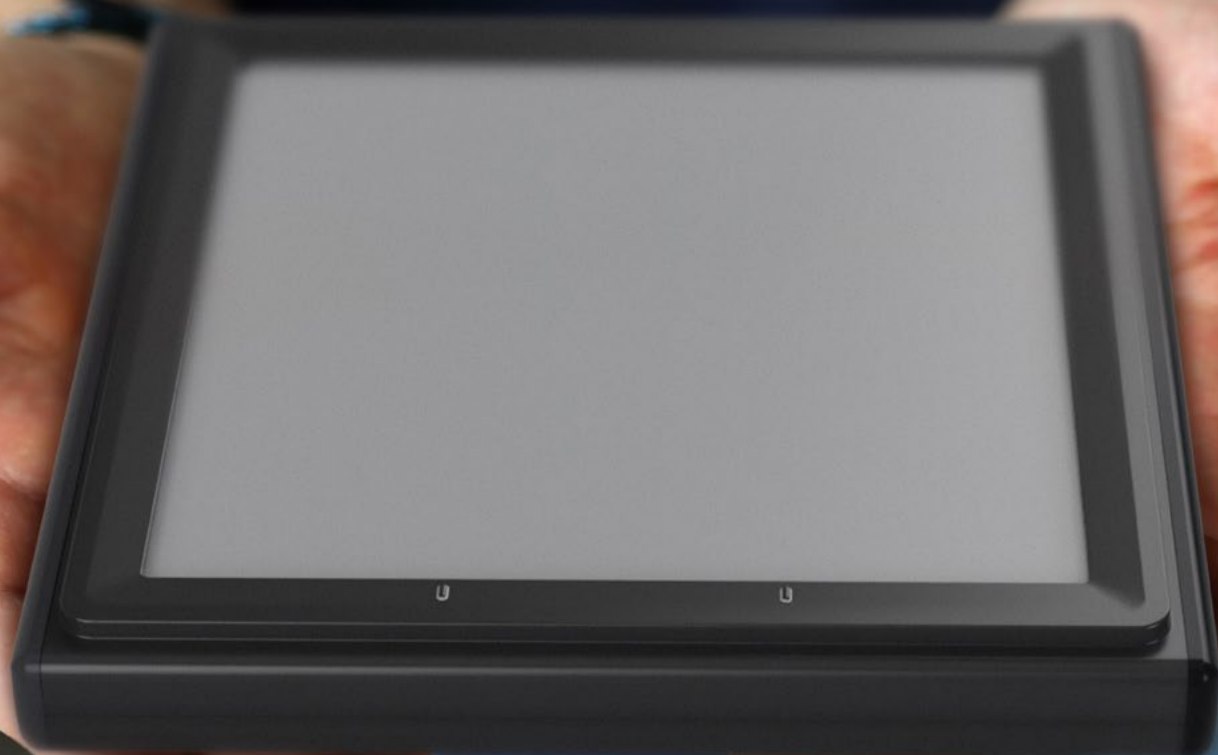**ib** INTEGRATED BIOMETRICS

Mannix Hardware Manual

The World's Only Mobile, Lightweight Appendix F-Certified and Appendix P-Compliant Palm Scanner
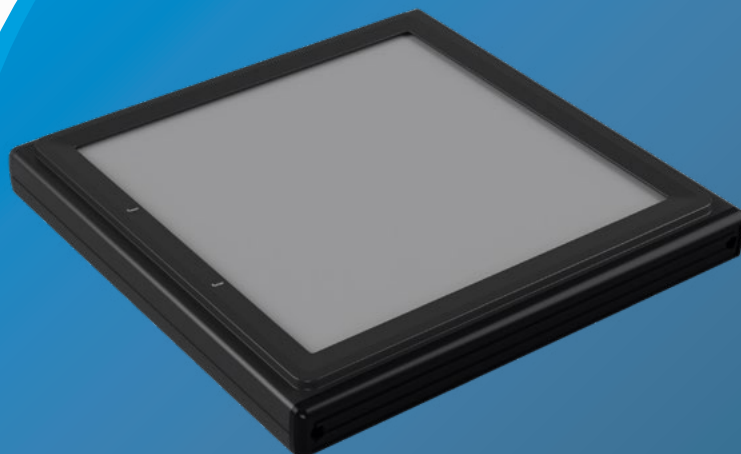
- Automatic Spoof Rejection
- Software-Based Autodetect

Contents

Revision History

Revision No.	Issue Date	Comments
1.0	2024.4	1.0 Version Preliminary

Ten Prints in Ten Seconds or Less

Leveraging the strengths of existing LES technology, Mannix is the only compact, mobile palm scanner available on the market. Developed as a half-palm scanner, Mannix has an active scanning area of 5"x5" and is Appendix F and Appendix P certified.

The IB SDK provides the core functions to enable capture of Upper Palm, Lower Palm, Writer's Palm (hypothenar), and Rolled Prints.

Faster

- Rapid dry-finger capture
- No need to clean latent prints in high-volume situations
- Easy integration via single SDK for all Integrated Biometrics FBI-certified products

Better

- Unaffected by extreme temperatures, direct sunlight, or bright artificial lights
- Compact, lightweight, and rugged
- Rejects common spoofing attacks
- Emits no bright lights during scans
- Meets or exceeds US military durability specifications

Smarter

- Extremely low power consumption
- Eliminates consumables (silicone membranes or cleaning tape)
- Lower maintenance costs

Software-Based Autodetect

- Scanner automatically detects the finger capture that generates the highest quality image without user intervention.
- Application developers enable this feature through the Integrated Biometrics software development kit (SDK)

Product Details

1. LES: Light Emitting Sensor, Sensing Area

The patented LES film is a multilayer, polymer composite containing particles that luminesce (give off light) in the presence of an electrical field.
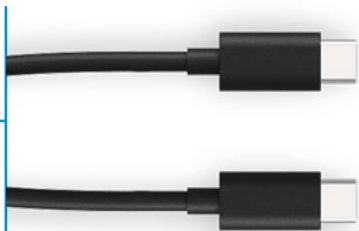
2. Conductive Bezel

The bezel, in conjunction with a user's finger, complete a low-level electrical circuit which causes the particles in the film to emit light.
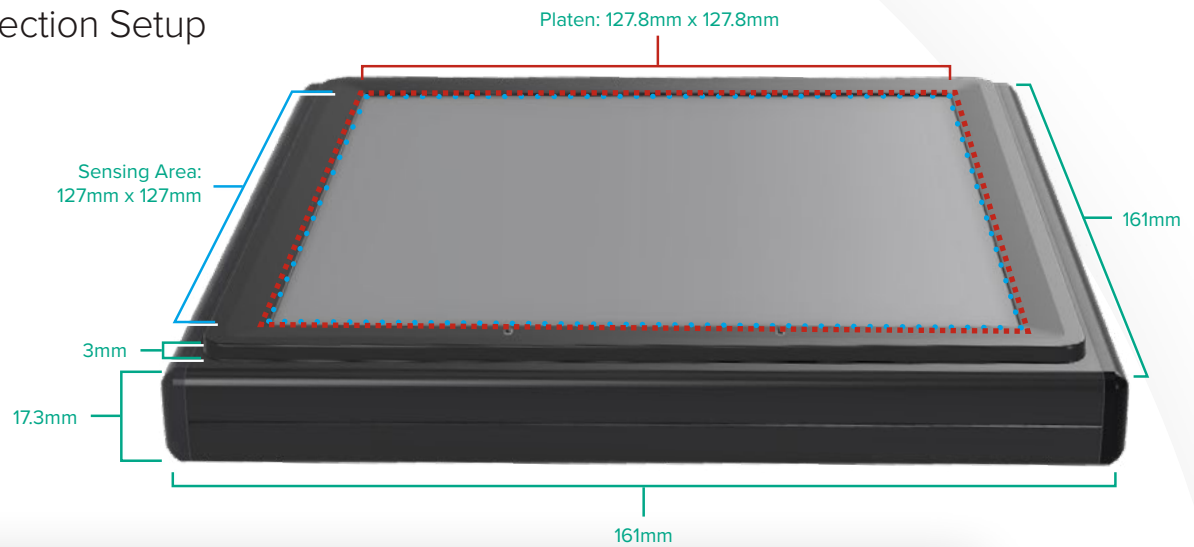
Accessories

USB-C Cable

Mannix Rugged Bumper Case – Part Number: MNBUPCA - 001

Hardware Connection Setup

Platen: 127.8mm x 127.8mm

Sensing Area: 127mm x 127mm

161mm

3mm

17.3mm

161mm

ITEM	SPECIFICATIONS
Scanner Physical Size	161.0 mm x 160.9 mm x 20.3 mm / 6.3" x 6.3" x 0.8"
Total Weight	600 grams/ 1.3 lbs (not including bumper case or cable)

USB Connector Pin Description

PIN NUMBER	TYPE	DESCRIPTION
1	V_BUS	+5 VDC
2	USB	Data (+)
3	USB	Data (-)
4	G	Ground
5	–	NC
6	G	Shield GND

USB Cable

ø7mm CIRCLE

ø5.5mm CIRCLE

ø7mm CIRCLE

USB C type connector

12mm

7mm

41mm

860mm

41mm

942mm

USB-C CONNECTOR WIRING ASSIGNMENT

GND: A1, B1, A12, B12
VBUS: A4, B4, A9, B9
DP1 (D+): A6
DN1 (D-): A7

SHELL, DRAIN WIRE (SHIELD)

A1   B12

A12   B1
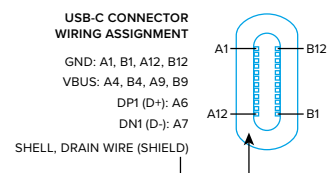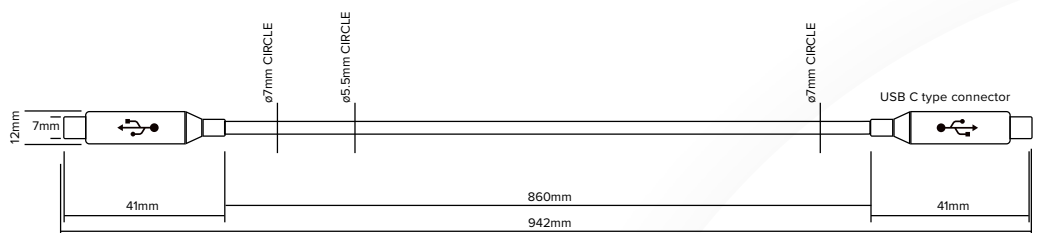
Specifications

OS Support

SECTION	SPECIFICATIONS
Windows	Desktop Editions 10, 11
Linux	Linux Kernel 4.0 or newer (64 bit, ARMv8) • Ubuntu 18.04LTS or newer • Debian 10, 11, or newer
Android	Android 10, 11, 12

System Requirements

SECTION	SPECIFICATIONS
CPU	x64	2.0GHz or higher ARM	2.0 GHz or higher
Memory	1GB or higher

General Specifications

SECTION	SPECIFICATIONS
Sensor Type	LES ZTX
Camera	TFT
Resolution	500 ppi
Grayscale	256 grayscale dynamic range
Image Size	2500 x 2500 pixels
Supported Image Formats	RAW, JPEG2000, BMP, PNG, WSQ (FBI-approved)
Encryption	N/A
FBI / Image Certifications	PIV 071006, FIPS 201, FAP 30 / Certified to Mobile ID Requirements
Speed	Min frame rate for flat capture > 6 fps Min frame rate for roll capature > 10 fps
API Interface	Capture with one finger or with multiple fingers or with palm; Capture of rolled fingerprints; Multi-device/multiprocessor support
Quality Scoring	NFIQ v1 supported on all OSes and NFIQ2 for Windows
Product Weight	600 grams/ 1.3 lbs (not including bumper case or cable)
Platen Size	127.8 mm x 127.8 mm/ 5.0" x 5.0"
Sensing Area	127.0 mm x 127.0 mm/ 5.0" x 5.0"
Connector Type	USB-C Port
Interface	USB 3.0
Power Source	USB Host
USB Voltage Level	4.40V to 5.25V; full scanning <500 mA, typical < 475 mA
Security Functionality	Kensington Security Slot
USB Certification	USB-IF USB.org
FCC/CE/UKCA Conformance	FCC Part 15 (per ANSI C63.4:2014) Class B CE Emissions: EN 55032:2015 /A1:2020 Class B, EN 55035:2017 /A11:2020
Air Discharge / Contact Discharge	In compliance with IEC 61000-4-2
Equipment Safety	IEC 62368-I

General Specifications continued...

SECTION	SPECIFICATIONS
Hazardous Material	RoHS Directive 2011/65/EU with amendment 2017/2102
Vibration Test	IEC 60068-2-64

Compliance/Certifications	• Fingerprint Template Output Formats
	    • ISO_19794_2_2005/2011, ISO_19794_4_2005/2011
	      • ANSI_INCITS_378_2004/ANSI_INCITS_381_2004
	• 500 PPI fingerprint image capture supporting rolls, flat and palm.
	• ISO 9001:2015

Operating Temperature	-10°C ~ +55°C / 14°F ~ 131°F
Humidity	30~85% RH < 40°C / 104°F (Non-condensing)
Storage Temperature	-40°C ~ +80°C / -40°F ~ 176°F
Ingress Protection / Water / Dust	IP65 sealed bezel to scanning surface
Surface Durability	MIL-C-675c4.5010, MIL-STD-810F
Surface Protection	NBD Nano high-durability, anti-microbial coating
Mean-Time Between Failures (MTBF)	Based on 200 full 10-print flats enrollments per day, the Mannix MTBF is 16 years.

Electrical DC Characteristics (VDD = 5Vdc, Top = 25°C)

SECTION	MIN.	TYP.	MAX.	UNIT
Power Supply Voltage (VBUS)	4.5		5.25	V
Full Scanning	—	275mA	320	mA
Standby			40	mA
D+ and D-	USB			

Attention IB Customers

Please note that the hardware and software requirements for Mannix differ from our other FBI-certified scanners. Verify that your system meets these requirements. Please contact your salesperson if you have any questions.

Support

North American Office

For Package Delivery
121 Broadcast Drive
Spartanburg, SC 29303

For Mailing & Correspondence
PO Box 170938
Spartanburg, SC 29301

Phone: US & Canada
(864) 990-3711
Toll-free (888) 840-8034

Sales & Pricing Inquiries
sales@integratedbiometrics.com

Technical Support
technical@integratedbiometrics.com

South Korean Office

Physical & Mailing Address
#910 SunTech City Building #1,
Dunchon-daero Jungwon-gu,
Seongnam-si Gyeonggi-do,
13229, Republic of Korea

Phone
+82-31-777-2200

Sales Administration
info.kr@integratedbiometrics.com

Cleaning And Sanitization

For proper cleaning and disinfection of IB products, visit:
https://integratedbiometrics.com/cleaning

Warranty Information

All products have a 12-month warranty starting from the date of delivery.
Additional years warranties available. Inquire with your salesperson.

View the warranty here: integratedbiometrics.com/warranty

ABOUT INTEGRATED BIOMETRICS

Integrated Biometrics (IB), a pioneer in biometrics technology, designs
and manufactures advanced, high-resolution touchless identification SDK
software and the world's most mobile, durable and reliable FBI-certified
fingerprint sensors. Law enforcement, military, homeland security, national
identity, election validation, financial and social services organizations
around the world rely on Integrated Biometrics' products for fast, accurate
enrollment, identification and verification, even in remote locations under
extreme conditions.

ib

integratedbiometrics.com
+1 888 840-8034
sales@integratedbiometrics.com