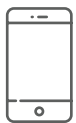# ioSmart Smart Card and Multi-Technology Readers

SmartTap – ioSmart Mobile Credentials
Mobile credentials using SmartTap at your fingertips by simply approaching the reader when using hattrix cloud solution

Versatile Communication
Flexible autodetect communication protocol of Kantech RS-485, OSDP and Wiegand

Robust Elegant Design
Optional capacitive touch keypad with enhanced card read capabilities

Mullion and Single-Gang Models
Cost-effective solution to transition from prox to advanced smart technology

High Level of Security
End-to-end AES 128-bit encryption when connected to KT-400, KT-2, and KT-1 controllers

LED Buzzer & Keypad Management
Customize color patterns, turn on/off buzzer, and keypad visual control

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More Than Just a Reader

ioSmart readers are uniquely designed with multi-purpose capabilities for broader access control applications. With ioSmart readers, existing access control systems can continue use of legacy contactless card and key tag technologies, while benefiting from the increased security and convenience of supporting mobile smartphone-based credentialing. ioSmart Smart Card Readers are available in single-gang or mullion models and can be installed in indoor or outdoor applications. Expand your credential ecosystem by using EntraPass go Pass Mobile Credentials with BLE or SmartTap when using hattrix cloud solution to access a door with ioSmart readers connected over encrypted Kantech RS-485.

Intuitive User Experience

Field Firmware upgradeable, providing a solution that customers can rely on for longterm performance. ioSmart Smart Card Readers include an intuitive LED status bar that clearly indicates various access conditions to the user. There are also models available with integrated back lit, capacitive keypad support for dual factor authentication, combining contactless card presentation with a PIN.

Cost-Effectively Transition to Advanced Technology

Kantech's ioSmart Smart Card Readers give customers an easy and powerful way to move from proximity cards to advanced smart card technology, whether they are using the popular Kantech ioProx solution or another proximity system.
Multi-technology readers provide the option to read both prox and smart cards allowing the customers to migrate at their pace.

High Level of Security

ioSmart readers provide end-to-end AES 128-bit encryption between the ioSmart card and ioSmart reader when connected to KT-400, KT-2 and KT-1 controller over Kantech RS-485 and aforementioned controllers to EntraPass software over IP.

Versatile, Time-Saving Design

Unlike other solutions on the market that use restrictive, proprietary technology, ioSmart's open technology offers versatility. Based on MIFARE Plus smart technology for readers, and MIFARE Plus EV1 for credentials, ioSmart supports many different card formats, including HID® Prox. The reader can also be used with any access controller using Wiegand or OSDP protocol.
To save installation time and money, ioSmart Smart Card Readers can be wired directly to standard door contacts and T.Rex devices rather than running the wires all the way to a controller.

Supported ioSmart Reader Card Formatting

Format	Multi-Technology Models	Smart Card Models
ioSmart SSF (Mifare Plus EV1 Smart Cards)	x	x
Mifare Plus EV1/2 (ISO-14443A) CSN	x	x
Mifare Desire EV1/2/3 (ISO-14443A) CSN	x	x
Mifare Classic (ISO-14443A) CSN	x	x
ISO-14443B CSN	x	x
ioProx XSF (Kantech Proximity Cards)	x	
HID Prox Cards (Common Formats)	x	

Note:
- Virtual rotating CSN not supported.
- 56-bit CSN available only with OSDP, 32-bit CSN available with Wiegand/RS-485.
- Software to program open sectors is not provided by Kantech.
- Compatible Kantech RS-485 access control units include KT-400, KT-2, and KT-1.
- SmartTap requires EntraPass goPass v2.23 or higher and ioSmart readers with firmware v1.10 or higher.
  ioSmart must communicate in Kantech RS-485. hattrix v8.62 is required.

Technical Specifications

Model	Mullion				Single Gang			
	KT-MUL-MTKP2	KT-MUL-MT2	KT-MULSC2	KT-MUL-SCKP2	KT-SG-MT-KP2	KT-SG-MT2	KT-SG-SC2	KT-SG-SCKP2
RF technologies	13.56 MHz 125 kHz	13.56 MHz 125 kHz	13.56 MHz	13.56 MHz	13.56 MHz 125 kHz	13.56 MHz 125 kHz	13.56 MHz	13.56 MHz
Power consumption (mA) @ 12 VDC Peak / AVG	210 mA / 100 mA	190 mA / 100 mA	190 mA / 100 mA	210 mA / 100 mA	210 mA / 100 mA	190 mA / 100 mA	190 mA / 100 mA	210 mA / 100 mA
Weight	110 g (0.24 lb)	110 g (0.24 lb)	105 g (0.23 lb)	110 g (0.24 lb)	175 g (0.4 lb)	170 g (0.37 lb)	165 g (0.36 lb)	175 g (0.4 lb)
Capacitive Touch Keypad with backlighting	Yes	No	No	Yes	Yes	No	No	Yes
Read range 125 kHz ioProx ID-1 credentials (Cards)	Up to 5.0 cm (1.9 in.)		--		Up to 7.5 cm (2.9 in.)		--	
Read range 13.56 MHz MIFARE Plus EV1, encrypted sector, ID-1 credentials (Cards)	Up to 4.5 cm (1.7 in.)				Up to 5.9 cm (2.3 in.)			
Mounting	Mullion				Single Gang, North America / Europe			
Dimension (H x W x D)	115.8 x 44.6 x 24.7 mm (4.56 x 1.75 x 0.97 in.)				115.8 x 71.5 x 24.7 (4.56 x 2.81 x 0.97 in.)			
Supported credentials 125 kHz	Kantech ioProx XSF cards HID Prox cards		--		Kantech ioProx: XSF cards HID Prox cards		--	
Supported credentials 13.56 MHz	ioSmart SSF (Mifare Plus EV1 Smart Cards). 32-bit CSN: Mifare Plus EV1 (ISO-14443A), Mifare Desfire EV1 (ISO-14443A), Mifare Classic (ISO-14443A) and ISO-14443B. OSDP CSN output is 56-bit.							
Supported credentials BLE (Bluetooth low energy) 2.4 GHz	ioSmart mobile credentials and smart keys							
Wiring terminal	6 screwless poles							
Tamper	Optical							
Wiegand communication formats	Kantech SSF/XSF 26/34bits and HID Prox							
Sounder	Integrated							
Security	AES- 128 bit encryption: Between the ioSmart card, the reader, and the controller (RS-485 or OSDP). AES-256 bit encryption: Between the ioSmart Mobile Credential (BLE) and reader. See the ioSmart Card Reader Installation Guide for more information.							
Output	RS-485 or BLE panel-less: 1 supervised open-drain, up to 750 mA							
Operating temperature	- 40°C to +70°C (- 40°F to +158°F). - 35°C to +66°C (- 31°F to +151°F) for UL listed product.							
Operating humidity	0 to 95% non-condensing. UL verified at 85% Rh.							
LED indicator	Multi-color bar: Red, green, yellow, blue. Configurable.							
Inputs in Wiegand mode	LED and buzzer							
Inputs in RS-485	2 to 4, configurable							
Inputs in BLE panel-less	2 configurable							
Input voltage	8.5 VDC to 16 VDC (provided by UL 2610, UL 294, or UL 603 listed, power limited power source).							
Housing	Polycarbonate, smoked black							
Flammability rating	UL94 V-2							
Firmware	Fully upgradable using Kantech RS-485							
Ingress protection rating	IP66. See the ioSmart Card Reader Installation Guide for more information.							
Communication	RS-485, Wiegand, OSDP, or BLE							
Cabling	3 twisted pairs AWG 22 unshielded or CAT5, up to 150 m (500ft). Refer to ioSmart Card Reader Installation Guide for more information about wiring distances.							
Warranty	Limited lifetime							
Certifications	FCC, IC, CE, UKCA, UL 294, UL 2610, FIPS 197, RoHS, WEEE. For RS-485, NIST CAVP validation number AES 3667, key length 128.							

US Ordering Information

ioSmart card Readers

Model Number	Description
KT-SG-MT-KP2	Multi-Technology Reader, single gang with keypad
KT-SG-MT2	Multi-Technology Reader, single gang
KT-SG-SC-KP2	Smart Card Reader, single gang with keypad
KT-SG-SC2	Smart Card Reader, single gang
KT-MUL-MT-KP2	Multi-Technology Reader, mullion with keypad
KT-MUL-MT2	Multi-Technology Reader, mullion
KT-MUL-SC-KP2	Smart Card Reader, mullion with keypad
KT-MUL-SC2	Smart Card Reader, mullion

ioSmart Cards

Model Number	Description
MFP-2KSHL	MIFARE PLUS 2K Shell Smart Card
MFP-2KDYE	MIFARE PLUS 2K Printable Smart Card
MFP-2KDYE-COM	MIFARE PLUS 2K Printable Smart Card. Composite, 40% Polyester/60% PVC
MFP-2KKEY	MIFARE PLUS 2K Keyfob
MT-2KDYE	Dual Tech Smart Card; MIFARE Plus 2K; 7-Byte UID; 125 kHz ioProx
KT-IO-OSDP-P13	Configuration Cards for OSDP ioSmart Readers (Pack of 13)

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