Hardware description

Internal

8-pin internal management bus

1. GND
2. CLK
3. MISO
4. MOSI
5. CS-1
6. CS-2
7. CS-3
8. CS-4

All data pins on 3V3

Interconnection

Arduino Nano

IoT LAB	**Arduino Nano**	**IoT LAB**	**Arduino Nano**
UART TX	D5	**SPI CS**	D10
UART RX	D6	**SPI SCK**	D13
I2C SCL	A5 = SCL	**SPI MISO**	D12
I2C SDA	A4 = SDA	**SPI MOSI**	D11
GP-1	A0 = D14	**GP-5**	D2
GP-2	A1 = D15	**GP-6**	D3
GP-3	A2 = D16	**GP-7**	D7
GP-4	A3 = D17	**GP-8**	D8

RockPi S

IoT LAB	**RockPi S**	**IoT LAB**	**RockPi S**
UART TX	24 (UART1) shared	**SPI CS**	24 (SPI2) shared
UART RX	23 (UART1) shared	**SPI SCK**	23 (SPI2) shared
I2C SCL	5 (I2C 1)	**SPI MISO**	21 (SPI2)
I2C SDA	3 (I2C 1)	**SPI MOSI**	19 (SPI2)
GP-1	12 - GPIO2_A5	**GP-5**	47 - GPIO2_B4
GP-2	13 - GPIO0_C0	**GP-6**	48 - GPIO2_B3
GP-3	16 - GPIO2_B2	**GP-7**	49 - GPIO2_B0
GP-4	15 - GPIO0_C1	**GP-8**	50 - GPIO2_A6

Raspberry Pico

IoT LAB	**Raspberry Pico**	**IoT LAB**	**Raspberry Pico**
UART TX	GP0	**SPI CS**	GP17
UART RX	GP1	**SPI SCK**	GP18
I2C SCL	GP5	**SPI MISO**	GP16
I2C SDA	GP4	**SPI MOSI**	GP19
GP-1	GP10	**GP-5**	GP22
GP-2	GP11	**GP-6**	GP20
GP-3	GP12	**GP-7**	GP28
GP-4	GP13	**GP-8**	GP21

STM32 BluePill

IoT LAB	BluePill	IoT LAB	BluePill
UART TX	PA2 (UART2)	**SPI CS**	PA4 (SPI 1)
UART RX	PA3 (UART2)	**SPI SCK**	PA5 (SPI 1)
I2C SCL	PB6 (I2C 1)	**SPI MISO**	PA6 (SPI 1)
I2C SDA	PB7 (I2C 1)	**SPI MOSI**	PA7 (SPI 1)
GP-1	PB5	**GP-5**	PB15
GP-2	PA15	**GP-6**	PB13
GP-3	PB4	**GP-7**	PB14
GP-4	PB3	**GP-8**	PB12

Application boards

- HC-SR04 + RGB LED
- DHT11 + DS18B20 + BMP280
- RFID reader + RGB LED
- OLED SPI + uSD reader + RGB LED
- Rotary encoder + LCD 1602 - I2C
- 3x Push Button + switch + shift_register + 8x LED

- RGB LED - common Cathode

Rotary encoder + LCD 1602 - I2C

LCD I2C address 0x3F
Rotary encoder pinout:

A	GP3
B	GP1
C	GND
Push	GP4

Communication boards

- RS-485 - MODBUS
- CANBUS
- IR
- 868/433