



SETALAB LORA GATEWAY

SETA-G100 Datasheet



Version 1.0

2019 AUGUST 7
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SETALab LoRa Gateway

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Introduction

1. Gateway Introduction

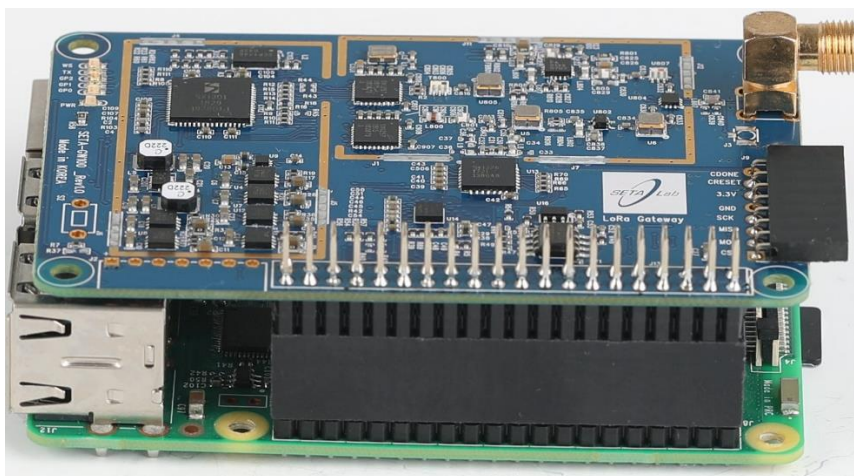
SETALab LoRa Gateway is a multi-channel concentrator based on Semtech gateway architecture version 1.5. It is a programmable gateway that uses open Linux development environment and open source hardware Raspberry Pi.



<TOP>



<BOTTOM>



<Raspberry Pi + Gateway Module>

Key Features

1. Flexible Development Environment

SETALab LoRa Gateway is easy to customize and manage for developers because it is based on open source software and open hardware.

2. LBT Functionality Support

SETALab LoRa Gateway supports Listen Before Talk functionality using FPGA in order to comply with the ISM band regulations of Korea and Japan.

3. Status LEDs Support

SETALab LoRa Gateway has some status LEDs. Check that WS (Working Status) LED on for about 2 seconds when it is successfully operating. In the case of TX transmission, both WS and TX LED blink at the same time.

4. Easy to Make a Test Network System

SETALab LoRa Gateway is connected to the AuLoRa network server by default and launched automatically. Therefore, it is easy to make the entire LoRaWAN test network system using the reference device of the LoRa Gateway Development Kit.



<SETALab LoRa Gateway Development Kit>

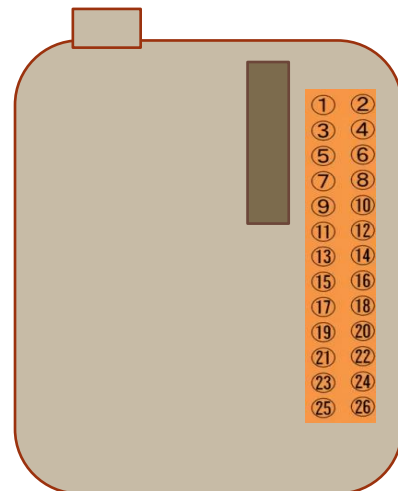
Module Overview

1. Specification

Contents	Data
Size	5.6cm x 8.4cm
Frequency	920MHz~924MHz (KR920), 940MHz
Tx power	14dBm
LBT	Supported
Input power	5V
Interface	SPI
LoRa Modem	SX1301 + SX1257
Temperature	-10°C ~ 50°C

2. Pin Map

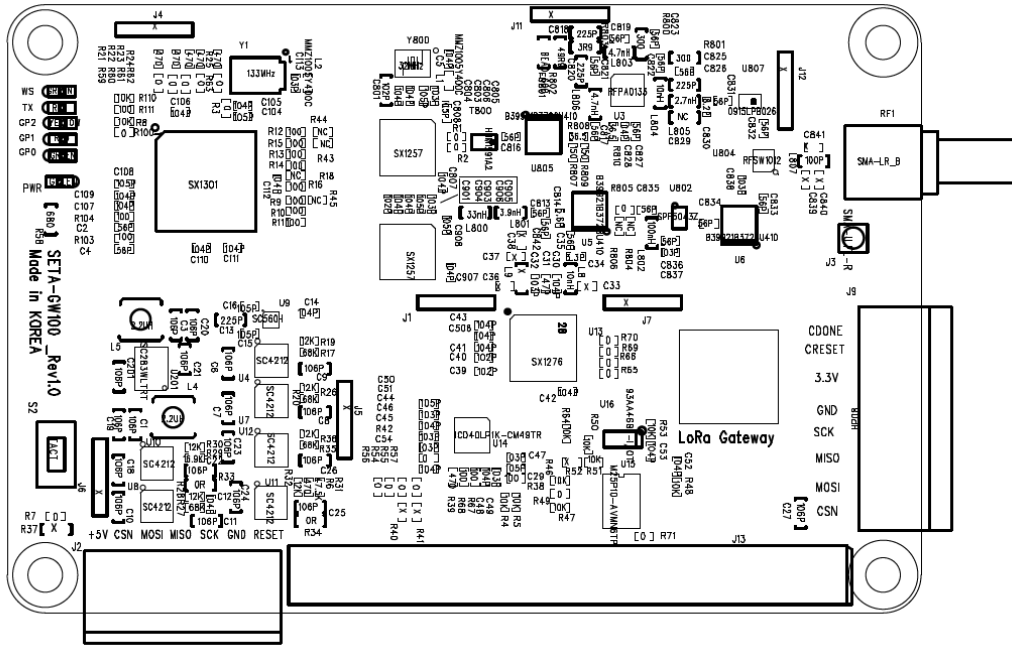
Functions	Pin Map
PWR	4
GND	6
SPI-MOSI	19
SPI- MOSO	21
SPI-CLK	23
SPI-SELECT	24
RESET	26



Interface EEPROM connector on the top has changed from 6 pins to SPI 7 pins.

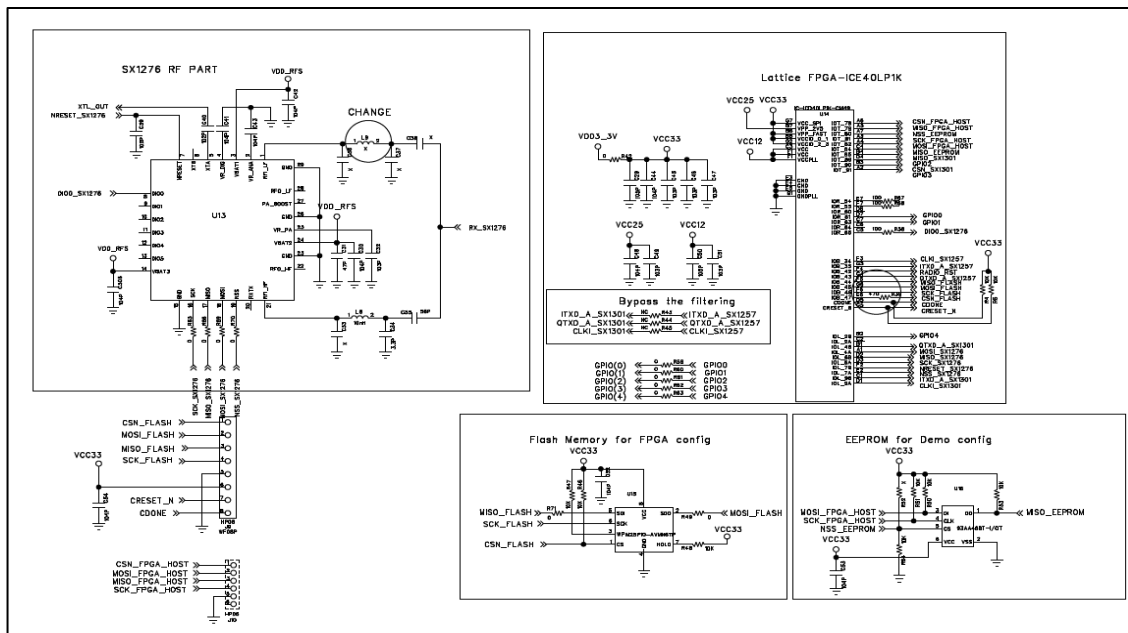
Hardware Descriptions

1. Block Diagram



2. Circuit Diagram

2-1. SX1276 RF Part and FPGA



LoRa System

1. Overview

Gateway is a role of the bridge between end-nodes and a network server. All gateways within reach of end-nodes will receive the packets and forward them to a network server.

In order to use LoRa technology, "Public" or "Private" networks should be configured. Public networks are managed by the operator (e.g. telecom), while private networks are managed individually. The network server can also be implemented on the gateway host to approach a private network.

2. Firmware

The LoRaWAN specification is driven by Semtech, IBM and Actility companies. Currently all available software, firmware and documentation can be downloaded from the open source project LoRa-net hosted on "<https://github.com/Lora-net>".

Korea Certification

1. Model Name

SETA-G100

2. KC Registration Number

R-R-9T9-SETA-G100 (2019-09-02)