



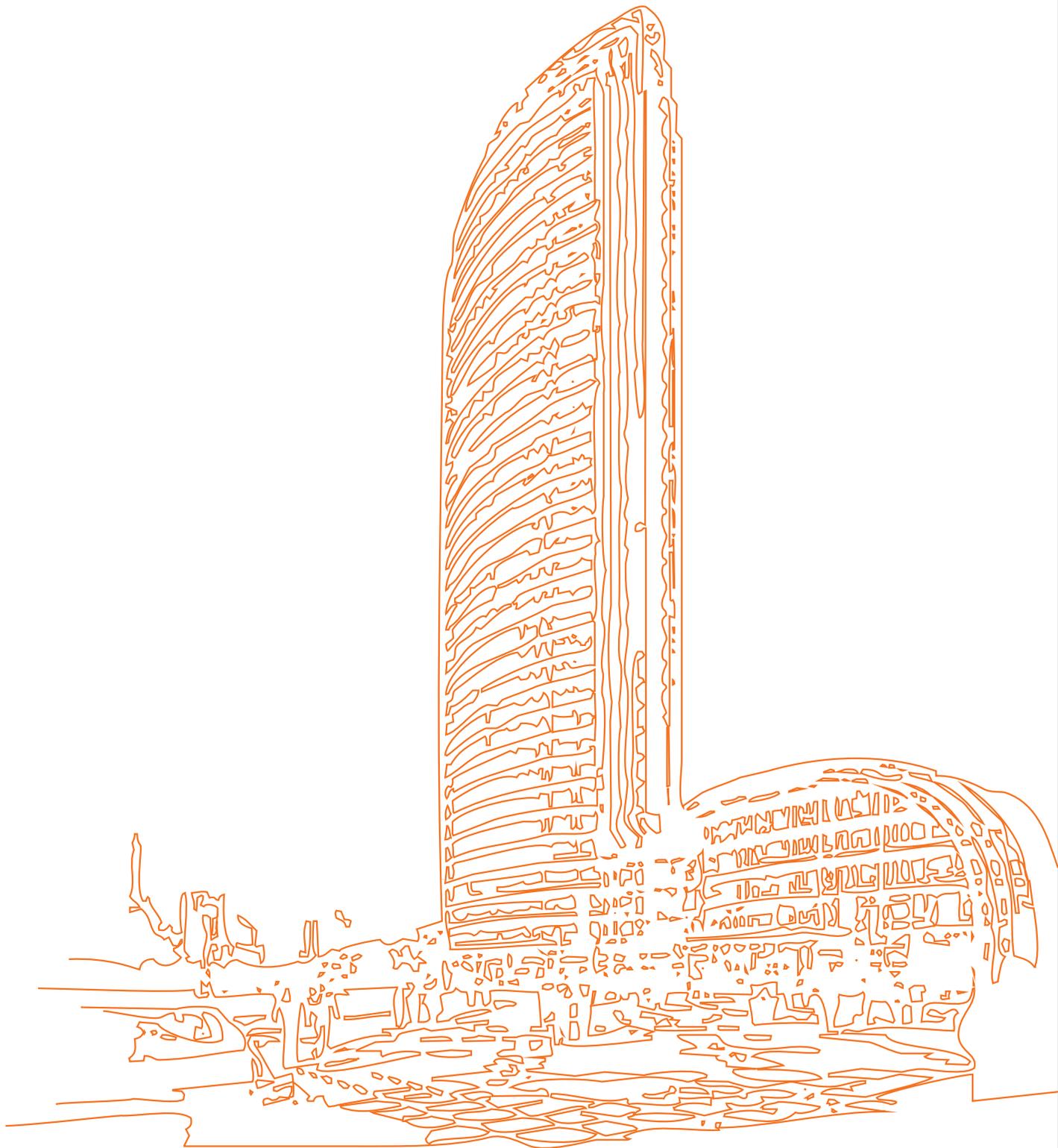
**AN5116-06B/AN5516-06/AN5516-04
Optical Line Terminal Equipment
Alarm and Event Reference**



[Version: B]
MN000003105

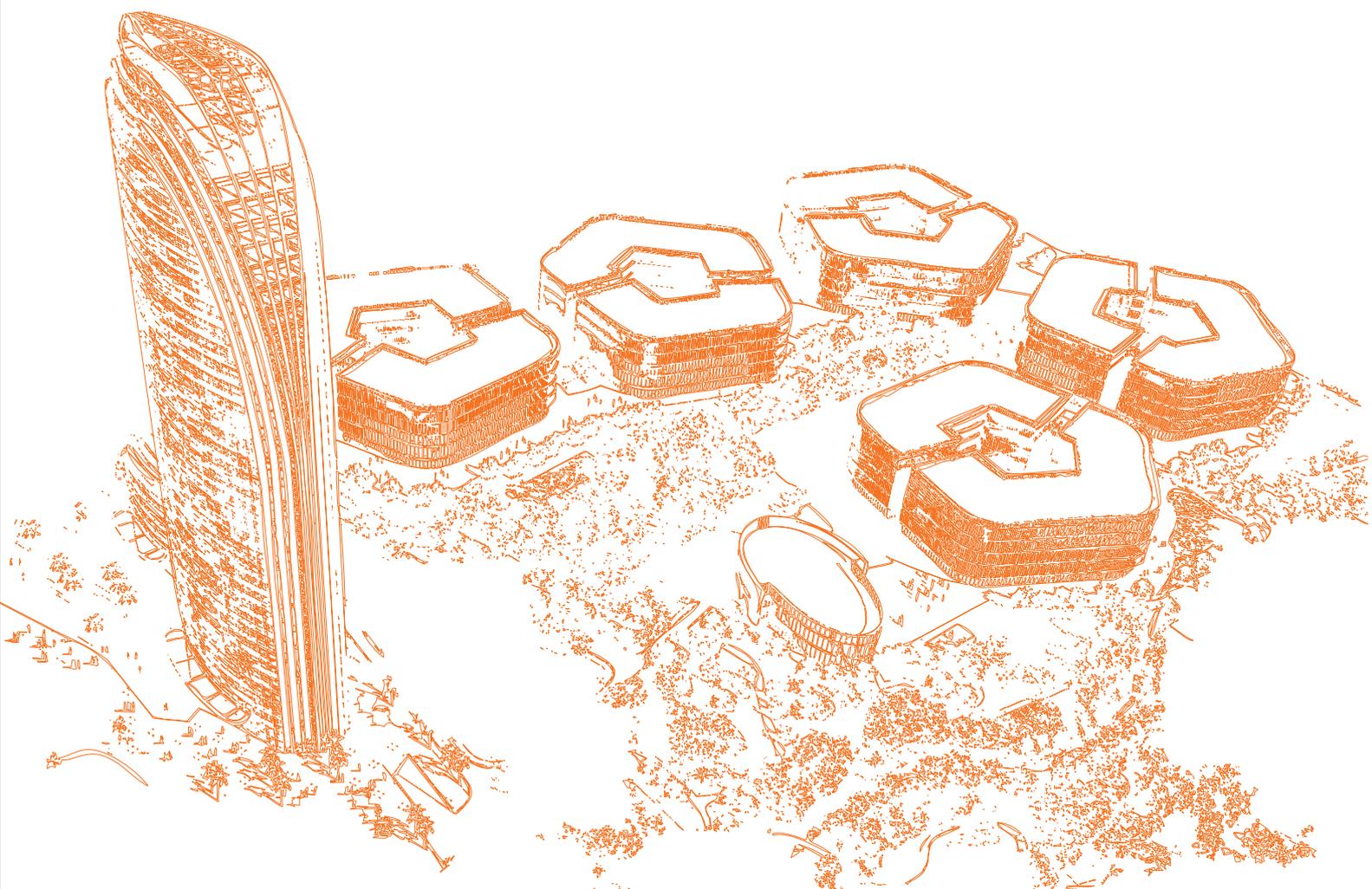


Customer Oriented
Honest and Devoted
Continuously Innovated
Incremental Development





People Centered
Advance with the Times
Benefiting Customers with Information



**AN5116-06B/AN5516-06/
AN5516-04**

Optical Line Terminal Equipment

Alarm and Event Reference

Version: B

Code: MN000003105

FiberHome Telecommunication Technologies Co., Ltd.

May 2017

Thank you for choosing our products.

We appreciate your business. Your satisfaction is our goal. We will provide you with comprehensive technical support and after-sales service. Please contact your local sales representative, service representative or distributor for any help needed at the contact information shown below.

Fiberhome Telecommunication Technologies Co., Ltd.

Address: No. 67, Guanggu Chuangye Jie, Wuhan, Hubei, China

Zip code: 430073

Tel: +6 03 7960 0860/0884 (for Malaysia)

+91 98 9985 5448 (for South Asia)

+593 4 501 4529 (for South America)

Fax: +86 27 8717 8521

Website: <http://www.fiberhomegroup.com>

Legal Notice

烽火通信®

FiberHome®

GONST®

FONST®

e-Fim®

CiTRANS®

E-jet®

IBAS®

Freelink®

FonWeaver®

OTNPlanner™

SmartWeaver™

are trademarks of FiberHome Telecommunication Technologies Co., Ltd.
(Hereinafter referred to as FiberHome)

All brand names and product names used in this document are used for identification purposes only and are trademarks or registered trademarks of their respective holders.

All rights reserved

No part of this document (including the electronic version) may be reproduced or transmitted in any form or by any means without prior written permission from FiberHome.

Information in this document is subject to change without notice.

Contents

1	Documentation Guide	1
2	Safety Precautions.....	3
2.1	General Safety Precautions	4
2.2	Laser Safety	5
2.3	Safety When Using a Ladder.....	6
2.4	Mechanical Safety	7
2.5	Other Safety Precautions	8
3	Overview	10
3.1	Alarm Definition	11
3.2	Principles for Alarm Handling	11
3.2.1	Principle of "Restoring First and Repairing Later".....	11
3.2.2	Principle of "External First and Equipment Later"	11
3.2.3	Principle of "Higher Level First and Lower Level Later"	12
3.2.4	Principle of "Majority First and Minority Later"	12
3.3	Alarm Level	12
3.4	Event Definitions.....	13
3.5	Event Level.....	13
4	Basic Operations	14
4.1	Viewing Current Alarms	15
4.2	Confirming Current Alarms.....	16
4.3	Viewing Alarm History	17
4.4	Configuring User-defined Alarm Names	19
4.5	Viewing User-defined Alarm Names	20
4.6	Viewing Events	21
5	Critical Alarms	26
5.1	Critical Alarms of Core Switch Cards	27
5.1.1	CPU_INVERSION_FAILED	27

	5.1.2	FAN_ERROR	29
	5.1.3	TEMPERATURE_OVER.....	30
	5.1.4	STANDBY_POWER_INPUT_FAIL.....	32
	5.1.5	TIME_HAVENT.....	33
	5.1.6	TIME_LOSS	34
	5.1.7	License Rrc Alarm	36
	5.1.8	Loopback detected on OLT	37
5.2		Critical Alarms of Service Cards	37
	5.2.1	SLOT_DOWN_AND_UP.....	38
	5.2.2	LINK_LOSS.....	39
	5.2.3	AUTO_UPGRADE_ONU_FAILURE.....	40
	5.2.4	LASER_ALWAYS_ON	43
	5.2.5	PHYSIC_ID_CONFLICT	44
	5.2.6	LOGIC_ID_CONFLICT	45
	5.2.7	CARD_NOT_PRESENT	46
	5.2.8	OPT_MODULE_TYPE_MISMATCH	48
	5.2.9	OLT_PON_LOOPBACK.....	49
	5.2.10	OPTMODULE_NOT_PRESENT	49
	5.2.11	OPTMODULE_FAIL.....	50
	5.2.12	PON_LINK_LOSS	51
5.3		Critical Alarms of TDM Service Cards.....	52
	5.3.1	SLOT_DOWN_AND_UP.....	52
	5.3.2	155_OPTICAL_LOF	53
	5.3.3	155_OPTICAL_LFA.....	54
	5.3.4	155_OPTICAL_LOS	56
	5.3.5	155_OPTICAL_AIS	57
	5.3.6	CARD_NOT_PRESENT	58
5.4		Critical Alarms of Clock Cards	60
	5.4.1	SLOT_DOWN_AND_UP.....	60
	5.4.2	OOCR	61
	5.4.3	1PPS_LOS.....	62
5.5		Critical Alarms of Uplink Cards	63
	5.5.1	NO_OPTICS_SIGNAL.....	63
	5.5.2	CCM LOC.....	64
	5.5.3	OPTMODULE_FAIL.....	65
	5.5.4	LACP_LINK_DOWN.....	66

	5.5.5	CARD_NOT_PRESENT	67
5.6		Critical Alarms of ONUs	69
	5.6.1	LINK_LOSS.....	69
	5.6.2	EQUIPMENT_TYPE_MISMATCH.....	70
	5.6.3	UPGRADE_FAILURE	71
	5.6.4	AUTO_UPGRADE_ONU_FAILURE.....	74
	5.6.5	MGC_DISCONNECTED.....	76
	5.6.6	ONU_REGISTER_FAILED	79
	5.6.7	HG_REGISTER_FAILED.....	80
	5.6.8	BATTERY_VOLTAGE_TOO_LOW.....	81
	5.6.9	LOF.....	82
	5.6.10	LOAM_LOS.....	83
	5.6.11	PSE_SHORT_CIRCUIT.....	84
	5.6.12	DEACTIVATE_FAIL	85
	5.6.13	OMCI_CHANNEL_LOS	86
	5.6.14	DYING_GASP	86
5.7		Critical Alarms of HCU	88
	5.7.1	ISSUE_ALM.....	88
	5.7.2	SYSMINALM	89
	5.7.3	HUM_OVER.....	89
	5.7.4	HUM_DOWN.....	90
	5.7.5	ENV_TEMP_DOWN.....	91
	5.7.6	ACVOLOVER.....	91
	5.7.7	ACVOLDOWN.....	92
	5.7.8	DCVOLOVER.....	93
	5.7.9	DCVOLDOWN.....	94
	5.7.10	OVERCURRE	95
	5.7.11	ENV_TEMP_OVER.....	96
	5.7.12	ARRESTBRK	97
	5.7.13	FIRE_ALM.....	98
	5.7.14	DOOR_ALM.....	98
	5.7.15	DCVOLFAIL	99
	5.7.16	ACVOLFAIL.....	100
	5.7.17	ACMAINFAIL.....	101
	5.7.18	LVDS_ALM.....	102
	5.7.19	LINKFAIL.....	103
	5.7.20	RECISSALM	104

	5.7.21	FANFAIL.....	104
	5.7.22	HEATFAIL	105
	5.7.23	SHAKE.....	106
	5.7.24	INFRARED.....	106
	5.7.25	INUNDATION	107
	5.7.26	SMOKE	108
	5.7.27	AIRCONDITION	109
	5.7.28	PALM	110
	5.7.29	BFUSEBRK.....	110
	5.7.30	LOADFUSE.....	111
	5.7.31	RECVOLOVER	112
	5.7.32	RECVOLDOWN	112
	5.7.33	RETEMPOVER.....	113
	5.7.34	Battery_Discharging	114
	5.7.35	BATTERY_TEMPRATURE_LOW_THRESHOLD_A- LARM.....	115
	5.7.36	BATTERY_HUM_OVER	115
	5.7.37	BATTERY_HUM_DOWN.....	116
6		Major Alarms	118
	6.1	Major Alarms of Core Switch Cards.....	119
		6.1.1 CONFIG_HAVENOT_SAVED	119
		6.1.2 TOO_MANY_TDM.....	120
		6.1.3 ALARM_NUM_OVER_THRESHOLD.....	120
		6.1.4 CUR_ALARM_NUM_OVER_THRESHOLD	121
		6.1.5 CARD_TYPE_NOT_IDENTICAL	122
	6.2	Major Alarms of Service Cards.....	123
		6.2.1 ALL_ONU_DYING-GASP	123
		6.2.2 TX_POWER_HIGH_ALARM.....	124
		6.2.3 CARD_TYPE_NOT_IDENTICAL	126
	6.3	Major Alarms of TDM Cards.....	126
		6.3.1 E1_LOS	127
		6.3.2 E1_LFA	128
		6.3.3 E1_AIS.....	129
		6.3.4 CARD_TYPE_NOT_IDENTICAL	130
	6.4	Major Alarms of Clock Cards.....	131

6.4.1	SYNC_RX_TIMEOUT.....	131
6.4.2	DELAY_RESP_RX_TIMEOUT.....	132
6.4.3	ANNOUNCE_RX_TIMEOUT	133
6.4.4	TOD_LOS	133
6.4.5	PPS_ALM.....	135
6.5	Major Alarms of Uplink Cards.....	136
6.5.1	UP_SPEED_OVER_THRESHOLD.....	136
6.5.2	DOWN_SPEED_OVER_THRESHOLD.....	137
6.5.3	DYING_GASP	138
6.5.4	AC_FAIL.....	138
6.5.5	E1_TIMING_UNLOCK.....	139
6.5.6	RX_POWER_HIGH_ALARM.....	141
6.5.7	RX_POWER_LOW_ALARM.....	142
6.5.8	TX_POWER_HIGH_ALARM.....	144
6.5.9	TX_POWER_LOW_ALARM	145
6.5.10	BIAS_HIGH_ALARM	147
6.5.11	BIAS_LOW_ALARM.....	148
6.6	Major Alarms of the HCU	149
6.6.1	DC_LOW.....	150
6.6.2	Battery Fail	150
7	Minor Alarms	152
7.1	Minor Alarms of Service Cards.....	153
7.1.1	UP_BANDWIDTH_UTILIZATION_OVER_THRESHOLD .	153
7.1.2	DOWN_BANDWIDTH_UTILIZATION_OVER_THRES- HOLD	154
7.2	Minor Alarms of Clock Cards.....	155
7.2.1	REFERENCE_LOS	155
7.3	Minor Alarms of Uplink Cards.....	156
7.3.1	CRC_THRESHOLD.....	156
7.3.2	UP_BROADCAST_SPEED_OVER_THRESHOLD	157
7.3.3	DOWN_BROADCAST_SPEED_OVER_THRESHOLD ...	158
7.3.4	DROPPED_SPEED_OVER_THRESHOLD	159
7.3.5	UP_BANDWIDTH_UTILIZATION_OVER_THRESHOLD .	160
7.3.6	DOWN_BANDWIDTH_UTILIZATION_OVER_THRES- HOLD	161

7.3.7	UP_BANDWIDTH_UTILIZATION_LOWER_THRES-	
	HOLD	163
7.3.8	DOWN_BANDWIDTH_UTILIZATION_LOWER_THRES-	
	HOLD	164
7.3.9	DROPPED_PROPOTION_OVER_THRESHOLD	165
7.3.10	UndersizeFrame Threshold.....	167
7.3.11	UP_RATE_THRESHOLD	167
7.3.12	DOWN_RATE_THRESHOLD	168
7.4	Minor Alarms of ONUs	169
7.4.1	DOWN_CRC_ERROR_THRESHOLD	169
7.4.2	ONU_NGN_SET_FAIL	171
7.4.3	ONU_NGN_VERSION_ERROR	172
7.4.4	UP_BIP8_OVER_THRESH_ALARM	172
7.4.5	DOWN_BIP8_OVER_THRESH_ALARM	174
8	Prompt Alarms.....	176
8.1	Prompt Alarms of Core Switch Cards	177
8.1.1	PEER_INSERT	177
8.1.2	LINECARD_SWITCH	177
8.1.3	CPU_USAGE_OVER_THRESHOLD.....	178
8.1.4	MEM_USAGE_OVER_THRESHOLD	180
8.1.5	UPLINKCARD_INVERSION	181
8.1.6	PON_PORT_SWITCH_SUCCESS	182
8.1.7	MAC Spoofing Attack.....	182
8.1.8	SOFTWARE_MISMATCH.....	183
8.1.9	DETECTION_OF_DOS_ATTACK	184
8.1.10	License Rrc Over Threshold.....	184
8.1.11	The Mac Address Number of Core Switchboard Over	186
8.2	Prompt Alarms of Service Cards	186
8.2.1	OPTMODULE_TEMP_OVER	186
8.2.2	OPTMODULE_VOL_OVER.....	188
8.2.3	OPTMODULE_BIAS_OVER.....	189
8.2.4	OPTMODULE_TXPOWER_OVER	190
8.2.5	ILEGAL_ONU_REGISTE.....	192
8.2.6	TOTAL_BANDWIDTH_OVER.....	193
8.2.7	ONU_AUTO_CONFIG_FAILED	194
8.2.8	OPTMODULE_VOL_OVER.....	195

	8.2.9	ONU_TO_OLT_RXPOWER_OVER.....	196
	8.2.10	OPTMODULE_RXPOWER_OVER.....	197
	8.2.11	CPU_USAGE_OVER_THRESHOLD.....	199
	8.2.12	MEM_USAGE_OVER_THRESHOLD.....	200
	8.2.13	SF.....	201
	8.2.14	SD.....	202
8.3		Prompt Alarms of TDM Service Cards.....	203
	8.3.1	CPU_USAGE_OVER_THRESHOLD.....	204
	8.3.2	MEM_USAGE_OVER_THRESHOLD.....	205
8.4		Prompt Alarms of Uplink Cards.....	206
	8.4.1	UNEXPECT_LEVEL.....	206
	8.4.2	UNEXPECT_MEP_ID.....	207
	8.4.3	CCM_MISTAKE_CONNECT.....	208
9		Critical Events.....	209
	9.1	Critical Events of Core Switch Cards.....	210
	9.1.1	OLT_REGISTER_FAILED.....	210
	9.1.2	LICENSE_ESN_INVALIDATED.....	211
	9.2	Critical Events of Service Cards.....	211
	9.2.1	CARD_INFO_UPDATE.....	211
	9.2.2	PULL_OUT_CARD.....	212
	9.2.3	INSERT_CARD.....	212
	9.3	Critical Events of ONUs.....	213
	9.3.1	UPGRADE_FAILURE.....	213
	9.3.2	UPGRADE_FILE_DISMATCH.....	214
	9.3.3	AUTO_UPGRADE_FAILURE.....	215
	9.3.4	HG_REGISTER_FAILED.....	215
	9.3.5	ONU_REGISTER_FAILED.....	216
	9.3.6	CONFIG_FAILED.....	217
10		Major Events.....	219
	10.1	Major Events of Core Switch Cards.....	220
	10.1.1	CONFIG_SUCCESSFULLY_SAVED.....	220
	10.1.2	TRACERT_FINAL_RESULT.....	220
	10.1.3	ETEA_FINAL_RESULT.....	221
	10.2	Major Events of Uplink Cards.....	221

	10.2.1	AH_THRESHOLD	222
10.3		Major Events of TDM Cards	222
	10.3.1	E1_PORT_FAILURE	222
10.4		Major Events of ONUs	223
	10.4.1	ETH_PORT_AUTO_NEG_FAILURE.....	223
	10.4.2	ETH_PORT_FAILURE.....	223
	10.4.3	POTS_PORT_FAILURE	224
	10.4.4	VOICE_CONFIG_FAILED	225
	10.4.5	NGN_REG_FAIL_OVER_THRESH	225
	10.4.6	Error_Symbol_Number_Beyond_The_Threshold	226
	10.4.7	Error_Frame_Number_Beyond_The_Threshold.....	227
	10.4.8	The_Inspection_Period_Error_Frame_Number_Beyond_The_Threshold	228
	10.4.9	Errored_Frame_Seconds_Number_Beyond_The_Threshold.....	229
11		Minor Events	231
	11.1	Minor Events of Core Switch Cards	232
	11.1.1	NGN_SET_FAIL	232
	11.1.2	NGN_VERSION_ERROR.....	233
12		Prompt Events.....	234
	12.1	Prompt Events of Core Switch Cards.....	235
	12.1.1	CPU_SWITCH_SUCCESS.....	235
	12.1.2	PEER_INSERT	235
	12.1.3	UPLINK_SWITCH	236
	12.1.4	TIME_REQ.....	237
	12.1.5	TIME_ACK	237
	12.1.6	CORE_CARD_STATUS_CHANGE.....	238
	12.1.7	COLD_START.....	238
	12.1.8	CONFIG_SYNCHRONIZING_BETWEEN_MAIN_CARD_AND_BACKUP_CARD.....	239
	12.1.9	CONFIG_SYNCHRONIZED_BETWEEN_MAIN_CARD_AND_BACKUP_CARD.....	239
	12.1.10	File of Traffic Statistics Uploads Successful.....	240
	12.1.11	File of Traffic Statistics Uploads Failed	240
	12.1.12	CONFIG_CHANGE	241

12.1.13	LICENSE_RESOURCES_APPLICATION	241
12.2	Prompt Events of Service Cards.....	242
12.2.1	SLOT_INITSUCCESS_TRAP	242
12.2.2	LINECARD_SWITCH	243
12.2.3	PON_PORT_PROTECTION_GROUP_STATU- S_CHANGE	243
12.2.4	PRE_REGISTER_FAILURE	244
12.2.5	PON_INVERSION_SUCCESSFUL.....	244
12.2.6	PON_INVERSION_FAILED	245
12.2.7	NEW_TEST_LINK_ADDED	246
12.3	Prompt Events of ONUs.....	246
12.3.1	ONU_DEAUTH_SUCCESS.....	246
12.3.2	Onu Replace Event.....	247
12.3.3	AUTO_UPGRADE_SUCCESS	247
12.3.4	PHYSICALID_REPLACE_SUCCESSFUL	248
12.3.5	SN_REPLACE_SUCCESS.....	248
12.3.6	MAC_SPOOFING_ATTACK	249
12.3.7	EQUIPMENT_TYPE_CHANGE	249
12.3.8	REPLACE_TYPE_MISMATCH.....	250
12.3.9	REPLACE_REPLY_FAILED	250
12.3.10	ONU_AUTH_SUCCESS.....	251
12.3.11	DISCONNECT.....	251
12.3.12	CONNECT	252
12.3.13	EQUIPMENT_ALARM.....	253
12.3.14	SELF_TEST_FAILURE.....	254
12.3.15	ONU_REPLACE_SUCCESSFUL	254
12.3.16	PSE_OPEN_CIRCUIT.....	255
12.3.17	POWER_MISMATCH	255
12.3.18	PORT_POWER_RECIEVE_START.....	256
12.3.19	PORT_POWER_RECIEVE_BREAK.....	256
12.3.20	ONU_RESTORE_DEFAULTCONFIG_SUCCESS.....	257
12.3.21	ONU_CONFIG_CHANGE.....	257

1 Documentation Guide

Document Orientation

Alarm and Event Reference is a reference manual providing the information about the alarms and events supported by the AN5116-06B/AN5516-06/AN5516-04 series of OLT equipment. Users can refer to this manual for guide in troubleshooting when they encounter any problems in operating or maintaining the equipment.

Intended Readers

- ◆ Commissioning engineers
- ◆ Operation and maintenance engineers

Version Information

Version	Version Information
A	Initial version, corresponding to equipment version V4R2.
B	Updated version, corresponding to equipment versions V4R2.2 and V4R3.

Content

Chapter	Content
Overview	<p>Introduces safety precautions, definitions of alarms and events, principles for alarm handling, and so on.</p> <ul style="list-style-type: none">◆ Safety Precautions◆ Alarm Definition◆ Principles for Alarm Handling◆ Alarm Level◆ Event Definitions◆ Event Level
Basic Operations	<p>Introduces basic operations in querying and conforming the alarms and events on the UNM2000 GUI.</p> <ul style="list-style-type: none">◆ Viewing Current Alarms◆ Confirming Current Alarms◆ Viewing Alarm History◆ Configuring User-defined Alarm Names◆ Viewing User-defined Alarm Names◆ Viewing Events

Chapter	Content
Alarm Reference	<p>Introduces alarms at different levels and alarm handling methods.</p> <ul style="list-style-type: none"> ◆ Critical Alarms ◆ Major Alarms ◆ Minor Alarms ◆ Prompt Alarms
Event Reference	<p>Introduces events at different levels and event handling methods.</p> <ul style="list-style-type: none"> ◆ Critical Events ◆ Major Events ◆ Minor Events ◆ Prompt Events

Related Documentation

Manual	Applied to
<i>Product Description</i>	Network planning phase
<i>Hardware Description</i>	Network planning phase
<i>Installation Reference</i>	Network deployment phase
<i>Quick Installation Guide</i>	Network deployment phase / network maintenance phase
<i>EPON Configuration Guide</i> <i>GPON Configuration Guide</i> <i>MSAN Configuration Guide</i>	Network deployment phase / network maintenance phase
<i>Alarm and Event Reference</i>	Network maintenance phase

2 Safety Precautions

This chapter introduces the general safety precautions for installing the equipment.

- General Safety Precautions
- Laser Safety
- Safety When Using a Ladder
- Mechanical Safety
- Other Safety Precautions

2.1 General Safety Precautions



Note:

When operating the equipment, always comply with local laws and regulations. The safety precautions provided in this guide are supplementary to local laws and regulations.

Installation Requirements

- ◆ Personnel responsible for the installation of equipment must undergo a rigorous training, so as to keep various safety precautions in mind and master correct operation methods before they are allowed to start the installation.
- ◆ Operations unrelated to this project should be avoided in the equipment room. Access to any unrelated project construction site is allowed only by users under certain conditions.
- ◆ During the equipment installation, operating personnel should be in strict accordance with the installation procedures and requirements.
- ◆ During the equipment installation, operating personnel should promptly report the faults and errors that might cause safety problems.

Grounding Requirements

- ◆ Damaging the grounding conductor may inhibit proper operations of the equipment and should be avoided.
- ◆ A good protection earth ground should be provided before the equipment installation.
- ◆ Before the equipment is powered on, the protection earth ground cable of its chassis should be well grounded. Make sure that the insulation resistance and ground resistance meet the specification; and that the power ground is making a good connection.

Human Safety

- ◆ Do not install / operate the equipment or lay cables during a lightning storm. Direct or indirect contact (through damp objects) with the high voltage power supply can cause bodily harm and should be avoided.
- ◆ Do not connect or remove the power cable while it is powered. Do not insert the power cable without a plug directly into the socket.
- ◆ To prevent laser radiation from injuring eyes, do not look into the end face of the fiber or fiber connector directly with naked eyes.
- ◆ Before installing the equipment, users should wear ESD protection clothing and an ESD protection wrist strap. Do not wear conductive articles such as jewelry and watches to prevent electric shock and burn.
- ◆ During the installation, the tools used (such as a soldering iron) should be electrically insulated and must be used and placed properly; otherwise they may do harm to human body and cause damage to the equipment or circuit board.
- ◆ In case of fire, users should evacuate the building or the equipment area, and activate any alarm system or make a fire alarm call.

Equipment Safety

- ◆ Do not install the equipment before construction of the equipment room is completed.
- ◆ When moving or lifting the equipment, avoid collisions with other hard objects.
- ◆ Never stack two or more devices to move together, so as to avoid collapse and wear.
- ◆ The equipment should be installed in a place that is away from direct sunlight but has good ventilation.
- ◆ Do not place the equipment near flammable, explosive, corrosive materials or in an atmosphere with solvent gases or smoke.

2.2 Laser Safety

- ◆ All operations should be performed by authorized personnel who have completed the required training courses.

- ◆ Before operations, view the laser level sign on the equipment or a card, and determine the operation guidelines to be followed according to the laser level sign.
- ◆ Wear a pair of eye-protective glasses when you are handling or near a strong laser.
- ◆ Never look directly into or near the end face of the optical fiber or connector.
- ◆ Measure the optical power with an optical power meter, and make sure that the optical source is switched off
- ◆ When handling or near a laser, do not wear reflective objects such as jewelry and watches to prevent accidental eye injury.
- ◆ Before cutting or splicing optical fibers, make sure that the fibers are disconnected from the optical source.

2.3 Safety When Using a Ladder

- ◆ Before using a ladder, first check whether the ladder is solid enough to stand on; the ladder shall be put into use only after it is examined and found to be qualified.
- ◆ Make sure that the ladder is safe for use. Overweight on the ladder is strictly prohibited.
- ◆ The ladder should be placed on a stable ground. The suitable slant angle of the ladder ranges from 60° to 70° as shown in Figure 2-1.

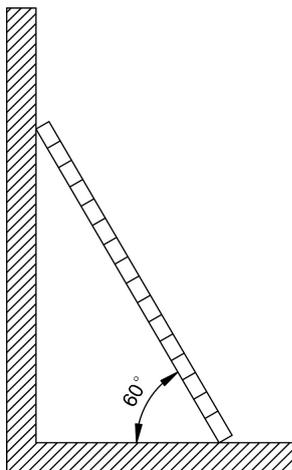


Figure 2-1 Slant Angle of the Ladder

- ◆ The width of the ladder should be no less than 50 cm; and the ladder should be equipped with anti-skid feet to prevent slipping.
- ◆ Ensure that your center of gravity does not deviate from the ladder edge. To reduce the danger and ensure safety, maintain your balance on the ladder before and during any operation.
- ◆ Installation personnel should wear anti-skid shoes.
- ◆ Avoid stepping on any cables, the cabinet or other equipment.
- ◆ Keep all objects secured, preventing them from falling on top of or hitting the equipment.
- ◆ Protect the cabinet top from the construction wastes such as metal filings.

2.4 Mechanical Safety

Drilling

- ◆ Always use the electrical drill or other tools in strict accordance with the operating instructions.
- ◆ Drilling on the cabinet without prior authorization is strictly prohibited. Drilling may damage the electromagnetic shield (EMS) performance and the wires and cables inside the equipment. If the metal filings from the drilling fall into the cabinet, it may result in an electrical short circuit on one or more circuit boards.
- ◆ During the drilling, users should fully comply with the prescribed safety measures, and should confirm the position, dimensions and depth first.
- ◆ When drilling, protect eyes from being hurt by the metal shavings.
- ◆ Before drilling, wear close fitting sleeves or bind up the cuffs, and do not wear gloves.
- ◆ Clean the metal shavings with a vacuum immediately after completing the drilling operations. Do not blow metal shavings away by mouth or other means. Do not pick metal shavings up by hand.

Carrying

- ◆ When carrying the equipment by hand, wear the protection gloves to avoid injury by sharp objects.

- ◆ Generally two people are needed to lift or move the cabinet. Generally, two persons are needed for lifting or moving the cabinet. Lift the cabinet by grasping its lower edges from both ends, and place it on the ESD protective cushion with good grounding. When moving the cabinet, use care not to collide with other objects.

2.5 Other Safety Precautions

Plugging / Unplugging a Card

- ◆ When plugging / unplugging a card, wear an ESD protection wrist strap and slide the card slowly along the slide rails to avoid distorting pins on the backplane.
- ◆ Prevent the circuit surfaces of cards from contacting each other, to avoid shorting or scratching.
- ◆ Always wear an ESD protection wrist strap and connect it to the ESD protection earth ground fastener on the cabinet when touching a card's circuitry, components, connectors, or wiring trough, so as to prevent damage to sensitive devices caused by electrostatic discharge.

Binding Wires and Cables

- ◆ Installers should bind all wires and cables used in onsite installation. Each cable type should be bound separately. For example, power cables, alarm cables and optical fibers should be laid out independently and bound separately. Note that optical fibers must be bound with special wire binders.
- ◆ After completing the equipment installation, do not adjust the positions of cables.

Laying Cables

- ◆ If the temperature is too low to allow proper cable handling, measures should be taken to warm cables before handling.
- ◆ When carrying cables, especially in low temperature, users should handle them with great care.

- ◆ When transporting cable for short distances, it is common practice to roll the cable spool. When rolling cable spool, always follow the direction indicated by the arrow on the spool. If there is no arrow indication on the spool, follow the direction that the cable is wound on the spool. Never roll the spool in the opposite direction as the cable ring may become loose.
- ◆ The cable staging area should be safe and stable, away from any heat sources.
- ◆ The cables' bends and branching elements should be kept in a proper order; that is, they should be arranged neatly without crossing or twisting. Any bends in the cable should be smooth and without any kinks.
- ◆ The power cable should be a single piece. Avoid connecting or welding two cables to form a longer one.
- ◆ When laying cables, it is better to lay, arrange and secure them one by one.
- ◆ The labels on the cables should be clear and intact.

3 Overview

- Alarm Definition
- Principles for Alarm Handling
- Alarm Level
- Event Definitions
- Event Level

3.1 Alarm Definition

The alarm is the notification and warning generated when the equipment is faulty or a system parameter reaches the threshold. Users should handle each alarm in the network in a timely manner to decrease faults and improve the network quality.

3.2 Principles for Alarm Handling

Users should adhere to the following principles while handling alarms, so as to remove the alarms and eliminate faults as soon as possible.

3.2.1 Principle of "Restoring First and Repairing Later"

Instruction

Restoring First and Repairing Later means that restore the services first by switching them to the protection path or the standby card and then remove faults. The prerequisite for this principle is that a protection path or a standby card same with the faulty working path or card is available in the system.

Application Range

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

3.2.2 Principle of "External First and Equipment Later"

Instruction

External first and equipment later means that when handling alarms, exclude possible external faults (such as broken fiber, terminal equipment fault, power supply fault, or unfavorable environment in the equipment room) first and then hunter for faults of the local equipment.

Application Scope

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

3.2.3 Principle of "Higher Level First and Lower Level Later"

Instruction

Higher level first and lower level later means that while analyzing alarms, start with those at higher levels such as critical and major alarms first and then those at lower levels such as minor and prompt (warning) alarms. When handling alarms, users should start with those affecting services first; however, if such alarms are caused by higher level ones, handle the higher level alarms first.

Application Scope

This principle is applicable when the system has both higher level and lower level alarms.

3.2.4 Principle of "Majority First and Minority Later"

Instruction

Majority first and minority later means that handle the majority of alarms (alarms of the same type in large quantity) first. The alarms of the same type are usually handled in the same way. Handling these alarms first will visibly reduce the total number of alarms in the network management system. This can help the monitoring and maintenance staff ascertain valid alarms.

Application Range

This principle is applicable when many alarms of the same type appear in the system.

3.3 Alarm Level

Generally, alarms are classified into four levels: critical alarm, major alarm, minor alarm and prompt alarm (warning alarm).

- ◆ Critical alarm: the alarm influencing service severely and requiring immediate troubleshooting.

- ◆ Major alarm: the alarm influencing service and requiring troubleshooting in a timely manner.
- ◆ Minor alarm: the alarm not influencing services but requiring troubleshooting when the traffic is small to avoid deterioration.
- ◆ Prompt alarm (warning alarm): the alarm that is not influencing services currently but may do later; users can decide whether to handle it or not as needed.

3.4 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 a critical event, users should handle it immediately; and for a prompt (warning) event, users need only to execute the corresponding operation or just omit it . While handling events, users should comply with rules to find out the causes for triggering an event and then take measures accordingly.

3.5 Event Level

Events are generally classified into four levels: critical event, major event, minor event and prompt event (warning event).

- ◆ Critical event: the operation or fault causing communication interruption and requiring immediate troubleshooting.
- ◆ Major event: the operation or fault possibly influencing the service and requiring troubleshooting in a timely manner.
- ◆ Minor event: the operation or fault not influencing current services but requiring troubleshooting when the traffic is small to avoid deterioration.
- ◆ Prompt event (warning event): the operation or fault not influencing services currently but may do later; users can decide whether to handle it or not as needed.

4 Basic Operations

This chapter introduces general operations on alarm handling.

- Viewing Current Alarms
- Confirming Current Alarms
- Viewing Alarm History
- Configuring User-defined Alarm Names
- Viewing User-defined Alarm Names
- Viewing Events

4.1 Viewing Current Alarms

Command Function

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

Users can view the current alarms based on the query objects as follows.

- ◆ System: The object is the entire OLT equipment.
- ◆ Card: The object is a certain card.
- ◆ Port: The object is a certain port of the card.
- ◆ Terminal device such as ONU: The object is a certain ONU or other terminal devices.

Prerequisites

The AN5116-06B/AN5516-06/AN5516-04 communicates with the UNM2000 normally.

Procedure

1. Right-click the query object, select **Current Alarm** in the shortcut menu, and you can view the current alarms of the object. See Figure 4-1.

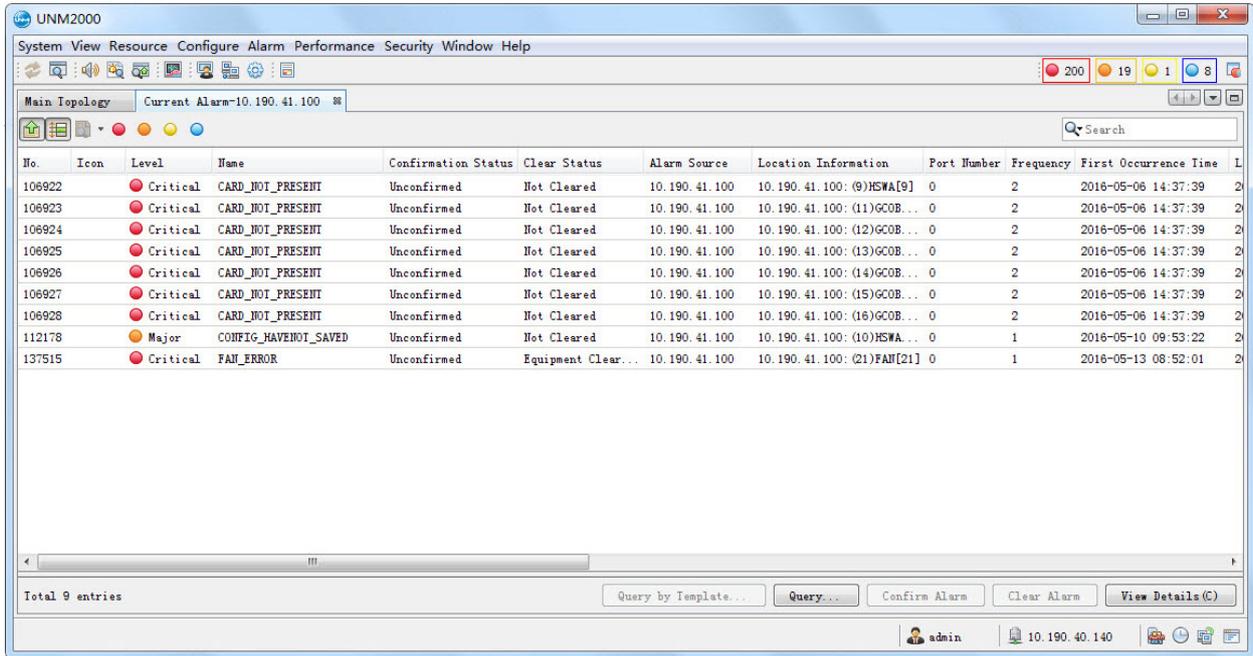


Figure 4-1 Viewing Current Alarms

Result

The **Current Alarm** tab displays the NE / object to be queried, system IP address, equipment type, alarm name, alarm type, alarm beginning and ending time, alarm confirmation time, the user confirming the alarm, and alarm confirmation information. Users can handle the alarms based on the information displayed here.

4.2 Confirming Current Alarms

Command Function

This command is used to confirm the current alarm information, indicating that this alarm has been noticed and is being handled.

Applicable Object

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

Prerequisites

The AN5116-06B/AN5516-06/AN5516-04 communicates with the UNM2000 normally.

Procedure

1. Access the **Current Alarm** tab in the way as described in [Viewing Current Alarms](#).
2. Right-click the alarm to be confirmed, and select **Confirm Alarm** or **Confirm and Mark the Alarms** in the shortcut menu.
 - ▶ Select **Confirm Alarm** to confirm the current alarm.
 - ▶ Select **Confirm and Mark the Alarms**, and type information in the **Confirm Alarm and Remark** dialog box that appears to confirm the current alarm.

Result

- ◆ After an alarm is confirmed, the network management system will record the confirmation time and the person confirming the alarm.
- ◆ A confirmed alarm that is not ended yet will still be displayed in the **Current Alarm** tab.
- ◆ A confirmed alarm that has ended can be viewed in the **History Alarm** tab.

4.3 Viewing Alarm History

Command Function

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

Applicable Object

Users can view the current alarms based on the query objects as follows.

- ◆ System: The object is the entire OLT equipment.
- ◆ Card: The object is a certain card.
- ◆ Port: The object is a certain port of the card.
- ◆ Terminal device such as ONU: The object is a certain ONU or other terminal devices.

Prerequisites

The AN5116-06B/AN5516-06/AN5516-04 communicates with the UNM2000 normally.

Procedure

1. Right-click the object to be queried, and select **History Alarm** from the shortcut menu to view the alarm history of the object. See Figure 4-2.

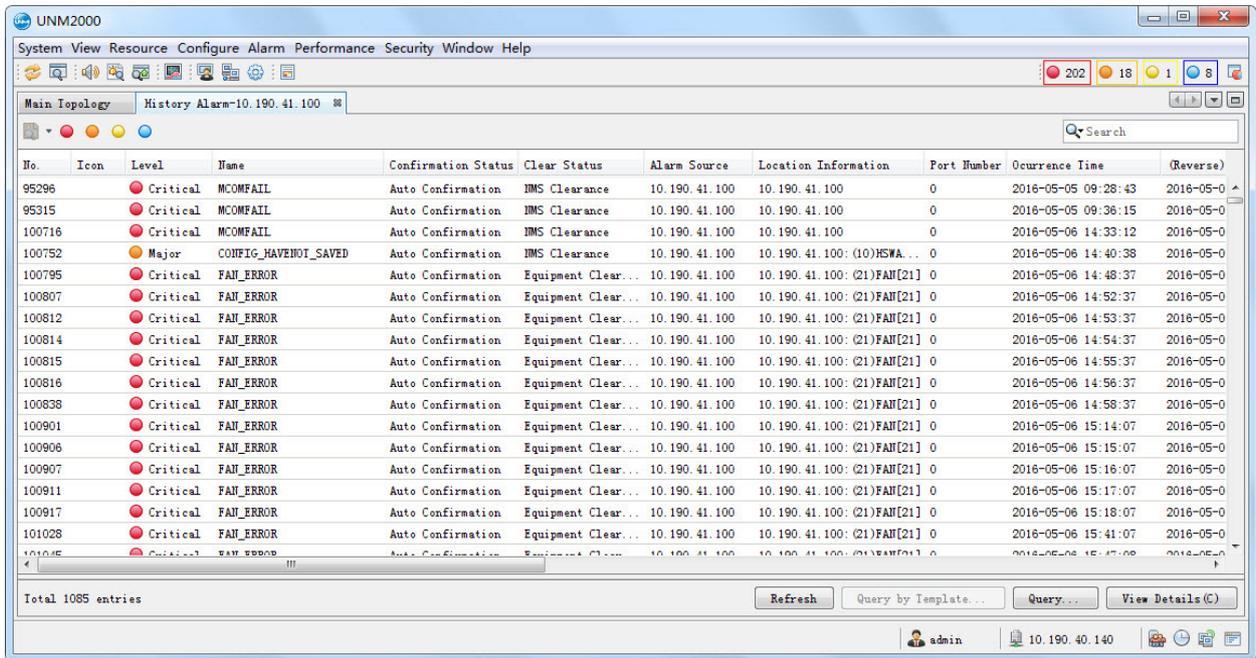


Figure 4-2 Viewing Alarm History

Result

The **History Alarm** tab displays the NE / object to be queried, system IP address, equipment type, 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.

4.4 Configuring User-defined Alarm Names

Command Function

This command is used to configure the user-defined alarm names for dry contacts.

Applicable Object

ONU

Prerequisites

- ◆ The AN5116-06B/AN5516-06/AN5516-04 communicates with the UNM2000 normally.
- ◆ The AN5116-06B/AN5516-06/AN5516-04 connects with the dry contact normally.
- ◆ The ONU connects with the dry contact equipment normally.

Procedure

1. Click **Alarm** in the UNM2000 window, and select **Alarm**→**Custom Alarm Name** in the drop-down menu to bring up the **Please Select an NE** dialog box.
2. Select the NE to be configured, and click **OK** to access the **Custom Alarm Name** tab.
3. In the right pane, select the row of the alarm to be configured.
4. Click the blank field below the **English Alarm Name** item, and select the desired alarm name from the drop-down list.
5. Click the **Apply to Object of the Same Type** button to deliver the user-defined alarm names to the equipment sets of the same type in the system.

6. Click the **Save** button to save the configuration of the user-defined alarm names.

Result

As soon as a certain custom alarm is defined, the object equipment will report the alarm with this name to the UNM2000.

4.5 Viewing User-defined Alarm Names

Command Function

This command is used to view user-defined alarm names for dry contacts.

Applicable Object

ONU

Prerequisites

- ◆ The AN5116-06B/AN5516-06/AN5516-04 communicates with the UNM2000 normally.
- ◆ The AN5116-06B/AN5516-06/AN5516-04 connects with the dry contact equipment normally.
- ◆ The ONU connects with the dry contact equipment normally.

Procedure

1. Click **Alarm** in the UNM2000 window, and select **Alarm**→**Custom Alarm Name** in the drop-down menu to bring up the **Please Select an NE** dialog box.
2. Select the NE to be configured, and click **OK** to access the **Custom Alarm Name** tab. Then the right pane of the tab will display the user-defined alarm names.

Result

After the user-defined alarm names are configured and the configurations become valid, users can view the configured user-defined alarm names in the **Custom Alarm Name** tab.

4.6 Viewing Events

Command Function

This command is used to query the event information of the selected object and its sub-objects. Users can filter the events according to the set conditions.

Applicable Object

Users can view the events as required according to the following query objects.

- ◆ System: The object is the entire OLT equipment.
- ◆ Card: The object is a certain card.
- ◆ Port: The object is a certain port of the card.
- ◆ Terminal device such as ONU: The object is a certain ONU or other terminal devices.

Prerequisites

The AN5116-06B/AN5516-06/AN5516-04 communicates with the UNM2000 normally.

Procedure

1. Click the **Alarm** button in the UNM2000 toolbar, and select **Query Reported Event** from the menu.
2. In the **Query Reported Event** dialog box, click the **Event Source** tab, and select **Select Equipment**; then click the **Select** button.

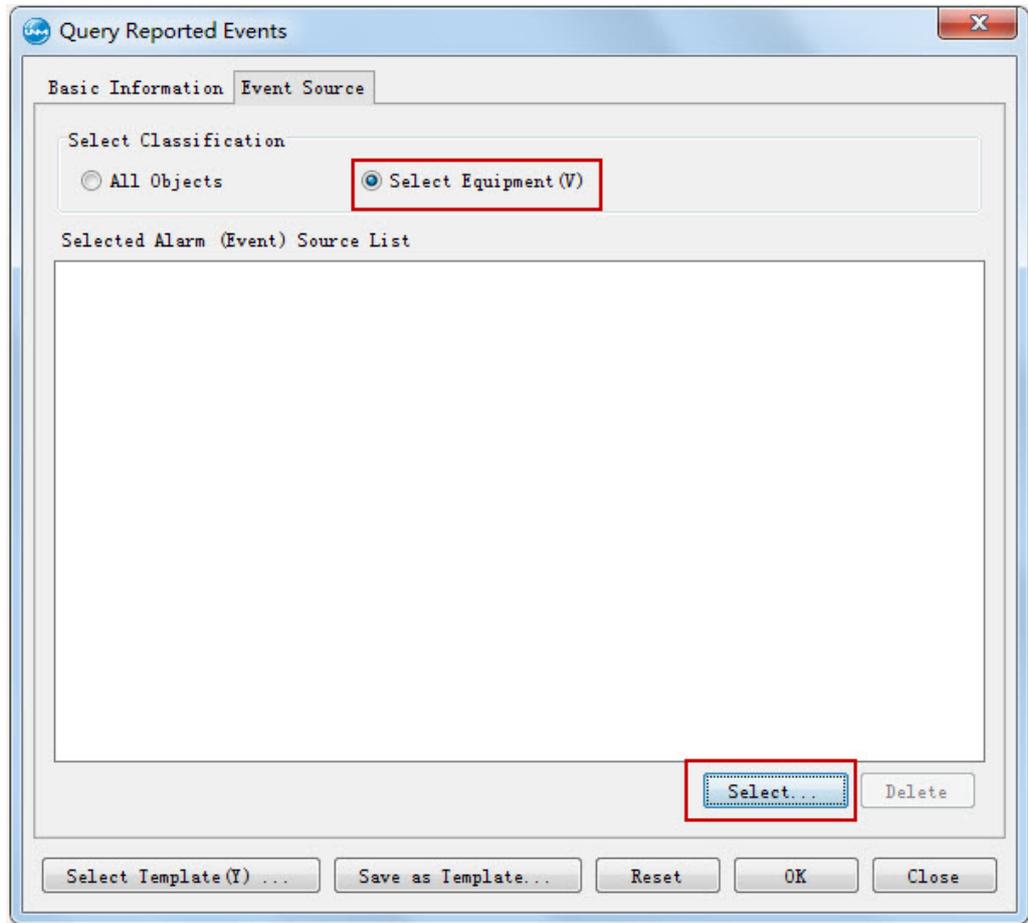


Figure 4-3 Selecting the Event Source

3. In the **Select NE** dialog box, select the object to be added, and click > to add it in the right pane.

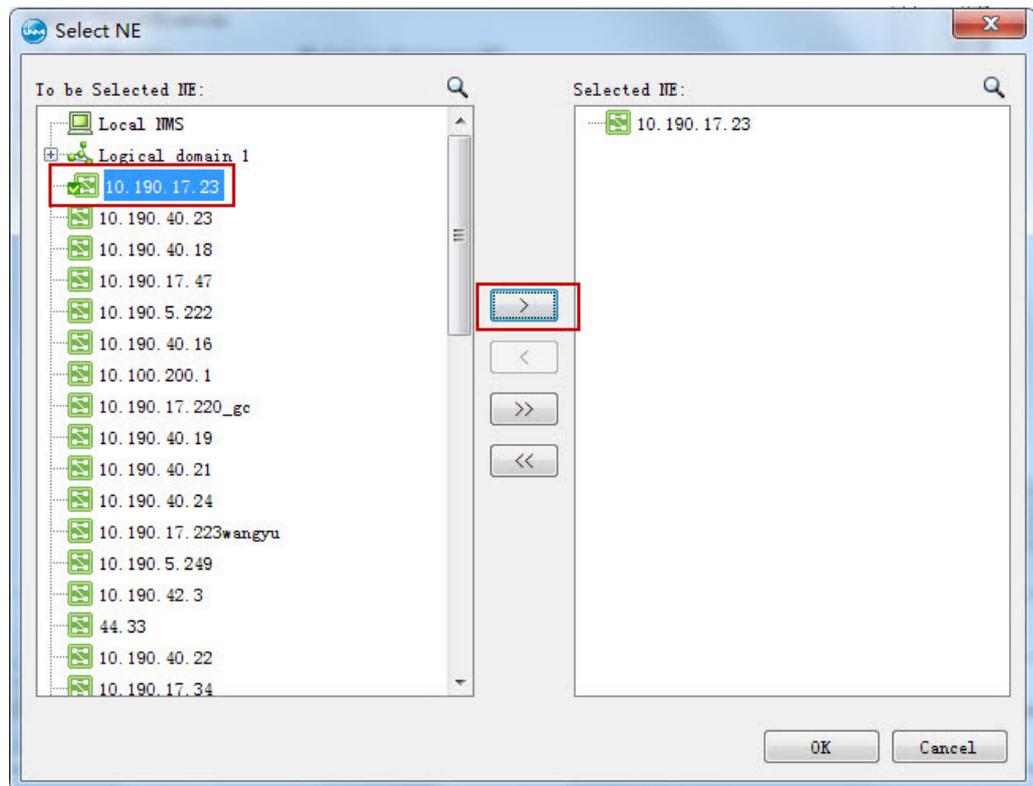


Figure 4-4 Adding Object NEs

4. Click **OK** to select the object as required.
5. Click the **Basic Information** tab, and set the filtering conditions as required.

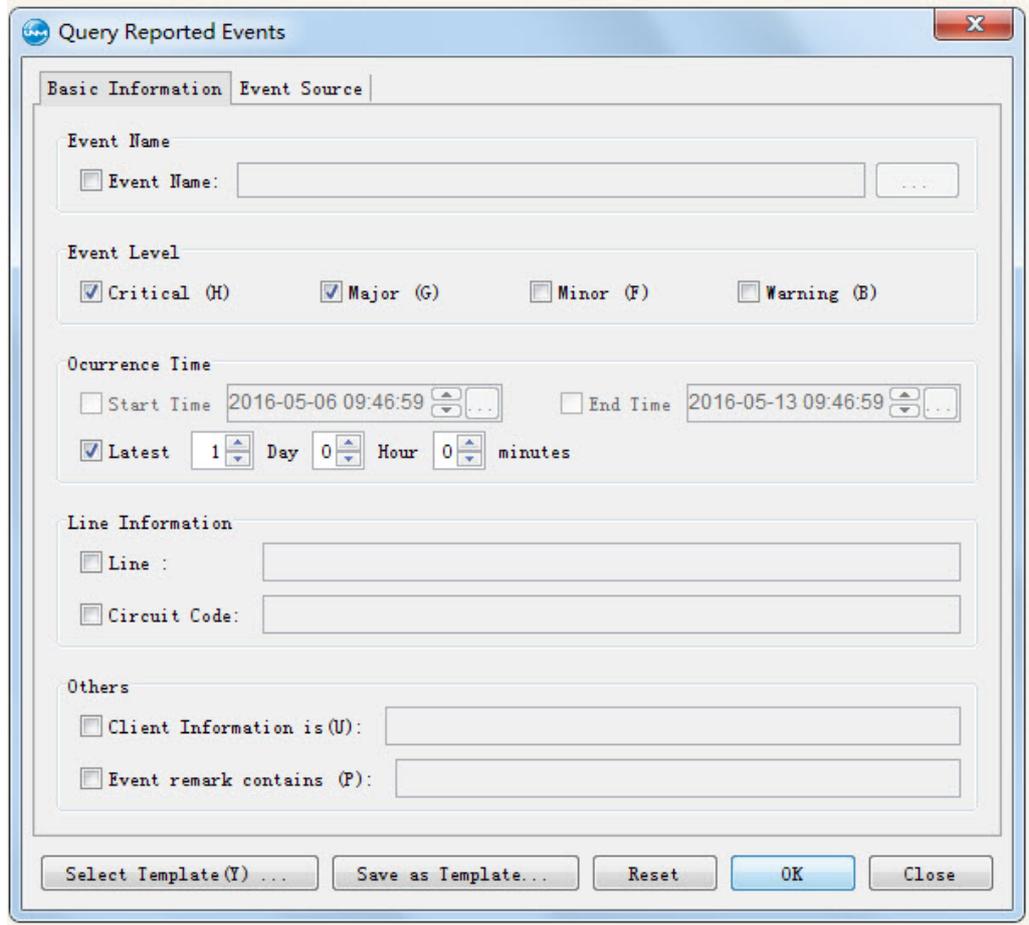


Figure 4-5 Setting the Filtering Conditions

6. Click **OK** to view the event information.

No.	Icon	Level	Name	Occurrence Time	Location Info	Port Number	Remark	NE Type
2870511	●	Critical	PULL_OUT_CARD	2016-05-12 09:42:18	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870537	●	Critical	PULL_OUT_CARD	2016-05-12 09:44:58	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870544	●	Critical	PULL_OUT_CARD	2016-05-12 09:45:59	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870549	●	Critical	PULL_OUT_CARD	2016-05-12 09:46:14	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870552	●	Critical	PULL_OUT_CARD	2016-05-12 09:46:18	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870571	●	Critical	PULL_OUT_CARD	2016-05-12 09:48:07	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870573	●	Critical	PULL_OUT_CARD	2016-05-12 09:48:19	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870598	●	Critical	PULL_OUT_CARD	2016-05-12 09:51:16	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870601	●	Critical	PULL_OUT_CARD	2016-05-12 09:51:26	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870612	●	Critical	PULL_OUT_CARD	2016-05-12 09:53:03	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870614	●	Critical	PULL_OUT_CARD	2016-05-12 09:53:07	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870618	●	Critical	PULL_OUT_CARD	2016-05-12 09:53:36	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870623	●	Critical	PULL_OUT_CARD	2016-05-12 09:53:58	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870648	●	Critical	PULL_OUT_CARD	2016-05-12 09:54:44	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870667	●	Critical	PULL_OUT_CARD	2016-05-12 09:55:24	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B
2870676	●	Critical	PULL_OUT_CARD	2016-05-12 09:55:57	10.190.17.23: (SlotNo=3)EC4B[3]	0		ANS116-06B

Total 1484 entries

Figure 4-6 The Query Result

Result

Users can view the filtered event information.

5 Critical Alarms

- Critical Alarms of Core Switch Cards
- Critical Alarms of Service Cards
- Critical Alarms of TDM Service Cards
- Critical Alarms of Clock Cards
- Critical Alarms of Uplink Cards
- Critical Alarms of ONUs
- Critical Alarms of HCU

5.1 Critical Alarms of Core Switch Cards

This section introduces the critical alarms related to the core switch cards and the handling procedure.

The AN5116-06B/AN5516-06/AN5516-04's core switch cards are uplink switch cards such as the HSUA, HSUB and HSUC cards.

5.1.1 CPU_INVERSION_FAILED

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CPU_INVERSION_FAILED	Critical alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB card HSWA / HSWB card

Impact on the System

The system services will be interrupted temporarily. If the switching fails, the active / standby status of the cards will not change after the services resume.

Possible Cause

- ◆ The standby core switch card is not present.
- ◆ The active core switch card works abnormally.
- ◆ The subrack backplane fault leads to abnormal communication between the active and standby cards.
- ◆ The active core switch card works abnormally.

Handling Procedure



Caution:

In case the switching of core switch cards fails, if users reset the standby core switch card or force the active-standby switching, the configuration data may be lost or the service may be interrupted even though the switching succeeds. It is recommended that users contact FiberHome for technical support when the alarm for switching failure of core switch cards occur.

1. Check whether the standby core switch card is plugged into the subrack.
-



Caution:

Users can first check whether the standby card is absent for a long time via the network management system. If yes, check on site whether the card is absent in the subrack.

- ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Plug the standby core switch card, and check whether its ACT indicator LED cannot be illuminated normally.
-



Caution:

Note: The software version and card type of the standby card should be the same as that of the present active card.

- ▶ If yes, → Step 3.
 - ▶ If not, → Step 6.
3. Check whether the pins on the subrack backplane are bent, broken or have other problems so that the standby card works abnormally after being plugged into the subrack.
 - ▶ If yes, → Step 4.
-

- ▶ If not, → Step 5.
- 4. Save the service configuration, and replace the subrack when the traffic is low. Plug the card into the subrack, and check whether the card can work normally.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
- 5. Plug the standby card into the subrack, and check whether the card can work normally.
 - ▶ If yes, → Step 6.
 - ▶ If not, → Step 8.
- 6. Check whether the active card is present and whether it works normally.
 - ▶ If yes, → Step 7.
 - ▶ If not, → Step 8.
- 7. Save the configuration into the Flash, perform the switching again, and check whether the switching succeeds.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 8.
- 8. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.1.2 FAN_ERROR

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
FAN_ERROR	Critical alarm	Environmental alarm	HSWA / HSWB / HSWD card HSUA / HSUB card HSWA / HSWB card

Impact on the System

The fan failure may cause poor heat dissipation for the entire system. If the equipment stays in this status for a long time, the system cannot run stably, and hardware faults may even occur.

Possible Cause

- ◆ The power supply of the fan is abnormal, or too much dust accumulates on the fan, so that air cooling is affected effect.
- ◆ The fan is damaged and must be replaced.

Handling Procedure

1. Check whether the ACT indicator LED of the fan card is OFF.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Unplug and re-plug the power supply of the fan, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
3. Remove the dust on the fan, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Replace the fan unit according to the operation specifications, connect the cables correctly, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.1.3 TEMPERATURE_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
TEMPERATURE_OVER	Critical alarm	Environmental alarm	HSWA / HSWB / HSWD card HSUA / HSUB card HSWA / HSWB card

Impact on the System

The over-high temperature may cause system instability and even damage the hardware components.

Possible Cause

- ◆ The temperature threshold setting is inappropriate.
- ◆ The fan works abnormally.
- ◆ The ambient temperature is abnormal.

Handling Procedure

1. Check whether the **FAN_ERROR** alarm is reported in the network management system.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Handle the fan fault according to [FAN_ERROR](#), and then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Search for the **Temp threshold** configuration item in the **Operational Tree** pane of the **NE Manager** page in the network management system (the access for the search operations in the network management system is the same hereinafter and is omitted for brevity), and check whether the temperature threshold should be modified.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Modify the threshold setting, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
5. Use the air conditioner to lower the ambient temperature, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.

▶ If not, → Step 6.

6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.1.4 STANDBY_POWER_INPUT_FAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
STANDBY_POWER_INPUT_FAIL	Critical alarm	Equipment alarm	HSWB card

Impact on the System

If the power supply does not recover from a failure in a timely manner, the equipment will fail to work and the services will be interrupted.

Possible Cause

The power supply line has a fault.

Handling Procedure

1. Use a multimeter to check whether the external -48 V power supply for the equipment is faulty.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Contact the power supply provider to handle the power faults, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.1.5 TIME_HAVENT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
TIME_HAVENT	Critical alarm	Service quality alarm	HSWA / HSWB / HSWD card HSUA / HSUB card HSWA / HSWB card

Impact on the System

When the alarm / event information is reported to the UNM2000, the time recorded by the network management system is incorrect.

Possible Cause

The equipment time does not synchronize with that of the UNM2000.

Handling Procedure

1. Search for the **System Time** configuration item in the network management system, and check whether the equipment time is inconsistent with that of the UNM2000.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Search for the **Time Calibration** configuration item in the network management system, modify the equipment time to synchronize it with that of the UNM2000, and then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.1.6 TIME_LOSS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
TIME_LOSS	Critical alarm	Service quality alarm	HSWA / HSWB / HSWD card HSUA / HSUB card HSWA / HSWB card

Impact on the System

The connection between the AN5116-06B/AN5516-06/AN5516-04 and the NTP time server is abnormal, so the AN5116-06B/AN5516-06/AN5516-04 cannot obtain the clock signal normally.

Possible Cause

- ◆ The up link is faulty.
- ◆ The uplink server is abnormal.
- ◆ The uplink port is faulty.
- ◆ The uplink card is faulty.

The communication between the AN5116-06B/AN5516-06/AN5516-04 and the NTP time server is interrupted.

Handling Procedure

1. Check whether the AN5116-06B/AN5516-06/AN5516-04's uplink port transmits the NTP messages abnormally.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 9.
2. Search for the **Uplink Status Info** item in the network management system, and check whether the values of **Port Status** and **Optic Status** for the uplink port are normal.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 6.
3. Check whether the NTP server works normally.

- ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Handle the problems influencing forwarding of the NTP messages (such as the problems with routing, QoS rules, and packet priorities in the forwarding process for the up link), and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 9.
 5. Repair the NTP server. When the server becomes normal, the AN5116-06B/AN5516-06/AN5516-04 will set up communication with it. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 9.
 6. Replace the optical module of the uplink port, and check whether the port status return to normal.
 - ▶ If yes, → Step 7.
 - ▶ If not, → Step 8.
 7. After the AN5116-06B/AN5516-06/AN5516-04 sets up communication with the NTP server, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 9.
 8. Replace the uplink card. After the new uplink card is connected, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 9.
 9. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.1.7 License Rrc Alarm

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
License Rrc Alarm	Critical alarm	Service quality alarm	HSWA / HSWB / HSWD card HSUA / HSUB card HSWA / HSWB card

Impact on the System

The functions controlled by License cannot be used.

Possible Cause

The License is not applied for or the License resource is insufficient.

Handling Procedure

1. Search for **License Resource Query** in the network management system, and check whether the value of the **Max Resource** is less than that of the **Apply Resource**.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Upgrade the License resource as follows, and then check whether the alarm disappears.
 - 1) Search for **Esn Query** in the network management system, and record the electronic serial number.
 - 2) Send the electronic SN to FiberHome engineers to obtain a new License file.
 - 3) Upload the new License file to the server.
 - 4) Search for **Update License** in the network management system, and deliver the License to the equipment.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.

- Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.1.8 Loopback detected on OLT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
Loopback detected on OLT	Critical alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB card HSWA / HSWB card

Impact on the System

May cause service flooding, and the system cannot process services normally since most resources are occupied.

Possible Cause

The OLT detects loop between the core switch card's ports, between slots, or between slots and uplink ports.

Handling Procedure

- Search for **Loopback Detection Table** in the network management system to check detailed loopback information.
- Eliminate the loop according to the prompted loopback information. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
- Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2 Critical Alarms of Service Cards

This section introduces the critical alarms related to the service cards and the handling procedures.

5.2.1 SLOT_DOWN_AND_UP

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
SLOT_DOWN_AND_UP	Critical alarm	Equipment alarm	Service cards

Impact on the System

The service card is disconnected with the backplane, so the service carried by the card will be interrupted.

Possible Cause

- ◆ The service card is unplugged manually.
- ◆ The service card is not plugged correctly.
- ◆ The backplane pins are faulty.
- ◆ The service card is faulty and works abnormally.

Handling Procedure

1. Check whether the service card is unplugged manually.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Re-plug the service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether backplane pins are faulty.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Replace the subrack, re-plug the card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.

5. Replace the service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2.2 LINK_LOSS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
LINK_LOSS	Critical alarm	Communication alarm	All PON ports on service cards

Impact on the System

The services are interrupted because all subscriber optical signals loaded on the PON port fail.

Possible Cause

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

Handling Procedure

1. Check whether other PON ports of the same service card report the same alarm.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 2.
2. Search for **OptModule Para Information** in the network management system, and check whether the physical parameters of the optical module are abnormal.
 - ▶ If yes, → Step 3.

- ▶ If not, → Step 4.
- 3. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
- 4. Check whether the **PON_LINK_LOSS** alarm is reported in the network management system.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
- 5. Replace the optical fiber between the PON port and the splitter. After the optical signal is detected normal, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
- 6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2.3 AUTO_UPGRADE_ONU_FAILURE

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
AUTO_UPGRADE_ONU_FAILURE	Critical alarm	Processing failure alarm	ONUs, HGs, all PON ports on service cards

Impact on the System

Upgrade failure of the target ONU may affect services concerned.

Possible Cause

- ◆ The ON upgrade file type cannot be identified or the upgrade file is verified to be incorrect.
- ◆ The type of the ONU upgrade file does not match that of the file to be upgraded.
- ◆ The FTP server or the downloaded file is faulty.

- ◆ The communication between the core switch card and the PON interface card fails.
- ◆ The communication between the interface card and the ONU fails.

Handling Procedure

1. Check whether the prompt information is **Unknown upgrade file type or wrong crc of file..**
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Check the version of the upgrade file, and use the file matching the ONU to be upgrade for the upgrade operation. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handing ends.
 - ▶ If not, → Step 3.
3. Check whether the prompt information is **Unconsistent upgrade file type with ONU type.**
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Check the ONU type corresponding to the upgrade file, and use the file matching the ONU to be upgrade for the upgrade operation. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handing ends.
 - ▶ If not, → Step 5.
5. Check whether the prompt information is **Error occurs when download files from FTP server.**
 - ▶ If yes, → Step 6.
 - ▶ If not, → Step 7.
6. Check the connection and operation status of the FTP server. When the FTP server can be accessed normally, upgrade the ONU again, and check whether the alarm disappears.
 - ▶ If yes, the alarm handing ends.
 - ▶ If not, → Step 7.

7. Check whether the prompt information is **Poor communication between GSW and line cards**.
 - ▶ If yes, → Step 8.
 - ▶ If not, → Step 10.
8. Log into the interface card through the CLI system, and check whether the login succeeds.
 - ▶ If yes, → Step 9.
 - ▶ If not, → Step 10.
9. Search for **Reset ONU** in the network management system, reset the ONU to be upgraded, and → Step 10.
10. Search for **ONU Information** in the network management system, and check whether the ONU has acquired the new software version.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 14.
11. Check whether the prompt information is **Poor communication between line cards and ONUs**.
 - ▶ If yes, → Step 12.
 - ▶ If not, → Step 14.
12. Check whether the alarms related with link quality such as **LINK_LOSS** are reported in the network management system.
 - ▶ If yes, → Step 13.
 - ▶ If not, → Step 14.
13. Handle the link faults according to the procedures mentioned in [LINK_LOSS](#), and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 14.
14. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2.4 LASER_ALWAYS_ON

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
LASER_ALWAYS_ON	Critical alarm	Equipment alarm	PON ports of service cards

Impact on the System

Except for this ONU, services on all the other ONUs under this PON interface are interrupted.

Possible Cause

A certain ONU in the PON network is always on (meaning that it does not transmit optical signals based on the set timeslots).

Handling Procedure

1. Check whether the ONU authorized number and the physical ID are given in the additional alarm information.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Find the ONU concerned at the subscriber side according to the authorized number and physical ID of the ONU, and replace the ONU. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
3. Unplug the branch fibers connected to the splitter, and then connect the fibers to the optical power meter one by one for examination. Check whether a certain ONU emits light through the fiber.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Replace the ONU and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.

- ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2.5 PHYSIC_ID_CONFLICT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
PHYSIC_ID_CONFLICT	Critical alarm	Equipment alarm	PON ports of service cards

Impact on the System

The ONU cannot be authorized normally.

Possible Cause

- ◆ The physical ID of a certain authorized ONU under the current service card's PON port conflicts with that of the ONU to be authorized in the system. This indicates that an illegal ONU may be accessed.
- ◆ The corresponding ONU is not added in the physical ID white list.

Handling Procedure

1. Check whether the physical ID in conflict is illegal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Deauthorized the illegal ONU, and check whether the alarm disappears.
 - ▶ If yes, →the alarm handling ends.
 - ▶ If not, → Step 4.
3. Check whether the ONU is absent in the physical ID white list.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.

4. Add the physical address of this ONU to the white list, and check whether the alarm disappears.
 - ▶ If yes, → the alarm handling ends.
 - ▶ If not, → Step 5.
5. Replace the ONU, perform the authentication and authorization again, and check whether the alarm disappears.
 - ▶ If yes, → the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2.6 LOGIC_ID_CONFLICT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
LOGIC_ID_CONFLICT	Critical alarm	Equipment alarm	PON ports of service cards

Impact on the System

The ONU cannot be authorized normally.

Possible Cause

- ◆ The logical ID of a certain authorized ONU under the current service card's PON port conflicts with that of the ONU to be authorized in the system. This indicates that an illegal ONU may be accessed.
- ◆ The corresponding ONU is not added in the logical ID white list.

Handling Procedure

1. Check whether the logical ID in conflict is illegal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.

2. Deauthorize the illegally accessed ONU, and check whether the alarm disappears.
 - ▶ If yes, →the alarm handling ends.
 - ▶ If not, → Step 4.
3. Check whether the corresponding ONU is absent in the logical ID white list.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Add the logical address of this ONU to the white list, and check whether the alarm disappears.
 - ▶ If yes, →the alarm handling ends.
 - ▶ If not, → Step 5.
5. Replace the ONU, perform the authentication and authorization again, and then check whether the alarm disappears.
 - ▶ If yes, →the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2.7 CARD_NOT_PRESENT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CARD_NOT_PRESENT	Critical alarm	Equipment alarm	All cards

Impact on the System

- ◆ The network management system cannot issue any command to the card.
- ◆ The services on this card will be interrupted.

Possible Cause

- ◆ The card is unplugged or plugged inappropriately.
- ◆ The card is faulty.

- ◆ The contact with the slot is poor.

Handling Procedure

1. Re-detect the physical configuration, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Check whether the service card is unplugged manually.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Re-plug the service card appropriately, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Check whether the ALM indicator LED of the card is ON.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Replace the service card, and plug the new card into the subrack. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Check whether the contact with the slot is poor.
 - ▶ If yes, → Step 7.
 - ▶ If not, → Step 8.
7. Plug the card into another slot, or replace the subrack.
8. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2.8 OPT_MODULE_TYPE_MISMATCH

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OPT_MODULE_TYPE_MISMATCH	Critical alarm	Equipment alarm	PON ports of the GC8B card

Impact on the System

- ◆ The service card cannot detect the ONU under the PON port.
- ◆ All subscriber services under the PON port run abnormally.

Possible Cause

- ◆ The optical module type of the PON interface is not identical.
- ◆ The optical module is faulty.

Handling Procedure

1. Unplug the optical module of the alarmed PON port, and check whether the optical module type and the service card type match each other.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Search for **OptModule Para Information** in the network management system, and check whether the optical module is faulty.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Replace the 2.5G GPON optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2.9 OLT_PON_LOOPBACK

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OLT_PON_LOOPBACK	Critical alarm	Equipment alarm	PON ports of service cards

Impact on the System

May cause service flooding, and the system cannot process services normally since most resources are occupied.

Possible Cause

The OLT detects loopback at the PON port of the service card.

Handling Procedure

1. Search for **Loopback Detection Table** in the network management system to check detailed loopback information.
2. Eliminate the loop according to the prompted loopback information. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2.10 OPTMODULE_NOT_PRESENT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OPTMODULE_NOT_PRESENT	Critical alarm	Equipment alarm	PON port / uplink port of the service card

Impact on the System

- ◆ The service card cannot detect the ONU under the PON port.

- ◆ All subscriber services under the PON port run abnormally.

Possible Cause

- ◆ The present optical module is unplugged.
- ◆ The card interface is faulty.

Handling Procedure

1. Replug the optical module of the alarmed PON port, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Replace the card, and replug the optical module. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2.11 OPTMODULE_FAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OPTMODULE_FAIL	Critical alarm	Equipment alarm	PON port / uplink port of the service card

Impact on the System

- ◆ The service card cannot detect the ONU under the PON port.
- ◆ All subscriber services under the PON port run abnormally.

Possible Cause

The optical module is faulty.

Handling Procedure

1. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.2.12 PON_LINK_LOSS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
PON_LINK_LOSS	Critical alarm	Communication alarm	All PON ports on service cards

Impact on the System

The services are interrupted because all subscriber optical signals loaded on the PON port fail.

Possible Cause

- ◆ The fiber between the card and the splitter is unplugged.
- ◆ The fiber between the card and the splitter is loosen or damaged.

Handling Procedure

1. Check whether the fiber at the OLT side is unplugged.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replug the fiber into the PON port, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.

- ▶ If not, → Step 3.
- 3. Check whether the optical fiber (from the PON port to the splitter) has no optical signals with an optical power meter.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 6.
- 4. Replace the optical fiber between the PON port and the splitter. After the optical signal is detected normal, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
- 5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.3 Critical Alarms of TDM Service Cards

This section introduces the critical alarms related to the TDM service cards and the handling procedure.

5.3.1 SLOT_DOWN_AND_UP

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
SLOT_DOWN_AND_UP	Critical alarm	Equipment alarm	Service cards

Impact on the System

The service card is disconnected from the backplane, so the service carried by the card will be interrupted.

Possible Cause

- ◆ The service card is unplugged manually.
- ◆ The service card is not plugged correctly.
- ◆ The service card is faulty and works abnormally.

Handling Procedure

1. Check whether the service card is unplugged manually.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replug the service card appropriately, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Replace the service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.3.2 155_OPTICAL_LOF

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
155_OPTICAL_LOF	Critical alarm	Communication alarm	TDM service card

Impact on the System

The TDM services carried by this card will be abnormal.

Possible Cause

- ◆ Excessive line loss causes abnormal signals.
- ◆ The link between the local end equipment and the opposite end equipment is faulty.
- ◆ The opposite end equipment works abnormally.

Handling Procedure

1. Check whether the Rx optical power of the card is normal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the local end optical module or card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the optical fiber between the local end equipment and the opposite end equipment and the fiber interfaces are damaged:
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Replace the faulty fiber and interfaces, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Check whether the opposite end equipment works abnormally.
 - ▶ If yes, → Step 6.
 - ▶ If not, → Step 7.
6. Repair the opposite end equipment, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.3.3 155_OPTICAL_LFA

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
155_OPTICAL_LFA	Critical alarm	Communication alarm	TDM service card

Impact on the System

The TDM services carried by this card will be abnormal.

Possible Cause

- ◆ Excessive line loss causes abnormal signals.
- ◆ The bit error ratio is excessively high during the transmission.
- ◆ The opposite end equipment works abnormally.

Handling Procedure

1. Check whether the Rx optical power of the card is normal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the local end optical module or card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the optical fiber between the local end equipment and the opposite end equipment and the fiber interfaces are damaged:
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Replace the faulty fiber and interfaces, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Check whether the opposite end equipment works abnormally.
 - ▶ If yes, → Step 6.
 - ▶ If not, → Step 7.
6. Repair the opposite end equipment, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.

▶ If not, → Step 7.

7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.3.4 155_OPTICAL_LOS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
155_OPTICAL_LOS	Critical alarm	Communication alarm	TDM service card

Impact on the System

The TDM services carried by this card will be interrupted.

Possible Cause

- ◆ The optical fiber is broken.
- ◆ Excessive line loss or transmission failure occurs.
- ◆ The Tx laser of the opposite end equipment is damaged.
- ◆ The opposite end equipment works abnormally.

Handling Procedure

1. Check whether the Rx optical power of the card is normal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the local end optical module or card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the optical fiber between the local end equipment and the opposite end equipment and the fiber interfaces are damaged:
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.

4. Replace the faulty fiber and optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Check whether the opposite end equipment works abnormally.
 - ▶ If yes, → Step 6.
 - ▶ If not, → Step 7.
6. Repair the opposite end equipment, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.3.5 155_OPTICAL_AIS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
155_OPTICAL_AIS	Critical alarm	Communication alarm	TDM service card

Impact on the System

The TDM services carried by this card will be interrupted.

Possible Cause

- ◆ The optical fiber is broken.
- ◆ Excessive line loss or transmission failure occurs.
- ◆ The Tx laser of the opposite end equipment is damaged.
- ◆ The opposite end equipment works abnormally.

Handling Procedure

1. Check whether the Rx optical power of the card is normal.

- ▶ If yes, → Step 2.
- ▶ If not, → Step 3.
2. Replace the local end optical module or card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the optical fiber between the local end equipment and the opposite end equipment and the fiber interfaces are damaged:
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Replace the faulty fiber and optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Check whether the opposite end equipment works abnormally.
 - ▶ If yes, → Step 6.
 - ▶ If not, → Step 7.
6. Repair the opposite end equipment, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.3.6 CARD_NOT_PRESENT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CARD_NOT_PRESENT	Critical alarm	Equipment alarm	All cards

Impact on the System

- ◆ The network management system cannot issue any command to the card.
- ◆ All the services carried by this card are interrupted.

Possible Cause

- ◆ The card is unplugged or plugged inappropriately.
- ◆ The card is faulty.
- ◆ The contact with the slot is poor.

Handling Procedure

1. Re-detect the physical configuration, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Check whether the service card is unplugged.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Replug the service card appropriately, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Check whether the ALM indicator LED of the card is ON.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Replace the service card, and plug the new card into the subrack. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Check whether the contact with the slot is poor.
 - ▶ If yes, → Step 7.

- ▶ If not, → Step 8.
- 7. Plug the card into another slot, or replace the subrack.
- 8. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.4 Critical Alarms of Clock Cards

This section introduces the critical alarms related to the clock cards and the handling procedure.

5.4.1 SLOT_DOWN_AND_UP

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
SLOT_DOWN_AND_UP	Critical alarm	Equipment alarm	Service cards

Impact on the System

The service card is disconnected from the backplane, so the service carried by the card will be interrupted.

Possible Cause

- ◆ The service card is unplugged manually.
- ◆ The service card is not inserted properly.
- ◆ The service card is faulty and works abnormally.

Handling Procedure

1. Check whether the service card is unplugged manually.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replug the service card appropriately, and check whether the alarm disappears.

- ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Replace the service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
 4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.4.2 OOCR

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OOCR	Critical alarm	Equipment alarm	The TIMA card

Impact on the System

The system clock fails in synchronization, so the system cannot obtain correct clock synchronization information.

Possible Cause

The TIMA card works abnormally.

Handling Procedure

1. Check whether the TIMA card status is abnormal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the TIMA card, and check whether the fault is eliminated.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.4.3 1PPS_LOS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
1PPS_LOS	Critical alarm	Equipment alarm	The TIMA card

Impact on the System

The system clock fails in synchronization, so the system cannot obtain correct clock synchronization information.

Possible Cause

- ◆ The communication with the up link is interrupted.
- ◆ The clock source device works abnormally.
- ◆ The TIMA card works abnormally.

Handling Procedure

1. Check whether any alarms related to the communication with the up link exist in the network management system.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Eliminate the relevant alarms using the corresponding troubleshooting methods, and then check whether this alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the time source device works normally.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Restore the clock source device, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Check whether the TIMA card status is abnormal.

- ▶ If yes, → Step 6.
 - ▶ If not, → Step 7.
6. Replug or replace the TIMA card, and check whether the fault is eliminated.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
 7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.5 Critical Alarms of Uplink Cards

This section introduces the critical alarms related to the uplink cards and the handling procedures.

5.5.1 NO_OPTICS_SIGNAL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
NO_OPTICS_SIGNAL	Critical alarm	Communication alarm	Uplink ports

Impact on the System

All services loaded on the uplink port will be interrupted.

Possible Cause

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

Handling Procedure

1. Search for **Uplink Port Properties** in the network management system, and enable the uplink port again. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.

2. Search for **Uplink Port Properties** in the network management system, and perform the auto-negotiation again. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Search for **OptModule Para Information** in the network management system, and check whether the optical module status is abnormal.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Check whether the uplink optical interface is not connected with optical fiber or the fiber connected is broken.
 - ▶ If yes, → Step 6.
 - ▶ If not, → Step 7.
6. Plug the optical fiber properly or replace the optical fiber, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.5.2 CCM LOC

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CCM LOC	Critical alarm	Communication alarm	Uplink ports

Impact on the System

The link is faulty, and this may cause service interruption.

Possible Cause

- ◆ The up link is abnormal.
- ◆ The optical module of the uplink port is faulty.
- ◆ The opposite end equipment is faulty.

Handling Procedure

1. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.5.3 OPTMODULE_FAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OPTMODULE_FAIL	Critical alarm	Communication alarm	Uplink ports

Impact on the System

All services loaded on the uplink port will be interrupted.

Possible Cause

The optical module is damaged.

Handling Procedure

1. Replace the optical module related to the alarm, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.5.4 LACP_LINK_DOWN

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
LACP_LINK_DOWN	Critical alarm	Communication alarm	Uplink ports

Impact on the System

All services loaded on the uplink port will be interrupted if all LACP links are interrupted.

Possible Cause

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

Handling Procedure

1. Check whether the opposite end equipment works normally.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 2.
2. Recover the opposite end equipment, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
3. Search for **Uplink Port Properties** in the network management system, and enable the uplink port of the local equipment again. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Search for **Uplink Port Properties** in the network management system, and set the port working mode to be consistent with that of the port on the opposite end equipment. Then check whether the alarm disappears.

- ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Search for **OptModule Para Information** in the network management system, and check whether the optical module status is abnormal.
 - ▶ If yes, → Step 6.
 - ▶ If not, → Step 7.
 6. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
 7. Check whether the uplink optical interface is not connected with optical fiber or the fiber connected is broken.
 - ▶ If yes, → Step 8.
 - ▶ If not, → Step 9.
 8. Plug the optical fiber properly or replace the optical fiber, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 9.
 9. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.5.5 CARD_NOT_PRESENT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CARD_NOT_PRESENT	Critical alarm	Equipment alarm	All cards

Impact on the System

- ◆ The network management system cannot issue any command to the card.
- ◆ All the services carried by this card are interrupted.

Possible Cause

- ◆ The card is unplugged or plugged inappropriately.
- ◆ The card is faulty.
- ◆ The contact with the slot is poor.

Handling Procedure

1. Re-detect the physical configuration, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Check whether the uplink card is unplugged.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Replug the uplink card properly, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Check whether the ALM indicator LED of the card is ON.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Replace the uplink card, and plug the new card in the subrack. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Check whether the contact with the slot is poor.
 - ▶ If yes, → Step 7.
 - ▶ If not, → Step 8.
7. Plug the card into another slot, or replace the subrack.
8. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6 Critical Alarms of ONUs

This section introduces the critical alarms related to the subscriber terminal devices such as ONUs or HGs and provides the handling procedures.

5.6.1 LINK_LOSS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
LINK_LOSS	Critical alarm	Communication alarm	All ONUs or HGs

Impact on the System

The services on the alarmed subscriber device will be interrupted.

Possible Cause

- ◆ The optical fibers at the ONU / HG side are faulty.
- ◆ The ONU / HG is faulty.
- ◆ The optical fiber connected with the PON port (i.e. the fiber between the PON port and the splitter) is damaged.
- ◆ The optical module of the PON port on the PON service card is faulty.

Handling Procedure

1. Check whether only a single ONU or HG reports this alarm.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 6.
2. Check whether the ONU or HG has received optical signals using an optical power meter.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Replace the ONU or HG, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.

- ▶ If not, → Step 4.
- 4. Replace the optical fiber at the ONU or HG side, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 9.
- 5. Check whether the optical fiber between the PON port and the splitter has optical signals using an optical power meter.
 - ▶ If yes, → Step 6.
 - ▶ If not, → Step 7.
- 6. Measure the optical power of each branch fiber using an optical power meter, and replace the faulty optical fibers. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 8.
- 7. Replace the optical fiber from the PON port to the splitter, and re-connect the fiber. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 8.
- 8. Replace the PON service card or optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 9.
- 9. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.2 EQUIPMENT_TYPE_MISMATCH

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
EQUIPMENT_ TYPE_MISMATCH	Critical alarm	Processing failure alarm	All ONUs

Impact on the System

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

Possible Cause

- ◆ The type of the new ONU is not identical to that of the one to be replaced.
- ◆ The type of the pre-configured ONU in the network management system is not identical to that of the physically connected ONU.

Handling Procedure

1. Click **ONU authentication** in the menu bar of the network management system, and check whether the ONU type in the **ONU Type** list is different from the pre-configured ONU type.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Check the configuration in the network management system, and modify the ONU type so that it is identical to the pre-configured ONU type. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Select an ONU with the correct type, and re-authorize it. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.3 UPGRADE_FAILURE

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UPGRADE_FAILURE	Critical alarm	Processing failure alarm	All ONUs

Impact on the System

The ONU fails in upgrade, so it cannot provide services for subscribers.

Possible Cause

- ◆ The type of the ONU upgrade file does not match that of the file to be upgraded.
- ◆ The FTP server works abnormally.
- ◆ The communication between the AN5116-06B/AN5516-06/AN5516-04 and the ONU is interrupted, and the upgrade file is not delivered to the ONU to be upgraded.
- ◆ The ONU fails to use the new upgrade files.
- ◆ The communication between the AN5116-06B/AN5516-06/AN5516-04's core switch card and service cards is abnormal.

Handling Procedure

1. Check whether the ONU upgrade file type does not match the file type of the ONU to be upgraded.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Use the correct upgrade file to perform the upgrade again, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the FTP server works abnormally.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Re-configure and restart the FTP server, and perform the upgrade operation again. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.

5. Check whether the prompt information of the alarm is **The ONU fails to start up the new version of the software**.
 - ▶ If yes, → Step 10.
 - ▶ If not, → Step 6.
6. Check whether the prompt information is **Poor communication between line cards and ONUs**.
 - ▶ If yes, → Step 8.
 - ▶ If not, → Step 7.
7. Check whether the prompt information is **Poor communication between GSW and line cards**.
 - ▶ If yes, → Step 11.
 - ▶ If not, → Step 14.
8. Check whether the ONU has reported fiber cut alarms.
 - ▶ If yes, → Step 9.
 - ▶ If not, → Step 14.
9. Handle the related faults with reference to [LINK_LOSS](#), and perform the upgrade operation again. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 10.
10. Deliver the firmware refresh command manually. After the command is executed successfully, restart the ONU, and check whether the alarm disappears and the ONU software version is updated.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 11.
11. Log into the interface card through the CLI system, and check whether the login succeeds.
 - ▶ If yes, → Step 12.
 - ▶ If not, → Step 13.

12. Search for **Reset ONU** in the network management system, and restart the ONU to be upgraded. Then search for **ONU Information**, and check whether the new software version is started up for the ONU.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 14.
13. Search for **ONU Information** in the network management system, and check whether the ONU has acquired the new software version.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 14.
14. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.4 AUTO_UPGRADE_ONU_FAILURE

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
AUTO_UPGRADE_ONU_FAILURE	Critical alarm	Processing failure alarm	ONUs, HGs, all PON ports on service cards

Impact on the System

The ONU fails in upgrade, and the services carried by the ONU may be influenced.

Possible Cause

- ◆ The ON upgrade file type cannot be identified or the upgrade file is verified to be incorrect.
- ◆ The ONU upgrade file type does not match that of the ONU to be upgraded.
- ◆ The FTP server or the downloaded file is faulty.
- ◆ The communication between the core switch card and the PON interface card fails.
- ◆ The communication between the interface card and the ONU fails.

Handling Procedure

1. Check whether the prompt information is **Unknown upgrade file type or wrong crc of file..**
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Check the version of the upgrade file, and use the file matching the ONU to be upgraded for the upgrade operation. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the prompt information is **Unconsistent upgrade file type with ONU type.**
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Check the ONU type corresponding to the upgrade file, and use the file matching the ONU to be upgraded for the upgrade operation. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Check whether the prompt information is **Error occurs when download files from FTP server.**
 - ▶ If yes, → Step 6.
 - ▶ If not, → Step 7.
6. Check the connection and operation status of the FTP server. When the FTP server can be accessed normally, upgrade the ONU again, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
7. Check whether the prompt information is **Poor communication between GSW and line cards.**
 - ▶ If yes, → Step 8.

- ▶ If not, → Step 10.
8. Log into the interface card through the CLI system, and check whether the login succeeds.
 - ▶ If yes, → Step 9.
 - ▶ If not, → Step 10.
 9. Search for **Reset ONU** in the network management system, reset the ONU to be upgraded, and → Step 10.
 10. Search for **ONU Information** in the network management system, and check whether the ONU has acquired the new software version.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 14.
 11. Check whether the prompt information is **Poor communication between line cards and ONUs**.
 - ▶ If yes, → Step 12.
 - ▶ If not, → Step 14.
 12. Check whether the link quality related alarms such as **LINK_LOSS** exist in the network management.
 - ▶ If yes, → Step 13.
 - ▶ If not, → Step 14.
 13. Handle the link faults according to the methods mentioned in [LINK_LOSS](#), and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 14.
 14. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.5 MGC_DISCONNECTED

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
MGC_DISCONNECTED	Critical alarm	Equipment alarm	ONUs, HGs

Impact on the System

- ◆ If a single ONU's voice service configuration has faults, the NGN voice services of the subscribers under this ONU will be influenced.
- ◆ If the uplink physical link of the OLT has faults, the NGN voice services of the subscribers under all ONUs will be influenced.

Possible Cause

After the NGN voice services are configured, the communication between the ONU and the MGC fails. This may be caused by the following reasons:

- ◆ The physical connection of the network has faults.
 - ▶ If a single ONU reports this alarm, the physical connection between this ONU and the OLT may have faults.
 - ▶ If all ONUs report this alarm, the OLT's physical connection may have faults.
- ◆ The configuration of the NGN voice service is modified and the modification is incorrect.
 - ▶ If a single ONU reports this alarm, the ONU's IP address, VLAN ID or MGC address configuration may be incorrect.
 - ▶ If all ONUs report this alarm, the OLT's local uplink platform data, VLAN configuration or MGC address configuration may be incorrect and the incorrect configuration has been delivered to all ONUs.

Handling Procedure

According to their influence range, two cases should be considered: the fault on a single ONU and the fault on all ONUs. Users should troubleshoot them as follows:

- ◆ If a single ONU reports the MGC_DISCONNECTED alarm,
 - 1) Check whether the physical connection from the ONU to the OLT is normal.
 - If yes, → Step 2.
 - If not, → Step 3.
 - 2) Modify the connection, and check whether the alarm disappears.

- If yes, the alarm handing ends.
 - If not, → Step 3.
- 3) Search for **NGN Configuration** in the network management system, and check whether the public network IP address of the ONU is configured correctly.
- If yes, → Step 4.
 - If not, → Step 5.
- 4) Modify the ONU public network IP address, and reconnect the MGC. Then check whether the alarm disappears.
- If yes, the alarm handing ends.
 - If not, → Step 5.
- 5) Search for **NGN Interface** in the network management system, and check whether the MGC IP address of the signaling service for the ONU is configured correctly.
- If yes, → Step 6.
 - If not, → Step 7.
- 6) Modify the MGC IP address configuration, and check whether the alarm disappears.
- If yes, the alarm handing ends.
 - If not, → Step 7.
- 7) In the **ONU Voice Port Config** tab, check whether the VLAN ID configuration for this ONU matches the planning data.
- If yes, → Step 8.
 - If not, → Step 9.
- 8) Modify the VLAN ID of this ONU, and redo the connection. Then check whether the alarm disappears.
- If yes, the alarm handing ends.
 - If not, → Step 9.
- 9) Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

- ◆ If all ONUs of the OLT report the MGC_DISCONNECTED alarm:
 - 1) Check whether the physical connection from the uplink card to the IP bearer network equipment is normal.
 - If yes, → Step 2.
 - If not, → Step 3.
 - 2) Modify the connection, and check whether the alarm disappears.
 - If yes, the alarm handling ends.
 - If not, → Step 3.
 - 3) Check whether the configured local VLAN range of the NGN service is consistent with the planned data.
 - If yes, → Step 4.
 - If not, → Step 5.
 - 4) Modify the local VLAN configuration, and check whether the alarm disappears.
 - If yes, the alarm handling ends.
 - If not, → Step 5.
 - 5) Check whether the MGC address configuration of the NGN service uplink interface is correct.
 - If yes, the alarm handling ends.
 - If not, → Step 6.
 - 6) Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.6 ONU_REGISTER_FAILED

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ONU_REGISTER_FAILED	Critical alarm	Processing failure alarm	ONUs

Impact on the System

The resource management system of the network operator fails to manage the ONU.

Possible Cause

The communication between the network management system and the resource management system of the network operator is interrupted.

Handling Procedure

1. Check whether the physical link between the network management system and the resource management system of the network operator is normal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Recover the physical link, and re-authorize the ONU. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.7 HG_REGISTER_FAILED

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
HG_REGISTER_FAILED	Critical alarm	Processing failure alarm	HGs

Impact on the System

The resource management system of the network operator fails to manage the HG.

Possible Cause

The communication between the network management system and the resource management system of the network operator is interrupted.

Handling Procedure

1. Check whether the physical link between the network management system and the resource management system of the network operator is normal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Recover the physical link, and re-authorize the HG. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.8 BATTERY_VOLTAGE_TOO_LOW

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
BATTERY_VOLTAGE_TOO_LOW	Critical alarm	Equipment alarm	ONUs

Impact on the System

The ONU cannot work normally because the voltage of the battery is over low.

Possible Cause

The voltage of the ONU's standby battery is over low.

Handling Procedure

1. Replace the ONU's standby battery, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.9 LOF

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
LOF	Critical alarm	Equipment alarm	The ONUs AN5506-04-B and AN5506-06



Note:

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

Impact on the System

The synchronization status of the data flow will be lost during the delimitation process, which may cause ONU disconnection.

Possible Cause

The OLT does not receive any valid delimitation frames from the ONU for successive four frames due to the loss on the optical fiber, bad connection at the interface, or optical module fault.

Handling Procedure

1. Search for **Reset ONU** in the network management system or restart the ONU manually. Observe for successive five minutes, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Search for **OptModule Para Information** in the network management system, and check whether the optical module is normal.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Use an optical power meter to check whether the optical fiber connection is normal. If any fiber is faulty, replace it. Then check whether the alarm disappears.

- ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
4. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
 5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.10 LOAM_LOS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
LOAM_LOS	Critical alarm	Equipment alarm	The ONUs AN5506-04-B and AN5506-06

Impact on the System

The services on the ONU may be interrupted and the ONU may even be disconnected from the OLT.

Possible Cause

After transmitting the PLOAM frames, the OLT fails to receive successive three PLOAMu frames from the ONU due to the loss on the optical fiber, bad connection of the fiber at the interface, or optical module fault.

Handling Procedure

1. Search for **Reset ONU** in the network management system or restart the ONU manually. Observe for successive five minutes, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Search for **OptModule Para Information** in the network management system, and check whether the optical module is normal.

- ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Use an optical power meter to check whether the optical fiber connection is normal. If any fiber is faulty, replace it. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
 4. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
 5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

Reference Information

- ◆ PLOAM: Used for transmitting the OAM function information between the ONU and the OLT.
- ◆ PLOAMu: Uplink PLOAM.

5.6.11 PSE_SHORT_CIRCUIT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
PSE_SHORT_CIRCUIT	Critical alarm	Equipment alarm	The ONUs supporting the power supply function

Impact on the System

The ONU cannot be powered on normally.

Possible Cause

The power supply line or power device is faulty.

Handling Procedure

1. Replace the power supply line or power device, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.12 DEACTIVATE_FAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DEACTIVATE_FAIL	Critical alarm	Equipment alarm	ONUs of various types

Impact on the System

The system cannot assign the bandwidth correctly, so other ONUs probably cannot log in normally.

Possible Cause

A rogue ONU exists in the network.

Handling Procedure

1. Remove the rogue ONU in the network, and perform the deactivation operation again. Then Check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.13 OMCI_CHANNEL_LOS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OMCI_CHANNEL_LOS	Critical alarm	Equipment alarm	ONUs of various types

Impact on the System

The ONU cannot be managed properly.

Possible Cause

- ◆ The OMCI path is inconsistent.
- ◆ The MIC error exists.
- ◆ A rogue ONU exists in the network.

Handling Procedure

1. Deauthorize or reset the target ONU, and wait for the ONU to get authorized on the OLT. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Remove the rogue ONU in the network, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.6.14 DYING_GASP

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DYING_GASP	Critical alarm	Communication alarm	ONUs of various types

Impact on the System

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

Possible Cause

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

Handling Procedure

1. Check whether the power supply connection of the ONU is faulty. Reconnect the power supply, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Check whether the external power supply is disconnected.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Resume the external power supply, and check whether the ONU is powered on normally.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Replace the power adapter, and check whether the ONU is powered on normally.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Replace the ONU, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7 Critical Alarms of HCU

This section introduces the critical alarms related to the environment monitoring unit and provides the handling procedures.

5.7.1 ISSUE_ALM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ISSUE_ALM	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

None.

Possible Cause

Other main system alarms exist and are not handled.

Handling Procedure

1. Check whether alarms related to the main environment monitoring unit exist in the current alarms.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Handle the related alarms. After all the related alarms are removed, check whether the alarm in this section disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.2 SYSMINALM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
SYSMINALM	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

None.

Possible Cause

Other secondary system alarms exist and are not handled.

Handling Procedure

1. Check whether alarms related to the environment monitoring unit exist in the current alarms.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Handle the related alarms. After all the related alarms are removed, check whether the alarm in this section disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.3 HUM_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
HUM_OVER	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The hardware fault may occur, and the operation of the equipment can be influenced.

Possible Cause

The ambient humidity for the equipment is over high.

Handling Procedure

1. Lower the ambient humidity for the equipment, or place the equipment in a relatively dry circumstance. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.4 HUM_DOWN

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
HUM_DOWN	Critical Alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The hardware fault may occur, and the operation of the equipment can be influenced.

Possible Cause

The ambient humidity for the equipment is over low.

Handling Procedure

1. Increase the ambient humidity for the equipment, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.

- ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.5 ENV_TEMP_DOWN

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ENV_TEMP_DOWN	Critical Alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The hardware fault may occur, and the operation of the equipment can be influenced.

Possible Cause

The ambient temperature for the equipment is over low.

Handling Procedure

1. Use proper measures to raise the ambient temperature, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.6 ACVOLOVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ACVOLOVER	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply condition of the equipment is abnormal. This may damage the power supply or card, and can cause service interruption.

Possible Cause

- ◆ The alarm threshold value is set over low.
- ◆ The voltage of the AC power supply is over high.

Handling Procedure

1. Check whether the alarm threshold value is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Handle the line problems, and replace the AC power supply. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.7 ACVOLDOWN

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ACVOLDOWN	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply condition of the equipment is abnormal. This can cause service interruption.

Possible Cause

- ◆ The alarm threshold value is set over high.
- ◆ The voltage of the AC power supply is over low.

Handling Procedure

1. Check whether the alarm threshold value is set over high.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Handle the line problems, and replace the AC power supply. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.8 DCVOLOVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DCVOLOVER	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply condition of the equipment is abnormal. This may damage the power supply or card, and can cause service interruption.

Possible Cause

- ◆ The alarm threshold value is set over low.
- ◆ The voltage of the DC power supply is over high.

Handling Procedure

1. Check whether the alarm threshold value is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Modify the upper limit of the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Handle the line problems, and replace the DC power supply. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.9 DCVOLDOWN

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DCVOLDOWN	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply condition of the equipment is abnormal. This can cause service interruption.

Possible Cause

- ◆ The alarm threshold value is set over high.
- ◆ The voltage of the DC power supply is over low.

Handling Procedure

1. Check whether the alarm threshold value is set over high.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Modify the upper limit of the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Handle the line problems, and replace the DC power supply. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.10 OVERCURRE

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OVERCURRE	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply condition of the equipment is abnormal. This may damage the power supply or card, and can cause service interruption.

Possible Cause

- ◆ The alarm threshold value is set over low.
- ◆ The current in the rectifier is over high.

Handling Procedure

1. Check whether the alarm threshold value is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Handle the line problems, and replace the rectifier or power supply. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.11 ENV_TEMP_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ENV_TEMP_OVER	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The hardware fault may occur, and the operation of the equipment can be influenced.

Possible Cause

The ambient temperature for the equipment is over high.

Handling Procedure

1. Take proper measures to lower the ambient temperature, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.12 ARRESTBRK

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ARRESTBRK	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The equipment may be damaged by lightning and lose its lightning protection function, which will affect the services carried by the equipment.

Possible Cause

The line of the lightning arrester is disconnected.

Handling Procedure

1. Handle the faults of the lightning protection module, and replace the lightning arrester. Then check whether the alarm disappears.

- ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.13 FIRE_ALM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
FIRE_ALM	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The equipment may be damaged by fire, and the services will be affected.

Possible Cause

There may be naked flame near the equipment, and it should be put out immediately.

Handling Procedure

1. Put out the naked flame, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.14 DOOR_ALM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DOOR_ALM	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The equipment may be faulty due to the environmental influence, and the services cannot operate normally.

Possible Cause

The cabinet door is opened.

Handling Procedure

1. Check whether the cabinet door is opened manually due to the maintenance operations.
 - ▶ If yes, the alarm requires no handling.
 - ▶ If not, → Step 2.
2. Close the cabinet door, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.15 DCVOLFAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DCVOLFAIL	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The rectifier may be faulty, and the services cannot operate normally.

Possible Cause

- ◆ The alarm threshold value is set over low.
- ◆ The DC voltage of the rectifier is over high.

Handling Procedure

1. Check whether the alarm threshold value is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Handle the line problems, and replace the rectifier or power supply. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.16 ACVOLFAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ACVOLFAIL	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The rectifier may be faulty, and the services cannot operate normally.

Possible Cause

- ◆ The alarm threshold value is set over low.
- ◆ The AC voltage of the rectifier is over high.

Handling Procedure

1. Check whether the alarm threshold value is set over low.
 - ▶ If yes, → Step 2.

- ▶ If not, → Step 3.
- 2. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
- 3. Handle the line problems, and replace the rectifier or power supply. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
- 4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.17 ACMAINFAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ACVOLOVER	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply of the equipment fails. This may damage the power supply or card, and cause service interruption.

Possible Cause

- ◆ The power supply line is faulty.
- ◆ The AC circuit breaker is faulty.

Handling Procedure

1. Check whether the power supply line is faulty.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Handle the power supply line problems, and check whether the alarm disappears.

- ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Replace the AC circuit breaker, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
 4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.18 LVDS_ALM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
LVDS_ALM	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply for the equipment is abnormal. This may damage the power supply or card, and cause service interruption.

Possible Cause

The AC power input is abnormal.

Handling Procedure

1. Check whether the power supply line is faulty.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Handle the power supply line problems, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.

3. Replace the AC power supply device, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.19 LINKFAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
LINKFAIL	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The rectifier may be faulty, so that the power supply of the equipment is abnormal, and the services cannot operate normally.

Possible Cause

The rectifier may be faulty.

Handling Procedure

1. Handle the line problems, and replace the rectifier. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.20 RECISSALM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
RECISSALM	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

A certain rectifier module may be faulty, so that the power supply of the equipment is abnormal, and the services cannot operate normally.

Possible Cause

The rectifier module is faulty.

Handling Procedure

1. Replace the rectifier module related to the alarm, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.21 FANFAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
FANFAIL	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The air cooling of the system is poor. Accordingly, the equipment temperature may be over high, and the services may run abnormally.

Possible Cause

- ◆ Dust accumulates on the anti-dust screen.
- ◆ The fan is faulty.

Handling Procedure

1. Clear the dust on the anti-dust screen and fan blades, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Replace the fan unit, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.22 HEATFAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
HEATFAIL	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The ambient temperature is over low, and the equipment operation may be affected.

Possible Cause

The heating rod is faulty.

Handling Procedure

1. Replace the heating rod, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.

- Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.23 SHAKE

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
SHAKE	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

Abnormal shake may affect normal operation of the equipment.

Possible Cause

Abnormal shake occurs.

Handling Procedure

- Observe whether the alarm occurs consistently in a certain period.
 - If yes, → Step 2.
 - If not, no handling is needed.
- Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.24 INFRARED

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
INFRARED	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

None.

Possible Cause

The infrared sensor detects that a certain object or person is near the equipment.

Handling Procedure

1. Observe whether the alarm occurs consistently in a certain period.
 - ▶ If yes, → Step 2.
 - ▶ If not, no handling is needed.
2. Clear the circumstance of the equipment, remove the objects near the sensor, and take measures to prevent unauthorized persons from approaching the equipment. After completing these operations, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.25 INUNDATION

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
INUNDATION	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The equipment may be damaged by the flood, and the normal operation of services may be influenced.

Possible Cause

The equipment is flooded.

Handling Procedure

1. Power off the equipment, and move it to a dry place. Drain off the water, and re-lay the equipment. Then check whether the alarm disappears.
 - ▶ If yes, → Step 2.
 - ▶ If not, no handling is needed.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.26 SMOKE

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
SMOKE	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

If the smoke comes from burning, the equipment may be damaged.

Possible Cause

- ◆ The fault of the smoke sensor causes an incorrect alarm.
- ◆ A certain object in the equipment environment is burning and generates smoke.

Handling Procedure

1. Check whether there is smoke in the equipment environment.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Search for the source of the smoke, and put out the fire if there is any. After clearing the smoke in the equipment environment, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Replace the sensor, and check whether the alarm disappears.

- ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.27 AIRCONDITION

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
AIRCONDITION	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The overhigh or overflow temperature can cause abnormal operation of the equipment, and the services may be influenced.

Possible Cause

The air conditioner is turned off.

Handling Procedure

1. Observe consistently for a certain period, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Turn on the air conditioner, and wait until the temperature gets to a proper level. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.28 PALM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
PALM	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply of the equipment is abnormal, and the services cannot operate normally.

Possible Cause

The power cable or the power module is faulty.

Handling Procedure

1. Replace the power cable or the power module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.29 BFUSEBRK

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
BFUSEBRK	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply of the equipment is abnormal, and the services cannot operate normally.

Possible Cause

The power cable or the power module is faulty.

Handling Procedure

1. Check the battery fuse of the corresponding line, replace the faulty fuse, and troubleshoot the line. Then turn on the power again, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.30 LOADFUSE

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
LOADFUSE	Critical Alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply of the equipment is abnormal, and the services cannot operate normally.

Possible Cause

The power supply is faulty, and the power line is overloaded.

Handling Procedure

1. Check the load fuse of the corresponding line, replace the faulty fuse, and eliminate the line troubles. Turn on the power again, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.

2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.31 RECVOLOVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
RECVOLOVER	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply of the equipment is abnormal, and the services cannot operate normally.

Possible Cause

The power supply is faulty, so the output voltage of the rectifier is over high.

Handling Procedure

1. Replace the rectifier of the corresponding line, and troubleshoot the problems with the line. Turn on the power again, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.32 RECVOLDOWN

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
RECVOLDOWN	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The power supply of the equipment is abnormal, and the services cannot operate normally.

Possible Cause

The power supply is faulty; as a result, the output voltage of the rectifier is over low.

Handling Procedure

1. Replace the rectifier of the corresponding line, and troubleshoot the problems with the line. Turn on the power again, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.33 RETEMPOVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
RETEMPOVER	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The rectifier may be faulty, so that the power supply of the equipment is abnormal, and the services cannot operate normally.

Possible Cause

The power supply is faulty; as a result, the temperature of the rectifier is over high.

Handling Procedure

1. Replace the rectifier of the corresponding line, and troubleshoot the problems with the line. Turn on the power again, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.34 Battery_Discharging

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
Battery_Discharging	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The standby battery has low power, so that it cannot serve as a backup power when the power supply for the equipment is abnormal, and the services may be affected.

Possible Cause

The rectifier is faulty.

Handling Procedure

1. Check the working status of the system rectifier module. Replace the faulty rectifier module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.35 BATTERY_TEMPRATURE_LOW_THRESHOLD_ALARM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
BATTERY_TEMPRATURE_LOW_THRESHOLD_ALARM	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The operation of the standby battery is affected, so the battery cannot serve as a backup power when the power supply for the equipment is abnormal, and the services may be affected.

Possible Cause

The ambient temperature for the equipment is over low.

1. Take proper measures to enhance the ambient temperature, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.36 BATTERY_HUM_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
BATTERY_HUM_OVER	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The standby battery is affected in performance and may be damaged, so that it cannot serve as a backup power when the power supply for the equipment is abnormal, and the services may be affected.

Possible Cause

The ambient humidity for the equipment is over high.

Handling Procedure

1. Lower the ambient humidity for the equipment, or lay the equipment in a relatively dry circumstance. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

5.7.37 BATTERY_HUM_DOWN

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
BATTERY_HUM_DOWN	Critical alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The operation of the standby battery is affected, so the battery cannot serve as a backup power when the power supply for the equipment is abnormal, and the services may be affected.

Possible Cause

The ambient humidity for the equipment is over low.

Handling Procedure

1. Take proper measures to enhance the ambient humidity, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6 Major Alarms

- Major Alarms of Core Switch Cards
- Major Alarms of Service Cards
- Major Alarms of TDM Cards
- Major Alarms of Clock Cards
- Major Alarms of Uplink Cards
- Major Alarms of the HCU

6.1 Major Alarms of Core Switch Cards

This section introduces the major alarms related to the core switch cards and the handling procedures.

The AN5116-06B/AN5516-06/AN5516-04's core switch cards are uplink switch cards such as the HSUA, HSUB and HSUC cards.

6.1.1 CONFIG_HAVENOT_SAVED

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CONFIG_HAVENOT_SAVED	Major alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

After the equipment reboot or a sudden power-down, the unsaved configurations will be lost.

Possible Cause

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

Handling Procedure

1. Check whether the configurations or modifications need to be saved:
 - ▶ If yes, → Step 2.
 - ▶ If not, no handling is needed.
2. Search for **Save Config to Flash** in the network management system, and check whether the alarm disappears after this operation.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.

3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.1.2 TOO_MANY_TDM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
TOO_MANY_TDM	Major alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

It does not influence the system.

Possible Cause

More than 15 TDM cards are plugged in the system.

Handling Procedure

1. Unplug the unnecessary TDM cards, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.1.3 ALARM_NUM_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ALARM_NUM_OVER_THRESHOLD	Major alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

New system alarms cannot be displayed in the network management system GUI, and users cannot learn of the latest system status and handle the new alarms in a timely manner.

Possible Cause

The total number of alarms in the current system exceeds the pre-configured threshold value.

Handling Procedure

1. Handle the alarms to be solved and delete the solved ones in a timely manner. After the aforesaid operations are completed, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.1.4 CUR_ALARM_NUM_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CUR_ALARM_NUM_OVER_THRESHOLD	Major alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

New system alarms cannot be displayed in the network management system GUI, and users cannot learn of the latest system status and handle the new alarms in a timely manner.

Possible Cause

The total number of alarms in the current system exceeds the pre-configured threshold value.

Handling Procedure

1. Handle the alarms to be solved and delete the solved ones in a timely manner. After the aforesaid operations are completed, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.1.5 CARD_TYPE_NOT_IDENTICAL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CARD_TYPE_NOT_IDENTICAL	Major alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

- ◆ The UNM2000 or the CLI (Command Line Interface) cannot issue any command to the card in this slot.
- ◆ The card cannot provide any service.

Possible Cause

The type of the card physically plugged in the equipment is not identical to that pre-configured in the UNM2000.

Handling Procedure

1. Check whether the card physically plugged in the equipment mismatches the card type configured in the UNM2000.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Modify the configuration in the network management system, or replace the card with a correct one. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.2 Major Alarms of Service Cards

This section introduces the major alarms related to the service cards and the handling procedures.

6.2.1 ALL_ONU_DYING-GASP

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ALL_ONU_DYING-GASP	Major alarm	Equipment alarm	PON ports of service cards

Impact on the System

All subscriber services loaded on the PON port are interrupted.

Possible Cause

The power supply in the corresponding area or the equipment room is cut off, or the power supply system is faulty.

Handling Procedure

1. Check the ON / OFF status of the power supply, and switch on the power supply again. Then check whether the power supply of the ONUs recovers and whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Contact the power supply department to handle the power line faults. After the power supply recovers, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Switch on the ONU power supply, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.2.2 TX_POWER_HIGH_ALARM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
TX_POWER_HIGH_ALARM	Major alarm	Equipment alarm	PON ports of service cards

Impact on the System

The optical module works in an unstable state, services under the PON port will be influenced, and all services may even be interrupted.

Possible Cause

- ◆ The optical module of the PON port is aging or damaged.
- ◆ The setting of the PON port's Tx optical power alarm threshold value is inappropriate.

Handling Procedure



Caution:

The operation of measuring the optical module's optical power will interrupt the service.

1. Check whether the alarm can disappear automatically in five minutes after it is reported.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Search for **PM Threshold Profile** in the network management system, and check whether the threshold value of the highest Tx optical power is set over low.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Re-configure the alarm threshold value, and check whether the alarm disappears after saving the configurations.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Measure the Tx optical power of the PON optical module with the optical power meter and check whether the optical power is over high:
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.2.3 CARD_TYPE_NOT_IDENTICAL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CARD_TYPE_NOT_IDENTICAL	Major alarm	Equipment alarm	Service cards

Impact on the System

- ◆ The UNM2000 or the CLI (Command Line Interface) cannot issue any command to the card in this slot.
- ◆ The card cannot provide any service.

Possible Cause

The type of the card physically plugged in the equipment is not identical to that pre-configured in the UNM2000.

Handling Procedure

1. Check whether the card physically plugged in the equipment mismatches the card type configured in the UNM2000.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Modify the configuration in the network management system, or replace the card with a correct one. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.3 Major Alarms of TDM Cards

This section introduces the major alarms related to the TDM cards and the handling procedures.

6.3.1 E1_LOS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
E1_LOS	Major alarm	Communication alarm	TDM service card

Impact on the System

The TDM services loaded on this card are interrupted.

Possible Cause

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

Handling Procedure

1. Search for **E1 loopback** in the network management system to perform the E1 loopback test, and check whether the connection between the OLT and the opposite end equipment's E1 interface is abnormal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Repair the physical link, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the equipment at the opposite end connected via the E1 transmission line works abnormally.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Handle the faults with the opposite end equipment, and check whether the alarm disappears after the opposite end equipment resumes normal work.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.

5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.3.2 E1_LFA

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
E1_LFA	Major alarm	Communication alarm	TDM service card

Impact on the System

The TDM services loaded on this card are interrupted.

Possible Cause

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

Handling Procedure

1. Search for **E1 loopback** in the network management system to perform the E1 loopback test, and check whether the connection between the OLT and the opposite end equipment's E1 interface is abnormal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Repair the physical link, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the equipment at the opposite end connected via the E1 transmission line works abnormally.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Handle the faults with the opposite end equipment, and check whether the alarm disappears after the opposite end equipment resumes normal work.

- ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.3.3 E1_AIS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
E1_AIS	Major alarm	Communication alarm	TDM service card

Impact on the System

The TDM services loaded on this card are interrupted.

Possible Cause

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

Handling Procedure

1. Search for **E1 loopback** in the network management system to perform the E1 loopback test, and check whether the connection between the OLT and the opposite end equipment's E1 interface is abnormal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Repair the physical link, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the equipment at the opposite end connected via the E1 transmission line works abnormally.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.

4. Handle the faults with the opposite end equipment, and check whether the alarm disappears after the opposite end equipment resumes normal work.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.3.4 CARD_TYPE_NOT_IDENTICAL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CARD_TYPE_NOT_IDENTICAL	Major alarm	Equipment alarm	Service cards

Impact on the System

- ◆ The UNM2000 or the CLI (Command Line Interface) cannot issue any command to the card in this slot.
- ◆ The card cannot provide any service.

Possible Cause

The type of the card physically plugged in the equipment is not identical to that pre-configured in the UNM2000.

Handling Procedure

1. Check whether the card physically plugged in the equipment mismatches the card type configured in the UNM2000.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Modify the configuration in the network management system, or replace the card with a correct one. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.

3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.4 Major Alarms of Clock Cards

This section introduces the major alarms related to the TIMA card and the handling procedures.

6.4.1 SYNC_RX_TIMEOUT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
SYNC_RX_TIMEOUT	Major alarm	Equipment alarm	The TIMA card

Impact on the System

The system clock fails in synchronization, so the system cannot obtain correct clock synchronization information.

Possible Cause

The TIMA card works abnormally.

Handling Procedure

1. Search for **Work Status Of Clock Synchronization** in the network management system, and check whether abnormal items exist in the **Work Status Of Clock Synchronization** and **Basic Info Of Clock Synchronization** tabs.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the TIMA card, and check whether the fault is eliminated.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.

3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.4.2 DELAY_RESP_RX_TIMEOUT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DELAY_RESP_RX_TIMEOUT	Major alarm	Equipment alarm	The TIMA card

Impact on the System

The system clock fails in synchronization, so the system cannot obtain correct clock synchronization information.

Possible Cause

The TIMA card works abnormally.

Handling Procedure

1. Search for **Work Status Of Clock Synchronization** in the network management system, and check whether abnormal items exist in the **Work Status Of Clock Synchronization** and **Basic Info Of Clock Synchronization** tabs.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the TIMA card, and check whether the fault is eliminated.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.4.3 ANNOUNCE_RX_TIMEOUT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ANNOUNCE_RX_TIMEOUT	Major alarm	Equipment alarm	The TIMA card

Impact on the System

The system clock fails in synchronization, so the system cannot obtain correct clock synchronization information.

Possible Cause

The TIMA card works abnormally.

Handling Procedure

1. Search for **Work Status Of Clock Synchronization** in the network management system, and check whether abnormal items exist in the **Work Status Of Clock Synchronization** and **Basic Info Of Clock Synchronization** tabs.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the TIMA card, and check whether the fault is eliminated.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.4.4 TOD_LOS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
TOD_LOS	Major alarm	Equipment alarm	The TIMA card

Impact on the System

The system clock fails in synchronization, so the system cannot obtain correct clock synchronization information.

Possible Cause

- ◆ The communication with the up link is interrupted.
- ◆ The clock source device works abnormally.
- ◆ The TIMA card works abnormally.

Handling Procedure

1. Check whether any alarms related to the communication with the up link exist in the network management system.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Eliminate the relevant alarms using the corresponding troubleshooting methods, and then check whether this alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the time source device works normally.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Restore the clock source device, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Search for **Work Status Of Clock Synchronization** in the network management system, and check whether abnormal items exist in the **Work Status Of Clock Synchronization** and **Basic Info Of Clock Synchronization** tabs.
 - ▶ If yes, → Step 6.
 - ▶ If not, → Step 7.

6. Replug or replace the TIMA card, and check whether the fault is eliminated.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.4.5 PPS_ALM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
PPS_ALM	Major alarm	Equipment alarm	The TIMA card

Impact on the System

The system clock fails in synchronization, so the system cannot obtain correct clock synchronization information.

Possible Cause

The TIMA card works abnormally.

Handling Procedure

1. Search for **Work Status Of Clock Synchronization** in the network management system, and check whether abnormal items exist in the **Work Status Of Clock Synchronization** and **Basic Info Of Clock Synchronization** tabs.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the TIMA card, and check whether the fault is eliminated.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.5 Major Alarms of Uplink Cards

This section introduces the major alarms related to the uplink cards and the handling procedures.

6.5.1 UP_SPEED_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UP_SPEED_OVER_THRESHOLD	Major alarm	Service quality alarm	Uplink port

Impact on the System

The uplink bandwidth insufficiency may influence the services.

Possible Cause

- ◆ The alarm threshold setting is inappropriate.
- ◆ The real-time uplink rate at the uplink port is over high, and the port is overloaded.

Handling Procedure

1. Search for **PM Threshold Profile** in the network management system, and check whether the related alarm reporting threshold is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Configure the load balancing (such as Trunking or LACP) for the up link, and check whether the alarm disappears.

- ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.5.2 DOWN_SPEED_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DOWN_SPEED_OVER_THRESHOLD	Major alarm	Service quality alarm	Uplink port

Impact on the System

The downlink bandwidth insufficiency may influence the services.

Possible Cause

- ◆ The alarm threshold setting is inappropriate.
- ◆ The real-time downlink rate at the uplink port is over high, and the port is overloaded.

Handling Procedure

1. Search for **PM Threshold Profile** in the network management system, and check whether the related alarm reporting threshold is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Configure the load balancing (such as Trunking or LACP) for the up link, and check whether the alarm disappears.

- ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.5.3 DYING_GASP

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DYING_GASP	Critical alarm	Communication alarm	Uplink port

Impact on the System

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

Possible Cause

The ONU connected with the equipment is powered off.

Handling Procedure

1. Remove the faults at the ONU side according to the procedures mentioned in [DYING_GASP](#), and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.5.4 AC_FAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
AC_FAIL	Major alarm	Communication alarm	AN5006-07 / 09, AN5506-04B, AN5506-06

Impact on the System

The ONU works abnormally and cannot provide services for subscribers.

Possible Cause

- ◆ The mains supply is cut off.
- ◆ The power adapter of the ONU is faulty.

Handling Procedure

1. Check whether the 220V mains supply for the ONU is cut off.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Handle the power supply line problems, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Replace the power adapter of the ONU, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.5.5 E1_TIMING_UNLOCK

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
E1_TIMING_UNLOCK	Major alarm	Communication alarm	The ONUs supporting the TDM function

Impact on the System

The TDM services loaded on this ONU are interrupted.

Possible Cause

- ◆ The connection of the E1 transmission line is abnormal.
- ◆ The TDM service card is faulty.
- ◆ The ONU is faulty.

Handling Procedure

1. Search for **E1 loopback** in the network management system to perform the E1 loopback test, and check whether the E1 connection between the OLT and the ONU is abnormal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Repair the physical link, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the TDM service card at the LOT side is abnormal.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Remove the faults with the TDM service card, and check whether the alarm disappears after the card resumes normal operation.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Replace the ONU, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.5.6 RX_POWER_HIGH_ALARM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
RX_POWER_HIGH_ALARM	Major alarm	Equipment alarm	ONUs

Impact on the System

The optical module is in unstable working state, which will influence the ONU services and may even cause interruption of all services.

Possible Cause

- ◆ The ONU optical module is aging or damaged.
- ◆ The setting of the ONU's Rx optical power alarm threshold is inappropriate.

Handling Procedure



Caution:

The operation of measuring the optical module's optical power will interrupt the service.

1. Check whether the alarm can disappear automatically in five minutes after it is reported.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Search for **PM Threshold Profile** in the network management system, and check whether the upper threshold value of the alarm is set over low.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Re-configure the alarm threshold value, and check whether the alarm disappears after saving the configurations.
 - ▶ If yes, the alarm handling ends.

- ▶ If not, → Step 4.
- 4. Measure the Tx power of the optical module on the PON service card with the optical power meter, and check whether the optical power is over high.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
- 5. Replace the optical module or add optical attenuators on the line, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
- 6. Replace the ONU and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
- 7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.5.7 RX_POWER_LOW_ALARM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
RX_POWER_LOW_ALARM	Major alarm	Equipment alarm	ONUs

Impact on the System

The optical module is in unstable working state, which will influence the ONU services and may even cause interruption of all services.

Possible Cause

- ◆ The setting of the alarm threshold value of the ONU's Rx optical power is inappropriate.
- ◆ The optical module of the ONU or PON service card is aging or damaged.
- ◆ Excessive optical attenuators are used in the optical line.

Handling Procedure



Caution:

The operation of measuring the optical module's optical power will interrupt the service.

1. Check whether the alarm can disappear automatically in five minutes after it is reported.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Search for **PM Threshold Profile** in the network management system, and check whether the lower threshold value of the alarm is set over high.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Re-configure the alarm threshold value, and check whether the alarm disappears after saving the configurations.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Measure the Tx power of the optical module on the PON service card with the optical power meter, and check whether the optical power is over low.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Replace the ONU or remove some optical attenuators in the optical line, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.

7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.5.8 TX_POWER_HIGH_ALARM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
TX_POWER_HIGH_ALARM	Major alarm	Equipment alarm	ONUs

Impact on the System

The optical module is in unstable working state, which will influence the ONU services and may even cause interruption of all services.

Possible Cause

- ◆ The optical module of the ONU or PON service card is aging or damaged.
- ◆ The setting of the alarm threshold value for the ONU's Tx optical power is inappropriate.

Handling Procedure



Caution:

The operation of measuring the optical module's optical power will interrupt the service.

1. Check whether the alarm can disappear automatically in five minutes after it is reported.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Search for **PM Threshold Profile** in the network management system, and check whether the upper threshold value of the alarm is set over low.
 - ▶ If yes, → Step 3.

- ▶ If not, → Step 4.
- 3. Re-configure the alarm threshold value, and check whether the alarm disappears after saving the configurations.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
- 4. Measure the Tx optical power of the ONU optical module with the optical power meter and check whether the optical power is over high.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
- 5. Replace the optical module or add optical attenuators on the line, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
- 6. Replace the ONU and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
- 7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.5.9 TX_POWER_LOW_ALARM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
TX_POWER_LOW_ALARM	Major alarm	Equipment alarm	ONUs

Impact on the System

The optical module is in unstable working state, which will influence the ONU services and may even cause interruption of all services.

Possible Cause

- ◆ The setting of the alarm threshold value for the ONU's Tx optical power is inappropriate.
- ◆ The optical module of the ONU or PON service card is aging or damaged.
- ◆ Excessive optical attenuators are used on the optical line.

Handling Procedure



Caution:

The operation of measuring the optical module's optical power will interrupt the service.

1. Check whether the alarm can disappear automatically in five minutes after it is reported.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Search for **PM Threshold Profile** in the network management system, and check whether the lower threshold value of the alarm is set over high.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Re-configure the alarm threshold value, and check whether the alarm disappears after saving the configurations.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Measure the Tx optical power of the ONU optical module with the optical power meter and check whether the optical power is over low.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Replace the ONU and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.

- ▶ If not, → Step 6.
- 6. Replace the optical module of the PON service card or remove some optical attenuators in the optical circuit, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
- 7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.5.10 BIAS_HIGH_ALARM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
BIAS_HIGH_ALARM	Major alarm	Equipment alarm	ONUs

Impact on the System

The optical module is in unstable working state, which will influence the ONU services and may even cause interruption of all services.

Possible Cause

- ◆ The ONU optical module is aging or damaged.
- ◆ The setting of the bias current alarm threshold for the ONU optical module is inappropriate.

Handling Procedure



Caution:

The operation of measuring the optical module's optical power will interrupt the service.

1. Check whether the alarm can disappear automatically in five minutes after it is reported.
 - ▶ If yes, the alarm handling ends.

- ▶ If not, → Step 2.
- 2. Search for **PM Threshold Profile** in the network management system, and check whether the upper threshold value of the alarm is set over low.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
- 3. Re-configure the alarm threshold value, and check whether the alarm disappears after saving the configurations.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
- 4. Replace the optical module or ONU, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
- 5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.5.11 BIAS_LOW_ALARM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
BIAS_LOW_ALARM	Major alarm	Equipment alarm	ONUs

Impact on the System

The optical module is in unstable working state, which will influence the ONU services and may even cause interruption of all services.

Possible Cause

- ◆ The ONU optical module is aging or damaged.
- ◆ The setting of the bias current alarm threshold for the ONU optical module is inappropriate.

Handling Procedure



Caution:

The operation of measuring the optical module's optical power will interrupt the service.

1. Check whether the alarm can disappear automatically in five minutes after it is reported.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Search for **PM Threshold Profile** in the network management system, and check whether the lower threshold value of the alarm is set over high.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Re-configure the alarm threshold value, and check whether the alarm disappears after saving the configurations.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Replace the optical module or ONU, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.6 Major Alarms of the HCU

This section introduces the major alarms related to the environment monitoring unit and the handling procedures.

6.6.1 DC_LOW

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DC_LOW	Major alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The operation of the standby battery is affected, so the battery cannot serve as a backup power when the power supply for the equipment is abnormal, and the services may be affected.

Possible Cause

The battery power is low.

Handling Procedure

1. Replace or charge the battery, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

6.6.2 Battery Fail

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
Battery Fail	Major alarm	Environmental alarm	Environment monitoring unit

Impact on the System

The standby battery fails to work, so the battery cannot serve as a backup power when the power supply for the equipment is abnormal, and the services may be affected.

Possible Cause

The battery power is low.

Handling Procedure

1. Replace the battery, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7 Minor Alarms

- Minor Alarms of Service Cards
- Minor Alarms of Clock Cards
- Minor Alarms of Uplink Cards
- Minor Alarms of ONUs

7.1 Minor Alarms of Service Cards

This section introduces the minor alarms related to the service cards and the handling procedures.

7.1.1 UP_BANDWIDTH_UTILIZATION_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UP_BANDWIDTH_UTILIZATION_OVER_THRESHOLD	Minor alarm	Service quality alarm	PON ports of service cards

Impact on the System

The uplink bandwidth insufficiency may influence the services.

Possible Cause

- ◆ The alarm threshold setting is inappropriate.
- ◆ The real-time uplink rate at the PON port is over high.

Handling Procedure

1. Search for **PM Threshold Profile** in the network management system, and check whether the related alarm reporting threshold is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding PON port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. According to the service and network conditions, search for **Data Service** in the network management system, modify the corresponding configurations, and adjust the bandwidth setting. Then check whether the alarm disappears.

- ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.1.2 DOWN_BANDWIDTH_UTILIZATION_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DOWN_BANDWIDTH_UTILIZATION_OVER_THRESHOLD	Minor alarm	Service quality alarm	PON ports of service cards

Impact on the System

The downlink bandwidth insufficiency may influence the services.

Possible Cause

- ◆ The alarm threshold setting is inappropriate.
- ◆ The real-time downlink rate at the PON port is over high.

Handling Procedure

1. Search for **PM Threshold Profile** in the network management system, and check whether the related alarm reporting threshold is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding PON port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.

3. According to the service and network conditions, search for **Data Service** in the network management system, modify the corresponding configurations, and adjust the bandwidth setting. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.2 Minor Alarms of Clock Cards

This section introduces the minor alarms related to the clock cards and the handling procedures.

7.2.1 REFERENCE_LOS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
REFERENCE_LOS	Minor alarm	Equipment alarm	The TIMA card

Impact on the System

The system clock fails in synchronization, so the system cannot obtain correct clock synchronization information.

Possible Cause

The TIMA card works abnormally.

Handling Procedure

1. Check whether the TIMA card status is abnormal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the TIMA card, and check whether the fault is eliminated.
 - ▶ If yes, the alarm handling ends.

- ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3 Minor Alarms of Uplink Cards

This section introduces the minor alarms related to the uplink cards and the handling procedures.

7.3.1 CRC_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CRC_THRESHOLD	Minor alarm	Service quality alarm	Uplink port

Impact on the System

The service provided by the system is influenced, and the uplink card's uplink / downlink data have packet loss.

Possible Cause

- ◆ The uplink / downlink CRC errors reach the threshold due to the poor network quality.
- ◆ The alarm threshold setting is inappropriate.

Handling Procedure

1. Check the network quality, i.e., check whether the network cable, optical fiber and optical module are aging.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the network cable, optical fiber, or optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.

- ▶ If not, → Step 3.
- 3. Check the optical fiber connector and the bending degree of the optical fiber. The bending radius of the optical fiber should be more than 38 mm. Clean the optical fiber connector with the fiber wiping paper as required. After completing these operations, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
- 4. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
- 5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3.2 UP_BROADCAST_SPEED_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UP_BROADCAST_SPEED_OVER_THRESHOLD	Minor alarm	Service quality alarm	Uplink port

Impact on the System

The service provided by the system is influenced, and the uplink card's uplink data have packet loss.

Possible Cause

- ◆ The broadcast packet rate in the uplink direction is over high.
- ◆ The alarm threshold setting is inappropriate.

Handling Procedure

1. Search for **Upport Packet Rate Control** in the network management system, and restrict the broadcast packet rate at the uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3.3 DOWN_BROADCAST_SPEED_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DOWN_BROADCAST_SPEED_OVER_THRESHOLD	Minor alarm	Service quality alarm	Uplink port

Impact on the System

Quality of the service provided by the system will be degraded, and the uplink card's downlink data will have packet loss.

Possible Cause

- ◆ The broadcast packet rate in the downlink direction is over high.
- ◆ The alarm threshold setting is inappropriate.

Handling Procedure

1. Search for **Upport Packet Rate Control** in the network management system, and restrict the broadcast packet rate at the uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3.4 DROPPED_SPEED_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DROPPED_SPEED_OVER_THRESHOLD	Minor alarm	Service quality alarm	Uplink port

Impact on the System

Quality of the service provided by the system will be degraded, and the services sensitive to delay may be interrupted.

Possible Cause

- ◆ The uplink / downlink CRC errors reach the threshold due to the poor network quality.
- ◆ The alarm threshold setting is inappropriate.

Handling Procedure

1. Check the network quality, i.e., check whether the network cable, optical fiber and optical module are aging.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the network cable, optical fiber, or optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Troubleshoot the problems of the previous network, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3.5 UP_BANDWIDTH_UTILIZATION_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UP_BANDWIDTH_UTILIZATION_OVER_THRESHOLD	Minor alarm	Service quality alarm	Uplink port

Impact on the System

The uplink bandwidth insufficiency may affect the normal operation of the services.

Possible Cause

- ◆ The alarm threshold setting is inappropriate.
- ◆ The real-time uplink rate at the uplink port is over high, and the port is overloaded.

Handling Procedure

1. Search for **PM Threshold Profile** in the network management system, and check whether the related alarm reporting threshold is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Configure the load balancing (such as Trunking or LACP) for the up link or restrict the rate at the uplink port, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3.6 DOWN_BANDWIDTH_UTILIZATION_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DOWN_BANDWIDTH_UTILIZATION_OVER_THRESHOLD	Minor alarm	Service quality alarm	Uplink port

Impact on the System

The downlink bandwidth insufficiency may influence the services.

Possible Cause

- ◆ The alarm threshold setting is inappropriate.
- ◆ The real-time downlink rate at the uplink port is over high, and the port is overloaded.

Handling Procedure

1. Search for **PM Threshold Profile** in the network management system, and check whether the related alarm reporting threshold is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Configure the load balancing (such as Trunking or LACP) for the up link or restrict the rate at the uplink port, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3.7 UP_BANDWIDTH_UTILIZATION_LOWER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UP_BANDWIDTH_UTILIZATION_LOWER_THRESHOLD	Minor alarm	Service quality alarm	Uplink port

Impact on the System

The over-low uplink bandwidth may affect the normal operation of the services.

Possible Cause

- ◆ Some services are interrupted abnormally.
- ◆ The rate limit set for the uplink port is over low.
- ◆ The alarm threshold setting is inappropriate.

Handling Procedure

1. Check the service status to see whether any services are interrupted abnormally.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Resume the services which are interrupted abnormally, and check whether the uplink bandwidth turns normal and whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Re-configure the rate limit value for the uplink port, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.

4. Search for **PM Threshold Profile** in the network management system, and check whether the related alarm reporting threshold is set over high.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3.8 DOWN_BANDWIDTH_UTILIZATION_LOWER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DOWN_BANDWIDTH_UTILIZATION_LOWER_THRESHOLD	Minor alarm	Service quality alarm	Uplink port

Impact on the System

The over-low downlink bandwidth may influence the service operation.

Possible Cause

- ◆ Some services are interrupted abnormally.
- ◆ The rate limit set for the uplink port is over low.
- ◆ The alarm threshold setting is inappropriate.

Handling Procedure

1. Check the previous network conditions to see whether some services are interrupted normally.

- ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Resume the services which are interrupted abnormally, and check whether the downlink bandwidth turns normal and whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
 3. Re-configure the rate limit value for the uplink port, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
 4. Search for **PM Threshold Profile** in the network management system, and check whether the related alarm reporting threshold is set over high.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
 5. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
 6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3.9 DROPPED_PROPOTION_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DROPPED_PROPOTION_OVER_THRESHOLD	Minor alarm	Service quality alarm	Uplink port

Impact on the System

Quality of the service provided by the system will be degraded, and the services sensitive to delay may be interrupted.

Possible Cause

- ◆ The uplink / downlink CRC errors reach the threshold due to the poor network quality.
- ◆ The alarm threshold setting is inappropriate.

Handling Procedure

1. Check the network quality, i.e., check whether the network cable, optical fiber and optical module are aging.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the network cable, optical fiber, or optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Troubleshoot the problems of the previous network, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3.10 UndersizeFrame Threshold

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UndersizeFrame Threshold	Minor alarm	Service quality alarm	Uplink port

Impact on the System

The service provided by the system is influenced.

Possible Cause

The opposite end equipment works abnormally.

Handling Procedure

1. Check the working status of the opposite end equipment, and troubleshoot the equipment. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3.11 UP_RATE_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UP_RATE_THRESHOLD	Minor alarm	Service quality alarm	Uplink port

Impact on the System

The over-high uplink rate may influence the service operation.

Possible Cause

- ◆ The alarm threshold setting is inappropriate.

- ◆ The real-time uplink rate at the uplink port is over high, and the port is overloaded.

Handling Procedure

1. Search for **PM Threshold Profile** in the network management system, and check whether the related alarm reporting threshold is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Configure the load balancing (such as Trunking or LACP) for the up link or restrict the rate at the uplink port, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.3.12 DOWN_RATE_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DOWN_RATE_THRESHOLD	Minor alarm	Service quality alarm	Uplink port

Impact on the System

The over-high downlink rate may influence the service operating.

Possible Cause

- ◆ The alarm threshold setting is inappropriate.

- ◆ The real-time uplink rate at the uplink port is over high, and the port is overloaded.

Handling Procedure

1. Search for **PM Threshold Profile** in the network management system, and check whether the related alarm reporting threshold is set over low.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Configure the load balancing (such as Trunking or LACP) for the up link or restrict the rate at the uplink port, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.4 Minor Alarms of ONUs

This section introduces the minor alarms related to the ONUs and the handling procedures.

7.4.1 DOWN_CRC_ERROR_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DOWN_CRC_ERROR_THRESHOLD	Minor alarm	Service quality alarm	ONUs of various types

Impact on the System

The services provided by the system will be influenced, and the ONU's downlink data will have packet loss.

Possible Cause

- ◆ The poor network quality causes the downlink CRC errors to reach the threshold value.
- ◆ The ONU itself is faulty.
- ◆ The alarm threshold setting is inappropriate.

Handling Procedure

1. Check the network quality, i.e., check whether the network cable, optical fiber and optical module are aging.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the network cable, optical fiber, or optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check the optical fiber connector and the bending degree of the optical fiber. The bending radius of the optical fiber should be more than 38 mm. Clean the optical fiber connector with the fiber wiping paper as required. After completing these operations, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Replace the ONU, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Search for **Alarm Report Manage Profile and Bind** in the network management system, modify the alarm threshold profile, and re-bind the profile to the corresponding uplink port. Then check whether the alarm disappears.

- ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.4.2 ONU_NGN_SET_FAIL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ONU_NGN_SET_FAIL	Minor alarm	Processing failure alarm	ONUs of various types

Impact on the System

The ONU fails to provide voice services for subscribers.

Possible Cause

- ◆ The ONU authentication fails.
- ◆ The voice service configuration is incorrect.

Handling Procedure

1. Re-authorize the ONU, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Check whether the voice service configurations for the OLT and ONU are correct and whether the configuration data are consistent with the planning data.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Modify the voice service parameters, and re-authorize the ONU. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.

▶ If not, → Step 4.

4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.4.3 ONU_NGN_VERSION_ERROR

Event information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ONU_NGN_VERSION_ERROR	Minor alarm	Processing failure alarm	ONUs of various types

Impact on the System

The voice services carried by the ONU cannot operate normally.

Possible Cause

The software version running on the ONU does not support the currently used NGN protocols.

Handling Procedure

1. Change the software version, and re-upgrade the ONU. After the upgrade is completed, re-authorize the ONU. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.4.4 UP_BIP8_OVER_THRESH_ALARM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UP_BIP8_OVER_THRESH_ALARM	Minor alarm	Equipment alarm	ONUs of various types

Impact on the System

The services on the ONU may be interrupted and the ONU may even be disconnected from the OLT.

Possible Cause

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

Handling Procedure

1. Restart the ONU and observe for five minutes to check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Confirm that the optical fiber is connected with the interface correctly. In case of optical fiber loss or poor connection at the PON port, replace the optical fiber or restore the normal connection at the PON port, and then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the ONU's optical module is working normally with an optical power meter.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.
4. Replace the ONU or the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

7.4.5 DOWN_BIP8_OVER_THRESH_ALARM

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DOWN_BIP8_OVER_THRESH_ALARM	Minor alarm	Equipment alarm	ONUs of various types

Impact on the System

The services on the ONU may be interrupted and the ONU may even be disconnected from the OLT.

Possible Cause

The quantity of the BIP8s (load bit errors) in 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.

Handling Procedure

1. Restart the ONU and observe for five minutes to check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Confirm that the optical fiber is connected with the interface correctly. In case of optical fiber loss or poor connection at the PON port, replace the optical fiber or restore the normal connection at the PON port, and then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the ONU's optical module is working normally with an optical power meter.
 - ▶ If yes, → Step 4.
 - ▶ If not, → Step 5.

4. Replace the ONU or the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8 Prompt Alarms

- Prompt Alarms of Core Switch Cards
- Prompt Alarms of Service Cards
- Prompt Alarms of TDM Service Cards
- Prompt Alarms of Uplink Cards

8.1 Prompt Alarms of Core Switch Cards

This section introduces the prompt alarms related to the core switch cards and provides the handling procedures.

The AN5116-06B/AN5516-06/AN5516-04's core switch cards are uplink switch cards such as the HSUA, HSUB and HSUC cards.

8.1.1 PEER_INSERT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
PEER_INSERT	Warning alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The standby core switch card is plugged in the subrack.

Handling Procedure

1. It is a normal status prompt, and needs no handling.

8.1.2 LINECARD_SWITCH

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
LINECARD_SWITCH	Warning alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

- ◆ The maintenance staff performs the active-standby switching manually.
- ◆ The active line card has faults.

Handling Procedure

1. Check whether the active-standby switching is performed manually.
 - ▶ If yes, no handling is needed.
 - ▶ If not, → Step 2.
2. Check whether the active core switch card has faults:
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Replace the active core switch card, resume the original active / standby status, and check whether the alarm disappears.
 - ▶ If yes, → Step 4.
 - ▶ If yes, the alarm handling ends.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.1.3 CPU_USAGE_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CPU_USAGE_OVER_THRESHOLD	Warning alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

The service processing capability of the equipment is influenced, and the services may be interrupted.

Possible Cause

- ◆ The card is faulty.
- ◆ The alarm threshold value is set over low.

Handling Procedure

1. Check whether the value of the CPU utilization ratio is over high.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 4.
2. Check whether the core switch card has faults.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 5.
3. Replace the core switch card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Modify the value of **Card CPU/Memory Usage Threshold** and re-bind the modified threshold profile to the HCU. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.1.4 MEM_USAGE_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
MEM_USAGE_OVER_THRESHOLD	Warning alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

The service processing capability of the equipment is influenced, and the services may be interrupted.

Possible Cause

- ◆ The card is faulty.
- ◆ The alarm threshold value is set over low.

Handling Procedure

1. Check whether the memory utilization ratio is over high.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 4.
2. Check whether the core switch card has faults.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 5.
3. Replace the core switch card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Modify the value of **Card CPU/Memory Usage Threshold** and re-bind the modified threshold profile to the HCU. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.

- ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.1.5 UPLINKCARD_INVERSION

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UPLINKCARD_INVERSION	Warning alarm	Equipment alarm	Uplink card

Impact on the System

The service traffics will be switched to other uplink cards. If the traffics are large, congestion may occur,

Possible Cause

- ◆ The maintenance staff unplugs / plugs optical fibers manually.
- ◆ The active up link is faulty.

Handling Procedure

1. Check whether manual operations trigger this alarm.
 - ▶ If yes, no handling is needed.
 - ▶ If not, → Step 2.
2. Check whether the corresponding up link is faulty.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Handle the up link problems, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.1.6 PON_PORT_SWITCH_SUCCESS

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
PON_PORT_SWITCH_SUCCESS	Warning alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The PON port protection group switching succeeds.

Handling Procedure

1. It is a normal status prompt, and needs no handling.

8.1.7 MAC Spoofing Attack

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
MAC Spoofing Attack	Warning alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

The services cannot operate normally.

Possible Cause

An illegal ONU in the network embezzles the MAC address of a legal device.

Handling Procedure

1. Hunter for the illegal ONU, and remove it from the network. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.1.8 SOFTWARE_MISMATCH

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
SOFTWARE_MISMATCH	Warning alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

The normal operation and the active-standby switching function of the equipment may be influenced.

Possible Cause

The software version of the standby card is inconsistent with that of the active card.

Handling Procedure

1. Re-upgrade the standby card software so that its software version is consistent with that of the active card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.1.9 DETECTION_OF_DOS_ATTACK

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
DETECTION_OF_DOS_ATTACK	Warning alarm	Equipment alarm	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

The services cannot operate normally.

Possible Cause

The OLT detects DOS attack.

Handling Procedure

1. Troubleshoot the equipment connected with the OLT, and prevent the equipment generating the DOS attack from accessing the network. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.1.10 License Rrc Over Threshold

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
License Rrc Over Threshold	Warning alarm	Service quality alarm	HSWA / HSWB / HSWD card HSUA / HSUB card HSWA / HSWB card

Impact on the System

The functions controlled by License cannot be used.

Possible Cause

The available License resources are inadequate.

Handling Procedure

1. Search for **License Resource Query** in the network management system, and check whether the **Max Resource** value of the License resources is smaller than the **Apply Resource** value.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Upgrade the License resource as follows, and then check whether the alarm disappears.
 - 1) Search for **Esn Query** in the network management system, and record the electronic serial number.
 - 2) Send the electronic SN to FiberHome engineers to obtain a new License file.
 - 3) Upload the new License file to the server.
 - 4) Search for **Upgrade License** in the network management system, and deliver the License to the equipment.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.1.11 The Mac Address Number of Core Switchboard Over

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
The Mac Address Number of Core Switchboard Over	Warning alarm	Service quality alarm	HSWA / HSWB / HSWD card HSUA / HSUB card HSWA / HSWB card

Impact on the System

The core switch card cannot learn new MAC addresses.

Possible Cause

Excessive terminal devices are connected to the OLT.

Handling Procedure

- Reduce the terminal devices connected to the OLT, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
- Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2 Prompt Alarms of Service Cards

This section introduces the prompt alarms related to the service cards and the handling procedures.

8.2.1 OPTMODULE_TEMP_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OPTMODULE_TEMP_OVER	Warning alarm	Equipment alarm	PON ports of service cards

Impact on the System

The optical module works in an unstable state, services under the PON port will be influenced, and all services may even be interrupted.

Possible Cause

- ◆ The ambient temperature for the OLT is over high.
- ◆ The setting of the optical module's temperature threshold value is inappropriate.
- ◆ The service card is faulty.

Handling Procedure

1. Check whether the OLT's fan unit works abnormally.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Replace the fan unit, and make sure the air cooling of the equipment is normal. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the ambient temperature is over high. Take measures to lower the temperature, and then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Check whether the alarm threshold setting is inappropriate.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.

- ▶ If not, → Step 7.
- 7. Replace the service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 8.
- 8. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2.2 OPTMODULE_VOL_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OPTMODULE_VOL_OVER	Warning alarm	Equipment alarm	PON ports of service cards

Impact on the System

The optical module works in an unstable state; services under the PON port will be influenced, and all services may even be interrupted.

Possible Cause

- ◆ The optical module is aging.
- ◆ The service card is faulty.
- ◆ The setting of the voltage threshold for the optical module is inappropriate.

Handling Procedure

1. Observe the alarm for a period of time, and check whether the alarm disappears automatically.
 - ▶ If yes, no handling is needed.
 - ▶ If not, → Step 2.
2. Check whether other alarms related to the optical module and optical power exist in the network management system.
 - ▶ If yes, → Step 3.

- ▶ If not, → Step 4.
- 3. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
- 4. Check whether the alarm threshold setting is inappropriate.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
- 5. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
- 6. Replace the service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 7.
- 7. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2.3 OPTMODULE_BIAS_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OPTMODULE_BIAS_OVER	Warning alarm	Equipment alarm	PON ports of service cards

Impact on the System

The optical module works in an unstable state; services under the PON port will be influenced, and all services may even be interrupted.

Possible Cause

- ◆ The optical module is aging or damaged.
- ◆ The setting of the bias current alarm threshold for the optical module is inappropriate.

Handling Procedure

1. Observe the alarm for five minutes and check whether the alarm disappears automatically.
 - ▶ If yes, no handling is needed.
 - ▶ If not, → Step 2.
2. Measure the optical power of the OLT's and ONU's optical modules with an optical power meter, and check whether the optical power is abnormal.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Check whether the alarm threshold setting is inappropriate.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2.4 OPTMODULE_TXPOWER_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OPTMODULE_TXPOWER_OVER	Warning alarm	Equipment alarm	PON ports of service cards

Impact on the System

The optical module works in an unstable state; services under the PON port will be influenced, and all services may even be interrupted.

Possible Cause

- ◆ The optical module is aging or damaged.
- ◆ The setting of the optical power alarm threshold for the optical module is inappropriate.

Handling Procedure

1. Observe the alarm for five minutes and check whether the alarm disappears automatically.
 - ▶ If yes, no handling is needed.
 - ▶ If not, → Step 2.
2. Measure the optical power of the OLT's and ONU's optical modules with an optical power meter, and check whether the optical power is abnormal.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Check whether the alarm threshold setting is inappropriate.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

Reference Information

The normal range of the optical module's Tx optical power on the OLT side is shown in the table below.

Optical Module Parameter	Normal Range
Tx optical power	When the 1000BASE - PX10 is used, the normal range is from -3 dBm to 2 dBm. When the 1000BASE - PX20 is used, the normal range is from 2 dBm to 7 dBm.



Note:

PX10 means the 10 km optical module, and PX20 means the 20 km optical module. The power meter with the working wavelength 1490 nm is used to measure the Tx optical power at the OLT side and the Rx optical power at the ONU side. The power meter with the working wavelength 1310 nm is used to measure the Rx optical power at the OLT side and the Tx optical power at the ONU side.

8.2.5 ILEGAL_ONU_REGISTE

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ILEGAL_ONU_REGISTE	Warning alarm	Equipment alarm	PON ports of service cards

Impact on the System

The ONU cannot provide services for subscribers.

Possible Cause

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

- ◆ In the authentication based on the logical ID white list (without password), the logical ID of the ONU to be registered does not match the entry in the logical ID white list.

Handling Procedure

1. Check whether the ONU is legal.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 4.
2. Check whether the ID information in the white list matches the ONU.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 3.
3. Modify the ID information in the white list, and re-authorize the ONU. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
4. Disconnect the ONU from the network, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2.6 TOTAL_BANDWIDTH_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
TOTAL_BANDWIDTH_OVER	Warning alarm	Processing failure alarm	PON ports of service cards

Impact on the System

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

Possible Cause

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

Handling Procedure

1. Check whether the other PON ports have available bandwidth.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Assign the newly-added ONUs to other PON ports, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Add an OLT for capacity expansion and assign the newly added ONUs to the PON ports of this OLT.

8.2.7 ONU_AUTO_CONFIG_FAILED

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ONU_AUTO_CONFIG_FAILED	Warning alarm	Processing failure alarm	PON ports of service cards

Impact on the System

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

Possible Cause

The MAC address of this ONU may have been included in the list of authorized ONUs.

Handling Procedure

1. Check whether the MAC address of this ONU has already been included in the list of authorized ONUs.

- ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Deauthorize this MAC address, and then re-authorize it. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
 3. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2.8 OPTMODULE_VOL_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OPTMODULE_VOL_OVER	Warning alarm	Equipment alarm	PON ports of service cards

Impact on the System

The optical module works in an unstable state; services under the PON port will be influenced, and all services may even be interrupted.

Possible Cause

- ◆ The optical module is aging or damaged.
- ◆ The setting of the bias current alarm threshold for the optical module is inappropriate.

Handling Procedure

1. Observe the alarm for five minutes and check whether the alarm disappears automatically.
 - ▶ If yes, no handling is needed.
 - ▶ If not, → Step 2.
2. Measure the optical power of the OLT's and ONU's optical modules with an optical power meter, and check whether the optical power is abnormal.

- ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
 4. Check whether the alarm threshold setting is inappropriate.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
 5. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
 6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2.9 ONU_TO_OLT_RXPOWER_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
ONU_TO_OLT_RXPOWER_OVER	Warning alarm	Equipment alarm	PON ports of service cards

Impact on the System

The optical module works in an unstable state; services under the PON port will be influenced, and all services may even be interrupted.

Possible Cause

- ◆ The optical attenuators in the optical path is insufficient.
- ◆ The optical module is aging or damaged.
- ◆ The setting of the bias current alarm threshold for the optical module is inappropriate.

Handling Procedure

1. Observe the alarm for five minutes and check whether the alarm disappears automatically.
 - ▶ If yes, no handling is needed.
 - ▶ If not, → Step 2.
2. Measure the optical power of the OLT's and ONU's optical modules with an optical power meter, and check whether the optical power is abnormal.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Increase optical attenuators or replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Check whether the alarm threshold setting is inappropriate.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2.10 OPTMODULE_RXPOWER_OVER

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
OPTMODULE_ RXPOWER_OVER	Warning alarm	Equipment alarm	PON ports of service cards

Impact on the System

The optical module works in an unstable state; services under the PON port will be influenced, and all services may even be interrupted.

Possible Cause

- ◆ The optical attenuators in the optical path is insufficient.
- ◆ The optical module is aging or damaged.
- ◆ The setting of the bias current alarm threshold for the optical module is inappropriate.

Handling Procedure

1. Observe the alarm for five minutes and check whether the alarm disappears automatically.
 - ▶ If yes, no handling is needed.
 - ▶ If not, → Step 2.
2. Measure the optical power of the OLT's and ONU's optical modules with an optical power meter, and check whether the optical power is abnormal.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 4.
3. Increase optical attenuators or replace the optical module, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Check whether the alarm threshold setting is inappropriate.
 - ▶ If yes, → Step 5.
 - ▶ If not, → Step 6.
5. Modify the alarm threshold value, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.

6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2.11 CPU_USAGE_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CPU_USAGE_OVER_THRESHOLD	Warning alarm	Equipment alarm	Service cards

Impact on the System

The service processing capability of the service card is influenced, and the services may be interrupted.

Possible Cause

- ◆ The service card is faulty.
- ◆ The alarm threshold value is set over low.
- ◆ Excessive subscribers are connected to the service card.

Handling Procedure

1. Check whether the CPU utilization ratio is over high.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 4.
2. Check whether the service card has faults.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 5.
3. Replace the corresponding service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.

4. Modify the value of **Card CPU/Memory Usage Threshold** and re-bind the modified threshold profile to the HCU. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
5. Reduce the subscribers under this service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2.12 MEM_USAGE_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
MEM_USAGE_OVER_THRESHOLD	Warning alarm	Equipment alarm	Service cards

Impact on the System

The service processing capability of the service card is influenced, and the services may be interrupted.

Possible Cause

- ◆ The service card is faulty.
- ◆ The alarm threshold value is set over low.
- ◆ Excessive subscribers are connected to the service card.

Handling Procedure

1. Check whether the memory utilization ratio is over high.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 4.

2. Check whether the service card has faults.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 5.
3. Replace the service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Modify the value of **Card CPU/Memory Usage Threshold** and re-bind the modified threshold profile to the HCU. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
5. Reduce the subscribers under this service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2.13 SF

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
SF	Warning alarm	Equipment alarm	PON service cards

Impact on the System

The services on the ONU may be interrupted and the ONU may even be disconnected from the OLT.

Possible Cause

The bit error rate of the ONU's uplink service flow is over high due to the loss on the optical fiber, bad connection at the interface, or optical module faults.

Handling Procedure

1. Restart the ONU and observe for five minutes to check whether the alarm disappears.
 - ▶ If yes, no handling is needed.
 - ▶ If not, → Step 2.
2. Check and confirm that the optical fiber is connected with the interface correctly. In case of optical fiber loss or poor connection at the interface, replace the optical fiber or restore the normal connection at the interface, and then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the ONU's optical module is working normally with an optical power meter.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Replace the optical module or ONU, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.2.14 SD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
SD	Warning alarm	Equipment alarm	PON service cards

Impact on the System

The services on the ONU may be interrupted and the ONU may even be disconnected from the OLT.

Possible Cause

The bit error rate of the ONU's uplink service flow is over high due to the loss on the optical fiber, bad connection at the interface, or optical module faults.

Handling Procedure

1. Restart the ONU and observe for five minutes to check whether the alarm disappears.
 - ▶ If yes, no handling is needed.
 - ▶ If not, → Step 2.
2. Check and confirm that the optical fiber is connected with the interface correctly. In case of optical fiber loss or poor connection at the interface, replace the optical fiber or restore the normal connection at the interface, and then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 3.
3. Check whether the ONU's optical module is working normally with an optical power meter.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Replace the optical module or ONU, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.3 Prompt Alarms of TDM Service Cards

This section introduces the prompt alarms related to the TDM service cards and the handling procedures.

8.3.1 CPU_USAGE_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CPU_USAGE_OVER_THRESHOLD	Warning alarm	Equipment alarm	TDM service card

Impact on the System

The service processing capability of the TDM service card is influenced, and the services may be interrupted.

Possible Cause

- ◆ The TDM service card is faulty.
- ◆ The alarm threshold value is set over low.
- ◆ Excessive subscribers are are connected to the TDM service card.

Handling Procedure

1. Check whether the CPU utilization ratio is over high.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 4.
2. Check whether the TDM service card has faults.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 5.
3. Replace the TDM service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Modify the value of **Card CPU/Memory Usage Threshold** and re-bind the modified threshold profile to the HCU. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.

5. Reduce the subscribers under this TDM service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.3.2 MEM_USAGE_OVER_THRESHOLD

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
MEM_USAGE_OVER_THRESHOLD	Warning alarm	Equipment alarm	TDM service card

Impact on the System

The service processing capability of the TDM service card is influenced, and the services may be interrupted.

Possible Cause

- ◆ The TDM service card is faulty.
- ◆ The alarm threshold value is set over low.
- ◆ Excessive subscribers are are connected to the TDM service card.

Handling Procedure

1. Check whether the memory utilization ratio is over high.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 4.
2. Check whether the TDM service card has faults.
 - ▶ If yes, → Step 3.
 - ▶ If not, → Step 5.

3. Replace the corresponding TDM service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 4.
4. Modify the value of **Card CPU/Memory Usage Threshold** and re-bind the modified threshold profile to the HCU. Then check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
5. Reduce the subscribers under this TDM service card, and check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 6.
6. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.4 Prompt Alarms of Uplink Cards

This section introduces the prompt alarms related to the uplink cards and the handling procedures.

8.4.1 UNEXPECT_LEVEL

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UNEXPECT_LEVEL	Warning alarm	Communication alarm	Uplink card

Impact on the System

Detection of the link connectivity is influenced.

Possible Cause

The MEP ID carried by the received CCM does not match the expected value.

Handling Procedure

1. Check the network connection, and troubleshoot the network faults. After these operations are completed, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.4.2 UNEXPECT_MEP_ID

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
UNEXPECT_MEP_ID	Warning alarm	Communication alarm	Uplink card

Impact on the System

Detection of the link connectivity is influenced.

Possible Cause

The MEP ID carried by the received CCM does not match the expected value.

Handling Procedure

1. Check the network connection, and troubleshoot the network faults. After these operations are completed, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

8.4.3 CCM_MISTAKE_CONNECT

Alarm Information

Alarm Name	Alarm Level	Alarm Type	Applicable Object
CCM_MISTAKE_CONNECT	Warning alarm	Communication alarm	Uplink card

Impact on the System

Detection of the link connectivity is influenced.

Possible Cause

The MEP ID carried by the received CCM does not match the expected value.

Handling Procedure

1. Check the network connection, and troubleshoot the network faults. After these operations are completed, check whether the alarm disappears.
 - ▶ If yes, the alarm handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

9 Critical Events

- Critical Events of Core Switch Cards
- Critical Events of Service Cards
- Critical Events of ONUs

9.1 Critical Events of Core Switch Cards

This section introduces the critical events related to the core switch cards and the handling procedures.

The AN5116-06B/AN5516-06/AN5516-04's core switch cards are uplink switch cards such as the HSUA, HSUB and HSUC cards.

9.1.1 OLT_REGISTER_FAILED

Event Information

Event Name	Event Level	Applicable Object
OLT_REGISTER_FAILED	Critical event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

The statistics and data entry of the resource system are influenced, and the work order cannot be delivered.

Possible Cause

The communication between the resource system and network management system is abnormal.

Handling Procedure

1. Restore the communication between the resource system and the network management system, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

9.1.2 LICENSE_ESN_INVALIDATED

Event Information

Event Name	Event Level	Applicable Object
LICENSE_ESN_INVALIDATED	Critical event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

The functions controlled by the License cannot be used.

Possible Cause

The original License becomes invalid due to the modification of the equipment management IP address. Users need to apply for a new License.

Handling Procedure

1. Apply for a new License and deliver it to the equipment. Then check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

9.2 Critical Events of Service Cards

This section introduces the critical events related to the service cards and the handling procedures.

9.2.1 CARD_INFO_UPDATE

Event Information

Event Name	Event Level	Applicable Object
CARD_INFO_UPDATE	Critical event	Service cards

Impact on the System

None.

Possible Cause

The service card type changes.

Handling Procedure

1. This event is informational so that no handling is needed.

9.2.2 PULL_OUT_CARD

Event Information

Event Name	Event Level	Applicable Object
PULL_OUT_CARD	Critical event	Service cards

Impact on the System

None.

Possible Cause

A service card is unplugged.

Handling Procedure

1. This event is informational so that no handling is needed.

9.2.3 INSERT_CARD

Event Information

Event Name	Event Level	Applicable Object
INSERT_CARD	Critical event	Service cards

Impact on the System

None.

Possible Cause

A certain service card is inserted in the subrack.

Handling Procedure

1. This event is informational so that no handling is needed.

9.3 Critical Events of ONUs

This section introduces the critical events related to the ONUs and the handling procedures.

9.3.1 UPGRADE_FAILURE

Event Information

Event Name	Event Level	Applicable Object
UPGRADE_FAILURE	Critical event	ONUs

Impact on the System

The ONU fails in upgrade, so it cannot provide services for subscribers.

Possible Cause

- ◆ The ONU upgrade file type does not match that of the ONU to be upgraded.
- ◆ The FTP server works abnormally.
- ◆ The communication between the AN5116-06B/AN5516-06/AN5516-04 and the ONU is interrupted, and the upgrade file is not delivered to the ONU to be upgraded.
- ◆ The ONU fails to use the new upgrade files.
- ◆ The communication between the AN5116-06B/AN5516-06/AN5516-04's core switch card and service cards is abnormal.

Handling Procedure

1. Handle the related faults according to [UPGRADE_FAILURE](#), and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

9.3.2 UPGRADE_FILE_DISMATCH

Event Information

Event Name	Event Level	Applicable Object
UPGRADE_FILE_DISMATCH	Critical event	ONUs

Impact on the System

The ONU fails in upgrade, so it cannot provide services for subscribers.

Possible Cause

The ONU upgrade file type does not match that of the ONU to be upgraded.

Handling Procedure

1. Use the correct upgrade files to perform the upgrade operation, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

9.3.3 AUTO_UPGRADE_FAILURE

Event Information

Event Name	Event Level	Applicable Object
AUTO_UPGRADE_FAILURE	Critical event	ONUs

Impact on the System

The ONU fails in upgrade, and the services carried by the ONU may be influenced.

Possible Cause

- ◆ The file type of the ONU cannot be identified or the checking of the upgrade file is faulty.
- ◆ The ONU upgrade file type does not match that of the ONU to be upgraded.
- ◆ The FTP server or the downloaded file is faulty.
- ◆ The communication between the core switch card and the PON interface card fails.
- ◆ The communication between the interface card and the ONU fails.

Handling Procedure

1. Handle the related faults according to [AUTO_UPGRADE_ONU_FAILURE](#), and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

9.3.4 HG_REGISTER_FAILED

Event Information

Event Name	Event Level	Applicable Object
HG_REGISTER_FAILED	Critical event	Terminals

Impact on the System

The statistics and data entry of the resource system are influenced, and the work order cannot be delivered.

Possible Cause

The communication between the resource system and network management system is abnormal.

Handling Procedure

1. Restore the communication between the resource system and the network management system, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

9.3.5 ONU_REGISTER_FAILED

Event Information

Event Name	Event Level	Applicable Object
ONU_REGISTER_FAILED	Critical event	ONUs

Impact on the System

The statistics and data entry of the resource system are influenced, and the work order cannot be delivered.

Possible Cause

The communication between the resource system and network management system is abnormal.

Handling Procedure

1. Restore the communication between the resource system and the network management system, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

9.3.6 CONFIG_FAILED

Event Information

Event Name	Event Level	Applicable Object
CONFIG_FAILED	Critical event	AN5506-04B, AN5506-06E, AN5506-07B, various EPON ONUs

Impact on the System

The OLT cannot deliver configuration commands to the ONU, and the services on the ONU cannot operate normally.

Possible Cause

The actual configuration of the ONU is inconsistent with the configuration read by the network management system.

Handling Procedure

1. Clear the service configuration in the network management system, restart the ONU, and modify and re-deliver the configuration of the ONU. Then check whether the operation succeeds.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Deauthorize the ONU, and re-authorize it. After the ONU gets registered on the OLT again, modify and deliver the configuration of the ONU again. Then check whether the operation succeeds.

- ▶ If yes, the event handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

10 Major Events

- Major Events of Core Switch Cards
- Major Events of Uplink Cards
- Major Events of TDM Cards
- Major Events of ONUs

10.1 Major Events of Core Switch Cards

This section introduces the major events related to the core switch cards and the handling procedures.

The AN5116-06B/AN5516-06/AN5516-04's core switch cards are uplink switch cards such as the HSUA, HSUB and HSUC cards.

10.1.1 CONFIG_SUCCESSFULLY_SAVED

Event Information

Event Name	Event Level	Applicable Object
CONFIG_SUCCESSFULLY_SAVED	Major event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The configuration information of the OLT is saved successfully.

Handling Procedure

1. This event is informational so that no handling is needed.

10.1.2 TRACERT_FINAL_RESULT

Event Information

Event Name	Event Level	Applicable Object
TRACERT_FINAL_RESULT	Major event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The system has completed the tracers test, and fed back the operation results.

Handling Procedure

1. This event is informational so that no handling is needed.

10.1.3 ETEA_FINAL_RESULT

Event Information

Event Name	Event Level	Applicable Object
ETEA_FINAL_RESULT	Major event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The system has completed the ETEA test, and fed back the operation results.

Handling Procedure

1. This event is informational so that no handling is needed.

10.2 Major Events of Uplink Cards

This section introduces the major events related to the uplink cards and the handling procedures.

10.2.1 AH_THRESHOLD

Event Information

Event Name	Event Level	Applicable Object
AH_THRESHOLD	Major event	EPON uplink cards, the HU4A card

Impact on the System

None.

Possible Cause

The value of the Ah parameter exceeds the set threshold.

Handling Procedure

1. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

10.3 Major Events of TDM Cards

This section introduces the major events related to the TDM cards and the handling procedures.

10.3.1 E1_PORT_FAILURE

Event Information

Event Name	Event Level	Applicable Object
E1_PORT_FAILURE	Major event	TDM service card

Impact on the System

The TDM services loaded on this card are interrupted.

Possible Cause

The E1 interface of the remote end equipment fails to work.

Handling Procedure

1. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

10.4 Major Events of ONUs

This section introduces the major events related to the ONUs and provides the handling procedures.

10.4.1 ETH_PORT_AUTO_NEG_FAILURE

Event Information

Event Name	Event Level	Applicable Object
ETH_PORT_AUTO_NEG_FAILURE	Major event	ONUs

Impact on the System

The ONU cannot provide services for subscribers normally.

Possible Cause

The UNI port fails in the auto-negotiation.

Handling Procedure

1. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

10.4.2 ETH_PORT_FAILURE

Event Information

Event Name	Event Level	Applicable Object
ETH_PORT_FAILURE	Major event	ONUs

Impact on the System

The ONU cannot provide services for subscribers normally.

Possible Cause

The UNI port fails.

Handling Procedure

1. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

10.4.3 POTS_PORT_FAILURE

Event Information

Event Name	Event Level	Applicable Object
POTS_PORT_FAILURE	Major event	The voice port of the ONU

Impact on the System

The ONU cannot provide services for subscribers normally.

Possible Cause

The POTS port of the remote end equipment fails.

Handling Procedure

1. Replace the opposite end equipment, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

10.4.4 VOICE_CONFIG_FAILED

Event Information

Event Name	Event Level	Applicable Object
VOICE_CONFIG_FAILED	Major event	ONUs supporting the voice function

Impact on the System

The ONU cannot provide voice services for subscribers.

Possible Cause

The ONU does not support the currently used voice protocol.

Handling Procedure

1. Use the ONU supporting the currently used voice protocol, or upgrade the corresponding software system. Then check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

10.4.5 NGN_REG_FAIL_OVER_THRESH

Event Information

Event Name	Event Level	Applicable Object
NGN_REG_FAIL_OVER_THRESH	Major event	The voice port of the ONU

Impact on the System

The ONU cannot provide NGN services normally.

Possible Cause

The POTS port of the remote end equipment fails.

Handling Procedure

1. Check whether the port service configuration is inconsistent with the softswitch configuration.
 - ▶ If yes, → Step 2.
 - ▶ If not, → Step 3.
2. Modify the service configuration on the port, and register NGN users again. Then check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

10.4.6 Error_Symbol_Number_Beyond_The_Threshold

Event Information

Event Name	Event Level	Applicable Object
Error_Symbol_Number_Beyond_The_Threshold	Major event	ONU PON port / LAN port

Impact on the System

The ONU cannot provide services for subscribers normally.

Possible Cause

- ◆ The network connection is faulty.
- ◆ The Ethernet interface has physical faults.
- ◆ Negotiation on the rates of Ethernet interfaces fails.

Handling Procedure

1. Check whether the physical status of the Ethernet interface and network cable is normal.
 - ▶ If yes, → Step 2.

- ▶ If not, → Step 3.
- 2. Set the Ethernet interface mode to auto-negotiation again, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 4.
- 3. Replace the cables, ONUs, or other network devices, and reconnect them. Then check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 4.
- 4. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

10.4.7 Error_Frame_Number_Beyond_The_Threshold

Event Information

Event Name	Event Level	Applicable Object
Error_Frame_Number_Beyond_The_Threshold	Major event	ONU PON port / LAN port

Impact on the System

The ONU cannot provide services for subscribers normally.

Possible Cause

- ◆ The network connection is faulty.
- ◆ The Ethernet interface has physical faults.
- ◆ Negotiation on the rates of Ethernet interfaces fails.

Handling Procedure

1. Check whether the physical status of the Ethernet interface and network cable is normal.
 - ▶ If yes, → Step 2.

- ▶ If not, → Step 3.
- 2. Set the Ethernet interface mode to auto-negotiation again, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 4.
- 3. Replace the cables, ONUs, or other network devices, and reconnect them. Then check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 4.
- 4. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

10.4.8 The_Inspection_Period_Error_Frame_Number_ - Beyond_The_Threshold

Event Information

Event Name	Event Level	Applicable Object
The_Inspection_Period_Error_Frame_Number_Beyond_The_Threshold	Major event	ONU PON port / LAN port

Impact on the System

The ONU cannot provide services for subscribers normally.

Possible Cause

- ◆ The network connection is faulty.
- ◆ The Ethernet interface has physical faults.
- ◆ Negotiation on the rates of Ethernet interfaces fails.

Handling Procedure

1. Check whether the physical status of the Ethernet interface and network cable is normal.
 - ▶ If yes, → Step 2.

- ▶ If not, → Step 3.
- 2. Set the Ethernet interface mode to auto-negotiation again, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 4.
- 3. Replace the cables, ONUs, or other network devices, and reconnect them. Then check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 4.
- 4. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

10.4.9 Errored_Frame_Seconds_Number_Beyond_The_Threshold

Event Information

Event Name	Event Level	Applicable Object
Errored_Frame_Seconds_Number_Beyond_The_Threshold	Major event	ONU PON port / LAN port

Impact on the System

The ONU cannot provide services for subscribers normally.

Possible Cause

- ◆ The network connection is faulty.
- ◆ The Ethernet interface has physical faults.
- ◆ Negotiation on the rates of Ethernet interfaces fails.

Handling Procedure

1. Check whether the physical status of the Ethernet interface and network cable is normal.
 - ▶ If yes, → Step 2.

- ▶ If not, → Step 3.
- 2. Set the Ethernet interface mode to auto-negotiation again, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 4.
- 3. Replace the cables, ONUs, or other network devices, and reconnect them. Then check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 4.
- 4. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

11 Minor Events

- Minor Events of Core Switch Cards

11.1 Minor Events of Core Switch Cards

This section introduces the minor events related to the core switch cards and the provides the handling procedures.

The AN5116-06B/AN5516-06/AN5516-04 core switch cards refer to the uplink switch cards, including the HSUA / HSUB / HSUC cards, etc.

11.1.1 NGN_SET_FAIL

Event Information

Event Name	Event Level	Applicable Object
NGN_SET_FAIL	Minor event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

The ONU cannot provide voice services for subscribers.

Possible Cause

The ONU does not support the currently used voice protocol.

Handling Procedure

1. Use the ONU supporting the currently used voice protocol, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

11.1.2 NGN_VERSION_ERROR

Alarm Information

Event Name	Event Level	Applicable Object
NGN_VERSION_ERROR	Minor event	ONUs of various types

Impact on the System

The ONU cannot provide voice services for subscribers.

Possible Cause

The protocol type configured for the ONU software version is inconsistent with the actual NGN protocol type.

Handling Procedure

1. Use the ONU supporting the currently used protocol, or upgrade the corresponding software system. Then check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the alarm name, alarm generation time, and the alarm object, and contact FiberHome engineers for technical support.

12 Prompt Events

- Prompt Events of Core Switch Cards
- Prompt Events of Service Cards
- Prompt Events of ONUs

12.1 Prompt Events of Core Switch Cards

This section introduces the prompt events related to the core switch cards and the provides the handling procedures.

The AN5116-06B/AN5516-06/AN5516-04's core switch cards are uplink switch cards such as the HSUA, HSUB and HSUC cards.

12.1.1 CPU_SWITCH_SUCCESS

Event Information

Event Name	Event Level	Applicable Object
CPU_SWITCH_SUCCESS	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The switching of the core switch card succeeds.

Handling Procedure

1. This event is informational so that no handling is needed.

12.1.2 PEER_INSERT

Event Information

Event Name	Event Level	Applicable Object
PEER_INSERT	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The standby core switch card is powered on.

Handling Procedure

1. This event is informational so that no handling is needed.

12.1.3 UPLINK_SWITCH

Event Information

Event Name	Event Level	Applicable Object
UPLINK_SWITCH	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

Switching occurs between two uplink ports backed up each other.

Handling Procedure

1. If this event occurs frequently, users should check the up link status. After removing the up link faults, check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

12.1.4 TIME_REQ

Event Information

Event Name	Event Level	Applicable Object
TIME_REQ	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The system initiates the SNMP timing request.

Handling Procedure

1. This event is informational so that no handling is needed.

12.1.5 TIME_ACK

Event Information

Event Name	Event Level	Applicable Object
TIME_ACK	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The configuration of the system time mode changes.

Handling Procedure

1. This event is informational so that no handling is needed.

12.1.6 CORE_CARD_STATUS_CHANGE

Event Information

Event Name	Event Level	Applicable Object
CORE_CARD_STATUS_CHANGE	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The equipment is started, or the switching of the core switch cards takes place.

Handling Procedure

1. This event is informational so that no handling is needed.

12.1.7 COLD_START

Event Information

Event Name	Event Level	Applicable Object
COLD_START	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The equipment is started.

Handling Procedure

1. This event is informational so that no handling is needed.

12.1.8 CONFIG_SYNCHRONIZING_BETWEEN_MAIN_CARD_AND_BACKUP_CARD

Event Information

Event Name	Event Level	Applicable Object
CONFIG_SYNCHRONIZING_BETWEEN_MAIN_CARD_AND_BACKUP_CARD	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The active and standby cards are synchronizing the configuration files.

Handling Procedure

1. This event is informational so that no handling is needed.

12.1.9 CONFIG_SYNCHRONIZED_BETWEEN_MAIN_CARD_AND_BACKUP_CARD

Event Information

Event Name	Event Level	Applicable Object
CONFIG_SYNCHRONIZED_BETWEEN_MAIN_CARD_AND_BACKUP_CARD	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The configuration synchronization between the active and standby cards is completed.

Handling Procedure

1. This event is informational so that no handling is needed.

12.1.10 File of Traffic Statistics Uploads Successful

Event Information

Event Name	Event Level	Applicable Object
File of Traffic Statistics Uploads Successful	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The traffic statistics file is uploaded successfully.

Handling Procedure

1. This event is informational so that no handling is needed.

12.1.11 File of Traffic Statistics Uploads Failed

Event Information

Event Name	Event Level	Applicable Object
File of Traffic Statistics Uploads Successful	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

Uploading of the traffic statistics file fails.

Handling Procedure

1. Restore the FTP server connection, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

12.1.12 CONFIG_CHANGE

Event Information

Event Name	Event Level	Applicable Object
CONFIG_CHANGE	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

The current configuration changes.

Handling Procedure

1. This event is informational so that no handling is needed.

12.1.13 LICENSE_RESOURCES_APPLICATION

Event Information

Event Name	Event Level	Applicable Object
LICENSE_RESOURCES_APPLICATION	Warning event	HSWA / HSWB / HSWD card HSUA / HSUB / HSUC card HSWA / HSWB card

Impact on the System

None.

Possible Cause

A certain function applies for using the License resource.

Handling Procedure

1. This event is informational so that no handling is needed.

12.2 Prompt Events of Service Cards

This section introduces the prompt events related to the service cards and provides the handling procedures.

12.2.1 SLOT_INITSUCCESS_TRAP

Event Information

Event Name	Event Level	Applicable Object
SLOT_INITSUCCESS_TRAP	Warning event	Service cards

Impact on the System

None.

Possible Cause

The system sets up the active-standby communication between the card and its peer successfully.

Handling Procedure

1. This event is informational so that no handling is needed.

12.2.2 LINECARD_SWITCH

Event Information

Event Name	Event Level	Applicable Object
LINECARD_SWITCH	Warning event	Service cards

Impact on the System

None.

Possible Cause

The switching between the card and its peer occurs.

Handling Procedure

1. This event is informational so that no handling is needed.

12.2.3 PON_PORT_PROTECTION_GROUP_STATUS_CHANGE

Event Information

Event Name	Event Level	Applicable Object
PON_PORT_PROTECTION_GROUP_STATUS_CHANGE	Warning event	PON ports of service cards

Impact on the System

None.

Possible Cause

The PON protection group is configured successfully or the corresponding switching succeeds.

Handling Procedure

1. This event is informational so that no handling is needed.

12.2.4 PRE_REGISTER_FAILURE

Event Information

Event Name	Event Level	Applicable Object
PRE_REGISTER_FAILURE	Warning event	PON ports of service cards

Impact on the System

The system fails in measuring the distance between PON ports.

Possible Cause

The PON chip or the optical path is faulty.

Handling Procedure

1. Check the connectivity of the optical path, and remove the link faults. Then check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Replace the optical module, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

12.2.5 PON_INVERSION_SUCCESSFUL

Event Information

Event Name	Event Level	Applicable Object
PON_INVERSION_SUCCESSFUL	Warning event	PON ports of service cards

Impact on the System

None.

Possible Cause

The switching between the PON port and its peer occurs.

Handling Procedure

1. This event is informational so that no handling is needed.

12.2.6 PON_INVERSION_FAILED

Event Information

Event Name	Event Level	Applicable Object
PON_INVERSION_FAILED	Warning event	PON ports of service cards

Impact on the System

The services cannot be switched to the standby PON port.

Possible Cause

The standby PON port does not work normally.

Handling Procedure

1. Re-enable the PON port, and try switching again after a certain period. Then check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Replace the optical module, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

12.2.7 NEW_TEST_LINK_ADDED

Event Information

Event Name	Event Level	Applicable Object
NEW_TEST_LINK_ADDED	Warning event	PON ports of service cards

Impact on the System

None.

Possible Cause

A certain test optical fiber is inserted in the PON port.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3 Prompt Events of ONUs

This section introduces the prompt events related to the ONUs and the handling procedures.

12.3.1 ONU_DEAUTH_SUCCESS

Event Information

Event Name	Event Level	Applicable Object
ONU_DEAUTH_SUCCESS	Warning event	ONUs

Impact on the System

None.

Possible Cause

The ONU is deauthorized successfully.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.2 Onu Replace Event

Event Information

Event Name	Event Level	Applicable Object
Onu Replace Event	Warning event	EPON ONU

Impact on the System

None.

Possible Cause

A certain ONU is replaced.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.3 AUTO_UPGRADE_SUCCESS

Event Information

Event Name	Event Level	Applicable Object
AUTO_UPGRADE_SUCCESS	Warning event	ONUs

Impact on the System

None.

Possible Cause

The ONU is automatically upgraded.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.4 PHYSICALID_REPLACE_SUCCESSFUL

Event Information

Event Name	Event Level	Applicable Object
PHYSICALID_REPLACE_SUCCESSFUL	Warning event	ONUs

Impact on the System

None.

Possible Cause

The physical address of a certain ONU is changed successfully.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.5 SN_REPLACE_SUCCESS

Event Information

Event Name	Event Level	Applicable Object
SN_REPLACE_SUCCESS	Warning event	ONUs

Impact on the System

None.

Possible Cause

The logical address of a certain ONU is changed successfully.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.6 MAC_SPOOFING_ATTACK

Event Information

Event Name	Event Level	Applicable Object
MAC_SPOOFING_ATTACK	Warning event	ONUs

Impact on the System

The legal subscribers cannot use services normally.

Possible Cause

A certain subscriber's ONU is accessing the system illegally by using the MAC address of another subscriber. This event is reported through the ONU accessing illegally, and the OLT can defend against the attack automatically.

Handling Procedure

1. The system can defend against this attack automatically, and users need not handle it. If this event occurs frequently, users should disconnect the illegal ONU from the network.

12.3.7 EQUIPMENT_TYPE_CHANGE

Event Information

Event Name	Event Level	Applicable Object
EQUIPMENT_TYPE_CHANGE	Warning event	ONUs

Impact on the System

None.

Possible Cause

The user has replaced the device connected to the ONU's downlink port.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.8 REPLACE_TYPE_MISMATCH

Event Information

Event Name	Event Level	Applicable Object
REPLACE_TYPE_MISMATCH	Warning event	ONUs

Impact on the System

The ONU type changes, and some services may run abnormally.

Possible Cause

In the process of service cutover, the type of the new ONU does not match that of the original ONU.

Handling Procedure

1. Check whether the change of the ONU type influences the services.
 - ▶ If yes, → Step 2.
 - ▶ If not, the event handling ends.
2. Use the ONU of the original type, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 3.
3. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

12.3.9 REPLACE_REPLY_FAILED

Event Information

Event Name	Event Level	Applicable Object
REPLACE_REPLY_FAILED	Warning event	ONUs

Impact on the System

None.

Possible Cause

After the ONU is replaced, the network management system fails in reporting the operation to the resource management system.

Handling Procedure

1. If this event occurs frequently, operate as follows: Record the information such as the event name, event generation time, and the event object, and contact FiberHome engineers for technical support.

12.3.10 ONU_AUTH_SUCCESS

Event Information

Event Name	Event Level	Applicable Object
ONU_AUTH_SUCCESS	Warning event	ONUs

Impact on the System

None.

Possible Cause

The ONU is authorized successfully.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.11 DISCONNECT

Event Information

Event Name	Event Level	Applicable Object
DISCONNECT	Warning event	ONU's ports

Impact on the System

The services on the ONU's port are interrupted.

Possible Cause

The network link at the ONU's port is interrupted.

Handling Procedure

1. Re-enable the service card's port, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Check the connectivity of the optical path, and remove the link faults. Then check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 3.
3. Replace the optical module, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 4.
4. Replace the ONU, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 5.
5. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

12.3.12 CONNECT

Event Information

Event Name	Event Level	Applicable Object
CONNECT	Warning event	ONU's ports, including PON, FE and ETH ports

Impact on the System

The service at the ONU's port resume normal.

Possible Cause

The network link at the ONU's port resumes normal.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.13 EQUIPMENT_ALARM

Event Information

Event Name	Event Level	Applicable Object
EQUIPMENT_ALARM	Warning event	ONUs

Impact on the System

The ONU cannot get registered, and the services cannot run.

Possible Cause

The ONU has faults.

Handling Procedure

Please contact FiberHome for technical support.

1. Replace the ONU, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

12.3.14 SELF_TEST_FAILURE

Event Information

Event Name	Event Level	Applicable Object
SELF_TEST_FAILURE	Warning event	ONUs

Impact on the System

The ONU cannot get registered, and the services cannot run.

Possible Cause

The self-test for the ONU fails.

Handling Procedure

1. Replace the ONU, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

12.3.15 ONU_REPLACE_SUCCESSFUL

Event Information

Event Name	Event Level	Applicable Object
ONU_REPLACE_SUCCESSFUL	Warning event	ONUs

Impact on the System

None.

Possible Cause

An ONU has been replaced, and the new ONU has been registered on the OLT.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.16 PSE_OPEN_CIRCUIT

Event Information

Event Name	Event Level	Applicable Object
PSE_OPEN_CIRCUIT	Warning event	The ONUs supporting the power supply function

Impact on the System

None.

Possible Cause

The network cable has been unplugged deliberately.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.17 POWER_MISMATCH

Event Information

Event Name	Event Level	Applicable Object
POWER_MISMATCH	Warning event	The ONUs supporting the power supply function

Impact on the System

The equipment powered by the ONU cannot work normally.

Possible Cause

The rated power of the equipment does not match the power supplied by the ONU.

Handling Procedure

1. Disconnect the equipment from the ONU, and check whether the event disappears.
 - ▶ If yes, the event handling ends.
 - ▶ If not, → Step 2.
2. Record the information such as the event name, event generation time and event object, and contact FiberHome engineers for technical support.

12.3.18 PORT_POWER_RECIEVE_START

Event Information

Event Name	Event Level	Applicable Object
PORT_POWER_RECIEVE_START	Warning event	The ONUs supporting the power supply function

Impact on the System

None.

Possible Cause

The ONU starts receiving the power supply.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.19 PORT_POWER_RECIEVE_BREAK

Event Information

Event Name	Event Level	Applicable Object
PORT_POWER_RECIEVE_BREAK	Warning event	The ONUs supporting the power supply function

Impact on the System

None.

Possible Cause

The ONU stops receiving the power supply.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.20 ONU_RESTORE_DEFAULTCONFIG_SUCCESS**Event Information**

Event Name	Event Level	Applicable Object
ONU_RESTORE_DEFAULTCONFIG_SUCCESS	Warning event	ONUs

Impact on the System

None.

Possible Cause

The ONU resumes its default configuration.

Handling Procedure

1. This event is informational so that no handling is needed.

12.3.21 ONU_CONFIG_CHANGE**Event Information**

Event Name	Event Level	Applicable Object
ONU_CONFIG_CHANGE	Warning event	ONUs

Impact on the System

None.

Possible Cause

The configuration of the ONU changes.

Handling Procedure

1. This event is informational so that no handling is needed.

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 trouble shooting 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



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

Address: No.67, Guanggu Chuangye Jie, Wuhan, Hubei, China
Zipcode: 430073

Tel: +6 03 7960 0860/0884 (for Malaysia)
+91 98 9985 5448 (for South Asia)
+593 4 501 4529 (for South America)

Fax: +86 27 8717 8521

Website: <http://www.fiberhomegroup.com>

Copyright©FiberHome Telecommunication Technologies Co., Ltd.

