IP Control Guide

Introduction

This guide provides instructions for setting up and using IP control for Hisense digital signage displays. IP control allows you to manage these displays over a local area network (LAN) using TCP/IP network protocols and hex string commands.

Prerequisites

Before setting up IP control for your Hisense displays, ensure you have the following:

- A stable local area network (LAN) with both the server (IP control software) and client devices connected.
- A computer or device with the IP control app installed.
- Basic knowledge of networking and IP address configuration.
- Connect all devices (displays and control devices) to the same LAN.

Network Setup

Configuring Your Network

- Connect all devices (displays and control devices) to the same LAN.
- Assign a static IP address to each display for consistent control access.

Finding Device IP Addresses

- Access the monitor's network settings menu to view its IP address.
- Use the router's web interface or a network scanning tool to confirm the IP addresses of all devices.

Understanding IP Control Protocols

Hisense displays use the following protocols for IP control:

- **TCP/IP Network Protocol**: The IP control software operates as a server that requires configuration of IP and port settings.
- **Hex String Command Format**: Commands to control the display are sent as hex strings,

Digital Signage – E series

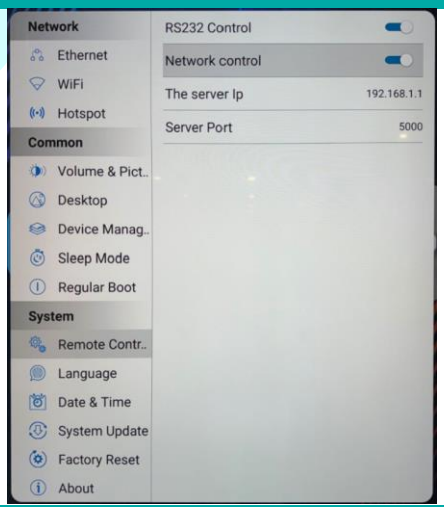
Product Series	Android	Product Model	Firmware Version
E	8.0	43B4E31T	FBV02.03
		55B4E31T	FBV01.08
		65B4E31T	FBV02.04
		75B4E30T (A000)	FBV02.06
		86B4E30T	FBV01.08

Sending Commands to Displays

Starting the IP Control Server

1. Lauch the IP Control on the display (Setting->Remote Control->Network control->Enable) (A1).
2. Setting the Port Number: The default port number for IP control is **5000**. If this port is occupied, choose a port between **5000–12000**.

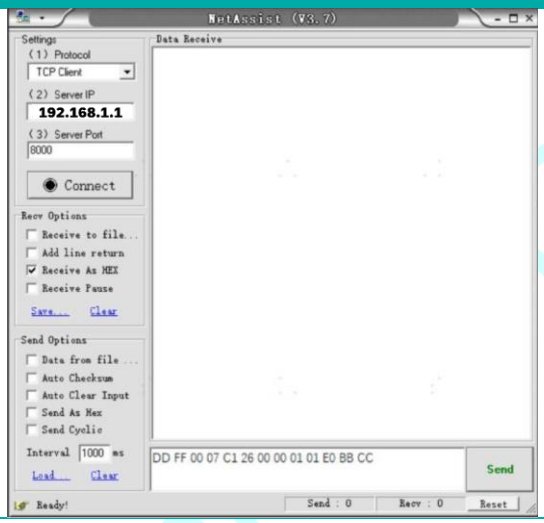
A1



Connecting a Client to the IP Control Server

1. Use a client application such as Net Assist (B1).
2. Select “TCP Client” mode.
3. Enter the server IP address and port number (default is 8000 or chosen port).
4. Click “Connect” to establish a connection.

B1



Sending Commands

- Once connected, input the hex string command in the client software and click “Send”.
- **Example Command**: To power off the display, use the hex string A601000000004011801BB.

Command Table

Name	Set	Get	Code	Example (PC -> HISENSE DISPLAY)	Example (HISENSE DISPLAY -> PC)
Set Screen Aspect Ratio	√		0x3A	0xA6 0x01 0x00 0x00 0x00 0x04 0x01 0x3A data[1] checksum data[1]: FuLL-0x00 Real-0x01 4:3-0x02 14:9-0x03 eg: Aspect Ratio is FuLL A601000000004013A0098	210100000401000025
Get Screen Aspect Ratio		√	0x3B	A601000000003013B9E data[1]: FuLL-0x00 Real-0x01 4:3-0x02 14:9-0x03	Current Aspect Ratio is FuLL 2101000004013B001E
Set Video Params	√		0x32	0xA6 0x01 0x00 0x00 0x00 0x0A 0x01 0x32 data[1] data[2] data[3] data[4] data[5] data[6] data[7] checksum data[1]: PICMODE In OSD data[2]: Brightness in OSD (0-100), data[3]: Contrast	210100000401000025

Name	Set	Get	Code	Example (PC -> HISENSE DISPLAY)	Example (HISENSE DISPLAY -> PC)
				(0-100) data[4]: Colour Temperature (0-normal /1-cool/2-warm) data[5]: Overscan(0-close/1-open) data[6]: PCMode(0-Auto/1-PC/2-video) data[7]: Sharpness in OSD(0-100) PICMODE: HI_MW_PICMODE_USER = 3, HI_MW_PICMODE_AIRPORT = 7, HI_MW_PICMODE_HOTEL = 8, HI_MW_PICMODE_DINING = 9, HI_MW_PICMODE_SECURITY = 10, HI_MW_PICMODE_OFFICE = 11, HI_MW_PICMODE_OUTDOOR = 12 ex: PICMODE is user, brightness 32, contrast 32, cool, overscan on, PC, Sharpness 50 -- IP Control Only A6010000000A013203202001010132AE	
Get Video Params		√	0x33	A60100000003013396	PICMODE is user, brightness 32, contrast 32, cool, overscan on, PC, Sharpness 50 210100000A013303202001010 13226
Set Remote Control Lock Mode	√		0x1C	0xA6 0x01 0x00 0x00 0x00 0x04 0x01 0x1C data[1] checksum data[1]: unlock -0x01 lock - 0x02 ex: A60100000004011C01BF - unlock A60100000004011C02BC - lock	210100000401000025
Get Remote Control Lock Mode		√	0x1D	A60100000003011DB8	Current state is lock 2101000004011D02A
Set Schedule for power on/off	√		0x5A	0xA6 0x01 0x00 0x00 0x00 0x0C 0x01 0x5A data[1] data[2] data[3] data[4] data[5] data[6] data[7] data[8] data[1]: bit 7- bit 4: 1 to 7 of the scheduling pages, bit 3 - bit 0: Page disable-0 Page enable-1 data[2]: Start time hour(0-23) data[3]: Start time minute(0-59) data[4]: End time hour(0-23) data[5]: End time minute(0-59) data[6]: HDMI2-0x06 USB-0x0CHDMI1-0x0D CMS-0x12 Media Player-0x16 Custom-0x18 data[7]: Saturday-Bit0 Friday-Bit1 Thursday-Bit2 Wednesday-Bit3 Tuesday-Bit4 Monday-Bit5 Sunday-Bit6 every week-Bit7 data[8]: For Media Player none-0x00 Tag 1-0x01 Tag 2-0x02 Tag 3-0x03	210100000040100025

<table>
<tr><th>Name</th><th>Set</th><th>Get</th><th>Code</th><th>Example (PC -> HISENSE DISPLAY)</th><th>Example (HISENSE DISPLAY -> PC)</th></tr>
<tr><td></td><td></td><td></td><td></td><td>Tag 4-0x04 Tag 5-0x05 Tag 6-0x06
Tag 7-0x07 data[9]: Volume (0-100)
ex: page 5, enable (00110001 = 0x51), power on at 13:00, power off at: 13:05, source HDMI2, every Monday, volume 50
A6010000000C015A510D000D0506A0003230</td><td></td></tr>
<tr><td>Get Schedule</td><td></td><td>√</td><td>0x5B</td><td>0xA6 0x01 0x00 0x00 0x00 0x04 0x01 0x5B data[1] checksum
Data[1]: 1 to 7 of the scheduling pages

ex: get schedule of page 1 A601000000004015B01F8</td><td>enable power on at 13:00, power off at: 13:05, source HDMI2, every Monday, volume 50
210100000C015B010D000D0506A00032E6</td></tr>
<tr><td>Set Screen on/off & power off</td><td>√</td><td></td><td>0x18</td><td>0xA6 0x01 0x00 0x00 0x00 0x04 0x01 0x18 data[1] checksum
data[1]: power off-0x01 screen on -0x03 screen off - 0x04
ex:
A601000000004011801BB power off A601000000004011803B9 screen on
A601000000004011804BE screen off</td><td>210100000401000025</td></tr>
<tr><td>Set Key (simulate Remote Controller Key)</td><td>√</td><td></td><td>0xB0</td><td>0xA6 0x01 0x00 0x00 0x00 0x05 0x01 0xB0 data[1] data[2] checksum
data[1]: IR Key(High) data[2]: IR Key(low)</td><td>210100000401000025</td></tr>
<tr><td>Set Key (simulate Remote Controller Key)</td><td>√</td><td></td><td>0xB0</td><td>0xA6 0x01 0x00 0x00 0x00 0x05 0x01 0xB0 data[1] data[2] checksum
data[1]: IR Key(High) data[2]: IR Key(low)
<table>
<tr><th>Key</th><th>Key Value</th><th>Key</th><th>Key Value</th></tr>
<tr><td>KEY_1</td><td>0x02</td><td>KEY_DOWN</td><td>0x6C</td></tr>
<tr><td>KEY_2</td><td>0x03</td><td>KEY_MUTE</td><td>0x71</td></tr>
<tr><td>KEY_3</td><td>0x04</td><td>KEY_VOLUMEDO WN</td><td>0x72</td></tr>
<tr><td>KEY_4</td><td>0x05</td><td>KEY_VOLUMEUP</td><td>0x73</td></tr>
<tr><td>KEY_5</td><td>0x06</td><td>KEY_POWER</td><td>0x74</td></tr>
<tr><td>KEY_6</td><td>0x07</td><td>KEY_BACK</td><td>0x9E</td></tr>
<tr><td>KEY_7</td><td>0x08</td><td>KEY_PIAY/PAUS E</td><td>0xA4</td></tr>
<tr><td>KEY_8</td><td>0x09</td><td>KEY_STOP</td><td>0xA6</td></tr>
<tr><td>KEY_9</td><td>0x0A</td><td>KEY_REWIND</td><td>0xA8</td></tr>
<tr><td>KEY_0</td><td>0x0B</td><td>KEY_FASTFORW ARD</td><td>0xD0</td></tr>
<tr><td>KEY_OK</td><td>0x1C</td><td>KEY_SOURCE</td><td>0xFA</td></tr>
<tr><td>KEY_ HO ME</td><td>0x66</td><td>KEY_MENU</td><td>0xFD</td></tr>
<tr><td>KEY_UP</td><td>0x67</td><td>KEY_INFO</td><td>0x0166</td></tr>
<tr><td>KEY_L EF T</td><td>0x69</td><td>KEY_CMS</td><td>0x0305</td></tr>
<tr><td>KEY_R IG HT</td><td>0x6A</td><td>KEY_TIME</td><td>0x0309</td></tr>
</table>
ex: set volume to 0 - mute
A60100000000501B0007162</td><td>210100000401000025</td></tr>
</table>

Digital Signage – BM/GM series

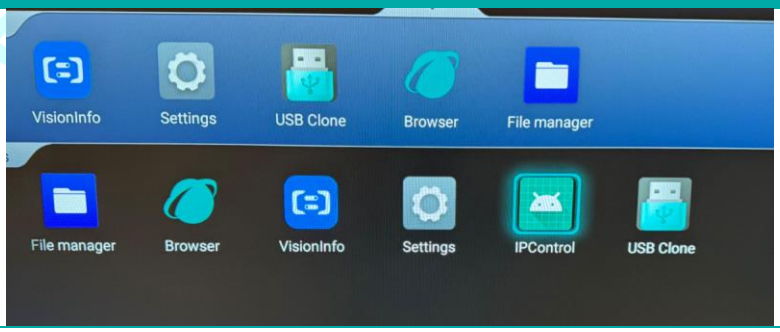
Product Series	Android	Product Model	Firmware Version
BM	9.0	32BM66AE	N1027
		43BM66AE	N1027
		43BM66AE (A000)	N1027
		49BM66AE (A000)	N1027
		55BM66AE (A000)	N1027
		65BM66D	N0609
		100BM66D	N0512
GM	9.0	50GM60AE	M0804
		55GM60AE	M0804
		65GM60AE	M0804

Sending Commands to Displays

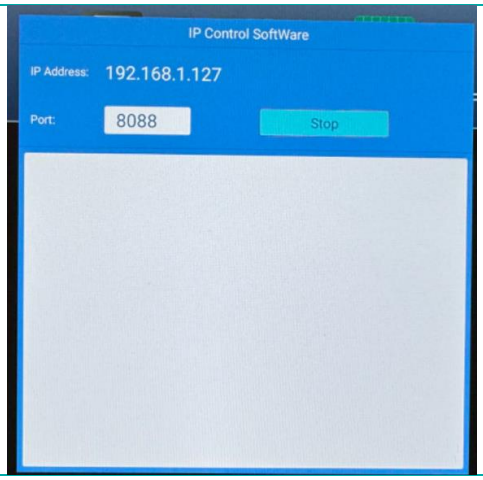
Starting the IP Control Server

3. Launch the IP Control app on the display (A1).
4. Setting the Port Number: The default port number for IP control is **8088**. If this port is occupied, choose a port between **5000–12000**.
5. The IP control server is activated by default when the app is opened. The button will toggle to "Stop" when the server is active. (A2)
6. Click the "Stop" button to inactivate the server when not needed. The button will toggle to "Start" when the server is inactive. (A3)

A1



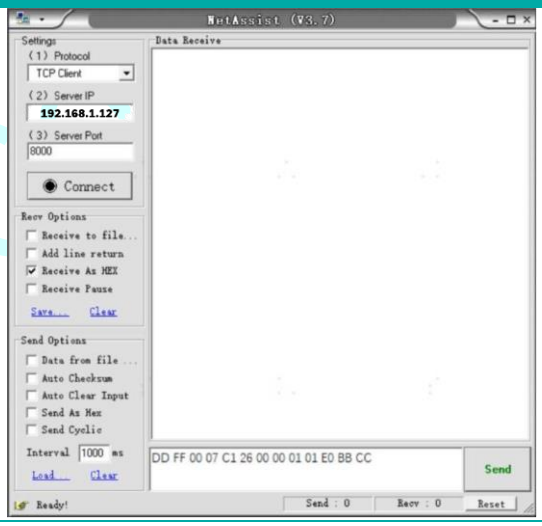
A2 A3



Connecting a Client to the IP Control Server

1. Use a client application such as Net Assist (B1).
2. Select “TCP Client” mode.
3. Enter the server IP address and port number (default is 8000 or chosen port).
4. Click “Connect” to establish a connection.

B1



Sending Commands

- Once connected, input the hex string command in the client software and click “Send”.

- **Example Command**: To mute the display, use the hex string DD FF 00 07 C1 26 00 00 01 01 E0 BB CC.

Command Table

Command	Command Type	Start Code	Length	Command Code	ID	Data	Verify	End Code
Screen on/off	On Send command	DD FF	00 07	C1 31 00 01	01	01	F6	BB CC
	On Receive command	AB AB	00 07	C1 31 00 01	01	01	F6	CD CD
	Off Send command	DD FF	00 07	C1 31 00 01	01	00	F7	BB CC
	Off Receive command	AB AB	00 07	C1 31 00 01	01	00	F7	CD CD
Inquire the Software Version	Send command	DD FF	00 06	C1 1B 00 00	01		DD	BB CC
	Receive command	AB AB	00 09	C1 1B 00 00	01	XX XX XX The first 'XX' stands for Year; The second 'XX' stands for Month; The third 'XX' stands for Day.	XX	CD CD
Set lime (Day/ Month/Year)	Send command	DD FF	00 09	C1 1C 00 00	01	XX XX XX The first 'XX' stands for Year; The second 'XX' stands for Month; The third 'XX' stands for Day.	XX	BB CC
	Receive command	AB AB	00 09	C1 1C 00 00	01	XX XX XX The first 'XX' stands for Year; The second 'XX' stands for Month; The third 'XX' stands for Day.	XX	CD CD
Set lime (Hour/Minute/ Second)	Send command	DD FF	00 09	C1 1D 00 00	01	XX XX XX The first 'XX' stands for Hour; The second 'XX' stands for Minute; The third 'XX' stands for Second.	XX	BB CC

Command	Command Type	Start Code	Length	Command Code	ID	Data	Verify	End Code
	Receive command	AB AB	00 09	C1 1D 00 00	01	XX XX XX The first 'XX' stands for Hour; The second 'XX' stands for Minute; The third 'XX' stands for Second.	XX	CD CD
Reboot the HISENSE DISPLAY	Send command	DD FF	00 06	C1 1E 00 00	01		D8	BB CC
	Receive command	AB AB	00 06	C1 1E 00 00	01		D8	CD CD
Power On/Off	Power on Send command	DD FF	00 08	C1 15 00 00	01	BB BB	DD	BB CC
	Power on Receive command	AB AB	00 08	C1 15 00 00	01	BB BB	DD	CD CD
	Power off Send command	DD FF	00 08	C1 15 00 00	01	AA AA	DD	BB CC
	Power off Receive command	AB AB	00 08	C1 15 00 00	01	AA AA	DD	CD CD
Set Volume	Send command	DD FF	00 07	C1 27 00 00	01	XX Volume Value	XX	BB CC
	Receive command	AB AB	00 07	C1 27 00 00	01	XX Volume Value	XX	CD CD
Mute Control	Mute off Send command	DD FF	00 07	C1 26 00 00	01	00	E1	BB CC
	Mute off Receive command	AB AB	00 07	C1 26 00 00	01	00	E1	CD CD
	Mute on Send command	DD FF	00 07	C1 26 00 00	01	01	E0	BB CC
	Mute on Receive command	AB AB	00 07	C1 26 00 00	01	01	E0	CD CD
VGA Automatic Adjustment	Send command	DD FF	00 06	C1 01 00 00	01		C7	BB CC
	Receive command	AB AB	00 06	C1 01 00 00	01		C7	CD CD
Restore Factory Settings	Send command	DD FF	00 06	C1 10 00 00	01		D6	BB CC
	Receive command	AB AB	00 06	C1 10 00 00	01		D6	CD CD

Command	Command Type	Start Code	Length	Command Code	ID	Data	Verify	End Code
Set Screen Rotation (811 not support)	Send command	DD FF	00 07	C1 35 00 00	01	00 stands for rotating 0 degree; 01 stands for rotating 90 degrees; Take effect after reboot.	XX	BB CC
	Receive command	AB AB	00 07	C1 35 00 00	01	00 stands for rotating 0 degree; 01 stands for rotating 90 degrees; Take effect after reboot.	XX	CD CD
Set Brightness	Send command	DD FF	00 07	C1 36 00 00	01	XX stands for brightness.	XX	BB CC
	Receive command	AB AB	00 07	C1 36 00 00	01	X stands for brightness.	XX	CD CD
Set Contrast	Send command	DD FF	00 07	C1 37 00 00	01	XX stands for contrast.	XX	BB CC
	Receive command	AB AB	00 07	C1 37 00 00	01	XX stands for contrast.	XX	CD CD
Set Color Temperature	Send command	DD FF	00 07	C1 39 00 00	01	XX 01 stands for Cold; 02 stands for Slight Cold; 03 stands for Slight Warm; 04 stands for Warm; 00 stands for Standard.	XX	B CC
	Receive command	AB AB	00 07	C1 39 00 00	01	XX 01 stands for Cold; 02 stands for Slight Cold; 03 stands for Slight Warm; 04 stands for Wann; 00 stands for Standard.	XX	CD CD
Set Zoom (811 not support)	Send command	DD FF	00 07	C1 3B 00 00	01	XX 02 stands for Zoom Standard, others stand for Full Screen.	XX	BB CC
	Receive command	AB AB	00 07	C1 3B 00 00	01	XX 02 stands for Zoom Standard, others stand for Full Screen.	XX	CD CD
Set Boot Time Delay (811 not support)	Send command	DD FF	00 07	C1 3C 00 00	01	XX 01 stands for delay of 10s; 02 stands for delay of 20s; 03 stands for delay of 30s; 00 stands for delay of 0s.	XX	BB CC

Command	Command Type	Start Code	Length	Command Code	ID	Data	Verify	End Code
	Receive command	AB AB	00 07	C1 3C 00 00	01	XX 01 stands for delay of 10s; 02 stands for delay of 20s; 03 stands for delay of 30s; 00 stands for delay of 0s.	XX	CD CD
Set Definition	Send command	DD FF	00 07	C1 38 00 00	01	XX Definition Value	XX	BB CC
	Receive command	AB AB	00 07	C1 38 00 00	01	XX Definition Value	XX	CD CD
Set Image Denoising	Send command	DD FF	00 07	C1 3A 00 00	01	XX 00 stands for Off; 01 stands for Low; 02 stands for Medium; 03 stands for High; 04 stands for Auto;	XX	BB CC
	Receive command	AB AB	00 07	C1 3A 00 00	01	XX 00 stands for Off; 01 stands for Low; 02 stands for Medium; 03 stands for High; 04 stands for Auto;	XX	CD CD
Get Smart Backlight	Send command	DD FF	00 06	C1 3E 00 01	01		F9	BB CC
	Receive command	AB AB	00 07/08	C1 3E 00 01	01	XX 01 stands for Bright Light; 02 stands for Soft Light; 03 stands for Light Sensed Frequency Conversion; 04 stands for Stereo Frequency Conversion; 05 stands for Comfortable Frequency Conversion; 06 stands for Custom, the second 'XX' stands for the value of backlight.	XX	CD CD
Set Inquiring Screen On/Off	Send command	DD FF	00 06	C1 32 00 01	01		F5	BB CC
	Receive command	AB AB	00 07	C1 32 00 01	01	XX 00 Screen Off, 01 Screen On.	XX	CD CD

Command	Command Type	Start Code	Length	Command Code	ID	Data	Verify	End Code
Set Smart Backlight	Send command	DD FF	00 08	C1 32 00 02	01	XX XX 01XX stands for Bight Light; 02 XX stands for Soft Light; 03 XX stands for Light Sensed Frequency Conversion; 04 XX stands for Stereo Frequency Conversion; 05 XX stands for Comfortable Frequency Conversion; XX does not work above. 06 XX stands for Custom, XX stands for value of backlight under this circumstance.	XX	BB CC
	Receive command	AB AB	00 07/08	C1 32 00 02	01	XX XX 01XX stands for Bight Light; 02 XX stands for Soft Light; 03 XX stands for Light Sensed Frequency Conversion; 04 XX stands for Stereo Frequency Conversion; 05 XX stands for Comfortable Frequency Conversion; XX does not work above. 06 XX stands for Custom, XX stands for value of backlight under this circumstance.	XX	CD CD
Set Boot lime (UTC Time, if it's GMT+8, minus 8 when setting)	Send command	DD FF	00 09	C1 3E 00 02	01	XX Day If 0 is set, Boot Time is off. XX Hour XX Minute	XX	BB CC
	Receive command	AB AB	00 09	C1 3E 00 02	01	XX Day If 0 is set, Boot Time is off. XX Hour XX Minute	XX	CD CD
Set Power Off lime (UTCTime, if it's GMT+8, minus 8 when setting)	Send command	DD FF	00 09	C1 FF 00 15	01	XX Day If 0 is set, Power Off Time is off. XX Hour XX Minute	XX	BB CC
	Receive command	AB AB	00 09	C1 FF 00 15	01	XX Day If 0 is set, Power Off Time is off. XX Hour XX Minute	XX	CD CD
Protect against screen burn	Send command	DD FF	00 07	C1 33 00 00	01	XX (00 means off, 01 means on)	XX	BB CC

Command	Command Type	Start Code	Length	Command Code	ID	Data	Verify	End Code
Protect against screen burn (only 551 support, 811 not support)	Receive command	AB AB	00 07	C1 33 00 00	01	XX (00 means off, 01 means on)	XX	CD CD
Remote Enabled/ Disabled	Send command	DD FF	00 07	C1 70 00 00	01	XX When XX is 01, disable Remote Control; When XX is 00, enable Remote Control.	XX	BB CC
	Receive command	AB AB	00 07	C1 70 00 00	01	XX When XX is 01, disable Remote Control; When XX is 00, enable Remote Control.	XX	CD CD
Picture Mode	Standard Mode Send Command	DD FF	00 07	C1 0F 06 00	01	07	C9	BB CC
	Standard Mode Receive Command	AB AB	00 07	C1 0F 06 00	01	07	C9	CD CD
	Soft Send Command	DD FF	00 07	C1 0F 06 00	01	09	C7	BB CC
	Soft Receive Command	AB AB	00 07	C1 0F 06 00	01	09	C7	CD CD
	Movie Mode Send Command	DD FF	00 07	C1 0F 06 00	01	0A	C4	BB CC
	Movie Mode Receive Command	AB AB	00 07	C1 0F 06 00	01	0A	C4	CD CD
	Vivid Send Command	DD FF	00 07	C1 0F 06 00	01	08	C6	BB CC
	Vivid Receive Command	AB AB	00 07	C1 0F 06 00	01	08	C6	CD CD
Inquire Function	Send Command	DD FF	00 06	C1 28 00 00	01		EE	BB CC

Command	Command Type	Start Code	Length	Command Code	ID	Data	Verify	End Code
	Receive Command	AB AB	00 0C	C1 28 00 00	01	XX Volume (Take effect when power on) XX XX Source (05 05 stands for HDMI1,05 04 stands for HDMI2,05 03 stands for DP, 08 01 stands for VGA. Take effect when power on.) XX Power Status (00 stands for power on, FF stands for power off.) XX Mute Status (01 stands for Mute, 00 stands for Non-Mute. Take effect when power on.)	XX	CD CD
Inquire Current Source	Send Command	DD FF	00 06	C1 1A 00 00	01		DC	BB CC
	Receive Command	AB AB	00 09	C1 1A 00 00	01	XX XX XX 05 03 04 stands for MDMI1,05 03 03 stands for HDMI2,05 03 02 stands for DP, 06 04 00 stands for VGA.	XX	CD CD
Switch Source	Send Command	DD FF	00 07	C1 08 00 01	xx	XX 0E(HDMI1) 0F(HDMI2) 16(DP) 17 D9(VGA)	xx	BB CC
	Receive Command	AB AB	00 07	C1 08 00 01	xx	XX 0E(HDMI1) 0F(HDMI2) 16(DP) 17 D9(VGA)	xx	CD CD

Digital Signage – DM/GM50D series

Product Series	Android	Product Model	Firmware Version
DM	11.0	32DM66D	V1.1.0.2-2024021152738
		43DM66D	V1.1.0.2-2024021152738
		50DM66D	V1.1.0.2-2024021152738
		50DM66E	V1.1.0.2-2024021152738
		65DM66D	V1.1.0.2-2024021152738
		75DM66D	V1.1.0.2-2024021152738
		86DM66D	V1.1.0.2-2024021152738

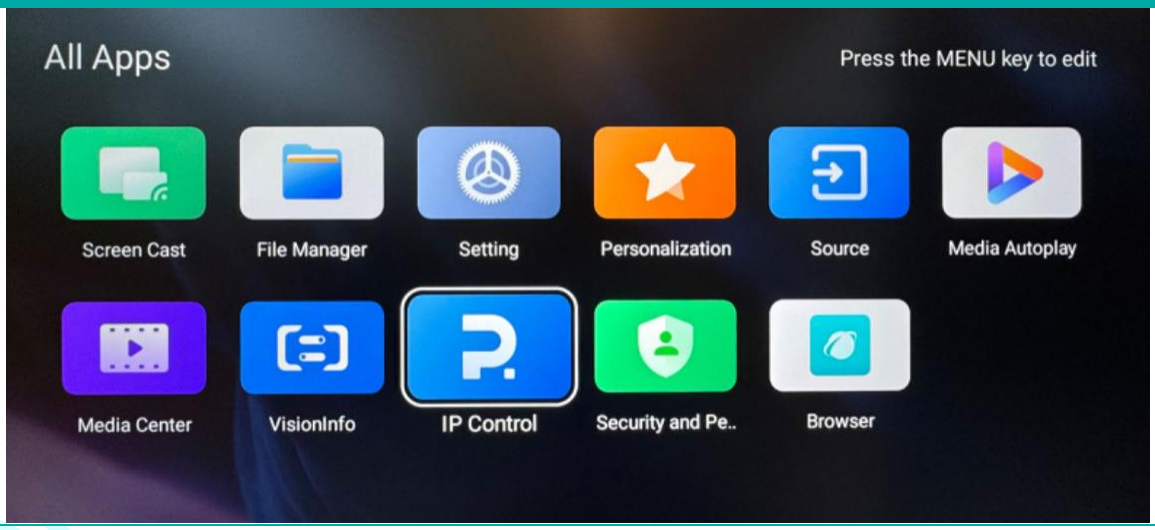
GM50D	11.0	50GM50D	V1.1.0.2-2024021152738
		55GM50D	V1.1.0.2-2024021152738
		65GM50D	V1.1.0.2-2024021152738
		75GM50D	V1.1.0.2-2024021152738
		86GM50D	V1.1.0.2-2024021152738

Sending Commands to Displays

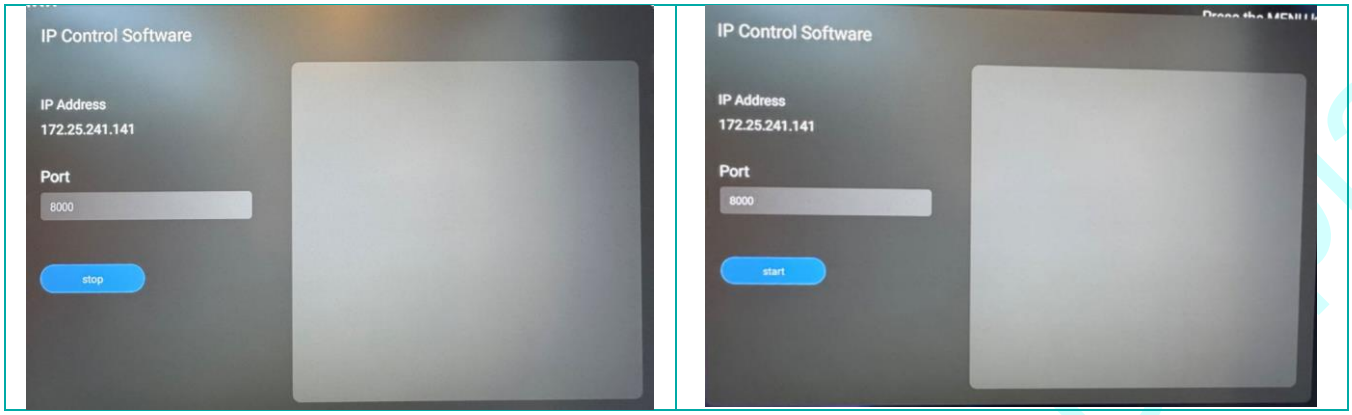
Starting the IP Control Server

1. Launch the IP Control app on the display (A1).
2. Setting the Port Number: The default port number for IP control is **8000**. If this port is occupied, choose a port between **5000–12000**.
3. The IP control server is activated by default when the app is opened. The button will toggle to "Stop" when the server is active. (A2)
4. Click the "Stop" button to inactivate the server when not needed. The button will toggle to "Start" when the server is inactive. (A3)

A1



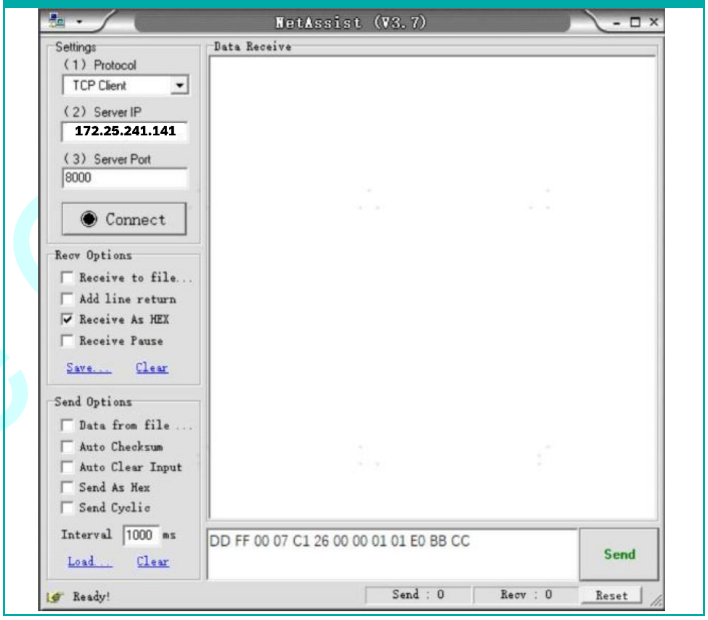
A2 A3



Connecting a Client to the IP Control Server

5. Use a client application such as Net Assist (B1).
6. Select "TCP Client" mode.
7. Enter the server IP address and port number (default is 8000 or chosen port).
8. Click "Connect" to establish a connection.

B1



Sending Commands

- Once connected, input the hex string command in the client software and click "Send".

- **Example Command**: To mute the display, use the hex string DD FF 00 07 C1 26 00 00 01 01 E0 BB CC.

Command Table

Description	Command (HEX Bytes)	Example (PC -> HISENSE DISPLAY)	HISENSE DISPLAY -> PC
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
Screen Off	DD FF 00 07 C1 31 00 00 xx 00 yy BB CC	DD FF 00 07 C1 31 00 00 01 00 F6 BB CC	AB AB 00 07 C1 31 00 00 xx 00 yy CD CD
Screen On	DD FF 00 07 C1 31 00 00 xx 01 yy BB CC	DD FF 00 07 C1 31 00 00 01 01 F7 BB CC	AB AB 00 07 C1 31 00 00 xx 01 yy CD CD
Reboot	DD FF 00 06 C1 1E 00 00 xx yy BB CC	DD FF 00 06 C1 1E 00 00 01 D8 BB CC	AB AB 00 06 C1 1E 00 00 xx yy CD CD
Set AC Power On Mode	DD FF 00 07 C1 FF 00 09 xx zz yy BB CC	DDFF0007C1FF0009010031BBCC zz: power on mode. 00 – direct, 01 – last, 02 – standby direct: DD FF 00 07 C1 FF 00 09 01 00 31 BB CC last: DD FF 00 07 C1 FF 00 09 01 01 30 BB CC standby: DD FF 00 07 C1 FF 00 09 01 02 33 BB CC	AB AB 00 07 C1 FF 00 09 xx zz yy CD CD
DP Input	DD FF 00 07 C1 08 00 00 xx 16 yy BB CC	DDFF0007C10800000116D9BBCC	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	DDFF0007C10800000117D8BBCC	AB AB 00 07 C1 08 00 00 xx 17 yy CD CD
HDMI1 Input	DD FF 00 07 C1 08 00 00 xx 0E yy BB CC	DDFF0007C1080000010EC1BBCC	AB AB 00 07 C1 08 00 00 xx 0E yy CD CD
HDMI2 Input	DD FF 00 07 C1 08 00 00 xx 0F yy BB CC	DDFF0007C1080000010FC0BBCC	AB AB 00 07 C1 08 00 00 xx 0F yy CD CD
PC Input	DD FF 00 07 C1 08 00 00 xx 0C yy BB CC	DDFF0007C10800000010CC3BBCC	AB AB 00 07 C1 08 00 00 xx 0C yy CD CD
DVI Input	DD FF 00 07 C1 08 00 00 xx 09 yy BB CC	DDFF0007C10800000109C6BBCC	AB AB 00 07 C1 08 00 00 xx 09 yy CD CD
Set Screen Rotation	DD FF 00 07 C1 35 00 00 xx zz yy BB CC	set screep rotation: Landscape: DD FF 00 07 C1 35 00 00 00 00 F3 BB CC Portrait: DD FF 00 07 C1 35 00 00 00 01 F2 BB CC	AB AB 00 07 C1 35 00 00 xx zz yy CD CD
Set Mute	DD FF 00 07 C1 26 00 00 xx 01 yy BB CC	DDFF0007C12600000101E0BBCC	AB AB 00 07 C1 26 00 00 xx 01 yy CD CD
Set Unmute	DD FF 00 07 C1 26 00 00 xx 00 yy BB CC	DDFF0007C12600000100E1BBCC	AB AB 00 07 C1 26 00 00 xx 00 yy CD CD
Set Volume	DD FF 00 07 C1 27 00 00 xx zz yy BB CC	DDFF0007C12700000101E1BBCC zz: volume range 0-100	AB AB 00 07 C1 27 00 00 xx zz yy CD CD
Set Backlight Brightness	DD FF 00 08 C1 32 00 00 xx 06 zz yy BB CC	ex: set brightness to 32 - zz = 0x20 DDFF0008C1320000010620DCBBCC	AB AB 00 08 C1 32 00 00 xx 06 zz CD CD

Description	Command (HEX Bytes)	Example (PC -> HISENSE DISPLAY)	HISENSE DISPLAY -> PC
Set Backlight Brightness Auto Adjust	DD FF 00 07 C1 34 00 00 xx zz yy BB CC	ex: set brightness auto adust off DDFF0007C13400000100F3BBCC zz = 00 - off, 01 - on	AB AB 00 07 C1 34 00 00 xx zz yy CD CD
Set Date	DD FF 00 09 C1 1C 00 00 xx zz zz zz yy BB CC	ex: set date to 23.Jan.2 DDFF0009C11C000001170102C1BBCC zz zz zz = Year Month Day	AB AB 00 09 C1 1C 00 00 xx zz zz zz yy CD CD zz zz zz = FF FF FF when error
Set Time	DD FF 00 09 C1 1D 00 00 xx zz zz zz yy BB CC	ex: set time to 12:25:2 DDFF0009C11D0000010C1902C3BBCC zz zz zz = Hour Minute Second	AB AB 00 09 C1 1D 00 00 xx zz zz zz yy CD CD zz zz zz = FF FF FF when error
Set Schedule for Power On	DD FF 00 09 C1 3E 00 00 xx tt zz zz yy BB CC	ex: power on at 9:10 every day DDFF0009C13E00000101090AF5BBCC tt = 00 - turn off schedule, 01 - everyday zz zz = Hour Minute Tips: If the device has been set to power on and off at a scheduled time, sending this command will clear the original settings, and leaving only the one sent.	AB AB 00 09 C1 3E 00 00 xx zz zz zz yy CD CD
Set Schedule for Power Off	DD FF 00 09 C1 3F 00 00 xx tt zz zz yy BB CC	ex: power off at 18:10 every day DDFF0009C13F00000101120AEFBBCC tt = 0 - turn off schedule, 1 - everyday zz zz = Hour Minute Tips: If the device has been set with a timed power on/off command, all previously set power on/off will be turned off	AB AB 00 09 C1 3F 00 00 xx zz zz zz yy CD CD
Set Brightness	DD FF 00 07 C1 36 00 00 xx zz yy BB CC current source must be: DP, VGA, HDMI, PC, DVI	ex: set brightness to 32 - zz = 0x20 DDFF0007C13600000120D1BBCC	AB AB 00 07 C1 36 00 00 xx zz yy CD CD
Set Contrast	DD FF 00 07 C1 37 00 00 xx zz yy BB CC current source must be: DP, VGA, HDMI, PC, DVI	ex: set contrast to 32 - zz = 0x20 DDFF0007C13700000120D0BBCC	AB AB 00 07 C1 37 00 00 xx zz yy CD CD
Set Sharpness	DD FF 00 07 C1 38 00 00 xx zz yy BB CC current source must be: DP, VGA, HDMI, PC, DVI	ex: set sharpness to 32 - zz = 0x20 DDFF0007C13800000120DFBBCC	AB AB 00 07 C1 38 00 00 xx zz yy CD CD
Set Color Temperature	DD FF 00 07 C1 39 00 00 xx zz yy BB CC current source must be: DP, VGA, HDMI, PC, DVI	ex: set colour temperature to 32 - zz = 0x20 DDFF0007C13900000120DEBBCC	AB AB 00 07 C1 39 00 00 xx zz yy CD CD
Set Noise Reduction	DD FF 00 07 C1 3A 00 00 xx zz yy BB CC current source must be: DP, VGA, HDMI, PC, DVI	ex: set noise reduction to High - zz = 0x03 DDFF0007C13A00000103FEBBCC zz = 01 - low, 02 - medium, 03 - high, 04 - auto, 00 – off	AB AB 00 07 C1 3A 00 00 xx zz yy CD CD

Description	Command (HEX Bytes)	Example (PC -> HISENSE DISPLAY)	HISENSE DISPLAY -> PC
Set Image Scaling	DD FF 00 07 C1 3B 00 00 xx zz yy BB CC current source must be: DP, VGA, HDMI, PC, DVI	ex: set image scaling to Full - zz = 0x03 DDFF0007C13B00000103FFBBCC zz = 00 - full, 01 - 16:9, 02 - 4:3, 03 - scaling 1, 04 - scaling 2, 05 - point to point	AB AB 00 07 C1 3B 00 00 xx zz yy CD CD
Set Picture Mode	DD FF 00 07 C1 0F 06 00 xx zz yy BB CC	ex: set picture mode to movie mode - zz = 0x03 DDFF0007C10F060001030CBBCC zz = 00 - standard, 01 - bright, 02 - soft, 03 - Movie, 04 - Text, 5 - gaming 12 – natural	AB AB 00 07 C1 0F 06 00 xx zz yy CD CD
Set Sound Mode	DD FF 00 07 C1 FF 00 03 xx zz yy BB CC	ex: set sound mode to standard mode - zz = 0x00 DDFF0007C1FF000301003BBBCC zz = 00 - standard, 01 - music, 02 - news, 08 - movie, 10 - sports, 20 - custom, 30 - voice, 40 - meeting	AB AB 00 07 C1 FF 00 03 xx zz yy CD CD
Set Eye Protection Mode	DD FF 00 07 C1 FF 00 1E xx zz yy BB CC	ex: set eye protection mode on - zz = 0x01 DDFF0007C1FF001E010127BBCC zz = 00 - off, 01 - on	AB AB 00 07 C1 FF 00 1E xx zz yy CD CD
VGA Auto Adjust	DD FF 00 07 C1 01 00 00 xx yy BB CC current source must be VGA	ex: VGA Auto Adjust DDFF0007C101000001C6BBCC zz = 00 - off, 01 – on	AB AB 00 07 C1 01 00 00 xx yy CD CD
Set anti-burn-in (image retention)	DD FF 00 07 C1 33 00 00 xx zz yy BB CC	ex: set anti-burn-in on DDFF0007C13300000101F4BBCC zz = 00 - off, 01 - on	AB AB 00 07 C1 33 00 00 xx zz yy CD CD
Set Power on delay	DD FF 00 07 C1 3C 00 00 xx zz yy BB CC	ex: set power on delay to 10s DDFF0007C13C0000010AF1BBCC zz = 00 – off, others - delay time, range: 2s - 255s	AB AB 00 07 C1 3C 00 00 xx zz yy CD CD
Set Video Wall	DD FF 00 09 C1 0A 00 00 xx zz zz zz yy BB CC	ex: vertical 3 devices, horizontal 4 devices, device position: 6 DDFF0009C10A000001030406C2BBCC zz: how many devices in vertical zz: how many devices in horizontal zz: current device position	AB AB 00 09 C1 0A 00 00 xx zz zz zz yy CD CD
Set Static IP Address of LAN	DD FF 00 16 C1 1B 30 00 xx zz … zz yy BB CC	Ex: set IP 10.16.150.225, subnet mask: 255.255.248.0, gateway: 10.16.144.1, DNS: 10.16.144.2 DDFF0016C11B3000010A1096E1FFFFF8000A1090010A10900249BBCC zz .. zz - 16 bytes, IP address - 4 bytes, Subnet mask - 4 bytes, gateway - 4 bytes, DNS - 4 bytes	AB AB 00 16 C1 1B 30 00 xx zz … zz yy CD CD
Set USB Lock	DD FF 00 07 C1 FF 00 0E xx zz yy BB CC	ex: lock USB DDFF0007C1FF000E010036BBCC zz = 00 – lock USB, 01 – enable USB	AB AB 00 07 C1 FF 00 0E xx zz yy CD CD
Factory Reset	DD FF 00 06 C1 10 00 00 xx yy BB CC	DDFF0006C110000001D6BBCC	AB AB 00 06 C1 10 00 00 xx yy CD CD

Description	Command (HEX Bytes)	Example (PC -> HISENSE DISPLAY)	HISENSE DISPLAY -> PC
Query HISENSE DISPLAY Status	DD FF 00 06 C1 28 00 00 xx yy BB CC	DDFF0006C128000001EEBBCC	AB AB 00 0C C1 28 00 00 xx zz zz zz zz zz zz yy CD CD zz: volume zz zz: 05 01 – PC, 05 02 – DVI, 05 03 – DP, 05 04 – HDMI2, 05 05 – HDMI1, 08 01 – VGA zz: 00 – power on, FF – power off zz: 01 – mute; 00 – unmute zz: 00 – no signal, 01 – has signal
Query Screen Status	DD FF 00 06 C1 32 00 01 xx yy BB CC	DDFF0006C110000001D6BBCC	AB AB 00 07 C1 32 00 01 xx zz yy CD CD zz: 00 – screen off; 01 – screen on
Query Source	DD FF 00 06 C1 1A 00 00 xx yy BB CC	DDFF0006C11A000001DCBBCC	AB AB 00 08 C1 1A 00 00 xx zz zz yy CD CD zz zz – source, refer to user menu for source definition
Query SW Version	DD FF 00 06 C1 1B 00 00 xx yy BB CC	DDFF0006C11B000001DDBBCC	AB AB 00 09 C1 1B 00 00 xx zz zz zz yy CD CD zz zz zz – Year Month Date
Query Backlight Brightness	DD FF 00 06 C1 3E 00 24 xx yy BB CC	DDFF0006C13E000001F8BBCC	AB AB 00 LL C1 3E 00 24 xx zz zz yy CD CD zz:01 – bright, 02 – soft, 03 – auto adjust, 04 – stereo frequency conversion, 05 – Comfort frequency conversion, 06 – custom zz: when first zz is 06 custom, this byte means backlight brightness value: 0-30 LL: when first zz is zz, LL = 08, otherwise, LL = 07
Query Brightness	DD FF 00 06 C1 36 00 01 xx yy BB CC	DDFF0006C136000101F0BBCC	AB AB 00 07 C1 36 00 01 xx zz yy CD CD zz is the brightness value
Query Network Status	DD FF 00 06 C1 FF 00 16 xx yy BB CC	DDFF0006C1FF0016012FBBCC	AB AB 00 07 C1 FF 00 16 xx zz yy CD CD zz: 00 – no network connection; 01 – network connected
Query Sound Mode	DD FF 00 06 C1 FF 00 02 xx yy BB CC	DDFF0006C1FF0002013BBBCC	AB AB 00 07 C1 FF 00 02 xx zz yy CD CD zz = 00 – standard, 01 – music, 02 – news, 08 – movie, 10 – sports, 20 – custom, 30 – voice, 40 – meeting
Query AC Power On Status	DD FF 00 06 C1 FF 00 08 xx yy BB CC	DDFF0006C1FF00080131BBCC	AB AB 00 07 C1 FF 00 08 xx zz yy CD CD zz: 00 – power on; 01 – Last mode; 02 – standby

Description	Command (HEX Bytes)	Example (PC -> HISENSE DISPLAY)	HISENSE DISPLAY -> PC
Query IP Address	DD FF 00 06 C1 1B 20 00 xx yy BB CC	DDFF0006C11B200001FDBBCC	AB AB 00 16 C1 1B 20 00 xx zz ... zz yy CD CD zz zz zz zz - IP address zz zz zz zz - Subnet mask zz zz zz zz Gateway zz zz zz zz - DNS
Query Device Temperature	DD FF 00 06 C1 FE 00 00 xx yy BB CC	DDFF0006C1FE00000138BBCC	AB AB 00 07 C1 FE 00 00 xx zz yy CD CD zz: temperature in centigrade
Query Picture Mode	DD FF 00 06 C1 6D 00 00 xx yy BB CC	DD FF 00 06 C1 6D 00 00 64 CE BB CC	AB AB 00 07 C1 6D 00 00 xx zz yy CD CD zz: 00 – standard, 01 – bright, 06 – AI, 07 – user, 02 – soft, 03 – movie, 04 – text, 05 – game, 12- nature
Query USB Status	DD FF 00 06 C1 6E 00 00 xx yy BB CC	DD FF 00 06 C1 6E 00 00 64 CD BB CC	AB AB 00 07 C1 6E 00 00 xx zz yy CD CD zz: 00 - off, 01 - on
Query Eye Protection Mode	DD FF 00 06 C1 FF 00 1D xx yy BB CC	DDFF0006C1FF001D0124BBCC	AB AB 00 07 C1 FF 00 1D xx zz yy CD CD zz: 00 - Off; 01 - On
Query SN	DD FF 00 06 C1 FF 00 0B xx yy BB CC	DDFF0006C1FF000B0132BBCC	AB AB 00 1D C1 FF 00 0B xx zz...zz yy CD CD zz .. zz: 23 bytes serial number
Query Devicd ID	DD FF 00 06 C1 FF 00 0D xx yy BB CC	DDFF0006C1FF000D0134BBCC	AB AB 00 26 C1 FF 00 0D xx zz...zz yy CD CD zz .. zz: 32 bytes device ID
Query MAC Address	DD FF 00 06 C1 6C 00 00 xx yy BB CC	DDFF0006C16C000001AABBCC	AB AB 00 0C C1 6C 00 00 xx zz...zz yy CD CD zz .. zz: 6 bytes
Query volume	DD FF 00 06 C1 7D 00 00 xx yy BB CC	DD FF 00 06 C1 7D 00 00 64 DE BB CC	AB AB 00 07 C1 7D 00 00 xx zz yy CD CD zz: volume
Query Serial Port ID	DD FF 00 06 C1 1B 10 00 xx yy BB CC	DD FF 00 06 C1 1B 10 00 64 A8 BB CC	AB AB 00 06 C1 1B 10 00 xx zz yy CD CD zz: serial port ID. Settings -> signal manager -> serial port ID
Query brand	DD FF 00 06 C1 FE 00 01 xx yy BB CC	DD FF 00 06 C1 FE 00 01 64 5C BB CC	AB AB 00 06 C1 FE 00 01 xx zz...zz yy CD CD zz...zz: brand. ex: hisense (ASCII)
Query model	DD FF 00 06 C1 FE 00 02 xx yy BB CC	DD FF 00 06 C1 FE 00 02 64 5F BB CC	AB AB 00 06 C1 FE 00 02 xx zz...zz yy CD CD zz...zz: model name
Send Remote	DD FF 00 08 C1 17 00 00 xx zz zz yy BB CC	ex: send menu key: zz zz = 00 00 DDFF0008C1170000010000DFBBCC zz zz = 00 00 - Menu; 00 01 - UP, 00 02 - DOWN, 00 03 -	AB AB 00 08 C1 17 00 00 xx zz zz yy CD CD

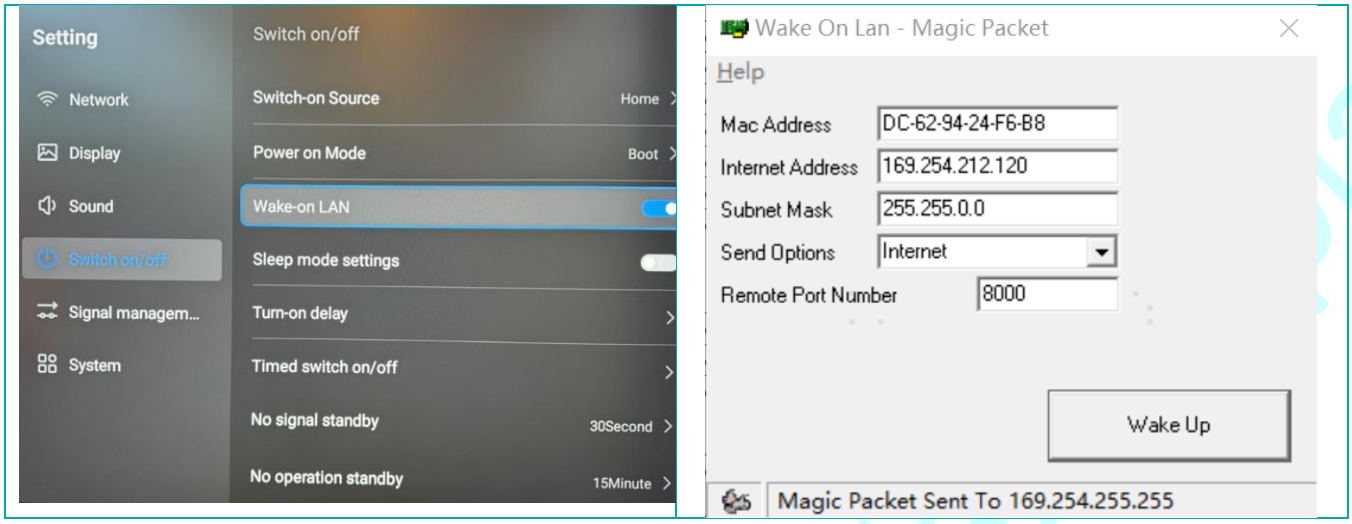
Description	Command (HEX Bytes)	Example (PC -> HISENSE DISPLAY)	HISENSE DISPLAY -> PC
Controller Key Code		LEFT, 00 04 - RIGHT, 00 05 - OK, 00 06 - Return, 00 07 - Source	
Open Settings	DD FF 00 06 C1 41 00 00 xx yy BB CC	DDFF0006C14100000187BBCC	AB AB 00 06 C1 41 00 00 xx yy CD CD
Open Home	DD FF 00 06 C1 FF 00 1A xx yy BB CC	DDFF0006C1FF001A0123BBCC	AB AB 00 06 C1 FF 00 1A xx yy CD CD
Open CMS	DD FF 00 06 C1 FF 00 13 xx yy BB CC	DDFF0006C1FF0013012ABBCC	AB AB 00 06 C1 FF 00 13 xx yy CD CD
Open Screen Cast	DD FF 00 06 C1 43 00 00 xx yy BB CC	DDFF0006C14300000185BBCC	AB AB 00 06 C1 43 00 00 xx yy CD CD
Turn on Hotspot	DD FF 00 06 C1 44 00 00 xx yy BB CC	DDFF0006C14400000182BBCC	AB AB 00 06 C1 44 00 00 xx yy CD CD
Take Screenshot	DD FF 00 06 C1 4B 00 00 xx yy BB CC	DDFF0006C14B0000018DBBCC	AB AB 00 06 C1 4B 00 00 xx yy CD CD
Freeze Screen	DD FF 00 07 C1 0F 08 00 xx zz yy BB CC	DD FF 00 07 C1 0F 08 00 01 01 C1 BB CC zz = 01 - freeze; 00 – unfreeze	AB AB 00 07 C1 0F 08 00 xx zz yy CD CD

Advanced Control and Automation

Using Wake on LAN (WOL) for Wired Networks

1. Enable Wake on LAN in the display settings (Settings -> Switch on/off -> Wake-on LAN) (C1).
2. Ensure the display and the PC sending the WOL command are on the same LAN and connected via Ethernet.
3. Use WOL software to send a “magic packet” to wake the display (C2).

C1	C2



Automating Commands and Integrating with Other Systems

- Write scripts using programming languages like Python to automate hex string commands.
- Integrate the Hisense display control into broader home or office automation systems using compatible software.

Testing and Troubleshooting

Test Connectivity and Commands

- Start with basic commands like turning the display on or off to test the connection.
- Ensure all devices are on the same LAN and configured correctly.

Common Troubleshooting Steps

- Verify that the IP address and port settings are correct.
- Check for firewall settings that might block IP control traffic.
- Confirm the display and control devices are connected to the same network.

Security Considerations

- **Secure Network Access**: Use strong passwords and network encryption to protect against unauthorized access.
- **Limit Access**: Configure the display to only accept commands from trusted IP addresses if possible.
- **Keep Firmware Updated**: Regularly update the display firmware to protect against security vulnerabilities.

Conclusion

By following this guide, you can set up and use IP control for Hisense DM66D and GM50D displays, allowing for flexible and remote management over your network. For further assistance or updates, you may reach our support team by clicking here.

Command Structure

Please read the following key points before starting the connection:

1. **HEX Code Format**: The RS232 commands for HISENSE displays are in HEX format, not ASCII. This means the commands are expressed in hexadecimal numbers.
2. **Device ID in Commands**: Each command includes an ID that specifies which screen or device the command is meant for. Using "00" as the ID will broadcast the command to all connected devices on the RS232 port. If a specific ID like "01" is used, only the device with that ID will respond to the command.
3. **No Response for Mismatched IDs**: If the ID in the command does not match the device's ID, there will be no feedback, and the command will not work. This ensures that each device only responds to commands intended for it.
4. **Device ID Configuration**: The default ID for HISENSE displays is "01". When setting up multiple devices in a video wall configuration, each device must have a unique ID to avoid conflicts.
5. **Compatibility and Software Version**: Some commands might not work depending on the device's current configuration or software version. If there are issues with

commands not working, updating the device software to the latest version is recommended.

6. **Checksum Calculation with XOR**: Certain RS232 commands require a checksum byte, which is calculated using an XOR operation on some of the HEX bytes in the command. You can use an online XOR calculator, such as the one provided in your message, to perform these calculations. To calculate the checksum:
   a. Enter each HEX byte that needs to be XORed into the left-hand box, each on a separate line.
   b. The result of the XOR operation, which is the checksum byte, will appear in the right-hand box.

Understanding the Command Structure

To understand in details about Hisense display RS232 command structure, let's see the breakdown as described below:

1. **Length**: The number of bytes that make up the Command, Data, and Checksum. This is a single byte that represents the total length.
2. **Command**: This is the specific command you're sending to the HISENSE device. The command byte dictates the action you want the device to perform (e.g., power on/off, change input, etc.).
3. **Monitor ID**: This specifies which device or screen the command is intended for. "00" will broadcast to all devices, while specific IDs (like "01") target individual devices.
4. **Data**: This section contains any additional information needed for the command, such as volume level or channel number.
5. **Checksum**: A single byte that is the result of an XOR operation applied to the Length, Command, Monitor ID, and Data bytes. The checksum ensures the integrity of the command data.

Constructing a Command

Here's how you can construct a command step-by-step:

1. **Determine the Length:**
    - The length byte is the total number of bytes for the Command, Monitor ID, Data, and Checksum.
    - If your command includes a command byte, a monitor ID, and two data bytes, and a checksum byte, the total length is 5. You will then represent this as 05 in HEX.
2. **Select the Command Byte:**
    - Identify the specific command you need to send. For example, let's assume the command byte for "Power On" is 0x01.
3. **Specify the Monitor ID:**
    - Use 00 for all devices or the specific ID of the device (e.g., 01).
4. **Prepare the Data Bytes:**
    - Data bytes are additional information that some commands require. For instance, if the command changes the volume, the data bytes might represent the volume level.
5. **Calculate the Checksum:**
    - The checksum is calculated using the XOR operation on all preceding bytes (Length, Command, Monitor ID, and Data).

Example Command Construction

Let's create an example command to illustrate these steps:

Example: Power On Command to Monitor ID 01 without Additional Data

1. **Command Structure:**
    a. **Length**: 04 (since we have the Length itself, Command, Monitor ID, and Checksum)
    b. **Command**: 0x01 (Power On)
    c. **Monitor ID**: 0x01 (specific to the first monitor)
    d. **Data**: None
    e. **Checksum**: Calculated by XORing Length, Command, Monitor ID, and Data.

2. **Calculate the Checksum:**
    a. XOR Calculation: Length XOR Command XOR Monitor ID
    b. In this case: 04 XOR 01 XOR 01

    Let's calculate it step-by-step:

    a. Length = 0x04
    b. Command = 0x01
    c. Monitor ID = 0x01
    d. Data = (None in this case)
    e. Checksum = Length XOR Command XOR Monitor ID
    f. Checksum = 0x04 XOR 0x01 XOR 0x01
        - 0x04 XOR 0x01 = 0x05
        - 0x05 XOR 0x01 = 0x04

    Thus, the **Checksum** byte is 0x04.
3. **Final Command:**

    Putting it all together:

    a. **Length**: 0x04
    b. **Command**: 0x01 (Power On)
    c. **Monitor ID**: 0x01
    d. **Checksum**: 0x04

    The command sequence to send over RS232 would be: 04 01 01 04

Using Online XOR Calculator

To use an online XOR calculator like the one mentioned earlier:

1. Enter each of the bytes (in HEX) that need to be XORed into the left-hand box, each on a new line:

    04

    01

    01
2. The right-hand box will display the XOR result, which should be 04.

Additional Tips

1. **Double-Check**: Always verify the command format and byte values according to the device manual.
2. **Test with Simple Commands**: Start with simple commands (like power on/off) to verify communication before sending more complex commands.
3. **Monitor Feedback**: Check the response from the device to ensure the command was correctly received and executed.

Troubleshooting Tips

Troubleshooting IP control for Hisense displays involves checking both the network and display's settings. Here's a step-by-step guide:

1. **Network Connectivity**
   - **Ensure the HISENSE DISPLAY is connected to the network:** Verify that the HISENSE DISPLAY is connected to the correct Wi-Fi or wired network.
   - **Check IP address:** On the HISENSE DISPLAY's network settings, find the IP address assigned to the HISENSE DISPLAY and note it.
   - **Ping the HISENSE DISPLAY:** From a computer or mobile device on the same network, use the ping command to test connectivity. If the ping fails, the device may not be properly connected or there may be a network issue.
   - **Router Settings:** Ensure that the router does not have any firewall or security settings blocking IP communication with the HISENSE DISPLAY.
2. **Display Settings**
   - **Enable IP control:** Hisense displays have an option for enabling IP control in their settings. Refer to the instruction to enable IP control setting or server.
   - **Update firmware:** Ensure the display's firmware is up to date, as updates can fix bugs with IP control.
3. **Control Device Settings**

- **Check for app compatibility:** Ensure the control app or software is compatible with the specific display model.
- **Verify IP control settings:** Ensure that the control app is set to the correct IP address of the display.
- **Use correct port number:** Some displays require a specific port for IP control.

4. Test with Another Device
   - **Try another device:** If possible, test the IP control with another smartphone, tablet, or computer to rule out device-specific issues.
5. Restart Devices
   - **Power cycle the display and router:** Restart both the display and the network router to reset the connections.
6. Static IP
   - **Assign a static IP address:** If the display's IP address changes frequently, assign a static IP to prevent control loss due to IP address changes.
7. Factory Reset
   - If all else fails, consider factory resetting the display, but this should be the last resort.

Hisense

Version: 1.0