

## Renesas RA Family

# FPB-RA4T1 Fast Prototyping Board

## 1. Introduction

The FPB-RA4T1 Fast Prototyping Board provides an entry point for evaluation, prototyping and development with the RA4T1 MCU. Moreover, since this board incorporates an emulator circuit, you can use it for designing your own applications without needing to make further investments in tools. This product includes through-holes for pin headers that allow access to all MCU signal pins, allowing easy prototyping with a breadboard.

## 2. Package Contents

- FPB-RA4T1 Fast Prototyping Board (RTK7FPA4T1S00001BE)
- Quick Start Guide (this document)

## 3. Board Specifications

Item	Specification
Evaluation MCU	Part No: R7FA4T1BB3CFM; package: 64-pin LQFP
	On-chip memory: 128 KB code flash, 40 KB SRAM, 4 KB data flash memory
Board size	Size: 53 mm x 85 mm; thickness: 1.6 mm
Power-supply voltage	Board supply: 5 V. VCC: 3.3 V. MCU operation voltage range 2.7 V to 3.6 V
Power-supply circuit	USB connector: VBUS (5 V input); VBUS is converted to 3.3 V by LDO
	2-pin external power-supply header*1
Push switch	Reset switch x 1; user switch x 1
LED	Power indicator: green x 1, user: green x 2, On-board debugger ACT LED: yellow x 1
USB connector	Connector: micro USB type-B
Pmod™ connector	Connector: angle type, 12-pin x 2
Arduino™ connector	Connector: 6-pin x 1, 8-pin x 2, 10-pin x 1
	The interface is compatible with Arduino™ Uno R3/R4
MCU header*1	Header: 32 pins x 2
Emulator	J-Link On-board programmer / debugger

\*1 This part is not mounted

## 4. Board Layout

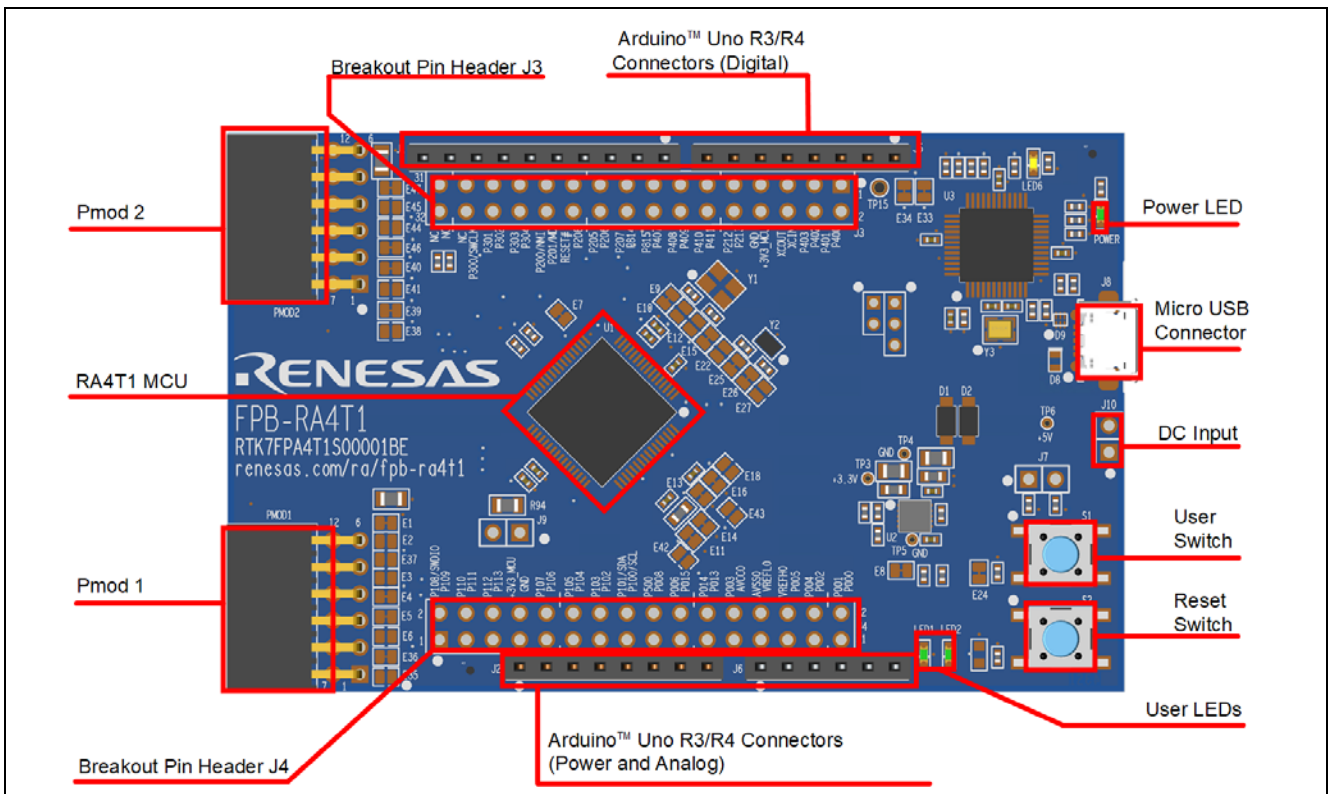


Figure 1. FPB-RA4T1 Board Layout

### 5. Arduino Interface

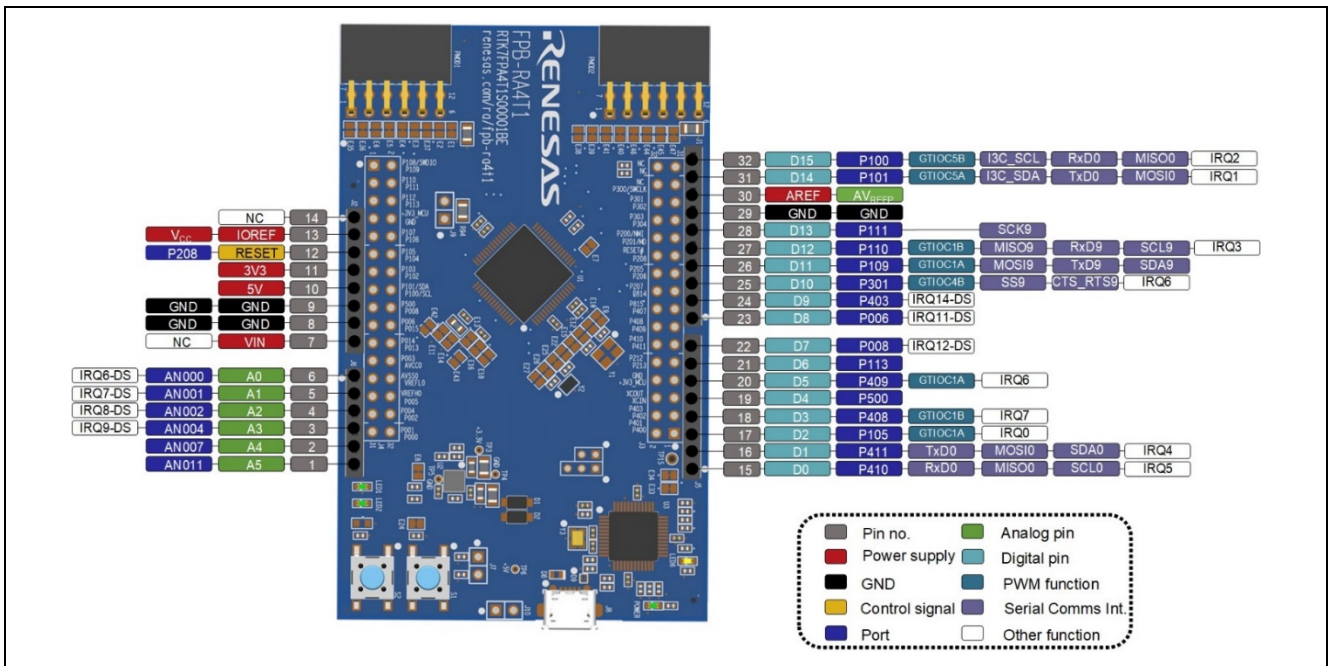


Figure 2. FPB-RA4T1 Arduino Interface

### 6. Pmod Interface

The FPB-RA4T1 Fast Prototyping Board has two Pmod connectors. Pmod 1 supports the Type 6A interfaces and can also be configured for Type 2A and Type 3A. Pmod 2 supports Type 2A and interfaces can also be configured for Type 3A.

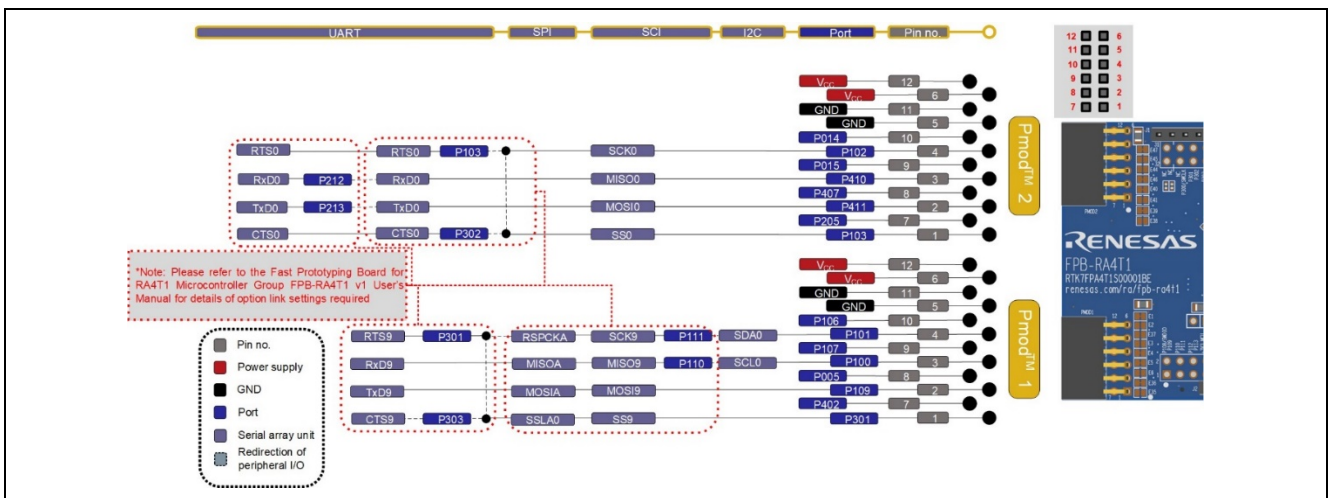


Figure 3. FPB-RA4T1 Pmod Interface

### 7. Power Up Behavior

When the board is powered using USB, the LEDs (LED1 and LED2) will count upwards in a binary sequence at a rate of 1 Hz, with the LEDs representing 1 or 0. When the user switch (S1) is pressed, the counting frequency is increased to 10 Hz. Future presses will cycle between the two rates.

### 8. Note on Using the Board

Before using this board, download the user's manual from the web site at [renesas.com/ra/fpb-ra4t1](https://renesas.com/ra/fpb-ra4t1), and check the full specifications.

