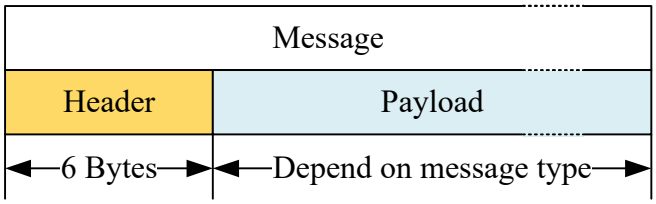
Baudrate： 600000

The communication protocol beses on "Message", transmitting one complete Message per transmission.

Message Structure



Header					
SOM	Reserved	LEN	LEN	TYPE	Reserved

Length of Header: 6 Bytes
SOM (Start Of Message): ABh
LEN: uint16, The total number of bytes in the entire message.
TYPE: 0h – CMD/RPRT
1h – DATA

Payload			
SOP	Payload Content	CHK	EOM

SOP (Start Of Payload): AAh
CHK: uint8 checksum, The sum of all the data from the message start to the byte preceding the CHK.
EOM (End Of Message): EEh

Available message payload.

CMD/RPRT (0h)			
AAh	VALUE	CHK	EEh

Length of payload: 4Bytes

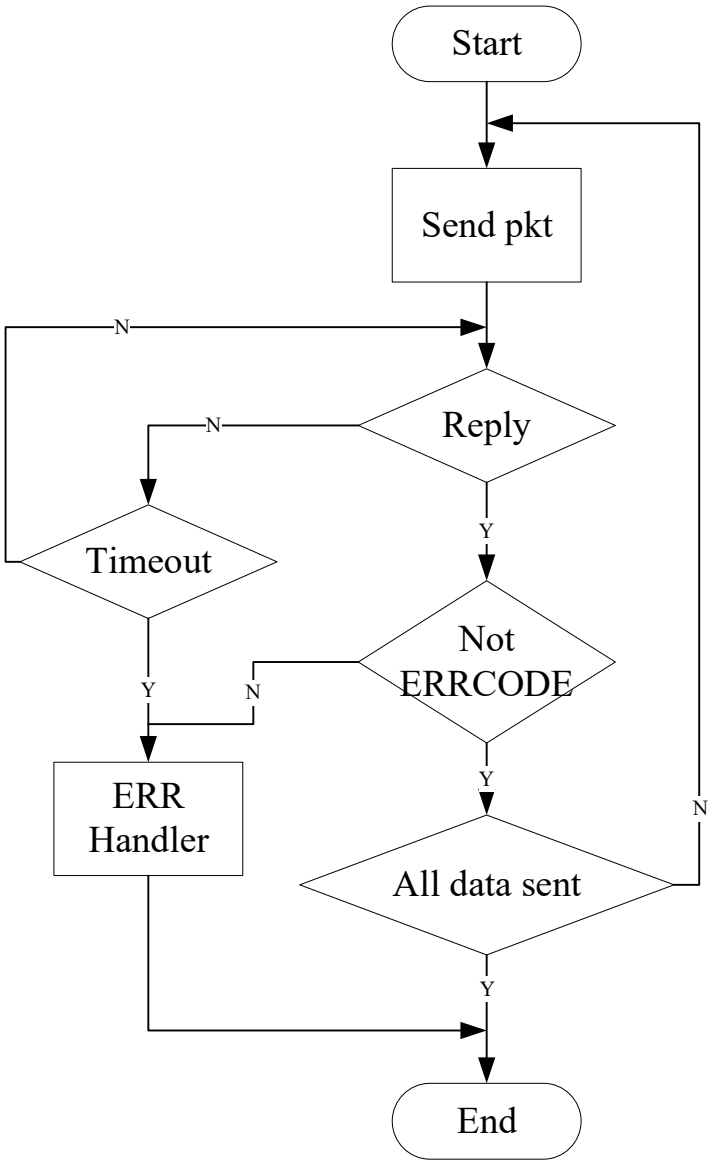
DATA (1h)							
AAh	Resv.	TOTAL	CURRENT	VALID	DATA	CHK	EEh

Length of payload: 522 Bytes
TOTAL: uint16, the total number of required data packets to be sent, starting from 0, where the TOTAL is 0 for a single data packet.
CURRENT: uint16, the current packet number; CURRENT = TOTAL indicates the end of transmission.
VALID: uint16, range in [1, 512]. The number of valid bytes in the Data segment.
DATA: Length is constantly 512 bytes; actual transmission length is confirmed via VALID.

e.g. When sending data with a total length of 800 bytes, it will be transmitted in two parts:
First transmission: TOTAL=1, CURRENT=0, VALID=512
Second transmission: TOTAL=1, CURRENT=1, VALID=288

Image Uploading - Packet Mode

- A 4-bit grayscale image is 3kB, or 3072 bytes, requires 6 transmissions.
- After each transmission, the MCU will reply a CMD/RPRT message to indicate the receive status.
- Under normal circumstances, the response will be a CMD/RPRT message with (int8)VALUE=(TOTAL-CURRENT).
- If there's a error, the reply will be a CMD/RPRT message with (int8)VALUE=ERRCODE, where ERRCODE is always less than 0.



ERRCODE

-3: No valid Header

-4: Message length does not match the LEN in the data header

-5: No valid EOM

-6: Checksum error

Note: If the transmitted data does not contain the SOM (ABh), no ERRCODE will be returned.

Image Uploading – Streaming Mode

- Streaming mode allows direct transfer of all 3072 bytes of data at once, faster but with a higher potential for errors.
- To start streaming mode, send a CMD/RPRT message with VALUE=1 as a request. After receiving a CMD/RPRT message with VALUE=1 from the MCU, the transmission can begin.
- The MCU will exit streaming mode and send a CMD/RPRT with VALUE=ABh as an indication after receiving 3072 bytes of data or waiting timeout.

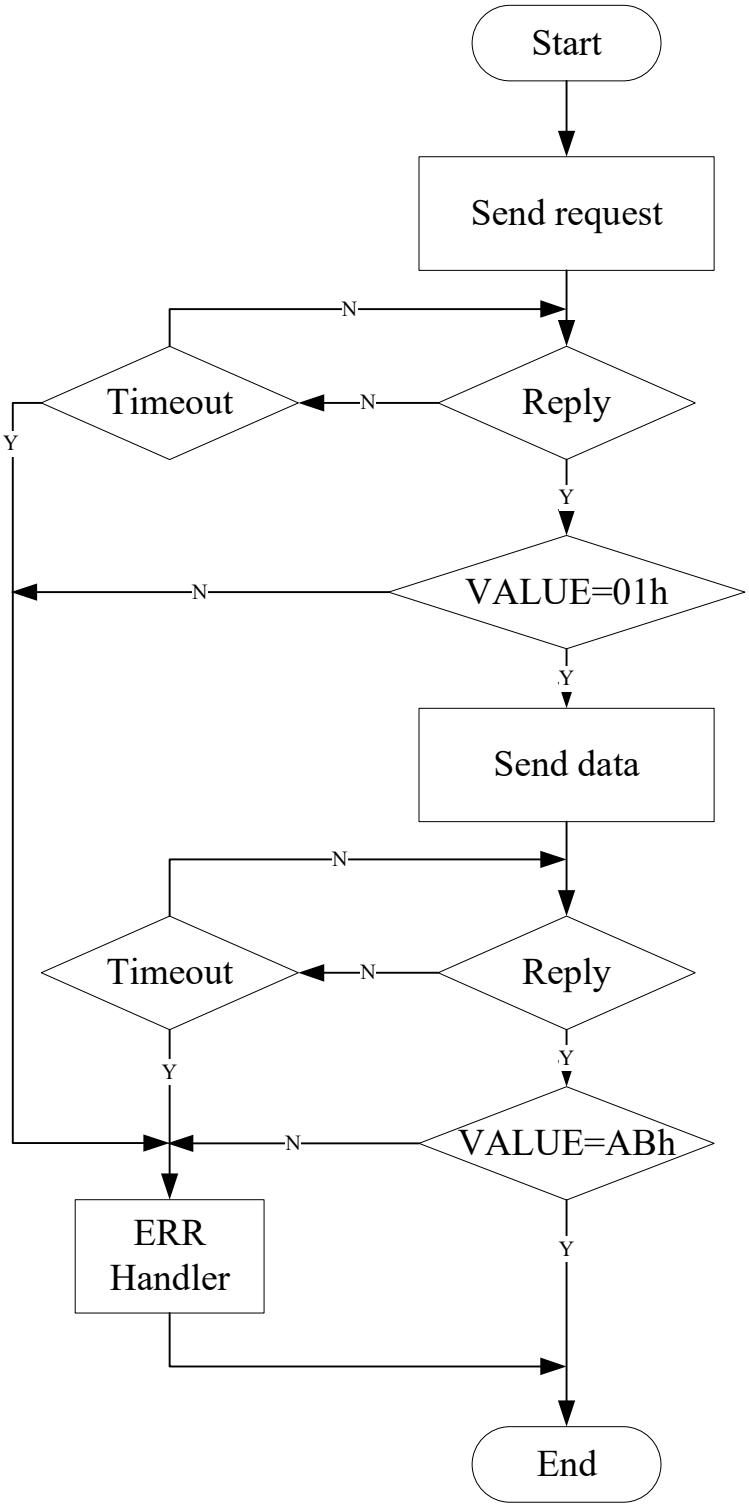


Image Receive Module on MCU Side