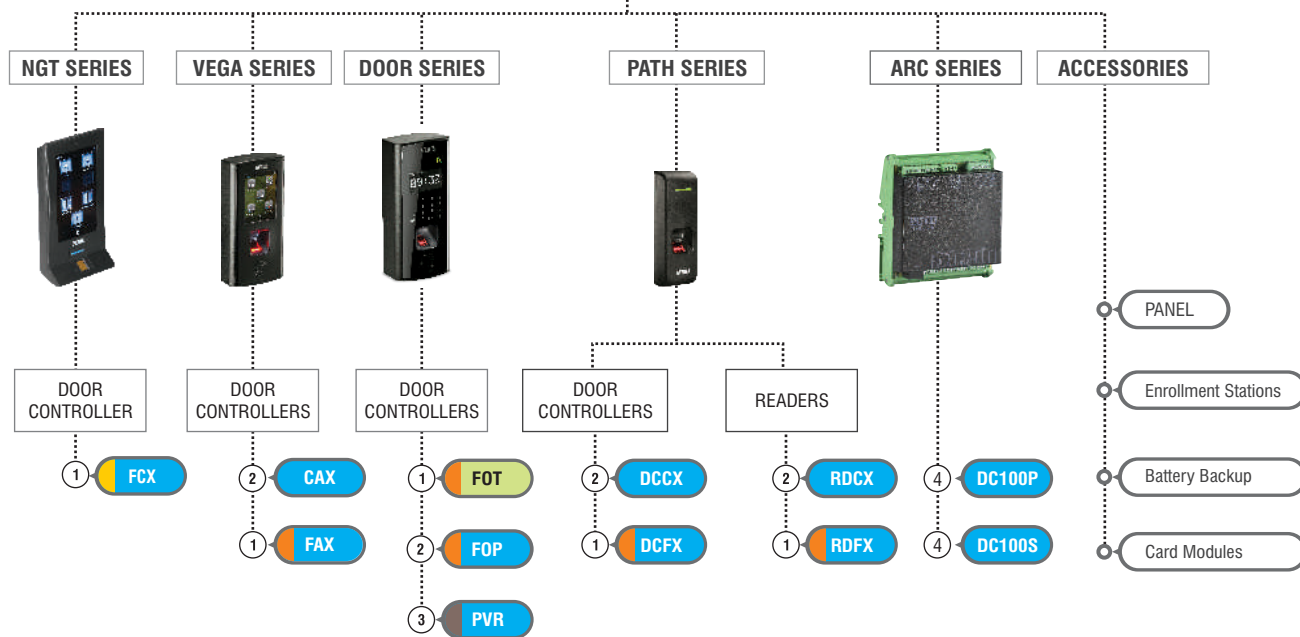## COSEC HARDWARE

Matrix COSEC hardware solutions comprise of multiple families of door controllers, readers and accessories. These products have won international awards for their aesthetics and engineering. They are specifically built for demanding enterprise applications using cutting-edge technologies and high-performance components, ensuring reliable performance for years

MATRIX

SECURITY SOLUTIONS

COSEC HARDWARE SOLUTIONS

| NGT SERIES | VEGA SERIES | DOOR SERIES | PATH SERIES | ARC SERIES | ACCESSORIES |

PANEL

Enrollment Stations

Battery Backup

Card Modules

| DOOR CONTROLLER | DOOR CONTROLLERS | DOOR CONTROLLERS | DOOR CONTROLLERS | READERS | |

1 FCX

2 CAX   1 FAX

1 FOT   2 FOP   3 PVR

2 DCCX   1 DCFX

2 RDCX   1 RDFX

4 DC100P   4 DC100S

Legend:
- Only Time-Attendance
- Access Control and Time-Attendance
- Suprema Capacitive Sensor
- Suprema Optical Sensor
- Fujitsu Palm Vein Contactless Sensor
- 1 Fingerprint and RFID Support
- 2 Only RFID Support
- 3 Palm Vein Support
- 4 Single Door Panel

Types of Card:
X - E, M, I, P Card Support
E - EM Prox
M- Mifare Smart
I - HID iCLASS
P - HID Prox

COSEC DOOR CONTROLLERS

COSEC door controllers are the front-end terminals people use during entry and exit. Door Controllers read biometric credentials (fingerprint and palm vein) or RF cards to log each entry/exit and control door lock. Door controllers are connected with the COSEC CENTRA server or site controller. They store all user access information and send entry-exit detail to COSEC CENTRA server in real time. The COSEC door controllers are offered in four series as below.

COSEC NGT

Matrix COSEC NGT FCX is a futuristic door controller to meet the functional and aesthetic needs of any modern organization for access control and time-attendance applications. It's touch-sense large display facilitates icon based graphical user interface for time-attendance functions for easy and intuitive user interaction.

- Capacitive Fingerprint Reader
- Smart Card and Proximity Card
- 7" LCD with Touch-Sense
- 1.3 MP Camera
- Voice Guidance
- Ethernet, Wi-Fi and 3G/4G/LTE
- Power over Ethernet (PoE)
- 100,000 Events Storage

reddot design award
winner 2010

COSEC VEGA

Matrix COSEC VEGA door controllers are premium devices engineered with careful blend of aesthetics, size, connectivity, reliability and ease-of-use. VEGA series is perfect fit for access control and time-attendance solutions for any organization.

• Optical Fingerprint Reader
• Smartcard, NFC and Proximity Card
• 3.5" Touch-Sense Color LCD
• IP65 for Outdoor Applications
• Power over Ethernet (PoE)
• Ethernet, Wi-Fi and 3G/4G/LTE
• 500,000 Events Log

COSEC PATH

Matrix COSEC PATH Series door controllers are specifically designed for access control applications. These compact, robust and cost-effective controllers blend in any modern building design and assure reliable and long-term performance as sentries at the building gates and doors.

• Optical Fingerprint Reader
• Smart Card and Proximity Card
• NFC Tag
• IP65
• Power over Ethernet (PoE)
• Power to Lock over PoE
• Elegant and Compact
• 9,600 Fingerprint Storage
• 50,000 Events Log
• Matching Exit Readers

COSEC DOOR

Winner of the coveted iF award for its superior design, Matrix COSEC DOOR series controllers are versatile devices designed for reliability, modularity and performance. These workhorses come in variants specifically targeted at time-attendance and access control applications.

• Palm Vein or Fingerprint Readers
• Smart Card and Proximity Card
• 128*64 Dot Matrix Display
• Touch-Sense Keypad
• USB Port
• Ethernet, Wi-Fi and 3G/4G/LTE
• 500,000 Events Storage

GOOD DESIGN
JAPAN

iF product design award 2011
GERMANY

INDIA DESIGN MARK

COSEC ARC

COSEC ARC is an intelligent compact IP Panel with PoE for a single door. The state-of-the-art COSEC ARC can control two readers on Wiegand or RS-485, door lock and other auxiliary devices making it an ideal solution for any access control installation.

• Compact, Single Door IP Panel With PoE
• Operation Modes: Standalone With COSEC PANEL or Centralized with COSEC CENTRA
• 2-Readers on Wiegand or RS-485
• PoE for Readers and Door Lock
• 10,000 Users
• 100,000 Events
• Aux-In and Aux-Out Ports
• Din Rail and Box Mounting

COSEC READERS

Matrix COSEC Readers can be connected with any COSEC door controller through RS-485 & RS-232 Interface.

- Works with any COSEC Door Controller
- Fingerprint and Card Reader
- Smart Card and Proximity Card
- Power Supply from Door Controller
- IP65
- Tamper Detection

COSEC ACCESSORIES

Matrix offers different COSEC accessories for enhancing features and performance of the COSEC solution. This includes PANEL, card modules, enrollment stations, battery backup etc.

COSEC PANEL

COSEC PANEL manages multiple controllers and acts as a bridge between the controllers and the central COSEC CENTRA server. They are responsible for synchronizing all the door controllers and implementing advanced access control features.

- Ethernet and RS-485
- USB Port for Wi-Fi, 3G/4G and Data Transfer
- Auxiliary Input and Output Ports
- Advance Access Control Features
- 500,000 Events Storage
- Controls 255 Door Controllers
- 25,000 User Templates

COSEC ENROLL

COSEC ENROLL is a desktop based enrolment station to enrol users with their palm, fingerprint and card from a single place. COSEC ENROLL along with enrolment software allows the HR department to enrol new employees quickly and easily.

- Palm, Fingerprint and Card Enrolment
- Fingerprint Verification
- Comprehensive Software
- Finger Image Quality Check during Enrolment

COSEC PSBB

COSEC power supply battery backup is used to supply power to the door controller. It is available in two different variants.

- Supply Power with Battery Backup to Door Controllers
- Power Supply for Door Lock and Exit Readers

COSEC PATH BBU

Power supply battery backup for COSEC PATH Door Controllers - highly useful for Mobile Application and remote areas where there is scarcity of connectivity and power.

COSEC VEGA BBU

Power supply battery backup for the COSEC VEGA Door Controllers - useful at remote sites where connectivity is an issue

COSEC CPM

COSEC CPMs are pluggable card personality reader modules inserted in the COSEC DOOR, NGT and VEGA series door controllers. Eight different card reader modules are available to support both proximity and smart cards.

Cards Support
Low Frequency (125KHz): EM, HID Prox
High Frequency (13.56MHz): MIFARE 1k, MIFARE 4k, HID iCLASS 2k/2, HID iCLASS 16k/2, HID iCLASS 16k/16

PRODUCT	TECHNOLOGY	SUPPORTED DOOR CONTROLLERS
COSEC CPM EM PROX	Proximity	COSEC DOOR Series and NGT Series
COSEC CPM HID PROX	Proximity	COSEC DOOR Series and NGT Series
COSEC CPM MIFARE SMART	Smart Card	COSEC DOOR Series and NGT Series
COSEC CPM HID iCLASS	Smart Card	COSEC DOOR Series and NGT Series
COSEC VEGA CPM EM PROX	Proximity	COSEC VEGA Series
COSEC VEGA CPM HID PROX	Proximity	COSEC VEGA Series
COSEC VEGA CPM MIFARE SMART	Smart Card	COSEC VEGA Series
COSEC VEGA CPM HID iCLASS	Smart Card	COSEC VEGA Series

COSEC DOOR CONTROLLER INTERFACE DIAGRAM

Wi-Fi/3G/4G/LTE

Ethernet

RS-485

Aux Output Port

Voice Guidance

Fingerprint, Palm Vein, RF Card Reader

Camera to Capture Photo

Touch Sense Display

Exit Switch Port

Door Lock Port

Aux Input Port

USB Ports

* Above diagram shows general connectivity of COSEC door controllers. For specific interface option in any door controller, please refer device feature comparison table.

COSEC DOOR CONTROLLERS SELECTION GUIDE

SERIES	NGT	VEGA		PATH		DOOR		
MODEL	FCX	CAX	FAX	DCCX	DCFX	FOT	FOP	PVR
Fingerprint Sensor(Optical)			●		●	●	●	
Fingerprint Sensor(Capacitive)	●							
Palm Vein Sensor								●
RFID Card Reader	●	●	●	●	●	●	●	●
Touch Screen LCD (7")	●							
Touch Screen LCD (3.5")		●	●					
128*64 Dot Matrix Display						●	●	●
Camera	●							
Touch Sense Keys						●	●	●
Ethernet	●	●	●	●	●	●	●	●
RS-485	●			●	●		●	
USB Port for Data Transfer	●	●	●			●	●	●
USB Port for Communication	●	●	●				●	●
Built-In Wi-Fi	●	●	●					●
Power over Ethernet (POE)	●	●	●	●	●			
Event Storage (50,000)				●	●	●		
Event Storage (1,00,000)	●							●
Event Storage (5,00,000)		●	●				●	
External Reader	●	●	●	●	●		●	●
Exit Switch	●	●	●	●	●		●	●
Door Lock	●	●	●	●	●		●	●
Auxiliary Input Port	●	●	●				●	●
Auxiliary Output Port	●	●	●				●	●
Tamper Detection	●	●	●	●	●	●	●	●
Buzzer	●	●	●	●	●	●	●	●
Voice Guidance	●							
LED Indication	●			●	●	●	●	●
IP65		●	●	●	●			

X-E, M, I, P Card Support   **E-** EM Prox   **M-**Mifare Smart   **I-** HID iCLASS **P-** HID Prox

● Built-In   ● COSEC CPM is Required

KEY FEATURES

Wired and Wireless Connectivity
Featuring Ethernet, Wi-Fi and 3G/4G connectivity, COSEC door controllers offer extra flexibility in designing a security solution while reducing installation and maintenance costs. Compared to conventional access control system, wireless and IP based connectivity provides lower cost per door using existing network infrastructure and improves reliability and performance.

Auxiliary Input and Output Ports
Matrix COSEC door controllers have multi functional supervised auxiliary input and output ports to control various applications. Input devices such as motion detectors, fire alarm panels, etc. and external devices like video recorders, siren, etc. can be connected on these ports. Input and output ports can be linked to enable applications like door unlocking when fire is detected, capture user photo during entries or exits of specified users.

Buzzers and LEDs
Alarms play a key role for the organization safety and security. Various alarms are predefined in the system and based on specific conditions, alarms are generated on door controllers and panels to indicate an important event, breach of access policy or unauthorized access. Both audio and visual indications are provided by means of a buzzer and LEDs. These alarms can be monitored, acknowledged, cleared and controlled in real-time.

External Reader Interfaces
COSEC door controllers have a built-in exit reader port to connect either fingerprint or card reader using RS-232 or wiegand interface. Power to this reader is supplied from the door controller directly to eliminate the need for separate power point at the installation site.

Request to Exit (REX) Switch
In many applications, only door controller is used without exit reader. COSEC has a built-in exit switch port to connect push button type switch to unlock the door.

USB for Advanced Utility
For remote location installations or where wired internet connectivity is not available, USB port on door controller and PANEL is used for easy data transfer, wireless (Wi-Fi and 3G/4G) connectivity and firmware upgrade.

DEVICE API

Matrix COSEC device API allows other third party application software to communicate directly with the COSEC devices using HTTP methods. These Device APIs perform functions such as device configuration, user configuration, enrollment, transfer of commands and events, etc.

Communication Using Device API
COSEC Device API enables a client application to access COSEC device directly without need of COSEC monitor or COSEC CENTRA server. Using APIs, third party software sends a simple HTTP request and device execute these requests.

HTTP Request

HTTP Response

INTERNET

COSEC Device

3rd Party Applications
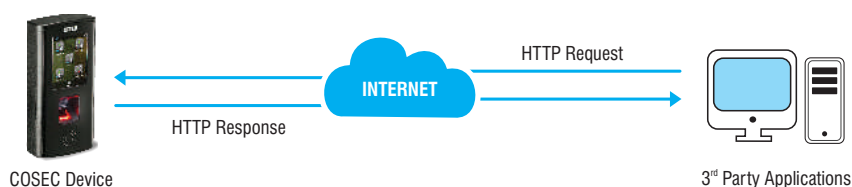
Supported Devices
Device APIs are supported on below COSEC door controllers.

- COSEC DOOR (Above V2 Doors)
- COSEC DOOR PVR
- COSEC NGT FCX
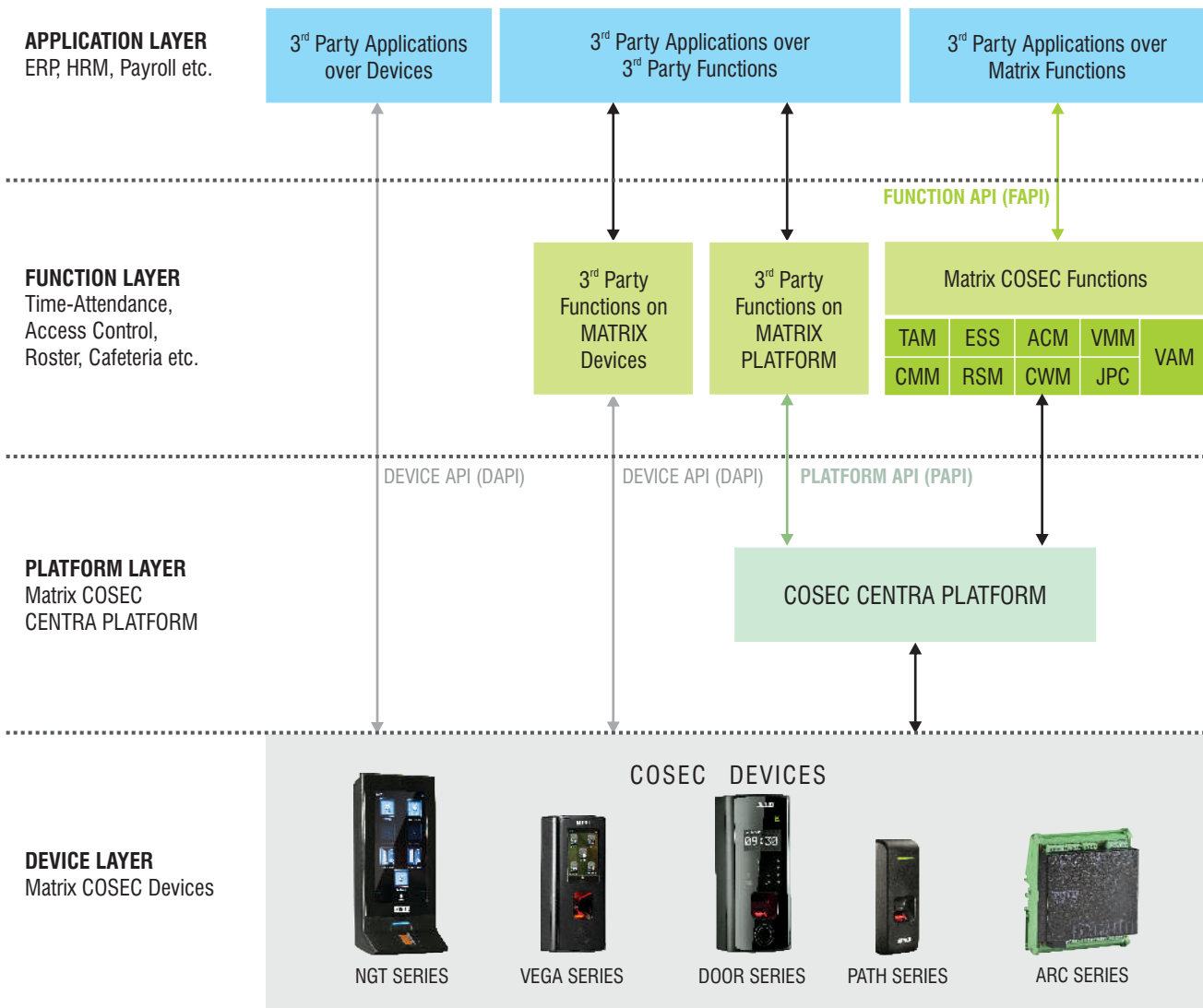- COSEC VEGA
- COSEC PATH

Device APIs
COSEC devices support below mentioned functions to communicate with the third party software application.

- User Configuration
- Enrollment Configuration
- Credential Management Configuration
- Basic Device Configuration
- Function Key Configuration
- Reader Configuration
- Access Setting Configuration
- Alarm Configuration
- Date and Time Configuration
- Door Features Configuration
- Event Configuration
- Device Control Configuration

MATRIX COSEC INTEGRATION

Matrix COSEC offers flexibility to interface with any third-party applications at three different levels as shown in the diagram.

APPLICATION LAYER ERP, HRM, Payroll etc.	3rd Party Applications over Devices	3rd Party Applications over 3rd Party Functions	3rd Party Applications over Matrix Functions

FUNCTION API (FAPI)

FUNCTION LAYER Time-Attendance, Access Control, Roster, Cafeteria etc.		3rd Party Functions on MATRIX Devices	3rd Party Functions on MATRIX PLATFORM	Matrix COSEC Functions

Matrix COSEC Functions:

TAM	ESS	ACM	VMM	
CMM	RSM	CWM	JPC	VAM

DEVICE API (DAPI)   DEVICE API (DAPI)   PLATFORM API (PAPI)

PLATFORM LAYER
Matrix COSEC
CENTRA PLATFORM

COSEC CENTRA PLATFORM

DEVICE LAYER
Matrix COSEC Devices

COSEC DEVICES

NGT SERIES   VEGA SERIES   DOOR SERIES   PATH SERIES   ARC SERIES

Device Level Integration

Matrix COSEC devices come ready with Device API for 3rd party application developers to develop their applications using Matrix COSEC devices. Matrix COSEC Device APIs (DAPI) allows other third party applications to communicate directly with the COSEC devices without need for COSEC CENTRA PLATFORM.

Platform Level Integration

Many application developers need application - ready APIs. They expect the hardware vendors to manage device configuration, communication, enrollment and all such lower-level tasks. This saves them from the complexity of physical interfaces, network management, communication, device configuration, template distribution, etc. For such developers, Matrix COSEC CENTRA offers PLATFORM APIs (PAPI). Matrix COSEC CENTRA PLATFORM

manages all the lower level tasks shielding application developers from the tedious lower-level software engineering and offers them application-ready interfaces for simple and quick programming. Using PAPI, they can build their applications like time-attendance, access control, visitor management, cafeteria management, contract labor management and roster management on top of COSEC CENTRA PLATFORM.

Function API

This is the highest level of interface Matrix COSEC offers for application to application integration. Using Function APIs (FAPI), Matrix COSEC applications like Time-Attendance can be integrated with other 3rd party applications like payroll, ERP, HRMS and CRM. Matrix COSEC is integrated with many widely popular applications like SAP, Oracle, Microsoft Dynamics NAV/AX, Tally and others.

ORDERING INFORMATION

DOOR CONTROLLERS

COSEC PATH DCFX*	Fingerprint and in-Built Card based Door Controller with PoE and IP65
COSEC PATH DCCX*	In-Built Card based Door Controller with PoE and IP65
COSEC DOOR FOT	Fingerprint and Card based Time-Attendance Terminal with LCD, Keypad and USB
COSEC DOOR FOP	Fingerprint and Card based Door Controller with LCD, Keypad and USB
COSEC DOOR PVR	Palm Vein and Card based Door Controller with Wi-Fi, LCD, Keypad and 3G/4G Connectivity Option
COSEC VEGA FAX	Fingerprint and Card based Door Controller with Touchscreen, IP65, Wi-Fi and 3G/4G Connectivity Option
COSEC VEGA CAX	Card based Door Controller with Touchscreen, IP65, Wi-Fi and 3G/4G Connectivity Option
COSEC NGT FCX	Fingerprint and Card based Door Controller with 7' Touchscreen, Camera, PoE, Wi-Fi and 3G/4G Connectivity Option
COSEC ARC DC100P	Single Door Panel with PoE for Access Control Application
COSEC ARC DC100S	Single Door Panel with RS-485 for Access Control Application

READERS

COSEC PATH RDFX*	Fingerprint and Card based Exit Reader with IP65
COSEC PATH RDCX*	Card based Exit Reader with IP65

ACCESSORIES

COSEC PANEL LITE	Control Panel to Support Multiple Door Controllers for Advance Access Control Features
COSEC ENROLL PALM	USB based Palm Enrolment Station
COSEC ENROLL CARD	Desktop based Card Enrollment Station
COSEC ENROLL FINGER	USB based Fingerprint Enrollment Station
COSEC PATH BBU	Power Supply Battery Backup for PATH Series Door Controllers
COSEC VEGA BBU	Power Supply Battery Backup for VEGA Series Door Controllers
COSEC VEGA CPM EM PROX	EM Proximity Card Personality Reader Module for VEGA Series Door Controller
COSEC VEGA CPM HID PROX	HID Proximity Card Personality Reader Module for VEGA Series Door Controller
COSEC VEGA CPM MIFARE SMART	Mifare Smart Card Personality Reader Module for VEGA Series Door Controller
COSEC VEGA CPM HID iCLASS	HID iCLASS Smart Card Personality Reader Module for VEGA Series Door Controller
COSEC CPM EM PROX	EM Proximity Card Personality Reader Module
COSEC CPM HID PROX	HID Proximity Card Personality Reader Module
COSEC CPM MIFARE SMART	Mifare Smart Card Personality Reader Module
COSEC CPM HID iCLASS	HID iCLASS Smart Card Personality Reader Module

X-E, M, I, P Card Support   **E-** EM Prox   **M-**Mifare Smart   **I-** HID iCLASS **P-** HID Prox

COSEC PANEL

COSEC PANEL manages multiple controllers and acts as a bridge between the controllers and the central COSEC CENTRA Server. They are responsible for synchronizing all door controllers and implementing advanced access control features.

- Ethernet and RS-485
- USB for Wi-Fi, 3G/4G/LTE and Data Transfer
- Auxiliary Input and Output Ports
- Wiegand OUT Port Available for Integration

- Advance Access Control Features
- Storage up to 500,000 Events
- Controls 255 Door Controllers
- Templates of up to 25,000 Users

COSEC PANEL LITE		
USE	**STANDALONE MODE**	**NETWORK MODE**
For	SMB, SME, and SOHO	Enterprises and SME
Location	Single Location	Multiple Locations with COSEC CENTRA
Software	Built-in with COSEC PANEL LITE	Web Based with COSEC CENTRA
Capacity	Connect up to 255 Doors	Connect up to 65,000 Doors with COSEC CENTRA
Users	25,000 Users	1 Million Users with COSEC CENTRA

WHEN COSEC PANEL IS REQUIRED?

COSEC PANEL LITE synchronizes multiple door controllers and provides a single interface for the server. COSEC PANEL LITE is required if one or more of the following conditions exist:

1. When number of user capacity exceeds the door controller's capacity (PANEL can support up to 25,000 users)

2. Single location with no requirement of webbased architecture (PANEL LITE works in Standalone Mode where there is no requirement of software)

3. When following additional security features are needed:
- Access Groups
- Access Levels
- Access Zones
- Access Route
- Dead-Man Zone
- Do Not Disturb
- I/O Linking
- Man Trap
- Time Zone Based Access

FEATURES AND BENEFITS	
FEATURES	**BENEFITS**
Control up to 255 Doors from a Single IP Panel	Eliminate Need for Multiple Panels
Leverage IP Technology	Standard Structured Cabling, Higher Reliability
Connect Third Party Readers	Protect Investment in Existing Readers
PoE Door Controller for Powering Readers and Lock	Simplified Installation, Higher Reliability
Standalone Operation without Server	Eliminate Server Cost
Scalable for Future Expansion	Optimum Investment

TECHNICAL SPECIFICATIONS

COSEC DOOR CONTROLLERS

SERIES	NGT	VEGA		PATH	
MODEL	**FCX**	**CAX**	**FAX**	**DCCX**	**DCFX**
CPU	400 MHz ARM9	1 GHz Cortex A8		32-bit Micro Controller	
Input Power	12V DC @ 2A				
Dimensions (W x H x D)	100mm x 220mm x 55mm (3.9" x 8.7" x 2.2")	90mm x 180mm x 37mm (3.54" x 7.08" x 1.45")		50mm x 136mm x 33mm (1.96" x 5.35" x 1.29")	50mm x 160mm x 42mm (1.96" x 6.29" x 1.65")
Weight	0.970kg (2.13Lbs)	0.4kg (1.88Lbs)		0.280kg (0.62Lbs)	
Environment	0°C to +50°C (32°F to 122°F) and 5% to 95% RH Non-Condensing				
Certificate		CE, FCC, RoHS		CE, FCC, RoHS	

SERIES	DOOR		
MODEL	**FOT**	**FOP**	**PVR**
Sensor	Suprema Optical Sensor		Fujitsu Palm Sensor
CPU	32-bit Micro Controller		1 GHz ARM Cortex A8
Input Power	12V DC @ 2A		
Dimensions (W x H x D)	100 x 220 x 55mm (3.9" x 8.7" x 2.2")		
Weight	0.49kg (1.07 Lbs)		
Environment	0°C to +50°C (32°F to 122°F) and 5% to 95% RH Non-Condensing		
Certificate	CE, FCC, RoHS		

COSEC READERS

FEATURE	PATH RDCX*	PATH RDFX*
Reader Type	Card	Fingerprint and Card
Interface	Wiegand or RS 232	
Tamper Detection	Yes	
LED	1 (Tri-Color)	
Buzzer	Yes	
IP65	Yes	
Dimensions (W x H x D)	50mm x 136mm x 33mm (1.96" x 5.35" x 1.29")	
Weight	0.150Kg (0.33Lbs)	0.225Kg (0.49Lbs)
Environment	0°C to +50°C (32°F to 122°F) and 5% to 95% RH Non-Condensing	

X-E, M, I, P Card Support   **E-** EM Prox   **M-**Mifare Smart   **I-** HID iCLASS **P-** HID Prox

FINGERPRINT SENSOR

FEATURE	OPTICAL	CAPACITIVE
Sensor Technology	Optical	Capacitive
Waterproof	Yes	No
Sensing Area	15.9mm x 17.9mm (0.62" x 0.70")	12.8mm x 18.0mm (0.50" x 0.70")
Image Size in Pixels	288 x 288	256 x 360
Image Resolution in DPI	500	508
Identification Time	< 1 sec	<650 msec
Verification Time	< 1 sec	<500 msec
Equal Error Rate (ERR)	< 0.1%	<0.1%

ABOUT MATRIX

Established in 1991, Matrix is a leader in Telecom and Security solutions for modern businesses and enterprises. An innovative, technology driven and customer focused organization; Matrix is committed to keep pace with the revolutions in the telecom and security industries. With more than 40% of its human resources dedicated to the development of new products, Matrix has launched cutting-edge products like Video Surveillance solutions, Access Control, Time-Attendance, IP-PBX, Universal Gateways, Terminals, Convergence solution, VoIP Gateways and GSM Gateways. These solutions are feature-rich, reliable and conform to the international standards. Having global foot-prints in Asia, Europe, North America, South America and Africa through an extensive network of more than 500 channel partners, Matrix ensures that the products serve the needs of its customers faster and longer. Matrix has gained trust and admiration of customers representing the entire spectrum of industries. Matrix has won many international awards for its innovative products.

SECURITY SOLUTIONS

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Due to continuous technology upgradations, product specifications are subject to change without notice.