ARMATURA

AMT-FAPVS-21

Dual-Lens Multimodal Standalone Module
For Face and Palm Recognition

AMT-FAPVR-21

Dual-Lens Multimodal Standalone Reader
For Face and Palm Recognition

AMT-FAPVS-21   AMT-FAPVR-21

Overview

- AMT-FAPVS-21 is a multimodal standalone module for face and palm recognition. The module includes built-in face & palm algorithms which allows the module to perform full-cycle biometric recognition operations, including scanning face & palm, capturing Near-Infrared (NIR) light grayscale and true-color RGB images, analyzing face- & palm-attributes, extracting face & palm templates, and matching face & palm.
- AMT-FAPVS-21 includes built-in wide dynamic range imaging sensors which capture high-definition NIR grayscale and RGB face & palm images for recognition process.
- AMT-FAPVS-21 supports auto exposure with built-in infrared LED for superior image quality in varying indoor and most outdoor environments.
- AMT-FAPVS-21 supports UVC streaming video and HID data communication protocols over USB 2.0 interface which are widely adopted on USB-supported hardware platforms.
- The built-in deep learning-based face & palm recognition algorithms is running on the module to perform high-speed enrollment and authentication. It allows integrators to leverage the high-performance computing power of the module, minimize dependency on host computing resource, and make it applicable to a wide range of hardware platforms.
- Based AI computer vision technologies, the built-in face & palm algorithms provide highly secure liveness detection, prevent forgery hacking by an imposter using digital photograph, video clip, printed picture or face mask. The highly accurate liveness detection is based on using collected visible and infrared light images for secured anti-spoofing protection.
- AMT-FAPVS-21 has built-in high-performance storage which stores and matches (1:N) face & palm in large volume, up to 50,000 face templates and 6,000 palm templates.
- Compact, light-weight size with USB 2.0 interface makes an easy, fast and friendly integration with a wide range of host hardware devices.
- AMT-FAPVR-21 reader enclosure embeds the AMT-FAPVS-21 module.

Software Development Kit (SDK)

- AMT-FAPVS-21 and AMT-FAPVR-21 are supported by Armatura MultiBio SDK 2.1.
- MultiBio SDK 2.1 supports Windows, Android and Linux (on request) system.
- MultiBio SDK2.1 provides fast and easy integration to most applications, reducing the time to market.
- For more information, please refer to MultiBio SDK 2.1 brochure.

Module Dimensions and Connection PIN Specifications

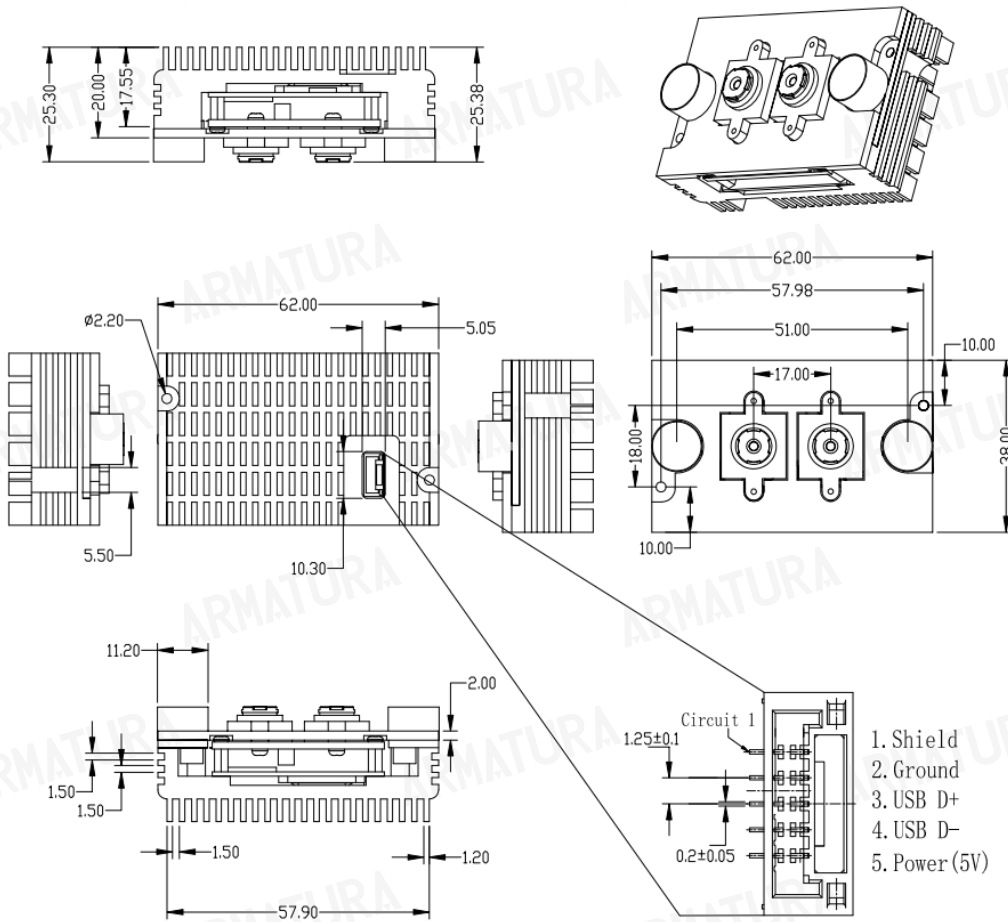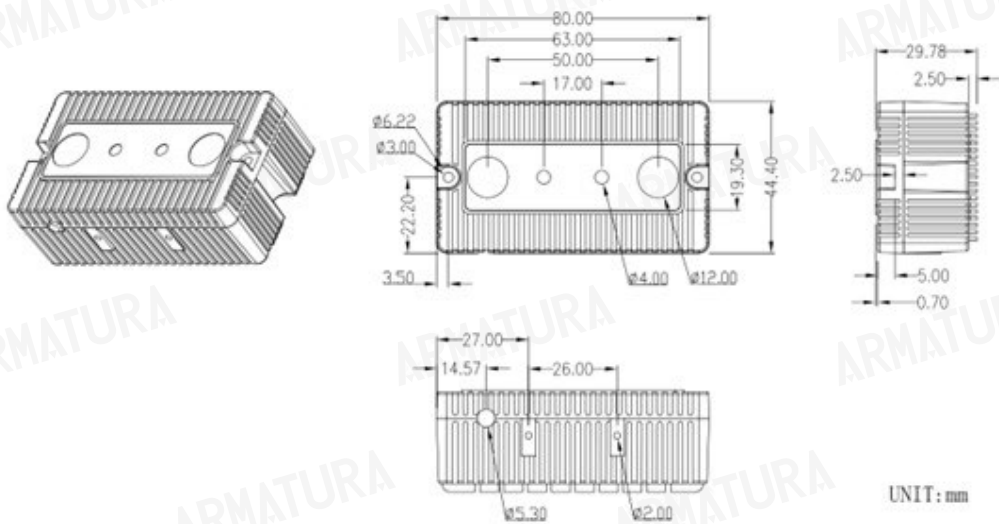Figure 1: AMT-FAPVS-21 dimension and PIN specification

1. Shield
2. Ground
3. USB D+
4. USB D−
5. Power (5V)

Figure 2: AMT-FAPVR-21 dimension

UNIT: mm

General Information

Processor	Quad-core Cortex-A7＠1.5GHz, 1.2TOPS（INT8）
Interface	USB 2.0
Communication	UVC and HID Protocol
Power Supply	DC 5.0V/1.0A
Power Consumption	< 3.3W (standby); < 5.0W (operation)
Operating Temperature	-10°C ~ 45°C / 14°F ~ 113°F
Storage Temperature	-40°C ~ 85°C / -40°F ~ 185°F
Operating Humidity	0 ~ 90% RH
Module Dimensions	Module: 62.0(L)* 38.0(W)*25.3(H) mm (±1mm)
	Reader: 80.0(L)* 44.4(W)*29.8(H) mm (±1mm)
SDK	Armatura MultiBio SDK 2.1
Certification	CE, FCC, RoHS, WHQL

Sensor

Camara Type	Visible Light Camera	Infrared Light Camera
CMOS	1/2.8" HDR CMOS, 2 MP	
Wide Dynamic Range	105dB	
Optical Wavelength	440 nm ~ 650 nm	850 nm
Image Type	24-bit RGB true color	256 Grayscale Levels
Illumination Range	0.01 Lux to 50,000 Lux	0.01 Lux to 20,000 Lux
Exposure Mode	Face Tracking AE	Palm Tracking AE
Distortion Rate	≤ 0.5%	
Image Resolution	720(W)*1280(H)＠25fps by default, 480(W)*640(H)＠25fps on request	
Field of View	Horizontal:40°, Vertical:65°, Diagonal:73°	
Default Output Format	MJPEG	NV12

Built-In Algorithms		
Biometric Type	Face	Palm
Recognition Distance	50cm ~ 160cm / 20 inch ~ 63 inch	15cm ~ 40cm / 6 inch ~ 15 inch
Posture Adaptability (by Default)	Yaw ≤ 30°, Pitch ≤ 30°, Roll ≤45°	Yaw≤20°, Pitch≤20°, Roll≤90°, Bend≤15°
Accuracy	*TAR=99.2%@FAR=0.001%	*TAR=98.2%@FAR=0.05%
Recognition Mode	1:1, 1:N	1:1, 1:N
Template Extraction Time	< 200 ms	< 300ms
Matching Time	< 70 ms	< 150 ms
Face Attribute	Age, Gender, Expression Class	N/A
Liveness Detection	Yes	Yes
Face Mask Detection	N/A	N/A
Capacity	50,000	6,000

ARMATURA