

# RS232C Protocol

for CTOUCH 46"/55"/82" LCD Interactive  
(82" Model "B")

Before using the RS-232C CABLE short of the wire#8 &# 9 must.

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## 1. Introduction

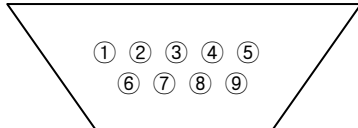
This document describes the hardware interface spec and software protocols of RS232 interface communication between PC and MONITOR(LCD INTERACTIVE)

## 2. Communication Protocol

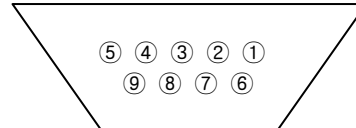
### - Hardware Specification

- Connector type : DSUB 9 Pin Male and Female
- Pin Assignment

Male DSUB 9 Pin(Outside View)



Female DSUB 9 Pin(Outside View)



Pin	Signal	Remark
1	GND	MO GND↔PC GND
2	Rx	MONITOR→PC
3	Tx	PC→ MONITOR
4	NC	
5	NC	
6	NC	
7	NC	
8	Open	Use the RS232C port (Pin8 & Pin9 Shunt)
9	Open	
frame	GND	

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### - Communication Setting

- Port : COM1~COM5
- Baud Rate : 9600 bps
- Data Bit : 8 Bit
- Stop Bit : 1 Bit
- Parity Bit : No Parity

### - Command Message Reference

- Transmission format

Name	CMD1	CMD2	Space	SetID1	SetID2	Space	Data1	Data2
Byte	1 Byte	1 Byte	1 Byte	1 Byte	1 Byte	1 Byte	1 Byte	1 Byte

Ex) kc 00 01

- Ack format

Succes	CMD1	CMD2	Space	SetID1	SetID2	Space	Data1	Data2	Space	O	K
Failure	CMD1	CMD2	Space	SetID1	SetID2	Space	Data1	Data2	Space	N	G
Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte	1Byte

Ex) Succes : kc 00 01 OK

Failure : kc 00 07 NG

- ✓ CMD1, CMD2 : Function command value that appeared on the below command list
- ✓ Space : space 1 character
- ✓ Set ID1, Set ID2 : This is ID of TV, set the figure between 0 and 99 on main menu of TV. Set ID 0 is a TV set as a global ID. In short, in the case of '0' figure of Set ID all of TV sets must play by receiving command, otherwise, only TV set must be responding which matching with Set ID.
- ✓ Data1, Data2 : Function data value that appeared on the below command list
- ✓ OK : Transmission success
- ✓ NG : Transmission failure

**- Remocon and key disable scenario**

When need to disable with standard IR or Key by communication for control the TV then do use the 'Remocon On/ Remocon Off' on the command list. But resetting the figures by this command should be reset every system rebooting or power on due to the clear. Default is key enable.

**3. Command List**

**- Power Control**

Command1	Command2	Data	Remark
'k'	'a'	00 : Power Off 01 : Power On	

**- Input Source Control**

Command1	Command2	Data	Remark
'k'	'b'	00 : TV 01 : SCART 02 : AV 03 : S-VIDEO 04 : COMPONENT 07 : PC 09 : HDMI1 0a : HDMI2 0b : HDMI3	Source Mode is different by System

**- ARC Control**

Command1	Command2	Data	Remark
'k'	'c'	00 : Auto 01 : 4 :3 02 : 16 :9 03 : 14 :9 04 : Zoom1 05 : Zoom2 06 : Spectacle	ARC Mode is different by Input mode

**- Picture Control**

Command1	Command2	Data	Remark
'k'	'u' : Color Temp.	00 : Normal 01 : Cool 02 : Warm	
	'g' : Contrast	00 ~ 100	
	'h' : Brightness		
	'k' : Sharpness		
	'i' : Color		
	'j' : Tint		R50 ~ G50

**- Sound Control**

Command1	Command2	Data	Remark
'k'	'e' : Mute	00 : Mute On 01 : Mute Off	
	'f' : Volume	00 ~ 100	
	't' : Balance		L50 ~ R50

**- Remote Control**

Command1	Command2	Data	Remark
'k'	'm'	00 : Remocon On 01 : Remocon Off	

**- Remote Control Key Command**

Command1	Command2	Data	Remark
'm'	'c'	80 : POWER	
		95 : MENU	
		8f : ◀	
		8d : ▲	
		8c : ENTER	
		90 : ▶	
		8e : ▼	
		96 : EXIT	
		ac : SOURCE	

## Application for below A/D board



1. AC Power In.(100V ~ 240V)
2. USB(for Touch)
3. RS-232 Input.(Software Update)
4. HDMI 1, 2, 3 Input.
5. PC(RGB) Input.
6. PC(Audio) Input.
7. SPIDF (Optical) Audio Output.
8. S-Video Input.
9. AV Input.
10. Component.(Input)
11. Sound Output.
12. SCART Input.
13. Sound Out.(2ch 8W , 8 Ohm )