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Created By	Eric

GloT Femto Cell User Guide

Modification History

Date	Change log	Author	Revision
2017/3/23	1st version	Eric, Joey	001

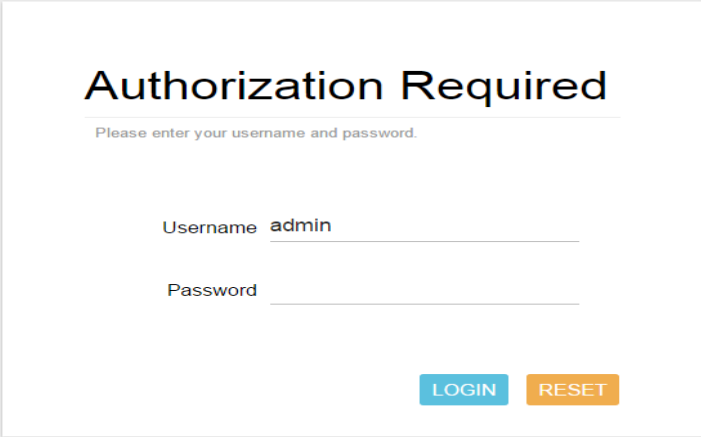
This GloT Femto Cell User Guide will assist you in navigating the system with the

following comprehensive guidelines.

1. Open Admin GUI

Connect to Femto Cell via wifi (SSID: AP-last 6 numbers of mac address)
Access Femto Cell WebUI via IP address "192.168.55.1".
Default username is "admin" and password is "admin".

Figure 1



The screenshot shows a web page titled "Authorization Required". Below the title is a subtitle "Please enter your username and password." There are two input fields: "Username" with the text "admin" entered, and "Password" which is empty. At the bottom right of the form are two buttons: "LOGIN" in blue and "RESET" in orange.

2. Status

The Status menu consists of the following categories: Overview, Routes, System Log, Kernel Log, Processes and Realtime Graphs. An introduction of each category will be distinctly stated in individual paragraphs.

2.1 Status - Overview

The purpose of this category is to view the following contents: system status, memory usage and network settings.

The contents are exhibited in one single page. Please scroll down the Status page to obtain an overall view. (figure2.A & figure 2.B & figure 2.C)

An “AUTO REFRESH ON/OFF” button is lodged on the top right of the panel. This function enables the status data to be refreshed every 5 seconds.
(figure3.A & figure3.B)

Figure 2.A - System Status

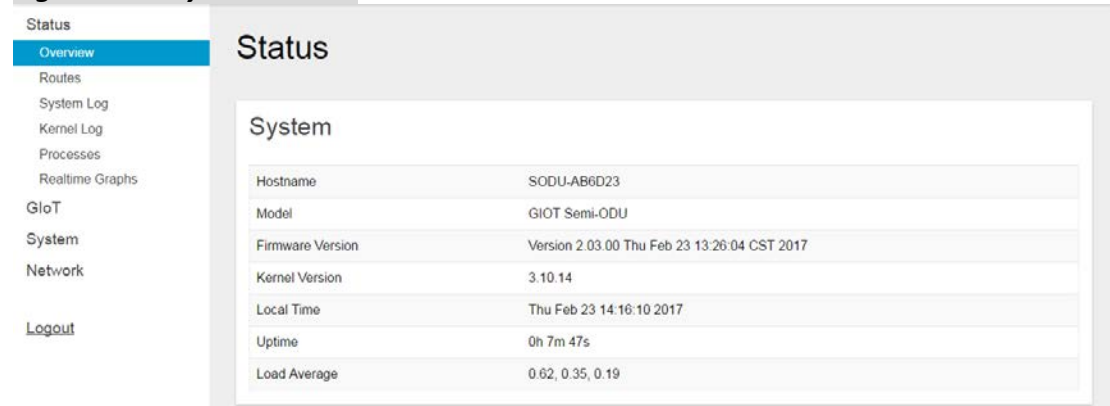


Figure 2.B - Memory Usage and Network Settings

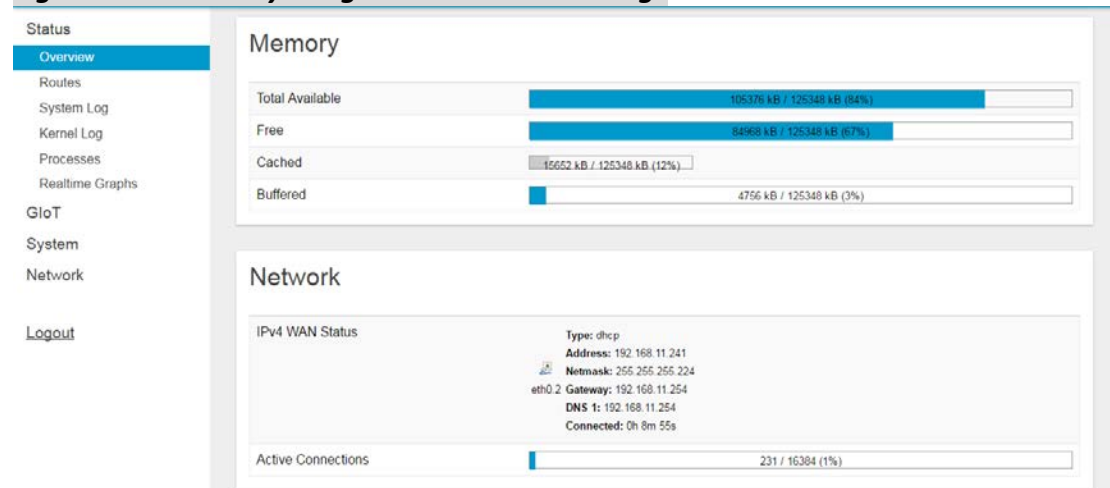


Figure 3.A - Status will auto refresh in 5 secs if “Auto Refresh ON” button is on

Femto-0f0708
UNSAVED CHANGES: 2
AUTO REFRESH ON

Status
Overview
Routes
System Log
Kernel Log
Processes
Realtime Graphs
GloT
System
Network
Logout

Status

System

Hostname	Femto-0f0708
Model	GIOT InDoor FemtoCell
Firmware Version	Version 2.03.02 Thu Mar 16 21:26:53 CST 2017
Kernel Version	3.10.14
Local Time	Thu Mar 23 13:11:49 2017
Uptime	0h 7m 55s
Load Average	0.82, 1.22, 0.69

Figure 3.B - Click “AUTO REFRESH ON/OFF” button to enable/ disable auto refresh.

Femto-0f0708
UNSAVED CHANGES: 2
AUTO REFRESH OFF

Status
Overview
Routes
System Log
Kernel Log
Processes
Realtime Graphs
GloT
System
Network
Logout

Status

System

Hostname	Femto-0f0708
Model	GIOT InDoor FemtoCell
Firmware Version	Version 2.03.02 Thu Mar 16 21:26:53 CST 2017
Kernel Version	3.10.14
Local Time	Thu Mar 23 13:12:09 2017
Uptime	0h 8m 15s
Load Average	0.59, 1.14, 0.67

2.2 Status - Routes

The purpose of this category is to view the ARP table and active IPv4 routes information.

Figure 4 - ARP table and Active IPv4 Routes

2.3 Status - System Log

This category is to view system log information.

Status

Overview

Routes

System Log

Kernel Log

Processes

Realtime Graphs

IoT

System

Network

Logout

System Log

Thu Feb 23 13:28:40 2017 user.emerg syslog:	switch reg write offset=2084, value=ff0003
Thu Feb 23 13:28:40 2017 user.emerg syslog:	switch reg write offset=2104, value=ff0003
Thu Feb 23 13:28:40 2017 user.emerg syslog:	switch reg write offset=2204, value=ff0003
Thu Feb 23 13:28:40 2017 user.emerg syslog:	switch reg write offset=2304, value=ff0003
Thu Feb 23 13:28:40 2017 user.emerg syslog:	switch reg write offset=2404, value=ff0003
Thu Feb 23 13:28:40 2017 user.emerg syslog:	switch reg write offset=2504, value=ff0003
Thu Feb 23 13:28:40 2017 user.emerg syslog:	switch reg write offset=2610, value=810000c0
Thu Feb 23 13:28:40 2017 user.emerg syslog:	switch reg write offset=2110, value=810000c0
Thu Feb 23 13:28:40 2017 user.emerg syslog:	switch reg write offset=2210, value=810000c0
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2310, value=810000c0
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2410, value=810000c0
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2510, value=810000c0
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2610, value=81000000
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2720, value=81000000
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2804, value=20ff0003
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2704, value=20ff0003
Thu Feb 23 13:28:50 2017 user.emerg syslog:	Special Tag Disabled
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2610, value=81000000
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2014, value=10001
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2114, value=10001
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2214, value=10001
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2314, value=10001
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2414, value=10002
Thu Feb 23 13:28:50 2017 user.emerg syslog:	switch reg write offset=2514, value=10002
Thu Feb 23 13:28:50 2017 user.emerg syslog:	REG_ESM_HT_PMC_ATC is 0x7f0002
Thu Feb 23 13:28:50 2017 user.emerg syslog:	

2.4 Status - Kernel log

This category is to view kernel log information.

Figure 6 - Kernel Log

Status
Overview
Routes
System Log
Kernel Log
Processes
Realtime Graphs
GloT
System
Network
Logout

Kernel Log

```

0.000000] Linux version 3.10.14 (sui@polaris) (gcc version 4.8.3 (OpenMPT/Linaro GCC 4.8-2014.04 unknown) ) #8 Thu Feb 23 13:27:00 CST 2017
0.000000] The CPU frequency set to 500 MHz
0.000000] PCI: bypass PCIe DLL
0.000000] PCI: Elastic buffer control: Addr:0x88 -> 0x84
0.000000] disable all power about PCIe
0.000000] CPU revision is: 00019650 (MIPS 24Kc)
0.000000] Software DPA cache coherency
0.000000] Determined physical RAM map:
0.000000] memory: 80000000 @ 00000000 (usable)
0.000000] initrd not found or empty - disabling initrd
0.000000] Zone ranges:
0.000000]   Normal: [mem 0x00000000-0x07ffffff]
0.000000]   Movable zone start for each node
0.000000]   Early memory node ranges
0.000000]     node 0: [mem 0x00000000-0x07ffffff]
0.000000]   On node 0 totalpages: 32768
0.000000] free_area_init_node: node 0, pgdat 80430a80, node_mem_map 81000000
0.000000]   Normal zone: 356 pages used for memmap
0.000000]   Normal zone: 0 pages reserved
0.000000]   Normal zone: 32768 pages, LIFO batch:7
0.000000] Primary instruction cache 64kB, 4-way, VPI, linesize 32 bytes.
0.000000] Primary data cache 32kB, 4-way, VPI, no aliases, linesize 32 bytes
0.000000] pcpu-alloc: s0 r0 d32768 u32768 alloc=1*32768
0.000000] pcpu-alloc: [0] 0
0.000000] Built 1 zonelists in Zone order, mobility grouping on. Total pages: 32512
0.000000] Kernel command line: console=ttyS1,57600n8 root=/dev/mtdblock5 rootfstype=squashfs,jffs2 running_firmware=rmwarel
0.000000] PID hash table entries: 512 (order: -1, 2048 bytes)

```

2.5 Status - Processes

The purpose of this category is to view the system processes that are in progress. Processes can be hung up, terminated, and killed for each individual Femto Cell item.

Figure 7 - Processes

Status
Overview
Routes
System Log
Kernel Log
Processes
Realtime Graphs
GloT
System
Network
Logout

Processes

This list gives an overview over currently running system processes and their status.

PID	Owner	Command	CPU usage (%)	Memory usage (%)	Hang Up	Terminate	Kill
1	root	/sbin/procd	0%	1%	HANG UP	TERMINATE	KILL
2	root	[kthreadd]	0%	0%	HANG UP	TERMINATE	KILL
3	root	[ksftirqd/0]	0%	0%	HANG UP	TERMINATE	KILL
4	root	[kworker/0:0]	0%	0%	HANG UP	TERMINATE	KILL
5	root	[kworker/0:0H]	0%	0%	HANG UP	TERMINATE	KILL
6	root	[kworker/u2:0]	0%	0%	HANG UP	TERMINATE	KILL
7	root	[watchdog/0]	0%	0%	HANG UP	TERMINATE	KILL
8	root	[khelper]	0%	0%	HANG UP	TERMINATE	KILL

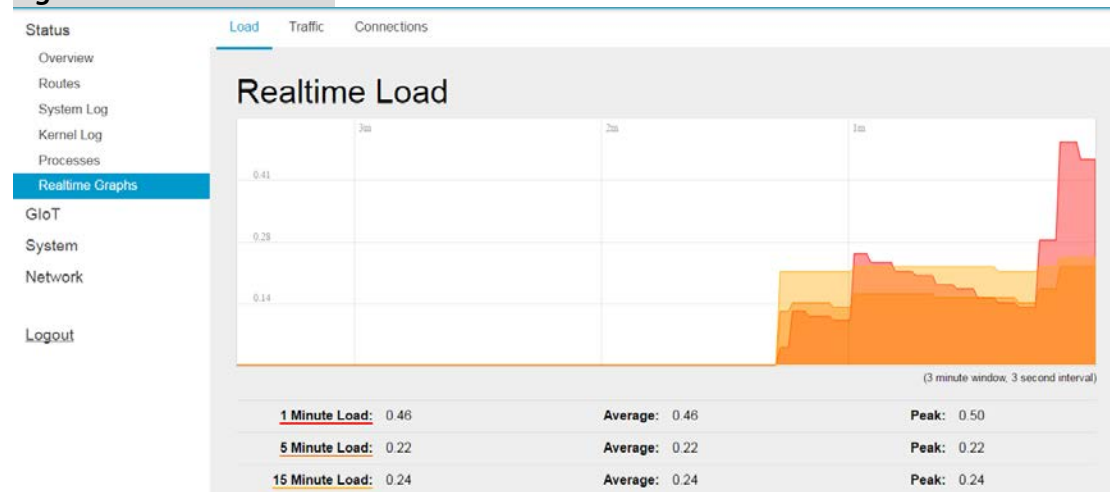
2.6 Status - Realtime Graphs

This category is further divided into the following sectors: Load, Traffic, and Connections. These options are lodged and labeled above the graph.

2.6.1 Load

To view the current load value and average of different time intervals.

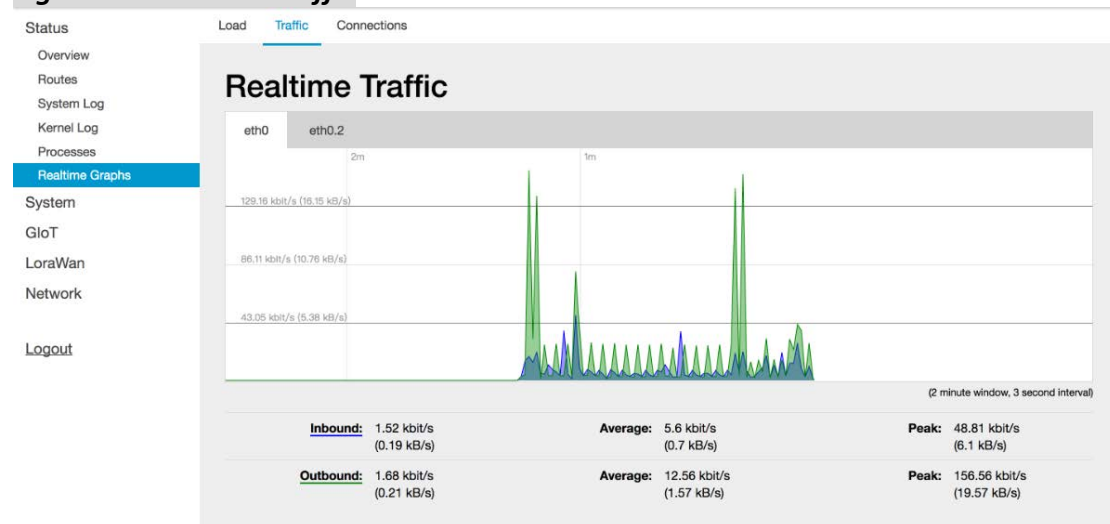
Figure 8 - Realtime Load



2.6.2 Traffic

To view the network traffic of each interface.

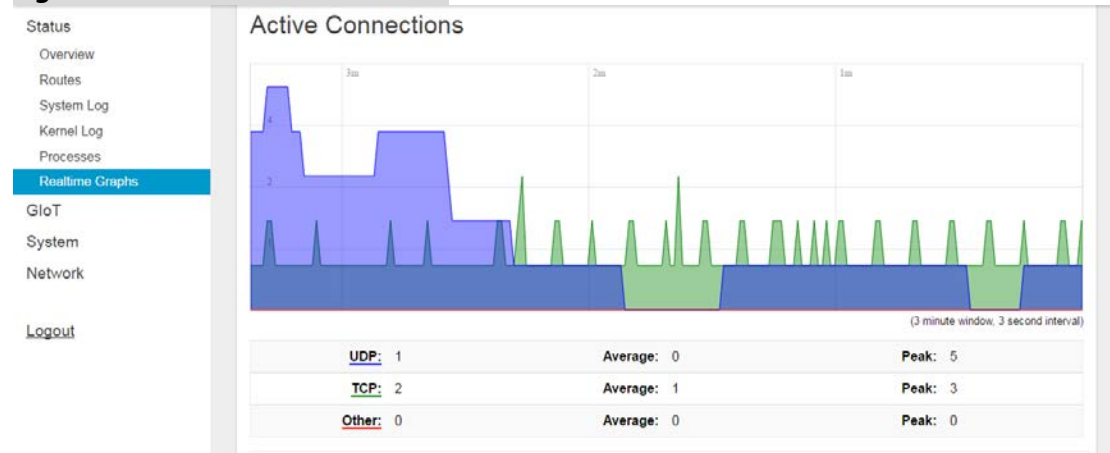
Figure 9 - Realtime Traffic



2.6.3 Connections

To view the currently active network connections.

Figure 10 - Realtime Connections



3. GloT

The GloT menu consists of the following categories: Status, Provision, Configuration and GPS MAP.

3.1 GloT - Status

The purpose of this category is to view GloT information as in its provision code, gateway type, gateway ID or LoRa modules, channels, spreading factor, and GPS status.

Figure 11 - GloT Info

- Status
- GloT
- Status**
- Provision
- Configuration
- GPS MAP
- System
- Network
- Logout

GloT Status

GloT Info

Provisioning Code	00001158 (Provision)
Area Code	00001158
Gateway Type	Semi-ODU
LoRa Module	ON
Gateway ID	1c497b9628d2
Radio 0	Ch0: ON 922.625MHz Ch1: ON 922.875MHz Ch2: ON 923.125MHz Ch3: ON 923.375MHz
Radio 1	Ch4: ON 923.625MHz Ch5: ON 923.875MHz Ch6: ON 924.125MHz

3.2 GloT - Provision

GloT provision code can be setup on this page.

Figure 12 - Provision Code

- Status
- GloT
- Status
- Provision**
- Configuration
- GPS MAP
- System
- Network
- Logout

Provision Code

System will reboot if activate Provision Code succeed

Code

SAVE

Powered by LuCI Trunk (git-860b4cc) / OpenWrt Barrier Breaker unknown

3.3 GloT - Configuration

Click “*PERFORM RESTART*” button to restart LoRa server.

The latitude and longitude coordinates can be manually embedded in this page. Click “*SAVE LOCATION*” button after inserting the coordinates or click “*SELECT ON MAP*” button to be redirected to the map in GPS Settings.

Figure 13 - GloT Management

The screenshot shows the 'GloT Management' web interface. On the left is a sidebar menu with the following items: Status, GloT, Status, Provision, Configuration (highlighted in blue), GPS MAP, System, Network, and Logout. The main content area is titled 'GloT Management' and contains two sections. The 'LoRa Management' section has a 'LoRa Restart' label and a blue 'PERFORM RESTART' button. The 'GPS Location' section has input fields for 'Latitude: Not Config' and 'Longitude: Not Config', with blue 'SAVE LOCATION' and 'SELECT ON MAP' buttons below them.

3.4 GloT - GPS MAP

To setup the GPS location, simply input your address location in the “Location” text field above the map or pinpoint your location on the map by dragging the red marker📍 to the correct spot.

Once the location is confirmed, the system will verify and apply the new Latitude/Longitude coordinates into its GPS setting.

Figure 14 - GPS Setting

Status
GloT
Status
Provision
Configuration
GPS MAP
System
Network
Logout

GPS

Here you can configure the GPS setting of your device. Please input the 'Location' or drag the location marker to change the setting.

Location: 303台灣新竹縣湖口鄉中華路15-1號



4. LoRaWan

The LoRaWan menu consists of the following categories: OTAA Status, OTAA, ABP and Network Server. The proper provision code has to be in place to reveal and access the LoRaWan features on the system menu. Please contact GIoT personnel if needed.

4.1 LoRaWan - OTAA Status

The purpose of this feature is to view the process status of a node joining Femto Cell via OTAA.

Figure 15 - OTAA Status

DevAddr	Device EUI	App EUI	Group Index	Latest Update Time
000ffc0	1122334455667788	383531385a347e19	0	2016-11-16 20:59:39

4.2 LoRaWan - OTAA

Click “ADD” button to create an OTAA rule entry.

To delete entries, select one or more OTAA rule entries and click “DELETE” button.

To edit an entry, select a rule entry and click “EDIT” button to proceed.

Please note that

1. The OTAA settings will be cleared after Femto Cell is reset to default.

2. The Aging Out Time must be at least 60 minutes.

Figure 16.A - OTAA - Add

Status
System
GloT
LoraWan
OTAA Status
OTAA
ABP
Network Server
Network
[Logout](#)

OTAA-Add/Edit

The description for the OTAA.

Parameter	Format	
Group Index	INT	0
AppEUI Start	16 HEX digits	1122334455667788
AppEUI Counts	Digit	5
DevEUI Start	16 HEX digits	383531385a347e19
DevEUI Counts	Digit	4
DevAddr Start	8 HEX digits	04ffff0
DevAddr Counts	Digit	5
AppKey	32 HEX digits	53A6B13B1E372D384C57
Again Out Time	Minute	60

[SAVE](#)
[CANCEL](#)

192.168.88.1/cgi-bin/fuse?.../OTAA

Figure 16.B - OTAA

Status
System
GloT
LoraWan
OTAA Status
OTAA
ABP
Network Server
Network
[Logout](#)

OTAA

The description for the OTAA.

1 / 1

	Group Index	AppEUI Start	App Counts	DevEUI Start	DevEUI Counts	DevAddr Start	DevAddr Counts	AppKey	Again Out Time (Minutes)	
	0	11223344 55667788	10	38353138 5a347e15	10	00ff ff0	5	53A6B13B 1E372D38 4C577BA3 F76B429C	60	EDIT

Figure 16.C - OTAA - Edit

InDoor
Status
System
GloT
LoraWan
OTAA Status
OTAA
ABP
Network Server
Network
[Logout](#)

OTAA

The description for the OTAA.

1 / 1

	Group Index	AppEUI Start	App Counts	DevEUI Start	DevEUI Counts	DevAddr Start	DevAddr Counts	AppKey	Again Out Time (Minutes)	
	0	11223344 55667788	10	38353138 5a347e15	10	00ff ffb1	10	53A6B13B 1E372D38 4C577BA3 F76B429C	70	EDIT

[DELETE](#)
[ADD](#)

4.3 LoRaWan - ABP

The main function of this feature is to add/delete/edit ABP rule entries on this page.
The ABP menu consists of the following categories: Individual and NetID Group.

4.3.1 INDIVIDUAL

Click **"INDIVIDUAL"** button to enter the INDIVIDUAL function page.

Click **"ADD"** button to create an ABP (INDIVIDUAL) rule entry.

To delete rule entries, select one or more ABP (INDIVIDUAL) rule entries and click **"DELETE"** button.

To edit a rule entry , select an ABP (INDIVIDUAL) rule entry and click **"EDIT"** button to proceed.

Please note that the ABP (INDIVIDUAL) settings will be cleared after Femto Cell is reset to default.

Figure 17.A - Individual

The screenshot shows the 'InDoor' interface with a sidebar menu on the left containing: Status, System, GloT, LoraWan, OTAA Status, OTAA, **ABP**, Network Server, Network, and Logout. The main content area is titled 'ABP' and includes the subtitle 'The description for the ABP'. Below this are two tabs: 'INDIVIDUAL' (highlighted with a red box) and 'NETID GROUP'. A table with three columns, 'DevAddr', 'NwkKey', and 'AppKey', is shown with a single empty row. At the bottom right, there are 'DELETE' and 'ADD' buttons. A page indicator '1 / 1' is visible in the top right corner.

Figure 17.B - Individual – Add

The screenshot shows the 'Individual-Update/Add' form. The sidebar menu is identical to Figure 17.A. The main content area is titled 'Individual-Update/Add' with the subtitle 'The description for the ABP'. It features 'INDIVIDUAL' and 'NETID GROUP' tabs. A table defines the parameters for the ABP rule:

Parameter	Format
DevAddr	8 HEX digits
NwkKey	32 HEX digits
AppKey	32 HEX digits

Below the table are input fields for each parameter. At the bottom right, there are 'SAVE' and 'CANCEL' buttons.

Figure 17.C - Individual – Edit

The screenshot shows the 'Edit' ABP configuration page. The sidebar menu is identical to Figure 17.A. The main content area is titled 'ABP' with the subtitle 'The description for the ABP'. It features 'INDIVIDUAL' and 'NETID GROUP' tabs. A table with three columns, 'DevAddr', 'NwkKey', and 'AppKey', is shown with one populated row. The 'DevAddr' field contains '00#faa'. The 'NwkKey' and 'AppKey' fields contain 32 hexadecimal digits. An 'EDIT' button (highlighted with a red box) is located to the right of the table row. At the bottom right, there are 'DELETE' and 'ADD' buttons. A page indicator '1 / 1' is visible in the top right corner.

4.3.2 NETID GROUP

Click “**NETID GROUP**” button to enter NETID GROUP function page.

Click “**ADD**” button to create a ABP (NETID GROUP) rule entry.

To delete rule entries, select one or more ABP (NETID GROUP) rules and click “**DELETE**” button.

To edit a rule entry, select a ABP (NETID GROUP) rule entry and click “EDIT” button to proceed.

Please note that the ABP (NETID GROUP) settings will be cleared after Femto Cell is reset to default.

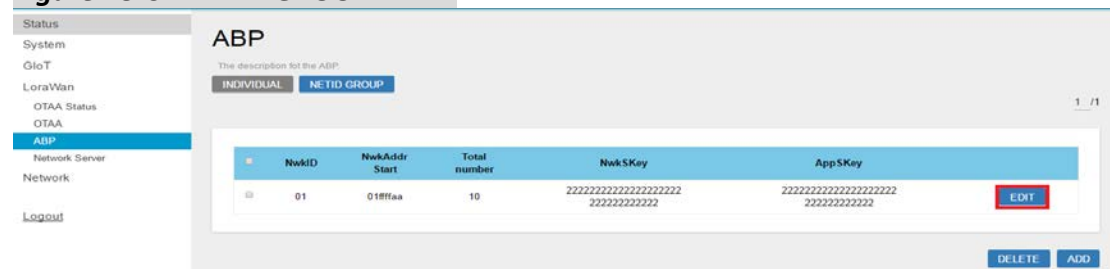
Figure 18.A - NETID GROUP



Figure 18.B - NETID GROUP - ADD



Figure 18.C - NETID GROUP - EDIT



4.4 LoRaWan - Network Server

The user can configure Network Server settings on this page.

The Femto Cell connects to the lora data center via CURL or MQTT.

Note that the node data will be sent to Gemtek lora data center if you select CURL.

Figure 19 - Network Server

Status
System
GloT
LoraWan
OTAA Status
OTAA
ABP
Network Server
Network
[Logout](#)

Network Server

The description for the Network Server

Protocol:	MQTT •
Hostname:	MQTTES
Username:	HTTPS
Password:	GWTBET
Publish topic:	admin
Subscribe topic:	GIOT-GW/DL
Downlink ACK:	GIOT-GW/DL-report
Port:	1883

APPLY

5. System

The System menu consists of the following categories: System, Administration, Backup, System Firmware, Reboot. Introduction and input procedures for each category are described in the following paragraphs.

5.1 System - System

Hostname and Timezone can be customized in the system properties.

Click “*Sync with Browser*” button (figure20.A) to adjust the local time.

Place a checkmark next to “*Enable NTP Client*” (figure20.B) to synchronize the time with NTP server.

If you choose to use another NTP server, please place a checkmark next to “*Provide NTP server*” and fill out the “NTP server candidates” text field.

Figure 20.A - System: System Properties

Status
GloT
System
System
Administration
Backup
System Firmware
Reboot
Network
Logout

System

Here you can configure the basic aspects of your device like its hostname or the timezone.

System Properties

Local Time: Wed Nov 16 15:59:55 2016 [SYNC WITH BROWSER](#)

Hostname: InDoor

Timezone: Asia/Taipei

Figure 20.B - System: Time Synchronization

Status
GloT
System
System
Administration
Backup
System Firmware
Reboot
Network
Logout

Timezone: Asia/Taipei

Time Synchronization

Enable NTP client ☒

Provide NTP server ☐

NTP server candidates

0	openwrt.pool.ntp.org	☒
1	openwrt.pool.ntp.org	☒
2	openwrt.pool.ntp.org	☒
3	openwrt.pool.ntp.org	☒



5.2 System - Administration

Gateway login password and SSH accessibility can be configured in this page.

Figure 21.A - Administration: Router Password

The screenshot shows the 'Router Password' configuration page. On the left is a sidebar menu with options: Status, GloT, System, System, Administration (highlighted), Backup, System Firmware, Reboot, Network, and Logout. The main content area has a title 'Router Password' and a subtitle 'Changes the administrator password for accessing the device'. Below this is a form with two input fields: 'Password' and 'Confirmation', each followed by a green checkmark icon.

Figure 21.B - Administration: SSH Access

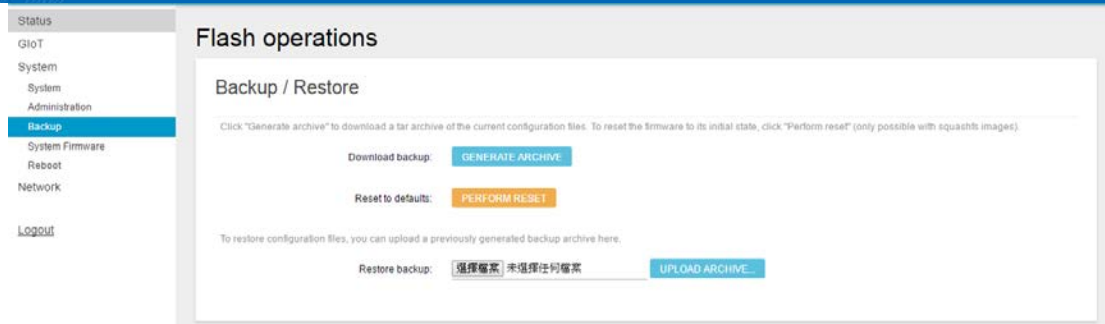
The screenshot shows the 'SSH Access' configuration page. On the left is the same sidebar menu as in Figure 21.A, with 'Administration' highlighted. The main content area has a title 'SSH Access' and a subtitle 'Dropbear offers [SSH](#) network shell access and an integrated [SCP](#) server'. Below this is a section titled 'Dropbear Instance' containing a table with configuration options. The table has columns for the setting name, its current value, and a description. The settings are: Port (22), Allow root logins with password (checked), and Gateway ports (checked). There is an 'ADD' button at the bottom left and a 'DELETE' button at the top right of the table.

Port	22	Specifies the listening port of this Dropbear instance
Allow root logins with password	☒	Allow the root user to login with password
Gateway ports	☒	Allow remote hosts to connect to local SSH forwarded ports

5.3 System - Backup

Click “*GENERATE ARCHIVE*” button to download the configuration file with the current gateway settings.

Figure 22.A - Backup/Restore



Click “*PERFORM RESET*” button to reset the firmware to its initial state.
Please note that the LoRa provision settings will NOT be reset by this action.

Figure 22.B - Backup/Restore

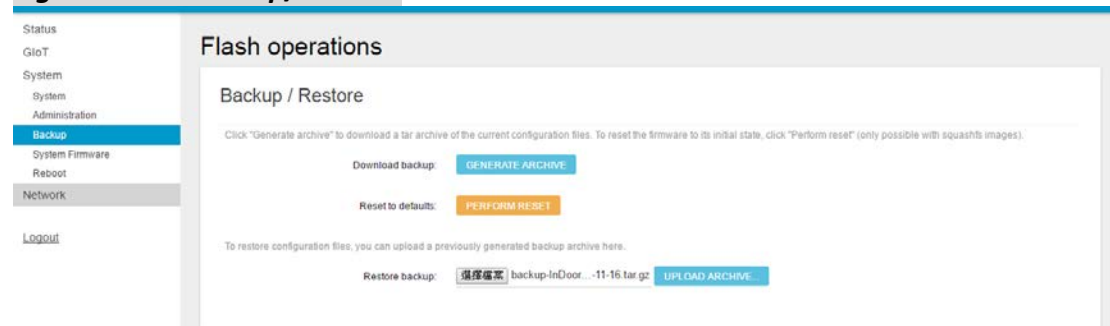


Choose the most recent backup file and click “*UPLOAD ARCHIVE*” to restore the configuration file. (figure 22.C & figure 22.D)

Figure 22.C - Backup/Restore



Figure 22.D - Backup/Restore



5.4 System - System Firmware

Click “*CHECK NEW FIRMWARE*” button to search the OTA server for the latest version of the new system firmware. Once a new system firmware version is detected on the OTA server, click “*UPGRADE NOW*” button to upgrade the newest system firmware from OTA server.

Figure 23.A - System Firmware

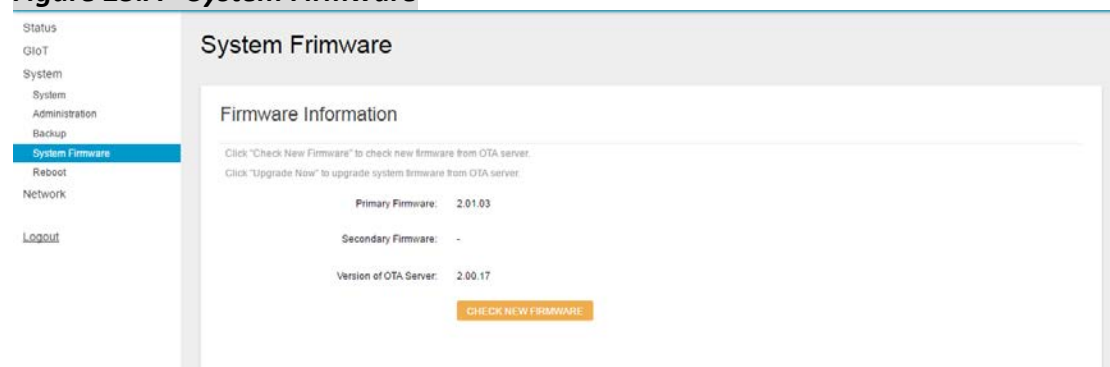
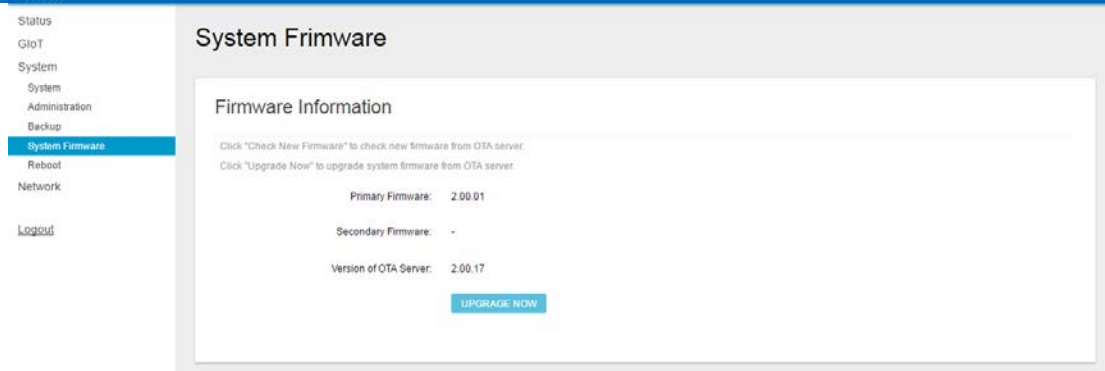


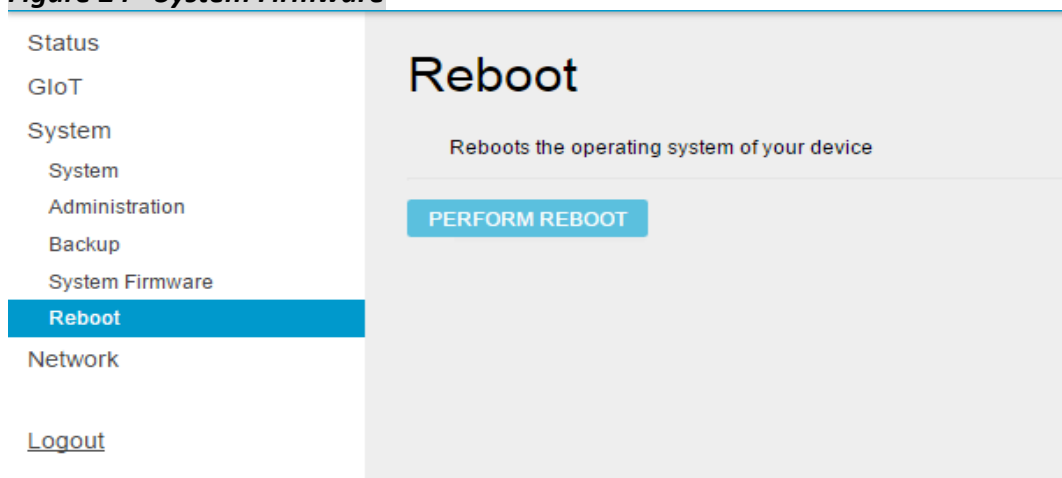
Figure 23.B - System Firmware



5.5 System - Reboot

Click "**PERFORM REBOOT**" to reboot your gateway.

Figure 24 - System Firmware



6 Network

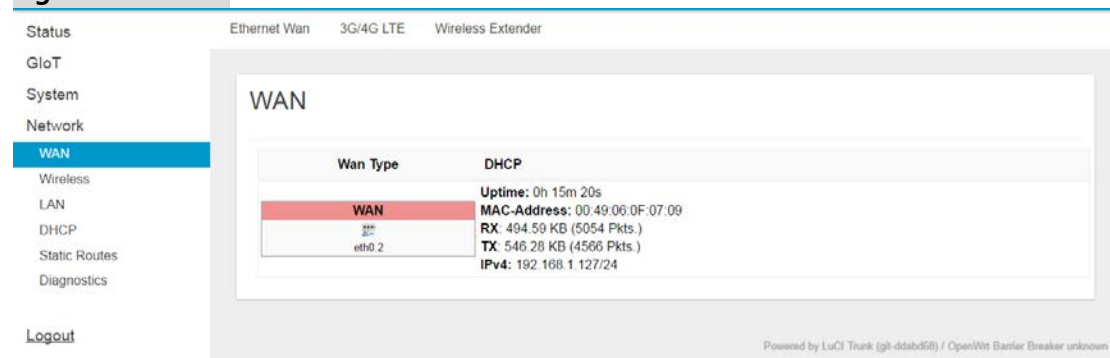
The System menu consists of the following categories: WAN, Wireless, LAN, DHCP, Static Routes and Diagnostics. Introduction and input procedures for each category are described in the following paragraphs.

6.1 Network - WAN

The purpose of this category is to view current WAN settings.

This category is further divided into three sectors: Ethernet Wan, 3G/4G LTE and Wireless Extender. These individual options are lodged and labeled above the main content panel.

Figure 25 - WAN



6.1.1 Ethernet WAN

This page is to setup the connection type in terms of Static IP, DHCP client or PPPoE. The three different options can be selected in the drop-down menu in "wantype". Please fill in the respective fields exhibited under each selection. Please make sure the Ethernet cable is connected to a WAN port.

Figure 26.A - WAN: Static IP

Status

GloT

System

Network

WAN

Wireless

LAN

DHCP

Static Routes

Diagnostics

Logout

Ethernet Wan

3G/4G LTE

Wireless Extender

wantypeStatic IP

IP Address

Subnet Mask255.255.255.0

Gateway

DNS Server

MAC Address00:49:06:0f:07:09

Figure 26.B - WAN: DHCP Client

Status Ethernet Wan 3G/4G LTE Wireless Extender

GloT

System

Network

WAN

Wireless

LAN

DHCP

Static Routes

Diagnostics

Logout

wantype: DHCP Client

MAC Address: 00:49:06:0f:07:09

SAVE RESET

Powered by LuCI Trunk (git-ddabdb58) / OpenWrt Barrier Breaker unknown

Figure 26.C - WAN: PPPoE

Status Ethernet Wan 3G/4G LTE Wireless Extender

GloT

System

Network

WAN

Wireless

LAN

DHCP

Static Routes

Diagnostics

Logout

wantype: PPPoE

Username

Password

MAC Address: 00:49:06:0f:07:09

SAVE RESET

Powered by LuCI Trunk (git-ddabdb58) / OpenWrt Barrier Breaker unknown

6.1.2 3G/4G LTE

This page is to setup required information.
Make sure the SIM card is installed.

Figure 27 - WAN: 3G/4G LTE

This screenshot shows the WAN configuration interface. The left sidebar lists navigation options: Status, GloT, System, Network, WAN (selected), Wireless, LAN, DHCP, Static Routes, Diagnostics, and Logout. The main content area is titled 'WAN' and has three tabs: Ethernet Wan, 3G/4G LTE (active), and Wireless Extender. The 3G/4G LTE tab contains the following fields:

- WAN TYPE: 3G/4G LTE (dropdown menu)
- Modem device: (dropdown menu)
- APN: (text input field)
- PIN: (text input field with a green lock icon)
- Username: (text input field)
- Password: (text input field with a green lock icon)

6.1.3 Wireless Extender

This page is to setup the Wireless Extender Mode for WAN connection. To activate the extended wireless connection, please select “Enable” from the Extender mode drop-down menu (figure 24.A). Click the “SCAN” button to obtain the list of available Access Points within your surrounding vicinity (figure 24.B).

Figure 28.A - WAN: Wireless Extender

This screenshot shows the Wireless Extender configuration interface. The left sidebar is the same as Figure 28.A, but 'Wireless' is selected under the 'Network' section. The main content area is titled 'Wireless Extender' and has a sub-header 'Click "Scan" to get Access Point List'. The configuration fields are:

- Extender mode: Enable (dropdown menu)
- SSID: Enable (dropdown menu)
- Security: Disabled (dropdown menu)
- KEY: (text input field)
- SCAN: (button)

At the bottom right, there are 'SAVE' and 'RESET' buttons.

6.2 Network - Wireless

The Wireless Setting is divided into two sectors in the same page: 2.4G and 5G.

6.2.1 2.4G

2.4G Interface Configuration to setup 2.4G wireless.

SSID, encryption type, and channels can be lodged within this sector.

Figure 29.A - Wireless Setting: 2.4G

The screenshot shows the '2.4G Interface Configuration' page. On the left is a navigation menu with options: Status, GloT, System, Network, WAN, **Wireless**, LAN, DHCP, Static Routes, and Diagnostics. Below the menu is a 'Logout' link. The main content area is titled '2.4G Interface Configuration' and contains the following settings:

- WiFi UP/Down: **ON** (dropdown menu)
- SSID: **AP-0f0708** (text input)
- Hidden Broadcast: ☐ (checkbox)
- encryption: **None** (dropdown menu)

6.3 Network - LAN

LAN IP can be setup in this page.

Figure 30 - LAN

The screenshot shows the 'LAN' configuration page. The left navigation menu is identical to Figure 29.A, with 'LAN' highlighted. The main content area is titled 'LAN' and contains a 'Local Network' section with the following setting:

- IP Address: **192.168.55.1** (text input)

At the bottom right of the main content area are two buttons: 'SAVE' (blue) and 'RESET' (orange).

6.4 Network - DHCP

You can manage detailed DHCP server settings, which includes First leased address, the allowed Number of leased addresses and Lease time.

Information on Active Leases can be viewed at the bottom of this page.

Figure 31 - DHCP

The screenshot shows the DHCP configuration page. On the left is a navigation menu with options: Status, GIoT, System, Network, WAN, Wireless, LAN, DHCP (highlighted), Static Routes, Diagnostics, and Logout. The main content area is titled 'DHCP' and contains a 'DHCP-Server' section. This section has four input fields: 'enable' (set to 'enable'), 'First leased address' (set to '100'), 'Number of leased addresses' (set to '102'), and 'Lease time (hr)' (set to '12').

6.5 Network - Static Routes

Static routes can be established by clicking the “ADD” button to enter proper settings. Click “Delete” to erase the entry.

Always click the “SAVE” button to apply your settings.

Figure 32 - Static Routes

The screenshot shows the 'Static IPv4 Routes' configuration page. The left navigation menu is the same as in the previous screenshot, with 'Static Routes' highlighted. The main content area is titled 'Routes' and includes a sub-header 'Static IPv4 Routes'. Below this is a table with the following columns: 'Interface', 'Target', 'IPv4-Netmask', 'IPv4-Gateway', 'Metric', and 'MTU'. The 'Target' column has a sub-header 'Host-IP or Network' and the 'IPv4-Netmask' column has a sub-header 'If target is a network'. The table is currently empty, with a message 'This section contains no values yet' at the bottom. An 'ADD' button is located at the bottom left of the table area.

6.6 Network - Diagnostic

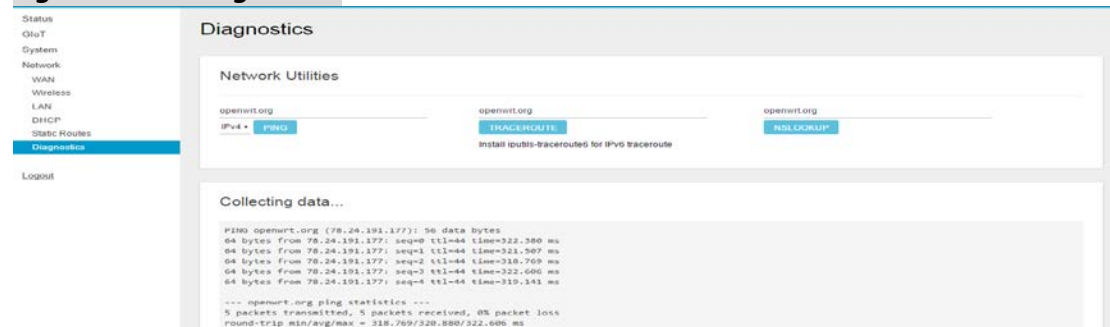
Diagnostics is divided into three parts on the same page: PING, TRACEROUTE and NSLOOKUP. Please see the following for input guidelines.

6.6.1 PING

Input a specific IP address in the text field above “PING”.

Click the “PING” button to ping the IP you have specified.

Figure 33.A - Diagnostics

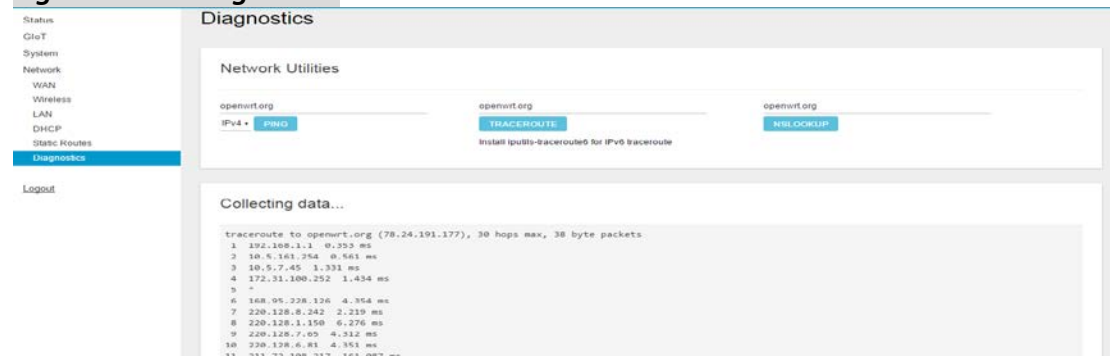


6.6.2 TRACEROUTE

Input a specific URL or IP address above “TRACEROUTE”.

Click the “TRACEROUTE” button to trace the URL or IP address you have specified.

Figure 33.B - Diagnostics



6.6.3 NSLOOKUP

Input a specific URL or IP address above “NSLOOKUP”.

Click the “NSLOOKUP” button to view the DNS server of the URL or IP address you have specified.

Figure 33.C - Diagnostics

Status
GloT
System
Network
WAN
Wireless
LAN
DHCP
Static Routes
Diagnostics
Logout

Diagnostics

Network Utilities

openurl.org

IPv4 • **PING**

openurl.org

TRACEROUTE

Install iputils-traceroute6 for IPv6 traceroute

openurl.org

NSLOOKUP

Collecting data...

Server: 127.0.0.1
Address 1: 127.0.0.1 localhost

Name: openurl.org
Address 1: 78.24.191.177 openurl.org

Federal Communication Commission Interference Statement

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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

IMPORTANT NOTE:

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Country Code selection feature to be disabled for products marketed to the US/CANADA

Operation of this device is restricted to indoor use only.

Professional installation instruction

Please be advised that due to the unique function supplied by this product, the device is intended for use with our interactive entertainment software and licensed third-party only. The product will be distributed through controlled distribution channel and installed by trained professional and will not be sold directly to the general public through retail store.

1. Installation personal

This product is designed for specific application and needs to be installed by a qualified personal who has RF and related rule knowledge. The general user shall not attempt to install or change the setting.

2. Installation location

The product shall be installed at a location where the radiating antenna can be kept 20cm from nearby person in normal operation condition to meet regulatory RF exposure requirement.

3. External antenna

Use only the antennas which have been approved by Gemtek Technology Co., Ltd.. The non-approved antenna(s) may produce unwanted spurious or excessive RF transmitting power which may lead to the violation of FCC limit and is prohibited.

4. Installation procedure

Please refer to user's manual for the detail.

5. Warning

Please carefully select the installation position and make sure that the final output power does not exceed the limit set force in relevant rules. The violation of the rule could lead to serious federal penalty.