

## AMT-FAS-35

### Dual-Lens Face Recognition Module



#### Overview

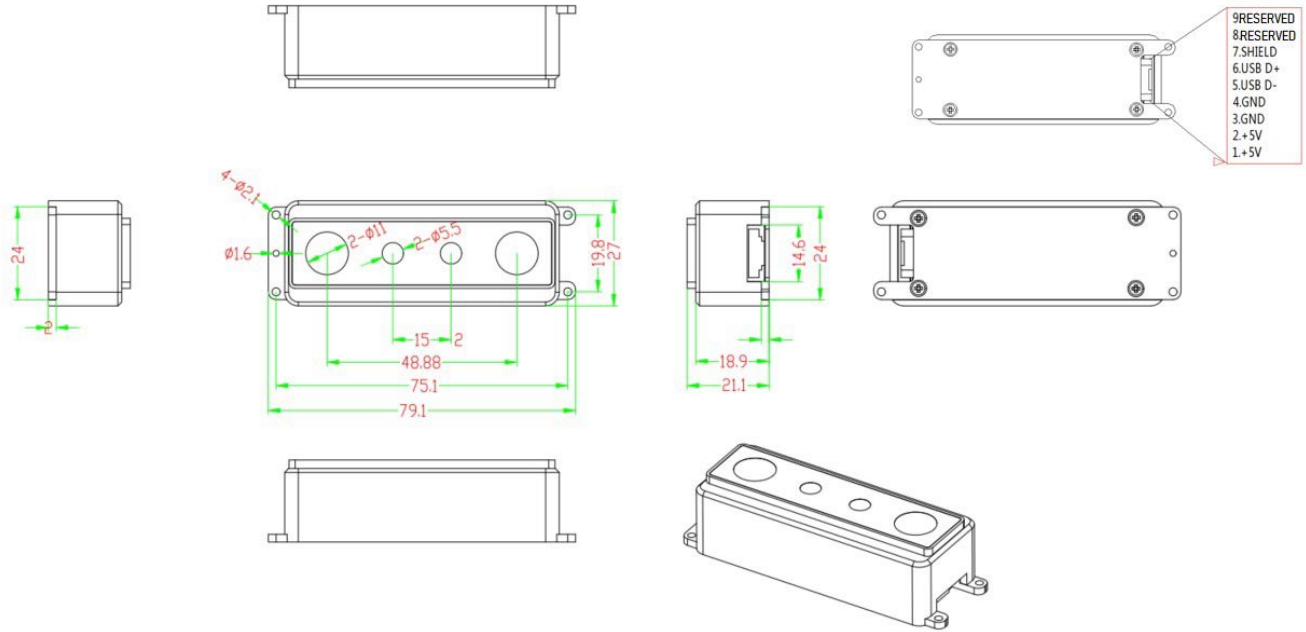
- AMT-FAS-35 is a dual-lens face recognition module that supports human face image capturing, face attribute analysis, liveness detection, face template extraction and matching on-chip.
- The module contains two wide dynamic range imaging sensors for true color RGB image and infrared light grayscale image capturing respectively. The images are sent to the subsystem for face liveness detection and recognition processing.
- The image sensors are highly adaptable to various indoor and most outdoor environments.
- The module supports UVC streaming video protocol and HID data protocol over USB 2.0, offers the developer-friendly integration capability with third-party applications.
- The high-performance CPU and built-in deep learning-based face recognition algorithms in the subsystem provide high-speed template extraction and matching operation with high-accuracy.
- The features to extract and match template on-chip empowers the face recognition features on a wide range of host devices that the system integrators can leverage the module computing power instead of host devices to perform face recognition.
- The combination of the infrared-light imaging sensor and the built-in AI algorithms enables highly secured liveness detection for real individuals, prevent the system from forgery attack by a personal representation such as photoprint, digital photograph, video clip, or facial mask.
- The module includes high-performance on-chip storage components which support large volume face templates for enrollment and matching operations.
- The lightweight and compact size make an easy, agile and flexible integration with a wide range of hardware and software applications.

#### Software Development Kit (SDK)

- AMT-FAS-35 module is supported by Armatura MultiBio SDK 3.0.
- MultiBio SDK 3.0 supports Windows, Android and Linux (per request) system.
- MultiBio SDK 3.0 encapsulates the USB lib interfaces for hardware communication, provides programming interfaces to module-built-in face algorithm and offers matching functionalities on host.
- MultiBio SDK 3.0 makes a fast and easy integration approach for developers/integrators.

## Module Dimensions and Connection PIN Specifications

Figure 1: AMT-FAS-35 dimension and PIN specification



Unit: mm

Note: The module in the above structure diagram is attached with the heat sink.

General Information	
Processor	1.2GHZ Quad Core ARM Processor, 2.4 TOPS NPU
Memory	1 GB RAM & 512MB Flash Storage
Camera	1.3 MP infrared light camera; 2.0 MP visible light camera.
Interface	USB 2.0
Communication	UVC and HID Protocol
Power Supply	DC 5.0V/2.0A
Power Consumption	< 2.5W (standby); < 3.5 W (operation)
Operating Temperature	-10°C ~ 55°C / 14°F ~ 131°F
Storage Temperature	-40°C ~ 85°C / -40°F ~ 185°F
Operating Humidity	15% ~ 95% RH
Dimension	79.1L x 27.0W x 21.1H (mm)
Certifications	CE, FCC, RoHS, WHQL

Sensor		
Camera Type	Visible Light Camera	Infrared Light Camera
CMOS	1/2.8" HDR CMOS, 2.0MP	1/4" CMOS, 1.3MP
Dynamic Range	HDR mode 106dB	100dB
Optical Wavelength	440 nm ~ 650 nm	940 nm
Image Type	24-bit RGB true color	256 Grayscale Levels
Illumination Range	0.01 Lux to 50,000 Lux	0.01 Lux to 50,000 Lux
Exposure Mode	Auto Expose on Region of Interest (AE on ROI)	
Image Resolution (Pixel)	Raw: 1080W*1920H	Raw: 1080W * 1280H
	Output: 720W * 1280H	Output: 720W * 1280H
Shutter Type	Rolling Shutter	Global Shutter
Frame of View (FOV)	Horizontal: 60°, Vertical 36°, Diagonal: 67°	
Frame per second	15	
Distortion Rate	≤ 0.5%	

Built-In Algorithms	
Recognition Distance	40cm - 120 cm
Posture Adaptability (by Default)	Yaw ≤ 30°, Pitch ≤ 30°, Roll ≤ 45°
Accuracy*	TAR=99%@FAR=0.01%
Recognition Mode	1:1, 1:N
Recognition Speed	< 100ms
Face Attribute	Age, Gender, Expression classification
Liveness Detection	Infrared-visible light mode & Infrared light mode
Face Mask Detection	Yes
1:N Capacity	30,000

[\*] The accuracy is assessed on the proprietary infrared light face image data set.

TAR: True Acceptance Rate, FAR: False Acceptance Rate.

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