

**eOMC910
V100R005C00
Product Description**

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1 Change History

Date	Version	Modified Chapter	Description	Author
2018-2-9	02	ALL	Added the flag for 3GPP.	wanglan
		ALL	deleted 3.3.1 overview.	wanglan
2017-2-9	02	3.4.1 Platform Function	Added descriptions to hardware alarms of Huawei servers.	heyu
		3.4.3 Configuration Management	Added the description that multiple NEs can be configured in batches by running MML commands.	
		3.4.7 File Management	New	
		3.4.8 License Management	New	
		3.4.9 Security Management	Added descriptions to the anti-tampering and channel encryption functions.	
		3.4.14 Northbound Interface Connection Management	Added descriptions to the report of NE performance file and configuration file.	
		3.5.2 Broadband Access	Added descriptions to network health check.	

Date	Version	Modified Chapter	Description	Author
		Terminal Management Client		
2016-6-17	02	4 Application Scenarios and Typical Configuration	Update configuration table and equivalent base conversion.	baojing
		3.4.10 System Management	Add the descriptions of blind startup.	
		3.4.14 Northbound Interface Connection Management	Added the description of the SNMP version supported by the northbound interface.	
		All	Update the descriptions.	
2015-12-31	02	All	<ul style="list-style-type: none"> Add the hardware counters. Add the eOMC910 support the function of common deployment. Update the terminal management to broad access terminal management. Update the server model. Delete the descriptions of eAPP one-click upgrade. Update the descriptions. 	baojing
2015-04-07	01	All	<ul style="list-style-type: none"> Delete the descriptions of PC Version Delete the descriptions of eBS Delete the descriptions of handset terminal Delete the descriptions of DELL R620 	chenshu
		3.3.1 Server Hardware	<ul style="list-style-type: none"> Delete the hardware specifications of DELL R620 Add the hardware specifications of DELL R630 	chenshu
		3.4.1 Platform Function	Add the NEs type can be managed in eLTE3.4	chenshu

Date	Version	Modified Chapter	Description	Author
		3.4.5 Fault Management	Add the descriptions of eNB commissioning alarm	chenshu
		3.4.11 Broadband Access Terminal Management	Add the descriptions of eAPP one-click upgrade	chenshu
		4 Application Scenarios and Typical Configuration	Update configuration table and equivalent base conversion	chenshu

2 Product Positioning and Features

This section describes the product positioning and features.

2.1 Product Positioning

The eOMC910 is an integrated network management system for managing NEs (including broadband access terminals) and devices on enterprise wireless networks.

2.2 Product Features

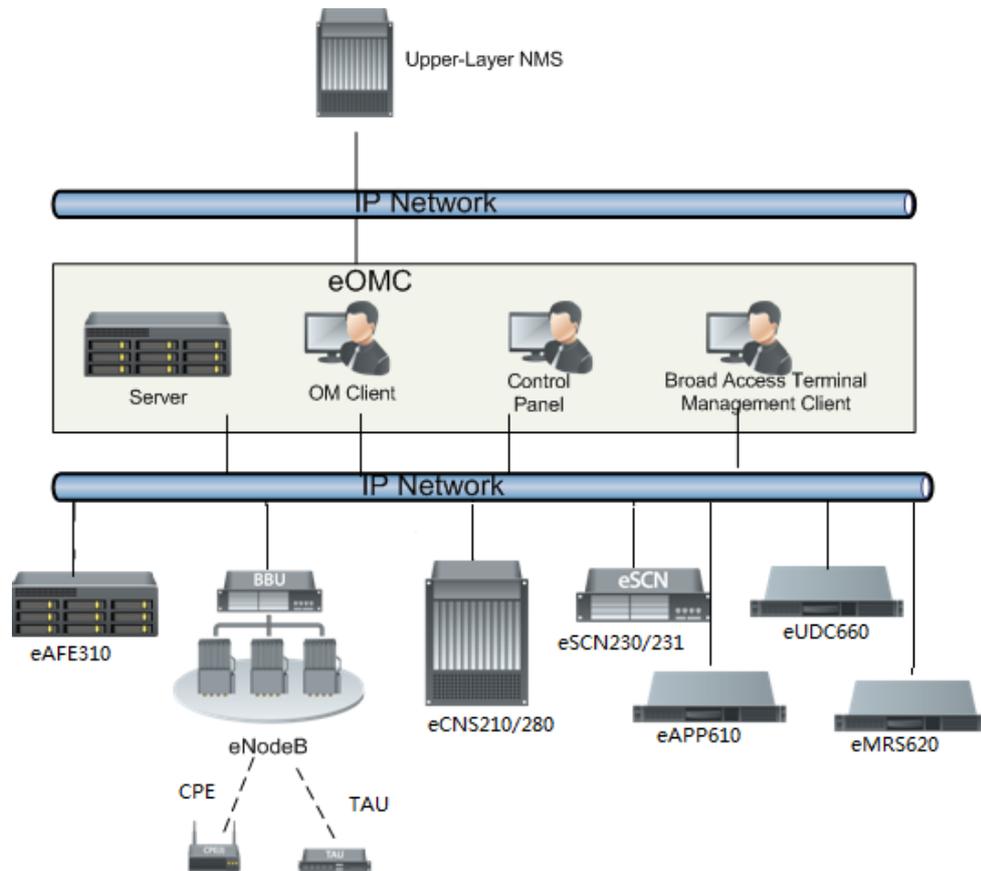
2.1 Product Positioning

The eOMC910 is an integrated network management system for managing NEs (including broadband access terminals) and devices on enterprise wireless networks.

The eOMC910 manages eNodeBs, eCN(eCNS210, eSCN230, eSCN231, and eSCN280), broadband access terminals (CPEs and TAUs), dispatching system devices (eAPP610, eMRS620 and eUDC660), end-to-end encryption service agents (eAFE310), and Huawei RH2288H V3 servers.

eOMC910's network position is as shown in Figure 2-1.

Figure 2-1 eOMC910's network position



2.2 Product Features

Integrated and unified management platform

eOMC910 supports integrated management on trunking network devices, such as broadband access terminals, eNodeBs, core networks, eUDC660, eAPP610, eMRS620 and eAFE310.

Powerful equipment management

eOMC910 provides a professional NE equipment management system, including topology management, configuration management, performance management, fault management, software management, license management, security management, system management, broadband access terminal management, log management, and equipment preventive maintenance.

Easy operation and maintenance

eOMC910 features a user-friendly GUI for operation and maintenance, instead of complicated command lines.

High reliability

The delicately-designed eOMC910 features high data security, operation security, software reliability, and hardware reliability, and can provide comprehensive, stable, and reliable network management.

Flexible networking

The eOMC910 can manage networks of different specifications.

Open and Integrated

eOMC910 reports information, such as equipment resources, alarms, performance files of NEs, configuration files of NEs and CPE, and to the connected third-party network management system through the northbound SNMP interface.

3 Product Structure

This section describes the general structure, hardware and product functions.

3.1 Overview

A typical eOMC910 comprises a server, client, alarm box, and some other devices.

3.2 General Structure

For eOMC910, its server and client are deployed on different hardware equipment to provide a comprehensive management function, including equipment management, broadband access terminal management, and operation management. It is used in the scenario with large-scale and high reliability network to meet the multi-eNodeB management requirements.

3.3 Hardware Description

Introduce the hardware.

3.4 Software Functions

On the eOMC910, users can manage the network under the TMN(Telecom Management Network) protocol in a centralized manner. Specifically, they can manage the configuration, performance, alarms, software, and broadband access terminals.

3.5 Client Functions

eOMC offers three separate client forms, targeted to provide different functions.

3.1 Overview

A typical eOMC910 comprises a server, client, alarm box, and some other devices.

eOMC910 adopts a modular design. Each service function is deployed as a component so that eOMC910 can quickly respond to user's operation and maintenance requests and be smoothly upgraded to meet customers' requirements.

3.2 General Structure

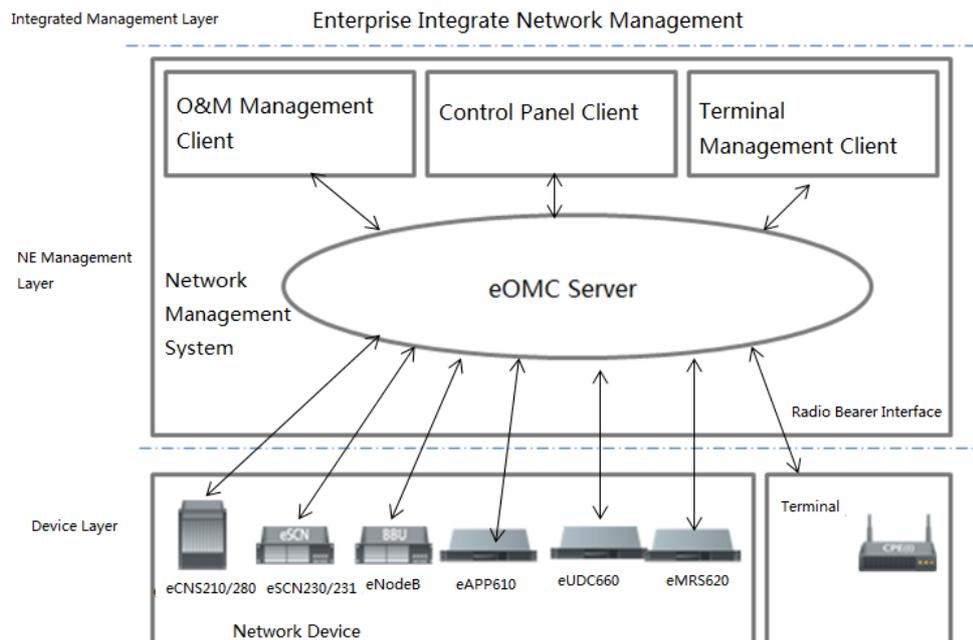
For eOMC910, its server and client are deployed on different hardware equipment to provide a comprehensive management function, including equipment management, broadband access

terminal management, and operation management. It is used in the scenario with large-scale and high reliability network to meet the multi-eNodeB management requirements.

eOMC910 server can be deployed independently or deployed together with eAPP610 and eUDC660 on a hardware device.

The structure of TD-LTE wireless enterprise network management system is as follows:

Figure 3-1 General structure of eOMC910



3.3 Hardware Description

Introduce the hardware.

3.3.1 Server Hardware

RAID disk array and power redundancy backup are introduced to the eOMC910 server to ensure hardware reliability.

The Table 3-1 provides the HUAWEI server hardware specifications.

Table 3-1 eOMC910 Huawei server specifications

Hardware model	Huawei RH2288H V3 (low server specification)	Huawei RH2288H V3 (high server specification)
Hardware configuration	CPU: 2 * X86 series-2400MHz-1.8V-64bit-85000 mW-Haswell EP Xeon E5-2620 v3-6Core-with heatsink Memory: 2*16GB, 2133000KHz,	CPU: 2 * X86 series-2600MHz-1.8V-64bit-14500 0mW-Haswell EP Xeon E5-2697 v3-14Core-with heatsink memory: 4*16GB, 2133000KHz,

Hardware model	Huawei RH2288H V3 (low server specification)	Huawei RH2288H V3 (high server specification)
	dual arrays, RDIMMs Hard disk: 4*600GB 2.5-inch 10K RPM 6Gbps SAS	dual arrays, RDIMMs Hard disk: 5*1200GB 2.5-inch 10K RPM 6Gbps SAS
Power consumption	<224W	<481W
Supporting configuration	4*GE electrical port 460W AC power supply module	4*GE electrical port 2*10GE optical port 750W white gold supply



NOTE

The ADLINK industrial computer is used only for the vehicle-mounted communication system and rapid deployment system. For descriptions about the ADLINK industrial computer , see *Vehicle-mounted Communications System User Guide*.

3.3.2 Client Hardware

This section describes eOMC910 client hardware requirements.

When an ordinary PC is used as the eOMC910 client, the minimum configurations listed in Table 3-2 are recommended. Products with configurations higher than the minimum configurations are required. Lenovo ThinkCentre M800 is recommended.

Table 3-2 Client hardware specifications

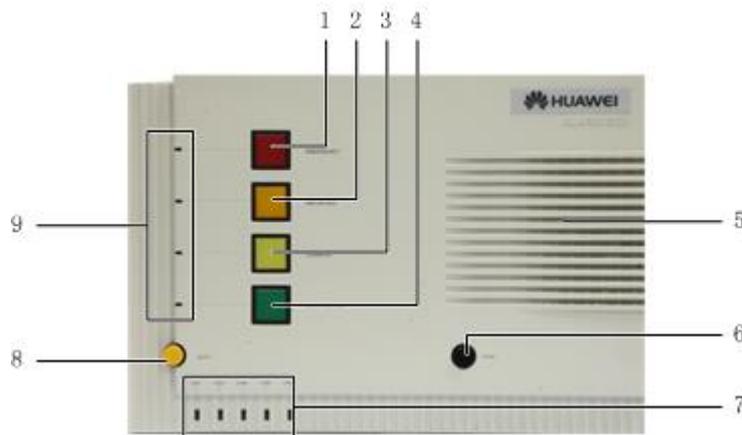
Item	Recommended Configuration
CPU	Pentium 4 2.4 GHZ or above
Memory	2 GB or larger
Hard disk	100 GB or larger available capacity
Accessories	DVDRW/network adapter/audio adapter/sound box/LCD display with a resolution of 1024x768x65K
OS	<ul style="list-style-type: none"> • Microsoft Windows 7 (32bit / 64bit) • Microsoft Windows 8 (32bit / 64bit) • Microsoft Windows 10 (32bit / 64bit)
Application software	Application software of eOMC910 client

3.3.3 Alarm Box

eOMC910 uses universal alarm box to provide audible and visual alarms for users.

Figure 3-2 shows the appearance of the alarm box. Table 3-3 provides corresponding hardware specifications.

Figure 3-2 Appearance of an alarm box



1 Critical alarm indicator	2 Major alarm indicator
3 Minor alarm indicator	4 Warning alarm indicator
5 Horn	6 Alarm acknowledgment button
7 Serial-port-communication status indicator	8 Alarm mute button
9 Alarm mute indicator	-

Table 3-3 Alarm box hardware specifications

Item	Parameter	Description
DC	-48V to -60V, 0.5A	Supports DC power input only.
AC	100V to 240V, 50Hz, 0.3A	Supports AC power input only.
Dimensions	412mm x 282mm x 90mm	-
Weight	≤ 2.0kg	-
Hardware structure	Comprises one main control board, a horn, external indicators, external operation buttons, external ports, and a power supply module.	-
Communication serial port	The universal alarm box has seven communication serial ports and one debugging port on the main control board (physical port: RJ45), including <ul style="list-style-type: none"> • Three RS232 (J4, J5, J6) serial ports (physical port: RJ45) • Four RS422 (JT6, JT7, JT8, and JT11) serial ports (physical port: 	The serial port 2 (RS232 J5 serial port) is preferred. Other serial ports are set to invalid using the dual in-line package (DIP) switch.

Item	Parameter	Description
	6-pin socket) <ul style="list-style-type: none"> One RS232 (J7) debugging serial port (physical port: RJ45) 	

3.4 Software Functions

On the eOMC910, users can manage the network under the TMN(Telecom Management Network) protocol in a centralized manner. Specifically, they can manage the configuration, performance, alarms, software, and broadband access terminals.

3.4.1 Platform Function

Managed NEs:

DBS3900, eCNS210, eCNS280, eSCN230, ASU, eAPP610, eMRS620, eUDC660, CPE(EG860, eA360, eA660, eA680), TAU, eAFE310 and eSRVHW(Huawei RH2288H V3 server hardware).

Managed scenarios:

- Core network redundant pool scenario
- Fallback Mode scenario
- distributed network scenario

3.4.2 Topology Management

Topology objects, such as NEs and subnets, are displayed on the topology view. Users can manage the topology objects.

Topology management is used to construct a topology structure of a whole network to display the networking situation and operating status. By using the function, you can view and monitor the network operating status in real time, as well as:

the NEs includes DBS3900, eCNS210, eCNS280(logic NEs vCGP, vUGW, vUSN, vTSN) ,eSCN230, ASU, eAPP610, eMRS620, eUDC660, eAFE310, eSRVHW.

- Create and delete NEs in topology view.
- Modify the attributes of topology objects, including the basic attributes and corresponding positions.
- Query a specified NE.
- Directly Query topology object information on the topology view, including NE details, and alarm status.

3.4.3 Configuration Management

NEs are configured and managed in a centralized manner. The eOMC910 provides a user-friendly graphical interface where you can deliver configuration data and run MML commands to configure NEs.

The NEs includes DBS3900, eCNS210, eCNS280(logic NEs vCGP, vUGW, vUSN, vTSN) ,eSCN230, ASU .

- Blindly start eNodeB, eSCN230 and ASU, and allocate the OMIP address for them.
- Apply configurations during the initial eNodeB, eSCN230 and ASU deployment.
- Query NE configurations.
- Synchronize NE configurations.
- Perform operations on multiple NEs at the same time by delivering MML commands in batches.

3.4.4 Performance Management

Performance management is used to manage the performance data (traffic statistics) generated by NEs, that is, to manage the performance data of enterprise LTE NEs (eCNS, eNB, eSCN230, eSCN231) performance.

After an NE is successfully created on the eOMC910 and communicates with the eOMC910 properly, the NE reports the measurement results of common counters to the eOMC910 which then collects, saves, and queries performance data and generates reports for analysis. In this way, you can identify and rectify problems on the network, and verify whether the problems are solved.

Specifically, you can customize performance counters to carry out arithmetic operations by using the existing system counters, so as to customize new measurement counters to be used as performance query objects. Besides, you can further use threshold alarm function to monitor the measurement indexes. If the NE measurement indexes meet triggering conditions of the threshold alarm, system generates the threshold alarm accordingly.

Performance management also supports the following operations:

- Collecting performance data of eCNS210, DBS3900, eSCN230 in a unified manner.
- Saving performance data of eCNS210, DBS3900, eSCN230 in a unified manner.
- Querying performance data of eCNS210, DBS3900, eSCN230,eCNS280 (logic NEs vTSN, vUSN, vUGW).
- Saving the performance query criteria for future query.
- Generating the performance report of DBS3900.
- Querying the whole network level KPI statistics.

3.4.5 Fault Management

Fault management is mainly used to manage alarms. By using the function, you can monitor alarms of all NEs on a network in real time, check the severities, types, and causes of the alarms, and handle the fault alarms promptly, as well as:

the NEs includes DBS3900, eCNS210, eCNS280, eSCN230, ASU, eAPP610, eMRS620, eUDC660, CPE(EG860, eA360, eA660, eA680), TAU, eAFE310 and eSRVHW.

- View alarms that are displayed in a table on the interface in real time.
- Manually synchronize alarms or enable automatic alarm synchronization.
- View alarms.
- Alarm TOPO display and positioning
- Query alarm details.
- Use the alarm box.

- Forward alarms and save alarm information.
- Clear, acknowledge, and unacknowledge alarms.
- Enable alarm masking.
- Collect statistics for alarms.
- The eOMC910 records eNodeB engineering alarms, providing necessary references for the O&M of eNodeBs.

3.4.6 Software Management

Software management is used to manage the software, patches, By using the function, you can:

- Manage the software and patch versions of eNB, ASU and eSCN230, eSCN231.
- Upgrade the software and patch of eNB, ASU, eSCN230 and eSCN231 in batch.
- Perform one-click upgrade on the software and patch of eNB, ASU, eSCN230, eSCN231, eAPP610, eUDC660 and eMRS620.

3.4.7 File Management

File management allows the user to manage the eOMC and NE files.

The NEs includes DBS3900, eCNS210, eCNS280(logic NEs vCGP, vUGW, vUSN, vTSN) ,eSCN230, ASU, eAPP610, eMRS620, eUDC660, eAFE310.

- Downloading files under the **/srv/ftpd** directory of the eOMC910 server.
- Collecting NE log files, including alarm data, call traffic statistics, host logs, background logs, operation logs, configuration scripts, system information, peer-end information, database logs, OS logs, and fault logs.

3.4.8 License Management

License management allows the user to manage the eOMC910 and NE licenses, such as:

- Uploading the eOMC910 License.
- Delivering an NE (DBS3900, eSCN230, ASU, eAPP610, eMRS620 and eUDC660) license to specific NEs.
- Invalidating NE (DBS3900, eSCN230, ASU, eAPP610, eMRS620 and eUDC660) License.

3.4.9 Security Management

Security management is used to manage the rights of users and user groups of the eOMC system to ensure the security. By using the function, you can:

- Manage users, user groups, operation sets, domains, and terminals after classifying them into different levels.
- Manage users and user groups in a centralized manner.
- Authenticate users.
- Enable the security policy function.
- Enable the automatic locking on the client.

An Anti-tampering mechanism is introduced to protect key eOMC910 features, guaranteeing the integrity of loaded firmware, software, and patch package.

In addition, to ensure transport security, the eOMC910 adopts encrypted transport channel when communicating with other NEs.

3.4.10 System Management

This section describes the system functions of the eOMC910.

- Support different NEs and the same NEs of different versions on the enterprise network.
- Chinese and English versions, copyrights and logos of different companies.
- English Microsoft Windows 7, Microsoft Windows 8 and Microsoft Windows 10 OSs.
- eOMC910 data backup and recovery.
- NE data backup.
- Monitoring the operation status of the eOMC910 system.
- Synchronizing the network time based on the Network Time Protocol (NTP)/Simple Network Time Protocol (SNTP).
- Serving as a DHCP server that supports NE blind startup.



NOTE

The blind startup feature enables automatic setup and retaining for the operation and maintenance channel (OMCH) during NE commissioning and running. This feature ensures the remote maintenance on NEs, thereby reducing local maintenance operations.

- Integrated task management.
- NE version mediation.
- Private DNS function and forwarding to the DNS of external networks.
- NE equipment asset information collection.
- eOMC server software version smooth update.

3.4.11 Broadband Access Terminal Management

The eOMC910 provides an independent client serving as a broadband access terminal management client to manage CPE(EG860, eA360, eA660, eA680), TAU600 and TAU610.

Table 3-4 provides the description of access terminal management functions.

Table 3-4 Function of Broad Access Terminal Management Client

Function	Description	Terminal Type
Automatic Discovery	Supports automatic discovery and access of broadband access terminals.	TAU600, TAU610, CPE(EG860, eA360, eA660, and eA680)
Engineering Parameter Management	Includes exporting and modifying engineering parameters.	EG860, TAU610, and TAU600
Configuration File Management	Includes importing, deleting, and querying configuration information of broadband access terminals.	CPE(EG860, eA680), TAU610, and TAU600. The configuration files of the CPE(eA680) cannot be delivered manually.
Software	Supports batch software upgrades	CPE(EG860, eA360, eA660,

Function	Description	Terminal Type
Management	of broadband access terminals.	eA680), TAU610, and TAU600
Topology Management	Supports managing broadband access terminals, including logging in to the WebUI, restarting broadband access terminals, restoring factory defaults of broadband access terminals, and other functions.	<ul style="list-style-type: none"> Restarting broadband access terminals, restoring factory defaults of broadband access: CPE(EG860), TAU610, and TAU600 Logging in to the WebUI: CPE(eA360, eA660, eA860, EG860), TAU610, and TAU600
Task Management	Includes configuration file uploading, log uploading, and performance data uploading tasks for broadband access terminals.	<ul style="list-style-type: none"> Configuring uploading applies EG860s in V200R002C00 and the later versions Log uploading applies TAU610, CPE(eA360, eA660, eA680 and EG860s in V200R002C00 and the later versions) Performance data uploading applies TAU610 and EG860s in V200R002C00 and the later versions.
eOMC File management	Supports exporting the configuration files and log files of broadband access terminal.	TAU610, CPE(eA360, eA660, eA680 and EG860s in V200R002C00 and the later versions)
Batch Diagnosis	Supports diagnosing broadband access terminals in batches using Ping and Traceroute.	TAU610, EG860s in V200R002C00 and the later versions.
Batch Configuration	Supports using MML commands to configure broadband access terminals of the same software version in batches.	CPE(EG860s in V200R002C00 and the later versions, eA360, eA660, eA680), TAU610
Account Management	Supports managing the bidirectional authentication password between the eOMC910 and a CPE.	CPE(EG860, eA360, eA660, eA680), TAU610
Network Health Check	Supports detecting the operating status of terminals, checking the signal strength and attached device link states of the broadband access terminal.	EG860 in V200R003C00 and later
Fault Management	Supports monitoring and handling alarms reported by broadband access terminals.	CPE(EG860, eA360, eA660, eA680), TAU610

3.4.12 Log Management

This section describes the log management of the eOMC910.

The eOMC910 system supports log management, including:

- Recording eOMC910 operation and security information in logs.
- Deleting operation logs, system logs, and security logs.

3.4.13 Diagnosis Maintenance

The eOMC910 provides task-based device preventive maintenance, upgrade check, and precaution rectification on NEs so that users can proactively prevent network faults.

Scenarios where a maintenance engineer or network management engineer performs the network health check includes:

- **Device Check:** In network routine maintenance, service quality assurances during big events, preventive maintenance, and checks after fault recoveries, maintenance engineers and network management engineers use the health check function to perform preventive maintenance on the NEs, and to detect potential risks.
- **Update Check:** Before and after NE upgrades, maintenance engineers and network management engineers use the health check tools to check NEs status, determining whether an NE is suitable for an upgrade and whether the result after an upgrade is correct.
- **Precaution and rectification check scenario:** In network routine maintenance and new deployment scenarios, maintenance engineers and network management engineers use the health check function to check for potential risks of NEs in certain configuration or scenario. The check results, impact, and handling suggestions are displayed in the check report.

NEs checked in different scenarios are as follows:

- The device check scenario supports the eOMC910, DBS3900, ASU, eSCN230, eSCN231, eCNS210, eAPP610, eMRS620 and eUDC660.
- The update check scenario supports the eOMC910, DBS3900, ASU, eSCN230, eSCN231, eCNS210, eAPP610, eMRS620 and eUDC660.
- The precaution and rectification check scenario supports the eOMC910, DBS3900, ASU, eSCN230, eSCN231, eCNS210, eAPP610, eMRS620 and eUDC660.

3.4.14 Northbound Interface Connection Management

The eOMC910 provides a Northbound interface for connecting to a third-party NMS so that the eOMC910 can manage Northbound alarms and resources.

- Northbound alarm management, including operations of confirming, cancelling confirmation, clearing, querying and filtering alarms.
- Northbound resource management, including real-time querying of NE information and automatically reporting change of NE data.
- Northbound performance management: Reporting NE performance files.
- Northbound configuration management: Reporting NE configuration files and CPE (EG860) configuration file.

The Northbound interface of the eOMC910 complies with SNMPv2c and SNMPv3.

3.5 Client Functions

eOMC offers three separate client forms, targeted to provide different functions.

3.5.1 Operation and Maintenance Client

An eOMC910 O&M client is a centralized NMS workbench that provides NMS functions, such as alarm management, configuration management, and performance management.

The following functions are supported:

- **System management:** You can perform universal operations on the client software.
- **Configuration management:** You can configure NE data and synchronize NE status.
- **Alarm management:** You can process the information about NE alarm reports, acknowledgment, and recovery, and query historical alarms in a centralized manner.
- **Software management:** You can upgrade the software on the GUI.
- **File management:** You can obtain eOMC910 system files and NE log files on the client.
- **License management:** You can control the number of resources for the eOMC910 and NEs.
- **Performance management:** You can query and browse collected NE performance data and display the data by period and technical specifications. In addition, you can directly generate performance reports and analyze KPI information.
- **Network health check:** You can perform task-oriented device inspect, upgrade check, and pre-warning and rectification check on NEs, which prevents network faults from occurring and guarantees the network reliability.
- **Trace management:** You can perform trace tasks on users, IFTS messages, user-level information, and cell DT messages.

3.5.2 Broadband Access Terminal Management Client

An eOMC910 broadband access terminal management client manages CPE(EG860, eA360, eA660, eA680), TAU600 and TAU610. The following functions are supported:

- **System management:** You can perform universal operations on the client software.
- **Configuration management:** You can configure NE data and synchronize NE status, as well as query equipment status.
- **Querying status information.**
- **Diagnosis function:** You can remotely diagnose equipment.
- **Alarm Management:** You can manage alarms of the broadband access terminal.
- **Software management:** You can upgrade broadband access terminals through the software management function.
- **Network health check:** You can check the operating status of a UE and the network, signaling indicators of the cell serving the UE, and link status of devices connected to the eOMC910.

3.5.3 Control Panel

You can perform security management through the Control Panel. By using this function, you can manage user information and user rights, preventing unauthorized operations and ensuring system security.

4 Application Scenarios and Typical Configuration

Depending on the scenarios and network scales, different levels NM server can be deployed.

Typical network scales and configuration are as shown in Table 4-1.

In terms of the network scale, networks can be classified into small-sized, medium-sized, and large-sized networks. Small-sized networks include the Rapid Deployment System and the Vehicle-mounted Communications System. Different servers are recommended for different networks.

Table 4-1 Network scale

Network Scale	Server	Number of Equivalent eNodeBs
Small-sized network	ADLINK cPCIS-6130R (chassis) + cPCI-6520 (mainboard)	≤ 5
Medium-sized network	HUAWEI RH2288H V3 (low configuration)	≤ 225
Large-sized network	HUAWEI RH2288H V3 (high configuration)	≤ 550

The equivalent conversion relationship is as follow:

Table 4-2 Numbers of equivalent eNodeBs

NE Name	Number of Equivalent eNodeBs
DBS3900	1
eCNS210	10
eSCN230	1
ASU	2

NE Name	Number of Equivalent eNodeBs
eAPP610	0.5
eMRS620	0.5
eUDC660	0.5
eAFE310	0.1
Broad Access Terminal	0.005



NOTE

- On a live network, the total number of equivalent eNodeBs for all NEs managed by the eOMC910 must be less than the number of equivalent eNodeBs supported by the selected server.
- If a new or enlarged network is bigger than the eOMC910 management system, an eOMC910 of higher specifications is needed, or it is necessary to build a new network management system. In case of network having more than 550 eNodeBs, it is necessary to deploy multiple eOMC910s for management.
- Total number of equivalent eNodeBs for all NEs managed by the eOMC910 = Quantity of NE 1 x Number of equivalent eNodeBs for NE 1 + Quantity of NE 2 x Number of equivalent eNodeBs for NE 2 + ... + Quantity of NE *N* x Number of equivalent eNodeBs for NE *N*.

If there are multiple sets of eOMC910s in the same network, and those eOMC910 are at the same management level, you can only query the NE information in your managed eOMC910. And if you need to collect the information of all the network devices, you must establish a comprehensive network management system at the higher level.

5 Reliability

The reliability of eOMC910 includes data security and operation security.

5.1 Data Security

There are five kinds of data stored in the database of eOMC910 server:

5.2 Operation Security

The operation security include login control, user monitoring and operation confirmation.

5.3 Sofeware Reliability

eOMC910 provides the automatic protection solution. This solution can check the states of all eOMC910 services periodically.

5.4 Hardware Reliability

eOMC910 server version supports remote disaster tolerance backup for large-sized networks. It adopts complete dual-node redundant backup that includes server node, RAID Disk, network interface, and Ethernet switch, to prevent single-node faults.

5.1 Data Security

There are five kinds of data stored in the database of eOMC910 server:

- Performance measurement data
- Alarm information
- Configuration data
- Security management data
- Running logs

Meanwhile, the security of historical data is ensured through backup and restoration solutions. Table 5-1 describes the contents of the backup and restoration solutions.

Table 5-1 Contents of the backup and restoration solutions

Items	Contents
Backup solution	eOMC910 supports automatic backup and manual backup.

Items	Contents
	<p>The system can backup data automatically and periodically. The period can be preset. Besides, the operator can backup data manually at anytime.</p> <p>The backup data can be restored in external equipment.</p>
Restoration solution	<p>The operator can restore the latest backup data. In this way, the damage of system data can be prevented in case of system breakdown and unsuccessful upgrade.</p>

5.2 Operation Security

The operation security include login control, user monitoring and operation confirmation.

Table 5-2 describes the contents of security management.

Table 5-2 Operation Security

Item	Contents
Login control	<p>eOMC910 limits the number of login attempts. If the number of failed consecutive login attempts exceeds the upper limit, the system will lock the user and records the login failures in the system log. Meanwhile, an internal alarm is generated.</p>
User monitoring	<p>eOMC910 can monitor the operations of all users and output maintenance report. The admin user can terminate the operation of any user..</p>
Operation confirmation	<p>eOMC910 provide user confirmation function for crucial operations.</p>

5.3 Sofeware Reliability

eOMC910 provides the automatic protection solution. This solution can check the states of all eOMC910 services periodically.

When a fault of some service is detected, eOMC910 will record reference information into system log. To make the service to normal state, eOMC910 can resolve the fault automatically or remind the operator to resolve the fault manually.

5.4 Hardware Reliability

eOMC910 server version supports remote disaster tolerance backup for large-sized networks. It adopts complete dual-node redundant backup that includes server node, RAID Disk, network interface, and Ethernet switch, to prevent single-node faults.

If the main server is abnormal, the backup automatically takes over.

It supports manual main-backup nodes switch.

6 Technical Requirement

This section describes the hardware reliability requirements and climatic requirements.

6.1 Hardware Counters

This section describes the eOMC910 mechanical and electrical specifications, and environment requirements.

6.2 Hardware Reliability Requirements

6.3 Climatic Requirements

6.1 Hardware Counters

This section describes the eOMC910 mechanical and electrical specifications, and environment requirements.

For details about the ADLINK industrial computer with cPCIS-6130R (main box) and cPCI-6520 (mainboard) inside, see *cPCIS-6130R_Datasheet_en* and *cPCI-6520_Datasheet_en* in *eOMC_Server_ADLINK_General_Product_Documentation.rar*.

Mechanical Specifications

Table 6-1 Mechanical specifications

Item	Specification (RH2288H V3 Large-sized Server)	Specification (RH2288H V3 Medium-sized Server)
Dimensions (H x W x D)	86.1 mm × 447 mm × 708 mm	86.1 mm × 447 mm × 708 mm
Weight	About 27 kg	About 27 kg

Electrical Specifications

Table 6-2 Electrical specifications

Item	Specification (RH2288H V3 Large-sized Server)	Specification (RH2288H V3 Medium-sized Server)
Voltage	100 V AC to 240 V AC	100 V AC to 240 V AC
Power Consumption	< 481 W	< 224 W

Environment Requirements

Table 6-3 Environment requirements

Item	Specification
Operating temperature	5 °C to 45 °C
Relative humidity	8% RH to 90% RH
Altitude	<p>≤ 3000 m (9842.40 ft)</p> <p>When the altitude is higher than 900 m (2952.72 ft), the operating temperature decreases by 1 °C (1.8 F) per 300 m (984.24 ft).</p>



NOTE

For detailed information, see *eOMC_Server_Tecal_RH2288H V3_User Guide* in the outsourcing documentation.

6.2 Hardware Reliability Requirements

Table 6-4 lists the hardware reliability for eOMC910 server version.

Table 6-4 Hardware Reliability of HUAWEI server

Hardware Reliability	MTBF
Huawei RH2288 V3	260000 hours

6.3 Climatic Requirements

Table 6-5 lists the requirements for temperature and humidity.

Table 6-5 Requirements for temperature and humidity

Temperature (°C)		Relative humidity (%)	
work duration	storage duration	work duration	storage duration
5 to 45	—40 to 60	8 to 90	5 to 95



NOTE

Short duration refers to continuous working for not more than 48 hours or working of not more than 15 days accumulated in a year.

Table 6-6 lists other climatic requirements.

Table 6-6 Other climatic requirements

Item	Range
Altitude (m)	≤3000

7 Acronyms and Abbreviations

Glossary	Full Name
ASU	Advanced Service Unit
CPE	Customer Premise Equipment
CPU	Central Processing Unit
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Service
eCNS	Enterprise Core Network System
eAPP610	Enterprise Network Application Software System
eMRS	Enterprise Multimedia Recording and playback Server
eNodeB	Enterprise NodeB
eNB	eNB
eSCN	Evolved Smart Core Switch Node
eUDC	Enterprise User And Device Controller
LTE	Long Term Evolution
MML	Man-Machine Language
MTBF	Mean Time Between Failures
NMS	Network Management System
SNMP	Simple Network Management Protocol
TAU	Train Access Unit