

# uPnP Service & Smart Home Application



**AddPac**

**AddPac Technology**

2014, Sales and Marketing

[www.addpac.com](http://www.addpac.com)

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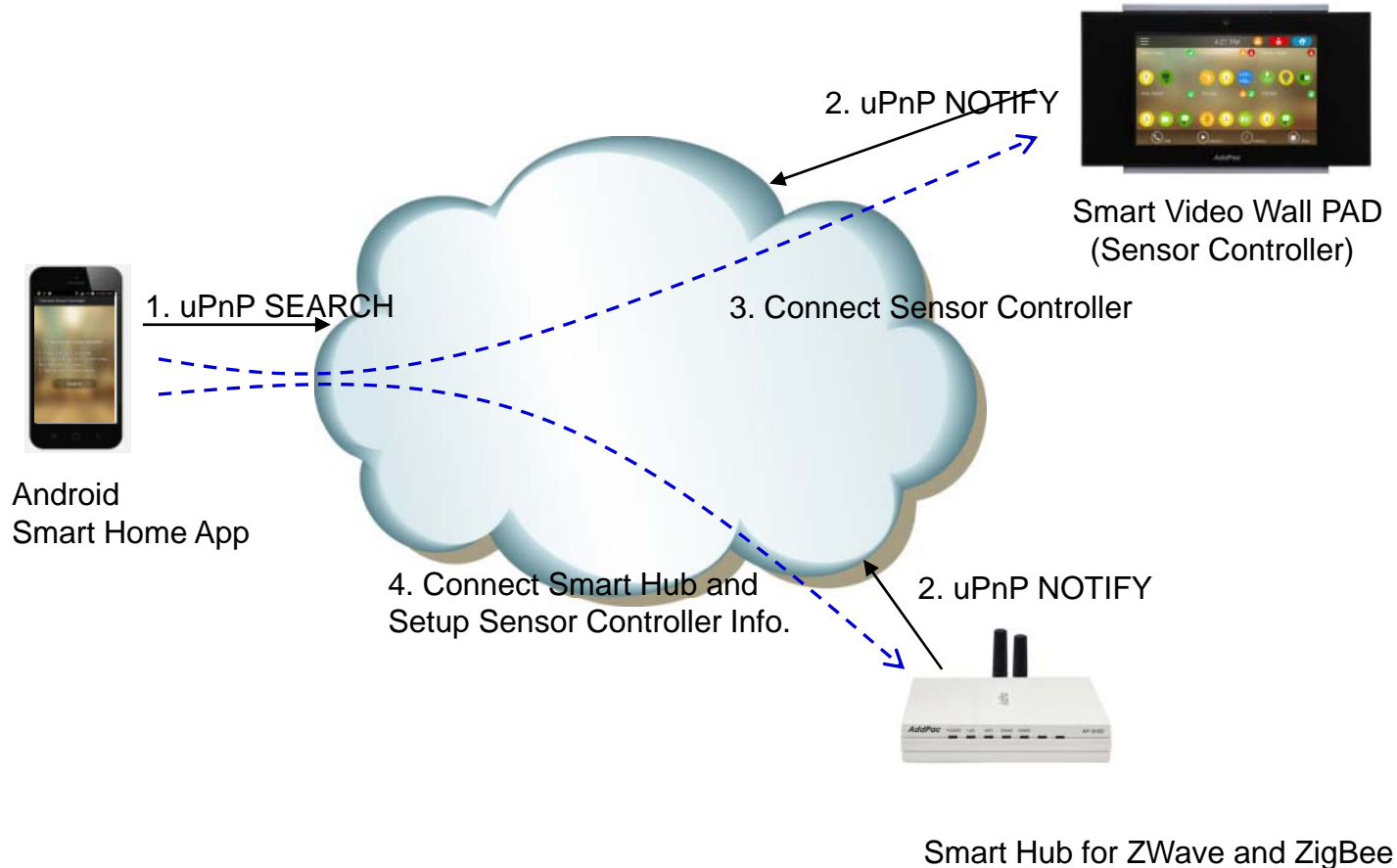
# uPnP Service Overview

- uPnP Discovery Service
  - Search AddPac Devices (**Sensor Controller & Smart Hub**)
  - Connect to **Sensor Controller & Smart Hub**
  - Set Network Address and Router Information to AddPac Devices
- uPnP Port Forwarding Service
  - Search NAT Router (Internet Gateway Device)
  - Set External to Local Port Mapping to NAT Router for HTTP, SIP, RTSP, telnet, etc

# uPnP Discovery Service Flow

- AddPac Device
  - Broadcast uPnP NOIFY message (239.255.255.250/1900 UDP) every 3 seconds
  - Response to uPnP SEARCH message
- Android Smart Home Application Software
  - Send uPnP SEARCH message to devices in local network
  - Receive uPnP NOIFY and find AddPac devices
  - Choose one device as a **Sensor Controller** among detected AddPac devices like as smart hub, smart wall PAD, etc
    - Set **Sensor Controller** Network Information
  - Sensor Controller is AddPac Sensor Network Device Manager for Small Sensor Network Control Area such as SOHO, Small enterprise, etc
  - Add **Smart Hubs** to **Sensor Controller**
    - Connect **Smart Hub** and Set Network Information
    - Add a **Smart Hub** to **Sensor Controller**

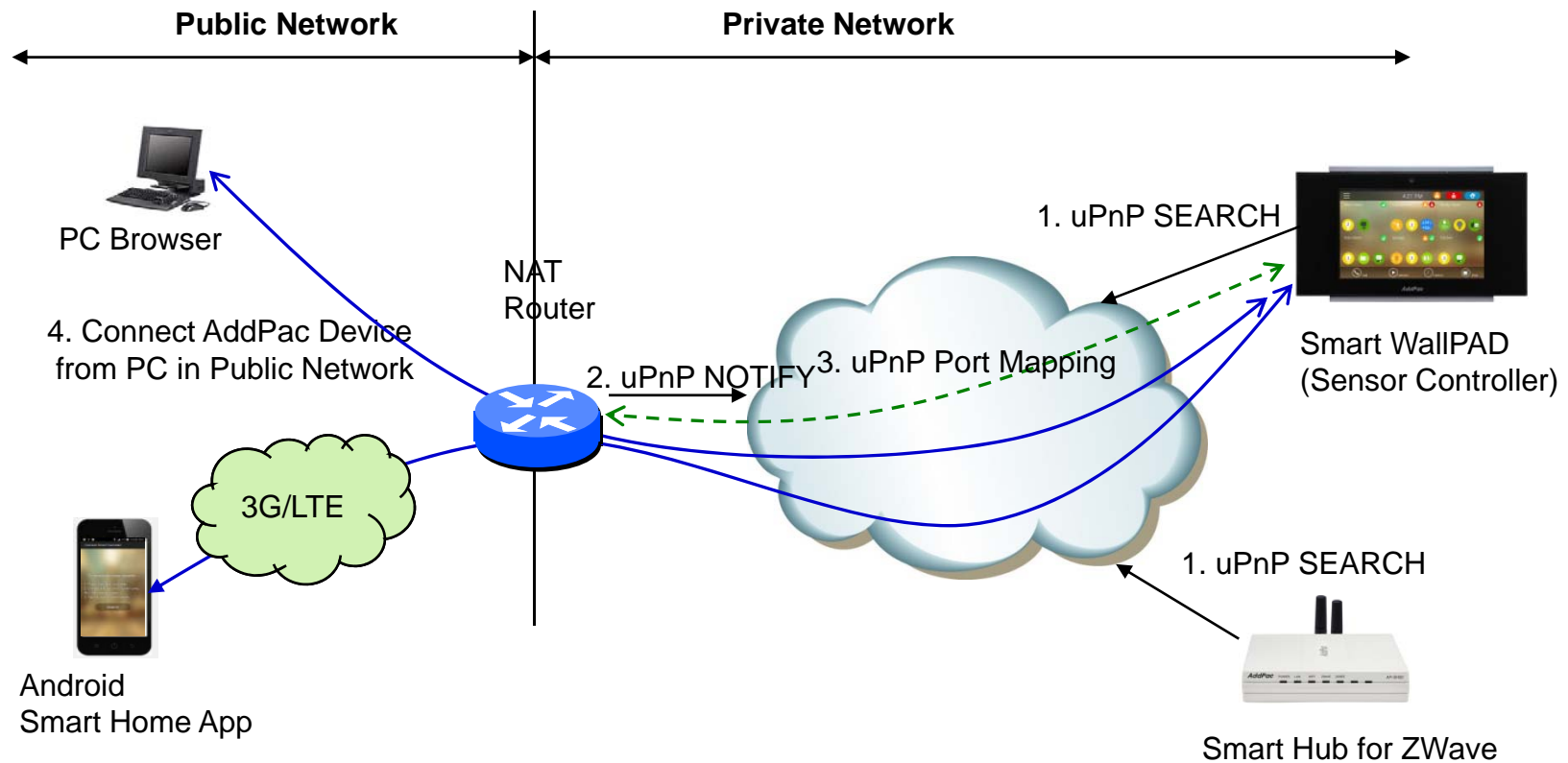
# uPnP Discovery Service



# uPnP Port Forwarding Service Flow

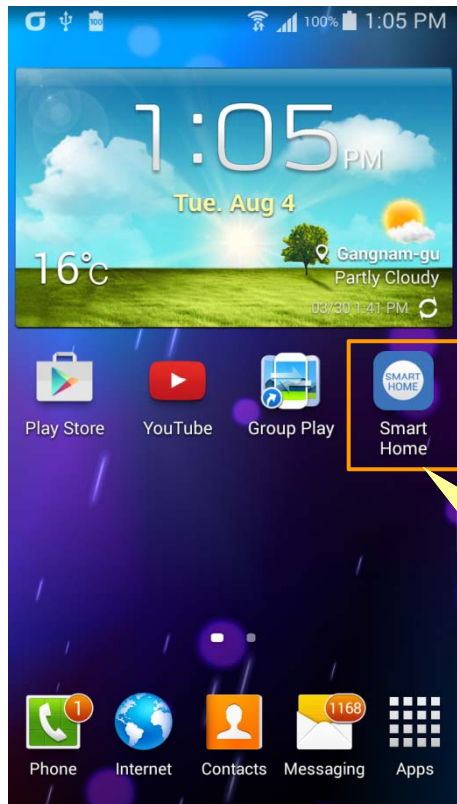
- NAT Router
  - Broadcast uPnP NOTIFY message (239.255.255.250 / 1900 UDP)
  - Response to uPnP SEARCH message
- AddPac Device
  - Send uPnP SEARCH message to Devices in Network
  - Receive uPnP NOTIFY and Find NAT Router
  - Send “Add Port Mapping” Message to NAT Router
    - External to Local Port Mapping
- Public Access
  - Connect AddPac Device from PC in Public Network

# uPnP Port Forwarding Service

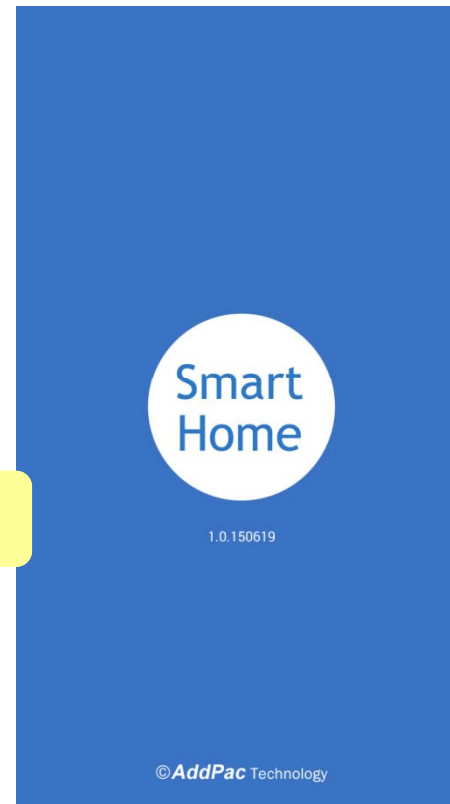


# uPnP Configuration (Smart Home App)

- Launch Smart Home



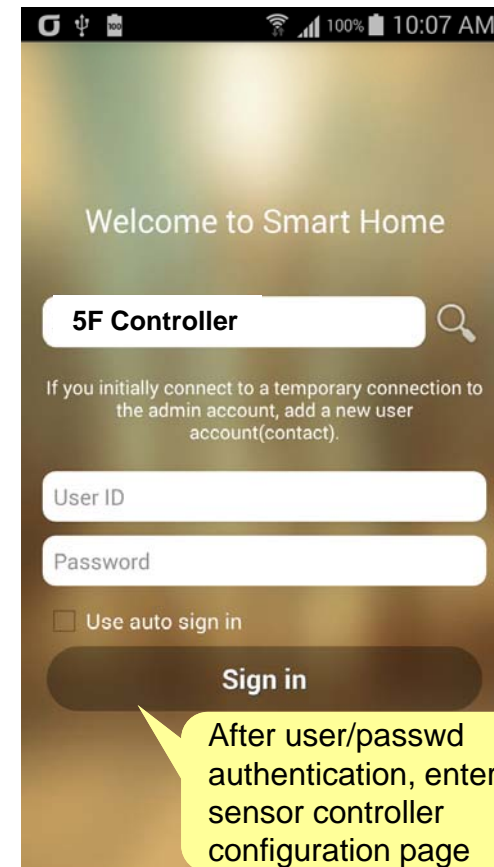
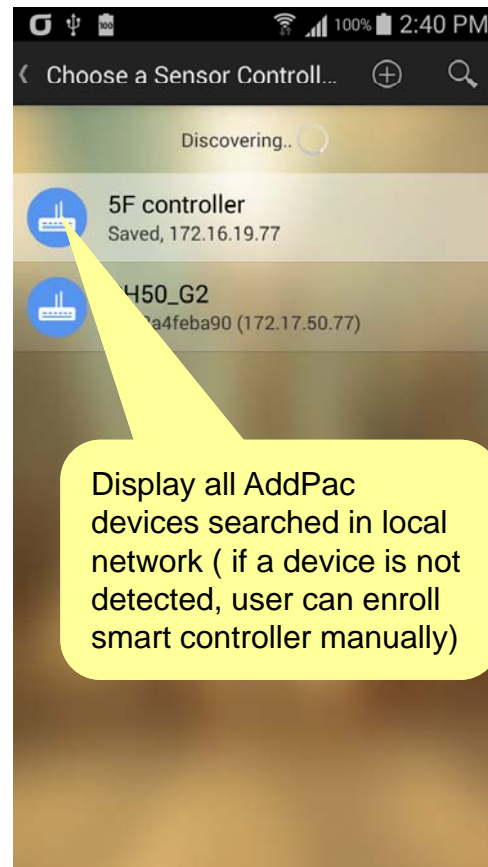
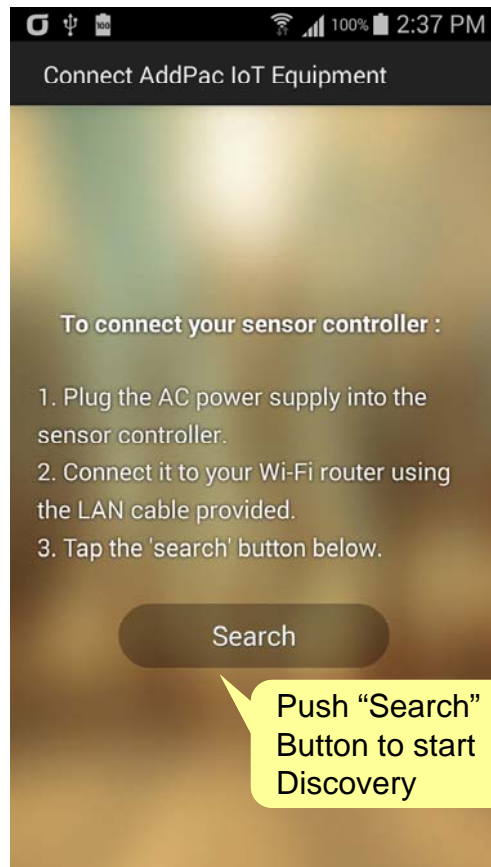
Android SmatHome App





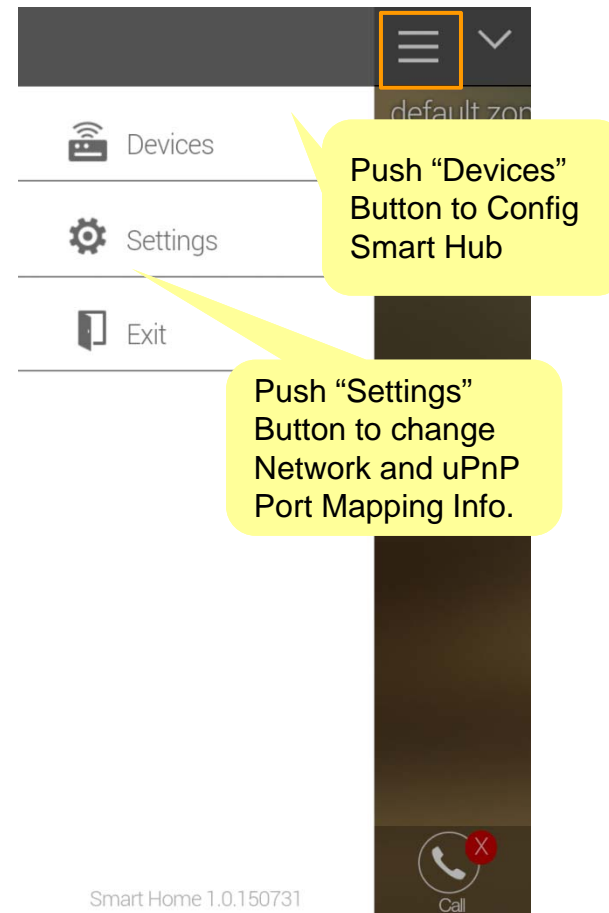
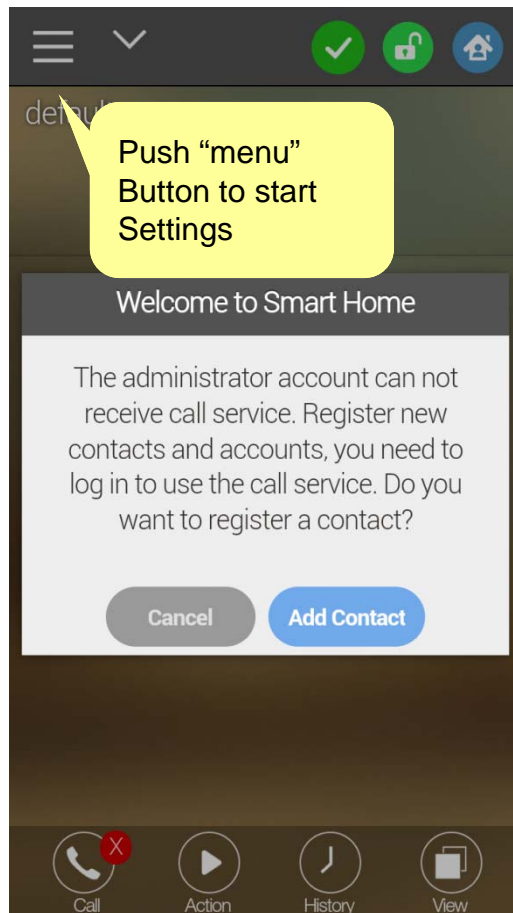
# uPnP Configuration (Smart Home App)

## Discover Device and Connect **Sensor Controller** (5F Controller)



# uPnP Configuration (SmartHome App)

## ▪ Sensor Controller Main Page and Menu



# uPnP Configuration (Smart Home App)

## ■ Settings (Sensor Controller)

The image displays a sequence of four smartphone screenshots illustrating the uPnP configuration process in the Smart Home App:

- Settings:** The 'My Sensor Controller' option is highlighted with an orange box.
- My Sensor Controller:** The 'Network' and 'UPnP' options are highlighted with orange boxes.
- Network:** The 'WAN Setup' section is visible, showing DHCP and IP address settings.
- UPnP:** The 'Port Forwarding' toggle is turned ON, and the 'External port' is set to 8080.

Two yellow callout boxes provide additional instructions:

- Enable uPnP Port Forwarding Service:** Points to the 'ON' toggle for Port Forwarding.
- Set uPnP External Port:** Points to the 'External port' field, which is set to 8080.

# uPnP Configuration (Smart Home App)

## ■ Devices (Add Smart Hub)

default zone

No Devices

Display current Smart Hub Lists

Add Device

- Add a Zone  
The devices should be assigned to one of zone to control and monitoring it.
- Add ZigBee / Z-Wave Devices  
You can discover and add wireless ZigBee / Z-Wave devices.
- Add Wired Device  
You can add wired devices.
- Add a Camera  
You can add an IP camera for video monitoring and recording.
- Add a Smart Hub  
You can add a smart hub to control and monitor devices under the smart hub

Push "Add a Smart Hub" to discover Smart Hub

Discovery Smart Hubs

Discovering Smart Hubs

- SH50\_G2  
0002a4fefa90 (172.17.50.77)  
New smart hub detected  
Add
- SH50\_G2  
0002a4fffa0 (172.17.0.24)  
Already registered to another controller.  
Update

Push "Add" to add New Smart Hub

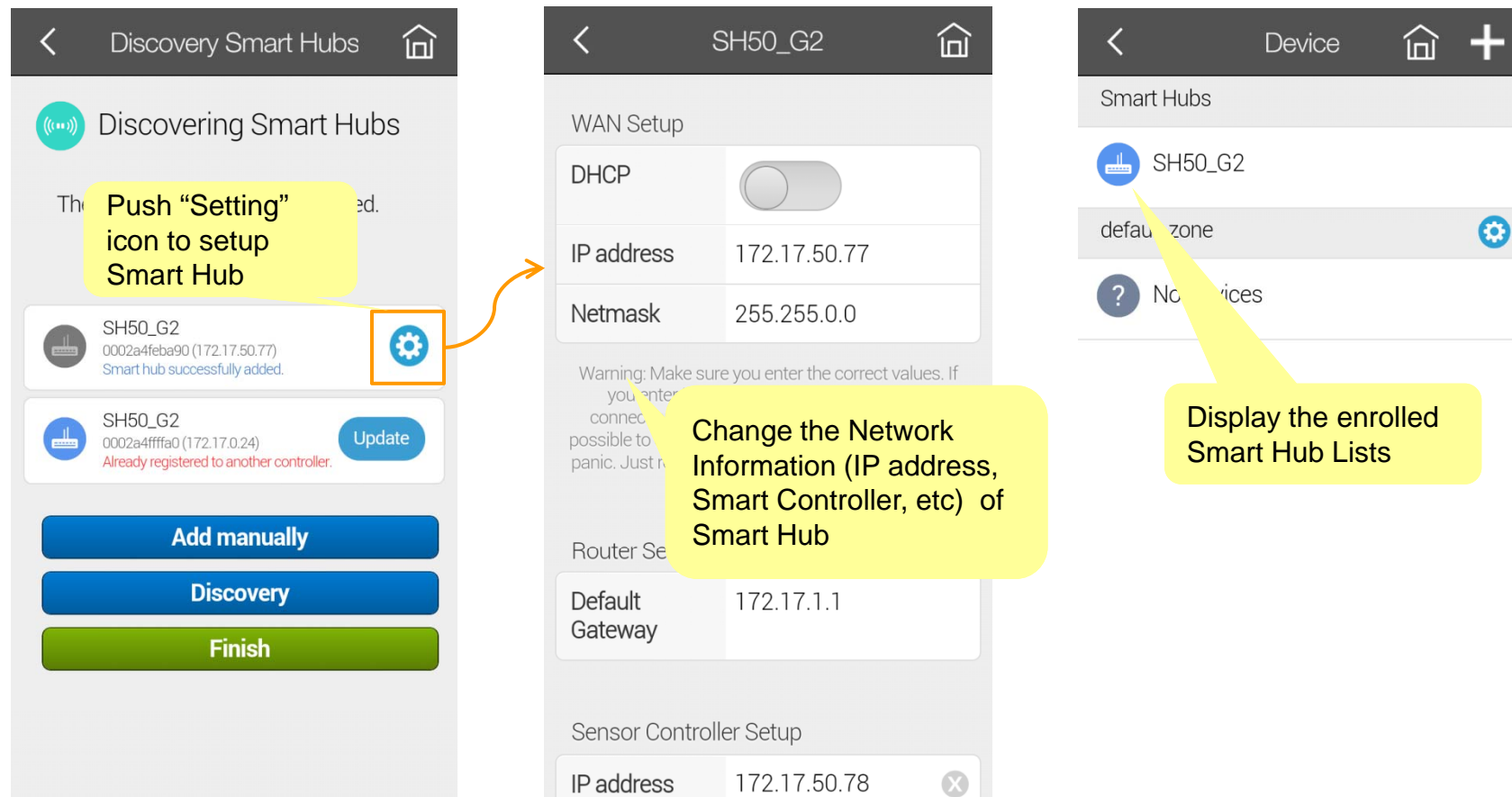
Push "Update" to modify Smart Hub Info.

Stop

Display all AddPac smart hub devices searched in local network ( if a device is not detected, user can enroll smart hub manually)

# uPnP Configuration (Smart Home App)

- Add **Smart Hub** and Set Network Information of **Smart Hub**



# AddPac Device Default Configuration

- uPnP Discovery Service : Enable
- uPnP Port Forwarding Service : Disable
  - No default External Port
- Network Configuration
  - DHCP Enable
  - DHCP Auto Address (169.254.x.x)

# AddPac Device Smart Web uPnP Configuration

The screenshot shows the 'uPnP Configuration' web interface. It includes a 'uPnP Client' section with 'Enable' selected. Below it, a dashed blue box highlights the 'IGD Address' (192.168.0.1) and 'IGD Interface' (FastEthernet0/0) fields. A yellow callout bubble points to these fields with the text 'uPnP Port Forwarding NAT Router (IGD: Internet Gateway Device) Configuration'. Another dashed blue box highlights the 'uPnP External Port' section, which contains four rows: 'HTTP Port' (checked, 8080), 'Telnet Port' (checked, 2300), 'FTP Control Port' (unchecked, empty), and 'SIP/UDP Port' (checked, 5060). A yellow callout bubble points to this section with the text 'External Port Forwarding Configuration'.

**uPnP Configuration**

uPnP Client  Enable  Disable

IGD Address  (A.B.C.D)

IGD Interface  ▼

**uPnP External Port**

HTTP Port  <1-65535>

Telnet Port  <1-65535>

FTP Control Port  <1-65535>

SIP/UDP Port  <1-65535>

uPnP Port Forwarding NAT Router (IGD: Internet Gateway Device) Configuration

External Port Forwarding Configuration



# Thank you!

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