

HaloB User Guide

March 2018

Version 1.3



About This Document

This document is intended for wireless service providers/operators upgrading a Baicells eNodeB (eNB) to the HaloB operating mode. Baicells's HaloB feature enables "lite core" functions that allow the eNB to continue servicing subscribers even when it has no connection to the Evolved Packet Core (EPC). The information overviews the HaloB architecture and explains the steps for upgrading an eNB to HaloB software and enabling the feature. Users of this document should already be familiar with the eNB GUI and the Baicells CloudCore Operations Management Console (OMC) and Business Operations Support System (BOSS).

The information in this document is based on OMC version 3.4.4 and BOSS version 3.4.1.

Copyright Notice

Baicells Technologies, Inc., copyrights the information in this document. No part of this document may be reproduced in any form or means without the prior written consent of Baicells Technologies, Inc. The Baicells logo is a proprietary trademark of Baicells Technologies, Inc. Other trademarks mentioned in this document belong to their owners.

Disclaimer

All products, services, and features bought from Baicells Technologies, Inc., are subject to the constraints of the company's business contract and terms. All or part of the products, services, or features described in this document might not be your specific Baicells network. Unless stated in the contract, Baicells Technologies, Inc., does not make any explicit or default statement or guarantee about the contents of this document.

Unless stated otherwise, this document serves only as a user guide, and all descriptions/information/suggestions mean no guarantee, neither explicit nor implicit.

The information in this document is subject to change at any time without notice. For more information, please consult with a Baicells technical engineer or the support team. Refer to the "Contact Us" section.

Revision Record

Date	Version	Description	SMEs/Contributors	Author/Editor
13-Mar-2018	V1.4, V1.3	Updated for OMC v3.4.4 and BOSS 3.4.1	Jesse Raasch Rick Harnish Sonny May	Sharon Redfoot
18-Jan-2018	V1.2	Incorporated SME comments; added eNB GUI section	Sonny May Rick Harnish	Sharon Redfoot
16-Jan-2018	V1.1	Draft English version based on HaloB v2.2.2 OMC only	Sonny May Jesse Raasch	Sharon Redfoot
15-Jan-2018	V1.0	Original guide from China	Fu Tian	Fu Tian



Related Documents

Other Baicells technical documents may be found on the Baicells support website (under "Contact Us"). Following is a list of the technical documents.

UE – Gen 1	Atom 5dBi Indoor CPE User Manual
	Atom 11dBi Outdoor CPE User Manual
	Atom 19.5dBi Outdoor CPE User Manual
UE – Gen 2	Atom ID04/06-6.5 User Manual
	Atom OD04/06-14/19.5 User Manual
eNB – Gen 1	Nova 1W Base Station Installation Guide
	Nova 1W Quick Start Guide
	Nova 10W Base Station Installation Guide
	Nova 10W Quick Start Guide
eNB – Gen 2	Nova-227 Outdoor 2x250mW TDD eNB Installation Guide
	Nova-227 Quick Start Guide
	Nova-233 Outdoor 2x1WG2 FDD-TDD eNB Installation Guide
	Nova-233 Quick Start Guide
	Nova-243 Outdoor 2x10WG2 FDD-TDD eNB Installation Guide
	Nova-243 Quick Start Guide
	Nova-436 Outdoor 4x1W CCA TDD eNB Installation Guide
	Nova-436 Quick Start Guide
	Nova-446 Outdoor 4x10W FDD eNB Installation Guide (forthcoming)
	Nova-446 Quick Start Guide (forthcoming)
	elfcell-220 Indoor 2x50mW FDD eNB Installation Guide (forthcoming)
	elfcell-220 Quick Start Guide (forthcoming)
	NeutralCell Indoor Multi FDD-TDD Small Cell Installation Guide (forthcoming)
	NeutralCell Quick Start Guide (forthcoming)
	Neutrino-224 Indoor 2x125mW FDD-TDD eNB Installation Guide (forthcoming)
	Neutrino-224 Quick Start Guide (forthcoming)
	SolarCell Outdoor Solution Installation Guide (forthcoming)
	SolarCell Quick Start Guide (forthcoming)
	Spectra LTE-U Outdoor 2x500mW FDD eNB Installation Guide (forthcoming)
	Spectra LTE-U Quick Start Guide (forthcoming)
System, CloudCore, OAM	Baicells Configuration & Network Administration Guide
	Baicells Handoff Configuration Guidelines (Beta trial)
	Baicells BOSS API Manual
	Baicells HaloB User Guide (this document)
	Baicells Operation, Maintenance, & Troubleshooting Guide (forthcoming)
	Baicells Enterprise EPC Deployment Guide (forthcoming)
	Baicells Enterprise EPC User Guide (forthcoming)



Contact Us

	Baicells Technologies Co., Ltd.	Baicells Technologies North America, Inc.
	China	North America
Address	3F, Bldg. A, No. 1 Kai Tuo Rd, Haidian Dist, Beijing, China	555 Republic Dr., #200, Plano, TX 75074, USA
Phone	+86-10-62607100	+1-888-502-5585
Email	<u>contact@Baicells.com</u>	sales_na@Baicells.com or support_na@Baicells.com
Website	www.Baicells.com	https://na.Baicells.com



Table of Contents

1.	INTR		1
	1 1		1
	1.1	SOLUTION OVERVIEW	Ŧ
	1.2	BENEFITS	3
	1.3	HOW TO GET HALOB	3
2.	омо	PROCEDURES	4
	2.1	UPGRADE ENBS	4
	2.2	Activate Feature Keys	6
	2.3	ENABLE HALOB FEATURE	7
3.	ENB	GUI PROCEDURES	8
	3.1	UPGRADE ENB	8
	3.2	Import Feature Key	8
	3.2	ENABLE HALOB FEATURE	9

List of Figures

FIGURE 1-1: LTE EPC FUNCTIONS	1
FIGURE 1-2: HALOB ENABLEMENT	2
FIGURE 2-1: NEW UPGRADE TASK	4
FIGURE 2-2: SELECT ENBS TO BE UPGRADED	5
FIGURE 2-3: SELECT HALOB SOFTWARE FILE	5
FIGURE 2-4: UPGRADE TASK RESULTS	6
FIGURE 2-5: CHECK ENB STATUS AFTER UPGRADE	6
FIGURE 2-6: ACTIVATE LICENSE	6
FIGURE 3-1: UPGRADE ENB	8
FIGURE 3-6: CHOOSE HALOB ENB'S FEATURE KEY FILE	9
FIGURE 3-7: IMPORT HALOB LICENSE	9
FIGURE 3-2: ENABLE HALOB FEATURE	10
FIGURE 3-3: CHECK HALOB STATUS	11
FIGURE 3-4: HALOB MODE = CENTRALIZED MODE	11
FIGURE 3-5: HALOB STATUS	12



1. Introduction

1.1 Solution Overview

HaloB is an invention of Baicells Technologies, developed to address certain wireless service provider scenarios. In particular, HaloB addresses:

- Operators who are concerned about adding core network functions to the network when full-blown end-to-end Long-Term Evolution (LTE) networking may not be necessary; and
- Operators who want subscriber service to continue in case there is a situation where the Evolved Packet Core (EPC) becomes unavailable (e.g., severe weather).

Operators in these situations need a way to offer or continue offering subscribers service but not be dependent on the availability of the core LTE EPC functions in order to do so. The Baicells eNodeB (eNB) base stations and user equipment (UE) are part of the LTE network access system (NAS). The core LTE EPC functions, shown in Figure 1-1, include the Mobility Management Entity (MME), Serving Gateway (SGW), Packet Data Network Gateway (PGW), Home Subscriber Server (HSS), and the Policy and Charging Rule Function (PCRF).



Figure 1-1: LTE EPC Functions

In simple terms, HaloB is an eNodeB (eNB) with onboard "lite" EPC capabilities. HaloB can be purchased as an add-on feature that the operator can enable/disable as needed on a per-eNB basis.

When an eNB is operating in HaloB mode, it provides the necessary EPC functions for UE attachment, signaling, and control. There are no S1 tunnels from the eNB to the EPC. Each eNB running HaloB software controls its subscribers independently. All signaling stays local, within the eNB.

A HaloB eNB eliminates the transport layer between the EPC and the eNB by embedding a lite EPC directly on the eNB. Therefore, critical control plane signaling is kept local. With HaloB installed, S1 (transport) failures are eliminated. This removes wireless point-to-point (PTP) backhaul failures, fiber outages, or routing mistakes from causing customer service disruption.



The only other network components involved in implementing HaloB are the Baicells Operations Management Console (OMC) and Business Operations Support System (BOSS) (Figure 1-2). During HaloB operation, the CloudCore is still available for OMC monitoring and upgrade functions, and the BOSS Home Subscriber Server (HSS) functions. Subscriber Identity Module (SIM) card activation and bandwidth package assignment are still performed by the BOSS.



Figure 1-2: HaloB Enablement

A HaloB-enabled eNB uses the TR069 connection to the cloud to download subscriber information. If a new subscriber attempts to attach to the HaloB eNB, the eNB does a quick query to the OMC/BOSS to validate and download the subscriber's information.

A SIM card's International Mobile Subscriber Identity (IMSI) can attach to multiple HaloB eNBs, and each will store the SIM data for future attachments. In the event of a rare CloudCore outage, new installs may not be able to attach during the outage if the SIM data has never been downloaded from the BOSS before. This is not a mission-critical event in most cases, and once the CloudCore connection is resumed, the HaloB eNB will collect the SIM data for the new install and commence with the attachment.

Operators using the Baicells application protocol interface (API) for billing software integration will see no change. When a UE attempts to attach to a HaloB eNB, the HaloB eNB contacts the BOSS to verify the IMSI is valid and active, and collects the bandwidth package information. All information is downloaded to the HaloB eNB's memory bank. Once stored in the eNB memory, the UE will remain attached indefinitely. In the event of an eNB or UE reboot, attachment only needs to check the local HaloB memory data for the UE to reattach.



1.2 Benefits

With HaloB:

- The Network Access System (NAS) is processed by each HaloB-enabled eNB, which means the UEs will always be online (barring any eNB equipment failure, of course).
- Operators can enter the world of fixed wireless with a lower initial investment.
 - Operators do not have to invest in local EPC hardware to offer wireless network access services. The eNBs and the core network functions are decoupled.
 - The simplified structure means there is no need for professional network design and maintenance.
- The self-configuration, plug-and-play deployment model means a shorter time-tomarket (TTM) and faster return-on-investment (ROI).

While there is a great deal of intelligence operating in the background of the HaloB feature, Baicells designed the feature to run efficiently and be easy to configure and manage. Even with HaloB operating on the eNB, in the control plane there is no huge impact on memory or processing. The eNB performs at the same level it normally would.

HaloB is a software feature that works with existing eNB hardware; you do not have to upgrade the hardware equipment to get the HaloB feature. The software upgrade to HaloB does require a unique feature key generated by Baicells for each eNB.

HaloB is an example of the industry movement to make LTE technology more accessible and less complicated, and to move more of the processing closer to the users. In essence, a HaloB eNB becomes a local EPC right on the tower!

1.3 How to Get HaloB

Operators wishing to take advantage of the HaloB solution for existing eNBs should contact their distributor. You can purchase the HaloB feature on a per-eNB or bundle basis. As part of the purchase process, you will be asked to provide the eNB serial numbers to Baicells. Baicells will use the eNB serial numbers to generate the feature keys. Be sure the eNBs that you target for HaloB operation are assigned to you, the operator.

The next two sections of this document pertain to how operators implement the HaloB solution in an existing network. You can use either the CloudCore OMC <u>Section 2</u> (e.g., to upgrade multiple eNBs) or the local/Web eNB GUI <u>Section 3</u> (e.g., to upgrade a single eNB) to perform the procedures. Go to the appropriate section based on the application you will be using.



2. OMC Procedures

2.1 Upgrade eNBs

Be sure the eNodeBs (eNBs) that you target for HaloB operation are assigned to you, the operator. The HaloB feature will query for only the subscribers' International Mobile Subscriber Identities (IMSIs) which are associated with the operator to which the eNB belongs in the Baicells Operations Management Console (OMC). If an eNB was not properly onboarded and the eNB remains assigned to the default operator, then none of your subscribers' IMSIs will be able to attach.

You will use the same, familiar upgrade task format that you normally use when upgrading an eNB's firmware using the OMC. Follow the steps below to perform the eNB upgrade to HaloB software.

 Go to the OMC, and select eNB > Strategy > Upgrade. Click on the + (Add) icon, and select Software Upgrade to add a new upgrade task. Refer to Figure 2-1.

Dashboard			Upprad	e Task										
7 Operator		11p	grade Type				a							2 Culture Liturate
" eNB			Operation	Task North	Fielbase	Western		Podet Type	Task Status	Fogue	Sealt	Start Time	a Int	Software Rollback
Meriller		1	- E (Software Upgrade, admin. 2	ter seet, etch, 2.2.2.MG	R79H,222		Standard	Active	Ind	Second .	2018-01-13 13:18:07	211	whetgot 10080
Configuration		1	1	Software Upprofectation, 21	18-CB-80,8194,2322MG	RT\$H,2.2.2		Standard	Active	End	Second	2018-01-11 1112-18	201	PATCH Uppiede
1000		1	I.	Software Upgrade, admin. 2	18-1 6w80, R194, 2.2.2.046	8754,333		Dandard	Active	6-4	Success	3058-03-13 1505-28	June	a second second
Strategy	-	4	1	Software Uppedra, advir, 20	18-C BAREL #79+(2.2.2.2MG			frandard	Active	Ind	fames	2018-01-11 10:56:14	2018-0	01-11 1100-17
Upprode		. 1	1	Selver Uppede, advis, 2	18-1 BARE, #19-1,2.223MG			Standard	Active	. Did	Decesso .	2010-01-11 10 33.27	2018-6	01-11-10/06/20

Figure 2-1: New Upgrade Task

2. Select the eNBs to be upgraded, and choose the Execute Type settings (immediately or schedule upgrade time, retain configuration yes or no). If you select Yes for retain configuration, the current eNB configuration will be retained after the upgrade. Refer to Figure 2-2. Note that the subscriber information is retained in the HaloB eNB's hard memory, so it will not be erased whenever the eNB is rebooted.



Figure 2-2: Select eNBs to be Upgraded

k1	Name	So	ftware Upgrade_admin_2	018-01-12 07:26:50				
eN	IBs				Se	elected		
De	vice Gro	oup 🗸		a			Serial Number(Cell Name)	
		0	Serial Number 0	Cell Name ©	1	8	Please Select	
	8	0-0	120200005116A8P0103	ATC_240(100.64				
	8	00	120200005116A8P0137	West_40(100.64				
		00	120200005116A8P0324	unknown name				
	.0	0-0	120200005116A8P0378	unknown name	-			
	8	0-0	120200005116A8P0424	West_240(100.6	5			
-		00	120200005116A8P0159	unknown name				
1	Page 1	of	1 🕨 🗿 Displayir	ig 1 to 6 of 6 items				
Exe	ecute	Туре						
	Imme	diately	Y		.0	Await	ting Start	٦
۲	Schee	dule Ti	me		R	etain Co	• Yes	
0								

3. Select the correct HaloB software file, which at this time is **BaiBS_RTSH_2.2.2.IMG** (Figure 2-3). Click on **Finish**.

Figure 2-3: Select HaloB Software File

	File Name	Product T	File Size(Byte)	Version	Upload Time	Upload	Description
	BaiBS_RTSH_2.2.2.IMG	Standard	53796864	RTSH_2.2.2	2018-01-12 07:09:42	admin	
	BaiStation_TDD_V500R001C00B02	Standard	52310016	B023	2017-10-26 06:07:27	admin	Merged rate limi
	BaiStation_TDD_V500R001C00B02	Standard	52310016	B021	2017-09-20 03:44:05	admin	omc upgrade ala
	BaiStation_TDD_V500R001C00B02	Standard	52310016	B20-2	2017-09-14 08:27:24	admin	sovle the prolem
	BaiStation_TDD_V500R001C00B02	Standard	52310016	8020-1	2017-09-14 04:10:52	admin	resolve single UI
0	▼ K ◀ Page 1 of 1 ▶	H O				Displ	aying 1 to 5 of 5 ite

The task results window will indicate the software download progress (Figure 2-4).



Figure 2-4: Upgrade Task Results

		0	
Serial Wienber / Ce	ll Name	Q	
enal Number	Cell Name	Original Version	Progress
20200005116A8P0159		BaiStation_V1.1.0.100.11	download in progress 57%

 After the HaloB software is loaded on the eNB, go to eNB > Monitor and check that the status reported is Active (Figure 2-5). Until the feature key is activated (next step), the eNB Monitor page will continue to show two Mobility Management Entities (MMEs) per eNB.

BaiOMC
42
Opphense, Samouth, BRC2013 B.B.1 (B.B.1)
Could C

Figure 2-5: Check eNB Status After Upgrade

2.2 Activate Feature Keys

Once the license keys are imported, either Baicells or you will need to activate the feature keys. Go to the OMC, and select **System > Device Management > License.** The feature key names match the serial numbers of the eNBs. Locate the feature keys in the list, click on the 3 bubble icons, and select **Active** for activate (Figure 2-6).

				perator -	Serve Postor			License fire	Shines inte	4	Status
AL CPE		1		1 00	12020000011	15A3P0159		120200005118A8P0158.lie	2018-01-12	17.18.87	Everate success
		2.1		Attiv)	A800324		1202000911564890024.6c	2018-01-12	17.1748	Unexecuted
di Alarm		3.1	8	(D) View	1	643P0137		LIGDOROFSISAGPOLITRE	2018-01-11	10-48-37	Execute success
Performance		4	1			64640100		120200001154A8P0103.Ac	2018-03-11	104742	Execute nuccess
12 - William - Car		5 1	10	. Dow	rised 11	ISABPOADA		1302000051554890424.8c	2018-01-11	84.2	Execute success.
Advance				Delet	te)						
0* System		Logi									
Device Management							Q				
Device											1990.0
Report Parameters		54	rial Not	nber -			Start Time 2		Task Progress		Result
		1 12	0200001	1116A8P0159			2018-01-12-07	39647	E-d	Contract (1)	Command deforming success 3
License	l I	2 12	0200001	1114ASP0137			2018-01-11 13	00:58	End		Command delivering success
User Management		1 32	0,100001	1116A8P0103			2018-00-11 14	49.04	Ded .		Command delivering success
		4 13	010000	111648P0424			2018-01-11 08	44:29	End		Command delivering suscess

Figure 2-6: Activate License



2.3 Enable HaloB Feature

The last step, enabling the HaloB feature, will be performed for each HaloB-enabled eNB using the eNB GUI. Click on this link (<u>section 3.2 Enable HaloB Feature</u>) to go to the procedure in the eNB GUI section.



3. eNB GUI Procedures

3.1 Upgrade eNB

You can upgrade a single eNodeB (eNB) at a time using the local or Web GUI application. Be sure the eNB is assigned to you, the operator. The HaloB feature will query for only the subscribers' International Mobile Subscriber Identities (IMSIs) which are associated with the operator to which the eNB belongs in the Baicells Operations Management Console (OMC). If an eNB was not properly onboarded and the eNB remains assigned to the default operator, then none of your subscribers' IMSIs will be able to attach.

- 1. Log in to the eNB GUI, and select **System > Upgrade**.
- Browse to the target software version, which at this time is BaiBS_RTSH_2.2.2.IMG. If you wish to retain the eNB configuration database, click the check box next to Attempt to Preserve Settings. Then, click on Upgrade Now. Refer to Figure 3-1.

Figure 3-1: Upgrade eNB

🗲 🛈 10.10.3.131/cgi	bin/update.htm	
Bai Cells		
▼ BTS Info	Upgrade Firmware	2
Basic Info	Select Firmware File: Browse No file selected.	5
Quick Setting	3 Attempt to Preserve Settings	
▼ System	Upgrade Now	
<u>NTP</u> 1		
Upgrade	-Version Rollback	

 After the HaloB software is loaded on the eNB, go to BTS Info > Basic Info and check that the Cell Status reported is Active. Note: Until the feature key is activated (next step), the eNB Monitor page will continue to show two Mobility Management Entities (MMEs) per eNB.

3.2 Import Feature Key

 Go to BTS Setting > License Management (Figure 3-6). Navigate to the HaloB feature key file that was provided by Baicells and is unique to this eNB. The feature key file name is the same as the eNB's serial number.



Figure 3-6: Choose HaloB eNB's Feature Key File

ai 66112		English •
BTS Info	- License	
Basic Info	Select License File: Choose File No file of	chosen
Quick Setting	Import License	
System		
NTP	License List	
Inorade		

2. After finding the file, select **Import License** (Figure 3-7). The feature key file name will display next to Choose File.

Figure 3-7: Import HaloB License

HaloB Setting License Management

/			
← → C ① 192.168.130.	12/cgi-bin/license.htm		
🔛 Apps 🥼 BaiCells Technolog	ies 🔺 BaiOMC 📥 BaiBoss Managemeni 🔊 Recommened advani 🔶 Getting Started – Bai	192.168.130.12 says:	× 50 5
Bai Cells			OK Cancel
▼ BTS Info	License	1	
Basic Info	Select License File: Choose File 130200000715AB0009.lic		
Quick Setting	Import License		
▼ System			
NTP	License List		
Upgrade			
:			
• • BTS Setting			
Security Setting			
Management Server			
Sync Setting			
HaloB Setting			
License Management			

3.2 Enable HaloB Feature

1. Go to **BTS Setting > HaloB Setting**, and use the pull-down menu to select **Enable**. This enables the HaloB feature on the eNB. Click on **Save**. Refer to Figure 3-2.



Figure 3-2: Enable HaloB Feature

Bai Cells		
▼ BTS Info	HaloB Setting	2
Basic Info	HaloB	Enable 🔻
Quick Setting	3	
▼ System	Save Reset	
:		
▼ BTS Setting		
Security Setting		
Management Server		
Sync Setting		
HaloB Setting		

2. **Reboot the eNB** for the HaloB settings to take effect.

NOTE: Rebooting the eNB is an important step. If you do not reboot the eNB after enabling HaloB, the status will incorrectly show that HaloB is On, but this only checks the parameter and does not check whether or not the feature is actually running. An eNB reboot is required before the HaloB feature can run.

3. After the reboot, go to BTS Info > Basic Info and check that the HaloB Status is set to Enable and the Cell Status shows Active (Figure 3-3). Note: You will see only 1 MME for each HaloB eNB. This is the MME that is now local to the HaloB-enabled eNB.



Figure 3-3: Check HaloB Status

BTS Info	-Basic Info-				
Basic Info	Product Type:	mBS1100			
Ouick Setting	Hardware Version:	VER.x			
System	Software Version:	BaiBS_RTSH	2.2.2		
NTD	SN Number:	130200000	715AB0009		
NIP	MAC:	48:BF:74:00	:95:F3		
Upgrade	Charles Info				
Backup	-Status Info-				
Password	Link Speed Negotiated:	1000M			
V Network	HaloB Status:	Enable			
WAN/LAN	Cell Status:	Active			
DUCD	OMC Status:	Connected			
DHCP	OTA Sync Status:	Not Synchr	onized		
VLAN	1588 Sync Status:	Not Synchr	Not Synchronized		
LGW	GPS Sync Status:	Not Synchronized			
Static Routing	Radio Resource Usage:	UL	DL	Uplink	DownLink
BTS Setting		Usage	Usage	BLER	BLER
Security Setting		0%	0%	0.0%	0.0%
Management	UE Status				
server	or outdo				
Sync Setting	UE Connections:	1			
HaloB Setting	UE imsi	LGW MAC	IP	PORT DownL	.ink UpLink hns) Rate/Mhns) ^U
License	62 31198000003125 8	BAE42C8D5435	192.168.130.119	53125 0.00	0.00 0

 Go back to BTS Setting > HaloB Setting, and verify that the Mode field is set to Centralized Mode (Figure 3-4). (That is the only option at this time.) Click on Save.

Bai Cells			English •
▼ BTS Info	HaloB Setting		
Basic Info	HaloB	Enable •	
Quick Setting	HaloB Mode	Centralized Mode *	
▼ System	Save Reset	t	
:			
▼ BTS Setting			
Security Setting			
<u>Management</u> <u>Server</u>			
Sync Setting			
HaloB Setting			
<u>License</u> <u>Management</u>			

 Go to BTS Info > Basic Info, and check that the HaloB Status still shows Enable (Figure 3-5).



Figure 3-5: HaloB Status

Bai Cells					0	English •
▼ BTS Info	-Basic Info-					_
Basic Info	Product Type:	mBS1100				
Quick Setting	Hardware Version:	VER.x				
Suctom	Software Version:	BaiBS_RTSH	2.2.2			
NTD	SN Number:	130200000	715AB0009			
DIF	MAC:	48:BF:74:00	:95:F3			
Upgrade	Chan and Ch					
Backup	Status Into					
Password	Link Speed Negotiated:	1000M				
V Network	HaloB Status:	Enable				
WAN/LAN	Cell Status:	Active				
DHCR	OMC Status:	Connected				
DHUE	OTA Sync Status:	Not Synchronized Not Synchronized				
/LAN	1588 Sync Status:					
LGW	GPS Sync Status:	Not Synchr	onized			
Static Routing	Radio Resource Usage:	UL	DL	Uplink	DownLink	
▼ BTS Setting		Usage	Usage	BLER	BLER	
Security Setting		0%	0%	0.0%	0.0%	
<u>Management</u> Server	UE Status					
Sync Setting	UE Connections:	1				
HaloB Setting	UE imsi	LGW MAC	IP	PORT Down. Rate(M	Link UpLink Ibps) Rate(Mbp	s) ulsir
<u>icense</u> Management	62 31198000003125 8	AE42C8D5435	192.168.130.119	53125 0.00	0.00	0
LTE						
A						