

## RAA2P3226 Evaluation Kit (RTKA2P3226S00000BE)

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This guide provides step-by-step instructions for setting up the hardware of the RAA2P3226 evaluation kit.

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# 1. Evaluation Kit Hardware

The RAA2P3226 hardware and software ecosystem is designed to provide quick setup and easy evaluation of the device's capabilities. Contact the local Renesas representative to obtain the required components and development boards.

## 1.1 Hardware Kit Content

Table 1 lists components that are included in the kit.

**Table 1. Evaluation Kit Contents**

Name	Ordering Number	Information	Quantity
RAA2P-COMBOARD	RAA2P-COMBOARD	Programming board	1
10-wire sensor cable	N/A		2
USB-B cable	N/A		1
RAA2P3226A1615	N/A	18-bit resolution, 44.5mm radius absolute Side Shaft Arc Encoder	1
RAA2P3226R3201	N/A	19-bit resolution, 72mm diameter Absolute Encoder	1
RAA2P3226R1601	N/A	18-bit resolution, 34mm diameter Absolute Encoder	



RAA2P-COMBOARD



RAA2P3226A1615



RAA2P3226R3201



RAA2P3226R1601

**Figure 1. RAA2P3226 Standard Kit Content**

# 2. Hardware Setup

The kit includes three sensor modules that could be interfaced with the RAA2P-COMBOARD to communicate, configure, and perform position sensing.

## 2.1 RAA2P3226A1615 Module

RAA2P3226A1615 module is a rotary sensor with the following characteristics:

- Absolute 360° rotary sensing in 44.5mm outer radius (OR) ARC design and rotary target
- 14-bit resolution
- $\pm 0.06^\circ$  accuracy
- Nonius dual channel for high accuracy 16/15
- 2-wire UART/ABI/I2C

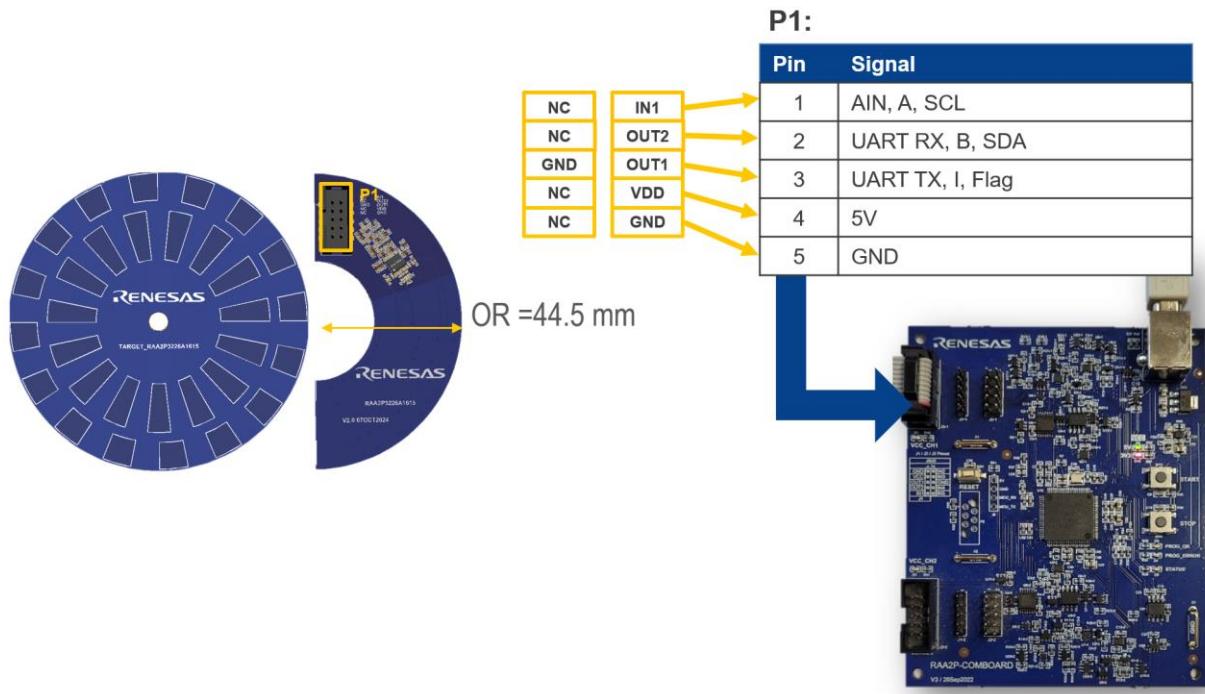


Figure 2. RAA2P3226A1615 Module Connection

This module can perform absolute position sensing over 360°, without having 360° receiver coils. The sensing coil receivers are in fact implemented as an arc, enabling a more compact and cost-effective sensing solution.

## 2.2 RAA2P3226R3201 Module

RAA2P3226R3201 module is a rotary sensor with the following characteristics:

- Absolute rotary 360° with OD = 72mm and rotary target
- Nonius dual channel for higher accuracy 32/1
- 19-bit resolution
- $\pm 0.013^\circ$  accuracy
- 2-wire UART interface

With the backward-compatible design Renesas can accommodate the sensor design on the top level, leaving the bottom layer available for the components and connectors, achieving a compact form factor.

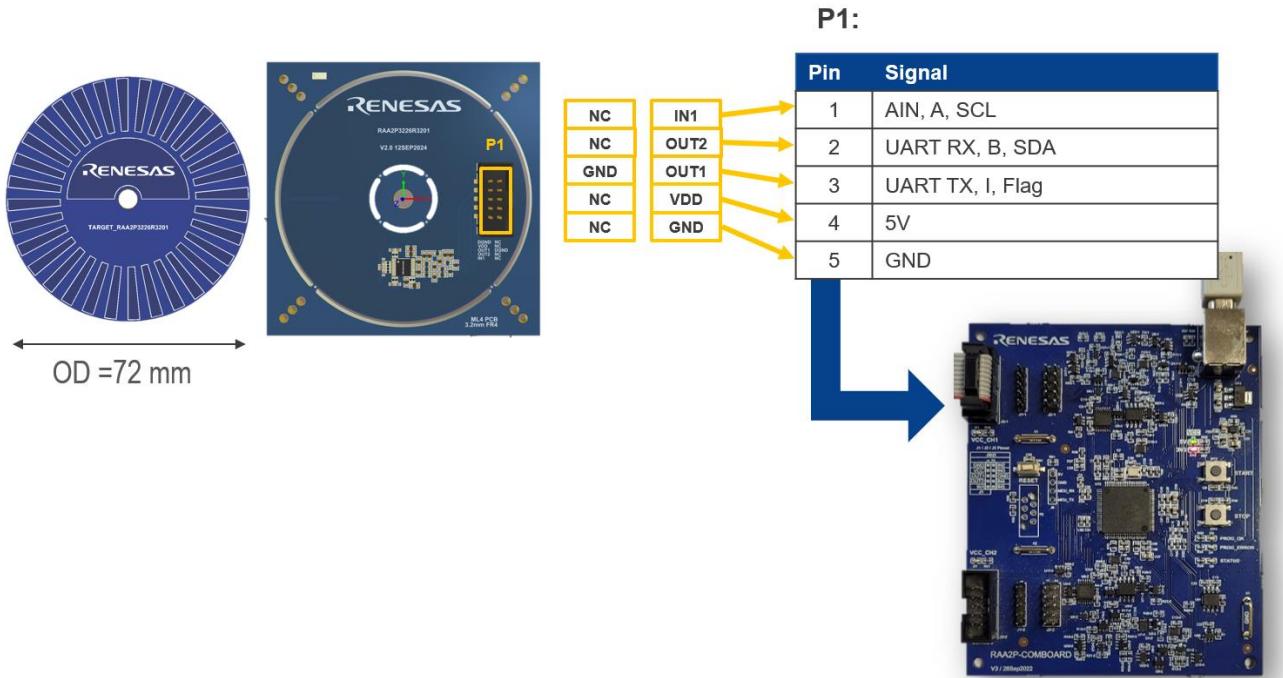


Figure 3. RAA2P3226R3201 Module Connection

## 2.3 RAA2P3226R1601 Module

RAA2P3226R1601 module is a rotary sensor with the following characteristics:

- Absolute rotary 360° with OD = 34mm and rotary target
- Nonius dual channel for higher accuracy 16/1
- 18-bit resolution
- $\pm 0.029^\circ$  accuracy
- 2-wire UART interface/UART/ABI

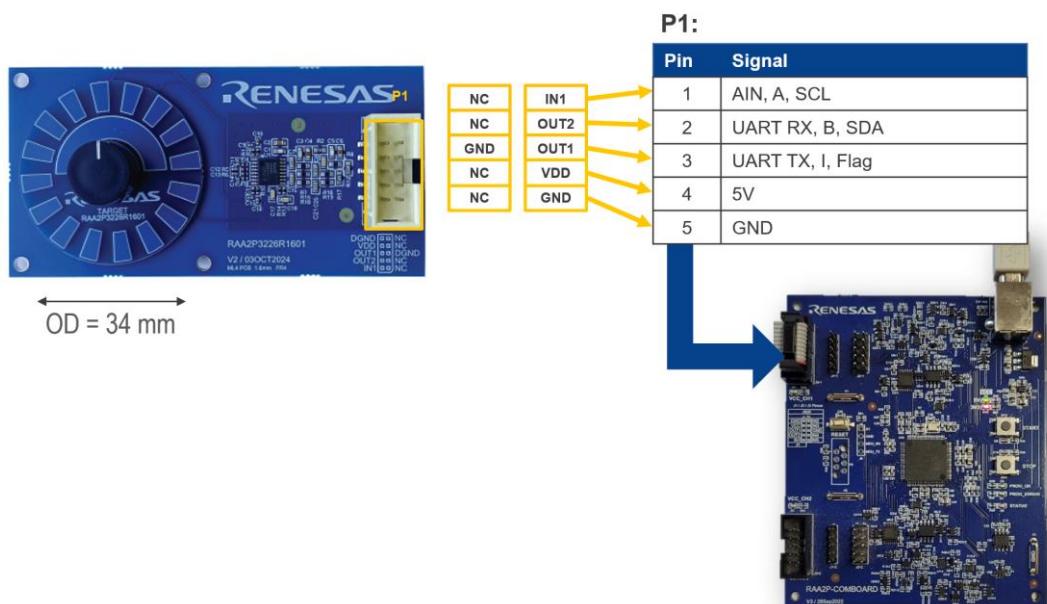


Figure 4. RAA2P3226R1601 Module Connection

## 2.4 RAA2P-COMBOARD Connections

The three sensor modules could be interfaced to the RAA2P-COMBOARD by the following steps:

1. Connect the sensor module P1 connector to the J3 header of the RAA2P-COMBOARD using the provided cable according to Figure 5
2. Connect the RAA2P-COMBOARD to the user PC using the provided USB-B cable.

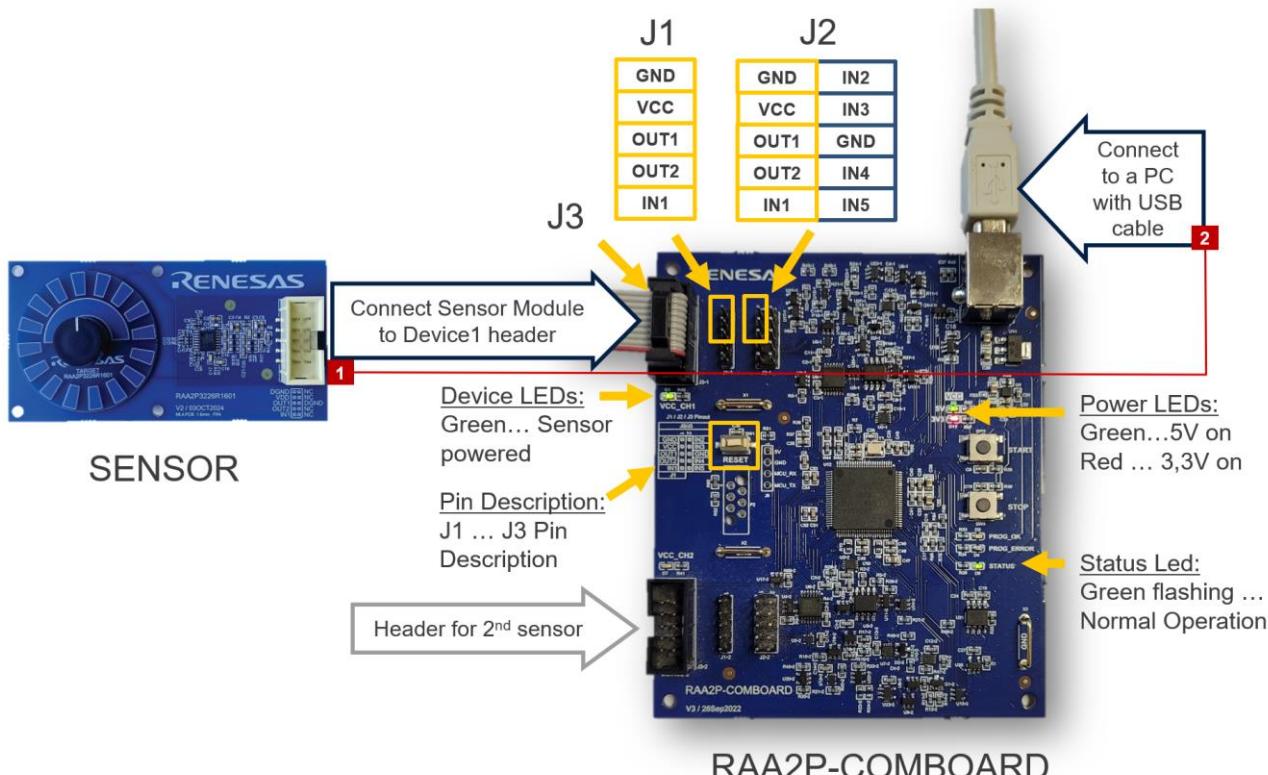


Figure 5. Evaluation Kit Connection Setup

## 3. Software Setup

Once the hardware setup is done, refer to the RAA2Pxxxx Evaluation Kit Software (GUI) Quick Start Guide to setup the software.

## 4. Revision History

Revision	Date	Description
1.00	Oct 2, 2025	Initial release.

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