PRODUCTION APPLICATION NOTE



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Zigbee3.0 Module Three Types of Serial Mode Switch

Foreword:
This section introduces how the Ebyte Zigbee module judges the current Command mode and switches between several modes. E18 series modules and E180-ZG120A/B modules both support HEX Command and data transparent transmission modes, and E180-ZG120A/B also supports AT Command mode.

Early preparation:
1. E18 series modules, E180-ZG120A/B modules.
2. Serial port debugging assistant tool: sscom or XCOM is recommended.
3. Hardware connection, open the serial port debugging assistant (baud rate: 115200, stop bit: 1, data bit: 8, Parity: None)

1. Query Current Mode and distribution network status

For details, see 2.1.1. Query the current status of the module in *Ebyte Zigbee 3.0 Module HEX Command Standard Specification.*

Command	Response	Current Mode	Network Status
55 03 00 00 00	**55 2A 00 00 00 00 F3 4C 60 FE FF 14 43 0C 0F C6 19 00 00 8C 18 3B 14 41 E0 A2 2D 39 20 93 ED E8 05 4C 09 55 6C 25 10 78 9B 2F D3 1C** Note: **F3 4C 60 FE FF 14 43 0C is short address** **0F is channel** **C6 19 is PANID** **00 00 is short address** **8C 18 3B 14 41 E0 A2 2D is expand ID** **39 20 93 ED E8 05 4C 09 55 6C 25 10 78 9B 2F D3 is network key**	HEX Command Mode	Connected
	55 0D 00 00 FF 01 4D 4D 60 FE FF 14 43 0C C4 Note: **4D 4D 60 FE FF 14 43 0C is MAC address**	HEX Command Mode	Not connected
	OK Note： In the transparent transmission state, the return "OK" does not have a CR symbol, and in the transparent transmission state, in addition to returning to the above states, there are also "JAM" and "FAIL". JAM means that it is interfered and the sending fails; FAIL means sending failed.	Data Transparent Transmission Mode	Connected
	ERRO Note： In the transparent transmission state, the return "ERRO" does not have a CR symbol, and in the transparent transmission state, in addition to returning the above states, there are also "JAM" and "FAIL". JAM means that it is interfered and the sending fails; FAIL means sending failed.	Data Transparent Transmission Mode	Not connected
	WRONG\r\n Note: \r\n means CRLF	AT Command Mode	-

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2. Mutual Switch between three modes

2.1 HEX Command Mode to Transparent Transmission Mode

Command	Response
55 07 00 11 00 03 00 01 13	**55 04 00 11 00 11**
Note：Successfully enter Transparent Transmission Mode	

2.2 HEX Command Mode to AT Command Mode（for E180ZG120 only）

Command	Response
55 03 00 16 16	**55 04 00 16 00 16**
Note：Successfully enter AT Command Mode	

2.3 AT Command Mode to Transparent Transmission Mode（for E180ZG120A/B only）

Command	Response
AT+SEND	**SEND_MODE\r\n**
Note：Successfully enter Transparent Transmission Mode，\r\n means CRLF	

2.4 AT Command Mode to HEX Command Mode（for E180ZG120A/B only）

Command	Response
AT+EXIT	**OK\r\n**
Note：Successfully enter HEX Command Mode，\r\n means CRLF	

2.5 Transparent Transmission Mode to HEX Command Mode

Command	Response
+++	**55 0D 80 00 00 10 D5 20 D9 FE FF 14 43 0C E6** **Note：for E180-ZG120A/B module，E18 series has no response**
Note： Successfully enter HEX Command Mode. Asynchronous Command, the module outputs this Command, indicating that the switch is successful (for E180-ZG120A/B)；E18 series has no response. 10 is version info. D5 20 D9 FE FF 14 43 0C is MAC address	

2.6 Transparent Transmission Mode to AT Command Mode（for E180ZG120A/B only）

Command	Response
+AT	**AT_MODE\r\n**
Note: Successfully enter AT Command Mode，\r\n means CRLF	

Appendix:
1. Remotely set HEXCommand mode and transparent transmission mode

The HEXCommand mode and transparent transmission mode of the module are determined by a status parameter inside the module, which can be viewed and controlled remotely through the ZCL protocol. According to the rules of the ZCL protocol, the module applies Cluster 0xFC08 on port 1, and Manufacture

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Code 0x2000. The value of Attribute 0x0003 can be read and written. The data type of this Attribute is a ZCL standard Bool data, 0 is the HEXCommand mode, and 1 is the data transparent transmission mode.

2. Module power-on default mode
The factory default value of the ZCL Attribute corresponding to the transmission mode is 0, and the default is HEX Command mode. When the Attribute is changed to 1 (can be modified locally or remotely), the module is E180-ZG120A/B and has not been configured with a network. When the module is powered on, it is in AT command mode, and the module is in transparent transmission mode when it is configured with a network. No matter whether the E18 series modules are configured with a network or not, the Attribute is always in the transparent transmission mode when the Attribute is 1. If the E18 modules without a network configuration are set to the transparent transmission mode, the network configuration operation cannot be performed through the serial port, and can only be triggered through the external Net pin. distribution network.

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