

HDSet Operation Manual

Table of contents

1.	Software installation	3
2.	Equipment search	3
	2.1 Device search	3
3.	Original process	4
	3.1 Hardware setting parameters	5
	3.2 Smart Settings	9
	3.3 Receiving card performance parameter description	13
	3.4 HUB setting instructions	15
	3.5 Connection setup instructions	16
4.	New process	19
	4.1 Hardware setting parameters	20
	4.2 Smart Settings	26
	4.3 Receiving card performance parameter description	30
	4.4 HUB setting instructions	32
	4.5 Data group exchange instructions	32
	4.6 Connection setup instructions	41
5.	Auxiliary functions	45
	5.1 Firmware upgrade	45
	5.2 Screen Test	46
	5.3 Multilingual35	47

5.4 Multi-function card	48
5.5 Video Processor Settings	49
5.6 Mapping function	50
5.7 Sending card network port backup	53
6. Playback software HD Show	58

V3.5 20240326

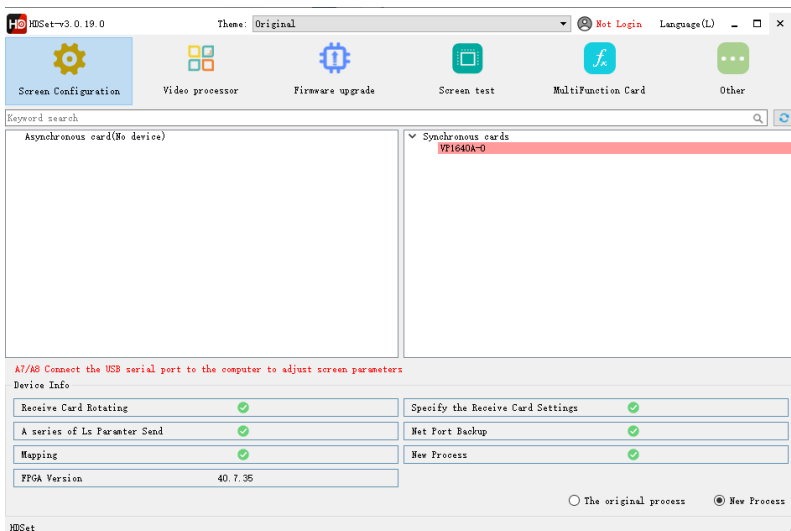
一、 Software Installation

Just double-click the software's executable file HDSet.exe, and then follow the software's prompts to install it by default.

二、 Device search

2.1 Device search

- T901 / T902/ VP210/VP410/VP620/VP820/VP1220/VP1620/ VP1240 VP1640/VP1640A use a dedicated USB cable to connect to the USB interface of the computer ;
- Opening the software will automatically search for the device;
- When a device is searched , the device will be displayed on the left and right sides . Synchronous cards and asynchronous cards are classified to display relevant information about the device .

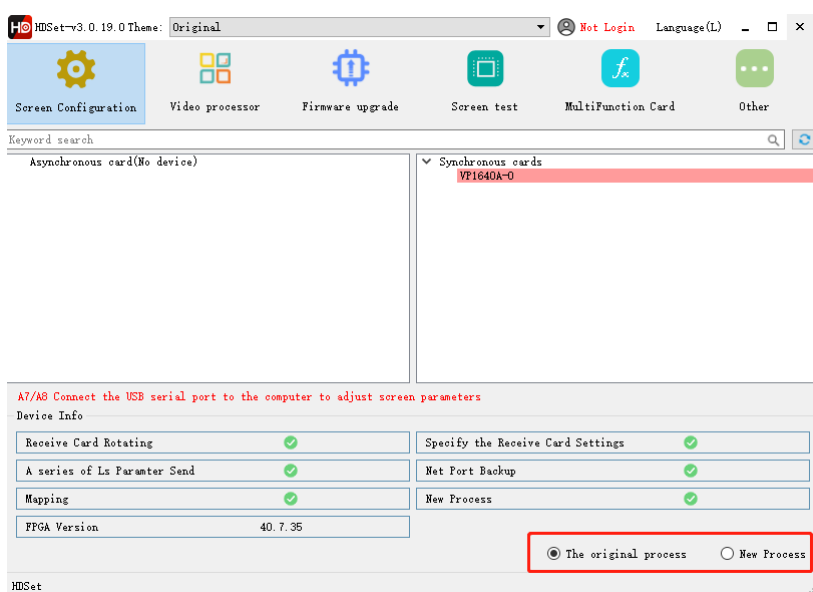


三、Original process

Original process: Keep the original software operation interface, and the receiving card parameters and connection settings are sent together. That is, the exported parameter file contains the connection settings and is a file.

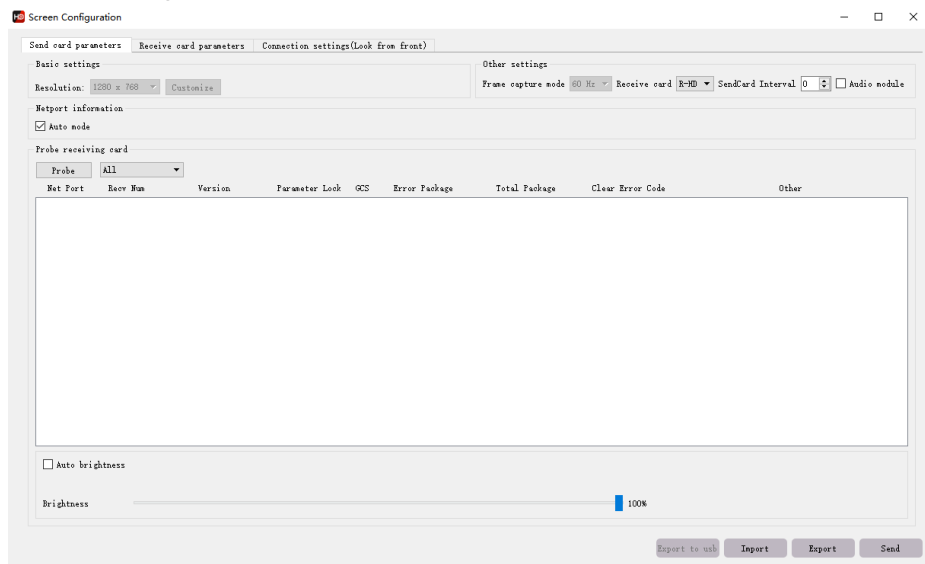
New process: Compared with the original process, the main difference of the new process is that the receiving card parameters and connection relationships are sent separately, that is, there are two module parameter configuration files and connection settings files.

The main functions of the new process include data group exchange wizard, designated receiving card parameter locking, mapping function, box construction, network port backup of the sending card, etc.



3.1 Hardware setting parameters

- Select the device and [click the display configuration button to enter the parameter setting interface](#) . The display configuration window is divided into sending card parameter setting, [receiving card parameter setting](#) , and [connection setting parameter setting](#).
- Among them, the parameters of the sending card can be set for resolution setting, frame mode (60Hz/30Hz) selection , audio transmission , automatic brightness , brightness linkage , detection of receiving cards and other functions.



Note: Audio transmission and automatic brightness adjustment need to be used with the multi-function card Y1.

- Receiving card parameter settings
- Click on the receiving card parameters to enter the receiving card parameter setting page. On this page, you can set the receiving card refresh rate, refresh rate acceleration, gray scale , brightness level , DCLK frequency , priority mode , phase , line blanking , line feed time and other parameters. Settings, this interface parameter directly affects the display effect of the display and HUB settings .


Screen Configuration

Send card parameters
Receive card parameters
Connection settings(Look from front)

Basic parameters

Refresh rate: 3840 Refresh rate acceleration: 16
Gradation: 8192 Brightness level: Normal brightness
DCLK Frequency: 10.40Hz Priority mode: Refresh rate priori
Phase: 3 Gray mode: Low gray balance
Blanking Line: 20 Line break time: 5
DCLK Frequency: 25MHz Refresh optimization: ☐
DCLK Phase: 0 (0°) Refresh Ratio: 8

Decoding the related

Blanking enhancement: close Blanking voltage: 3.25V
Blanking delay level: 50 0ns

HUB settings

☒ HUB75-12 (24GB) ☐ HUB75-10 (20GB)
☐ HUB75-16 (32GB) ☐ HUB75-20 (extended)
☐ RS05 (28GB) ☐ Serial 128 group

Other

Load File Smart settings Advanced settings Data group exchange
Color channel Data set offset Extended attribute

Tips

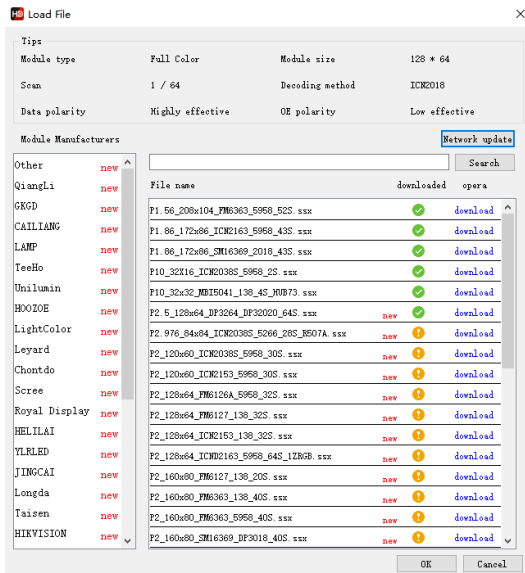
Module type Full Color
Scan 1 / 64
Decoding method TC8018
Data polarity Highly effective
OE polarity Low effective
Highly effective 62.91%
Drive TC1063/TC8263
[Details Of Modul](#)

Case

Mode Two separate
Width 16 <= 322
Height 64 <= 768
Read back Network port Card 1

Export to usb Import Export Send

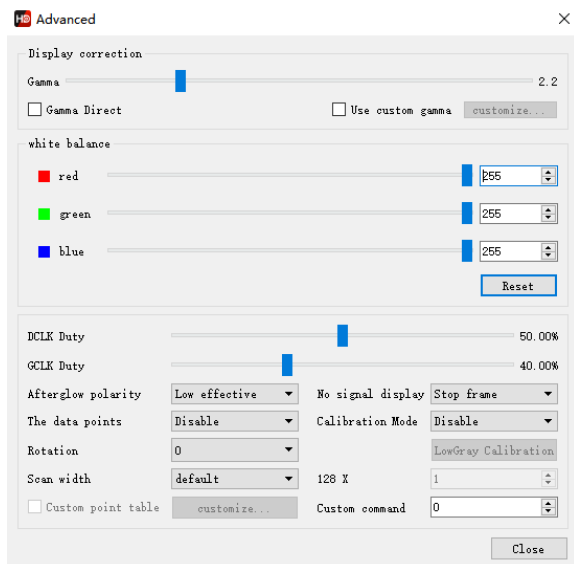
- Click **Load File** to select the corresponding module manufacturer and module parameter configuration file .



- Smart setting function:** For configuration file options that do not have corresponding modules in the **loaded file** , module parameter settings can be completed through smart setting .
- Advanced setting function:** In this interface, you can adjust the gamma value , white balance, rotation , no signal display settings and other functions to further adjust the screen display effect.
"DCLK duty cycle ": refers to the duty cycle of the shift clock , generally set to 50%.
"GCLK duty cycle": The duty cycle of the grayscale clock.
" No signal display ": When the receiving card cannot receive the signal , you can set a black screen or the last frame .

"Rotation": You can set 0, 90, 180, and 270 degree rotation.

"Data Time Sharing ": This option can be enabled when there is a flash point on the screen.

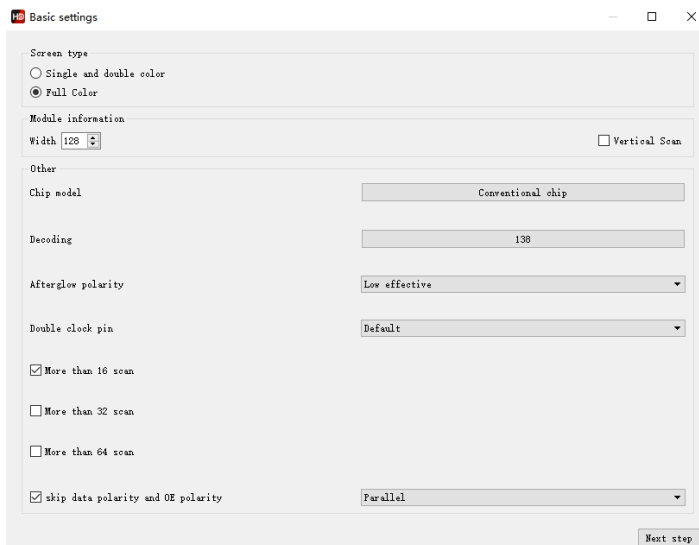


- Color channel: The red, green, and blue colors of the display can be changed through debugging.
- Data group exchange: This function can exchange the data of the output port of the receiving card, and exchange the output of the receiving card data to other output ports.

- Extended attributes : For some special ICs, such as high-brush ICs , which require **current gain adjustment** and register configuration , you can use this function to set them.
- Data group offset: Mainly used for special-shaped screens or cross screens, asymmetric multi-opening for data group offset.

3.2 Intelligent settings

- The picture below shows the first step of intelligent setting. In this interface, you need to set the screen type, single module width resolution, module chip model, and decoding method (decoding options are: 138 decoding, no decoding, 595 decoding, RT 595 8, SM5266, SM5366, SM5368, DP32019, DP32020, ICN2012, ICN2013, ICN2018, TC7258, TC7558, TC7559B and other decoders).
- are greater than 16 scans, greater than 32 scans, and greater than 64 scans. If the current module is between 17-32 scans, please check the box above 16 scans . If the current module is between 33-64 scans , please check More than 32 scans . If the current module is more than 65 scans , please check Greater than 64 scans .
- Skip the step of data polarity and OE polarity, which is the determination of data polarity and OE polarity. It is checked by default.



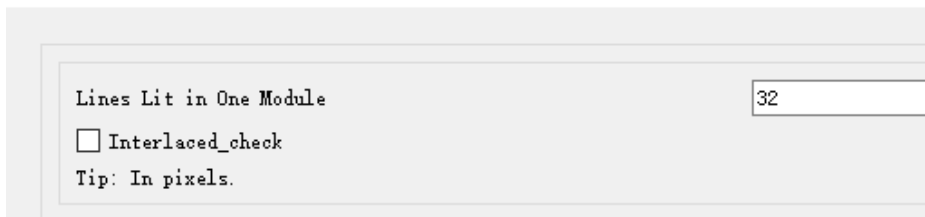
- The picture below shows the second step of smart setting . In this step, please try to click the status A B C D to observe the color display of the module. According to the performance of the module, select the corresponding option in the display status . This step is to determine the color channel status of the module.

Color channel



- The picture below shows the third step of smart setting. Please observe the performance of the module and fill in the corresponding values . This step is to determine the row height controlled by a set of RGB data .

Determine the row height of a set of RGB data controls



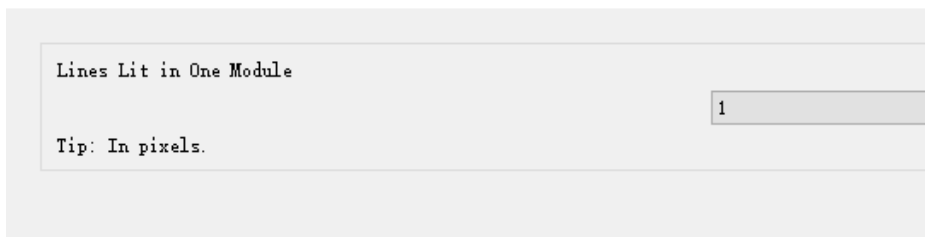
Lines Lit in One Module

☐ Interlaced_check

Tip: In pixels.

- The picture below shows the fourth step of smart setting. Please observe the performance of the module and fill in the corresponding values . This step is to determine the scanning type.

Determine scan mode



Lines Lit in One Module

Tip: In pixels.

- The picture below shows the fifth step of smart setting. Please observe the performance of the module, click on the corresponding cell according to the location of the bright spot , until all the bright spots on the screen are clicked , and then "Scan Settings" is completed.

灰度科技 HUIDU TECHNOLOGY HDSet Operating Instructions

HD Trace

Left-click tracing point, you can use the arrow keys to control

☐ Insert empty point

Null Point Inserted 0

Retreat Empty point Smart point

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152
2	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280
3	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408
4	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536
5	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664
6	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792
7	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920
8	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048
9	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176
10	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304
11	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432
12	1537	1538	1539	1540	1541	1542	1543	1544	1545	1546	1547	1548	1549	1550	1551	1552	1553	1554	1555	1556	1557	1558	1559	1560
13	1665	1666	1667	1668	1669	1670	1671	1672	1673	1674	1675	1676	1677	1678	1679	1680	1681	1682	1683	1684	1685	1686	1687	1688
14	1793	1794	1795	1796	1797	1798	1799	1800	1801	1802	1803	1804	1805	1806	1807	1808	1809	1810	1811	1812	1813	1814	1815	1816
15	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944
16	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072
17	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200
18	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328
19	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456

Back Next step

After completion, click Reset Connection to complete the smart settings .

3.3 Receiving card performance parameter description

Screen Configuration

Send card parameters **Receive card parameters** Connection settings(Look from front)

Basic parameters

Refresh rate:	3840	Refresh rate acceleration:	2
Gradation:	8192	Brightness level:	Normal brightness
DCLK Frequency:	10.4MHz	Priority mode:	Refresh rate priori
Phase	1	Gray mode	Video noise reducti
Blanking Line	20	Line break time	5
GCLK Frequency	25MHz	☐ Refresh optimization	?
GCLK Phase	0 (0~9)	Refresh Ratio	8

- For different chips , the performance parameters of the receiving card parameter interface are different , mainly including the following :
- "Refresh rate": The higher the theoretical refresh rate, the more stable the displayed image will be, but the higher the refresh rate, the lower the brightness efficiency will be.
- "Refresh rate acceleration": The higher the refresh rate, the higher the refresh rate will be.
- "Gradation": The parameter for the brightness and darkness of the screen display. There are 9 grayscale levels available on the software, divided into 256, 512, 1024, 2048, 4096, 8192, 16384, 32768, and 65536. The selected grayscale The higher the level, the more detailed the screen display will be.
- "Brightness level: divided into low brightness, normal brightness, and high brightness. Normal brightness is generally selected as the brightness level.
- "DCLK frequency": the frequency of the shift clock. The larger this parameter is, the larger the theoretical load width can be. If it is a PWM chip, the default is usually 12.5MHz or the DCLK frequency is adjusted

so that the number of loading points is slightly larger than the number of actual cabinet points. If it is a general-purpose chip or a dual-latch chip, it is generally set to 17.86/15.625MHz. If there is a flash point, the DCLK needs to be lowered by one level.

- "Priority mode": The default is refresh rate priority, which can achieve a higher refresh rate. Selecting brightness priority can achieve higher brightness, but it will reduce the refresh rate.
- "Phase": The phase of the shift clock. When there is misalignment or flash point in the picture, adjusting this parameter can eliminate it.
- "Grayscale mode": This is mainly the gama effect, low gray balance: one level of gray;

Video noise reduction: non-first-level graying, which can eliminate some small dark highlights during video playback.

- "Line blanking ": used to adjust the afterglow on the scanning screen. If the afterglow is severe, this value can be increased.
- "Line break time": Adjust the scanning screen persistence according to the line blanking time.
- "GCLK frequency": the frequency of the grayscale clock.



3.4 HUB setup instructions

Screen Configuration

Send card parameters	Receive card parameters	Connection settings(Look from front)
Basic parameters		
Refresh rate:	3840	Refresh rate acceleration:
Gradation:	8192	Brightness level:
DCLK Frequency:	10.4MHz	Priority mode:
Phase	1	Gray mode
Blanking Line	20	Line break time
GCLK Frequency	25MHz	☐ Refresh optimization
GCLK Phase	0 (0~9)	Refresh Ratio
Decoding the related		
Blanking enhancement	close	Blanking voltage
Blanking delay level	50	8ns
HUB settings		
☐ HUB75-12 (24RGB)	☐ HUB75-10 (20RGB)	
☒ HUB75-16 (32RGB)	☐ HUB75-20 (extended)	
☐ R505 (28RGB)	☐ Serial 128 group	
Other		

- HUB settings check:

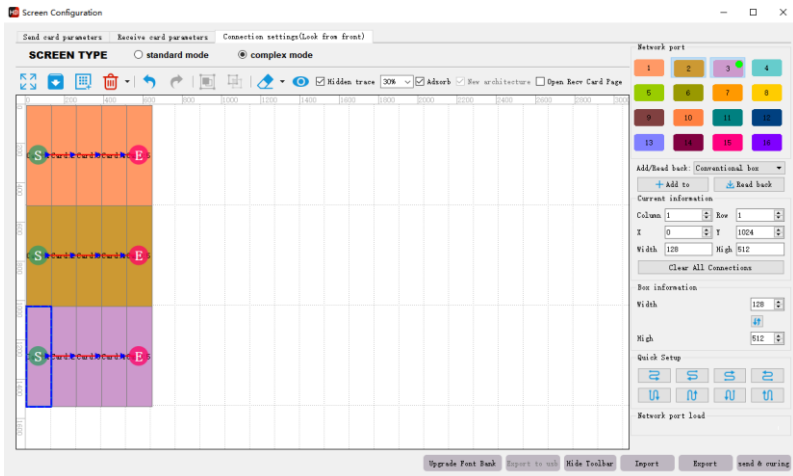
R512T/R712 receiving card check HUB75-12

C15C/C16C/C35C/C36C control card check HUB75-10

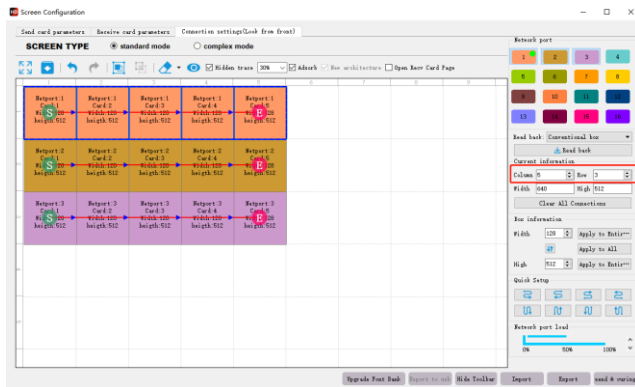
R516T/R320T/R732 receiving card check HUB75-16

3.5 Connection setup instructions

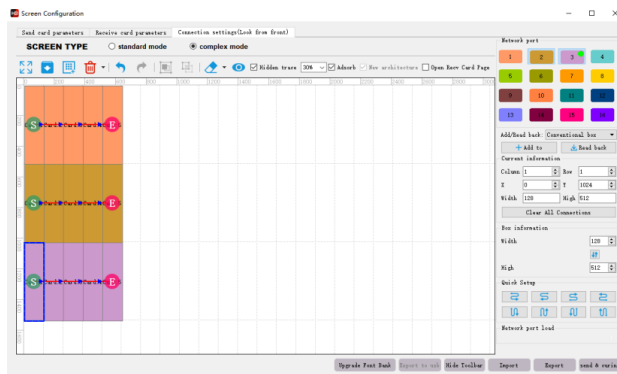
- Logically connect the receiving cards . Generally, one box is carried by one receiving card, so it is also called a connected box.



- Click Connection Settings to enter the connection settings page.
- This page can conveniently and quickly set the connection relationship of the receiving card . You can set the number of horizontal and vertical receiving cards according to the actual situation, as shown in the figure below.



- the receiving card according to the actual width and height of the receiving card connected to the LED screen, and set the connection method of the receiving card. First select a network port, then select a connection method of the receiving card, and click on the corresponding square Drag the mouse directly to the left to select, and then follow the same steps to complete the connection settings of other network ports, and then click Send to complete the large screen configuration.



- Introduction to interface icons



Edit the connection relationship in full screen;  read back button: read back the connection relationship;



Add cabinet button: After clicking, long press the mouse and drag the position in the cabinet setting interface to add multiple cabinets;



Delete cabinet: Click to delete the selected cabinet;



Undo button: Click to restore the original steps;



Undo button: Click to recover the steps before undoing;



Combination button: Select multiple cabinets and click to combine, and the selected cabinets will become a whole;



Ungroup button: After ungrouping, each cabinet becomes a cabinet that can be set independently;



Clear button: clear cabinet information;



Hide/show cabinets: Click to hide or show all cabinets of the selected network port;



Show wiring: Check to display the wiring of the connection relationship;



Cabinet proportion: adjust the proportion of the cabinet for easy operation;

Precautions:

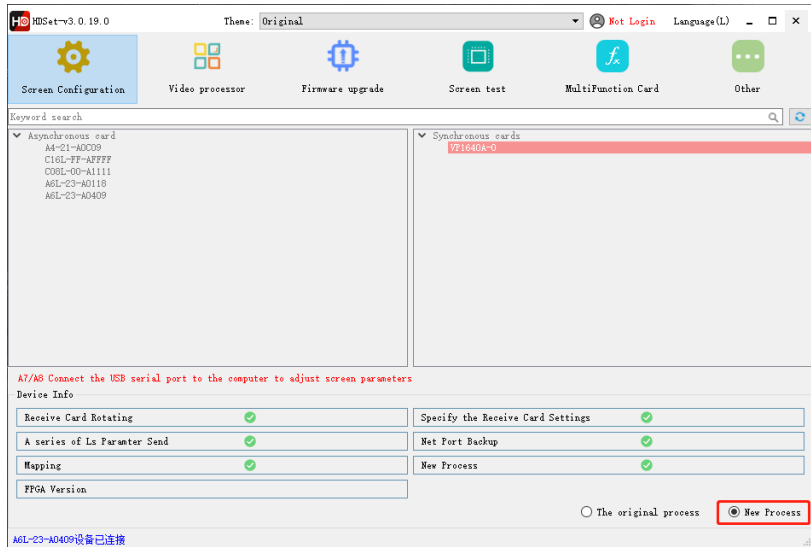
1. The connection relationships of all network ports are set together without distinguishing between network ports.
2. Add designated receiving card setting parameters (select the cabinet, right-click the mouse and select receiving card parameters to enter the designated receiving card setting interface). Cx5 and Cx6 series cannot modify the parameters of the sending card itself as the receiving card.

四、 new process

New process: The main difference is that the receiving card parameters and connection relationships are sent separately, that is, there are two receiving card parameter configuration files and connection setting files. The main functions of the new process include: data group exchange wizard, designated receiving card parameter locking, Mapping function, sending card network port backup, box construction, etc.

Conditions for supporting the new process:

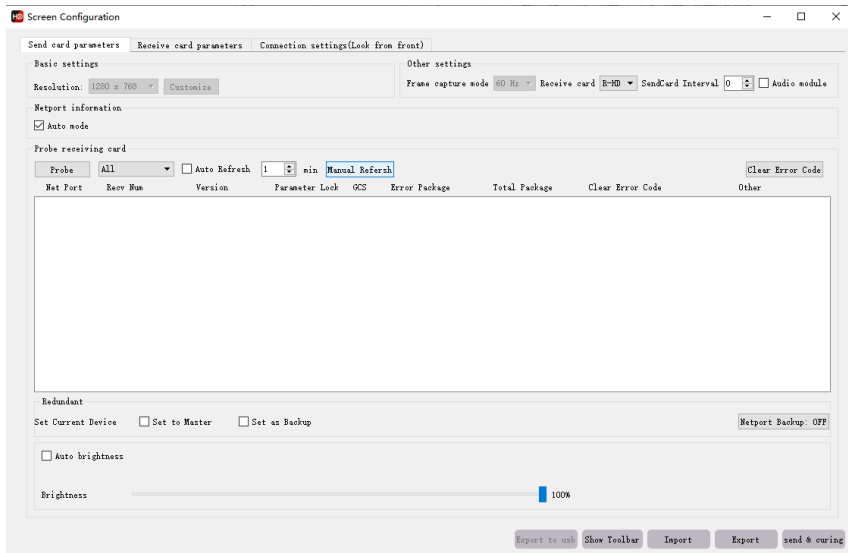
- 1) HDSet software version---2.1.0.3 and above;
- 2) For the FPGA firmware version of the sending card, you can check whether it supports "new process" in the device information of the main interface of the H DSet software. If the "new process" option is marked with an ×, it means that the new process is not supported, and the FPGA firmware of the sending card needs to be upgraded;
- 3) Receiving card firmware version ----V22.xx.xx.xx and above (receiving cards with firmware versions below V22 cannot be mixed).



4.1 Hardware setting parameters

- Select the device , check the new process, and click the display configuration button to enter the parameter setting interface . The display configuration window is divided into sending card parameter setting, receiving card parameter setting , and connection setting parameter setting.

Among them, the parameters of the sending card can be set for resolution setting, frame mode (60Hz/30Hz) selection , audio transmission , automatic brightness , brightness linkage , detection of receiving cards , network port backup and other functions .



Note: Audio transmission and automatic brightness adjustment need to be used with the multi-function card Y1

- Receiving card parameter settings
- Click on the receiving card parameters to enter the receiving card parameter setting page. On this page, you can set the receiving card refresh rate, refresh rate acceleration, gray scale , brightness level , DCLK frequency , priority mode , phase , line blanking , line feed time and other parameters. Settings, this interface parameter directly affects the display effect of the display and HUB settings .

Screen Configuration

Send card parameters Receive card parameters Connection settings(Look from front)

Basic parameters

Refresh rate: 3840 Refresh rate acceleration: 16
 Gradation: 8192 Brightness level: Normal brightness
 HCLC Frequency: 10.4MHz Priority mode: Refresh rate priori
 Phase: 3 Gray mode: Low gray balance
 Blanking Line: 20 Line break time: 5
 GCLK Frequency: 200MHz Refresh optimization: ☐
 GCLK Phase: 0 (0°) Refresh Ratio: 8

Decoding the related

Blanking enhancement: close Blanking voltage: 5.25V
 Blanking delay level: 50 ns

RGB settings

☒ RGB75-12 (24RGB) ☐ RGB75-10 (20RGB)
☐ RGB75-16 (32RGB) ☐ RGB75-20 (extended)
☐ RGB05 (20RGB) ☐ Serial 128 group

Other

Load File Smart settings Advanced settings Data group exchange
 Color channel Data set offset Extended attribute

Send Model

☐ All Receive Card ☐ Reset Recv Card Starting Coordinates
☐ Specified Receive Card Network port 1: Card 1
☒ Specified More Than One Receive Card Send List box maintenance

Tips

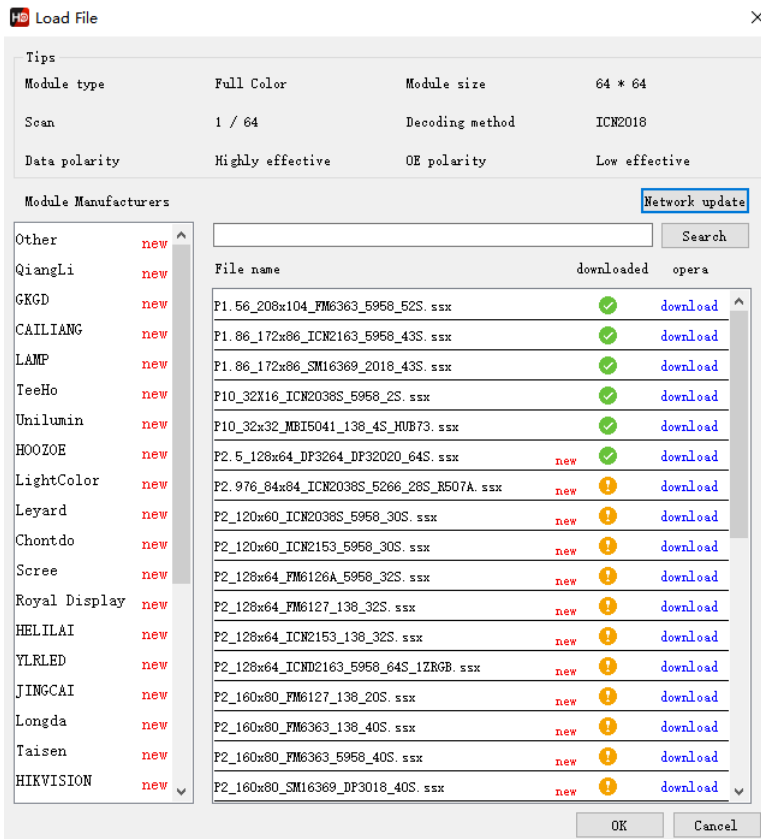
Module type: Full Color
 Scan: 1 / 64
 Decoding method: RGB018
 Data polarity: Highly effective
 OE polarity: Low effective
 Highly effective: 62.91%
 Drive: ICH1063/ICH2063
[Details Of Model](#)

Case

☒ Regular box ☐ Construct box
 Mode: Two separate
 Width: 128 <= 322
 Height: 576 <= 768
 Read back: Network port Card 1

Report to mah Show Toolbar Import Export Send saving

- Click Load File to select the corresponding module manufacturer and module parameter configuration file.



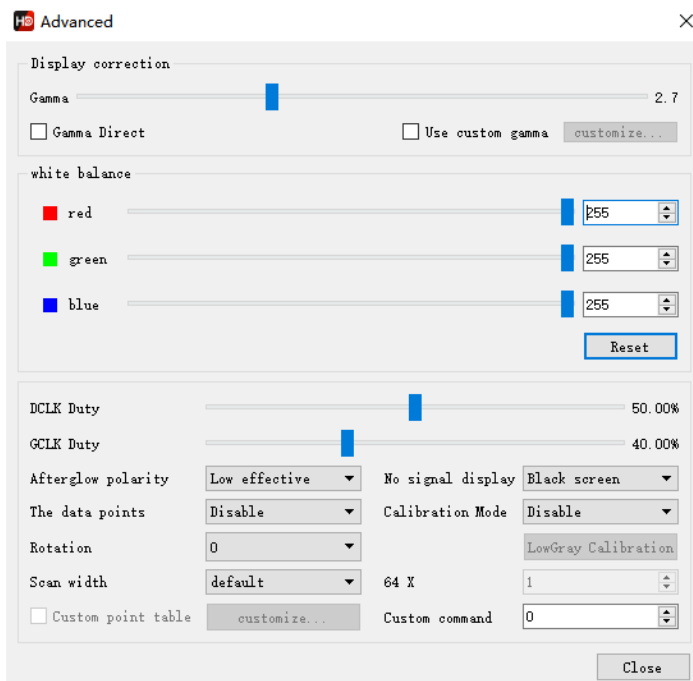
- **Smart setting function:** For configuration file options that do not have corresponding modules in the loaded file, module parameter settings can be completed through smart setting .
- **Advanced setting function:** In this interface, you can adjust the gamma value , DCLK duty cycle , data time sharing , rotation , no signal display settings and other functions to further adjust the screen display effect.

DCLK duty cycle : refers to the duty cycle of the shift clock , generally set to 50%.

GCLK duty cycle: the duty cycle of the grayscale clock.

No signal display : When the receiving card cannot receive a signal , you can set the display of the last frame of the screen or a black screen .

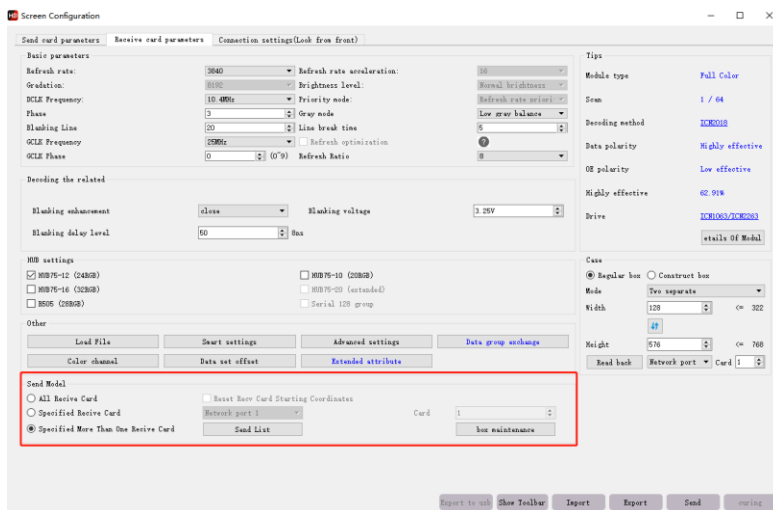
Data Time Sharing : This option can be enabled when there are flash points on the screen .



- Color channel: The red, green, and blue colors of the display can be changed through debugging.

- **Data group exchange:** This function can exchange the data of the output port of the receiving card, and exchange the output of the receiving card data to other output ports.
- **Extended attributes :** For some special ICs, such as high-brush ICs , which require current gain adjustment and register configuration , you can use this function to set them.
- **Data group offset:** Mainly used for special-shaped screens or cross screens, asymmetric multi-opening for data group offset.

● Receiving card parameter sending mode

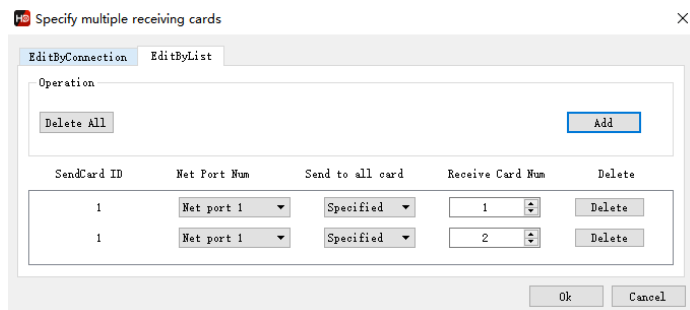


The receiving card parameter sending mode is divided into sending to the receiving cards of all network ports, sending to a receiving

card of the specified network port, and sending to multiple receiving cards of multiple specified network ports.

If the sending card has multiple network ports, the parameters only need to be sent to all receiving cards in a certain network port. Select designated receiving card, specify the network port, and change the number of subsequent cards to 256.

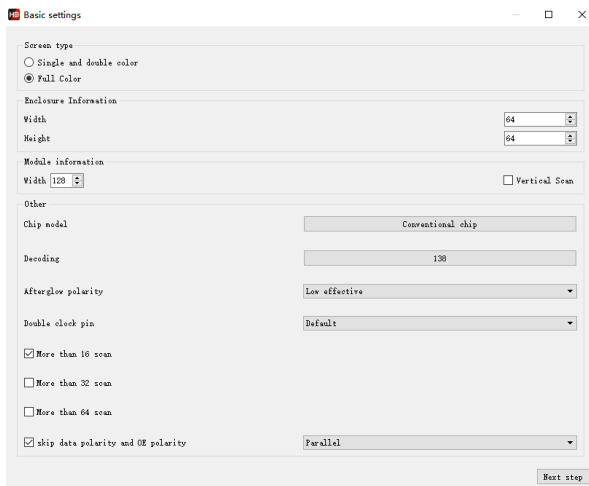
If the sending card has multiple network ports, the parameters need to be sent to multiple receiving cards in multiple network ports. Select to specify multiple receiving cards, add the network port number and the card number of the designated receiving card, and click OK.



4.2 Intelligent settings

- The picture below shows the first step of intelligent setting. In this interface, you need to set the screen type, cabinet information , single module width, module chip model, decoding method , and module scan number selection .
- Display type: divided into single and double colors and full color, selected according to the actual module type.

- Box information: The width and height resolution of a single receiving cassette inside the screen.
- Module width: Users can input the module width value based on the total number of points in a row of the LED screen used.
- Chip model: The default is the conventional chip, you can also select the corresponding driver chip.
- Decoding: The commonly used decoding is 138 decoding. Different modules have different decoding methods, which should be selected according to the actual decoding chip.
- greater than 16 scans, greater than 32 scans, and greater than 64 scans: If the current module is between 17-32 scans, please check greater than 16 scans ; if the current module is between 33-64 scans , please check More than 32 scans . If the current module is more than 65 scans , please check Greater than 64 scans.
- Skip data polarity and OE polarity: This is the determination of data polarity and OE polarity. It is checked by default.



The screenshot shows the 'Basic settings' window of the HDSet software. The window has a title bar with standard Windows controls. The settings are organized into several sections:

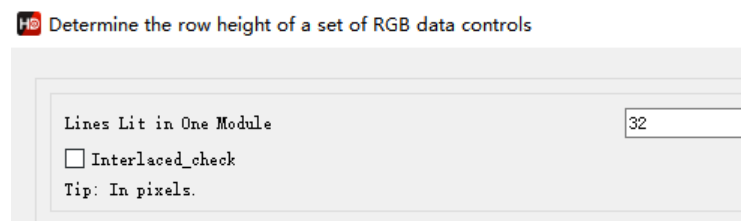
- Screen type:** Two radio buttons are present: 'Single and double color' (unselected) and 'Full Color' (selected).
- Enclosure Information:** Two numeric input fields: 'Width' (set to 64) and 'Height' (set to 64).
- Module information:** A 'Width' dropdown menu (set to 120) and a 'Vertical Scan' checkbox (unchecked).
- Other:** A section containing several settings:
 - 'Chip model': A dropdown menu set to 'Conventional chip'.
 - 'Decoding': A dropdown menu set to '138'.
 - 'Afterglow polarity': A dropdown menu set to 'Low effective'.
 - 'Double clock pin': A dropdown menu set to 'Default'.
 - Three checkboxes for scan rates: 'More than 16 scan' (checked), 'More than 32 scan' (unchecked), and 'More than 64 scan' (unchecked).
 - 'ship data polarity and OE polarity': A dropdown menu set to 'Parallel', with a checked checkbox to its left.

A 'Next step' button is located at the bottom right of the window.

- The picture below shows the second step of smart setting . In this step, please try to click the status A B C D to observe the color display of the module. According to the performance of the module, select the corresponding option in the display status . This step is to determine the color channel status of the module.



- The picture below shows the third step of smart setting. Please observe the performance of the module and fill in the corresponding values . This step is to determine the row height controlled by a set of R G B data .



- The picture below shows the fourth step of smart setting. Please observe the performance of the module and fill in the corresponding values . This step is to determine the scanning mode.

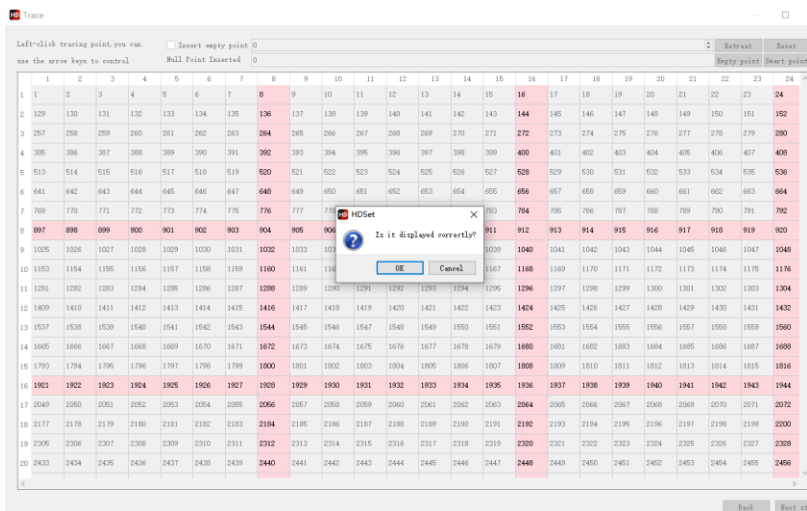
Determine scan mode

Lines Lit in One Module

1

Tip: In pixels.

- The picture below shows the fifth step of smart setting. Please observe the performance of the module, click on the corresponding cell according to the location of the bright spot, until all the bright spots on the screen are clicked, and then "Scan Settings" is completed.



4.3 Receiving card performance parameter description

Send card parameters	Receive card parameters	Connection settings(Look from front)
Basic parameters		
Refresh rate:	3840	Refresh rate acceleration: 16
Gradation:	8192	Brightness level: Normal brightness
DCLK Frequency:	10.4MHz	Priority mode: Refresh rate priori
Phase:	3	Gray mode: Low gray balance
Blanking Line	20	Line break time: 5
GCLK Frequency	25MHz	☐ Refresh optimization
GCLK Phase	0 (0°)	Refresh Ratio: 8

- For different chips , the performance parameters of the receiving card parameter interface are different , mainly including the following :
- "Refresh rate": The higher the theoretical refresh rate, the more stable the displayed image will be, but the higher the refresh rate, the lower the brightness efficiency will be.
- "Refresh rate acceleration": The higher the refresh rate, the higher the refresh rate will be.
- "Grayscale": The parameter for the brightness and darkness of the screen display. There are 9 grayscale levels available on the software, divided into 256, 512, 1024, 2048, 4096, 8192, 16384, 32768, and 65536. The selected grayscale The higher the level, the more detailed the screen display will be.
- "Brightness level: divided into low brightness, normal brightness, and high brightness. Normal brightness is generally selected as the brightness level.
- "DCLK frequency": the frequency of the shift clock. The larger this parameter is, the larger the theoretical load width can be. If it is a PWM chip, the default is usually 12.5MHz or the DCLK frequency is adjusted

so that the number of loading points is slightly larger than the number of actual cabinet points. If it is a general-purpose chip or a dual-latch chip, it is generally set to 17.86/15.625MHz. If there is a flash point, the DCLK needs to be lowered by one level.

- "Priority mode": The default is refresh rate priority, which can achieve a higher refresh rate. Selecting brightness priority can achieve higher brightness, but it will reduce the refresh rate.
- "Phase": The phase of the shift clock. When there is misalignment or flash point in the picture, adjusting this parameter can eliminate it.
- "Grayscale mode": This is mainly the gama effect, low gray balance: one level of gray;

Video noise reduction: non-first-level graying, which can eliminate some small dark highlights during video playback.

- "Line blanking ": used to adjust the afterglow on the scanning screen. If the afterglow is severe, this value can be increased.
- "Line break time": Adjust the scanning screen persistence according to the line blanking time.
- "GCLK frequency": the frequency of the grayscale clock.

4.4 HUB setup instructions

Screen Configuration

Send card parameters	Receive card parameters	Connection settings(Look from front)
Basic parameters		
Refresh rate:	3840	Refresh rate acceleration:
Gradation:	8192	Brightness level:
DCLK Frequency:	10.4MHz	Priority mode:
Phase	3	Gray mode
Blanking Line	20	Line break time
GCLK Frequency	25MHz	☐ Refresh optimization
GCLK Phase	0 (0°)	Refresh Ratio
Decoding the related		
Blanking enhancement	close	Blanking voltage
Blanking delay level	50 8ns	
HUB settings		
☒ HUB75-12 (24RGB) ☐ HUB75-10 (20RGB)		
☐ HUB75-16 (32RGB) ☐ HUB75-20 (extended)		
☐ RS05 (28RGB) ☐ Serial 128 group		

- **HUB settings check:**
 R512T/R712 receiving card check HUB75-12
 C15C/C16C/C35C/C36C control card check HUB75-10
 R516T/R320T/R732 receiving card check HUB75-16

4.5 Data group exchange instructions

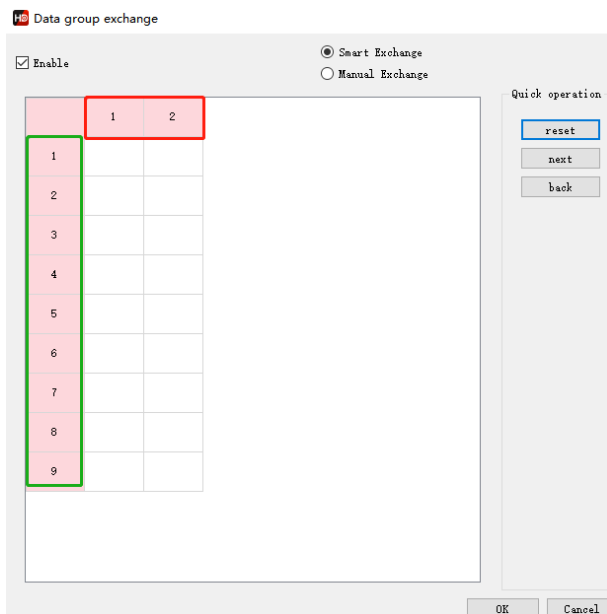
- It is used to exchange data groups in pairs for screen adjustment. It needs to be configured after the intelligent setting is completed. The red area represents how many sets of data there are in the horizontal direction, depending on the multi-open number. If it is a

normal input, there will be only 1 column, if it is a second open, there will be 2 columns; if it is a third open, there will be 3 columns, and so on.

The green area represents several sets of data in the vertical direction, depending on the height of the box and the height of the data set.

The blue area is the specific scanning group area, which can be entered manually after enabling smart scanning group.

Select all receiving cards or specified receiving cards, click "Data Group Exchange", confirm that the interface is consistent with the box module distribution, then check "Enable", and then click "Reset", the blue area will appear All will be cleared, and the LED screen will also light up with the first set of data. According to the bright position of the LED screen, click the corresponding position on the data group exchange interface, where the bright spot is, and proceed in sequence. During the group scanning process, if the LED screen does not display, you need to click on the empty group. If the click position is wrong, you can click back. retreat.



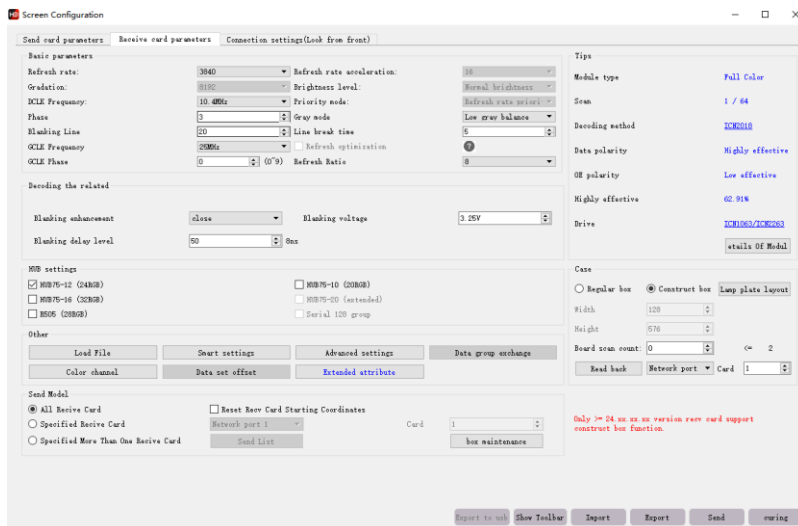
4.6 Description of special -shaped structure box

- , the special-shaped structure is to arrange the box modules by stacking blocks according to the actual module arrangement , and input the corresponding data group into the corresponding module to form an intuitive way.
- Application scenarios of special-shaped cabinet structures : cross screens , multi-open/asymmetrical multi-open loading, module cascade with built-in two-open modules, modules with rows/columns, individual modules with different data group distribution, etc.
- Version requirements for supporting construction boxes:
HDSet software version: 3.0.0.58 or above;

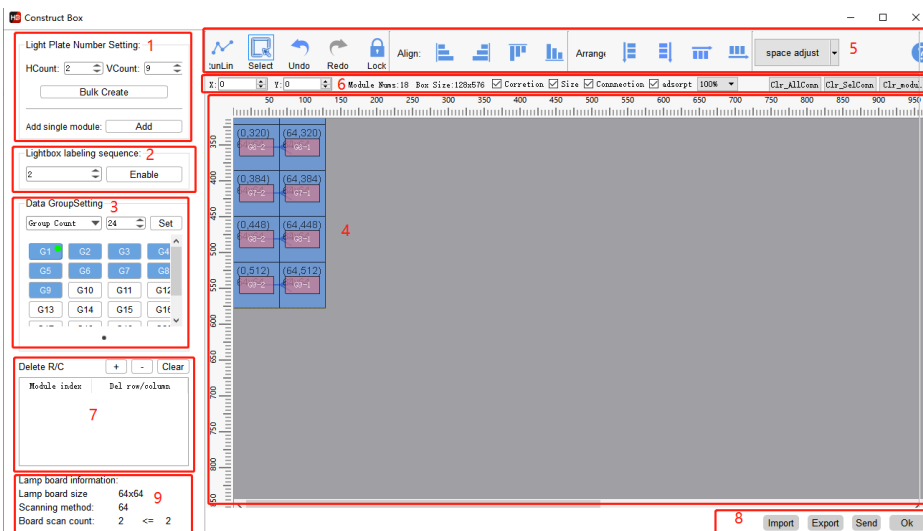
Sending card requirements: L series box, synchronization card and VP series processor to support the new process;

Receiving card model: R708/R712/R716/R732

Receiving card firmware version: 24.xx.xx.xx



● Structure box interface and function description



① Area 1 lamp board number setting:

1. Enter the horizontal number and vertical number, and click Batch Create to automatically generate a rectangle with a horizontal value
2. Add a single light panel: After clicking, you can use the mouse to add a single light panel at the specified location in area 4.

② Area 2 light panel labeling sequence:

After the smart setting is completed, click the Enable button, and the light panel will display the number of the data group in the current cabinet, making it easy to exchange data groups and set up connection relationships. (The maximum value is 8 and the minimum value is not 0)

③Area 3 data group settings:

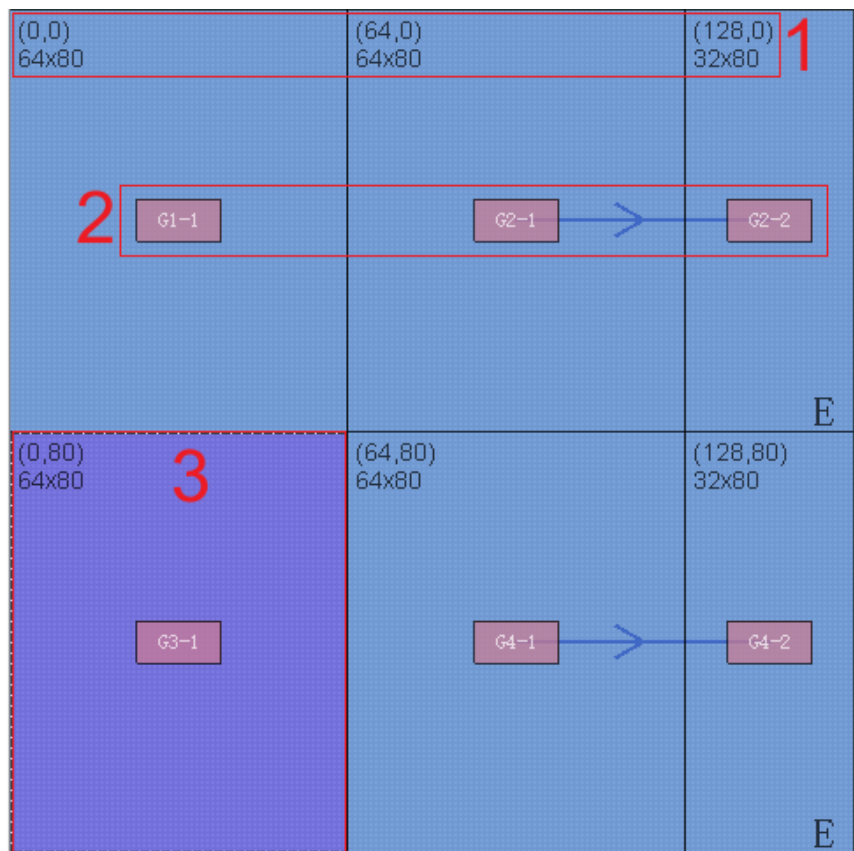
1. The number of data groups in the box is automatically generated according to the HUB setting checked on the receiving card parameter interface. Two sets of data are automatically generated according to one

interface. The user can also change it by himself. The maximum number of data groups is 128.

2. Configure the number of currently pre-used data groups and the current data group, and highlight the current data group grouping situation.

④Area 4 Graphic element interaction area:

Through functional linkage with the mouse and keyboard and other areas, a visual editing effect of the cabinet module is displayed to the user, including:



Part 1 above (x, y) is the coordinates of the current block, 64x80 is the size of the light board

Part 2 is the current data group number grouping situation and connection display.

Part 3 is the highlighted state of the selected block

⑤Area 5 Graphic element editing shortcut operation function area:

In the data group grouping mode , turn on the light board sequencing function , click on the wiring , number it according to the currently selected data group , and group the clicked primitive module into the current data group. The serial number will increase . The grouped primitive modules will not be processed. Take effect . When using the wiring function , the element movement and multi-selection functions in the cabinet are not available . If you need to move the elements , you need to click the selection button to switch the operation mode .

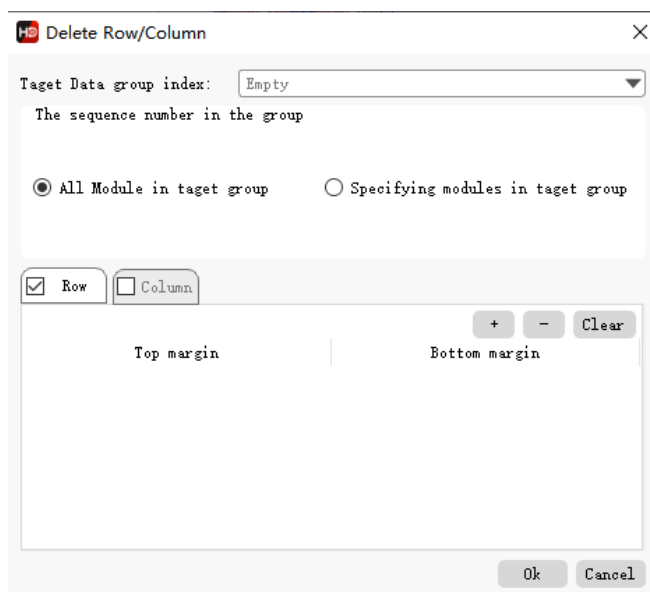
moving or copying the elements in the box, you need to click to select first to switch the operating mode. When moving the light board in routing mode, you need to click to select first.

⑥Area 6 Information editing area:

In this area, you can modify the X and Y coordinate values of the selected light panel, and you can also check whether to display the position, size, connection relationship, adsorption and other options. The scaling percentage value can be selected according to the actual situation. If the data group number is wrong, you can select Clear all connections or clear the button for a selected connection.

⑦Area 7 Extract rows and columns:

Rows and columns can be extracted from the currently edited data group. After the row/column of the target light panel is extracted, the light panel will change size, but the light panels that are stuck together will still be stuck together and will not be affected by the extraction. Rows and columns create gaps between each other.



⑧Area 8 Some operations for constructing boxes:

Import and export .hdbox files, send for debugging, etc.

⑨Area 9 Basic information of the light panel in the current structural box

This area displays the size of the light panels in the current cabinet, the scanning mode, and the number of scanned light panels. (When the current data group connection value is greater than the number of light board scans, a prompt will be displayed when sending)

Lamp board information:

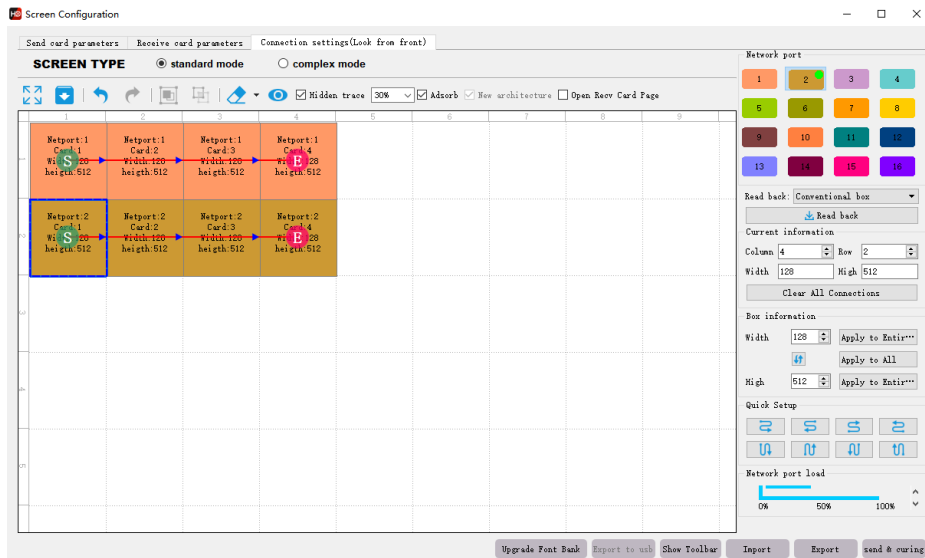
Lamp board size 64x64

Scanning method: 64

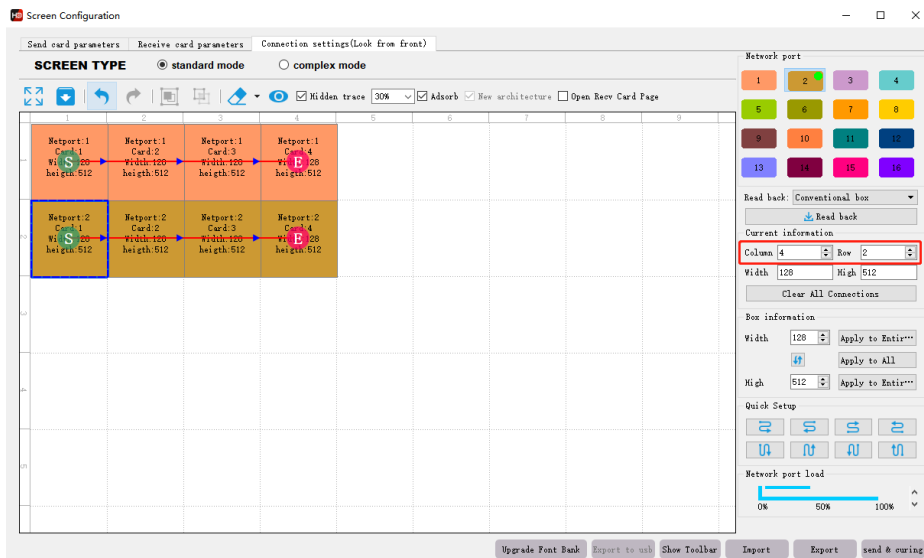
Board scan count: 2 <= 2

4.7 Connection setup instructions

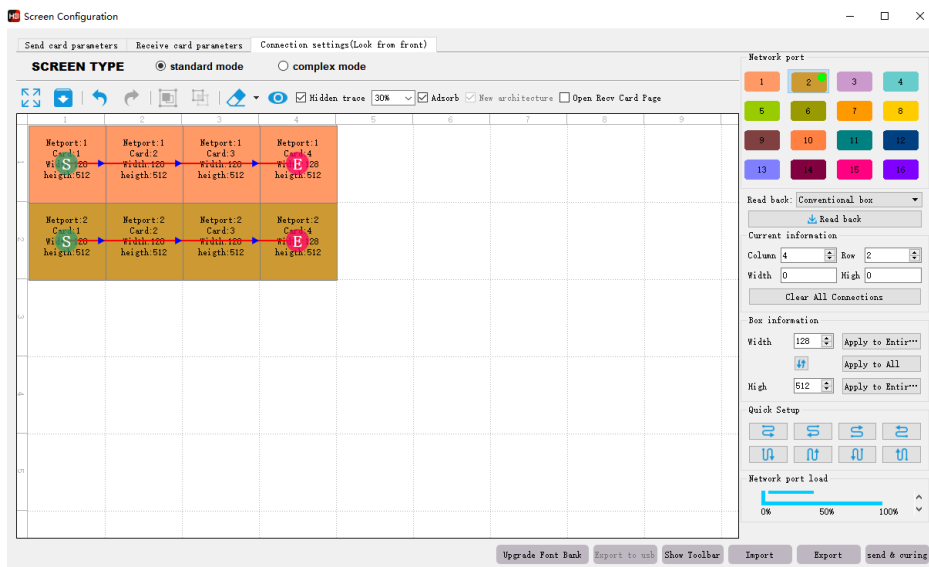
- Logically connect the receiving cards . Generally, one box is carried by one receiving card, so it is also called a connected box.



- Click Connection Settings to enter the connection settings page.
- This page can conveniently and quickly set the connection relationship of the receiving card . You can set the number of horizontal and vertical receiving cards according to the actual situation, as shown in the figure below.



- the receiving card according to the actual width and height of the receiving card connected to the LED screen, and set the connection method of the receiving card. First select a network port, then select a connection method of the receiving card, and click on the corresponding square Drag the mouse directly to the left to select, and then follow the same steps to complete the connection settings of other network ports, and then click Send to complete the large screen configuration.



● Introduction to interface icons

SCREEN TYPE : Divided into standard mode and complex mode, usually choose standard mode;



Edit the connection relationship in full screen;  read back button: read back the connection relationship;



Add cabinet button: After clicking, long press the mouse and drag the position in the cabinet setting interface to add multiple cabinets;



Delete cabinet: Click to delete the selected cabinet;



Undo button: Click to restore the original steps;



Undo button: Click to recover the steps before undoing;



Combination button: Select multiple cabinets and click to combine, and the selected cabinets will become a whole;



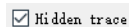
Ungroup button: After ungrouping, each cabinet becomes a cabinet that can be set independently;



Clear button: clear cabinet information;



Hide/show cabinets: Click to hide or show all cabinets of the selected network port;



Hidden trace Show wiring: Check to display the wiring of the connection relationship;



Cabinet proportion: adjust the proportion of the cabinet for easy operation;

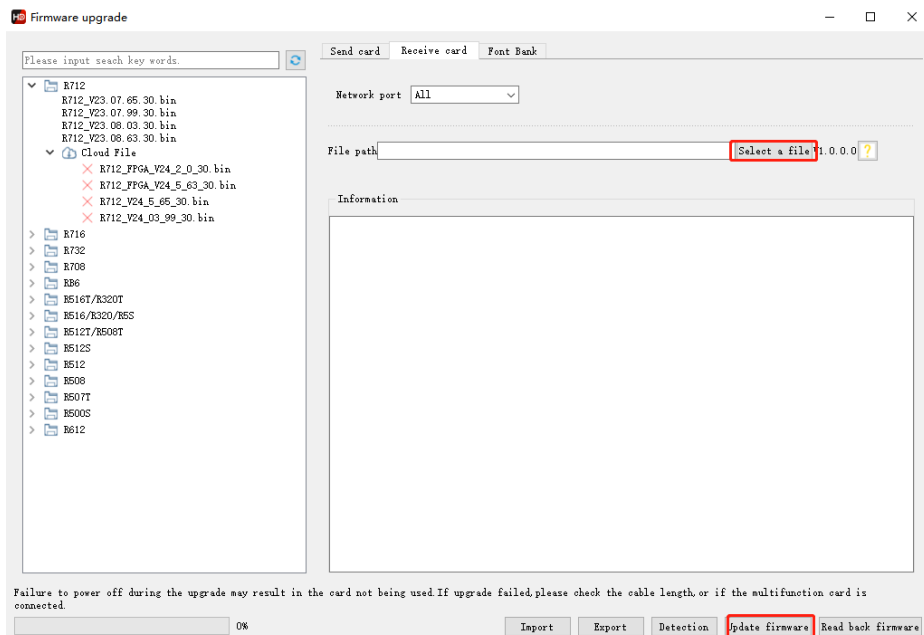
Precautions:

1. The connection relationships of all network ports are set together without distinguishing between network ports.
2. Add designated receiving card setting parameters (select the cabinet, right-click the mouse and select receiving card parameters to enter the designated receiving card setting interface).

五、 Accessibility

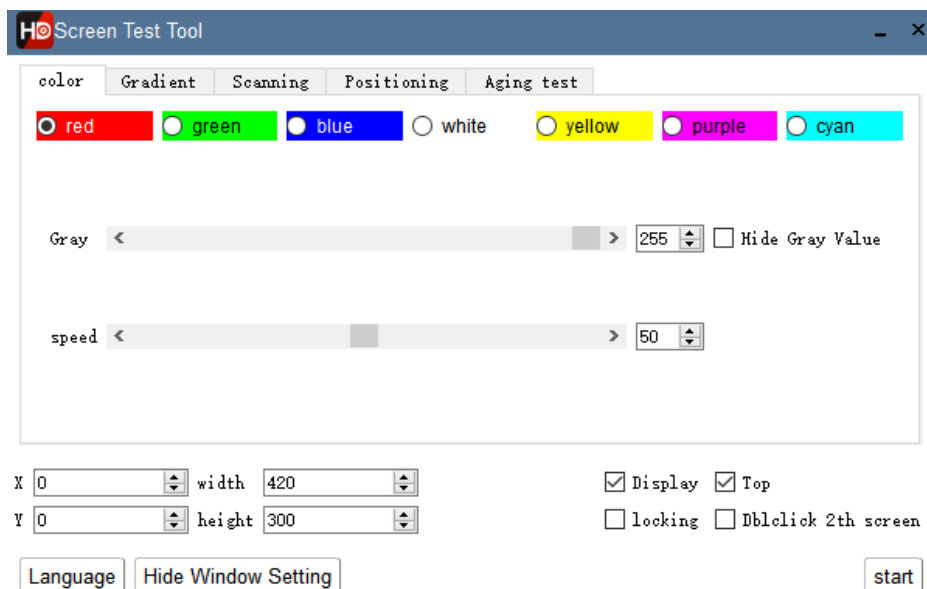
5.1Firmware upgrade

- The firmware upgrade interface includes upgrading the firmware of the sending card, upgrading the firmware of the receiving card and writing the font file of the receiving card.
- Click the firmware upgrade button to enter the sending card upgrade interface, select the corresponding sending card FPGA firmware, and then click Upgrade; enter the receiving card interface, select the corresponding receiving card firmware, and then click Upgrade (each product has a corresponding .bin file , You can download the firmware file that comes with the software).



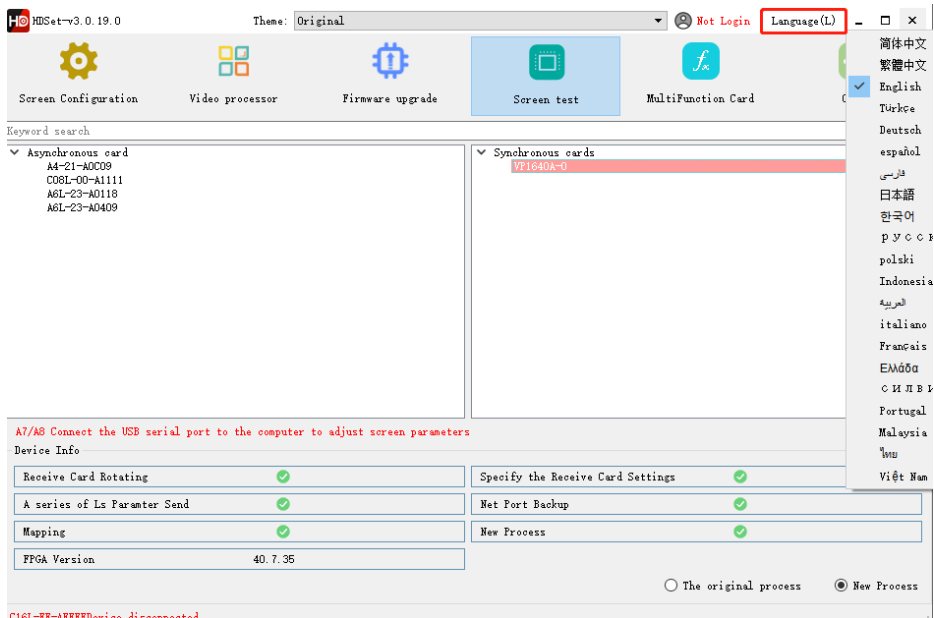
5.2 Screen test

- **Screen test:** Mainly used to test the display effect of large screens and the aging test of large screens. Click the "Screen Test" button on the main interface of the software to enter the screen test. The screen test interface includes color, gradient, scan, position, and aging tests;



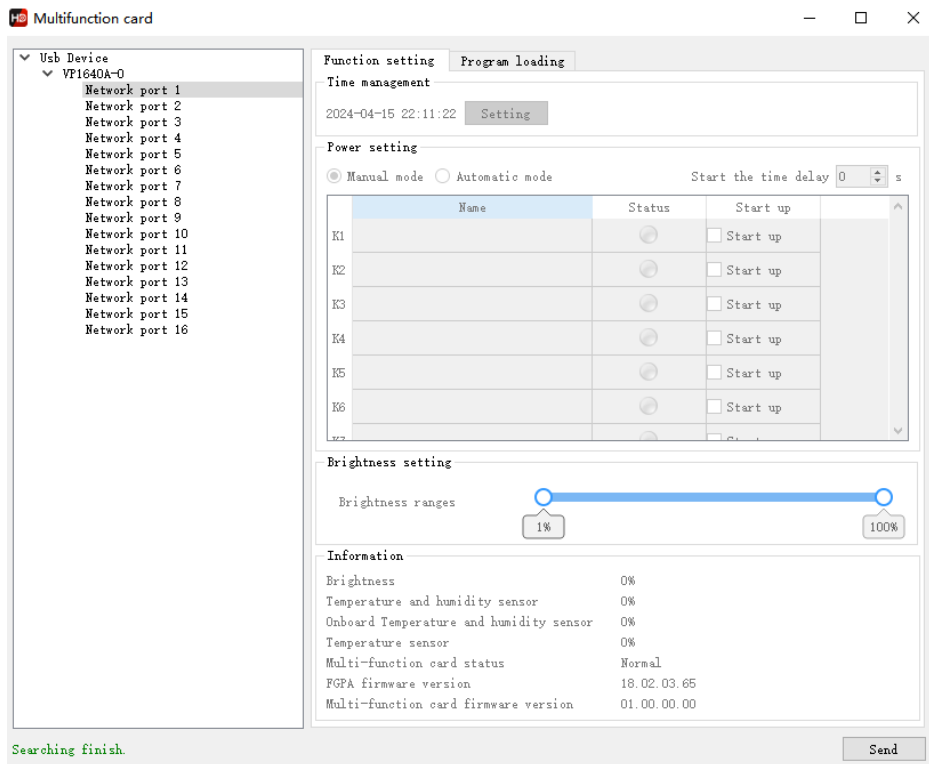
5.3 Multiple languages

- Click [Language] in the upper right corner to adjust the display language of the interface.



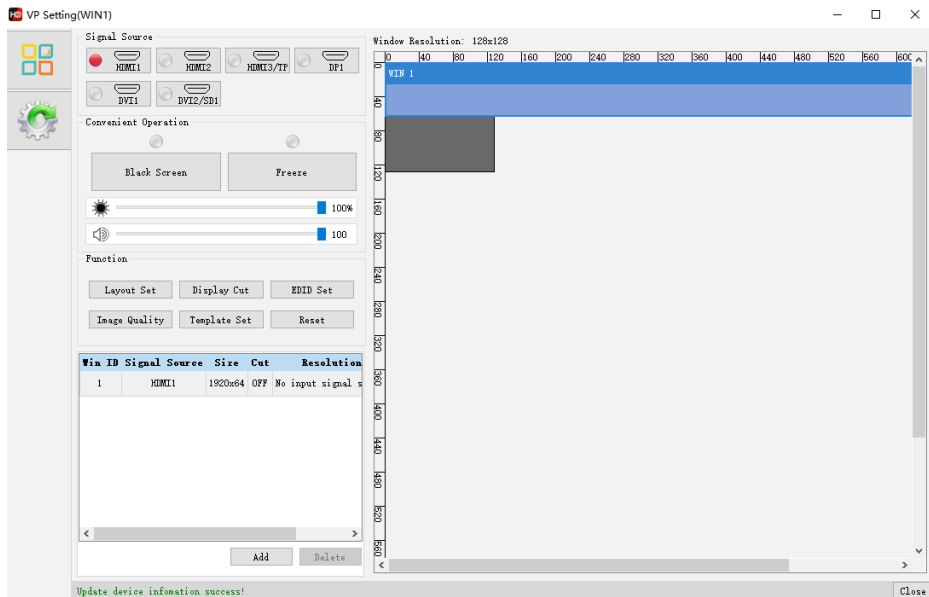
5.4 multi -function card

Y1 is a multi-function card with a variety of auxiliary functions. The main functions include supporting audio output, automatic brightness adjustment, power switch control and other functions.



5.5 Processor Settings

The processor settings in the HDSet software are mainly used to upgrade the processor firmware, input source settings, screen layout settings, image quality settings, image capture, factory reset and other functions.

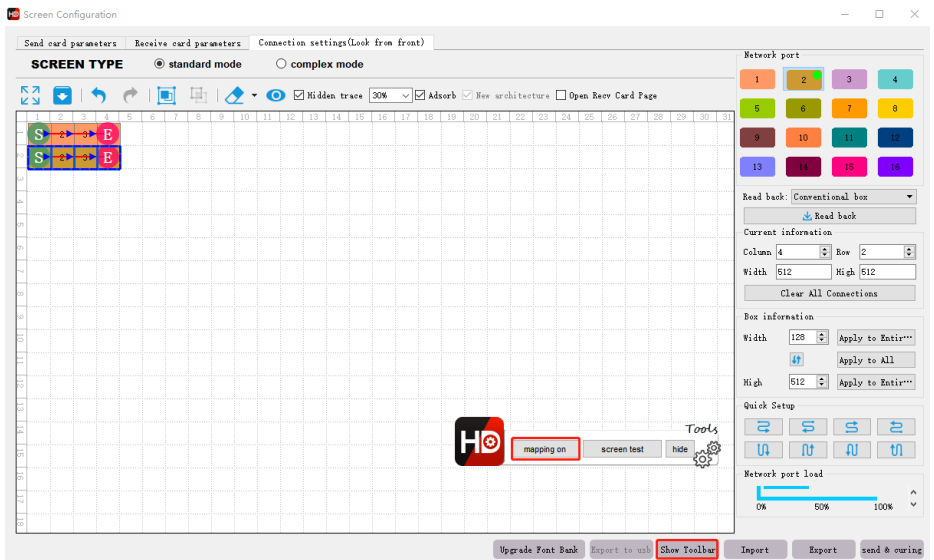


5.6 Mapping function

The Mapping function is mainly to check the wiring mode of the receiving card where the network port is located and the distribution position of the network port number.

- Conditions that need to be met to support the Mapping function:
Software version: HDSet V2.1.0.3 and above

Receiving card firmware version: V22.xx.xx.xx and above
FPGA firmware version of the sending card: needs to support new processes and support Mapping function



● Steps

- A. First, you need to ensure that the parameters of the receiving card are adjusted and displayed normally;
- B. Connect each network port of the sending end to the receiving card through network cables;
- C. Select the new process, click Display Configuration, enter the

connection setting interface, and turn on Mapping;

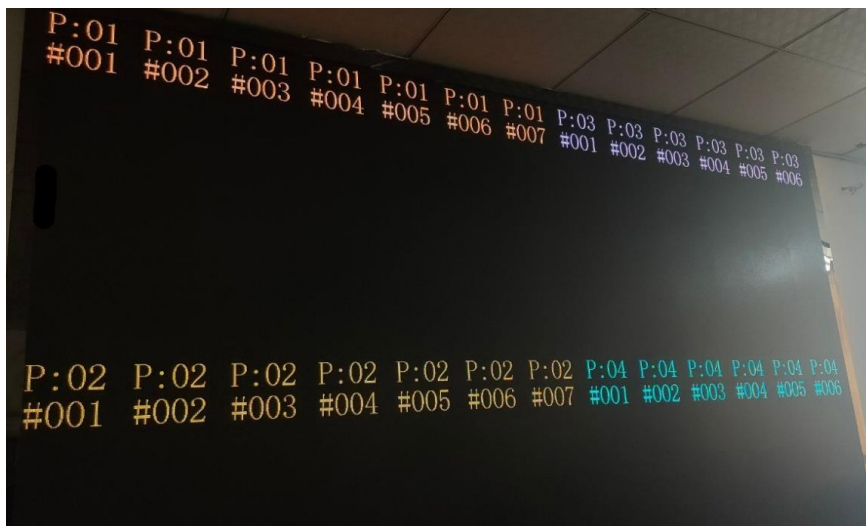
D. After turning on Mapping, the LED screen will display a screen similar to the picture below.

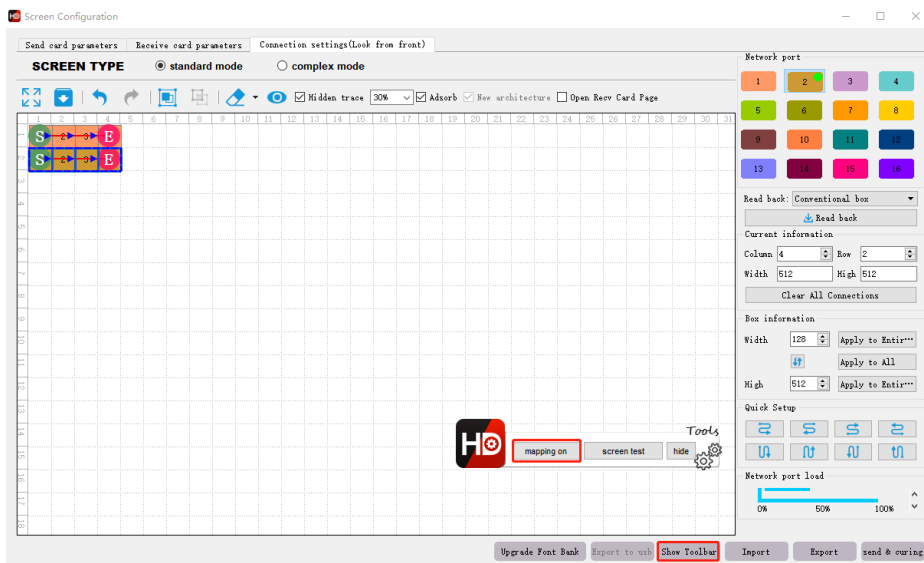
P: xx represents the network port serial number (01-16)

#xxx: Indicates the receiving card serial number (001-255) in the corresponding network port;

E. According to the actual connection sequence displayed on the LED screen, after setting the connection sequence diagram of the receiving card for each network port in the connection setting interface, click "Send & Solidify";

F. Finally, click "Turn off mapping" on the original "Turn on mapping" button to check whether the entire screen display is normal.



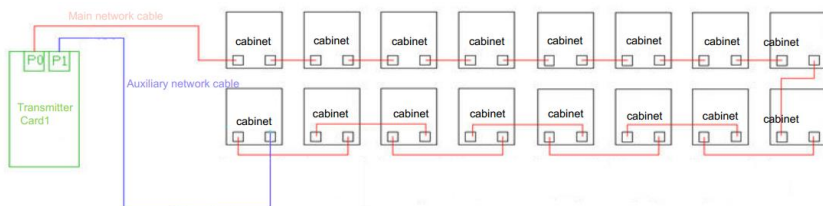


5.7 Sending card network port backup

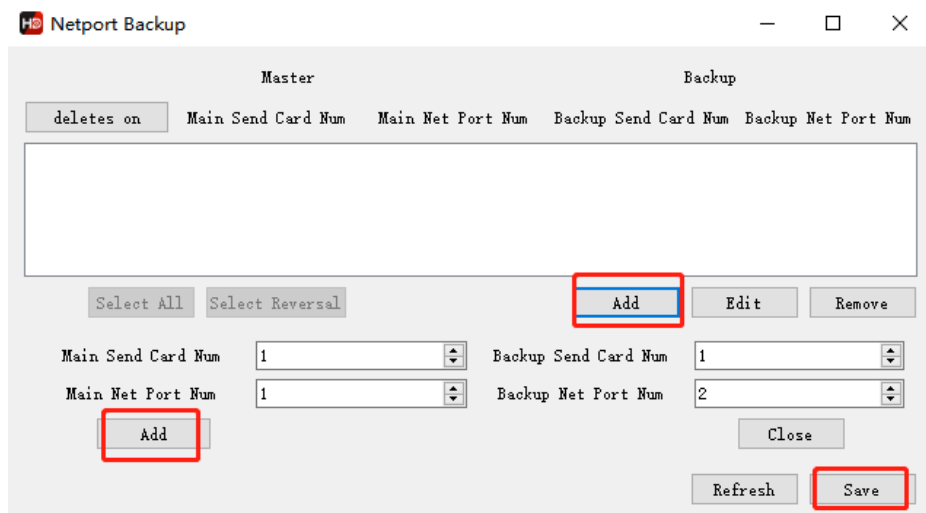
The "Network port backup" setting is suitable for backup between different network ports of a single device, and the device loading range is halved;

The "Set as Master/Backup" setting applies to backups between dual devices.

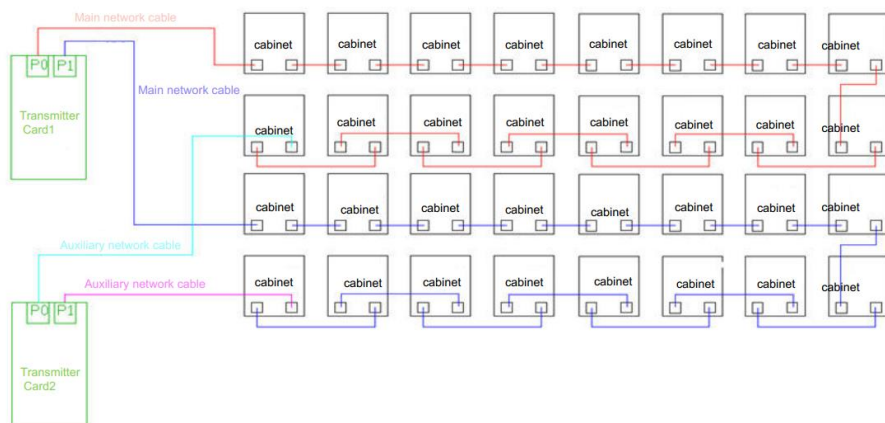
The network port backup function of a single sending device, the connection diagram is as follows:



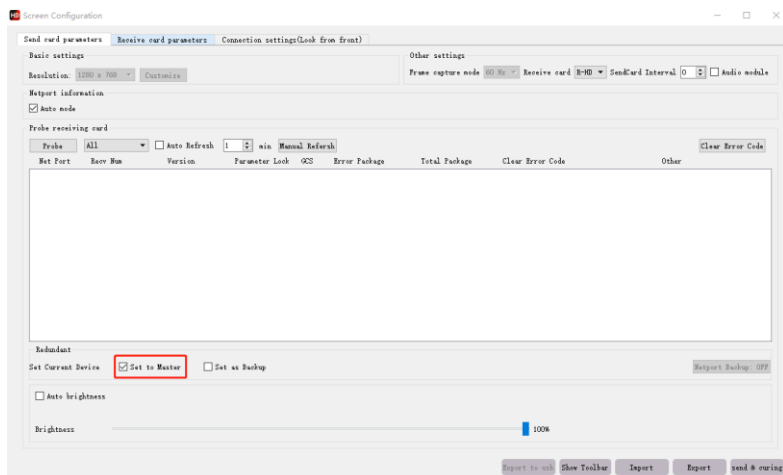
The settings on the network port backup software of a single sending device, such as T901 sending card, network port 1 is the main network cable with a large screen, the network cable of network port 2 is connected to the output network port of the last receiving card in the large screen, open the HDSet software , select the new process, click Display Configuration, click Network Port Backup on the sending card parameter interface, click the Add button, click Add, then click Save, and click Send to solidify.



The reference diagram of the backup connection between dual sending cards is as follows:



In the sending card parameter interface, enter sending card 1 and set it as the main control, and set sending card 2 as the backup. When the master and slave devices are powered on at the same time, the backup device will send display data to the receiving card 4S later than the master device.



5.8 Adjust light and dark lines

Bright and dark line adjustment: Due to splicing and design accuracy issues, light and dark lines will appear between cabinets or modules. In the main interface of the HDSet software, click Other → Adjust the light and dark line interface to adjust the coefficient value between modules. Optimize the gap. After adjusting the coefficient value, click Solid.

Preparation for light and dark line adjustment:

1. HDSet software version 3.0.19.0 or above;
2. The firmware of the receiving card needs to support light and dark line adjustment;
3. The display effect of the LED screen has been adjusted. When the sending card or processor displays a black screen, there is no background color. The brightness of the sending card is 100%. The resolution scaling ratio of the computer is adjusted to 100%. It is recommended to use the extended mode display of the computer. , to prevent the debugging

interface from blocking the preview interface and facilitate debugging.

Bright and dark line adjustment steps:

1. After debugging the display effect of the receiving card, set the correction mode to brightness/seam trimming in the advanced settings, then enable low gray correction, and set the grayscale value to 63 and the given coefficient to 1.000, then click OK to close the advanced settings interface , send the parameters and solidify them.
2. In the connection settings, set the screen connection relationship to be debugged and click Send to solidify.
3. Close the connection setting interface, click other buttons on the main interface of the HDSet software, select Adjust Bright and Dark Lines, and open the light and dark line adjustment interface.
4. Modify the position coordinates of the preview window and click to move the simulation screen so that the preview position corresponds to the LED screen.
5. Click on the light board level, then set the number of module rows and rows for a receiving cassette, and click OK to divide the modules into sections so that the bright lines can be easily modified.
6. According to the position of the bright line displayed on the LED screen, select the bright line on the interface for adjusting bright and dark lines, and adjust the coefficient value below to make the bright line disappear. The coefficient value defaults to 1.000. The smaller the value, the darker the bright line. The general adjustment value is above 0.95.
7. Debugging while watching the LED screen, until all the bright lines on the screen are repaired. At this time, it is recommended to export and save the repair data so that it can be imported and modified later. Then click Curing

and wait for about 20 seconds. All data will be cured to Receiving card.



六、 Playback software HD Show

After HDSet adjusts the screen, use HD Show to edit and play programs.
For detailed operations, see (HD Show Operation Instructions).