

# WPU-7800G

## Auto Provision & Upgrade User Guide book



### UniData Communication Systems Inc.

Provides best quality service and products for "IP communication" solutions, with the ultimate objective of improving customers' quality of life.

# UniData WPU-7800G

## About UniData

UniData Communications Systems, Inc. offer Wi-Fi phone and application based on stable VoIP solution technology. UniData which has the advantage of optimal customization for various customer's demands is to enjoy the better convenience of communication technology in both enterprise and home by the field-proven quality with a history for 10 years. We will be active partner of yours to enjoy the most advanced wireless communication technology and to create the higher productivity and value. For more information on UniData and its Wi-Fi solutions, visit [www.udcsystems.com](http://www.udcsystems.com)

## UniData WPU-7800G



UniData WPU-7800G is SIP-based Wi-Fi phone with the advantage of long-lasting battery, L2-L3 quick roaming and convenient management of auto provisioning during bootup sequence.

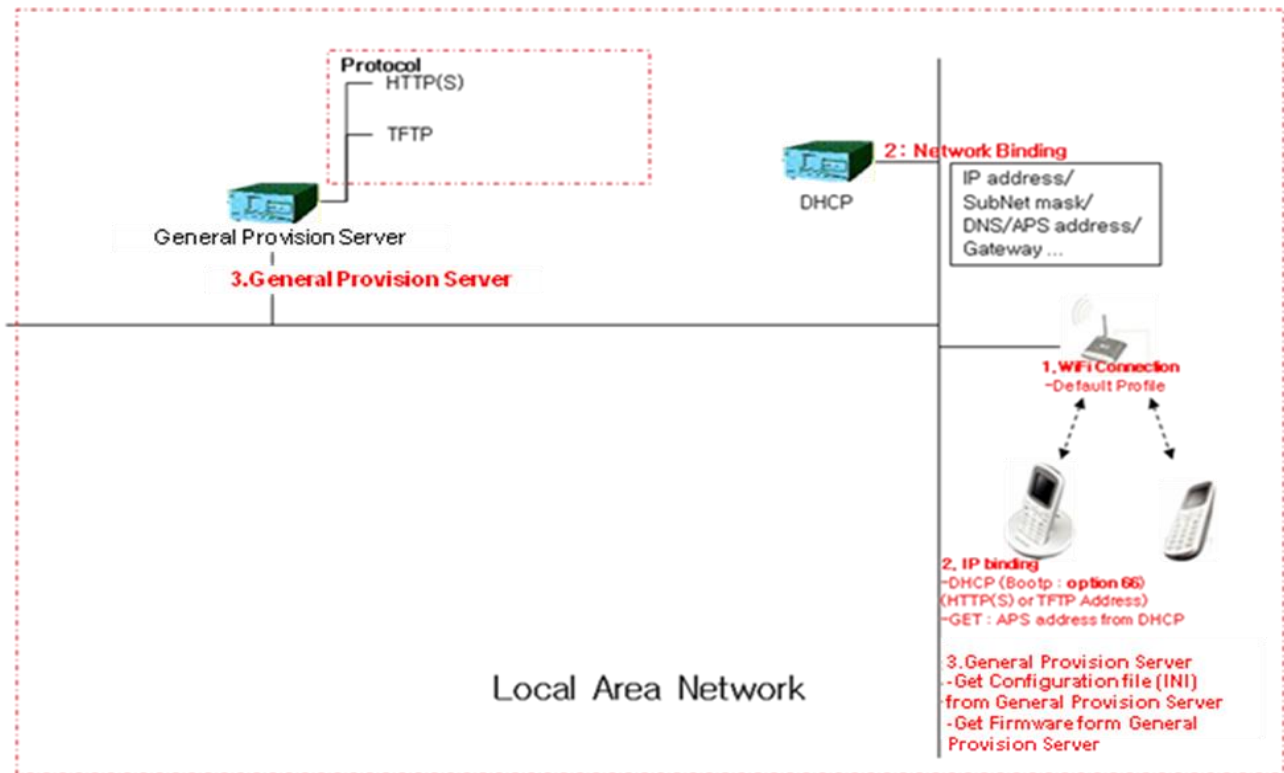
## Overview

1. This document explains features (a.k.a. Auto Provision) that you need to set up multiple WPU-7800Gs and manage updates generally in mid size (more than 10 users) environment.
2. No programs are provided by Unidata but you can manage WPU-7800G easily if you build Server (HTTP/HTTPS/TFTP) followed by a way that is provided in this document.
3. Technologies for Server are based on technologies that are currently open or in use widely.
4. Building environments requires PC (Server) that can access WPU-7800G via network.
5. Managing firmware and configuration files (e1\_common.ini and e1\_MAC.ini) and applying them to WPU-7800G can be done via this PC (Server).
6. You can make INI files (e1\_common.ini and e1\_MAC.ini) easily by using Phone Config Generator (<http://www.udcsystems.com/support/download.php>) that Unidata provides.  
☞ Refer to Phone Config Generator Manual. (<http://www.udcsystems.com/support/download.php>).
7. Additionally, it can provide updates easily by controlling applying new firmware automatically.

# Auto Provision

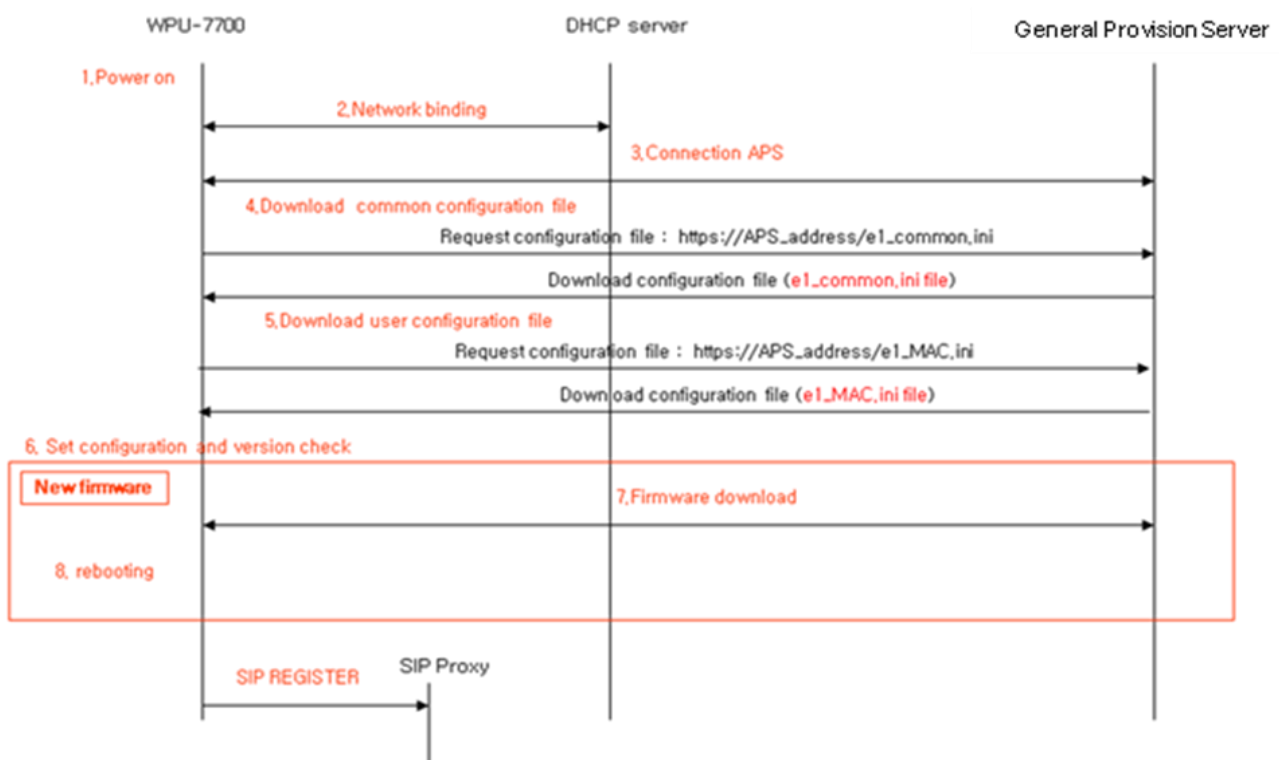
## 1. Systems Diagram

Figure1. Network diagram



[Network Diagram]

Figure2. Data Flow



## Data flow

1. Power On
2. Network Binding
  - ☞ General Provision Server Address can be set up by using BOOTP option 66. (DHCP server should provide BOOTP option 66.)
3. Connection General Provision Server
  - ☞ Try to access Server via APS address that has been set up.
4. Download Common Configuration file
  - ☞ Download e1\_common.ini.
5. Download User Configuration file
  - ☞ Download e1\_MAC.ini.
6. Set Configuration and Version check
  - ☞ Apply e1\_common.ini and e1\_MAC.ini to WPU-7800G.
  - Compare firmware version of e1\_common.ini and that of WPU-7800G.
  - Do step 7 and 8 if firmware version of e1\_common.ini is higher than that of WPU-7800G.
7. Firmware download
  - ☞ Download firmware.
8. Rebooting
  - ☞ Apply new firmware to WPU-7800G by rebooting.
9. SIP REGISTER
  - ☞ Try REGISTER with registered SIP Proxy.

## 2. Auto Provision Server Protocol (HTTP, HTTPS, TFTP)

### 2.1 Protocols that are available in Auto Provisioning

1. HTTP (HyperText Transfer Protocol)
2. HTTPS (HyperText Transfer Protocol over Secure Socket Layer)
3. TFTP (Trivial File Transfer Protocol)

### 2.2 Programs that are available.

Protocol	OS	Program
HTTP	Windows	Apache Web Server
	Linux	
HTTPS	Windows	Apache Web Server
	Linux	Open-SSL / Mod-SSL
TFTP	Windows	3CDeamon
	Linux	TFTP

### 3. How to use Auto Provision

Provision Agent in WPU-7800G is executed when power is on and network binding is completed. It starts to operate when entries below are setup.

Entry	Value	Default value	Comment
Use_Provision	0:Disabled, 1:Enabled	1	Whether to use Provision or not
Request_Mode	0:HTTP, 1:HTTPS, 2:TFTP	2	Request Method

[PROVISIONING Section]

#### 3.1 How to connect to the 1<sup>st</sup> Auto Provision Server

This uses default profile of WPU-7800G and BOOTP option 66 and doesn't need settings to WPU-7800G. It explains how you use it by interlocking General Provision Server when the power is on.

Default profile of WPU-7800G

Entry	Value	Default value	Comment
SSID	32 String	voip	Setting for SSID in Network 1 When the phone searching AP, the SSID will be appear. "voip" is a default value
Security	0 : none, 1 : WEP, 2 : WPA-PSK, 3 : WPA2-PSK, 4 : WPA-EAP, 5 : WPA2-EAP	2	Selecting AP authentication security Notice: Phone and AP should be use same type of authentication security.
WPA_PSK_PassPhrase	63 String	un1d4t4wpu7700	Setting PassPhrase for WPA PSK Key Notice: Security should be selected as WPA PSK. Do not Set WPA_PSK Pass Phrase, if you use PSK Key, it should be set Only WPA_PSK_Key field.

- Default Profile can be changed only in Web server Provision. Below are the settings.
- Default Profile lets Web server Provision set up Access Point info that is fixed in user environment. It can prevent issues that are due to incorrect registration of users' profile.

#### 3.1.1 How to Use

(1) Install Auto Provision server.

- Install one server among TFTP/HTTP/HTTPS.

(2) Set up users' AP with info below.

- SSID: voip
- SECURITY:WAP-PSK
- WPA PSK PassPhrase : un1d4t4wpu7700

(3) Execute Provision server.

- Copy e1\_common.ini and e1\_MAC.ini to a root directory of the server.

(4) Set up BOOTP option 66 to DHCP server.

(5) Set up BOOTP option 66 and provision server IP address.

(6) Turn WPU-7800G power on.

#### 3.2 How to connect to the 2<sup>nd</sup> Auto Provision server

This doesn't use default profile of WPU-7800G. It uses a way to set up AP's SSID and security according to users' network environment and set up Provision Server IP address directly at WPU-7800G.

### 3.2.1 How to use.

- (1) Install Auto Provision server.
  - Install one server among TFTP/HTTP/HTTPS.
- (2) Execute Auto Provision server.
  - Copy e1\_common.ini and e1\_MAC.ini to a root directory of the server.
- (3) Turn WPU-7800G power on.
- (4) Register AP by selecting Menu → Settings → 3. WLAN Search or Navi up key.
  - Network Profile that is currently in use should be registered via Add Profile menu. Provisioning only works when the power is on so if you connect this temporarily, Provisioning may not work properly when the power is on.
- (5) Select Menu → Settings → 9. Admin Menu → <Enter Admin Password> → 4.APS address. Enter protocol and Provision server IP address that are in use.
- (6) Reboot WPU-7800G.
- (7) Provisioning proceeds when the power is on, WPU-7800G is connected to AP and receives IP address.

## 4. How to make configuration file

Here's INI file format and examples.

### 4.1 WPU-7800G Configuration file.

WPU-7800G uses two types of configuration files for setup.

One configuration file, either e1\_common.ini or e1\_MAC.ini, is enough to execute WPU-7800G but we recommend you to use two files, e1\_common.ini and e1\_MAC.ini, if possible.

#### 4.1.1 e1\_common.ini

E1\_common.ini is used to apply common settings of WPU-7800G that are in use.

You can add all configuration entries that are in use to e1\_common.ini. It's fine to delete some configuration entries that are considered not necessary by administrator's decision.

The file name should be e1\_common.ini.

#### 4.1.2 e1\_MAC.ini

E1\_MCA.ini is used to set up individual settings such as WPU-7800G users' info automatically.

Use 8 digits of WPU-7800G's MAC address such as e1\_00000000.ini for the file name.

☞ It's fine to use configuration entries that are in use in either e1\_common.ini or e1\_MAC.ini. We recommend you to use Phone Configuration Generator when you make INI files.

## 4.2 e1\_common.ini Example

☞ Administrators can add and/or delete configurations depending on environments.

```
[SYSTEM]
Language = 1
Admin_Password = 000000
Country_Tone_Type = 1

[RTP_RTCP]
Use_RTCP = 1
RTP_Port_Min = 9000
RTP_Port_Max = 9020
RTCP_Report_Interval = 5000
Last_RTP_Received_Timeout = 0

[TIME]
NTP_Refresh_Interval = 7200
NTP_Server1 = 203.248.240.103
NTP_Server2 = 203.254.163.74

[SIP]
Local_Port = 5060

[BASIC_CALL]
Use_Call_Waiting = 1
Session_Expire = 1800
Remove_DASH_On_Alias = 1

[WIFI]
Enable_Check_Server_Cert = 0
Force_Enable_Short_Preamble = 0

[WIFI_SCAN]
Scan_Channel_List = 1,2,3,4,5,6,7,8,9,10,11,12,13

[ROAMING]
Try_Beacon_Signal_Level = -77
Try_Over_TxError_Count = 5

[NETWORK1]
Enable = 1
SIP_Outbound_Proxy =
SSID = voip
Enable_DHCP = 1
Address = 0.0.0.0
Netmask = 255.255.255.0
Gateway = 0.0.0.0
DNS1 = 0.0.0.0
DNS2 = 0.0.0.0
Security = 2
WEP_Bits = 0
Default_WEP_Key = 1
WEP_Key1 =
WEP_Key2 =
WEP_Key3 =
WEP_Key4 =
Post_Authentication_Mode = 0
8021X_Name =
8021X_Password =
WPA_PSK_PassPhrase = un1d4t4wpu7700
PA_PSK_Key=5ae4b848d871fdcba8dda23716245901b0e5ea8047b06e4445e94d96ec27ee23
Use_WPA_PSK_Key_Hex_Mode = 1
Proactive_Key_Caching = 1
```

```
PMK_LifeTime = 43200
PMK_Max_Count = 32
DiffServ_Signal = 46
DiffServ_Media = 46
WMM = 1
Jitter_Buffer_Size = 60
Payload_Type = 8,18,0
Multiframe = 2,2,2
```

```
[PROVISION]
Firmware_Version =
Firmware_Name =
Phonebook_Name =
```

### 4.3 e1\_MAC.ini Example

☞ Administrators can add and/or delete configurations depending on environments.

```
[USER_ACCOUNT]
Displayname =
Phone_Number =
User_ID =
User_Password =

[SERVER_SETTINGS]
1st_Proxy =
2nd_Proxy =
Domain_Realm =
Register_Expire = 3600
```

## 5. Reference

1. Provision Agent: Provision client that executes Auto Provision of WPU-7800G.
2. Network Binding: A process that the device gets IP/NETMASK/Gateway/DNS to use network.
3. BOOTP: In computer networking, the Bootstrap Protocol, or BOOTP, is a network protocol used by a network client to obtain an IP address from a configuration server. The BOOTP protocol was originally defined in RFC 951.
4. BOOTP option: DHCP(BOOTP) options have the same format as the BOOTP 'vendor extensions'. Options may be fixed length or variable length. All options begin with a tag byte, which uniquely identifies the option. Fixed length options without data consist of only a tag byte. The value of the length byte does not include the tag and length fields.
5. BOOTP option 66: This option is used to identify a TFTP server when the 'sname' field in the DHCP header has been used for DHCP options. The BOOTP option was originally defined in RFC2131.
6. Provision server IP address: Provision server IP address.
7. Phone Configuration generator: A program that is provided by Unidata to make configuration files. (Download is available at <http://www.udcsystems.com/support/download.php>)
8. Entry: Configuration name that sets up WPU-7800G. Refer to Appendix WPU-7800G Configuration Entry.pdf. (Download is available at <http://www.udcsystems.com/support/download.php>)