## **Dahua Video Conference Terminal User's Manual**

## Welcome

Thank you for purchasing our video conference terminal!

This quick start guide is designed to be a reference tool for your system.

Please read the following safeguard and warnings carefully before you use this series product! Please keep this user's manual well for future reference!

## **Important Safeguards and Warnings**

#### 1 Attention

- Please modify the user's default password after the device operates in case of being stolen.
- Please do not keep or install the device in a place with direct sunlight or near heat-producing equipment.
- Please do not install the device in a place which is wet, dusty or with soot.
- Please ensure horizontal installation for the device or it is installed in a stable place, and pay attention not to make the product fall.
- Please do not allow liquid dripping or splashing onto the device and make sure no object filled with liquid is placed on the device, which is to avoid the liquid flowing into the device.
- Please install the device in a place with sound ventilation, and do not block the ventilation opening
  of the device.
- Please use the device only within the rated input output range.
- Please do not dismantle the device unprofessionally.

#### 2 . Warning

- All installation and operation here should use your locally recommended wire module (power cable), and make sure it is applied within the fixed standard.
- The power shall conform to the requirement in the SELV (Safety Extra Low Voltage) and the rated voltage power supply of Limited power source according to the IEC60950-1. The exact power supply requirement is subject to the device label.
- Please make disconnecting device conveniently operable if using power plug or appliance coupler as disconnecting device.

#### 3. Statement

- Please refer to the actual product for more details; the manual is just for reference.
- The manual will be regularly upgraded according to the product update; the upgraded content will be added in the manual without prior announcement.
- The company is not liable for any loss caused by the operation which is not followed by the manual.
- There may be deviation between the actual value of some data and the value provided in the manual due to the reasons such as the real environment is not stable and so on. Please refer to the company's final explanation if there is any doubt or dispute.
- Other trademarks or company names may be mentioned in this manual, which belong to their respective owners.

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#### 1 Product Overview

#### 1.1 Brief Introduction

TS51A0 is a type of integrated video conference terminal with small size which is presented by Dahua; it integrates HD digital camera and stereo microphone. The operation is so convenient that it only needs to connect to power and network to realize video communication; the device can be operated and controlled via remote control, keyboard, mouse and etc, which is quite suitable for the video conference in the enterprise, government and crossed region; besides, it is fit for home users as well.

#### 1.2 Features

Apart from being portable and convenient installation of TS51A0, the device also owns the following features:

- Support mouse and keyboard operation, quick configuration.
- Built-in Wi-Fi module, support wireless network connection.
- Support data sharing.
- Support built-in MCU.

## 1.3 Structure Figure

#### 1.3.1 Structure Figure of Video Conference Terminal

Please refer to Figure 1-1 and 1-2 for the structure figure of video conference terminal.

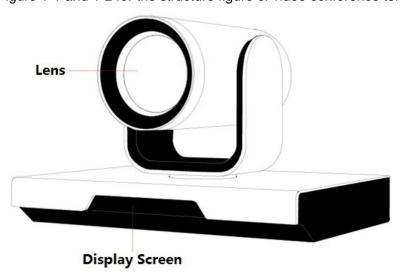


Figure 1-1



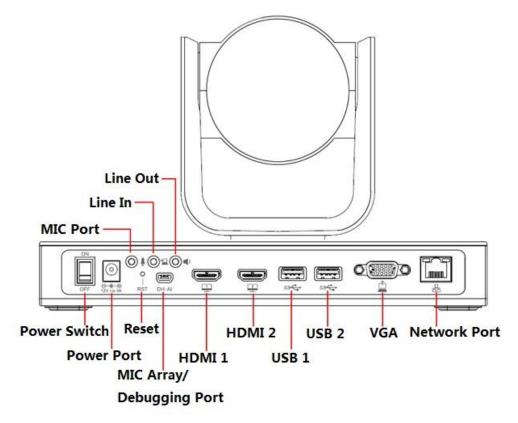


Figure 1-2

#### 1.3.2 Remote Control

#### 1.3.2.1 Structure Figure of Remote Control

Please refer to Figure 1-3 and Sheet 1-1 for the structure and button description of the remote control.



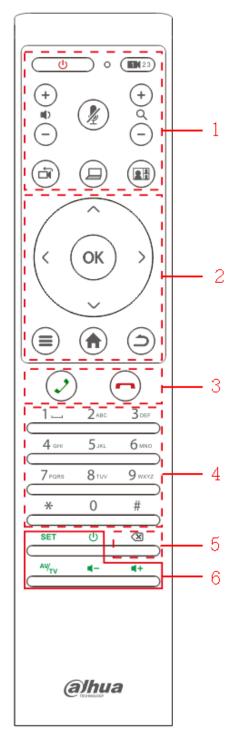


Figure 1-3

SN	Name	Description	
	U	Used to turn on/off the device.	
1	0	Indicator light	
	<b>EN</b> 23	Option button for remote camera.	



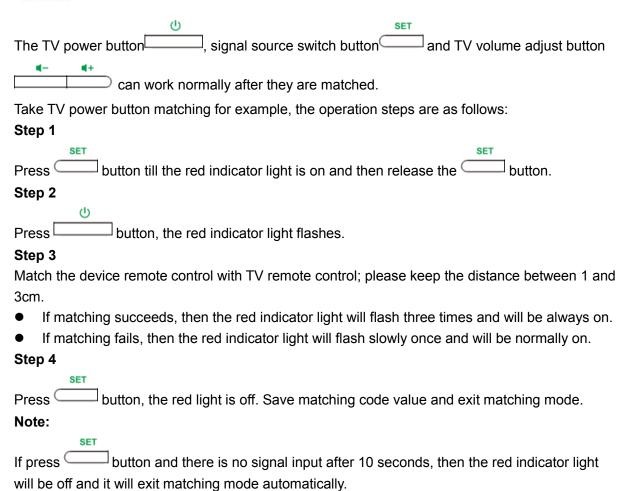
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SN	Name	Description
	+	Volume button for voice output
	<b>1</b>	Mic mute
	+ 0 (-)	Zoom in or out, which can be checked via local preview interface.
		Remote/local camera switch.
		One button to send demo after the device is correctly connected to laptop.
		Switch button for local screen layout.
		UDLR direction button.
	ОК	OK button
2		Menu button.
	<b>(h)</b>	Home button.
	(3)	Return button.
3	$\bigcirc$	Call or have a meeting.
		Hang up meeting.
4	Number button	Press number button continuously and it can switch to English, character.
5		Backspace/Delete
	SET	Setting button.
6	U U	TV power button.
	AV/ <sub>TV</sub>	HDMI signal source switch button.
	<b>4</b> - <b>4</b> +	TV volume button

Sheet 1-1

## 1.3.2.2 Button Matching







## 2 Product Networking

The networking of video conference terminal is shown in Figure 2-1.

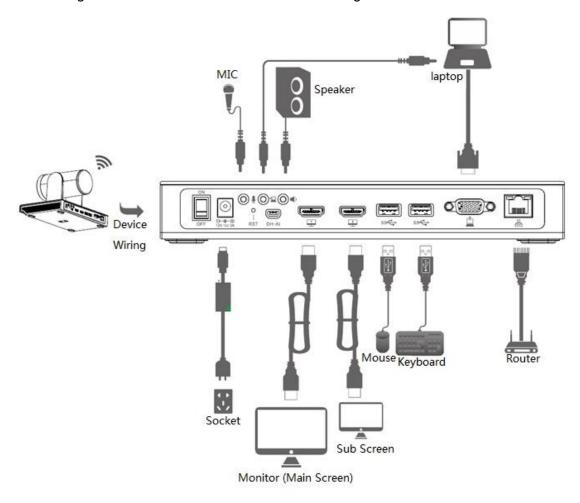


Figure 2-1



## 3 Product Installation

## 3.1 Packing List

Please check the stuff according to sheet 3-1 before installation.

SN	Name	Figure	Quantity	Description
1	Terminal TS51A0		1	-
2	L-shaped bracket	B	1	Used for wall mount and pendant of the device.
3	Remote control		1	-
4	Battery		4	Used to provide power for remote control.
5	Power adapter		1	Used to connect to power.
6	Power connection cable		1	Plug of power cable, used to connect to power cable and switch on.
7	Network cable		1	Used to connect to network.
8	HDMI cable		2	Used to connect to monitor.
9	Screw	1 ×4	1	Used to fix the pendant and device bracket.
10	Quick start guide	Gellense  Bellense  Bellen	1	Used to guide users for quick installation, how to connect and use video terminal device.

Sheet 3-1

### 3.2 Video Conference Terminal Installation

It supports three installation modes: hang mount, wall mount and pendant.

## 3.2.1 Hang Mount

Users can select hang mount if the thickness of monitor is  $\leq$ 170mm, hang the video terminal device on the monitor. Please refer to Figure 3-1 for the exact installation steps.

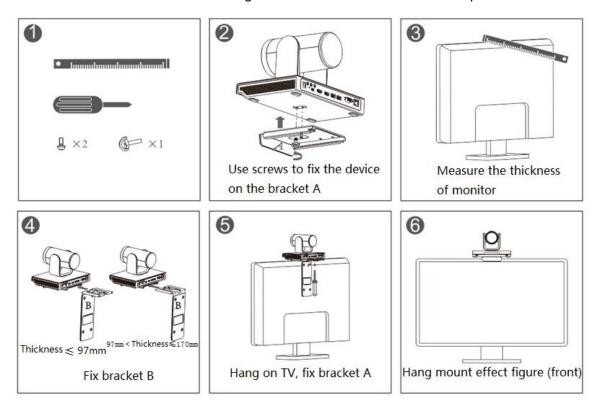


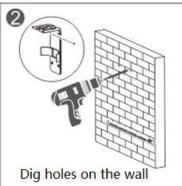
Figure 3-1

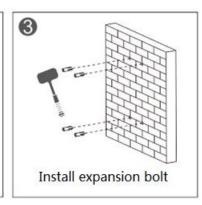
#### 3.2.2 Wall Mount

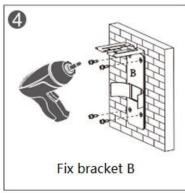
Users can select wall mount mode if the monitor thickness is more than 170mm or it needs to be installed on the wall. Please refer to Figure 3-2 for the exact installation steps.

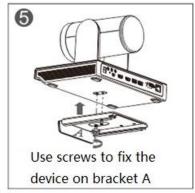


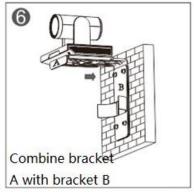


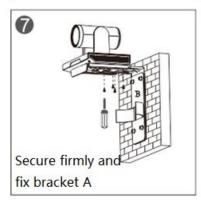












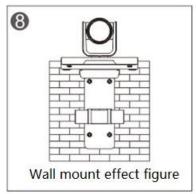


Figure 3-2

#### 3.2.3 Pendant

Users can select pedant if the monitor fails to be installed via hang mount or wall mount. Please refer to Figure 3-3 for the exact installation steps.



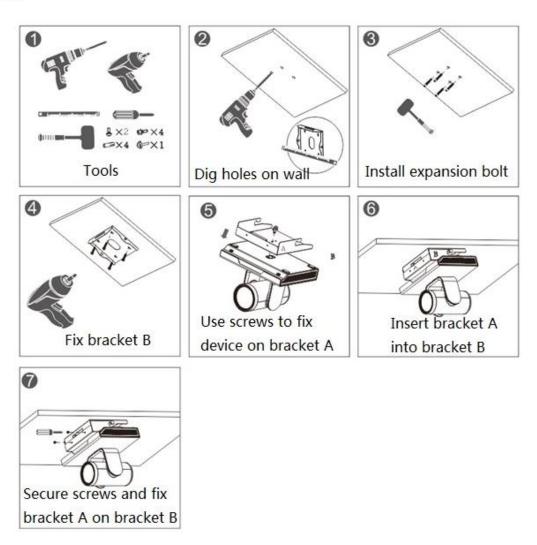


Figure 3-3



## 4 Login

## 4.1 Explanation before Login

- Please make sure the device cable is correctly connected and turn on the monitor.
- Video terminal device supports three kinds of control operation which are remote control, keyboard and mouse, take the control operation of remote control as an example.
- Press button to turn on/off the device.
- to switch the HDMI output channel of After the device is powered on, please press monitor to implement meeting operation.

#### Note:

 $\Box$  button before it is matched successfully, otherwise, it becomes invalid. Please refer to 1.3.2.2 for remote control button matching.

### 4.2 Common Button Description of Remote Control

The following button operation description is the common operation command of the device.

- button to select parameter.
- button to select confirm/OK. **Press**
- Press "number button" to input parameter information.

#### 4.3 Interface Introduction

SET

The interface is shown in Figure 4-1 after switching the HDMI output channel of the monitor.



Figure 4-1



## 5 System Operation

#### 5.1 General

It is to set meeting config.

Step 1

Select "Settings> General".

The system displays "Meeting Config" interface, which is shown in Figure 5-1.

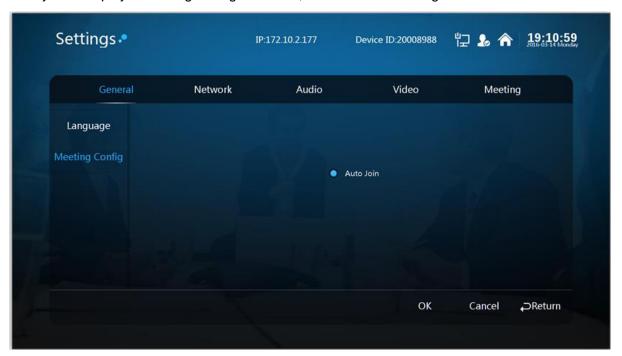


Figure 5-1

#### Step 2

Select "Auto Join"

It will auto join meeting for the first time, but it won't join meeting automatically or be invited if users exit actively during the meeting.

#### Note:

It will show the inquiry box before joining meeting every time if it is not checked.

#### Step 3

Select "OK" and complete config.

#### 5.2 Network

#### Step 1

Select "Settings > Network". The system displays "Network" interface, which is shown in Figure 5-2.





Figure 5-2

Step 2 Configure the interface parameter; please refer to sheet 5-1 for more details about the parameters description.

Parameter	Note
Mode	Static     It needs to set IP address/Subnet mask/default gateway manually.  PLOD  Static
	DHCP     It is to search IP address automatically, at this moment, IP/subnet mask/default gateway can't be set.

Sheet 5-1

Select "OK".

Step 4

Complete network setting.

## 5.3 Audio

Users can select relative output/input format according to the actual speaker and Mic port.

Step 1

Select "Settings > Audio". The system displays the "Audio" interface, which is shown in Figure 5-3.



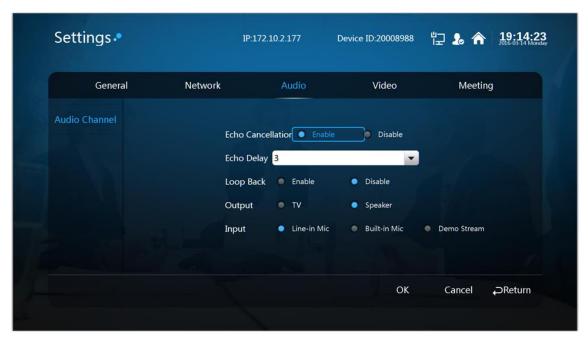


Figure 5-3

Step 2 Configure interface parameter; please refer to Sheet 5-2 for more details about parameter description.

Parameter	Note
Echo Cancellation	It is to enable or disable echo cancellation, it is enable by default.
Echo Delay	It is to adjust level to eliminate echo.  Note: The echo delay box will be hidden if it disables echo cancellation.
Loop Back	Enable the function to realize self-check of local audio input.
Output	TV output and speaker output.
Input	Line-in Mic, built-in Mic and demo stream.

Sheet 5-2

Select "OK".

Step 4

Complete audio setting.

#### 5.4 Video

It is to set preview image, encode and other relevant parameters.

#### 5.4.1 Image Parameter

The parameter can be adjusted according to your practical camera image.

Step 1

Select "Settings > Video > Image". The system displays the image parameter interface, which is shown in Figure 5-4.





Figure 5-4

Step 2 It is to set interface parameter, please refer to sheet 5-3 for more details about the parameter description.

Parameter	Note
Brightness	It is used to adjust image chroma and show image hue and saturation. The value range is $0\sim100$ , and it is 50 by default.
Contrast	It is used to adjust the image contrast. It is 50 by default. The bigger the value is, the bigger the image bright contrast becomes; on the contrary, it becomes smaller. Users can adjust the value when the image total brightness is appropriate but the image contrast is not enough. When the value is set to high, the dark part of the image becomes darker and the bright part is likely to be overexposed. The image becomes blurry when the value is set to low. The recommended value is $40\sim60$ , and the range is $0\sim100$ .
Saturation	The threshold is used to adjust the color darkness and lightness. It is 50 by default, the bigger the value is, the darker the color becomes, and on the contrary, it is opposite. The threshold won't affect the total brightness of the image. When the value is set too high, image color is too strong and if the white balance is not correct, which may cause color cast to the gray part of the image. The image color is not bright enough when the value is set too low. The recommended value is $40\sim60$ , the range is $0\sim100$ .

Sheet 5-3



Step 4

Select "OK" to complete image setting.



#### 5.4.2 Encode

Step 1

Select "Settings > Video > Encode". The system displays "Encode" interface, which is shown in Figure 5-5 and 5-6.

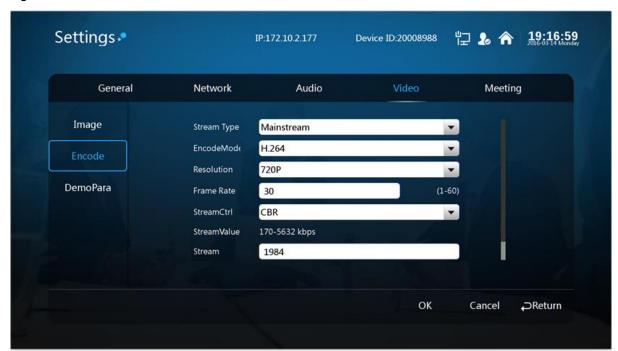


Figure 5-5



Figure 5-6

#### Step 2

It is to set interface parameter, please refer to sheet 5-4 for more details about encode parameter description.



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Parameter	Note	
Stream type	It can configure main stream.	
	Users can select H.264, MJPEG and H.265 encoding.	
	H.264: Main Profile encoding mode	
Encode mode	<ul> <li>MJPEG: It needs higher stream value to guarantee image definition in this encoding mode. It is recommended to use the max stream value of the corresponding reference stream value in order to make the video image reach better result.</li> </ul>	
	H.265: Main Profile encoding mode.	
Resolution	It includes several resolution types, each corresponding recommended stream value is different.	
Frame rate (FPS)	PAL: 1 frame/s~25 frame/s or 1 frame/s~60 frame/s. The frame rate varies according to different resolution.	
	It includes CBR and VBR.	
Stream	• It can set image quality in VBR mode; it is not allowed to set image quality in CBR.	
CONTROL	The stream control mode can only be CBR in the MJPEG encoding mode.	
Reference stream value	It is to advise users to set a reasonable stream value range according to the resolution and frame rate configured by users.	
Ctroom	In the VBR mode, the value is the upper limit of stream; in the CBR, the value is fixed.	
Stream	Refer to the "reference stream value", the stream value provides best reference range.	
Frame interval	The number of P frame between two I frames, the range changes according to the frame rate, the max is 150, it is recommended to set it twice as big as frame rate.	

Sheet 5-4

#### Step 3

Select "OK" to complete encode setting.

## 5.5 Meeting

#### Step 1

Select "Settings > Meeting". The system displays "Meeting" interface, which is shown in Figure 5-7.





Figure 5-7

It is to set device ID, SIP server, SIP service port, user ID, user password and etc.

#### Note:

Make sure the parameter on this interface has to be in accordance with the practical config of the MCU server; otherwise, the system registration fails.

#### Step 3

Select "OK" to complete meeting setting.

Note:

is successfully connected after completing all the Please check if system registration

configurations. The meeting can't be held normally if registration fails and displays





## 6 System Operation

#### 6.1 Local Preview

#### 6.1.1 Adjust Local Preview Image

It is used to adjust local camera image before the meeting.

Step 1

Select "Local Preview Image".

Step 2

Press button to confirm. The system displays "Local Preview" image, which is shown in Figure 6-1.



Figure 6-1

Step 3

button to adjust camera angle.

Step 4

button to realize image zoom in/out setting.

### 6.1.2 Camera Preset Memory

Step 1

button after completing local preview image adjustment and save camera preset. The system displays "Save Preset" interface, which is shown in Figure 6-2.





Figure 6-2

Press "Number button" and input value with range 1∼64.

#### Note:

Save the camera preset, you can press "Number button" to input corresponding preset value and quickly adjust camera lens.

#### Step 3

button to return to main menu interface.

## 6.2 Contacts

#### 6.2.1 Create New Contact

#### Step 1

Select "Contacts > Contact person > New Contact", it will display "New Contact" interface which is shown in Figure 6-3.



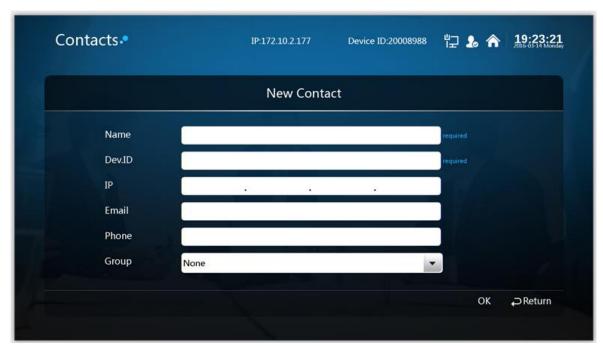


Figure 6-3

Step 2 It is to set interface parameter, please refer to sheet 6-1 for more details about parameter.

Name	Parameter description
Name	It is to add member name.
ID	It is to add member device ID.
IP	It is to add member IP address.
Email	It is to add member email.
Phone	It is to add member phone number.
	The group to which the member belongs. Note:
Group	It needs to establish group first, otherwise, it fails to select in the box. Please refer to 6.2.3 for more details about creating new group.

Sheet 6-1

Select "OK" to finish adding contact person.

#### **6.2.2 Delete Contact**

#### Step 1

Select "Contacts > Contact Person > Delete". The system displays "Delete" interface, which is shown in Figure 6-4.





Figure 6-4

Check the members who need to be deleted.

Note:

Select "All" and it will check all the contacts.

#### Step 3

Select "OK" to delete.

#### 6.2.3 Create New Group

#### Step 1

Select "Contacts > Group > New Group". The system displays "New Group" interface, which is shown in Figure 6-5.



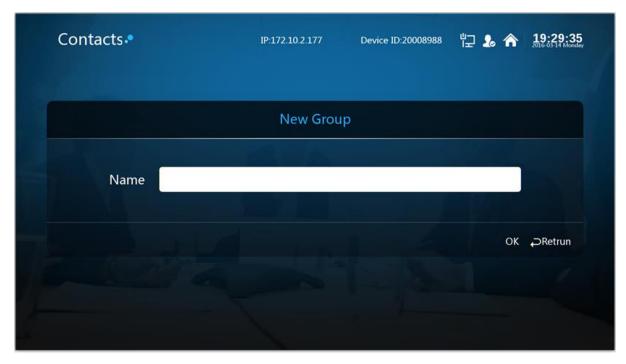


Figure 6-5

It is to set group name.

#### Step 3

Select "OK" to complete adding group.

#### 6.2.4 Delete Group

#### Step 1

Select "Contacts > Group > Delete" and the system displays "Delete" interface, which is shown in Figure 6-6.



Figure 6-6



Check the group which needs to be deleted.

#### Step 3

Select "OK" to delete.

## 6.3 Join Meeting

It consists of "Join Meeting" and "Create Meeting", which is shown in Figure 6-7.

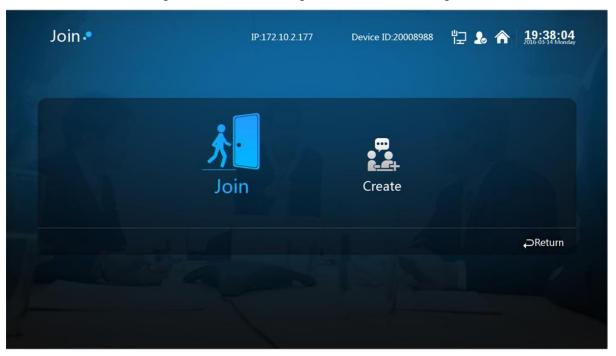


Figure 6-7

#### 6.3.1 Create Meeting

You can create immediate meeting and reserve meeting.

- Immediate meeting: It is to set meeting theme, duration, add members and etc, the meeting is enabled immediately.
- Reserve meeting: You can customize meeting time, and creating meeting.

#### Note:

- The meeting duration shall be at least 30 minutes.
- The earliest time to reserve meeting is one minute after the current time.

Take "Create Immediate Meeting" as an example, the exact operation steps are shown as follows:

#### Step 1

Select "Join > Create", the system "Create" interface, which is shown in Figure 6-8.



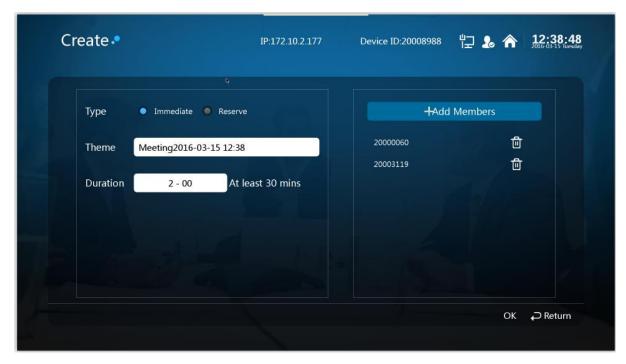


Figure 6-8

As for meeting type, select "Immediate".

#### Step 3

Set "Meeting Theme", "Duration" and other information.

## Step 4 Select "Add Members". The system will display "Add Meeting Place/Contact Person" interface, which is shown in Figure 6-9.



Figure 6-9



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Parameter	Note
Contacts	It is to display the members added by contacts.
	It is to display groups.
Groups	Note:
Стопро	In the form of group, add all the members of the group to join
	meeting.

Sheet 6-2

#### Step 5

Check the needed meeting member to add.

#### Step 6

Select "OK" to complete adding meeting member. The system displays "Create Meeting" interface, which is shown in Figure 6-10.

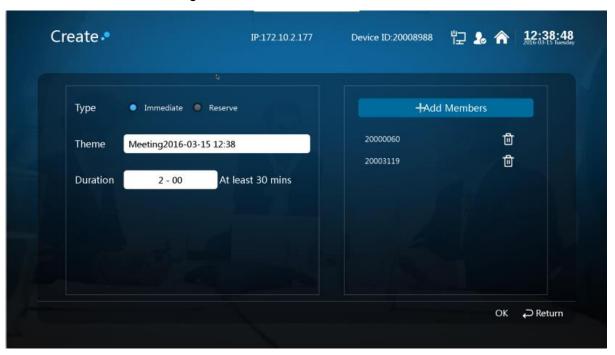


Figure 6-10

#### Step 7

Select "OK" to finish creating meeting.

So far you have finished creating meeting, enter meeting interface, which is shown in Figure 6-11.





Figure 6-11

## 6.3.2 Join Meeting

#### Attention:

When a user wants to join the on-going meeting, he or she has to be the member of it. Some meeting is in process, and you failed to join in time, then you can join directly via entering "Meeting ID".

Step 1

Select "Join meeting> Join", and see Figure 6-12.

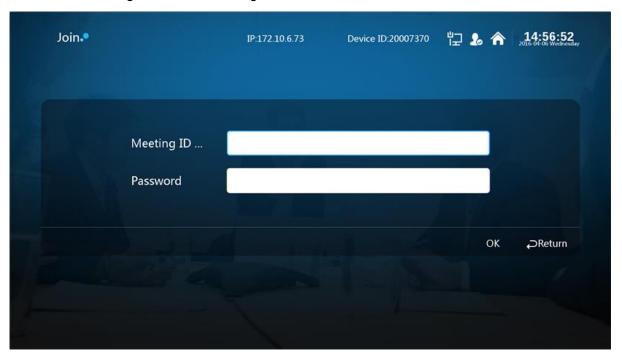


Figure 6-12



Enter "Meeting ID".

Step 3 Select "OK" to join meeting. Enter the meeting interface, which is shown in Figure 6-13.



Figure 6-13

## 6.4 Control Meeting

The meeting control is divided into "Host Meeting Place" and "Non-host Meeting Place'.

- Host meeting place: The host meeting place has the right to control the rights of all the meeting places, the meeting creator is the meeting host by default, which is shown in Figure
- Non-host meeting place: The person who joins the meeting is considered as non meeting place host default, which is shown in Figure 6-15.





Figure 6-14



Figure 6-15

Note:

button to display meeting menu interface. **Press** 

## 6.4.1 Host Meeting Place

#### 6.4.1.1 Split

It will auto display the meeting picture according to the number of meeting places, it can also set meeting picture layout according to the user requirement, which is to satisfy multi-view watching. Step 1



Select "Split > Select Meeting Place", then the system displays the interface of "Select Meeting Place", which is shown in Figure 6-16.



Figure 6-16

#### Step 2

Check the meeting member whose meeting picture is needed to be displayed.

#### Step 3

Select "Layout" and adjust the meeting picture layout of meeting member which has been checked. The system displays the interface of "Layout", which is shown in Figure 6-17.



Figure 6-17

Step 4

Select "Distribution" and adjust the meeting picture location of the meeting members. The system displays the interface of "Distribution", which is shown in Figure 6-18.



Figure 6-18

#### Step 5

Select "OK" to complete setting.

#### 6.4.1.2 Demo On

Full HD data sharing is realized between external computer and meeting place.

#### Note:

It can connect computer to video conference terminal via VGA cable.

#### Step 1

Select "Demo On"

#### Step 2

Press button to confirm. The system displays "Demo On" interface, which is shown in Figure 6-19.





Figure 6-19

Step 3

of remote control to send/close demo (optional).

#### 6.4.1.3 Control

It can control some meeting member or all meeting members, which is shown in Figure 6-20.



Figure 6-20



SN	Parameter	Note
1	20008988	It is to display member device ID.
	<b>(III)</b>	Enable/disable the member Mic.
		Enable/disable the member speaker.
		Hang up the member during meeting.
2	C	Call all meeting members again.
		Hang up all meeting members.
		Enable/disable Mic of all meeting members.
		Disable the Mic of all meeting members.
		Enable the speaker of all meeting members.
		Disable the speaker of all meeting members.

Sheet 6-3



button to select the control button you need.

### Step 5

button to confirm control operation.

#### 6.4.1.4 Release

#### Step 1

Select "Release" and the system displays the interface which is shown in Figure 6-21.



Figure 6-21

Step 2

to confirm and exit host control right of the meeting place.

#### 6.4.1.5 More

The button includes several functions, such as add, remove, overtime, tour and etc, which is shown in Figure 6-22.



Figure 6-22

6.4.1.5.1 Add

Step 1

Select "More > Add" and the system will display the "Add" interface, which is shown in Figure 6-23 and Figure 6-24.



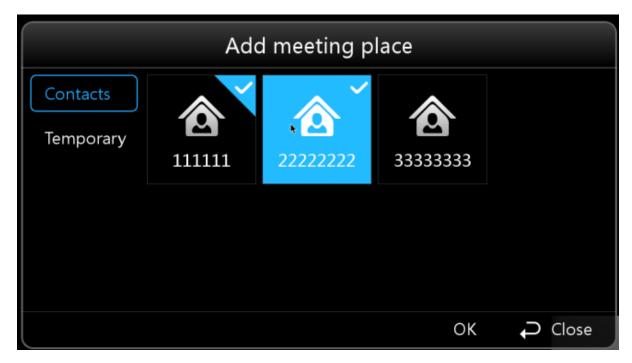


Figure 6-23

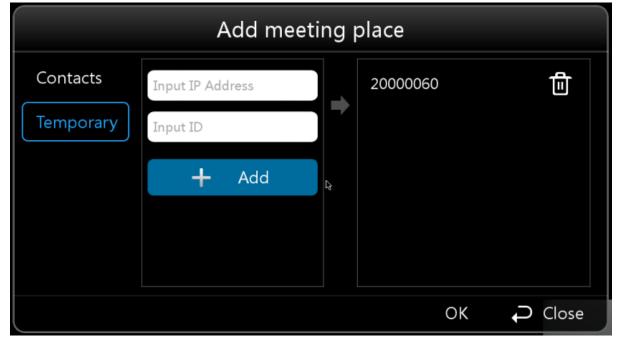


Figure 6-24

Step 2

It is to configure interface parameter, please refer to sheet 6-4 for more details about the parameter description.

Parameter	Note
Contacts	Select to add the members in the contacts.
Temporary	Enter member "IP address" and "ID No." to add.

Sheet 6-4

#### Step 3

Select "OK" to finish adding.

#### 6.4.1.5.2 Remove

#### Step 1

Select "More > Remove" and the system will display the interface of "Remove", which is shown in Figure 6-25.

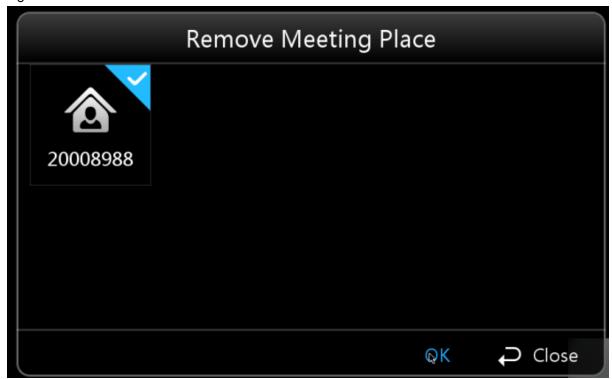


Figure 6-25

#### Step 2

Check the meeting place you need to remove.

#### Step 3

Select "OK" to confirm.

#### 6.4.1.5.3 Overtime

#### Step 1

Select "More > Overtime" and the system will display the interface of "Overtime", which is shown in Figure 6-26.





Figure 6-26

Enter delay time.

Note:

The range of delay time is between 1 minute and 999 minutes.

#### Step 3

Select "OK" to confirm.

#### 6.4.1.5.4 Remote PTZ

#### Step 1

Select "More > Remote PTZ" and the system will display the interface of "Remote PTZ Control", which is shown in Figure 6-27 and Figure 6-28.

### Step 2

to realize shortcut operation. It can press





Figure 6-27

Select the member you need to control.

### Step 4

to realize shortcut operation. You can press

### Step 5

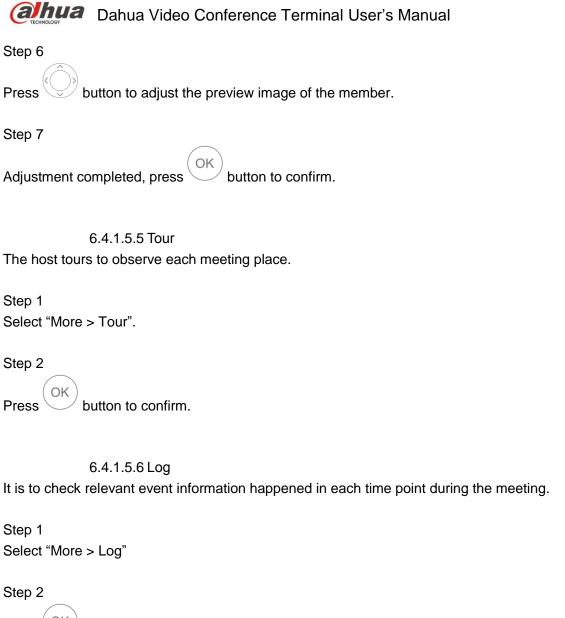
button and confirm. The system will display the interface which is shown in Figure 6-Press 28.



Figure 6-28



Figure 6-29.



button to confirm. The system displays the interface of "Log", which is shown in



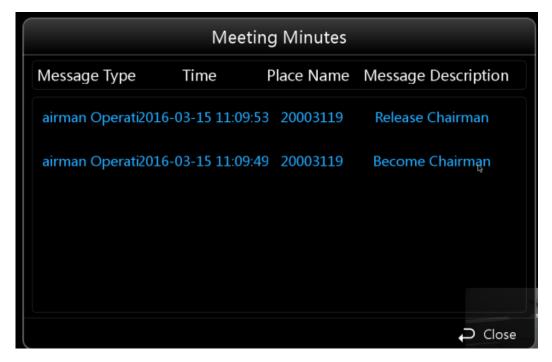


Figure 6-29

#### 6.4.1.6 Hang up

Step 1

Select "Hang up" to exit or end meeting. The interface is shown in Figure 6-30.

#### Step 2

button to realize shortcut operation. You can press



Figure 6-30

Parameter	Note	
Away	Exit the meeting interface temporarily.	
	Note:	
	You can select in the "Meeting Agenda" to call and return to the meeting again.	
End	The whole meeting is over; the meeting members have to exit	
	the meeting.	

Sheet 6-5

Step 3

Select "Away" / "End".

Step 4

Press OK button to confirm.

### 6.4.2 Non-host Meeting Place

#### 6.4.2.1 Demo On

Full HD data sharing can be realized between external computer and meeting place.

#### Note:

It is to connect computer to video conference terminal via VGA cable.

Step 1

Select "Demo On".

Step 2

Press button to confirm. The system displays the interface of 'Demo On", which is shown in Figure 6-31.



Figure 6-31



button of the remote control to send /close demo (optional).

#### 6.4.2.2 Apply

The host meeting place has more control rights than the non-host meeting place.

Meeting place without host: You can apply to be host directly if there is no host in the meeting place.

Meeting place with host: If there is host in the meeting place, then it needs to be agreed by the current host when you apply for host.

Step 1

Select "Apply".

Step 2

button to confirm.

#### 6.4.2.3 Log

It is to check the relevant event information at each time point during the meeting.

Step 1

Select "More > Log".

Step 2

button to confirm. The system displays the interface of "Log", which is shown in Figure 6-32.



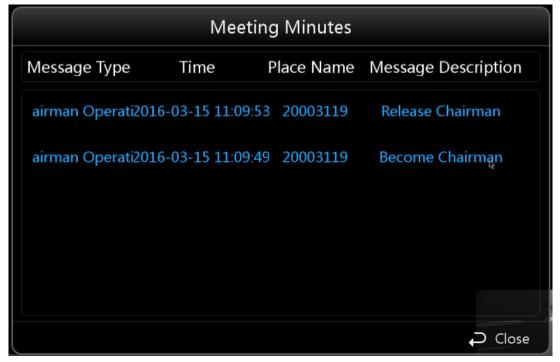


Figure 6-32

#### 6.4.2.4 Hang up

Step 1

Select "Hang up" to exit meeting, which is shown in Figure 6-33.

#### Step 2

to realize shortcut operation (optional).

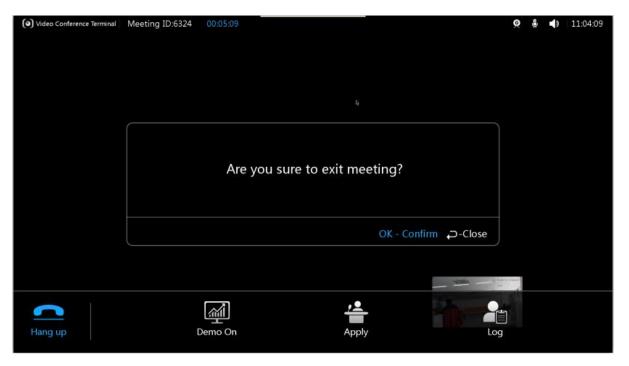


Figure 6-33



button to confirm.

## 6.5 Agenda

It is to display the ongoing meeting and all the reserved meetings.

#### Step 1

Select "Agenda".

#### Step 2

button to confirm. The system displays the interface of "Agenda", which is shown in Press Figure 6-34.

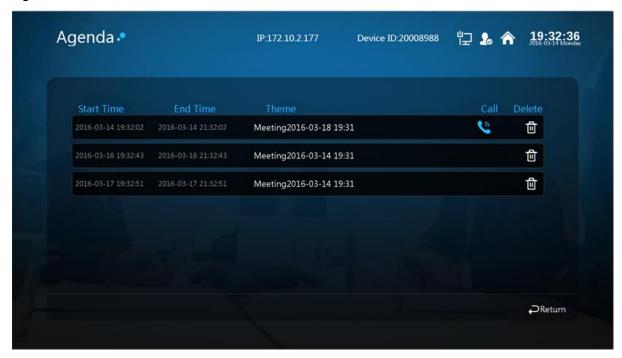


Figure 6-34

# 6.6 History

It is to check relevant information record of the history meetings.

#### Step 1

Select "History". The system displays the interface of "History", which is shown in Figure 6-35.



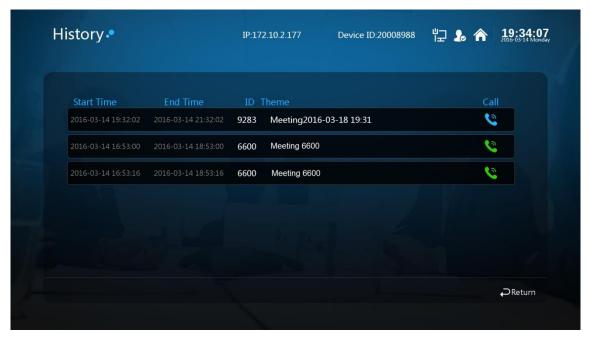


Figure 6-35



 $^{\prime}$  to confirm to call the meeting again.

# 7 Appendix I Technical Parameters

Parameter	Note
Device Dimension	245mm×166mm×156mm
Package size	425mm×305mm×220mm (reference size, ±5mm)
Device net weight	2.5kg
Device gross weight	5kg
Working voltage	AC 100V~AC 240V DC 12V
Working frequency	50Hz∼60Hz
Max power consumption	36W
Temperature	$0^{\circ}$ C ~+45 $^{\circ}$ C (working state) -40 $^{\circ}$ C ~+70 $^{\circ}$ C (non working state)
RH	10% $\sim$ 80% (working state) 0% $\sim$ 95% (non working state)
ambient noise	<46dBA SPL
Min illuminance	7Lux
Recommended illuminance	<300Lux

#### Note:

- This quick start guide is for reference only. Slight difference may be found in user interface.
- All the designs and software here are subject to change without prior written notice.
- If there is any uncertainty or controversy, please refer to the final explanation of us.
- Please visit our website or contact your local service engineer for more information.



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#### **Compliance Information**

#### FCC 15.105

For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- —Reorient or relocate the receiving antenna.
- —Increase the separation between the equipment and receiver.
- —Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- —Consult the dealer or an experienced radio/TV technician for help.

#### FCC 15.19

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

#### FCC 15.21

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

#### FCC 15.203

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

#### RF exposure warning

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.