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**TECHNICAL STANDARDS FOR ETHERNET NETWORK
TELECOMMUNICATION DEVICES**

CHAPTER I

GENERAL REQUIREMENTS

A. Definition

Ethernet Network Telecommunications Equipment is a device that has 2 (two) or more Ethernet type interfaces in accordance to the IEEE 802.3 standard and functions to connect 2 (two) or more devices on the network through that interface.

B. Configuration

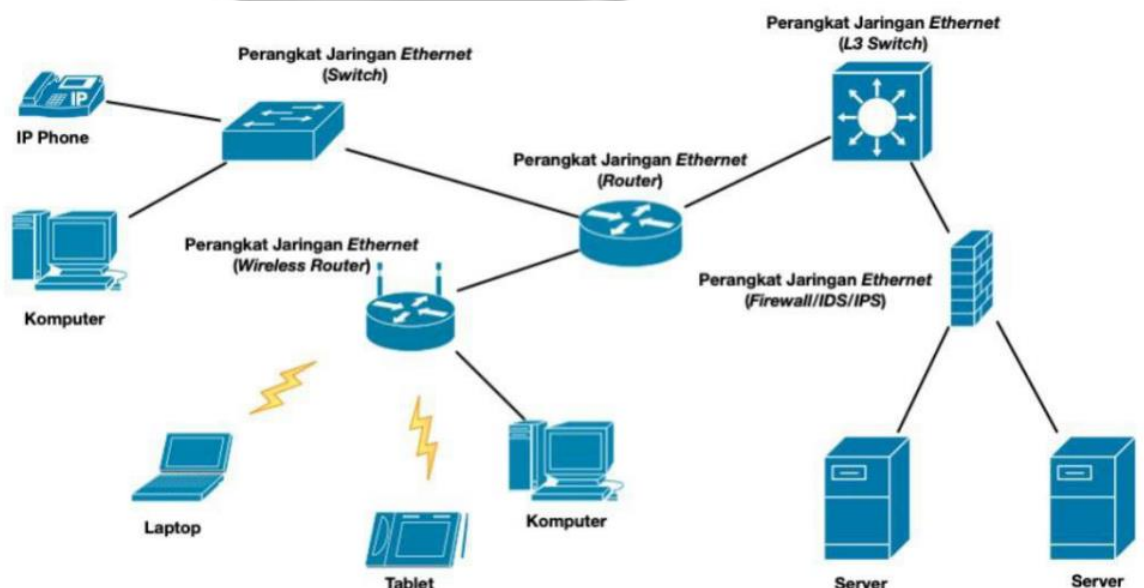


Figure 1 – Example of Telecommunication Equipment Configuration

Ethernet Network



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CHAPTER II TECHNICAL STANDARDS

A. General Requirements

1. Power Supply

The device can be supplied with either AC or DC power. For devices with an AC power supply, the device should operate normally with a supply of $220\text{ V} \pm 10\%$ and a frequency of $50\text{ Hz} \pm 6\%$. In terms of the device using an external power source, such as an AC adapter, the power supply must not affect the device's operability.

2. EMC

a. Emission

The following emission measurements must be performed on the device whenever possible:

1) Devices used in residential areas

- a) The radiation emission of the device must meet the Class B requirements specified in Table A.4 and Table A.5 in accordance with clause 4 of SNI ISO/IEC CISPR 32;
- b) The conduction emission at the DC power port of the device must meet the Class B requirements specified in Table A.10 in accordance with clause 4 of SNI ISO/IEC CISPR 32;
- c) Conduction emission at the AC supply port of devices with special AC/DC power converter must meet Class B requirements specified in Table A.10 in accordance with clause 4 of SNI ISO/IEC CISPR 32 (the device with a DC power port supplied with special AC/DC power adapter or converter considered as a device with AC power supply (clause 3.1.1 SNI ISO/IEC CISPR 32)); and
- d) Conduction emissions at the cable network port must meet the Class B requirements specified in Table A.12 in accordance with clause 4 of SNI ISO/IEC CISPR 32.

2) Devices used in non-residential areas

- a) The radiation emission of the device must meet the Class A requirements specified in Table A.2 and Table A.3 in accordance with clause 4 of SNI ISO/IEC CISPR 32;



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- b) The conduction emission at the DC power port of the device must be meet the Class A requirements specified in Table A.9 in accordance with clause 4 of SNI ISO/IEC CISPR 32;
- c) Conduction emissions at the AC supply port of devices with dedicated AC/DC power converters must meet the Class A requirements specified in Table A.9 according to clause 4 of SNI ISO/IEC CISPR 32 (the device with DC power port supplied with special AC/DC power adapter or converter considered as a device with AC power supply (clause 3.1.1 SNI ISO/IEC CISPR 32)); and
- d) Conduction emissions at the cable network port must meet the Class A requirements specified in Table A.11 in accordance with clause 4 of SNI ISO/IEC CISPR 32.

b. Immunity

The following immunity measures should be performed on the device whenever possible and must comply with the provisions of SNI ISO/IEC CISPR 35:

- 1) RF electromagnetic field (80 MHz to 1 GHz) at device casing;
- 2) Electromagnetic discharge in the case of the device;
- 3) Fast transients (common mode) on the DC power supply port and AC with cables longer than 3 m;
- 4) RF common mode 0.15 MHz to 80 MHz on the supply port DC and AC power with cables longer than 3 m;
- 5) Voltage dips and interrupts on the AC power supply port of devices with dedicated AC/DC power converters; and
- 6) Power surge, common mode, and differential mode on the device's power supply port with a dedicated AC/DC converter.

The fulfillment of this immunity is enforced if there are at least 2 (two) domestic test centers that obtain accreditation from the National Accreditation Committee for the scope of ISO/IEC CISPR 35 or SNI ISO/IEC CISPR 35.

3. Electrical Safety

- a. The electrical safety assessment of the device must meet requirements specified in IEC 60950-1 or IEC 62368-1 based on the following assumptions:
 - 1) The device is powered by a dedicated external power supply (AC/ DC converter or adapter/charger); and
 - 2) The device operates with SELV in an environment where the overvoltage of the telecommunications network is not might happen. SELV refers to a voltage that does not exceed 42.4 V peak or 60 V DC.



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- b. For device safety assessments carried out with a risk-based approach, the process specified in 62368-1 of the following should be used:
 - 1) Identification of the energy source in the device;
 - 2) Classification of energy sources (impact on the body or material flammable substances, such as possible injury or ignition);
 - 3) Identification of efforts to protect energy sources; and
 - 4) Considering the effectiveness of safeguards by considering the fulfillment criteria or requirements specified in the IEC standard 62368-1.

4. Laser Safety

In the case that the device has optical interface, the laser used on the optical interface must meet the requirements of Class 1 or Class 1M complies with IEC 60825.

B. Interface Interoperability Requirements

1. Ethernet

The ethernet interface must conform to the IEEE 802.3 standard which is relevant.

2. Other types of interfaces

In the event that the device has another type of interface, the characteristics interface must be tested under the provisions of the law and regulation.

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