

# User Manual

## DuraFon Roam BSC

### Long-Range SIP Cordless System Controller



EnGenius Customer Service  
<http://www.engeniustech.com/>

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## Regulatory Information

### Federal Communications Commission (FCC) EMC Statement

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operations.

#### **WARNING!**

***Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### IC Interference Statement

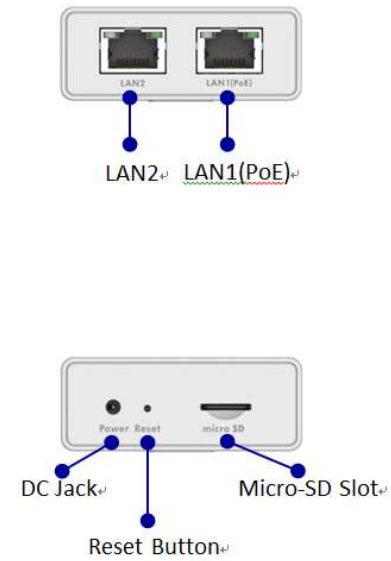
The following information applies if you use the product within Canada area.  
 Industry Canada ICES Statement  
 CAN ICES 003 (Issue 7)

## Equipment Checklist

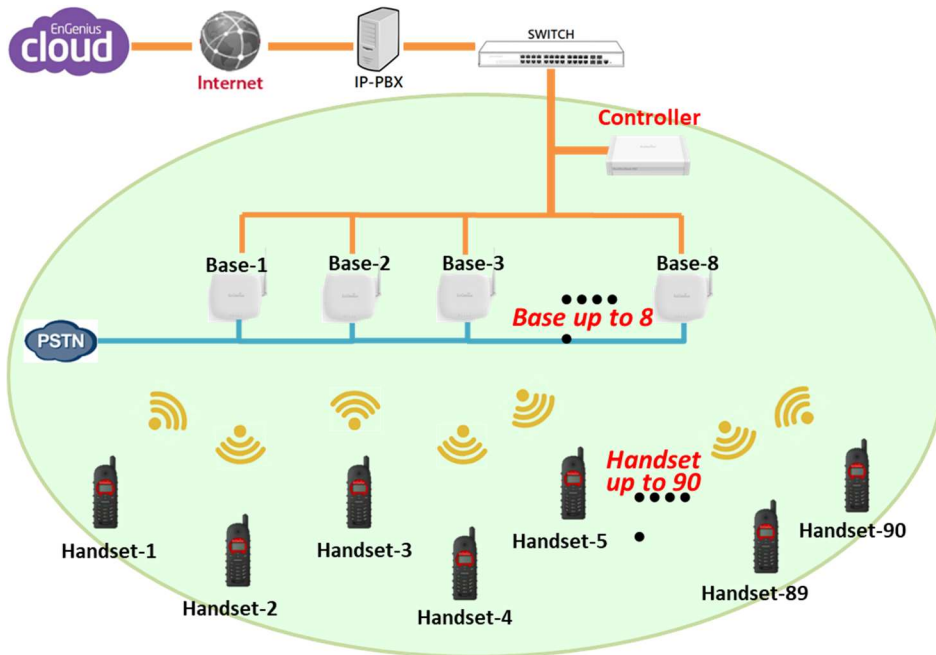
In a DuraFon Roam BSC package, please find the following components:

- a. DuraFon Roam BSC x 1
- b. Screw pack x 1
- c. Quick Guide

## DuraFon Roam BSC Illustration



## System Architecture



## System Features (including DuraFon Roam BU and DuraFon Roam HC)

### SIP

- Voice codec: G.711a, G.711u, G.729A
- SIP protocol: RFC3261
- DTMF: RFC2833, SIP INFO Hold: RFC3264
- Transfer: RFC3515, RFC3891, RFC3892
- Support Outbound Proxy
- DNS SRV Support

### Long-Range

- 12 Floors In-Building Penetration
- 250,000 sq. ft. of Facility Coverage
- 3,000 Acres of Property, Open Land Coverage

### Durable

- Tested to withstand 6-Foot Drops, Over 50 Times onto Concrete Floors

## Handset Features

- Cordless telephone
- 2-Way Radio
- User Handset Naming
- Keypad Lock
- Speakerphone
- Caller ID
- Call Waiting
- Vibrate Mode
- Line Select
- Call Logs – Dialed & Received
- Redial
- Speed Dial
- Call Hold
- Call Transfer
- Wireless PBX Function Sharing
- Wireless Phone Book Sharing
- Silent Ring
- Mute
- Wired Headset
- Blue Tooth
- 900 MHz, DSS, Frequency Hopping
- Selectable Handset Grouping (7 groups)
- User Programmable PBX Functions
- Phone Book Supports 50 Entries
- Intercom (Handset-to-Handset), no group chatter
- PTT Broadcast (One-to-Many)

## System

- 900MHz(902~928MHz)
- Multi-Cell Architecture
- Roaming & Handover
- Multi-Base up to 8
- 1 LAN and 1 PSTN Ports per Base Unit
- Multi-Handset up to 90
- Removable Base Antenna
- Flexible Port Dedication: Single, Group or All
- Standard SIP Protocol Connection
- Remote Configuration via EnGenius Cloud
- Any Analog Line Connection: Landline, ATA, Cellular, VoIP or Satellite
- Supports Ring Groups & Hunt Groups

- Type I/II Caller ID (FSK and DTMF)
- Visual Message Waiting Indication (VMWI) for PSTN
- Conference Calling
- Modifiable Flash and DTMF Tone Timing
- Secure, Digital Spread Spectrum w/Frequency Hopping Technology
- EnGenius Cloud Remote Access

#### Battery & Charger

- Li-Ion Technology
- 6-Hours of Talk Time
- 50-Hours of Stand-By Time
- Desktop Charger Supports Handset & Spare Battery Charging Slots
- 4-Hour Recharge Time
- Battery Hot-Swap While Call is On-Hold

#### Optional Equipment

- External Base Antenna Kits: Optional indoor or outdoor antenna with 20 meter low loss LMR-400 cable
- Lighting Protection Kit
- Antenna Splitter

#### DuraFon Roam Value

- No Monthly Bill (like cellular)
- No Per Minute charges (like cellular)
- No Contracts (like cellular)
- No Annual FCC License Fees (like 2-way radios)
- No Extensive Infrastructure Installation (like wireless networking, Wi-Fi phones)
- No QoS Concerns
- No Wireless Network Interference

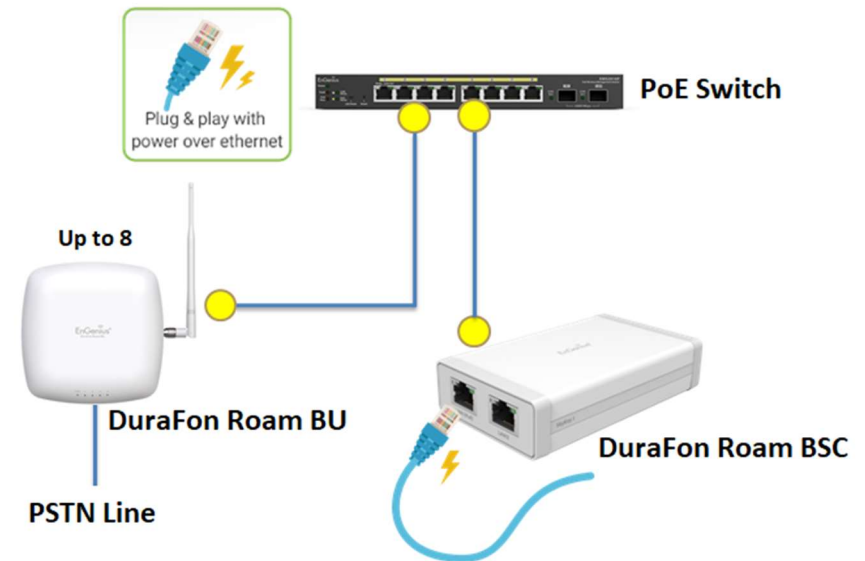
#### Manufacturer's Part Numbers

- DuraFon Roam BSC (Controller)
- DuraFon Roam HC (Handset)
- DuraFon Roam BU (Base Station)

#### Getting Started

Install and connect DuraFon Roam BSC and BU to a PoE switch inside your company's network which is able to access to internet.

Re: Connecting the line port of BU to PSTN network as a backup.



Note : In case the switch inside your company's network doesn't support 802.3af PoE (Power over Ethernet), you can power the DuraFon Roam BSC and BU via EnGenius single port Power-over-Ethernet (PoE) adapter respectively (e.g. EPA5006GP/ EPA5006GAT).

#### Signing up

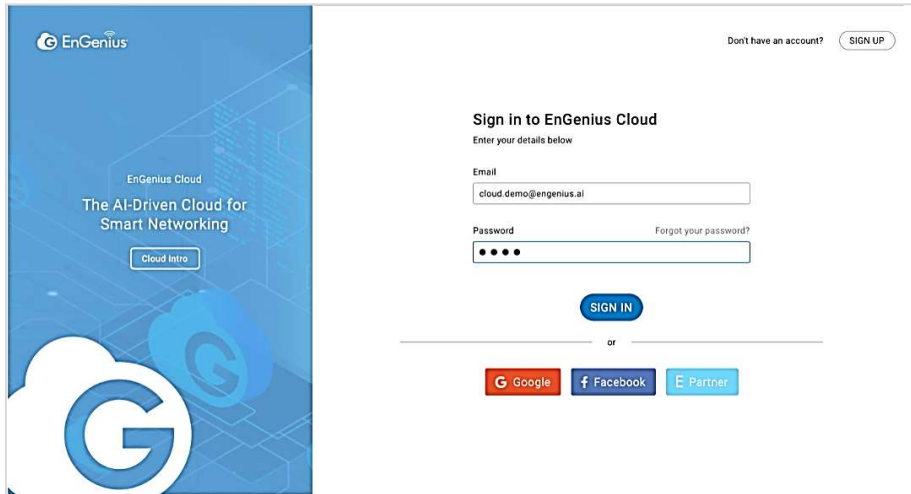
Before you start to manage EnGenius DuraFon Roam BSC, you must first sign up for the service.

Registering EnGenius Cloud is similar to other web-based platforms and can be done either with a social media account (e.g. Google or Facebook) or by creating an account from scratch. You will need to provide your email address, company name, physical address, and phone number. Furthermore, you must determine the country in which your account will be hosted. That is, all relative device information, user configurations, and client statistics will be kept in the corresponding region of servers (Oregon for US and Frankfurt for other countries). This enables EnGenius Cloud to protect customer data and comply with requirements like GDPR for customers within the European Union.

## Logging On

Once your account has been created, you can login to EnGenius Cloud in the following steps:

1. Open a web browser to <https://cloud.engenius.ai/>. This will bring up the main login page.



2. Enter your EnGenius Cloud email address and password, click the SIGN IN button.

3. For EnGenius Partner who has account on EnGenius Partner Portal already, you can simply click on "E Partner" button, and EnGenius Partner Portal will pop up login page for you to use Single-Sign-On capability of Partner Portal to log on to EnGenius Cloud

4. For Google and Facebook users, you can also click on "Google" or "Facebook" button to use your account on Google and Facebook to log on to EnGenius Cloud

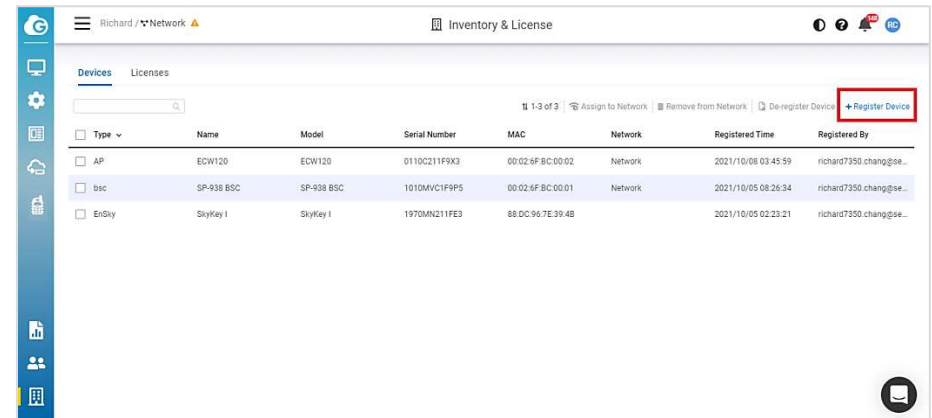
5. EnGenius Cloud will create a new default Organization and Network for every new account based on the email address as unique user identification. (Note: If someone is invited to an Organization or Network, this account won't have default Organization and Network.) If you have multiple accounts created on EnGenius Cloud, EnGenius Cloud will merge your accounts based on the "email address" of the account. For example, if you have created a new account on EnGenius Cloud using the same email address as your google account, then you're able to login to this email account either through Google account authentication

with Google account password or through EnGenius Cloud Login with the password while you created the EnGenius Cloud account.

## Registering Devices to Organization

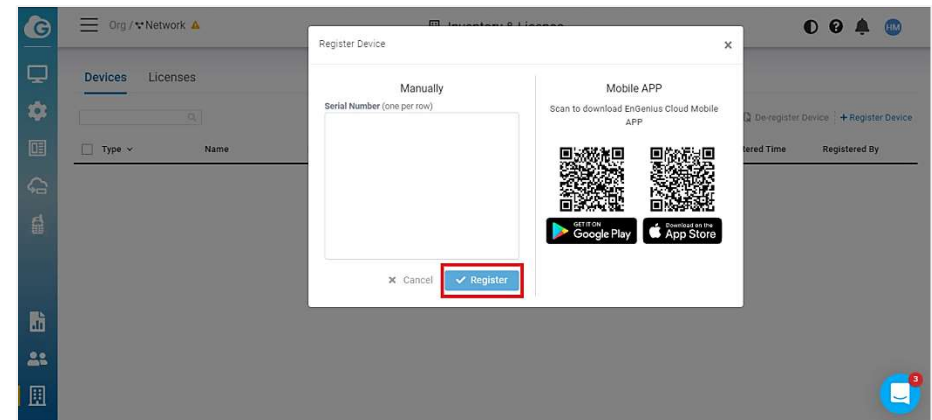
Register a DuraFon Roam BSC to EnGenius Cloud inventory by using the serial number located on the device.

Firstly, navigate to Inventory & License, click "Register Device".



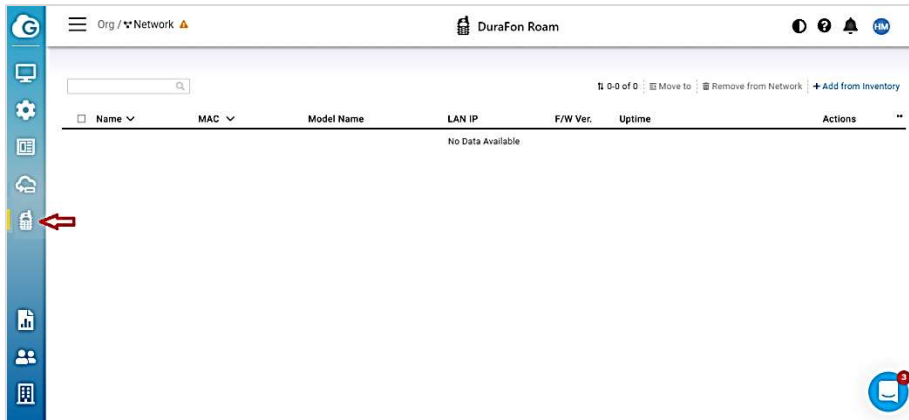
Type	Name	Model	Serial Number	MAC	Network	Registered Time	Registered By
AP	ECW120	ECW120	0110C211F9X3	00:02:4F:BC:00:02	Network	2021/10/08 03:45:59	richard7350.chang@se...
bsc	SP-938 BSC	SP-938 BSC	1010MVC1F9P5	00:02:4F:BC:00:01	Network	2021/10/05 08:26:34	richard7350.chang@se...
EnSky	SkyKey 1	SkyKey 1	1970MN21FE3	88:DC:96:7E:39:4B		2021/10/05 02:23:21	richard7350.chang@se...

Registering devices with a serial number is easy. Just enter the serial numbers of your DuraFon Roam BSC, one per line, click the "Register" button.

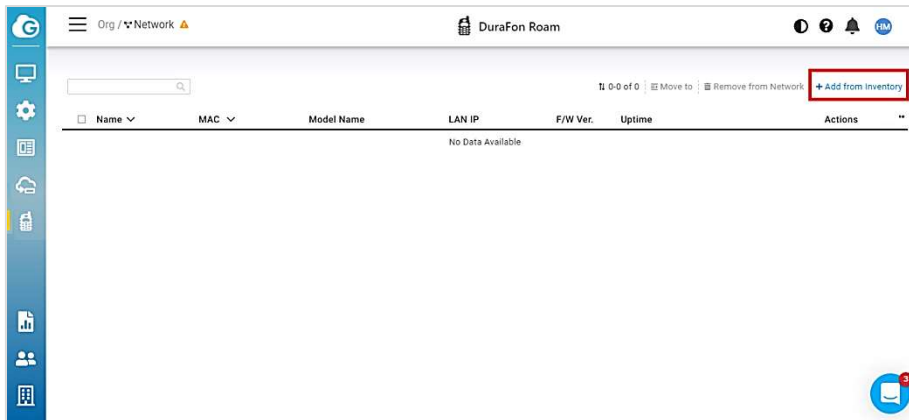


## Adding BSC from Inventory

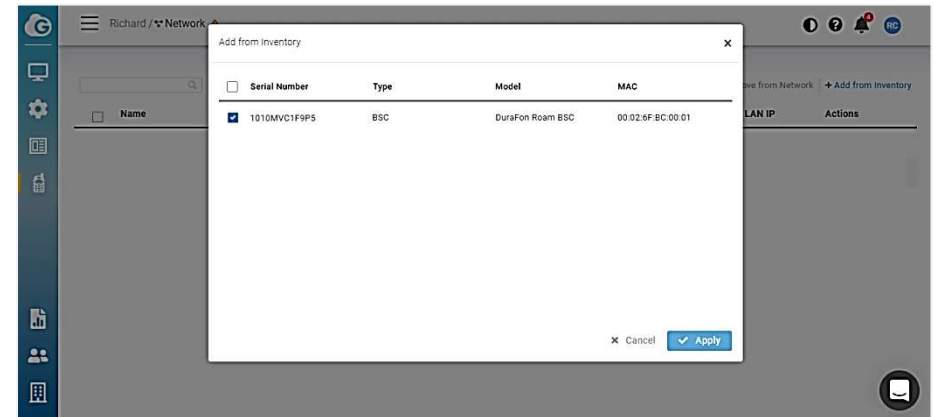
- Navigate to DuraFon Roam



- Click "Add from Inventory"

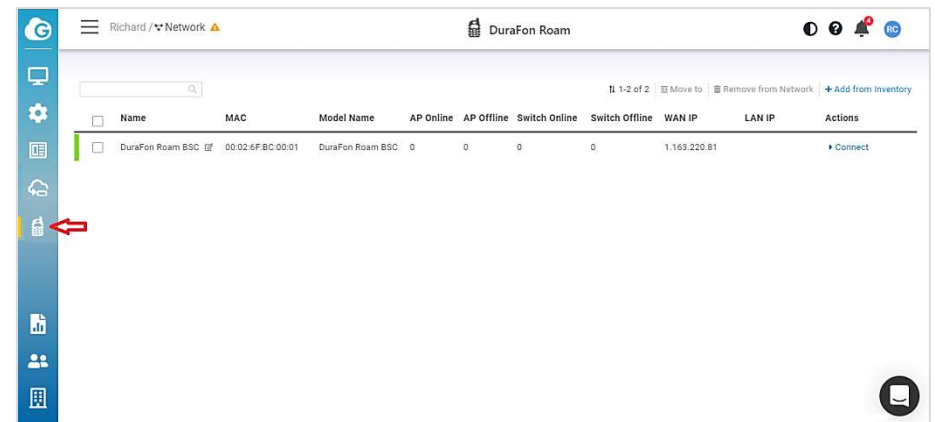


- Select BSC then click **Apply**

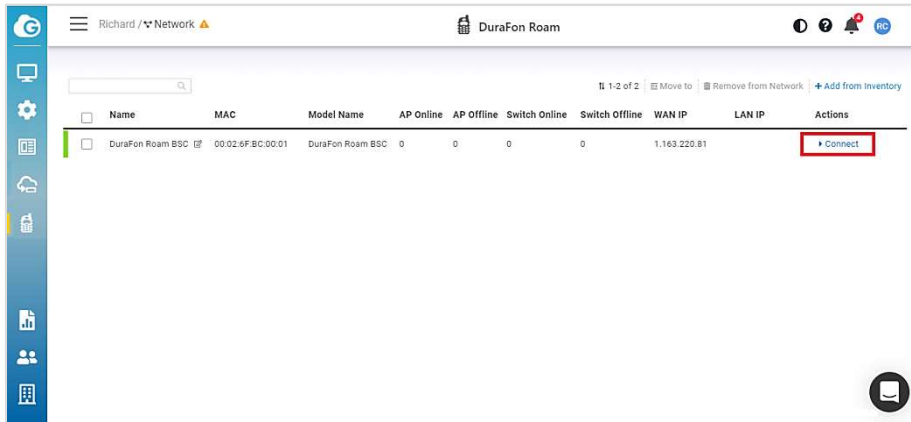


## Connect to DuraFon Roam

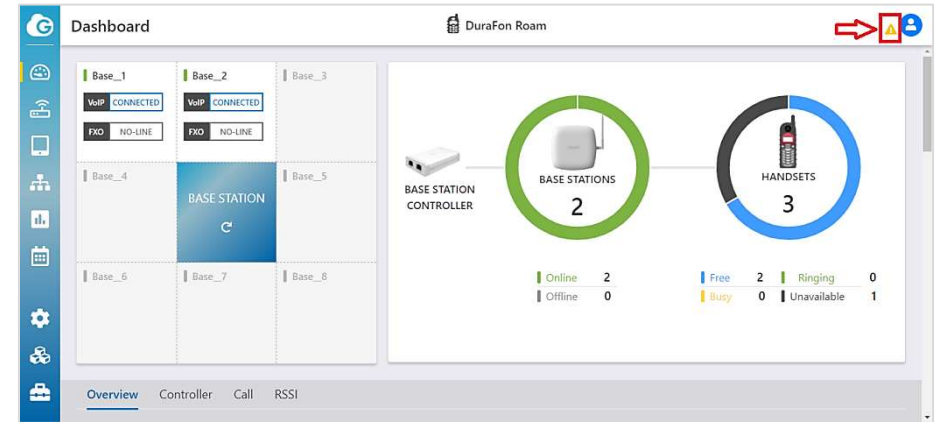
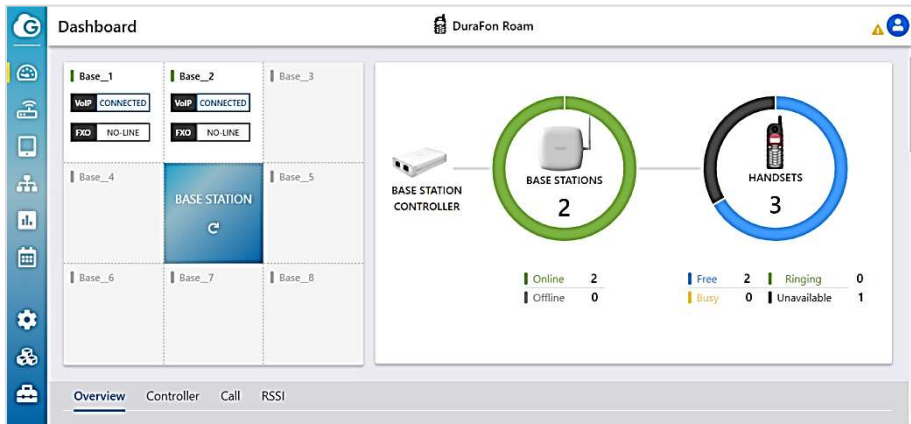
- Navigate to DuraFon Roam



- Click "Connect" to entering GUI of BSC

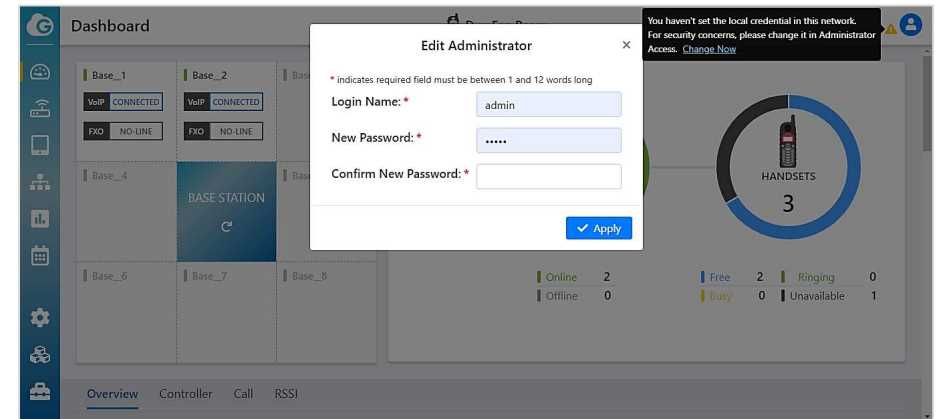


➤ Now the DuraFon Roam is ready for networks configuration · device management and event/log analysis.



When you move the cursor to the icon, it will show you a message to remind you to change default credential. Click “Change Now” to change Login Name and Password.

Re: The default Login Name and Password is “admin”.



## Changing default credential

When first time enter the GUI of DuraFon Roam, you will find a triangle icon on the right top corner.

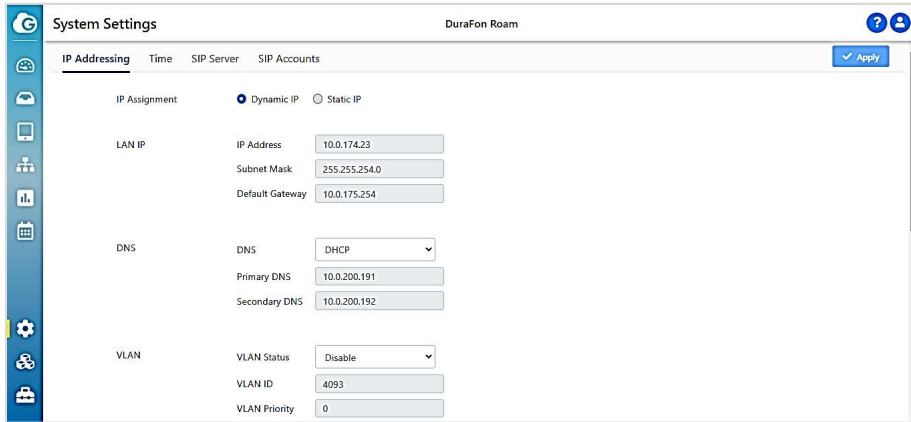


## System Settings

Before start using the DuraFon Roam, please make sure the related network settings are well setup.

### IP Addressing

- Navigate to System Settings > IP Addressing



- By default is DHCP, the BSC is assigned an IP address dynamically by the DHCP server. If somehow it can't be assigned the IP address from the DHCP server, it will roll back to default static IP 192.168.1.156 for the base unit automatically. You can set static IP 192.168.1.x to your PC/NB, so that they would be able to access web of this BSC.

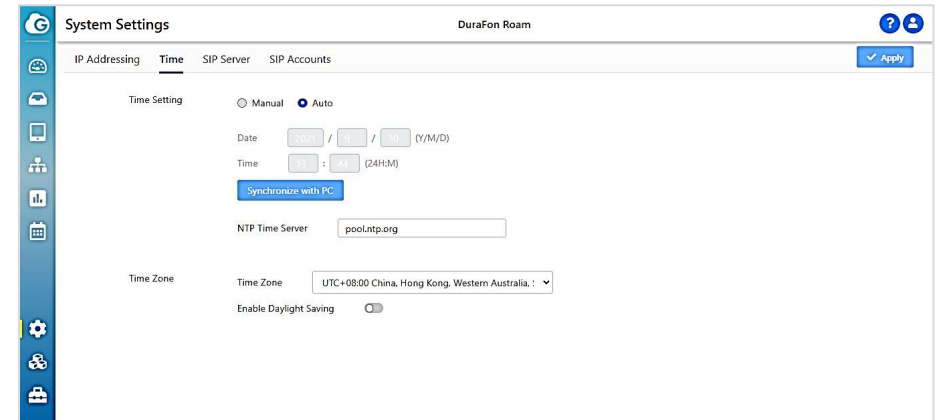
IP Address	<b>IP assigned by DHCP server Or using 192.168.1.156</b>
Username / Password	<b>admin / admin</b>

- After finishing all settings, click **Apply** to take effect.

### Time

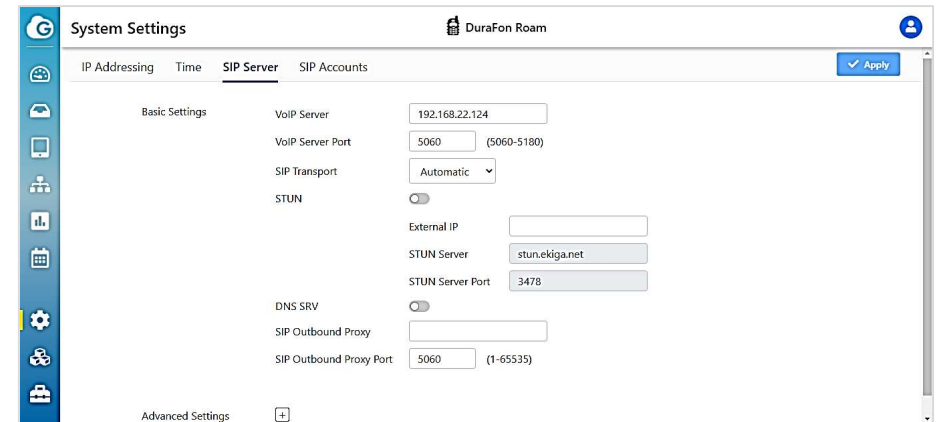
- Navigate to System Settings > Time
- Check the default of Time Setting in "Auto" and NTP server Time server with "pool.ntp.org".

- Select the Time Zone you located in, e.g. California is "UTC-08:00 Pacific Time", New York is "UTC-05:00 Eastern Time".
- Re-1 : If it's in daylight saving time, you should enable the "Daylight Saving".
- Re-2 : The Time Zone will be back to default("UTC-05:00 Eastern Time") when BSC's firmware is upgraded.
- After finishing all settings, click **Apply** to take effect.

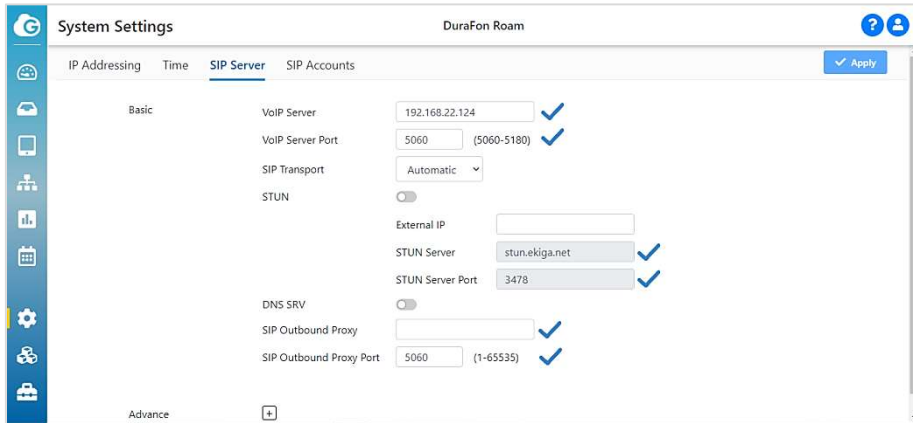


### SIP Server

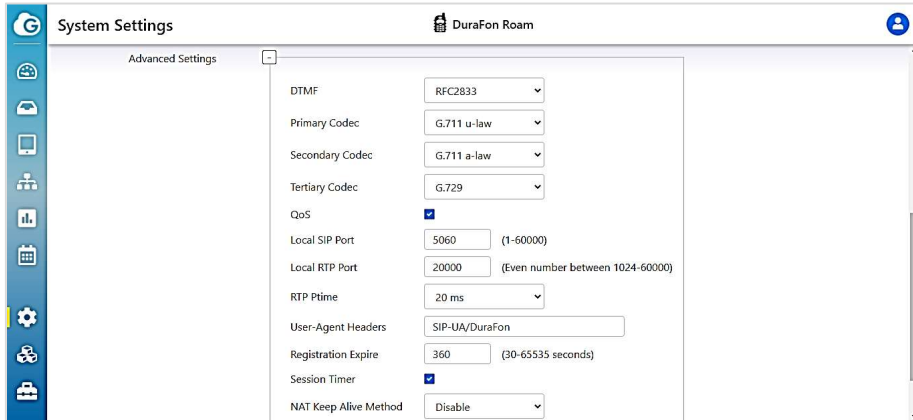
- Navigate to System Settings > SIP Server



- You must check with SIP service provider to get the correct “VoIP Server”、 “VoIP Server Port”、 “Stun Server”、 “Stun Server Port”、 “SIP Outbound Proxy” and “SIP Outbound Proxy Port” before setting the SIP Server.



- Click **+** to set up advanced SIP settings(If necessary).



Re:

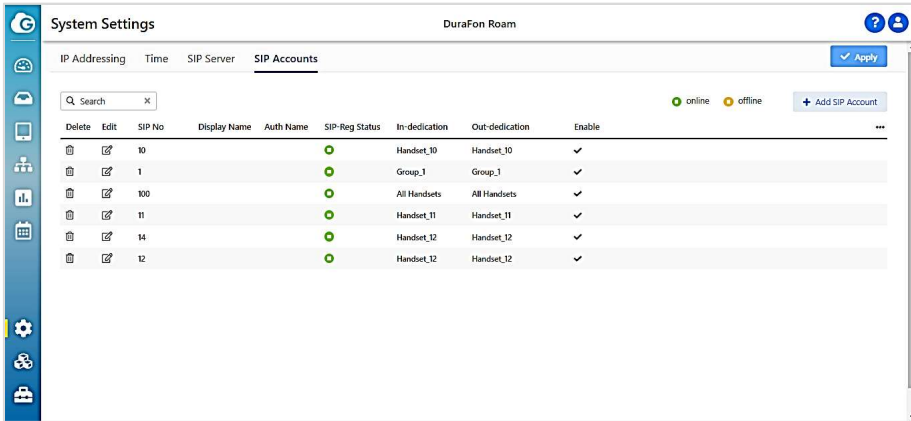
Basic	
SIP Transport	Default: Automatic. According to the requirement of SIP server, you can select UDP or TCP or TLS.
STUN	When the BSC is located behind a NAT, you can set STUN server to discover its public IP.

DNS SRV	The BSC is used a hosted device connected to ITSP, DNS SRV record type may be required in some service providers. When DNS SRV is activated, DNS is assigned to 8.8.8.8 (google DNS)
Advance	
DTMF	Default: RFC2833
Primary Codec Secondary Codec	G.711 u-law or G.711 a-law is suggested. If you select G.729 Codec, the SIP call will not support 3-way conference.
QoS	When activate this QoS, it will add the QoS parameters in message(following 802.1p, priority 6)
Allow SDP NAT Rewrite	In some cases, i.e. connected with NAT or VPN, to enable this option to have the IP address in UDP message bodies rewritten and routed correctly.
RTP Ptime	RTP packetization time is required to synchronize when using a P2P call.
User-Agent Header	For security in some SIP servers, they may authorize the specific user-agent string.
Registration Expire	Expire time of SIP registration
Session Timer	Enable/Disable SIP Session Timer

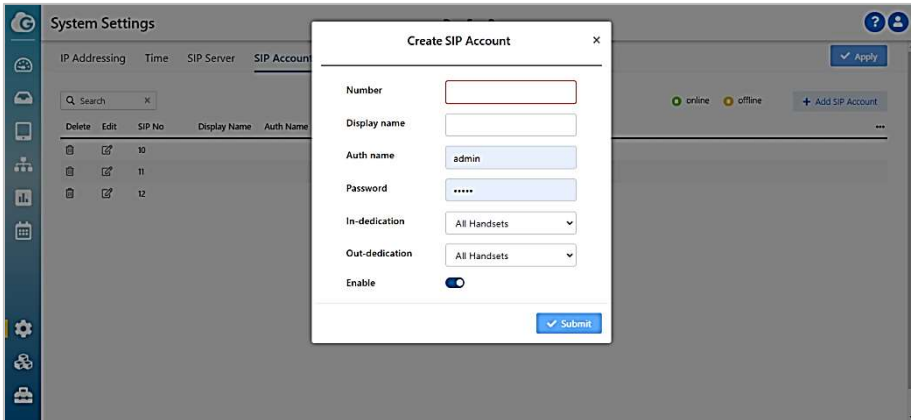
- After finishing all settings, click **Apply** to take effect.

### SIP Accounts

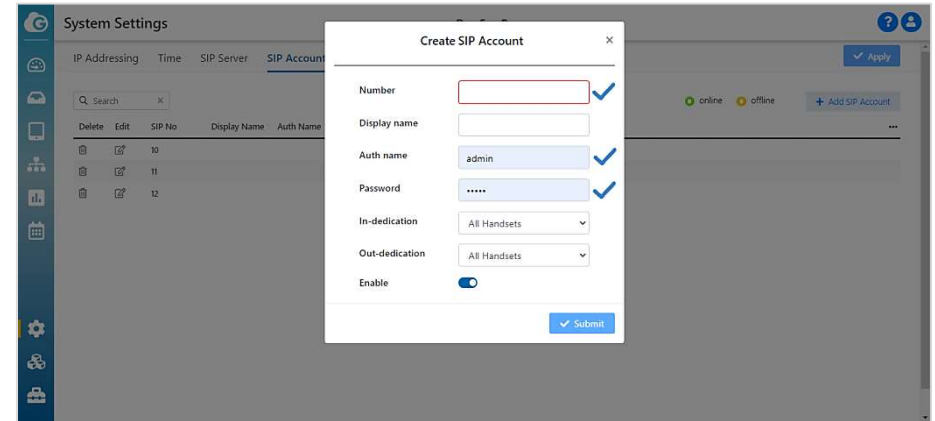
- Navigate to System Settings > SIP Accounts



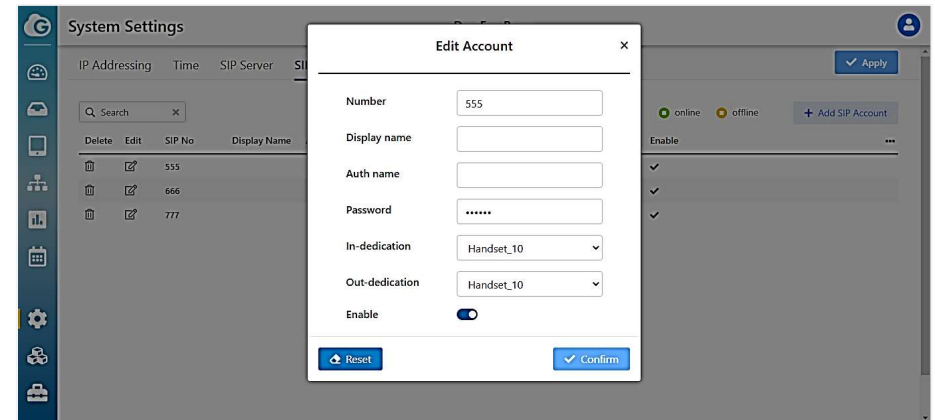
➤ Click **Add SIP Account** to increase new account



Re : You must check with SIP service provider to get the correct SIP  
 “Number”、 “Auth name” and “Password” before creating the new SIP  
 account.



➤ Click to edit the SIP account



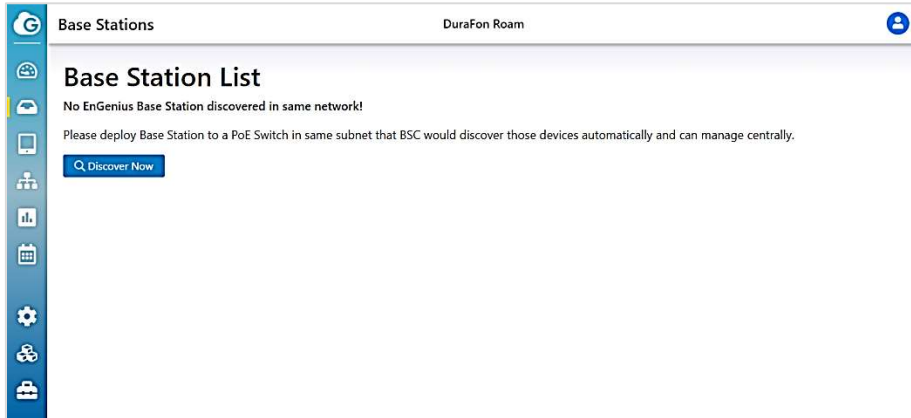
➤ After finishing all settings, click **Apply** to take effect.

## Base Station

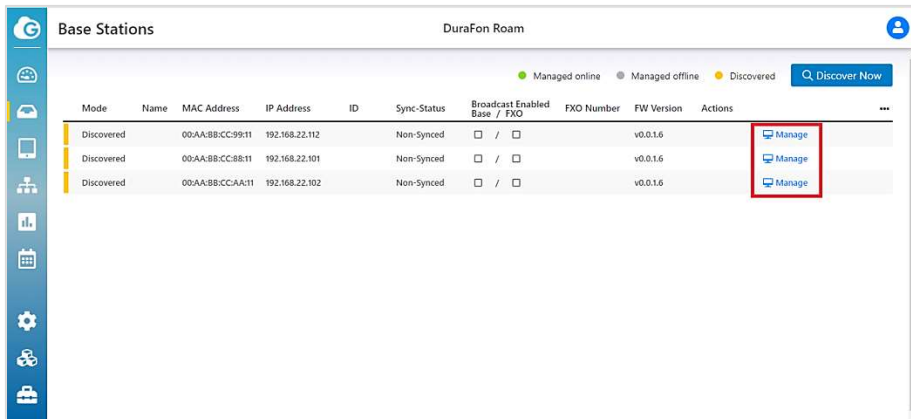
When finishing the System Settings, adding/editing Base Station will be next.

Navigate to Base Station

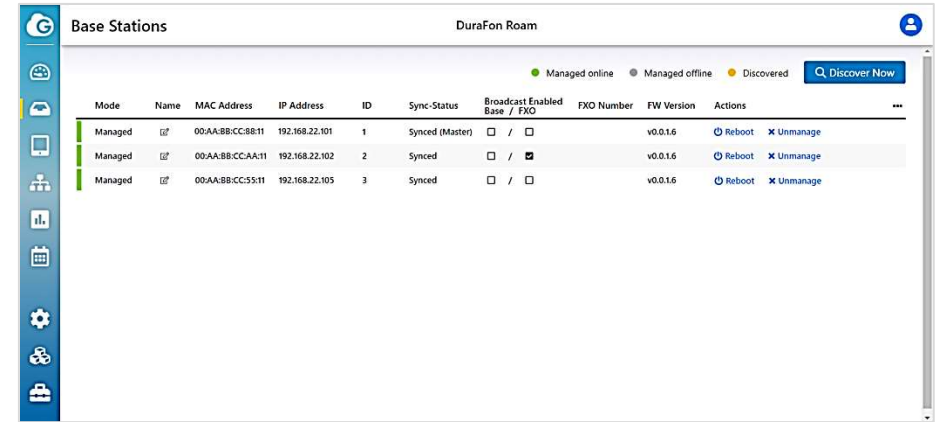
- If your PC/NB displaying “No EnGenius Base Station discovered in same network!”, It means the base station list is empty, please make sure the base is well connected to intranet, and can be discovered by BSC.




- Once the base station connected to intranet, click the “Discover Now” to find new base station (Or simply wait for a few seconds, GUI will update automatically).



- Click “Manager”, the base station will be registered to BSC with “Managed” Mode.



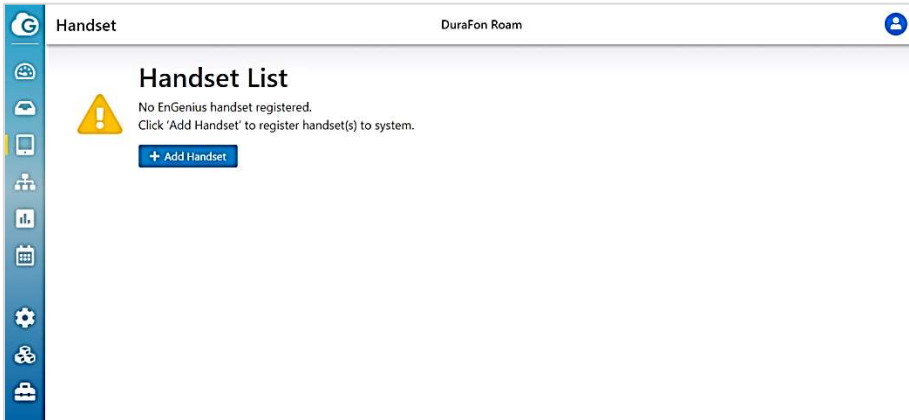
- Click  to change the Name of base stations.

## Handset

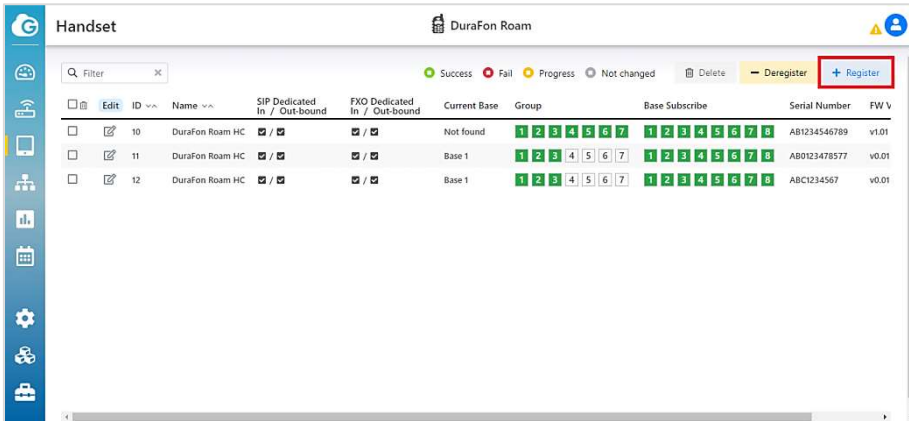
After adding/editing the Base Station, you can then add/edit Handset.

Navigate to Handset

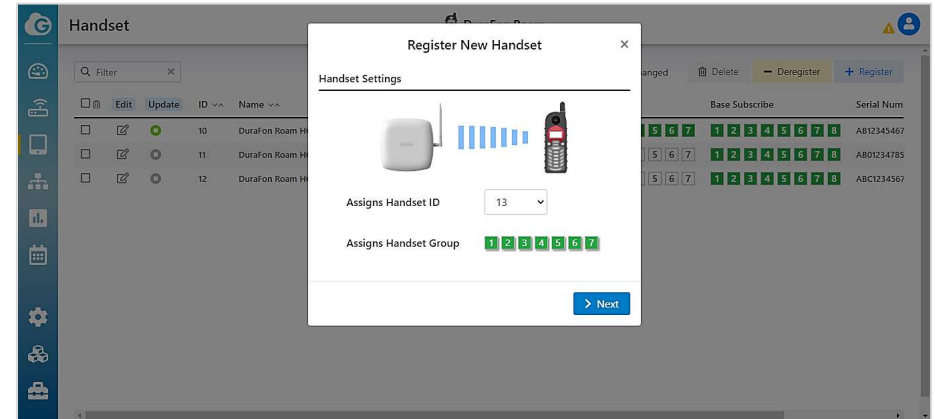
- If your PC/NB displaying “No EnGenius handset registered”, it means the handset list is empty, please register handset(s) first.



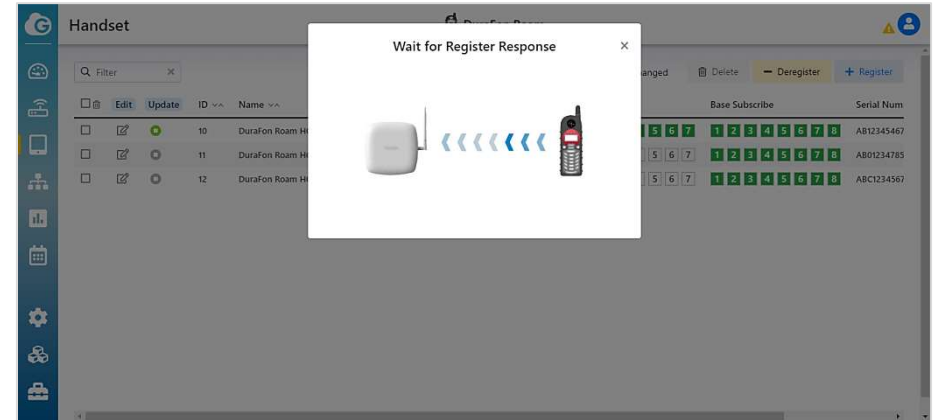
- Click “Add Handset” to register new handset(s)



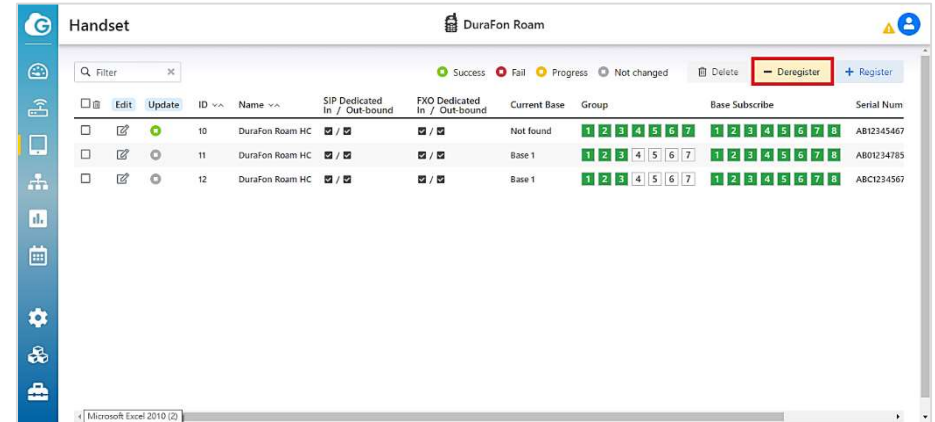
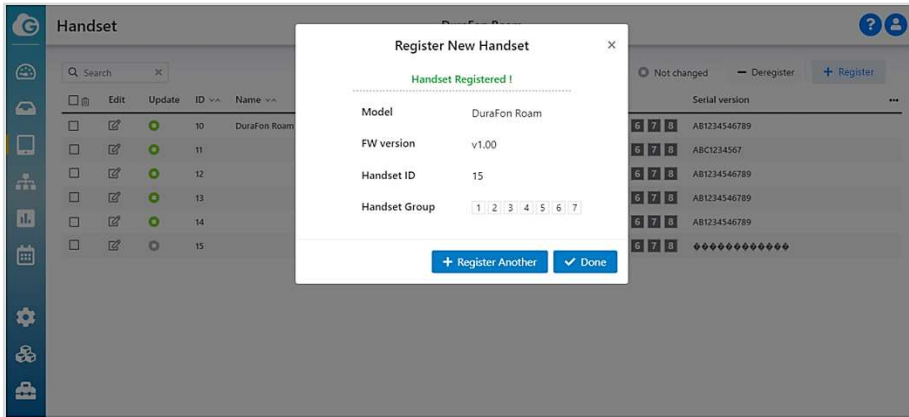
- Assign Handset ID and Handset Group, click “Next”. At the same time, press MENU (softkey) on handset >> 6.Registration > 1.Register



- Handset is registering to base

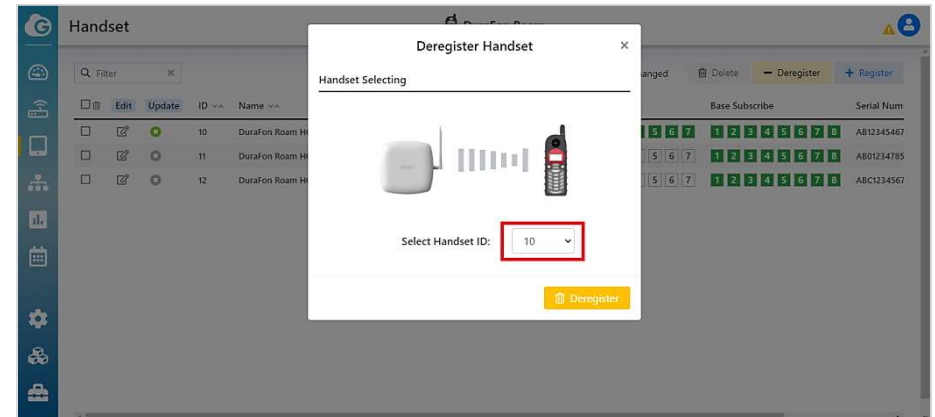
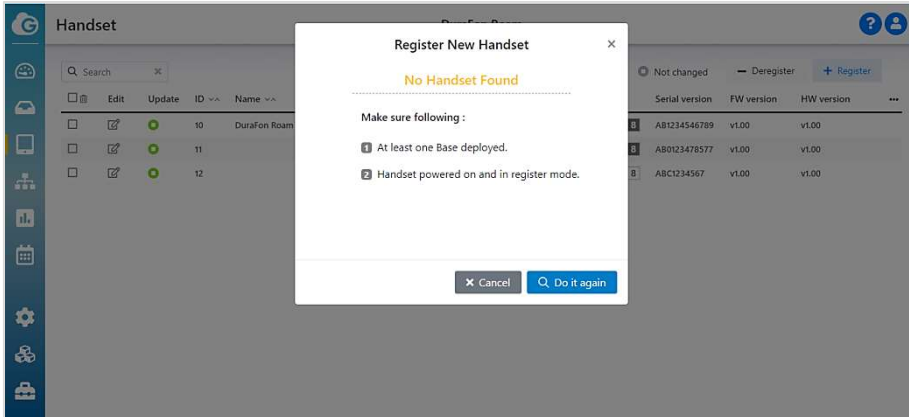


- When handset registered completely, click “Done” to finish process.



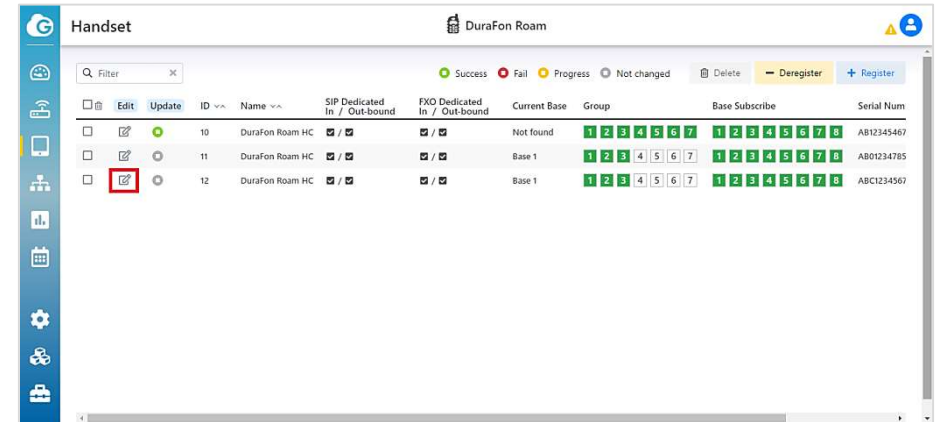
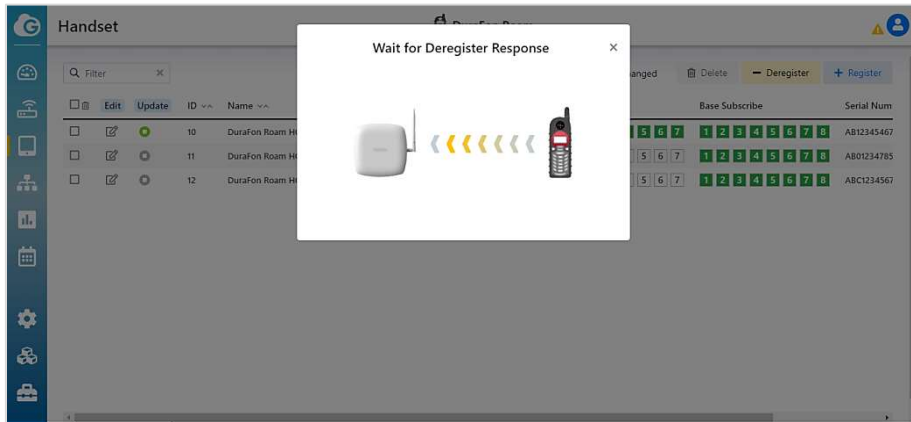
Re : In case registration failed, please check your registration process and do it again.

➤ Select handset ID, click **“De-register”**. At the same time, press **MENU** (softkey) on handset > 6.Registration > 2.Deregister

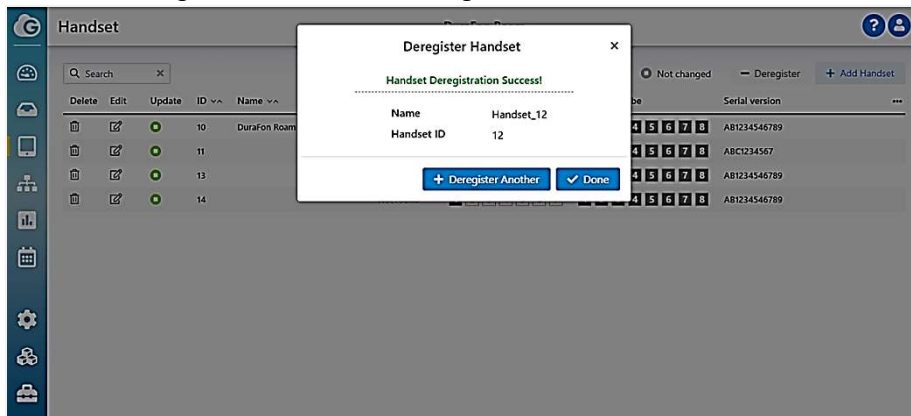


➤ Click **“Deregister”** to remove a handset

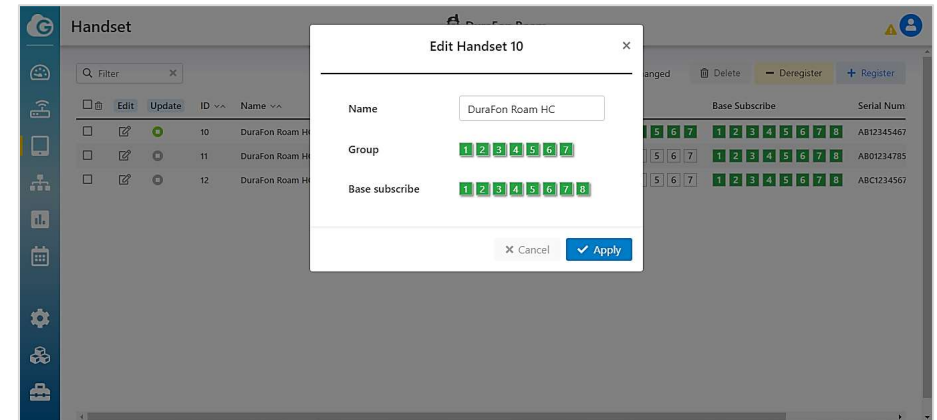
➤ Select Handset ID, click **“Deregister”**. At the same time, press **MENU** (softkey) on handset > 6.Registration > 2.Deregister





- Handset deregistered. Click **“Done”** to finish process. Or click **“Deregister Another”** to go ahead for another deregistration.

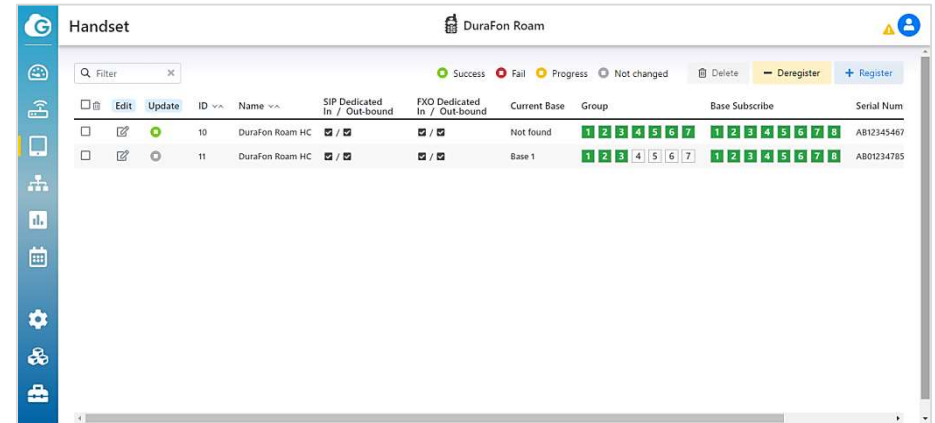
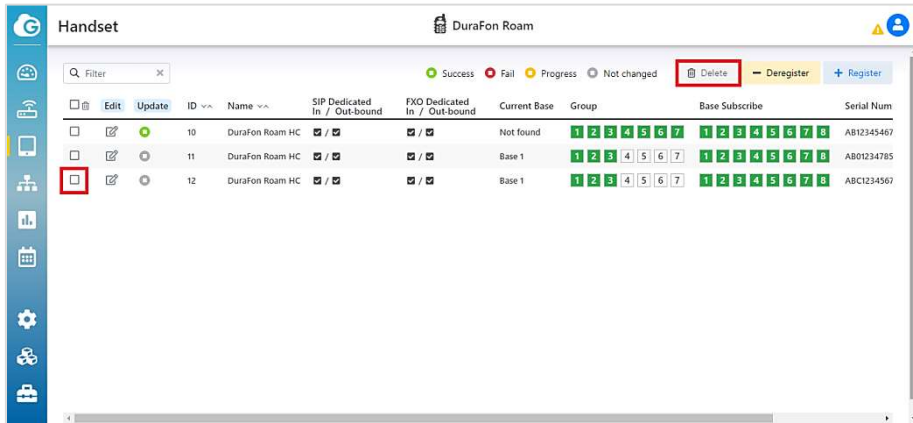


- After editing **“Name”**, **“Group”** and **“Base subscribe”**, click **“Apply”** to take effect.

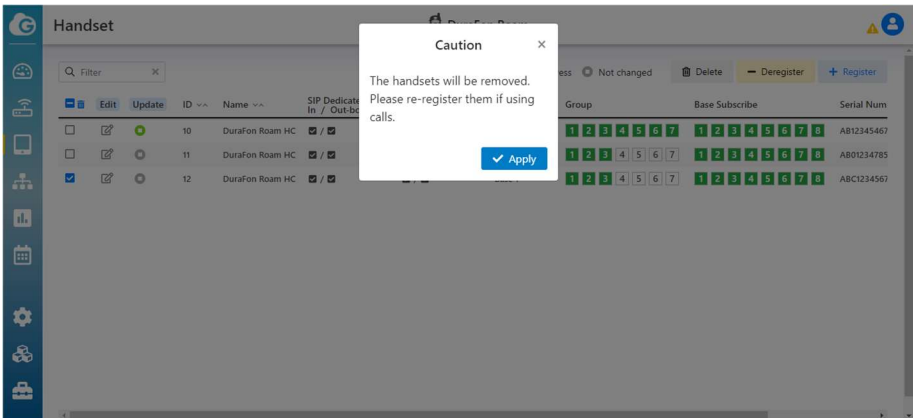


- Click  to edit the handset, including handset’s name, group and subscribed base. Click **Apply** to take effect.

- Delete handset  
In case a handset is not working for some reason, you can’t deregister it. You can click  to select the handset you want to remove, and then click **“Delete”** to remove it from the system. The handset ID will be removed and become available for use again.



Select handset 12, and click “Delete”. There is a warning message.



➤ Click “Apply” to remove handset 12



## Base Station Settings

### FXO Settings

- DuraFon Roam base station implement a FXO port for emergency backup, please setup the related parameters before using it.

The screenshot shows the 'FXO Settings' tab in the 'Base Station Settings' interface for 'DuraFon Roam'. The settings are as follows:

Parameter	Value
Transmit Gain	6 dB
Receive Gain	0 dB
Country	USA
AC Impedance	600 Ω
Flash Time	600 ms
DTMF Gain	0 dB
DTMF Duration	100 ms
PSTN Line-in Gain	0 dB
PSTN Line-out Gain	0 dB

### FXO Number Settings

- You can assign the PSTN inbound call received by dedicated handset/group handset/all handsets. Also the outbound call called via dedicated handset/group handset/all handsets.

The screenshot shows the 'FXO Number Settings' tab in the 'Base Station Settings' interface for 'DuraFon Roam'. It displays a table with columns for Base, Base Name, Phone Number, Description, In-Dedication, and Out-Dedication. The 'In-Dedication' column has a dropdown menu open, showing options like 'All Handsets', 'Group\_1', 'Group\_2', etc., up to 'Handset\_21'. The 'Out-Dedication' column also has a dropdown menu with 'All Handsets' selected.

Base	Base Name	Phone Number	Description	In-Dedication	Out-Dedication
1				All Handsets	All Handsets
2				All Handsets	All Handsets
3				All Handsets	All Handsets
4				All Handsets	All Handsets
5				All Handsets	All Handsets
6				All Handsets	All Handsets

## Broadcast

- DuraFon Roam handset is not only able to make peer to peer broadcast, but also broadcast via base station.  
In order to extend the communication range, the default of broadcast in DuraFon Roam is via base station.
- When enabling broadcast over base, you can assign individual base (or multiple bases) for broadcasting. After enabled, broadcasts will always utilize enabled base(s) for broadcast.

The screenshot shows the 'Broadcast' tab in the 'Base Station Settings' interface for 'DuraFon Roam'. The settings are as follows:

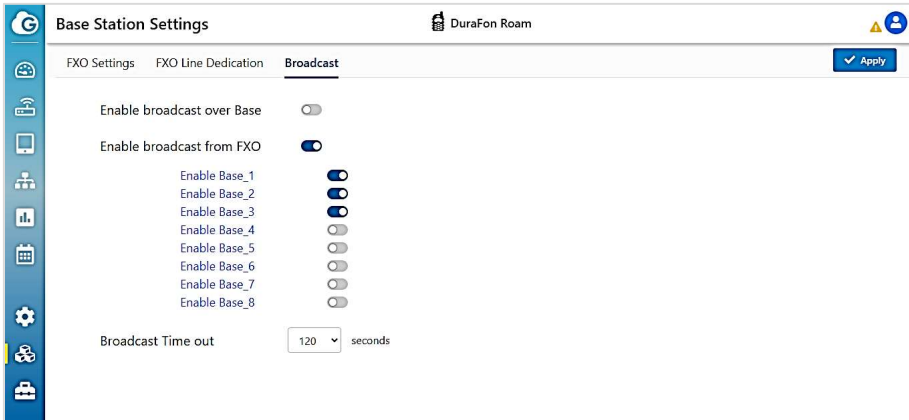
- Enable broadcast over Base:
- Enable Base\_1:
- Enable Base\_2:
- Enable Base\_3:
- Enable Base\_4:
- Enable Base\_5:
- Enable Base\_6:
- Enable Base\_7:
- Enable Base\_8:
- Time out to convert peer to peer broadcast: 1 seconds
- Enable broadcast from FXO:
- Broadcast Time out: 120 seconds

- In case the base station isn't able to build connection for broadcast, after certain timing, it will automatically convert to peer to peer broadcast instead. The option for time out timing is 1 ~ 5 seconds.

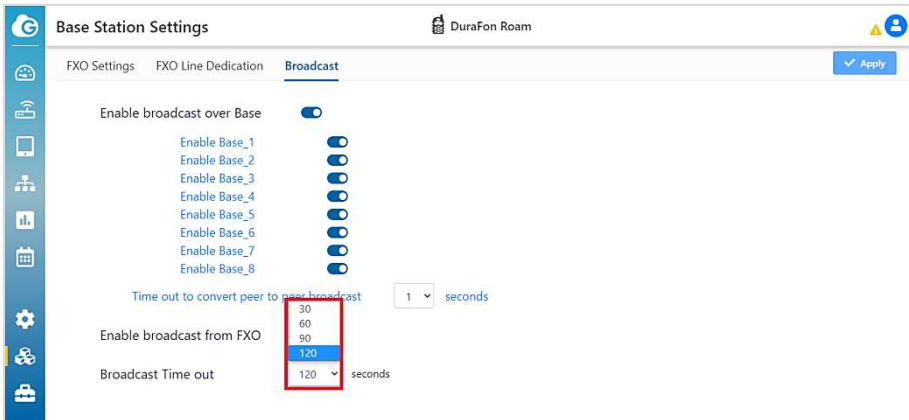
This screenshot is similar to the previous one, but the dropdown menu for 'Time out to convert peer to peer broadcast' is open, showing options 1, 2, 3, 4, and 5 seconds. The '1' option is highlighted.

- Enable broadcast over Base:
- Enable Base\_1:
- Enable Base\_2:
- Enable Base\_3:
- Enable Base\_4:
- Enable Base\_5:
- Enable Base\_6:
- Enable Base\_7:
- Enable Base\_8:
- Time out to convert peer to peer broadcast: 1 seconds
- Enable broadcast from FXO:
- Broadcast Time out: 120 seconds

- Broadcast via base stations can be enabled also via the FXO port of the base, allowing non-DuraFon Roam users to broadcast to DuraFon Roam handsets by calling from outside to base's FXO port.

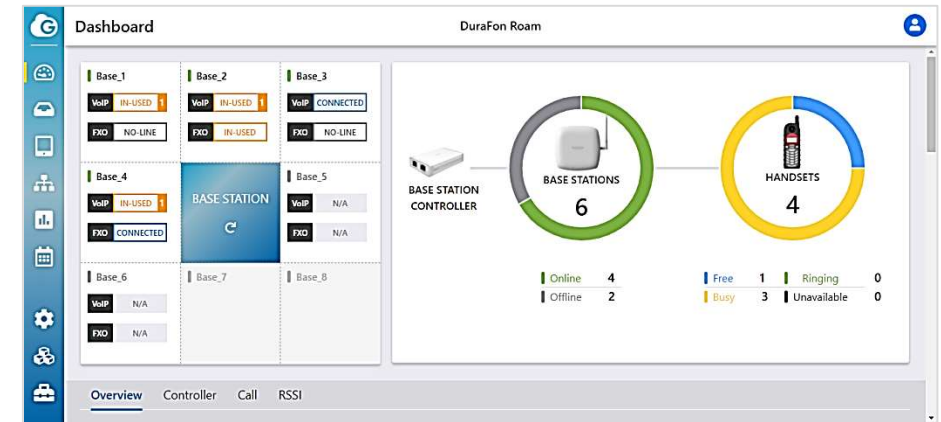


- Since broadcast will send signal to handsets, in order not to occupy the handsets, you can limit the max broadcast timing. The option for broadcast time out timing is 30/60/90/120 seconds.



## Dashboard

- Dashboard of DuraFon Roam provides you an overall picture of whole system operating status, the details including overall usage, BSC status, Call status and RSSI status.



- In the nine square grids, it shows the status of SIP/PSTN of each base.



**VoIP IN-USED 1** means one SIP call is in process.

- VoIP** **CONNECTED** means the SIP is connected and ready for calling.
  - VoIP** **N/A** means the base is off-line.
  - FXO** **IN-USED** means one PSTN call is in process.
  - FXO** **CONNECTED** means the PSTN line is connected and ready for calling.
  - FXO** **N/A** means the base is off-line.
  - FXO** **NO-LINE** means the PSTN isn't connected.
- Base\_7 means no base connected.

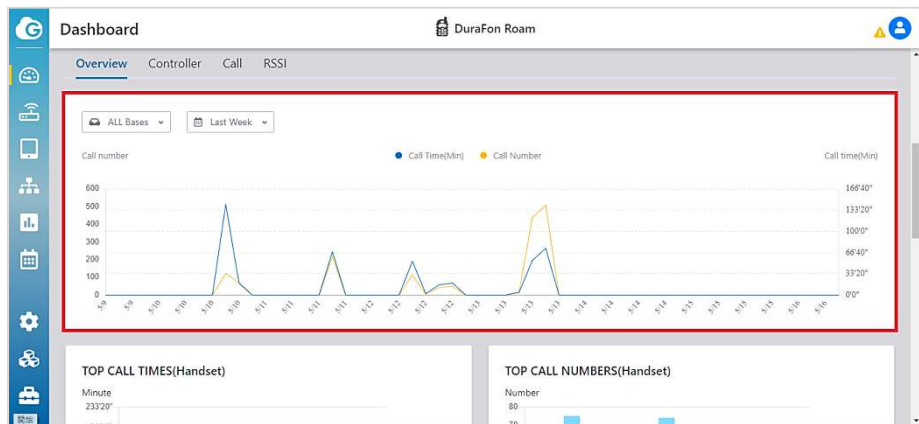
➤ In the middle of nine square grids, the GUI will be re-freshed if clicking it.



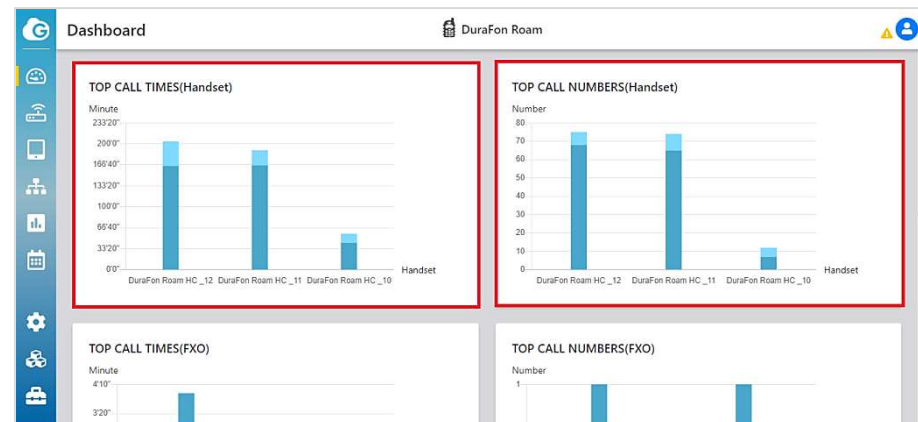
## Overview

➤ Click "Overview", you can check "Call number" and "Call time" with all bases, or dedicated base.

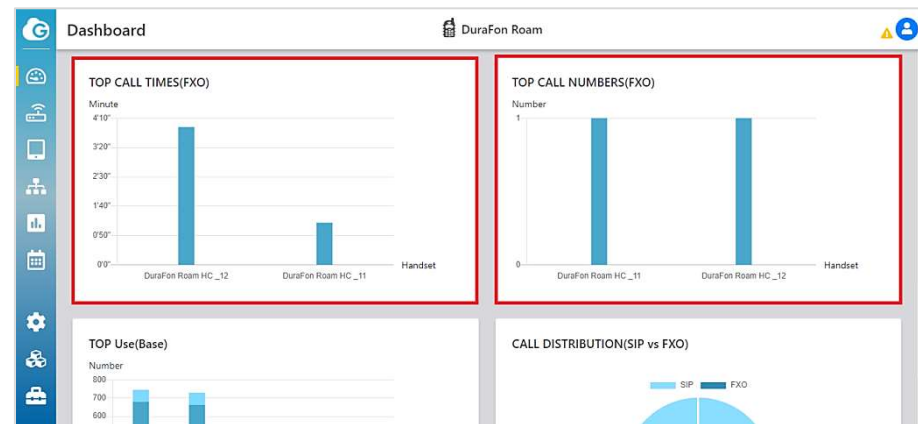
Also you can check at three periods: Last Hour, Last Day and Last Week.



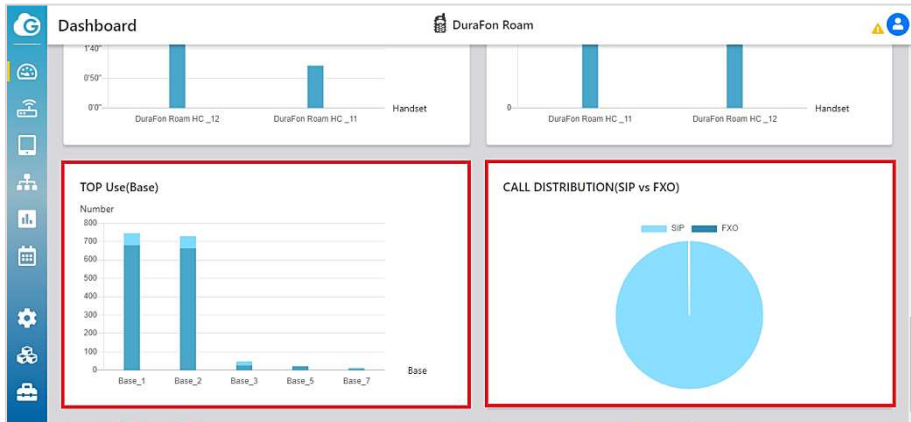
- When scrolling down, you can check the following six charts :
- 1) "TOP CALL TIMES(Handset)"
  - 2) "TOP CALL NUMBERS(Handset)"



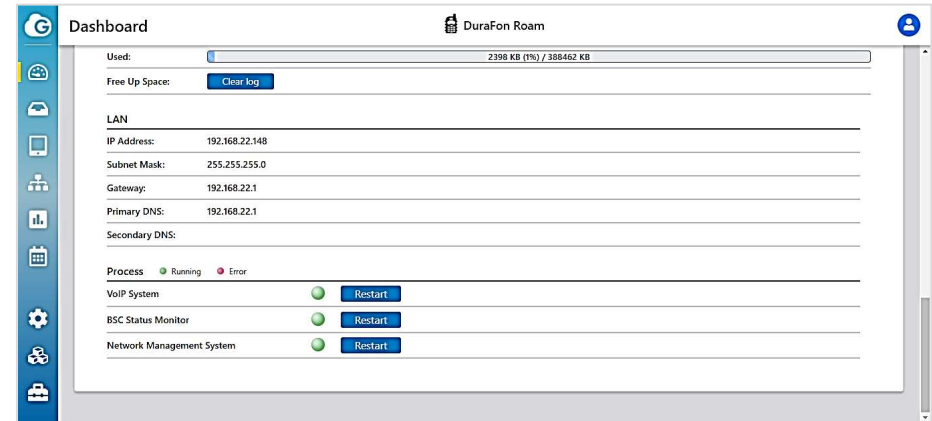
- 3) "TOP CALL TIMES(FXO)"
- 4) "TOP CALL NUMBERS(FXO)"



- 5) "TOP Use(Base)"
- 6) "CALL DISTRIBUTION(SIP vs FXO)"

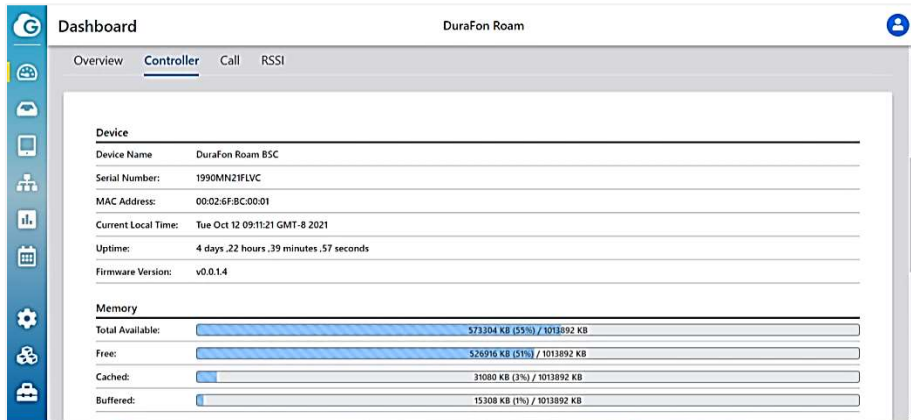


- 6) Process : VoIP System、 BSC Status Monitor and Network Management System.
- 7) If Process indicator signals “Error”, simply click Restart



### Controller

- Click “Controller”, you can check the following system status:
  - 1) Device : including Device Name、 Series Number、 MAC、 Current Local Time、 Uptime and Firmware Version.
  - 2) Memory : including Total Available、 Free、 Cached and Buffered.

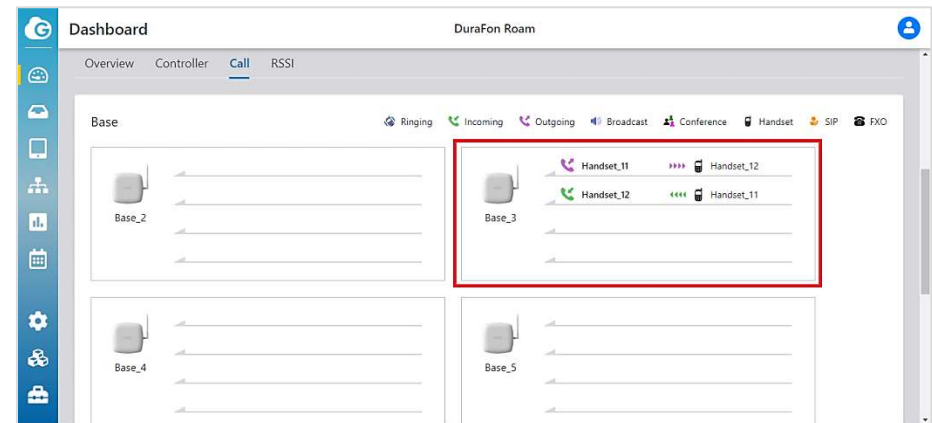


- 3) CPU loading
- 4) eMMC : including Used and Free Up Space.
- 5) LAN : Including IP Address、 Subnet Mask、 Gateway、 Primary DNS and Secondary DNS.

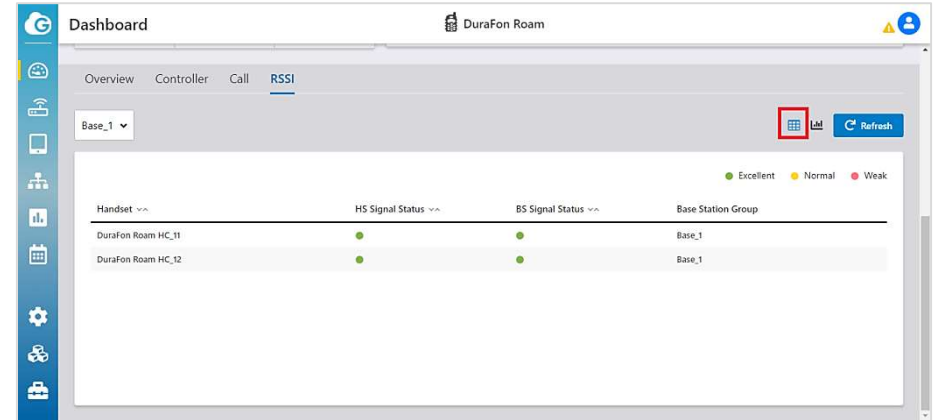
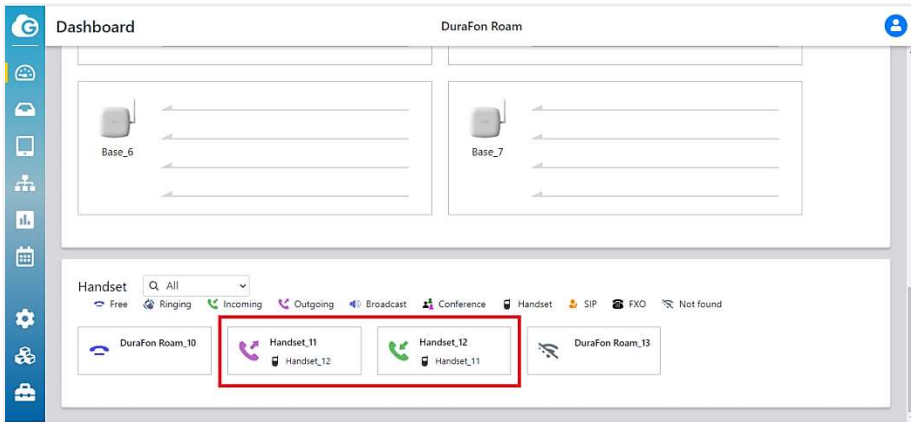
### Call

- Click “Call”, you can check the current call status in both base station and handset.

For example, checking below call status of base 3, handset 11 is making a call to handset 12. And handset 12 is receiving a call from handset 11.

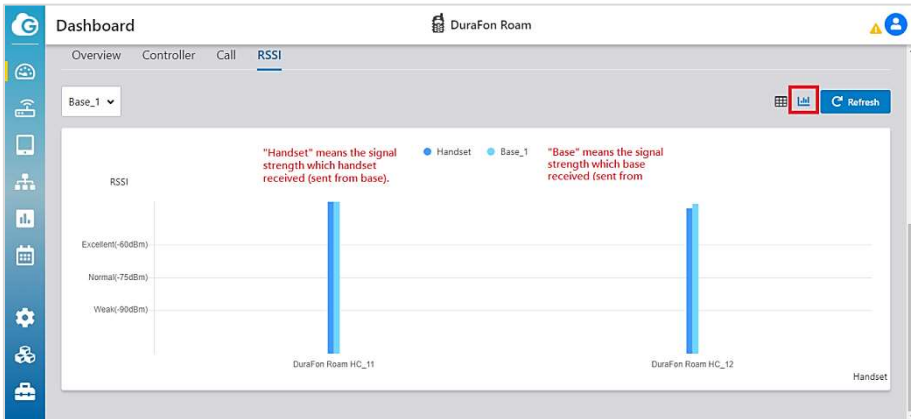


At the same moment, checking below call status of handset, handset 11 is making the outgoing call to handset 12, and handset 12 is receiving the incoming call from handset 11.



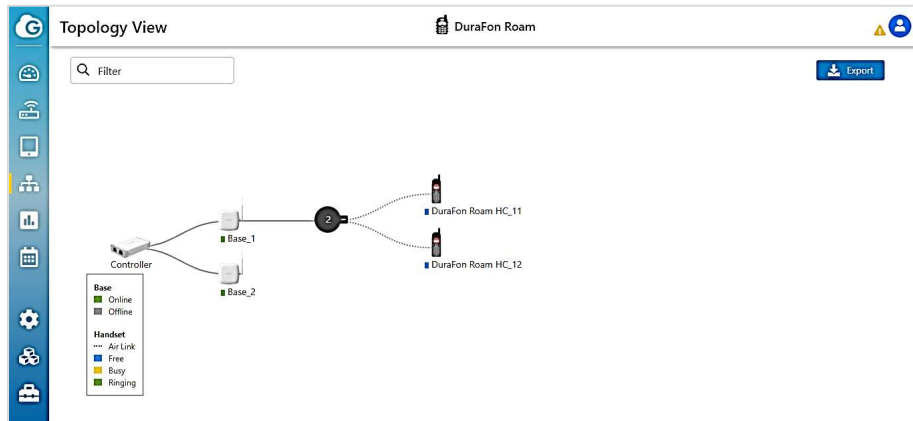
## RSSI

- Click "RSSI", you can check the receiving radio signal strength of handset and base. This info shows you the connection performance of handset and base. For example, the bar of deep blue means the handset receiving signal strength which received from base. And the bar of light blue means the base signal strength which received from handset. Two type of RSSI : Bar chart & columnar

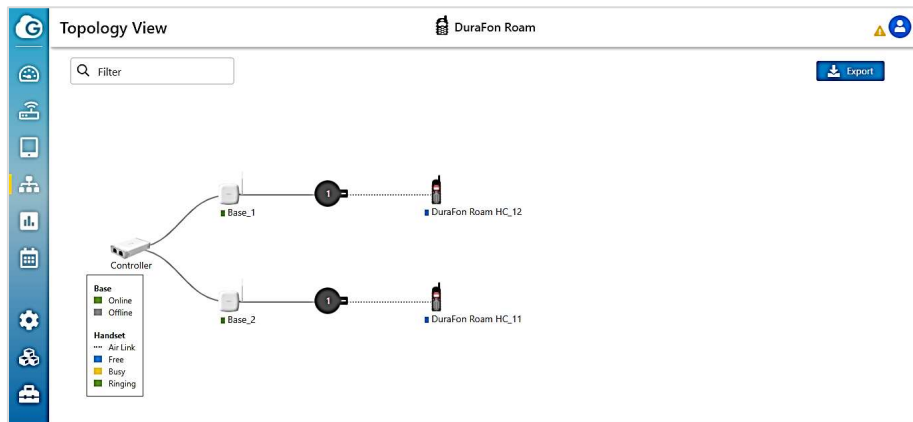


## Topology

- Navigate to “Topology”, you can overall view the current connection between base(s) and handset(s).



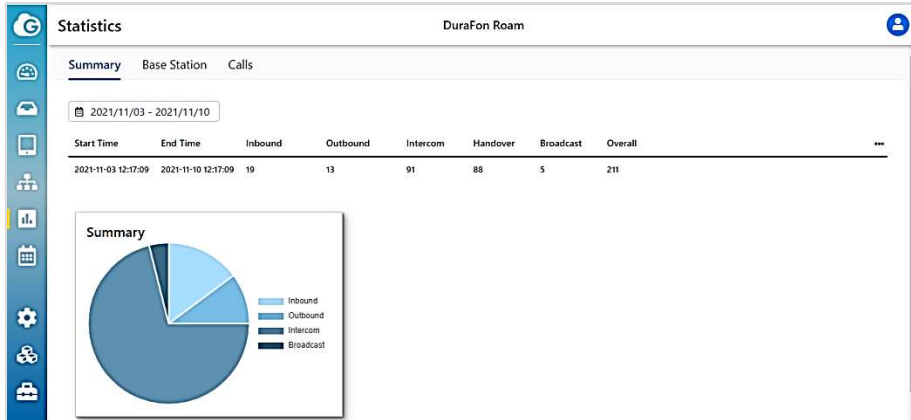
- When handset(s) is moving around, the handset will automatically hand-over from one to the other base, the topology will update the connection accordingly.



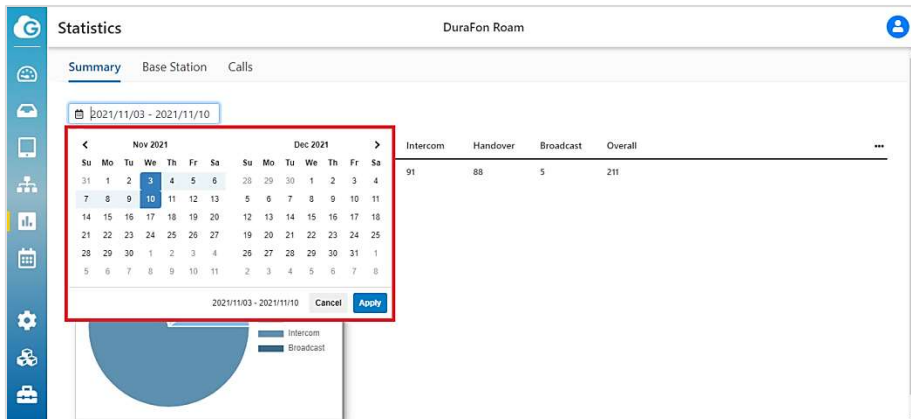
## Statistics

### Summary

- Navigate to Statistic, click “Summary”, you can view the various calls during a time period, including Incoming Calls、Outgoing Calls、Intercom、Handover and Broadcast.



- Select time period.



## Base Station

- Navigate to Statistic, click “Base Station”, you can view the following info :

ID	Air Time	Busy	Busy Time	Total Call	Handover	1588 Failed	SIP Failed
1	03:48:17	58	03:32:56	116	77	1	14
2	01:13:57	12	00:03:16	98	72	5	21
3	00:07:54	0	00:00:00	1	3	3	12
4	00:00:52	0	00:00:00	3	0	1	12
5	00:08:36	0	00:00:00	1	4	1	12

Re : “Air Time” is the accumulated time when handset link to base. “Busy” is the frequency of base full loading. “Busy Time” is the accumulated time when base full loading.

“The “1588 Failed” means the base failed in synchronization via networking. It will be recovered automatically, as long as the network works normally.

The “SIP Failed” means the bases inquire with BSC about the registration info of handsets, but somehow BSC doesn’t respond. It will be recovered automatically, as long as the connection is normal between BSC BU.

- Select time period.



## Calls

➤ Navigate to Statistics, click “Calls” to view call statistics over a time period.

Start Time	Call Type	Trunk	Caller ID	From	To	Base	Disposition	Duration(Sec)	Rssi(dBm)
2021-11-04 16:26:11	Inbound	SIP_555	111	111	555		Answered	4	
2021-11-04 16:27:17	Inbound	SIP_555	111	111	555		Answered	3	
2021-11-04 16:27:35	Inbound	SIP_555	111	111	555		Answered	5	
2021-11-04 16:47:31	Inbound	SIP_555	111	111	555		No answer	3	
2021-11-04 16:53:25	Inbound	SIP_555	111	111	555		No answer	5	
2021-11-04 16:55:22	Inbound	SIP_555	111	111	555		No answer	10	
2021-11-04 16:55:39	Inbound	SIP_555	111	111	555		No answer	3	
2021-11-04 17:23:36	Inbound	SIP_555	111	111	555		Answered	14	
2021-11-04 17:47:07	Inbound	SIP_555	111	111	555		No answer	4	
2021-11-04 18:05:34	Inbound	SIP_555	111	111	555		No answer	10	
2021-11-04 18:05:56	Inbound	SIP_555	111	111	555		No answer	8	

➤ Select time period.

Start Time	Call Type	Trunk	Caller ID	From	To	Base	Disposition	Duration(Sec)	Rssi(dBm)
2021-11-04 16:26:11	Inbound	SIP_555	111	111	555		Answered	4	

## Log

Navigate to Log, there are “Event” and “System” for manager reviewing.

## Events

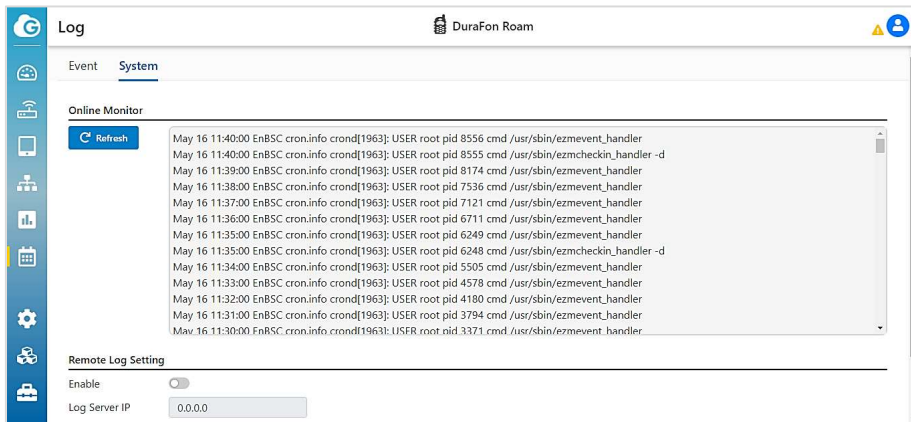
Time	Device	Event Type	Description/Detail
2022-05-16 08:43:56	Base_1	Daemon Status	ptp IP change restart.
2022-05-16 08:43:56	Base_2	Daemon Status	ptp IP change restart.
2022-05-16 08:43:49	Base_2	Device Status	Base online from 192.168.22.112.
2022-05-16 08:43:49	Base_1	Device Status	Base online from 192.168.22.113.
2022-05-16 08:43:48	Base_2	Device Status	Base online from 192.168.22.112.
2022-05-16 08:43:48	Base_1	Device Status	Base online from 192.168.22.113.
2022-05-16 08:41:16	Controller	Device Status	Controller boot up.
2022-05-13 17:03:08	Base_1	Device Status	Base online from 192.168.22.113.
2022-05-13 17:03:03	Base_2	Device Status	Base online from 192.168.22.112.
2022-05-13 17:03:00	Base_2	Device Status	Base online from 192.168.22.112.
2022-05-13 15:45:29	Base_1	Device Status	Base online from 192.168.22.113.

• Select time period of Event log.

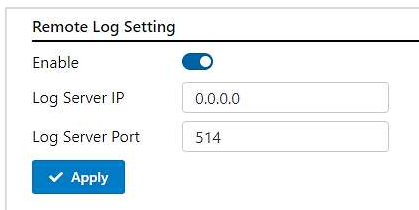
Time	Device	Event Type	Description/Detail
2021-09-30 06:40:24	Controller	DUT Status	Controller boot up.
2021-10-04 01:09:27	Controller	DUT Status	Controller boot up.
2021-10-04 01:40:22	Base_2	DUT Status	Base managed.
2021-10-04 01:40:26	Base_2	DUT Status	Base online from 192.168.22.114.



## System



Re: You can enable the “Remote Log Setting”, when system log has something abnormal, you can remotely check the log.



## Tools

### Firmware

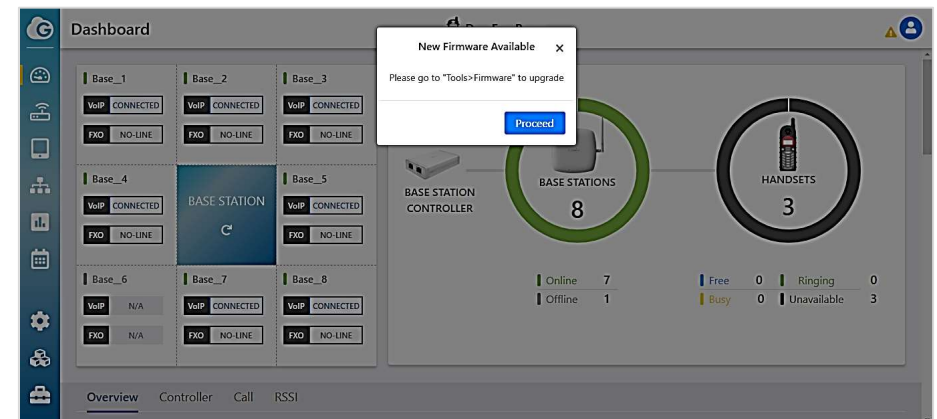
#### New Firmware Available

- When new firmware is available, you will receive an email notification as following, to notify “new firmware available”.

Event log			
Time	Device	Event Type	Description/Detail
2022-06-16 15:24:55	DuraFon Roam	Notify	Controller has new firmware available

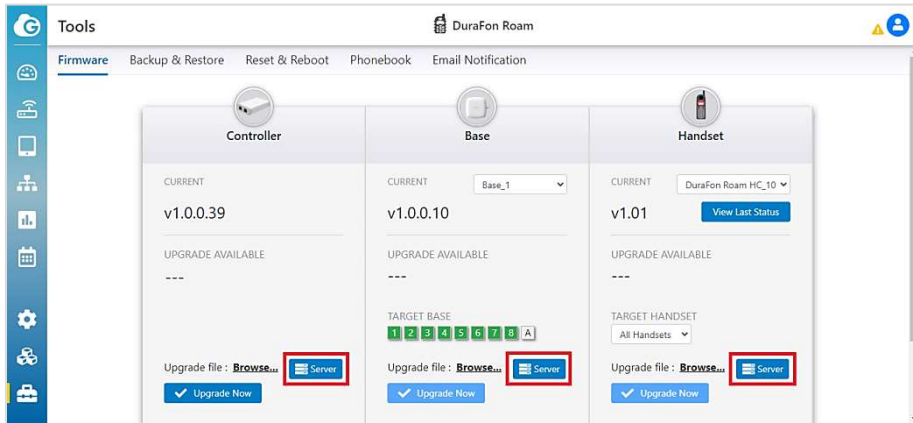
Re : Please make sure the “Email Notification” has been set up, otherwise, you will not receive the notification.

- Also, when you access the GUI, you will see a prompt window as following. You can upgrade firmware at once or do it later.



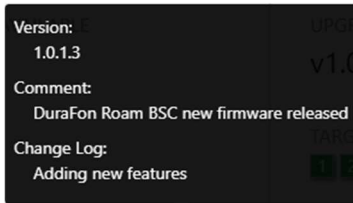
#### Download new firmware

- Navigate to Tools > Firmware, you can check the current firmware version and upgrade new firmware (immediately upgrade or scheduled upgrade).

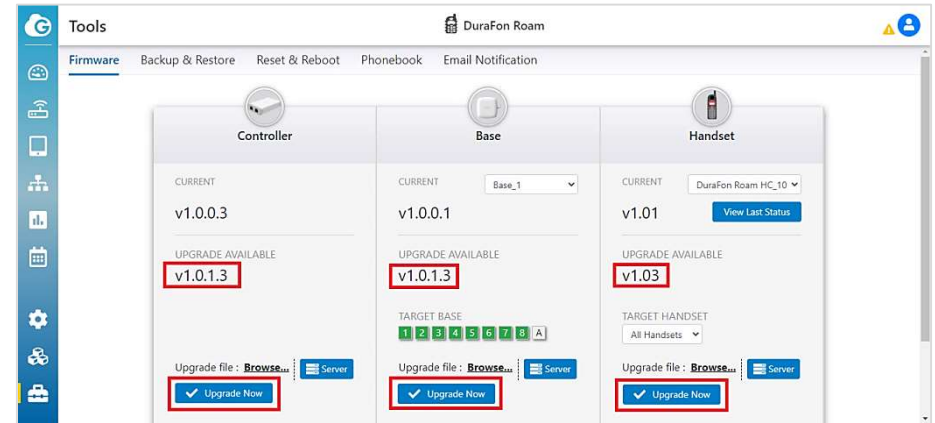


➤ When new firmware available, the button of **Server** will turn to dark blue, you can click the button to download new firmware from EnGenius server.

Re : If moving the cursor to the **Server**, it will show you the detail information of new firmware.



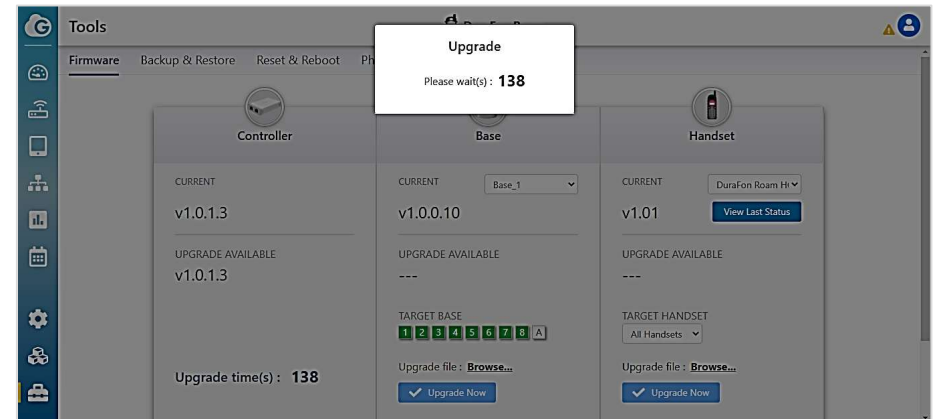
Once the new firmware downloaded well, you will see the new firmware version, and the button of **Upgrade Now** will turn to dark blue too. It means you can upgrade new firmware at once.



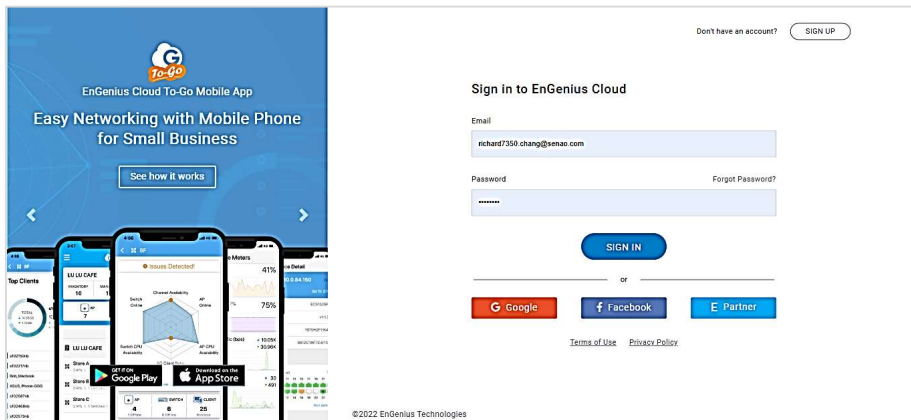
### Upgrade BSC

➤ Once the new firmware is available, you can choose to upgrade new firmware at once (click "**Upgrade Now**"), or set up scheduled upgrade.

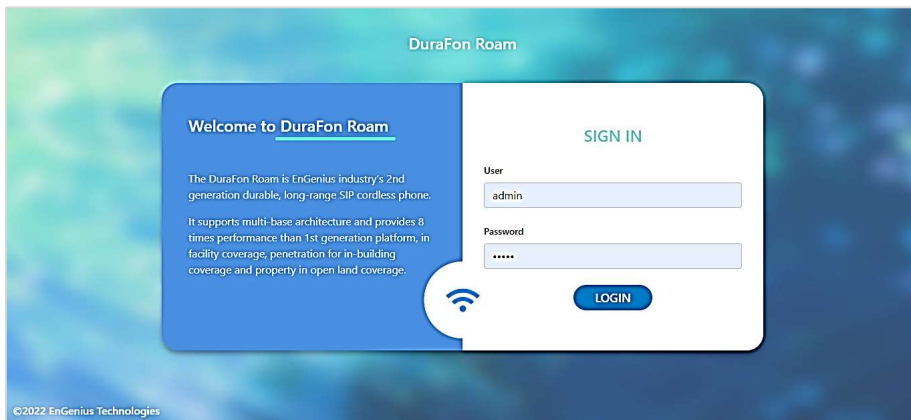
➤ It will take around 140 seconds to upgrade firmware.



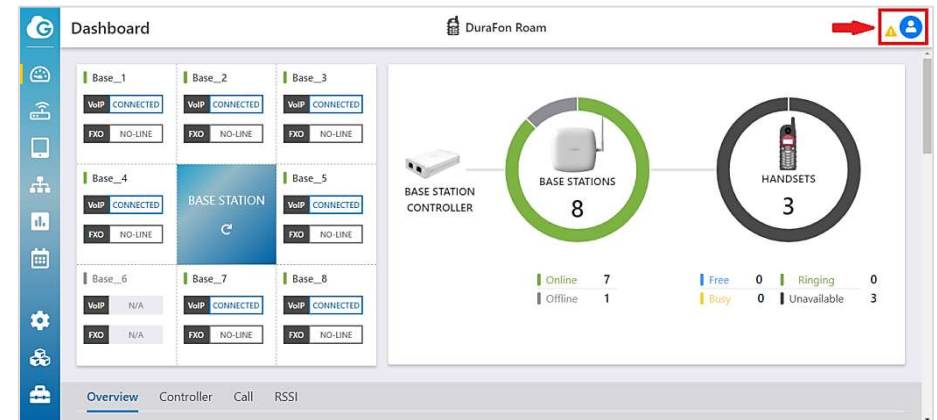
➤ When firmware upgrade completely, the BSC will reset and reconnect to EnGenius Cloud, you have to login Cloud again.



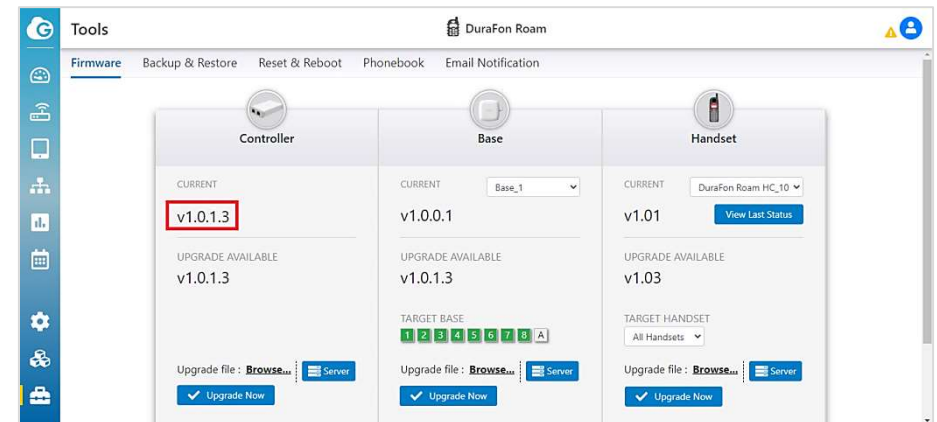
- If you initially login from local GUI, after firmware upgrade completely, the BSC will reset and reconnect to local GUI, you have to login again.



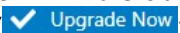
Re : You can change the user ID and password by entering the “Administrator Access” as following.

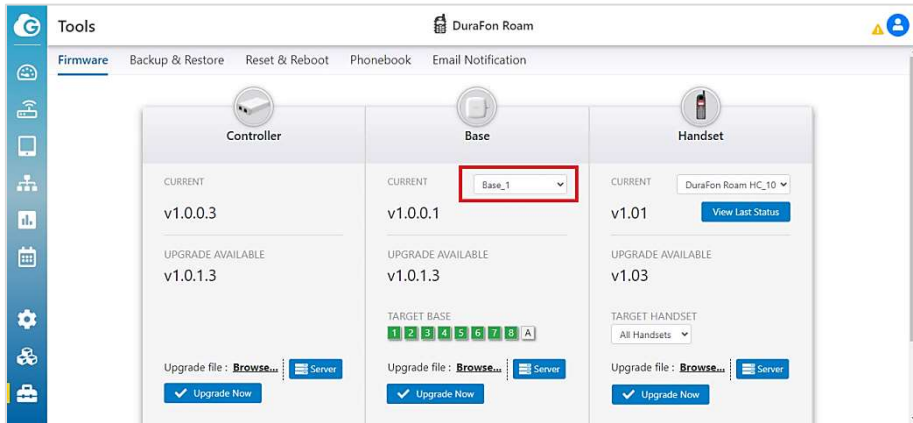


- Now the firmware is new version.

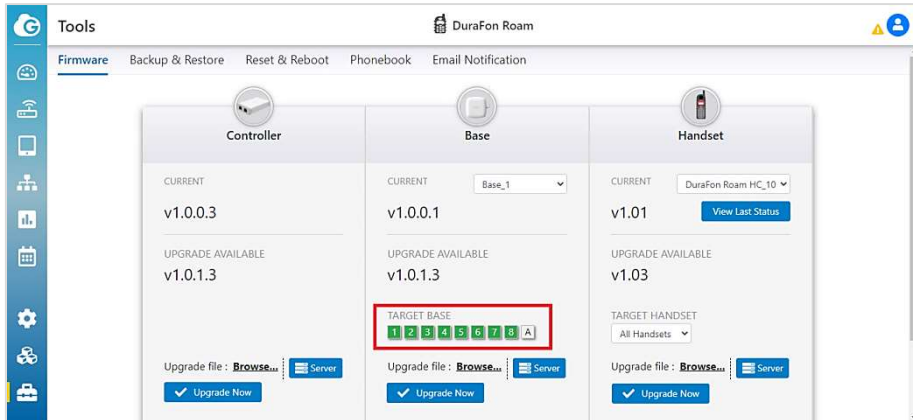


### Upgrade Base

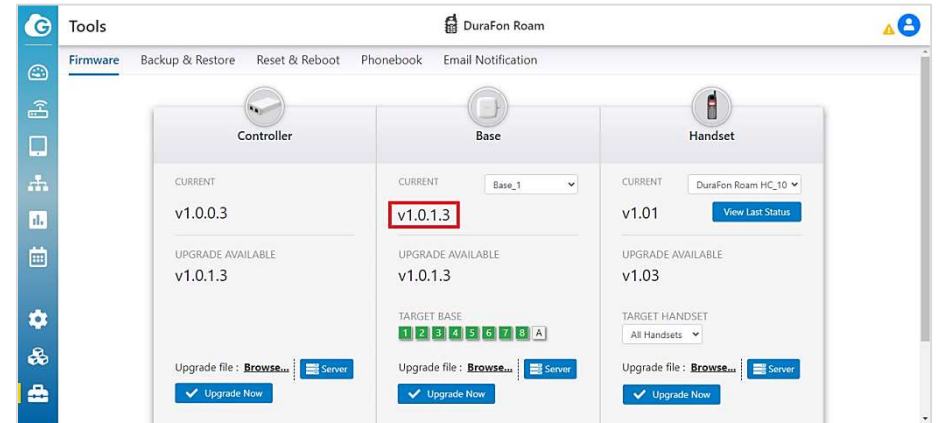
- Once the new firmware is available, you can choose to upgrade new firmware at once (click “ Upgrade Now”), or set up scheduled upgrade.
- Before upgrade new firmware, you can check the current firmware version for base.



- Choose the Base which needs to upgrade new firmware.  
Re : The number 1 ~ 8 means the Base ID. The A means for all bases.

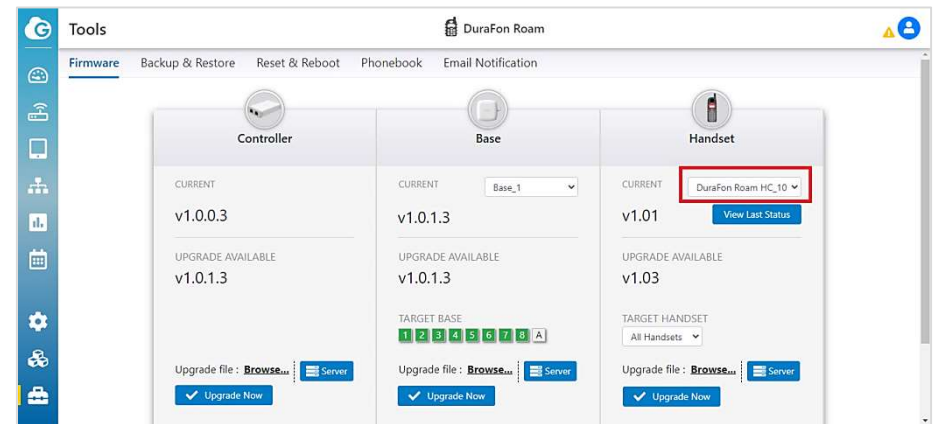


- It will take around 190 seconds to upgrade firmware. When firmware upgrade completely, the base station will reset and reconnect, please check the dashboard to make sure if the base station has connected to BSC.
- After firmware upgrade, you will see the current firmware version(v1.0.1.3) showed on screen.

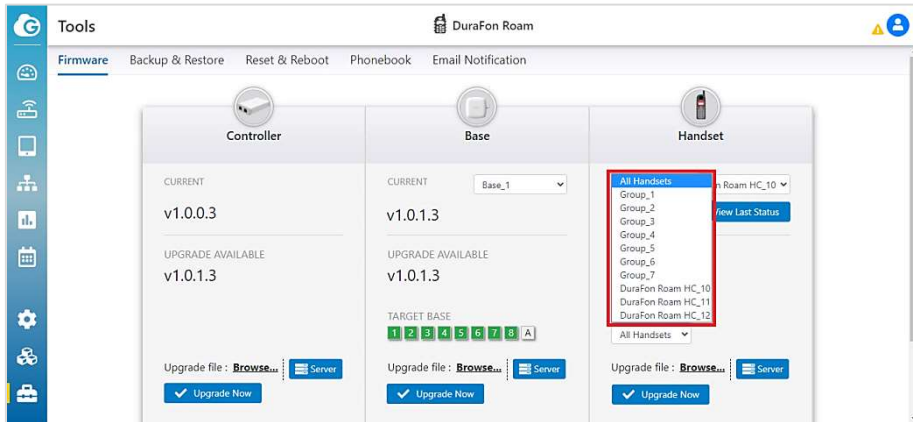


### Upgrade Handset

- Once the new firmware is available, you can choose to upgrade new firmware at once(click "Upgrade Now"), or set up scheduled upgrade.
- Same as Base, you can check the firmware version of Handset by clicking drop-down menu.

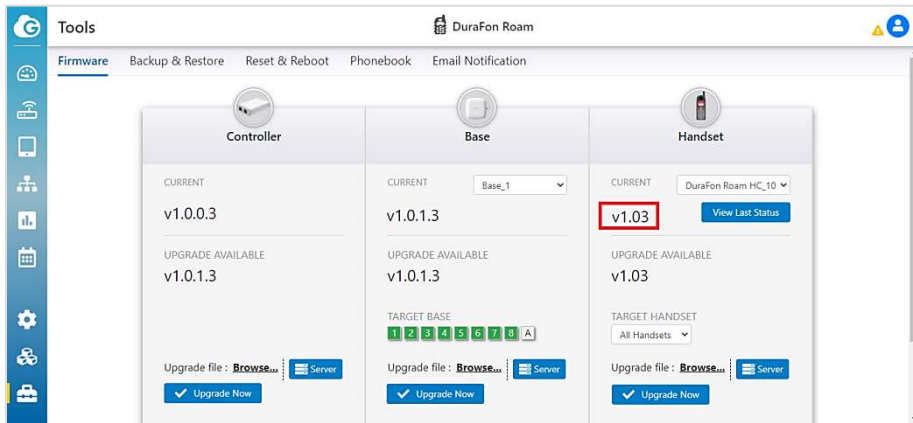


- Click "TARGET HANDSET" to select the handset(s) for firmware upgrade. There are "All Handsets", "Group\_1 ~ Group\_7" and individual handset as an option.

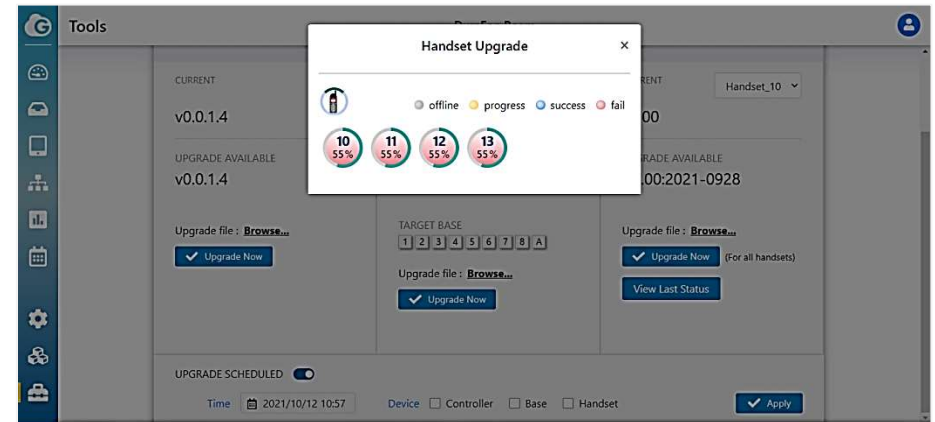


Re : In case the all bases installed closely (the interval between bases less than 6 feet), in order to avoid the interference between bases, please keep the Base\_1 “Managed” only (“Un-manage” the rest bases) before start upgrading the firmware of handset(s).

- When firmware upgrade completely, you will see the new firmware version(v1.03) showed on screen.

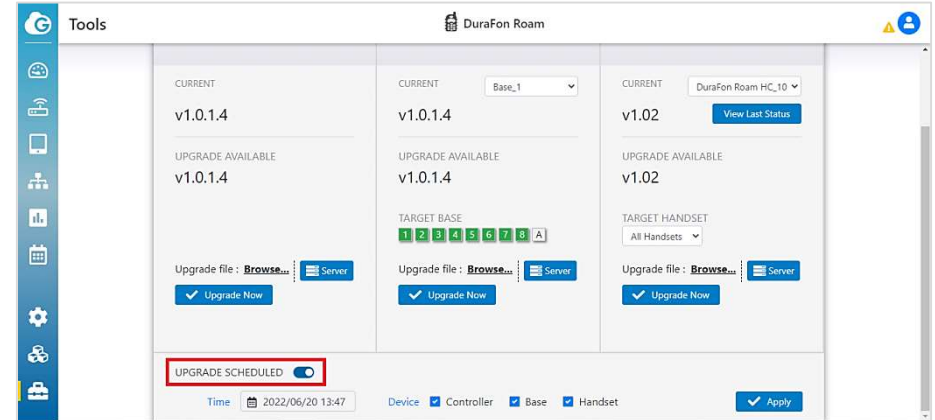


PS : You can check the status of last upgrade by click “View Last Status”.



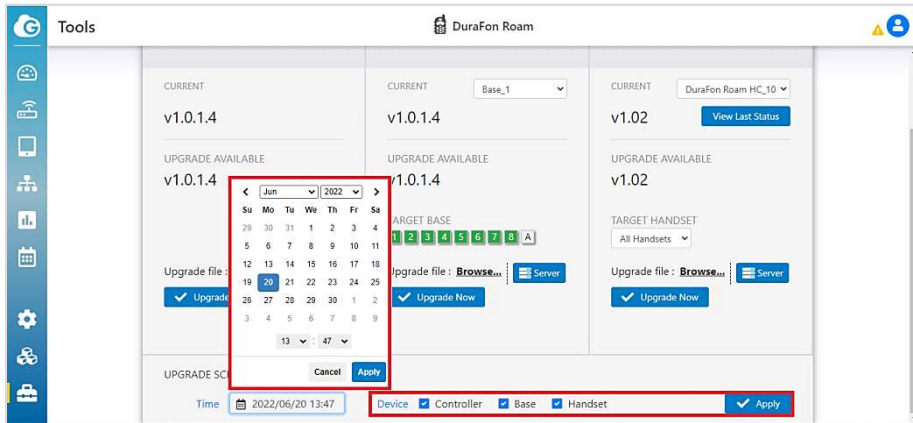
### Schedule Upgrade

- In case you don't want to upgrade immediately, you can set a schedule upgrade.



- Enable the “upgrade scheduled”, setup a proper time by setting “Time”, and click the device(Controller、 Base or Handset). After setting up, click “Apply” to take effect.

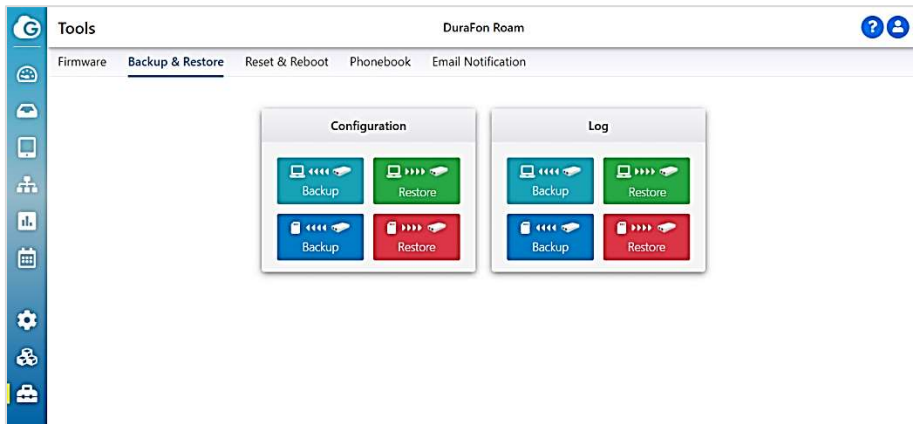




## Backup & Restore

Navigate to Tools > Backup & Restore.

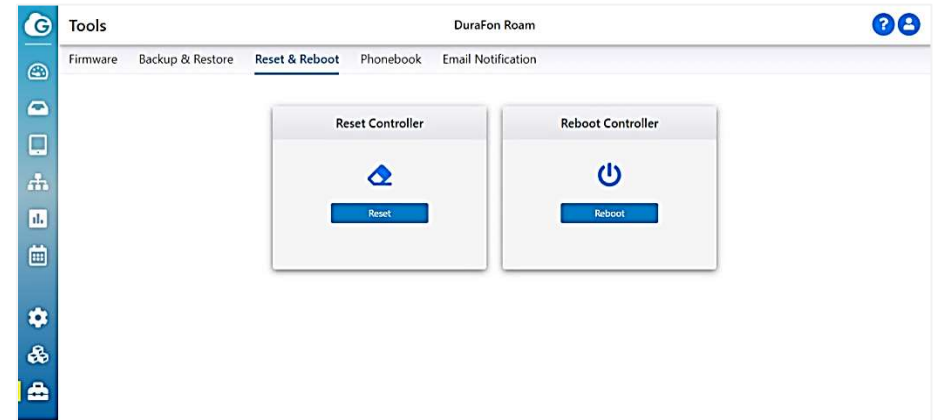
You can back-up the Configuration & Log of BSC to NB/PC or Micro-SD card. Also can restore the Configuration & Log of BSC from NB/PC or Micro-SD card.



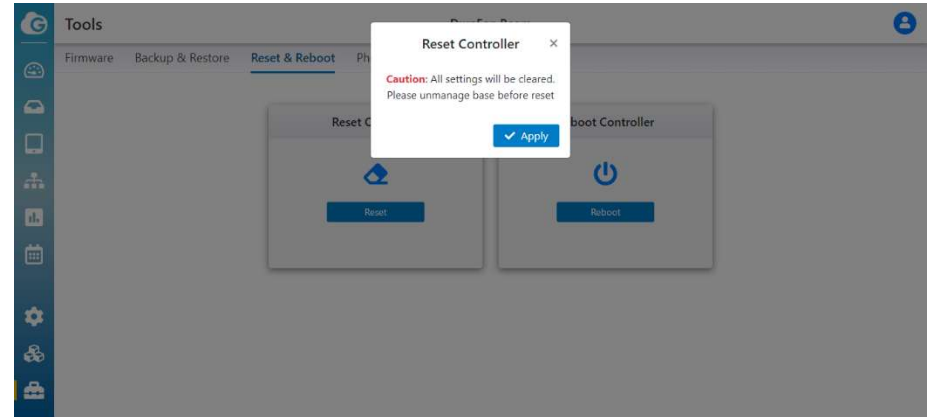
## Reset & Reboot

Navigate to Tools > Reset & Reboot.

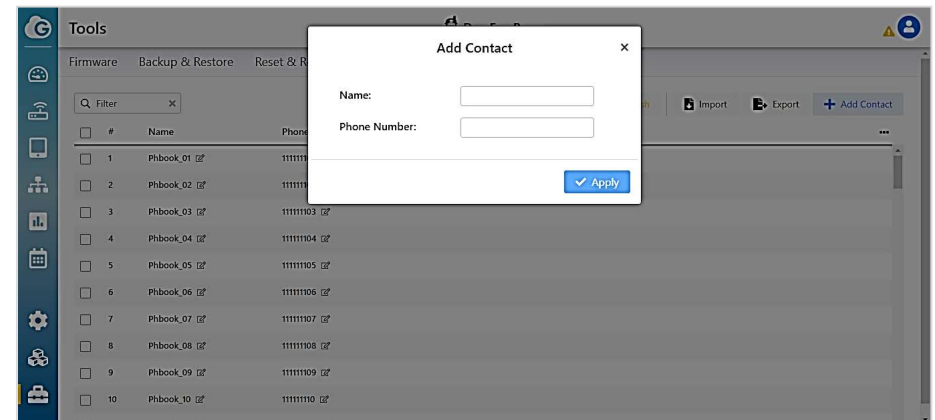
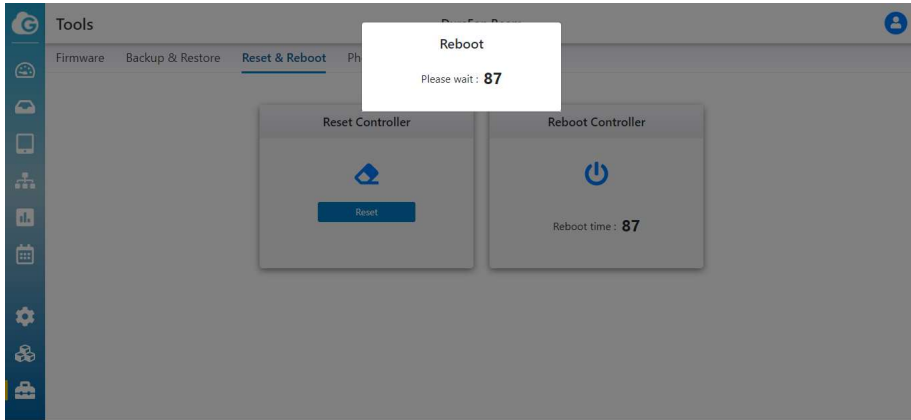
When system running abnormally, you can reset the system, or reboot it.



➤ Click "Reset", followed by clicking "Apply" to reset BSC



➤ Click "Reboot", BSC will take 90 seconds to restart.

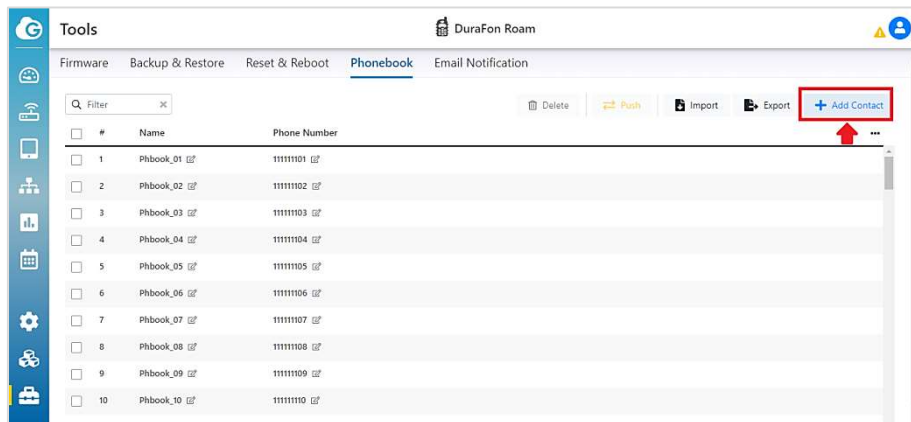


## Phonebook


➤ Navigate to Tools > Phonebook, you can do the following:

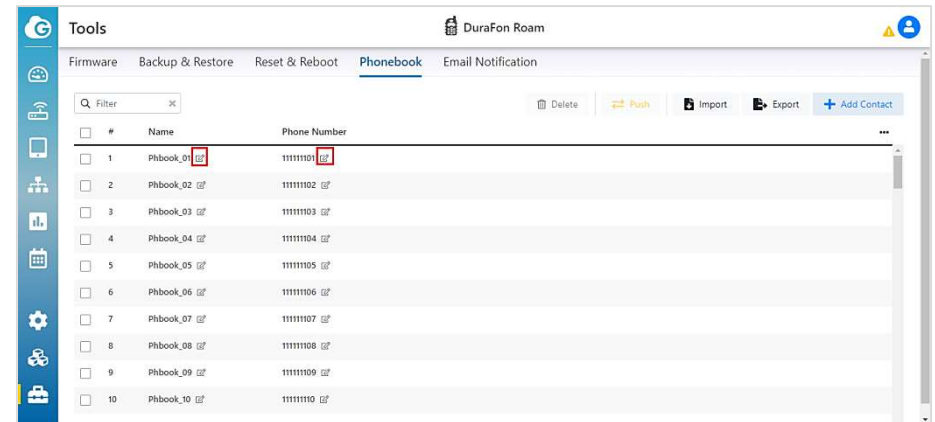
- 1) Create a phonebook list
- 2) Edit a phonebook list
- 3) Delete a phonebook list
- 4) Push phonebook list to all handsets.
- 5) Export phonebook list to PC/NB.
- 6) Import phonebook list from PC/NB.


➤ Create a phonebook list by clicking “+ Add Contact”.

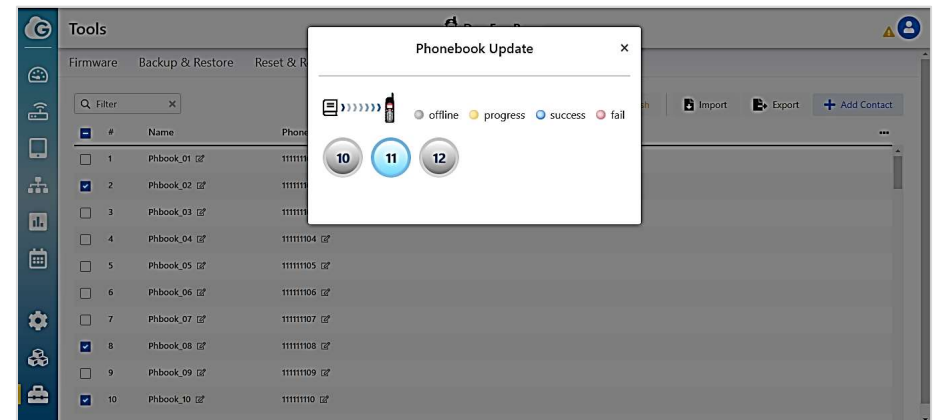
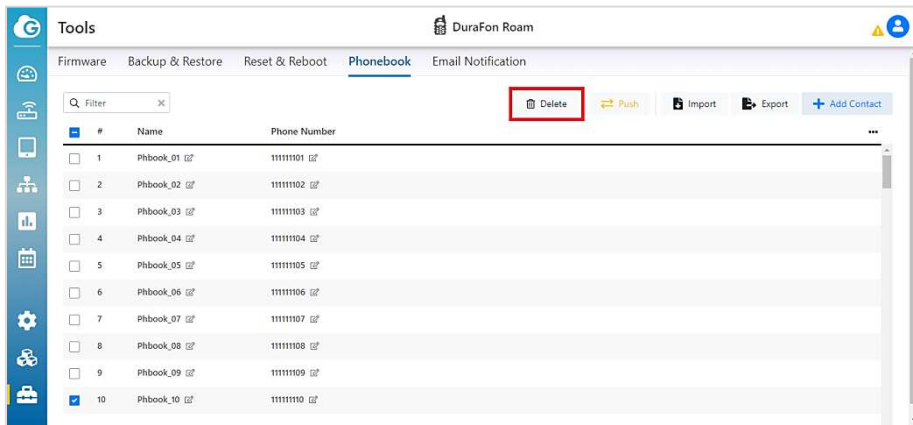



➤ Enter Name and Phone Number, click “Apply” to take effect.

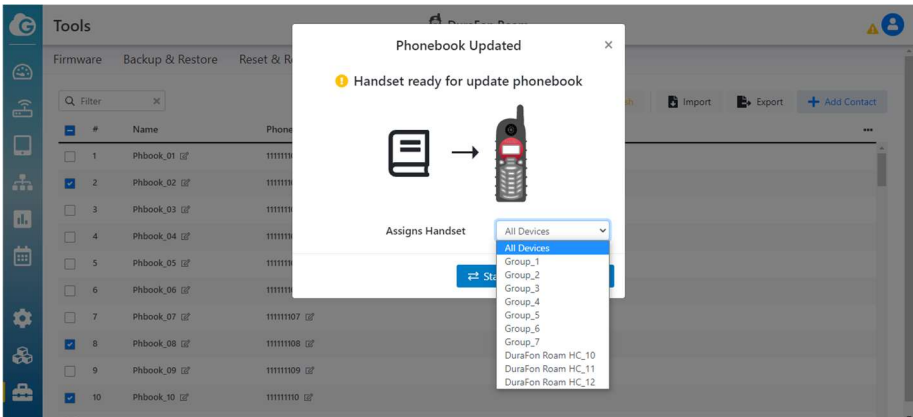
➤ Edit a phonebook list by clicking “”.




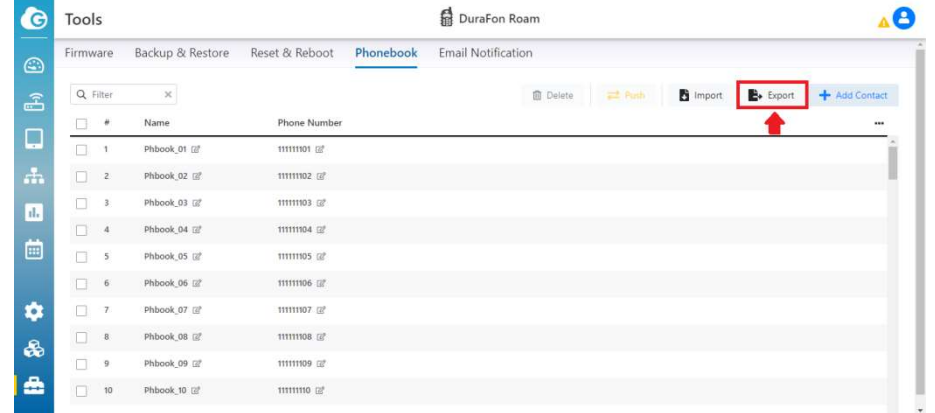
➤ Delete a phonebook list, select the entry you want to delete, and then click the “ Delete”.



➤ Transfer phonebook to handset by clicking “  Push ”.



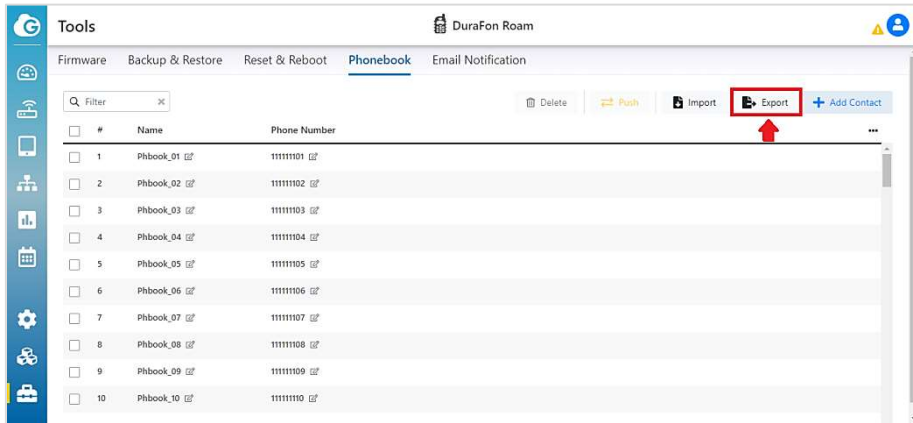
➤ Save phonebook list to NB/PC by clicking “  Export ”



- You can choose to transfer selected phonebook or all phonebook
- You can choose to transfer phonebook to individual/group/all handsets.

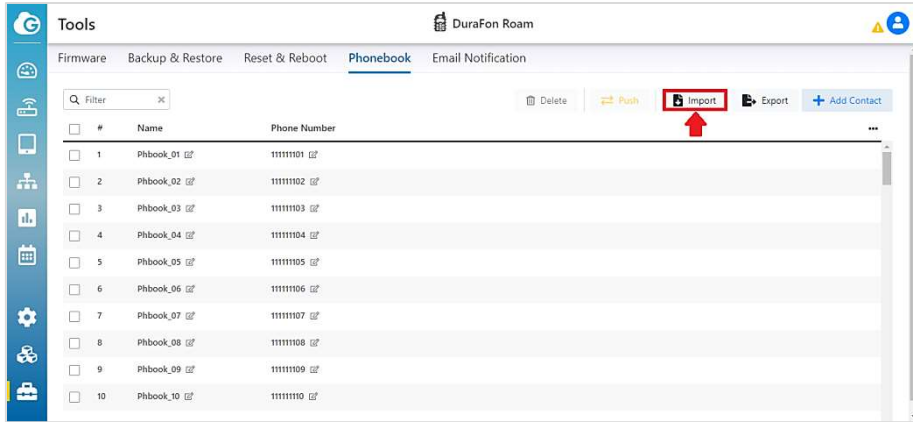
➤ Click “Start Pushing Phonebook” to send selected phonebook to desired handsets.





Re: the default file name is "phonebook.csv".

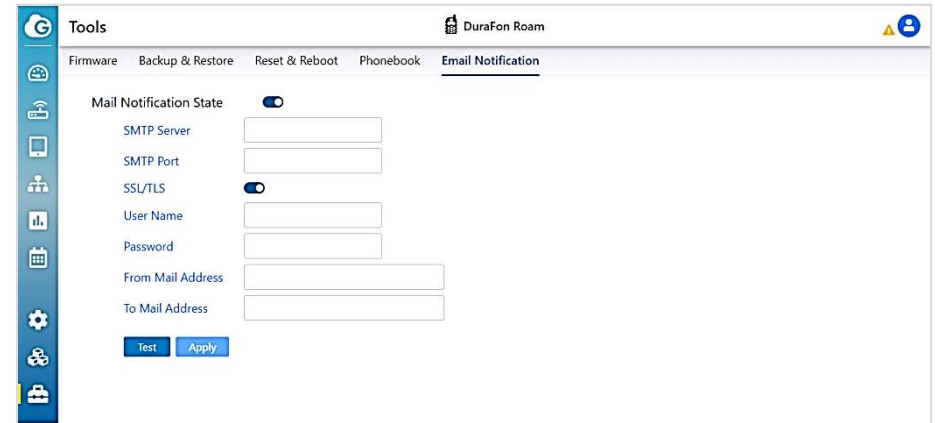
➤ Retrieve and open phonebook file from NB/PC by clicking " Import ".



## Email Notification

➤ Navigate to Tools > Email Notification, you can setup the email notification for below information :

- Weekly report with the Event & Call Log list.
- Instant alert with base station offline.
- New firmware available.



➤ Below is an example of "Weekly report with the Event & Call Log list".

Task tracked last week (2021-09-29 11:36:58 ~ 2021-10-06 11:36:58)

**eMMC**  
Used - 4%

**Calls**

Start Time	Call Type	Trunk	Caller ID	From	To	Base	Disposition	Duration	Rssi
2021-10-04 01:56:53	in	sip_00	222	222	Grp00	5	ANSWERED	10	-52
2021-10-04 02:45:19	in	sip_00	222	222	Grp00	2	ANSWERED	352	
2021-10-04 06:16:14	in	sip_00	222	222	Grp00	6	ANSWERED	4	-106
2021-10-04 07:23:13	in	sip_00	222	222	Grp00	4	ANSWERED	10	-52
2021-10-05 10:43:08	intercom		10	Hs10	Hs11	3	ANSWERED	5	-64,-101

**Event log**

■ Error ■ Warning ■ General

Time	Device	Event Type	Description/Detail
2021-09-30 06:40:24	Controller	DUT Status	Controller boot up.
2021-10-04 01:09:27	Controller	DUT Status	Controller boot up.
2021-10-04 01:40:22	Base_2	DUT Status	Base managed.
2021-10-04 01:40:26	Base_2	DUT Status	Base online from 192.168.22.134.
2021-10-04 01:40:53	Base_2	DUT Status	Base unmanaged.

➤ Below is an example of "Instant alert with base station offline".

**Event log**

■ Error ■ Warning ■ General

Time	Device	Event Type	Description/Detail
2022-06-16 16:23:36	Base_8	Device Status	Base offline.

➤ Below is an example of "New firmware available".

**Event log**

■ Error ■ Warning ■ General

Time	Device	Event Type	Description/Detail
2022-06-16 15:24:55	DuraFon Roam	Notify	Controller has new firmware available

## Technical Specifications

### Hardware Specification

#### CPU:

Model: Qualcomm IPQ4019  
 Architecture: 32-bit  
 Clock Rate: ARM A7 Quad Core 717MHz  
 Hardware Encryption Acceleration: Yes

#### Memory:

System Memory: 1GB DDR3

#### Storage:

eMMC: 4GB (MLC)

#### Interfaces and LEDs

2 x 10/100/1000 Mbps RJ45 ports (1 x PoE)  
 1 x Micro SD Slot  
 1 x DC-Input Jack  
 1 x Reset Button  
 1 x Power LED (Orange)  
 2 x LAN LED (Green)

### Mechanical & Environment

#### Dimension

100mm(L) x 60mm(W) x 23.4mm(H)

#### Weight (Without accessories)

103g

#### Operating:

Temperature: 0°C~40°C (32°F~104°F)

Humidity: 0% ~ 90% typical

#### Storage:

Temperature: -40°C~80°C (-40°F~176°F)

Humidity: 0% ~ 90% typical

### Compliance Regulatory

FCC Subpart15 B

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