

ICS 33.040.50

CCS M 42



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 46463-2025

**Test methods for access network equipment -
10-Gigabit-capable symmetric passive optical network
(XGS-PON)**

接入网设备测试方法 10Gbit/s对称无源光网络 (XGS-PON)

Issued on: October 31, 2025

Implemented on: February 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1.Scope	1
2 Normative References	1
3.Terms and Definitions	2
4.Abbreviations	2
5.Test Instruments and Fiber Optic Requirements	3
5.1 Test Instrument Requirements	3
5.2 Fiber Optic Requirements 4 6.PON Interface Testing	4
6.1 OLTPON Interface Parameter Test	4
6.2 OLTPON Interface Parameter Test (Built-in WDM1r Module)	8
6.3 ONUPON Interface Parameter Test	11
7.Network-side and user-side interface testing	15
7.1 GE Interface 15 7.2 10/100BASE-T interface 15 7.3 10GB ASE-X interface	15
1 Interface	15
7.5 E1 interface	15
7.6 Z interface	15
7.7 Za Interface	16
7.8 DSL Interface	16
7.9 FAST interface 16 8.PON Basic Function Test	16
8.1 Maximum splitting ratio and maximum transmission distance	16
8.2 Maximum difference distance	17
8.3 ONU Auto-Discovery and Registration	17
8.4 ONU Device Certification	18
8.5 T-CONT Uplink Dynamic Bandwidth Allocation Function	19
8.6 FEC Function	22
8.7 Optical Link Testing and Diagnosis	23
8.8 Detection and Control of Abnormally Emitting ONUs	24
8.9 Fiber optic protection switching	25
9 Ethernet/IP Functionality Test	27
9.1 VLAN Function	27
9.2 VLAN Stacking Function	31
9.3 Multicast Function	32
9.4 Safety Features	37

9.5 OLT uplink link aggregation function	42
9.6 Rapid Spanning Tree (RSTP) Functionality	43
9.7 OLT Uplink Port Mirroring and Redirection Functionality	43
9.8 OLTMAC address table depth	44
10 QoS Functionality Test	45
10.1 Business Flow Classification and Priority Marking	45
10.2 Business Priority Marking Processing	48
10.3 Business flow rate limit	49
10.4 Service Priority Scheduling Strategy	51
10.5 Flow control function	53
11 Performance Test	54
11.1 IP service performance	54
11.2 Multicast Service Performance	55
11.3 Service Performance (Optional)	56
11.4 VoIP voice service performance	56
11.5 Scheduled Synchronization	57
11.6 Equipment Stability Test	58
12 Coexistence Tests	58
12.1 Coexistence Test of XGS-PON and GPON on the Same Platform	58
12.2 Coexistence Test of XG/XGS-PON Dual-rate and GPON on the Same Platform	59
12.3 Coexistence Test of XG/XGS-PON Dual-rate and GPON on the Same OLT Service Board (Built-in WDM)	60
13 Network Management Test	61
13.1 Human-Computer Interface and Basic Functions	61
13.2 Configuration Management	62
13.3 Performance Management	63
13.4 Fault and Alarm Management	63
13.5 Safety Management 64 14 IPv6 test	64
14.1 OLT supports IPv6 testing	64
14.2 MDU supports IPv6 testing	64
14.3 SFU supports IPv6 testing	64
14.4 HGU supports IPv6 testing	64
15 Other tests	65
15.1 Environmental Testing	65
15.2 Power Supply Test	65

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the Ministry of Industry and Information Technology of the People's Republic of China. This document is under the jurisdiction of the National Telecommunications Standardization Technical Committee (SAC/TC485). This document was drafted by: China Academy of Information and Communications Technology, China Information and Communications Technology Group Co., Ltd., and ZTE Corporation. Nokia Bell Shanghai Co., Ltd., Huawei Technologies Co., Ltd., China Telecom Group Co., Ltd., Shenzhen Academy of Information and Communications Technology, Guangzhou CoreTech Communications Technology Co., Ltd. The main drafters of this document are: Shi Hang, Cao Xiaobo, Cheng Qiang, Chang Ying, Jiang Yi, Luo Ye, Liu Dekun, Zhang Dezhi, Li Haoyi, and He Feng. Access network equipment testing method 10Gbit/s symmetrical Passive Optical Network (XGS-PON)

1 Scope

GB/T 46463-2025 is the Chinese national standard covering testing XGS-PON kit - the optical budget and receiver sensitivity, the ranging and burst mode timing that make a shared fibre work, the dynamic bandwidth allocation, the coexistence with the GPON already on the same fibre, and the management interface. At 35,000 words. First edition, under the Ministry of Industry and Information Technology. In force from 1 February 2026. Issued on 31 October 2025, it has been in force since 1 February 2026.

This document describes the interfaces between the central office equipment (OLT) and the user-side equipment (ONU) of a 10Gbit/s symmetric passive optical network (XGS-PON). Testing methods for functionality, performance, operation, management, and maintenance. This document applies to the research, development, production, and testing of XGS-PON equipment in public telecommunications network environments. It can also be used as a reference for private telecommunications networks.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this

document; for undated references, the latest version (including all amendments) applies.
This document.

GB/T 7611-2016 Characteristics of Bit Rate Electrical Interfaces for Digital Networks

GB/T 9254.2 Electromagnetic compatibility of information technology equipment,
multimedia equipment and receivers - Part

chinastandards.org - PREVIEW