

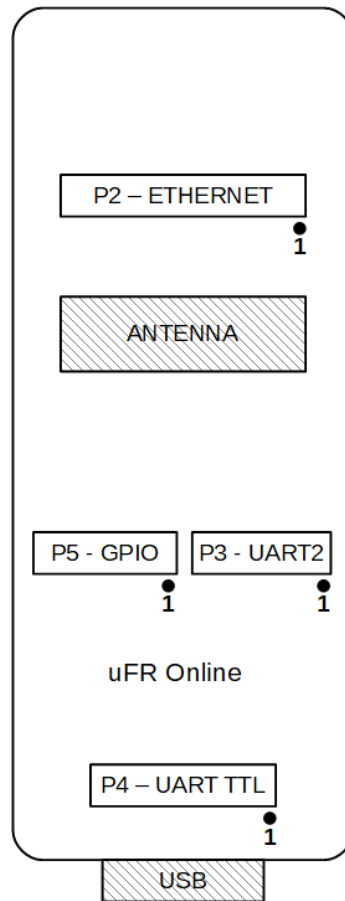


## uFR Online pins and connectors description Version 1.2

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## Connectors location



## Available pins

In the table below is a list of available pins on uFR Online.

User available uFR Online pins		
WROOM-32	WROVER-E	Description
GPIO36	GPIO36	External input pin 1
GPIO39	GPIO39	External input pin 2
GPIO34	GPIO34	Connected to uFR reader TX
GPIO35	GPIO35	Connected to external UART TX
GPIO32	GPIO32	Connected to uFR reader reset
GPIO33	GPIO5	External input/output pin 3
GPIO13	GPIO13	Connected to internal RGB LED
GPIO2	X	External output pin 6
GPIO16	GPIO33	Connected to uFR reader RX
GPIO5	GPIO18	External input/output pin 4
GPIO18	X	External input/output pin 5
GPIO3	GPIO3	Connected to Serial to USB FTDI RX
GPIO1	GPIO1	Connected to Serial to USB FTDI TX
GPIO23	GPIO23	Connected to external UART RX
<b>*WROOM-32 has 6 and WROVER-E has 4 external pins.</b>		

## User programmable pins

In the table below is a list of user programmable pins on OEM unlocked uFR Online.

**January 2021 update: We upgraded the ESP32 SoC on Nano Online from ESP32-WROOM-32 to ESP32-WROVER-E**

UART 1 - Internally connected to uFR Reader		
WROOM-32	WROVER-E	Description
GPIO34	GPIO34	Connected to uFR Reader TX
GPIO32	GPIO32	Connected to uFR Reader reset
GPIO16	GPIO33	Connected to uFR reader RX

UART 2 - connected external P3 connector			
P3 Pin number	WROOM-32	WROVER-E	Description
1	X	X	Connected to 3.3V power supply
2	GPIO35	GPIO35	Connected to external UART TX
3	GPIO23	GPIO23	Connected to external UART RX
4	GPIO32	GPIO32	Connected to uFR Reader reset
5	X	X	Connected to GND

Input/Output pins - connected external P5 connector			
P5 Pin number	WROOM-32	WROVER-E	Description
1	GPIO36	GPIO36	External input pin 1
2	GPIO39	GPIO39	External input pin 2
3	GPIO33	GPIO5	External input/output pin 3
4	GPIO5	GPIO18	External input/output pin 4
5	GPIO18	X	External input/output pin 5
6	GPIO2	X	External output pin 6
<b>*WROOM-32 has 6 and WROVER-E has 4 external pins.</b>			

## Input/Output pins additional features

In the table below is a list of additional features available for Input/Output pins on OEM unlocked uFR Online.

**January 2021 update: We upgraded the ESP32 SoC on Nano Online from ESP32-WROOM-32 to ESP32-WROVER-E**

Input/Output pins - additional features		
P5 Pin number	List of features - WROOM-32	List of features - WROVER-E
1	Deep sleep wake-up, ADC	Deep sleep wake-up, ADC
2	Deep sleep wake-up, ADC	Deep sleep wake-up, ADC
3	Deep sleep wake-up, ADC, Touch sensor, PWM, I2C	PWM, I2C
4	PWM, I2C	PWM, I2C
5	PWM, I2C	X
6	Deep sleep wake-up, ADC, Touch sensor, PWM, I2C	X
<b>*WROOM-32 has 6 and WROVER-E has 4 external pins.</b>		

## Non-programmable pins

In the table below is a list of pins that are internally connected and not user programmable pins on OEM unlocked uFR Online.

<b>External P4 connector. Only available on UART TTL version without USB connector</b>	
<b>P4 Pin number</b>	<b>Description</b>
1	External 5V power supply
2	UART TX Pin
3	UART RX Pin
4	UART RTS Pin
5	GND
6	UART DTR Pin

<b>External P2 connector. Only available on Ethernet version with dedicated LAN adapter.</b>	
<b>P2 Pin Number</b>	<b>Description</b>
1	Ethernet TX/ RX Positive Channel 1
2	Connected to 3.3V power supply
3	Ethernet TX/ RX Negative Channel 1
4	Ethernet TX/ RX Positive Channel 2
5	Ethernet TX/ RX Negative Channel 2
6	LED1. Active when a valid link is detected and blinks when activity is detected
7	LED2. Active when the speed is 100Mbps. Inactive when the speed is 10Mbps
8	External 5V power supply
9	External 5V power supply
10	Connected to GND

## Revision history

Date	Version	Comment
2019-07-15	1.0	Base document
2021-03-12	1.1	WROVER-E version pins description added
2021-05-06	1.2	Ethernet connector pinout added