RAK1921 WisBlock OLED Display Datasheet

Overview

Description

The RAK1921 module, part of the WisBlock series, is one of the modules that belong to the accessory category. This module was designed to be part of a production-ready IoT solution in a modular way. As part of the accessory category, it is not mandatory to be part of the final solution, but for certain cases can provide competitive advantages and improves the usability of the final solution.

RAK1921 is an OLED display module with a 128×64 dot matrix. The main characteristics of this module are the following: high brightness, self-emission, high contrast ratio, slim/thin outline, wide viewing angle, wide temperature range, and low power consumption.

Features

- **Module specifications**
  - 0.96 in OLED display
  - 128x64 pixel resolution
  - Bright white color on black background
  - I2C interface
  - Driver IC: SSD1306
  - Slim/thin Outline
  - Wide Viewing Angle
  - Wide Temperature Range
  - Low Power Consumption
  - Chipset: Solomon Systech Limited SSD1306
  - Module size: 27.8 x 27.3 mm

Specifications

Hardware

The hardware specification is categorized into four parts. It discusses the interfacing, pinouts, and its corresponding functions and diagrams. It also covers the electrical and mechanical parameters that include the tabular data of the functionalities and standard values of the RAK1921 WisBlock OLED Display.

Chipset

Vendor	Part number
Solomon Systech Limited	SSD1306

Interfaces

The RAK1921 module is compatible with the RAK5005-O WisBoard baseboard. The RAK5005-O has reserved a dedicated I2C port with a 2.54 mm header, as shown in the red rectangle in **Figure 1**, in which the RAK1921 can be attached.
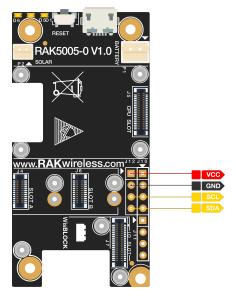
Figure 1: I2C pin header in the RAK5005-O

> 📝 **NOTE:**
>
> Be careful in selecting the baseboard, and make sure to choose RAK5005-O because the RAK5005 is not compatible with the RAK1921 WisBlock OLED Display.

Pin Definition

Figure 2 shows the name of the pins available in the RAK1921 module. This module supports an I2C interface.
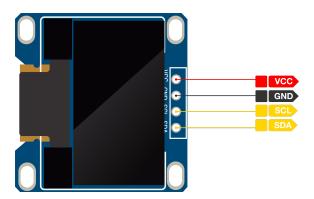

Figure 2: RAK1921 Pin Definition

Name	Description
VCC	Power Supply (2.4 –3.5 V)
GND	Grounding
SCL	I2C Clock Signal
SDA	I2C Data Signal

Electrical Characteristics

The absolute minimum and maximum ratings of the RAK1921 WisBlock OLED Display are presented in tabular representation. This should be followed accordingly to avoid future damages.

Absolute Maximum Ratings

Symbol	Description	Minimum	Nominal	Maximum	Unit

Symbol	Description	Minimum	Nominal	Maximum	Unit
Vdd	Power Supply for the Module	−0.5		3.5	V
Temperature	Operation Temperature	−30		70	° C

Operating Conditions

Symbol	Description	Minimum	Nominal	Maximum	Unit
Vdd	Power Supply	2.4		3.5	V
Lbr	Normal Mode Brightness	80	100		Cd/m²
	View Angle	160			degree (°)

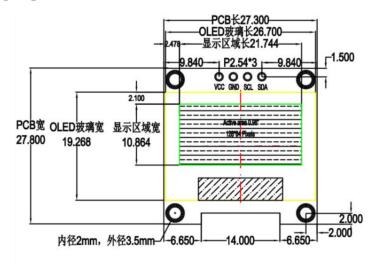# Mechanical Characteristics

Board Dimensions

Figure 3: Mechanical Dimensions

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