JT-G703-a Leased Line Secondary Rate User-Network Interface Layer 1-Specification

1. Relations with international standards

JT-G703-a is applicable to the secondary rate user-network interface for leased line services.

This Standard is based on ITU-T recommendation G.703, I.431, G704, G706, and G.824 (mainly G703 and I431). Detail items are shown in Table 1.

2. Summary of departures from ITU-T recommendations

(1) Summary of function

(a) D channel

Specifications related with the D channel are deleted. Also, primitives between layer 1 and layer2 are deleted.

<Reasoning>:

The D channel is not necessary for leased line user-network interface at present.

(b) H11 channel

The bi-directional transmission function of independent H11 channel signals is provided.

<Reasoning>:

The secondary rate interface has a transmission capacity to transmit several H11 channel singles.

(2) Interchange circuit medium, characteristic impedance, and connector

One coaxial pair is adopted. The characteristic impedance of interface cable shall be 75 ohm (±5% at 1 MHz).

The JIS (Japan Industrial Standard) C 5412-1976 C02 Type Connector for Radio Frequency Coaxial Cable is adopted.

<Reasoning>:

A coaxial pair is superior to a twisted pair in its electrical and magnetic interference characteristics.

(3) Line code

<Reasoning>:

The B8ZS line code given in Recommendation G.703 is adopted to guarantee BSI.

(4) Time slot assignment

Fixed time slot assignments are adopted.

<Reasoning>:

A call-by-call basis time slot assignment by the D channel is not available, because the D channel is not defined at this interface.

(5) Electrical environment

<Reasoning>:

This issue is included in the Standard, because specifications for lighting-surges in various groundings are necessary from the viewpoint of safety.

The issue, however, is still open for further study because it is being discussed by the ITU-T SG 5 and relevant national committees.

3. History of revised versions

Version	Date	Outline
1	November 30, 1987	Established
2	April 28, 1989	Added the regulation about an interface connector.
3	November 26, 1993	Improved the disturbance wave regulation in Appendix 1.
4	April 23, 1997	Deleted the disturbance wave regulation from this standard, in order to specify independently.

4.Others

(1) Recommendations and Standards to be referred to

(i) TTC Standards

JT-I430, JT-I431, JT-I431-a, JT-G703, JT-G704, JT-G706

(ii) ITU-T Recommendations

G.824(1988)

(iii) Others

JIS C5412-1976

Table 1(1/3) Relations with international standards

Item	Revelant ITU-T Recommendations				
	G.703	I.431	G.704	G.706	G.824
Type of configuration		○			
Functional characteristics					
Summary of function		○			
Interchange circuit		○			
Activation/ deactivation		○			
Operational functions		○			
Electrical characteristics					
Bit rate	○				
Interchange circuit medium	○				
Line code	○				
Test load impedance	○				

Table 1(2/3) Relations with international standards

Item	Revelant ITU-T Recommendations				
	G.703	I.431	G.704	G.706	G.824
Electrical characteristics					
Nominal pulse shape	○				
Voltage at zero		○			
Specification at the input ports		○			
Electrical environment		○			
Frame structure			○		
Timing considerations		○			
Time slot assignment			○		
Jitter					○
wander					○

Table 1(3/3) Relations with international standards

Item	Revelant ITU-T Recommendations				
	G.703	I.431	G.704	G.706	G.824
Interface procedures					
Code for idle channel and idle slots		○			
Frame alignment and CRC procedure				○	
Maintenance					
Maintenance function		○			
Definition of maintenance signal		○			
CRC-5 in-service performance monitoring and reporting		○			
Power feeding		○			