

**AN5116-06B**

**Optical Line Terminal Equipment**

**Alarm and Event Reference**

**Version B**

**Code: MN000000072**

**FiberHome Telecommunication Technologies Co., Ltd.**

**March 2010**



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# Preface

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## Relevant Manuals

Manual	Description
<i>AN5116-06B Optical Line Terminal Equipment Documentation Guide</i>	Introduces the retrieval method, contents, releasing, reading approach, and suggestion feedback method for the complete manual set for the AN5116-06B.
<i>AN5116-06B Optical Line Terminal Equipment Product Description</i>	Introduces the AN5116-06B's network location, functional features, hardware structure, FTTx application model, equipment configuration, network management system and technical specifications. It is the foundation of the complete manual set. The other manuals extend and enrich the concepts introduced in the <i>Product Description</i> .
<i>AN5116-06B Optical Line Terminal Equipment Hardware Description</i>	Introduces the appearance, structure, functions, technical specifications, and usage method for the AN5116-06B's cabinet, PDP, subrack, cards, cables and wires, facilitating users' mastery of the hardware features of the equipment.
<i>AN5116-06B Optical Line Terminal Equipment Installation Guide</i>	Introduces the overall installation and verifying procedure from unpacking inspection to power-on examination after the equipment is delivered on site, and provides reference information (e.g. safety principles and wiring scheme of a variety of interfaces) to guide users to install the equipment.
<i>AN5116-06B Optical Line Terminal Equipment EPON Configuration Guide</i>	Introduces the method for configuring the EPON services supported by the equipment via ANM2000 Network Management System, such as basic configuration, voice service configuration, data service configuration, multicast service configuration, and software upgrading configuration, to guide users on start-up for various services and software upgrading.

Manual	Description
<i>AN5116-06B Optical Line Terminal Equipment GPON Configuration Guide</i>	Introduces the method for configuring the GPON services supported by the equipment via ANM2000 Network Management System, such as basic configuration, voice service configuration, data service configuration, multicast service configuration, and software upgrading configuration, to guide users on start-up for various services and software upgrading.
<i>AN5116-06B Optical Line Terminal Equipment GUI Reference</i>	Introduces the shortcut menu for every card of the AN5116-06B inside ANM2000 Network Management System, including the function, parameter explanation, precautions and configuration example of every command in the shortcut menu of each card, to help users master the operation of the AN5116-06B inside ANM2000.
<i>AN5116-06B Optical Line Terminal Equipment Daily Operation Guide</i>	Introduces the AN5116-06B's daily operation method, including early-stage preparation, precautions, early-stage operation, operation procedure, and follow-up operation, to guide users on basic operations based on hardware.
<i>AN5116-06B Optical Line Terminal Equipment Alarm and Event Reference</i>	Introduces the AN5116-06B's alarm information, including alarm names, alarm levels, possible reasons, effects on the system, and processing procedure, to guide users on effective alarm processing.
<i>AN5116-06A Optical Line Terminal Equipment EPON Troubleshooting Guide</i>	Introduces the fault processing principles and methods of fault diagnosis and locating for the AN5116-06B. Also discusses the typical fault cases of various EPON services. If the trouble is too complicated to process, users can refer to FiberHome for technical support according to the instructions in this document.
<i>AN5116-06A Optical Line Terminal Equipment GPON Troubleshooting Guide</i>	Introduces the fault processing principles and methods of fault diagnosis and locating for the AN5116-06B. Also discusses the typical fault cases of various GPON services. If the trouble is too complicated to process, users can refer to FiberHome for technical support according to the instructions in this document.

## Version and Usage

Version	Instruction
A	This manual corresponds to the AN5116-06B equipment releases EPON V2.0 and GPON V2.0 Initial version
B	Add some alarms.

This manual introduces the general handling methods for the AN5116-06B's alarms and events, to guide the maintenance staff on effective alarm and event processing.

## Intended Readers

This manual is intended for the following readers:

Operation and maintenance engineers

To utilize this manual, these prerequisite skills are necessary:

- ◆ EPON technology
- ◆ GPON technology
- ◆ Data communication technology
- ◆ Fiber communication technology
- ◆ Ethernet technology

## Conventions

### Terminology Conventions

Terminology	Meaning
AN5116-06B	AN5116-06B Optical Line Terminal Equipment
ANM2000	FiberHome e-Fim ANM2000 Broadband Access Network Management System
EC4B	4×EPON-C Interface Card (type B)
EC8B	8×EPON-C Interface Card (type B)
GC4B	4×GPON-B Interface Card (type B)
GC8B	8×GPON-B Interface Card (type B)
C155A	1×STM-1 Optical Interface Card (CES Mode)
CE1B	32×E1 Optical Interface Card (CES mode) (type B)
PUBA	Public Card (type A)
HSPA	Core Switch Card (EPON)
	Core Switch Card (type A)
HU1A	4×GE +1×10GE Optical Interface Uplink Card
HU2A	2×GE +2×10GE Optical Interface Uplink Card
GU6F	6×GE Optical Interface Uplink Card

### Symbol Conventions

Symbol	Refer To	Meaning
	Note	Important features or operation guide.
	Caution	Possible injury to persons or systems, or cause traffic interruption or loss.
	Warning	May cause severe bodily injuries.

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# 1 Alarm Overview

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When abnormal conditions occur in the system, the equipment will report the alarm information to the network management system. These alarms are directly related to the faults, so each of them can be taken as the reliable basis for the maintenance staff to locate and eliminate the fault in time.

This chapter covers the basic methods of operating alarm function, including the following contents:

- Alarm definitions
- Principles for alarm handling
- Alarm levels
- Alarm information list

## **1.1 Alarm Definitions**

The alarm is the notice and alert of a system parameter reaching a certain threshold. Therefore, users must handle all alarms generated in the system immediately, so as to eliminate them at the initial stage, avoid occurring of various faults, and improve the network quality. For handling alarms, users must follow certain principles, so as to eliminate alarms and faults in the shortest possible time.

## **1.2 Principles for Alarm Handling**

### **1.2.1 Principle of “Restoring First and Repairing Second”**

Instruction

“Restoring first and repairing second” means: restore the services first by switching them to the protection path or the standby card and then repair faults. The application prerequisite of this principle is that there is a protection path or a standby card for the faulty working path or the active card in the system.

Application range

This principle is mainly applicable for handling the alarms influencing services.

### **1.2.2 Principle of “External First and Equipment Second”**

Instruction

“External first and equipment second” means: while handling alarms, users should first exclude possible external faults (such as the broken fiber, terminal equipment fault, power supply fault, or equipment room environment problem), and then consider faults of this equipment.

Application range

This principle is applicable for handling alarms caused by external faults.

### **1.2.3 Principle of “Higher Level First and Lower Level Second”**

#### Instruction

“Higher level first and lower level second” means: in the course of alarm analysis, users should analyze the alarm with higher level, such as the critical alarm and major alarm first, then the alarm with lower level, such as the subordinate alarm and prompt alarm. When handling alarms, users should handle the alarm influencing services first; if this alarm is caused by the alarm with higher level, then handle the alarm with higher levels first.

#### Application range

This principle is applicable for handling alarms when higher level alarms and lower level alarms exist at the same time.

### **1.2.4 Principle of “Majority First and Minority Second”**

#### Instruction

“Majority first and minority second” means: users should handle the majority of alarms with the same type existing in the network management system first. The handling methods of the same type alarms are probably the same. After the majority of alarms with the same type are eliminated, the alarms existing in the network management system will reduce greatly. And this can help the supervision and maintenance staff analyze and judge the valid alarms.

#### Application range

This principle is applicable for handling alarms when the majority of the existing alarms are of the same type.

## 1.3 Alarm Levels

Alarm levels are for defining the severity, importance, and urgency of an alarm.

Alarms commonly have four levels: critical alarm, major alarm, subordinate alarm, and prompt alarm.

- ◆ Critical alarm: means the alarm causing service interruption and needing immediate troubleshooting.
- ◆ Major alarm: means the alarm influencing services severely and needing immediate troubleshooting.
- ◆ Subordinate alarm: means the alarm not influencing services but needing troubleshooting when the traffic is relatively small to avoid deterioration.
- ◆ Prompt alarm: means the alarm not influencing current services but having the possibility to influence services; users can decide whether to handle it or not on demand.

## 1.4 Alarm Information List

Table 1-1 lists the alarm information of the AN5116-06B.

Table 1-1 The AN5116-06B's alarm information

Alarm Object	Alarm Name	Alarm Level	Alarm Type	Refer To
HSWA card	CPU_INVERSION_FAILED	Critical alarm	Manage fail alarm	3.1.1
	TEMPERATURE_OVER	Critical alarm	Environment alarm	3.1.2
	FAN_ERROR	Critical alarm	Device alarm	3.1.3
	CONFIG_HAVENOT_SAVED	Major alarm	Device alarm	4.1.1
	ALARM_NUM_OVER_THRESHOLD	Major alarm	Device alarm	4.1.2
	CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.1.1
	MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.1.2
Uplink card	CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm	3.7.1
	CARD_NOT_PRESENT	Critical alarm	Device alarm	3.7.2
	GUP_NO_OPTICS_SIGNAL	Critical alarm	Communication alarm	3.7.3
	UP_CRC_ERROR_THRESHOLD / DOWN_CRC_ERROR_THRESHOLD	Subordinate alarm	Service quality alarm	5.1.1
	UNDERSIZEFRAME_THRESHOLD	Subordinate alarm	Service quality alarm	5.1.2

Alarm Object	Alarm Name	Alarm Level	Alarm Type	Refer To
EC4B / EC8B card	CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm	3.2.1
	CARD_NOT_PRESENT	Critical alarm	Device alarm	3.2.2
	LINK_LOSS	Critical alarm	Communication alarm	3.2.3
	PHYSIC_ID_CONFLICT	Critical alarm	Device alarm	3.2.4
	LOGIC_ID_CONFLICT	Critical alarm	Device alarm	3.2.5
	ILEGAL_ONU_REGISTE	Prompt alarm	Device alarm	6.2.1
	ONU_AUTO_CONFIG_FAILED	Prompt alarm	Manage fail alarm	6.2.2
	CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.2.3
	MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.2.4
	TOTAL_BANDWIDTH_OVER	Prompt alarm	Manage fail alarm	6.2.5
GC4B / GC8B card	CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm	3.3.1
	CARD_NOT_PRESENT	Critical alarm	Device alarm	3.3.2
	LINK_LOSS	Critical alarm	Communication alarm	3.3.3
	PHYSIC_ID_CONFLICT	Critical alarm	Device alarm	3.3.4
	PASSWORD_CONFLICT	Critical alarm	Device alarm	3.3.5
	ILEGAL_ONU_REGISTE	Prompt alarm	Device alarm	6.3.1
	ONU_AUTO_CONFIG_FAILED	Prompt alarm	Manage fail alarm	6.3.2
	CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.3.3
	MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.3.4
	ONU_UNAUTHENTICATED	Prompt alarm	Device alarm	6.3.5
	OPTMODULE_TEMP_OVER	Prompt alarm	Device alarm	6.3.6
	OPTMODULE_VOL_OVER	Prompt alarm	Device alarm	6.3.7
	OPTMODULE_BIAS_OVER	Prompt alarm	Device alarm	6.3.8
	OPTMODULE_TXPOWER_OVER	Prompt alarm	Device alarm	6.3.9
OPTMODULE_RXPOWER_OVER	Prompt alarm	Device alarm	6.3.10	
CE1B card	CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm	3.5.1
	CARD_NOT_PRESENT	Critical alarm	Device alarm	3.5.2
	E1 LOS	Major alarm	Communication alarm	4.2.1
	E1 AIS	Major alarm	Communication alarm	4.2.2
	CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.4.1
	MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.4.2
C155A card	CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm	3.6.1
	CARD_NOT_PRESENT	Critical alarm	Device alarm	3.6.2
	155_OPTICAL_LOS	Critical alarm	Communication alarm	3.6.3
	155_OPTICAL_LOF	Critical alarm	Communication alarm	3.6.4
	155_OPTICAL_LFA	Critical alarm	Communication alarm	3.6.5
	AIS	Subordinate alarm	Communication alarm	5.2.1
	CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.5.1
	MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.5.2

Alarm Object	Alarm Name	Alarm Level	Alarm Type	Refer To
PUBA card	CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm	3.4.1
	CARD_NOT_PRESENT	Critical alarm	Device alarm	3.4.2
	User_defined_alarm1 to User_defined_alarm14	Prompt alarm	Environment alarm	6.6.1
ONU	LINK_LOSS	Critical alarm	Communication alarm	3.8.1
	DYING_GASP	Critical alarm	Communication alarm	3.8.2
	EQUIPMENT_TYPE_MISMATCH	Critical alarm	Manage fail alarm	3.8.3
	MGC_DISCONNECTED	Critical alarm	Device alarm	3.8.4
	BATTERY_VOLTAGE_TOO_LOW	Critical alarm	Device alarm	3.8.5
	AC_FAIL	Major alarm	Communication alarm	4.3.1
	DC_LOW	Major alarm	Communication alarm	4.3.2
	BATTERY_MISSING	Major alarm	Device alarm	4.3.3
	CPU_VER_LOW	Major alarm	Device alarm	4.3.4
	E1_LOS	Major alarm	Communication alarm	4.3.5
	E1_AIS	Major alarm	Communication alarm	4.3.6
	RX_POWER_HIGH_ALARM	Major alarm	Device alarm	4.3.7
	RX_POWER_LOW_ALARM	Major alarm	Device alarm	4.3.8
	TX_POWER_HIGH_ALARM	Major alarm	Device alarm	4.3.9
	TX_POWER_LOW_ALARM	Major alarm	Device alarm	4.3.10
	BIAS_HIGH_ALARM	Major alarm	Device alarm	4.3.11
	BIAS_LOW_ALARM	Major alarm	Device alarm	4.3.12
	VCC_HIGH_ALARM	Major alarm	Device alarm	4.3.13
	VCC_LOW_ALARM	Major alarm	Device alarm	4.3.14
	TEMP_HIGH_ALARM	Major alarm	Device alarm	4.3.15
	TEMP_LOW_ALARM	Major alarm	Device alarm	4.3.16
	LOOPBACK	Major alarm	Communication alarm	4.3.17
	UP_CRC_ERROR_THRESHOLD / DOWN_CRC_ERROR_THRESHOLD	Subordinate alarm	Service quality alarm	5.3.1
	CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.8.1
	MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm	6.8.2
	User_defined_alarm1 to User_defined_alarm5	Prompt alarm	Environment alarm	6.8.3
	Optical Power Too Low	Prompt alarm	Device alarm	6.8.4
	ONU LOF	Prompt alarm	Device alarm	6.8.5
	ONU DOW	Prompt alarm	Device alarm	6.8.6
	ONU SF	Prompt alarm	Device alarm	6.8.7
ONU SD	Prompt alarm	Device alarm	6.8.8	
LCDG	Prompt alarm	Device alarm	6.8.9	
RDI	Prompt alarm	Device alarm	6.8.10	

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Alarm Object	Alarm Name	Alarm Level	Alarm Type	Refer To
	SUF	Prompt alarm	Device alarm	6.8.11
	LOA	Prompt alarm	Device alarm	6.8.12
	LOAM	Prompt alarm	Device alarm	6.8.13
	MEM	Prompt alarm	Device alarm	6.8.14
	PEE	Prompt alarm	Device alarm	6.8.15
	MIS	Prompt alarm	Device alarm	6.8.16
	Uplink BIP8 Threshold Crossing Alarm	Prompt alarm	Device alarm	6.8.17
	Downlink BIP8 Threshold Crossing Alarm	Prompt alarm	Device alarm	6.8.18



## 2 Basic Operations on Alarms

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This chapter introduces commonly used operation methods of alarm management, including the following contents:

- Viewing current alarms
- Confirming current alarms
- Viewing history alarms
- Configuring custom alarm names
- Viewing custom alarm names
- Configuring custom alarm reporting conditions

## 2.1 Viewing Current Alarms

### Command usage

This command is used to query current alarms of the selected object and its sub-objects. The current alarms include all alarms that have not ended and are not confirmed by users.

### Applicable object

This command is applicable to the system, module, HSWA card, EC4B / EC8B / GC4B / GC8B card and their PON ports, CE1B card, C155A card and its STM-1 optical interfaces, HU1A card and its uplink ports, PUBA card, FAN card, ONU and its FE ports.

### Prerequisite

The AN5116-06B communicates with the ANM2000 normally.

### Operation procedure

Open the **Current Alarm** window, according to the corresponding path listed in Table 2-1.

Table 2-1 Operation paths for querying current alarms

Object	Menu Item	Path
The system, card, and port	Current alarm	Right-click the AN5116-06B system in the <b>Object Tree</b> pane; select <b>Current Alarm</b> in the shortcut menu.
		Right-click the card in the <b>Object Tree</b> pane; select <b>Current Alarm</b> in the shortcut menu.
		Right-click the port in the <b>Object Tree</b> pane; select the <b>Current Alarm</b> in the shortcut menu.
		Select <b>Alarm</b> → <b>Current Alarm</b> in the main menu bar, or click the  button in the menu bar.

### Operation result

The **Current Alarm** tab displays the object to be queried, alarm name, alarm type, alarm beginning and ending time, alarm confirmation time, the user confirming an alarm, and alarm confirming information. Users can handle relevant alarms based on the information displayed in this tab.

## 2.2 Confirming Current Alarms

### Command usage

This command is used to confirm the current alarm information, indicating that users have noticed this alarm and they are handling it.

### Applicable object

This command is applicable to current alarms of all alarm objects.

### Prerequisite

The AN5116-06B communicates with the ANM2000 normally.

### Operation procedure

1. Open the **Current Alarm** tab, according to the corresponding path listed in Table 2-1, and then right-click a certain alarm item.
2. Select **Alarm Confirm** in the shortcut menu.
3. Input the alarm confirming information in the **Confirming Information** box.

### Operation result

- ◆ If an alarm has not ended, it will still be displayed in the **Current Alarm** tab after being confirmed.
- ◆ If an alarm has ended, it will not be displayed in the **Current Alarm** tab after being confirmed. Users can query it in the **History Alarm** tab.

## 2.3 Viewing History Alarms

### Command usage

This command is used to query history alarms of the selected object and its sub-objects. The history alarms include all alarms that have ended and have been confirmed by users or by the system automatically.

### Applicable object

This command is applicable to the system, module, HSWA card, EC4B / EC8B / GC4B / GC8B card and their PON ports, CE1B card, C155A card and its STM-1 optical interfaces, HU1A card and its uplink ports, PUBA card, FAN card, ONU and its FE ports.

### Prerequisite

The AN5116-06B communicates with the ANM2000 normally.

### Operation procedure

Open the **History Alarm** window, according to the corresponding path listed in Table 2-2.

Table 2-2 Operation paths for querying history alarms

Object	Menu Item	Path
The system, card, and port	History alarm	Right-click the AN5116-06B system in the <b>Object Tree</b> pane; select <b>History Alarm</b> in the shortcut menu.
		Right-click the card in the <b>Object Tree</b> pane; select the <b>History Alarm</b> in the shortcut menu.
		Select <b>Alarm</b> → <b>History Alarm</b> in the main menu bar, or click the  button in the menu bar.

### Operation result

The **History Alarm** tab displays the object to be queried, alarm name, alarm type, alarm beginning and ending time, alarm confirmation time, the user confirming an alarm, and alarm confirming information.

## 2.4 Configuring Custom Alarm Names

### Command usage

This command is used to configure the custom alarm names for dry contacts.

### Applicable object

This command is applicable to the PUBA card and the ONU.

### Prerequisite

- ◆ The AN5116-06B communicates with the ANM2000 normally.
- ◆ The AN5116-06B connects with the dry contact normally.
- ◆ The ONU connects with the dry contact normally.

### Operation procedure

1. Select **Alarm** → **Custom alarm manage** in the main menu of the **ANM2000** window to open the **Custom alarm manage** window.
2. Select the PUBA card or the ONU from the object tree in the left pane.
3. Select **Operation** → **Append** in the menu bar to get the **Custom alarm setting** dialog box.
4. Click the **Add** button to add one custom alarm item.
5. Click the blank under the **Alarm English Name** item, and then select the alarm name in the drop-down list or input the corresponding alarm name.
6. Repeat Steps 4 and 5 to configure other custom alarm names.



#### Note:

For the PUBA card, 14 custom alarm items can be defined; for the FTTH type ONU, two custom alarm items can be defined; for the FTTB type ONU, five custom alarm items can be defined.

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1. Select the **Apply to same type device** check box to deliver the custom alarm names to equipments with the same type in the system.

2. Click the **Apply** button to finish setting the custom alarm names.

### Operation result

As soon as a certain custom alarm is reported to the ANM2000, the ANM2000 will display this alarm's name defined here.

## 2.5 Viewing Custom Alarm Names

### Command usage

This command is used to view the default names and custom names for custom alarms of dry contacts.

### Applicable object

This command is applicable to the PUBA card and the ONU.

### Prerequisite

- ◆ The AN5116-06B communicates with the ANM2000 normally.
- ◆ The AN5116-06B connects with the dry contact normally.
- ◆ The ONU connects with the dry contact normally.
- ◆ Custom alarm names have been set.

### Operation procedure

1. Select **Alarm** → **Custom alarm manage** in the main menu of the **ANM2000** window to open the **Custom alarm manage** window.
2. Select the object to be queried from the object tree in the left pane.

### Operation result

The right pane of the **Custom alarm manage** window displays the default names and custom names of custom alarms.

## 2.6 Configuring Custom Alarm Reporting Conditions

### Command usage

This command is used to set the reporting conditions for custom alarms.

### Applicable object

This command is applicable to the PUBA card and the ONU.

### Prerequisite

- ◆ The AN5116-06B communicates with the ANM2000 normally.
- ◆ The AN5116-06B connects with the dry contact normally.
- ◆ The ONU connects with the dry contact normally.

### Operation procedure

- ◆ Configuring custom alarm reporting conditions for the PUBA card
  - 1) Right-click the PUBA card in the object tree of the **ANM2000** window, and then select **Config** → **Custom Alarm Config** in the shortcut menu.
  - 2) Select **Edit** → **Append** or click the  button in the menu bar to get the **Please Input The Rows For Add:** dialog box; and then input **1** in the dialog box and click the **OK** button to create an item.
  - 3) Input the alarm interface No. in the **Interface No.** column, and select the alarm reporting condition in the drop-down list of the **Alarm Report Condition** item.
  - 4) Click the **Apply** button to write the configuration to the equipment.
- ◆ Configuring custom alarm reporting conditions for the ONU
  - 1) In the object tree of the **ANM2000** window, click the PON port connected with the ONU.
  - 2) In the **ONU List** tab that appears subsequently, right-click the ONU and select **Config** → **Custom Alarm Config** in the shortcut menu.

- 3) Input the alarm interface No. in the **Interface No.** column, and select the alarm reporting condition in the drop-down list of the **Alarm Report Condition** item.
- 4) Click the **Apply** button to write the configuration to the equipment.

### Operation result

When each alarm interface detects the level meeting the reporting conditions, the alarm will be generated and reported to the network management system.



# 3 Critical Alarms

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This chapter introduces properties, probable reasons, influences on the system, and handling procedures of all critical alarms, including the following contents:

- Critical alarms of the HSWA card
- Critical alarms of the EC4B / EC8B card
- Critical alarms of the GC4B / GC8B card
- Critical alarms of the PUBA card
- Critical alarms of the CE1B card
- Critical alarms of the C155A card
- Critical alarms of the uplink card
- Critical alarms of the ONU

## 3.1 Critical Alarms of the HSWA Card

### 3.1.1 CPU\_INVERSION\_FAILED

Alarm information

Alarm Name	Alarm Level	Alarm Type
CPU_INVERSION_FAILED	Critical alarm	Manage fail alarm

Probable reasons

- ◆ The active HSWA card works abnormally.
- ◆ The standby HSWA card is not present.
- ◆ The standby HSWA card is faulty.

Influences on the system

If the system automatically or manually forced switching between the active and standby HSWA cards fails, the system will still use the faulty active HSWA card, resulting in the system service interruption and the OLT failure for providing any service.

Handling steps

1. Check whether the standby HSWA card is present or not:
  - ▶ If not, please proceed to the next step.
  - ▶ If yes, please skip to Step 3.
2. Reset the standby HSWA card:
  - 1) In the ANM2000, right-click the active HSWA card in the **Object Tree** pane and select **Control Command** → **Reset Standby Card**.
  - 2) Click the **OK** button to reset the standby HSWA card in the **Reset Standby Card** window that appears subsequently.

- ▶ If the standby HSWA card is present after the reset, please execute the switching between the active and standby HSWA cards again. If the switching is successful, please skip to Step 7; if not, please skip to Step 4.
  - ▶ If the standby HSWA card is still not present after the reset, please replace this card.
3. Check the status of the ACT LED on the standby HSWA card:
    - ▶ If the LED blinks slowly, it means that the standby HSWA card is not ready to switch. Please wait a moment, and execute the switching between the active and standby HSWA cards again after the LED became ON.
    - ▶ If the LED is ON, please proceed to the next step.
  4. Check whether the active HSWA card works normally, using the **Get Information** command to query whether each parameter is normal:
    - ▶ If the active HSWA card does not work normally, please proceed to the next step for the forced switching.
    - ▶ If the active HSWA card works normally, please skip to Step 6.
  5. Execute the manually forced switching:
    - ▶ If the manually forced switching is successful, please do not change the current active-standby status of the HSWA cards and skip to Step 7.
    - ▶ If not, please stop the current operation and proceed to the next step.
  6. Please contact technicians of FiberHome.
  7. End.

### 3.1.2 TEMPERATURE\_OVER

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
TEMPERATURE_OVER	Critical alarm	Environment alarm

#### Probable reasons

- ◆ The ambient temperature is abnormal.
- ◆ The temperature threshold setting is unreasonable.

## Influences on the system

The abnormal temperature may cause instability of the system.

## Handling steps

1. Check whether the fan rotates normally:
  - ▶ If the fan rotates abnormally, please repair it.
  - ▶ If the fan rotates normally, please proceed to the next step.
2. Check whether there is too much dust inside the fan card so that the cooling effect of the fan worsens:
  - ▶ If there is too much dust inside the fan card, clear the dust.
  - ▶ If not, please proceed to the next step.
3. Check whether the air conditioner at the equipment site works normally:
  - ▶ If the air conditioner is off, please switch it on.
  - ▶ If the air conditioner has faults, please repair it.
  - ▶ If the air conditioner works normally, please proceed to the next step.
4. Check whether the temperature threshold needs to be modified:
  - ▶ If the threshold needs to be modified, please proceed to the next step.
  - ▶ If not, please skip to Step 6.
5. Modify the temperature threshold, following the steps below:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Alarm Management** → **Temperature Threshold** in the shortcut menu to open the **Temperature Threshold** window.
  - 3) Input the suitable threshold value in the **Temperature Threshold** column.
  - 4) Click the  button to write the configuration to the equipment.
    - ▶ If the alarm is removed after the modification, please skip to Step 7.
    - ▶ If the alarm persists, please proceed to the next step.
6. Please contact technicians of FiberHome.
7. End.

### 3.1.3 FAN\_ERROR

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
FAN_ERROR	Critical alarm	Device alarm

#### Probable reasons

The fan unit works abnormally

#### Influences on the system

The fan failure may cause too high system temperature. If the equipment works in this situation for a long time, the system cannot keep running stably, even hardware faults may occur.

#### Handling steps

1. Check whether the power supply of the fan unit is connected correctly. If not, please connect the power supply correctly for the fan unit first.
2. Check whether there is too much dust inside the fan card:
  - ▶ If yes, clear the dust. If the alarm is removed after the cleaning, please skip to Step 5; if the alarm persists, please proceed to the next step.
  - ▶ If not, please proceed to the next step.
3. Replace the faulty fan complying with the operation specification and make the correct cable connection:
  - ▶ If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm persists, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

## 3.2 Critical Alarms of the EC4B / EC8B Card

### 3.2.1 CARD\_TYPE\_NOT\_IDENTICAL

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm

#### Probable reasons

The type of the card physically inserted in the equipment is not identical to that preconfigured in the ANM2000.

#### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ All services loaded on this card are interrupted; and the card cannot provide any service.

#### Handling steps

1. Check the type of the card physically inserted in the equipment to verify whether the card type matches the configuration in the ANM2000.
  - ▶ If the physical card type does not match the configuration in the ANM2000, please replace the card and proceed to the next step.
  - ▶ If the physical card type matches the configuration in the ANM2000, please skip to Step 3.
2. Modify the card type in the ANM2000 to make it identical to the physical card type in the equipment:
  - 1) In the ANM2000, right-click the AN5116-06B in the **Object Tree** pane and select the **Card Config** in the shortcut menu.

- 2) In the **Card Config** window that appears subsequently, click the item to be modified and select **Set Card Authorization** → **Copy Hardware Config To Card Config** in the menu bar.
- 3) Select **Operation** → **Write Device** in the menu bar, and please proceed to the next step.
3. After modifying the card configuration, check whether the alarm is removed:
  - ▶ If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

## 3.2.2 CARD\_NOT\_PRESENT

### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_NOT_PRESENT	Critical alarm	Device alarm

### Probable reasons

- ◆ The EC4B / EC8B card is unplugged from the equipment.
- ◆ The EC4B / EC8B card in the equipment is faulty.

### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ All services loaded on this card are interrupted; and the card cannot provide any service.

### Handling steps

1. Check whether the card is unplugged from the equipment:
  - ▶ If the card is unplugged, please check the card and insert it again. If the alarm is removed, please skip to Step 4; if the alarm still persists, please proceed to the next step.
  - ▶ If the card is present, please proceed to the next step.
2. Check whether the card is faulty; that is check whether the ALARM LED on the card is ON:
  - ▶ If the ALARM LED is OFF, please proceed to the next step.
  - ▶ If the ALARM LED is ON, please replace the card and skip to Step 4.
3. Please contact technicians of FiberHome.
4. End.

### 3.2.3 LINK\_LOSS

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
LINK_LOSS	Critical alarm	Communication alarm

#### Probable reasons

- ◆ The optical module of the PON port on the OLT card is faulty.
- ◆ The optical fiber connected with the PON port (i.e. the fiber link between the PON port and the splitter) is damaged.

#### Influences on the system

All subscriber services loaded on the PON port are interrupted.

#### Handling steps

1. Detect the optical module of the PON port on the OLT card with an optical power meter:
  - ▶ If the optical power is too low or there is not any optical signal, it means that the optical module has faults. Please replace the card.
  - ▶ If the optical power is normal, please proceed to the next step.
2. Detect the optical fiber (from the PON port to the splitter) with an optical power meter:
  - ▶ If the optical power is too low or there is not any optical signal, it means that the fiber link or the splitter has faults. Please repair the physical link.
  - ▶ If the optical power is normal, please proceed to the next step.
3. Please contact technicians of FiberHome.
4. End.

### 3.2.4 PHYSIC\_ID\_CONFLICT

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
PHYSIC_ID_CONFLICT	Critical alarm	Device alarm

#### Probable reasons

The physical IDs of ONUs under the current EC4B / EC8B card's PON port conflict with those of the authorized ONUs in the system.

#### Influences on the system

The system cannot authorize the ONUs which use the conflict physical IDs.

#### Handling steps

1. Check the validity of the ONUs whose physical IDs conflict with each other. Power off the illegal ONU under the current PON port or replace the ONU:
  - ▶ If the alarm is removed, please skip to Step 3.
  - ▶ If the alarm persists, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

### 3.2.5 LOGIC\_ID\_CONFLICT

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
LOGIC_ID_CONFLICT	Critical alarm	Device alarm

#### Probable reasons

The logical IDs of ONUs under the current EC4B / EC8B card's PON port conflict with those of the authorized ONUs in the system.

#### Influences on the system

The system cannot authorize the ONUs which use the conflict logical IDs.

#### Handling steps

1. Check the validity of the ONUs whose logical IDs conflict with each other. Power off the illegal ONU under the current PON port or replace the ONU:
  - ▶ If the alarm is removed, please skip to Step 3.
  - ▶ If the alarm persists, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

## 3.3 Critical Alarms of the GC4B / GC8B Card

### 3.3.1 CARD\_TYPE\_NOT\_IDENTICAL

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm

#### Probable reasons

The type of the card physically inserted in the equipment is not identical to that preconfigured in the ANM2000.

#### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ All services loaded on this card are interrupted; and the card cannot provide any service.

#### Handling steps

1. Check the type of the card physically inserted in the equipment to verify whether the card type matches the configuration in the ANM2000.
  - ▶ If the physical card type does not match the configuration in the ANM2000, please replace the card and proceed to the next step.
  - ▶ If the physical card type matches the configuration in the ANM2000, please skip to Step 3.
2. Modify the card type in the ANM2000 to make it identical to the physical card type in the equipment:
  - 1) In the ANM2000, right-click the AN5116-06B in the **Object Tree** pane and select the **Card Config** in the shortcut menu.

- 2) In the **Card Config** window that appears subsequently, click the item to be modified and select **Set Card Authorization** → **Copy Hardware Config To Card Config** in the menu bar.
- 3) Select **Operation** → **Write Device** in the menu bar, and please proceed to the next step.
3. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

### 3.3.2 CARD\_NOT\_PRESENT

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_NOT_PRESENT	Critical alarm	Device alarm

#### Probable reasons

- ◆ The GC4B / GC8B card is unplugged from the equipment.
- ◆ The GC4B / GC8B card in the equipment is faulty.

#### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ All services loaded on this card are interrupted; and the card cannot provide any service.

#### Handling steps

1. Check whether the card is unplugged from the equipment:
  - ▶ If the card is unplugged, please check the card and insert it again. If the alarm is removed, please skip to Step 4; if the alarm still persists, please proceed to the next step.
  - ▶ If the card is present, please proceed to the next step.
2. Check whether the card is faulty; that is check whether the ALARM LED on the card is ON:
  - ▶ If the ALARM LED is OFF, please proceed to the next step.
  - ▶ If the ALARM LED is ON, please replace the card and skip to Step 4.
3. Please contact technicians of FiberHome.
4. End.

### 3.3.3 LINK\_LOSS

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
LINK_LOSS	Critical alarm	Communication alarm

#### Probable reasons

- ◆ The optical module of the PON port on the OLT card is faulty.
- ◆ The optical fiber connected with the PON port (i.e. the fiber link between the PON port and the splitter) is damaged.

#### Influences on the system

All subscriber services loaded on the PON port are interrupted.

#### Handling steps

1. Detect the optical module of the PON port on the OLT card with an optical power meter:
  - ▶ If the optical power is too low or there is not any optical signal, it means that the optical module has faults. Please replace the card.
  - ▶ If the optical power is normal, please proceed to the next step.
2. Detect the optical fiber (from the PON port to the splitter) with an optical power meter:
  - ▶ If the optical power is too low or there is not any optical signal, it means that the fiber link or the splitter has faults. Please repair the physical link.
  - ▶ If the optical power is normal, please proceed to the next step.
3. Please contact technicians of FiberHome.
4. End.

### 3.3.4 PHYSIC\_ID\_CONFLICT

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
PHYSIC_ID_CONFLICT	Critical alarm	Device alarm

#### Probable reasons

The physical IDs of ONUs under the current GC4B / GC8B card's PON port conflict with those of the authorized ONUs in the system.

#### Influences on the system

This alarm does not influence the system; but the system cannot authorize the ONUs which use the conflict physical IDs.

#### Handling steps

1. Check the validity of the ONUs whose physical IDs conflict with each other. Power off the illegal ONU under the current PON port or replace the ONU:
  - ▶ If the alarm is removed, please skip to Step 3.
  - ▶ If the alarm persists, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

### 3.3.5 PASSWORD\_CONFLICT

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
PASSWORD_CONFLICT	Critical alarm	Device alarm

#### Probable reasons

The passwords of ONUs under the current GC4B / GC8B card's PON port conflict with those of the authorized ONUs in the system.

#### Influences on the system

The system cannot authorize the ONUs with the conflict passwords.

#### Handling steps

1. Check the validity of the ONUs whose passwords conflict with each other. Power off the illegal ONU under the current PON port or replace the ONU:
  - ▶ If the alarm is removed, please skip to Step 3.
  - ▶ If the alarm persists, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

## 3.4 Critical Alarms of the PUBA Card

### 3.4.1 CARD\_TYPE\_NOT\_IDENTICAL

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm

#### Probable reasons

The type of the card physically inserted in the equipment is not identical to that preconfigured in the ANM2000.

#### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ All services loaded on this card are interrupted; and the card cannot provide voice services.

#### Handling steps

1. Check the type of the card physically inserted in the equipment to verify whether the card type matches the configuration in the ANM2000.
  - ▶ If the physical card type does not match the configuration in the ANM2000, please replace the card and proceed to the next step.
  - ▶ If the physical card type matches the configuration in the ANM2000, please skip to Step 3.
2. Modify the card type in the ANM2000 to make it identical to the physical card type in the equipment:
  - 1) In the ANM2000, right-click the AN5116-06B in the **Object Tree** pane and select the **Card Config** in the shortcut menu.

- 2) In the **Card Config** window that appears subsequently, click the item to be modified and select **Set Card Authorization** → **Copy Hardware Config To Card Config** in the menu bar.
- 3) Select **Operation** → **Write Device** in the menu bar, and please proceed to the next step.
3. After modifying the card configuration, check whether the alarm is removed:
  - ▶ If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

## 3.4.2 CARD\_NOT\_PRESENT

### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_NOT_PRESENT	Critical alarm	Device alarm

### Probable reasons

- ◆ The PUBA card is unplugged from the equipment.
- ◆ The PUBA card in the equipment is faulty.

### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ All services loaded on this card are interrupted; and the card cannot provide voice services.

### Handling steps

1. Check whether the card is unplugged from the equipment:
  - ▶ If the card is unplugged, please check the card and insert it again. If the alarm is removed, please skip to Step 4; if the alarm still persists, please proceed to the next step.
  - ▶ If the card is present, please proceed to the next step.
2. Check whether the card is faulty; that is check whether the ALARM LED on the card is ON:
  - ▶ If the ALARM LED is OFF, please proceed to the next step.
  - ▶ If the ALARM LED is ON, please replace the card and skip to Step 4.
3. Please contact technicians of FiberHome.
4. End.

## 3.5 Critical Alarms of the CE1B Card

### 3.5.1 CARD\_TYPE\_NOT\_IDENTICAL

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm

#### Probable reasons

The type of the card physically inserted in the equipment is not identical to that preconfigured in the ANM2000.

#### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ The TDM services loaded on this card are interrupted.

#### Handling steps

1. Check the type of the card physically inserted in the equipment to verify whether the card type matches the configuration in the ANM2000.
  - ▶ If the physical card type does not match the configuration in the ANM2000, please replace the card and proceed to the next step.
  - ▶ If the physical card type matches the configuration in the ANM2000, please skip to Step 3.
2. Modify the card type in the ANM2000 to make it identical to the physical card type in the equipment:
  - 1) In the ANM2000, right-click the AN5116-06B in the **Object Tree** pane and select the **Card Config** in the shortcut menu
  - 2) In the **Card Config** window that appears subsequently, click the item to be modified and select **Set Card Authorization** → **Copy Hardware Config To Card Config** in the menu bar.

- 3) Select **Operation** → **Write Device** in the menu bar, and please proceed to the next step.
3. After modifying the card configuration, check whether the alarm is removed:
  - ▶ If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

## 3.5.2 CARD\_NOT\_PRESENT

### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_NOT_PRESENT	Critical alarm	Device alarm

### Probable reasons

- ◆ The CE1B card is unplugged from the equipment.
- ◆ The CE1B card in the equipment is faulty.

### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ The TDM services loaded on this card are interrupted.

### Handling steps

1. Check whether the card is unplugged from the equipment:
  - ▶ If the card is unplugged, please check the card and insert it again. If the alarm is removed, please skip to Step 4; if the alarm still persists, please proceed to the next step.
  - ▶ If the card is present, please proceed to the next step.
2. Check whether the card is faulty; that is check whether the ALARM LED on the card is ON:
  - ▶ If the ALARM LED is OFF, please proceed to the next step.
  - ▶ If the ALARM LED is ON, please replace the card and skip to Step 4.
3. Please contact technicians of FiberHome.
4. End.

## 3.6 Critical Alarms of the C155A Card

### 3.6.1 CARD\_TYPE\_NOT\_IDENTICAL

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm

#### Probable reasons

The type of the card physically inserted in the equipment is not identical to that preconfigured in the ANM2000.

#### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ The TDM services loaded on this card are interrupted.

#### Handling steps

1. Check the type of the card physically inserted in the equipment to verify whether the card type matches the configuration in the ANM2000.
  - ▶ If the physical card type does not match the configuration in the ANM2000, please replace the card and proceed to the next step.
  - ▶ If the physical card type matches the configuration in the ANM2000, please skip to Step 3.
2. Modify the card type in the ANM2000 to make it identical to the physical card type in the equipment:
  - 1) In the ANM2000, right-click the AN5116-06B in the **Object Tree** pane and select the **Card Config** in the shortcut menu.
  - 2) In the **Card Config** window that appears subsequently, click the item to be modified and select **Set Card Authorization** → **Copy Hardware Config To Card Config** in the menu bar.

- 3) Select **Operation** → **Write Device** in the menu bar, and please proceed to the next step.
3. After modifying the card configuration, check whether the alarm is removed:
  - ▶ If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

## 3.6.2 CARD\_NOT\_PRESENT

### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_NOT_PRESENT	Critical alarm	Device alarm

### Probable reasons

- ◆ The C155A card is unplugged from the equipment.
- ◆ The C155A card in the equipment is faulty.

### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ The TDM services loaded on this card are interrupted.

### Handling steps

1. Check whether the card is unplugged from the equipment:
  - ▶ If the card is unplugged, please check the card and insert it again. If the alarm is removed, please skip to Step 4; if the alarm still persists, please proceed to the next step.
  - ▶ If the card is present, please proceed to the next step.
2. Check whether the card is faulty; that is check whether the ALARM LED on the card is ON:
  - ▶ If the ALARM LED is OFF, please proceed to the next step.
  - ▶ If the ALARM LED is ON, please replace the card and skip to Step 4.
3. Please contact technicians of FiberHome.
4. End.

### 3.6.3 155\_OPTICAL\_LOS

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
155_OPTICAL_LOS	Critical alarm	Communication alarm

#### Probable reasons

- ◆ The optical fiber is broken.
- ◆ Excessive line loss or transmission failure.
- ◆ The Tx laser of the far end equipment is broken.

#### Influences on the system

The TDM services loaded on this card are interrupted.

#### Handling steps

1. Check whether the connection optical fiber is broken:
  - ▶ If yes, please replace the broken optical fiber and plug in the new one. If the alarm is removed, please skip to Step 5; if the alarm still persists, please proceed to the next step.
  - ▶ If not, please proceed to the next step.
2. Measure the Rx optical power of the C155A card that reports the alarm. If the optical power is normal, please check whether the optical fiber is firmly connected to the port. If yes, please replace the C155A card that reports the alarm.
  - ▶ If the alarm is removed after replacing the C155A card, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Check whether the optical fiber is firmly connected to the port of the optical transmitting card on the far end equipment. If yes, please replace the card on the far end equipment. If the alarm still persists after replacing the card, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

### 3.6.4 155\_OPTICAL\_LOF

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
155_OPTICAL_LOF	Critical alarm	Communication alarm

#### Probable reasons

- ◆ Excessive line loss.
- ◆ The signals transmitted from the far end equipment have no frame structure.

#### Influences on the system

The TDM services loaded on this card have faults.

#### Handling steps

1. Measure the Rx optical power of the C155A card that reports the alarm.
  - ▶ If the optical power is normal, please replace the C155A card that reports the alarm. If the alarm is removed after replacing, please skip to Step 5; if the alarm still persists, please skip to Step 3.
  - ▶ If the optical power is not within the normal range, please proceed to the next step.
2. Check whether the optical fiber between the local end equipment and the far end equipment and its interface are damaged:
  - ▶ If yes, please replace the optical fiber and the interface. If the alarm is removed after replacing, please skip to Step 5; if the alarm still persists, please proceed to the next step.
  - ▶ If not, please proceed to the next step.
3. Check whether the far end equipment works normally:
  - ▶ If not, please restore the far end equipment to the normal working status. If the alarm is removed after restoration, please skip to Step 5; if the alarm still persists, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

### 3.6.5 155\_OPTICAL\_LFA

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
155_OPTICAL_LFA	Critical alarm	Communication alarm

#### Probable reasons

- ◆ Excessive line loss.
- ◆ Excessive bit errors during the transmission.
- ◆ The far end equipment works abnormally

#### Influences on the system

The TDM services loaded on this card have faults.

#### Handling steps

1. Measure the Rx optical power of the C155A card that reports the alarm.
  - ▶ If the optical power is normal, please replace the C155A card that reports the alarm. If the alarm is removed after replacing, please skip to Step 5; if the alarm still persists, please skip to Step 3.
  - ▶ If the optical power is not within the normal range, please proceed to the next step.
2. Check whether the optical fiber between the local end equipment and the far end equipment and its interface are damaged:
  - ▶ If yes, please replace the optical fiber and the interface. If the alarm is removed after replacing, please skip to Step 5; if the alarm still persists, please proceed to the next step.
  - ▶ If not, please proceed to the next step.
3. Check whether the far end equipment works normally:
  - ▶ If not, please restore the far end equipment to the normal working status. If the alarm is removed after restoration, please skip to Step 5; if the alarm still persists, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

## 3.7 Critical Alarms of the Uplink Card

### 3.7.1 CARD\_TYPE\_NOT\_IDENTICAL

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_TYPE_NOT_IDENTICAL	Critical alarm	Device alarm

#### Probable reasons

The type of the card physically inserted in the equipment is not identical to that preconfigured in the ANM2000.

#### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ All services of the whole OLT system are interrupted.

#### Handling steps

1. Check the type of the card physically inserted in the equipment to verify whether the card type matches the configuration in the ANM2000.
  - ▶ If the physical card type does not match the configuration in the ANM2000, please replace the card and proceed to the next step.
  - ▶ If the physical card type matches the configuration in the ANM2000, please skip to Step 3.
2. Modify the card type in the ANM2000 to make it identical to the physical card type in the equipment:
  - 1) In the ANM2000, right-click the AN5116-06B in the **Object Tree** pane and select the **Card Config** in the shortcut menu.
  - 2) In the **Card Config** window that appears subsequently, click the item to be modified and select **Set Card Authorization** → **Copy Hardware Config To Card Config** in the menu bar.

- 3) Select **Operation** → **Write Device** in the menu bar, and please proceed to the next step.
3. After modifying the card configuration, check whether the alarm is removed:
  - ▶ If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

## 3.7.2 CARD\_NOT\_PRESENT

### Alarm information

Alarm Name	Alarm Level	Alarm Type
CARD_NOT_PRESENT	Critical alarm	Device alarm

### Probable reasons

- ◆ The card is unplugged from the equipment.
- ◆ The card in the equipment is faulty.

### Influences on the system

- ◆ The ANM2000 or the CLI (Command Line Interface) cannot issue any command to the card located in this slot successfully.
- ◆ All services of the whole OLT system are interrupted.

### Handling steps

1. Check whether the card is unplugged from the equipment:
  - ▶ If the card is unplugged, please check the card and insert it again. If the alarm is removed, please skip to Step 4; if the alarm still persists, please proceed to the next step.
  - ▶ If the card is present, please proceed to the next step.
2. Check whether the card is faulty; that is check whether the ALARM LED on the card is ON:
  - ▶ If the ALARM LED is OFF, please proceed to the next step.
  - ▶ If the ALARM LED is ON, please replace the card and skip to Step 4.
3. Please contact technicians of FiberHome.
4. End.

### 3.7.3 GUP\_NO\_OPTICS\_SIGNAL

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
GUP_NO_OPTICS_SIGNAL	Critical alarm	Communication alarm

#### Probable reasons

- ◆ The optical fiber connection of the uplink port is abnormal.
- ◆ The optical module of the uplink port is faulty.

#### Influences on the system

All services loaded on the port are interrupted.

#### Handling steps

1. Check whether the uplink port is connected with the optical fiber:
  - ▶ If not, please complete the fiber connection and skip to Step 5.
  - ▶ If yes, please proceed to the next step.
2. Check whether the fiber connection of the uplink port is normal:
  - ▶ If not, please unplug the optical fiber, clean the fiber's end surface with the special fiber wiper, and plug it in again. And then, skip to Step 5.
  - ▶ If yes, please proceed to the next step.
3. Detect the optical fiber on the uplink port or the optical module with the optical power meter:
  - ▶ If there is not any optical signal, it means the optical fiber is faulty. Please replace the fiber and skip to Step 5.
  - ▶ If there are optical signals, please proceed to the next step.
4. Enable the uplink port again:
  - 1) In the ANM2000 window, right-click the HU1A card in the **Object Tree** pane.
  - 2) Select **Config** → **Uplink Port Properties** in the shortcut menu.

- 3) In the **Uplink Port Properties** window that appears subsequently, click the desired port and clear the **Port Enable** check box to disable the uplink port.
  - 4) Click the  button to write the configuration to the equipment.
  - 5) Select the **Port Enable** check box to enable the uplink port again.
  - 6) Click the  button to write the configuration to the equipment; and proceed to the next step.
5. Check whether the alarm has ended:
    - ▶ If the alarm has ended, please skip to Step 9.
    - ▶ If not, please proceed to the next step.
  6. Perform the automatic negotiation for the port again:
    - 1) In the **ANM2000** window, right-click the HU1A card in the **Object Tree** pane.
    - 2) Select **Config** → **Uplink Port Properties** in the shortcut menu.
    - 3) In the **Uplink Port Properties** window that appears subsequently, click the desired port and select **Disable** in the drop-down list of **Port Auto Negotiate** to disable the port automatic negotiation function.
    - 4) Click the  button to write the configuration to the equipment.
    - 5) Select **Enable** in the drop-down list of **Port Auto Negotiate** to enable the port automatic negotiation function again.
    - 6) Click the  button to write the configuration to the equipment; and proceed to the next step.
  7. Check whether the alarm has ended:
    - ▶ If the alarm has ended, please skip to Step 9.
    - ▶ If not, please proceed to the next step.
  8. Please contact technicians of FiberHome.
  9. End.

## 3.8 Critical Alarms of the ONU

### 3.8.1 LINK\_LOSS

Alarm information

Alarm Name	Alarm Level	Alarm Type
LINK_LOSS	Critical alarm	Communication alarm

Probable reasons

- ◆ If a single ONU reports this alarm, the probable reasons are:
  - ▶ The optical fiber is unconnected.
  - ▶ The optical fiber connection is abnormal.
  - ▶ The optical module of the uplink PON port on the ONU is faulty.
- ◆ If all ONUs under a PON port of the OLT card report this alarm, the probable reasons are:
  - ▶ The uplink link (such as a splitter) has faults.
  - ▶ The optical module of the PON port on the OLT card has faults.

Influences on the system

- ◆ If a single ONU reports this alarm, all subscriber services of this ONU may be interrupted.
- ◆ If all ONUs under a PON port of the OLT card report this alarm, all subscriber services under the PON port are interrupted.

Handling steps

- ◆ If a single ONU reports this alarm:
  - 1) Check whether the ONU's PON port is connected with an optical fiber:
    - ▶ If the port is not connected with an optical fiber, please connect an optical fiber to the port.

- ▶ If the port is connected with an optical fiber, please proceed to the next step.
  - 2) Check whether the fiber connection for the ONU's PON port is normal; that is, check whether the LOS LED on the ONU is ON.
    - ▶ If the fiber connection is abnormal (that is, the LOS LED is ON), please unplug the optical fiber, clean the fiber's end surface with the special fiber wiper, and plug it in again.
    - ▶ If the connection is normal, please proceed to the next step.
  - 3) Use an optical power meter to detect whether the ONU receives optical signals:
    - ▶ If the ONU does not receive any optical signal, it means that the optical fiber's physical link is faulty. Please replace the optical fiber; and skip to Step 6 if the alarm is removed after the replacement.
    - ▶ If the ONU receives optical signals, please proceed to the next step.
  - 4) Replace the ONU:
    - ▶ If the alarm is removed after the replacement, please skip to Step 6.
    - ▶ If the alarm still persists after the replacement, please proceed to the next step.
  - 5) Please contact technicians of FiberHome.
  - 6) End.
- ◆ If all ONUs under the PON port of the OLT card report this alarm:
- 1) Detect the optical module of the PON port on the OLT card with an optical power meter:
    - ▶ If the optical power is too low or there is not any optical signal, it means that the optical module is faulty. Please replace the optical module or the card.
    - ▶ If the optical power is normal, please proceed to the next step.
  - 2) Detect the optical fiber (from the PON port to the splitter) with an optical power meter:
    - ▶ If there is not any optical signal, it means that the fiber link or the splitter is faulty. Please repair the physical link.
    - ▶ If there are optical signals, please proceed to the next step.

- 3) Detect each optical fiber at the ONU side under the PON port with an optical power meter:
  - ▶ If there is not any optical signal, it means that the branch fiber link or the splitter is faulty. Please repair the physical link.
  - ▶ If there are optical signals, please proceed to the next step.
- 4) Please contact technicians of FiberHome.
- 5) End.

## 3.8.2 DYING\_GASP

### Alarm information

Alarm Name	Alarm Level	Alarm Type
DYING_GASP	Critical alarm	Communication alarm

### Probable reasons

- ◆ The ONU supply transformer is faulty.
- ◆ The external power supply is disconnected.
- ◆ The ONU power supply module is faulty.

### Influences on the system

The ONU cannot work normally and cannot provide services for its subscribers.

### Handling steps

1. Check whether the power supply of the ONU is normal:
  - ▶ If the external power supply is abnormal, please restore it.
  - ▶ If the power cable connection is abnormal, please check the power cable to find the loosening point and connect the cable again.
  - ▶ If the ONU power switch is at the OFF position, please place the switch to the ON position.
  - ▶ If the external power supply is normal, the power cable connection is normal, and the ONU power switch is at the ON position, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

### 3.8.3 EQUIPMENT\_TYPE\_MISMATCH

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
EQUIPMENT_TYPE_MISMATCH	Critical alarm	Manage fail alarm

#### Probable reasons

- ◆ In the ONU replacement, the new ONU's type is not identical to that of the original one.
- ◆ The pre-configured ONU type in the ANM2000 is not identical to the physically connected ONU type, including the following two cases:
  - 1) The MAC address of the newly registered ONU is identical to that listed in the physical white list, but the ONU's type does not match that pre-configured in the white list.
  - 2) The logical link ID of the newly registered ONU is identical to that listed in the logical link ID white list, but the ONU's type does not match that pre-configured in the white list.

#### Influences on the system

The ONU cannot work normally and cannot provide services for its subscribers.

#### Handling steps

- ◆ In the ONU replacement, the new ONU's type is not identical to that of the original one.
  - 1) Use an ONU with the appropriate type to replace the original one.
  - 2) End.
- ◆ The pre-configured ONU type in the ANM2000 is not identical to the physically connected ONU type.
  - 1) Check against the data planning to confirm whether the pre-configured ONU type in the ANM2000 or the physically connected ONU type is wrong:
    - ▶ If the physically connected ONU type is wrong, please proceed to the next step.

- ▶ If the pre-configured ONU type in the ANM2000 is wrong, please skip to Step 3.
- 2) Use an ONU with the appropriate type to replace the original one to end the alarm, and skip to Step 4.
- 3) Modify the configuration in the ANM2000 according to the data planning to end the alarm, and proceed to the next step.
- 4) End.

### 3.8.4 MGC\_DISCONNECTED

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
MGC_DISCONNECTED	Critical alarm	Device alarm

#### Probable reasons

After the NGN voice services are configured, the communication between the ONU and the MGC is disconnected; this may be caused by the following events:

- ◆ The physical connection of the network has faults.
  - ▶ If a single ONU reports this alarm, the physical connection between the ONU and the OLT maybe has faults.
  - ▶ If all ONUs report this alarm, the OLT's uplink physical connection maybe has faults.
- ◆ The NGN voice service configurations are incorrect.
  - ▶ If a single ONU reports this alarm, maybe the ONU's IP address, VLAN ID or MGC address setting is wrong.
  - ▶ If all ONUs report this alarm, maybe the OLT's local VLAN setting or MGC address setting is wrong and the wrong configuration is delivered to all ONUs.

#### Influences on the system

- ◆ If a single ONU's voice service configuration is wrong, only the NGN voice services of this ONU's subscribers are unsuccessful.
- ◆ If the uplink physical link of the OLT has faults, the NGN voice services of all ONUs' subscribers are unsuccessful.

#### Handling steps

- ◆ If a single ONU reports this alarm:
  - 1) Check whether the physical connection from the ONU to the OLT is normal:

- ▶ If the connection is abnormal, please restore the connection and skip to Step 6 after the alarm is removed.
  - ▶ If the connection is normal, please proceed to the next step.
- 2) Check whether the ONU's public network IP setting is correct in the NGN uplink subscriber configuration:
- ▶ If the setting is wrong, please modify it and reconnect the MGC. Skip to Step 6 after the alarm is removed.
  - ▶ If the setting is correct, please proceed to the next step.
- 3) Check whether the MGC IP address setting of the signaling service corresponding to the ONU is correct in the NGN uplink port configuration:
- ▶ If the setting is wrong, please modify it and reconnect the MGC. Skip to Step 6 after the alarm is removed.
  - ▶ If the setting is correct, please proceed to the next step.
- 4) In the ONU voice port configuration, check whether the ONU's VLAN ID setting is identical to that described in the data planning:
- ▶ If the setting is wrong, please modify it and reconnect the MGC. Skip to Step 6 after the alarm is removed.
  - ▶ If the setting is correct, please proceed to the next step.
- 5) Please contact technicians of FiberHome.
- 6) End.
- ◆ If all ONUs of the OLT report this alarm:
1. Check whether the physical connection from the uplink card to the IP bearer network equipment is normal:
    - ▶ If the connection is abnormal, please restore the connection and skip to Step 6 after the alarm is removed.
    - ▶ If the connection is normal, please proceed to the next step.
  2. Check whether the physical connection from the MGC to the IP bearer network equipment is normal:
    - ▶ If the connection is abnormal, please restore the connection and skip to Step 6 after the alarm is removed.
    - ▶ If the connection is normal, please proceed to the next step.

3. Check the OLT's local VLAN configuration:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Local VLAN** in the shortcut menu.
  - 3) In the **Local VLAN** tab, check whether the local VLAN range setting of the NGN service is identical to that described in the data planning.
    - ▶ If the setting is wrong, please modify it and skip to Step 6 after the alarm is removed.
    - ▶ If the setting is correct, please proceed to the next step.
4. Check the uplink port setting of the NGN service:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **NGN Config** in the shortcut menu.
  - 3) In the **NGN Uplink Port** tab, check whether the MGC address setting is correct:
    - ▶ If the setting is wrong, please modify it and skip to Step 6 after the alarm is removed.
    - ▶ If the setting is correct, please proceed to the next step.
5. Please contact technicians of FiberHome.
6. End.

### 3.8.5 BATTERY\_VOLTAGE\_TOO\_LOW

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
BATTERY_VOLTAGE_TOO_LOW	Critical alarm	Device alarm

#### Probable reasons

The voltage of the ONU standby battery is overflow.

#### Influences on the system

If users do not handle this alarm as soon as possible; the ONU will be power-off when the standby battery provides the power supply for it independently. And the ONU will not be able to operate normally and provide services for users.

#### Handling steps

1. Check whether the ONU standby battery is abnormal:
  - ▶ If it is obviously abnormal, please change the battery and connect the cables and optical fibers correctly, so as to guarantee that the battery can be charged normally.
  - ▶ If not, please check the connection of the cables and optical fibers, so as to make the battery can be charged normally.



Note:

The alarm will not end until the storage battery has been charged for some time.

---

2. End.

# 4 Major Alarms

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This chapter introduces properties, probable reasons, influences on the system, and handling procedures of all major alarms, including the following contents:

- Major alarms of the HSWA card
- Major alarms of the CE1B card
- Major alarms of the ONU

## 4.1 Major Alarms of the HSWA Card

### 4.1.1 CONFIG\_HAVENOT\_SAVED

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
CONFIG_HAVENOT_SAVED	Major alarm	Device alarm

#### Probable reasons

After performing or modifying configurations of the equipment, users do not execute **Save Config to Flash** command.

#### Influences on the system

- ◆ After the equipment reboot or a sudden power-down, the unsaved configurations will be lost.
- ◆ In this case, the HSWA card cannot be restarted independently.

#### Handling steps

1. Check whether the configurations or modifications need to be saved:
  - ▶ If the configurations and modifications do not need to be saved, users can leave this alarm alone.
  - ▶ If they need to be saved, please proceed to the next step.
2. Save the current configuration to the **Flash**:
  - 1) In the ANM2000, right-click the active HSWA card in the **Object Tree** pane.
  - 2) Select **Control** → **Save Config to Flash** in the shortcut menu.
  - 3) Click the **OK** button to save the current configurations to the **Flash**.
3. End.

## 4.1.2 ALARM\_NUM\_OVER\_THRESHOLD

### Alarm information

Alarm Name	Alarm Level	Alarm Type
ALARM_NUM_OVER_THRESHOLD	Major alarm	Device alarm

### Probable reasons

The quantity of alarms accumulated on the current system exceeds the configured threshold value.

### Influences on the system

The new system alarms cannot be displayed on the network management GUI, and the users are not able to see the latest status of the system and process the newly emerged alarm information.

### Handling steps

Analyze the system alarms in the alarm report pane, deal with the problems indicated by the alarms one by one; and immediately delete the alarms that have been processed.

## 4.2 Major Alarms of the CE1B Card

### 4.2.1 E1\_LOS

Alarm information

Alarm Name	Alarm Level	Alarm Type
E1_LOS	Major alarm	Communication alarm

Probable reasons

- ◆ The connection of the E1 transmission line is abnormal.
- ◆ The far end equipment connected with the E1 interface has faults.

Influences on the system

The TDM services loaded on this card are interrupted.

Handling steps

1. Check whether the E1 transmission line connection is correct, through the E1 loopback test:
  - ▶ If not, please restore the E1 connection or replace the E1 cable. If the alarm is removed after the restoration, please skip to Step 4; if the alarm persists, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.
2. Check whether the equipment at the far end of the E1 transmission line works normally:
  - ▶ If the equipment at the far end works abnormally, please restore it to the normal status. If the alarm is removed after the restoration, please skip to Step 4; if the alarm persists, please proceed to the next step.
  - ▶ If the equipment works normally, please proceed to the next step.
3. Please contact technicians of FiberHome.
4. End.

## 4.2.2 E1\_AIS

### Alarm information

Alarm Name	Alarm Level	Alarm Type
E1_AIS	Major alarm	Communication alarm

### Probable reasons

- ◆ The connection of the E1 transmission line is abnormal.
- ◆ The far end equipment connected with the E1 interface has faults.

### Influences on the system

The TDM services loaded on this card are interrupted.

### Handling steps

1. Check whether the E1 transmission line connection is correct, through the E1 loopback test:
  - ▶ If not, please restore the E1 connection or replace the E1 cable. If the alarm is removed after the restoration, please skip to Step 4; if the alarm persists, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.
2. Check whether the equipment at the far end of the E1 transmission line works normally:
  - ▶ If the equipment at the far end works abnormally, please restore it to the normal status. If the alarm is removed after the restoration, please skip to Step 4; if the alarm persists, please proceed to the next step.
  - ▶ If the equipment works normally, please proceed to the next step.
3. Please contact technicians of FiberHome.
4. End.

## 4.3 Major Alarms of the ONU

### 4.3.1 AC\_FAIL

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
AC_FAIL	Major alarm	Communication alarm



#### Note:

Only the AN5006-07 ONU and the AN5006-09 ONU can have this alarm.

#### Probable reasons

The AC power supply of the storage battery is power-off, and the storage battery cannot be charged normally.

#### Influences on the system

If users do not handle this alarm as soon as possible; the ONU will be power-off due to the low battery when the storage battery provides the power supply for it independently.

#### Handling steps

1. Check whether the main power supply is power-off:
  - ▶ If yes, users may leave this alarm alone and wait for the recovery of the main power supply.
  - ▶ If not, please proceed to the next step.
2. Check whether the power socket is in good connection or damaged
  - ▶ If the power socket is abnormal, please reconnect it or replace the damaged power socket, so as to guarantee that the storage battery can be charged normally.

- ▶ If the power socket is normal, please reconnect the cables and optical fibers, so as to guarantee that the storage battery can be charged normally.

3. End.

## 4.3.2 DC\_LOW

### Alarm information

Alarm Name	Alarm Level	Alarm Type
DC_LOW	Major alarm	Communication alarm



Note:

Only the AN5006-07 ONU and the AN5006-09 ONU can have this alarm.

### Probable reasons

The electricity of the battery is used up.

### Influences on the system

If users do not handle this alarm as soon as possible; the ONU will be power-off when the storage battery provides the power supply for it.

### Handling steps

1. Check whether the storage battery can be charged normally:
  - ▶ If yes, please charge the storage battery.
  - ▶ If not, please replace the storage battery, reconnect it and guarantee that it can be charged normally.
2. End.

### 4.3.3 BATTERY\_MISSING

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
BATTERY_MISSING	Major alarm	Device alarm

#### Probable reasons

The battery is not configured or wrongly connected, so the system cannot detect the battery.

#### Influences on the system

When there is no main power supply, the ONU is power-off due to the lack of standby power supply provided by the storage battery.

#### Handling steps

1. Check whether the storage battery is configured:
  - ▶ If not, please configure the storage battery and ensure that it can be charged normally
  - ▶ If yes, please proceed to the next step.
2. Check whether the connection between the storage battery and the ONU is normal:
  - 1) If not, please restore the normal connection.
  - 2) If yes, please replace the storage battery.
3. End.

## 4.3.4 CPU\_VER\_LOW

### Alarm information

Alarm Name	Alarm Level	Alarm Type
CPU_VER_LOW	Major alarm	Device alarm

### Probable reasons

The ONU's chip software version is an old version, which cannot be compatible with the service configuration of the AN5116-06B system.

### Influences on the system

The ONU fails to be configured with new functions.

### Handling steps

1. Upgrade the ONU's CPU version to meet the requirement of service configuration in the AN5116-06B system:
  - 1) Start the FTP server and make configuration. Copy the desired CPU version into the corresponding folder.
  - 2) In the ANM2000, right-click the active HSWA card in the **Object Tree** pane and select **Control Command** → **Batch Upgrade ONU** in the shortcut menu.
  - 3) Open the **Batch Upgrade ONU** dialog box and set parameters based on the practical situation; and then click the **Upgrade Software** button. After the upgrade command is conducted successfully, the system can support the new function configuration on the ONU.
2. End.

## 4.3.5 E1\_LOS

### Alarm information

Alarm Name	Alarm Level	Alarm Type
E1_LOS	Major alarm	Communication alarm

---



#### Note:

Only the ONU providing E1 services can generate this alarm and corresponding fault.

---

### Probable reasons

- ◆ The E1 cable is connected incorrectly.
- ◆ The far end equipment connected with the E1 interface has faults.

### Influences on the system

The E1 transmission service may be interrupted.

### Handling steps

1. Check whether the E1 transmission line connection is correct, through the E1 loopback test:
  - ▶ If not, please restore the E1 connection. If the alarm is removed after the restoration, please skip to Step 4; if the alarm persists, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.
2. Check whether the equipment at the far end of the E1 transmission line works normally:
  - ▶ If the equipment at the far end works abnormally, please restore it to the normal status. If the alarm is removed after the restoration, please skip to Step 4; if the alarm persists, please proceed to the next step.
  - ▶ If the equipment works normally, please proceed to the next step.
3. Please contact technicians of FiberHome.
4. End.

## 4.3.6 E1\_AIS

### Alarm information

Alarm Name	Alarm Level	Alarm Type
E1_AIS	Major alarm	Communication alarm



#### Note:

Only the ONU providing E1 services can generate this alarm and corresponding fault.

### Probable reasons

- ◆ The ONU has faults.
- ◆ The far end equipment connected with the E1 interface has faults.

### Influences on the system

The services carried by the E1 interface may be interrupted.

### Handling steps

1. Execute the E1 loopback test to check whether the local end equipment works normally:
  - 1) In the ANM2000, click the PON port connected with the ONU in the **Object Tree** pane.
  - 2) In the **ONU List** tab that appears subsequently, right-click the ONU.
  - 3) Select **Config** → **E1 Loopback** in the shortcut menu to open the **E1 Loopback** window.
  - 4) Select **Line Loop** in the **Loopback State** drop-down list of the E1 interface.
  - 5) Click the  button to loop back and test the local end equipment.
  - 6) Check whether the alarm is removed:
    - ▶ If the alarm persists, it means that the local end equipment has faults. So the ONU should be replaced.

- ▶ If the alarm is removed, please proceed to the next step.
2. Check whether the far end equipment connected with the E1 interface works normally:
    - ▶ If the far end equipment works abnormally, please repair it.
    - ▶ If the equipment works normally, please proceed to the next step.
  3. Please contact technicians of FiberHome.

### 4.3.7 RX\_POWER\_HIGH\_ALARM

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
RX_POWER_HIGH_ALARM	Major alarm	Device alarm

#### Probable reasons

The optical module has faults or the quality of the optical path is not good enough, so the Rx optical power of the optical module exceeds the higher threshold.

#### Influences on the system

The data received by the ONU become abnormal.

#### Handling steps

1. Check the optical fiber and the quality of the optical path; and observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, users may leave this alarm alone.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Measure the optical power of the OLT and ONU's optical modules with the PON dedicated optical power meter and testing optical fiber, checking whether the optical power is within the normal range:
  - ▶ If not, please replace the optical module.
  - ▶ If yes, please proceed to the next step.



#### Caution:

The operations of the optical module power test may interrupt the services.

---

3. Please contact technicians of FiberHome.
4. End.

#### Reference information

The normal range for the Rx optical power of the optical module is: -29 to -6dBm.

### 4.3.8 RX\_POWER\_LOW\_ALARM

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
RX_POWER_LOW_ALARM	Major alarm	Device alarm

#### Probable reasons

The optical module has faults or the quality of the optical path is not good enough, so the Rx optical power of the optical module exceeds the lower threshold.

#### Influences on the system

The data received by the ONU become abnormal.

#### Handling steps

1. Check the optical fiber and the quality of the optical path; and observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, users may leave this alarm alone.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Measure the optical power of the OLT and ONU's optical modules with the PON dedicated optical power meter and testing optical fiber, checking whether the optical power is within the normal range:
  - ▶ If not, please replace the optical module.
  - ▶ If yes, please proceed to the next step.



#### Caution:

The operations of the optical module power test may interrupt the services.

---

3. Please contact technicians of FiberHome.
4. End.

#### Reference information

The normal range for the Rx optical power of the optical module is: -29 to -6dBm.

### 4.3.9 TX\_POWER\_HIGH\_ALARM

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
TX_POWER_HIGH_ALARM	Major alarm	Device alarm

#### Probable reasons

The optical module has faults or the quality of the optical path is not good enough, so the Tx optical power of the optical module exceeds the higher threshold.

#### Influences on the system

The data received by the OLT become abnormal.

#### Handling steps

1. Check the optical fiber and the quality of the optical path; and observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, users may leave this alarm alone.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical modules of the OLT and ONU operate normally:
  - ▶ If not, please replace the optical module.
  - ▶ If yes, please proceed to the next step.



#### Caution:

The operations of the optical module power test may interrupt the services.

---

3. Please contact technicians of FiberHome.
4. End.

## Reference information

The table below shows the normal power ranges of the optical module.

Optical Module Parameter	Normal Range
Tx optical power	At OLT side: -3 to +2dBm for the 1000BASE—PX10; +2 to +7dBm for the 1000BASE—PX20. At ONU side: -1 to +4dBm for the 1000BASE—PX10; -1 to +4dBm for the 1000BASE—PX20.



### Note:

PX-10 refers to the 10KM module, and PX-20 refers to the 20KM module. The Tx optical power at the OLT side and the Rx optical power at the ONU side are measured by the optical power meter that provides the measurement on the wavelength of 1490nm. The Rx optical power at the OLT side and the Tx optical power at the ONU side are measured by the optical power meter that provides the measurement on wavelength of 1310nm in burst mode.

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## 4.3.10 TX\_POWER\_LOW\_ALARM

### Alarm information

Alarm Name	Alarm Level	Alarm Type
TX_POWER_LOW_ALARM	Major alarm	Device alarm

### Probable reasons

The optical module has faults or the quality of the optical path is not good enough, so the Tx optical power of the optical module exceeds the lower threshold.

### Influences on the system

The data received by the OLT become abnormal.

### Handling steps

1. Check the optical fiber and the quality of the optical path; and observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, users may leave this alarm alone.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical modules of the OLT and ONU operate normally:
  - ▶ If not, please replace the optical module.
  - ▶ If yes, please proceed to the next step.



#### Caution:

The operations of the optical module power test may interrupt the services.

---

3. Please contact technicians of FiberHome.
4. End.

## Reference information

The table below shows the normal power ranges of the optical module.

Optical Module Parameter	Normal Range
Tx optical power	At OLT side: -3 to +2dBm for the 1000BASE—PX10; +2 to +7dBm for the 1000BASE—PX20. At ONU side: -1 to +4dBm for the 1000BASE—PX10; -1 to +4dBm for the 1000BASE—PX20.



### Note:

PX-10 refers to the 10KM module, and PX-20 refers to the 20KM module. The Tx optical power at the OLT side and the Rx optical power at the ONU side are measured by the optical power meter that provides the measurement on the wavelength of 1490nm. The Rx optical power at the OLT side and the Tx optical power at the ONU side are measured by the optical power meter that provides the measurement on wavelength of 1310nm in burst mode.

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## 4.3.11 BIAS\_HIGH\_ALARM

### Alarm information

Alarm Name	Alarm Level	Alarm Type
BIAS_HIGH_ALARM	Major alarm	Device alarm

### Probable reasons

The optical module is aged or damaged.

### Influences on the system

The data received by the OLT become abnormal.

### Handling steps

1. Observe for 5 minutes; and see whether the alarm is removed:
  - ▶ If yes, users may leave this alarm alone.
  - ▶ If the alarm still persists, and events or alarms of the abnormal optical power occur as well; it tells that optical module is aged or damaged, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

## 4.3.12 BIAS\_LOW\_ALARM

### Alarm information

Alarm Name	Alarm Level	Alarm Type
BIAS_LOW_ALARM	Major alarm	Device alarm

### Probable reasons

The optical module is aged or damaged.

### Influences on the system

The data received by the OLT become abnormal.

### Handling steps

1. Observe for 5 minutes; and see whether the alarm is removed:
  - ▶ If yes, users may leave this alarm alone.
  - ▶ If the alarm still persists, and events or alarms of the abnormal optical power occur as well; it tells that optical module is aged or damaged, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

### 4.3.13 VCC\_HIGH\_ALARM

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
VCC_HIGH_ALARM	Major alarm	Device alarm

#### Probable reasons

The optical module is aged or damaged.

#### Influences on the system

The data received by the OLT become abnormal.

#### Handling steps

1. Observe for 5 minutes; and see whether the alarm is removed:
  - ▶ If yes, users may leave this alarm alone.
  - ▶ If the alarm still persists, and events or alarms of the abnormal optical power occur as well; it tells that optical module is aged or damaged, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

## 4.3.14 VCC\_LOW\_ALARM

### Alarm information

Alarm Name	Alarm Level	Alarm Type
VCC_LOW_ALARM	Major alarm	Device alarm

### Probable reasons

The optical module is aged or damaged.

### Influences on the system

The data received by the OLT become abnormal.

### Handling steps

1. Observe for 5 minutes; and see whether the alarm is removed:
  - ▶ If yes, users may leave this alarm alone.
  - ▶ If the alarm still persists, and events or alarms of the abnormal optical power occur as well; it tells that optical module is aged or damaged, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

## 4.3.15 TEMP\_HIGH\_ALARM

### Alarm information

Alarm Name	Alarm Level	Alarm Type
TEMP_HIGH_ALARM	Major alarm	Device alarm

### Probable reasons

The optical module is aged or damaged.

### Influences on the system

The data received by the OLT become abnormal.

### Handling steps

1. Observe for 5 minutes; and see whether the alarm is removed:
  - ▶ If yes, users may leave this alarm alone.
  - ▶ If the alarm still persists, and events or alarms of the abnormal optical power occur as well; it tells that optical module is aged or damaged, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

## 4.3.16 TEMP\_LOW\_ALARM

### Alarm information

Alarm Name	Alarm Level	Alarm Type
TEMP_LOW_ALARM	Major alarm	Device alarm

### Probable reasons

The optical module is aged or damaged.

### Influences on the system

The data received by the OLT become abnormal.

### Handling steps

1. Observe for 5 minutes; and see whether the alarm is removed:
  - ▶ If yes, users may leave this alarm alone.
  - ▶ If the alarm still persists, and events or alarms of the abnormal optical power occur as well; it tells that optical module is aged or damaged, please proceed to the next step.
2. Please contact technicians of FiberHome.

## 4.3.17 LOOPBACK

### Alarm information

Alarm Name	Alarm Level	Alarm Type
LOOPBACK	Major alarm	Communication alarm

### Probable reasons

The port of the ONU for connecting with the subscriber equipment is under the loopback condition.

### Influences on the system

The subscriber equipment connected with this port cannot use services normally.

### Handling steps

1. Check whether any loop exists in the connection line of the subscriber equipment:
  - ▶ If a certain loop exists, please disconnect the cable causing the loop.
  - ▶ If no loop exists, please proceed to the next step.
2. In the ANM2000, click the PON port connected with the ONU in the **Object Tree** pane.
3. In the **ONU List** tab that appears subsequently, right-click the ONU and select **Config** → **Port Loop Detect** in the shortcut menu. And then, select **UNI loop detect management deactivated** in the drop-down list of the **Lock / Unlock** item to disable the loop back function of this port.
4. Write the configuration to the equipment. If the alarm is removed, please skip to Step 6; if the alarm persists, please proceed to the next step.
5. Please contact technicians of FiberHome.
6. End.



# 5 Subordinate Alarms

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This chapter introduces properties, probable reasons, influences on the system, and handling procedures of all subordinate alarms, including the following contents:

- Subordinate alarms of the uplink card
- Subordinate alarms of the C155A card
- Subordinate alarms of the ONU

## 5.1 Subordinate Alarms of the Uplink Card

### 5.1.1 UP\_CRC\_ERROR\_THRESHOLD / DOWN\_CRC\_ERROR\_THRESHOLD

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
UP_CRC_ERROR_THRESHOLD / DOWN_CRC_ERROR_THRESHOLD	Subordinate alarm	Service quality alarm

#### Probable reasons

- ◆ The downlink CRC threshold value setting is unreasonable.
- ◆ The bad network quality causes that the downlink CRC errors reach the threshold value.

#### Influences on the system

This alarm influences the quality of services provided by the system; that is, the loss of packets occurs in the downlink data of the uplink card.

#### Handling steps

1. Check the network quality and check whether the network cable, optical fiber or optical module is aging:
  - ▶ The alarm is removed after the aging network cable, optical fiber or optical module is replaced. If the performance statistic function needs to be disabled, please skip to Step 4.
  - ▶ If the alarm still persists after the replacement, please proceed to the next step.
2. Check the optical fiber connector or the fiber curvature. The fiber bending radius should never be less than 38 mm. Clean the fiber's connector with the special fiber wiper.

- ▶ If the alarm is removed after the fiber connector cleaning or fiber curvature adjustment, please skip to Step 6.
  - ▶ If the alarm still persists after the cleaning or adjustment, please proceed to the next step.
3. Check whether the performance statistic function needs to be disabled:
    - ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
    - ▶ If the function does not need to be disabled, please skip to Step 5.
  4. Disable the performance statistic function:
    - 1) In the ANM2000, right-click the HU1A card in the **Object Tree** pane.
    - 2) Select **Config** → **Performance Sort Switch** in the shortcut menu.
    - 3) Select **Disable** in the drop-down list of the **Switch** item.
    - 4) Click the  button to write the configuration to the equipment.
  5. Please contact technicians of FiberHome.
  6. End.

## Reference information

CRC (Cyclical Redundancy Check): Use the principles of division and remainder to detect errors. The transmitting device calculates the CRC value and sends it to the receiving device together with the data; the receiving device then calculates the new CRC value based on the received data and compares it with the received CRC value. If the two CRC values are different, it means that there are errors in the data communication.

## 5.1.2 UNDERSIZEFRAME\_THRESHOLD

### Alarm information

Alarm Name	Alarm Level	Alarm Type
UNDERSIZEFRAME_THRESHOLD	Subordinate alarm	Service quality alarm

### Probable reasons

The quantity of the undersized packets currently received by the system exceeds the configured threshold.

### Influences on the system

The system bandwidth is occupied by the undersized packets, so the quality of the services provided is influenced.

### Handling steps

1. Check whether the far end equipment connected with the uplink card works normally:
  - ▶ If not, please restore the far end equipment to the normal working status. If the alarm is removed after restoration, please skip to Step 3; if the alarm still persists, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

### Reference information

Undersized packet: The frame that is smaller than 64 bytes. The undersized packets are considered as the fragments generated in the signal collision, and should be discarded.

## 5.2 Subordinate Alarms of the C155A Card

### 5.2.1 AIS

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
AIS	Subordinate alarm	Communication alarm

#### Probable reasons

- ◆ The optical fiber is broken.
- ◆ The far end equipment has faults.

#### Influences on the system

The TDM services loaded on this card are interrupted.

#### Handling steps

1. Check whether the optical fiber connection is correct, through the loopback test:
  - ▶ If not, please restore the optical fiber connection or replace the optical fiber. If the alarm is removed after the restoration, please skip to Step 4; if the alarm persists, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.
2. Check whether the equipment at the far end of the optical fiber works normally:
  - ▶ If the equipment at the far end works abnormally, please restore it to the normal status. If the alarm is removed after the restoration, please skip to Step 4; if the alarm persists, please proceed to the next step.
  - ▶ If the equipment works normally, please proceed to the next step.
3. Please contact technicians of FiberHome.
4. End.

## 5.3 Subordinate Alarms of the ONU

### 5.3.1 UP\_CRC\_ERROR\_THRESHOLD / DOWN\_CRC\_ERROR\_THRESHOLD

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
UP_CRC_ERROR_THRESHOLD / DOWN_CRC_ERROR_THRESHOLD	Subordinate alarm	Service quality alarm

#### Probable reasons

- ◆ The uplink CRC threshold value setting is unreasonable.
- ◆ The bad network quality causes that the uplink CRC errors reach the threshold value.

#### Influences on the system

This alarm influences the quality of services provided by the ONU; that is, the loss of packets occurs in the uplink data to the ONU.

#### Handling steps

1. Check whether the network cable of the FE port is connected normally:
  - ▶ If the connection is abnormal, please replace the network cable.
  - ▶ If the connection is normal, please proceed to the next step.
2. Check whether the uplink / downlink CRC threshold value needs to be modified:
  - ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the value does not need to be modified, please skip to Step 4.
3. Modify the uplink / downlink CRC threshold value:

- 1) In the ANM2000, click the PON port connected to the ONU in the **Object Tree** pane.
  - 2) In the **ONU List** tab that appears subsequently, right-click this ONU.
  - 3) Select **Config** → **FE Port Performance Threshold Config** in the shortcut menu to open the **FE Port Performance Threshold Config** window.
  - 4) Input the appropriate threshold values in the **Up Crc Statistics Threshold** and **Down Crc Statistics Threshold** columns for this ONU port.
  - 5) Click the  button to write the configuration to the equipment.
4. Please contact technicians of FiberHome.
  5. End.



# 6 Prompt Alarms

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This chapter introduces properties, probable reasons, influences on the system, and handling procedures of all prompt alarms, including the following contents:

- Prompt alarms of the HSWA card
- Prompt alarms of the EC4B / EC8B card
- Prompt alarms of the GC4B/GC8B card
- Prompt alarms of the CE1B card
- Prompt alarms of the C155A card
- Prompt alarms of the PUBA card
- Prompt alarms of the uplink card
- Prompt alarms of the ONU

## 6.1 Prompt Alarms of the HSWA Card

### 6.1.1 CPU\_USAGE\_OVER\_THRESHOLD

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

#### Probable reasons

- ◆ The CPU utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or too large in size.

#### Influences on the system

The CPU running speed of this card may lower, and the system may collapse.

#### Handling steps

1. Check the card's CPU utilization:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 3) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 4) Proceed to the next step.
2. Observe for a certain period, and then check whether the CPU utilization lowers:
  - ▶ If the CPU utilization lowers, users may leave this alarm alone.
  - ▶ If the CPU utilization does not lower, please proceed to the next step.
3. Check whether the CPU utilization threshold value needs to be modified:
  - ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the threshold value does not need to be modified, please skip to Step 5.

4. Modify the CPU utilization threshold value:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Alarm Manage** → **Board CPU/memory Usage Threshold** in the shortcut menu.
  - 3) In the **Board CPU/memory Usage Threshold** window that appears subsequently, select the column in which the HSWA card locates.
  - 4) Input the appropriate CPU utilization threshold value in the **CPU Usage Threshold** column.
  - 5) Click the  button to write the configuration to the equipment.
5. Check whether the signaling tracing is running:
  - ▶ If the signaling tracing is running, please proceed to the next step.
  - ▶ If not, please skip to Step 7.
6. Stop running the signaling tracing:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Signaling Trace Enable** in the shortcut menu.
  - 3) Select **Disable** in the drop-down list under the **Enable Status** item.
  - 4) Click the  button to write the configuration to the equipment.
7. Check whether the performance statistic function needs to be disabled:
  - ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
  - ▶ If the function does not need to be disabled, please skip to Step 9.
8. Disable the performance statistic function:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Performance Sort Switch** in the shortcut menu.
  - 3) Select **Disable** in the drop-down list of the **Switch** item.
  - 4) Click the  button to write the configuration to the equipment.
9. Please contact technicians of FiberHome.

## 6.1.2 MEM\_USAGE\_OVER\_THRESHOLD

### Alarm information

Alarm Name	Alarm Level	Alarm Type
MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

### Probable reasons

- ◆ The memory utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or some programs occupy too much memory space.

### Influences on the system

The CPU running speed of this card may lower; and the system may collapse.

### Handling steps

1. Check the card's memory utilization:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 3) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 4) Proceed to the next step.
2. Observe for a certain period, and then check whether the memory utilization lowers:
  - ▶ If the memory utilization lowers, users may leave this alarm alone.
  - ▶ If the memory utilization does not lower, please proceed to the next step.
3. Check whether the memory utilization threshold value needs to be modified:
  - ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the threshold value does not need to be modified, please skip to Step 5.
4. Modify the memory utilization threshold value:

- 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Alarm Manage** → **Board CPU/memory Usage Threshold** in the shortcut menu.
  - 3) In the **Board CPU/memory Usage Threshold** window that appears subsequently, select the column in which the HSWA card locates.
  - 4) Input the appropriate memory utilization threshold value in the **Memory Usage Threshold** column.
  - 5) Click the  button to write the configuration to the equipment.
5. Check whether the signaling tracing is running:
- ▶ If the signaling tracing is running, please proceed to the next step.
  - ▶ If not, please skip to Step 7.
6. Stop running the signaling tracing:
- 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Signaling Trace Enable** in the shortcut menu.
  - 3) Select **Disable** in the drop-down list under the **Enable Status** item.
  - 4) Click the  button to write the configuration to the equipment.
7. Check whether the performance statistic function needs to be disabled:
- ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
  - ▶ If the function does not need to be disabled, please skip to Step 9.
8. Disable the performance statistic function:
- 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Performance Sort Switch** in the shortcut menu.
  - 3) Select **Disable** in the drop-down list of the **Switch** item. Click the  button to write the configuration to the equipment.
9. Please contact technicians of FiberHome.

## 6.2 Prompt Alarms of the EC4B / EC8B Card

### 6.2.1 ILEGAL\_ONU\_REGISTE

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
ILEGAL_ONU_REGISTE	Prompt alarm	Device alarm

#### Probable reasons

- ◆ In the authentication based on the physical ID white list, the physical ID of an ONU to be registered does not match the item in the physical ID white list.
- ◆ In the authentication based on the logical ID white list, the logical ID of an ONU to be registered does not match the item in the logical ID white list.

#### Influences on the system

The ONU cannot be authorized; and it cannot provide services for subscribers.

#### Handling steps

- ◆ In the authentication based on the physical ID white list:
  1. Check whether the ONU's physical ID is in the physical ID white list:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **ONU Authentication** → **ONU Physic\_IDaddress Whitelist** in the shortcut menu.
    - 3) Check whether the current ONU's MAC address is in the physical ID white list:
      - ▶ If yes, please skip to Step 3.
      - ▶ If not, please proceed to the next step.
  2. Add the ONU's physical ID into the physical ID white list:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **ONU Authentication** → **ONU Physic\_IDaddress Whitelist** in the shortcut menu.

- 3) Select **Edit** → **Append** or click the  button in the menu bar to get the **Please Input The Rows For Add:** dialog box; and then input **1** in the dialog box and click the **OK** button to create an item in the white list.
- 4) Input the corresponding physical address, and select the slot No., PON port and ONU type.
- 5) After finishing the configuration, click the  button to write the configuration to the equipment.
  - ▶ If the alarm is removed after the physical ID is added, please skip to Step 6.
  - ▶ If the alarm still persists after the physical ID is added, please proceed to the next step.
3. Check whether the ONU authentication mode is the authentication based on the physical ID:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **ONU Authentication** → **PON Authentication Mode** in the shortcut menu.
  - 3) Check whether the current authentication mode is the authentication based on the physical ID:
    - ▶ If yes, please skip to Step 5.
    - ▶ If not, please proceed to the next step.
4. Modify the ONU authentication mode as the authentication based on the physical ID:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **ONU Authentication** → **PON Authentication Mode** in the shortcut menu.
  - 3) Modify the current authentication mode as the authentication based on the physical ID:
    - ▶ If the alarm is removed after the modification, please skip to Step 6.

- ▶ If the alarm still persists after the modification, please proceed to the next step.
5. Please contact technicians of FiberHome.
  6. End.
- ◆ In the authentication based on the logical ID white list:
1. Check whether the ONU's logical ID is in the logical ID white list:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **ONU Authentication** → **ONU SN: LOIDLogic SN Whitelist** in the shortcut menu.
    - 3) Check whether the current ONU's logical SN number is in the logical ID white list:
      - ▶ If yes, please skip to Step 3.
      - ▶ If not, please proceed to the next step.
  2. Add the ONU's logical ID into the logical ID white list:
    - 1) In the ANM2000, right-click the active HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **ONU Authentication** → **ONU SN: LOIDLogic SN Whitelist** in the shortcut menu.
    - 3) Select **Edit** → **Append** or click the  button in the menu bar to get the **Please Input The Rows For Add:** dialog box; and then input **1** in the dialog box and click the **OK** button to create an item in the white list.
    - 4) Input the corresponding logical address, and select the slot No., PON port and ONU type.
    - 5) After finishing the configuration, click the  button to write the configuration to the equipment.
      - ▶ If the alarm is removed after the logical ID is added, please skip to Step 6.
      - ▶ If the alarm still persists after the logical ID is added, please proceed to the next step.

3. Check whether the ONU authentication mode is the authentication based on the logical ID:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **ONU Authentication** → **PON Authentication Mode** in the shortcut menu.
  - 3) Check whether the current authentication mode is the authentication based on the logical ID:
    - ▶ If yes, please skip to Step 5.
    - ▶ If not, please proceed to the next step.
4. Modify the ONU authentication mode as the authentication based on the logical ID:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **ONU Authentication** → **PON Authentication Mode** in the shortcut menu.
  - 3) Modify the current authentication mode as the authentication based on the logical ID:
    - ▶ If the alarm is removed after the modification, please skip to Step 6.
    - ▶ If the alarm still persists after the modification, please proceed to the next step.
5. Please contact technicians of FiberHome.
6. End.

## 6.2.2 ONU\_AUTO\_CONFIG\_FAILED

### Alarm information

Alarm Name	Alarm Level	Alarm Type
ONU_AUTO_CONFIG_FAILED	Prompt alarm	Manage fail alarm

### Probable reasons

- ◆ There are 64 ONUs accessed to a PON port; and the 64 authorization numbers have been assigned. In this case, if the 65<sup>th</sup> ONU is accessed to the PON port, then the OLT cannot assign the newly added ONU with an authorization number.
- ◆ If the number of ONUs accessed to a PON port is less than 64 but the sum of bandwidth assigned to these ONUs is greater than the total bandwidth of the PON port, then the OLT cannot assign the newly added ONU with an authorization number.

### Influences on the system

The ONU cannot be authorized; and it cannot provide various services for subscribers.

### Handling steps

1. Check whether there is an ONU registered with the same MAC address:
  - ▶ If yes, please skip to Step 4.
  - ▶ If not, please proceed to the next step.
2. Check the PON port's total bandwidth and subscriber service bandwidth assignment:
  - ▶ If the service bandwidth is larger than the PON port's total bandwidth, please adjust the service bandwidth and skip to Step 3.
  - ▶ If the PON port's bandwidth is adequate, please proceed to the next step.
3. Authorize the ONU again manually under this OLT. Please refer to *AN5116-06B Optical Line Terminal Equipment Configuration Guide* for more details.
4. Please contact technicians of FiberHome.

## 6.2.3 CPU\_USAGE\_OVER\_THRESHOLD

### Alarm information

Alarm Name	Alarm Level	Alarm Type
CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

### Probable reasons

- ◆ The CPU utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or too large in size.

### Influences on the system

The CPU running speed of this card may lower; and the system may collapse because of the excessive utilization.

### Handling steps

1. Check the card's CPU utilization:
  - 1) In the ANM2000, right-click the EC4B / EC8B card in the **Object Tree** pane.
  - 2) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 3) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 4) Proceed to the next step.
2. Observe for a certain period, and then check whether the CPU utilization lowers:
  - ▶ If the CPU utilization lowers, users may leave this alarm alone.
  - ▶ If the CPU utilization does not lower, please proceed to the next step.

3. Check whether the CPU utilization threshold value needs to be modified:
  - ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the threshold value does not need to be modified, please skip to Step 5.
4. Modify the CPU utilization threshold value:
  - 1) In the ANM2000, right-click the active HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Alarm Manage** → **Board CPU/memory Usage Threshold** in the shortcut menu.
  - 3) In the **Board CPU/memory Usage Threshold** window that appears subsequently, select the column in which the EC4B / EC8B card locates.
  - 4) Input the appropriate CPU utilization threshold value in the **CPU Usage Threshold** column.
  - 5) Click the  button to write the configuration to the equipment.
5. Check whether the performance statistic function needs to be disabled:
  - ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
  - ▶ If the function does not need to be disabled, please skip to Step 7.
6. Disable the performance statistic function:
  - 1) In the ANM2000, right-click the EC4B / EC8B card in the **Object Tree** pane.
  - 2) Select **Config** → **Performance Sort Switch** in the shortcut menu.
  - 3) Select **Disable** in the drop-down list of the **Switch** item.
  - 4) Click the  button to write the configuration to the equipment.
7. Please contact technicians of FiberHome.

## 6.2.4 MEM\_USAGE\_OVER\_THRESHOLD

### Alarm information

Alarm Name	Alarm Level	Alarm Type
MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

### Probable reasons

- ◆ The memory utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or some programs occupy too much memory space.

### Influences on the system

The CPU running speed of this card may lower; and the system may collapse because of the excessive utilization.

### Handling steps

1. Check the card's memory utilization:
  - 1) In the ANM2000, right-click the EC4B / EC8B card in the **Object Tree** pane.
  - 2) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 3) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 4) Proceed to the next step.
2. Observe for a certain period, and then check whether the memory utilization lowers:
  - ▶ If the memory utilization lowers, users may leave this alarm alone.
  - ▶ If the memory utilization does not lower, please proceed to the next step.
3. Check whether the memory utilization threshold value needs to be modified:

- ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the threshold value does not need to be modified, please skip to Step 5.
4. Modify the memory utilization threshold value:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **Alarm Manage** → **Board CPU/memory Usage Threshold** in the shortcut menu.
    - 3) In the **Board CPU/memory Usage Threshold** window that appears subsequently, select the column in which the EC4B / EC8B card locates.
    - 4) Input the appropriate memory utilization threshold value in the **Memory Usage Threshold** column.
    - 5) Click the  button to write the configuration to the equipment.
  5. Check whether the performance statistic function needs to be disabled:
    - ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
    - ▶ If the function does not need to be disabled, please skip to Step 7.
  6. Disable the performance statistic function:
    - 1) In the ANM2000, right-click the EC4B / EC8B card in the **Object Tree** pane.
    - 2) Select **Config** → **Performance Sort Switch** in the shortcut menu.
    - 3) Select **Disable** in the drop-down list of the **Switch** item.
    - 4) Click the  button to write the configuration to the equipment.
  7. Please contact technicians of FiberHome.

## 6.2.5 TOTAL\_BANDWIDTH\_OVER

### Alarm information

Alarm Name	Alarm Level	Alarm Type
TOTAL_BANDWIDTH_OVER	Prompt alarm	Manage fail alarm

### Probable reasons

Under the PON port, the sum of the minimum guaranteed bandwidth of subscriber services exceeds the maximum bandwidth of the system.

### Influences on the system

When a lot of subscriber services are running together, the quality of the subscriber services may decrease, even some subscriber services may be interrupted.

### Handling steps

1. Check whether there are other PON ports which have available bandwidth in the system:
  - ▶ If yes, please assign the newly added ONUs to these PON ports.
  - ▶ If not, please add an OLT for the capacity expansion and assign the newly added ONU to the PON port of this OLT.
2. End.

## 6.3 Prompt Alarms of the GC4B / GC8B Card

### 6.3.1 ILEGAL\_ONU\_REGISTE

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
ILEGAL_ONU_REGISTE	Prompt alarm	Device alarm

#### Probable reasons

- ◆ In the authentication based on the physical ID white list, the physical ID of an ONU to be registered does not match the item in the physical ID white list.
- ◆ In the authentication based on the password, the password of an ONU to be registered does not match the item in the password white list.

#### Influences on the system

The ONU cannot be authorized; and it cannot provide services for subscribers.

#### Handling steps

- ◆ In the authentication based on the physical ID white list:
  1. Check whether the ONU's physical ID is in the physical ID white list:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **ONU Authentication** → **ONU Physic\_IDaddress Whitelist** in the shortcut menu.
    - 3) Check whether the current ONU's MAC address is in the physical ID white list:
      - ▶ If yes, please skip to Step 3.
      - ▶ If not, please proceed to the next step.
  2. Add the ONU's physical ID into the physical ID white list:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.

- 2) Select **Config** → **ONU Authentication** → **ONU Physic\_IDAddress Whitelist** in the shortcut menu.
  - 3) Select **Edit** → **Append** or click the  button in the menu bar to get the **Please Input The Rows For Add:** dialog box; and then input **1** in the dialog box and click the **OK** button to create an item in the white list.
  - 4) Input the corresponding physical address, and select the slot No., PON port and ONU type.
  - 5) After finishing the configuration, click the  button to write the configuration to the equipment.
    - ▶ If the alarm is removed after the physical ID is added, please skip to Step 6.
    - ▶ If the alarm still persists after the physical ID is added, please proceed to the next step.
3. Check whether the ONU authentication mode is the authentication based on the physical ID:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **ONU Authentication** → **PON Authentication Mode** in the shortcut menu.
    - 3) Check whether the current authentication mode is the authentication based on the physical ID:
      - ▶ If yes, please skip to Step 5.
      - ▶ If not, please proceed to the next step.
  4. Modify the ONU authentication mode as the authentication based on the physical ID:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **ONU Authentication** → **PON Authentication Mode** in the shortcut menu.
    - 3) Modify the current authentication mode as the authentication based on the physical ID:

- ▶ If the alarm is removed after the modification, please skip to Step 6.
  - ▶ If the alarm still persists after the modification, please proceed to the next step.
5. Please contact technicians of FiberHome.
  6. End.
- ◆ In the authentication based on the password white list:
1. Check whether the ONU's password is in the password white list:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **ONU Authentication** → **ONU Password Whitelist** in the shortcut menu.
    - 3) Check whether the current ONU's password is in the password white list:
      - ▶ If yes, please skip to Step 3.
      - ▶ If not, please proceed to the next step.
  2. Add the ONU's password into the password white list:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **ONU Authentication** → **ONU Password Whitelist** in the shortcut menu.
    - 3) Select **Edit** → **Append** or click the  button in the menu bar to get the **Please Input The Rows For Add:** dialog box; and then input **1** in the dialog box and click the **OK** button to create an item in the white list.
    - 4) Input the corresponding password, and select the slot No., PON port and ONU type.
    - 5) After finishing the configuration, click the  button to write the configuration to the equipment.
      - ▶ If the alarm is removed after the password is added, please skip to Step 6.

- ▶ If the alarm still persists after the password is added, please proceed to the next step.
3. Check whether the ONU authentication mode is the authentication based on the password:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **ONU Authentication** → **PON Authentication Mode** in the shortcut menu.
    - 3) Check whether the current authentication mode is the authentication based on the password:
      - ▶ If yes, please skip to Step 5.
      - ▶ If not, please proceed to the next step.
  4. Modify the ONU authentication mode as the authentication based on the password:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **ONU Authentication** → **PON Authentication Mode** in the shortcut menu.
    - 3) Modify the current authentication mode as the authentication based on the password:
      - ▶ If the alarm is removed after the modification, please skip to Step 6.
      - ▶ If the alarm still persists after the modification, please proceed to the next step.
  5. Please contact technicians of FiberHome.
  6. End.

## 6.3.2 ONU\_AUTO\_CONFIG\_FAILED

### Alarm information

Alarm Name	Alarm Level	Alarm Type
ONU_AUTO_CONFIG_FAILED	Prompt alarm	Manage fail alarm

### Probable reasons

- ◆ There are 64 ONUs accessed to a PON port; and the 64 authorization numbers have been assigned. In this case, if the 65<sup>th</sup> ONU is accessed to the PON port, then the OLT cannot assign the newly added ONU with an authorization number.
- ◆ If the number of ONUs accessed to a PON port is less than 64 but the sum of bandwidth assigned to these ONUs is greater than the total bandwidth of the PON port, then the OLT cannot assign the newly added ONU with an authorization number.

### Influences on the system

The ONU cannot be authorized; and it cannot provide various services for subscribers.

### Handling steps

1. Check whether there is an ONU registered with the same MAC address:
  - ▶ If yes, please skip to Step 4.
  - ▶ If not, please proceed to the next step.
2. Check the PON port's total bandwidth and subscriber service bandwidth assignment:
  - ▶ If the service bandwidth is larger than the PON port's total bandwidth, please adjust the service bandwidth and skip to Step 3.
  - ▶ If the PON port's bandwidth is adequate, please proceed to the next step.
3. Authorize the ONU again manually under this OLT. Please refer to *AN5116-06B Optical Line Terminal Equipment Configuration Guide* for more details.
4. Please contact technicians of FiberHome.

### 6.3.3 CPU\_USAGE\_OVER\_THRESHOLD

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

#### Probable reasons

- ◆ The CPU utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or too large in size.

#### Influences on the system

The CPU running speed of this card may lower; and the system may collapse because of the excessive utilization.

#### Handling steps

1. Check the card's CPU utilization:
  - 1) In the ANM2000, right-click the GC4B / GC8B card in the **Object Tree** pane.
  - 2) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 3) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 4) Proceed to the next step.
2. Observe for a certain period, and then check whether the CPU utilization lowers:
  - ▶ If the CPU utilization lowers, users may leave this alarm alone.
  - ▶ If the CPU utilization does not lower, please proceed to the next step.
3. Check whether the CPU utilization threshold value needs to be modified:

- ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the threshold value does not need to be modified, please skip to Step 5.
4. Modify the CPU utilization threshold value:
    - 1) In the ANM2000, right-click the active HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **Alarm Manage** → **Board CPU/memory Usage Threshold** in the shortcut menu.
    - 3) In the **Board CPU/memory Usage Threshold** window that appears subsequently, select the column in which the GC4B / GC8B card locates.
    - 4) Input the appropriate CPU utilization threshold value in the **CPU Usage Threshold** column.
    - 5) Click the  button to write the configuration to the equipment.
  5. Check whether the performance statistic function needs to be disabled:
    - ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
    - ▶ If the function does not need to be disabled, please skip to Step 7.
  6. Disable the performance statistic function:
    - 1) In the ANM2000, right-click the GC4B / GC8B card in the **Object Tree** pane.
    - 2) Select **Config** → **Performance Sort Switch** in the shortcut menu.
    - 3) Select **Disable** in the drop-down list of the **Switch** item.
    - 4) Click the  button to write the configuration to the equipment.
  7. Please contact technicians of FiberHome.

## 6.3.4 MEM\_USAGE\_OVER\_THRESHOLD

### Alarm information

Alarm Name	Alarm Level	Alarm Type
MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

### Probable reasons

- ◆ The memory utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or some programs occupy too much memory space.

### Influences on the system

The CPU running speed of this card may lower; and the system may collapse because of the excessive utilization.

### Handling steps

1. Check the card's memory utilization:
  - 1) In the ANM2000, right-click the GC4B / GC8B card in the **Object Tree** pane.
  - 2) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 3) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 4) Proceed to the next step.
2. Observe for a certain period, and then check whether the memory utilization lowers:
  - ▶ If the memory utilization lowers, users may leave this alarm alone.
  - ▶ If the memory utilization does not lower, please proceed to the next step.
3. Check whether the memory utilization threshold value needs to be modified:

- ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the threshold value does not need to be modified, please skip to Step 5.
4. Modify the memory utilization threshold value:
    - 1) In the ANM2000, right-click the active HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **Alarm Manage** → **Board CPU/memory Usage Threshold** in the shortcut menu.
    - 3) In the **Board CPU/memory Usage Threshold** window that appears subsequently, select the column in which the GC4B / GC8B card locates.
    - 4) Input the appropriate memory utilization threshold value in the **Memory Usage Threshold** column.
    - 5) Click the  button to write the configuration to the equipment.
  5. Check whether the performance statistic function needs to be disabled:
    - ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
    - ▶ If the function does not need to be disabled, please skip to Step 7.
  6. Disable the performance statistic function:
    - 1) In the ANM2000, right-click the GC4B / GC8B card in the **Object Tree** pane.
    - 2) Select **Config** → **Performance Sort Switch** in the shortcut menu.
    - 3) Select **Disable** in the drop-down list of the **Switch** item.
    - 4) Click the  button to write the configuration to the equipment.
  7. Please contact technicians of FiberHome.

## 6.3.5 ONU\_UNAUTHENTICATED

### Alarm information

Alarm Name	Alarm Level	Alarm Type
ONU_UNAUTHENTICATED	Prompt alarm	Device alarm

### Probable reasons

The GC4B / GC8B card has detected that an ONU is registered, but cannot find the corresponding item that matches this ONU's MAC address in the local authorization table.

### Influences on the system

The ONU can be accessed and used by the system only after it is authorized.

### Handling steps

1. Ignore this alarm or authorize the unauthorized ONU (taking the authentication mode based on the physical ID as example):
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **ONU Authentication** → **PON Authentication Mode** in the shortcut menu that appears.
  - 3) In the **PON Authentication Mode** window that appears, please select the slot and the PON interface of the GC4B / GC8B and set the corresponding authentication mode as **PHYSIC\_ID AUTHENTICATION**. Then click the  button to write the configuration to the equipment.
  - 4) After closing the **PON Authentication Mode** window, please right-click the active HSWA card in the **Object Tree** pane, and then select **Config** → **ONU Authentication** → **ONU Physic\_IDaddress Whitelist** in the shortcut menu.

5) In the **Physical Address White List Setting** window that appears, click



; and then in the **Get Unauthorized ONU** dialog box that appears, select the corresponding slot no. and the PON interface no. Click the **Get Unauthorized ONU** button at the bottom part of the dialog box, the unauthorized ONUs will be displayed in the lower pane. Select the ONU that needs to be authorized and click the **OK** button, so as to authorize the unauthorized ONUs.

2. End.

## 6.3.6 OPTMODULE\_TEMP\_OVER

### Alarm information

Alarm Name	Alarm Level	Alarm Type
OPTMODULE_TEMP_OVER	Prompt alarm	Device alarm

### Probable reasons

- ◆ The fan of the equipment operates abnormally.
- ◆ The temperature of the operation environment in the equipment room is overhigh.
- ◆ The optical module is aged or damaged.

### Influences on the system

The quality of the user services gets worse; some of the services are even interrupted.

### Handling steps

1. Check whether the equipment fan works normally.
  - ▶ If the fan has faults, please skip to Step 4.
  - ▶ If the fan works normally, please proceed to the next step.
2. Check whether the cooling devices in the equipment room work normally.
  - ▶ If not, please turn on the air conditioner to decrease the temperature inside the room. If the alarm is removed, please skip to Step 5. If the alarm still persists, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.
3. Implement continuous observation. If the temperature of the optical module always exceeds the threshold, and events or alarms of the abnormal optical power occur as well; it tells that optical module is aged or damaged, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

## 6.3.7 OPTMODULE\_VOL\_OVER

### Alarm information

Alarm Name	Alarm Level	Alarm Type
OPTMODULE_VOL_OVER	Prompt alarm	Device alarm

### Probable reasons

The optical module is aged or damaged.

### Influences on the system

The quality of the user services gets worse; some of the services are even interrupted.

### Handling steps

1. Observe for 5 minutes; and see whether the alarm is removed:
  - ▶ If yes, please skip to Step 3.
  - ▶ If the alarm still persists, and events or alarms of the abnormal optical power occur as well; it tells that optical module is aged or damaged, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

## 6.3.8 OPTMODULE\_BIAS\_OVER

### Alarm information

Alarm Name	Alarm Level	Alarm Type
OPTMODULE_BIAS_OVER	Prompt alarm	Device alarm

### Probable reasons

The optical module is aged or damaged.

### Influences on the system

The quality of the user services gets worse; some of the services are even interrupted.

### Handling steps

1. Observe for 5 minutes; and see whether the alarm is removed:
  - ▶ If yes, please skip to Step 3.
  - ▶ If the alarm still persists, and events or alarms of the abnormal optical power occur as well; it tells that optical module is aged or damaged, please proceed to the next step.
2. Please contact technicians of FiberHome.
3. End.

## 6.3.9 OPTMODULE\_TXPOWER\_OVER

### Alarm information

Alarm Name	Alarm Level	Alarm Type
OPTMODULE_TXPOWER_OVER	Prompt alarm	Device alarm

### Probable reasons

The optical module has faults or the quality of the optical path is not good enough, so the Tx optical power of the optical module exceeds the threshold.

### Influences on the system

The data received by the ONU become abnormal.

### Handling steps

1. Check the optical fiber and the quality of the optical path; and observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 4.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical modules of the OLT and ONU operate normally:
  - ▶ If not, please replace the optical module.
  - ▶ If yes, please proceed to the next step.



#### Caution:

The operations of the optical module power test may interrupt the services.

---

3. Please contact technicians of FiberHome.
4. End.

---

## Reference information

The table below shows the normal power ranges of the optical module at the OLT side.

Optical Module Parameter	Normal Range
Tx optical power	-3 to +2dBm for the 1000BASE-PX10; +2 to +7dBm for the 1000BASE-PX20.



Note:

PX-10 refers to the 10KM module, and PX-20 refers to the 20KM module. The Tx optical power at the OLT side and the Rx optical power at the ONU side are measured by the optical power meter that provides the measurement on the wavelength of 1490nm. The Rx optical power at the OLT side and the Tx optical power at the ONU side are measured by the optical power meter that provides the measurement on wavelength of 1310nm in burst mode.

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## 6.3.10 OPTMODULE\_RXPOWER\_OVER

### Alarm information

Alarm Name	Alarm Level	Alarm Type
OPTMODULE_RXPOWER_OVER	Prompt alarm	Device alarm

### Probable reasons

The optical module has faults or the quality of the optical path is not good enough, so the Rx optical power of the optical module exceeds the threshold.

### Influences on the system

The data received by the system become abnormal.

### Handling steps

1. Check the optical fiber and the quality of the optical path; and observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 4.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Measure the optical power of the OLT and ONU's optical modules with the PON dedicated optical power meter and testing optical fiber, checking whether the optical power is within the normal range:
  - ▶ If not, please replace the optical module.
  - ▶ If yes, please proceed to the next step.



#### Caution:

The operations of the optical module power test may interrupt the services.

---

3. Please contact technicians of FiberHome.
4. End.

### Reference information

The normal range for the Rx optical power of the optical module is: -29 to -6dBm.

## 6.4 Prompt Alarms of the CE1B Card

### 6.4.1 CPU\_USAGE\_OVER\_THRESHOLD

Alarm information

Alarm Name	Alarm Level	Alarm Type
CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

Probable reasons

- ◆ The CPU utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or too large in size.

Influences on the system

The CPU running speed of this card may lower; and the system may collapse because of the excessive utilization.

Handling steps

1. Check the card's CPU utilization:
  - 1) In the ANM2000, right-click the CE1B card in the **Object Tree** pane.
  - 2) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 3) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 4) Proceed to the next step.
2. Observe for a certain period, and then check whether the CPU utilization lowers:
  - ▶ If the CPU utilization lowers, users may leave this alarm alone.
  - ▶ If the CPU utilization does not lower, please proceed to the next step.

3. Check whether the CPU utilization threshold value needs to be modified:
  - ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the threshold value does not need to be modified, please skip to Step 5.
4. Modify the CPU utilization threshold value:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Alarm Manage** → **Board CPU/memory Usage Threshold** in the shortcut menu.
  - 3) In the **Board CPU/memory Usage Threshold** window that appears subsequently, select the column in which the CE1B card locates.
  - 4) Input the appropriate CPU utilization threshold value in the **CPU Usage Threshold** column.
  - 5) Click the  button to write the configuration to the equipment.
5. Check whether the performance statistic function needs to be disabled:
  - ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
  - ▶ If the function does not need to be disabled, please skip to Step 7.
6. Disable the performance statistic function:
  - 1) In the ANM2000, right-click the CE1B card in the **Object Tree** pane.
  - 2) Select **Config** → **Performance Sort Switch** in the shortcut menu.
  - 3) Select **Disable** in the drop-down list of the **Switch** item.
  - 4) Click the  button to write the configuration to the equipment.
7. Please contact technicians of FiberHome.

## 6.4.2 MEM\_USAGE\_OVER\_THRESHOLD

### Alarm information

Alarm Name	Alarm Level	Alarm Type
MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

### Probable reasons

The card's MEM\_USAGE\_OVER\_THRESHOLD alarm may be caused by the following events:

- ◆ The memory utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or some programs occupy too much memory space.

### Influences on the system

The CPU running speed of this card may lower; and the system may collapse.

### Handling steps

1. Check the card's memory utilization:
  - 1) In the ANM2000, right-click the CE1B card in the **Object Tree** pane.
  - 2) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 3) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 4) Proceed to the next step.
2. Observe for a certain period, and then check whether the memory utilization lowers:
  - ▶ If the memory utilization lowers, users may leave this alarm alone.
  - ▶ If the memory utilization does not lower, please proceed to the next step.

3. Check whether the memory utilization threshold value needs to be modified:
  - ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the threshold value does not need to be modified, please skip to Step 5.
4. Modify the memory utilization threshold value:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Alarm Manage** → **Board CPU/memory Usage Threshold** in the shortcut menu.
  - 3) In the **Board CPU/memory Usage Threshold** window that appears subsequently, select the column in which the CE1B card locates.
  - 4) Input the appropriate memory utilization threshold value in the **Memory Usage Threshold** column.
  - 5) Click the  button to write the configuration to the equipment.
5. Check whether the performance statistic function needs to be disabled:
  - ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
  - ▶ If the function does not need to be disabled, please skip to Step 7.
6. Disable the performance statistic function:
  - 1) In the ANM2000, right-click the CE1B card in the **Object Tree** pane.
  - 2) Select **Config** → **Performance Sort Switch** in the shortcut menu.
  - 3) Select **Disable** in the drop-down list of the **Switch** item.
  - 4) Click the  button to write the configuration to the equipment.
7. Please contact technicians of FiberHome.

## 6.5 Prompt Alarms of the C155A Card

### 6.5.1 CPU\_USAGE\_OVER\_THRESHOLD

Alarm information

Alarm Name	Alarm Level	Alarm Type
CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

Probable reasons

- ◆ The CPU utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or too large in size.

Influences on the system

The CPU running speed of this card may lower; and the system may collapse.

Handling steps

1. Check the card's CPU utilization:
  - 1) In the ANM2000, right-click the C155A card in the **Object Tree** pane.
  - 2) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 3) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 4) Proceed to the next step.
2. Observe for a certain period, and then check whether the CPU utilization lowers:
  - ▶ If the CPU utilization lowers, users may leave this alarm alone.
  - ▶ If the CPU utilization does not lower, please proceed to the next step.
3. Check whether the CPU utilization threshold value needs to be modified:

- ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the threshold value does not need to be modified, please skip to Step 5.
4. Modify the CPU utilization threshold value:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **Alarm Manage** → **Board CPU/memory Usage Threshold** in the shortcut menu.
    - 3) In the **Board CPU/memory Usage Threshold** window that appears subsequently, select the column in which the C155A card locates.
    - 4) Input the appropriate CPU utilization threshold value in the **CPU Usage Threshold** column.
    - 5) Click the  button to write the configuration to the equipment.
  5. Check whether the performance statistic function needs to be disabled:
    - ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
    - ▶ If the function does not need to be disabled, please skip to Step 7.
  6. Disable the performance statistic function:
    - 1) In the ANM2000, right-click the C155A card in the **Object Tree** pane.
    - 2) Select **Config** → **Performance Sort Switch** in the shortcut menu.
    - 3) Select **Disable** in the drop-down list of the **Switch** item.
    - 4) Click the  button to write the configuration to the equipment.
  7. Please contact technicians of FiberHome.

## 6.5.2 MEM\_USAGE\_OVER\_THRESHOLD

### Alarm information

Alarm Name	Alarm Level	Alarm Type
MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

### Probable reasons

- ◆ The memory utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or some programs occupy too much memory space.

### Influences on the system

The CPU running speed of this card may lower; and the system may collapse.

### Handling steps

1. Check the card's memory utilization:
  - 1) In the ANM2000, right-click the C155A card in the **Object Tree** pane.
  - 2) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 3) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 4) Proceed to the next step.
2. Observe for a certain period, and then check whether the memory utilization lowers:
  - ▶ If the memory utilization lowers, users may leave this alarm alone.
  - ▶ If the memory utilization does not lower, please proceed to the next step.
3. Check whether the memory utilization threshold value needs to be modified:
  - ▶ If the threshold value needs to be modified, please proceed to the next step.

- ▶ If the threshold value does not need to be modified, please skip to Step 5.
4. Modify the memory utilization threshold value:
    - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
    - 2) Select **Config** → **Alarm Manage** → **Board CPU/memory Usage Threshold** in the shortcut menu.
    - 3) In the **Board CPU/memory Usage Threshold** window that appears subsequently, select the column in which the C155A card locates.
    - 4) Input the appropriate memory utilization threshold value in the **Memory Usage Threshold** column.
    - 5) Click the  button to write the configuration to the equipment.
  5. Check whether the performance statistic function needs to be disabled:
    - ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
    - ▶ If the function does not need to be disabled, please skip to Step 7.
  6. Disable the performance statistic function:
    - 1) In the ANM2000, right-click the C155A card in the **Object Tree** pane.
    - 2) Select **Config** → **Performance Sort Switch** in the shortcut menu.
    - 3) Select **Disable** in the drop-down list of the **Switch** item.
    - 4) Click the  button to write the configuration to the equipment.
  7. Please contact technicians of FiberHome.

## 6.6 Prompt Alarms of the PUBA Card

### 6.6.1 User\_defined\_alarm1 to User\_defined\_alarm14

Alarm information

Alarm Name	Alarm Level	Alarm Type
User_defined_alarm1 to User_defined_alarm14	Prompt alarm	Environment alarm

Probable reasons

- ◆ The PUBA card detects that the signals at the dry contact change.
- ◆ The alarm reporting condition setting is incorrect.

Influences on the system

The running environment of the equipment may be abnormal. To ensure the long-period and stable running of the equipment, users need to handle this alarm immediately.

Handling steps

1. Check whether the monitored object of the dry contact is normal:
  - ▶ If the monitored object is abnormal, please restore its normal conditions.
  - ▶ If the monitored object is normal, please proceed to the next step.
2. Check the alarm reporting condition setting:
  - 1) In the ANM2000 window, right-click the PUBA card in the object tree.
  - 2) Select **Config** → **Custom Alarm Config** in the shortcut menu to open the **Custom Alarm Config** window.
3. Check the alarm reporting conditions:
  - ▶ If the alarm reporting condition setting is wrong, please modify it referring to Section 2.6 in this manual.
  - ▶ If the alarm reporting condition setting is correct, please proceed to the next step.
4. Please contact technicians of FiberHome.

## 6.7 Prompt Alarms of the Uplink Card

### 6.7.1 LINK\_DOWN

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
LINK_DOWN	Prompt alarm	Device alarm



#### Note:

Only the electrical interface uplink card can generate this alarm and corresponding fault.

---

#### Probable reasons

The interface on the uplink card is disconnected or its automatic negotiation is unsuccessful.

#### Influences on the system

In the OLT system, all services of the uplink card's interface may be interrupted.

#### Handling steps

1. Confirm whether it is needed to disable the interface manually or disconnect the network cable:
  - ▶ If yes, it belongs to the normal phenomenon and users may leave this alarm alone.
  - ▶ If not, please proceed to the next step.
2. Check whether the optical fiber or network cable connection of the uplink card and the far end equipment is normal:
  - ▶ If not, please restore the connection. If the alarm is removed after the restoration, please skip to Step 5.
  - ▶ If yes, please proceed to the next step.

3. Check whether the far end equipment is powered on normally:
  - ▶ If not, please power on the far end equipment normally. If the alarm is removed after the power-on operation, please skip to Step 5.
  - ▶ If yes, it means that the equipment's interface is damaged or the automatic negotiation of the interface is unsuccessful. Please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

## 6.8 Prompt Alarms of the ONU

### 6.8.1 CPU\_USAGE\_OVER\_THRESHOLD

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
CPU_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

#### Probable reasons

- ◆ The CPU utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or too large in size.



Note:

This alarm may occur only in the FTTB-type ONU.

---

#### Influences on the system

The CPU running speed of this card may lower; and the system may collapse.

#### Handling steps

1. Check the card's CPU utilization:
  - 1) In the ANM2000, click the PON port connected to the ONU in the **Object Tree** pane.
  - 2) In the **ONU List** tab that appears subsequently, right-click this ONU.
  - 3) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 4) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 5) Proceed to the next step.
2. Observe for a certain period, and then check whether the CPU utilization lowers:

- ▶ If the CPU utilization lowers, users may leave this alarm alone.
  - ▶ If the CPU utilization does not lower, please proceed to the next step.
3. Check whether the CPU utilization threshold value needs to be modified:
- ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the threshold value does not need to be modified, please skip to Step 5.
4. Modify the CPU utilization threshold value:
- 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Alarm Manage** → **ONU CPU/memory Usage Threshold** in the shortcut menu.
  - 3) Select the **ONU CPU/memory Usage Threshold** tab.
  - 4) Input the appropriate CPU utilization threshold value in the **CPU Usage Threshold** column.
  - 5) Click the  button to write the configuration to the equipment.
5. Check whether the performance statistic function needs to be disabled:
- ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
  - ▶ If the function does not need to be disabled, please skip to Step 7.
6. Disable the performance statistic function:
- 1) In the ANM2000, click the PON port connected to the ONU in the **Object Tree** pane.
  - 2) In the **ONU List** tab that appears subsequently, right-click this ONU.
  - 3) Select **Config** → **Performance Sort Switch** in the shortcut menu.
  - 4) Select **Disable** in the drop-down list of the **Switch** item.
  - 5) Click the  button to write the configuration to the equipment.
7. Please contact technicians of FiberHome.

## 6.8.2 MEM\_USAGE\_OVER\_THRESHOLD

### Alarm information

Alarm Name	Alarm Level	Alarm Type
MEM_USAGE_OVER_THRESHOLD	Prompt alarm	Device alarm

### Probable reasons

- ◆ The memory utilization threshold value setting is unreasonable.
- ◆ The programs running in the card are too many in number or some programs occupy too much memory space.



Note:

This alarm may occur only in the FTTB-type ONU.

### Influences on the system

The CPU running speed of this card may lower; and the system may collapse.

### Handling steps

1. Check the card's memory utilization:
  - 1) In the ANM2000, click the PON port connected to the ONU in the **Object Tree** pane.
  - 2) In the **ONU List** tab that appears subsequently, right-click this ONU.
  - 3) Select **Realtime Performance** → **CPU/memory Usage** in the shortcut menu.
  - 4) In the **Realtime Performance Collection** window that appears subsequently, click the  button to start collecting the real-time CPU / memory utilization.
  - 5) Proceed to the next step.
2. Observe for a certain period, and then check whether the memory utilization lowers:
  - ▶ If the memory utilization lowers, users may leave this alarm alone.
  - ▶ If the memory utilization does not lower, please proceed to the next step.

3. Check whether the memory utilization threshold value needs to be modified:
  - ▶ If the threshold value needs to be modified, please proceed to the next step.
  - ▶ If the threshold value does not need to be modified, please skip to Step 5.
4. Modify the memory utilization threshold value:
  - 1) In the ANM2000, right-click the HSWA card in the **Object Tree** pane.
  - 2) Select **Config** → **Alarm Manage** → **ONU CPU/memory Usage Threshold** in the shortcut menu.
  - 3) Select the **ONU CPU/memory Usage Threshold** tab.
  - 4) Input the appropriate memory utilization threshold value in the **Memory Usage Threshold** column.
  - 5) Click the  button to write the configuration to the equipment.
5. Check whether the performance statistic function needs to be disabled:
  - ▶ If the performance statistic function needs to be disabled, please proceed to the next step.
  - ▶ If the function does not need to be disabled, please skip to Step 7.
6. Disable the performance statistic function:
  - 1) In the ANM2000, click the PON port connected to the ONU in the **Object Tree** pane.
  - 2) In the **ONU List** tab that appears subsequently, right-click this ONU.
  - 3) Select **Config** → **Performance Sort Switch** in the shortcut menu.
  - 4) Select **Disable** in the drop-down list of the **Switch** item.
  - 5) Click the  button to write the configuration to the equipment.
7. Please contact technicians of FiberHome.

### 6.8.3 User\_defined\_alarm1 to User\_defined\_alarm5

#### Alarm information

Alarm Name	Alarm Level	Alarm Type
User_defined_alarm1 to User_defined_alarm5	Prompt alarm	Environment alarm

#### Probable reasons

- ◆ The ONU detects that the signals at the dry contact change.
- ◆ The alarm reporting condition setting is incorrect.



#### Note:

The FTTH-type ONU supports two custom alarms (User\_defined\_alarm1 to User\_defined\_alarm2); and the FTTB-type ONU supports five custom alarms.

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#### Influences on the system

The running environment of the equipment may change. The change in some environmental parameters may lead to the equipment running instability, even may result in the equipment failure. To ensure the long-period and stable running of the equipment, users need to handle this alarm immediately.

#### Handling steps

1. Check whether the monitored object of the dry contact is normal:
  - ▶ If the monitored object is abnormal, please restore its normal conditions.
  - ▶ If the monitored object is normal, please proceed to the next step.
2. Check the alarm reporting condition setting:
  - 1) In the ANM2000, click the PON port connected to the ONU in the **Object Tree** pane.
  - 2) In the **ONU List** tab that appears subsequently, right-click this ONU; and then select **Config** → **Custom Alarm Config** in the shortcut menu to open the **Custom Alarm Config** window.

3. Check the alarm reporting conditions:
  - ▶ If the alarm reporting condition setting is wrong, please modify it referring to Section 2.6 in this manual.
  - ▶ If the alarm reporting condition setting is correct, please proceed to the next step.
4. Please contact technicians of FiberHome.

## 6.8.4 Optical Power Too Low

### Alarm information

Alarm Name	Alarm Level	Alarm Type
Optical Power Too Low	Prompt alarm	Device alarm

### Probable reasons

The optical power between the line card and the ONU is overflow.

### Influences on the system

The services of the ONU may be interrupted; the ONU may even be disconnected.

### Handling steps

1. Check the optical fiber and the quality of the optical path; and observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, users may leave this alarm alone.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
  - ▶ If not, please replace the optical module.
  - ▶ If yes, please proceed to the next step.



#### Caution:

The operations of the optical module power test may interrupt the services.

---

3. Please contact technicians of FiberHome.
4. End.

## 6.8.5 ONU LOF

### Alarm information

Alarm Name	Alarm Level	Alarm Type
ONU LOF	Prompt alarm	Device alarm



#### Note:

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

### Probable reasons

The OLT does not receive any frame that is validly delimited from the ONU within successive 4 frames due to the loss on the optical fiber, bad connection at the interface and optical module fault.

### Influences on the system

The data flow synchronization loss occurs during the delimitation process, which may cause ONU disconnection.

### Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:
  - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:

- ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.
- 

**Caution:**

The operations of the optical module power test may interrupt the services.

---

4. Please contact technicians of FiberHome.
5. End.

### Reference information

Frame delineation: The delineation of GPON needs to be performed with the GEM frame header at the start point of the downlink GEM domain and each uplink GEM payload. In this way, we can ensure that the receiver finds the first frame header, and takes the PLI as the pointer to find the following frame headers.

## 6.8.6 ONU DOW

### Alarm information

Alarm Name	Alarm Level	Alarm Type
ONU DOW	Prompt alarm	Device alarm

---

**Note:**

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

---

### Probable reasons

The transmitting signals of the ONU do not arrive at the expected positions due to the loss on the optical fiber, bad connection at the interface and optical module fault.

## Influences on the system

The services of the ONU may be interrupted; the ONU may even be disconnected.

## Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:
  - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
  - ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.



### Caution:

The operations of the optical module power test may interrupt the services.

---

4. Please contact technicians of FiberHome.
5. End.

## 6.8.7 ONU SF

### Alarm information

Alarm Name	Alarm Level	Alarm Type
ONU SF	Prompt alarm	Device alarm



#### Note:

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

---

### Probable reasons

The bit error rate of the ONU's uplink service flow  $\geq 10^{-x}$  ( $8 \geq X \geq 3$ ) due to the loss on the optical fiber, bad connection at the interface and optical module fault.

### Influences on the system

The services of the ONU may be interrupted; the ONU may even be disconnected.

### Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:
  - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
  - ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.

- ▶ If yes, please proceed to the next step.



#### Caution:

The operations of the optical module power test may interrupt the services.

4. Please contact technicians of FiberHome.
5. End.

## 6.8.8 ONU SD

### Alarm information

Alarm Name	Alarm Level	Alarm Type
ONU SD	Prompt alarm	Device alarm



#### Note:

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

### Probable reasons

The bit error rate of the ONU's uplink service flow  $\geq 10^{-Y}$  ( $9 \geq Y \geq 4$ , and Y should be larger than the X in the ONU\_SF alarm) due to the loss on the optical fiber, bad connection at the interface and optical module fault.

### Influences on the system

The services of the ONU may be interrupted; the ONU may even be disconnected.

### Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.

2. Check the connection of the optical fibers and the interfaces:
    - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
    - ▶ If the alarm still persists, please proceed to the next step.
  3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
    - ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.
    - ▶ If yes, please proceed to the next step.
- 

**Caution:**

The operations of the optical module power test may interrupt the services.

---

4. Please contact technicians of FiberHome.
5. End.

## 6.8.9 LCDG

### Alarm information

Alarm Name	Alarm Level	Alarm Type
LCDG	Prompt alarm	Device alarm

---

**Note:**

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

---

### Probable reasons

Loss of GEM channel delineation occurs on the ONU due to the loss on the optical fiber, bad connection at the interface and optical module fault.

## Influences on the system

The services of the ONU may be interrupted; the ONU may even be disconnected.

## Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:
  - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
  - ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.



### Caution:

The operations of the optical module power test may interrupt the services.

---

4. Please contact technicians of FiberHome.
5. End.

## 6.8.10 RDI

### Alarm information

Alarm Name	Alarm Level	Alarm Type
RDI	Prompt alarm	Device alarm



#### Note:

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

---

### Probable reasons

The ONU has detected that the data from the OLT have faults due to the loss on the optical fiber, bad connection at the interface and optical module fault.

### Influences on the system

The services of the ONU may be interrupted; the ONU may even be disconnected.

### Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:
  - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
  - ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.

- ▶ If yes, please proceed to the next step.



#### Caution:

The operations of the optical module power test may interrupt the services.

4. Please contact technicians of FiberHome.
5. End.

## 6.8.11 SUF

### Alarm information

Alarm Name	Alarm Level	Alarm Type
SUF	Prompt alarm	Device alarm



#### Note:

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

### Probable reasons

After the OLT has received the optical pulse from the ONU, the ONU distance measurement has been failed twice.

### Influences on the system

The services can only be configured after the ONU distance measurement is successful.

### Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.

2. Check the connection of the optical fibers and the interfaces:
  - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
  - ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.



**Caution:**

The operations of the optical module power test may interrupt the services.

---

4. Please contact technicians of FiberHome.
5. End.

## Reference information

Distance measurement: The PON system uses the TDMA uplink mode; the transmission of all uplink data is controlled by the OLT. For the differential fiber distance of up to 20 km, the difference between the transmission delays from the nearest ONU to the OLT and the furthest ONU to the OLT is 100 $\mu$ s. In order to avoid the uplink burst data collision between different ONUs, the OLT should range the ONUs, measure the relative distance from each ONU to the OLT according to the round-trip transmission delay; and then adjust the uplink transmission time of each ONU according to the distance measurement delays, in order to make the ONUs appear to be at an equal distance from the OLT.

## 6.8.12 LOA

### Alarm information

Alarm Name	Alarm Level	Alarm Type
LOA	Prompt alarm	Device alarm



#### Note:

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

### Probable reasons

The OLT has not received the uplink confirmation information that should be sent from the ONU due to the loss on the optical fiber, bad connection at the interface and optical module fault.

### Influences on the system

This event does not influence the system.

### Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:
  - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:

- ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.
- 

**Caution:**

The operations of the optical module power test may interrupt the services.

---

4. Please contact technicians of FiberHome.
5. End.

## 6.8.13 LOAM

### Alarm information

Alarm Name	Alarm Level	Alarm Type
LOAM	Prompt alarm	Device alarm

---

**Note:**

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

---

### Probable reasons

After transmitting the SendPLOAMU frame, the OLT has not received the PLOAM frames sent from the ONU for successively three times due to the loss on the optical fiber, bad connection at the interface and optical module fault.

### Influences on the system

The services of the ONU may be interrupted; the ONU may even be disconnected.

### Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.

- ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:
    - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
    - ▶ If the alarm still persists, please proceed to the next step.
  3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
    - ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.
    - ▶ If yes, please proceed to the next step.
- 

**Caution:**

The operations of the optical module power test may interrupt the services.

---

4. Please contact technicians of FiberHome.
5. End.

## Reference information

PLOAM: For transmitting the OAM function information between the ONU and the OLT.

PLOAMu: Uplink PLOAM.

## 6.8.14 MEM

### Alarm information

Alarm Name	Alarm Level	Alarm Type
MEM	Prompt alarm	Device alarm

---



#### Note:

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

---

### Probable reasons

The OLT has received unknown messages from the ONU have faults due to the loss on the optical fiber, bad connection at the interface and optical module fault.

### Influences on the system

This event does not influence the system.

### Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:
  - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
  - ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.

- ▶ If yes, please proceed to the next step.



#### Caution:

The operations of the optical module power test may interrupt the services.

4. Please contact technicians of FiberHome.
5. End.

## 6.8.15 PEE

### Alarm information

Alarm Name	Alarm Level	Alarm Type
PEE	Prompt alarm	Device alarm



#### Note:

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

### Probable reasons

The OLT has received a PEE message from the ONU due to the loss on the optical fiber, bad connection at the interface and optical module fault.

### Influences on the system

The services of the ONU may be interrupted; the ONU may even be disconnected.

### Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:

- ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
- ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.



**Caution:**

The operations of the optical module power test may interrupt the services.

---

- 4. Please contact technicians of FiberHome.
- 5. End.

### Reference information

PEE: Physical Equipment Error, indicating to the OLT that this ONU cannot simultaneously transmit the GEM frame and the OMCC frame from the GEM layer to the TC layer.

## 6.8.16 MIS

### Alarm information

Alarm Name	Alarm Level	Alarm Type
MIS	Prompt alarm	Device alarm



#### Note:

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

### Probable reasons

The OLT has detected that the received PST is different from the transmitted PST.

### Influences on the system

The services of the ONU may be interrupted; the ONU may even be disconnected.

### Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:
  - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
  - ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.

**Caution:**

The operations of the optical module power test may interrupt the services.

---

4. Please contact technicians of FiberHome.
5. End.

**Reference information**

PST: In the PON protection configuration structure, it is used to detect the connection status of the ONU and the OLT, and implement the APS.

## 6.8.17 Uplink BIP8 Threshold Crossing Alarm

**Alarm information**

Alarm Name	Alarm Level	Alarm Type
Uplink BIP8 Threshold Crossing Alarm	Prompt alarm	Device alarm

---

**Note:**

Only the AN5506-04B ONU and the AN5506-06 ONU can have this alarm.

---

**Probable reasons**

The quantity of the BIP8s (load bit errors) within the uplink data received by the OLT exceeds the configured threshold due to the loss on the optical fiber, bad connection at the interface and optical module fault.

**Influences on the system**

The services of the ONU may be interrupted; the ONU may even be disconnected.

## Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:
  - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
  - ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.



### Caution:

The operations of the optical module power test may interrupt the services.

---

4. Please contact technicians of FiberHome.
5. End.

## 6.8.18 Downlink BIP8 Threshold Crossing Alarm

### Alarm information

Alarm Name	Alarm Level	Alarm Type
Downlink BIP8 Threshold Crossing Alarm	Prompt alarm	Device alarm

### Probable reasons

The quantity of the BIP8s (load bit errors) within the downlink data received by the OLT exceeds the configured threshold due to the loss on the optical fiber, bad connection at the interface and optical module fault.

### Influences on the system

The services of the ONU may be interrupted; the ONU may even be disconnected.

### Handling steps

1. Restart the ONU; and continuously observe for 5 minutes; then see whether the alarm is removed:
  - ▶ If yes, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
2. Check the connection of the optical fibers and the interfaces:
  - ▶ If optical fiber loss occurs or the interfaces are not firmly connected, please replace the optical fiber or restore the normal connection on the interface. If the alarm is removed, please skip to Step 5.
  - ▶ If the alarm still persists, please proceed to the next step.
3. Use the PON dedicated optical power meter and testing optical fiber to check whether the optical module of the ONU operates normally:
  - ▶ If not, please replace the optical module. If the alarm is removed after the replacing, please skip to Step 5. If not, please proceed to the next step.
  - ▶ If yes, please proceed to the next step.



Caution:

The operations of the optical module power test may interrupt the services.

---

4. Please contact technicians of FiberHome.
5. End.



# 7 Event Overview

---

When abnormal conditions occur in the system, the equipment will report the event information to the network management system. The information tells the operations and status that occur in the current system to the maintenance staff.

This chapter covers the basic methods of using the event information, including the following contents:

- Event definitions
- Event levels
- Event list
- Event query

## 7.1 Event Definitions

The event is the notice of the operations related to the system. Users should handle the events according to their levels and contents: For the urgent event, users should handle it immediately; and for the prompt event, users only need to execute the corresponding operation or leave it alone. Handling events should comply with the relevant rules; users should find out the causes of triggering an event first, and then adopt the suitable measures.

## 7.2 Event Levels

Event levels are for defining the severity and importance of an event.

Events commonly have two levels: urgent event and prompt event.

- ◆ Urgent event: means the operation or fault causing communication interruption and needing immediate troubleshooting.
- ◆ Prompt event: means the event not influencing current services but having the possibility to influence services; users can decide whether to handle it or not on demand.

## 7.3 Event List

Table 7-1 lists the event information of the AN5116-06B.

Table 7-1 Event information of the AN5116-06B

Event Object	Event Name	Event Level	Refer to
HSPA card	CPU_SWITCH_SUCCESS	Prompt event	9.1.1
	CORE_CARD_STATUS_CHANGE	Prompt event	9.1.2
	UPLINK_SWITCH	Prompt event	9.1.3
	Signal_trace	Prompt event	9.1.4
	TIME_REQ	Prompt event	9.1.5
	COLD_START	Prompt event	9.1.6
ONU	AUTO_UPGRADE_FAILURE	Urgent event	8.1.1
	AUTO_UPGRADE_SUCCESS	Prompt event	9.2.1
	EQUIPMENT_TYPE_CHANGE	Prompt event	9.2.2
	REPLACE_SUCCESSFUL	Prompt event	9.2.3
	Onu Replace event	Prompt event	9.2.4
	ONU_AUTH_SUCCESS	Prompt alarm	9.2.5
	DISCONNECT	Prompt alarm	9.2.6
CONNECT	Prompt alarm	9.2.7	
Card	PULL_OUT_CARD	Urgent event	8.2.1
	INSERT_CARD	Urgent event	8.2.2
	PON_INVERSION_SUCCESS	Prompt event	9.3.1

## 7.4 Event Query

### Command usage

This command is used to query the event information of the selected object and its sub-objects.

### Applicable object

This command is applicable to the system, module, HSWA card, EC4B / EC8B / GC4B / GC8B card and their PON ports, CE1B card, C155A card and its STM-1 optical interfaces, HU1A card and its uplink ports, PUBA card, FAN card, ONU and its FE ports.

### Prerequisite

The AN5116-06B communicates with the ANM2000 normally.

### Operation procedure

1. In the ANM2000 window, select **Config** → **History Event Query** in the main menu bar.
2. In the **Event Query** tab that appears subsequently, select the relevant query conditions; that is, query all events meeting the selected conditions.

### Operation result

The Event Query tab displays the object to be queried, event level, and event beginning time. Users can query events based on the information.

# 8 Urgent Events

---

This chapter introduces properties, probable reasons, influences on the system, and handling procedures of all urgent events, including the following contents:

- Urgent events of the ONU
- Urgent events of the card

## 8.1 Urgent Events of the ONU

### 8.1.1 AUTO\_UPGRADE\_FAILURE

#### Event information

Event Name	Event Level
AUTO_UPGRADE_FAILURE	Urgent event

#### Probable reasons

After the ONU software upgrade command is executed, the new software version is not delivered to the ONU or the ONU fails to start up the new software version.

#### Influences on the system

The ONU cannot use the new software version so that it cannot work normally or cannot obtain the configurations, resulting in service interruption.

#### Handling steps

1. Check whether the upgrade file type and version are correct:
  - ▶ If not, please replace the upgrade file.
  - ▶ If yes, please proceed to the next step.
2. Check whether the FTP server works normally:
  - ▶ If the server works abnormally, please reconfigure and restart the FTP server.
  - ▶ If the server works normally, please proceed to the next step.
3. Check whether there is the LINK\_LOSS alarm:
  - ▶ If yes, repair the broken optical fiber and restore the physical connection.
  - ▶ If not, please proceed to the next step.
4. Check whether the ONU firmware needs to be upgraded:
  - ▶ If the ONU firmware does not need to be upgraded, please skip to Step 7.

- ▶ If it needs to be upgraded, please proceed to the next step.
5. Issue the firmware refresh command manually:
    - 1) In the ANM2000, right-click the EC4B / EC8B card connected to the ONU in the **Object Tree** pane.
    - 2) Select **Control Command** → **Restore ONU** in the shortcut menu to open the **Restore ONU** window.
    - 3) Select **Edit** → **Append** or click the  button in the menu bar to get the **Please Input The Rows For Add:** dialog box; and then input **1** in the dialog box and click the **OK** button to create an item.
    - 4) Input the No. of the PON port connected to the ONU in the **PON Port No.** column; and input the ONU's authorization No. in the **ONU No.** column.
    - 5) Click the  button to refresh the ONU firmware, and proceed to the next step.
  6. In the shortcut menu of the EC4B / EC8B card, select **Get Information** → **ONU information** to check whether the ONU starts up the new software version:
    - ▶ If the ONU starts up the new software version, other operations are not needed.
    - ▶ If the ONU does not start up the new software version, please proceed to the next step.
  7. Please contact technicians of FiberHome.

## 8.2 Urgent Events of the Card

### 8.2.1 PULL\_OUT\_CARD

Event information

Event Name	Event Level
PULL_OUT_CARD	Urgent event

Probable reasons

A card is unplugged.

Influences on the system

All functions of this card are disabled and all services on this card are interrupted; that is, the card cannot provide the relevant services and functions.

Handling steps

1. Confirm whether it is necessary to insert the unplugged card in the equipment again:
  - ▶ If yes, please insert the card into the equipment again. The system will give an urgent event, i.e. the INSERT\_CARD event after the card is started up.
  - ▶ If not, please proceed to the next step.
2. End.

## 8.2.2 INSERT\_CARD

### Event information

Event Name	Event Level
INSERT_CARD	Urgent event

### Probable reasons

A card is plugged in again.

### Influences on the system

The card cannot provide the corresponding services and functions before it is started up normally.

### Handling steps

Users do not need to handle this event, but they should make the related records.



# 9 Prompt Events

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This chapter introduces properties, probable reasons, influences on the system, and handling procedures of all prompt events, including the following contents:

- Prompt events of the HSWA card
- Prompt events of the ONU
- Prompt events of the card

## 9.1 Prompt Events of the HSWA Card

### 9.1.1 CPU\_SWITCH\_SUCCESS

Event information

Event Name	Event Level
CPU_SWITCH_SUCCESS	Prompt event

Probable reasons

- ◆ Perform the switching between the active and standby HSWA cards via the ANM2000.
- ◆ Perform the switching between the active and standby HSWA cards via the CLI.
- ◆ Unplug the active HSWA card, resulting in the system switching.
- ◆ The active HSWA card restarts automatically because of its abnormality, resulting in the system switching.

Influences on the system

This event does not influence the system.

Handling steps

1. Check whether the switching is initiated manually in the network management system:
  - ▶ If the switching is executed manually, no operation is needed.
  - ▶ If the switching is initiated automatically, please proceed to the next step.
2. Check whether the original active HSWA card has faults:
  - ▶ If the HSWA card has faults, please replace it.
  - ▶ If the HSWA card works normally, please proceed to the next step.
3. Please contact technicians of FiberHome.

## 9.1.2 CORE\_CARD\_STATUS\_CHANGE

### Event information

Event Name	Event Level
CORE_CARD_STATUS_CHANGE	Prompt event

### Probable reasons

- ◆ The switching between the active and standby HSWA cards occurs.
- ◆ The system starts up.

### Influences on the system

This event does not influence the system.

### Handling steps

It is not necessary to handle this event.

### 9.1.3 UPLINK\_SWITCH

#### Event information

Event Name	Event Level
UPLINK_SWITCH	Prompt event

#### Probable reasons

Manual switching or automatic switching occurs on an uplink port.

#### Influences on the system

This event does not influence the system.

#### Handling steps

1. Check whether the switching for the uplink port is initiated manually:
  - ▶ If the switching is executed manually, no operation is needed.
  - ▶ If the switching is initiated automatically, please proceed to the next step.
2. Check whether the uplink port's physical connection is normal:
  - ▶ If not, please implement the connection again.
  - ▶ If yes, please proceed to the next step.
3. Detect the optical module with an optical power meter:
  - ▶ If the optical module cannot receive and transmit optical signals normally, please replace the module.
  - ▶ If the optical module works normally, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

## 9.1.4 Signal\_trace

### Event information

Event Name	Event Level
Signal_trace	Prompt event

### Probable reasons

The signaling tracing function of the HSWA card is enabled.

### Influences on the system

This event does not influence the system.

### Handling steps

Users do need to handle this event.

## 9.1.5 TIME\_REQ

### Event information

Event Name	Event Level
TIME_REQ	Prompt event

### Probable reasons

Reconfigure the SNMP time mode in the ANM2000.

### Influences on the system

The equipment time is not synchronized with the NTP server time.

### Handling steps

Execute the time calibration command again:

1. In the ANM2000, right-click the AN5116-06B system in the **Object Tree** pane. And then, select **Config** → **Time Calibration** in the shortcut menu.
2. In the **Sending Commands...** window that appears subsequently, click the **OK** button to execute the time calibration command.

## 9.1.6 COLD\_START

### Event information

Event Name	Event Level
COLD_START	Prompt event

### Probable reasons

- ◆ Reset the active HSWA card via the ANM2000.
- ◆ Reset the active HSWA card via the CLI.
- ◆ When there is not a standby card in the system, the HSWA card is unplugged and then it is inserted again.

### Influences on the system

The restart of the HSWA card may cause the loss of unsaved configuration.

### Handling steps

Users do not need to handle this event.

## 9.2 Prompt Events of the ONU

### 9.2.1 AUTO\_UPGRADE\_SUCCESS

Alarm information

Event Name	Event Level
AUTO_UPGRADE_SUCCESS	Prompt event

Probable reasons

The ONU upgrades successfully.

Influences on the system

The ONU uses the new software version.

Handling steps

Users do not need to handle this event.

## 9.2.2 EQUIPMENT\_TYPE\_CHANGE

### Event information

Event Name	Event Level
EQUIPMENT_TYPE_CHANGE	Prompt event

### Probable reasons

- ◆ The home gateway has replaced the PC and becomes the access equipment.
- ◆ The PC has replaced the home gateway and becomes the access equipment.

### Influences on the system

- ◆ When the home gateway has replaced the PC and becomes the access equipment, the FE port services may be interrupted because that the home gateway is in the TAG mode or has broadcast services.
- ◆ When the PC has replaced the home gateway and becomes the access equipment, the FE port services may be interrupted because that the PC is in the UNTAG mode.

### Handling steps

1. Check whether the user has changed the access equipment of the FE port:
  - ▶ If yes, please proceed to the next step.
  - ▶ If not, please skip to Step 3.
2. Modify the service configuration of the FE port or change the access equipment to the original set.
  - ▶ If the services restore after the modification on the configurations or the change on the access equipment, please skip to Step 4.
  - ▶ If the services remain abnormal after the modification on the configurations or the change on the access equipment, please proceed to the next step.
3. Please contact technicians of FiberHome.
4. End.

### 9.2.3 REPLACE\_SUCCESSFUL

#### Event information

Event Name	Event Level
REPLACE_SUCCESSFUL	Prompt event

#### Probable reasons

The ONU is replaced successfully.

#### Influences on the system

This event does not influence the system.

#### Handling steps

Users do not need to handle this event.

### 9.2.4 Onu Replace event

#### Event information

Event Name	Event Level
Onu Replace event	Prompt event

#### Probable reasons

The ONU at the far end of the EPON equipment is replaced successfully.

#### Influences on the system

This event does not influence the system.

#### Handling steps

Users do not need to handle this event.

## 9.2.5 ONU\_AUTH\_SUCCESS

### Event information

Event Name	Event Level
ONU_AUTH_SUCCESS	Prompt event

### Probable reasons

The system authorizes an ONU successfully.

### Influences on the system

This event does not influence the system.

### Handling steps

Users do not need to handle this event.

## 9.2.6 DISCONNECT

### Event information

Event Name	Event Level
DISCONNECT	Prompt event

### Probable reasons

The network transmission link of the ONU port is interrupted.

### Influences on the system

The service of the ONU port is interrupted.

### Handling steps

1. Check the status of the ADSL / VDSL or the FE ports:
  - ▶ If the ADSL / VDSL ports have faults, please proceed to the next step.
  - ▶ If the ETH ports have faults, please skip to Step 3.
2. Right-click the AD32/VD24 card in the **Object Tree** pane. And then, select **Get Information** → **DSL Port Status** in the shortcut menu, checking the **Operation Status** item.
  - ▶ If **Data** or **Low Power Consumption Mode** is displayed, please skip to Step 4.
  - ▶ If other statuses are displayed, please check the physical link connection.
3. Right-click the ETH card in the **Object Tree** pane. And then, select **Get Information** → **ETH Port Status** in the shortcut menu, checking the **Connection Status** item.
  - ▶ If **Connection Failed** is displayed, please check the physical link connection.
  - ▶ If **Connection Successful** is displayed, please proceed to the next step.
4. Please contact technicians of FiberHome.
5. End.

## 9.2.7 CONNECT

### Event information

Event Name	Event Level
CONNECT	Prompt event

### Probable reasons

The network transmission link of the port is restored.

### Influences on the system

This event does not influence the system.

### Handling steps

Users do need to handle this event.

## 9.3 Prompt Events of the Card

### 9.3.1 PON\_INVERSION\_SUCCESS

#### Event information

Event Name	Event Level
PON_INVERSION_SUCCESS	Prompt event

#### Probable reasons

- ◆ When the active PON port detects the abnormality of the PON port's optical signals, the switching occurs on the PON port.
- ◆ When the connection between the card configured with the PON port protection and the backplane is abnormal or this card is unplugged, the switching occurs on the PON port.

#### Influences on the system

This event does not influence the system.

#### Handling steps

Users do not need to handle this event.

# Product Documentation Customer Satisfaction Survey

Thank you for reading and using the product documentation provided by FiberHome. Please take a moment to complete this survey. Your answers will help us to improve the documentation and better suit your needs. Your responses will be confidential and given serious consideration. The personal information requested is used for no other purposes than to respond to your feedback.

Name	
Phone Number	
Email Address	
Company	

To help us better understand your needs, please focus your answers on a single documentation or a complete documentation set.

Documentation Name	
Code and Version	

## Usage of the product documentation:

1. How often do you use the documentation?

Frequently  Rarely  Never  Other (please specify) \_\_\_\_\_

2. When do you use the documentation?

in starting up a project  in installing the product  in daily maintenance  in troubleshooting  Other (please specify) \_\_\_\_\_

3. What is the percentage of the operations on the product for which you can get instruction from the documentation?

100%  80%  50%  0%  Other (please specify) \_\_\_\_\_

4. Are you satisfied with the promptness with which we update the documentation?

Satisfied  Unsatisfied (your advice) \_\_\_\_\_

5. Which documentation form do you prefer?

Print edition  Electronic edition  Other (please specify) \_\_\_\_\_

## Quality of the product documentation:

1. Is the information organized and presented clearly?

Very  Somewhat  Not at all (your advice) \_\_\_\_\_

2. How do you like the language style of the documentation?

Good  Normal  Poor (please specify) \_\_\_\_\_

3. Are any contents in the documentation inconsistent with the product?

\_\_\_\_\_

4. Is the information complete in the documentation?

Yes

No (please specify) \_\_\_\_\_

5. Are the product working principles and the relevant technologies covered in the documentation sufficient for you to get known and use the product?

Yes

No (please specify)\_\_\_\_\_

6. Can you successfully implement a task following the operation steps given in the documentation?

Yes (please give an example)\_\_\_\_\_

No (please specify the reason)\_\_\_\_\_

7. Which parts of the documentation are you satisfied with?

\_\_\_\_\_

8. Which parts of the documentation are you unsatisfied with? Why?

\_\_\_\_\_

9. What is your opinion on the Figures in the documentation?

Beautiful  Unbeautiful (your advice) \_\_\_\_\_

Practical  Unpractical (your advice) \_\_\_\_\_

10. What is your opinion on the layout of the documentation?

Beautiful  Unbeautiful (your advice) \_\_\_\_\_

11. Thinking of the documentations you have ever read offered by other companies, how would you compare our documentation to them?

Product documentations from other companies: \_\_\_\_\_

Satisfied (please specify) \_\_\_\_\_

Unsatisfied (please specify) \_\_\_\_\_

12. Additional comments about our documentation or suggestions on how we can improve:

\_\_\_\_\_

\_\_\_\_\_

Thank you for your assistance. Please fax or send the completed survey to us at the contact information included in the documentation. If you have any questions or concerns about this survey please email at [edit@fiberhome.com.cn](mailto:edit@fiberhome.com.cn).