VC870 Protocol

communication interface.

1. Baud rate of RS232 serial interface is 9600 bits / S, a frame message is 10 bit: no parity, 1 bit start bit (0), 8 data bits (low bit onward) (1), 1 bit stop bit (1).

mcu transmission packet format

1 Function   rs232_dat[0]

2 Function Select Function_ select   rs232_dat[1]

Function code	Function_ select code	Measurement mode
0x30 (0110000)	0x30 (0110000)	DCV
0x30 (0110000)	0x31 (0110001)	ACV
0x31 (0110001)	0x30 (0110000)	DCmV
0x31 (0110001)	0x31 (0110001)	Celsius ( )
0x32 (0110010)	0x30 (0110000)	Resistance OHM
0x32 (0110010)	0x31 (0110001)	Short-circuit test CTN
0x33 (0110011)	0x30(0110000)	Capacitance CAP
0x34 (0110100)	0x30 (0110000)	Diode DIO
0x35 (0110101)	0x30 (0110000)	Frequency
0x35(0110101)	0x31 (0110001)	(4~20mA)%
0x36 (0110110)	0x30 (0110000)	DCuA
0x36 (0110110)	0x31 (0110001)	ACuA
0x37 (0110111)	0x30 (0110000)	DCmA
0x37 (0110111)	0x31 (0110000)	ACmA
0x38 (0111000)	0x30 (0110000)	DCA
0x38 (0111000)	0x31 (0110000)	ACA
0x39 (0111001)	0x30 (0110000)	Active power +Apparent power
0x39 (0111001)	0x31 (0110000)	Power factor+ Frequency
0x39(0111001)	0x32(0110000)	Voltage effective value +current effective value

3 Main Display Range   rs232_dat[2]

code	DCV	ACV	DCmV	OHM	CAP	DCuA	DCmA	DCA	ACuA	ACmA	ACA	W
0110000	4V	4V	400mV	400Ω	40nF	400uA	40mA	10A	400uA	40mA	10A	
0110001	40V	40V		4KΩ	400 nF	4000uA	400mA		4000uA	400mA		
0110010	400V	400V		40KΩ	4000 nF							
0110011	1000V	1000V		400KΩ	40uF							
0110100				4MΩ	400μF							
0110101				40MΩ	4mF							
0110110					40mF							

4 Main display value   DISP1_DIGIT4~DISP1_DIGIT0   rs232_dat[3]   rs232_dat[4]   rs232_dat[5]   rs232_dat[6]   rs232_dat[7]

5 Auxiliary display value   DISP2_DIGIT4~DISP2_DIGIT0   rs232_dat[8]   rs232_dat[9]   rs232_dat[10]   rs232_dat[11]   rs232_dat[12]

Parameters	code
0	0110000
1	0110001
2	0110010
3	0110011
4	0110100
5	0110101
6	0110110

7	0110111
8	0111000
9	0111001

6 rs232_dat[13]   Simulate strip tens digit

   rs232_dat[14]   Simulate strip the single digit

   Simulate strip number: 0~39

7 Status   rs232_dat[15]

0	1	1	Sign2_flag	Sign1_flag	batt_flag	vc870_ol1_flag

8 Option1   rs232_dat[16]

0	1	1	max_flag	min_flag	maxmin_flag	rel_flag

9 Option2   rs232_dat[17]

0	1	1	vc870_ol2_flag	open_flag	manu_flag	hold_flag

10 Option3   rs232_dat[18]

0	1	1	light_flag	usb_flag	warning_flag	auto_power_fla

11 Option4   rs232_dat[19]

0	1	1	misplug_warn_flag	lo_flag	hi_flag	open_flag

12.. rs232_dat[20]

   0x31:LCD need Dual display

   0x30: LCDdoesn't need Dual display

13 CR   rs232_dat[21]

   0001101(0x0d)

14 LF   rs232_dat[22]

   00