

## General Description

RFMO-0201 is a complete RF board with a protocol-on-micro-processor structure and without extra driver installation, which is designed to replace the cable between the peripheral and the peripheral and make signal transmitted over radio. RFMO-0201 uses 433.92 free-licensed ISM band. RFMO-0201 is designed to interface with RS-232 port, with its featured compact size it can be installed or embedded in various handheld devices.

- ♦ Note 1: Max 2 characters are allowed in every single transmission.
- ♦ Note 2: This product is utilized for control purpose. Continuous data transmission will not be adopted.
- ♦ Note 3: The duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

## Product Features

- FCC Certified
- Max. Output Power 10dBm
- RF Sensitivity: -102dBm
- Communication Range: 5 ~ 60 meters
- UART Data Rate: 9.6K bps
- 433.92 MHz ISM Band
- 2 Level FSK Modulation
- Embedded Micro Processor and UART Interface
- Optional On-board 50Ω PCB Loop Antenna
- TDMA Access

## Application

- Simple Robotic Control System

**General Description**

Radio Frequency	433.92MHZ
Modulation Type	2-level FSK
Number of channel	One channel TDMA

**Performance**

RF Transmission Data Rate	16.2Kbps
UART Data Rate	9.6Kbps (Inter-communication)
Output Power	1mW
Sensitivity	-102 ~ -99dBm at 16.2kbps 10 <sup>-1</sup> BER
Communication range	5 ~ 60m line of sight

**Power Requirement**

Supply Voltage	3.3 ~ 5.0 Vdc
Transmit Current Consumption	10 ~ 17mA
Standby Current Consumption	< 60uA

**Antenna**

Optional	On Board Loop Antenna, 50 Ω terminal
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**Physical Properties**

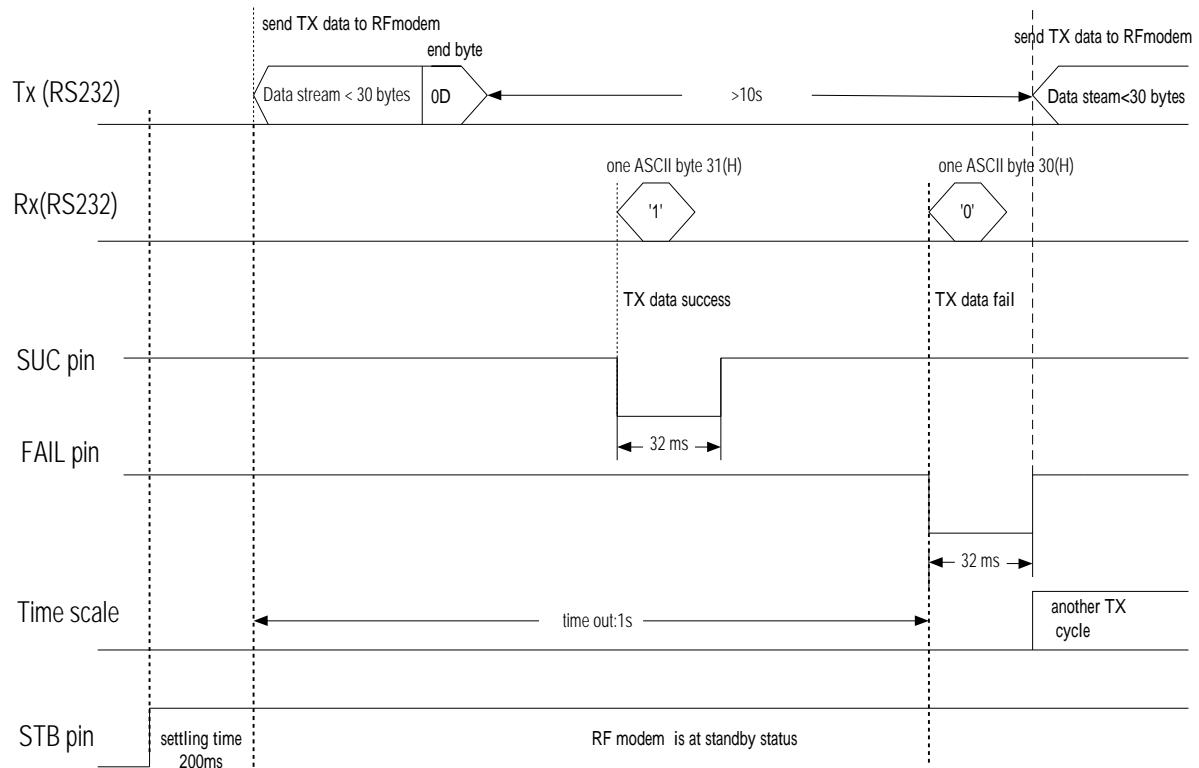
Board size (Without ANT)	34 x 34 x 8 (mm)
Connect Pitch	2.0mm
Operating Temperature	-10 ~ 65

**Pin Configuration**

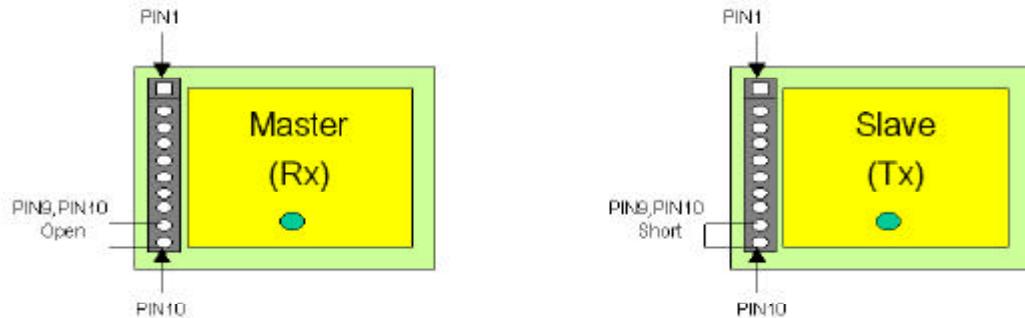
Connector:	
PIN 1: VCC	Supply Voltage 5V
PIN 2: GND	
PIN 3: FAIL	Fail active Low
PIN 4: SUC	Success active Low
PIN 5: STB	Standby active Low
PIN 6: RX	UART Receiver pin
PIN 7: TX	UART Transmitter pin
PIN 8: TEST	Test Pin
	Pull Low before power on will be into the Test mode
	Pull Hi will be release the test mode
PIN 9: MASTER/SLAVE	Mode change pin Low=SLAVE mode Hi=MASTER mode
PIN 10: GND	



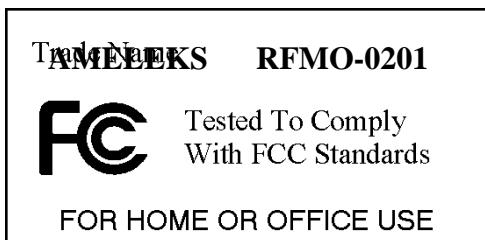
## Time Out Sequence with Programming Format



## Operation Mode & Jumper Setting



## FCC DoC Label



## Important Notice

Devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

## Federal Communication Commission Interference Statement

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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**IMPORTANT NOTE:**

**FCC Radiation Exposure Statement:**

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

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

**This device is intended only for OEM integrators under the following conditions:**

The antenna must be installed such that 20 cm is maintained between the antenna and users, and The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

**End Product Labeling**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users (for example Simple Robotic Control System and similar equipment). The final end product must be labeled in a visible area with the following: **“Contains TX FCC ID: QHUMAMRF01”**.

**Manual Information That Must be Included**

The users manual for end users must include the following information in a prominent location “**IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.**”

**Information to User –** The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.



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**FEDERAL COMMUNICATIONS COMMISSION  
DECLARATION OF CONFORMITY (DoC)**

FOR THE FOLLOWING EQUIPMENT:

PRODUCT NAME: RF Module

MODEL NO. RFMO-0201

TRADE NAME: Ameleks

IS HEREWITNESS CONFIRMED AND FOUND TO COMPLY WITH THE REQUIREMENTS OF  
CFR 47 PART 15 REGULATION. THE RESULTS OF ELECTROMAGNETIC EMISSION  
EVALUATION ARE SHOWN IN THE REPORT NO. D910617R01 ISSUED ON Aug. 20, 2002

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 AND,
- (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING  
INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THE FOLLOWING MANUFACTURER/IMPORTER IS RESPONSIBLE FOR THIS  
DECLARATION:

AMELEKS CORP.

(COMPANY NAME)

6F, 48 KEELUNG ROAD SEC. 2, TAIPEI, TAIWAN, R.O.C.

(COMPANY ADDRESS)

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MARY TIEN

MARKETING SUPPORT

(NAME)

(TITLE)

Mary Tien

SEPT. 09, 2002

(SIGNATURE)

(DATE)

AMELEKS CORP.

Report No.: D910617R01