**Q: Why are there two versions of the 2T2R TDD Power Amplifier Module (1100–1500 MHz)? One has four RF connectors (2 TX + 2 RX), while the other has only two RF connectors. What is the difference?**
**A:** The main difference is the RF interface architecture of your wireless communication module. The correct version depends on how your communication module handles its TX (transmit) and RX (receive) signals. There are two common RF interface configurations:

**Version 1: 4 RF Connectors (2 TX + 2 RX)**

This version is designed for wireless communication modules with separate TX and RX RF ports for each channel.

- **Channel 1:** One TX port and one RX port.
- **Channel 2:** One TX port and one RX port.
- **Total:** 4 RF connectors (2 TX + 2 RX).

Since the transmitter and receiver use separate RF connectors, you need our **4-RF-port 2T2R TDD PA module** to match this architecture.

Each TX port connects to the corresponding PA transmit input, while each RX port connects to the corresponding receive path.

**Version 2: 2 RF Connectors (2 Combined TX/RX Ports)**

This version is designed for wireless communication modules that use a combined TX/RX RF interface.

- **Channel 1:** One RF port for both transmission and reception.
- **Channel 2:** One RF port for both transmission and reception.
- **Total:** 2 RF connectors.

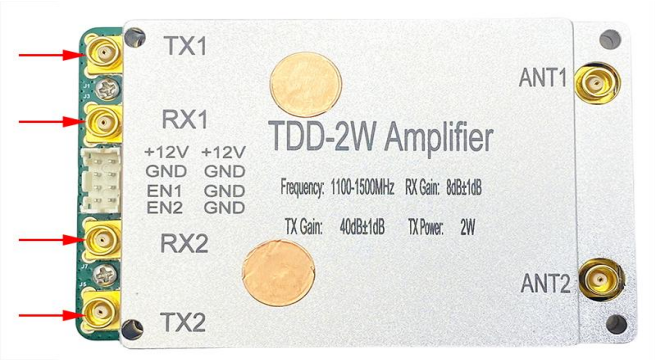
In this configuration, each RF connector handles both TX and RX signals, with switching controlled by the communication module.

Typically, the communication module has a built-in T/R switch or RF switching control signal. This control signal can be connected to the **EN (Enable) control interface** of our PA module.

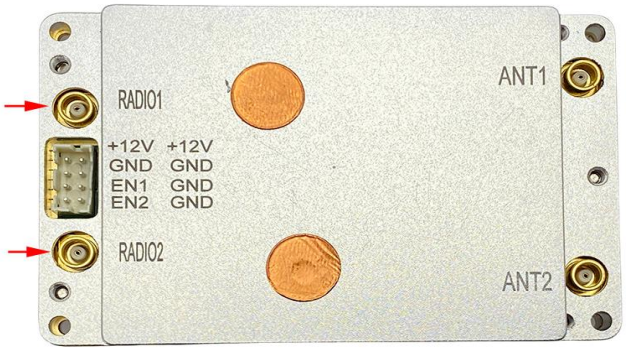
The operating principle is:

- **During transmission (TX):** The communication module activates the PA through the EN control signal, allowing the PA to amplify the outgoing RF signal.
- **During reception (RX):** The communication module disables the PA, allowing the RF signal to pass through the appropriate receive path without PA amplification.

This allows one RF connector per channel to support both transmitting and receiving.




4x RF Radio Connector 2xT+2xR




2x RF Radio Connector

## How to Choose the Correct Version?

| Your Communication Module | Recommended PA Version |
| --- | --- |
| Separate TX and RX ports for each channel | 4 RF connectors (2 TX + 2 RX) |
| One combined TX/RX port per channel | 2 RF connectors (2 combined TX/RX) |

**Important:** Before ordering, please check the RF interface design and TDD switching control signals of your wireless communication module. The EN control logic and electrical levels must be compatible with our PA module. If you are unsure which version you need, please send us your communication module model, datasheet, or RF interface diagram. Our engineers can help you identify the correct 2T2R TDD PA configuration.