

HX-DU1022D Common AT Command Operation Instructions

1, The methods of entering and exiting the radio parameter configuration mode of HX-DU1022D 400M.

(1), method 1: CONFIG configuration pin (46 pin)

Setting the CONFIG pin to low level, the radio will enter the configuration mode; setting the Config pin to the high level, and the radio will exit the configuration mode (ie entering the normal working mode of the system);

(2), method 2: sending the string +++ and ATA commands

Sending the string +++ the radio will enter the configuration mode; (Note: it must be sent as follows, 1 second before the string "+++" sent, no characters can be sent; after the string "+++" sent, No characters can be sent after 1 second, otherwise the system cannot enter the radio parameter configuration mode; there is no carriage return line feed (\r\n) after the string;

Sending the ATA command the radio will exit the configuration mode;

2, HX-DU1022D commonly used AT command

(1), AT&W

It is the parameter saving command.

Note: If you want the parameter to be saved when powered off, you must first send this AT&W command to save the parameters.

After the command is successfully sent, it will return to the prompt OK.

(2),ATP0=CH TX RX

It is The 400M fixed frequency working frequency table configuration

E.g:

ATP0=00 450.125 450.125

It is Indicated that the transmitting frequency of channel 0 is 450.125MHZ and the receiving frequency is 450.125MHZ. If you want to configure multiple channels, just follow the steps below:

ATP0=00 451.125 451.125
ATP0=01 452.125 452.125
ATP0=02 453.125 453.125
ATP0=03 454.125 454.125
ATP0=04 455.125 455.125
ATP0=05 456.125 456.125
ATP0=06 457.125 457.125
ATP0=07 458.125 451.125

...

Note: The frequency and the channel number are separated by a space character (only one space symbol);

(3)、ATPO?

Query the working frequency table that the current station has configured of 400M fixed frequency.

E.g:

```
ATPO?
Channel Number Tx Frequency (MHZ) Rx Frequency (MHZ) DIR
----- -----
00 440.12500 440.12500 Tx&Rx
01 452.12500 452.12500 Tx&Rx
02 453.12500 453.12500 Tx&Rx
03 454.12500 454.12500 Tx&Rx
04 455.12500 455.12500 Tx&Rx
05 456.12500 456.12500 Tx&Rx
06 457.12500 457.12500 Tx&Rx
07 458.12500 458.12500 Tx&Rx
OK
```

(4)、AT&V

Query current radio operating parameters

```
AT&V
HX-DU1018D-NB400 Harxon Corporation.
Soft ver:CO17.00.01 2017-05-19
S/N:D17051118
S101=2 Operating Mode
S102=1 Serial Baud Rate
S103=2 Wireless Link Rate
S105=2 Unit address
S108=L Output Power
S131=00-440.12500 Current Tx Frequency
S132=00-440.12500 Current Rx Frequency
S127=0 Modulation
S186=01 Protocol Selection
S128=0 Modem Type|
OK
```

(5), Modify the current serial port baud rate

ATS102=value

The value is as follows:

1-115200; 2-57600; 3-38400; 5-19200; 7-9600;

Special Note: After sending this command, the serial port baud rate will take effect immediately.

If you want to save the current configuration parameters, you need to switch the serial port baud rate of the current configuration tool, and then send the AT&W saved command.

For example: change the current serial port baud rate to 9600, as follows:

(1). ATS102=7

(2). Switch the serial port baud rate of the configuration tool to 9600;

(3). Send an AT&W saved command;

(6), Modify the wireless baud rate

ATS103=value

The value is as follows:

0-4800; 1-8000; 2-9600; 3-16000; 4-19200;

Remarks: The protocols of TRANSEOT and TRIMTALK support both wireless baud rates of 4800 and 9600, and TRIMMM3 only supports 19200 wireless baud rate;

(7), Modify the transmission power

ATS108=value

The value is as follows:

H: high power; L: low power;

(8), Set the current radio work transmission channel

ATS131=value

Value range:

0-63

(9), Set the current radio work receiving channel

ATS132=value

Value range:

0-63

(10), Select the communication protocol

ATS186=value

The value is as follows:

1-TRIMTALK;

2-TRIMMK3;

4-TT450S;

5-TRANSEOT

11-HITARGET

(11), AT&F53

It is the default configuration of the TRANSEOT protocol. The default configuration of the current radio operating parameters is as follows:

S102=1; The serial port baud rate is 115200

S103=2; The wireless baud rate is 9600;

S108=H; The transmitting power is high

S131=00-xxx.xxxxx; The current sending channel is 0. For the frequency, check the frequency table configured by the ATP0 command, and the corresponding 0 channel is the sending frequency.

S132=00-xxx.xxxxx; The current receiving channel is 0. For the frequency, check the frequency table configured by the ATP0 command, and the corresponding 0 channel is the receiving frequency point.

S186=05; TRANSOSOT protocol;

S127=0; 400M fixed frequency mode (band can only be queried in this command)

(12), AT&F54

It is the default configuration of the TRIMTALK protocol. The default configuration of the current radio parameters is as follows:

S102=1; The serial port baud rate is 115200

S103=2; The wireless baud rate is 9600;

S108=H; The transmitting power is high;

S131=00-xxx.xxxxx; the current sending channel is 0. For the frequency, check the frequency table configured by the ATP0 command, and the corresponding 0 channel is the sending frequency.

S132=00-xxx.xxxxx; the current receiving channel is 0. For the frequency, check the frequency table configured by the ATP0 command, and the corresponding 0 channel is the receiving frequency point.

S186=01; TRIMTALK protocol;

S127=0; 400M fixed frequency mode (band can only be queried in this command)

(13), AT&F55

It is the default configuration of the TRIMMK3 protocol, the default configuration of the current radio operating parameters is as follows:

S102=1; The serial port baud rate is 115200

S103=4; The wireless baud rate 19200;

S108=H; The transmitting power is high

S131=00-xxx.xxxxx; The current sending channel is 0. For the frequency, check the frequency table configured by the ATP0 command, and the corresponding 0 channel is the sending frequency.

S132=00-xxx.xxxxx; the current receiving channel is 0. For the frequency, check the frequency table configured by the ATP0 command, and the corresponding 0 channel is the receiving frequency.

S186=02; TRIMMK3 protocol;

S127=0; 400M fixed frequency mode (band can only be queried in this command)

Remarks: Unless otherwise specified, each AT command must be followed by "carriage return (\r\n)"

FCC regulatory compliance statement

§15.19 Statement(N/A)

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.

§15.21 Information to user

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

- List of applicable FCC rules:

47 CFR Part 90

47 CFR PART 1, Subpart I, Section 1.1307

47 CFR PART 2, Subpart J, Section 2.1091

- Summarize the specific operational use conditions

This module can be used in IOT devices, the input voltage to the module is nominally 3.3 V.

- Limited module procedures

This module is not a limited module.

- Trace antenna designs

The antenna is not a trace antenna.

- RF exposure considerations

This Module complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

- **Antennas**

If you desire to increase antenna gain and either change antenna type or use same antenna type certified, a Class II permissive change application is required to be filed by us, or you (host manufacturer) can take responsibility through the change in FCC ID (new application) procedure followed by a Class II permissive change application.

- **Label and compliance information**

Please notice that if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains FCC ID: 2BA39HX-DU1022D" any similar wording that expresses the same meaning may be used.

§ 15.19 Labelling requirements shall be complied on end user device.

Labelling rules for special device, please refer to §2.925, § 15.19 (a)(5) and relevant KDB publications. For E-label, please refer to §2.935.

- **Information on test modes and additional testing requirements**

The OEM integrator is responsible for ensuring that the end-user has no manual instruction to remove or install module.

The module is limited to installation in mobile application, a separate approval is required for all other operating configurations, including portable configurations with respect to §2.1093 and difference antenna configurations.

Test software access to different test modes:

Testing item, Frequencies, Transmit Power, Modulation Type can be selected on the test script instructions.

- **FCC other Parts, Part 15B Compliance Requirements for Host product manufacturer**

This modular transmitter is only FCC authorized for the specific rule parts listed on our grant, host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

Host manufacturer in any case shall ensure host product which is installed and operating with the module is in compliant with Part 15B requirements.

Please note that For a Class B or Class A digital device or peripheral, the instructions furnished the user manual of the end-user product shall include statement set out in *§15.105 Information to the user* or such similar statement and place it in a prominent location in the text of host product manual. Original texts as following:

For Class B

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.

For Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.