

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

GY/T 322.3-2019

**Audio applications of networks-open control architecture - Part
3: Protocol for TCP/IP networks
(English Translation)**

Issued on: January 1, 1970

Implemented on: April 28, 2019

Issued by: State Administration of Radio and Television

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Foreword

GY/T 322 "Open Control Architecture for Network Audio Applications" is divided into the following three parts.

- Part 1. Framework;
- Part 2. Class structure;
- Part 3. Protocols for TCP/IP networks.

This part is the third part of GY/T 322.

This section is drafted in accordance with the rules given in GB/T 1.1-2009.

This section refers to AES70-3-2015 "Open Control Architecture for Network Audio Applications Part 3. Protocols for TCP/IP Networks Conference".

Please note that some elements of this document may involve patents. The issuer of this document is not responsible for identifying these patents.

This section is under the jurisdiction of the National Radio, Film and Television Standardization Technical Committee (SAC/TC 239).

Drafting units of this section. China Central Radio and TV Station, State Administration of Radio and Television, Academy of Radio and Television Science, and State Administration of Radio and Television Radio and Television Planning Institute, Jiangsu Provincial Radio and Television General Station, Zhejiang Radio and Television Group, Suzhou Fuchuan Technology Co., Ltd., Beijing YingfuMeidi Technology Co., Ltd., Beijing Zhonghechuan New Technology Co., Ltd., Hangzhou Union Technology Co., Ltd., Shanghai Baibei Technology Development Co., Ltd.

Company, Beijing Jebesen Century Technology Co., Ltd., and Suzhou University.

0.1 Overview

This section supports remote monitoring of media devices that conform to an open control architecture in a TCP/IP network.

The first part of the open control architecture is based on AES70-1-2015 "Open control architecture for network audio applications Part 1. Framework" the second part of the open control architecture defines the class structure of the open control architecture for media network monitoring. Part 2 is a reference Prepared by AES70-2-2015 "Open Control Architecture for Network Audio Applications Part 2. Class Structure" the third part of the open control architecture is based on AES70-3-2015 "Open control architecture for network audio applications Part 3. For "TCP/IP Network Protocol", the original English text can be obtained from

0.2 Document Conventions

The general data types involved in this section are applicable to all protocols that conform to the open control architecture, and specific data types are only applicable to this Part Minute. For easy differentiation, the names of common data types are prefixed with "Oca", while the names of specific data types are prefixed with "Ocp1".

Open control architecture for network audio applications Part 3. Protocols for TCP/IP networks

1 Scope

This section of GY/T 322 specifies the protocols used for TCP/IP networks.

This section applies to monitoring of network audio applications.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this document.

For undated references, the latest version (including all amendments) applies to this document.

GY/T 322.1-2019 Open Control Architecture for Network Audio Applications Part 1.
Framework GY/T 322.2-2019 Open Control Architecture for Network Audio Applications
Part 2. Class Structure IETF RFC 3927 Dynamic Configuration of IPv4 Link-Local
Addresses IETF RFC 4862 IPv6 Stateless Address Autoconfiguration IETF RFC 6335
Internet Assigned Numbers Authority (IANA) Registry for Service Name and Transport
Protocol Port Number Assigned Numbers Authority (IANA) Procedures for the Management
of the Service Name and Transport Protocol Port Number Registry) IETF RFC 6762
Multicast DNS IETF RFC 6763 DNS-Based Service Discovery

3.1 Terms and definitions

The following terms and definitions apply to this document.

3.1.1

Open control protocol; OCP A network protocol defined according to an open control architecture.

3.2 Acronyms

The following abbreviations apply to this document.

PDU Protocol Data Unit

4 Minimal implementation

Every device that complies with an open control architecture shall implement all of this section.

The specific options included in this section are described in Chapter 5.

5.1.1 IP address initialization

When the device initializes the OcaNetwork or OcaStreamNetwork object (see GY/T 322.2-2019), it should perform 5.1.2, 5.1.3, the initialization steps described in 5.1.4.

The ControlProtocol property value of the above object should be "OCP01".

5.1.2 IP address allocation method

Devices that conform to the open control architecture should implement at least IPv4 or IPv6 network addressing standards. In this section, the symbols that implement IPv4 network addressing Devices with an open control architecture are called IPv4 devices. Devices that conform to the open control architecture that implement IPv6 network addressing are called IPv6 devices.

The device can implement both IPv4 and IPv6, that is, it can be both an IPv4 device and an IPv6 device.

Each IPv4 device should implement a DHCP client and use a DHCP server. Each IPv6 device should implement a DHCPv6 client and use DHCPv6 server. In the following, these clients and servers will be collectively referred to as IP address clients and IP address servers, respectively.

If the device belongs to multiple IP subnets, it should set up an IP address client for each subnet. When the device is connected to a subnet, the device should Start the corresponding IP address client.

If the IP address client connects to the IP address server during the address allocation timeout period, the device shall use the address assigned by the server.

When no IP address server is found or the device does not implement an IP address client within the address allocation timeout period.

- a) IPv4 equipment should use the IPv4 link-local address defined in IETF RFC 3927;
- b) IPv6 devices should use IPv6 link-local addresses automatically generated by IPv6 as defined in IETF RFC 4862.

When the device does not implement a link-local address, the IP address should be set manually.

5.1.3 Sockets and Ports

After obtaining the IP address, the device shall establish a TCP listening socket to receive insecure sessions that conform to this section, or a TCP listening socket Words receive secure conversations that fit this section, or both are open at the same time.

The device shall use TCP port numbers within the standard IANA dynamic port range