Mainland China Standard—YD/T 1082-2000

YD/T 1082-2000 establishes the technical specifications on overvoltage and overcurrent protection of access network equipment for Mainland China.

This Chinese Standard parallels the ITU-T K series. This Standard specifies the technical requirements and test methods for overvoltage and overcurrent protection and the basic environmental adaptability of access network equipment. This Standard does not deal with protection against radiated electromagnetic fields.

The specifications as presented here are a succinct summary of the lightning surge, power fault, and ESD testing required by this document.

The ports of the Network equipment are classified into five categories:

I. Ports used to connect the twisted pairs introduced from outside of the building, namely analog user interface, ISDN-BRA interface, ADSL interface, and so on

II. Twisted pair ports used to interconnect the different equipment inside the building, namely V.24 interface, V.35 interface, 2048 kbits/s interface connected to twisted pairs, 10/100 Base-T Ethernet interface, and so on

III. Coaxial cable port: 2048 kbits/s interface connected to coaxial cables, ISDN-PRA interface, and so on

IV. AC Power interface

V. DC power interface

The sequence of testing shall follow this order:

ESD –> EFT –> simulation of lightning strike –> power line induction –> power line contact

ESD Testing

The environmental conditions for ESD testing shall be:

- Temperature—15 °C ~ 35 °C
- Relative humidity—30% ~ 60%
- Air pressure —86 ~ 106 kPa

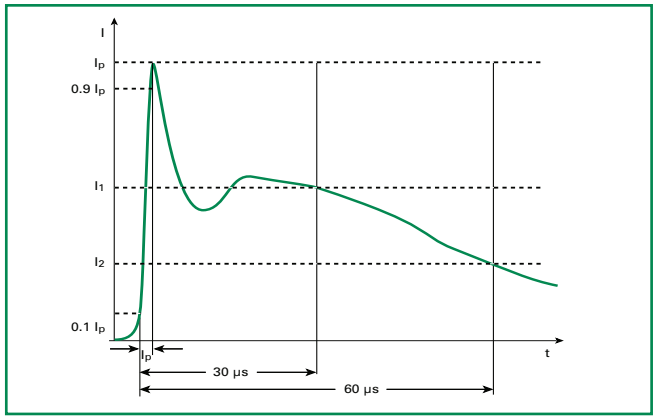
The waveform of the generator should meet the requirements of YD/T 950 as shown in table 3.45.

Establish a communications link via any port of the EUT before the test. The communications link should be capable of normal use without being attended to manually after the test.

Table 3.45 Waveform Parameters

Indicated Voltage	Peak of Initiation of the Discharge Currents I_p	Time of Rising During Discharge Switch On / Off t_r	Current at 20 ms I_1	Current at 60 ns I_2
6 kV	22.5 A ± 30%	0.7–1 ns	12 A ± 30%	6 A ± 30%

Figure 3.12 ESD Waveform



EFT (Electrically Fast Transient)

Waveform of the generator should meet the requirements of ITU-T K.34.

Table 3.46 EFT

Tested Port	Number of Ports		Test Conditions
	Remote	Central Office	
I	1	—	1 kV, 5 kHz, ≥ 1 min
II	1	1	1 kV, 5 kHz, ≥ 1 min
III	1	1	1 kV, 5 kHz, ≥ 1 min
IV	1	—	2 kV, 2.5 kHz, ≥ 1 min
V	—	1	2 kV, 2.5 kHz, ≥ 1 min
VI	—	1	2 kV, 2.5 kHz, ≥ 1 min

Table 3.47 Lightning Surge Test Conditions

Class of Port	Number of Ports		Voltage and Current Waveforms µs	Amplitude *
	Central Office	Remote		
I	—	3	10/700 – 5/310	4 kV
		8	1.2/50 – 8/20	6 kV
II	1	1	1.2/50 – 8/20	500 V
III	1	1	1.2/50 – 8/20	500 V
IV	—	1	1.2/50 – 8/20	10 kV, 5 kA
V	1	1	1.2/50 – 8/20	500 V

* All tests are conducted ±5 times with at least one minute between events.

Table 3.48 Power Line Induction and Contact Testing

Tested Port	Number of Ports		Test Conditions
	Remote	Central Office	
I	3	—	600 V, 600Ω, 50 Hz, 1 s
I	1	—	220 V, 50 Hz, 1 h, 600/200/10Ω

Revised: April 15, 2011