

ATOM OD15 CPE Installation & Configuration Guide

Model EG8015G-M19

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About This Document

This document is for operators who will be installing and configuring the Baicells ATOM OD15 CPEs, model EG8015G-M19.

Related Documents

All technical specifications and documents are on the Baicells website under Resources > Documentation.

- Baicells SNAP PoE+ Router Data Sheet
- Baicells SNAP PoE+ Router User Manual
- Baicells ATOM OD06H/L Data Sheet

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Support Resources

- Documentation Baicells product data sheets, this document, and other technical manuals may be found at Baicells > Resources > Documentation.
- Support Open a support ticket, process an RMA, and the Support Forum are at Baicells > Support.

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1. Introduction

1.1. Description

The Baicells Atom OD15 Outdoor Low-Gain and Outdoor High-Gain User Equipment (UE) is part of a broadband wireless access system that integrates with Long-Term Evolution (LTE) backhaul networks to provide subscribers with Internet access. The UE, also referred to as Customer Premise Equipment (CPE), communicates through a wireless connection to the operator's eNodeB's (eNB) at cell sites located in the region. The eNBs communicate with the backhaul network.



Figure 1: LTE Network Architecture

The outdoor low-gain or high-gain UE may be selected because of the distance between the user's location and the closest eNB or for environments where there may be blockage or partial blockage in the wireless signal path between the UE and eNBs in the area - e.g., dense trees or buildings.

As an LTE standards-based product, the Baicells equipment provides higher near-line-of-sight (nLOS) and non-line-of-sight (NLOS) signal penetration than other wireless technologies. The high-gain UE has a higher antenna gain than the low-gain UE, making it possible to get the strongest possible signal reception for subscribers.

The LTE standards organization that defines certain characteristics of user equipment across manufacturers labels each progression of the standards as releases, such as Release 9, Release 10, etc., and categories, such as Category 4 (CAT4) and Category 6/7 (CAT6/7).

Typically the difference from one release/category to the next is in capacity, i.e., higher throughput. There is no physical difference between the CAT4 and CAT6/7 UE, but the low-gain UE and the high-gain UE do look different from one another. A physical comparison is provided in section 4.

1.2. ODU Modes

This device can work at two modes, ODU standalone or IDU+ODU mode.

(1) ODU standalone Mode

Standalone mode, ODU can worked at NAT/TUNNEL/BRIDGE mode

- a) NAT Mode, the ODU work as a LTE and Ethernet Gateway, it converts LTE network data to local Ethernet data.
- b) Tunnel Mode, the ODU can build a L2 or L3 VPN tunnel with a designated VPN server.
- c) Bridge Mode, the ODU can bridge it LTE IP address to LAN port devices, when configured as the bridge, the CPE's LAN port will work as trunk mode, so it can't assign IP address to any no-trunk devices (like PC), so you have to Manual Configure the PC's IP address in the same broadcast domain (e.g. 192.168.150.88).
- (2) IDU+ODU Mode

When the ODU connect to a IDU device (Baicells PoE router), it will automatic be configured as Bridge mode, and assign all its LTE IP to IDU, at that mode, the IDU will take the place of ODU to control all the CPE functions.

Before contacting Baicells FAE or your distributor, please **DO NOT** mixed use the two modes.



1.3. Features

The Baicells Atom UEs provide robust throughput and are designed for growth and expansion as technology evolves. Some of the key features and attributes of the Atom outdoor UEs are listed below. Exact specifications vary by model. For the latest information, please refer to the <u>Baicells website</u> for your specific UE model.

- Standardized LTE TDD bands 41. Customization may be requested.
- Complies with 3GPP Release 11 (CAT12/15)
- 1000 Mbps Ethernet interface
- Built-in bipolar directional LTE antenna
- Power supply using Power Over Ethernet (PoE)
- Cell lock, SIM lock, and Pin lock
- Pole or wall mount options
- TR-069 management protocol support
- Local and remote GUI management

2. Installation

2.1. Part & Materials

Refer to Table 1 for a list of the components that you should receive with the Baicells outdoor UE.

| Table | e 1: | Parts |
|-------|--------------|---------|
| Tuble | L T • | 1 01 13 |

| Item | Qty | Picture |
|-------------------|-----|---------|
| Atom OD15 unit | 1 | |
| Power Cable | 1 | |
| PoE Power Adaptor | 1 | |

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| Atom OD15 Mounting | 1 each | |
|--------------------|--------|--|
| Bracket | | |
| | | |
| | | |
| | | |

You will need standard tools, Ethernet cable, ground wire, and RJ-45 connectors for installing and connecting the outdoor unit (Table 2).

Table 2: Materials

| Item | Description |
|----------------|---|
| Ethernet Cable | Outdoor shield CAT5E, shorter than 330 feet |
| Ground Wire | 16mm ² yellow-green wire |

2.2. LEDs & Interfaces

On the low-gain UE the LEDs are on the side of the unit, and the connection interfaces are on the bottom of the unit. On the high-gain UE both the LEDs and the interfaces are on the side of the unit.

Table 3: LEDs

LEDs vary by model – not all models will have all of the LEDs listed below.

| Identity | Description | Color | Status | Description |
|------------|--------------------------|--------|-----------|---|
| 19.5 | LTE network and USIM | Plue | Off | The UE is not connected to the network |
| LQS | status | ыце | Steady On | The UE is connected to the LTE network |
| | Dower status | Vallow | Off | No power supply to the UE |
| PVK | Power status | rellow | Steady On | Power to the UE is on |
| LTE Signal | | | | The signal is too weak for the UE to connect to |
| | L/M/H 3 bars to indicate | Green | All Off | the network |
| | wireless connection | | Steady On | Bars will light steadily according to signal |
| | status. The more bars, | | | strength |
| | the stronger the signal | | | The UE is scanning the network |
| | between the UE and a | | Blinking | The UE is authenticating with the network |
| | network cell (eNB). | | | The UE is getting an IP address from the |
| | | | | network |

Table 4: Interfaces

Interfaces vary by model - not all models will have all of the interfaces listed below.

| Interfaces | Description |
|---------------|--|
| PoE | Power over Ethernet (PoE) power adaptor |
| SIM/USIM Slot | Universal Subscriber Identity Module card slot, 1.8V/3.0V USIM 2FF |



| Interfaces | Description |
|------------|--|
| RESET | Reset/restore button |
| GND | Ground lug. The unit is connected to Earth by conductor. |

2.3. CPE Software

The firmware of the CPE should be BaiCE_BG_1.5.4 or above, if the CPE is not running this version, please download it from the Baicells website > Resources > <u>Firmware</u> or contact Baicells support.

2.4. Login

The CPE comes preloaded with a GUI to configure the device. With the CPE turned on and connected to the router, access the GUI login page by opening a Web browser and entering <u>http://192.168.150.1</u>.

Figure 2: Login

| 4G Router | |
|-----------|--|
| Lisemame | |
| Password | |
| Log in | |

Initially, use the default Username = *admin*/Password = *admin* (Figure 21). Once you are in the GUI, you will want to change the password; please refer to <u>section 3.9.1 Account</u>.

2.5. Status Menu

2.5.1. Overview

After logging in, the GUI opens to the Status > Overview page. This page is a dashboard of key information regarding the CPE. The top row, *Current State*, shows the network connection status, signal intensity, LAN link status, and the number of smart devices (cell phones, pc's, laptops) connected to the Internet through the CPE.

The *Device Info* pane displays the product name, software version, serial number, etc. The *LTE Status* pane shows important operational information, such as the CPE's SIM card status and its IMSI and IMEI numbers, wireless frequency being used, eNB connection status, and current signal strength and quality.

Under *Throughput Statistics* you will see downlink (DL) and uplink (UL) data rates for current throughput (kbps), average rates, peak rates, and total throughput. The data is measured during a 3-second interval every 5 minutes. The *APN Status* pane displays any gateway connections. The bottom pane, *Devices List*, will show details about all smart devices currently connected through the CPE. Refer to Table 5 for a description of the *Status* fields.

Figure 3: Status

| Bricells | | | | | | | |
|----------|--|--|---|---|----------------------------------|--|------------|
| Status | | | | | | | |
| | Current State | 2 | | 8 | onnected | Good 1 Stand Intendity Destando | or and the |
| Network | l | | | _ | _ | | |
| LTE | _ | | | | | | |
| Security | Device Info | | | | | | |
| NAT | Product Name : | LTE BOUTER | | Software Versi | ion : BaiCE NG 1 | 3.4 | |
| Surtam | Product Model : | EG7010A_M11 | | Software Build | Time : Aug 3 2020 | 151547 | |
| System | Hardware Version : | A | | SN : | 120300008 | 12023400199 | |
| Reboot | LTE Module FW Versi | on: 0.5.3.12 | | MD : | 8075450400 | 066470 | |
| Log out | LTE Connection Time | : 2 days, 21 hours | , 6 minu, 27 secu | System Up Tim | ne : 3 days, 10 h | ours, 9 mins, 16 secs | |
| | | | | | | | |
| | LTE Status | Available 460680001200064 | DL Prequency(MHz) : UL Prequency(MHz) : | 3630.0 3630.0 | R5NP1 | -90.3 dBm | |
| | LTE Status | Available Asio680001200064 Asio68 | DL Prequency(MHz) : UL Prequency(MHz) : RSSI(JdHn) : | 1610.0 1610.0 -60.5 / -61.0 / -62.9 / -61.1 | R5891 | -90.3 dBm -94.8 dBm | |
| | LTE Status USM : MR2 : POMV : PC : | Analiable Asibeletotti200064 Asibele Tel | DL Frequency(MHz) : UL Frequency(MHz) : R031(dbm) : R032(db) : | 36338 36538 4857 4837 4839 / 483 487 487 487 487 488 | 85891 85892 85893 | -90.3 dBm -94.8 dBm -92.8 dBm | |
| | LTE Status USM : MR2 : RUNV : RC : Cell D : Cell D : | Analishie 460680001300064 46068 183 87 87 | DL Frequency(MH4) 1 UL Frequency(MH4) 1 R030;dtm() 1 R040;j40 1 S040;j40 1 | 3650.8 3650.8 -60.5 / -60.3 / -62.9 / -63.3 -63.7 -63.7 -63.9 / -63.8 25 25 24 / -15 | R5891 | -90.3 dBm -94.8 dBm -92.8 dBm -93.2 dBm | |
| | LTE Status USM : MR2 : POMV : PO : Cel 10 : WR8 10 : MR8 10 : | Available 460680001190064 46068 180 87 0 0 40000 | DL Frequency(MH4) 1 UL Frequency(MH4) 1 R030;d8(4) 1 R040;j48 1 S840;j48 1 C(2) 1 T2980;j484 1 | 3650.8 3650.8 -60.5 / 46.0 / 42.9 / 43.3 -60.7 -40.7 -40.9 / 40.9 25 14 / 15 14 / 15 | R5891 R5892 R5893 R5894 | -90.3 dBm -94.8 dBm -92.8 dBm -93.2 dBm | |
| | LTE Status USM : MEI: FUMV: FCI: CellD: eNEID: EARPON: | Available 460680001190064 46068 183 87 0 44090 20 | DL Frequency(MH4) 1 UL Frequency(MH4) 1 R050;d8m(1 R040;j48) 1 S3M0;d8) 1 CQ1 1 CQ1 1 T3M0;d8m(1 R04m 1 | 3650.8 3650.8 -60.5 / 46.0 / 42.9 / 43.3 -60.7 -40.7 -40.9 / 40.9 25 14 / 15 16.5 Ne | R5891 R5892 R5893 R5894 | -90.3 dBm -94.8 dBm -92.8 dBm -93.2 dBm | |

Figure 4: Throughput Statistics

Throughput Statistics

| | | 3+ | | 24 | | - he | 2. 2. 2. 2. 2. 2. | _ |
|------------|------------------------------|---------|---------------------------|------|-----------|------|---------------------------------|---|
| 10.141 | ingo (that when | | | | | | | |
| 14793 | No. (1997, 1997) | | | | | | | |
| 3230 | NA DACINE | | | | | | | |
| | | | | | | | 3 weate andres 1 larenatio | |
| <u>91.</u> | 10.57 Moleck (12.45 MB/h) | Average | NEET MARKS (12.30 MRX) | Peak | PLAT MEN | Saw. | 21.36.07 18 2022.548521 Pets | |
| site: | EMPA | Average | 215 92255 | Peak | ALL MERCH | Sam | THE REAL OF MALE | |

Figure 5: Internet Statistics

| nternet Status | | | | |
|---------------------|---------------|------------------------|---|--|
| Notice Name 1 | APH1 | | | |
| Pub Aubiente 1 | 10,000.10.101 | Probabilities - | 4 | |
| full Primary DNS : | DEPERTATION | multituring (NG) | 1 | |
| Pol Secondary ONE : | 1010 | Public Considery (196) | | |



Figure 6: LAN Status

| LAN Status | | |
|--------------------|-----------------|-------------------|
| IPv4 Address : | 192.168.150.1 | IPv6 Address : |
| IPv4 Netmask : | 255.255.255.0 | IPv6 Prefix : |
| IPv4 MAC Address 1 | 48/0474.0da9/ca | Ipv6 Prefix Len : |

Figure 7: Device List

| C62 F121 | | | |
|---------------------------|--------------------------|-----------------|------------|
| Phoet Niama | MAC Advinue | (P Address) | Loses Time |
| Comparison and statements | Transfer Status (Spinsor | 100 100 100 100 | 12,4111 |

Table 3: Status

| Field Name | Description |
|---------------------|---|
| Connection State | Connection status between the CPE and the network – either Checking SIM, Scanning, |
| | Registering, Acquiring IP, Connected, or Disconnected |
| Signal Intensity | Indicates the strength of the signal between this CPE and the serving eNB, either |
| | excellent, good, general, bad, or severe. The ODU CPE hardware typically displays 1 to 5 |
| | LEDs to indicate this level (Figure 3&4). |
| Devices Connected | The number of smart devices connected to the Internet through this CPE via a LAN or |
| | Wireless LAN (WLAN)/Wi-Fi connection |
| Device Info | |
| Product Name | LTE ROUTER indicates the CPE is operating as a router |
| Product Model | ODU CPE model number |
| Hardware Version | ODU CPE hardware version |
| LTE Module FW Name | LTE Module FW's version |
| LTE Connection Time | The timer will be reset after every LTE connections |
| Software Version | ODU CPE operating software version |
| Software Build Time | Date and time the software was built |
| SN | Serial Number |
| IMEI | International Mobile Equipment Identity is like a serial number for the SIM card |
| System Up Time | The timer will be reset after reboot |
| LTE Status | |
| USIM | The Universal Subscriber Identity Module, or SIM, card status is either available or not |
| | ready in the ODU CPE |
| IMSI | The unique International Mobile Subscriber Identity (IMSI) number associated with the |
| | SIM card in the subscriber's ODU CPE. The IMSI must be identifiable by the operator's LTE |
| | network in order to access it. |
| PLMN | The Public Land Mobile Number (PLMN), or operator network ID, to which the CPE is |
| | connected |
| PCI | The Physical Cell Identifier (PCI) unique to each eNB. PCI indicates to which eNB the |
| | ODU CPE is connected. An operator can have multiple eNBs serving the same cell. |
| eNB ID | The operator's cell site ID to which the CPE is connected. A cell site may comprise more |
| | than one eNB. Each eNB is given a PCI to identify it. |



| which the CPE operatesBandwidthThe range of frequencies within the band the CPE may use for wireless communications with an eNB, expressed in MHzCINRThe Channel Signal-to-Interference-plus-Noise Ratio reflects the signal strength of the signal received from the two antennas in the eNB, expressed in decibels (dB) NOTE: Additional SINR values are reported when a transmitting device is using more than two antennas.DL FrequencyThe frequency, in MHz, being used in the downlink (eNB to CPE). In LTE, the carrier frequency in the uplink and downlink is designated by the EARFCN, which identifies the LTE band and carrier frequency.UL FrequencyThe frequency, in MHz, that the CPE is using in the uplink (CPE to eNB). In LTE, the carrier frequency in the uplink and downlink is designated by the EARFCN, which identifies the LTE band and carrier frequency.RSSI (dBm)Reference Signal Receiving Quality indicates the quality of the wireless signalCQIChannel Quality indicationTXPWR (dBm)Real time UE TX power | EARFCN | The E-UTRA Absolute Radio Frequency Channel Number (band and frequency) within |
|--|-----------------------|--|
| BandwidthThe range of frequencies within the band the CPE may use for wireless communications with an eNB, expressed in MHzCINRThe Channel Signal-to-Interference-plus-Noise Ratio reflects the signal strength of the signal received from the two antennas in the eNB, expressed in decibels (dB) NOTE: Additional SINR values are reported when a transmitting device is using more than two antennas.DL FrequencyThe frequency, in MHz, being used in the downlink (eNB to CPE). In LTE, the carrier frequency in the uplink and downlink is designated by the EARFCN, which identifies the LTE band and carrier frequency.UL FrequencyThe frequency, in MHz, that the CPE is using in the uplink (CPE to eNB). In LTE, the carrier frequency in the uplink and downlink is designated by the EARFCN, which identifies the LTE band and carrier frequency.RSSI (dBm)Reference Signal Receiving Quality indicates the quality of the wireless signalCQIChannel Quality indicationTXPWR (dBm)Real time UE TX power | | which the CPE operates |
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| CINRThe Channel Signal-to-Interference-plus-Noise Ratio reflects the signal strength of the signal received from the two antennas in the eNB, expressed in decibels (dB) NOTE: Additional SINR values are reported when a transmitting device is using more than two antennas.DL FrequencyThe frequency, in MHz, being used in the downlink (eNB to CPE). In LTE, the carrier frequency in the uplink and downlink is designated by the EARFCN, which identifies the LTE band and carrier frequency.UL FrequencyThe frequency, in MHz, that the CPE is using in the uplink (CPE to eNB). In LTE, the carrier frequency in the uplink and downlink is designated by the EARFCN, which identifies the LTE band and carrier frequency.WL FrequencyReference Signal Receiving Quality indicates the quality of the wireless signalCQIChannel Quality indicationTXPWR (dBm)Real time UE TX power | | with an eNB, expressed in MHz |
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| UL FrequencyThe frequency, in MHz, that the CPE is using in the uplink (CPE to eNB). In LTE, the carrier frequency in the uplink and downlink is designated by the EARFCN, which identifies the LTE band and carrier frequency.RSSI (dBm)Reference Signal Receiving Quality indicates the quality of the wireless signalCQIChannel Quality indicationTXPWR (dBm)Real time UE TX power | | LTE band and carrier frequency. |
| frequency in the uplink and downlink is designated by the EARFCN, which identifies the LTE band and carrier frequency.RSSI (dBm)Reference Signal Receiving Quality indicates the quality of the wireless signalCQIChannel Quality indicationTXPWR (dBm)Real time UE TX power | UL Frequency | The frequency, in MHz, that the CPE is using in the uplink (CPE to eNB). In LTE, the carrier |
| LTE band and carrier frequency. RSSI (dBm) RSRQ (dBm) Reference Signal Receiving Quality indicates the quality of the wireless signal CQI Channel Quality indication TXPWR (dBm) Real time UE TX power | | frequency in the uplink and downlink is designated by the EARFCN, which identifies the |
| RSSI (dBm) Reference Signal Receiving Quality indicates the quality of the wireless signal CQI Channel Quality indication TXPWR (dBm) Real time UE TX power | | LTE band and carrier frequency. |
| RSRQ (dBm)Reference Signal Receiving Quality indicates the quality of the wireless signalCQIChannel Quality indicationTXPWR (dBm)Real time UE TX power | RSSI (dBm) | |
| CQI Channel Quality indication TXPWR (dBm) Real time UE TX power | RSRQ (dBm) | Reference Signal Receiving Quality indicates the quality of the wireless signal |
| TXPWR (dBm) Real time UE TX power | CQI | Channel Quality indication |
| | TXPWR (dBm) | Real time UE TX power |
| Roam Roam status | Roam | Roam status |
| Throughput Statistics | Throughput Statistics | |
| DL The current downlink data throughput rate, in Kbps | DL | The current downlink data throughput rate, in Kbps |
| UL The current uplink data throughput rate, in Kbps | UL | The current uplink data throughput rate, in Kbps |
| Average The average DL and UL data throughput rates, in Kbps, for this CPE in the last 3 minutes | Average | The average DL and UL data throughput rates, in Kbps, for this CPE in the last 3 minutes |
| Peak The peak DL and UL data throughput rates, in Kbps, for this CPE in the last 3 minutes | Peak | The peak DL and UL data throughput rates, in Kbps, for this CPE in the last 3 minutes |
| Sum The total (sum) DL and UL data throughput rates, in Kbps | Sum | The total (sum) DL and UL data throughput rates, in Kbps |
| Internet Status | Internet Status | |
| APN Number Access Point Name (gateway) connection to other network devices. At least one APN | APN Number | Access Point Name (gateway) connection to other network devices. At least one APN |
| must be configured to establish the TR-069 connection to the CloudCore or other NMS | | must be configured to establish the TR-069 connection to the CloudCore or other NMS |
| Enable Indicates if the APN is enabled or disabled | Enable | Indicates if the APN is enabled or disabled |
| MAC Address MAC address of the APN gateway | MAC Address | MAC address of the APN gateway |
| Connection Type Type of network connection | Connection Type | Type of network connection |
| IP Address IPv4, IPv6, or IPv4v6 address of the APN gateway | IP Address | IPv4, IPv6, or IPv4v6 address of the APN gateway |
| DNS server Domain Name Server IP address | DNS server | Domain Name Server IP address |
| LAN Status | LAN Status | |
| MAC Address MAC address of the LAN device, e.g., router, to which the CPE is connected | MAC Address | MAC address of the LAN device, e.g., router, to which the CPE is connected |
| IP Address The IP address of the LAN device | IP Address | The IP address of the LAN device |
| Netmask The subnet mask of the LAN device | Netmask | The subnet mask of the LAN device |
| Devices List | Devices List | |
| Index Numerical ID assigned to each smart device connected through the ODU CPE | Index | Numerical ID assigned to each smart device connected through the ODU CPE |
| Device Name The name of each smart device connected through the CPE | Device Name | The name of each smart device connected through the CPE |
| MAC Address The MAC address of each smart device connected through the CPE | MAC Address | The MAC address of each smart device connected through the CPE |
| IP Address The IP address of each device connected through the CPE | IP Address | The IP address of each device connected through the CPE |
| Lease Time Amount of time a smart device's IP address has been leased | Lease Time | Amount of time a smart device's IP address has been leased |
| Type of smart device connection | Туре | Type of smart device connection |

2.6. Network Menu

2.6.1. LAN Settings

Enter the Network > LAN DHCP Server enable, IP address, subnet mask, DHCP range, lease time, UPNP enable.

Figure 8: DHCP Settings

| THES-OF | OHCP | | | |
|---------------|------|-----------------|--------------------|---|
| and leaves | DHCK | | | |
| Marth Reserve | | and here. | Unite. | - |
| (MA) | | W. Inside and | 10.001 | |
| iner. | | Summer Starte | 200.000.000-0 | |
| CHE . | | Sector Sprint | 700,700,200,70 | |
| Security . | | 1000 Hot (140 H | 702.000.000.000 | |
| PART | | loss test | - | |
| System . | | | Sheet * | |
| Rebot | | 1988 Salita | W Party, U through | |
| tag out | | | | |

DHCP Static Leases settings can set by the host's MAC address.

Figure 9: DHCP Static Leases

| DHCP Static Leases |
|--|
| |
| Basic Settings DHCP Static Leaves (Exatle + Aqub Canot |
| |
| Add DHCP Static Lease IP Address : Image: Canad Mill: Address : Image: Canad |
| |
| Current DHCP Static Leases No. IP Address MAC Address Selected Edit Later Later Career |

2.6.2. WAN Settings

2.6.2.1. NAT Mode

The CPE will be worked at NAT mode, and all 8 APNs can be configured by Default router/Data/Mgmt/Voip bear types.

Figure 10: WAN Settings

| A | | | | | | | - 8.4 |
|--|----------------|--|---|---|---|---------|-------|
| A 1011 1 1000 | 0.5.0.0.000 | All second and second and | | | | 11+1-21 | |
| Status Network | WAN Setting | p. | | | | | |
| Billion Second | Operation \$70 | de la cherte de la | (ereal) | 2 | | | |
| | Prottie List | | | | | | |
| tt belafy AAT Gyflen Feboet Lagad | | Avele April 494 494 495 495 495 495 495 495 495 495 | Bar typ Dright Kante Drig Rigen Rigen Rigen Rigen Rigen Rigen | | | | |
| | Porta Settop | Train Species | | | - | | |
| | PART BALLA | | | | | | |

2.6.2.2. Router Mode

When selected Router mode, the CPE will worked at router mode, it can dynamic update router tables.

Figure 11: Router Mode

| Operation Mode | | | | | |
|----------------|-----------------|---------------|-----|------|--|
| | Operation Month | Houser Martin | (a) | | |
| | | | | Ante | (Carling Street, Stree |
| | | | | | - |

2.6.2.3. Tunnel Mode

This CPE can support L2TP and GER VPN mode.

Figure 12: Tunnel Mode

| | Operation Mode : | Tunnel Mode * |
|------------|------------------|---------------|
| unnel Mode | | |
| | VPN Type : | L2TP • |
| | NAT Support : | Enable • |
| | Default Route : | VPN + |
| | Host name : | |
| 2TP | | |
| | BCP Support : | Disable • |
| | L2TP Server IP : | |
| | L2TP User : | admin |
| | L2TP Password : | |

2.6.2.4. Bridge Mode

When the CPE worked at Bridge mode, the WAN ports address will bridge to LAN port, and the LAN port will worked at trunk mode.

| Operation Mode | | | | |
|-----------------|------------------|-------------|----------|--------|
| | Operation Mode : | Bridge Mode | | |
| | | | | |
| Profile List | | | | |
| Index | Profile Name | Vlan Id | Edit | |
| 1 | APN1 | 1121 | 0 | |
| 2 | APN2 | 1122 | 0 | |
| 3 | APN3 | 1123 | 0 | |
| 4 | APNA | 1124 | 0 | |
| 5 | APN5 | 1125 | 0 | |
| 6 | APN6 | 1126 | 0 | |
| 7 | APN7 | 1127 | 0 | |
| 8 | APN8 | 1128 | 0 | |
| | | | | |
| Profile Setting | | | | |
| - | Profile Name : | | | |
| | Vian ld : | | (0-4094) | |
| | | | | |
| | | | Apply | Cancel |
| | | | | |

Figure 13: Bridge Mode

2.6.2.5. Mixed Mode

Mixed mode can configured every APN with different mode (e.g. Bridge), this is a professional mode.

Figure 14: Mixed Mode

| Operatio | on Mode | | | | | |
|-----------|--------------|-------------|----------------|----------------|-------|--------|
| | Operat | ion Mode : | Mixed Mode | | | |
| Profile L | ist | | | | | |
| Index | Profile Name | Mode | Vlan Id | Bear Type | Edit | |
| 1 | APN1 | Bridge | 1121 | Default Router | 0 | |
| 2 | APN2 | Bridge | 1122 | Data | 0 | |
| 3 | APN3 | Bridge | 1123 | Mgmt | 0 | |
| 4 | APN4 | Bridge | 1124 | Voip | 0 | |
| 5 | APN5 | Bridge | 1125 | Reserve | 0 | |
| 6 | APN6 | Bridge | 1126 | Reserve | 0 | |
| 7 | APN7 | Bridge | 1127 | Reserve | 0 | |
| 8 | APNB | Bridge | 1128 | Reserve | 0 | |
| Profile S | Setting | | | | | |
| | Pro | file Name : | | | | |
| | | Mode : | NAT Mode | | | |
| | 1 | Bear Type : | Default Router | * | | |
| | | | | | | |
| | | | | | Αρρίγ | Cancel |

2.6.3. Static Routes

Figure 15: Static routes

Set Static routes of the CPE, it can configure LAN or WAN port routes, Gateway, Destination Network and Route Subnet Mask, in Current Settings, show all activated static routes.

| Bricells | |
|---------------|--|
| Status | |
| Network | Route Settings |
| LAN Settings | |
| WAN Settings | |
| WLAN Settings | Route Settings |
| Static Routes | Route Type : LAN + |
| C4M2 | Gateway : |
| UPeP | Destination Network : |
| LTE | Route Subnet Mask : |
| Security | |
| NAT | Apply Careed |
| System | |
| Reboot | |
| Log out | |
| | Current Settings |
| | Route Type Gateway Destination IP(reachable) Route Subnet Mask Selected Edit |
| | |
| | Delete Carcel |
| | |



2.6.4. DMZ

In technology, the DMZ refers to a firewall between incoming WAN traffic and the LAN to which the CPE is connected. Two basic DMZ methods are (a) using a single firewall, also known as the three-legged model, and (b) using dual firewalls (Figure 36). These architectures can be expanded to create complex architectures depending on the network requirements.

Figure 16: DMZ



When the LAN has a DMZ/firewall server, you can enable DMZ on the CPE so that packets from the WAN are forwarded to the firewall (Figure 37). Alternatively, you can enable Internet Control Message Protocol (ICMP) redirect error messages to support Layer 2 multicast features.

Figure 17: DMZ Settings

| DMZ | DMZ Setting : DMZ Address : | Eude | Ŧ | | |
|-----|--------------------------------|------|---|-------|-------|
| | | | | Apply | Canol |

2.6.5. UPnP

The Universal Plug & Play (UPnP) function provides a set of networking protocols that allows device-to-device networking on a local network. When UPnP is enabled, devices seamlessly and dynamically discover each other's presence on the network and attach to one another and to network services. Often, UPnP is used for streaming media between devices on the network.

Go to Security > UPnP to enable the CPE to be searched by other devices (Figure 38). Once enabled, any redirects of traffic will display in the *Active UPnP Redirects* section of the window.

| | | - | | | | | | |
|-------------------|--------------|---------|---|-------------|---------|---------------|-------------|--|
| UPnP | PoP Setting: | Enable | ¥ | Auto | Careeri | | | |
| Port Mapping List | | Protect | 4 | Extend Port | | internal Port | Description | |
| | | | | | | | | |

Figure 18: UPnP Settings

2.7. LTE Menu

2.7.1. Connection Settings

LTE connection settings includes Roaming settings, Default connection settings and Power Scan Option.

Figure 19: Connection Settings

| Roaming Settings | | | |
|--------------------|-----------------------|-------|--------|
| | | | |
| Roam Settings : | # Enable © Disable | | |
| | | Apple | Garcel |
| Default Connection | | | |
| | | | |
| Status I | Disconnected | | |
| Commentation Model | Annaly in | | |
| | | Acces | Garcel |
| Power Scan Option | | | |
| | | | |
| Power Scan : | First Detected Cell * | | |
| | | Auto | Canol |

2.7.1.1. Roaming setting

If set Roam enable, the CPE can access to other PLMN network, else the CPE just can access the network PLMN same with the SIM card.

2.7.1.2. Default connection

If set always on, the CPE will automatic access the LTE network after booting, if set manual, the CPE need manual connection to the LTE network.

Figure 20: Default Connection Settings

| Statui | Disponented | | |
|-------------------|--------------|------|-------|
| Committee Milder: | diverges and | | |
| | Advance on | | |
| | | hith | Cases |



The CPE support two power scan options, the first is First Detected Cell, and the second is the Strongest Cell.

Figure 21: Scan mode Settings

| wet Scatt ; | Feat Detected Lieb | | |
|-------------|---------------------|-------|-----------|
| | First Detected Cell | | |
| | Stringent Cell | - | - |
| | | ALLAY | Concert 1 |

2.7.2. Edit APN Profile

An Access Point Name (APN) is the name of a gateway between a 3G/4G mobile network and another computer network, frequently the public Internet. Generally, multiple APNs are used for different business flows such as TR-069 management, voice, data, etc., and may support different services and QoS levels for different subscribers.

Figure 22: APN Profiles

| APN Profile | List | | | | | | |
|-------------|----------|--------------------|------------|-----------|--------------|------|--|
| Fratte Name | | Marchief. | 4444 | 214 Type: | Tri-ielense. | 0.04 | |
| A(Py) | | | HEULI, | 294 | | | |
| White . | | | 99101 | 111 | | | |
| entral (| | | 14111 | P54 | | | |
| 4754 | | | 19133 | Pol. | | 100 | |
| arsi - | | | MILL. | 254 | | | |
| 4796 | | | 19111 | if yes | | | |
| 6967 | | | 44111 | 0.44 | | | |
| det tradi | | | 196316 | 714 | | 1.0 | |
| APN Profile | Settings | Souther . | W passie | | | | |
| | | | 146541 | | | | |
| | | 10.42 | | | | | |
| | | Auto | 16AL T | | | | |
| | | 100 million (1997) | Line - The | | | | |

The CPE supports 8 APN configurations. At least one APN (TR-069) must be configured when the CPE/eNB connect to the Baicells CloudCore. In the window (Figure 42) you will select the APN number (1-8), enable it, enter an APN Name, select the type of IP addressing (IPv4, IPv6, or IPv4v6), identify if it is the default gateway, and choose which type of protocol will be supported on it.

2.7.3. PIN Management

Use the PIN Management feature if you want to require users to enter a PIN code before they can use the CPE to access the network (Figure 43). Once the PIN is enabled, you will need to remember it if you want to later modify the number. You are limited to 3 tries to enter the correct PIN code before getting locked out. If this happens, contact your service provider (end-users) or Baicells support (service providers).

Figure 23: PIN Management

| PIN Management | | | |
|---|-------------------------------|------|-------|
| USM Card Status : PRV Verification : Input PRI : Research Alforestic | Ph Dubled. # Endle 0 Duble | | |
| | - | Auto | Carol |

2.7.4. Cell selection

The Cell selection determines which frequencies the CPE's routine scan of available frequencies will cover. Scanning is a process of tuning to a specific frequency and measuring the simplest signal quality [e.g., Received Signal Strength Indication (RSSI)].

As part of the cell selection and re-selection process, the CPE performs the scan first and then selects a small number of candidate cells to go through the next step of measuring and evaluating signals to select the best eNB that can serve it. The CPE frequently (milliseconds) performs the scan to ensure it has the best possible connection to the network. Refer Figure 44.

| Cell Selection | | | | |
|----------------|-------------|-----------|------|--------|
| | Scan Mode : | Full Band | | |
| | | | Acch | Cancel |

Select one of the following options:

Figure 24: Cell selections

- Full Band (default) All channels in the band.
 - The CPE will routinely scan all channels in the band and all EARFCNs, increasing the time it takes to connect compared to the other modes. The band is dependent on the CPE model.
- Dedicated EARFCN Specific EARFCNs or frequencies. (Figure 45)
 - The CPE will scan the dedicated EARFCN or frequency list first when it is powered on.
 - If the CPE cannot connect to the LTE network after scanning the list, it will scan other supported bands and frequencies. You can add up to 10 EARFCNs or frequencies.
- Cell Lock A combination of PCI + EARFCN or frequency. (Figure 46)
 - The CPE is limited to scanning a specific list of eNBs based on both their Physical Cell Identifier (PCI) and EARFCN or frequency. The CPE will scan the list of eNBs with the EARFCN and PCI combination. Using this mode can accelerate network access time.
- PCI Lock Specific PCIs only. Locks the CPE to a designated PCI or PCI range. (Figure 47)

After selecting an option, enter the required information and select ADD.

Figure 25: Dedicated EARFCN

| | Super States | unin (APA) Se if fait | 3 | |
|-----------------|---|--|----------------------|--|
| EARFCN Settings | dana) (E. Navi - ir gal gallette fotogeney | (N. S. Inconstruct Section 44 (2010) - 100 | 2 criti to Mea | |
| EARFON List | x faging | pers) Second | | |

Figure 26: Cell Lock

| | San Made | Torses | + | - | - |
|---------------------------|---|----------------------|--|--|---|
| Cell Setting | | | | _ | |
| | Basi Lipe Lipe Liperte Mage | 42 ★ SANCR © Free | y) hintog (hintog-counts, (hintog-counts, hintog (hintog | | |
| Cell Lot. feet Lotting | | - 100 (1) (1) (1) | General | | |
| | | | | 20-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1 | |



Figure 27: PCI Only Lock

| PCI Setting | | 3 | un Unite | Allee | | 3 | - | - |
|-------------|-------------|---|----------|-------|------------------|---|-------|---|
| PC isst | PC: Setting | | | | | | | |
| PCI List | | | No Seale | | 11 SPR 25 SPR | 1 | nen (| |
| | PCI List | | | | | | | |

2.7.5. SIM Lock Settings

This feature may be used to lock the SIM card to the operator's network (Figure 48). Each operator has a unique Public Land Mobile Network (PLMN) number. Locking the SIM prohibits the users from accessing another operator's network.

Figure 28: Throughput Statistics

| SM Lorik 1 | · UNA Look Churce - Cli Sala Look Unicheren |
|------------|---|
| PUMIK (D) | |
| | Acces |

2.7.6. MTU

Figure 29: MTU Settings

This is for setting the MTU of WAN (LTE) port, the range is from 1280 to 1500 Bytes.

| | 1. Print | and the second second second | | |
|---------|----------|------------------------------|------|--------|
| PRI/A C | 1500 | (Between 1289 and 1500) | | |
| | | | 100 | |
| | | | Adde | Genuit |
| | | | | |

2.8. Security Menu

2.8.1. IP Filtering

When using a firewall server in the local network, invoke this setting to enable or disable the firewall for this CPE (Figure 50).

| asic Settings | | | | |
|---------------|---------------|----------|---|-----|
| | which there a | Dealer - | * | |
| | | | | - |
| | | | | 200 |

When enable IP/Port Filtering, then the IP/Port Filter can be set.

24 JD / D J E'IL -

| out times semilide | | | |
|---------------------------|--------|-----|--|
| Deditation of Addition | | | |
| tions in which a | | | |
| Armenti | 34 | (H) | |
| (Institution Pyrt Bacage) | | | |
| Reacht Pick Bariger, | | | |
| Schwarz and an other of | Room # | | |
| (herear inc.) | | | |

Settings:

_..

- (1) IP/Port Filtering Mode: Blacklist, White list
- (2) IP/Port Filtering Log Dropped: enable / disable
- (3) Destination IP Address: the destination IP Address of the filter
- (4) Source IP Address: the source IP Address of the filter
- (5) Protocol: TCP, UDP, TCP/UDP, ICMP, ALL
- (6) Destination Port Range: the range of port
- (7) Source Port Range: the range of port
- (8) Schedule Index: Select box, if can be schedule by APPs
- (9) Remarks

2.8.2. IPv6 Filtering

When enable IP/Port Filtering, then the IP/Port Filter can be set.

Figure 32: IPv6 Filtering

| IPv6/Port filter artting | pa. | | |
|--------------------------|-----------|-----|--|
| Destination If Address | | | |
| Inna P Addres | | | |
| Patricial | Al | (*) | |
| Destination Fort Asings | | | |
| Americe Part Advage | 12 · 12 · | | |
| Serverine . | | | |
| | | | |
| | | | Contract of Contra |

Settings:

- (1) IPv6 Filtering Mode: Blacklist, White list
- (2) IPv6 Filtering Log Dropped: enable / disable
- (3) Destination IP Address: the destination IP Address of the filter
- (4) Source IP Address: the source IP Address of the filter
- (5) Protocol: TCP, UDP, TCP/UDP, ICMPv6, ALL
- (6) Destination Port Range: the range of port
- (7) Source Port Range: the range of port
- (8) Schedule Index: Select box, if can be schedule by APPs
- (9) Remarks

2.8.3. MAC Filtering

Media Access Control (MAC) Filtering allows you to identify a list of devices either allowed to access or forbidden from accessing the network through the CPE (Figure 53). Select *Enable* to enable MAC filtering, and then determine whether you will allow or forbid the defined MAC addresses to access the network.

Figure 33: MAC Filtering

| | MAC Riter (| Enable | | | |
|---------------------|-------------------|----------|--------------------|--------|--------|
| NON | Cilibering Mode : | Backlot | | | |
| MAC Filteri | ng Log Dropped : | Enable | | | |
| | | | | Auto - | Canal |
| | | | | | |
| MAC Filter Settings | (m | | lmaril NPC Address | * | |
| | | | | Auto | Cancel |
| | | | | | |
| | | | | | |
| Current Settings | | | | | |
| Current Settings | AC Address | Selected | LR. | | |

Settings:

(1) MAC Filtering Mode: Blacklist, White list



- (2) MAC Filtering Log Dropped: enable / disable
- (3) MAC Address: the filtering MAC address

2.8.4. URL Filtering

The Uniform Resource Location Filter (*URL Filter*) allows you to define a list of URL addresses users are forbidden from accessing. When you enable the filter, a *Settings* window appears. Enter the specific URL address users cannot access, as shown in Figure 54. To add more URL addresses, click on *ADD*. After entering the addresses and saving, the URL(s) you enter will appear in the URL List.

| Figure 34: URL Filtering | |
|--------------------------|--|
| | |

| Basic Settings | | | | |
|-----------------------------|-----------|------|-------|--------|
| LIRL Filter : | Enable | | | |
| URL Filtering Mode : | Blacklist | * | | |
| URL Filtering Log Dropped : | Enable | * | | |
| | | | Apply | Cancel |
| | | | | |
| URL Filter Settings | | | Away | Canad |
| | | | | |
| Current Settings No. URL | Selected | Edit | Date | Canal |

Settings:

- (1) URL Filtering Mode: Blacklist, White list
- (2) URL Filtering Log Dropped: enable / disable
- (3) URL: the filtering URL

2.8.5. System Security

Figure 35: System Security

| Faculty 1 | and a local | |
|---|--|--|
| Security L | and the second | |
| | | |
| | | |
| | | |
| System Security Settings | | |
| | | |
| Remote Web Lo | opin : Enable | |
| Remote Web-Lo Remote Te | ogin : Enable Inet i Disable | |
| Ramota Web Lo Remote Te Access Control | ogin : Enable Inet i Disable Unt : Disable | |
| Ramota Web Lo Ramota Tal Access Control Bluck Port S | ogin : Enable Inet i Disable Unt : Disable Gan i Enable | |
| Ramota Web Lo Remote Tal Access Control Block Port S Block Syn Fh | ogin : Enable inet i Disable List : Disable ican i Enable cod : Enable | |

System Security Profiles, include High, Medium, None and Custom, every profiles will corresponding with a set of System Security Settings.

Settings:

- (1) Remote Web Login: enable / disable
- (2) Remote Telnet: enable / disable
- (3) Access Control List: enable / disable
- (4) Block Port Scan: enable / disable
- (5) Block Syn Flood: enable / disable
- (6) SPI Firewall: enable / disable

2.8.6. Connect Limit

Connect Limit feature is used to control the number of connections through the UE to a host device, for example, a peer-to-peer file sharing application such as BitTorrent. Such apps require a large amount of bandwidth. By limiting the number of connections to the host device, you can control how much bandwidth each active connection receives. You can configure a Connect Limit for up to 16 host devices.

Figure 36: Connect Limit

| Connect Limit : | Enable | * |
|------------------|--------|---|
| Lan IP Address : | - | |
| Limit Value : | | |
| Schedule Index : | None | * |
| Remarks : | | |



2.8.7. Schedule

This feature is set for a group schedule list, like start from 2020.8.18 to 2020.8.20 as a index of the schedule.



| | and the second | 1000 | | 10.27 | | | | |
|------------------------------------|-----------------------------------|-------------------|-----------------------|-----------|---------------------|---|-----|--|
| | iner line (1990) | | and the second second | 10.0 | | | | |
| | Doogue Tree I | | | | | | | |
| | C.a. | | | | | | | |
| | 116 | | | | | | | |
| | | | | | | and the second se | 100 | and the second s |
| | | | | | | 100 | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| (therefore 1 | La l | | | | | | | |
| Schedule L | lst. | | | | | | | |
| ichedale L | het Then - Viset Tree | farmer free | Fairers | mari Day | interest | 1.0 | | |
| Scheelule L | het Hare Wart New 10.16 60 | Tanta Ine 18 | lagang tar | mart Day | inerer B | 1.00 10 | | |
| ichedule L | ht Taro Viet Tree 2.13 Ki | Taratas Son M | lagaris Inte | mari Da | inere A | 1.4 9 9 | | |
| Schedule L main fran ann | het Then Wart Time 214 00 | tione les M | ingang Sar | more free | internet All All | 1.4 0 0 | | |
| Schedule L | ht Date Wat fine 214 00 | Essent from 14 | Tanjarinji Sola | Mart Day | 1000 | 1.4 0 0 0 | | |
| Schedule L Inter Inter I All | lat Dam Wart New 2014 No | Essent from 14 | Tangan sa Kasa | more Day | - | 1.0 0 0 0 0 | | |
| Schechule L | lat Taro Viset Tase 2.18 00 | Tantas Tan M | Trajana Traj | man Da | | | | |
| Schechule L | lat Dan Wat fina 2.18 00 | Taratan Soo M | lasara Ina | mari Da | | 1.0 0 0 0 0 0 | | |
| Schedule L | lat Dan Vart free 1.14 KK | Toopter Tree M | insers int | Mari Da | | 1.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | | |

In previous Filter configurations, you can select the schedule index like below figure.

Figure 38: Schedule Settings

| IP/Port Filter Settings | | |
|--------------------------|----------|---|
| Destination IP Address (| 1- D-C | |
| Source IP Address 1 | | |
| Protocold a | A8 | * |
| Debbishton Part Narope - | | |
| Swarts-Port Narspe 1 | | |
| Schedule Indias : | fices * | |
| Fill marks | 1 martin | |
| | | |

2.9. NAT Menu

2.9.1. Port Forwarding

When NAT mode is enabled as the WAN interface type (section 3.5.2), you can redirect a communication request from one address and port number combination to another. Only the IP address on the WAN side is open to the Internet. If a computer on the LAN is enabled to provide services for the Internet (for example, work as an FTP server), port forwarding is required so that all access requests to the external server port from the Internet are redirected to the server on the LAN.

To add a port forwarding rule, select the *Enable* check box and click on *ADD LIST* (Figure 59). Enter the parameters per the field descriptions in Table 4.

| Port Forward | | | | | |
|----------------------------------|-------------------|------------------|------|--------|--------|
| Port Ferwarding | : Enable | | | | |
| Wan Port Range | | | | | |
| Lan IP Address | | | | | |
| Lan Por | | | | | |
| Protoco | TCP | | | | |
| Remark | | | | | |
| | | | | Apple | Canoel |
| Port Forwarding List | | | | | |
| No. Wan Port Range Lan IP Addres | Lan Port Protocol | Remarks Selected | Edit | | |
| | | | | Delete | Cancel |

Figure 39: Port Forwarding settings

Table 4: Port Forwarding

| Field Name | Description |
|----------------|---|
| WAN Port Range | Enter the port number range for the remote device in the format of 1000 to 1500 |
| LAN IP Address | Enter the local host IP address. The address must be different from the IP address that is set for the LAN Host Settings parameter, but they must be on the same network segment. |
| LAN Port | Enter the local port number. Range is 1 to 65,535. |
| Protocol | Select the type of data protocol, either TCP, UDP, or TCP&UDP |
| Remarks | |

2.9.2. Port Triggering

Port Triggering is a configuration option on a router - in this case, the CPE - if it is operating in NAT mode as the WAN interface type (section 3.5.2). When an application uses a trigger port to build a connection, the CPE will forward the data to the forward port.

To configure the feature, click on the check box next to *Enable* and then click on *ADD LIST* to enter the service type, protocol, trigger port, and forward port (Figure 60).

Figure 40: Port Triggering Settings

| Port Trigger | | | | | | | |
|-------------------|------------------|-----------|---------|----------|------|-------------|--------|
| | Port Trigger : | Enable | | | | | |
| | Trigger Port : | | | | | | |
| | Protocol : | TOP | | | | | |
| | Open Port : | | | | | | |
| | Remarks : | | | | | | |
| | | | | | | Auto | Canoel |
| Port Trigger List | | | | | | | |
| No. Trigger Port | Trigger Protocol | Open Port | Remarks | Selected | Edit | | |
| | | | | | | Dates | Cancel |

2.9.3. ALG

The Application Layer Gateway (ALG) function provides a security component that augments a firewall or the NAT used by the CPE (if WAN Network Mode = NAT). It allows customized NAT traversal filters to be plugged into the gateway to support address and port translation for certain application layer control/data protocols such as SIP, TFTP, PPTP, L2TP and IPSeC. You can enable the different types of application protocols by clicking on the check box next to the protocol name (Figure 61).

Figure 41: Throughput Statistics

| ALG Settings | | |
|---------------------|--------|---|
| SIP : | Enable | * |
| TFTP | Enable | ٧ |
| PPTP Passthrough : | Enable | |
| L2TP Passthrough : | Enable | * |
| IPsec Passthrough : | Enable | * |

2.10. System Menu

2.10.1. Account

This menu is used to change the login password for the CPE (Figure 62). The password must be 5 to 12 characters. Baicells recommends using a combination of upper- and lower-case letters and numbers.

| Figure | 42: | Account |
|---------------|-----|---------|
|---------------|-----|---------|

| Online Passeted | |
|--------------------|--|
| New Personnel : | |
| Confere Paramont (| |
| | |
| | |
| | |
| | |
| | |

2.10.2. WEB Settings

WEB Setting provides the ability to configure and manage the CPE remotely (Figure 63). This is especially helpful when a user calls in for technical assistance. In <u>section 3.3 Login</u>, you used this Web application with the default URL of <u>http://192.168.150.1</u>. Refer to 错误!未找到引用源。 for a description of each field.

| Figure 43: WEB Settings | | | | |
|-------------------------|-----|--|--|--|
| HTTP Service : | × | | | |
| HTTP Port : | 80 | | | |
| HTTPS Service : | | | | |
| HTTPS Port : | 443 | | | |

2.10.3. NTP

Figure 44: NTP Settings

The operator's network may may use up to 4 Network Time Protocol (NTP) servers to provide correct time-of-day to network devices. In the CPE GUI you can refresh the local time display using the *SYNC WITH BROWSER* button; select the time zone that the CPE is in; and enable NTP client to use the default or specified NTP servers for synchronization (Figure 64).

| NTP Settings | | | | | | |
|-------------------------------|--|----|------------|----|----|-----------|
| Current Time : | Thu 01/01 | 19 | 70, 00:585 | 37 | | |
| Mode : | Sync from network Set manually (the time will be reset after the router restarts) | | | | | |
| Time Zone : | (GMT-05:00) Indiana Eastern Time * | | | | | |
| NTP Server : | time nist gov exe time.nist.gov ntp0.broad.mit.edu time.stdtime.gov.tv | | | | | |
| Enable Daylight Saving Time : | | | | | | |
| Start Date : | First | ٠ | Sunday | • | of | March • |
| End Date : | First | ٠ | Sunday | • | of | Novembe * |

2.10.4. TR-069

If your network operates using a TR-069 auto-configuration server (ACS), the ACS will automatically provide the CPE configuration settings. Once you set up both the ACS and the CPE, you do not need to enter any other parameters through the CPE GUI. Use the *TR069* sub-menu to enable the TR-069 function for the CPE (Figure 45).

Figure 45: Throughput Statistics

| TR-069 : | 8 Enable |
|------------------------------------|---|
| ACS Server URL : | http://baiomc.cloudapp.net.48080/smallx |
| ACS Username : | admin |
| ACS Password : | |
| Periodical Notification : | i Enable |
| Periodical Notification Interval : | 3000 seconds (10-2678400) |
| Connection Request Username : | |
| Connection Request Password : | |
| Cloudkey : | |
| NickName : | |

2.10.5. TR-069 Certificate

This feature is used to upload the TR-069 certificate.

Figure 46: TR-069 Certificate

2.10.6. Restore / Update

Use the System > Restore/Update menu to reset the CPE to its factory default settings, to manually update the firmware, or to manually update a module within the firmware - meaning to apply a patch to the current firmware (Figure 67).

Amit



Caution: Performing a restore or update action will disrupt service.

2.10.6.1. Firmware Update

Caution: Do not power off the CPE or disconnect it from the computer during an upgrade.

To update (upgrade) the CPE to a different firmware version (Figure 67):

- 1. Download the image file from the Baicells support website (Baicells > Support > Downloads), and save it to your computer.
- 2. Under *Flash new firmware image*, determine if you want to keep the current configuration settings on the CPE . If you do, select the check box next to *Keep settings*.
- 3. Click on *Choose File* to navigate to the new image file on your computer, and then click on *FLASH IMAGE* to initiate the upgrade.

After the upgrade, the CPE will restart automatically running the newer version of code.



2.10.6.2. Restore Factory Settings

To initiate a restore action, click on the *PERFORM RESET* button. The CPE will automatically reset its configuration to the factory default values.

| igure 47: Restore & update | | | |
|----------------------------|-------------------------------|--------|--|
| Firmware Update | | | |
| Filename | 整理文件 中热神任何文件 | | |
| Status : | lease select the update file. | | |
| | | Update | |
| | | | |
| Restore Factory Settings | | | |
| Load Default Button : | Restore | | |

2.10.7. Diagnosis

2.10.7.1. TCPDump

Figure 48: TCPDump Settings

| TcpDump | | |
|---------|-----------------|---------------|
| | PC IP Address : | 192.168.150.9 |
| | PC PORT : | 1 |
| | Interface : | Al • |
| Stop | | |

Settings:

- (1) PC IP Address
- (2) PC PORT
- (3) Interface: ALL, LTEOPDNO (APNO)

2.10.7.2. Ping

Figure 49: Ping Diagnosis Settings

| Diagnostics | |
|---------------------|--------|
| Command : | Ping * |
| IPv4/IPv6 : | (Pv4 + |
| IP Address/Domain : | |
| Count : | |
| Fragment : | Yes * |
| Packetsize : | 66 |

Settings:



- (1) IPv4/IPv6: Select the protocol
- (2) IP Address/Domain: IP Address or URL
- (3) Count: number of ping count
- (4) Fragment: yes or no
- (5) Packet size: 56~1400 Bytes (non-fragment)

2.10.7.3. Trace

Figure 50: Trace Diagnosis Settings

| Diagnostics | | |
|-------------|---------------------|---------|
| | Command : | Trace • |
| | IPv4/IPv6 : | IPv4 * |
| | IP Address/Domain : | |

Settings:

- (1) IPv4/IPv6: Select the protocol
- (2) IP Address/Domain: IP Address or URL

2.10.7.4. Result

Figure 51: Diagnosis results





2.10.8. Backup Settings

This feature is used to backup the user settings, from the Web-GUI, you can Import / Export the settings.

Figure 52: Backup Settings

| Export Settings Export Setting Barran | Equit |
|--|--|
| Import Settings must betting future - trates : | (1985) este in zo Seart the setting the |
| | Aire) Canad |

2.10.9. System Log

System log is the debug information of the CPE, when select the Setting, it can Export or Clear Logs.

| Figure | 53: | System | Log |
|--------|-----|--------|-----|
|--------|-----|--------|-----|

| Select Log | | | | | |
|--------------------------------------|-----------------|----------------------------------|---|--|-------------------|
| | | Sel | ect Log : | ₩ Settings | |
| | | Sh | ow Log : | Operating Log Run-time Log | |
| Export Log |) | | | | |
| | | Export Log | Button : | Export | |
| Clear Log | | | | | |
| | | Clear Log | Button : | Clear | |
| Filter | | | | | |
| Rinto Rive | mina 🕅 Er | w Rose | al. | | |
| Figure 54: S | ystem | ogs | | | |
| Time | Level | Module | Messor | | Displayed logs:10 |
| 00.0148.01/01/70 | Warring | MER. | LOR STORON | THEOUT, REDRECT | |
| 00.24.05 03/01/79 | into | WEB | ADMIN LOGIN | SUCCESSFULLY IP-192 | |
| 00.20.40 01/01/70 | Warning | WEB | KAR SERVICE | TIMEDUT, REDRECT | |
| 00.15.37 01/01/70 | 140 | WEB | ADMIN LOOP | SUCCESSFULLY IP+192 | |
| 00/15/33 01/01/79 | Warning | WEB | LISE GROUP | TakeDutt, REDALCT | |
| 00.0147.01/01/70 | 1.4v | | 100 million 100 million | | |
| 00.01.09.01/01/09 | | WEB | 188.158.8 | SUCCESSFULLY IF~152 | |
| | Warning | WEB | JALINES, MERSON TO LOOM | I SUCCESSIULT IN~ 152 I THIREDUT, REDIRECT | |
| 00.01/35.01/01/79 | Warning | WEB WEB FIREWALL | THE THEN HOLDSHIP | SUCCESSFULLY IP-152 ITMEDUT, REDRECT FLITERING MODE BLAC | |
| 00x0125 01/01/79 00x0125 01/01/79 | Warning Info | WEB WEB PREMALL PREMALL | THE REAL PROPERTY AND A DESCRIPTION OF THE REAL PROPERTY | SUCCESSFULLY IV~ 152 19wEOVT, REDRECT TETRING MODE BLAC LETRING BNABLE SU | |

2.10.10.System Messages

Use this Web-GUI, you can Export System Message, Collect real-time system information and transfer system message to PC.

Figure 55: System Message Settings

| Export System Message | |
|-------------------------------|---------|
| Papert Surger Message Batter | Eight |
| | |
| | |
| Collect System Information | |
| Collect System (Hermalism) | Collect |
| Emert Symmet Industriation (| Equal |
| | |
| | |
| Transfer System Message to PC | |
| 100 10 40 | |
| PS IP Address 1 | |
| | |
| | Aug |

Figure 56: System Messages



2.11. Reboot

Use the Reboot menu to perform a reboot of the CPE, as shown in Figure 77. It can take several minutes for the reboot to complete. After it reboots, the CPE GUI will display the login screen.

Caution: The reboot action will disrupt service.

Figure 57: Reboot



2.12. Logout

When you click on the Logout menu, you are automatically logged out of the CPE and returned to the login screen (Figure 78).



Figure 58: Throughput Statistics



Appendix: Regulatory Compliance

FCC Compliance

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.

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

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 or more 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.

Warning:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 45cm between the radiator & your body.

ISED Compliance

This device complies with Innovation, Science, and Economic Development Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.
- Le présent appareil est conforme aux CNR d' Innovation, Science et Développement

économique Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 45cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter, End-Users must be provided with transmitter operation conditions for satisfying RF exposure compliance.

Les antennes utilisées pour cet émetteur doivent être installées de façon à offrir une distance de séparation d'au moins 45cm entre toutes les personnes et ne doivent pas être colocalisées ou fonctionner conjointement avec d'autres antennes ou transmetteurs. pour satisfaire la conformité à l'exposition RF.