

# RS232C Protocol

## **70" LED INTERACTIVE**

(Applied to page of the I/O terminal models.).

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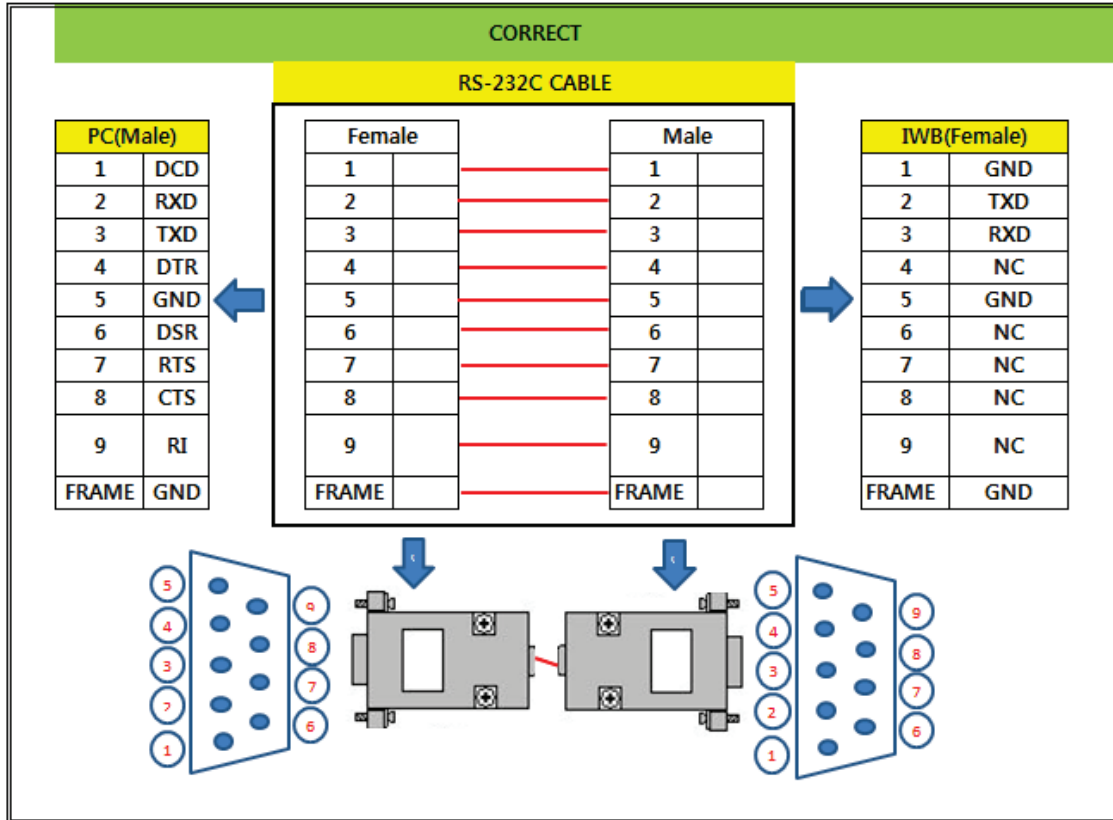
## 1. Introduction

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



- 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

|         |       |       |       |        |        |       |       |       |       |       |       |
|---------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|
| Success | 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) Success : 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<br>01 : Power On |        |

**- Input Source Control**

| Command1 | Command2 | Data   | Remark                             |
|----------|----------|--|------------------------------------|
| 'k'      | 'b'      | <del>00 : TV</del><br><del>01 : SCART</del><br>02 : AV(Optional)<br><del>03 : S-VIDEO</del><br>04 : COMPONENT<br>(Option)<br>07 : PC<br>09 : HDMI1<br>0a : HDMI2<br>0b : HDMI3<br><del>0c : DP</del> | Source Mode is different by System |

**- ARC Control**

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

**- Picture Control**

| Command1 | Command2          | Data                                  | Remark    |
|----------|-------------------|---------------------------------------|-----------|
| 'k'      | 'u' : Color Temp. | 00 : Normal<br>01 : Cool<br>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<br>01 : Mute Off |           |
|          | 'f' : Volume  | 00 ~ 100                      |           |
|          | 't' : Balance |                               | L50 ~ R50 |

**- Remote Control**

| Command1 | Command2 | Data                                | Remark |
|----------|----------|-------------------------------------|--------|
| 'k'      | 'm'      | 00 : Remocon On<br>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**

