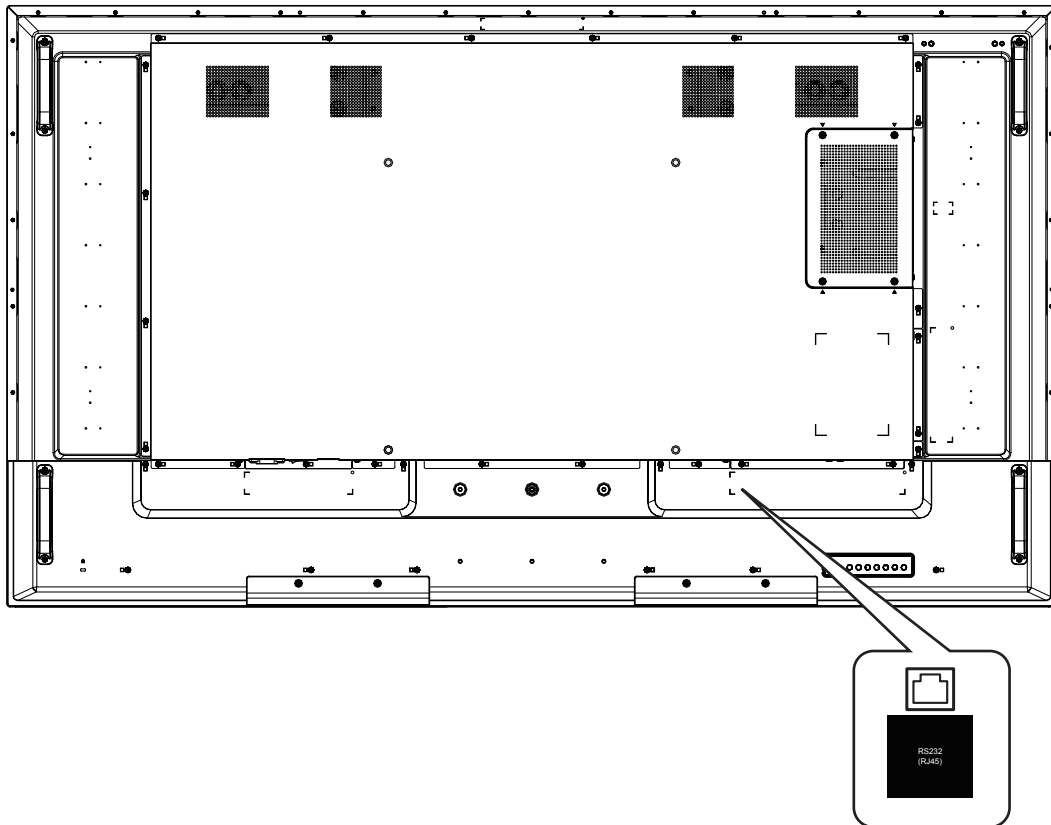# Hisense

EXTERNAL RS232 CONTROL GUIDE

RS232
(RJ45)

E SERIES | M SERIES | WR SERIES

INTRODUCTION

Our users can control a Hisense display from an external source via RS-232. This user guide will provide all of the command structures and system parameters required to confidently control Hisense commercial displays via a PC or a 3rd party control system.
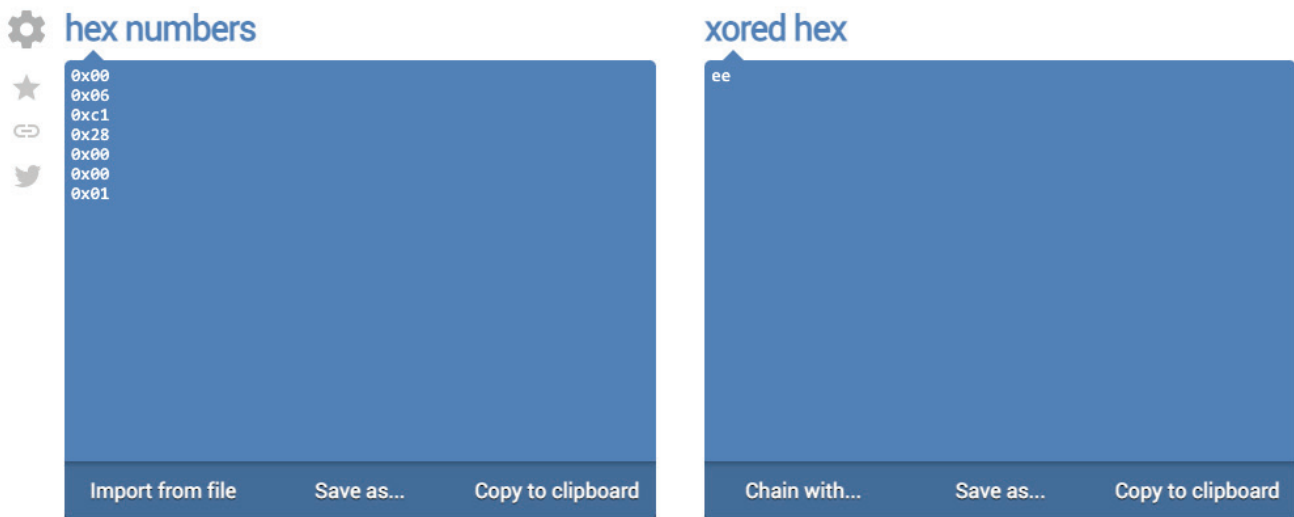
RS-232 COMMANDS

HISENSE RS232 commands are HEX codes, not ASCII format.

Where applicable, codes contain the ID of the screen you are trying to control. Denoted by "yy" in the codes within the below table. A value of "00" for "yy" will broadcast the command to all of the screens connected to the RS232 port. This might be all of the panels in a video wall daisy chained together for control. A value of "01" for example, will lead to control of the panel with ID 01 only.

Some control codes require an XOR operation on some of its HEX bytes in order to generate the "check bit", the HEX number denoted by "xx" in the code table. The HEX numbers that need to be XORed are highlighted in green. Example codes are given and XOR calculations can be made using this online calculator:

https://onlinehextools.com/xor-hex-numbers

Each HEX number from the code that needs to be XORed is input into the left hand box on the page, each on a separate line. The XORed result is shown in the right hand box on the page.

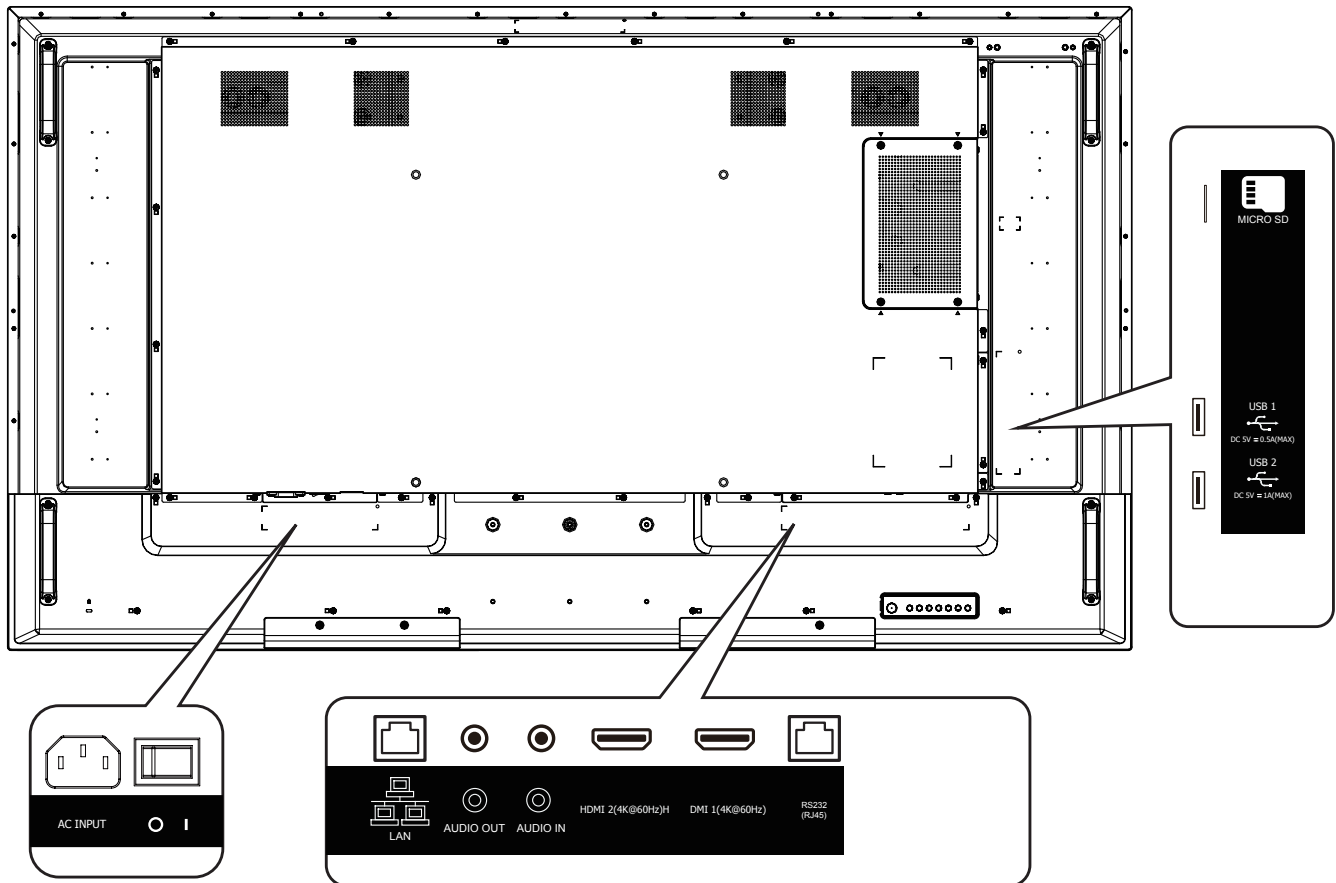| hex numbers	xored hex
0x00 0x06 0xc1 0x28 0x00 0x00 0x01	ee
Import from file Save as... Copy to clipboard	Chain with... Save as... Copy to clipboard

The value of "xx" (the check bit) will change as you alter the ID of the screen you wish to control. So the value of "xx" is not the same for controlling a screen with an ID of 01 and a screen on ID 22 for example. So the code sent to the screen for control is different.

Some commands have discrete control of settings such as volume. So they have another HEX value that can be altered. Notes are included in the table on how to use these where applicable. A table of HEX values for 0 to 100 are included in the back of this document for reference.

Need to work out the best and most consistent way to display the actual commands (maybe landscape) – none of these code examples are real.
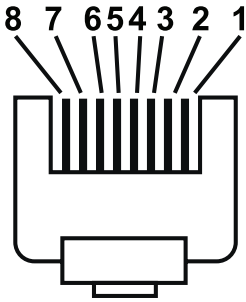
E SERIES - DIGITAL SIGNAGE

Connectivity Diagram

MICRO SD

USB 1
DC 5V ⎓ 0.5A(MAX)

USB 2
DC 5V ⎓ 1A(MAX)

AC INPUT   O I

LAN   AUDIO OUT   AUDIO IN   HDMI 2(4K@60Hz)H   DMI 1(4K@60Hz)   RS232 (RJ45)

Included in the box –

1 x RJ45 – RS-232 cable

PIN CONFIGURATION

Rj-45 Jack (Male)

8 7 6 5 4 3 2 1

Rj-45 Jack (Female)

1 2 3 4 5 6 7 8
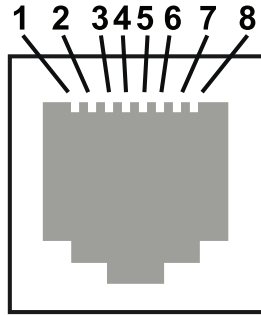
Pin	Signal
1	
2	
3	
4	GND
5	RX
6	
7	TX
8	

DB-9 Male
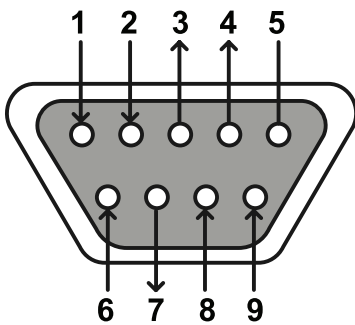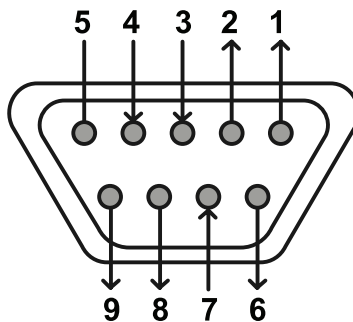
1 2 3 4 5
6 7 8 9

DB-9 Female

5 4 3 2 1
9 8 7 6

Pin	Signal
1	
2	RX
3	TX
4	
5	GND
6	
7	
8	

Please use table below when wiring a cable.

Pin out Connection	
RJ45	**DB-9F**
1	
2	
3	
4	5
5	2
6	
7	3
8	

DATA PARAMETERS

E-SERIES	
Baud Rate	115200
Data length (bits)	8
Parity	None
Stop bit	1
Flow control	None

RS-232 COMMANDS

| Description	Command (HEX Bytes)	Example (to screen ID 01)	Notes
Power On	A6 xx 00 00 00 00 04 01 18 02 yy	A6 01 00 00 00 00 04 01 18 02 B8	Uart Wake On function must be On
Power Off	A6 xx 00 00 00 04 01 18 01 yy	A6 01 00 00 00 00 05 01 B0 00 74 67	
HDMI 1 Input	A6 xx 00 00 00 00 04 01 AC 0D yy	A6 01 00 00 00 00 04 01 AC 0D 03	
HDMI 2 Input	A6 xx 00 00 00 04 01 AC 06 yy	A6 01 00 00 00 00 04 01 AC 06 08	
OPS Input	A6 xx 00 00 00 00 04 01 AC 0B yy	A6 01 00 00 00 00 04 01 AC 0B 05	
CMS Input	A6 xx 00 00 00 04 01 AC 15 yy	A6 01 00 00 00 00 04 01 AC 15 1B	
PDF Input	A6 xx 00 00 00 04 01 AC 17 yy	A6 01 00 00 00 00 04 01 AC 17 19	
Media Input	A6 xx 00 00 00 04 01 AC 16 yy	A6 01 00 00 00 00 04 01 AC 16 18	
USB Input	A6 xx 00 00 00 04 01 AC 0C yy	A6 01 00 00 00 00 04 01 AC 0C 02	
Set Volume	A6 xx 00 00 00 04 01 44 vv yy	A6 01 00 00 00 00 04 01 44 4D AB	vv is 4D, volume 77 in the example.
Set Mains Application Mode	A6 01 00 00 00 04 01 A3 ww yy	A6 01 00 00 00 00 04 01 A3 00 01	ww is 00 for standby in the example.
Query Input Selection	A6 xx 00 00 00 03 01 AD yy	A6 01 00 00 00 00 03 01 AD 08	zz is the currently selected input. 0D for HDMI 1, 06 for HDMI 2, 0B for OPS, 15 for CMS, 17 for PDF, 16 for Media, 0C for USB and 14 for Home Screen.
Query Power State	A6 xx 00 00 00 03 01 19 yy	A6 01 00 00 00 00 03 01 19 BC	zz is the current power state. 01 for Off and 02 for On.
Query Software version	A6 xx 00 00 00 04 01 A2 02 yy	A6 01 00 00 00 00 04 01 A2 02 02	Get platform version
Query Volume Level	A6 xx 00 00 00 03 01 45 yy	A6 01 00 00 00 00 03 01 45 E0	Get volume
Source Menu		A6 01 00 00 00 00 05 01 B0 00 FA E9	
Settings Menu		A6 01 00 00 00 00 05 01 B0 00 FD EE	
Up		A6 01 00 00 00 00 05 01 B0 00 67 74	
Down		A6 01 00 00 00 00 05 01 B0 00 6C 7F	
Ok		A6 01 00 00 00 00 05 01 B0 00 1C 0F	
Right		A6 01 00 00 00 00 05 01 B0 00 6A 79	
Left		A6 01 00 00 00 00 05 01 B0 00 69 7A	
Home		A6 01 00 00 00 00 05 01 B0 00 66 75	
Vol+		A6 01 00 00 00 00 05 01 B0 00 73 60	
Vol-		A6 01 00 00 00 00 05 01 B0 00 72 61	
Return		A6 01 00 00 00 00 05 01 B0 00 9E 8D	

Where xx is screm ID (01 to FF).

Where yy is the check bit, an XOR or all the Hex bytes highlighted in red.

Where vv is the volume level to be set. 0 - 100 in Hex.

Where ww is the mains application mode. 00 for Standby, 01 for Power On and 02 for last known state

M SERIES - 24/7 DIGITAL SIGNAGE
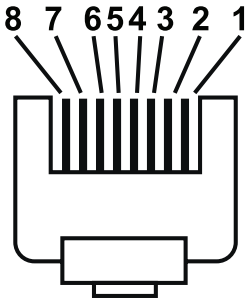
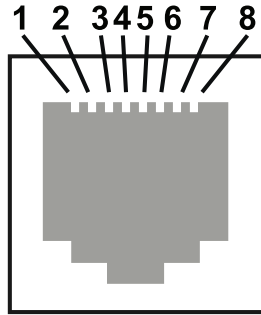## Connectivity Diagram
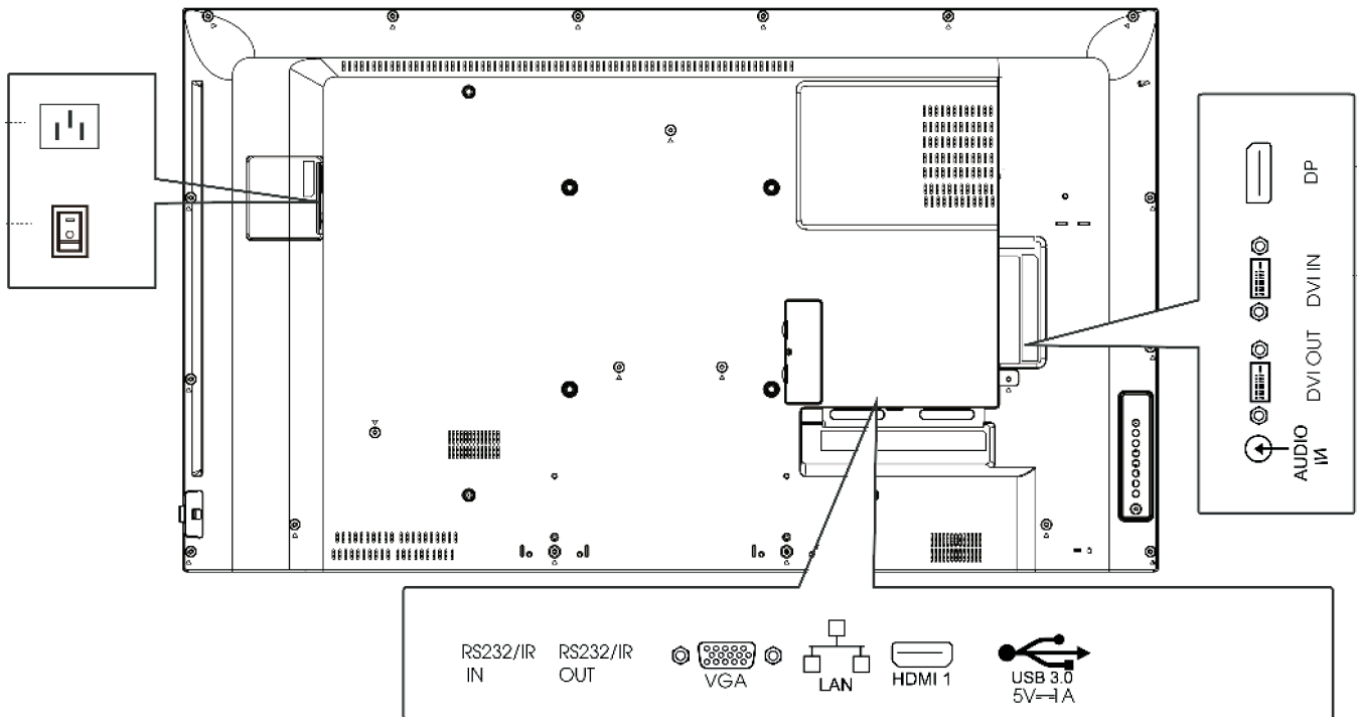
Included in the box –
1 x RJ45 – RS-232 cable
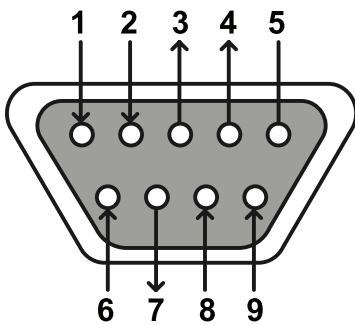
PIN CONFIGURATION

Rj-45 Jack (Male)

Rj-45 Jack (Female)

Pin	Signal
1	
2	
3	GND
4	
5	RX
6	
7	
8	TX

DB-9 Male

DB-9 Female
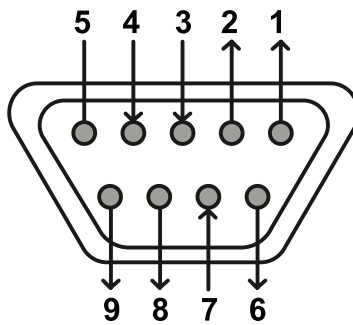
Pin	Signal
1	
2	RX
3	TX
4	
5	GND
6	
7	
8	

Please use table below when wiring a cable.

Pin out Connection	
RJ45	DB-9F
1	
2	
3	5
4	
5	3
6	
7	
8	2

DATA PARAMETERS

M-SERIES	
Baud Rate	9600
Data length (bits)	8
Parity	None
Stop bit	1
Flow control	None

RS-232 COMMANDS

Description	Command (HEX Bytes)	Example (to screen ID 01)	Feedback from Screen
Power On	DD FF 00 08 C1 15 00 00 xx BB BB yy BB CC	DD FF 00 08 C1 15 00 00 01 BB BB DD BB CC	AB AB 00 08 C1 15 00 00 xx BB BB yy CD CD
Power Off	DD FF 00 08 C1 15 00 00 xx AA AA yy BB CC	DD FF 00 08 C1 15 00 00 01 AA AA DD BB CC	AB AB 00 08 C1 15 00 00 xx AA AA yy CD CD
Displayport Input	DD FF 00 07 C1 08 00 00 xx 16 yy BB CC	DD FF 00 07 C1 08 00 00 01 16 D9 BB CC	AB AB 00 07 C1 08 00 00 xx 16 yy CD CD
VGA Input	DD FF 00 07 C1 08 00 00 xx 17 yy BB CC	DD FF 00 07 C1 08 00 00 01 17 D8 BB CC	AB AB 00 07 C1 08 00 00 xx 17 yy CD CD
HDMI Input	DD FF 00 07 C1 08 00 00 xx 08 yy BB CC	DD FF 00 07 C1 08 00 00 01 08 C7 BB CC	AB AB 00 07 C1 08 00 00 xx 08 yy CD CD
DVI Input	DD FF 00 07 C1 08 00 00 xx 09 yy BB CC	DD FF 00 07 C1 08 00 00 01 09 C6 BB CC	AB AB 00 07 C1 08 00 00 xx 09 yy CD CD
Mute Audio On	DD FF 00 07 C1 26 00 00 xx 01 yy BB CC	DD FF 00 07 C1 26 00 00 01 01 E0 BB CC	AB AB 00 07 C1 26 00 00 xx 01 yy CD CD
Mute Audio Off	DD FF 00 07 C1 26 00 00 xx 00 yy BB CC	DD FF 00 07 C1 26 00 00 01 00 E1 BB CC	AB AB 00 07 C1 26 00 00 xx 00 yy CD CD
Set Volume	DD FF 00 07 C1 27 00 00 xx vv yy BB CC	DD FF 00 07 C1 27 00 00 01 01 E1 BB CC	AB AB 00 07 C1 27 00 00 xx vv yy CD CD
Query Status	DD FF 00 06 C1 28 00 00 xx yy BB CC	DD FF 00 06 C1 28 00 00 01 EE BB CC	AB AB 00 0C 28 00 00 xx aa bb cc dd ee ff yy CD CD

Where xx is the ID of the TV in HEX. 01 to FF.

Where yy is the check bit. An XOR of the numbers highlighted in **red**.

Where vv is the volume level to set the TV to. 0 to 100 in Hex.

Where aa is the current volume level of the screen.

Where bb and cc represent the currently selected input source. 05 02 for DVI, 05 03 for displayport, 05 04 for HDMI and 08 01 for VGA.
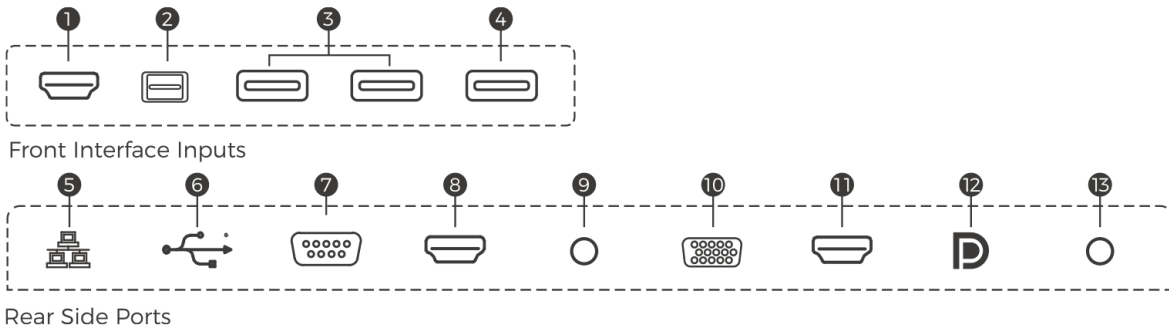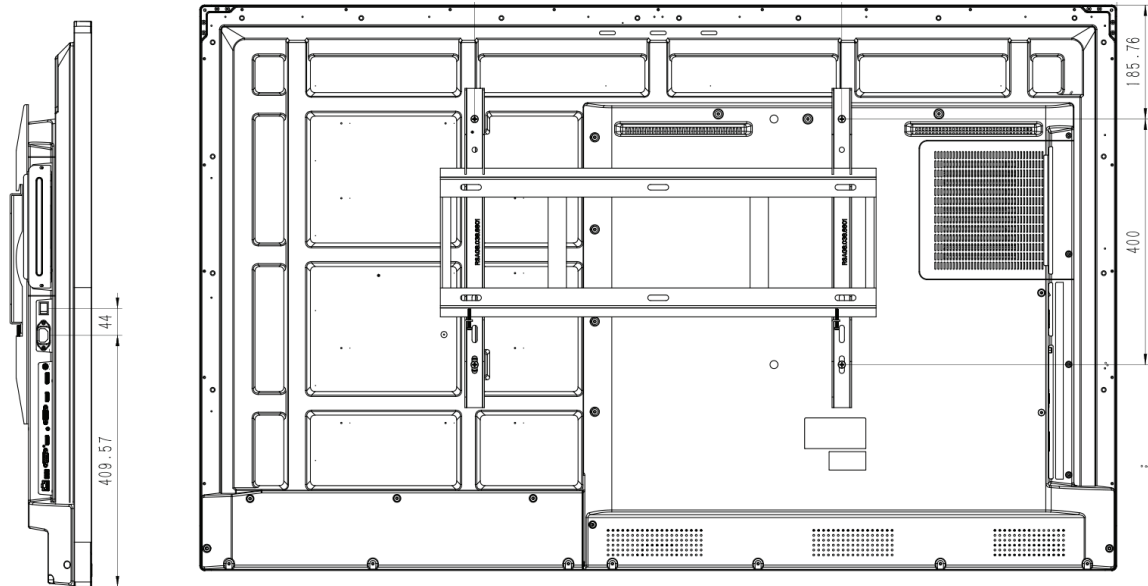
Where dd is the current power state of the screen. 00 for on and FF for off.

Where ee is the current mute state of the TV. 01 for muted and 00 for unmuted.

Where ff is the signal presence state. 00 mean a signal is absent and 01 means a signal is present at the selected input.
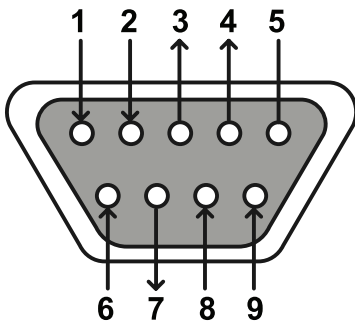
WR INTERACTIVE TOUCH DISPLAYS

Connectivity Diagram

Front Interface Inputs

Rear Side Ports

Included in the box –

1 x RJ45 – RS-232 cable

PIN CONFIGURATION

DB-9 Male

DB-9 Female

Pin	Signal
1	
2	RX
3	TX
4	
5	GND
6	
7	
8	

Hisense
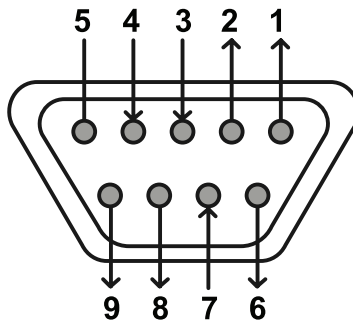
DATA PARAMETERS

WR-SERIES	
Baud Rate	9600
Data length (bits)	8
Parity	None
Stop bit	1
Flow control	None

RS-232 COMMANDS

Description	Command (HEX Bytes)	Feedback from Screen	Notes
Power On	DD FF 01 04 A1 00 00 00 BB CC	AB AB 01 04 A1 00 00 00 CD CD	
Power Off	DD FF 01 04 A1 01 00 00 BB CC	AB AB 01 04 A1 01 00 00 CD CD	
PC Input	DD FF 00 07 C1 08 00 00 01 04 CB BB CC	AB AB 00 07 C1 08 00 00 01 04 CB BB CC	
HDMI 1 Input	DD FF 00 07 C1 08 00 00 01 05 CA BB CC	AB AB 00 07 C1 08 00 00 01 05 CA BB CC	
HDMI 2 Input	DD FF 00 07 C1 08 00 00 01 06 C9 BB CC	AB AB 00 07 C1 08 00 00 01 06 C9 BB CC	
VGA Input	DD FF 00 07 C1 08 00 00 01 07 C8 BB CC	AB AB 00 07 C1 08 00 00 01 07 C8 BB CC	
DisplayPort Input	DD FF 00 07 C1 08 00 00 01 0B C4 BB CC	AB AB 00 07 C1 08 00 00 01 0B C4 BB CC	
Reboot TV	DD FF 00 06 C1 1E 00 00 01 D8 BB CC	AB AB 00 06 C1 1E 00 00 01 CD CD	
Set Volume	DD FF 01 04 A1 07 00 xx BB CC	AB AB 01 04 A1 07 00 xx CD CD	Where xx is the volume value.
Video Mute On	DD FF 00 07 C1 31 00 00 01 00 F6 BB CC	AB AB 00 07 C1 31 00 00 01 00 F6 CD CD	
Video Mute Off	DD FF 00 07 C1 31 00 00 01 01 F7 BB CC	AB AB 00 07 C1 31 00 00 01 01 F7 CD CD	
Set Brightness	DD FF 01 04 A1 08 00 xx BB CC	AB AB 01 04 A1 08 00 00 CD CD	Where xx is the brightness value.
Set Date (Y/M/D)	DD FF 00 09 C1 1C 00 00 01 ww xx yy zz BB CC	AB AB 00 09 C1 1C 00 00 01 ww xx yy zz CD CD	Where ww is the year, xx the month, yy the day and zz the check bit.
Set Time (H/M/S)	DD FF 00 09 C1 1D 00 00 01 ww xx yy zz BB CC	AB AB 00 09 C1 1D 00 00 01 ww xx yy zz CD CD	Where ww is the hour, xx the minute, yy the seconds and zz the check bit.
Query Input Selection	DD FF 00 06 C1 1A 00 00 01 DC BB CC	AB AB 00 09 C1 1A 00 00 01 ww xx yy zz CD CD	Where ww xx yy is 05 03 02 for PC, 06 04 00 for VGA, 05 05 00 for HDMI 1, 05 03 01 for HDMI 2 and 05 03 03 for Displayport.
Query Power State	DD FF 00 06 C1 32 00 00 01 F4 BB CC	AB AB 00 07 C1 32 00 00 01 xx yy CD CD	Where xx is the power state, 00 for off and 01 for on and yy is the check bit.
Query Software version	DD FF 00 06 C1 1B 00 00 01 DD BB CC	AB AB 00 09 C1 1B 00 00 01 ww xx yy zz CD CD	Where ww is the year, xx the month, yy the day and zz the check bit.

The check bit is a an XOR calculation of those Hex numbers highlighted in **red**.

Hisense

www.hisense-b2b.com