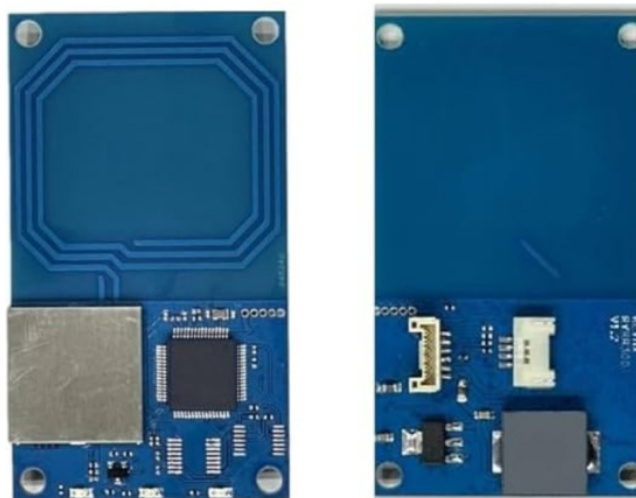


Contents [[hide](#)]

- [1 REYAX RYRR30D NFC Antenna Module User Guide](#)
- [2 THE SEQUENCE OF USING AT COMMAND](#)
- [3 AT Command Set](#)
- [4 CERTIFICATION INFORMATION](#)
- [5 Documents / Resources](#)
 - [5.1 References](#)

REYAX RYRR30D NFC Antenna Module User Guide



THE SEQUENCE OF USING AT COMMAND

1. The module will start working after power is provided.
2. Use “**AT+APPLE**” and “**AT+GOOGLE**” commands to enter <ID> and <Key> to activate Apple® Wallet VAS & Google® Smart Tap pass.
3. Install the correct Apple Wallet VAS & Google SmartTap pass in your smartphone wallet.
4. When the mobile phone containing the correct Apple® Wallet VAS & Google® SmartTap® pass in the wallet approaches the RYRR30D sensing area, RYRR30D will

decode the RAW data in the Apple® Wallet VAS & Google® SmartTap® pass, These RAW data will be output through UART and USB Keyboard interface.

5. You can use “**AT+CTYPE**” command to select the protocols you need to decode.

AT Command Set

1. AT Test if the module can respond to Commands.

Syntax	Response
AT	+OK

2. Software RESET

Syntax	Response
AT+RESET	+RESET+READY

3. **AT+MODE** Set the work mode.

Syntax	Response
AT+MODE=<Parameter><Parameter>Range from 1 to 2 1 Command Mode(default) 2 Standalone Mode 1: In Command mode: you can execute AT Command to set various parameters. .2: Standalone Mode: In this mode, only AT+MODE commands are accepted, will depend on the Command mode setting's Apple® Wallet VAS & Google® SmartTap pass ID and Key, as well as AT+SCAN setting's protocol Scan Pass and TAG Example: Set to Standalone Mode: AT+MODE=2*The settings will be memorized in Flash.	+OK
AT+MODE? 1	'When MODE= +MODE=1

4. **AT+IPR** Set the UART baud

Syntax	Response
<p>AT+IPR=<rate><rate> is the UART baud rate 4800960019200288003840057600115200(default)Example: Set the Baud Rate as 9600 AT+IPR=9600*The settings will be memorized in Flash.</p>	+OK
AT+IPR?	+IPR=9600

5. **AT+APPLE** Set Apple® Wallet VAS parameters

[illegible]

6. **AT+GOOGLE** Set Google® SmartTap pass parameters

Syntax	Response
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<p>AT+GOOGLE=<Number>,<ID>,<Key></p> <p>1. <Number>: Serial number, 1~6 represents the order. Each serial number has its own corresponding ID and Key of Google® SmartTap pass.2 . <ID>: Collector ID is generally 8 characters.3. <key>: Key matching the Collector ID, usually 64 characters. Example: <ID> and <Key> set as the 2nd group of serial numbers</p> <p>AT+GOOGLE=2,01234567,234567890123456789012345678901234567890123456789012345*The settings will be memorized in Flash.</p>	<p>+OK</p>
<p>Confidentiality issue, no inquiry instructions</p>	

7. **AT+CTYPE** Set the protocols that can be scanned

<p>AT+CTYPE=<Protocols><Protocols> The range is binary from 0000000000000000 to 1111111111111111<default>. When the bit value of the protocol is 1, the scan is started, and when the bit value of the protocol is 0, the scan is turned off. The list is as follows:</p> <table><tr><td>Bit15</td><td>Bit14</td><td>Bit13</td><td>Bit12</td><td>Bit11</td><td>Bit10</td></tr><tr><td>Apple ID 1</td><td>Google ID 1</td><td>Apple ID 2</td><td>Google ID 2</td><td>Apple ID 3</td><td>Google ID 3</td></tr><tr><td>Apple ID 4</td><td>Google ID 4</td><td>Apple ID 5</td><td>Google ID 5</td><td>Apple ID 6</td><td>Google ID 6</td></tr><tr><td>Felica</td><td>ISO14443B</td><td>ISO14443A</td><td>ISO15693</td><td></td><td></td></tr></table> <p>Example: Scan Apple ID 1 and Google ID1 and ISO14443A. So Bit15~Bit0 are 1100000000000010 in sequence, so the command is AT+CTYPE=1100000000000010When returning to AT+MODE=2 Standalone mode, protocols will be scanned in this order.*The settings will be memorized in Flash.</p>	Bit15	Bit14	Bit13	Bit12	Bit11	Bit10	Apple ID 1	Google ID 1	Apple ID 2	Google ID 2	Apple ID 3	Google ID 3	Apple ID 4	Google ID 4	Apple ID 5	Google ID 5	Apple ID 6	Google ID 6	Felica	ISO14443B	ISO14443A	ISO15693			<p>+OK</p>
Bit15	Bit14	Bit13	Bit12	Bit11	Bit10																				
Apple ID 1	Google ID 1	Apple ID 2	Google ID 2	Apple ID 3	Google ID 3																				
Apple ID 4	Google ID 4	Apple ID 5	Google ID 5	Apple ID 6	Google ID 6																				
Felica	ISO14443B	ISO14443A	ISO15693																						
<p>AT+CTYPE?</p>	<p>+CTYPE=1100000000000010</p>																								

8. **+APPLE** Actively prompt Apple® Wallet VAS to receive information

Response
<p>+APPLE=<Number>,<DATA>1. <Number>: Serial number, 1~6 represents the order. Each serial number has its correspondingly ID of Apple® Wallet VAS and DATA decoded by Key.2. <DATA> : Data from Apple® Wallet VAS. The maximum length of data is 63 bytes.</p>
<p>Example: +APPLE=1,ABCDEFGF</p>

9. **+GOOGLE** Proactively prompt Google® SmartTap pass to receive information

Response
+GOOGLE=<Number>,<DATA>1. <Number>: Serial number, 1~6 represents the order. Each serial number has its own corresponding ID of Google® SmartTap pass and DATA decoded by Key.2. <DATA> : Data from Google® SmartTap pass. The maximum length of data is 138 bytes.
Example: +GOOGLE=1,ABCDEFGG

10. **+FeliCa** Actively prompt to analyze the UID of FeliCa

Response
+FELICA=<UID>+<Type>:<Payload>1. <UID>: Unique serial number, unique UID serial number on FeliCa TAG.2. <Type>: NFC Forum NDEF Record Types. 3.<Payload>: NFC Forum NDEF Record Payload.* If the TAG does not contain NDEF data, the <Type> and <Payload> fields will not be displayed.
Example: (TAG contain NDEF data)+FELICA=0011223344556677+Text:Reyax Test Tag(TAG not contain NDEF data)+FELICA=0011223344556677

11. **+ISO14443B** Actively prompt to analyze the UID of ISO14443B

Response
+ ISO14443B=<UID>+<Type>:<Payload>1. <UID>: Unique serial number, unique UID serial number on ISO14443B TAG.2. <Type>: NFC Forum NDEF Record Types. 3.<Payload>: NFC Forum NDEF Record Payload.* If the TAG does not contain NDEF data, the <Type> and <Payload> fields will not be displayed.
Example: (TAG contain NDEF data)+ISO14443B=ABCDEFGH+URI: (http://www.tiananxin.com) (TAG not contain NDEF data)+ISO14443B=ABCDEFGH

12. **+ISO14443A** Actively prompt to analyze the UID of ISO14443A

Response

+ ISO14443A=<UID>+<Type>:<Payload>1. <UID>: Unique serial number, unique UID serial number on ISO14443A TAG.2. <Type>: NFC Forum NDEF Record Types. 3.<Payload>: NFC Forum NDEF Record Payload.* If the TAG does not contain NDEF data, the <Type> and <Payload> fields will not be displayed.

Example:(TAG contain NDEF data)+ISO14443A=AABBCCDDEEFFGG+ Text: Reyax Test Tag
(TAG not contain NDEF data)+ISO14443A=AABBCCDDEEFFGG

13. **+ISO15693** Actively prompt to analyze the UID of ISO15693

Response
+ ISO15693=<UID>+<Type>:<Payload>1. <UID>: Unique serial number, unique UID serial number on ISO15693 TAG.2. <Type>: NFC Forum NDEF Record Types. 3. <Payload>: NFC Forum NDEF Record Payload.* If the TAG does not contain NDEF data, the <Type> and <Payload> fields will not be displayed.
Example: (TAG contain NDEF data)+ ISO15693=0011223344556677+Text:Reyax Test Tag (TAG not contain NDEF data)+ISO14443A=0011223344556677

14. **+ ST25TB** Actively prompt to analyze the UID of ST25TB

Response
+ ST25TB=<UID>1.<UID>: Unique serial number, unique UID serial number on ST25TB TAG.
Example:+ST25TB=0011223344556677

15. **AT+UID?** To inquire module's unique serial number ‘

Syntax	Response
AT+UID?12 Bytes Unique ID	+UID=164738323135383200100025

16. **AT+VER?** To inquire the firmware

Syntax	Response
AT+VER?	+VER=RYRR30D-Vx.x.x

17. **AT+ IAP** Update FW through UART

Syntax	Response
<p>AT+ IAP</p> <p>When the module sends “C” continuously, it means the module is in YMODEM mode. The module enters the status of F/W update.</p> <p>* Only valid in MODE=1</p>	<p>+IAP=====</p> <p>=====</p> <p>= (C) Reyax Inc.== By Huck =====</p> <p>=====</p> <p>===== CCCC</p>

18. **Error result codes**

Narrative	Response
There is not “CR/LF” or 0x0D 0x0A in the end of the AT Command.	+ERR=1
The head of AT command is not “AT” string.	+ERR=2
Unknown command./Command given in incorrect state.	+ERR=4

CERTIFICATION INFORMATION

FCC compliance

Notice:

Any changes or modifications not expressly approved by the party responsible for

compliance could void your authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Notice:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference.
2. this device must accept any interference received, including interference that may cause undesired operation.

This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

For a host using a certified modular with a standard fixed label, if (1) the module's FCC

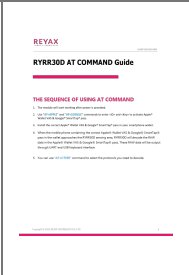
ID is not visible when installed in the host, or (2) if the host is marketed so that end users do not have straightforward commonly used methods for access to remove the module so that the FCC ID of the module is visible; then an additional permanent label referring to the enclosed module: “Contains Transmitter Module FCC ID: QLYRYRR30D” or “Contains FCC ID: QLYRYRR30D” must be used. The host OEM user manual must also contain clear instructions on how end users can find and/or access the module and the FCC ID.

E-mail: sales@reyax.com

Website: <http://reyax.com>



Documents / Resources

	REYAX RYRR30D NFC Antenna Module [pdf] User Guide RYRR30D, RYRR30D NFC Antenna Module, NFC Antenna Module, Antenna Module
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References

- [User Manual](#)

Antenna Module, NFC Antenna Module, REYAX, RYRR30D, RYRR30D NFC Antenna
REYAX Module

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