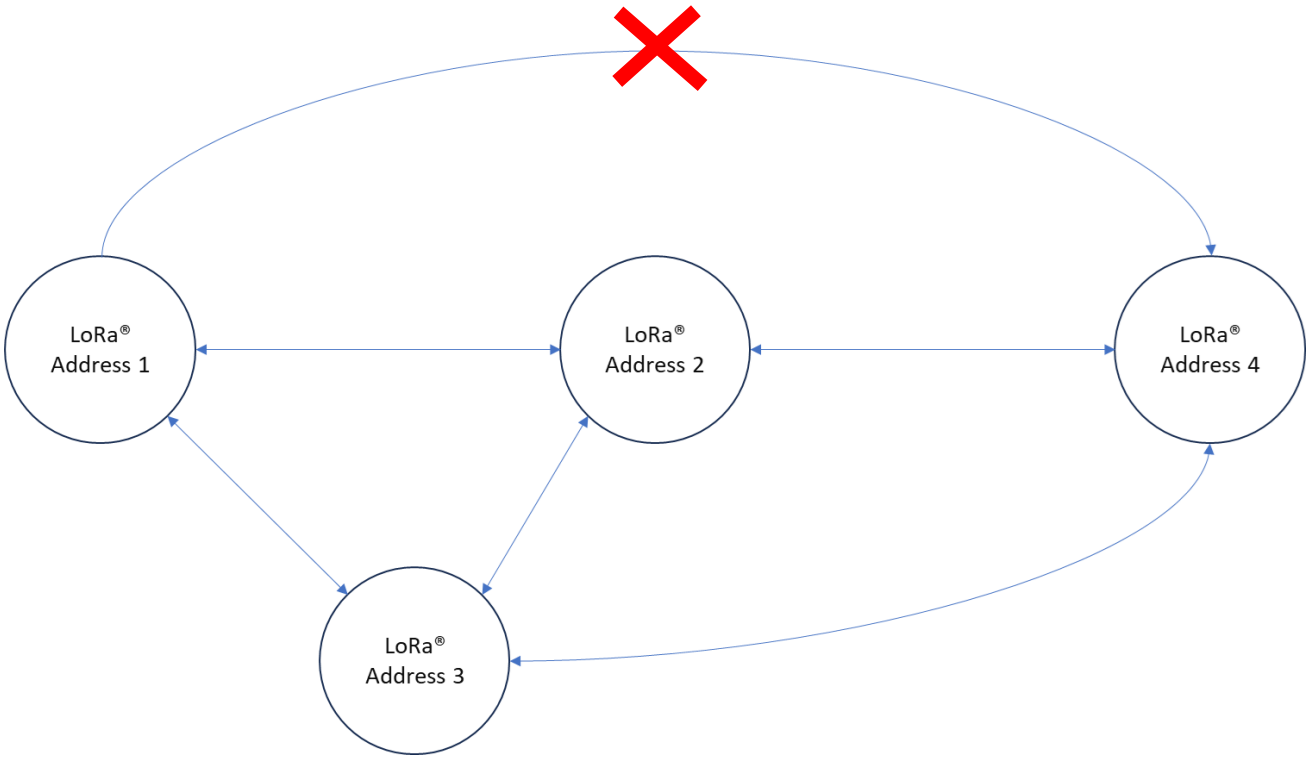
REYAX LoRa® Mesh Application

Applicable Models

REYAX RYLRxxx series products.

Mesh Network Architecture

In this architecture, consider the following scenario:Address 1 can directly communicate with Address 2 and Address 3, but cannot directly communicate with Address 4. Using the Mesh transmission concept, Address 1 and Address 4 can communicate with each other by using the forwarding method of Address 2 and Address 3.



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Mesh Basic Application Methods

1. For example: When transmitting a signal from Address 1, a unique Sequence number must be automatically generated before transmitting. This Sequence number can use the UID of AT+UID or be generated randomly by the user.

2. When Address 1 uses the AT+SEND command for transmission, the Sequence number is placed in the <Data> field, the <Address> field is set to 0, and the signal is broadcasted to all REYAX LoRa® modules.

   Example: AT+SEND=0,20,0123456789ABC04DDDDDD and the Sequence number is 0123456789AB, DDDDDDDD means the Data to be transmitted.

3. Upon receiving the above LoRa® signal, the TXD of the UART interface in Address 2 or Address 3 modules will output +RCV=1,20,0123456789ABC04DDDDDD,-99,40. It's necessary to check if the Sequence number has been received within a specified period (e.g., 30 seconds, user-defined). If not received, you can command this LoRa® module AT+SEND=0,20,0123456789ABC04DDDDDD and transmit this signal out. This filtering mechanism can avoid infinite repeated transmissions.

4. In addition, a collision prevention mechanism is required. When receiving <Data> such as +RCV=1,20, 0123456789ABC04DDDDDD,-99,40, if Address 2 or Address 3 broadcasts signals at the same time, a signal collision may occur, preventing the receiving end from receiving the signal. In such cases, the signal should be relayed at random times to mitigate collisions.

5. This example illustrates the Mesh transmission method for scenarios where <Data> is small, ensuring effective signal transmission across almost every LoRa® module.

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