# RF test AT command

## Revision History

| Revision | Date | Author | Description |
|----------|------|--------|-------------|
| 0.1 | Create | | New create |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

# Contents

# 1. Introduction

In this section, we will focus on how to do RF test AT command inside MC300. Users can use AT command through UART.

# 2. Hardware connection
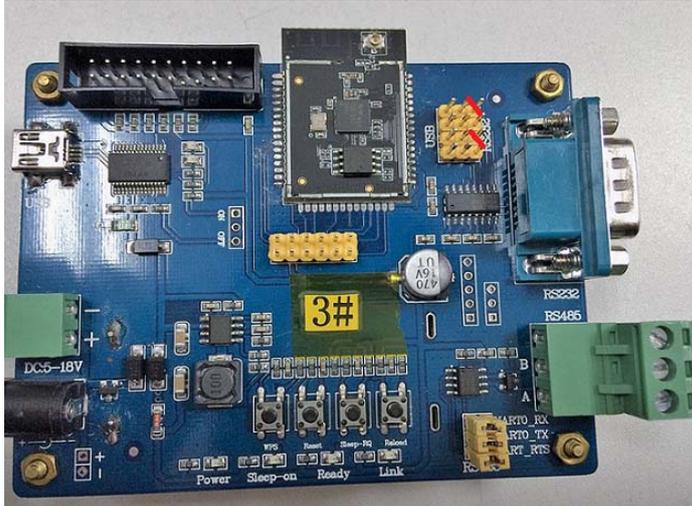


Note：According to the pictures of by method of jump line

# 3. RF test AT Command list

### 3.1 ICAT+RADIO_CHANNEL=n
set channel
n =[1~14]

### 3.2 ICAT+RADIO_RF_START
Enter RF TX Test Mode

### 3.3 ICAT+RADIO_RF_STOP
Stop RF TX Test Mode

### 3.4 ICAT+RADIO_RF_RATE=n
set TX rate format
N=0 ~ 38

- Rate n     format
  - 0 =      11b 1M
  - 1 =      11b 2M
  - 2 =      11b 5.5M
  - 3 =       11b 11M
  - 4 =      11b 2M SP
  - 5 =      11b 5.5M SP
  - 6 =      11b 11M SP
  - 7 =      NON-HT 6M
  - 8 =      NON-HT 9M
  - 9 =      NON-HT 12M
  - 10       =        NON-HT 18M
  - 11       =        NON-HT 24M
  - 12       =        NON-HT 36M
  - 13       =        NON-HT 48M
  - 14       =        NON-HT 54M
  - 15       =        HT-MM MCS0
  - 16       =        HT-MM MCS1
  - 17       =        HT-MM MCS2
  - 18       =        HT-MM MCS3
  - 19       =        HT-MM MCS4
  - 20       =        HT-MM MCS5
  - 21       =        HT-MM MCS6
  - 22       =        HT-MM MCS7

- Rate n              format
  - 23       =        HT-GF MCS0
  - 24       =        HT-GF MCS1
  - 25       =        HT-GF MCS2
  - 26       =        HT-GF MCS3
  - 27       =        HT-GF MCS4
  - 28       =        HT-GF MCS5
  - 29       =        HT-GF MCS6
  - 30       =        HT-GF MCS7
  - 31       =        HT-MM SGI MCS0
  - 32       =        HT-MM SGI MCS1
  - 33       =        HT-MM SGI MCS2
  - 34       =        HT-MM SGI MCS3
  - 35       =        HT-MM SGI MCS4
  - 36       =        HT-MM SGI MCS5
  - 37       =        HT-MM SGI MCS6
  - 38       =        HT-MM SGI MCS7

## 3.5 ICAT+RADIO_RF_GNGAIN=n

Set 11 g/n TX power value

**N=7~20**

## 3.6 IC AT+RADIO_RF_BGAIN=n

Set 11 b TX power value

**N=7~20**

# 4  Example

Following are some examples that demonstrate the usage of these AT commands.


**The following test instance is based on 802.11G**

**AT+NDBGL=2,0**

**ICAT+RADIO_CHANNEL=1**

**ICAT+RADIO_RF_START**

**ICAT+RADIO_RF_RATE=14**

**The following test instance is based on 802.11N**

**AT+NDBGL=2,0**

**ICAT+RADIO_CHANNEL=1**

**ICAT+RADIO_RF_START**

**ICAT+RADIO_RF_RATE=22**

**Note: Support only 20M**

**The following test instance is based on 802.11B**

**AT+NDBGL=2,0**

**ICAT+RADIO_CHANNEL=1**

**ICAT+RADIO_RF_START**

**ICAT+RADIO_RF_RATE=6**

## FCC STATEMENT :

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.

**Warning:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's 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.

## 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.

**FCC INFORMATION (additional)**

**OEM INTEGRATION INSTRUCTIONS:**

This device is intended only for OEM integrators under the following conditions: The module must be installed in the host equipment 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. The module shall be only used with the internal antenna(s) that has been originally tested and certified with this module. As long as 3 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.).

**Validity of using the module certification:**

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot 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. The final end product must be labeled in a visible area with the following: "Contains FCC ID: 2ACSV-HF-LPB120".

**Information that must be placed in the end user manual:**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

This device must be kept away from all persons by 20cm or more and installations using less distance, or installations using antennas with gain greater than that with which this was Certified will require additional approvals.

Antenna Specification:

Type: PCB Antenna

Model: HF-LPB120

Brand: High-Flying

Gain: 2.18dBi