DS-4CU

Speaker Tracking Station

User Manual | English
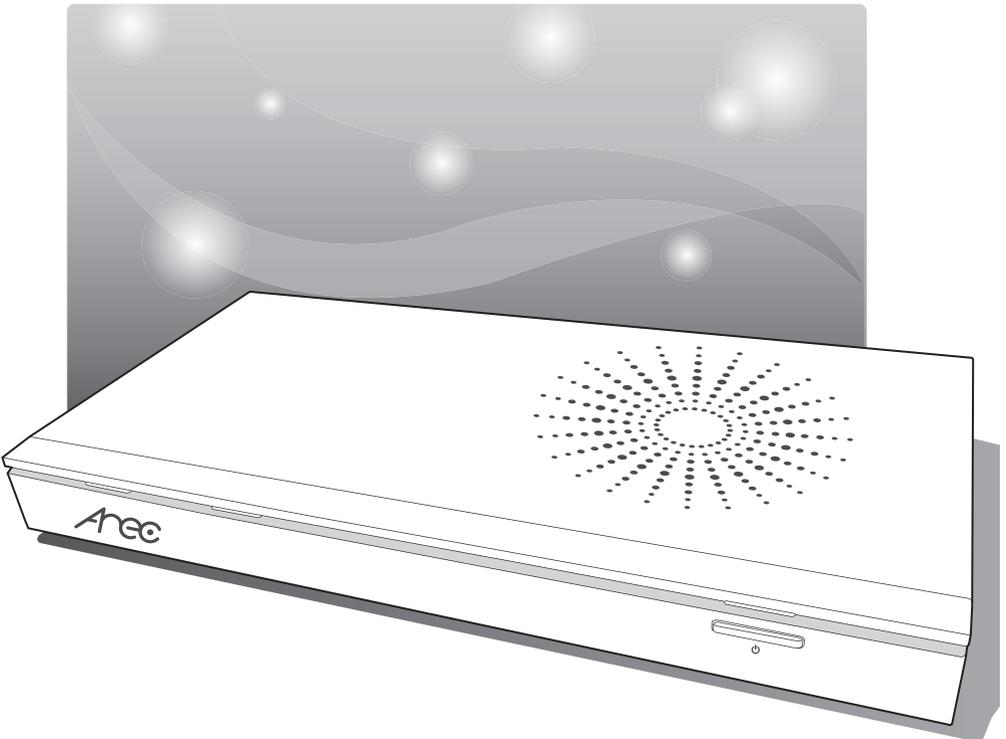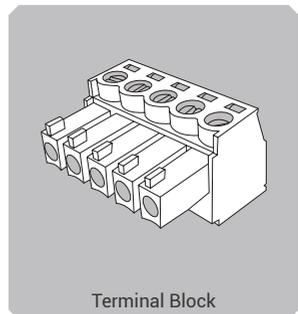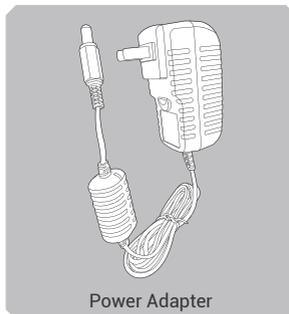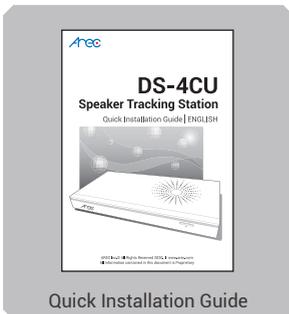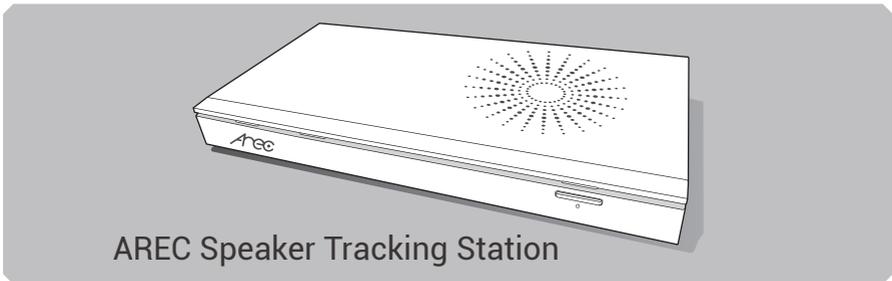
Table of Contents

Introduction

Compatible with recommended Conference Microphone System and AREC PTZ Cameras, AREC DS-4CU Speaker Tracking Station enables all of the meeting participants can see the close-up view of the active speaker and a custom graphic together on the local screen clearly. Working with AREC Media Station, all the meeting and discussing content can be recorded completely with auto tracking and auto switching features. The architecture of AREC Speaker Tracking System is simple and can be installed quickly, providing more effective meetings and enhancing user experience.

Specifications

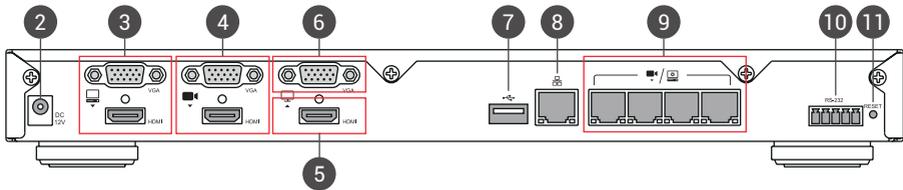|	
Product Name	Speaker Tracking Station
Model Name	DS-4CU
Dimension	354mm(L) x 188.2mm(W) x 46mm(H)
Weight	1324g
Power Requirement	12V/2A
Power Consumption (Max.)	24W (Max.)
Operating Temperature / Humidity	0ºC ~ 40ºC / 90%
Maximum loading disclosure	Insert 3 IP CAM to LAN port and insert 1 video signal (either HDMI or VGA input). And output the transcoded video to both HDMI and VGA port.

Package Contents

AREC Speaker Tracking Station

DS-4CU
Speaker Tracking Station
Quick Installation Guide | ENGLISH

Quick Installation Guide

Power Adapter

Terminal Block

Product Appearance

Front

Back

No.	Name	Brief introduction
1	Power	Power on/off the device
2	Power port	12V / 2A
3	Video input	VGA / HDMI input source for PC [🖥]
4	Video input	VGA / HDMI input source for camera [🎥]
5	Video output	Monitor input sources
6	Video output	Preview with On-screen menu
7	Back USB port	1. Control external devices via USB to RS-232 converter 2. Connect the mouse to control the menu
8	Network port	RJ-45 Ethernet connector for network connection
9	Network camera input or device setting	1. RJ-45 Ethernet connector for network camera input source 2. RJ-45 Ethernet connector for device configuration and control
10	RS-232	Phoenix type connector for control over RS-232
11	Reset button	Restore the device to factory default

Connection

Power

TV

projector

Video output VGA / HDMI

Setting PC

AREC
Network Camera

RS-232

USB

Ethernet

RS-232

network

Video input VGA / HDMI

notebook

document cam

DV

Mouse
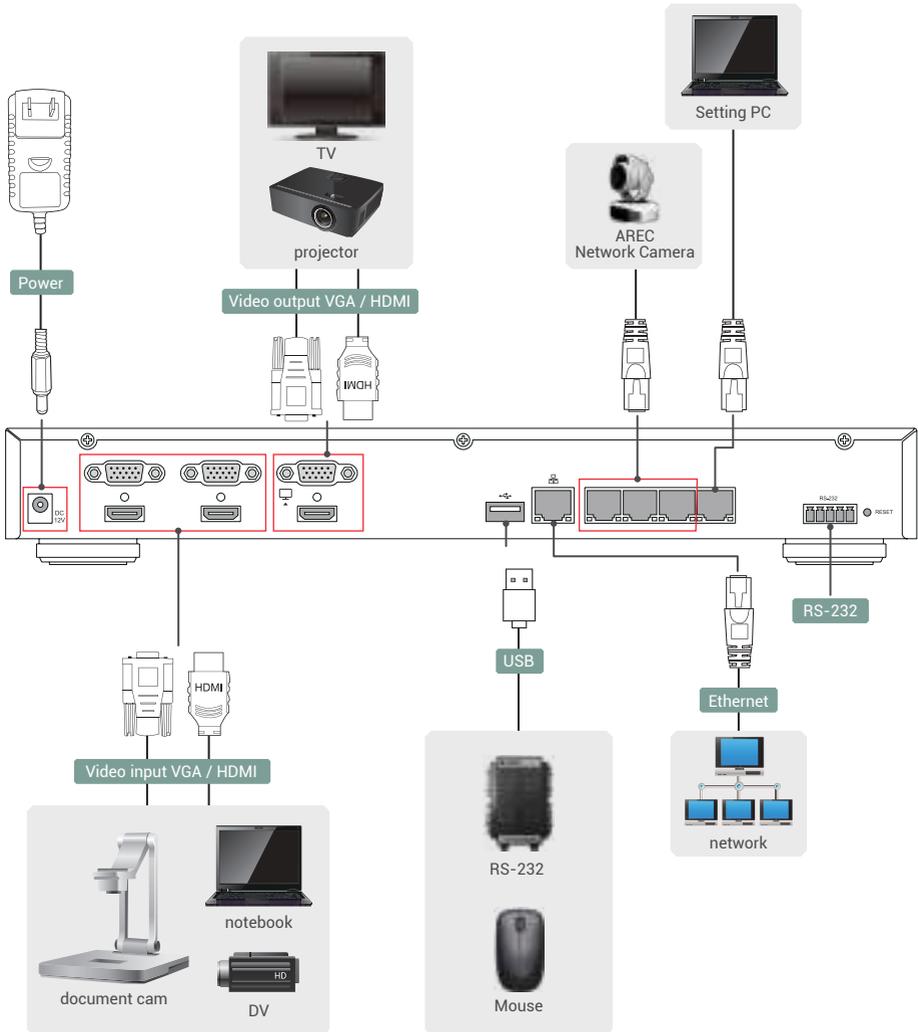
Front Panel Buttons and Indicators

Button	Display method of indicator	Product status
Power	Solid red.	Stand-by mode.
	Green and red light flash alternately.	Device is booting up.
	Solid green.	Boot up completed.
	Fast flashing red.	Device is shutting down.
	Fast flashing green.	Firmware updating.
	Slow flashing red.	Fan is abnormal. Storage is abnormal.

Getting start

Connect PC to the setting port of Speaker Tracking Station with standard network cable. Open up the browser, and input 192.168.11.254 in the browser page. Log in Administrator   with default username admin and password admin, then entering the DS-4CU system Administrator webpages. We suggest to use IE(Internet Explorer) browser only.

Chapter 1 Administrator

The Administrator web pages provide a system administration interface of the DS-4CU: it can perform Media I/O, Speaker Tracking, Theme, Account, System settings. The Media I/O settings allow users to make sure each input source are properly connected. System are pages contain basic settings and information of this device.
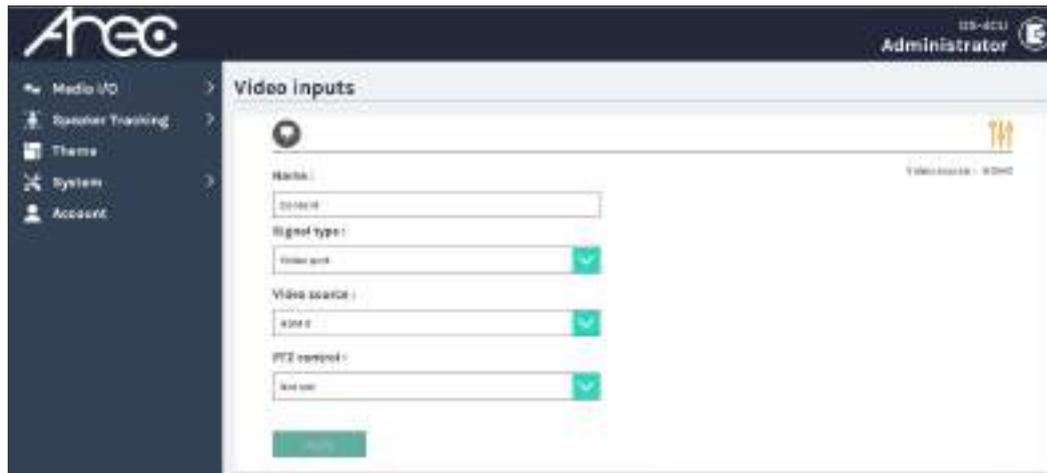
1.1 Media I/O

The pages within Media I/O include the following functions :
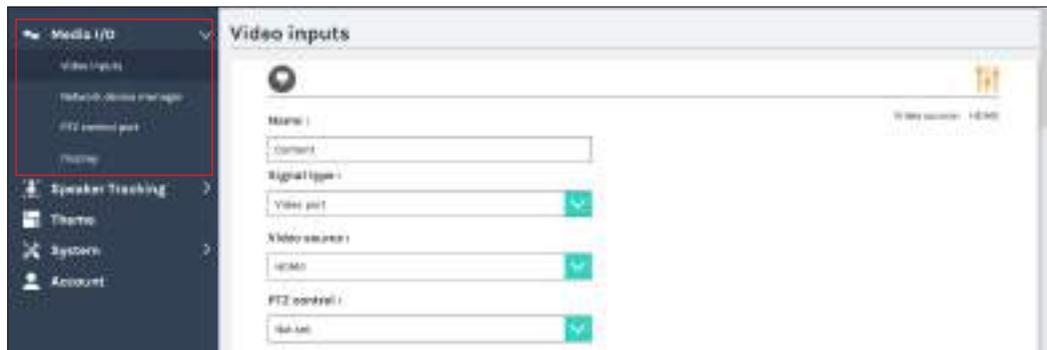
Video inputs	Select the signal type, video source and PTZ control method for each input.
Network device manager	List out all the connected network cameras/ devices.
PTZ control port	Set DS-4CU back USB-to-RS-232 serial port to drive PTZ cameras.
Display	Set the DS-4CU on screen display language, video output settings and color adjustments.

1.1.1 Video inputs

The DS-4CU is capable to process up to four video inputs. The name of these inputs are user configurable; by default are Content, Cam 1, Cam 2 and Cam 3.

1.1.1.1 Content 🖥 / Cam 1 ❶ / Cam 2 ❷ / Cam 3 ❸

■ Video Source can be chosen from Network Camera, Encoder or Video port. Video port is available only for the first two video inputs.

Video port	Select Video source: The DS-4CU provides VGA and HDMI input options for video port. If only one of those is connected, the system would detect and automatically switch to the signal source. If both options are connected, select one in between.
Network Camera	Select IP address: Select from the camera IP address drop-down list of those available. Note: A login authentication with the camera might be required. See 1.1.2 Network device manager for more details.
Encoder	Select Protocol: The available options are RTP, RTSP, or RTMP. Enter the primary and secondary url/port number.

■ PTZ control : The DS-4CU is highly integrated with PTZ cameras and provides two control methods, Over IP or via Serial port.

Serial port	Select this option when the appointed camera uses RS-232 PTZ control protocol. Then complete the Serial port selection from drop list ttyUSB 0~3. See Media I/O\ PTZ control port for more details.
Over IP	The option is available when the specified signal type is a network camera. Select this option if that camera supports networking PTZ control.
Auto-Tracking Mount	Select IP address: Select from the drop-down list of the available TP-100 IP addresses. Select Tracking mode to be off. Note: A login authentication with the TP-100 might be required. See 1.1.2 Network device manager for more details.

1.1.1.2 Advanced configuration

A preview and further configuration of the video input is provided. After the video input setting is successfully applied, click 🎚️ to enter the advanced configuration page. In the case of a PTZ camera, the direction control panel, zoom in/out control bar, and up to 8 preset positions are enabled.
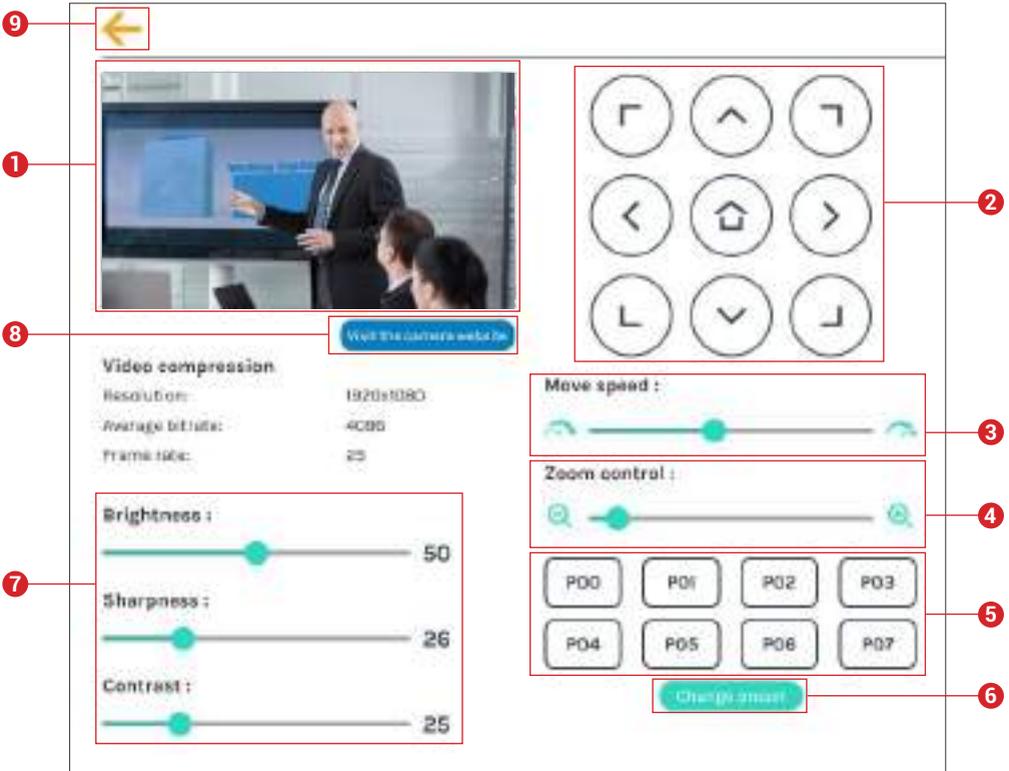

1. The video input preview.
2. Direction control panel: Click the arrow buttons to move the camera.
3. Movement speed: Move leftward or rightward to set slower or faster the camera is moving.
4. Zoom in/out: Click the buttons or drag on the control bar.
5. Preset positions: Click the buttons to command that the camera go to the preset position.
6. Change preset: Click the button to modify the preset positions. Select any of the P00~P07, move the camera to a new position by using the direction control panel or using the zoom in/out control. Click Save button to complete the change or click Cancel button to give it up.
   Note: If you use AREC CI-xxx network camera with TP-100, you can change preset of TP-100's Home.
7. Brightness, sharpness, and contrast: Slide the adjust bar leftward or rightward to change the camera image settings.
8. Visit the camera website: Click this 〔Visit the camera website〕 button to enter the webcam management web site, input the verification code as prompted.
9. Click ⬅ button at upper left corner to return to the last page.

1.1.2 Network device manager

The system automatically scans and lists the network cameras/ devices connected to the Speaker Tracking Station once entering the [Network device manager] page. You may click Refresh button to scan again. Click Login button and the login authentication dialog pop out.

Enter the username and password of the camera/ devices to complete the authentication. Take AREC network camera for example, enter the default username and password admin/ admin. The status then changes to OK, which indicates it is available for video input selection.

Note : If you fail to find your camera by clicking on "Refresh", please select "Signal type" to "Encoder" in the "Video Inputs" and fill in the stream URL off your camera.
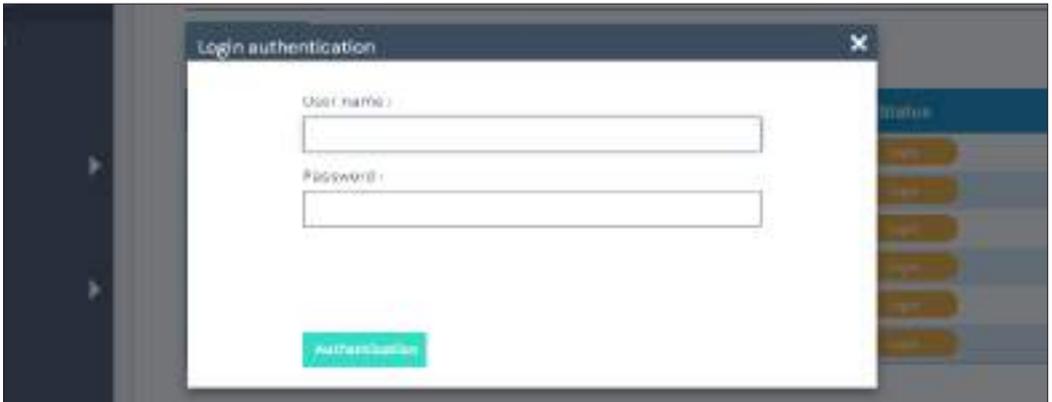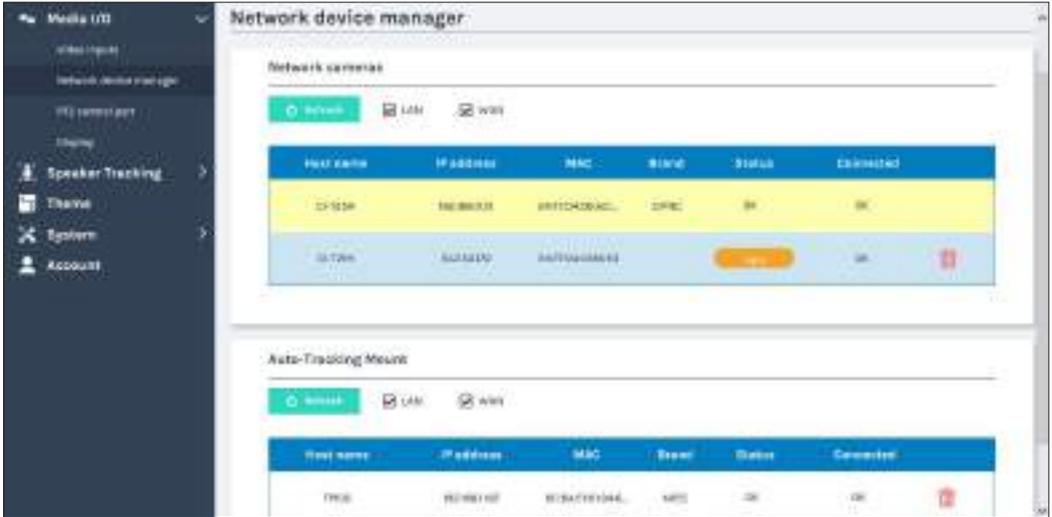
1.1.3 PTZ control port

The DS-4CU facilitate the web-based users control PTZ cameras using RS-232 protocol. Connect an USB-to-RS-232 adapter to the DS-4CU back USB port in advance. Before making any changes to this page, please get to know about the RS-232 settings of the PTZ camera. The following configurations must be identical to the external device settings.

• Protocol : Available options are VISCA, PELCO-D, and PELCO-P;
• Address : Set according to the camera address for RS-232 communication. VISCA: 1-7, PELCO D/P. 1-255;
• Baud rate : 2400, 4800, 9600, and 115200

Note: Support USB to RS-232 serial port adapter with chip PL2303 or FT4232H.

1.1.4 Display

Set the DS-4CU on screen display language, video output settings and color adjustment.

On-screen language: Change the GUI language.
Video output settings: Assign either "Monitor input sources" or "Preview with On-screen menu" to HDMI output and another one would be switched to VGA output.
Screen color adjustment(HDMI and VGA): Change the Brightness, Contrast, Saturation and Hue

1.2 Speaker Tracking

Setup for DS-4CU main functions:
1. Tracking and Focus on the Active Speaker
2. Auto Switch and Auto Adding a Customized Overlay
3. Available for Customized Overlays and Output Layouts
4. Auto Switch to the Designed Conference View as Multi-Participants Speak*
5. Automatic Camera Switching and Conferencing Recording with AREC Media Station
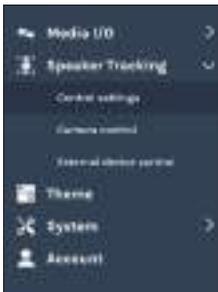
Control settings	Set external system and tracking general default.	
Camera control	Set video inputs (preset)、overlay/background、layout and AREC Media Station theme on the active.	
External device control	e.g Video Matrix or AREC Media Station	

1.2.1 Control settings

External system	Set external system (e.g Conference Microphone System and AREC Media Station) IP and username/password.
General default	Assign which DS-4CU input channel you want it to be shown when Microphone System event is not triggered.
General - Multiple people speaking Group - Multiple people speaking	DS-4CU can switch camera to the designated conference view when multiple participants press the Microphone buttons and discuss at the same time.

1.2.1.1 External system
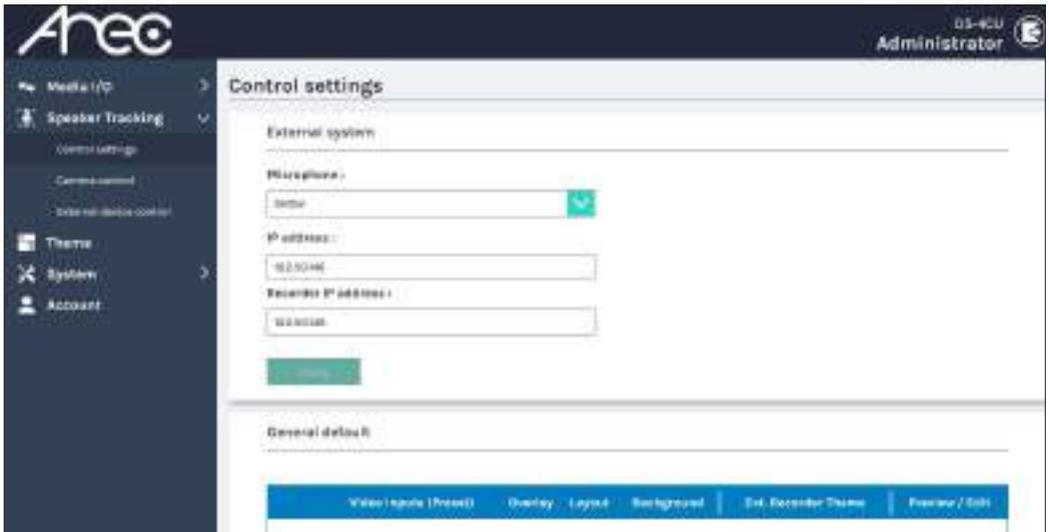
1. Microphone (System): Available options are AREC S1, SHURE, SHOW, Sennheiser, BOSCH, HAYACO*

2. IP address: Microphone System IP address

3. Recorder IP address: AREC Media Station (lecture capture system) IP address

* Contact AREC distributors to get updated information.
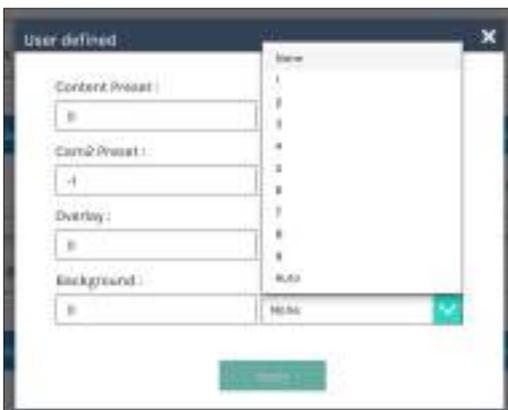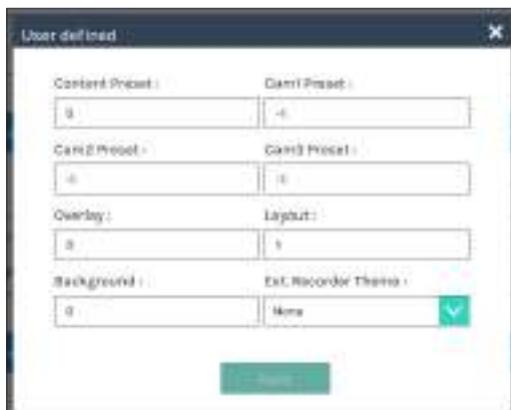
1.2.1.2 General default

Value define:

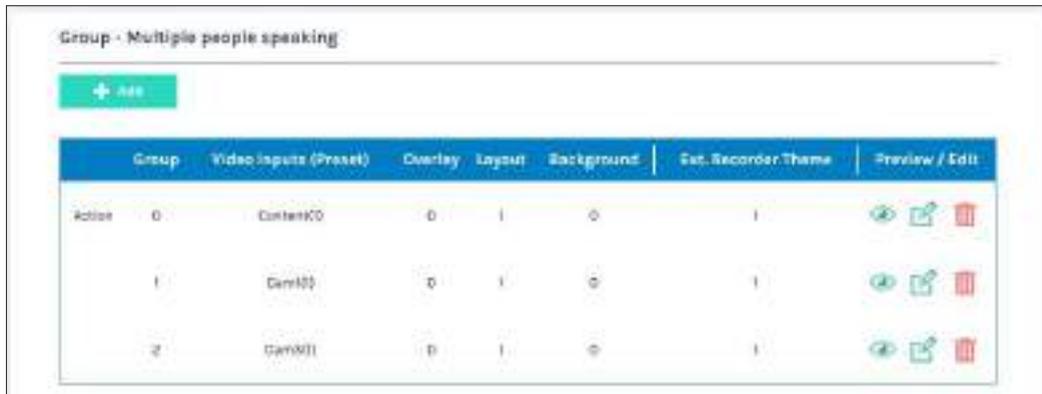| Video inputs (Preset)	Overlay	Layout	Background	Theme (external recorder)
Preset = 0 ~ 255 Preset = -1 (off)	ID number	ID number	ID number	ID number = 1~9, -1 (none), Auto (switch to last Overlay/Layout/Background)

Note: Overlay, Layout and Background ID numbers are based on DS-4CU theme settings, please refer to 1.3

Preview : Click for test setting, Camera auto switch and auto adding an overlay.

Edit : Click , edit value of the Video inputs (Preset), Overlay, Layout, Background and Theme (external recorder)

1.2.1.3 General - Multiple people speaking

Value define:

Video inputs (Preset)	Overlay	Layout	Background	Theme (external recorder)
Preset = 0 ~ 255 Preset = -1 (off)	ID number	ID number	ID number	ID number = 1~9, -1 (none),

Note: Overlay, Layout and Background ID numbers are based on DS-4CU theme settings, please refer to 1.3

Preview : Click [icon] for test setting, Camera auto switch and auto adding an overlay.

Edit : Click [icon] , edit value of the Video inputs (Preset), Overlay, Layout, Background and Theme (external recorder)

1.2.1.4 Group - Multiple people speaking

Value define:

Video inputs (Preset)	Overlay	Layout	Background	Theme (external recorder)
Preset = 0 ~ 255 Preset = -1 (off)	ID number	ID number	ID number	ID number = 1~9, -1 (none),

Group: Group number of Microphone System
Note: Overlay, Layout and Background ID numbers are based on DS-4CU theme settings, please refer to 1.3

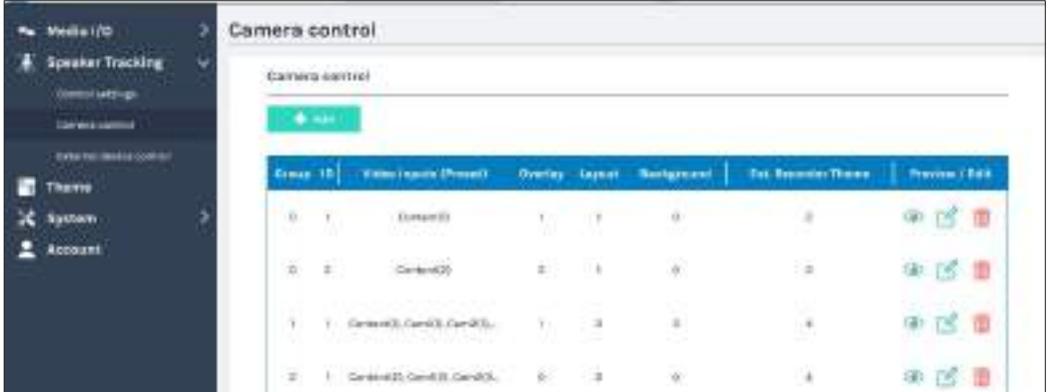**Add :** Click [+ Add] , add an action setting.

Preview : Click [⊙] for test setting, Camera auto switch and auto adding an overlay.

Edit : Click [⬚] , edit value of the Video inputs (Preset), Overlay, Layout, Background and Theme (external recorder)

Delete : Click [🗑] , delete the action setting.

1.2.2 Camera control

Value define:

Video inputs (Preset)	Overlay	Layout	Background	Theme (external recorder)
Preset = 0 ~ 255 Preset = -1 (off)	ID number	ID number	ID number	ID number = 1~9, -1 (none),

Group: Group number of Microphone System
ID: ID number of Group
Note: Overlay, Layout and Background ID numbers are based on DS-4CU theme settings, please refer to 1.3

Add : Click ⬜ , add an action setting.

Preview : Click 📷 for test setting, Camera auto switch and auto adding an overlay.

Edit : Click 📝 , edit value of the Video inputs (Preset), Overlay, Layout, Background and Theme (external recorder)

Delete : Click 🗑 , delete the action setting.

1.2.3 External device control

Set RS-232 commands to control the External device, e.g Video Matrix or AREC Media Station.

Port : Select the port number of the Video Matrix

Baud rate : Select the Baud rate of the Video Matrix

**When mic focus :** Define the RS-232 command to be executed when the microphone event is triggered
When mic default : Define the RS-232 command to be executed when the microphone event is dismissed

1.3 Theme

Overlay : Select can edit [⬚] the overlay. Click [+] button and select the desired file in the Open dialog box.
The file name would appears with the newly uploaded image.
Click Apply button at the bottom corner to apply the settings, or click [✖ Cancel] Cancel to give it up.
Refer to Overlay ID numbers for speaker tracking settings.
Note: The overlay file must be in PNG format, maximum size 1920px*1080px.
Note: The user can use the mouse to drag the order of the display.

Background : Select edit [⬚] the background. Click [+] button and select the desired file in the Open dialog box.
The file name would appears with the newly uploaded image.
Click Apply button at the bottom corner to apply the settings, or click [✖ Cancel] Cancel to give it up.
Refer to Background ID numbers for speaker tracking settings.
Note: The background file must be in PNG format, maximum size 1920px*1080px.
Note: The user can use the mouse to drag the order of the display.
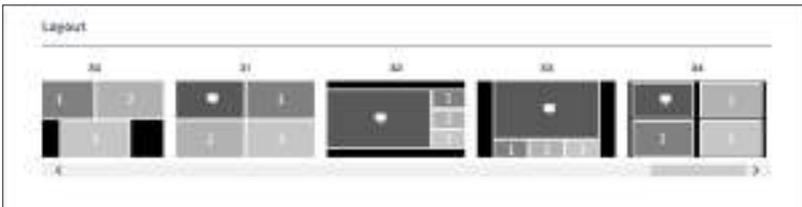
Layout : Refer to layout ID numbers for speaker tracking settings.

1.4 System

The pages within System include the following functions:
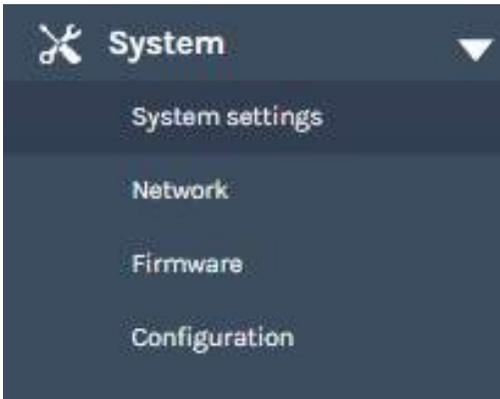
System settings	Contains device identification, date and time configuration, and booting settings.
Network	The device IP assignment in the networking.
Firmware	Displays the current firmware version, and provides web-based user a way to update firmware for the device.
Configuration	Export / Import the configuration.

1.4.1 System settings

The basic information and initial date/time of this device are configured here.

Device identification – Set the name (device description) for this device.

Date and Time – Set the device date, time, and time zone manually/ be synchronized to PC, or with an external NTP (network time protocol) server.

Boot image – Change the boot screen image. The boot screen is the image you will see when you boot up the device. Click Browse button and select the desired file in the Open dialog box. The file name would appears with the newly uploaded image. Click Apply button at the bottom corner to apply the settings, or click ✕ Cancel Cancel to give it up.

Power – Choose how to turn on the device.

Note: The boot screen file must be in PNG format, maximum size 1920x1080px.

1.4.2 Network

By default DS-4CU uses DHCP to obtain an IP Address via a router or any DHCP server. To use a static IP address for your device, configure the network settings in this webpage.

IP assignment – Select DHCP to have IP address be allocated by a router or any DHCP server being connected; or Select Static IP and enter the required network settings including IP address / subnet mask / default gateway/ DNS server.

Click Apply at lower right corner, click Confirm in popup dialog box.

Note: The system will automatically reboot to complete the network settings. Login the updated IP address after the system restarts.

1.4.3 Firmware

This page displays the device firmware version. To update the firmware, click "Update" and a dialog box opens asking you to select the file. Select the desired file and click "Open", the dialog box closes and the file name appears underneath. Click "Apply" to start firmware update. Click "Cancel" if the uploaded file is no longer wanted.

Note: System will reboot automatically when the firmware update is completed. It might takes a few minutes. Do not shutdown/ power off the system during firmware updating.
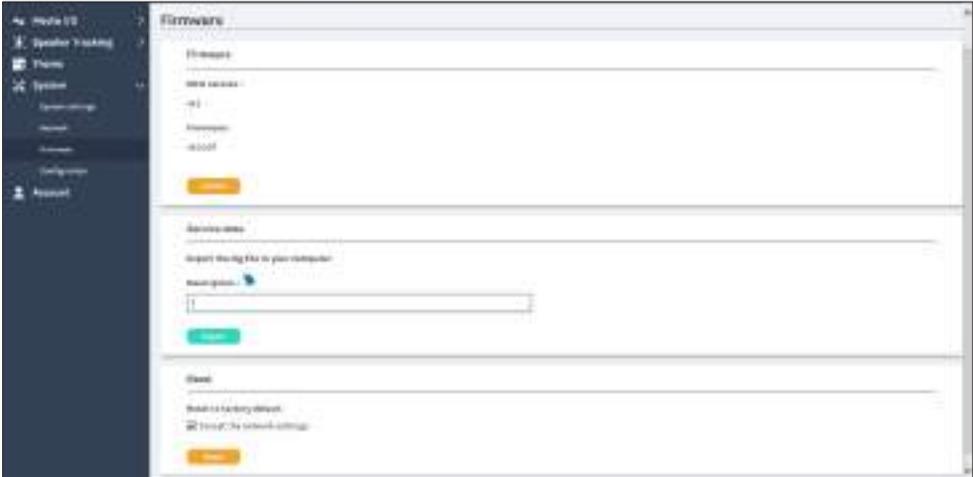
Service data : Export the log file to your computer or upload it to the Customer Service Server. Input the file name, and then click "Export" or "Upload".

Note : The length of the string is 0~16 characters, allowing letters, numbers, symbols 11(~!@$%^&*-+_).

Reset : Reset to factory default. Check if you want to keep your network settings, and click "Reset".The dialog pop out and ask you "System will reboot after updating, continue?
" Click "Confirm" to start reset.

1.4.4 Configuration
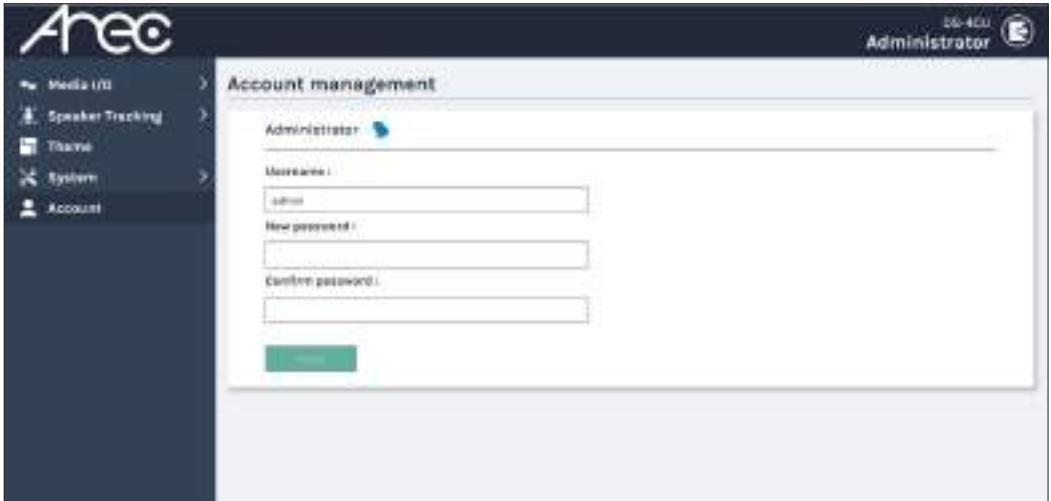
You can export or import the configuration in this page:

Export : Select the configuration to export and click "Export".
Import : Click "Import"to load a configuration.

1.5 Account

Users can set the system account password.

Changing username and password:

(1) New User: Enter an user login name that you want.

(2) New Password: Enter an user login password that you want.

(3) Confirm Password: Requires you to enter your password again for confirmation.

(4) Click Apply.

Chapter 2 The Local Display

For Tracking and Focusing on the Active Speaker and Displaying via HDMI and VGA Outputs.

2.1 On-screen menu

This section refer to the content of the setting "Preview with On-screen menu" in 1.1.4 Display.
After the USB port is connected to the mouse, user can click the menu on the screen. GUI allow user to switch the Camera control view on the display.
Note: on-screen GUI is selectable to be output between HDMI and VGA display port, please refer to 1.1.4

2.1.1 Functions

This section introduces the names and the functions of these buttons.

a. Information
Click , the dialog is shown as below. Show device information: Hostname/ Device description/ IP address/ Model/ Version/ Brand.

b. Speaker list
Click , open the camera control list for speakers which is set in Speaker Tracking / Camera control. And click the button on the dialog: Camera auto switch and auto adding an overlay.

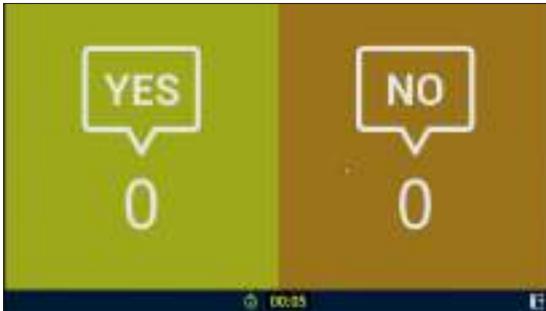Note:Camera control settings, please refer to 1.2.2
: Focus on the G2-2 Speaker
: List of Multi-Participants Speak

c. Vote control (Limited model)

Click ⊠ , open the vote menu for speakers.

Click the button ⏱ to start vote mode.

Click ⏱ again to stop vote mode.

[YES] 5 : Agree

[NO] 2 : Disagree

▢ 1 : Abstain

👥 8 : Total

Note: Voting mode is available with "DCS-100 Digital Conference System" voting function.

2.2 Display Monitor

This section refer to the content of the setting "Monitor input sources" in 1.1.4 Display.
Automatic display by pressing microphone button allows:
   • Automatic camera selection
   • Automatic layout switching
   • Automatic display of predefined themes (combinations of backgrounds, layouts, and overlays)

Speaker 1 pressing microphone button

Speaker 2 pressing microphone button

Table of On Screen Display Icons

There are event icons/ dialogs on screen display and to show the system information or the error operation warnings.

	Network connection failed
	Invalid operation
	No Streaming inputs
	No input from Video ports

Firmware update failed	Firmware updating
Shutdown confirmation	Fan error

Made in Taiwan
Date : 2020.2.1
Version : 6.0