



ROSSII

GF851EM / GF851EM-S MODULE DATASHEET

We are committed to developing sensing technology and providing customers with innovative and diverse sensor products including modules and readers. Our MatriXcan provides the most advanced fingerprint identification extraction technology, providing advanced and convenient fingerprint collection.

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1. REVOLUTIONARY TECHNOLOGY

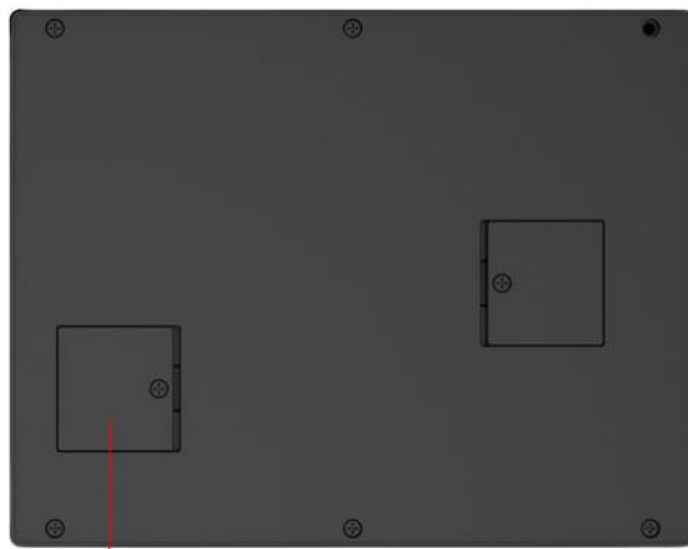
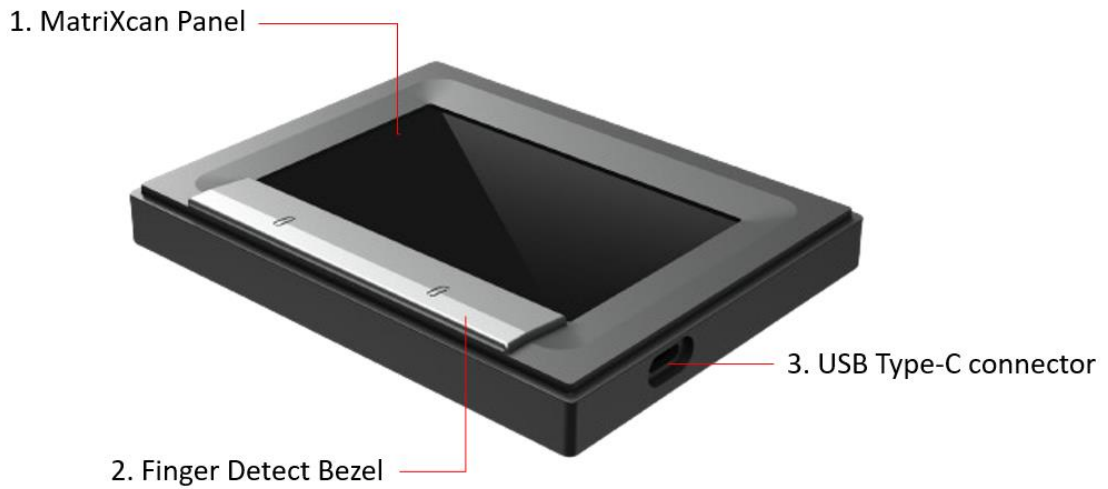


Differing from two kinds of typical fingerprint verification solution, optical and capacitive, iMD's world-leading technology MatriXcan™ is able to capture the best quality of fingerprint images, to extract most minutiae you have ever seen, and to output with outstanding speed and security. MatriXcan™ the extremely clear and distinct images captured on dry or worn fingers makes the high possibility to adapt all sorts of finger conditions without exceptions.

2. FEATURE

- Remarkable GF series fingerprint sensor!
- 4-4-2 fingers registration/verification
- Automatically detects the finger captured
- Live finger detection
- High security and reliability
- Outstanding image quality on dry/worn fingers
- Low power consumption
- Latent print, UV, strong light resistance
- Hard surface for scratch protection
- Excellent ESD performance
- RoHS compliant and low-halogen
- Slim and compact design
- Encryption function (GF851EM-S)

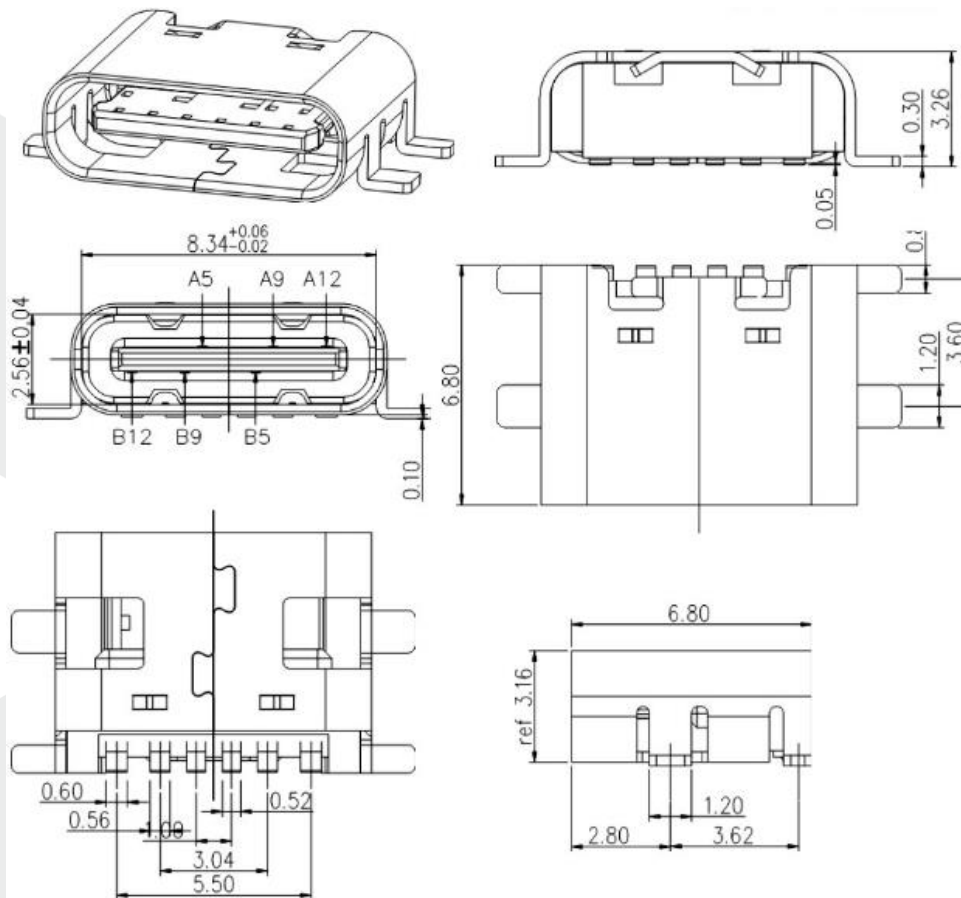
3. PRODUCT DETAILS



1. **MatriXcan Panel:** Sensing area 81.28 mm x 50.8 mm
2. **Finger Detect Bezel:** Detects whether a finger touches the product and includes an anti-counterfeiting function
3. **USB connector:** USB 2.0 Type-C connector
4. **USB Connector:** USB 2.0 (4 pin) connector

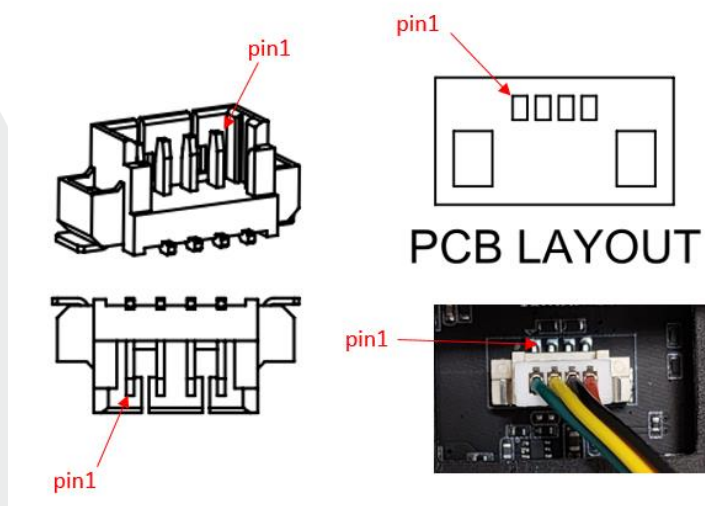
4. USB Type-C CONNECTOR

Pin Number	Pin Description
1	VBUS
2	D-
3	D+
4	Ground
5	Shield GND



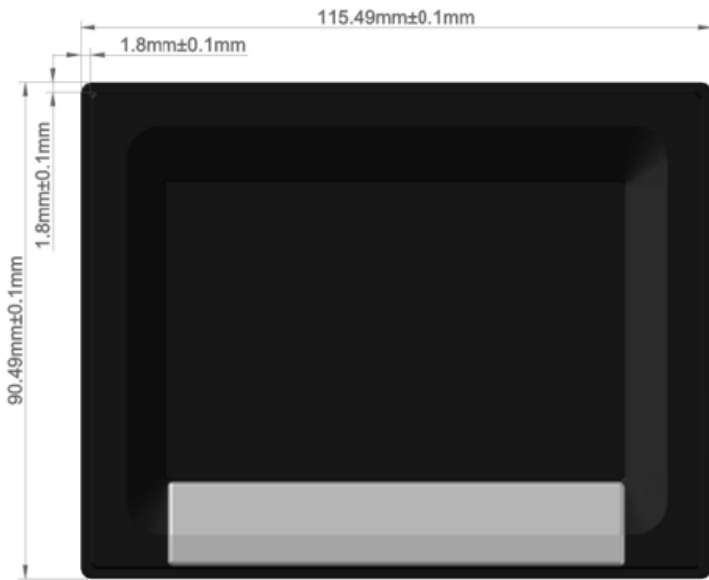
5. USB (4 Pin) CONNECTOR

Pin Number	Pin Description
1	5V
2	D+
3	D-
4	GND



Molex Connector part number: 533980467

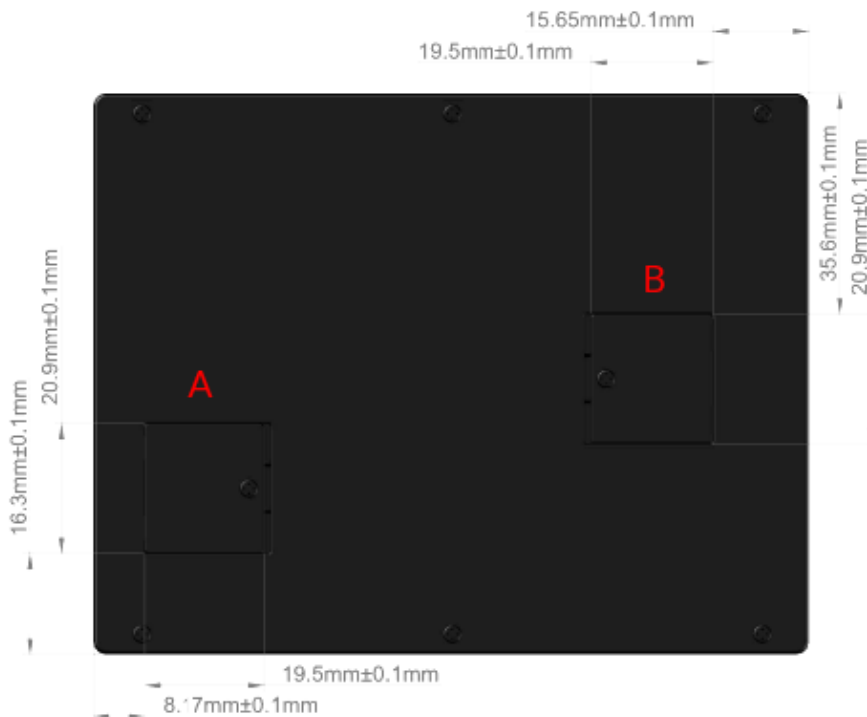
6. GF851EM 2D DRAWING



Top view



Side view



Bottom view

7. SPECIFICATIONS

General Specifications	
Model Name	GF851EM / GF851EM-S
Image Size	1600 Pixels x 1000 Pixels
Sensing Area	81.28 mm x 50.8 mm
Resolution	500 dpi
Grayscale	256 (8bit)
FPS	Flats: 10 / sec, Rolls : 15 / sec
LFD	Supported
Interface	USB 2.0 (4 pin) connector / Type-C connector
Power Consumption (read image)	450 mA
Power Consumption (standby)	160 mA
ESD Level	IEC 61000-4-2 Level 4
Encryption Function (GF851EM-S)	AES CBC:128 192 256 / AES ECB:128 193 256
Dimensions and weight	
Device Size	115.49 mm x 90.49 mm x 13.2 mm
Device Weight	116.9 g
Housing Material	Steel

OS Support	
Windows	Windows7+ or later
Linux	Linux(X64, ARM) or later
Android	Android 4.2+ or later
Certifications	
FBI	Appendix F (FAP50)
Environmental Specification	
Operating temperature	-20° C to +70° C
Storage temperature	-40° C to +80° C
RCA	200 cycle
Pencil Hardness	7H
Protection / Water / Dust	IP65 (sealed bezel to scanning surface)

8. REVISION HISTORY

Version	Date	Changes	Approved	Checked	Author
V1.0	3/11/2024	First Version	Colman	Hyde	Sam