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# **Interactive Intelligent Panel**

## **RS232 protocol specification**

# RS232 protocol specification

## 1 Introduction

This document describes the hardware interface specification and software protocols of RS232 interface communication between LED LCD and PC or other control unit with RS232 protocol.

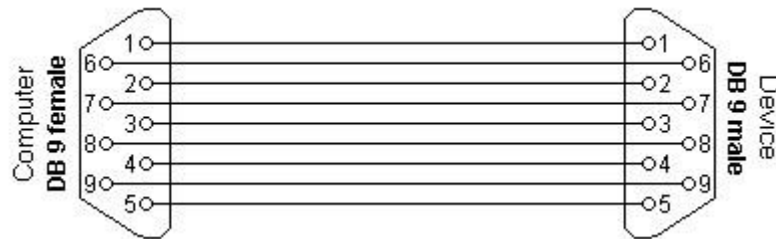
## 2 Communication requirements

### 2.1 Pin definition

- ◆ TV main board DB9 terminal



- ◆ Pin2 is TXD Pin3 is RXD. Pin to Pin connection as below.



### 2.2 Protocol

- ◆ Serial Port Settings:

Items	Value
Baud Rate	9600bps (fixed)
Data Bits	8 (fixed)
Stop Bits	1 (fixed)
Parity	None (fixed)
Stream Control	None (fixed)

- ◆ Command format

No.	Content	Description	Remark
1	0xAA	Head	Fixed value
2	0xBB		Fixed value
3	0xCC		Fixed value
4		Main	
5		Subcommand	
6	0x00	Length	Valid data
7	checksum	Checksum	Sum from No.4 to No.6
8	0xDD	End	Fixed value
9	0xEE		Fixed value
10	0xFF		Fixed value

### 3 Code list

Function	Mode	Code	Remark
Power	ON	AA BB CC 01 00 00 01 DD EE FF	
	OFF	AA BB CC 01 01 00 02 DD EE FF	
Source	AV(CVBS)	AA BB CC 02 02 00 04 DD EE FF	
	VGA1	AA BB CC 02 03 00 05 DD EE FF	
	VGA2	AA BB CC 02 04 00 06 DD EE FF	
	HDMI1	AA BB CC 02 06 00 08 DD EE FF	
	HDMI2	AA BB CC 02 07 00 09 DD EE FF	
	HDMI3	AA BB CC 02 05 00 07 DD EE FF	
	Android	AA BB CC 02 0A 00 0C DD EE FF	
	YPBPR	AA BB CC 02 0F 00 05 DD EE FF	
	DP	AA BB CC 02 11 00 13 DD EE FF	
Volume	000 - 100	AA BB CC 03 00 xx ** DD EE FF	
	MUTE	AA BB CC 03 01 00 04 DD EE FF	
	UNMUTE	AA BB CC 03 01 01 05 DD EE FF	
Aspect Ratio	16:9	AA BB CC 08 00 00 08 DD EE FF	
	4:3	AA BB CC 08 01 00 09 DD EE FF	
	PTP	AA BB CC 08 07 00 0F DD EE FF	

xx = from 0 to 100, for Volume.

Ex. Volume = 30(Decimal) = 1E (Hex), xx=1E and \*\* = 03(Hex) +00(Hex) +1E (Hex) = 21(Hex).

XX = from 0 to 99, for TV Channel.

\*\* = XX + 05

Function	Mode	Code	Remark
Remote Control	WIN	AA BB CC 07 0B 00 12 DD EE FF	
	Space	AA BB CC 07 46 00 4D DD EE FF	
	Alt + Tab	AA BB CC 07 1D 00 24 DD EE FF	
	Alt+F4	AA BB CC 07 1F 00 26 DD EE FF	
	NUM_1	AA BB CC 07 00 00 07 DD EE FF	
	NUM_2	AA BB CC 07 10 00 17 DD EE FF	
	NUM_3	AA BB CC 07 11 00 18 DD EE FF	
	NUM_4	AA BB CC 07 13 00 1A DD EE FF	
	NUM_5	AA BB CC 07 14 00 1B DD EE FF	
	NUM_6	AA BB CC 07 15 00 1C DD EE FF	
	NUM_7	AA BB CC 07 17 00 1E DD EE FF	
	NUM_8	AA BB CC 07 18 00 1F DD EE FF	
	NUM_9	AA BB CC 07 19 00 20 DD EE FF	
	NUM_0	AA BB CC 07 1B 00 22 DD EE FF	
	Display	AA BB CC 07 1C 00 23 DD EE FF	
	Refresh	AA BB CC 07 4C 00 53 DD EE FF	
	Input	AA BB CC 07 07 00 0E DD EE FF	
	Home	AA BB CC 07 48 00 4F DD EE FF	
	Menu	AA BB CC 07 0D 00 14 DD EE FF	
	Delete	AA BB CC 07 40 00 47 DD EE FF	
	Energy	AA BB CC 07 4E 00 55 DD EE FF	
UP	AA BB CC 07 47 00 4E DD EE FF		
DOWN	AA BB CC 07 4D 00 54 DD EE FF		

LEFT	AA BB CC 07 49 00 50 DD EE FF	
RIGHT	AA BB CC 07 4B 00 52 DD EE FF	
ENTER	AA BB CC 07 4A 00 51 DD EE FF	
Point	AA BB CC 07 06 00 0D DD EE FF	
Back	AA BB CC 07 0A 00 11 DD EE FF	
CH+	AA BB CC 07 02 00 09 DD EE FF	
CH-	AA BB CC 07 09 00 10 DD EE FF	
VOL+	AA BB CC 07 03 00 0A DD EE FF	
VOL-	AA BB CC 07 41 00 48 DD EE FF	
PageUp	AA BB CC 07 42 00 49 DD EE FF	
PageDown	AA BB CC 07 0F 00 16 DD EE FF	
F1	AA BB CC 07 45 00 4C DD EE FF	
F2	AA BB CC 07 12 00 19 DD EE FF	
F3	AA BB CC 07 51 00 58 DD EE FF	
F4	AA BB CC 07 5B 00 62 DD EE FF	
F5	AA BB CC 07 44 00 4B DD EE FF	
F6	AA BB CC 07 50 00 57 DD EE FF	
F7	AA BB CC 07 43 00 4A DD EE FF	
F8	AA BB CC 07 1A 00 21 DD EE FF	
F9	AA BB CC 07 04 00 0B DD EE FF	
F10	AA BB CC 07 59 00 60 DD EE FF	
F11	AA BB CC 07 57 00 5E DD EE FF	
F12	AA BB CC 07 08 00 0F DD EE FF	
RED	AA BB CC 07 5C 00 63 DD EE FF	
GREEN	AA BB CC 07 5D 00 64 DD EE FF	
YELLOW	AA BB CC 07 5E 00 65 DD EE FF	
BLUE	AA BB CC 07 5F 00 66 DD EE FF	

Polling Code List:

Mode	Code	Response	Status
Power Status	AA BB CC 01 02 00 03 DD EE FF	AA BB CC 80 00 00 80 DD EE FF	ON
		AA BB CC 80 01 00 81 DD EE FF	OFF
Volume Status	AA BB CC 03 02 00 05 DD EE FF	AA BB CC 82 00 xx ** DD EE FF	Volume = xx
Mute Status	AA BB CC 03 03 00 06 DD EE FF	AA BB CC 82 01 00 83 DD EE FF	MUTE
		AA BB CC 82 01 01 84 DD EE FF	UNMUTE
Source Status	AA BB CC 02 00 00 02 DD EE FF	AA BB CC 81 02 00 83 DD EE FF	AV(CVBS)
		AA BB CC 81 03 00 84 DD EE FF	VGA1
		AA BB CC 81 04 00 85 DD EE FF	VGA2
		AA BB CC 81 05 00 86 DD EE FF	HDMI3
		AA BB CC 81 06 00 87 DD EE FF	HDMI1
		AA BB CC 81 07 00 88 DD EE FF	HDMI2
		AA BB CC 81 0A 00 8B DD EE FF	ANDROID
		AA BB CC 81 0F 00 90 DD EE FF	YPBPR
		AA BB CC 81 11 00 92 DD EE FF	DP

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