

## Mobile Facial Recognition and Access Control System

# KFX-100



### OVERVIEW

The KFX-100 mobile access control and facial recognition system is designed based on advanced technologies, artificial intelligence, fast processing speed, high performance, high durability, impact resistance and tolerance to harsh working environments, meeting the requirements of rapid deployment at the scene to serve the work of controlling, tracing, identifying subjects in important events or protecting VIPs.

#### The System includes:

- The facial recognition subsystem uses AI technology and deep learning to allow real-time online identification of up to 32 cameras deployed at the scene, allowing quick identification of subjects of interest at the scene, helping the authorities deploy timely situation handling plans to ensure security and safety for the event or protect VIPs. At the same time, the system allows storing video data streams for the required time to serve the investigation and tracing work.
- Access control subsystem, allowing quick deployment of access control solutions at a location or event where there is no pre-deployed access control solution. Access control system using face, fingerprint or contactless card.
- Infrastructure connection subsystem using IP transmission technology via wired or wireless networks: Wifi, 4G, 5G mobile networks.
- Power Supply and battery subsystem allows quick deployment without the need to use electrical power as required.

### MAIN FEATURES

#### 1. Face recognition (AI Vision)

- Detect and match faces with objects in the real-time database via IP cameras on the scene
- High accuracy  $\geq 98\%$ , capable of recognizing when wearing a mask / helmet
- Allows searching for people by image, video
- Allow identifying subjects both in and out of the list. The list can be configured via the user interface or through an integrated API
- Allow detecting and recognizing faces of subjects within a crowd
- Allow displaying all faces that have appeared within the camera's surveillance frame
- Allow searching for faces using external images or images extracted from recorded video
- Support face recognition for faces with a minimum size of 24×24 pixels
- Real-time face recognition speed:  $\leq 0.05$  seconds
- Query the database at the Center via 4G/5G transmission

#### 2. VMS - Video management

- Manage video streams up to 32 cameras
- Record continuously or by schedule, or by event
- Manage the display of multiple cameras simultaneously or 1 camera for the entire screen
- Assign usage rights to users, administrators

#### 3. Access Control

- Multi-modal connection: Read fingerprints, faces, NFC contactless cards
- Synchronize logs and events to VMS
- Real-time entry and exit warnings on screen or sound, connected to doors, if automatic control is available

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## MAIN FEATURES

### 4. Easy-to-use management software interface

- Friendly web interface, allowing management of users, user groups and events
- Visually and vividly display information according to operational requirements: Live video, facial recognition information, access control status, authentication log, system access
- Allows extraction of report data, video logs for field investigation

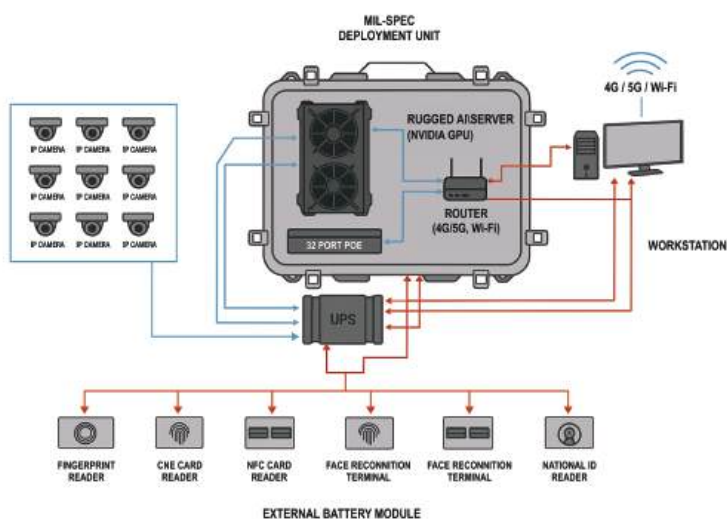
### 5. Security and Connection

- Connect to the center via 4G/5G mobile network secured by VPN
- Connect to the camera via wi-fi or network cable
- Encrypt TLS/SSL camera data and access data
- Multi-level user authentication mechanism
- Full system logging (Syslog + Audit)

### 6. Transportable, flexible and fast deployment

- Military standard Pelican or SKB case, resistant to rain, impact and dust
- Plug-and-play operation
- 220VAC or 24VDC power source with built-in UPS running continuously for 4 hours combined with external backup UPS to ensure operation according to the required time

## SYSTEM ARCHITECTURE



## TECHNICAL SPECIFICATIONS

| Items                 | Parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Server             | <ul style="list-style-type: none"><li>- Processor: 1 x 3rd Generation Intel Xeon D Scalable processor with up to 20 cores</li><li>- RAM: 4 x DDR4 DIMM slots, supports RDIMM 256 GB max and LRDIMM 512 GB max, with speeds up to 2933 MT/s</li><li>- Storage controllers: Internal boot: Boot Optimized Storage Subsystem (BOSS-N1): 2 x M.2 SSDs 480 GB or 960 GB, USB</li><li>- GPU: NVIDIA 4090 24GB</li><li>- Storage: 8 x M.2 NVMe SSDs on PCIe Add-in card (XR4520c)</li></ul> |
| 2. Access Control     | CPU:1.4 GHz Octa Core; 8GB Flash, 1GB RAM; High speed fingerprint matching: max 400.000 match/s; user capacity: max 500.000 user; event log storage: max 5000.000 logs                                                                                                                                                                                                                                                                                                               |
| 3. Fingerprint Reader | CPU: 1,0 GHz; 8GB Flash, 64MB RAM; 1:10.000 match/s; high precision, OP 6 Optical Sensor                                                                                                                                                                                                                                                                                                                                                                                             |
| 4. Card Reader        | Processor 32bit; Reading Freq. 125KHz; Reading range: 50mm; Audio Alert: Beeper                                                                                                                                                                                                                                                                                                                                                                                                      |
| 5. Facial Reader      | Vanadium Oxid uncooled Sensor; Recognition distance: 0.3 – 0.8 m; face marsh detection; 7-inch LCD touch screen; face reconigntion duration: 0.2s/user; face reconigntion accuracy rate: 99%; 6000 face capacity, 100.000 event capacity.                                                                                                                                                                                                                                            |
| 6. UPS Online         | <ul style="list-style-type: none"><li>- UPS type: Double conversion online</li><li>- Power: 2200VA</li><li>- Power factor: 0.9</li><li>- Wave type: Sine wave</li><li>- Input voltage: 220/230/240 VAC; 50/60 Hz</li><li>- Output voltage: 220/230/240 VAC; 50/60 Hz</li></ul>                                                                                                                                                                                                       |
| 7. Battery            | Lithium LiFePO4 24V 60Ah                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Items                   | Parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>8. Connection</b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Switch PoE              | <ul style="list-style-type: none"><li>- 48 ports 10/100/1000 PoE+ with 370W power budget</li><li>- Forwarding: 77.38 Mpps</li><li>- Switching Capacity: 104 Gbps</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Industrial Router 4G/5G | <ul style="list-style-type: none"><li>- CPU: Quad-core ARM Cortex A7, 717 MHz</li><li>- Flash storage: 256 MB</li><li>- RAM: 256 MB</li><li>- SIM: 2 x SIM slot (Mini SIM – 2FF), 1.8 V/3 V</li><li>- Antenna connectors: 4 x SMA for Mobile, 2 x RP-SMA for WiFi, 1 x SMA for GNSS</li><li>- Ethernet: 5 x 10/100/1000 Ethernet ports: 1 x WAN (configurable as LAN), 4 x LAN</li><li>- WiFi: 802.11b/g/n/ac Wave 2 (WiFi 5) with data transmission rates of up to 867 Mbps (Dual Band, MU-MIMO), 802.11r fast transition, Access Point (AP), Station (STA)</li><li>- Wireless mesh/roaming: Wireless mesh (802.11s), fast roaming (802.11r)</li><li>- GNSS: GPS, GLONASS, BeiDou, Galileo, QZSS</li></ul> |
| Wi-Fi Mesh              | <ul style="list-style-type: none"><li>- Speed: 2.4 GHz: 1148 Mbps; 5 GHz: 2402 Mbps</li><li>- Ethernet Port: 1x 2.5Gbps Ethernet Port</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Network Cable           | Cat6A FTP LSZH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>9. Workstation</b>   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Workstation             | <ul style="list-style-type: none"><li>- Processor: 13th Generation Intel® Core™ i7-13850HX, 30 MB cache, 28 threads, 20 cores (8 P cores &amp; 12 E cores), P cores 2.20 GHz to 5.30 GHz, E cores 1.50 GHz to 3.80 GHz.</li><li>- Memory: 16 GB, 1 x 16 GB, DDR5, 4800 MT/s, non-ECC, CAMM module 32GB, 1 x 32 GB, DDR5, 4800 MT/s for 13th Generation Intel®</li><li>- Storage: 512 GB, M.2 2280, PCIe NVMe Gen4 x4, Class 40 SSD</li></ul>                                                                                                                                                                                                                                                                |
| Display                 | 17"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Keyboard, mouse         | included with the device                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 10. Weight              | 30Kg                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

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