Simulation Serial Port Communication Protocol

**Communication protocol:**

Conventional baud rate of serial port: 115200

Data bits: 8

Parity check: N/A

Stop bit: 1

Data flow control: N/A

|  |  |  |
| --- | --- | --- |
| Field | Length(byte) | Description |
| Module type | 1 | Type module, Lora or Zigbee |
| Command word | 1 | Detailed frame type |
| Data length | 2 | Big endian |
| Data | XXXX |  |
| End byte | 1 | # |

1. **Module type:**
2. **Lora: 0x01**
3. **Zigbee: 0x02**
4. **Commands word:**
5. **Connect command (0x00):** software muốn connect với MCU

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Module type | Command word | Data  length | Data | End byte |
| Lora | PC sends | 0x01 | 0x00 | 0x0000 |  | # |
| MCU  reports | 0x01 | 0x00 | 0x0000 |  | # |
| Zigbee | PC sends | 0x02 | 0x00 | 0x0000 |  | # |
| MCU  reports | 0x02 | 0x00 | 0x0000 |  | # |

1. **Read config command(0x01****):** software muốnđọc lại giá trị được lưu trước đó của MCU

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Module type | Command word | Data  length | Data | End byte |
| Lora | PC sends | 0xXX | 0x01 | 0x0000 |  | # |
| MCU  reports | 0x01 | 0x01 | 0x0002 | Format: id + baudrate  Example(id = 1, baudrate = 9600): 0x01 0x03 | # |
| Zigbee | PC sends | 0xXX | 0x01 | 0x0000 |  | # |
| MCU  reports | 0x02 | 0x01 | 0x0002 | Format: id + baudrate  Example(id = 1, baudrate): 0x01 0xXX | # |

1. **Config command(0x02): ):** software config module cho MCU

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Module type | Command word | Data  length | Data | End byte |
| Lora | PC sends | 0x01 | 0x02 | 0x0002 | Format: id + baudrate  Example(id = 1, baudrate = 9600): 0x01 0x03 | # |
| MCU  reports | 0x01 | 0x02 | 0x0000 |  | # |
| Zigbee | PC sends | 0x02 | 0x02 | 0x0002 | Format: id + baudrate  Example(id = 1, baudrate): 0x01 0xXX | # |
| MCU  reports | 0x02 | 0x02 | 0x0000 |  | # |

1. **Change mode command (0x03):** khi module thay đổi mode sẽ gửi 1 message thông báo cho software biết để cập nhật mode( chỉ hoạt động với module lora)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Module type | Command word | Data  length | Data | End byte |
| Lora | PC sends | 0x01 | 0x03 | 0x0000 |  | # |
| MCU  reports | 0x01 | 0x03 | 0x0001 | Format: mode  Example: 1 | # |

1. **Send data command (0x04):** software gửi data cho MCU hoặc MCU gửi data cho software

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | Module type | Command word | Data  length | Data | End byte |
| Lora | PC sends | 0x01 | 0x04 | 0xXXXX | Data raw | # |
| MCU  reports | 0x01 | 0x04 | 0xXXXX | Data raw | # |
| Zigbee | PC sends | 0x02 | 0x04 | 0xXXXX | Data raw | # |
| MCU  reports | 0x02 | 0x04 | 0xXXXX | Data raw | # |