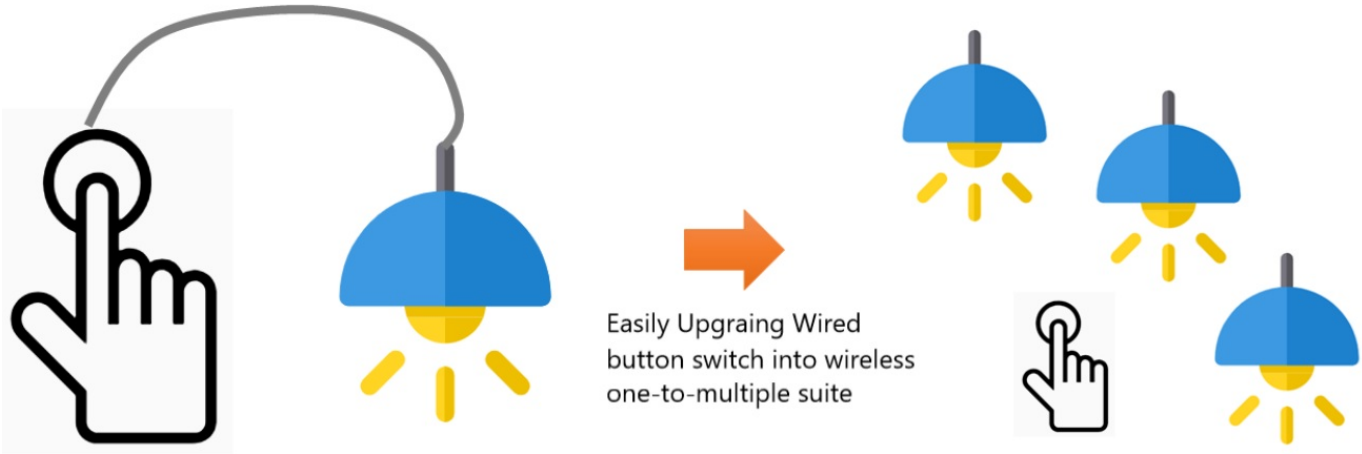
RFLINK-IO Wireless Switch Module User Manual

RF LINK-IO
The magic finger is no longer a myth RF LINK-IO makes the wireless switch real



The RF LINK-IO Wireless Switch Module is an easy-to-use module that instantly and painlessly upgrades a wired switch to a wireless switch(could be one to multiple suites). No additional coding and hardware equipment or other transmission modules are required to upgrade the device to a remotely controllable wireless control device

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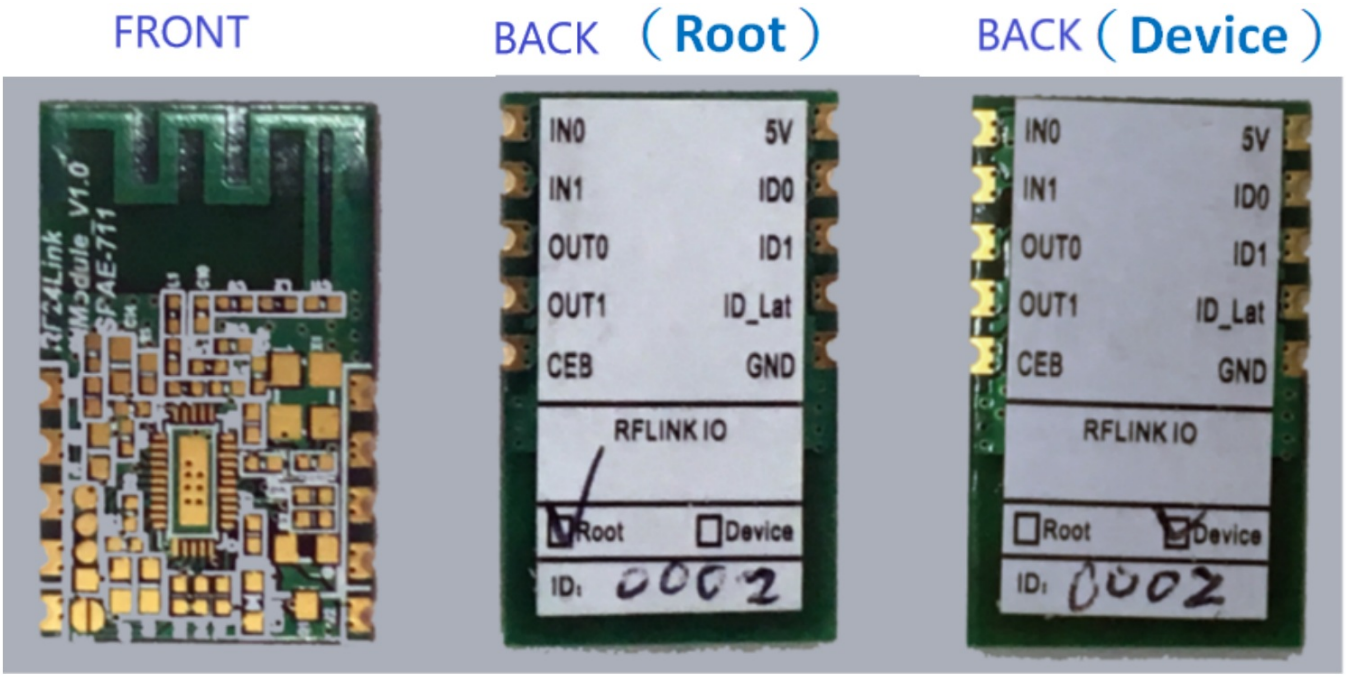
Module appearance and dimension

The RF LINK-IO module contains one root terminal (left) and up to four devices. On the device side (on the right

side of the figure below, numbered 1 to 4), the outlook of the root and device looks almost the same, they can be identified by the label on the back
As shown in the figure below, the ID of this group of RF LINK-UART modules is 0002.

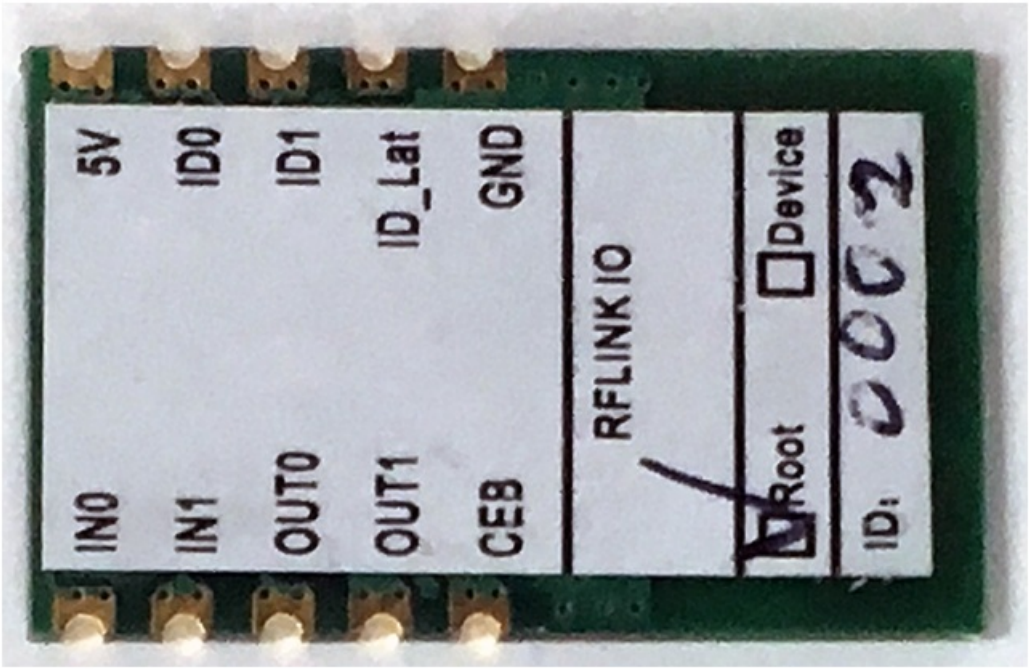


Module characteristics

All types of development boards and MCUs can use this module directly, and there is no need to install additional drivers or API programs.

1. **Operating voltage:** 3.3~5.5V
2. **RF Frequency:**2400MHz~2480MHz
3. **Power consumption:** 24 mA@ +5dBm at TX mode and 23mA at RX mode.
4. **Transmit power:** +5dBm
5. **Transmission rate**: 250Kbps
6. **Transmission distance:** around 80 to 100m in the open space
7. **Each module has two sets of I/Os.**
8. RF LINK-IO **suite can support one root to one device(2 sets of IO ports) and one root to multiple devices(up to four**).

Pin pin definition

	
GND ⟶ Ground **+5V** ⟶ 5V voltage input **THE CEB** ⟶ This CEB should connect to the ground (GND), then the module will be power-on and can be used as a power-saving control function. **INO** ⟶ Input pin of the first I0 port **IN1** ⟶ Input pin of the second I0 port **AUTO** ⟶ Output pin of the first 10 ports. **The OUT** ⟶ Output pin of the second 10 port. **IDO** ⟶ **selects** which device to connect to via the HIGH/LOW combination of these two pins. **ID Lat** ⟶ Device ID Latch pins. When Root sets the target device via IDO, 01, you need to set this pin LOW then the connection will officially be switched to the specified device.	**GND** ⟶ Ground **+5V** ⟶ 5V voltage module will be power **INO** ⟶ **Input** pin o **IN1** ⟶ Input pin of **AUTO** ⟶ **Output** p **OUT1** ⟶ The outp rd. By the combinatio **ID Lat** ⟶ This Pin

How to use

The general switch is a 1-to-1 on/off switch, this RF LINK-IO can support 1-to-multiple mode, which means you can send on/off commands to up to IO devices(and a total of 8 sets of IO ports)
The Root (#0) will connect to Device (#1) by default when powered on. At this time, Root and Device #1 can transmit On/Off between two sets of IO Messages. If you have a different number of devices (#2~#4), you can choose any one by ID0 and ID1 of the Root side. The Root sends different HIGH/LOW combinations to select the specific device. For more information about the ID0 and ID1 number combinations for setting and specifying the Device number, please refer to the table below.

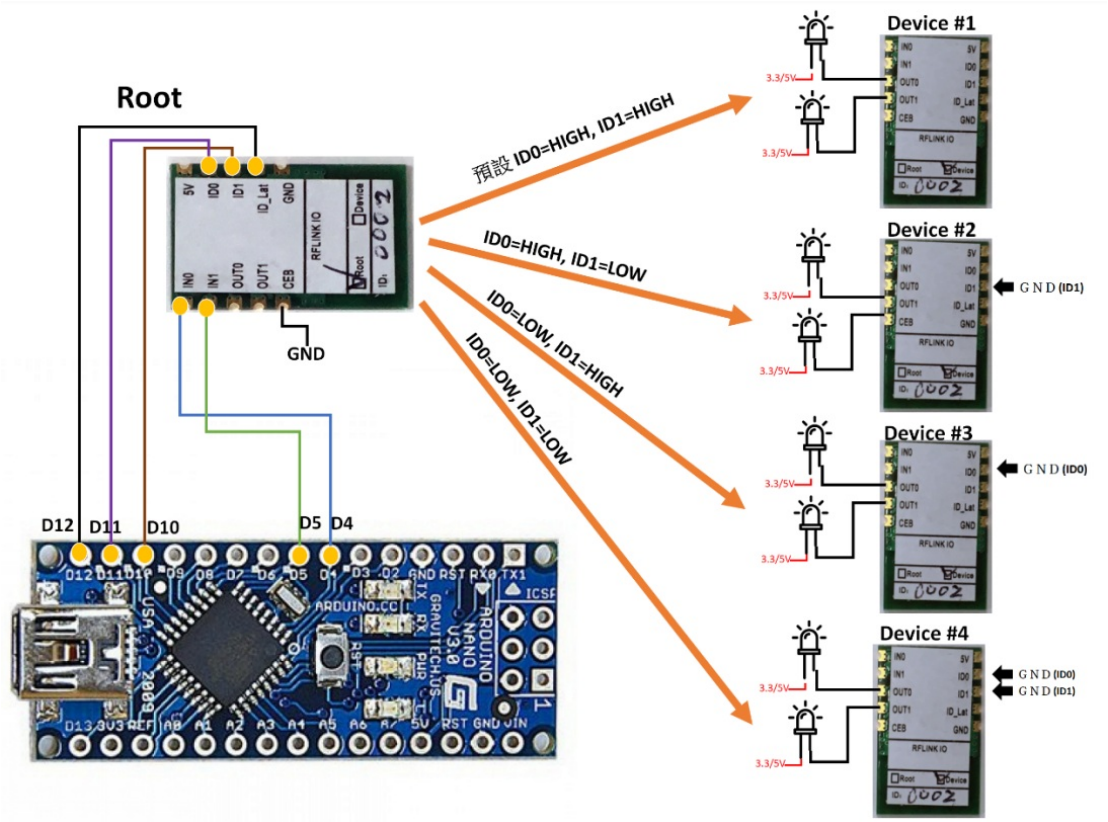
	Device 1 (#1)	Device 2 (#2)
ID0 pin ID1 pin	HIGH HIGH	HIGH LOW

ID0 and ID1 pin are default HIGH, they will be LOW via connecting to the ground.
Note: The device-side should be set to the required device number according to first, the root will choose the target device via the same table.

You can choose a different device to transfer messages via the ID0 and ID1 of the root, usually, tying ID0 or/and ID1 to the GND. More than that, the root side can also send a Low/High signal through the IO pin to choose the target device on the fly.

Example of use: Controlling a remote switch via the Arduino

For example, in the following figure, Arduino Nano connects the ID0 and ID1 pins of the RF LINK-IO Root through the D10 and D11 pins. Arduino Nano will send different High/Low combination signals to select the Device to be connected to (after setting up, let the D12 pin send Low to the pin ID_Lat of the Device, then the connection is effective). Thus the root connects to the specified device and passes through D4 or D5 to control the signals of IN0 and IN1, its status will be synchronized at the OUT0 and OUT1 of the specific remote device.

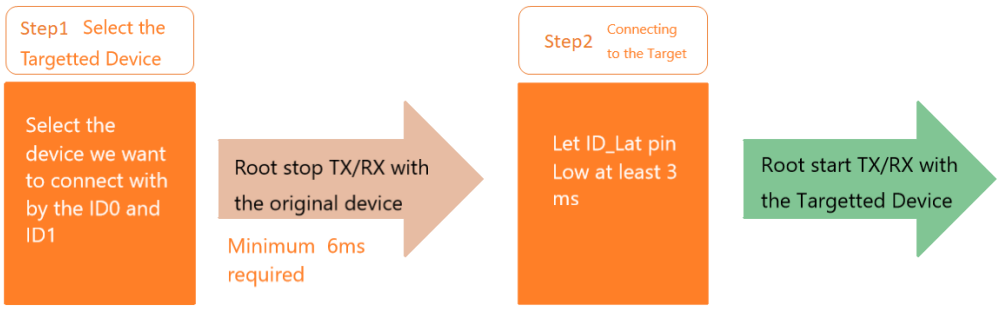


Note: The development board pins connected to RFLink-IO do not limit specific pins, you can also change them to other numbered pins.

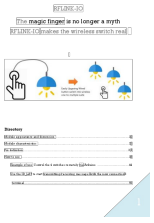
Use the ID_LAT to start sending/receiving messages with the new connection

After sending the corresponding High/Low signal to the ID0 and ID1 pins, the Root terminal will interrupt the transmission with the old connection end (that is, stop the transmission and receiving with the old connection end). And wait for a Low signal from the ID_Lat pin to switch to the new connection.

That is, after you send the target device number signal via ID0, ID1, all transection between the root and the currently connected device will be halted. The new transaction won't start until you send a LOW signal of ID_Lat at least 3ms. The process is as follows:



Documents / Resources

	RFLINK RFLINK-IO Wireless Switch Module [pdf] User Manual RFLINK-IO, Wireless Switch Module, RFLINK-IO Wireless Switch Module

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