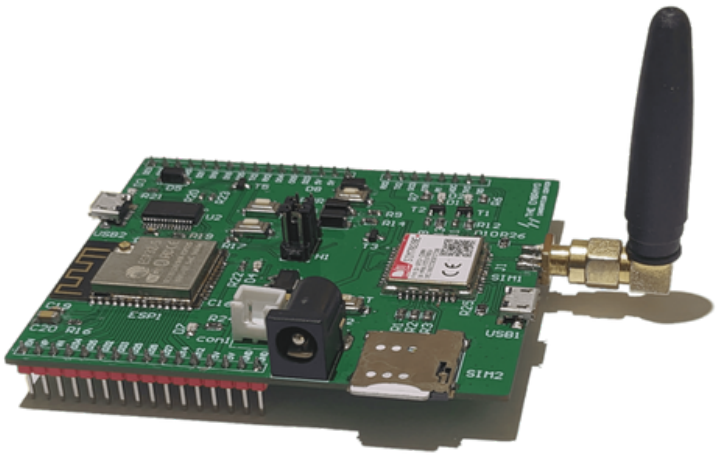
SLTMOBITEL THEEMBRYO INNOVATION CENTRE

SriLink Dev Kit V1



SriLink Dev Kit is an entry-level development board with inbuilt NB-IoT, WiFI, and Bluetooth connectivity to enhance the productivity and quality of IoT applications. In Addition to that, the Sri link library provides simplified functions to utilize Nb-IoT connectivity with all the NB-IoT features.

SriLink Dev Kit consists of the SIM7020x as well as the ESP32-WROOM-S with a common ESP32-S DevKit pin configuration.

Most of the I/O pins on the module are broken out to the pin headers on both sides for easy interfacing. Developers can either connect peripherals with jumper wires or mount the dev board on a breadboard.

Target Apps

- IoT Devices
- Sensor Data Collection
- Smart Water and Electricity Meters
- Aqua Culture Monitoring System

Specifications

ESP32 wroom S with FTDI USB to serial converter	Programable with Arduino IDE
Wi-Fi , BT, NB-IoT	TCP/UDP /HTTP/HTTPS/TLS/DTLS/DNS/NTP/PING LWM2M/COAP/MQTT/MQTTS OneNET/CT Cloud/ CUCC Cloud/Ayla Cloud/Ali Cloud FOTA EAT
Multiple Power Inputs	B1/B3/B5/B8
Separate USB interface for SIM7020X module	Uplink: 62.5Kbps Downlink:26.15Kbps

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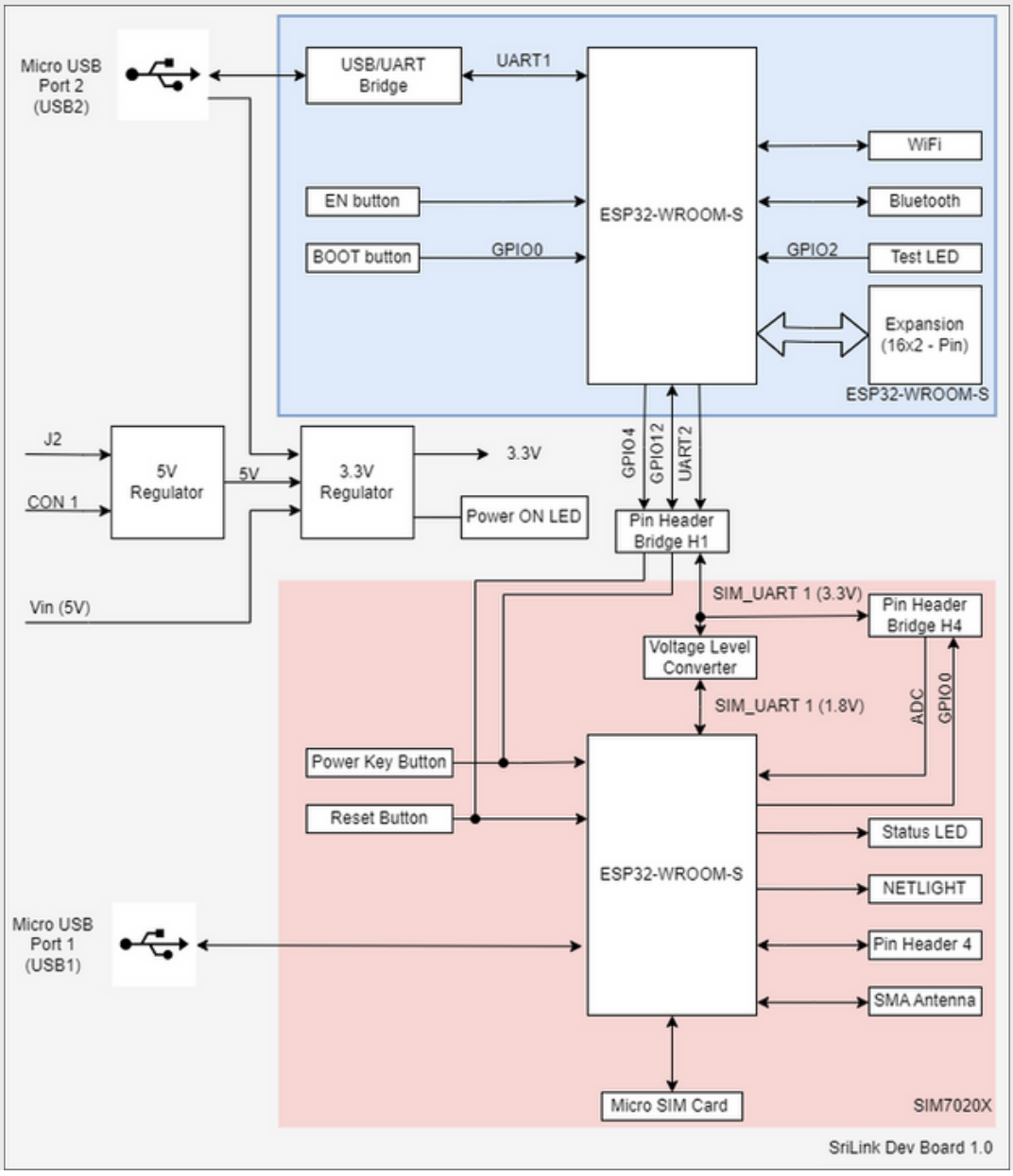
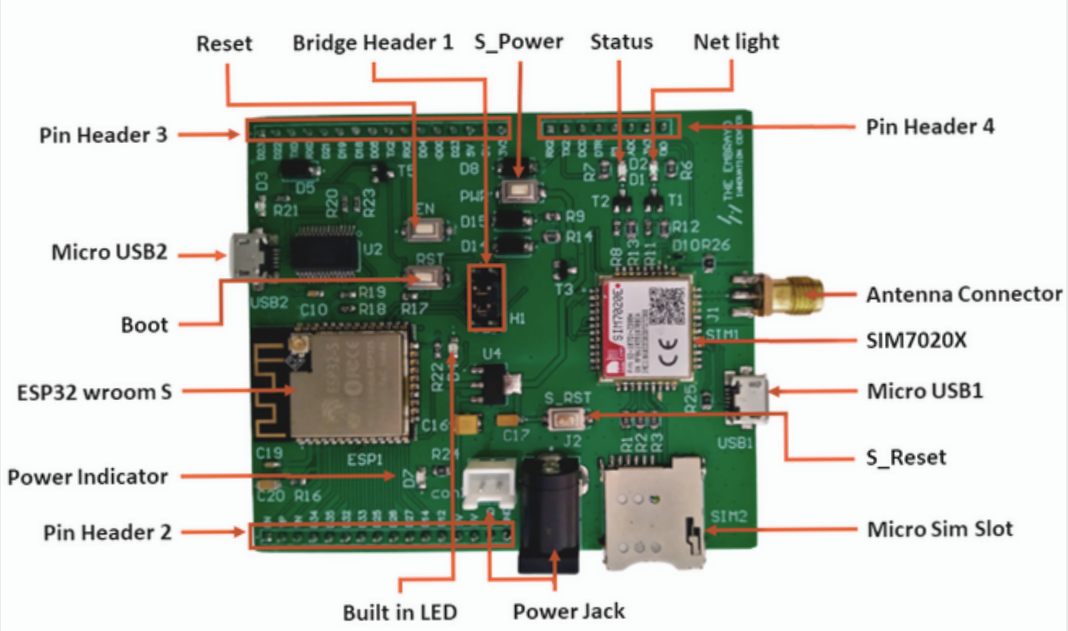
Block Diagram



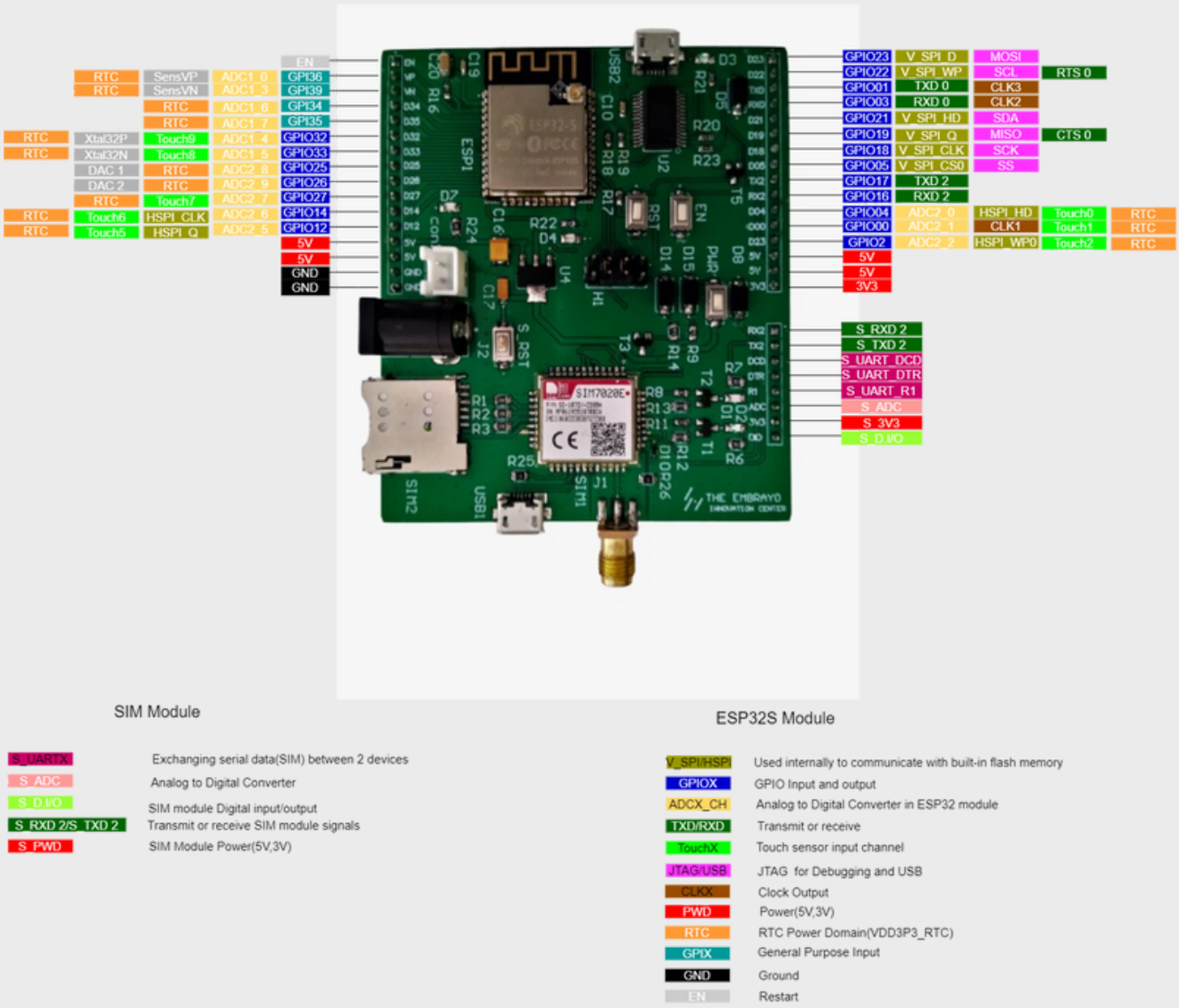
Key Components



Key Component Description

Key Component	Description
ESP32 wroom S	
Micro USB2	USB Connection Interface. Power Supply for ESP32 and communication Interface. Once connect the USB port Green color LED will blink.
Reset	Reset button
Boot	Boot button. Holding down Boot Button and then pressing Reset Button Initiates the Firmware Download mode.
Power Indicator	Turns on when the development board is power on.
SIM7020X	
S_Power	Sim7020X power on & off button. To power on module physically user has to press the button and also to power off again press the button. Power on module - 800mS Power off module – 1S
Pin Header 2/Pin Header 3	All available GPIO pins are connected to the headers on the board. Users can program ESP32- Wroom S chip to enable multiple functions such as SPI, I2S, UART, I2C, touch sensors, PWM etc. Power Input/Output(3V3,5V) and GROUND pins are connected.
Status	The STATUS LED indicates the whether module is powered on or not.
Net light	NETLIGHT Indicates the Network Status. 64ms ON, 800ms OFF No registered network 64ms ON, 3000ms OFF Registered network 64ms ON, 300ms OFF Data transmit OFF Power off or PSM mode
Micro USB1	USB Connection Interface with SIM7020X, but the USB charging function is not supported.

S_Reset	SIM7020 can be reset by using S_Reset button.
Micro Sim Slot	Insert Micro Sim Card.
Pin Header 4	SIM7020X pins are connected with the header pins. RXD2 - Receive Data TXD2 - Transmit Data DCD - Data carrier detect DTR - Transmit Data R1 - Ring Indicator ADC - Analog-digital converter input. Voltage range: 0.1-1.4V VDD 3.3 - Power output (3.3V-3.5V) Max 50mA current output. Not present in PSM mode. GPIO0 - Do not pull down before power on.
Bridge Header 1	Set up connection between Esp32 and SIM7020X module. GPIO12 - Power ON/OFF SIM7020X TX2 - S_RX1 RX2 - S_TX1 GPIO4 - Reset SIM7020X
Power Jack	External Power Supply (Max: 20V)
Antenna Connector	External SMA Antenna connector Impedance: 50 ohm Frequency range: 700MHz-960MHz



Pin Description

Bridge Header 1

Pin No	Type	Description
1-2	T	Power on SIM7020X(connected GPIO12)
3-4	T	Transmit Data from Esp32 to SIM7020X(TX2)
5-6	T	Receive Data from SIM7020X to Esp32(RX2)
7-8	T	Reset SIM7020X(GPIO4)

Pin Header 2 & Pin Header 3

Pin No	Type	Description
EN	Input	Restart
VP	Input Only	Only ADC input.
VN	Input Only	Only ADC input.
D34	Input Only	SPIIO5, GPIO34, FSPICS0
D35	Input Only	SPIIO6, GPIO35, FSPID
D32	I/O/T	GPIO32, ADC1_CH4, RTC_GPIO9, TOUCH9
D33	I/O/T	SPIIO4, GPIO33, FSPIHD
D25	I/O/T	GPIO25, ADC2_CH8, RTC_GPIO6, DAC_1,EMAC_RXD0
D26	I/O/T	GPIO26, ADC2_CH9, RTC_GPIO7, DAC_2,EMAC_RXD1
D27	I/O/T	GPIO27, ADC2_CH7, RTC_GPIO17, TOUCH7,EMAC_RX_DV
D14	I/O/T	GPIO14, ADC2_CH6, RTC_GPIO16, TOUCH6,EMAC_TXD2,
D12	I/O/T	GPIO12, PWR_SIM7020X, ADC2_CH5, RTC_GPIO15,TOUCH5, EMAC_TXD3, HSPIQ, HS2_DATA2, SD_DATA2, MTDI
5V	P	Input/Output Power supply(5V)
5V	P	Input/Output Power supply(5V)
GND	GND	Ground
GND	GND	Ground

Pin No	Type	Description
D23	I/O	GPIO23, HS1_STROBE, VSPID
D22	I/O	GPIO22, U0RTS, VSPIWP, EMAC_TXD1
TX0	I/O	I/O GPIO1, U0RXD, CLK_OUT3
RX0	I/O	I/O GPIO3, U0RXD, CLK_OUT3
D21	I/O	GPIO21, VSPIHD,
D19	I/O	GPIO19, U0CTS, VSPIQ, EMAC_TXD0
D18	I/O	GPIO18, HS1_DATA7, VSPICLK
D05	I/O	GPIO5, HS1_DATA6, VSPICS0, EMAC_RX_CLK
TX2	I/O	GPIO17, HS1_DATA5, U2TXD, EMAC_CLK_OUT_180
RX2	I/O	GPIO16, HS1_DATA4, U2RXD, EMAC_CLK_OUT
D04	I/O	GPIO4,RST_SIM7020X, ADC2_CH0, RTC_GPIO10, TOUCH0, EMAC_TX_ER, HSPIHD, HS2_DATA1, SD_DATA1,
D00	I/O	GPIO0, ADC2_CH1, RTC_GPIO11, TOUCH1
D02	I/O	TC_GPIO2, GPIO2, TOUCH2, ADC1_CH1
5V	P	Input/Outout Power supply(5V)
5V	P	Input/Output Power supply(5V)
3V3	P	Output Power Supply (3.3V)

Pin Header 4

Pin No	Type	Description
RX2	DI	Receiving Data (3.3V)
TX2	DOH	Transmitting Data (3.3V)
DCD	DOH	Data Carrier Detection
DTR	DI/PU	Transmit Data
R1	DOH	Ring Indicator
ADC	AI	Analog to Digital converter (0.1-1.4)
3V3	P	Output Power Supply (3.3V)
GPIO0	I/O	Do not Pull Down before Power On

Parts

SriLink_Dev_Board - ESP1	ESP32 wroom S
SriLink_Dev_Board - SIM1	SIM7020
SriLink_Dev_Board - U2	FT232R

Related Documents

SriLink_Dev_Board - ESP1	ESP32-WROOM-32
SriLink_Dev_Board - SIM1	SIM7020 NB-IoT Module
SriLink_Dev_Board - U2	FT232R USB UART IC Datasheet Version 2.16

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SLTMOBITEL The Connection

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