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ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

K.43

Amendment 1
(11/2004)

SERIES K: PROTECTION AGAINST INTERFERENCE

Immunity requirements for telecommunication equipment

Amendment 1

ITU-T Recommendation K.43 (2003) – Amendment 1

ITU-T Recommendation K.43

Immunity requirements for telecommunication equipment

Amendment 1

Source

Amendment 1 to ITU-T Recommendation K.43 (2003) was agreed on 12 November 2004 by ITU-T Study Group 5 (2005-2008).

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g. interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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ITU-T Recommendation K.43

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1) Clause 7.2.6

Modify 7.2.6 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 its 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 into account. More detailed information about the service interruption shall be provided by the manufacturer on the request of the operator.

2) Table 1

Modify Table 1 as follows:

Table 1/K.43 – Equipment for telecom centre

Environmental phenomena	Test levels	Units	Basic standard	Performance criteria	Remarks
Enclosure port					
Radio frequency 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

Table 1/K.43 – Equipment for telecom centre

Environmental phenomena	Test levels	Units	Basic standard	Performance criteria	Remarks
Outdoor telecommunication ports					
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 µs (Note 4)
Fast transient	0.25	kV	IEC 61000-4-4	B	Capacitive clamp used
Indoor telecommunication ports					
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) µs (Note 4)
Fast transient	0.25	kV	IEC 61000-4-4	B	Capacitive clamp used
DC power port					
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)	
Abnormal Voltage	0 to 90 1	% of nominal voltage s		C (Notes 7, 8, 9)	
	110 to 125 1	% of nominal voltage s		C (Notes 7, 8, 9)	

Table 1/K.43 – Equipment for telecom centre

Environmental phenomena	Test levels	Units	Basic standard	Performance criteria	Remarks
Voltage Variation	From 100 to 90 2	% of nominal voltage s		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 voltage s		A	The test simulates a change in the DC voltage (is not an interruption but a change from the nominal value to a higher value)
AC power ports					
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) µs (Note 4)
Fast transients	0.5	kV	ICE 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	

NOTE 1 – The test may be performed with a start frequency lower than 80 MHz, but not less than 27 MHz.

NOTE 2 – The lower test level above 10 MHz can be applied. The specific level is under study.

NOTE 3 – The test level can be defined as equivalent current into 150 Ω.

NOTE 4 – This test can be applied when appropriate CDN exists.

NOTE 5 – During the voltage dips test with a duration longer than 4 ms ~~I~~in some sensitive equipment, momentary and temporary interruption of the service may occur as a result of such transient. ~~Lengthening~~ The duration of ~~the~~ service interruption ~~to service~~ (equipment is not functioning as intended) due to the recovery of software shall be taken into 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

NOTE 6 – To prevent system malfunctioning, additional arrangements concerning the power supply system may be necessary.

For example:

– Dual feeding system.
– High Ohmic distribution system.
– Independent power distribution.

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.

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."

NOTE 9 – This test is applicable only in equipment in which the battery back-up is not permanently connected to the DC distribution system.

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