PA13



PY32F003L24D6TR DevLab Development Board

v1.0 2025-09-24 Rev. A

Professional electronic component

PRODUCT OVERVIEW

The DevLab Development Board based on the PY32F003L24D6TR microcontroller is designed for rapid prototyping, embedded systems education, IoT experimentation, and wearable devices. This board combines flexible power options, modern connectivity, and accessible interfaces to accelerate your hardware development.

Quick Setup

PRODUCT WIKI

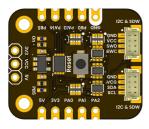
DATASHEET

BUY NOW

GETTING STARTED

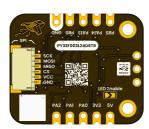
PRODUCT VIEWS

TOP VIEW



Component placement and connectors

BOTTOM VIEW



Underside components and connections

KEY TECHNICAL SPECIFICATIONS

CONNECTIVITY

Interfaces: I²C, SPI

Connector: Qwiic + Pin Headers

PIN CONFIGURATION

FUNCTION / NOTES

Power Input

Ground

USART2_TX MISO

USART2_RX SCK

ADC_IN2 CS

GPIO / NRST

LED Built In / GPIO / MOSI

SWDIO / I2C_SCL

KEY FEATURES

Microcontroller

PY32F003L24D6TR (32-bit ARM Cortex-M0)

ADC

12-bit ADC with multiple channels

SPI 1 channel

UART 1 channel **Clock Speed Internal**

Up to 24 MHz

Memory

16KB Flash, 2KB SRAM

I2C 1 channel

ADDITIONAL TECHNICAL INFORMATION



FEATURE	DESCRIPTION
Microcontroller	PY32F003L24D6TR (32-bit ARM Cortex-M0)
Memory	24KB Flash, 4KB SRAM
Flash (Kbytes)	16
SRAM (Kbytes)	2

FEATURE	DESCRIPTION
Advanced Timers (16-bit)	1
General Purpose Timers	4
Low Power Timer	1
SysTick	1
Watchdog	2
SPI	1
I2C	1
USART	1
DMA Channels	3
RTC	Yes
GPIOs	7
12-bit ADC (ext+int)	4+2
Comparators	2
Max. CPU Frequency (MHz)	24
Operating Voltage (V)	1.7 ~ 5.5

1. HARDWARE CONNECTIONS

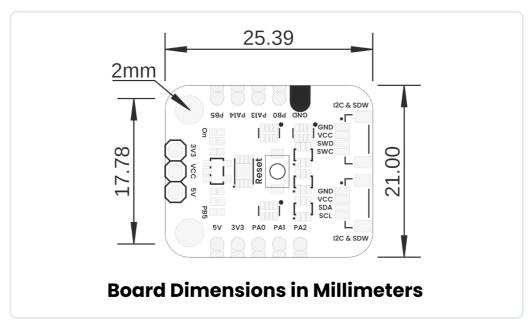
PIN	DESCRIPTION	NOTES
VCC	3.3V or 5V supply	Power supply
GND	Ground	Common ground
SDA	I2C Data Line (SDA)	Connect to microcontroller I2C SDA pin
SCL	I2C Clock Line (SCL)	Connect to microcontroller I2C SCL pin
D0	Digital I/O (separate connection)	Not included in QWIIC connector, must be connected separately

2. SOFTWARE INSTALLATION

FEATURE / PERIPHERAL	PY32F003L24D6TR
Flash (Kbytes)	16
SRAM (Kbytes)	2
Advanced Timers (16-bit)	1
General Purpose Timers	4
Low Power Timer	1
SysTick	1
Watchdog	2
SPI	1
I2C	1
USART	1
DMA Channels	3
RTC	Yes
GPIOs	7
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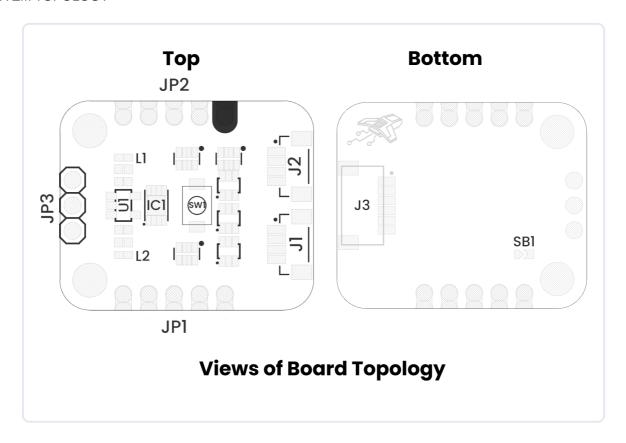
HARDWARE DOCUMENTATION

MECHANICAL DIMENSIONS



Physical dimensions and mounting specifications (measurements in millimeters)

SYSTEM TOPOLOGY



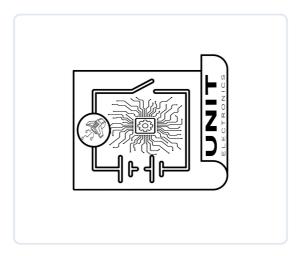
Connection topology and system integration diagram

Click image to open in full size

COMPONENT REFERENCE DESCRIPTION REF. IC1 PY32f003L24D6TR Microcontroller U1 AP2112K 3.3V Regulator SW1 Reset Push Button Power On LED L1 Built In LED to PB5 L2 J1 JST 1mm Connector for I2C or JTAG J2 JST 1mm Connector for I2C or JTAG J3 JST 1mm Connector for SPI Header for GPIOs JP1 Header for GPIOs JP2 JP3 Header for Power Supply Selection SB1 Solder Bridge to Enable LED Built In

INTERFACE	DETAILS
Primary Interface	JST 1 mm pitch QWIIC connector (I2C)
Power Input	USB-C (5V) or external battery (if supported)
GPIO Pins	Accessible via 0.1" headers
I2C	Yes, via QWIIC connector
SPI	Yes
UART	Yes
ADC	Yes, multiple channels

CIRCUIT SCHEMATIC



Complete circuit schematic showing all component connections

View Complete Schematic PDF

PIN DESCRIPTION

Detailed pin assignment and electrical specifications

SIGNAL DESCRIPTION

PIN LABEL	FUNCTION / NOTES
VCC	Power Input
GND	Ground
PA0	USART2_TX MISO
PA1	USART2_RX SCK
PA2	ADC_IN2 CS
PB0 / PF2	GPIO / NRST
PB5	LED Built In / GPIO / MOSI
PA13 / PB6	SWDIO / I2C_SCL
PA14 / PA10	SWCLK / I2C_SDA

PIN CONFIGURATION LAYOUT

Physical connector layout and pin positioning



Pin Configuration Layout

Complete pin configuration diagram showing all connectors, pin assignments, and electrical connections for proper integration

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