User manual

SLC-120S48OGAH
LTE Network Outdoor CPE

www.seowonintech.co.kr

Contents

Introduction to the Product

Thank you for choosing SLC-120S48OGAH, Outdoor CPE.
SLC-120S48OGAH is offers better performance over Outdoor CPE given that LTE reception is not impeded.
It offers easy installation, reliable network connection, advanced security & authentication features, and more.
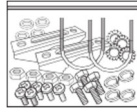Please read this User Manual carefully to learn about the SLC-120S48OGAH.
It will help you to meet your diverse communication needs, at home and at the office.

1. Package Contents

| | | User Manual | PoE |
| Main Unit | Mounting Kits | LAN Cable | AC Code (100~240V) |

Note :
- Please note that it performs the best with the accessories which are contained in the package, and the manufacturer will not be responsible for defects/ damage or shortened product life resulting from the use of product in conjunction or connection with accessories, products, or ancillary/peripheral equipment not approved by the manufacturer.
- Please use the product with accessories which are contained in the package.
- The components, appearance of the product, specifications and etc. are subject to change without prior notice for performance improvement.

2. Functional Features

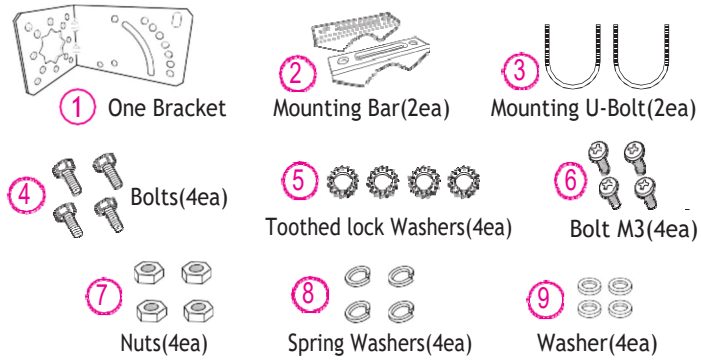| Function		Features
Model Name		SLC-120S48OGAH
LTE	Technical Standard	LTE 3GPP Release 12, Category 15, TDD Configuration DL:580Mbps(4x4MIMO-2Layer,4CA,256QAM), UL:30Mbps(2CA,64QAM)
	Frequency Band	LTE Band48(3550MHz ~ 3700MHz)
	Max. Transmit Power	23dBm(+3 / -4 dB)
	Antenna	Internal Patch Antenna, 4x4 MIMO 15dBi Gain
	HPBW (3dB Beam Width)	+/- 45 degree Dual Linear / Directional
External Interface		1 x Gigabit Ethernet RJ45 LAN port
		1 x Mini USIM Card Slot
		1 x Reset button
LED Indicators	Power	Sharing with Signal Strength
	Signal Strength	5 LEDs with 1 color (5 Level display)
Operating Temperature		-30° to +70°C
Power Supply		IEEE 802.3af, Giga PoE Injector (Input : 100~240VAC, Output : 48V/0.45A)
Dimension		275(W) x 285(D) x 78(H)mm

3. LED Presentation

Status icon & LED indicator	
Boot in progress	Blinking Yellow LED (1), Blinking period = 1sec
Network connection	Number of LED depending on signal strength - Most Strong Signal: Five yellow LED - Strong Signal : Four yellow LED - Middle Signal : Three yellow LED - Weak Signal : Two yellow LED - Very Weak Signal : One yellow LED

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4. Mounting Configuration

Package List
You need the following :

① One Bracket   ② Mounting Bar(2ea)   ③ Mounting U-Bolt(2ea)

④ Bolts(4ea)   ⑤ Toothed lock Washers(4ea)   ⑥ Bolt M3(4ea)

⑦ Nuts(4ea)   ⑧ Spring Washers(4ea)   ⑨ Washer(4ea)
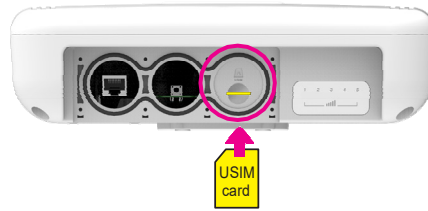
5. Assembly sequence optimization

Step 1

Remove the four Bolt M3 from the outdoor CPE.
 * Remaining 4 screws are enclosed in the mounting kits as

(4ea)

Step 2 (Installing USIM Card)
Carefully insert the USIM Card into USIM slot.

| ⚠ | **CAUTION :**
 The surface of IC(metal) should be facing downward from the USIM card. | IC
 USIM card |

Step 3

Remove the cap by turning. Then follow the next steps as shown below

1. Remove the cap.
2. Put A, B, Cap and Aluminum plate to cable line in order.
3. Plug the cable line into the LAN hole of outdoor CPE.
4. Connect A and B in order.
5. Lastly, Connect Cap to Aluminum Plate by turning

Cap   B   A

Cable line
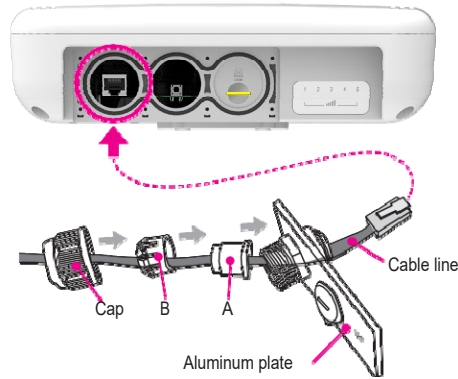
Aluminum plate

Step 4

Assemble the Aluminum plate and outdoor CPE using the screws Bolt M3(8ea)

⑥ (8ea)

LAN
Cable line
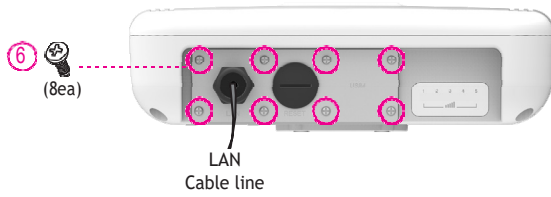
Step 5

Attach item 1 to the back side of the device using item 4 as
shown.(Insert item 5 into item 4 before installing)

⑤

④

①
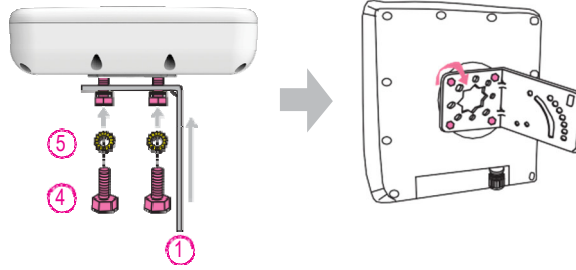
Step 6

Install the device to pole using item 2 and 3, tighten the bracket by
using item 7, 8 and 9

③

⑦ ⑧ ⑨ ②
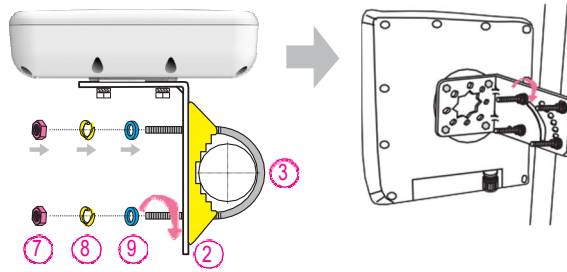
Step 7

Adjust the device, using the different position on the
bracket. Check the LED light (1~5).
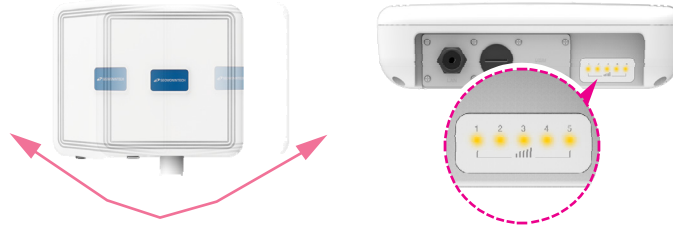
RESET Button(When the device turned On)
- Press the reset button once : Device reboot
- Press and hold the reset button 5 sec : Factory reset

Turn left: Open Turn
right: Closed
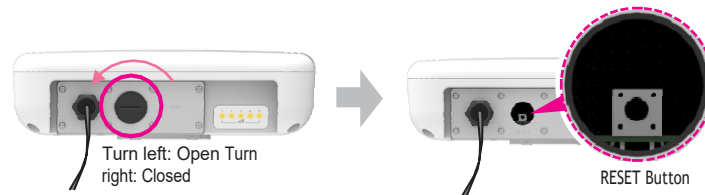
RESET Button

Note : If you forget the Login password for the Outdoor CPE or
IP address after making changes, use the reset button
to restore the Outdoor CPE to its original factory
default settings.

Configuration

1. Network Configuration

External Network
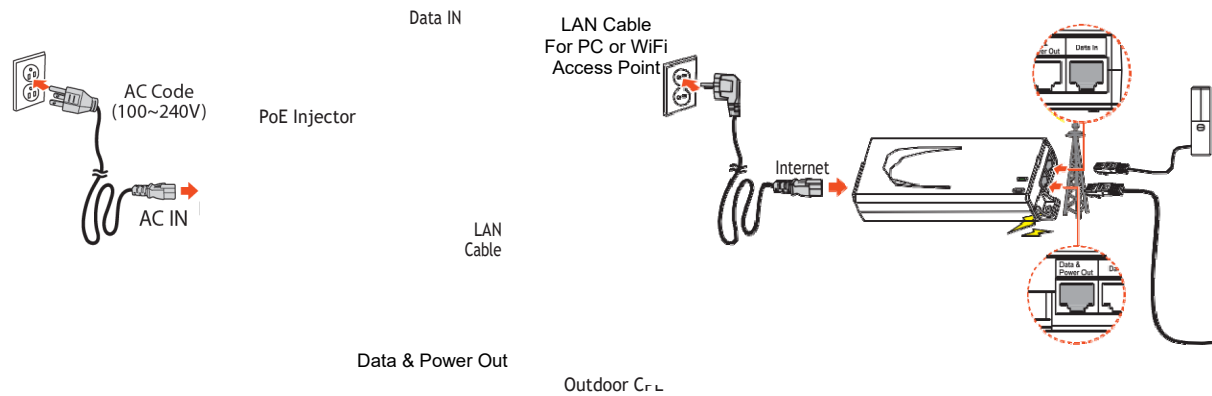
Data IN

LAN Cable
For PC or WiFi
Access Point

AC Code
(100~240V)

PoE Injector

Internet

AC IN

LAN
Cable

Data & Power Out

Outdoor CPE

Install a Outdoor CPE after connecting to the network. If normal connection between
Outdoor CPE and PC is checked, you have to set up the PC and Outdoor CPE. The purpose
of PC setup is to control network configuration for Windows Windows 7/8/10 or Mac OS X
to use the Internet while the PC is connected to a Outdoor CPE. The purpose of Outdoor
CPE setup is to connect the Outdoor CPE to the Internet. Please refer to the Outdoor CPE
Setup chapter.

2. PC Configuration(Windows10)

• Most computers already have TCP/IP configuration enabled. For your computer to support CPE, please verify that the IP address and DNS settings are automatically generated in the Local Area connection of your Internet Protocol (TCP/IP) properties.

• In a Windows environment :

• Click "Start" button >> Click "Control Panel" >> Click "Network and Internet Connection" >> Click "Network Connection" >> Right-click "Local Area
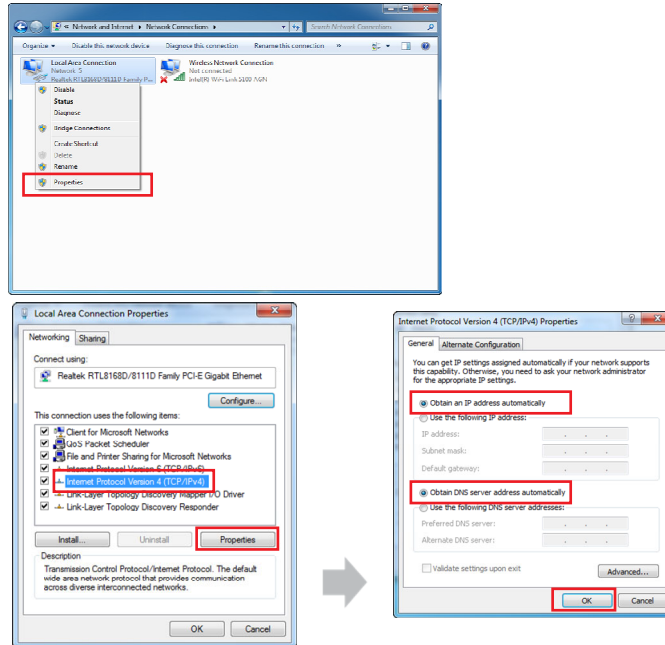
Connection" and Select "Properties" >> Select "Internet Protocol 4 (TCP/IPv4)" and click "Properties" >> Select "obtain an IP address automatically" and "obtain DNS server address automatically" >> Click "OK" ..

3. How to check your IP address

• Open the Command Prompt window by clicking the "Start" button and selecting "Run". Enter "cmd", and click the "OK" button.
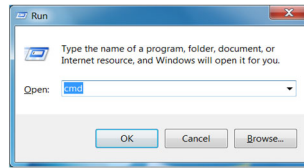
< Run cmd >

• When the Command Prompt window opens, enter the "ipconfig" command to verify the IP address, Subnet mask, and Gateway, which are automatically assigned to your PC.

Note : PCs connected to Device will receive own assigned IP address.

< Verify IP address >

• If the host can reach the device using the ping command, the device has successfully attached.

Note : If an IP address is not assigned, check the following. and
Then restart the PC and check whether an IP address is assigned.
- LAN cable connection between PC and CPE
- Check TCP/IP setup details

Log-in to Web Interface

The Web Browser allows you to manage the Device and to view.
  In the Address Bar :
  • Go to WEB "http://192.168.1.1" then press ENTER to access the login
    screen.
  • The default one is "user" for both User Name and Password.
  • You can change the Password after logging in (User Name and Password
    are case-sensitive)..

User name = **user**
Password = **user**
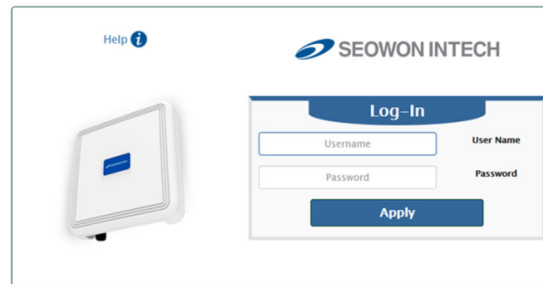
Note : The Web Interface can be accessed by entering http://192.168.1.1
         in the Address Bar, regardless of the network connection status.
         When there is no input for 1 hour after your login to the Web
         Interface, you will be automatically logged out.

Setup on the web page

1. Dashboard

- Select "Dashboard" from the left menu.
- You can see the Mobile Network, LTE, Network, Firewall, Monitoring and Firmware Information.

2. Connection Mode

- Select "Connection Mode" from the left menu.
- You can see the status of Connect Manager.
- Start LTE Connection by clicking "Connect" or stop by clicking "Disconnect" button.

3. Status

3.1 LTE

- Select "Status" "LTE" from the left menu.
- You can see the LTE Information, Status and Statistics by clicking each tab.

3.2 Network

- Select "Status" "Network" from the left menu.
- You can see the WAN, LAN status and Lease Status Table.

3.3 Device Details

SEOWON INTECH

| | | T.ııll | 👤 user | English ▾ | **Logout** |

Menu

- 🔧 Dashboard
- 📡 Connection Mode
- 🖥 Status
  - LTE
  - Network
  - **Device Details**
  - Device Performance
- ⚙ Settings

Device Details

Device Time

Current Local Time	2021-05-16 21:14:29	Time Server	us.pool.ntp.org
Synchronize With PC	Out of sync	Time Zone	Eastern Time (US and Canada)
Daylight Saving Time	Disable		

Device Information

ODM	Seowonintech co., LTD.	Product Name	SLC-120S48OGAH
OUI	00:21:07	Serial Number	SEOWONXX150S07GQ-0000001
Firmware Version	1.28.501	Firmware Creation Date	2021.05.14-10:07
Hardware Version	1.0	Last reboot cause	(Mon May 17 11:04:11 EST 2021) Reboot by Factory Reset

- ⬧ Select "Status" "Device Details" from the left menu.
- ⬧ You can see the device time and device information.

3.4 Device Performance
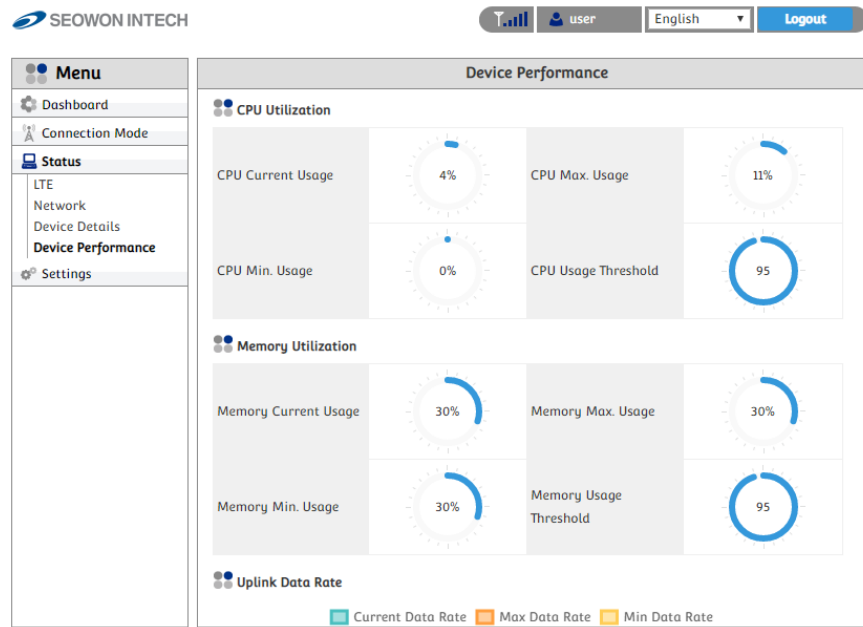
- Select "Status" "Device Performance" from the left menu.
- You can see the system performance such as CPU, memory, UL/DL data rate and firewall status.

4. Setting
4.1 LTE
4.1.1 Cell Selection

- Select "Settings"→"LTE"→"Cell Selection" from the left menu.
- You can change the mode "Full Band" or "Frequency".
- Check the box and click the "Apply" button.

4.1.2 Cell Lock

- Select "Settings" "LTE" "Cell Lock" from the left menu.
- You can add current cell to lock or delete cell to unlock in the list.
- You can manually add cell by clicking "Add+" button.
- Finish setup by clicking the "Apply" button.

4.1.3 **PCI Cell Lock**

◗ Select "Settings" → "LTE" → "PCI Cell Lock" from the menu.
◗ You can add current the cell to PCI Cell Lock List or delete
    the cell to unlock from the list.
◗ You can manually add the cell by clicking "Add+" button.
◗ Finish setup by clicking the "Apply" button.

4.1.4 SIM Management

- Select "Settings" "LTE" "SIM Management" from the left menu.
- You can see the current status of SIM.
- Only the button operation is enabled to match the current status.
  - If you SIM card is locked, PIN Status shows "PIN ENABLED NOT VERIFIED".
  - Then you should enter the PIN code and click the "Verify" button.
  - After success unlock PIN then you can attached the LTE network.
  - You can set new PIN code by unblocking with PUK code.
  - If you failed to unblock PIN, you never use this SIM card.

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4.1.5 Default PDN

- Select "Settings" "LTE" "Default PDN" from the left menu.
- You can set the PDN data such as APN, Authentication Type and PDN type(IPv4, IPv6).
- Put in the data to box then click "Apply" button.
- If you set wrong data, the device doesn't attach the LTE network.

4.1.6 Multiple PDN

- Select "Settings" "LTE" "Multiple PDN" from the left menu.
- You can set the multiple PDN data for IMS, admin, App service.
- Select "Cid", check "Enable", put in the data to box then click "Apply" button.

4.1.7 Internet MTU

- Select "Settings" "LTE" "Internet MTU" from the left menu.
- You can change the internet MTU size.
- Put in the data to box then click "Apply" button.

4.1.8 IPv6 Settings

- Select "Settings" "LTE" "IPv6 Setup" from the left menu.
- You can Enable or Disable IPv6 function by selecting the list.
- You can set DHCPv6 Auto-configuration mode by selecting the list.
- You can set DNS Server Address Mode to "Auto" or "Manual".
- After selecting the each mode, put in the data to all boxes.
- Finish setup by clicking the "Apply" button.

4.1.9 CBSD Settings

- You can check the enable and disable status in the CBSD item.
- The default setting is category B.

5. Network

5.1   Switch

- Select "Settings" "Network" "Switch" from the left menu.
- You can select Switch Mode to "NAT" or "BRIDGE".
- Finish setup by clicking the "Apply" button.

5.2 DHCP Server

- Select "Settings" "Network" "DHCP Server" from the left menu.
- Configure DHCP Server Setting.
  - IP address is used in the LAN cable that the device manages.
  - Setup IP address in "Gateway IP Address/ Gateway Subnet Mask" text boxes.
  - Initial Value is "192.168.1.1/255.255.255.0" and only the last byte in "Gateway Subnet Mask" box can be modified.
  - Finish setup by clicking the "Apply" button.

5.3 DMZ

- Select "Settings" "Network" "DMZ" from the left menu.
- Configure DMZ(Demilitarized Zone)
  - Select whether or not to enable the DMZ function.
  - You can set "Redirect ICMP To The Host" and "Exclude Web Server Port".
  - Set the IP address to have all ports opened in "Private LAN IP Address" content.
  - Finish setup by clicking the "Apply" button.

5.4　Port Forwarding

- Select "Settings" "Network" "Port Forwarding" from the left menu.
- Configure Port Forwarding
  - Enter the Name.
  - Select one of the listed Protocols (BOTH, TCP, UDP).
  - Enter Start Port, End Port, Destination IP and Destination Port.
  - Click the "Add" button when you finished.
  - You can change the data by clicking "Edit" or "Del" button in the list.

5.5 Port Triggering

- Select "Settings" "Network" "Port Triggering" from the left menu.
- Configure Port Triggering
  - Enter the Name.
  - Select one of the Port Type(RANGE or SINGLE).
  - Select Trigger Protocol and Open Protocol(ALL, TCP, UDP).
  - Enter Trigger Port Range and Open Port Range.
  - Click the "Add" button when you finished.
  - You can change the data by clicking "Edit" or "Del" button in the list.

5.6 VPN Configuration

- Select "Settings" "Network" "VPN Configuration" from the left menu.
- You can set VPN mode by selecting "GRE", "L2TP" or "PPTP".
- After selecting the mode, put in the data to all boxes.
- Then click "Add" button.
- Finish setup by clicking the "Apply" button.

5.7   VPN Passthrough

- Select "Settings" "Network" "VPN Passthrough" from the left menu.
- The device support 2 types of service : PPTP Service, L2TP/IPSEC
  Service.
- Select the type(s) of VPN pass-through to use with the checkboxes.
- Finish setup by clicking the "Apply" button.

5.8 UPnP

- Select "Settings" "Network" "UPnP" from the left menu.
- Select whether or not to Enable the Universal Plug & Play function.
- Finish setup by clicking the "Apply" button.
- When UPnP Client is connecting, it will appear on the Client List.

5.9 QoS

• Select "Settings" "Network" "QoS" from the left menu.
• To set the QOS, check "Shaping".
  The desirable service quality class can be set.
    - Setup download speed in "Download(kbps)" text box.
    - By selecting "Upload" and "Download" in the list, you can adjust
      each speed.
    - Setup IP address/mask, protocol, port and rate.
    - Click the "Add" button after setting all items.
    - Finish setup by clicking the "Apply" button

5.10 DDNS

• Select "Settings" "Network" "DDNS" from the left menu.
• Set the DDNS environment
- If you want to set the DDNS, check "Enable" in the checkbox to
  enter necessary inputs.
- After entering all the necessary information for DDNS Setting,
  finally, click the "Apply" button to finish setting.

6. Firewall

6.1 Basic

- Select "Settings" "Firewall" "Basic" from the left menu.
- If you want to use the default Firewall function, check the "Enable" checkbox.
- You can set other firewall rules as Ping, HTTP, HTTPS login and Multicast Filter.
- If you want to use SIP ALG function, check enable and type port number in the box.
- For filter set up, select the filter item(IP, MAC, ACCEPT, DROP, BOTH, etc) and fill the blank.
- Finish setup by clicking the "Add" button.
- You can also delete the filter rule by clicking "remove" button in the Filter List.

7. UserManagement

7.1 Account

- Select "Settings" "User Management" "Account" from the left menu.
- Set the password to be given to the administrator who manages the device.
- Enter the new password.
- Finish setup by clicking the "Apply" button.

7.2 Language

- Select "Settings" "User Management" "Language" from the left menu.
- Select the Language.
- Finish setup by clicking the "Apply" button.

7.3 Restore Default

- Select "Settings" "User Management" "Restore Default" from the left menu.
- To initialize all configurations the device, click "Apply" button.
- If you want to save, remove or reset this configuration click the button.
- The device will reboot automatically and it takes about 70 seconds.

7.4 Reboot

- Select "Settings" "User Management" "Reboot" from the left menu.
- To reboot by software, click "Apply" button.
- The device will reboot automatically and it takes about 60 seconds.

7.5 Date and time

- Select "Settings" "User Management" "Date and Time" from the left menu.
- Configure Time Zone.
  - If you want to set the NTP Client, select "Enable".
  - Set the "Time Server".
  - Select the "Time Zone Select".
  - If you want to set the "Daylight Saving", check "Enable Daylight Saving".
  - If you want to set the duration of "Daylight Saving", set the below.
  - Finish setup by clicking the "Apply" button.
  - Changed configuration is applied immediately.

7.6 Remote Management

- Select "Settings" "User Management" "Remote Management" from the left menu.
- You can set HTTP Server port and HTTPS Server port.
- If you want to set https server, check "Enable" and type Port Number.
- Finish setup by clicking the "Apply" button.

8. Firmware Management

8.1 Software

- Select "Settings" "Firmware Management" "Software" from the left menu.
- Select the firmware file by clicking the "Choose File" button.
- To start the firmware update, click "Update" button.
- The device will be restart automatically.

9. Monitoring

9.1 Iperf

- Select "Settings" "Monitoring" "Iperf" from the left menu.
- You can use iperf by clicking the "Enable" button.
- Set the all data in the field.
- Finish setup by clicking the "Apply" button.
- Whenever you want to see the result, click "Refresh" button.

9.2 Diagnostic Ping

- Select "Settings" "Monitoring" "Diagnostic" from the left menu.
- Configure the Ping.
  - If you want to test ping, enter IP Address to "IP Address (URL)".
  - Set the all data in the field.
  - Click the "Apply" button to test.
  - The results come out below.

9.2.1 Trace router

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* Configure the Trace route.
   - If you want to test trace route, enter IP Address to "IP Address (URL)".
   - Select the "Set Maximum TTL" and "Set the number of queries at each TTL".
   - If you want to see report consisting of IP Address, check the "Report IP Address Only".
   - Click the "Apply" button to test. - The results come out below.

9.3 Log

- Select "Settings" "Monitoring" "Log" from the left menu.
- The device support 2 types of log : System log and Kernel log.

9.3.1 System log.
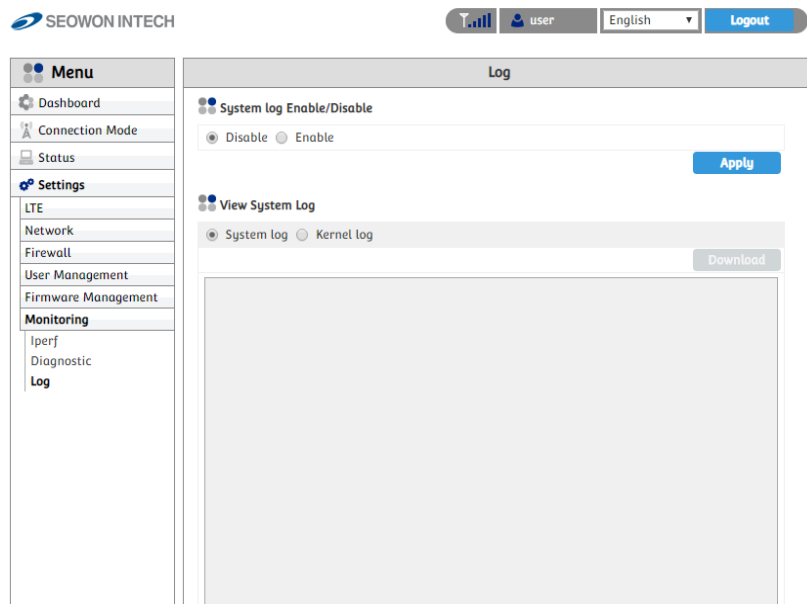
- Configure System log.
    - Check "Enable" in "System log Enable/Disable".
    - Check "System log" in "View System Log".
    - Click "Refresh" button or "Clear" button for each action.
    - If you want to download the log to your PC, click "Download" button.

9.3.1 Kernel log.

- Configure Kernel log.
  - Check "Kernel log" in "View System Log".
  - Check "Detailed" or "Simple" in below.
  - Click "Refresh" button or "Clear" button for each action.
  - If you want to download the log to your PC, click "Download" button

Troubleshooting

Refer to the following if you are having trouble connecting to the Internet:

1. Check the status of outdoor CPE.
- Check if the USIM Card is inserted.
- Check if the each Cable is connected. (Adapter, LAN Cable, PoE Cable)

2. Check the IP address of PC.
- For Windows 7/8/10
- Run [Command Prompt] and enter the [ipconfig] command to check the [IP address].

3. If IP Address is not normal – Set the IP Address of the PC manually.
   - For Windows 7/8/10
   ① Start > Control Panel > Network and Internet > Network Connections > Mouse right- click > Local Area Connection and Select Properties
   ② Click Properties of [Internet Protocol Version 4 (TCP/IPv4)] among Components.
   ③ Click [Use the following IP address]
   ④ Enter [192.168.1.2] for IP Address, [255.255.255.0] for Subnet Mask, and [192.168.1.1] for Default Gateway.
   ⑤ Click [Use the following DNS Server Address].
   ⑥ For [Preferred DNS Server], enter the communication company server of each country.
   ⑦ Click [OK]. Click [OK] again in the [Local Area Connection Properties] window.
      - For MAC OS X
   ① From the "Apple" menu, Choose "System Preference.."
   ② Click on the [Network] icon in the [Internet & Network] category.
   ③ Click on the [Ethernet] option from the left hand side of the Network setting window.
   ④ Select [Manually] option from the [Configure] drop-down menu.
   ⑤ Enter [192.168.1.2] for IP Address, [255.255.255.0] for Subnet Mask, and [192.168.1.1] for Default Gateway.
   ⑥ For [DNS Server], enter the communication company server of each country.
   ⑦ Click [Apply].

4. Run [MS-DOS] or [Command Prompt] and then perform PING Test with [192.168.1.1].
   A message [Reply from 192.168.1.1: bytes=32 time=1ms TTL=64] should appear when running [ping 192.168.1.1] command. If the result of the Ping test does not arrive properly, please contact the Customer Support Center.

Safety Information

Minor injury or product damage can occur the following directions are violated.

Caution

- Do not put any object on the product.

- Avoid heating devices.

- Do not disassemble, repair or redesign the product.

- Be careful not to allow any foreign matter inside the product.

- Do not leave the Product in a location where it is exposed to severe static electricity, as this can cause the product to malfunction.

- Do not put any metallic object(coin, hair pin) of flammable object inside the product, or drop the product.

- The device must be installed to provide a minimum of 20cm between the device and persons to comply with RF exposure limits.

- The device must be turned off during the flight.

Legal Information

FCC Part 15.105

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Part 15.19

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Part 15.21

Changes or modifications not expressly approved by the manufacture(or party responsible) for compliance could void the user's authority to operate the equipment.

FCC Radiation Exposure Statement:

The output power from the device is below the threshold for requiring RF exposure evaluation. The device must be installed to provide a minimum of 26.5cm between the device and persons to

FC

FCC ID : V7MBHSLCTOGA

Warranty Information

This product is the result of high-class craftsmanship based on strict quality control procedures.
- In case of Product failure or malfunction during normal usage, your product will be repaired free of charge within the Limited Warranty period.
- The Consumer shall bear any labor or parts charges not covered by this Limited Warranty.
- At the request for repair, you must provide the proof of purchase and the warranty.
- Keep the warranty in a safe location because it is not reissued.

Purchase date			
Quality warranty period	1(One) Year		
Seller			
Telephone number			
Consumer	Name		
	Address		
	Telephone number		
	E-mail		

The Consumer shall have no coverage or benefits under this Limited Warranty if the Product has been:
- Subjected to inappropriate use, improper storage, unauthorized repair, unauthorized modifications, neglect abuse, inadequate installation, misuse, damage caused by shipping, etc.
- Damaged from fire, flooding, windstorm, lighting, earthquake, theft, blown fuse, internet viruses, worms, Trojan Horses, etc.
- Treated with its Product Serial # removed or defaced.

SEOWON INTECH