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

GY/T 195-2003

**Specifications and methods of measurement on two-way
subscriber port used in CATV systems
(English Translation)**

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Foreword

This standard refers to GY/T 140-1999 "Technical Conditions and Measurement Methods for Cable TV System Output Ports (5 ~ 1000MHz)", GY/T 180-2001 "Technical Specifications for Physical Transmission Channels of HFC Networks Uplink", GY/T 106-1999 "Technical Specifications for Cable Television Broadcasting Systems", IEC 60728-4 "Cable distribution system equipment and components for television and sound signals-Part 4. Upstream broadband coaxial distribution equipment", IEC 60728-3 "Cable distribution system equipment and components for television and sound signals-Part 3. Downstream broadband coaxial distribution equipment" Fixed. Part of the technical requirements and measurement methods of this standard refer to GB/T 11318.1-1996 "Cable distribution system for television and sound signals Equipment and components-Part 1. General specifications and GB/T 11318.12-1996 "Equipment and components for cable and distribution systems for television and sound signals Part 12. General Specifications for System Outputs. During the development of this standard, a large number of test data and cable television systems should be comprehensively analyzed.

The specific requirements of the application, while taking into account the advanced nature of the technical requirements, while taking into account the needs of production costs and use.

This standard is under the jurisdiction of the National Radio and Television Standardization

Technical Committee.

This standard was drafted. State Administration of Radio, Film and Television Radio and Television Measurement and Testing Center, Zhongshan Jiehexing Electronics Co., Ltd.

1 Scope

This standard specifies the technical requirements and measurement methods of two-way user ports for cable television systems. For ensuring the same measurement uncertainty any equivalent method can also be used. In case of dispute, this standard shall prevail.

This standard applies to the development, production, use, operation and maintenance of two-way user ports in cable television systems.

2 Normative references

The clauses in the following documents have become the clauses of this standard after being referenced. For dated references, all subsequent Neither amendments (excluding errata) or revised versions are applicable to this standard, however, parties who have reached an agreement under this standard are encouraged to study is the latest version of these files available? For undated references, the latest version applies to this standard.

GB 5465.2-1985 Graphical symbols for electrical equipment GB/T 11318.1-1996 Cable and distribution system equipment and components for television and sound signals-Part 1. General specifications GY/T 106-1999 Cable TV system technical specifications GY/T 140-1999 Cable TV system output (5 ~ 1000MHz) technical conditions and measurement methods GY/T 180-2001 Technical Specifications of Physical Transmission Channels for HFC Networks

3 Terms and definitions

The following terms and definitions apply to this standard.

Two-way subscriber port Duplex access port in the user room that can transmit signals downwards and upwards.

4 Product Categories

According to the number of user ports and corresponding purposes, it is divided into two-hole user ports. TV port (TV port) and data port (DP port); three-hole user port.

TV port (TV port), FM port (FM port) and data port (DP port).

5.1 General requirements

The appearance should be neat, and the surface should be free of obvious dents, scratches, cracks, burrs and deformation; the plating coating should not be blistering, cracking and peeling; gold the attachments shall be free from rust and mechanical damage; the pouring material shall not overflow.

Structures and components should be fastened and not loose; the text and graphic symbols describing functions should be complete, correct, clear and firm;

The shape symbol shall comply with the relevant provisions of GB 5465.2-1985.

The input port and user port connectors should be metric F headers.

5.2 Technical requirements

The technical requirements of the two-way user port of the cable television system are shown in Table 1.

Table 1 Technical requirements for two-way user ports in cable television systems

Technical index

dB	serial number	items	Frequency Range	MHz	two-hole	three-hole
5 ~ 65	≥ 45.0	≥ 45.0				
Input port-TV port	87 ~ 1000	≤ 5.0	≤ 6.0	Input port-DP port	5 ~ 1000	≤ 5.0
						≤ 6.0
5 ~ 65	≥ 30.0	insert loss	Input port-FM port	87 ~ 108	≤ 14.0	5 ~ 108
						≥ 30.0
TV port-FM port	108 ~ 1000	≥ 28.0	5 ~ 65	≥ 60.0	≥ 60.0	TV port-DP port
						87 ~ 1000
						≥ 26.0
5 ~ 65	≥ 60.0	mutual isolation	FM-DP	87 ~ 1000	≥ 35.0	5 ~ 65
						≥ 16
87 ~ 550	≥ 16					≥ 16
input port	550 ~ 1000	≥ 14	≥ 14	108 ~ 550	≥ 16	≥ 16
TV port	550 ~ 1000	≥ 14	≥ 14	FM port	87 ~ 108	≥ 16
						≥ 16
5 ~ 65	≥ 16					≥ 16
87 ~ 550	≥ 16					≥ 16
reflection loss	DP port	550 ~ 1000	≥ 14	≥ 14	shield attenuation	5 ~ 1000
						≥ 90
						≥ 90

5 Withstand voltage input-2kV AC voltage, no breakdown for 1min

6.1.1 Measurement block diagram

see picture 1.

input Output

Input and output

Measured in both directions User port the internet Analyzer

Figure 1 Block diagram of insertion loss and mutual isolation measurement

6.1.2 Measurement procedure

- a) Set the working frequency range of the network analyzer to the working frequency range of the bidirectional user port under test;
- b) calibrate the network analyzer;
- c) Connect the bidirectional user port under test and the network analyzer according to Figure 1;
- d) read the maximum and minimum levels in the operating frequency range;
- e) Measure the insertion loss of input port to TV port, input port to DP port, and input port to FM port according to the frequency range requirements in Table 1.

Consume

- f) Measure the isolation between TV port to FM port, TV port to DP port, and FM port to DP port according to the frequency range requirements in Table 1.

If a frequency sweeper is used for measurement, it should meet the relevant regulations in GY/T 140-1999 and GB/T 11318.1-1996.

A 75ohm termination load is applied to all unmeasured device ports.

6.2.1 Measurement block diagram

See Figure 2.

Input and output

The internet

Analyzer

Measured in both directions User port

Figure 2 Block diagram of reflection loss measurement

6.2.2 Measurement procedure

- a) Set the working frequency range of the network analyzer to the working frequency range of the bidirectional user port under test;
- b) Perform "open", "short", and "match load" calibration on the network analyzer;
- c) Connect the bidirectional user port under test and the network analyzer according to Figure 2;
- d) According to the requirements of Table 1, directly read out the minimum value of the reflection loss in different frequency bands of the input port, TV port, FM port and DP port,