Compact, modular, and open STM32 development boards provided with M.2 connectors

IZITRON
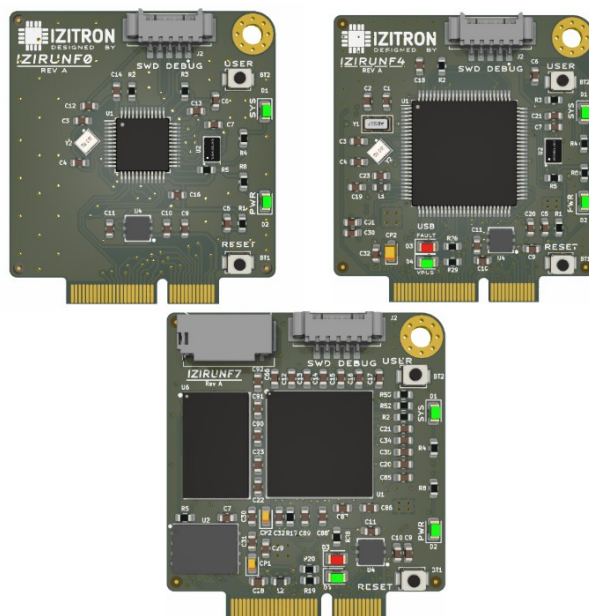
- Format M.2 connector
- 3 versions based on ARM Cortex-M0, -M4, and -M7 to suits multiple application, from low power applications and IoT to mid- and high-level applications (e.g. graphic 2D accelerations, sound, Ethernet, etc.)
- Build-in peripherals: EEPROM flash, SRAM, NOR flash, leds, buttons, quarts and debug connector
- Compact design (35 x 35 mm)
- Fully open source

OVERVIEW

IZIRUN modules are compact STM32 boards with lots of built-in peripherals that use the M.2 67-pin connection for external communication via I²C, SPI, CAN, and UART protocols. MCU boards are available in ARM Cortex-M0, -M4, and -M7 to suit your application. You can use it for low-power applications, IoT, mid- and high-level applications. The modules can be directly connected to your own board, or you can use IZIGOBOARD shield for rapid access to all the board capabilities and speed up your development.

Based on your application needs you can easily evolve your design by passing from one MCU board to another thanks to the M.2 connector and its standard footprint, only 35x35 mm.

The IZIRUN modules as well as IZIGOBOARD shield are fully open source. KiCad project files, schematics, firmware, and software are all available on Bitbucket: https://bitbucket.org/izi_team/

MCU BOARDS

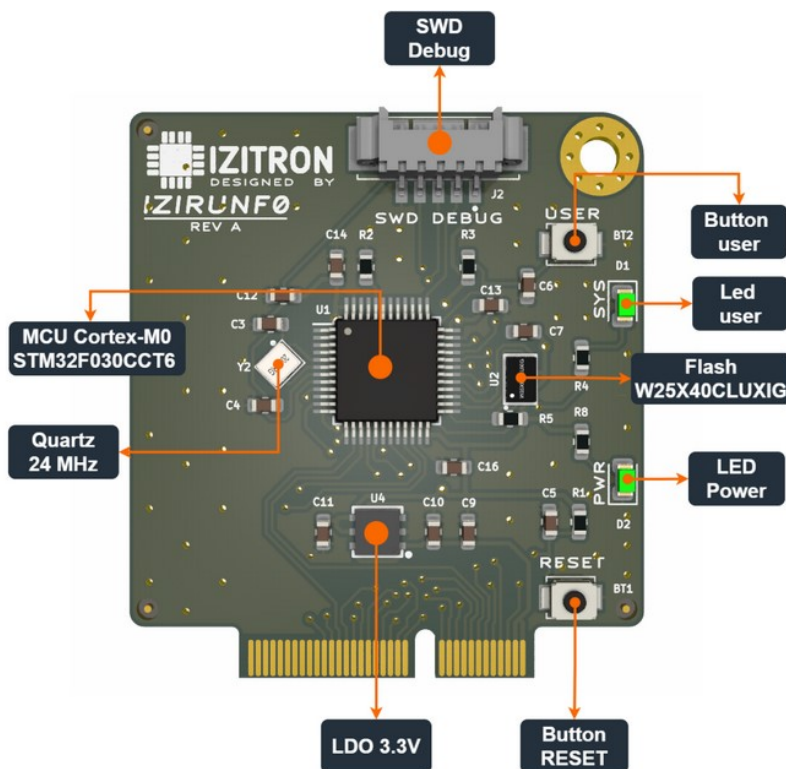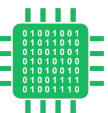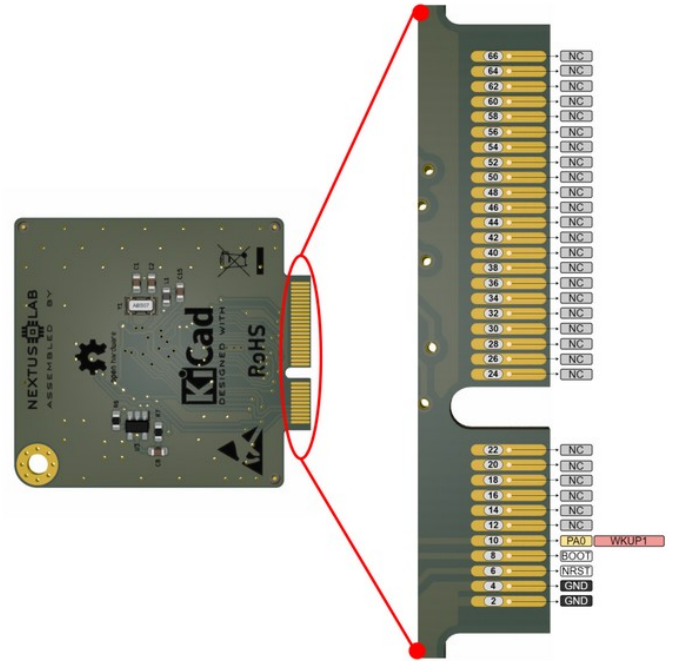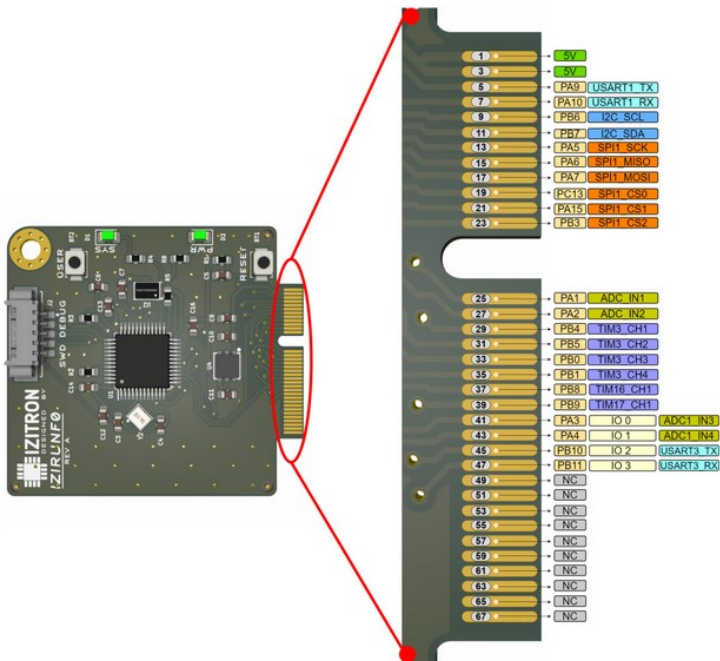|	IZIRUNF0	IZIRUNF4	IZIRUNF7
Applications	Low-power, IoT	Mid-level - motor control, display, CAN, Ethernet communications, etc.	Mid- and high-level - graphic 2D accelerations, sound, Ethernet, etc.
MCU	Cortex-M0 STM32F030CCT6	Cortex-M4 STM32F407VET6	Cortex-M7 STM32F769NIH6
Max frequency	48 MHz	168 MHz	216 MHz
Flash	256 kB	512 kB	2 MB
RAM	32 kB	192 kB	532 kB
Peripherals			
EEPROM	16 kB	16 kB	16 kB
Flash	512 kB	512 kB	64 MB
CAN		ATA6561	ATA6561
LAN		8742A	8742A
SDRAM			8 MB
Exposed signals			
UART	2	4	2
I²C	1	1	2
SPI	1	1	1
ADC	4	4	2
PWM	6	21	8
GPIO	23	43	43
BOOT PIN	1	1	1
RESET PIN	1	1	1
RMII ETH		1	1
CAN		1	1
USB DEVICE		1	
USB OTG			1
DSI			1
DFSDM			2
Dimensions	35 x 35 mm	35 x 35 mm	35 x 35 mm
Temperature range	-20° C to +80° C	-20° C to +80° C	-20° C to +80° C
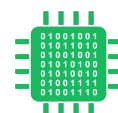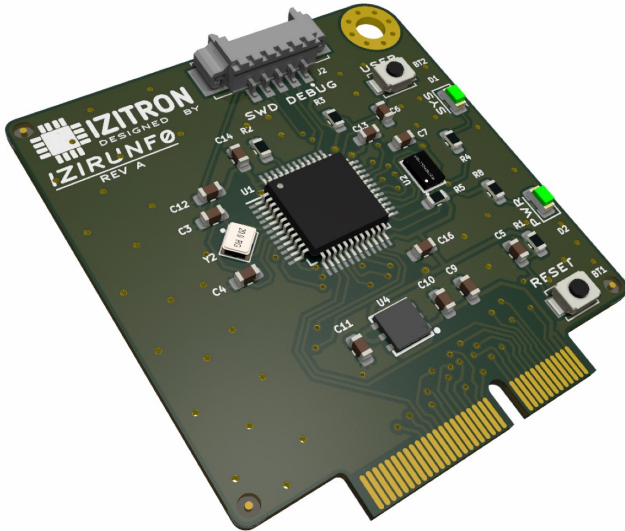
IZIRUNF0 is based on ARM Cortex-M0, designed for low power applications and IoT projects.

- Power supply: 5V
- Format M.2 connector
- RoHS compliant
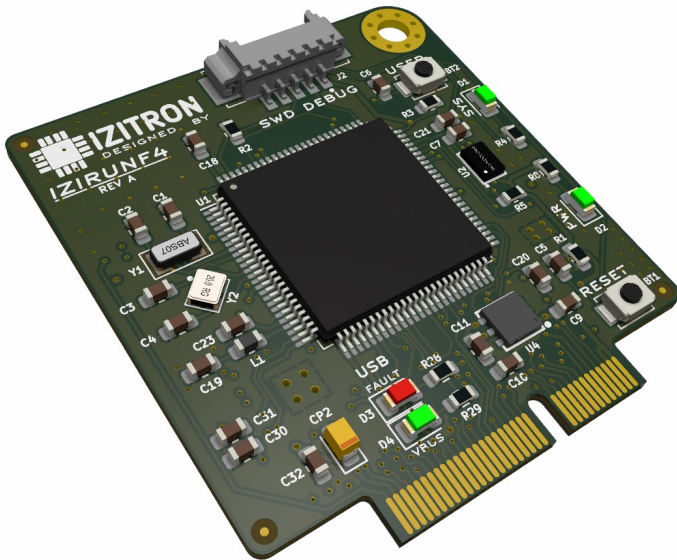- Long term availability
- Made in France

FEATURES DIAGRAM
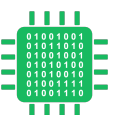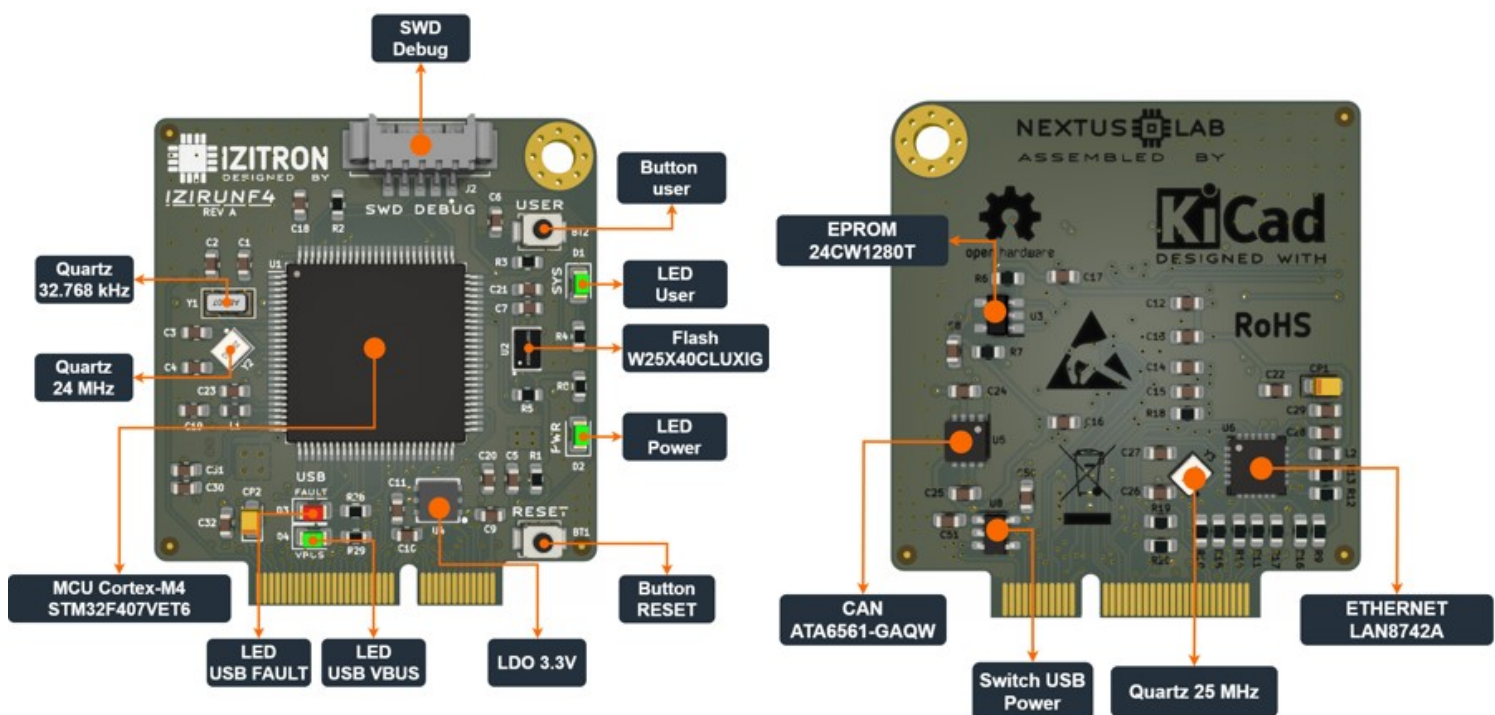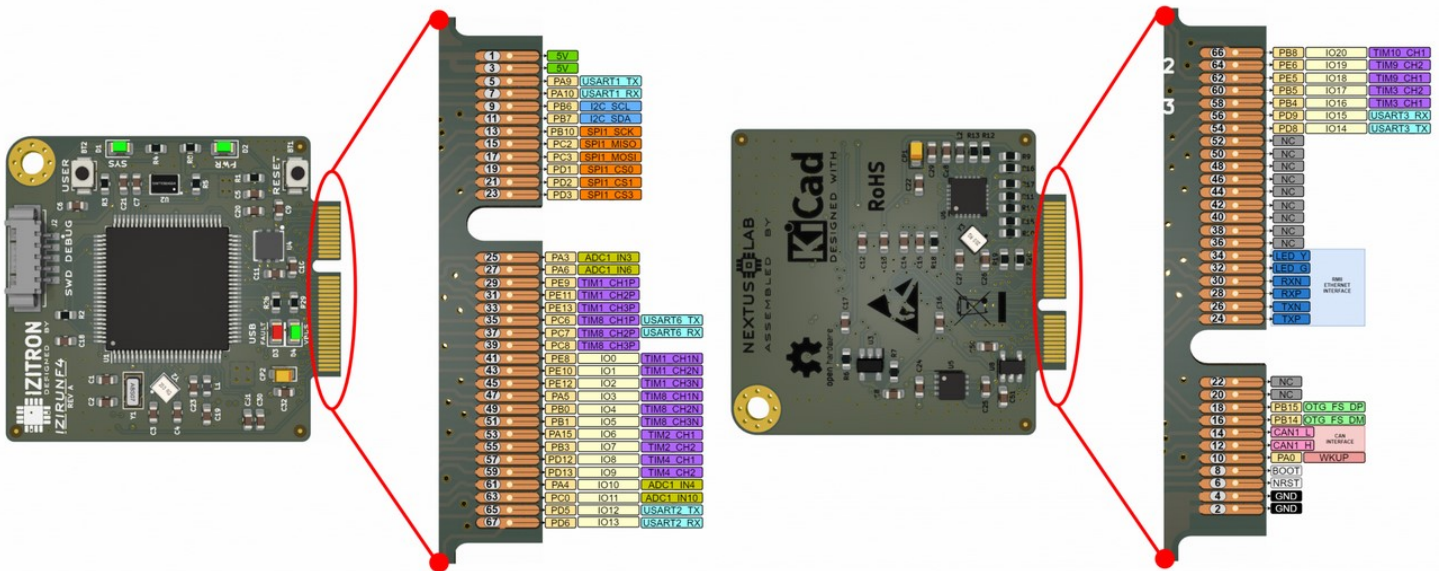
M.2 PINOUT DIAGRAMS

Pin	Signal	Function
1	5V	
3	5V	
5	PA9	USART1_TX
7	PA10	USART1_RX
9	PB6	I2C_SCL
11	PB7	I2C_SDA
13	PA5	SPI1_SCK
15	PA6	SPI1_MISO
17	PA7	SPI1_MOSI
19	PC13	SPI1_CS0
21	PA15	SPI1_CS1
23	PB3	SPI1_CS2
25	PA1	ADC_IN1
27	PA2	ADC_IN2
29	PB4	TIM3_CH1
31	PB5	TIM3_CH2
33	PB0	TIM3_CH3
35	PB1	TIM3_CH4
37	PB8	TIM16_CH1
39	PB9	TIM17_CH1
41	PA3	IO 0 / ADC1_IN3
43	PA4	IO 1 / ADC1_IN4
45	PB10	IO 2 / USART3_TX
47	PB11	IO 3 / USART3_RX
49	NC	
51	NC	
53	NC	
55	NC	
57	NC	
59	NC	
61	NC	
63	NC	
65	NC	
67	NC	

Pin	Signal	Function
66	NC	
64	NC	
62	NC	
60	NC	
58	NC	
56	NC	
54	NC	
52	NC	
50	NC	
48	NC	
46	NC	
44	NC	
42	NC	
40	NC	
38	NC	
36	NC	
34	NC	
32	NC	
30	NC	
28	NC	
26	NC	
24	NC	
22	NC	
20	NC	
18	NC	
16	NC	
14	NC	
12	NC	
10	PA0	WKUP1
8	BOOT	
6	NRST	
4	GND	
2	GND	

IZIRUNF4 is based on ARM Cortex-M4, designed for mid-power applications like motor control, display, CAN control, Ethernet, and more.

- Power supply: 5V
- Format M.2 connector
- RoHS compliant
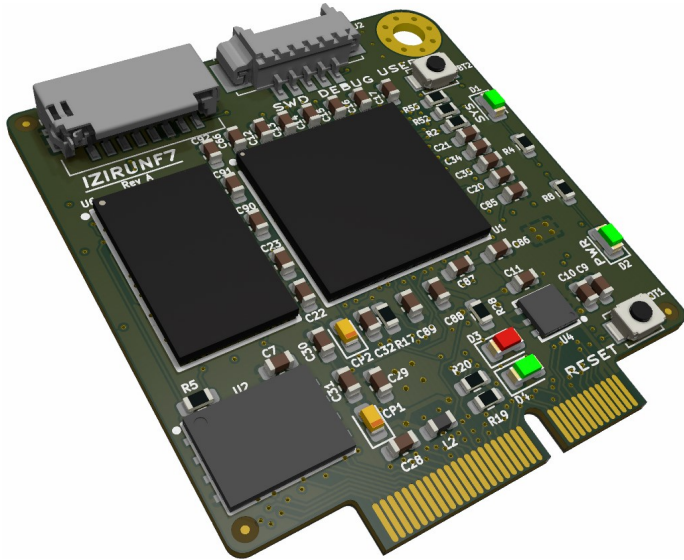- Long term availability
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FEATURES DIAGRAM

SWD Debug

Button user

LED User

Flash W25X40CLUXIG

LED Power

Quartz 32.768 kHz

Quartz 24 MHz

MCU Cortex-M4 STM32F407VET6

LED USB FAULT

LED USB VBUS

LDO 3.3V

Button RESET

EPROM 24CW1280T

CAN ATA6561-GAQW

Switch USB Power

Quartz 25 MHz

ETHERNET LAN8742A

M.2 PINOUT DIAGRAMS

IZIRUNF7 based on ARM Cortex-M7 for multimedia applications where more resources are required like graphic 2D acceleration, sound, Ethernet, and more.

- Power supply: 5V
- Format M.2 connector
- RoHS compliant
- Long term availability
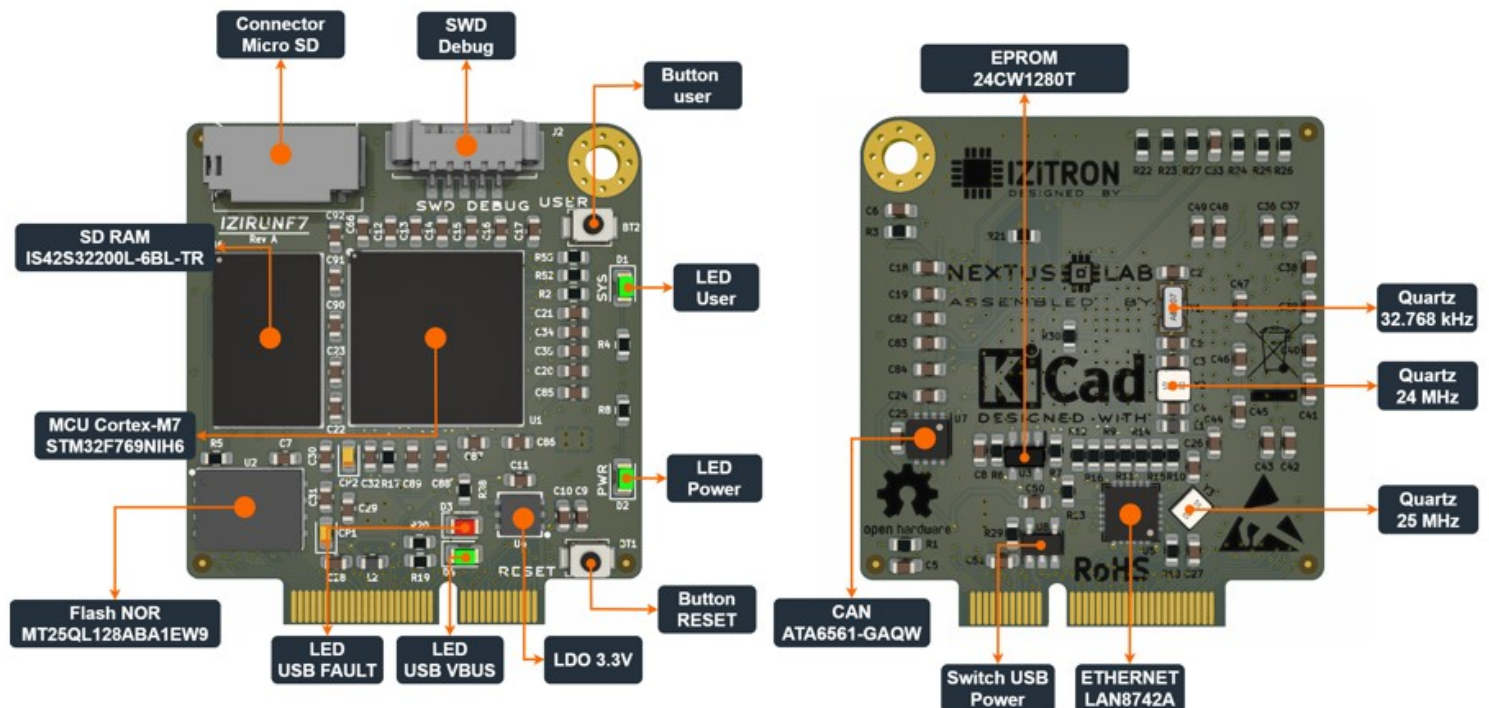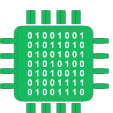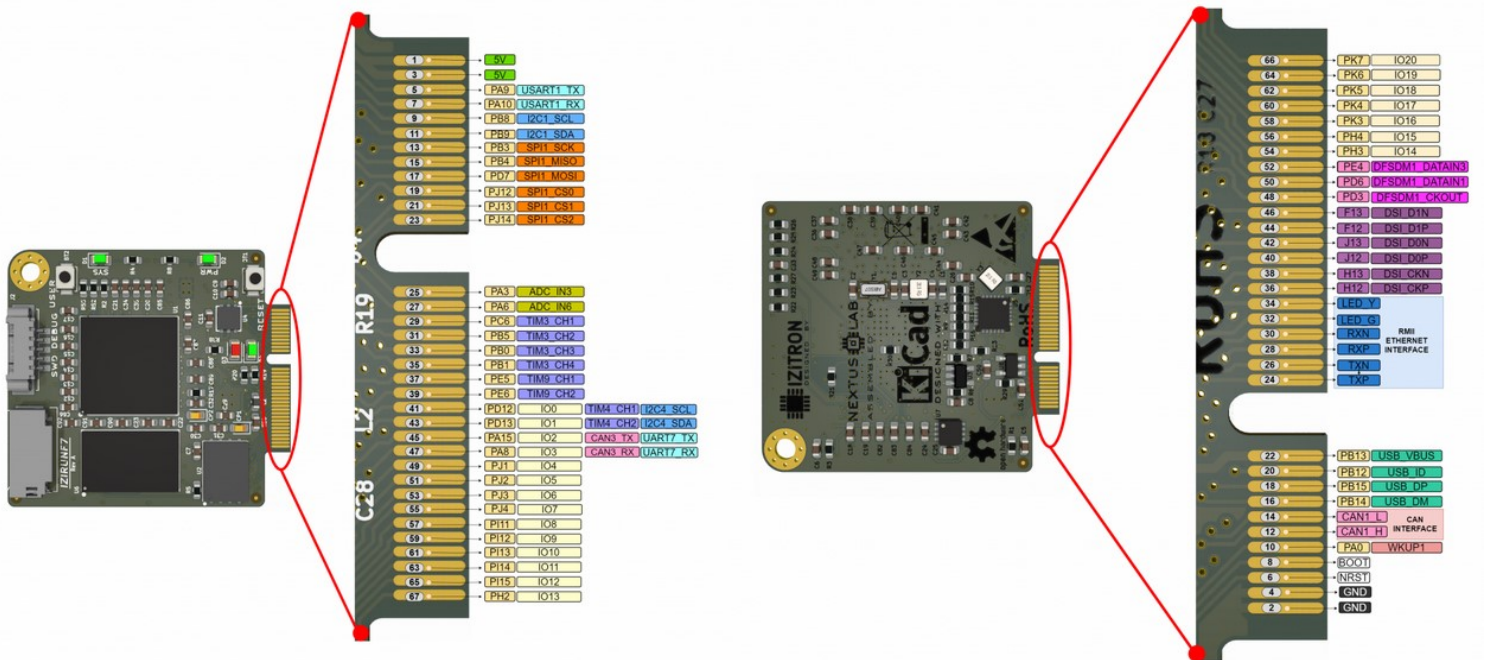- Made in France

FEATURES DIAGRAM

M.2 PINOUT DIAGRAMS

IZIGOBOARD is a base board that can be used with IZIRUNF0, IZIRUNF4, IZIRUNF7 modules. The board includes a micro USB connector for power and communication thanks to the USB/UART convertor chip. It is also provided with RJ45 Ethernet, USB OTG and CAN connectors, reset/wakeup buttons and pins extension.

- Dimensions: 80 x 50 mm
- Operating temperature: -20° C +80° C
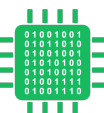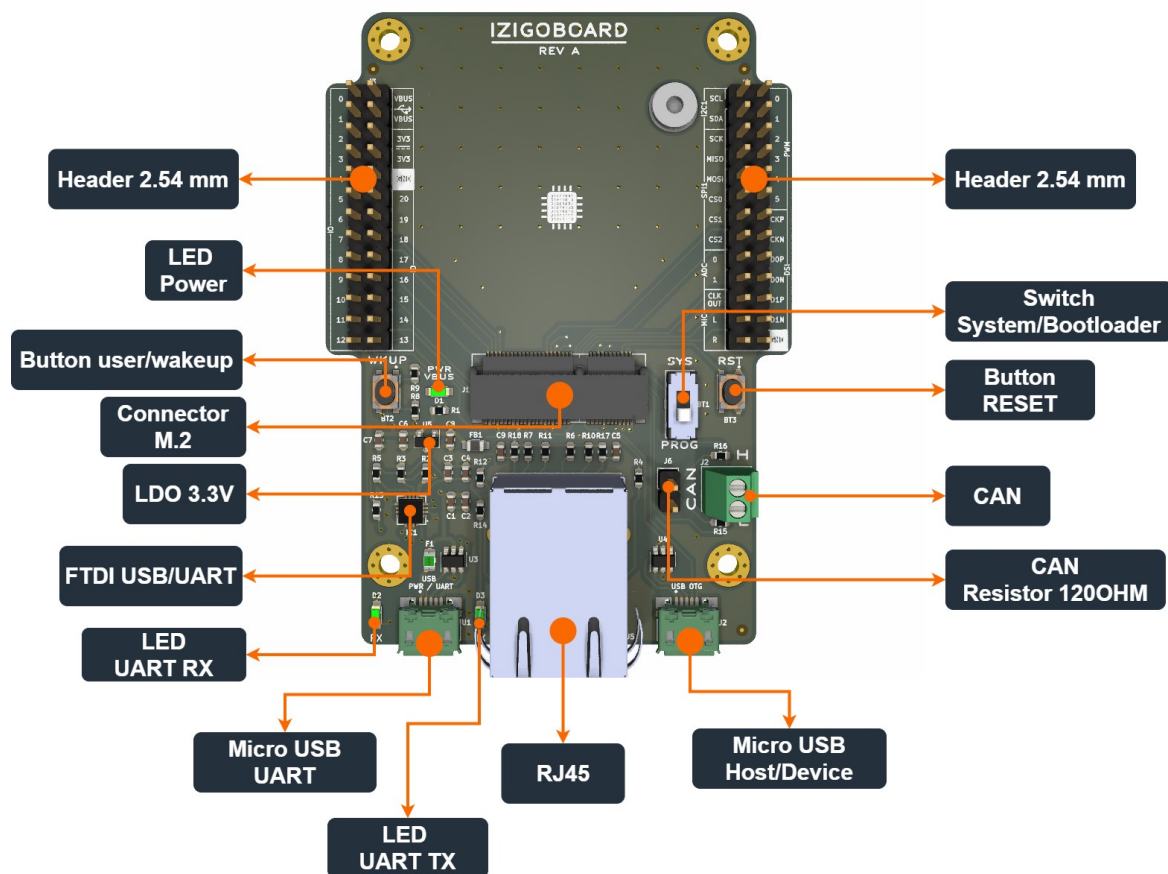
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