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V. 1.0/MAR/2020

JARM ESP32

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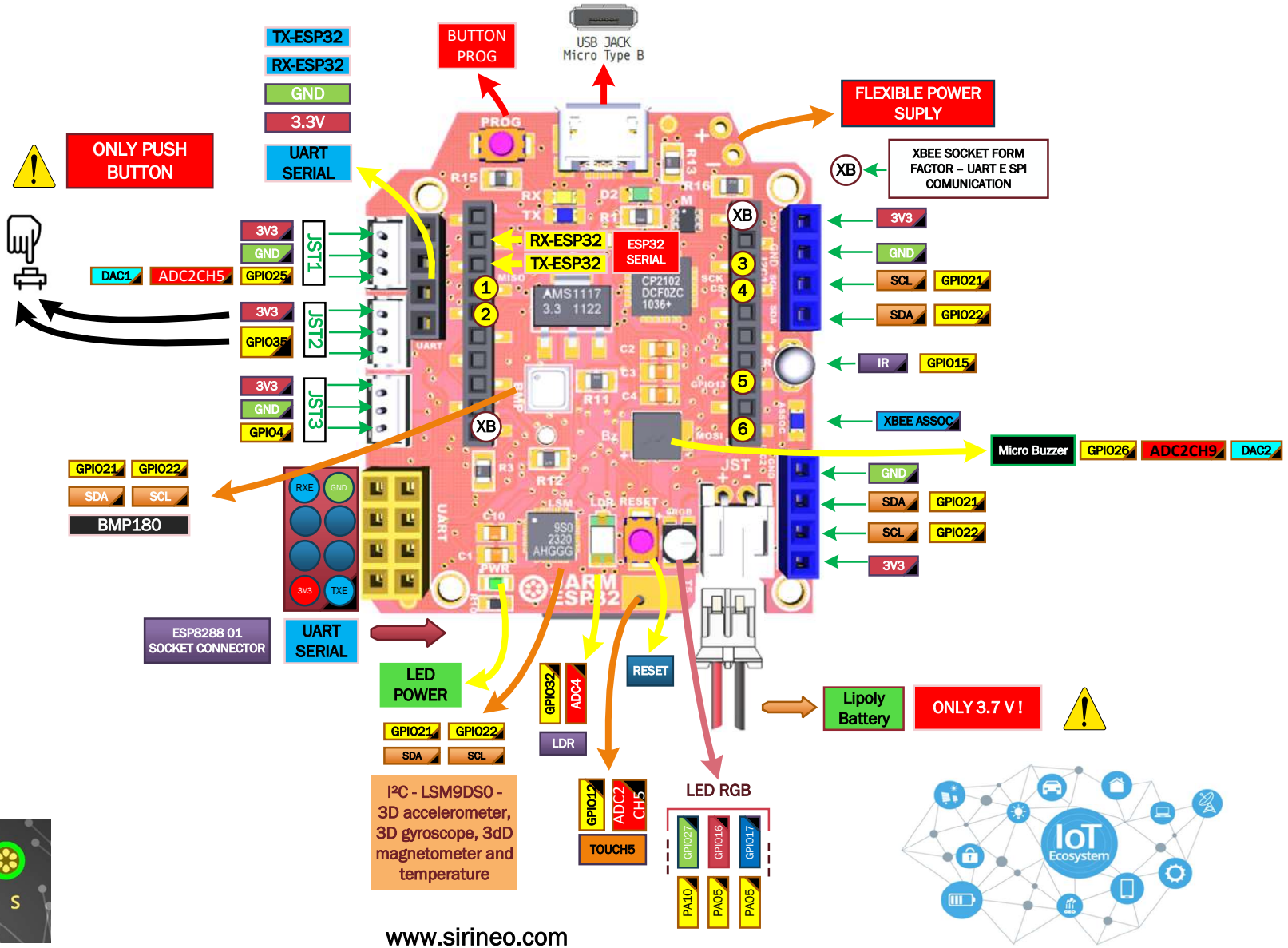

LORABOT SPI

4	GPIO19	MISO	1
5	GPIO14	RESET	2
18	GPIO18	SCK	3
17	GPIO5	NSS	4
13	GPIO13	IRQ	5
5	GPIO23	MOSI	6

XBEE SOCKET FEMALE PIN

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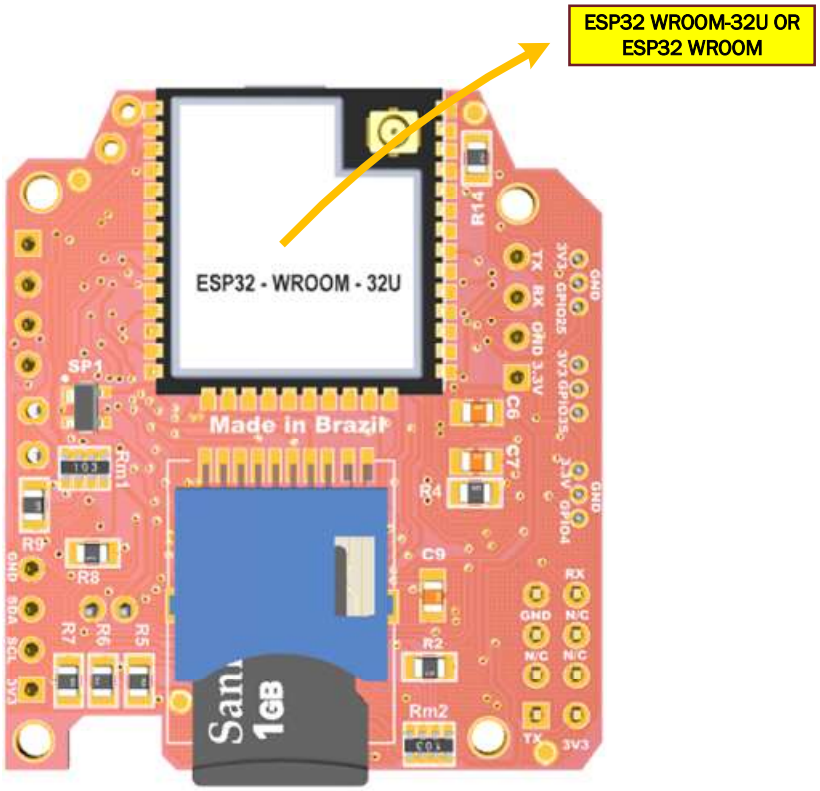

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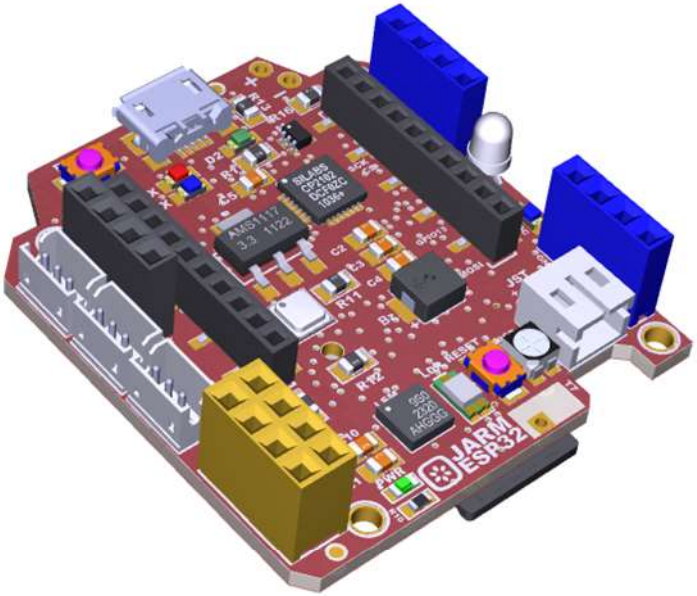
STORY



The first Esp32 IoT Platform in Brazil !

The **JARM ESP32 IoT** is a hardware micro platform with a new mechanical format "JARM", developed specifically for projects that demand fast connectivity, low consumption, different sensing and versatility. It is based on the ESP32 WROOM developed by the company Espressif, a hardware that presented itself as an innovative technology in the IOT (Internet of Things) market. It is already practically integrated with the Wi-Fi (802.11 b/g/n) and BLE (low energy Bluetooth) and Bluetooth classic protocols, and with new features, allowing to offer up to 8 MB of flash, 64 Mbits SPI FLASH, plus UFL antenna on board.

In order to create equipment different from the most common ESP32-based development boards on the market, **SIRINEO TECNOLOGIES**, endeavored to integrate, as in the JARM IOT M microplatform, the maximum functional sensors for practical application in an IoT sensing system . The JARM ESP32 IoT can, through expansion boards, shields and various sensors, and also in conjunction with other wireless modules such as: LoRaWAN, SIGFOX, GPRS and ZigBEE (all also manufactured by SiriNEO Technologies), create multiple solutions for IoT Ecosystems, fitting into a Smart IoT Device concept.

Build your IoT Solution with our JARM ESP32 IoT, and create optimized solutions for your connectivity problems!

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TECHNICAL INFORMATION

BASIC SPECIFICATIONS	
PCB SIZE - Small form factor	42.912mm X 37.636mm
INDICATORS	PWR, status xbee assoc
Power supply in	3.3~5V, EXTERNAL IN DC
Current max. Consumption	700mA
Communication Protocol	UART, I2C and SPI
RoSH	Yes

KEY FEATURES

1 – MICROCONTROLADOR ESP32-WROOM-32U/ESP32-WROOM

2 - Clock Speed: 40 MHz;

3 – Female socket (TOP) for: XBEE, LoraBOT (UART-SPI), SIGBOT - SERIAL and SPI;

4 - Flexible power suply;

5 - ESP8266-01 standard female socket;

6 - POWER LED, connected to the 5V input via the USB port;

7 - LED DI02-on-board;

8 - LSM9DS0 - Accelerometer/Gyroscope/Magnetometer/Temperature on board;

9 - TEMT6000 Phototransistor Brightness Sensor;

10 - MICRO SMD 3528 led RGB PLCC-4;

11 –IR emitter - 3mm;

12 – 01 (one) JST connector for connecting devices with one-wire interface (IN/OUT);

13 - 01 (one) exclusive JST connector for connection of push button;

14 – 01 (one) JST connector for connecting analog sensors and DAC output;

15 - 2mm JST input for external 3.7V power supply;

16 - Small Piezo Electrical Magnetic Buzzer;

17 - TransFlash TF Micro SLOT for micro SD Card;

18 - 02 (two) 1x4 sockets for connecting I2C devices;

19 - 01 (one) 2x4 socket for connecting UART devices;

20 - 01 (one) PAD TOUCH;

21 - Pressure and Temperature Sensor BMP180 – I2C;

22 - Supply Voltage: 5V or 3.3V (Via Li-Po Single Cell battery, 3.7V, 700mAh minimum);

23 - Extremely small: 42.912mm X 37.636mm. Supply voltage: 5V or 3.3V (Via Li-Po Single Cell battery, 3.7V, 700mAh minimum);

24 - It can be used with the SunBOT - ST solar battery charger;

27 - It is compatible with all hardware from EngeBOT Tecnologia and SIRINEO TECHNOLOGIES.

28 - Compatible with Arduino IDE, MicroPython, FreeRTOS, ESP-IDF, etc.

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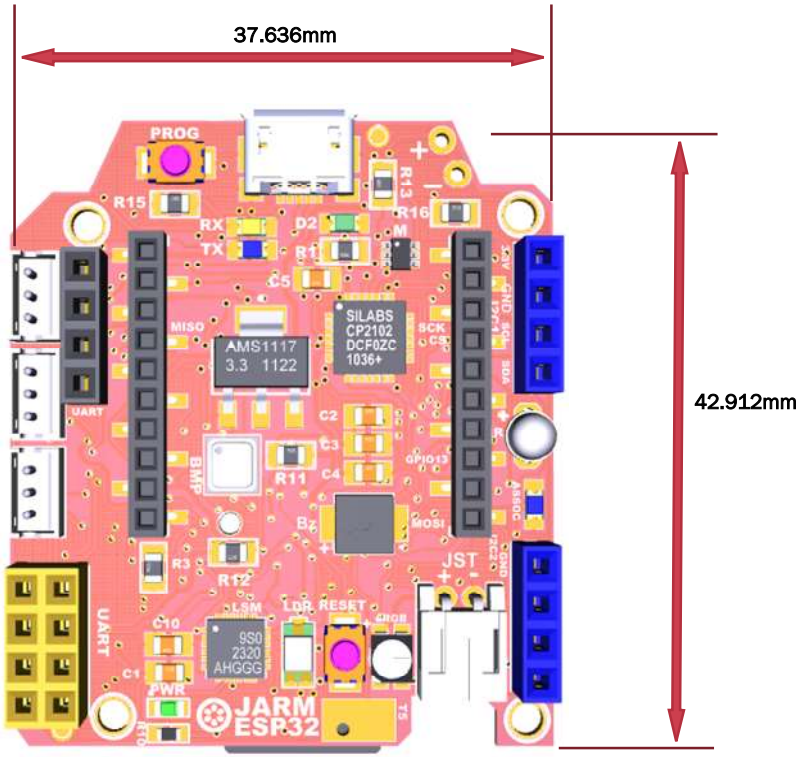
MECHANICAL DIMENSIONS



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ADDITIONAL INFORMATION

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OPERATING VARIATIONS

- Disable power status LEDs
- LEDs RX-TX Serial communication indicators
- Micro switches for manual and reset programming mode.
- UFL connector for connecting external antennas.

⚠ IMPORTANT HARDWARE INFORMATION

1 . THE JARM ESP32 IOT MUST BE USED WITH A LIPO BATTERY OF AT LEAST 700 mA.

2. THE JARM ESP32 IOT SHOULD BE USED IN CASES SUITABLE FOR ITS DIMENSIONS, ST HAS 3D MODEL CASES AVAILABLE FOR THIS.

3. WHEN THERE IS LOCKING OR PROGRAMMING FAILURES PRESS THE HARDWARES RESET SWITCH THAT HE WILL RESTART.

4. FOR SERIAL COMMUNICATION WITH ARDUINO IDE, IT MUST BE DEFINED THE ESP32 DEV MODULE HARDWARE DEVICE.

5. THE JARM ESP32 IOT IS A HARDWARE PLATFORM THAT CAN USE THE IOT PROTOCOL REDUNDANCE FEATURE.

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DESIGN BY ENGEREGGAE

JARM ESP32 GPIOs

CONNECTION INTERFACE	JARM ESP32 NATIVE FUNCTION	ESP32-WROOM-32U	ESP32-WROOM-32U PIN DEFINITIONS
	FIRMWARE RECORDER	GPIO0	GPIO0, ADC2_CH1, TOUCH1, RTC_GPIO11, CLK_OUT1, EMAC_TX_CLK
UART	TX0	GPIO1	TXD
	LED BUILTIN (Onboard LED)	GPIO2	GPIO2, ADC2_CH2, TOUCH2, RTC_GPIO12, HSPIWP, S2_DATA0, SD_DATA0
UART	RX0	GPIO3	RXD
	JST 3 IN/OUT	GPIO4	GPIO4, ADC2_CH0, TOUCH0, RTC_GPIO10, HSPIHD, HS2_DATA1, SD_DATA1, EMAC_TX_ER
SPI	NSS-SPI/XBEE SOCKET	GPIO5	GPIO5, VSPICS0, HS1_DATA6, EMAC_RX_CLK
	NOT APPLICABLE	GPIO6	GPIO6, SD_CLK, SPICLK, HS1_CLK, U1CTS
	NOT APPLICABLE	GPIO7	GPIO7, SD_DATA0, SPIQ, HS1_DATA0, U2RTS
	NOT APPLICABLE	GPIO8	GPIO8, SD_DATA1, SPID, HS1_DATA1, U2CTS
	NOT APPLICABLE	GPIO9	GPIO9, SD_DATA2, SPIHD, HS1_DATA2, U1RXD
	NOT APPLICABLE	GPIO10	GPIO10, SD_DATA3, SPIWP, HS1_DATA3, U1TXD
	NOT APPLICABLE	GPIO11	GPIO11, SD_CMD, SPICS0, HS1_CMD, U1RTS
	NOT APPLICABLE	GPIO12	GPIO12, ADC2_CH5, TOUCH5, RTC_GPIO15, MTDI, HSPIQ, HS2_DATA2, SD_DATA2, EMAC_TXD3
	NOT APPLICABLE	GPIO13	GPIO13, ADC2_CH4, TOUCH4, RTC_GPIO14, MTCK, HSPID, HS2_DATA3, SD_DATA3, EMAC_RX_ER
SPI	RESET LORASPI/XBEE SOCKET	GPIO14	GPIO14, ADC2_CH6, TOUCH6, RTC_GPIO16, MTMS, HSPICLK, HS2_CLK, SD_CLK, EMAC_TXD2
	IR EMISSOR	GPIO15	GPIO15, ADC2_CH3, TOUCH3, MTDO, HSPICS0, RTC_GPIO13, HS2_CMD, SD_CMD, EMAC_RXD3
	uRGB-RED	GPIO16	GPIO16, HS1_DATA4, U2RXD, EMAC_CLK_OUT
	uRGB-BLUE	GPIO17	GPIO17, HS1_DATA5, U2TXD, EMAC_CLK_OUT_180
SPI	CLK-SPI/XBEE SOCKET	GPIO18	GPIO18, VSPICLK, HS1_DATA7
SPI	MISO-SPI/XBEE SOCKET	GPIO19	GPIO19, VSPIQ, U0CTS, EMAC_TXD0
	NOT APPLICABLE	GPIO20	NOT APPLICABLE
I2C	SDA SOCKET 1X4	GPIO21	GPIO21, VSPIHD, EMAC_TX_EN
	SCL SOCKET 1X4	GPIO22	GPIO22, VSPIWP, U0RTS, EMAC_TXD1
SPI	MOSI-SPI/XBEE SOCKET	GPIO23	GPIO23, VSPID, HS1_STROBE
	NOT APPLICABLE	GPIO24	NOT APPLICABLE
	JST 1 IN/OUT/ADC	GPIO25	GPIO25, DAC_1, ADC2_CH8, RTC_GPIO6, EMAC_RXD0
	Ubuzzer	GPIO26	GPIO26, DAC_2, ADC2_CH9, RTC_GPIO7, EMAC_RXD1
	TOUCH PIN	GPIO27	GPIO27, ADC2_CH7, TOUCH7, RTC_GPIO17, EMAC_RX_DV
	NOT APPLICABLE	GPIO28	NOT APPLICABLE
	NOT APPLICABLE	GPIO29	NOT APPLICABLE
	NOT APPLICABLE	GPIO30	NOT APPLICABLE
	NOT APPLICABLE	GPIO31	NOT APPLICABLE
	LDR	GPIO32	GPIO32, XTAL_32K_P (32.768 kHz crystal oscillator input), ADC1_CH4, TOUCH9, RTC_GPIO9
	SD-CARD-CS	GPIO33	GPIO33, XTAL_32K_N (32.768 kHz crystal oscillator output), ADC1_CH5, TOUCH8, RTC_GPIO8
	uRGB-YELLOW	GPIO34	GPIO34, ADC1_CH6, RTC_GPIO4
	JST 2 PUSH BUTTON	GPIO35	GPIO34, ADC1_CH6, RTC_GPIO4
	NOT APPLICABLE	GPIO36	GPIO36, SENSOR_VP, ADC_H, ADC1_CH0, RTC_GPIO0
	NOT APPLICABLE	GPIO37	NOT APPLICABLE
	NOT APPLICABLE	GPIO38	NOT APPLICABLE
	NOT APPLICABLE	GPIO39	GPIO39, ADC1_CH3, RTC_GPIO3

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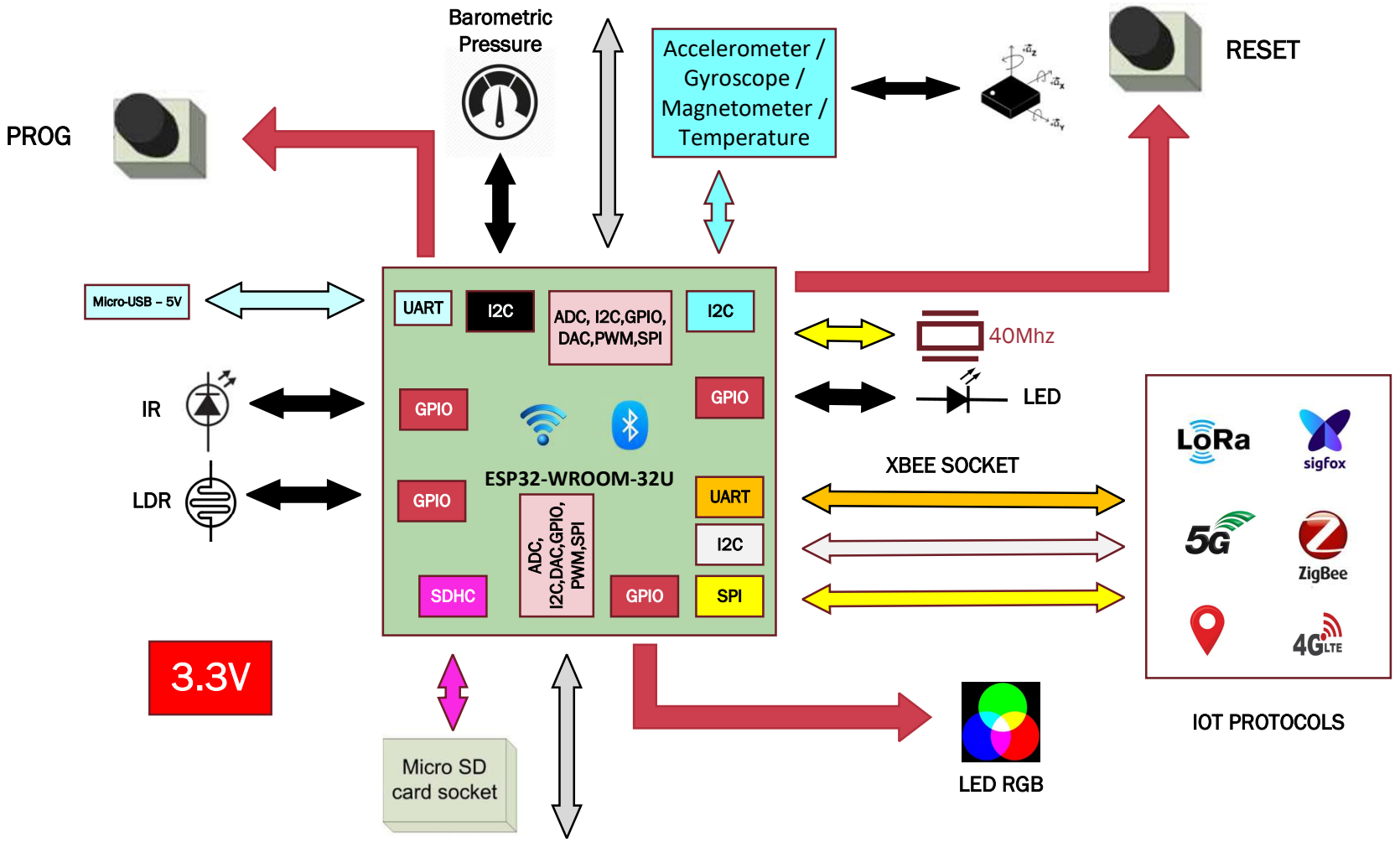
I/O HEADERS, CONNECTORS AND JST



I/O HEADERS, CONNECTORS AND JST

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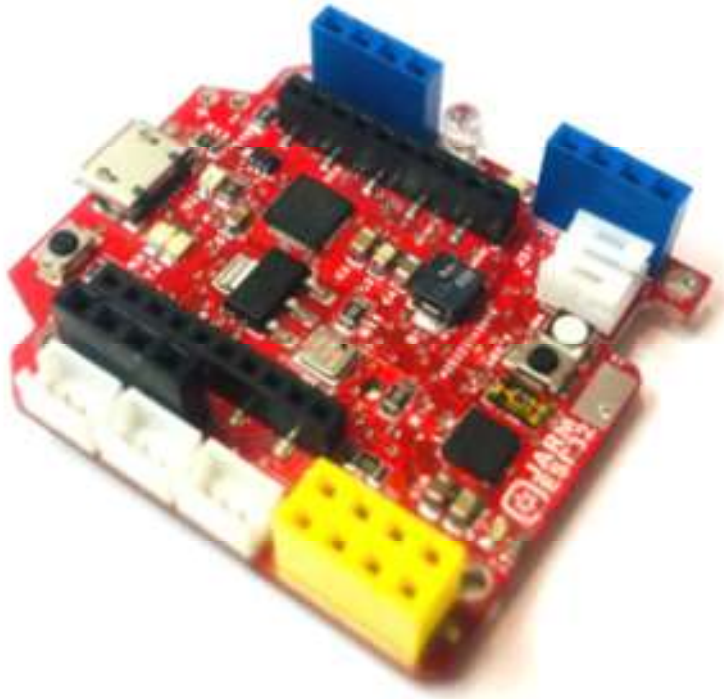
TECHNOLOGIES AND COMPATIBILITY



The JARM ESP32 IOT is compatible with several software and IoT platforms on the world market.

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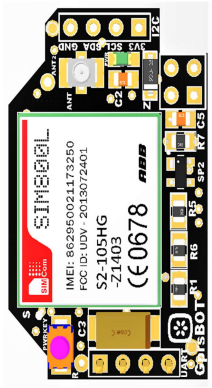
IOT MODULES

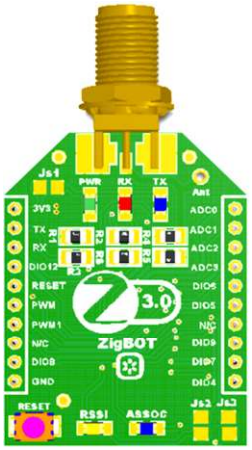
GPRS

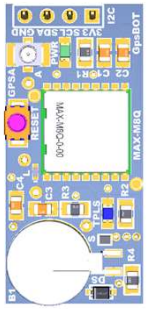
ZigBee

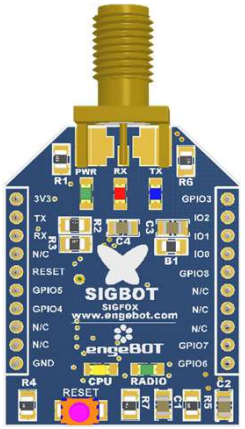
sigfox

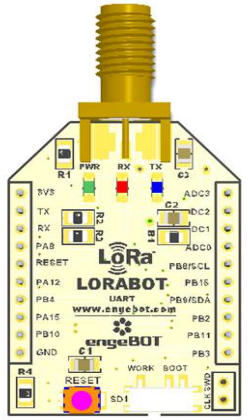
LoRa











SiriNEO Technologies has developed some of the most well-known wireless protocol modules on the market, such as Zigbee, Wi-Fi, Bluetooth, Lora, GPRS and Sigfox, namely: SigBOT, LoraBOT, Wroombee, ZigBOT and GPRSBOT.

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COUPLINGS

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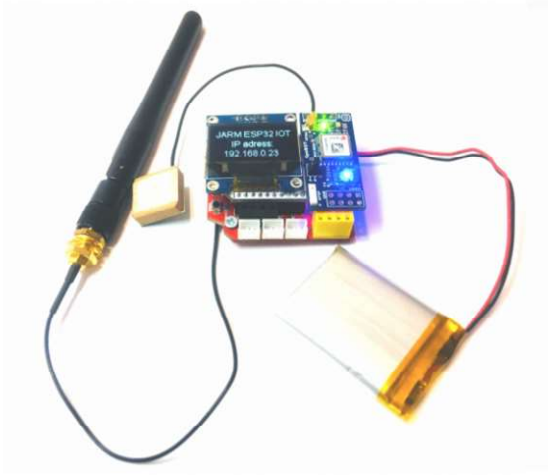

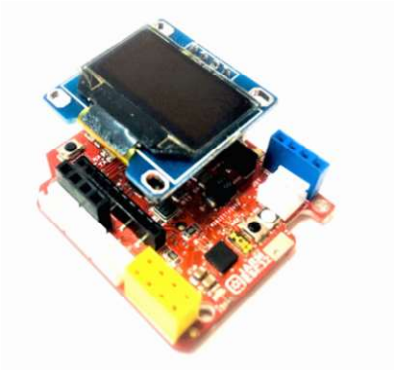

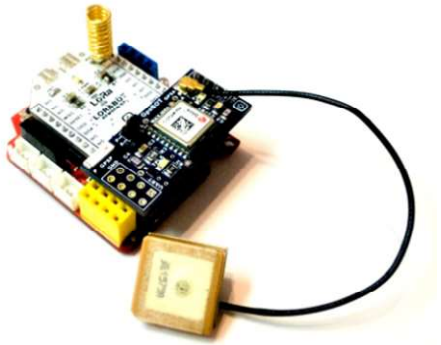

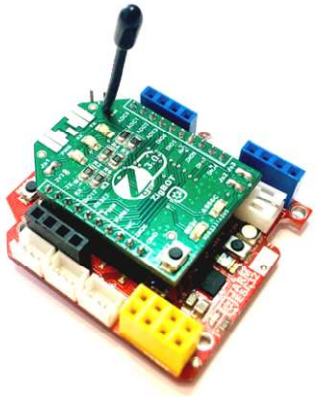

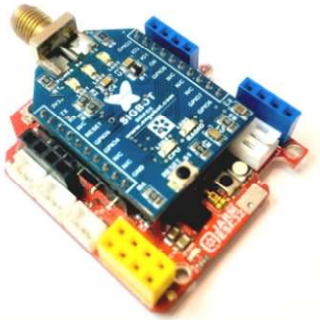

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CASES FOR JARM ESP32

3D CASE

INDOOR

OUTDOOR

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IOT SOLUTIONS

INDUSTRY 4.0

Smart City

AgroTech

IoTHealthCare

IoT Education

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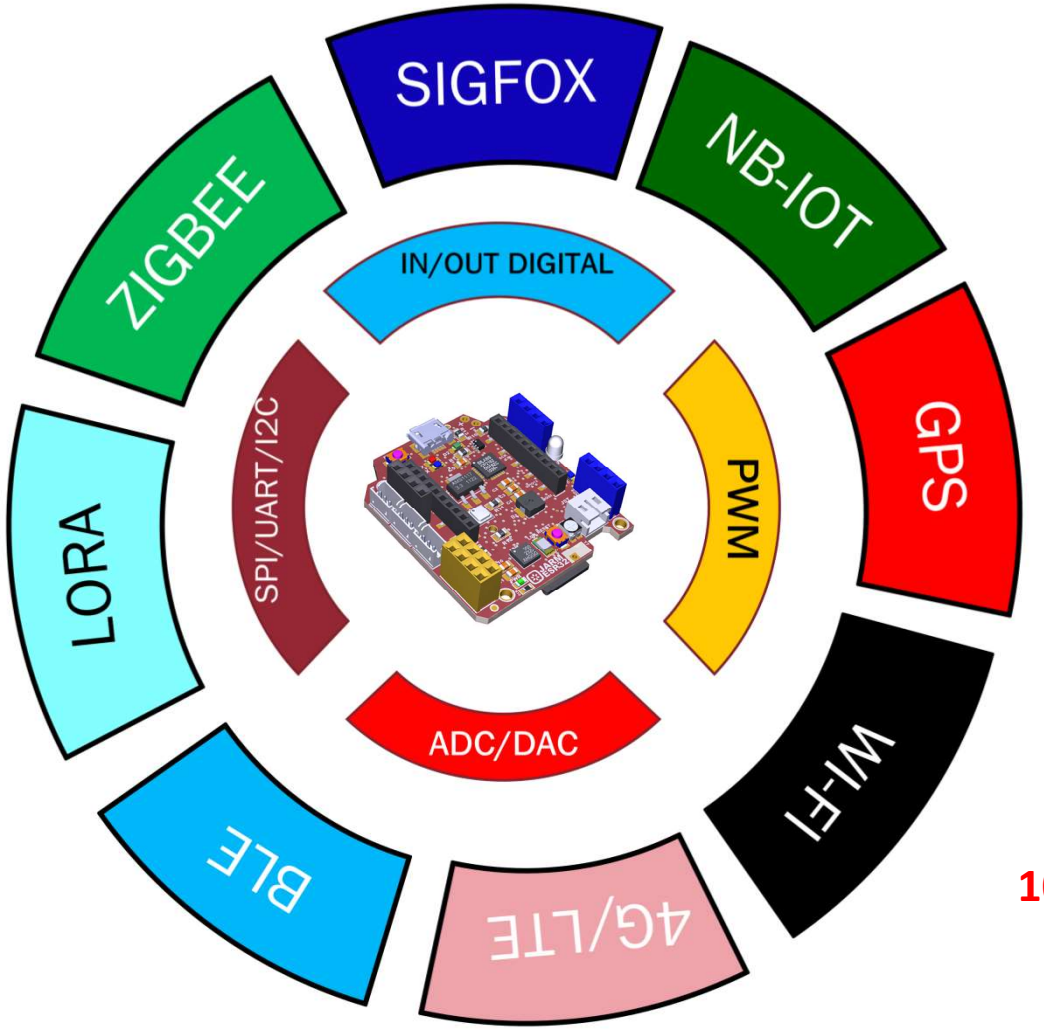
IOT ECOSYSTEMS



JARM ESP32 IoT SMART IOT DEVICE:

1. PROTOCOL REDUNDANCES
2. LOW POWER
3. MULTIPROTOCOLS
4. SMALL FORM FACTOR
5. MORE THAN 20 FEATURES
6. LOCAL DATA LOGGER
7. FLEXIBLE POWER SUPPLY
8. TOUCH PAD TESTER
9. 2 UART, 1 SPI and 2-I2C
10. Compatible with ESP32 DEV MODULE

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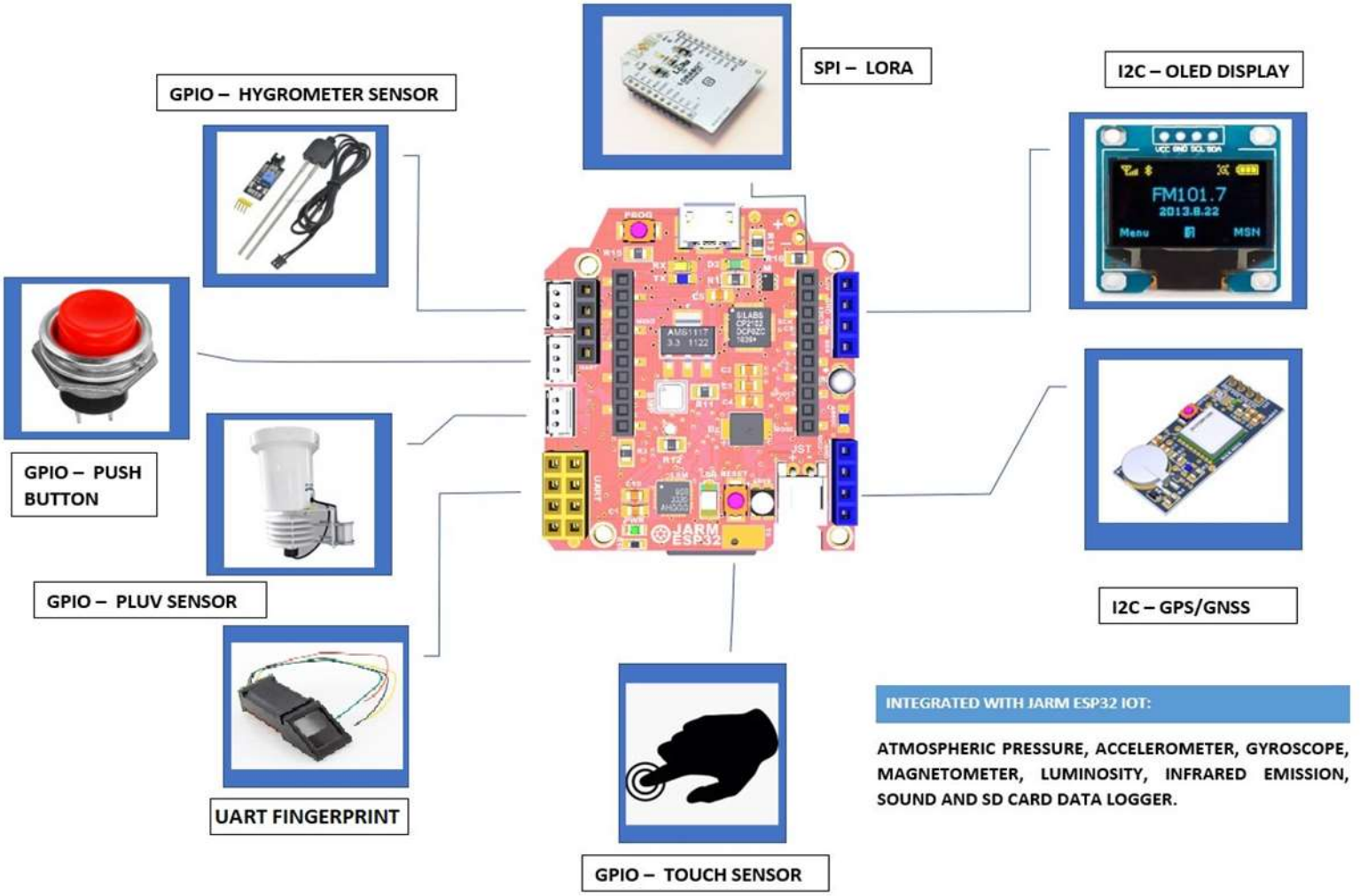
Connection example



INTEGRATED WITH JARM ESP32 IOT:

ATMOSPHERIC PRESSURE, ACCELEROMETER, GYROSCOPE, MAGNETOMETER, LUMINOSITY, INFRARED EMISSION, SOUND AND SD CARD DATA LOGGER.

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