# Iritech, Inc.
Technology with the Iris

IriShield™ Monocular Series
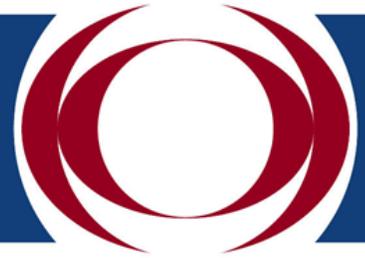
IriShield™-USB MK 2120 (Encased Device)

IriShield™-USB MK 2121 (Encased Device)
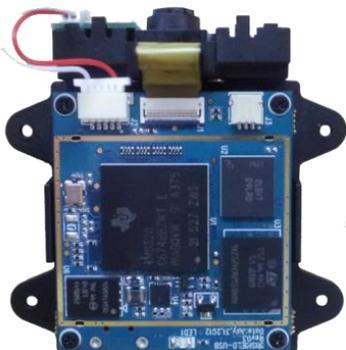
IriShield™-USB MO2120 & MO2121 (Module)

The IriShield™ Series feature IriTech's superior iris matching and iris image quality assessment algorithms to provide good quality images and avoid false positives while maximizing true positive identification rates. The embedded algorithms can complete a matching query against 1,000 stored templates in 500 milliseconds.

The IriShield™-USB MK 2120U and MK 2121 are ultra-compact and ready-to-use monocular iris cameras, which are highly portable and fashionable looking, ideal for biometric service providers or value-added resellers to develop application systems.

❶ *IriShield™-USB MK 2120U* : close distance camera

❷ *IriShield™-USB MK 2121 :* far distance camera

The IriShield™-USB MO 2120 and MO 2121 is an auto-capture camera module with on-board iris recognition feature. All components are assembled on a single board smaller than half a credit card in size, ready to be integrated seamlessly into customers' existing product lines.

Key Benefits

- ⊙ Secure on-board processing
- ⊙ Secure data and communication
- ⊙ Ultra-compact and light weight
- ⊙ Low power consumption
- ⊙ Cost-effective
- ⊙ Support various OS

IriShield™ Binocular Series
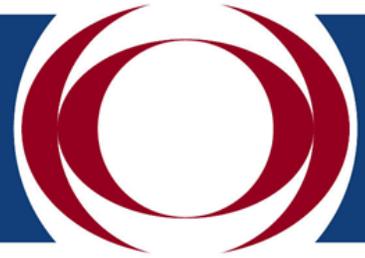
IriShield™-USB BK 2121
(Without Goggle)
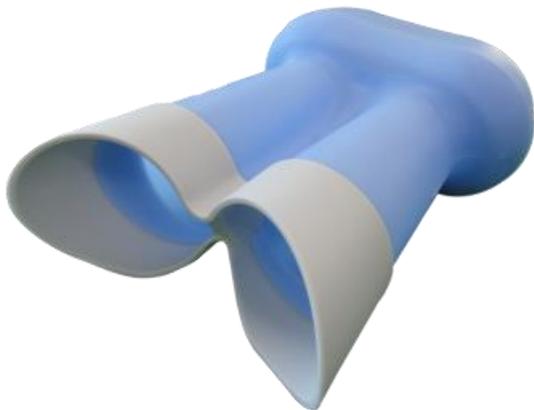
IriShield™-USB BK 2121
(With Goggle)
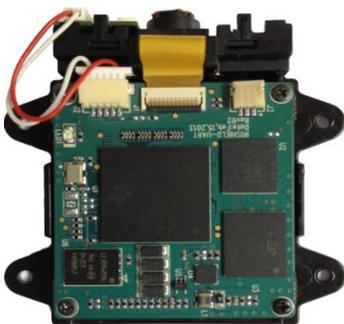
IriShield™-UART
Module

The **IriShield™-USB BK 2121U & UART Model** are revolutionary design that delivers the highest quality auto-capturing iris acquisition with an ease of use never achieved by older camera systems. The system offers contactless, fast, standards-compliant iris acquisition in a small form factor that is easy to house in a variety of packages.

IriShield™-USB BK 2121U & UART Model include an embedded CPU that enables on-board computing for automated quality-based iris image capturing, verification, and identification without taxing the computing power of the host PC.

❶ *IriShield™-USB BK 2120U* : camera without goggle

❷ *IriShield™-USB MK 2121* : camera with goggle

❷ *IriShield™-USB UART 2121* : monocular microchip

Key Benefits

⊙ Built-in Real-time Quality Evaluator and Automated Iris Acquisition

⊙ Proven leading algorithms for template generation and comparison

⊙ Powerful SDK for easy software development

⊙ Safest for eyes: Safe infrared illumination at less than 2% of the LED Eye Safety Standard Regulation

⊙ Ready to be integrated with IriTech's enterprise SW environment

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IriShield™ Specifications

Specifications

Capture Mode	**Auto Capture**	
Capture Distance	**MK 2120U MO 2120**	4.7 cm - 5.3 cm (1.8 in. -2.1 in.) from the image sensor (Optimal distance = 5 cm (2 in.), Focal depth = 0.6 cm (0.2 in.)
	MK 2121 MO 2121	13.5 cm - 14.5 cm (5.3 in. -5.7 in.) from the front of the top of camera module
	BK 2121U	14 cm - 15 cm (5.5 in. -5.9 in.) from the front of camera Lens
	BO 2121	14.5 cm (5.7 in.), Focal depth = 1.0 cm (0.4 in.), About 3.3 cm x 2.4 cm at 14.5 cm (1.3 in. x 0.9 inch at 5.7 in.)
	UART	4.7 cm – 5.3 cm (1.8 in. -2.1 in.) from the image sensor (Optimal distance = 5 cm (2 in.), Focal depth = 0.6 cm (0.2 in.), Field of View = 3.3 cm x 2.4 cm at 5 cm (1.3 in. x 0.9 inch at 2 in.)
Dimension	**MK 2120U**	51.2mm x 92.6mm x 15.1mm (2 in. x 3.6 in. x 0.59 in.)
	MO 2120	Processor Board: 36mm x 40mm x 6.9mm (1.4 in. x 1.6 in. x 0.3 in.) Camera Module: 30mm x 15.4mm x 7.1mm (1.2 in. x 0.6 in. x 0.3 in.)
	MK 2121	56.4mm x 110.7mm x 16.7mm (2.2 in. x 4.4 in. x 0.66 in.)
	MO 2121	Processor board: 36mm x 40mm x 6.9mm (1.4 in. x 1.6 in. x 0.3 in.) Camera module: 48mm x 17.5mm x 7.9mm (1.9 in. x 0.7 in. x 0.3 in.)
	BK 2121U	Without goggle: 124 mm x 63.2mm x 42.5 mm (4.9 in. x 2.49 in. x 1.68 in.) With goggle: 200 mm x 145 mm x 72 mm (7.9 in. x 5.7 in. x 2.8 in.)
	BO 2121	Processor board: 47 mm x 40 mm x 6.9 mm (1.8 in. x 1.6 in. x 0.3 in.) Camera module: 31 mm x 27 mm x 23.3 mm (1.2 in. x 1.1 in. x 0.9 in.)
	UART	Processor Board: 36mm x 40mm x 6.9mm (1.4 in. x 1.6 in. x 0.3 in.) Camera Module: 30mm x 15.4mm x 7.1mm (1.2 in. x 0.6 in. x 0.3 in.)

IriShield™ Specifications
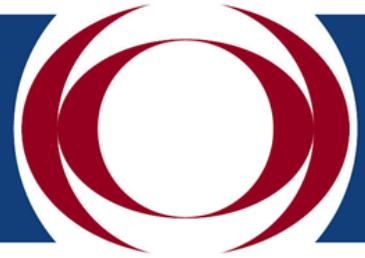
Specifications (Cont.)		
Power	MK 2120U MO 2120	Single USB Bus Powered (DC +5V±5%) (Max power consumption=250mA)
	MK 2121 MO 2121	Single USB Bus Powered (DC +5V±5%) (Max power consumption: MK 2121 =350mA and MO 2121 = 290mA)
	BK 2121U BO 2121	Single USB Bus Powered (DC +5V±5%) (Max power consumption=430mA)
	UART	Single USB Bus Powered (DC +5V±5%) (Max power consumption=200mA)
Image Format	ISO Standard 19794-6 (2005 & 2011), (640 x 480 Pixels, 8 bit Grayscale), full support of K1, K2, K3, K7	
Sensor Resolution	VGA	
Illumination	Infrared LED	
Environmental	MK 2120U MO 2120	-20°C to +60°C (Storage); 0°C to +50°C (Operating) 0% to 90% humidity (non-condensing)*
	MK2121 MO 2121 UART	
	BK 2121U BO 2121	
Usage	Indoor; Outdoor (avoid direct sunlight and bright reflections)	
Compliance & Certificates	Eye safety standard (IEC 62471:2006-07), RoHS FCC-Class A* , IP54*	
Resolutions	Spatial : ≥ 60% @ 4.0 Lp/mm, Pixel : ≥ 16 Pixels/mm	
Connectivity	USB 2.0 (IriShield™-USB Series), UART RS-232 (IriShield™-UART Series)	
Security	PKI (2048-bit) and AES (256-bit); X509 Certificate, PFX/PKCS#12 Certificate , RSA key pair generated on-board	
Ancillary SW	Demo Application, Drivers, SDK (C/C++, .NET C#/VB, Java) with Sample codes	
Host OS	Windows Family, Linux Family, WinCE, Embedded Linux, and Android	

* Encased Model Only

※ Specifications subject to change without notice.