

Hardware Development Manual

Kojak **Fingerprint Scanner**

Version 1.0.1



Revision History

Revision No.	Issue Date	Comments
1.0	2015.8	1.0 Version Preliminary
1.0.1	2016.11	Reformatted

WEEE Symbol (Waste from Electrical and Electronic Equipment)



This symbol indicates that when the end-user wishes to discard this product, it must be sent to separate collection facilities for recovery and recycling. By separating this product from other household-type waste, the volume of waste sent to incinerators or land-fills will be reduced and natural resources will thus be conserved.

Direct Current Symbol



to indicate on the rating that the equipment is suitable for direct current only; to identify relevant terminals.

Contents

1. Introduction.....	4
2. Features	5
2.1. Hardware Features	5
2.2. Software Features	5
3. Applications.....	5
4. Exterior	6
5. Hardware Overview.....	7
5.1. Operational Modes	7
6. USB Specification	8
6.1. Supported OS Driver.....	8
6.2. Recommended specification for PC.....	8
6.3. Minimum specification for PC.....	8
7. Specification.....	9
7.1. Hardware Specification.....	9
7.2. Software Specification.....	9
7.3. Environmental	10
7.4. Electrical DC Characteristics (VDD = 5Vdc, Top = 25°C).....	10
8. Mechanical Specification	11
8.1. Appearance	11
8.2. USB cable.....	13

1. Introduction



Kojak is provided with a full-featured SDK to enable effective integration into applications requiring certified FAP60 quality images. This product meets the needs for both enrollment and verification applications common in international standards based programs. Kojak is particularly suited to the many mobile applications where minimal size and weight have significant value. It can also cost-effectively perform all requirements common in Ten Print enrollment applications.

2. Features

- **Lightweight:** designed to have minimal impact on the overall weight or structure of biometric devices
- **Compact:** designed to easily integrate into multiple applications, allowing biometric devices to be smaller and more mobile
- **Durable:** impact-resistant and able to withstand the toughest conditions with minimal maintenance or damage due to scratching or breakdown from contaminants
- **Accurate:** provides accurate high-resolution fingerprint scans in virtually any environment: indirect or direct sunlight, a factory, with dirty or clean fingers
- **Secure:** live finger detection

2.1. Hardware Features

- **It can get a fingerprint image with high speed thanks to internal FPGA**
- **The verification of competiability and interoperability using USB I/F certification**
 - It can get and transfer a fingerprint image most effectively using USB 2.0 interface.
 - It supports USB 2.0 Plug and play.

2.2. Software Features

- **It can capture single flat fingerprint, single rolled fingerprint, and two & four flat fingerprints.**
- **High security level**
 - It can distinguish between real and fake fingerprint.
 - U.S patented Contact Light Emitting Sensor
- **Automatic fingerprint capturing**
- **Provide SDK**
 - We provide a SDK for developing Windows & Linux program (Visual Basic, Visual C++, .Net).

3. Applications

- Immigration system
- Electronic ID
- Electronic ID

4. Exterior



- (1) LEDs
- (2) Buttons
- (3) Kojak sensor plate
- (4) LE Sensor : Light Emitting Sensor

5. Hardware Overview

5.1. Operational Modes



- USB Connector Pin Description

Pin No.	Type	Description
1	V_BUS	+5Vdc
2	USB	D+
3	USB	D-
4	G	GND
5	-	NC
6	G	Shield GND

6. USB Specification

6.1. Supported OS Driver

Section	Spec.	Remarks
Windows	XP	
	VISTA	
	7&8	
Android	Android 4.0 higher	
Linux	Kernel 2.6	

6.2. Recommended specification for PC

Section	Spec.	Remarks
CPU	Pentium4 - 2.0GHz higher	
Memory	512 RAM higher	
USB	USB 2.0	

6.3. Minimum specification for PC

Section	Spec.	Remarks
CPU	Pentium4 - 1.0GHz higher	
Memory	256RAM higher	

7. Specification

7.1. Hardware Specification

Section		Spec.	Remarks
IBNK110	Interface	USB 2.0 High speed Plug & Play	
	Sensor Type	LE Polymer Film	
	Camera	CMOS Image sensor	
	Resolution	500DPI \pm 1%	
	Platen size	89mm(W) x 80mm(L), 3.5"(W) x 3.15"(L)	
	Slap sensing area	80mm(W) x 76mm(L), 3.2"(W) x 3"(L)	
	Roll sensing area	40mm(W) x 38mm(L), 1.6"(W) x 1.5"(L)	
	Image size	Slap image : 1600(W) x 1500(H) pixels Roll image : 800(W) x 750(H) pixels	
	Indicate	LEDs and Magnetic buzzer	
	Extra buttons	Supported two buttons	
	Supply voltage	USB Level 4.40V ~ 5.25V	
	Static Discharge	IEC61000-4-2 Air Discharge : \pm 15kV Contact Discharge : \pm 8kV	
	Sunlight	Has no effect on fingerprint image	
Mechanical	Scanner Package	114.8mm x 131.9mm x 85.1mm (\pm 1mm)	
	Product Weight	<750 grams	

7.2. Software Specification

Section	Spec.	Remarks
API Interface	Capture One finger	
	Capture Two finger	
	Capture Four finger	
	Capture roll image	
Supported Operating System	Windows, Linux, Android	

7.3. Environmental

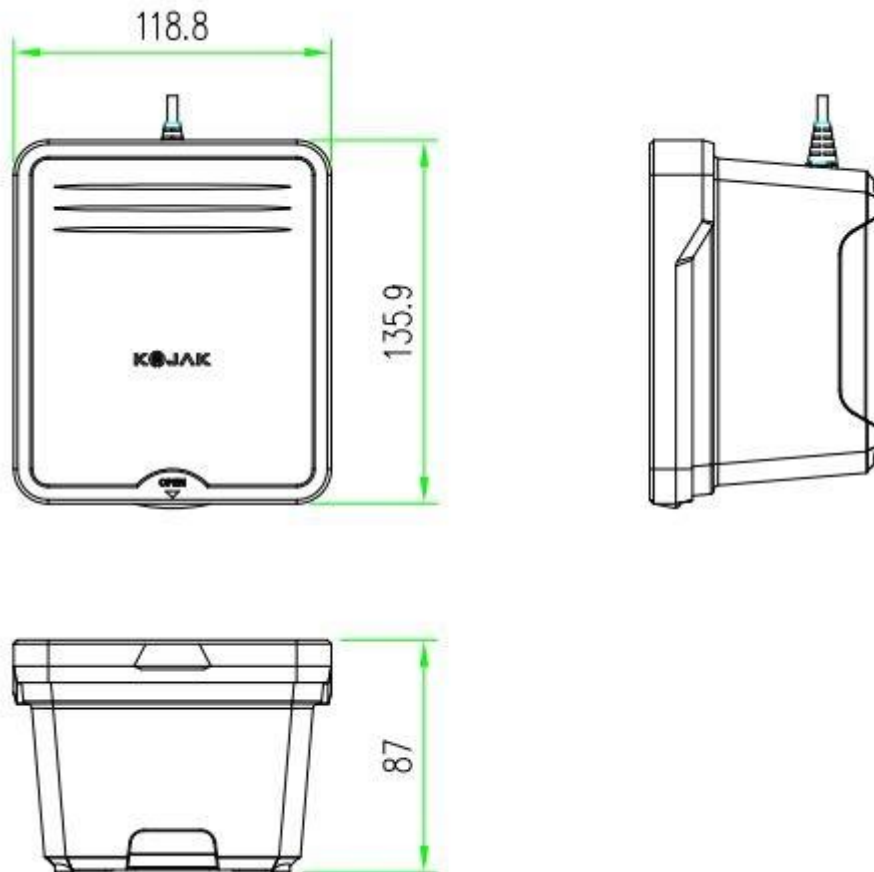
Section	Spec.	Remarks
Operating Temperature	-10°C ~ 55°C	
Humidity	20 ~ 95 %RH < 40°C, Non-condensing	
Hazardous Material	RoHS 2002/95/EC Compliant	
Storage Temperature	-30°C ~ 80°C	
Enclosure	IP65 Compliant	

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

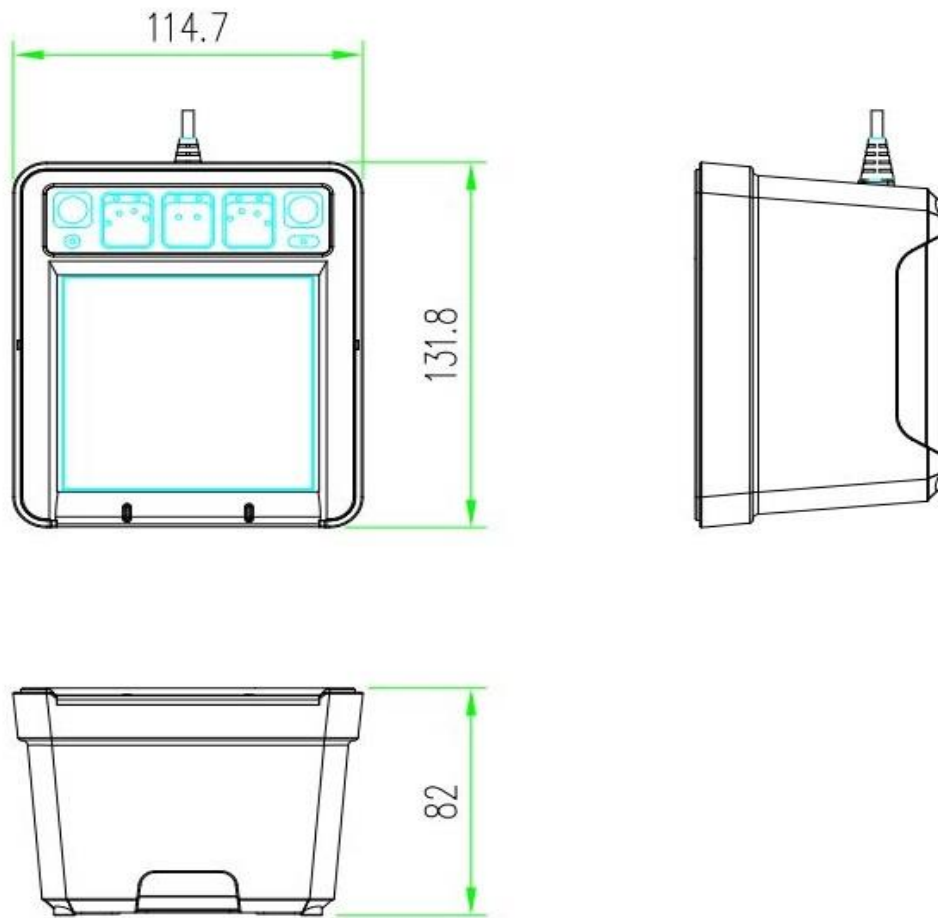
Section		Min.	Typ.	Max.	Unit
Power Supply Voltage (VBUS)		4.5		5.5	V
Full Scanning		-	-	320	mA
Scanner in Sleep Mode		-	-	2	mA
USB only (Driver connection)				40	mA
Wake-Up Line	On/Off V _{IH} (LVTTL)	2		3.6	V
	On/Off V _{IL} (LVTTL)		0.8		V
Grounding		Bezel <5Ω to USB cable shield			
D+ and D-		USB			

8. Mechanical Specification

8.1. Appearance

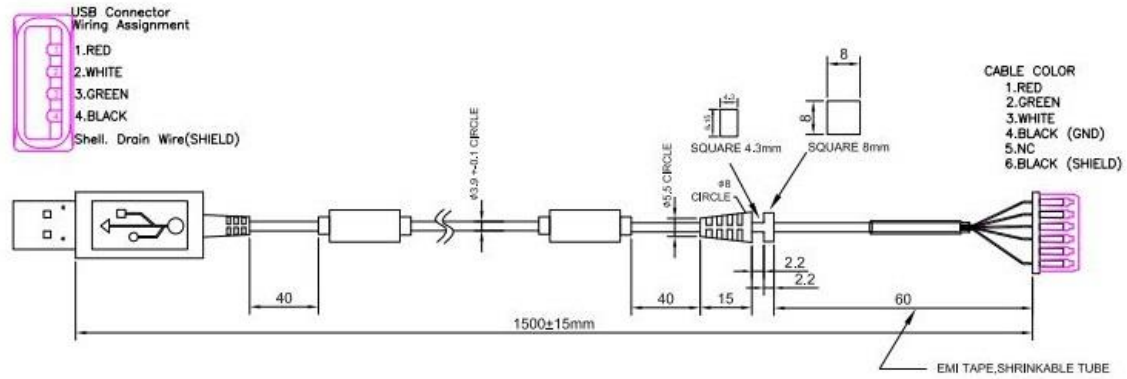


< With Protect Cover >



< Without Protect Cover >

8.2. USB cable



Support Contact Information:

www.integratedbiometrics.com

Integrated Biometrics, LLC

North American Office

Physical Address for Package Delivery

121 Broadcast Drive
Spartanburg SC 29303

For Mailings & Correspondence

PO Box 170938
Spartanburg, SC 29301

US & Canada

(864) 990-3711
Toll-free (888) 840-8034
Extension 1 – Company Directory
Extension 2 – Technical Support
Extension 3 – Sales Support
Extension 4 – Marketing
Extension 5 – Accounting
Extension 0 – Main Line

Sales & Pricing Inquiries

sales@integratedbiometrics.com

[Terms & Conditions of a Sale](#)

[Terms & Conditions for Supplier Purchases](#)

Sales Administration

marci.bowers@integratedbiometrics.com

Technical Support

technical@integratedbiometrics.com

South Korean Office

Physical Address and Mailing Address

#910 Suntech-City1, 513-15
Sangdaewon 1-dong Jungwon-gu
Seongnam-si, Gyeonggi-do
Republic of Korea

Phone

+82-31-777-2207

Sales Administration

everun@ibkr.co.kr