ARMATURA

ARCHITECTURAL AND ENGINEERING SPECIFICATIONS

SUPERIOR QUALITY
DESIGNED & ENGINEERED IN THE USA
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GEORGIA • USA

Explorer Series
EP30CF Multi-tech Fingerprint Reader

Bluetooth NFC IP65

Address: 190 Bluegrass Valley Parkway Alpharetta, GA 30005 United States
Email: sales@armatura.us

Date: 1 August 2024
Version Number: Version 1.2

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SECTION 1

1. Purpose

The purpose of this architecture and engineering specifications (A&E) document is to provide guidance for the design, implementation, and installation of the Explorer Series, EP30CF multi-tech fingerprint reader for access control security applications and management.

2. Goals And Objectives

The EP30CF multi-tech fingerprint reader A&E specification aims to achieve the following goals and objectives:

- Provide a highly secure and reliable multi-tech fingerprint reader with advanced authentication and access control capabilities.
- Ensure scalability and flexibility to accommodate varying user and system requirements.
- Meet or exceed relevant industry standards and regulations.
- Provide a clear and detailed specification for the design, supply, installation, and commissioning of the EP30CF multi-tech fingerprint reader.

3. Key Features and Requirements

The EP30CF multi-tech fingerprint reader shall have the following key features and requirements:

- Adopts advanced fingerprint scanning technology, with fingerprint algorithm AMTFingerprint v10.0, supports the whole system to cascade up to millions of fingerprint templates, and the fingerprint is irreversible to fingerprint photos under any possible measures, and adopt the AES128 encryption standard.
- Mobile credential capability for access control on both iOS and Android systems. With the Armatura ID mobile app that supports NFC (Android operating system only) and Bluetooth, allowing users to easily open doors by presenting your smartphone to the reader, extending mobile access functions to almost all smartphone users.

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- Supports Open Supervised Device Protocol (OSDP v2.2) via RS-485 for secure communication between the control panel and the EP30CF reader.
- Utilizes certified crypto chips with EAL6+ secure data storage.
- Supports multi-tech reading including 125kHz,13.56MHz and 2.4GHz frequency credentials.
- Supports over 30 RFID card types, covering most of the common card formats in the market.
- Compact mullion mount design with optional gang box (Single gang, European gang and Asian gang box).
- IP65 water & dustproof protection rating to withstand dust, dirt, and sand effectively and operate full under any installation environment.
- The system shall comply with GDPR privacy standards.

4. Design And Implementation Constraints

The design and implementation of the EP30CF multi-tech fingerprint reader shall adhere to the following constraints:

- The design shall be scalable and flexible to accommodate varying user and system requirements.
- The implementation shall be done by trained installers who have been certified by the manufacturer.
- The implementation shall comply with relevant standards and regulations.
- The implementation shall ensure high-level cybersecurity to protect against unauthorized access or data breaches.

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5. Existing Standards and Regulations

The EP30CF multi-tech fingerprint reader shall comply with the following standards and regulations:

- FCC Standards
- CE Standards
- UL294 Standards (Coming Soon)
- RoHS3.0 Standards
- WEEE Standards

6. Submittals

The following submittals shall be provided by the manufacturer.

- Product data sheets
- Installation and operation manuals
- Technical support contact information
- Warranty information

7. Qualifications

The manufacturer shall have the following qualifications:

- ISO 9001 certification, ISO27701, ISO27001, ISO9001, ISO14001.
- Minimum of 5 years' experience in producing access control equipment.

8. Warranty

The manufacturer shall provide a limited 36-month warranty for the EP30CF multi-tech fingerprint reader to be free of defects in material and workmanship.

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SECTION 2

1. Key Features and Requirements

1.1 Key Features

i. Multi-tech RFID & Mobile Credential

- Supports over 30+ RFID card types and dual RFID frequencies (125kHz and 13.56MHz). Also, supports both mobile NFC (Android operating system only) and Bluetooth (Low Energy).

ii. Support Multi-card Types

- The standard package supports over 30 RFID card types, with varies optional RFID modules available to over some extra advanced secured RFID protocols. It includes dual RFID frequencies (125kHz and 13.56MHz), as well as mobile NFC (Android operating system only) and Bluetooth (low energy credentials). OSDP Multi-tech Biometric Reader

iii. One of the first OSDP multi-tech biometric readers in the market. Fully complied with the Open Surprised Device Protocol (OSDP) version 2.2 with secured communication encrypted by AES-128 standards and complies with AES-256 encryption standards for enhanced data protection. Also, the device uses EAL6+ certified crypto chip to secure data storage.

iv. Advanced fingerprint scanning technology is highly advanced and capable of supporting millions of fingerprint templates. The system ensures that the fingerprint data is irreversible and cannot be converted back into a fingerprint image.

v. Adopts the AMTFingerprint v10.0 fingerprint algorithm.

vi. Provides two modes of mobile credential through the Armatura's ID mobile App across the iOS and Android systems on smartphones. The card mode presents your smartphone to the reader like an access card. The remote mode conducts the verification on the reader by clicking a button in the Armatura ID App.

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vii. Operating Frequency: 125kHz, 13.56MHz: ISO14443 types A & B, ISO15693, 2.4GHz Bluetooth.

viii. The RFID reading distance for 13.56MHz & 125kHz multi-tech cards reading distance is maximum at 2.3” or 60mm, depends on environment and transponder.

ix. The RFID reading distance for the Bluetooth with a smartphone is up to 393.7” or 10m, and the distance is configurable on each reader.

x. Provides red, green and blue (RGB) LEDs as the visual indicator and it is configurable by Armatura Connect mobile App.

xi. Equipped with an internal buzzer with adjustable intensity and it is configurable by Armatura Connect mobile App.

xii. Provides back box for flush mount or surface mount on any flat surface mounting.

xiii. Power supply ranges from 9 VDC to 24 VDC.

xiv. The standard dimensions without a metal case is 2.57” in length, 5.26" in height and 1.54” in depth (65.2 x 133.7 x 39.1 mm).

xv. The standard dimensions with a metal case is 2.59” in length, 5.28" in height and 1.54” in depth (65.9 x 134.2 x 39.1 mm).

xvi. The standard dimensions with a metal case and back case is 2.48” in length, 5.18" in height and 1.57” in depth (63 x 131.5 x 40 mm).

xvii. Fully operate at temperature ranges from -4°F to 131°F, which is equivalent to -20°C to 55°C.

xviii. Complies with CE, FCC, UL294 (coming soon), RoHS 3.0 and WEEE standards.

xix. Reached IP65 protection rating for water and dust proof to withstand dust, dirt and sand effectively.

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2. Technical Specifications

Dimensions

EP30CF (With metal Case) | EP30CF (Without metal Case) | EP30CF (Without metal Case) | EP30CF (With metal Case & Back Case)

Specification

Internal Number	EP30CF
Operating Frequency / Standards	125 kHz 13.56 MHz 2.4 GHz Bluetooth®
Functions	RFID, Bluetooth, Fingerprint
Communications & Panel Connection	OSDP (v2.2) via RS485
RFID Reading Distance	13.56MHz & 125kHz: Up to 2.3"/60 mm (depending on environment and transponder) Up to 393.7"/ 10m with a Bluetooth Smartphone (configurable distances on each reader)
Data Protection	AES128 (Secured Communication between Reader & Controller) Secure Data Storage in EAL6+ Certified Crypto Chip
Fingerprint Algorithm	AMTFingerprint v10.0
Visual Indicator	RGB LEDs (Configurable By 'Armatura Connect' Mobile APP)
Audio Indicator	Internal buzzer with adjustable intensity (Configurable By 'Armatura Connect' Mobile APP)
Power Requirement / Power Supply	9 VDC to 24 VDC
Operating Temperature	-4°F - 131°F /-20°C to 55°C
Dimensions (L*H*D)	With Metal Case: 2.59" L x 5.28" H x 1.54" D (65.9 x 134.2 x 39.1mm) With Metal Case and Back Case: 2.48 L x 5.18 H x 1.57 D (63 x 131.5 x 40mm) Without Metal Case: 2.57" L x 5.26" H x 1.54" D (65.2 x 133.7 x 39.1mm)
Tamper Switch	Magnetic tamper detection system
Certifications	CE, FCC, UL294(Coming Soon), RoHs3.0, WEEE
Mounting	Back box for flush mount or surface mount on any flat surface mounting
Protection / Resistance	Weather & Dust Proof Protection Rating compliant with IP65

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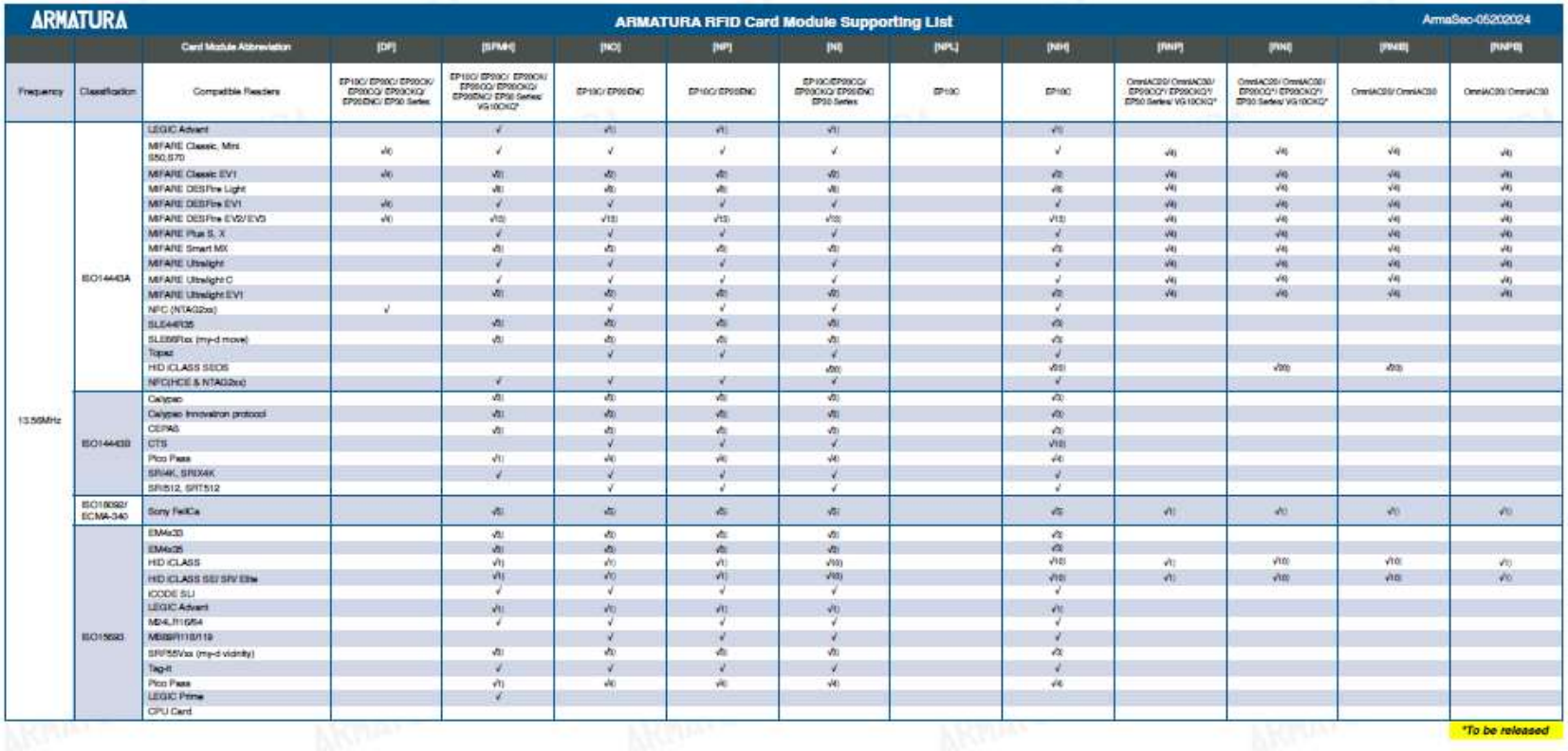
3. Armatura Card Modules Supporting List



ARMATURA RFID Card Module Supporting List — ArmaSec-052202024

Frequency	Classification	Card Module Abbreviation / Compatible Readers	[DF]	[SFMH]	[NO]	[NP]	[NI]	[NPL]	[NIH]	[NHP]	[FIN]	[FNB]	[FNFB]
		Compatible Readers	EP10C/ EP60C/ EP60CK/ EP60CQ/ EP60CKQ/ EP60ENC/ EP50 Series	EP10C/ EP60C/ EP60CK/ EP60CQ/ EP60CKQ/ EP60ENC/ EP50 Series/ VG10CKQ*	EP10C/ EP60ENC	EP10C/ EP60ENC	EP10C/EP60CQ/ EP60CKQ/ EP60ENC/ EP50 Series	EP10C	EP10C	OmniAC20/ OmniAC30/ EP60CQ*/ EP60CKQ*/ EP50 Series/ VG10CKQ*	OmniAC20+/ OmniAC20/ EP60CQ*/ EP60CKQ*/ EP50 Series/ VG10CKQ*	OmniAC20/ OmniAC30	OmniAC20+/ OmniAC30
13.56MHz	ISO14443A	LEGIC Advant		√	√①	√①	√①		√①				
		MIFARE Classic, Mini S50,S70	√④	√	√	√	√		√	√④	√④	√④	√④
		MIFARE Classic EV1	√④	√④	√④	√④	√④		√④	√④	√④	√④	√④
		MIFARE DESFire Light		√④	√④	√④	√④		√④	√④	√④	√④	√④
		MIFARE DESFire EV1	√④	√	√	√	√		√	√④	√④	√④	√④
		MIFARE DESFire EV2/EV3	√④	√⑬	√⑬	√⑬	√⑬		√⑬	√④	√④	√④	√④
		MIFARE Plus S, X		√	√	√	√		√	√④	√④	√④	√④
		MIFARE Smart MX		√④	√④	√④	√④		√④	√④	√④	√④	√④
		MIFARE Ultralight		√	√	√	√		√	√④	√④	√④	√④
		MIFARE Ultralight C		√	√	√	√		√	√④	√④	√④	√④
		MIFARE Ultralight EV1		√④	√④	√④	√④		√④	√④	√④	√④	√④
		NFC (NTAG2xx)	√		√	√	√		√				
		SLE44R35		√④	√④	√④	√④		√④				
		SLE66Rxx (my-d move)		√④	√④	√④	√④		√④				
		Topaz			√	√	√		√				
		HID iCLASS SE/SE					√⑩		√⑩		√⑩	√⑩	
		NFC(HCE & NTAG2xx)		√	√	√	√		√				
	ISO14443B	Calypso		√④	√④	√④	√④		√④				
		Calypso Innovatron protocol		√④	√④	√④	√④		√④				
		CEPAS		√④	√④	√④	√④		√④				
		CTS			√	√	√		√⑩				
		Pico Pass		√①	√④	√④	√④		√④				
		SRI4K, SRIX4K		√	√	√	√		√				
		SRI512, SRT512			√	√	√		√				
	ISO18092/ ECMA-340	Sony FeliCa		√④	√④	√④	√④		√④	√①	√①	√①	√①
	ISO15693	EM4x20		√④	√④	√④	√④		√④				
		EM4x35		√④	√④	√④	√④		√④				
		HID iCLASS		√①	√①	√①	√⑩		√⑩	√①	√⑩	√⑩	√①
		HID iCLASS SE/ SR/ Elite		√①	√①	√①	√⑩		√⑩	√①	√⑩	√⑩	√①
		ICODE SLI		√	√	√	√		√				
		LEGIC Advant		√①	√①	√①	√①		√①				
		M24LR16/64		√	√	√	√		√				
		M68R/R116/R16			√	√	√		√				
		SRF55Vxx (my-d vicinity)		√④	√④	√④	√④		√④				
		Tag-it		√	√	√	√		√				
		Pico Pass		√①	√④	√④	√④		√④				
		LEGIC Prime		√									
		CPU Card											*To be released

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ARMATURA RFID Card Module Supporting List

ArmaSec-05202024

Frequency	Classification	Card Module Abbreviation / Compatible Readers	[DF] EP10C/ EP50C/ EP50OK/ EP50OQ/ EP50KOQ/ EP50ENC/ EP50 Series	[SFMH] EP10C/ EP50C/ EP50OK/ EP50OQ/ EP50OKQ/ EP50ENC/ EP50 Series/ VG10OKQ*	[NO] EP10C/ EP50ENC	[NP] EP10C/ EP50ENC	[NI] EP10C/EP50OQ/ EP50OKQ/ EP50ENC EP50 Series	[NPL] EP10C	[NH] EP10C	[RNP] OmniAC20/ OmniAC30/ EP50OQ*/ EP50OKQ*/ EP50 Series/ VG10OKQ*	[RNI] OmniAC20/ OmniAC30/ EP50OQ*/ EP50OKQ*/ EP50 Series/ VG10OKQ*	[RNIB] OmniAC20/ OmniAC30	[RNPB] OmniAC20/ OmniAC30
125KHz		AWID			√	√	√	√					
		Cardax			√	√	√	√					
		CASI-RUSCO			√6)	√6)	√6)	√6)		√	√	√	√
		Deister			√6)	√6)	√6)	√6)					
		EM4100, 4102, 4200	√		√7)	√7)	√7)	√7)		√	√	√	√
		EM4050, 4150, 4450, 4550			√	√	√	√					
		EM4305			√	√	√	√					
		Ultra Prox			√	√	√	√					
		G-Prox				√6)	√6)	√6)					
		HID DuoProx II (1336)				√	√	√		√1)	√1)	√1)	√1)
		HID ISO Prox II (1386)				√	√	√		√1)	√1)	√1)	√1)
		HID Micro Prox II (1391)				√	√	√		√1)	√1)	√1)	√1)
		HID Prox III (1346)				√	√	√		√1)	√1)	√1)	√1)
		HID Prox				√	√	√		√1)	√1)	√1)	√1)
		HID Prox II (1326)				√	√	√		√1)	√1)	√1)	√1)
		HITAG 1, 2, S			√5)	√5)	√5)	√5)					
		ICT			√6)	√6)	√6)	√6)					
		IDTECK			√	√	√	√					
		Indala				√	√	√					
		ioProx				√	√						
		ISONAS			√	√	√	√					
		Kert			√	√	√	√					
		Mino			√	√	√	√					
		Nedap			√6)	√6)	√6)	√6)					
		Nexwatch				√	√	√					
		Pyramid			√	√	√	√					
		Q5			√	√	√	√					
		T5557, T5567, T5577			√	√	√	√					
		TITAN (EM4050)			√	√	√	√					
		UNIQUE			√	√	√	√					
		ZODIAC			√	√	√	√					
2.4GHz		BLE										Y*	Y*
		Globally Available		Y				Y	Y	Y	Y		
	Availability	Globally Available Except for U.S., E.U., Japan, Australia, Canada, U.K., Albania, Iceland, Liechtenstein, Monaco, North Macedonia, Norway, San Marino, Serbia, Switzerland, Turkey, and the United Kingdom	Y		Y	Y	Y						

√) UID only, customization upon request for reading encryption content
1) UID only
2) Read/ write (customization) enhanced security features on request
3) Read/ write (customization) in direct chip command mode
4) UID only, read/ write (customization) on request
5) UID + read/ write (customization) public area
6) Hash value only
7) Only emulation of 4100, 4102
8) On request
9) Without encryption
10) UID + PAC (CSN & Facility Code), read/ write(customization) on request
11) In preparation
13) EV2/ EV3 supported as part of the EV1 downward compatibility
14) From FW V4.05
15) 134.2 kHz only
20) PAC (CSN & Facility Code), read/ write (customization) on request

*The RNIB/ RNPB version is for devices that don't have built-in Bluetooth support. If the device already has Bluetooth Low Energy (BLE) built-in, then you don't need to use the RNIB/RNPB version.

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4. Maintenance and Support

The EP30CF multi-tech fingerprint reader shall be supported by a comprehensive support program, which shall include the following:

- Regular software updates and security patches.
- Technical support via phone and email.
- Onsite repair services as needed.
- Spare parts availability.
- Training for system administrators and end-users.

5. Documentation

The supplier shall provide the following documentation for the EP30CF multi-tech fingerprint reader:

- User manual
- Installation guide
- Technical specifications
- Software release notes
- Warranty terms and conditions
- Support program details

6. Warranty and Support

The EP30CF multi-tech fingerprint reader shall be covered by a minimum of 36-month manufacturer's warranty that covers defects in materials and workmanship. The manufacturer shall provide remote technical support and assistance to the installer and end-user during the installation and operation of the controller.

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7. Training and Documentation

The manufacturer shall provide the following training and documentation for the EP30CF multi-tech fingerprint reader:

- User manuals and technical documentation for installation, configuration, and operation of the controller.
- Online training courses and videos for system administrators and operators.
- On-site or remote training sessions for system integrators and installers.
- Technical support and assistance for system integrators, installers, and end-users.

*Note Certifications may vary by region and country. Please consult the manufacturer for specific certifications applicable to your location.

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