WEBINAR

All about CoreStation

Speaker

Dwayne Neufville
UK & Ireland Technical Team Lead Manager at Suprema

Contents

1. What is the CoreStation ?

- **General Information**
- **Product Line-Up**
- **Door Configuration**

2. How to install CoreStation System

- **HW Installation**
- **CoreStation network setting by SETUP Manager**
- **Caution**

3. How to sell CoreStation

- **Scalability**
- **Flexibility**
- **Secure**
- **User Friendly**

4.Case Study

Who we are

• Suprema is a leading global provider of biometrics and security.

By combining world renowned biometric algorithms with superior engineering, Suprema has introduced several technology initiatives and innovations to the security industry over the last couple of decades.

Access Control & Time Attendance software with powerful functionalities and features

AC/TA Server

Comm

Suprema Device

Door Control

March 2016

Time Attendance

BioStar 2

New Features of BioStar 2 2.7 / 2.7.14 v

Released in April 2020

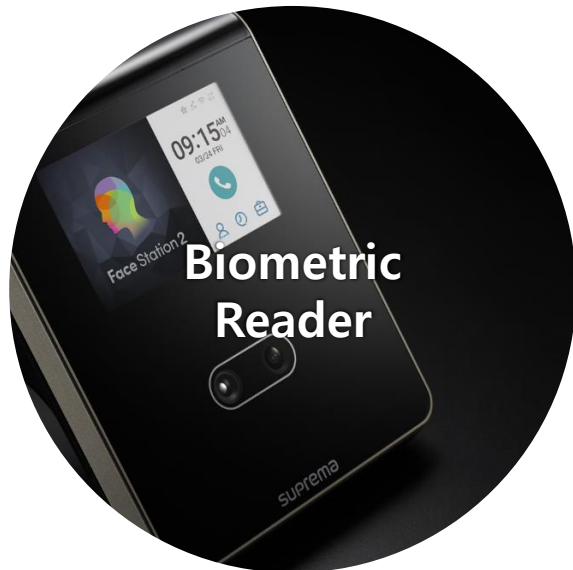|			
Suprema Mobile Credential	Enhanced Security Settings	Enhancement In Mobile Credential Usage	New Device Support: Xpass D2 (Rev 2)
Airfob Patch	CoreStation Supports the FS2 as Slave Device	Visitor Management (Basic)	Improved Muster Zone

Product

The best in biometrics and security

Suprema provides comprehensive security solutions for security.
Whatever you're looking for, you'll find a Suprema's products to suit your needs. From robust outdoor Biometric Readers to discreet products for sensitive environments, we offer it all.

Biometric Reader

RFID Reader

Intelligent Controller

Ⅰ. What is the CoreStation?

What is CoreStation?

Suprema's Intelligent Biometric Controller

- 4 Door Access Controller

- Matching all type of credentials (Card, Biometrics, Mobile)

- Compatible with all standard readers

- Stores up to 500,000 users

- Suitable for SMB to Enterprise System(Max. 132 Door)

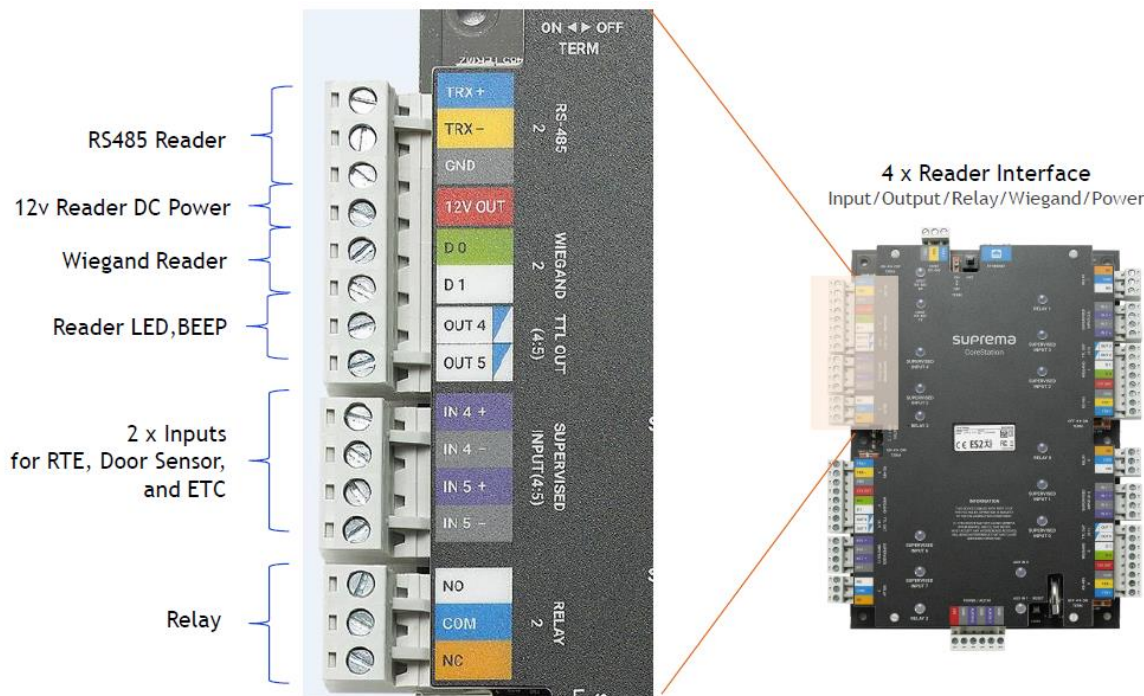- Easy setup and configuration via webserver and App.

What is CoreStation?

CoreStation supports four on-board reader ports for both Wiegand and RS485 interface along with relays, inputs, and reader power-out.

CoreStation Specs	
CPU	1.4 GHz Octa Core
POWER /AUX IN	DC 12V, 3A
Memory	8 GB Flash + 1 GB RAM
Max. Users	500,000 (1:1) and 100,000 (1:N)
Max. Templates	1,000,000 (1:1) and 200,000 (1:N)*
Max. Text Logs	5,000,000 (text)
Serial Comm. Protocol	OSDP V2
Ethernet	10/100 Mbps and Auto MDI/MDI-X
RS-485	5ch
Wiegand	4ch Input
Relay	4 Relays
TTL Input	8ch (Supervised input selectable)
TTL Output	8ch
AUX Input	2ch (AC power fail and tamper)
Certification	CE, FCC, KC, RoHS, WEEE, REACH, UL 294 (Coming)

CoreStation System Line-Up

✓ **CoreStation related Reader**

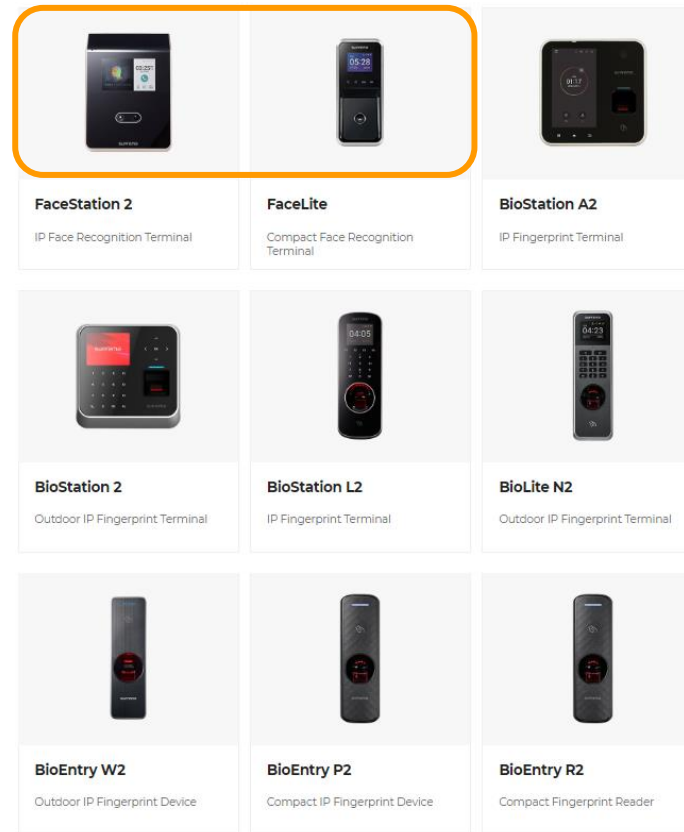|	**BER2**	**XPD2(Mullion)**	**XPD2(Gang Box)**	**XPD2(Gang Box)**
RF Option	125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire/EV1, FeliCa	125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire/EV1, FeliCa	125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire/EV1, FeliCa	125kHz EM & 13.56MHz MIFARE, MIFARE Plus, DESFire/EV1, FeliCa
Suprema Mobile Access	NFC	NFC/BLE	NFC/BLE	NFC/BLE
Template	SUPREMA	-	-	-
Sensor Type	Optical Sensor (OP6)	-	-	-
IP rating	-	IP67	IP67	IP67
IK rating	-	IK08	IK08	IK08
RS-485	1ch (OSDP V2)	1ch (OSDP V2)	1ch (OSDP V2)	1ch (OSDP V2)
Wiegand	-	1ch output	1ch output	1ch output
Dimension (WxHxDmm)	50 x 164 x 37.5	48 x 144.7 x 27	80 x 130 x 25	80 x 130 x 25
Certificates	CE, FCC, KC, RoHS, REACH, WEEE	CE, FCC, KC, RoHS, REACH, WEEE, SIG	CE, FCC, KC, RoHS, REACH, WEEE, SIG	CE, FCC, KC, RoHS, REACH, WEEE, SIG

CoreStation System Line-Up

✓ **CoreStation + Suprema Intelligent Biometric Reader**

Plan to support on June

FaceStation 2

IP Face Recognition Terminal

FaceLite

Compact Face Recognition Terminal

BioStation A2

IP Fingerprint Terminal

BioStation 2

Outdoor IP Fingerprint Terminal

BioStation L2

IP Fingerprint Terminal

BioLite N2

Outdoor IP Fingerprint Terminal

BioEntry W2

Outdoor IP Fingerprint Device

BioEntry P2

Compact IP Fingerprint Device
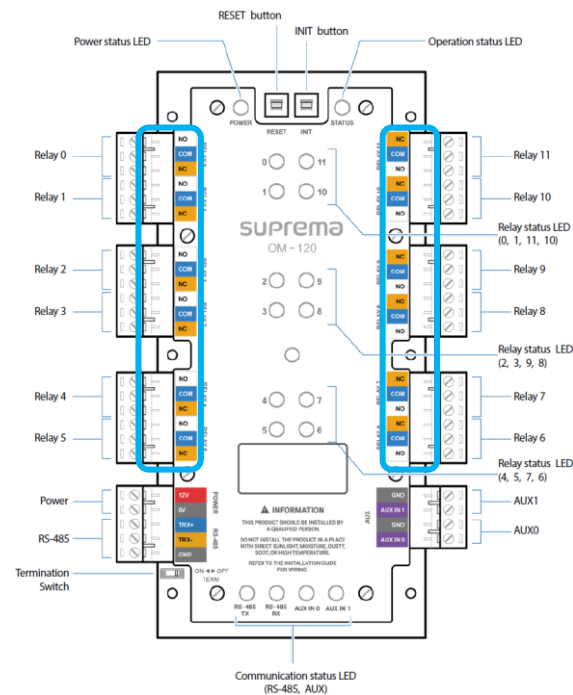
BioEntry R2

Compact Fingerprint Reader

CoreStation System Line-Up

✓ **CoreStation Peripherals**

DM-20(Door Module)
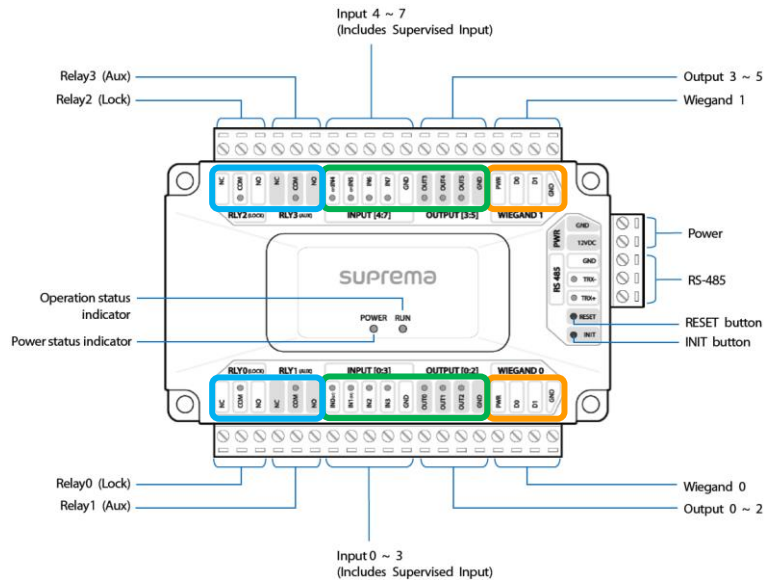
OM-120(Output Module)

Secure I/O2
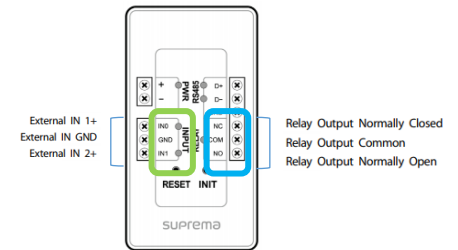
CoreStation System Line-Up

✓ **CoreStation Enclosure(ENCR-10)**
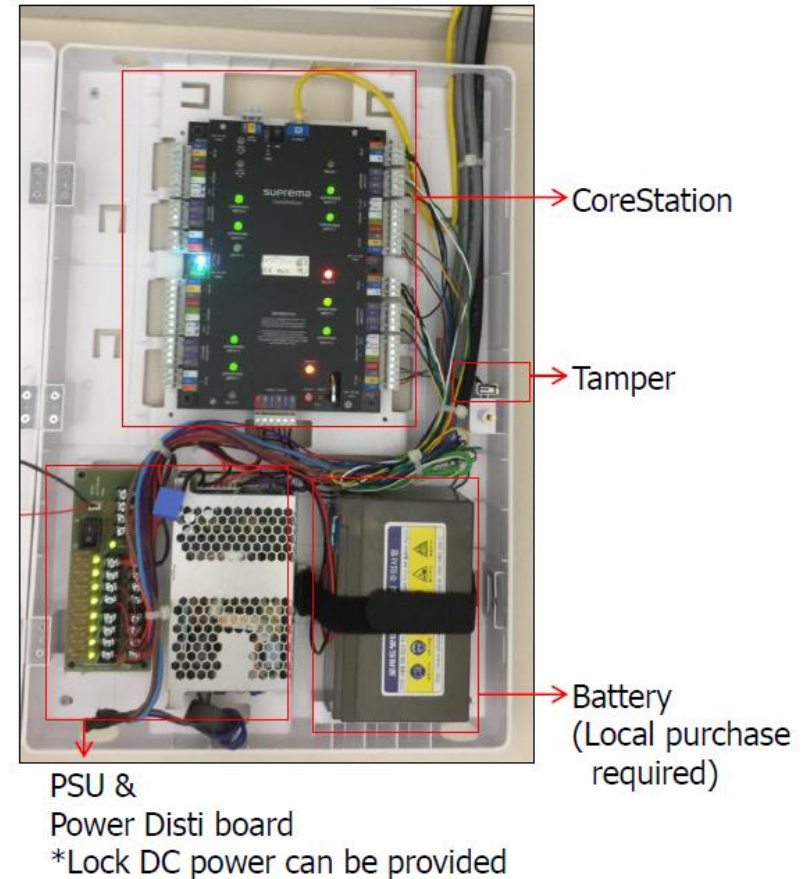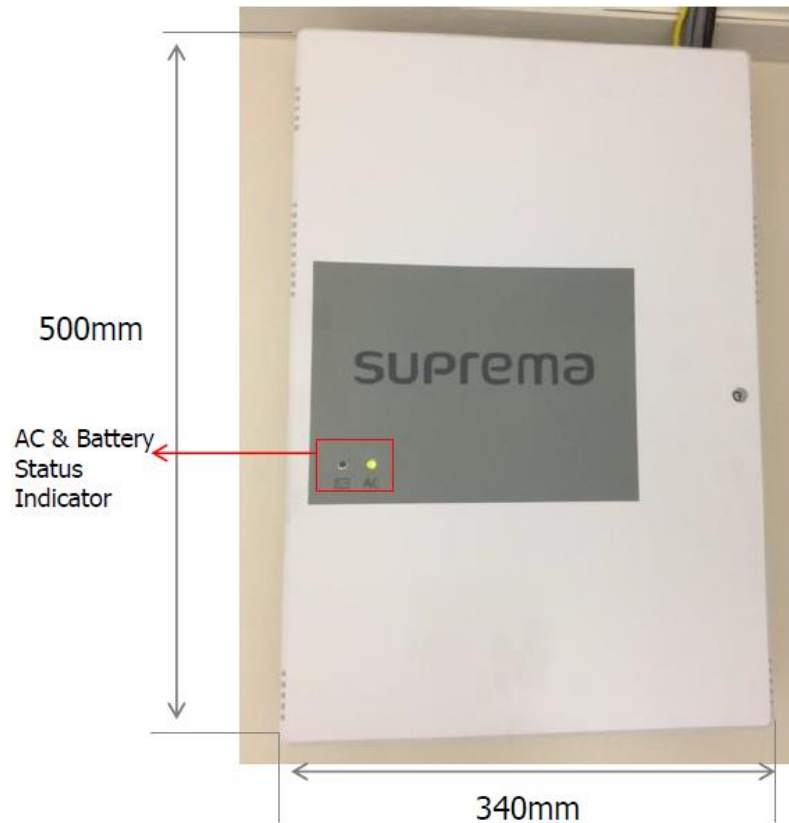
500mm

AC & Battery Status Indicator

340mm

CoreStation

Tamper

Battery (Local purchase required)

PSU & Power Disti board
*Lock DC power can be provided

CoreStation System – How it works?

Wiegand
Relay
TCP/IP
Input
RS485
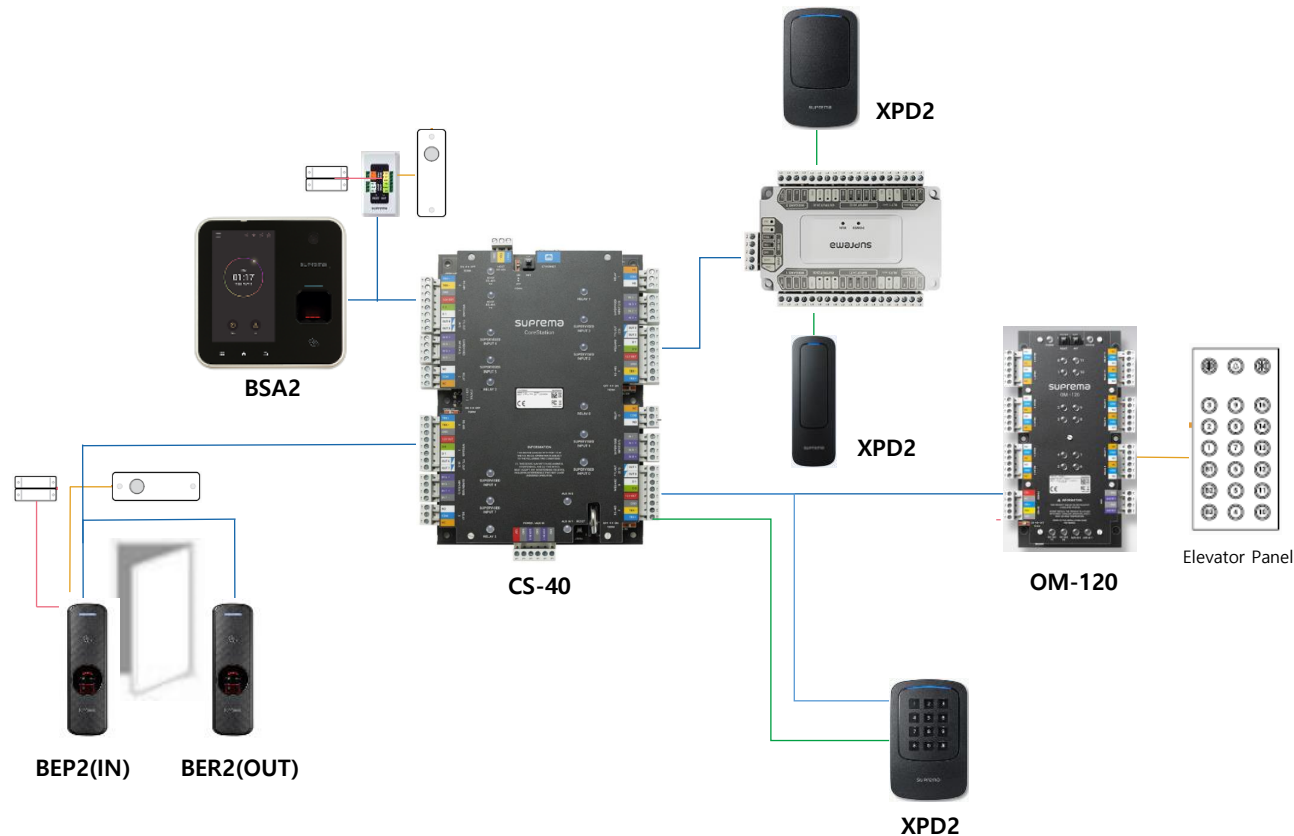
XPD2

BSA2

XPD2

CS-40

OM-120

Elevator Panel

BEP2(IN)   BER2(OUT)

XPD2

CoreStation System – How it works?

8 Door Setup with DM20 & Corestation
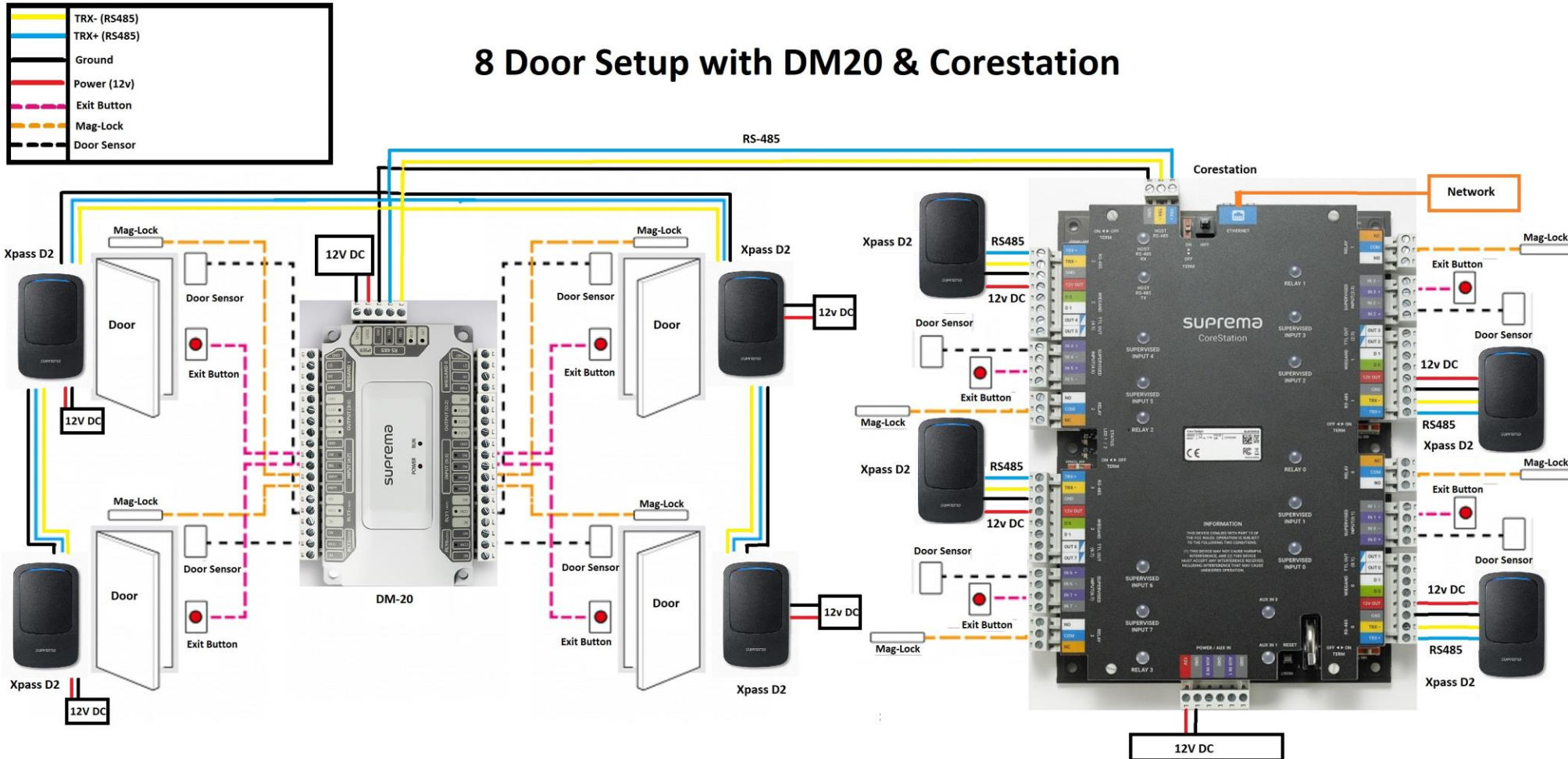
Legend:
- TRX- (RS485)
- TRX+ (RS485)
- Ground
- Power (12v)
- Exit Button
- Mag-Lock
- Door Sensor

Created By George Cartlidge

CoreStation System – Wiegand vs RS485

- **Typical AC Controller**

vs

- **CoreStation**

Legacy way to use Bio-Readers:
- TCP/IP at the front door
- Data-Subject info in device
- Wiegand
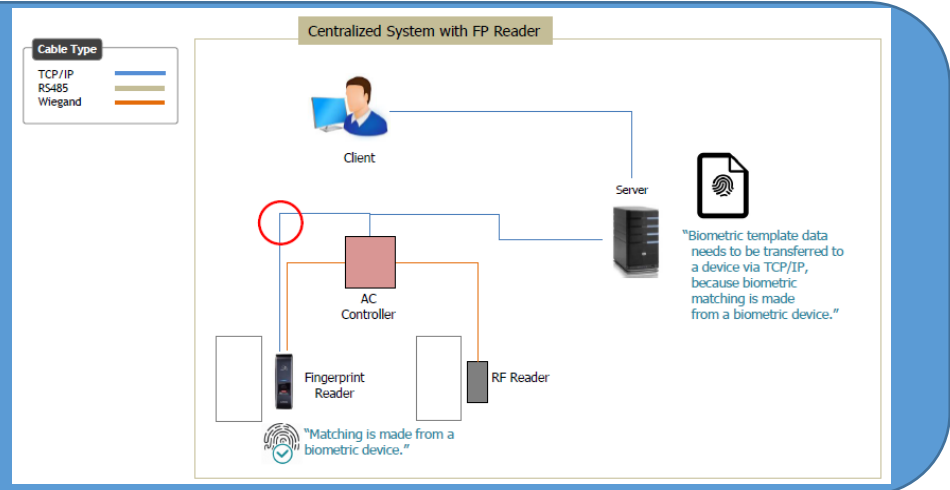
New Privacy by Design:
- TCP/IP only in the secure area
- Data-Subject info in the Controller
- RS485 OSDP V2 SC

Legacy way to use Bio-Readers:

Created By George Cartlidge

CoreStation System – Transition Phrase

Example

Change without additional wiring
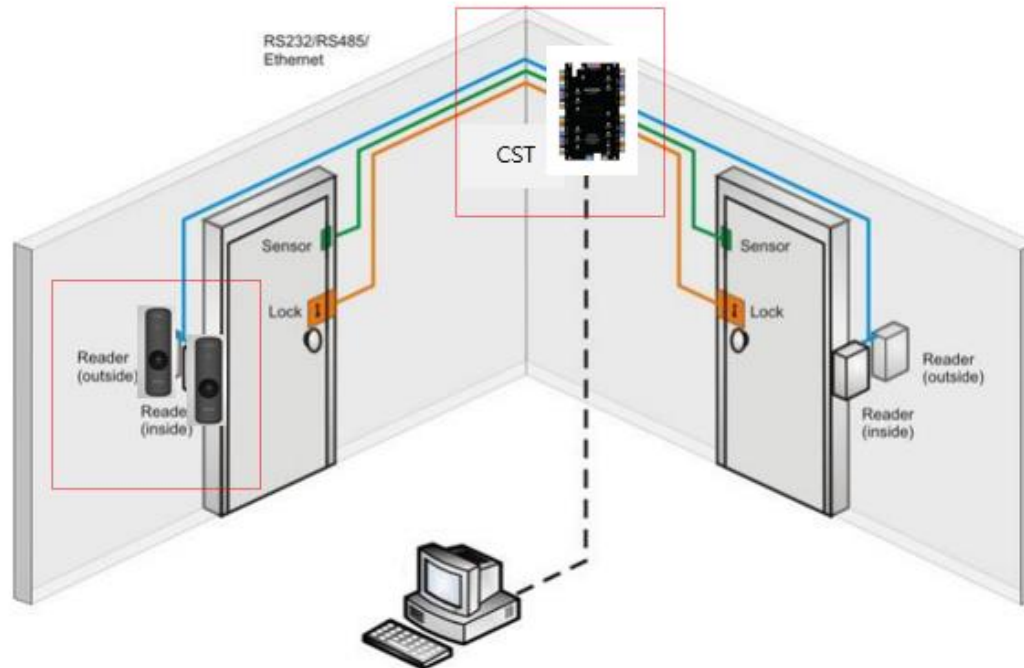
CoreStation: Centralize Solution

CoreStation (Biometric Matcher)
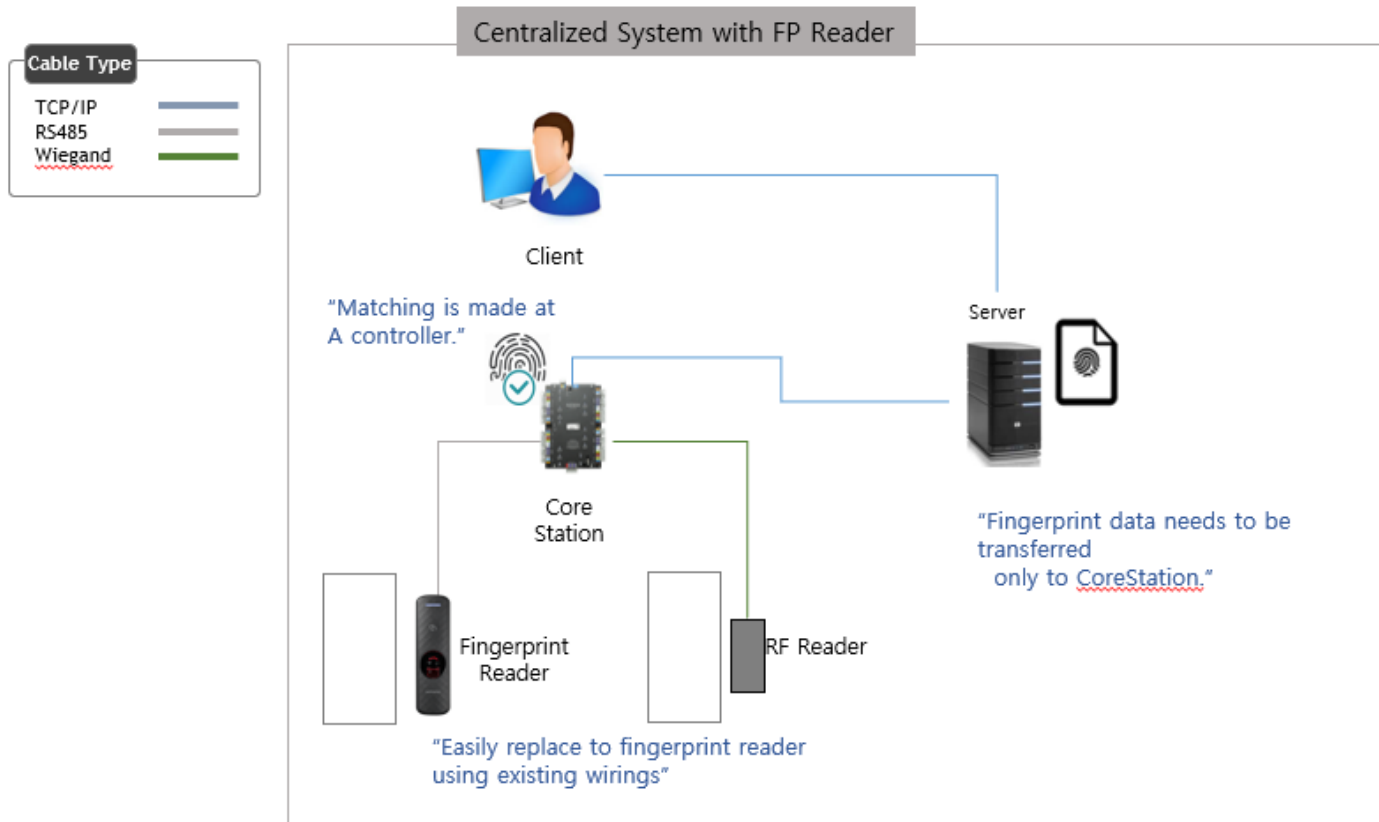
Cable Type
TCP/IP
RS485
Wiegand

Centralized System with FP Reader

Client

"Matching is made at A controller."

Core Station

Server

"Fingerprint data needs to be transferred only to CoreStation."

Fingerprint Reader

RF Reader

"Easily replace to fingerprint reader using existing wirings"

Created By George Cartlidge

How to configure door by CoreStation

Door Configuration by RS485

CoreStation System – Configuration by RS485

✓ **4 Door Configuration**

CoreStation System – Configuration by RS485

✓ **4 Door Configuration**

Cable Type
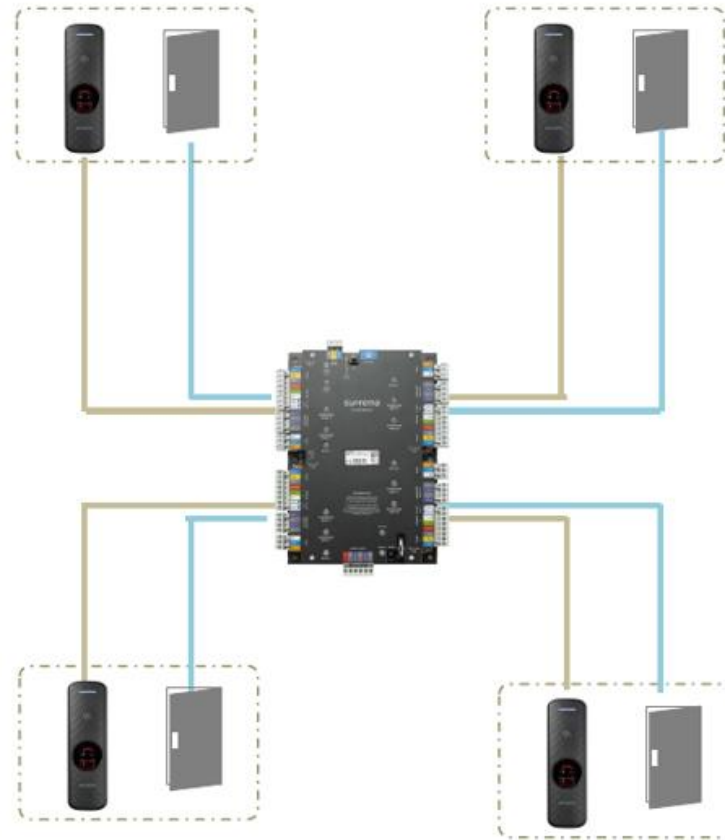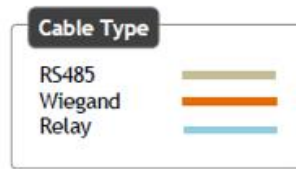
RS485	
Wiegand	
Relay	
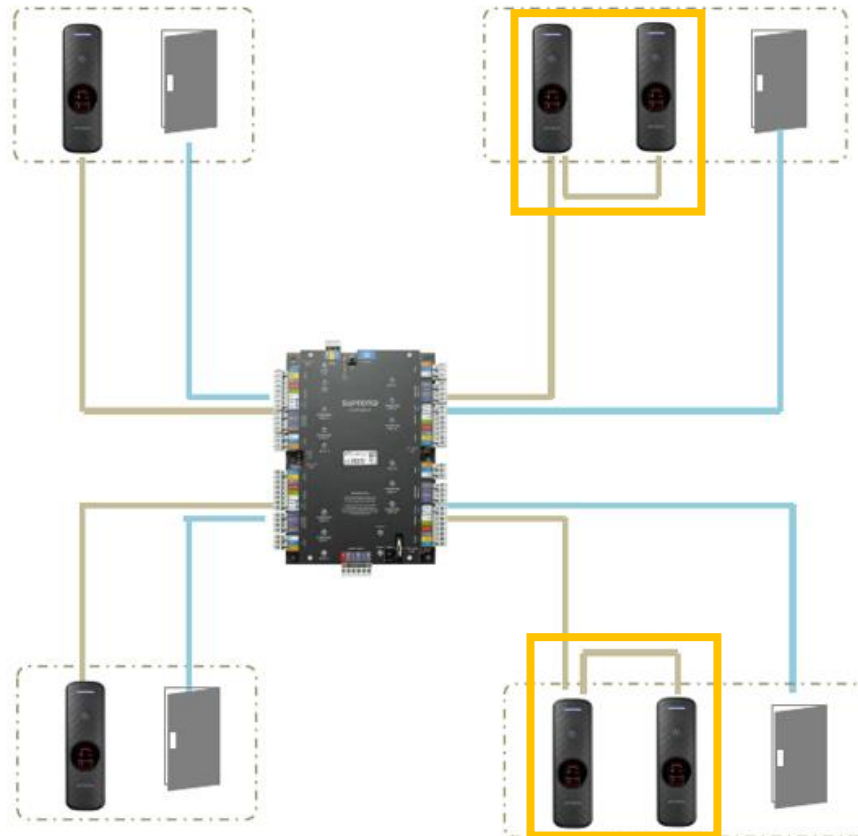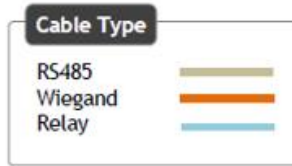
*When using RS485 daisy chain, reader power-out from CoreStation may not be strong enough. So it's recommended to use an additional power connection.

CoreStation System – Configuration by RS485

✓ **6 Door Configuration**

Cable Type
- RS485
- Wiegand
- Relay
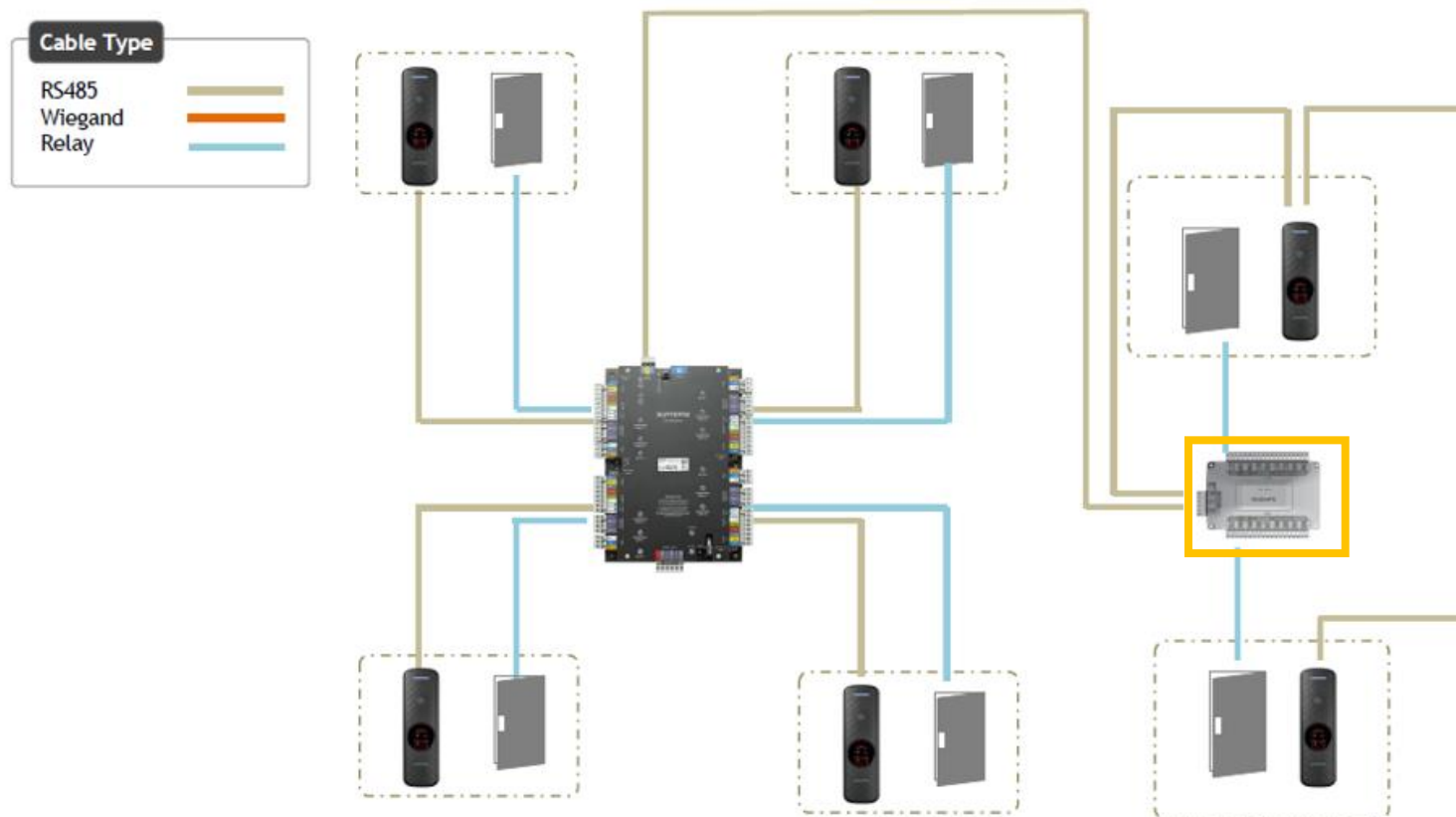
CoreStation System – Configuration by RS485

✓ **52 Door Configuration**
- Up to 64 slave devices can connect CS40
- Make sure up to 32 slave devices can connect per RS485 port

15 slaves

15 slaves

4 slaves

**52 doors
by 1ea CS40**

15 slaves

15 slaves

CoreStation connection RS-485

How many Doors will the CoreStation accommodate with 2 readers (RS-485) per door?

Answer is 28

8 Door Setup with DM20 & Corestation
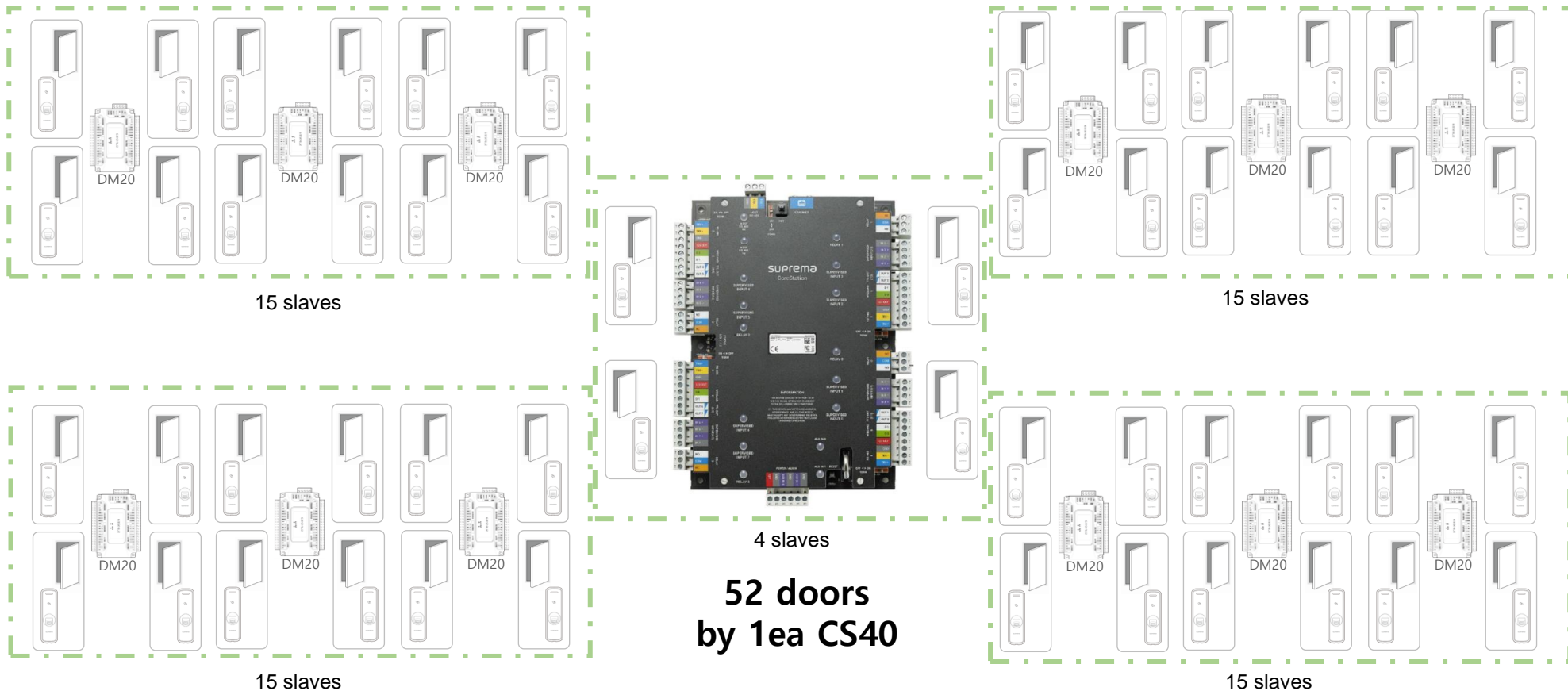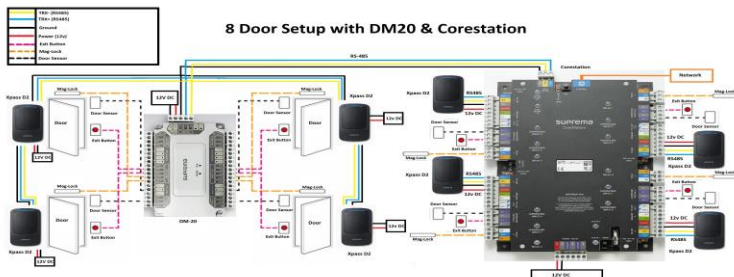
How to utilize the capacity of the 64 Devices on RS-485 connection to CoreStation

CoreStation connection RS-485

16 Readers + 2 DM-20 = 8 Doors & 18 RS-485 devices

16 Readers + 2 DM-20 = 8 Doors & 18 RS-485 devices

8 Readers + 1 DM-20 = 4 Doors & 9 RS-485 devices

16 Readers + 2 DM-20 = 8 Doors & 18 RS-485 devices

2 RS-485
Reader per door

DM20

DM20

DM20

DM20

DM20

DM20

DM20
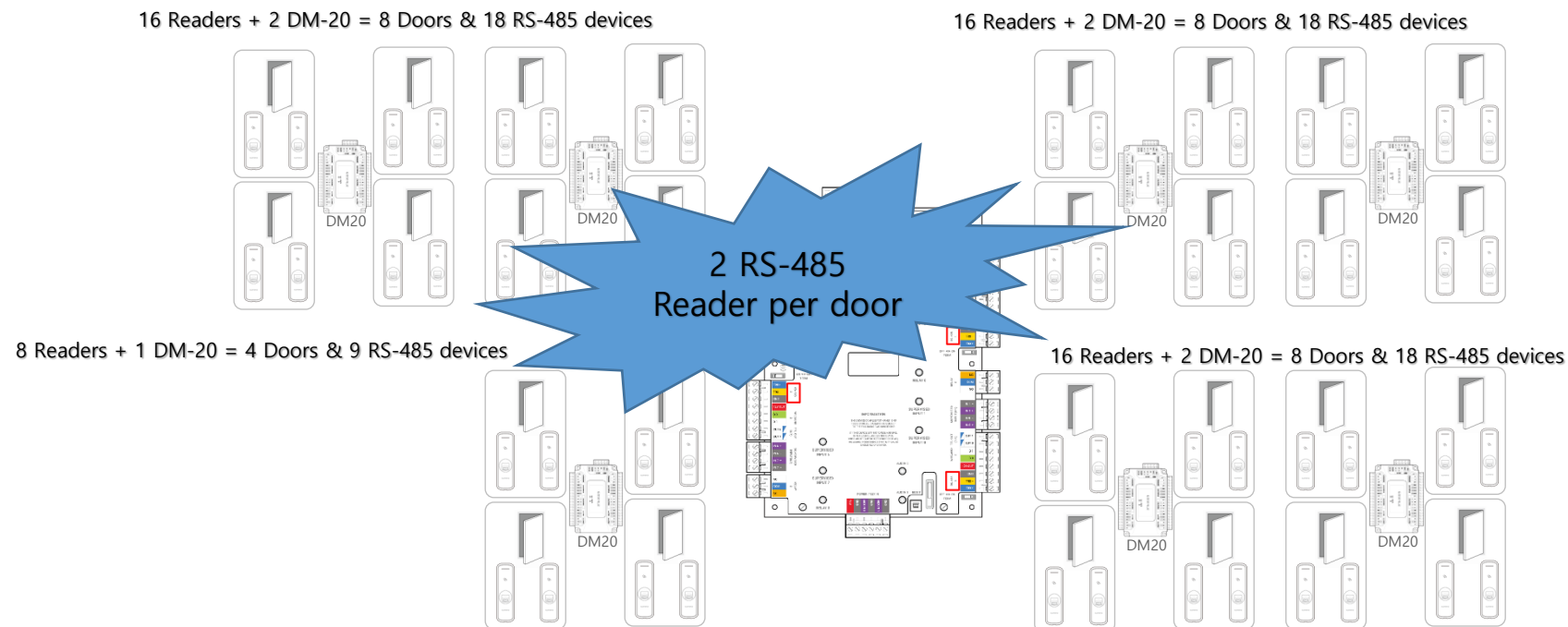
8 + 8 + 8 + 4 = **28** Doors with 2 reader per door

63 RS-485 devices

8 Door Setup with DM20 & Corestation

suprema
BIOMETRICS & SECURITY
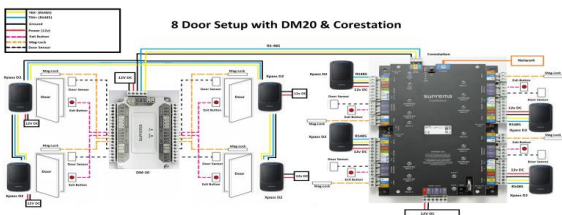
BREAK TIME

Door Configuration by Wiegand

CoreStation System – Configuration by Wiegand

✓ **4 Door Configuration**
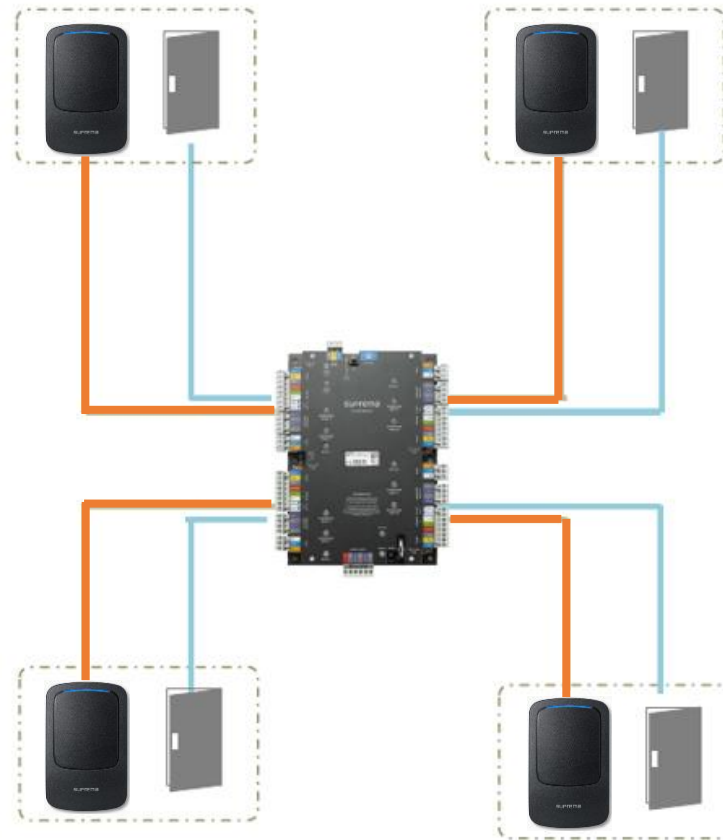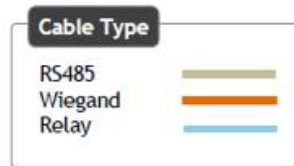
CoreStation System – Configuration by Wiegand

✓ **8 Door Configuration**
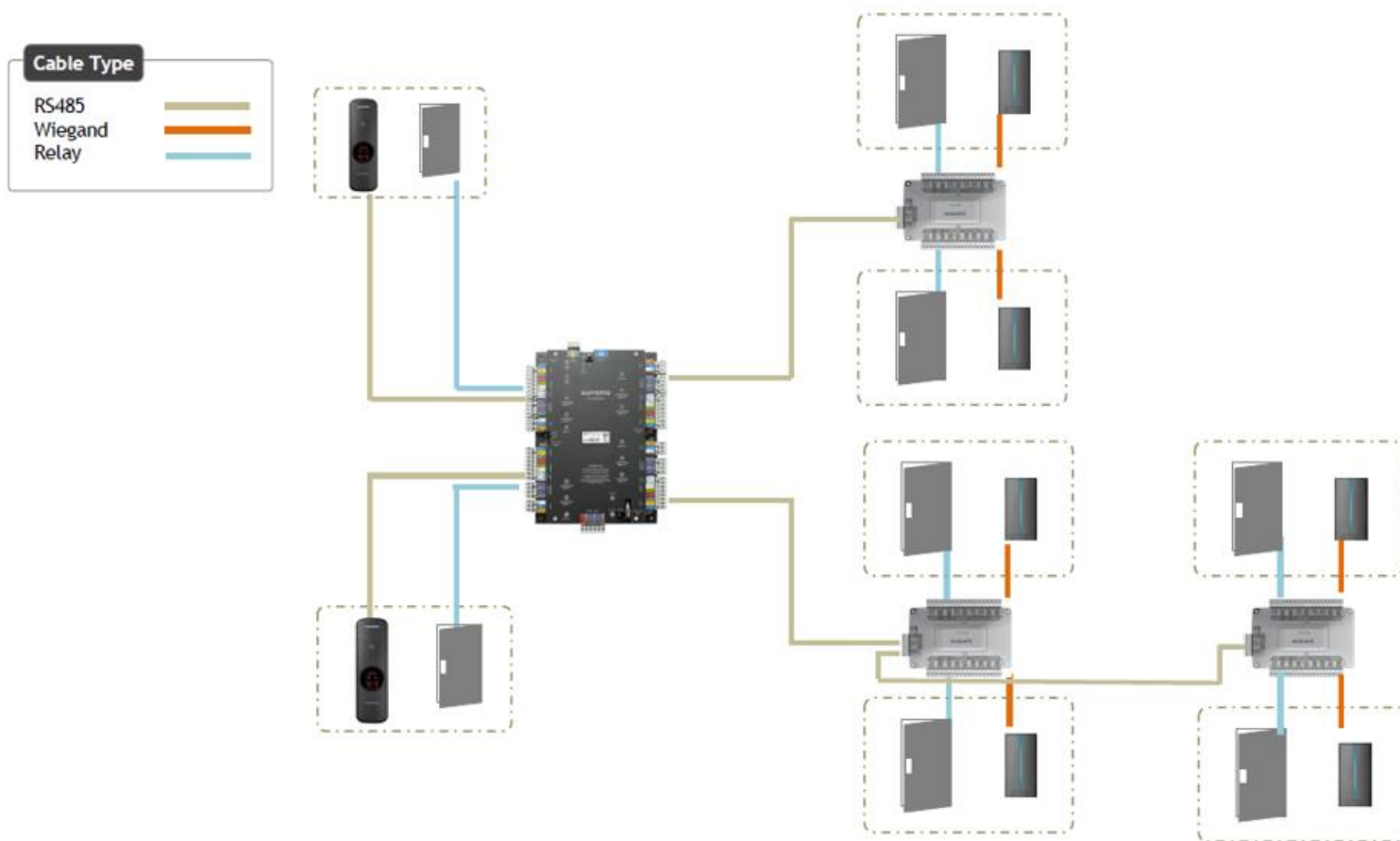
CoreStation System – Configuration by Wiegand

✓ **18 Door Configuration**
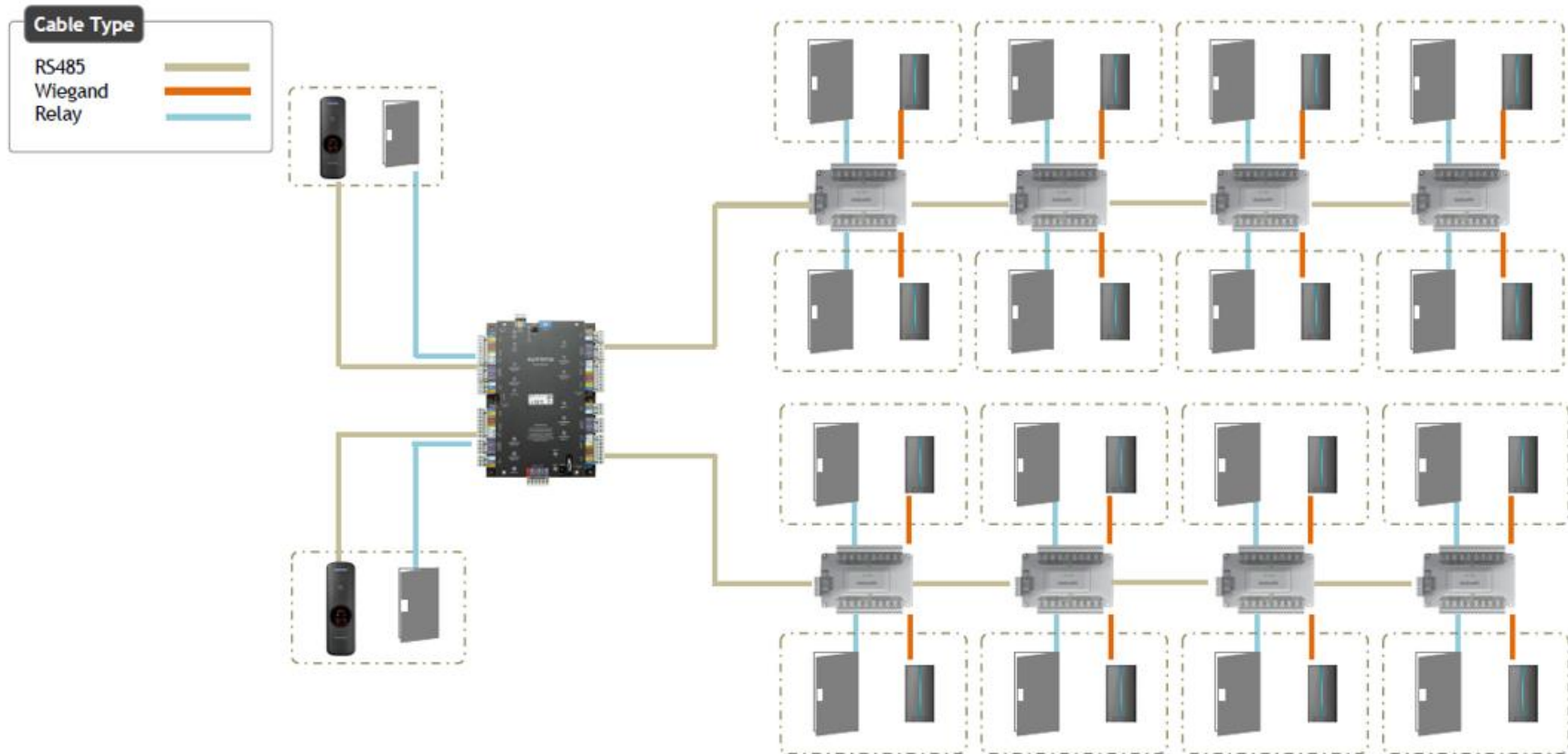
CoreStation System – Configuration by Wiegand

✓ **33 Door Configuration**
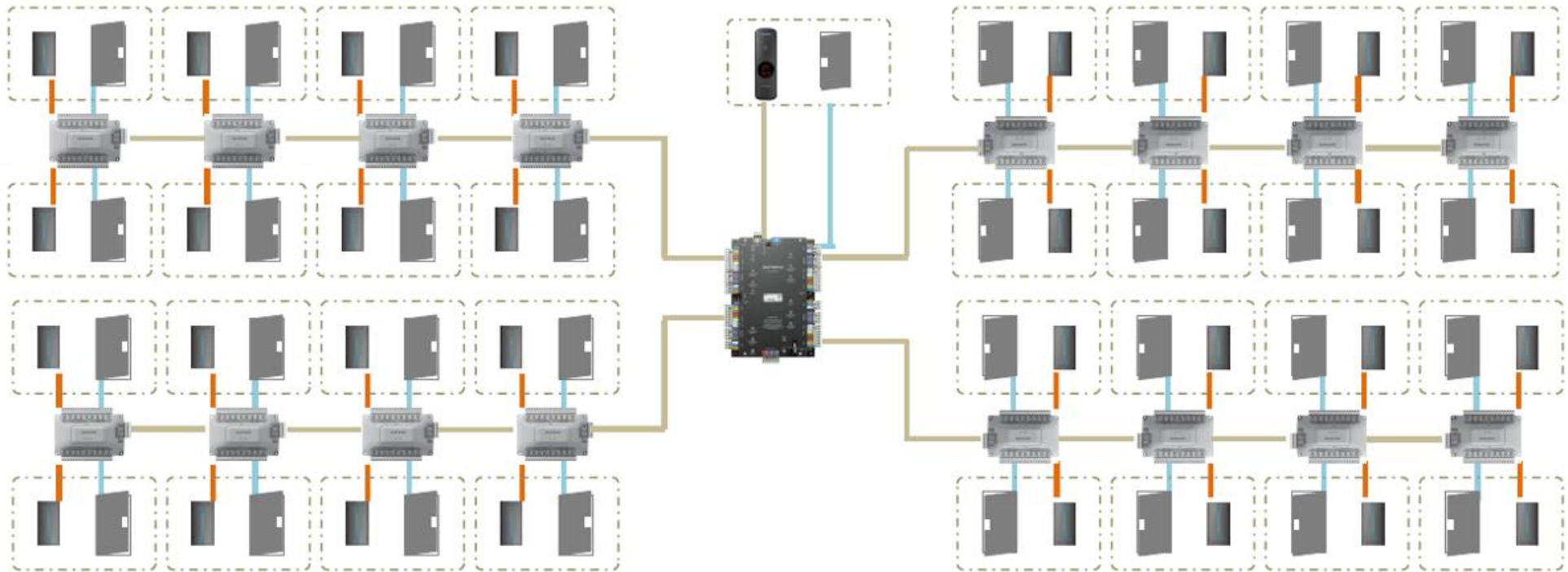
CoreStation System – Configuration by Wiegand

✓ **68 Door Configuration**
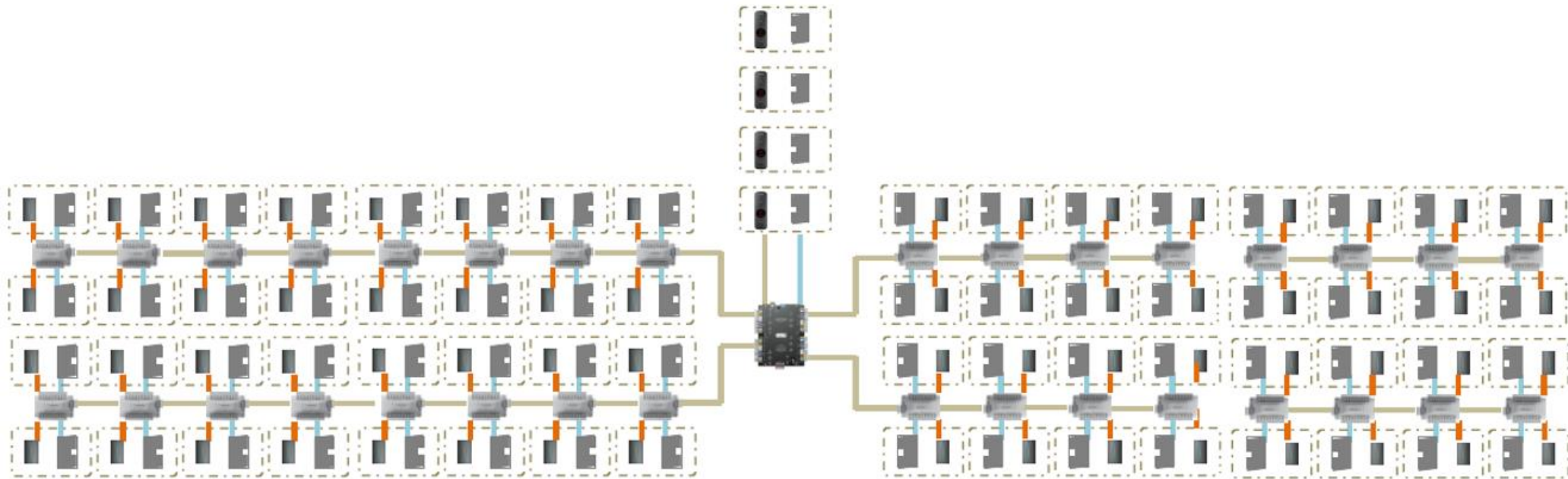
CoreStation System – Configuration by Wiegand

✓ **132 Door Configuration**

- 64 DM-20 slave devices can connect to CS40 by RS485
- Up to 132 Wiegand devices can connect to CS40
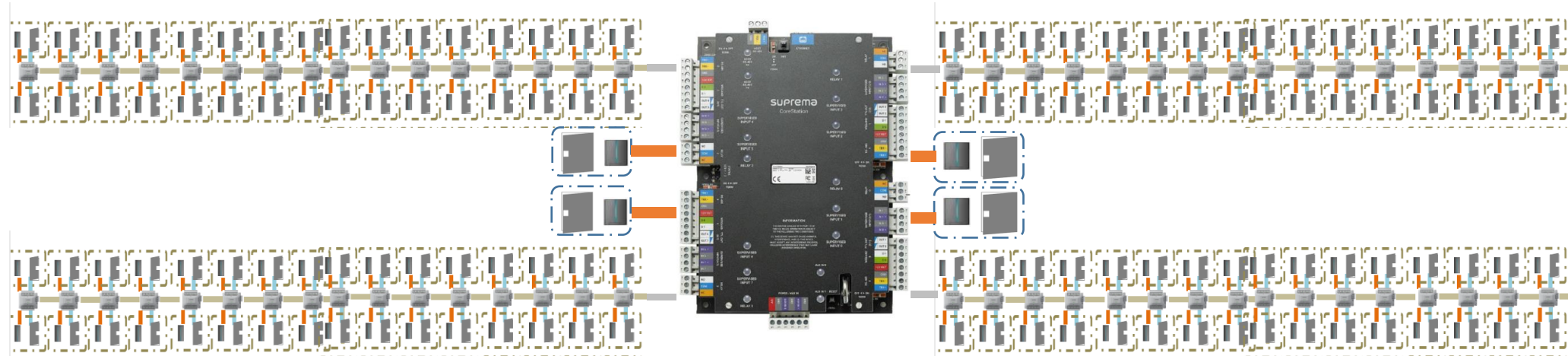
132 doors
by 1ea CS40

Ⅱ. How to Install A CoreStation System?

H/W Installation (Demo Video)

CoreStation H/W Installation

✓ **Caution**

The RS-485 transmission system requires **AWG 24 twisted-pair** cables for best results, to maximize its noise rejection characteristics. The characteristic impedance of the cable is recommended to be 120 ohms.

Terminating resistance (120ohm)

CoreStation Terminating resistance switch ON
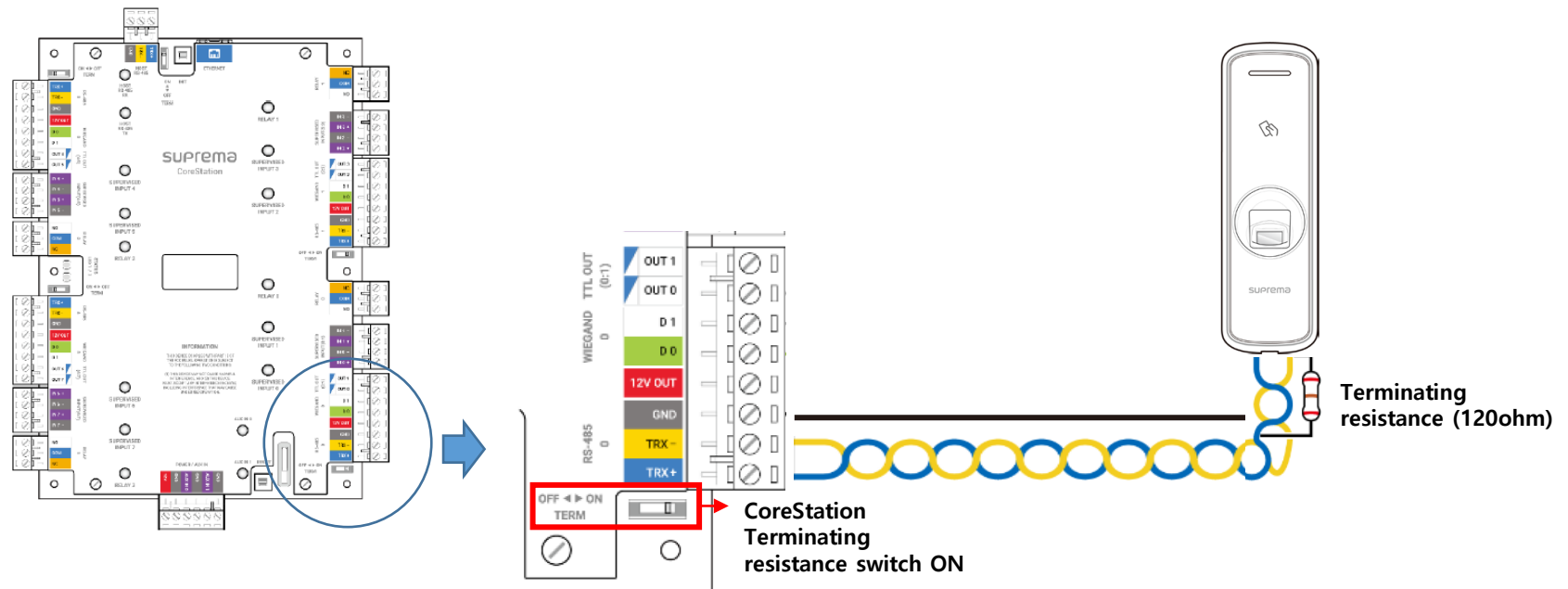
CoreStation H/W Installation

✓ **Caution**

How to connect RS485 cables by daisy chain in correct way?

Correct daisy chain

Not a proper daisy chain
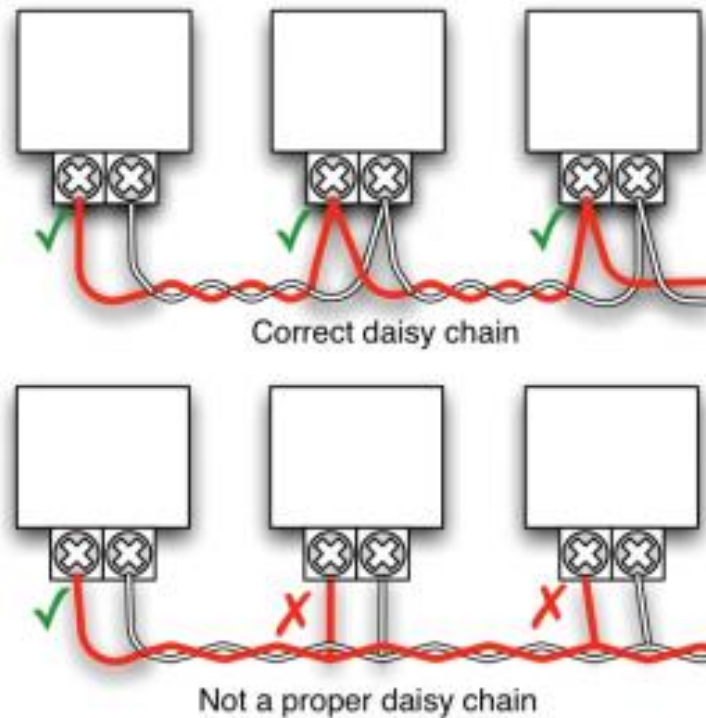
CoreStation Network Setting

How to install CoreStation System

✓ **CoreStation network setting by SETUP Manager**

You can configure CoreStation network setting by connecting CoreStation to PC directly without requiring connection to the central software.

1 : 1 Ethernet Connection
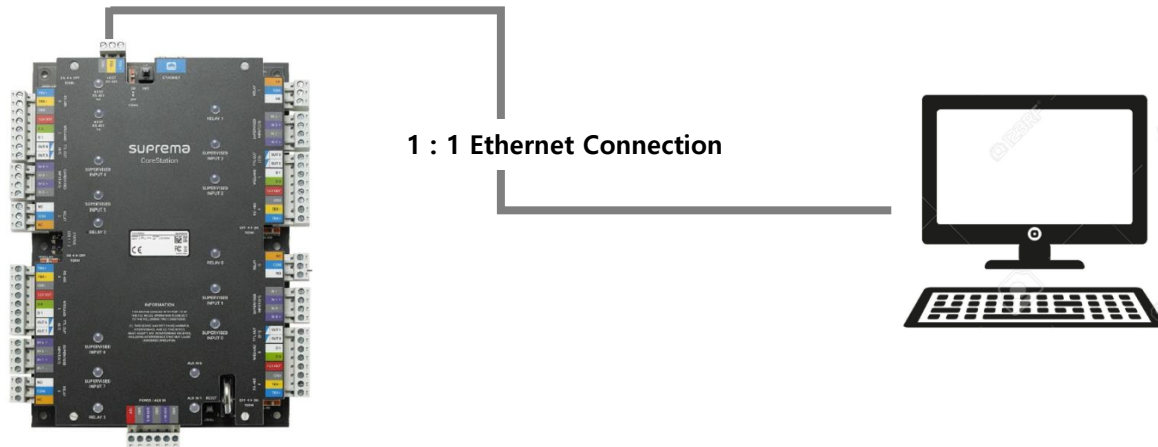
How to install A CoreStation System

✓ **CoreStation network setting by SETUP Manager**

CoreStation SETUP Manager (Demo Video)

https://www.youtube.com/watch?v=6Q8IxUXsA0M&t=6s

How to install A CoreStation System

✓ **CoreStation SETUP Manager**

> ➢ Easily manage network settings

> ➢ Test salve device connections

> ➢ Check status of inputs and outputs

> ➢ Easy to find controller even network broadcasts cannot find it

It saves a lot of time for installer in first stage of software.

Ⅲ. How to sell A CoreStation System?

Unique Sales Propositions

Scalability
- Suitable for small to enterprise system
- Flexible architecture allows the most cost-effective solution
- Easy to update software from SMB to Enterprise system.

Flexibility
- Support all type of credentials (Card, Biometrics, Mobile)
- Compatible with all standard readers
- Stores up to 500,000 users
- Open Platform for 3rd party integration (Milestone, HR System, SIP, PSIM etc.)

Secure
- Secure biometric data protection (Encrypted by 256bit AES)
- Secure communication between CS-40 and central server (TLS 1.2 including SSL/HTTPS)
- GDPR Compliance

User Friendly
- Easy setup and configuration via webserver and App
- Easily accessible by client without software installation
- Automatic f/w update notice
- Easy overview of system status by dashboard
- Event reporting by e-mail
- Time & Attendance / Visitor management

Scalability

- **Suitable for small to enterprise system**
- **Easy to update software from SMB to Enterprise system**
- **Flexible architecture allows the most cost-effective solution**

Sales Strategy

Scalability

- **Suitable for small to enterprise system**

Scalable from 1 door to 132 doors

| 1 door | 4 door | 16 door | 64 door | 132 door |
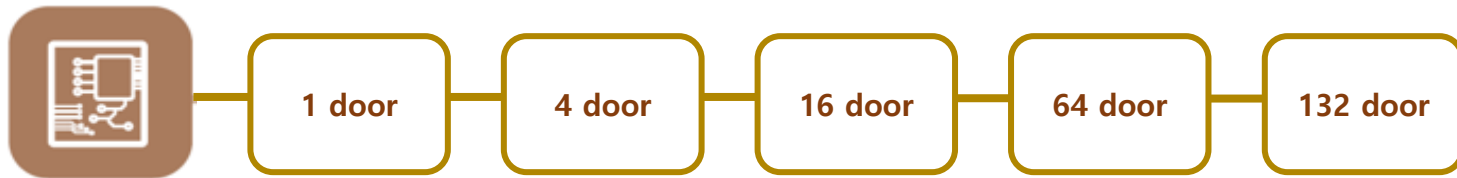
Sales Strategy

Scalability

- **Easy to update software from SMB to Enterprise system**

Easy to add advanced features

| | Basic | Standard | Advanced | Professional | Enterprise |

Sales Strategy

⬀ Scalability

- **Flexible architecture allows the most cost-effective solution –> Suprema 4 DOOR ACCESS CONTROL PACKAGE for SMB Market**

	Component
CS40-KIT-1	CS40(1ea) / XPD2-MDB(4ea)
CS40-KIT-2	CS40(1ea) / XPD2-GDB(4ea)
CS40-KIT-3	CS40(1ea) / XPD2-GKDB(4ea)
CS40-KIT-4	CS40(1ea) / BER2-OD(4ea)

✓ The cost per door is competitive

Flexibility

- Support all type of credentials (Card, Biometrics, Mobile)
- Compatible with all standard readers
- Stores up to 500,000 users
- Open Platform for 3rd party integration (Milestone, HR System, SIP, PSIM etc.)

Sales Strategy

Flexibility

- **Support all type of credentials (Card, Biometrics, Mobile)**

Fingerprint

Card

Face(June)

Mobile(April)
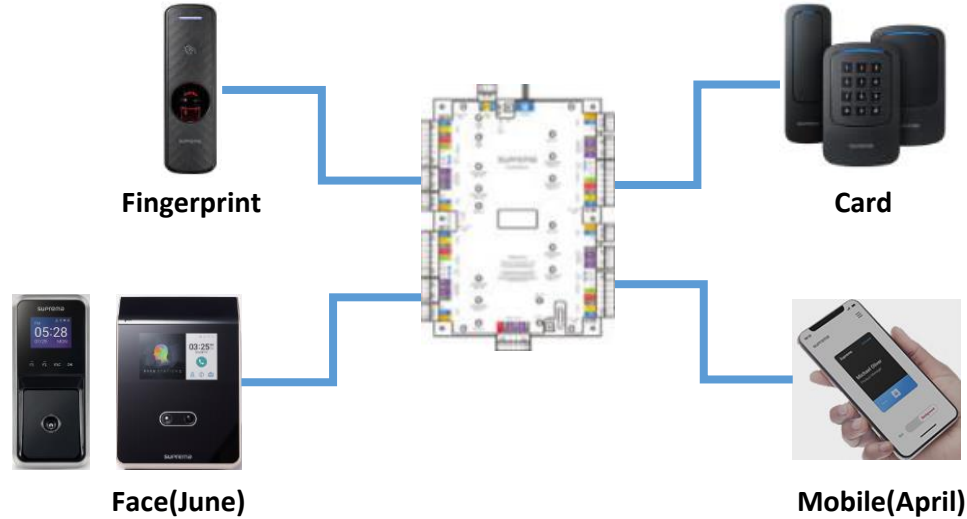
Sales Strategy

Flexibility ▪ **Support all type of credentials (Card, Biometrics, Mobile)**

Sales Strategy

Flexibility

- **Compatible with all standard readers**
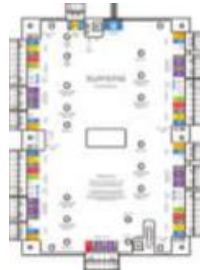
3rd party

125kHz EM/Prox & 13.56MHz MIFARE, MIFARE Plus, DESFire/EV1, Felica

Sales Strategy

Flexibility

- **Open Platform for 3rd party integration -**

- With Professional license or higher

1. Install BioStar 2

2. Configure BioStar 2

3. Install Milestone Xprotect VMS

4. Install BioStar2 Integration For Milestone XProtect

5. Use Xprotect Smart Client

- Enroll the users
- Register the devices
- Create the doors
- Create the zones
- Configure the elevators
- Configure the alarm

- AC Plugin for BioStar2
- Workspace Plugin for BioStar 2

SUPREMA
SECURITY & BIOMETRICS

Sales Strategy

Flexibility

- **Open Platform for 3rd party integration**

- **Name**: Enter the desired name of the plug-in.
- **Integration plug-in**: Select **BioStar 2 Server** from the list.
- **Address**: IP address of BioStar 2 server.
- **User**: Enter the login ID for BioStar 2.
- **Password**: Enter the password for BioStar 2.

Sales Strategy

Secure

- Secure communication between software and CS40(TLS 1.2)
- Secure biometric data protection (Encrypted line security 128bit for RS485 OSDP)
- UL 294 / GDPR Compliance

UL 294 (Targeting in 3Q)

Sales Strategy
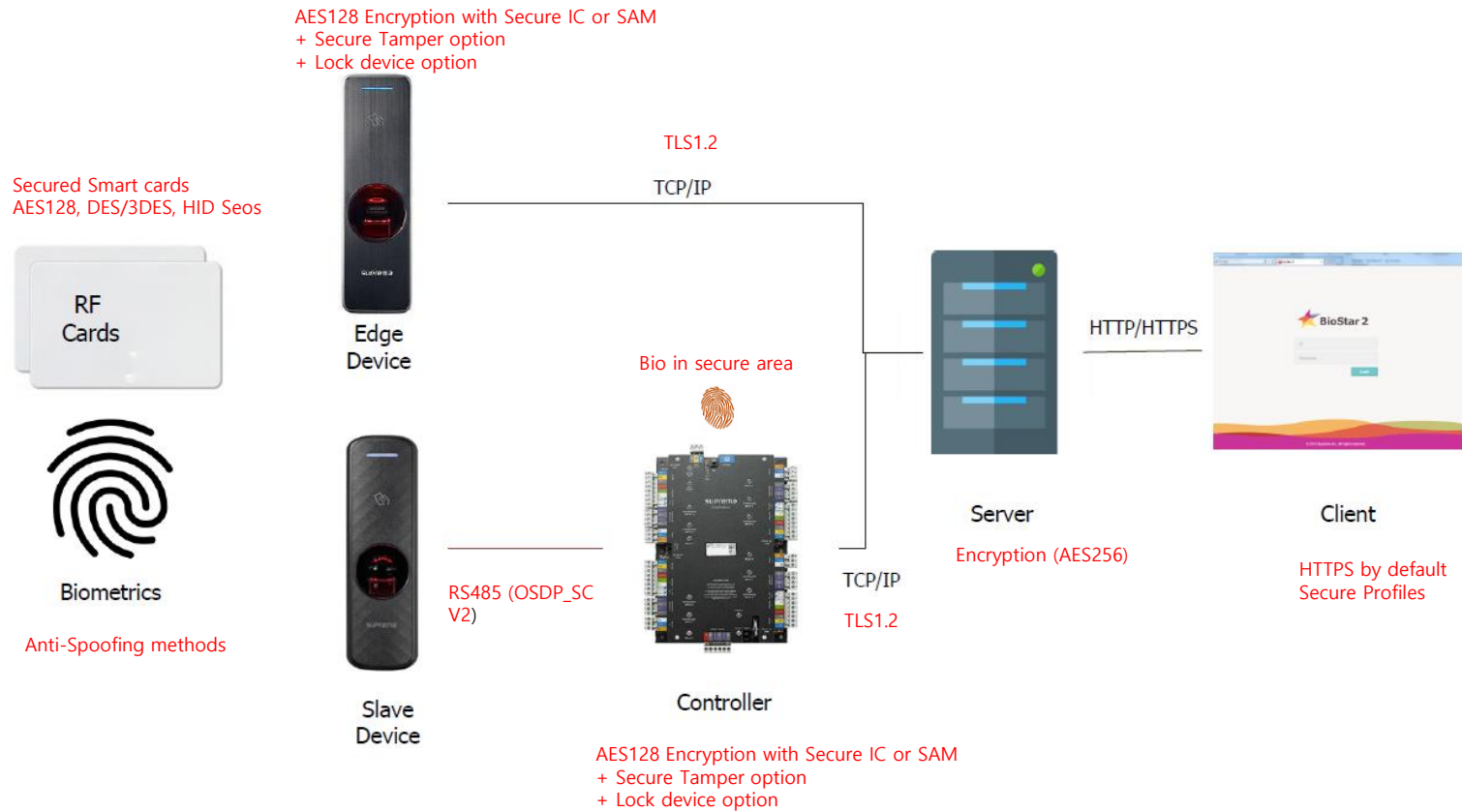
Secure

Secured Smart cards
AES128, DES/3DES, HID Seos

RF
Cards

Biometrics

Anti-Spoofing methods

AES128 Encryption with Secure IC or SAM
+ Secure Tamper option
+ Lock device option

Edge
Device

Slave
Device

RS485 (OSDP_SC
V2)

TLS1.2

TCP/IP

Bio in secure area

Controller

AES128 Encryption with Secure IC or SAM
+ Secure Tamper option
+ Lock device option

TCP/IP

TLS1.2

Server

Encryption (AES256)

HTTP/HTTPS

BioStar 2

Client

HTTPS by default
Secure Profiles

Sales Strategy

User Friendly

- **Easy setup and configuration via webserver and App**
- **Easily accessible by client**
- **Automatic f/w update notice**
- **Easy overview of system status by dashboard**
- **Event reporting by e-mail**
- **Time & Attendance / Visitor management**
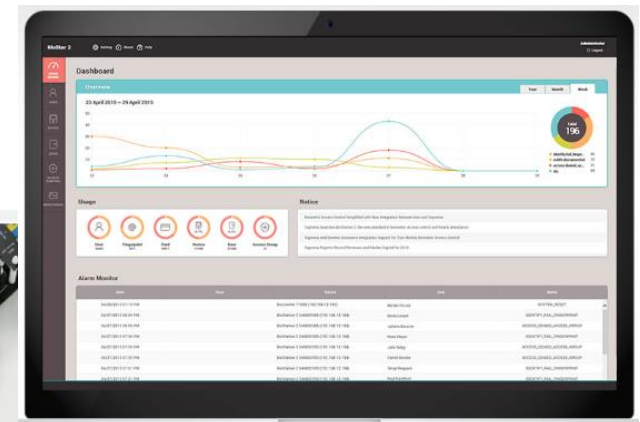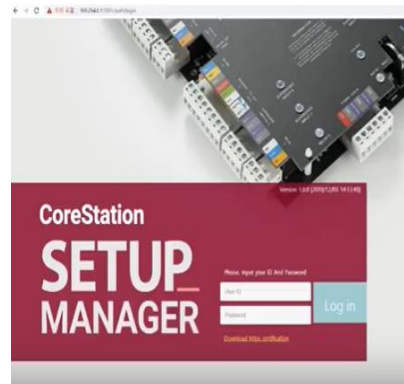
IV. Case Study

https://www.supremainc.com/uploadfiles/Marketing_Materials/20200120111425875.pdf

CoreStation Demo Kit

CoreStation
DM-20
BioEntry R2
XPass D2

Suprema Inc.

17F Parkview Tower, 248, Jeongjail-ro, Bundang- gu, Seongnam-si, Gyeonggi-do, 13554, Rep. of KOREA
Tel: +82 31 783 4502 | Fax: +82 31 783 4503 | Inquiry: sales_sys@supremainc.com

For more information about Suprema's global branch offices, visit the webpage below by scanning the QR code.
https://www.supremainc.com/en/about/contact-us.asp

suprema

Components

CoreStation Demo Kit Box

CoreStation Demo Kit Wiring Guide | LED Light Bar | Plastic Mold Bar

NOTE
- Refer to the Installation Guide for each product for instructions on installing and wiring CoreStation, DM-20, BioEntry R2, XPass D2.
- Components are subject to change without notice.

Demensions

(Unit: mm)

50
320
370

330
100
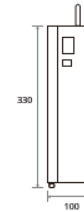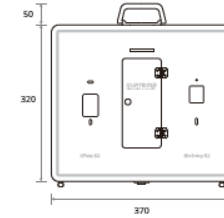
Components: CoreStation

Fixing Screw x12 | Spacer x6
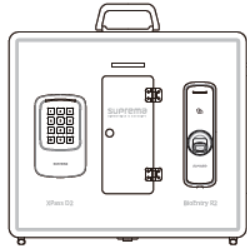
CoreStation

Quick Guide | Open Source Software Guide

Components: DM-20
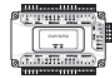
DM-20 | PVC Anchor x4 | Wall Fixing Screw x4

Bracket | 120 Ω resistor | Diode x2

Support Boss x4

Components: BioEntry R2

BioEntry R2 | Wall Bracket | Drilling Template
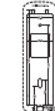
Connection Cables (2-pin, 4-pin) | Ferrite Core

120 Ω resistor | Diode | Wall Fixing Screw x2

PVC Anchor x2 | Quick Guide | Open Source Software Guide

Components: XPass D2

XPass D2 | Wall Bracket | Drilling Template

PVC Anchor x2 | Wall Fixing Screw x2 | Bracket Fixing Screw (Star Shaped) | 120 Ω resistor

Shrink Tube | Quick Guide | Open Source Software Guide

SUPREMA
SECURITY & BIOMETRICS

Name of each part: Outside

Front

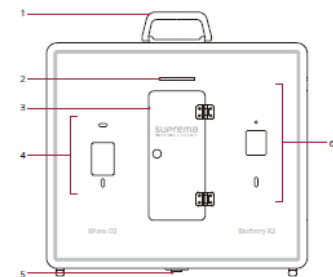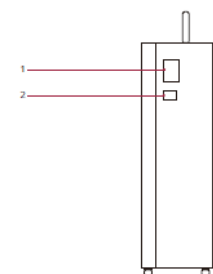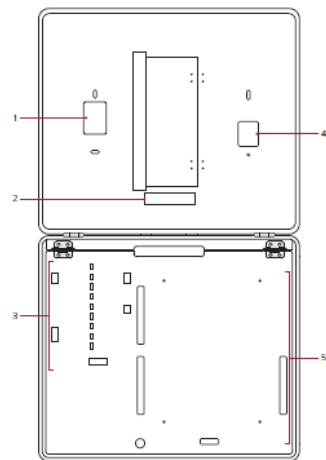| No.	Name	Description
1	Handle	The handle can be used to carry the demo kit. Make sure the demo kit is locked when moving.
2	LED Indicator	If authentication is successful, the LED indicator lights up.
3	Door	If authentication is successful, the door will unlock and open.
4	XPass D2 Mounting Area	Mount the XPass D2 bracket on the Demo kit using the fixing screws. Insert the cable of the XPass D2 into the cable hole and mount the XPass D2 to the bracket.
5	Lock	Lock the demo kit.
6	BioEntry R2 Mounting Area	Mount the BioEntry R2 bracket on the Demo kit using the fixing screws. Insert the cable of the BioEntry R2 into the cable hole and mount the BioEntry R2 to the bracket.

Right side

No.	Name
1	Power Cable Hole
2	Ethernet Cable Hole

Name of each part: Inside

| No.	Name	Description
1	XPass D2 Cable Hole	Cables on the outside mounted XPass D2 can be pulled in through this hole.
2	LED Light Bar Adhesion Area	Attach the LED light bar to this area using double-sided tape.
3	DM-20 Mounting Area	Mount the DM-20 bracket on this area using the fixing screws. Insert the cable of the DM-20 into the cable hole and mount the DM-20 to the bracket.
4	BioEntry R2 Cable Hole	Cables on the outside mounted BioEntry R2 can be pulled in through this hole.
5	CoreStation Mounting Area	Mount the CoreStation on this area using the fixing screws and spacers.

CoreStation SETUP Manager

CoreStation SETUP Manager is a program that allows users to connect CoreStation to the PC directly to view or manage the network settings of CoreStation and monitor the status of slave devices, input and output ports, and Wiegand ports.

1. Connect CoreStation to the PC with an Ethernet cable.

2. Enter **https://169.254.0.1:3001** in the address input field of the web browser to access the CoreStation SETUP Manager.

NOTE

- CoreStation SETUP Manager is supported with CoreStation firmware version 1.3.1 or later.
- For more information on connecting and configuring the CoreStation SETUP Manager, refer to the user guide. You can download the user guide from the Suprema website (www.supremainc.com).

Wiring Guide
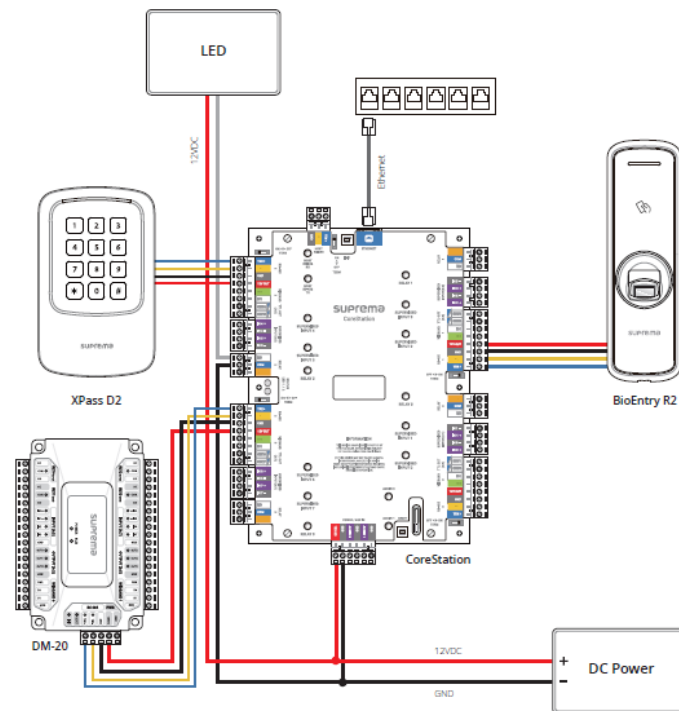
NOTE

- Use the correct power specifications (12V DC, 3A).
- Use an AWG24 twisted pair with a maximum length of 1.2 km for the RS-485 cable.
- Connect terminating resistance (120 Ω) to both ends of the RS-485 daisy chain connection. If connected to the middle line, the signal level will weaken and the communication performance will deteriorate. Make sure to connect it to both ends of the daisy chain connection. Set the termination switch(TERM) to ON for CoreStation.
- When wiring the LED light bar, connect NO relay as shown in the figure above.
- Neatly organize the cables of the readers and DM-20 with aluminum mold bars.

Thank you!