

Mini_COFDM Ethernet module communication control protocol

1. The module configuration parameters are written by writing a 256x8 of RAM To achieve this, the configured parameters are valid after saving reset, or powering on again.
2. RAM Parameter Description
The module configuration parameters are written by writing a256x8of RAM To achieve this, the configured parameters are valid after saving and resetting or powering on again. After the system is powered on or reset, the serial port will print {AAAAA}
3. RAM Parameter Description
RAM[0] : System reset control, readable and writable, Reading and writing represent different meanings:
4. Writing
 - 00 => Reset the whole system,Serial returns {AAAAA}, indicating that the system has been reset
 - 01 => Save the parameters set by the user, Serial returns {000101}, Indicates successful execution
 - 02 => Restore parameters to system default parameters, Serial returns {000202}, indicating successful execution
 - 03=> Search for the frequency point of the specified bandwidth. The serial port returns {000303},Indicates successful execution
 - 04=> Search for the specified frequency when the parameters are known, return {000404}, Indicates successful execution
 - 05=> reloadkey, Serial port parameter setting of transmitting parameters and data serial port, returns {000505}, Indicates successful execution
 - 06=> Dynamically modify the decay parameters of the emission (writeRAM[8]The attenuation value takes effect immediately after the command is issued, and does not reset the emission. After power off, power on againRAM[8]is the previously saved value), return{000606}, Indicates successful execution

other=> reserve

read:

Bit[0] =>

'1' = transmitter RF frequency lock

'0' = Transmitter RF Frequency not locked

Bit[1] =>

'1' = take over RF frequency lock

'0' = take over RF Frequency not locked

Bit[7:2] => reserve

RAM[1]: Function module working state setting, and data serial port rate, readable and writable,

Defaults0X44 Bit[7:4]: serial speed

"0000" =1200,

"0001"=2400,

"0010"=4800,

"0011"=9600,

"0100"=19200,
"0101"=38400,
"0110"=57600,
"0111"=115200
"1000"=230400,
"1001"~"1111"=reserved

Bit[3] :Parity

'0'=even effect test,
'1'=miraculous effect

Bit[2] :parity switch

'1'=open
'0'=close

Bit[1]: Receive module working status

'1'=Receiver module off
'0'=Receiver module works normally

Bit[0]: Transmitter working status

'1'=Transmitter module off
'0'=The transmitter module works normally

RAM[2]: Transmit bandwidth, readable and writable

Defaults 0X14,Divide the corresponding decimal number by10 The bandwidth set for, ranges from20~80,include20(2mbandwidth) and80(8mbandwidth)
other=> reserve

RAM[3]~ RAM[4]: Transmitter module RF center frequency, readable and writable. Defaults
RAM[3] = 0X0D, RAM[4] = 0X48

In units of 100KHz. The maximum value is 25000 and the minimum value is 500

RAM[5]: Transmitter module FEC Code rate, readable and writable, Defaults 0X00

00 => 1/2
01 => 2/3
02 => 3/4
03 => 5/6
04 => 7/8
other=> reserve

RAM[6]: Transmitting module modulation mode, readable and writable, Defaults 0X00

00 => QPSK(4QAM)
01 => 16QAM
02 => 64QAM
other=> reserve

RAM[7]: Transmitting module guard interval, readable and writable, Defaults 0X00

00 => 1/32
01 => 1/16
02 => 1/8
03 => 1/4
other=> reserve

RAM[8]: launch module RF Output power attenuation value, readable and

writable, The default value is 0X00

00: 0db

01: 1 db

02: 2 dB;

.....

0F: 15 db

other=> reserve

RAM[9]: Receive frequency bandwidth, readable and writable, Defaults 0X14

Divide the corresponding decimal number by 10. The bandwidth set for, ranges from 20~80, include 20 (2M Bandwidth) and 80 (8M Bandwidth)

other=> reserve

RAM[10]~RAM[11]: receiving module RF center frequency, range 158M to 860M readable and writable Defaults RAM[10] = 0X0D, RAM[11] = 0X48

In units of 100KHz. The maximum value is 90000 and the minimum value is

2000

RAM[12]~RAM[21]: Receive searched channel parameters, read-only,

struct dibDVBTChannel {

int8_t spectrum_inversion;

int8_t nfft;

int8_t guard;

int8_t constellation;

int8_t hrch;

int8_t alpha;

int8_t code_rate_hp;

int8_t code_rate_lp;

int8_t select_hp;

int8_t intlv_native;

} dvbt;

RAM[22]~RAM[37]: The encryption key, the readable and writable, Default value is all zeros

RAM[22] : 128 bit encryption key[127-120]bit

RAM[23] : 128 bit encryption key[119-112]bit

RAM[24] : 128 bit encryption key[111-104]bit

RAM[25] : 128 bit encryption key[103-96]bit

RAM[26] : 128 bit encryption key[95-88]

RAM[27] : 128 bit encryption key[87-80]bit

RAM[28] : 128 bit encryption key[79-72]bit

RAM[29] : 128 bit encryption key[71-64]bit

RAM[30] : 128 bit encryption key[63-56]bit

RAM[31] : 128 bit encryption key[55-48]bit

RAM[32] : 128 bit encryption key[47-40]bit

RAM[33] : 128 bit encryption key[39-32]bit

RAM[34] : 128 bit encryption key[31-24]bit

RAM[35] : 128 bit encryption key[23-16]bit

RAM[36] : 128 bit encryption key[15-8]bit

RAM[37] :128 bit encryption key[7-0]bit

illustrate[127 arrive 0]all for0,no encryption

RAM[40]~RAM[43]: For calculating the signal-to-noise ratio

RAM[44]~RAM[45]: calculate RF power

RAM[46]~RAM[48]: calculate RF power

Others RAM Reserved, cannot read or write its contents

7. Module configuration command

The configuration command is realized by sending commands to it through the serial port

Command format: {+opcode+RAM address+<operand>+check code+} symbol {} inside is

ASCII expressed in code16 base number

{ : Indicates the start of the command

+ : Indicates that only the connection is indicated here,for illustration,does not exist in the actual command

<> : Indicates that there is no

} : Indicates the end of the command

opcode: 00 means to write, FF means to read,1 byte

RAM address: 1 byte

operand: the operand of the command1 byte, in read operation: This byte does not

check code: (opcode+ Register address+ <operand>) mod 256

command return format:

Operation successful return format: {+register address+register value+check code+}

reset command did not return

Operation failure return format {FFFFFF}