

# Terminology and Specification

## 1. Device type and abbreviations

Building Door Station (BDS)

*Doors stations only works for one building.*

Indoor Monitor (IM)

*Indoor monitors inside building*

Guard Unit (GL)

*Guard unit call all monitors or be called*

Out Door Station (OS)

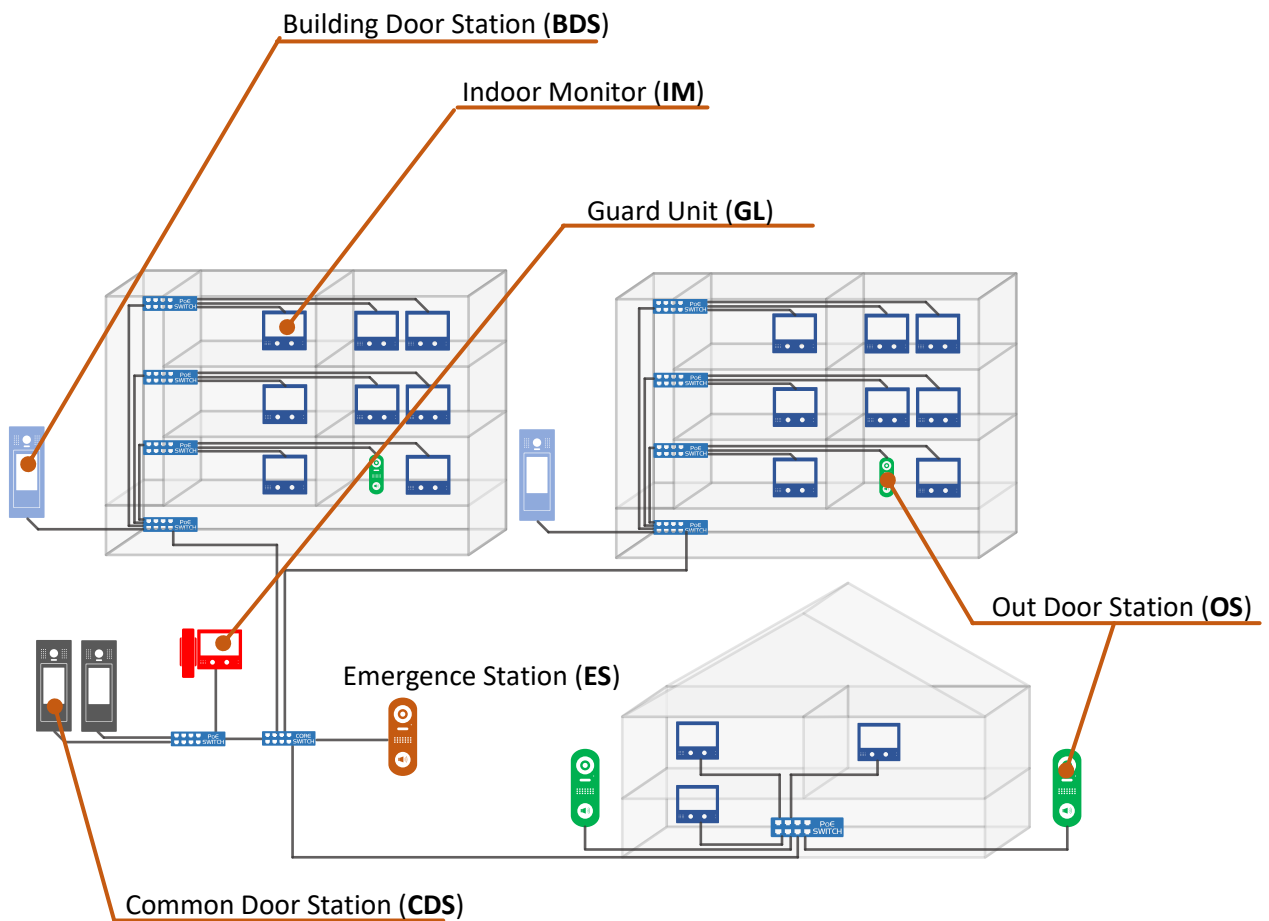
*Door station belong to each room, as slave device of master monitor.*

Common Door Station (CDS)

*Door stations could Call to all buildings.*

Emergence Station (ES)

As below:



## 2. System Type

Villa system for single family (**VS**)

*Single villa intercom, for only one room/ family.*

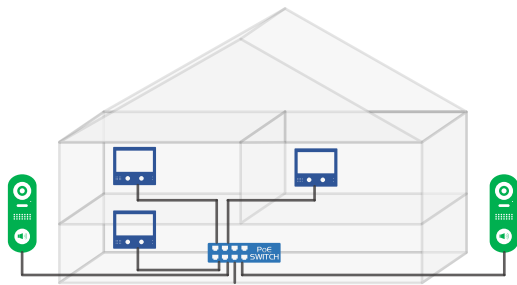
Standalone apartment system (**SS**)

*Standalone building, no other buildings, monitor all in same building*

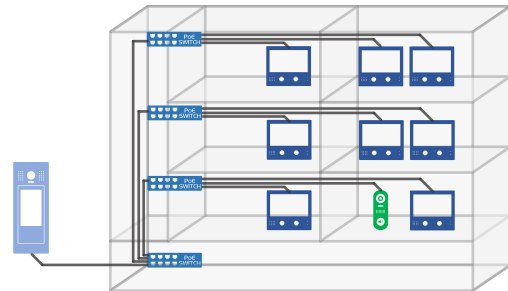
Networked system (**NS**)

*Multi buildings or blocks, complex intercom.*

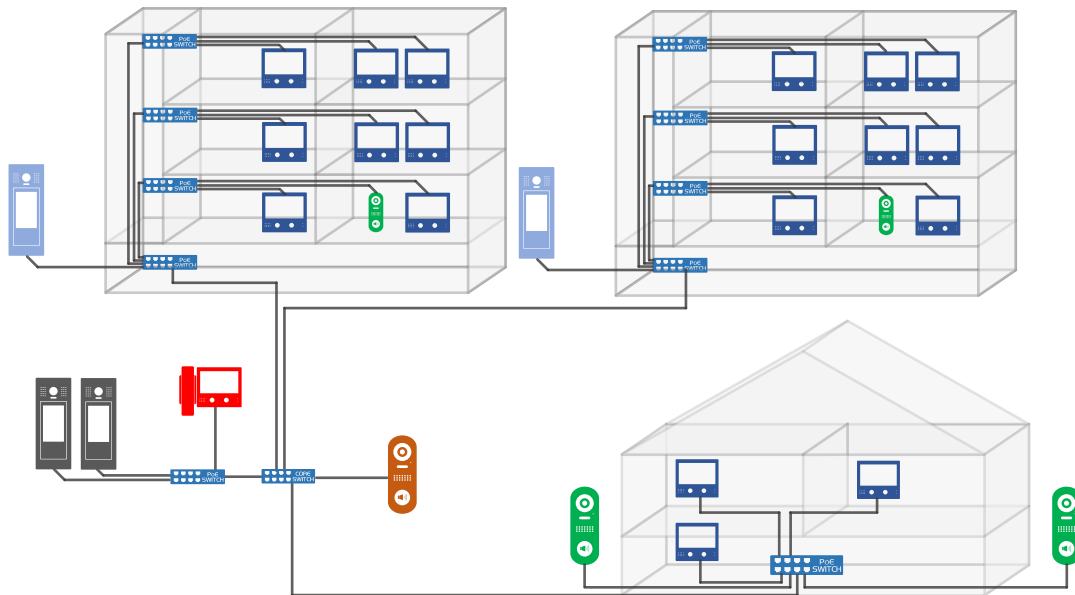
As below:



Villa system for single family (**VS**)

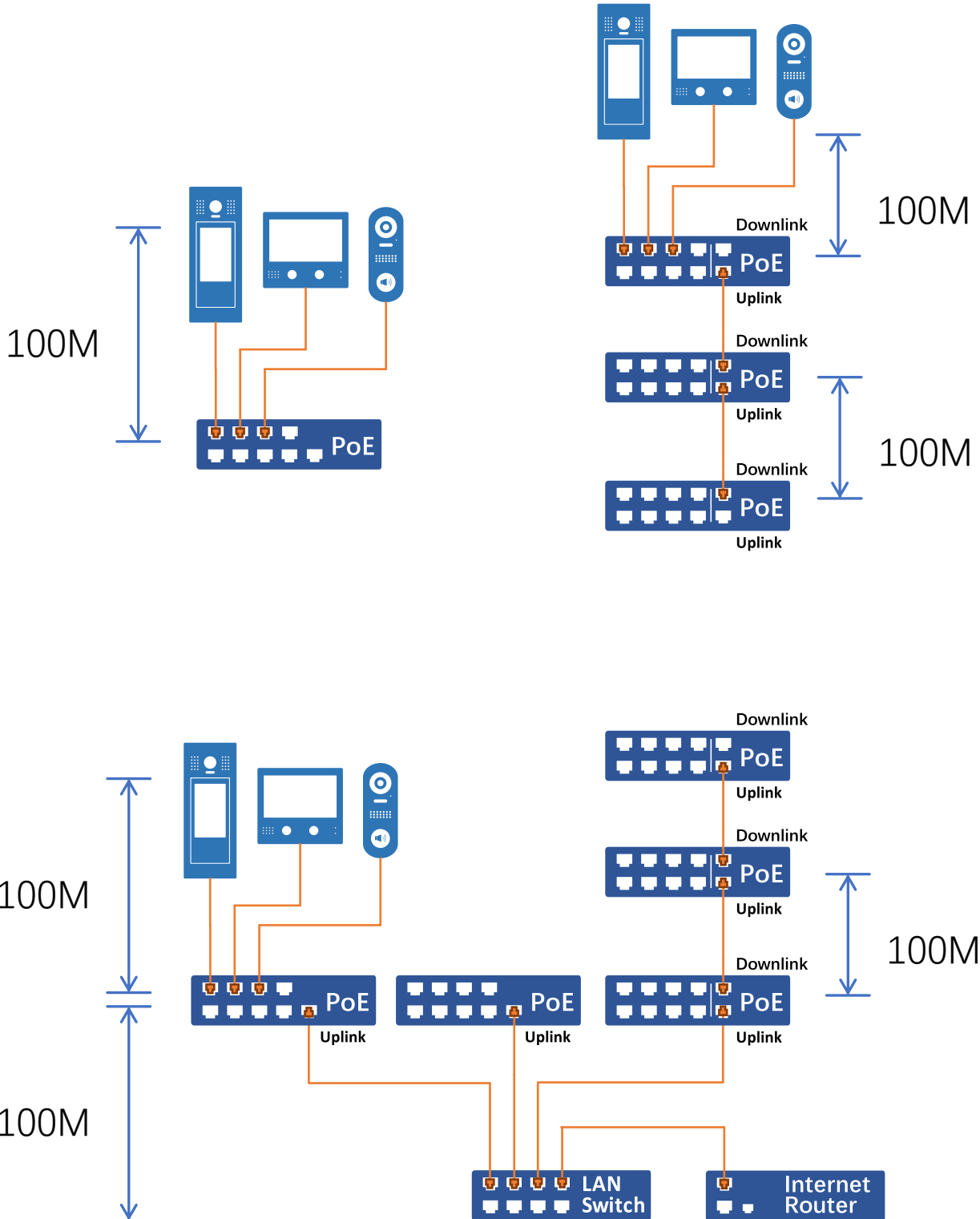


Standalone apartment system (**SS**)



Networked system (**NS**)

### 3. Basic network topology and wiring



## 4. Capacity and Network Device Limits

### a. Capacity

#### Villa system for single family (VS)

---

Master Monitor:	1, IM (1)
Slave Monitor:	31, IM (2~31)
Outdoor Stations:	32, OS (1~32)

---

#### Standalone apartment system (SS)

---

Door Stations:	48, DS (1~48)
Guard Units:	48, GL (1~48)
Monitor Users:	9800 addressable numbers, IM (1~9800)
Virtual Users:	Max. 1000
External Units:	same as VS system type

---

#### Networked system (NS)

---

Common Door Stations:	MAX.48, CDS (1~48)
Common Guard Units	MAX.48, CGL (1~48)
Building interconnected	1999 (addressable numbers 1~1999)

---

### b. Physical Network structure limited

#### 1. System with simple Layer-2 Switch

##### Total Device less than 128pcs

Not require switch VLAN enable, intercom all available.

##### Total Device from 129~512

Enable switch VLAN(4port), Intercom among monitors will be disable.

##### Total Device from 513~1024

Enable switch VLAN(8port), Intercom among monitors will be disable.

#### 2. By using 3-Layer Router and VLAN

**Device Total in Each VLAN (VLAN on Layer-3 switch): Max. 128**

**Device Total: Max. 32,512 (VLAN < 254)**

Layer-3 Router/Switch must be used as core switcher, intercom all available.

## 5. Network device requirements

### a. Network Requirements Summary

A network design can be as simple as a single PoE switch or as complicated as utilizing multiple switches, depends on system capacity and locations.

Multicasts are capable of being routed, but are not routed by default on any typical Layer 3 switch or router. Multicast packets can be routed using PIM (Protocol Independent Multicast).

#### 1. POE switch requirement:

Class 0 PoE connection is required

UP link port、 VLAN option (depends on network structure)

#### 2. Cable requirement:

Qualified Cat5E / Cat6, all copper wires

Each cable length should be less than 100m

### 1.1 Ports Using in 2Easy IX system

As below internet port are using in 2Easy\_IX system, please make sure those ports are open and not been block by network firewall.

Protocol	Ports	Notes
DHCP	68	DHCP client
DNS	53	DNS for email domain name lookup
HTTP	80	CGI commands (SIP/CGI protocol)
HTTPS	443	Embedded Web server
NTP	123	Network time
RTCP	20000 - 30000	Audio and Video
RTP	20000 - 30000	Audio and Video
RTSP	10080	
SIP	5060	Default SIP port
TCP	8840~8849	System FW and resource remote upgrade
UDP	25000~25009, 28000~28100	System general communication

## 6. Specification

### PoE Switch

Power Source	Power-over-Ethernet (IEEE 802.3af Class 0)
LAN Interface	10 BASE-T / 100 BASE-TX Ethernet (RJ-45)
Network Protocols	TCP, UDP, SIP, DHCP, AUTOIP, TFTP, RTSP, RTP, RTCP, IGMP, MLD, NTP, DNS
Media codec	Audio, G.711; Video, H.264
Bandwidth Usage	Audio, 128Kbps; Video, 24Kbps ~ 8,192Kbps
Communication	Hands-free
Wire Type	Cat-5e or Cat-6
Wiring Distance	100m (Approx. 330')
Operating temperature	-10 to +50 (oC)

### IX610/IX850: DC7121

Camera	Type 1/3.7" Ultra Sense, ISP with 77dB WDR
Len angle	170 degree with Fisheye correction
Minimum illumination	5 lux

### IX610/IX850: NT99141

Camera	Type 1/4" CMOS
Len angle	90 degree
Minimum illumination	8 lux

### TFT Screen

TFT Screen (IX471)	7 inch, 800*480 resolution
TFT Screen (IX439)	4.3 inch, 480*272 resolution
TFT Screen (IX850)	5 inch, 480*800 resolution

### All door stations

Ingress Protection	IP65
Impact Protection	IK08