

**Multi-technology Access Reader Specification****Manufacturer - Matrix Research Limited****Product Brand - ACX**

1. 3-in-1 Multi-technology Smart Card smart Reader (Bluetooth + Scramble QR Code + RFID Card)
  - a) Supports 13.56MHz NXP Mifare Class, Mifare Plus, Mifare DESFire, and LEGIC card technology.
  - b) 13.56MHz card read range: 5cm+; Bluetooth read range: 0.5m to 10m; QR Code read range: 4cm to 22cm
  - c) Programmable reader buzzer beep sound interval and times for access granted and access denied
  - d) Programmable reader LED color (7 colors) interval and times for access granted and access denied
  - e) Reader configuration can be updated through the network by ACX proprietary software
  - f) Reader firmware can be upgraded through the network by ACX proprietary software
  - g) Reader outputs ACX proprietary scramble encryption RS485 format
  - h) Reader Tamper: Optical sensor
  - i) Reader size shall be not larger than 80mm(W) x 130mm(H) x 20mm(D)
  - j) Waterproof, IP65 rated
  
2. 4-in-1 Multi-technology Smart Card Keypad Reader (Keypad + Bluetooth + Scramble QR Code + RFID Card)
  - a) 12 capacitance touch keypads, 0~9,\*,#. Keypad has backlight in 7 different colors.
  - b) Supports 13.56MHz NXP Mifare Class, Mifare Plus, Mifare DESFire, and LEGIC card technology.
  - c) 13.56MHz card read range: 5cm+; Bluetooth read range: 0.5m to 10m; QR Code read range: 4cm to 22cm
  - d) Programmable reader buzzer beep sound interval and times for access granted and access denied
  - e) Programmable reader LED color (7 colors) interval and times for access granted and access denied
  - f) Reader configuration can be updated through the network by ACX proprietary software
  - g) Reader firmware can be upgraded through the network by ACX proprietary software
  - h) Reader outputs ACX proprietary scramble encryption RS485 format
  - i) Reader Tamper: Optical sensor
  - j) Reader size shall be not larger than 80mm(W) x 130mm(H) x 20mm(D)
  - k) Waterproof IP65 rated
  
3. 4-in-1 Multi-technology Palm Vein Smart Card Reader (Palm Vein + Bluetooth + Scramble QR Code + RFID Card)

- a) Palm Vein recognition technology should be provided by Fujitsu PalmSecure-F Pro sensor
- b) Palm Vein Sensor supports binocular infrared live detection
- c) Palm Vein recognition can be completed in one second for 2,000 palm vein users. Each user can register 2 palm vein templates
- d) FRR is 0.00001%, Palm Vein detective range of the Palm Vein Sensor from 30mm to 70mm
- e) Supports 5,000 local personnel
- f) Supports 13.56MHz NXP Mifare Class, Mifare Plus, Mifare DESFire, and LEGIC card technology.
- g) 13.56MHz card read range: 5cm+; Bluetooth read range: 0.5m to 10m; QR Code read range: 4cm to 22cm
- h) Programmable reader buzzer beep sound interval and times for access granted and access denied
- i) Programmable reader LED color (7 colors) interval and times for access granted and access denied
- j) Reader configuration can be updated through the network by ACX proprietary software
- k) Reader firmware can be upgraded through the network by ACX proprietary software
- l) Reader outputs ACX proprietary scramble encryption RS485 format
- m) Reader Tamper: Optical sensor
- n) Reader size shall be not larger than 80mm(W) x 130mm(H) x 20mm(D)
- o) Waterproof IP55 rated

4. 4-in-1 Multi-technology Facial Recognition Smart Card Reader (Facial Recognition + Bluetooth + Scramble QR Code + RFID Card)

- a) Facial Recognition Algorithm by SenseTime technology
- b) Facial detection supports binocular infrared live detection
- c) Face recognition can be completed in 300 milliseconds
- d) The recognition accuracy rate is higher than 99% and 0.5m-1.5m recognition distance is supported
- e) Supports 20,000 local personnel
- f) Real-time detection and tracking of human faces, accurate detection can be carried out in situations such as side faces, half occlusion, and blur
- g) Minimum 0.5 lux recognition
- h) Effective defense against non-living attacks such as 3D printing, electronic screens, video, pictures, masks, hoods, etc.
- i) Supports 13.56MHz NXP Mifare Class, Mifare Plus, Mifare DESFire, and LEGIC card technology.
- j) 13.56MHz card read range: 5cm+; Bluetooth read range: 0.5m to 10m; QR Code read range: 4cm to 22cm
- k) Programmable reader buzzer beep sound interval and times for access granted and access

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- l) Programmable reader LED color (7 colors) interval and times for access granted and access denied
- m) Reader configuration can be updated through the network by ACX proprietary software
- n) Reader firmware can be upgraded through the network by ACX proprietary software
- o) Reader outputs ACX proprietary scramble encryption RS485 format
- p) Reader Tamper: Optical sensor
- q) Reader size shall be not larger than 80mm(W) x 130mm(H) x 20mm(D)
- r) Waterproof IP65 rated

5. 4-in-1 Multi-technology Facial Recognition Smart Card LCD Reader (Facial Recognition + Bluetooth + Scramble QR Code + RFID Card)

- a) Facial Recognition Algorithm by SenseTime technology
- b) Reader cover material by Aluminum alloy
- c) Reader LCD 5.5"
- d) Facial detection supports binocular infrared live detection
- e) Face recognition can be completed in 300 milliseconds
- f) The recognition accuracy rate is higher than 99% and 0.5m-1.5m recognition distance is supported
- g) Supports 20,000 local personnel
- h) Real-time detection and tracking of human faces, accurate detection can be carried out in situations such as side faces, half occlusion, and blur
- i) Minimum 0.5 lux recognition
- j) Effective defense against non-living attacks such as 3D printing, electronic screens, video, pictures, masks, hoods, etc.
- k) Supports 13.56MHz NXP Mifare Class, Mifare Plus, Mifare DESFire, and LEGIC card technology.
- l) 13.56MHz card read range: 5cm+; Bluetooth read range: 0.5m to 10m; QR Code read range: 4cm to 22cm
- m) Programmable reader buzzer beep sound interval and times for access granted and access denied
- n) Programmable reader LED color (7 colors) interval and times for access granted and access denied
- o) Reader configuration can be updated through the network by ACX proprietary software
- p) Reader firmware can be upgraded through the network by ACX proprietary software
- q) Reader outputs ACX proprietary scramble encryption RS485 format
- r) Reader Tamper: Optical sensor
- s) Reader size shall be not larger than 96mm(W) x 240mm(H) x 22mm(D)

6. 4-in-1 Multi-technology Octopus smart lock reader (Octopus + Bluetooth + Scramble QR Code)

- a) Support HK Octopus Card, Octopus mobile apps, Octopus watch

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- b) Supports Octopus, Mobile Virtual Card by Bluetooth 4.0+ and Scramble QR Code
  - c) Bluetooth read range: 0.5m to 10m; QR Code read range: 4cm to 22cm
  - d) The reader shall have the Octopus Holding Limited Type Approval Certificate
  - e) Octopus ISO card read range: 7cm+; Bluetooth read range: 0.5m to 10m; QR Code read range: 4cm to 22cm
  - f) Programmable reader buzzer beep sound interval and times for access granted and access denied
  - g) Programmable reader LED color (7 colors) interval and times for access granted and access denied
  - h) Reader configuration can be updated through the network by ACX proprietary software
  - i) Reader firmware can be upgraded through the network by ACX proprietary software
  - j) Reader outputs ACX proprietary scramble encryption RS485 format Reader size shall be not larger than 94mm(W) x 196mm(H) x 55mm(D)
  - k) Flush mount design with only 6mm extruded from the wall