# Intercom Programming

Networking Basics.

Perry Chung
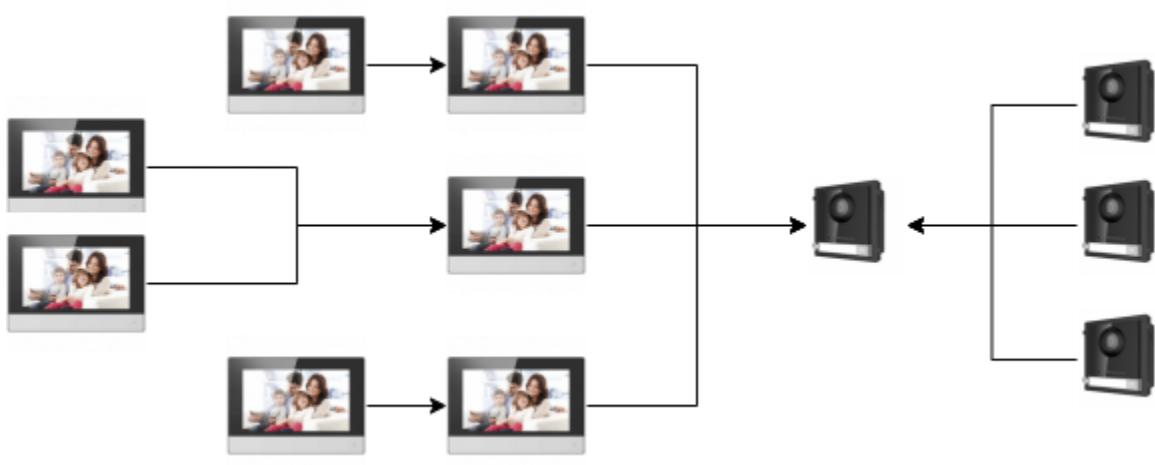
The Basics

Devices	Terminology
LTH-M201-C This is the camera module of our modular intercom system. Has a single button for calling and is capable of having other modules connect to it. 	**Main Door Station** The main door station is the door station that is set to manage all the communication within the intercom network **Sub Door Station** Extra door stations in an intercom system. Do not manage communications in any way. **Main Indoor Station** The indoor station which is programmed to have the room number. **Indoor Extension** Extra indoor stations inside each room that hold an extension number instead.
LTH-301M-WIFI Non modular door station. Has a single button as well as a built in Mifare card reader. 	
LTH-D301GY-WIFI Indoor station for our intercom system. Receives calls from door stations and can unlock doors. 	

Core System

The core of our intercom system is comprised of 1 Main Door Station and 1 Main Indoor Station. Every single intercom project **MUST** have at least these 2 devices.

Programming is done with the PC NVMS v3 software (Mac is not supported).

1. Assign an IP address to both devices using either NVMS v3 or IP Portal.
2. Add both devices into the Device Management within NVMS v3.

3. Access the remote configuration of the Indoor Station. Navigate to Intercom -> Linked Network Configuration and type in the IP address of your Main Door Station into the field for (Main) Door Station. Save after.
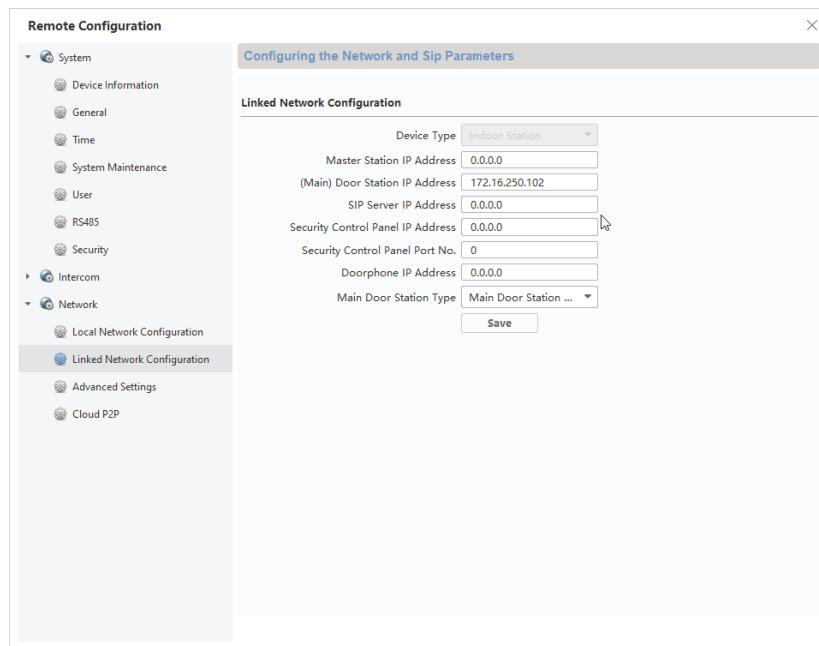

4. You're finished. Hitting the button on the main door station will call the indoor station now.

Expanded System

The intercom system can be expanded from the original core system by adding more Door Stations (up to 5) and/or more Indoor Stations (up to 500 total with room numbers and 5 more extensions for each room number). An example maximum size system is shown below.

500 total
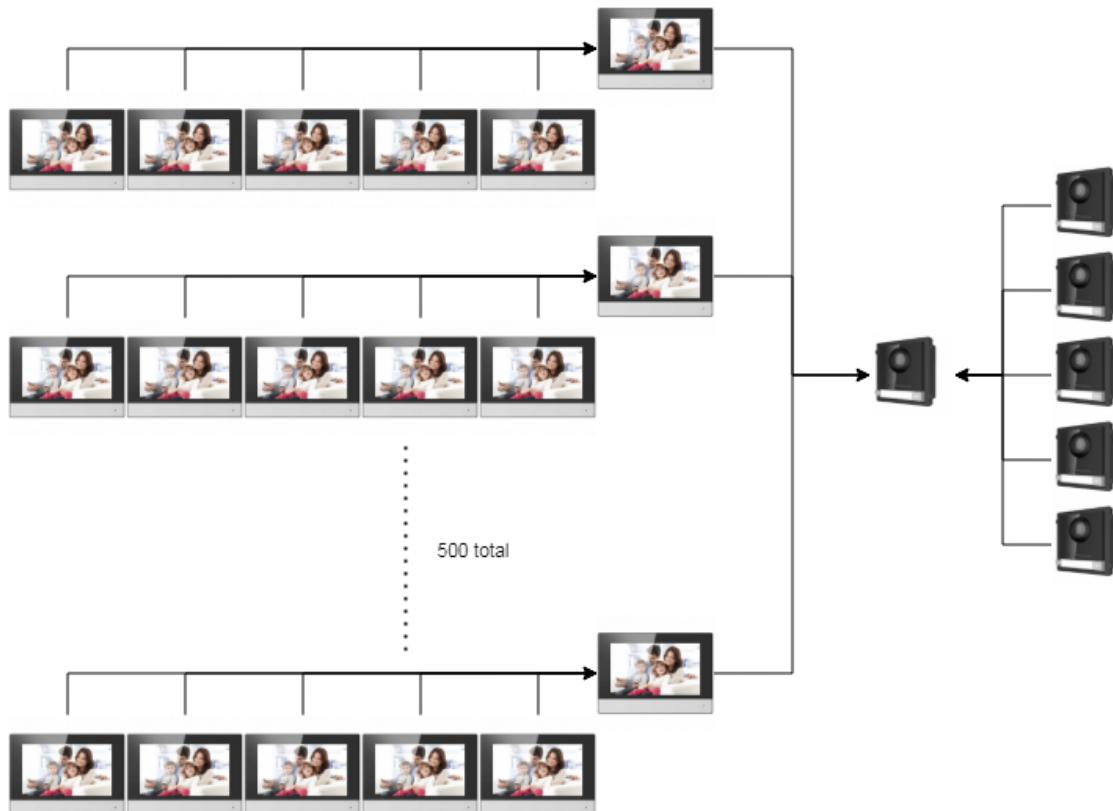
Sub Door Station

1. Assign an IP address on your extra door stations and add them into the NVMS v3 device management.

2. Access remote configuration for your device and navigate to Intercom -> ID Configuration. Assign an index number to your door station (numbers greater than 0 will change the working mode to sub door station mode) and save. You will be prompted to reboot the device, press ok and wait for your device to reboot.
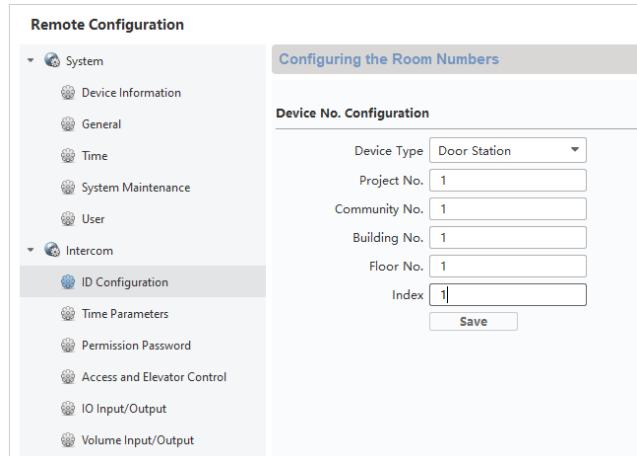
3. After your device finishes rebooting, access the remote configuration again. Navigate to Network -> Linked Network Configuration. Type in the IP address of the Main Door Station.
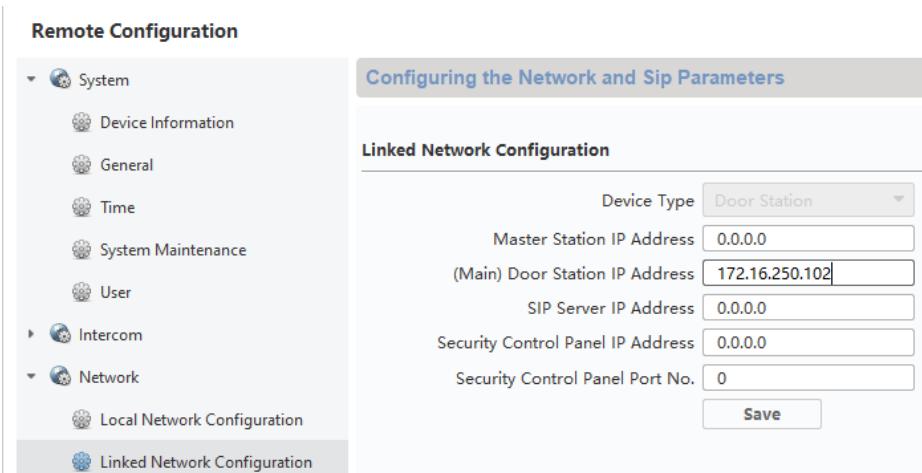
Sub Door Station Cont.

Now that the configuration is complete, here is a look at the current setup.

Device Type	Door Station ▼
Project No.	1
Community No.	1
Building No.	1
Floor No.	1
Index	0

Device Type	Door Station ▼
Project No.	1
Community No.	1
Building No.	1
Floor No.	1
Index	1

Device Type	Indoor Station ▼
Call No.	1
Floor No.	1

Save

Save

Save

IP: 172.16.250.101

IP: 172.16.250.102

IP: 172.16.250.103

Device Type	Indoor Station ▼
Master Station IP Address	0.0.0.0
(Main) Door Station IP Address	172.16.250.102
SIP Server IP Address	0.0.0.0
Security Control Panel IP Address	0.0.0.0
Security Control Panel Port No.	0
Doorphone IP Address	0.0.0.0
Main Door Station Type	Main Door Station ... ▼

Save

Device Type	Door Station ▼
Master Station IP Address	0.0.0.0
(Main) Door Station IP Address	172.16.250.102
SIP Server IP Address	0.0.0.0
Security Control Panel IP Address	0.0.0.0
Security Control Panel Port No.	0

Save

With this current system, pressing the button on either of the 2 door stations will call the single indoor station that we have on the network. The indoor station can speak to both door stations and unlock the doors as well.

Indoor Station

In the expanded system, we have the option for more indoor stations (D301-GY). And we have 2 different modes which these indoor stations can operate under.

1. Indoor Station mode. These extra stations will have a unique room number. From door stations go to a specific room number and only those stations and extensions associated will receive the call.
2. Indoor Extension mode. These stations do not have a room number, instead they have an extension number and are linked to the room number of their linked Indoor Station.

I'll now go through the 2 different possibilities and how they are programmed.

Indoor Station Mode

1. Assign an IP address to your extra indoor station and add it into the device management of your NVMS v3.
2. Go into the remote configuration of the Indoor Station and navigate to Intercom -> ID Configuration. Assign a new Call No. to your indoor station, remember that this must be unique amongst all your indoor stations. Save the information.
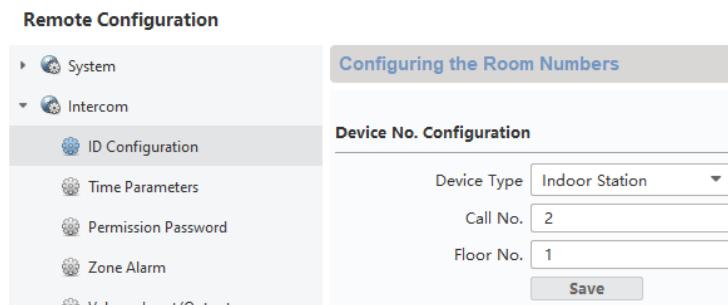
3. While still in remote configuration, now navigate to Network -> Linked Network Configuration. Put in the IP address of the Main Door Station into the (Main) Door Station field.

- Now this brings us to an interesting predicament. There is only a single button on each Door Station, but we must call 2 different indoor stations. There are solutions to this for a single

indoor station using our modular intercom, but for this setup I will have 1 door station call 1 indoor station and the other door station call the remaining indoor station.

4. Go into the remote configuration for your Sub Door Station. Navigate to Intercom -> Dial. Change the dial number to the same call number as in your second indoor station and save.
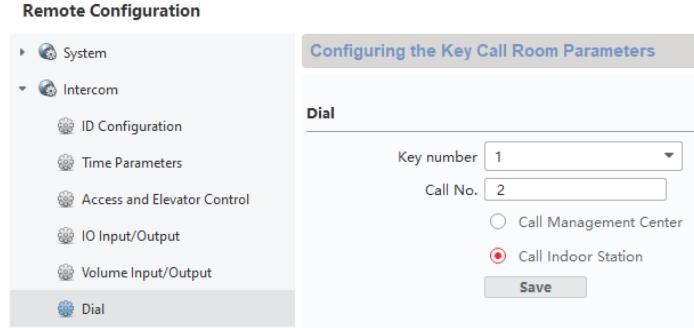
Now our system consists of 2 indoor stations with 2 different room numbers and 2 door stations that each call a different indoor station. System overview is shown below.
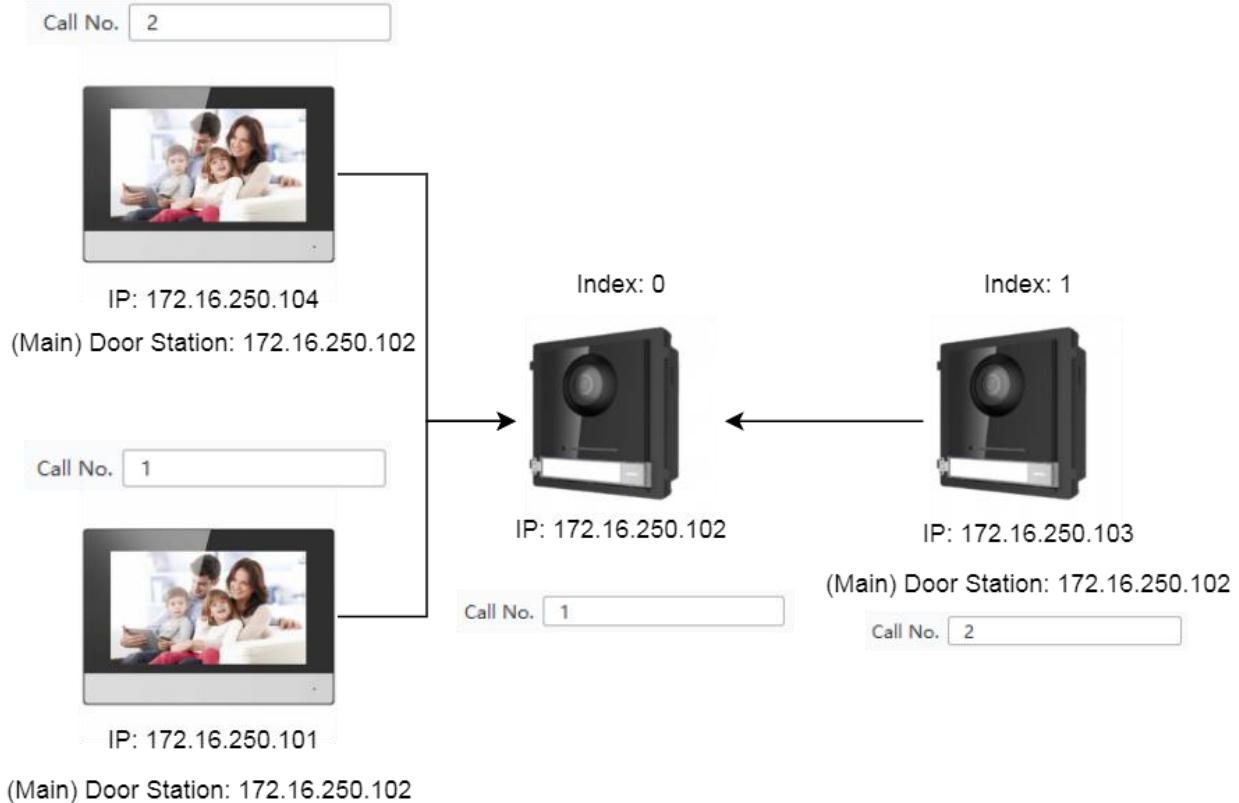
Indoor Extension

1. Assign an IP address to your extra indoor station and add it into the device management of your NVMS v3.
2. Go into the remote configuration of your second indoor station and navigate to Intercom -> ID Configuration. Change the mode of the system to Indoor Extension and set an extension number from 1 to 5. Save and it will prompt you to reboot. Click okay and wait for your device to finish rebooting.

3. After the reboot, access remote configuration again and navigate to Network -> Linked Network Configuration. For (Main) Indoor Station, type in the IP address of the Indoor Station with the room number that it should be connected to.

4. For our door stations, make sure that the dial buttons for both are still set to call 1.

Our system is now comprised of 1 Indoor Extension, 1 Indoor Station, 1 Door Station, and 1 Sub Door Station. This is the last configuration to learn to do and our current system is shown below.

Pushing the button on either the Main or Sub Door Station will ring both indoor stations at the exact same time.

Expanding Expanded Systems

All systems are the core system and any number of the expanded system programming that has been covered.

For example, if you wish to have 20 apartments with 1 indoor station each, simply repeat the indoor station programming 20 times over to account for all your rooms.

This concludes the networking and calling programming of our intercom system.