

User Manual

Video Recorder -Face Recognition Function

Version: 2018.9

- ▶ **Similarity:** The similarity threshold of the captured face. The threshold range can be set from 1-99. Preview real-time recognition interface to display a face image that is greater than or equal to the threshold, the face image is recognized. If the face image similarity is smaller than the threshold, then it cannot be recognized; the recommended threshold is about 55-60, which can be adjusted according to actual environment;
 - ▶ **Sensitivity:** Face scoring standard, the higher sensitivity, the lower face score is required, that is, capture the face more sensitively, the recommended sensitivity is about 6, which can be adjusted according to the actual environment;
 - ▶ **Minimum image pixel:** The device can detect a face image larger than or equal to the minimum picture pixel. If the picture smaller than the pixel cannot be detected, the recommended minimum picture pixel is about 100, which can be adjusted according to the actual environment;
 - ▶ **Snapshot quality:** Configuration range from 1-99, the larger the number, the better quality of the saved picture. It is recommended to set the quality of the picture to 99, which can be adjusted according to the actual environment;
 - ▶ **Detection area:** Draw the area where the face is detected;
 - ▶ **Masking area:** After the masking area is delimited, the face that appears in the area cannot be detected;
3. In "Advanced Setting", the IPC detection mode can be set. There are four detection modes: interval mode, enter mode, leave mode, enter or leave mode, as shown in Figure 2;

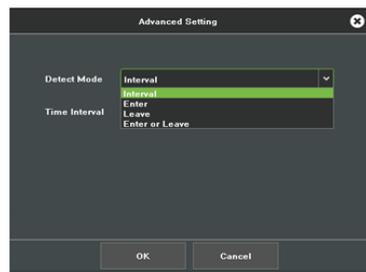


Figure 2

- ▶ **Interval mode:** You can set the interval time and upload a better face image every set time. For example, if the interval time is 1 second, a better picture will be uploaded every second. If there is no better picture, it will not be uploaded.

- ▶ **Enter mode:** set the entry time and the snapshot quantity. After the target enters the detection area, upload the set number of face images within the set time period. For example, if the device enter time is 1 second and the snapshot quantity is one, the target enters the detection area for one second, and then uploads a picture;
 - ▶ **Leave mode:** upload a set number of face images when the target leaves the detection area;
 - ▶ **Enter or leave mode:** when a target enters or leaves the detection area, the device will uploads a face image;
- Note: Face images of all modes are dependent on sensitivity. If the quality of the captured face image does not reach the set sensitivity, it will not be uploaded.
4. **Arming:** Set the arming time of blacklist, whitelist and other list, as shown in Figure 3.

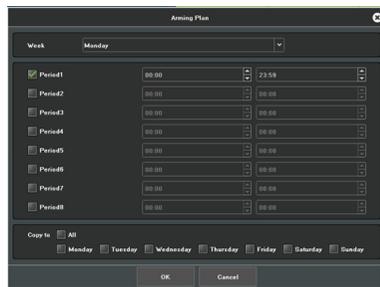


Figure 3

5. **Linkage:** set the alarm linkage of blacklist, whitelist, other list, as shown in Figure 4;

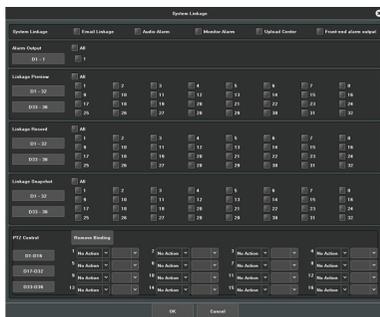


Figure 4

- **Blacklist linkage:**
 - ▶ **Email linkage:** This method needs to set a valid sending and receiving mailbox in the Email parameter of the device, and fill in the valid sending and receiving server and port. After setting, if there is an alarm, the mailbox will receive the real-time alarm information;

- ▶ **Audio alarm:** Enable it means the device buzzer will sound when the alarm occurs;
- ▶ **Monitor alarm:** The real-time alarm information will be displayed in the alarm information field of local preview interface.
- ▶ **Upload Center:** The real-time alarm information will be displayed in the alarm information of the website or VMS of the device,
- ▶ **Front-end alarm output:** After connecting the IPC to the output alarm device, if the alarm is triggered, the alarm information will be feedback to the output device;
- ▶ **Alarm output:** After the NVR connect external alarm output device, if the alarm is triggered, the alarm information will be fed back to the alarm output device;
- ▶ **Linkage preview:** You can select one, a few or all channels linkage, after the preview linkage is started in the preview interface, if there is an alarm trigger, the selected channel video will pop up automatically;
- ▶ **Linkage record:** You can select one, some or all channels linkage, if the alarm is triggered, the selected channel will capture the image in real time;
- ▶ **Linkage snapshot:** You can select one, a few or all channels linkage, if the alarm is triggered, the selected channel will capture the image in real time;
- ▶ **PTZ control :** The device needs to be connected to the PTZ device. After the alarm is triggered, the PTZ device's preset , cruise or pattern can be linked, or all the PTZ linkages can be canceled if click cancel all.

- The whitelist linkage and other list linkage are same as above;

Face template database import and management

Face Group

1. The face template database is managed in the form of grouping, enters the artificial intelligent menu, select "Face Group", enter the face group management interface, can create face groups and maintain & manage the group information;
2. Add group: You can create a group, click "Add Group", name the group, set the created group as blacklist or whitelist, and associate the group with the corresponding channel, as shown in Figure 5;

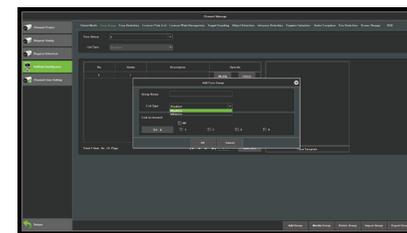


Figure 5

3. **Modify group:** The name of the group, the type of the list and the associated channel can be re-modified;
4. **Delete group:** Delete the created group;
5. **Import group:** That is import face images in batches, which will be described in detail below;
6. **Export group:** Export group information from devices;

Face template database import

Face image can be added in a single or batch import;

1. **Single add:** you can use the USB flash drive to add a face image or capture the face image by IPC extraction.

- Add a face image through a USB flash drive;
 - a) After adding the group, click "Add Face" button of the corresponding group to jump to the face import interface, each person could be imported five face templates, as shown in Figure 6;

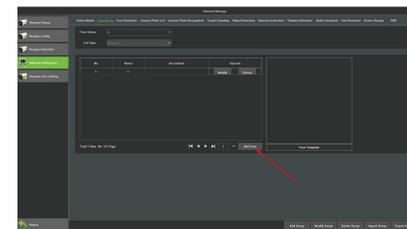


Figure 6

- b) Select an external image and click on "Import Image" as shown in Figure 7.

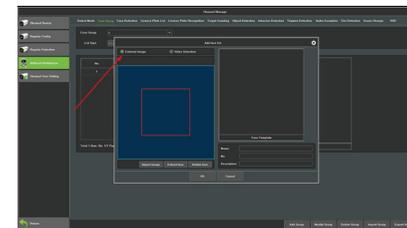


Figure 7

- c) Select the image to import from the U disk, click the left mouse button on the left corner of the image, and drag it to the lower right corner. Release the mouse after the target face image in the box, and click "Extract Face", as shown 8;



Figure 8

- d) After the face template is extracted, add the name, number and description to the face template image and click "OK". In the corresponding group, click the face template picture to view, as shown in Figure 9;

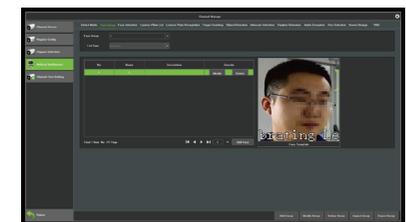


Figure 9

- Note:
1. The imported image pixel size cannot exceed 1080P;
 2. The number of the face image is unique and cannot be repeated;

- Face template extraction by IPC capturing;
 - a) Select the camera channel to capture the image, click "Capture", as shown in Figure 10;

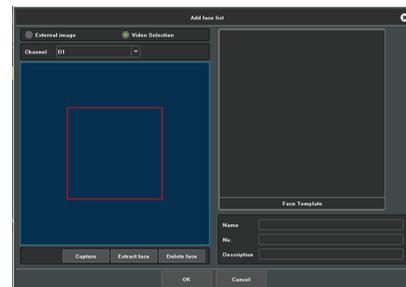


Figure 10

- b) If you are not satisfied with the current effect, you can click "Delete Face" to delete the extracted face template image and re-shooting;

Note: The number of the face image is unique and cannot be repeated;

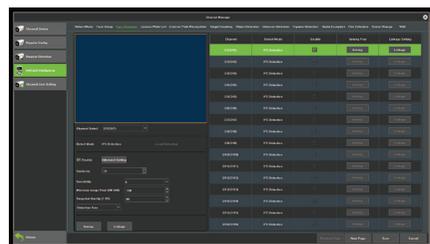


Figure 1

2. Batch Import:

a) Before importing face template images in batches, you need to store the face template images in the form of a directory. You need to create a two-level directory. The secondary directory name must follow the "(number)_(name)_(description)" rule. The brackets are English characters, as shown in Figure 11; the corresponding face template image is placed in the secondary directory, and the corresponding face image name needs to start with 1, as shown in Figure 12;



Figure 11



Figure 12

b) Before importing the face group, you need to create a group. After the group is created successfully, select "Import Group", as shown in Figure 14;

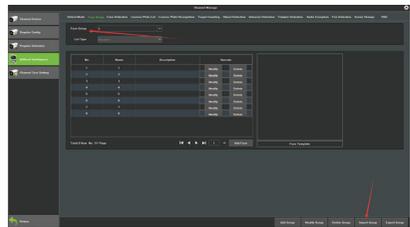


Figure 13

c) Before importing a face image, you can choose to force updating face with same ID or skip importing face with same ID, as shown in Figure 14;



Figure 14

- ▶ Force updating face with same ID: If the imported face template image ID conflicts with the ID of the existing template in the device, the image in the device is replaced.
- ▶ Skip importing face with same ID: If there is a face template image with the same ID, skip the image and not import it.

d) After clicking OK, the device starts importing the face template, as shown in Figure 15;

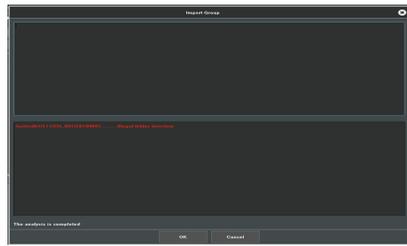


Figure 15

e) After the face template is imported, the interface prompts "analysis complete".

f) At this point, you can see the imported face image in the group, as shown in Figure 16;

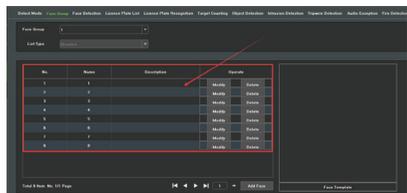


Figure 16

Note: The total number of imported face images (including all groups) supports up to 5,000 people;

Real-time preview of facerecognition results

1. Preview interface Click "Face Recognition", enter the face real-time comparison interface, you can see the real-time captured picture is the face image, as shown in Figure 17;

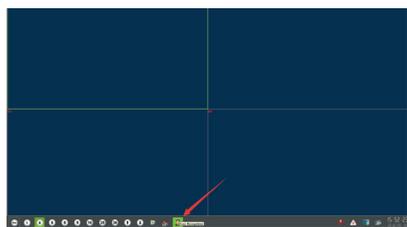


Figure 17

2. The current comparison result information can be displayed, including similarity, name, number, description, channel, list type, time, as shown in Figure 18;



Figure 18

3. You can choose display all the face images or display matched face images;

- ▶ Display all face images: including all captured pictures, both recognized and unrecognized;
- ▶ Display matched face images: only the recognized face image will be displayed;

4. Display or hidden the face detection frame, select "Display the face detection frame", the face frame will be displayed when the face appears in the channel screen; select "Hidden the face detection frame", the face line can not be displayed when a face appears in the screen;

Face recognition retrieval

1. Click "Search" in menu, entry the retrieval interface, as shown in Figure 19;



Figure 19

2. Channels, time periods can be selected, and separate retrieve according to different search types, as shown in Figure 20;

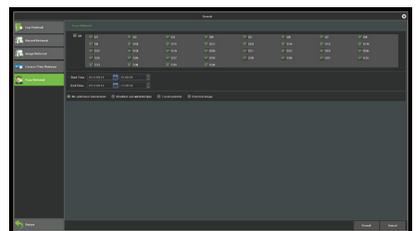


Figure 20

3. In the interface of retrieved the image, the face image can be selected again for secondary retrieval, as shown in Figure 21.



Figure 21

4. The each retrieved image can correspond to displaying the last 10 seconds of the captured video, as shown in Figure 22;



Figure 22

5. You can also back up the retrieved images and videos, check the images to be backed up, select backup images or videos, click the "Backup" button to back up the images or videos to the USB flash drive, as shown in Figure 23;



Figure 23

6. The retrieved images can also be displayed in a list, and the list interface can also check 10 seconds of video and backup, etc. The method is the same as above, as shown in Fig. 24;



Figure 24

- ▶ No additional information retrieval: All captured face images from the selected channel can be queried, and up to 10000 results can be displayed at a time. When the search result exceeds 10000, the first 10000 images will be displayed;

- ▶ Black and white list type retrieval: There are three types of search: blacklist, whitelist, and other list; Black list search: Can query the recognized blacklist face image;

White list search: Can query the recognized white list face image;

Other list search: You can query the captured face images that are not blacklisted and whitelisted, that's unrecognized face images;

- ▶ Local list search: Search according to the face list in the local face template of the device, the face image with the similarity value greater than or equal to the set value can be queried, as shown in Figure 25;

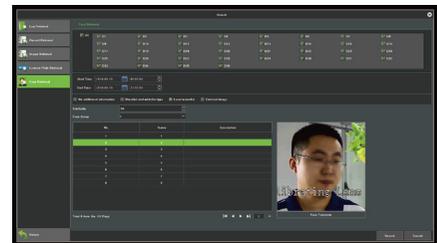


Figure 25

- ▶ External image retrieval: Retrieve the extracted face template based on the imported image in the U disk, the face image with the similarity value greater than or equal to the set value can be queried, as shown in Figure 26;

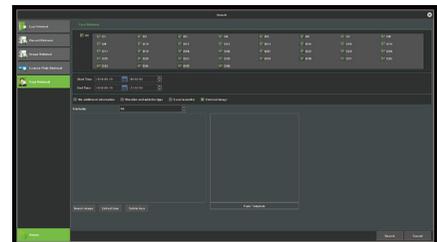


Figure 26