定Lora參數																
PC -> MCU	0xC1 0xC2	0x04	0x03	BW	CR	SF	CRC									BW:125k(0x01)、250k(0x2)、500k(0x3) CR:4/5(0x1)、4/6(0x2)、4/7(0x3)、4/8(0x4) ~~SF:6(0x1)注4~~、7(0x2)、8(0x3)、9(0x4)、10(0x5)、11(0x6)、12(0x7)
PC <- MCU	0xC1 0xC2	0xAA	0x01	0x55	CRC											MCU收到資料回ACK

[Please click here.]

Application note

How to start first project

1. Download Command table and read of it.

2. Using Tera term or any hyper terminal tools execute command on it.

3. First, we need to know the Module has been connection correctly.

   Arduino example code-ReadID

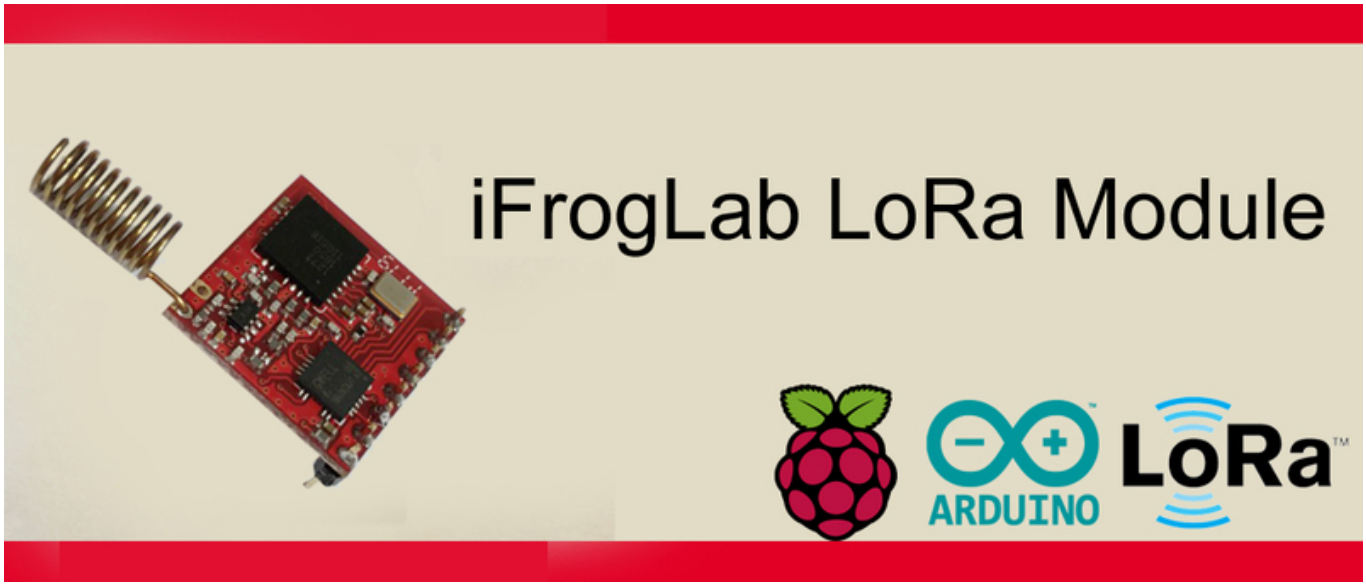
```
byte* iFrogLabLoRaLibrary::GetChipIDAll()
{

  byte CRC = 0;
  byte t1[] = {0x80,0,0,CRC};
  CRC=Fun_CRC(t1,3);
  t1[3] = CRC;

  mySerial->write(t1, 4);
  Fun_PrintArray(t1,4);
  if(m_Debug==1) Serial.print("Recive: ");
  i=0;
  for(int j=0;j<DeTimeout;j++){
   if (mySerial->available()) {
    byte t1=mySerial->read();
    if(m_Debug==1){
       Serial.print(t1,HEX);
       Serial.print(",");
    }
```

   ....

   Please check website Application notes.


iFrogLab LoRa Module
ARDUINO
LoRa