LTDZ_23.5M-6000M
RF signal source instructions

1. Product Introduction

Using MAX2870, STM32F103C8T6, 90*160 (0.96 inch) oled color display, CH340GUSB to serial chip. The following functions can be realized.

（1）23.5M-6000M Signal output;

（2）Accuracy:0.001mhz；

（3）-4dB、-1dB、+2dB、+5dB Power regulation；

（4）Support frequency sweep function；

（5）Support SCM serial port control, SCM sends commands through serial port interface to adjust frequency output and power control。

（6）Support USB serial port to send commands to adjust frequency output and power control。

2.Point frequency function Instructions

Use the left and right buttons to move the cursor to select different positions, and use the up and down buttons to modify the values at the corresponding positions. The output will change in time as the value changes. The middle button can exit the point frequency mode.

3. Scanning instructions

Use the left and right buttons to move the cursor to select different positions, and use the up and down buttons to modify the values at the corresponding positions. You can set continuous scan mode and single scan mode. After setting the start frequency and stop frequency, you can turn on or off the frequency sweep by changing the status. The middle button can exit the sweep mode.

4. Description of frequency sweep setting function

This function can adjust the step frequency and interval time when sweeping the frequency. The default bit is 1Mhz, 10ms.

2. Explanation of serial port protocol

Serial protocol

head		Integer frequency		Fractional frequency		Power Control	tail	
0x55	0X55	0X??	0X??	0X??	0X??	0X??	0X0d	0X0a
Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte6	Byte 7	Byte88	Byte9
Fixed value		H8	L8	H8	L8	1、2、3、4	Fixed value	

Related instructions:

The protocol consists of 9 bytes, byte 1 and byte 2 must be 0X55 0X55. Byte 3 and byte 4 represent the upper 8 bits and the lower 8 bits of the integer part of the frequency, respectively. Byte 5 and Byte 6 represent the upper 8 bits and lower 8 bits of the fractional part of the frequency, respectively. Byte 7 represents the output power. Byte 8 and byte 9 must be 0X0d and 0X0a; the communication baud rate is a fixed value: 115200;

E.g：

100.123Mhz Frequency command

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte6	Byte 7	Byte88	Byte9
0x55	0X55	0X00	0X64	0X00	0X7b	0X01	Byte88	Byte9
Fixed value		H8	L8	H8	L8	1、2、3、4	Fixed value	
		100		123				

100.123Mhz +5dB Frequency command：0X55 0X55 0X00 0X64 0X00 0X7b 0x04 0X0d 0X0a

100.123Mhz +2dB Frequency command：0X55 0X55 0X00 0X64 0X00 0X7b 0x03 0X0d 0X0a

100.123Mhz -1dB Frequency command：0X55 0X55 0X00 0X64 0X00 0X7b 0x02 0X0d 0X0a

100.123Mhz -4dB Frequency command：0X55 0X55 0X00 0X64 0X00 0X7b 0x01 0X0d 0X0a

2000.456Mh Frequency command

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte6	Byte 7	Byte88	Byte9
0x55	0X55	0X07	0Xd0	0X01	0Xc8	0X01	Byte88	Byte9
Fixed value		H8	L8	H8	L8	1、2、3、4	Fixed value	
		2000		456				

2000.456Mhz +5dB Frequency command：0X55 0X55 0X07 0Xd0 0X01 0Xc8 0x04 0X0d 0X0a

2000.456Mhz +2dB Frequency command：0X55 0X55 0X07 0Xd0 0X01 0Xc8 0x03 0X0d 0X0a

2000.456Mhz -1dB Frequency command：0X55 0X55 0X07 0Xd0 0X01 0Xc8 0x02 0X0d 0X0a

2000.456Mhz -4dB Frequency command：0X55 0X55 0X07 0Xd0 0X01 0Xc8 0x01 0X0d 0X0a

It can be found in the table that both the integer part and the decimal part are directly sent integer data, for example, the integer part is 100, and the high 8 bits and low 8 bits of the value 100 are directly sent in the instruction. The decimal part is 123, and the upper 8 bits and lower 8 bits of 123 are sent directly in the instruction. After the MCU receives the instruction, it will automatically synthesize the two integer data into the floating point data required.

Note:Computer USB and MCU serial control cannot be used at the same time.

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