

**ATT-TP-76204, Issue 3**  
**BROADBAND**  
**RESIDENTIAL EQUIPMENT PHYSICAL DESIGN**  
**REQUIREMENTS**

**To:** Broadband Equipment Suppliers

**Effective Date:** September 10, 2008  
**Issue Date:**

**Expires On:** N/A

**Related Documents:** ATT-TP-76200, UL 60950, National Electrical Code, Telcordia GR-63-CORE and GR-78-CORE

**Cancelled Documents:** ATT-TP-76200, Issue 2

**Issuing Department:** Network Staff, Common Systems

**Business Unit:** AT&T Services, Inc.

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# 1 GENERAL

## 1.1 *Requirements and Objectives*

This section provides the requirements and objectives for the minimum safety and testing requirements for equipment placed at customer's residence. Additional requirements may be specified on a case-by-case basis for different equipment.

## 1.2 *Purpose*

The purpose of this section is to provide product suppliers with a reference of equipment requirements.

## 1.3 *Scope*

This section applies to information equipment intended for deployed at customer's residence including associated power supply units.

## 1.4 *Definitions*

- A. Requirements are those product features that **must** be provided by the equipment manufacturer. The words "shall" and "must" are used throughout this section to identify requirements.
- B. Objectives are product features that are **desired** for the long term use or application. The word "should" is used throughout this section to identify objectives.

## 1.5 *ATT- TP-76200 Internet Web Site*

Copies of this document and general information about AT&T's equipment standards may be found at <https://ebiznet.sbc.com/sbcnebs/>.

## 1.6 *Product Evaluation Process*

Documentation of conformance to requirements must be submitted to AT&T for evaluation and verification. Forward documents to:

John Tablerion  
15248 S. Ravinia  
Orland Park Ill. 60462  
Office: 708-403-4450  
Fax: 708-460-4457  
Email: [jt3216@sbccom.com](mailto:jt3216@sbccom.com)

## **1.7 Laboratory Requirements**

Listing of equipment must be done by a Nationally Recognized Testing Laboratory.

## **1.8 Reasons for Reissue**

- Major revisions and additions to Sections 2 through 7

## **1.9 Effective Date of this Issue**

Requirements contained in this section are effective immediately upon publication and are applicable to equipment submitted for approval for use within AT&T IS after the date of publication.

## **1.10 Comments**

*Comments or questions regarding the content of this section should be directed to:*

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## **2 LISTING/CODE REQUIREMENTS**

### **2.1 Equipment powered via customer's AC power**

- 2.1.1** Equipment shall be listed to UL-60950 for the intended use for by a Nationally Recognized Testing Laboratory. Verification of listing is required.
- 2.1.2** Equipment which uses an external power supply shall have the power supply listed to UL 60950 or UL 1310 by a Nationally Recognized Testing Laboratory. Verification of listing is required.
- 2.1.3** Equipment shall be tested to and found in conformance with Federal Communications Commission Part 15 electromagnetic emissions criteria for Class B devices when applicable. Verification of conformance is required.

- 2.1.4** Equipment shall be tested to and found in conformance with Federal Communications Commission Part 68 electromagnetic emissions criteria. Verification of conformance is required. Certification and marking of equipment shall be established on a case-by-case basis and should be discussed with AT&T.

## **2.2 *Set Top Box Battery Powered Remote Controls***

- 2.2.1** Equipment shall be tested to and be found in conformance with Federal Communications Commission Part 15 electromagnetic emissions criteria when applicable. Verification of conformance is required.

## **3 ELECTRICAL REQUIREMENTS**

- 3.1** Equipment shall meet requirements of GR 1089 Core Issue 4, Section 4.12.2.
- 3.2** Equipment shall be compliant with IEEE C62.41.2
- 3.3** Network Access Devices (e.g., residential gateways, modems, etc.) shall comply with the applicable requirements of ITU-T K.21, Resistibility of telecommunication equipment installed in customer premises to overvoltages and overcurrents.

## **4 PHYSICAL DESIGN REQUIREMENTS**

- 4.1** Equipment shall meet the requirements and intent of the appropriate IPC design and manufacturing standards including IPC Standards for PCB Assemblies (e.g., IPC-A-610D), IPC-2220 Series and IPC-6010 Series.

## **5 SURFACE TEMPERATURE**

- 5.1** All CPE devices shall utilize materials (metallic and polymeric) that meet the surface temperature contact exposure requirements defined in GR-63-CORE section 4.1.7, specifically R4-22[159] -Temperature Limits of Touchable Surfaces - when the equipment is operating in a room with an ambient air temperature of 23°C (73°F).

## **6 MATERIAL/COMPONENTS FIRE-RESISTANCE CRITERIA**

- 6.1** All materials, components, and interconnect wire and cable used within equipment assemblies shall meet the requirements of Section 4.1 of ANSI T1.307- 2003, Fire-Resistance Criteria - Ignitability Requirements for Equipment Assemblies, Ancillary Non-Metallic Apparatus, and Fire Spread Requirements for Wire and Cable.

## 7 ENVIRONMENTAL REQUIREMENTS

### 7.1 Storage and Transportation

Equipment shall be tested to and be found in conformance with Telcordia GR-63-CORE Section 4.1.1, Storage and Transportation Criteria.

### 7.2 Temperature, Humidity and Altitude

Equipment shall be tested to and be found in conformance with Telcordia GR-63-CORE, Section 4.1.2, Temperature, Humidity and Altitude requirements as summarized in Table 7-1.

**Table 7-1 Temperature, Humidity and Altitude Criteria**

Conditions	Limits
Temperature <ul style="list-style-type: none"> <li>• Operating</li> <li>• Short Term</li> </ul>	<ul style="list-style-type: none"> <li>• 5°C to 40°C (41°F to 104°F)</li> <li>• -5°C to 50°C (23°F to 122°F)</li> </ul>
Relative Humidity <ul style="list-style-type: none"> <li>• Operating</li> <li>• Short Term</li> </ul>	<ul style="list-style-type: none"> <li>• 5% to 85%</li> <li>• 5% to 90% but not to exceed 0.024 kg water/kg of dry air</li> </ul>
Altitude <ul style="list-style-type: none"> <li>• At 40°C Ambient</li> <li>• At 30°C Ambient</li> </ul>	<ul style="list-style-type: none"> <li>• 60 m (197ft) below sea level to 1800 m (6000 ft) above sea level</li> <li>• 1800 m (6000 ft) to 4000 m (13,000 ft) above sea level</li> </ul>