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**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**K.43(2003)**

**Amendment 1**  
(12/2004)

SERIES K: PROTECTION AGAINST INTERFERENCE

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Immunity requirements for telecommunication  
equipment

**Amendment 1**

***CAUTION !***

***PREPUBLISHED RECOMMENDATION***

This prepublication is an unedited version of a recently approved Recommendation. It will be replaced by the published version after editing. Therefore, there will be differences between this prepublication and the published version.

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**Subject: Amendment 1 (11/2004) to  
ITU-T Recommendation K.43 (07/2003), *Immunity requirements for  
telecommunication equipment***

*Please modify § 7.2.6 and Table I/K.43 as follows:*

**7.2.6 Voltage dips, short interruptions and voltage variations**

Voltage dips, short interruptions and voltage variations tests shall be conducted in accordance with IEC 61000-4-11 for AC line ~~and~~

~~The voltage Dips on DC line shall be conducted with IEC 61000-4-29 for DC line.~~

The Abnormal Voltage test simulate a out of specification of DC power station failure, during this failure the DC voltage submitted at the equipment is out of the specification. ~~the test voltage~~

When the equipment's The test voltage dips test shall be limited at the high impedance test in the case that the DC input of the equipment contains diodes in the DC input circuit is designed to prevent the discharge of it's capacitor or battery backup on into a short circuit of on the DC distribution system, of capacitor or battery backup present in the equipment testing to IEC 61000-4-29 shall consider the high impedance case only.

During the voltage dips test with a duration longer than 4 ms in ~~In~~ some sensitive equipment, momentary and temporary interruption of the service may occur as a result of such transients. ~~Lengthening~~ The duration of the service interruption to service (equipment is not functioning as intended) due to the recovery of software shall be taken in account. More detailed information about the service interruption shall be provided by the manufacturer on the request of the operator.

**Table 1/K.43 – Equipment for telecom centre**

<b>Environmental phenomena</b>	<b>Test levels</b>	<b>Units</b>	<b>Basic standard</b>	<b>Performance criteria</b>	<b>Remarks</b>
<i>Enclosure port</i>					
Radiofrequency electromagnetic field	1 10 10	V/m	IEC 61000-4-3	A	80-800 MHz 800-1000 MHz 1400-2000 MHz (Note 1)
Electrostatic discharge	4 (Contact and air discharge)	kV	IEC 61000-4-2	B	Contact and air discharge
<i>Outdoor telecommunication ports</i>					
Radio frequency conducted continuous	1	V	IEC 61000-4-6	A	0.15-80 MHz (Notes 2 and 3)
Surges	0.5 (line-to-line) 1 (line-to-ground)	kV	IEC 61000-4-5	B	10/700 $\mu$ s (Note 4)
Fast transient	0.25	kV	IEC 61000-4-4	B	Capacitive clamp used
<i>Indoor telecommunication ports</i>					
Radio frequency conducted continuous	1	V	IEC 61000-4-6	A	0.15-80 MHz (Notes 2 and 3)
Surges	0.5 (line-to-ground)	kV	IEC 61000-4-5	B	1.2/50 (8/20) $\mu$ s (Note 4)
Fast transient	0.25	kV	IEC 61000-4-4	B	Capacitive clamp used
<i>DC power port</i>					
Radio frequency conducted continuous	1	V	IEC 61000-4-6	A	0.15-80 MHz (Notes 2 and 3)
Fast Transient	0.25	kV	IEC 61000-4-4	B	
Voltage Dips	0 0.004	V s	IEC 61000-4-29	A (Note 9)	High impedance (output impedance of test generator)
	0 0.01 and 0.1	V s	IEC 61000-4-29	C (Notes 7, 8, 9)	
	0 0.004	V s	IEC 61000-4-29	A (Note 9)	Low impedance (output impedance of test generator)
	0 0.01 and 0.1	V s	IEC 61000-4-29	C (Notes 5, 6, 9)	

**Table 1/K.43 – Equipment for telecom centre**

<b>Environmental phenomena</b>	<b>Test levels</b>	<b>Units</b>	<b>Basic standard</b>	<b>Performance criteria</b>	<b>Remarks</b>
Abnormal Voltage	0 to 90 1	% of nominal voltages		C (Notes 7, 8, 9)	
	110 to 125 1	% of nominal voltages		C (Notes 7, 8, 9)	
Voltage Variation	From 100 to 90 2	% of nominal voltages		A	The test simulates a change in the DC voltage (is not an interruption but a change from the nominal value to a lower value)
	From 100 to 110 2	% of nominal voltages		<u>A</u>	The test simulates a change in the DC voltage (is not an interruption but a change from the nominal value to a higher value)
<i>AC power ports</i>					
Radio frequency conducted continuous	1	V	IEC 61000-4-6	A	0.15-80 MHz (Notes 2 and 3)
Surges	0.5 (line-to-line) 1 (line-to-ground)	kV	IEC 61000-4-5	B	1.2/50 (8/20) $\mu$ s (Note 4)
Fast transients	0.5	kV	IEC 61000-4-4	B	
Voltage Dips	> 95 0.5	% reduction period	IEC 61000-4-11	B	
	30 25	% reduction period	IEC 61000-4-11	C	
Voltage interruption	95 250	% reduction period	IEC 61000-4-11	C	

**Table 1/K.43 – Equipment for telecom centre**

Environmental phenomena	Test levels	Units	Basic standard	Performance criteria	Remarks
<p>NOTE 1 – The test may be performed with a start frequency lower than 80 MHz, but not less than 27 MHz.</p> <p>NOTE 2 – The lower test level above 10 MHz can be applied. The specific level is under study.</p> <p>NOTE 3 – The test level can be defined as equivalent current into 150 Ω.</p> <p>NOTE 4 – This test can be applied when appropriate CDN exists.</p> <p>NOTE 5 – <u>During the voltage dips test with a duration longer than 4ms</u> <del>In</del> some sensitive equipment, momentary and temporary interruption of the service may occur as a result of such transient. <del>Lengthening</del> <u>The duration of the service interruption to service</u> (equipment is not functioning as intended) due to the recovery of software shall be taken in account. More detailed information about the service interruption shall be provided by the manufacturer on the request of the operator.</p> <p>NOTE 6 – To prevent system malfunctioning, additional arrangements concerning the power supply system may be necessary.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>– Dual feeding system.</li> <li>– High Ohmic distribution system.</li> <li>– Independent power distribution.</li> </ul> <p>NOTE 7 – Following the restoration of the supply to the normal voltage range, the power conversion and management systems shall automatically restore service. The telecommunication equipment shall then resume operation according to its specifications. The abnormal service voltage shall not lead to the disconnection of the power supply, e.g., by causing circuit breakers, fuses or other such devices to operate.</p> <p>NOTE 8 – For equipment with a low priority of service it is acceptable to use the following performance criteria during the test: "Loss of function is allowed, the function can be restored by a manual operation of the user in accordance with the manufacturer's instructions. Functions and information protected by a battery backup shall not be lost."</p> <p>NOTE 9 – This test is applicable only in equipment in which the battery back-up is not permanently connected to the DC distribution system.</p>					