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SPORTON LAB.

Certificate No : L951516L206

CERTIFICATE

● **EQUIPMENT :** Wireless LAN USB Adapter
MODEL NO. : EW-7612UAn / GWU-H612An
APPLICANT : EDIMAX TECHNOLOGY CO., LTD.
NO.3, Wu Chuan 3rd Road, Wu-Ku Industiral Park.
Taipei Hsien, Taiwan



CERTIFY THAT :

THE MEASUREMENTS SHOWN IN THIS TEST REPORT WERE MADE IN ACCORDANCE WITH THE PROCEDURES GIVEN IN **EUROPEAN COUNCIL DIRECTIVE 2006/95/EC**. THE EQUIPMENT WAS **PASSED** THE TEST PERFORMED ACCORDING TO

European Standard: 2006/95/EC

IEC 60950-1: 2005 (2nd Edition)

EN 60950-1: 2006

This evaluation was carried out to the best of our knowledge and ability, and our responsibility is limited to the exercise of reasonable care. This certification is not intended to relieve the sellers from their contractual obligations.

THE CERTIFICATE WAS CARRIED OUT ON July 20, 2009 AT SPORTON INTERNATIONAL INC. LAB.

Peter Hsu

Peter Hsu
Director



LOW VOLTAGE DIRECTIVE TEST REPORT IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1: 2006 Information technology equipment – Safety – Part 1: General requirements	
Report Reference No.	L951516L206
Compiled by (+ signature).....	Angel Chen Project Engineer <div style="text-align: right; margin-top: 10px;"><i>Angel Chen</i></div>
Approved by (+ signature)	Peter Hsu Director <div style="text-align: right; margin-top: 10px;"><i>Peter Hsu</i></div>
Date of Issue	July 20, 2009
Testing laboratory.....	Sporton International Inc.
Address.....	14Fl.-2, No. 186, Jianyi Rd., Junghe City, Taipei Hsien,
Testing location	Taiwan
Applicant.....	EDIMAX TECHNOLOGY CO., LTD.
Address.....	NO.3, Wu Chuan 3rd Road, Wu-Ku Industiral Park. Taipei Hsien, Taiwan
Standard	IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1: 2006
Test Report Form No.	LVD 60950-1
Test procedure	Sporton LVD type test approval
Procedure deviation	N/A
Non-standard test method	N/A
Type of test object.....	Wireless LAN USB Adapter
Trademark	EDIMAX
Model/type reference	EW-7612UAn / GWU-H612An
Manufacturer	EDIMAX TECHNOLOGY CO., LTD. NO.3, Wu Chuan 3rd Road, Wu-Ku Industiral Park. Taipei Hsien, Taiwan
Rating	+5 Vdc, 200 mA (Optional)

Particulars: test item vs. test requirements

Equipment mobility: Transportable
Operating condition: continuous
Mains supply tolerance (%): --
Tested for IT power systems: No
IT testing, phase-phase voltage (V).....: N.A.
Class of equipment: Class III
Mass of equipment (kg): 4 g
Protection against ingress of water: IPX0

Test case verdicts

Test case does not apply to the test object: N (N.A.)
Test item does meet the requirement.....: P (Pass)
Test item does not meet the requirement.....: F (Fail)

Testing:

- Date of receipt of test item: 2009-07-14
- Date(s) of performance of test.....: 2009-07-20

General remarks:

The test result presented in this report relate only to the object(s) tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(see appended table)" refers to a table appended to the report.
Throughout this report a comma (point) is used as the decimal separator.

Comments:

The test results are true for the test sample(s) only.
A part of this test report or certificate should not be duplicated in any way; however, the duplication of the whole document is allowed.

This test-report includes the following documents:

Test report - (31 pages)
Photo - (5 pages)

Brief description of the test sample:

The equipment is a Wireless LAN USB Adapter, intended for used with information technology equipment.

The unit of power source (USB port) is in according with the Limited Power Source (Clause 2.5).

Overall dimensions of the equipment were approximate 15.6 by 35 by 15.2 mm, and plastic enclosure was secured together by snap-fit.

Model GWU-H612An identical to model EW-7612UAn except for model designation.

The equipment was evaluated for use in a maximum air ambient of 55 °C.

The test sample is pre-production without serial number.

Clause	Requirement - Test	Result - Remark	Verdict
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1	GENERAL		Pass
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1.5	Components		Pass
1.5.1	Comply with IEC 60950 or relevant component standard	Components, which were found to affect safety aspects, comply with the requirements of this standard or with the safety aspects of the relevant IEC/EN component standards.	Pass
1.5.2	Evaluation and testing of components	Components, which are certified to IEC/EN and/or national standards, are used correctly within their ratings or have been evaluated during this approval.	Pass
1.5.3	Thermal controls		N.A.
1.5.4	Transformers		N.A.
1.5.5	Interconnecting cables		N.A.
1.5.6	Capacitors bridging insulation		N.A.
1.5.7	Resistors bridging insulation		N.A.
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N.A.
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N.A.
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N.A.
1.5.8	Components in equipment for IT power systems		N.A.
1.5.9	Surge suppressors		N.A.
1.5.9.1	General		N.A.
1.5.9.2	Protection of VDRs		N.A.
1.5.9.3	Bridging of functional insulation by a VDR		N.A.
1.5.9.4	Bridging of basic insulation by a VDR		N.A.
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N.A.

1.6	Power interface		Pass
1.6.1	AC power distribution systems		N.A.
1.6.2	Input current	See appended table 1.6.2	Pass
1.6.3	Voltage limit of hand-held equipment	.	N.A.

1.6.4	Neutral conductor		N.A.
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1.7	Marking and instructions		Pass
1.7.1	Power rating	See below	Pass
	Rated voltage(s) or voltage range(s) (V)	Optional, 5 Vdc	Pass
	Symbol for nature of supply, for d.c. only	Optional, IEC 60417, No. 5031: 	Pass
	Rated frequency or rated frequency range (Hz) ...	DC input	N.A.
	Rated current (mA or A)	Optional, 200 mA	Pass
	Manufacturer's name or trade-mark or identification mark	See page 1.	Pass
	Type/model or type reference	See page 1.	Pass
	Symbol for Class II equipment only	Class III equipment.	N.A.
	Other symbols.....	Additional symbols or marking do not give rise to misunderstandings.	Pass
1.7.2	Safety instructions and marking	Operation/installation instruction is provided with each unit.	Pass
1.7.2.1	General		N.A.
1.7.2.2	Disconnect devices		N.A.
1.7.2.3	Overcurrent protective device		N.A.
1.7.2.4	IT power distribution systems		N.A.
1.7.2.5	Operator access with a tool		N.A.
1.7.2.6	Ozone		N.A.
1.7.3	Short duty cycles		N.A..
1.7.4	Supply voltage adjustment		N.A.
	Methods and means of adjustment; reference to installation instructions		N.A.
1.7.5	Power outlets on the equipment		N.A.
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)		N.A.
1.7.7	Wiring terminals		N.A.
1.7.7.1	Protective earthing and bonding terminals		N.A.
1.7.7.2	Terminal for a.c. mains supply conductors		N.A.
1.7.7.3	Terminals for d.c. mains supply conductors		N.A.
1.7.8	Controls and indicators		N.A.
1.7.8.1	Identification, location and marking		N.A.
1.7.8.2	Colours		N.A.
1.7.8.3	Symbols according to IEC 60417		N.A.
1.7.8.4	Markings using figures		N.A.

1.7.9	Isolation of multiple power sources		N.A.
1.7.10	Thermostats and other regulating devices		N.A.
1.7.11	Durability	Complied	Pass
1.7.12	Removable parts	No required markings placed on removable parts.	Pass
1.7.13	Replaceable batteries		N.A.
	Language(s)		—
1.7.14	Equipment for restricted access locations	Not intended for use in restricted access locations.	N.A.

2	PROTECTION FROM HAZARDS		Pass
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2.1	Protection from electric shock and energy hazards		Pass
2.1.1	Protection in operator access areas	See below	Pass
2.1.1.1	Access to energized parts	The unit is intended to supplied by host device via a USB port, that consider as SELV circuit and energy level below 240VA.	Pass
	Test by inspection		N.A.
	Test with test finger (Figure 2A)		N.A.
	Test with test pin (Figure 2B)		N.A.
	Test with test probe (Figure 2C)		N.A.
2.1.1.2	Battery compartments		N.A.
2.1.1.3	Access to ELV wiring		N.A.
	Working voltage (V_{peak} or V_{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring		N.A.
2.1.1.5	Energy hazards	No energy hazard in operator access area. The connectors of the equipment below 240VA.	Pass
2.1.1.6	Manual controls		N.A.
2.1.1.7	Discharge of capacitors in equipment		N.A.
	Time-constant (s); measured voltage (V)		—
2.1.1.8	Energy hazards – d.c. mains supplies		N.A.
	a) Capacitor connected to the d.c. mains supply		N.A.
	b) Internal battery connected to the d.c. mains supply		N.A.
2.1.1.9	Audio amplifiers		N.A.
2.1.2	Protection in service access areas		N.A.

2.1.3	Protection in restricted access locations		N.A.
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2.2	SELV circuits		Pass
2.2.1	General requirements	See below	Pass
2.2.2	Voltages under normal conditions (V).....	Between any SELV circuits 42.4 V peak and 60 Vdc are not exceeded.	Pass
2.2.3	Voltages under fault conditions (V)	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120Vd.c. were not exceeded within 0.2s and limits 42.4V peak and 60Vd.c. were not exceeded for longer than 0.2s.	Pass
2.2.4	Connection of SELV circuits to other circuits.....	See 2.2.2 and 2.2.3.	Pass

2.3	TNV circuits		N.A.
2.3.1	Limits		N.A.
	Type of TNV circuits		—
2.3.2	Separation from others circuits and from accessible parts		N.A.
2.3.2.1	General requirements		N.A.
2.3.2.2	Protection by basic insulation		N.A.
2.3.2.3	Protection by earthing		N.A.
2.3.2.4	Protection by other constructions		N.A.
2.3.3	Separation from hazardous voltages		N.A.
	Insulation employed.....		—
2.3.4	Connection of TNV circuits to other circuits		N.A.
	Insulation employed.....		—
2.3.5	Test for operating voltages generated externally		N.A.

2.4	Limited current circuits		N.A.
2.4.1	General requirements		N.A.
2.4.2	Limit values		N.A.
	Frequency (Hz)		—
	Measured current (mA).....		—
	Measured voltage (V) :		—
	Measured capacitance (µF)		—
2.4.3	Connection of limited current circuits to other circuits		N.A.

2.5	Limited power sources		N.A.
	a) Inherently limited output		N.A.
	b) Impedance limited output		N.A.
	c) Regulating network limited output under normal operating and single fault condition		N.A.
	d) Overcurrent protective device limited output		N.A.
	Max. output voltage (V), max. output current (A), max. apparent power (VA)		—
	Current rating of overcurrent protective device (A)		—

2.6	Provisions for earthing and bonding		N.A.
2.6.1	Protective earthing	Class III equipment.	N.A.
2.6.2	Functional earthing		N.A.
2.6.3	Protective earthing conductors and protective bonding conductors		N.A.
2.6.3.1	General		N.A.
2.6.3.2	Size of protective earthing conductors		N.A.
	Rated current (A), cross-sectional area (mm ²), AWG.....		—
2.6.3.3	Size of protective bonding conductors		N.A.
	Rated current (A), cross-sectional area (mm ²), AWG.....		—
	Protective current rating (A), cross-sectional area (mm ²), AWG		N.A.
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)		N.A.
2.6.3.5	Colour of insulation		N.A.
2.6.4	Terminals		N.A.
2.6.4.1	General		N.A.
2.6.4.2	Protective earthing and bonding terminals		N.A.
	Rated current (A), type and nominal thread diameter (mm).....		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N.A.
2.6.5	Integrity of protective earthing		N.A.
2.6.5.1	Interconnection of equipment		N.A.
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N.A.
2.6.5.3	Disconnection of protective earth		N.A.
2.6.5.4	Parts that can be removed by an operator		N.A.

2.6.5.5	Parts removed during servicing		N.A.
2.6.5.6	Corrosion resistance		N.A.
2.6.5.7	Screws for protective bonding		N.A.
2.6.5.8	Reliance on telecommunication network or cable distribution system		N.A.

2.7	Overcurrent and earth fault protection in primary circuits		N.A.
2.7.1	Basic requirements	Class III equipment.	N.A.
	Instructions when protection relies on building installation.		N.A.
2.7.2	Faults not simulated in 5.3.7		N.A.
2.7.3	Short-circuit backup protection		N.A.
2.7.4	Number and location of protective devices		N.A.
2.7.5	Protection by several devices		N.A.
2.7.6	Warning to service personnel.....		N.A.

2.8	Safety interlocks		N.A.
2.8.1	General principles		N.A.
2.8.2	Protection requirements		N.A.
2.8.3	Inadvertent reactivation		N.A.
2.8.4	Fail-safe operation		N.A.
2.8.5	Moving parts		N.A.
2.8.6	Overriding		N.A.
2.8.7	Switches and relays		N.A.
2.8.7.1	Contact gaps (mm)		N.A.
2.8.7.2	Overload test		N.A.
2.8.7.3	Endurance test		N.A.
2.8.7.4	Electric strength test		N.A.
2.8.8	Mechanical actuators		N.A.

2.9	Electrical insulation		Pass
2.9.1	Properties of insulating materials		N.A.
2.9.2	Humidity conditioning		N.A.
	Humidity (%), Temperature (°C)		—
2.9.3	Grade of insulation	The unit provides SELV, only Functional insulation in the unit. See Clause 5.3.4.	Pass
2.9.4	Separation from hazardous voltages		N.A.

	Method(s) used		—
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2.10	Clearances, creepage distances and distances through insulation		Pass
2.10.1	General	Functional insulation only. See Clause 5.3.4.	Pass
2.10.1.1	Frequency		N.A.
2.10.1.2	Pollution degrees		N.A.
2.10.1.3	Reduced values for functional insulation	See 2.10.1	Pass
2.10.1.4	Intervening unconnected conductive parts		N.A.
2.10.1.5	Insulation with varying dimensions		N.A.
2.10.1.6	Special separation requirements		N.A.
2.10.1.7	Insulation in circuits generating starting pulses		N.A.
2.10.2	Determination of working voltage		N.A.
2.10.2.1	General		N.A.
2.10.2.2	RMS working voltage		N.A.
2.10.2.3	Peak working voltage		N.A.
2.10.3	Clearances	See 2.10.1	N.A.
2.10.3.1	General		N.A.
2.10.3.2	Mains transient voltages		N.A.
	a) AC mains supply		N.A.
	b) Earthed d.c. mains supplies		N.A.
	c) Unearthed d.c. mains supplies		N.A.
	d) Battery operation		N.A.
2.10.3.3	Clearances in primary circuits		N.A.
2.10.3.4	Clearances in secondary circuits		N.A.
2.10.3.5	Clearances in circuits having starting pulses		N.A.
2.10.3.6	Transients from a.c. mains supply		N.A.
2.10.3.7	Transients from d.c. mains supply		N.A.
2.10.3.8	Transients from telecommunication networks and cable distribution systems		N.A.
2.10.3.9	Measurement of transient voltage levels		N.A.
	a) Transients from a mains supply		N.A.
	For an a.c. mains supply		N.A.
	For a d.c. mains supply		N.A.
	b) Transients from a telecommunication network..		N.A.
2.10.4	Creepage distances	See 2.10.1	N.A.
2.10.4.1	General		N.A.

2.10.4.2	Material group and comparative tracking index		N.A.
	CTI tests.....		N.A.
2.10.4.3	Minimum creepage distances		N.A.
2.10.5	Solid insulation		N.A.
2.10.5.1	General		N.A.
2.10.5.2	Distances through insulation		N.A.
2.10.5.3	Insulating compound as solid insulation		N.A.
2.10.5.4	Semiconductor devices		N.A.
2.10.5.5.	Cemented joints		N.A.
2.10.5.6	Thin sheet material – General		N.A.
2.10.5.7	Separable thin sheet material		N.A.
	Number of layers (pcs).....		—
2.10.5.8	Non-separable thin sheet material		N.A.
2.10.5.9	Thin sheet material – standard test procedure		N.A.
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		N.A.
	Electric strength test		—
2.10.5.11	Insulation in wound components		N.A.
2.10.5.12	Wire in wound components		N.A.
	Working voltage		N.A.
	a) Basic insulation not under stress		N.A.
	b) Basic, supplementary, reinforced insulation		N.A.
	c) Compliance with Annex U		N.A.
	Two wires in contact inside wound component; angle between 45° and 90°		N.A.
2.10.5.13	Wire with solvent-based enamel in wound components		N.A.
	Electric strength test		—
	Routine test		N.A.
2.10.5.14	Additional insulation in wound components		N.A.
	Working voltage		N.A.
	- Basic insulation not under stress		N.A.
	- Supplementary, reinforced insulation		N.A.
2.10.6	Construction of printed boards		N.A.
2.10.6.1	Uncoated printed boards		N.A.
2.10.6.2	Coated printed boards		N.A.
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N.A.

2.10.6.4	Insulation between conductors on different layers of a printed board		N.A.
	Distance through insulation		N.A.
	Number of insulation layers (pcs)		N.A.
2.10.7	Component external terminations		N.A.
2.10.8	Tests on coated printed boards and coated components		N.A.
2.10.8.1	Sample preparation and preliminary inspection		N.A.
2.10.8.2	Thermal conditioning (°C)		N.A.
2.10.8.3	Electric strength test		—
2.10.8.4	Abrasion resistance test		N.A.
2.10.9	Thermal cycling		N.A.
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N.A.
2.10.11	Tests for semiconductor devices and cemented joints		N.A.
2.10.12	Enclosed and sealed parts		N.A.

3	WIRING, CONNECTIONS AND SUPPLY		Pass
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3.1	General		Pass
3.1.1	Current rating and overcurrent protection	All wires/conductors possess adequate cross-sectional areas for their intended application and Internal wiring are adequately insulated.	Pass
3.1.2	Protection against mechanical damage	The wires are well routed away from sharp edges, etc. and are adequately fixed to prevent excessive strain on wire and terminals.	Pass
3.1.3	Securing of internal wiring	The wires are positioned in such a manner that prevents excessive strain, loosening of terminal connections and damage of conductor insulation.	Pass
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1.	Pass
3.1.5	Beads and ceramic insulators		N.A.
3.1.6	Screws for electrical contact pressure		N.A.
3.1.7	Insulation materials in electrical connections		N.A.
3.1.8	Self-tapping and spaced thread screws		N.A.
3.1.9	Termination of conductors		N.A.
	10 N pull test		N.A.

3.1.10	Sleeving on wiring		N.A.
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3.2	Connection to a mains supply		N.A.
3.2.1	Means of connection	Class III equipment.	N.A.
3.2.1.1	Connection to an a.c. mains supply		N.A.
3.2.1.2	Connection to a d.c. mains supply		N.A.
3.2.2	Multiple supply connections		N.A.
3.2.3	Permanently connected equipment		N.A.
	Number of conductors, diameter (mm) of cable and conduits		—
3.2.4	Appliance inlets		N.A.
3.2.5	Power supply cords		N.A.
3.2.5.1	AC Power supply cords		N.A.
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG.....		—
3.2.5.2	DC power supply cords		N.A.
3.2.6	Cord anchorages and strain relief		N.A.
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage		N.A.
3.2.8	Cord guards		N.A.
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm).....		—
3.2.9	Supply wiring space		N.A.

3.3	Wiring terminals for connection of external conductors		N.A.
3.3.1	Wiring terminals	No wiring terminals	N.A.
3.3.2	Connection of non-detachable power supply cords		N.A.
3.3.3	Screw terminals		N.A.
3.3.4	Conductor sizes to be connected		N.A.
	Rated current (A), cord/cable type, cross-sectional area (mm ²)		—
3.3.5	Wiring terminal sizes		N.A.
	Rated current (A), type and nominal thread diameter (mm).....		—
3.3.6	Wiring terminals design		N.A.

3.3.7	Grouping of wiring terminals		N.A.
3.3.8	Stranded wire		N.A.

3.4	Disconnection from the mains supply		N.A.
3.4.1	General requirement	Class III equipment.	N.A.
3.4.2	Disconnect devices		N.A.
3.4.3	Permanently connected equipment		N.A.
3.4.4	Parts which remain energized		N.A.
3.4.5	Switches in flexible cords		N.A.
3.4.6	Number of poles - single-phase and d.c. equipment		N.A.
3.4.7	Number of poles - three-phase equipment		N.A.
3.4.8	Switches as disconnect devices		N.A.
3.4.9	Plugs as disconnect devices		N.A.
3.4.10	Interconnected equipment		N.A.
3.4.11	Multiple power sources		N.A.

3.5	Interconnection of equipment		N.A.
3.5.1	General requirements		N.A.
3.5.2	Types of interconnection circuits		N.A.
3.5.3	ELV circuits as interconnection circuits		N.A.
3.5.4	Data ports for additional equipments	No data port.	N.A.

4	PHYSICAL REQUIREMENTS		Pass
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4.1	Stability		N.A.
	Angle of 10°	Transportable equipment.	N.A.
	Test: force (N)		N.A.

4.2	Mechanical strength		N.A.
4.2.1	General		N.A.
4.2.2	Steady force test, 10 N		N.A.
4.2.3	Steady force test, 30 N		N.A.
4.2.4	Steady force test, 250 N		N.A.
4.2.5	Impact test		N.A.
	Fall test		N.A.
	Swing test		N.A.

4.2.6	Drop test; height (mm)		N.A.
4.2.7	Stress relief test		N.A.
4.2.8	Cathode ray tubes		N.A.
	Picture tube separately certified		N.A.
4.2.9	High pressure lamps		N.A.
4.2.10	Wall or ceiling mounted equipment; force (N)		N.A.

4.3	Design and construction		Pass
4.3.1	Edges and corners	All edges and corners are rounded or smoothed	Pass
4.3.2	Handles and manual controls; force (N)		N.A.
4.3.3	Adjustable controls		N.A.
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress.	Pass
4.3.5	Connection of plugs and sockets		N.A.
4.3.6	Direct plug-in equipment		N.A.
	Dimensions (mm) of mains plug for direct plug-in		N.A.
	Torque and pull test of mains plug for direct plug-in; torque (Nm);pull(N)		N.A.
4.3.7	Heating elements in earthed equipment		N.A.
4.3.8	Batteries		N.A.
	- Overcharging of a rechargeable battery		N.A.
	- Unintentional charging of a non-rechargeable battery		N.A.
	- Reverse charging of a rechargeable battery		N.A.
	- Excessive discharging rate for any battery		N.A.
4.3.9	Oil and grease		N.A.
4.3.10	Dust, powders, liquids and gases		N.A.
4.3.11	Containers for liquids or gases		N.A.
4.3.12	Flammable liquids.....		N.A.
	Quantity of liquid (l)		N.A.
	Flash point (°C)		N.A.
4.3.13	Radiation; type of radiation		N.A.
4.3.13.1	General		N.A.
4.3.13.2	Ionizing radiation		N.A.
	Measured radiation (pA/kg)		—

	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N.A.
	Part, property, retention after test, flammability classification		N.A.
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N.A.
4.3.13.5	Laser (including LEDs)		N.A.
	Laser class		—
4.3.13.6	Other types		N.A.

4.4	Protection against hazardous moving parts		N.A.
4.4.1	General		N.A.
4.4.2	Protection in operator access areas		N.A.
4.4.3	Protection in restricted access locations		N.A.
4.4.4	Protection in service access areas		N.A.

4.5	Thermal requirements		Pass
4.5.1	General	See below	Pass
4.5.2	Temperature tests	(see appended table 4.5)	Pass
	Normal load condition per Annex L		—
4.5.3	Temperature limits for materials	(see appended table 4.5)	Pass
4.5.4	Touch temperature limits	(see appended table 4.5)	Pass
4.5.5	Resistance to abnormal heat		N.A.

4.6	Openings in enclosures		N.A.
4.6.1	Top and side openings	No opening.	N.A.
	Dimensions (mm)		—
4.6.2	Bottoms of fire enclosures	No opening.	N.A.
	Construction of the bottom, dimensions (mm).....		—
4.6.3	Doors or covers in fire enclosures		N.A.
4.6.4	Openings in transportable equipment		N.A.
4.6.4.1	Constructional design measures		N.A.
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings		N.A.
4.6.4.3	Use of metallized parts		N.A.
4.6.5	Adhesives for constructional purposes		N.A.

	Conditioning temperature (°C)/time (weeks)		—
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4.7	Resistance to fire		Pass
4.7.1	Reducing the risk of ignition and spread of flame	See below.	Pass
	Method 1, selection and application of components wiring and materials	Use of materials with the required flammability classes.	Pass
	Method 2, application of all of simulated fault condition tests		N.A.
4.7.2	Conditions for a fire enclosure	See below.	Pass
4.7.2.1	Parts requiring a fire enclosure		N.A.
4.7.2.2	Parts not requiring a fire enclosure	<p>With having the following parts :</p> <ul style="list-style-type: none"> ● Components in secondary (supplied by LPS). ● Components mounted on material of flammability Class V-1. <p>The fire enclosure is not required.</p>	Pass
4.7.3	Materials	See below.	Pass
4.7.3.1	General	See appended table 1.5.1 for PCB	Pass
4.7.3.2	Materials for fire enclosures		N.A.
4.7.3.3	Materials for components and other parts outside fire enclosures		N.A.
4.7.3.4	Materials for components and other parts inside fire enclosures	All internal materials are rated V-2 or better or are mounted on a PWB rated V-1 or better	Pass
4.7.3.5	Materials for air filter assemblies		N.A.
4.7.3.6	Materials used in high-voltage components		N.A.

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		Pass
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5.1	Touch current and protective conductor current		N.A.
5.1.1	General	Class III equipment.	N.A.
5.1.2	Equipment under test (EUT)		N.A.
5.1.2.1	Single connection to an a.c. mains supply		N.A.
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N.A.
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N.A.
5.1.3	Test circuit		N.A.
5.1.4	Application of measuring instrument		N.A.
5.1.5	Test procedure		N.A.

5.1.6	Test measurements		N.A.
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA)		N.A.
5.1.7	Equipment with touch current exceeding 3.5 mA		N.A.
5.1.7.1	General		N.A.
5.1.7.2	Simultaneous multiple connections to the supply		N.A.
5.1.8	Touch currents to and from telecommunication networks and cable distribution systems and from telecommunication networks		N.A.
5.1.8.1	Limitation of the touch current to a telecommunication network and a cable distribution system		N.A.
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks.....		N.A.
	a) EUT with earthed telecommunication ports		N.A.
	b) EUT whose telecommunication ports have no reference to protective earth		N.A.

5.2	Electric strength		N.A.
5.2.1	General	Class III equipment.	N.A.
5.2.2	Test procedure		N.A.

5.3	Abnormal operating and fault conditions		Pass
5.3.1	Protection against overload and abnormal operation	See below.	Pass
5.3.2	Motors		N.A.
5.3.3	Transformers		N.A.
5.3.4	Functional insulation.....	Complied with the requirements c).	Pass
5.3.5	Electromechanical components		N.A.
5.3.6	Audio amplifiers in ITE		N.A.
5.3.7	Simulation of faults		N.A.
5.3.8	Unattended equipment		N.A.

5.3.9	Compliance criteria for abnormal operating and fault conditions		N.A.
5.3.9.1	During the tests		N.A.
5.3.9.2	After the tests		N.A.

6	CONNECTION TO TELECOMMUNICATION NETWORKS		N.A.
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6.1	Protection of telecommunication network service personnel, and users of other equipment connected to the network, from hazards in the equipment		N.A.
6.1.1	Protection from hazardous voltages		N.A.
6.1.2	Separation of the telecommunication network from earth		N.A.
6.1.2.1	Requirements		N.A.
	Supply voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions.....		N.A.

6.2	Protection of equipment users from overvoltages on telecommunication networks		N.A.
6.2.1	Separation requirements		N.A.
6.2.2	Electric strength test procedure		N.A.
6.2.2.1	Impulse test		N.A.
6.2.2.2	Steady-state test		N.A.
6.2.2.3	Compliance criteria		N.A.

6.3	Protection of telecommunication wiring system from overheating		N.A.
	Max. output current (A).....		—
	Current limiting method		—

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N.A.
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7.1	General		N.A.
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N.A.
7.3	Protection of equipment users from overvoltages on the cable distribution system		N.A.
7.4	Insulation between primary circuits and cable distribution systems		N.A.
7.4.1	General		N.A.
7.4.2	Voltage surge test		N.A.



7.4.3	Impulse test		N.A.
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A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE	N.A.
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)	N.A.
A.1.1	Samples	—
	Wall thickness (mm)	—
A.1.2	Conditioning of samples; temperature (°C)	N.A.
A.1.3	Mounting of samples	N.A.
A.1.4	Test flame (see IEC 60695-11-3)	N.A.
	Flame A, B, C or D	N.A.
A.1.5	Test procedure	N.A.
A.1.6	Compliance criteria	N.A.
	Sample 1 burning time (s)	—
	Sample 2 burning time (s)	—
	Sample 3 burning time (s)	—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)	N.A.
A.2.1	Samples, material	—
	Wall thickness (mm)	—
A.2.2	Conditioning of samples; temperature (°C)	N.A.
A.2.3	Mounting of samples	N.A.
A.2.4	Test flame (see IEC 60695-11-4)	N.A.
	Flame A, B or C	—
A.2.5	Test procedure	N.A.
A.2.6	Compliance criteria	N.A.
	Sample 1 burning time (s)	—
	Sample 2 burning time (s)	—
	Sample 3 burning time (s)	—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9	N.A.
	Sample 1 burning time (s)	—
	Sample 2 burning time (s)	—
	Sample 3 burning time (s)	—
A.3	Hot flaming oil test (see 4.6.2)	N.A.
A.3.1	Mounting of samples	N.A.
A.3.2	Test procedure	N.A.
A.3.3	Compliance criterion.....	N.A.

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		N.A.
B.1	General requirements		N.A.
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
B.2	Test conditions		N.A.
B.3	Maximum temperatures		N.A.
B.4	Running overload test		N.A.
B.5	Locked-rotor overload test		N.A.
	Test duration (days)		—
	Electric strength test: test voltage (V)		—
B.6	Running overload test for DC motors in secondary circuits		N.A.
B.6.1	General		N.A.
B.6.2	Test procedure		N.A.
B.6.3	Alternative test procedure		N.A.
B.6.4	Electric strength test; test voltage (V)		N.A.
B.7	Locked-rotor overload test for DC motors in secondary circuits		N.A.
B.7.1	General		N.A.
B.7.2	Test procedure		N.A.
B.7.3	Alternative test procedure;		N.A.
B.7.4	Electric strength test; test voltage (V)		N.A.
B.8	Test for motors with capacitors		N.A.
B.9	Test for three-phase motors		N.A.
B.10	Test for series motors		N.A.
	Operating voltage (V)		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		N.A.
	Position		—
	Manufacturer		—
	Type		—
	Rated values		—
	Method of protection		—
C.1	Overload test		N.A.

C.2	Insulation		N.A.
	Protection from displacement of windings		N.A.

D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS		N.A.
D.1	Measuring instrument		N.A.
D.2	Alternative measuring instrument		N.A.

E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)		N.A.
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F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10)		Pass
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G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES		N.A.
G.1	Clearances		N.A.
G.1.1	General		N.A.
G.1.2	Summary of the procedure for determining minimum clearances		N.A.
G.2	Determination of mains transient voltage (V)		N.A.
G.2.1	AC mains supply		N.A.
G.2.2	Earthed d.c. mains supplies		N.A.
G.2.3	Unearthed d.c. mains supplies		N.A.
G.2.4	Battery operation		N.A.
G.3	Determination of telecommunication network transient voltage (V)		N.A.
G.4	Determination of required withstand voltage (V) ...		N.A.
G.4.1	Mains transients and internal repetitive peaks		N.A.
G.4.2	Transients from telecommunication networks		N.A.
G.4.3	Combination of transients		N.A.
G.4.4	Transients from cable distribution systems		N.A.
G.5	Measurement of transient levels (V)		N.A.
	a) Transients from a mains supply		N.A.
	For an a.c. mains supply		N.A.
	For a d.c. mains supply		N.A.
	b) Transients from a telecommunication network		N.A.
G.6	Determination of minimum clearances		N.A.

H	ANNEX H, IONIZING RADIATION (see 4.3.13)		N.A.
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J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)	N.A.
	Metal used	—

K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)	N.A.
K.1	Making and breaking capacity	N.A.
K.2	Thermostat reliability; operating voltage (V).....	N.A.
K.3	Thermostat endurance test; operating voltage (V)	N.A.
K.4	Temperature limiter endurance; operating voltage (V)	N.A.
K.5	Thermal cut-out reliability	N.A.
K.6	Stability of operation	N.A.

L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)	Pass
L.1	Typewriters	N.A.
L.2	Adding machines and cash registers	N.A.
L.3	Erasers	N.A.
L.4	Pencil sharpeners	N.A.
L.5	Duplicators and copy machines	N.A.
L.6	Motor-operated files	N.A.
L.7	Other business equipment	Pass

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)	N.A.
M.1	Introduction	N.A.
M.2	Method A	N.A.
M.3	Method B	N.A.
M.3.1	Ringling signal	N.A.
M.3.1.1	Frequency (Hz).....	—
M.3.1.2	Voltage (V)	—
M.3.1.3	Cadence; time (s), voltage (V)	—
M.3.1.4	Single fault current (mA).....	—
M.3.2	Tripping device and monitoring voltage	N.A.
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage	N.A.
M.3.2.2	Tripping device	N.A.
M.3.2.3	Monitoring voltage (V)	N.A.

N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)		N.A.
N.1	ITU-T impulse test generators		N.A.
N.2	IEC 60065 impulse test generator		N.A.

P	ANNEX P, NORMATIVE REFERENCES		Pass
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Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)		N.A.
	a) Preferred climatic categories		N.A.
	b) Maximum continuous voltage		N.A.
	c) Pulse current		N.A.

R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES		N.A.
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N.A.
R.2	Reduced clearances (see 2.10.3)		N.A.

S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N.A.
S.1	Test equipment		N.A.
S.2	Test procedure		N.A.
S.3	Examples of waveforms during impulse testing		N.A.

T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N.A.
		See separate test report	—

U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4).		N.A.
			—

V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		N.A.
V.1	Introduction		N.A.
V.2	TN power distribution systems		N.A.

W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N.A.
W.1	Touch current from electronic circuits		N.A.
W.1.1	Floating circuits		N.A.
W.1.2	Earthed circuits		N.A.

W.2	Interconnection of several equipments		N.A.
W.2.1	Isolation		N.A.
W.2.2	Common return, isolated from earth		N.A.
W.2.3	Common return, connected to protective earth		N.A.

X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N.A.
X.1	Determination of maximum input current		N.A.
X.2	Overload test procedure		N.A.

Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N.A.
Y.1	Test apparatus		N.A.
Y.2	Mounting of test samples		N.A.
Y.3	Carbon-arc light-exposure apparatus		N.A.
Y.4	Xenon-arc light-exposure apparatus		N.A.

Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		N.A.
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AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N.A.
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BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
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1.5.1	TABLE: list of critical components					Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity	
PCB	--	--	Min. V-1, 105 °C	UL 796	UL	
Plastic Enclosure	--	--	HB min.	UL 94	UL	
* Additional testing and evaluation may be required based on auditing agency's discretion.						

1.6.2	TABLE: electrical data (in normal conditions)						Pass
fuse #	I _{rated} (A)	U (V)	P (W)	I (A)	I _{fuse} (A)	condition/status	
--	0.2	5 Vdc	0.965	0.193	--	Max. Normal load.	
Comments:							

2.1.1.5	TABLE: max. V, A, VA test					N.A.
Voltage (rated) (V)	Current (rated) (A)		Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
Note(s)						

2.1.1.7	TABLE: discharge test				N.A.
Condition	τ calculated (s)	τ measured (s)	t _u → 0V (s)	Comments	
Note(s)					

2.2.2	TABLE: Hazardous voltage measurement				N.A.
Transformer	Location	max. Voltage		Voltage Limitation Componet	
		V peak	V d.c.		
Note(s)					

2.2.3	TABLE: SEL voltage measurement			N.A.
Location	Voltage measured (V)		Comments	
Note(s)				

2.4.2	TABLE: limited current circuit measurement					N.A.
Location	Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments	

Note(s)					

2.5	TABLE: limited power source measurement				N.A.
	Limits	Measured		Verdict	
According to Table 2B (normal condition), Uoc =					
current (in A)	8				
Apparent power (in VA)	≤ 100				
According to Table 2B (single fault condition:), Uoc=					
current (in A)	8				
Apparent power (in VA)	≤ 100				
Note(s)					

2.6.3.4	TABLE: ground continue test			N.A.
Location	Resistance measured(mΩ)	Comments		
Note(s)				

2.10.2	TABLE: working voltage measurement			N.A.
Location	Resistance measured(mΩ)	Comments		
Note(s)				

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					Pass
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
Notes: Functional insulation only.						

2.10.5	TABLE: distance through insulation measurements				N.A.
distance through insulation di at/of:	U r.m.s. (V)	test voltage (V)	required di (mm)	di (mm)	
Note(s)					

4.5	TABLE: maximum temperatures					Pass
	test voltage (V).....	5 Vdc				—
	t _{amb1} (°C).....	--				—
	t _{amb2} (°C).....	--				—
temperature rise dT of part/at:		T (°C)			allowed T _{max} (°C)	
PWB near U1		63.5			105	
Plastic Enclosure inside near U1		61.6			--	
Plastic Enclosure outside near U1		61.7			95	
Ambient		55.0			--	
temperature T of winding:		R1 (Ω)	R2 (Ω)	dT (°K)	allowed T _{max} (°C)	insulation class
Supplementary information:						
1) All values for T (°C) are re-calculated from Tamb respectively.						
2) The maximum ambient temperatures specified by manufacturer is 55°C(Tma).						

4.5.5	TABLE: ball pressure test of thermoplastics parts			N.A.
	Allowed impression diameter (mm):	≤ 2 mm		—
part:		test temperature (°C)	impression diameter (mm)	
Note(s)				

4.6.1, 4.6.2	TABLE: Enclosure openings			N.A.
	Location	Size(mm)	Comments	
	Top	--	--	
	Both sides	--	--	
	Bottom	--	--	
Note(s) No openings.				

4.7	Table: Resistance to fire					Pass
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence	

Note(s): **See appended table 1.5.1**

5.1.6	TABLE: touch current measurement				N.A.
Condition	L→terminal A (mA)	N→terminal A (mA)	Limit	Comments	
Note(s)					

5.2	TABLE: electric strength tests, impulse tests and voltage surge tests			N.A.
test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	test voltage (V)	breakdown	
Note(s)				

5.3	TABLE: fault condition tests							N.A.
	ambient temperature (°C).....:		--					—
	model/type of power supply		--					—
	manufacturer of power supply.....:		--					—
	rated markings of power supply.....:		--					—
No.	component No.	fault	test voltage (V)	test time	fuse No.	fuse current (A)	result	
Note(s)								

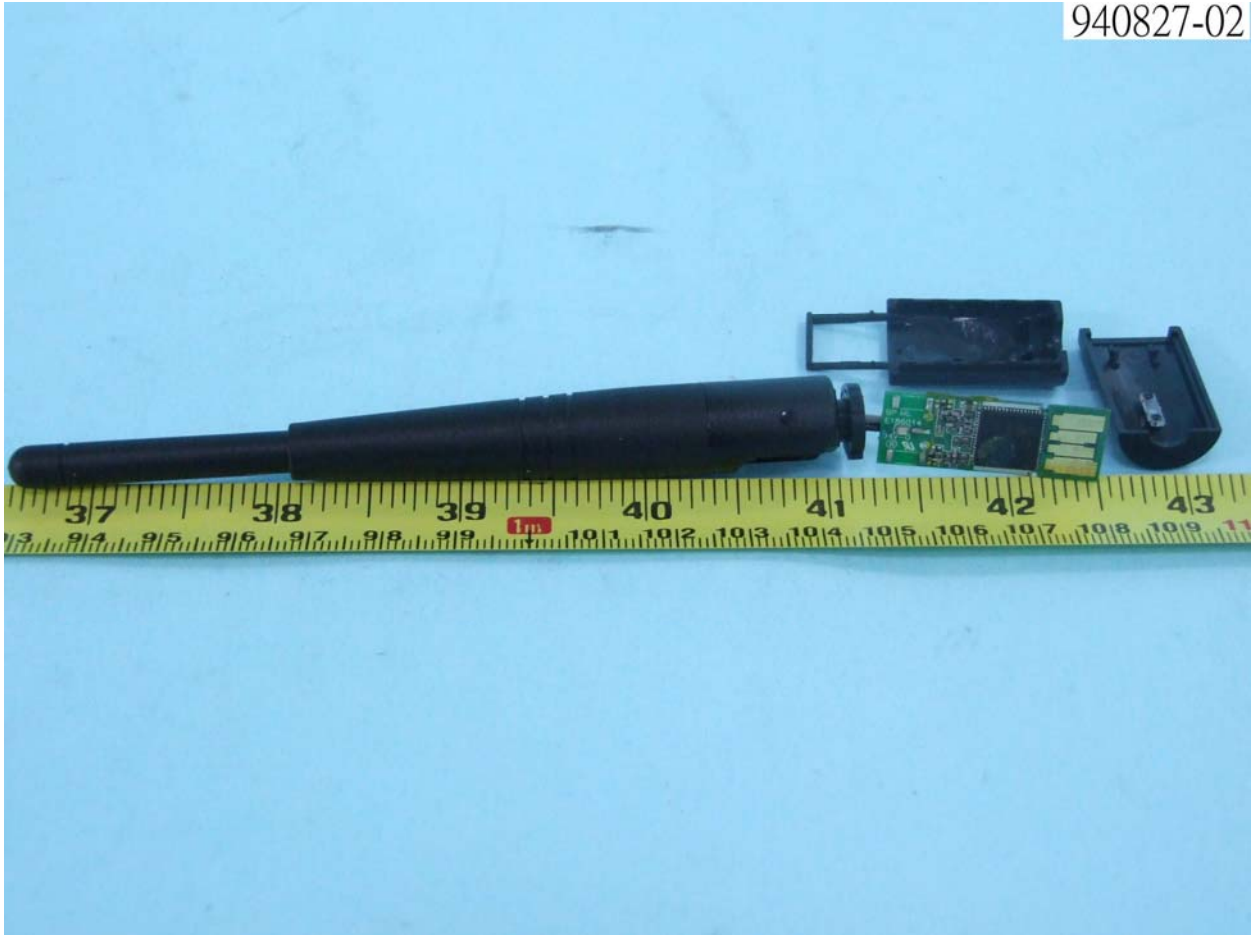
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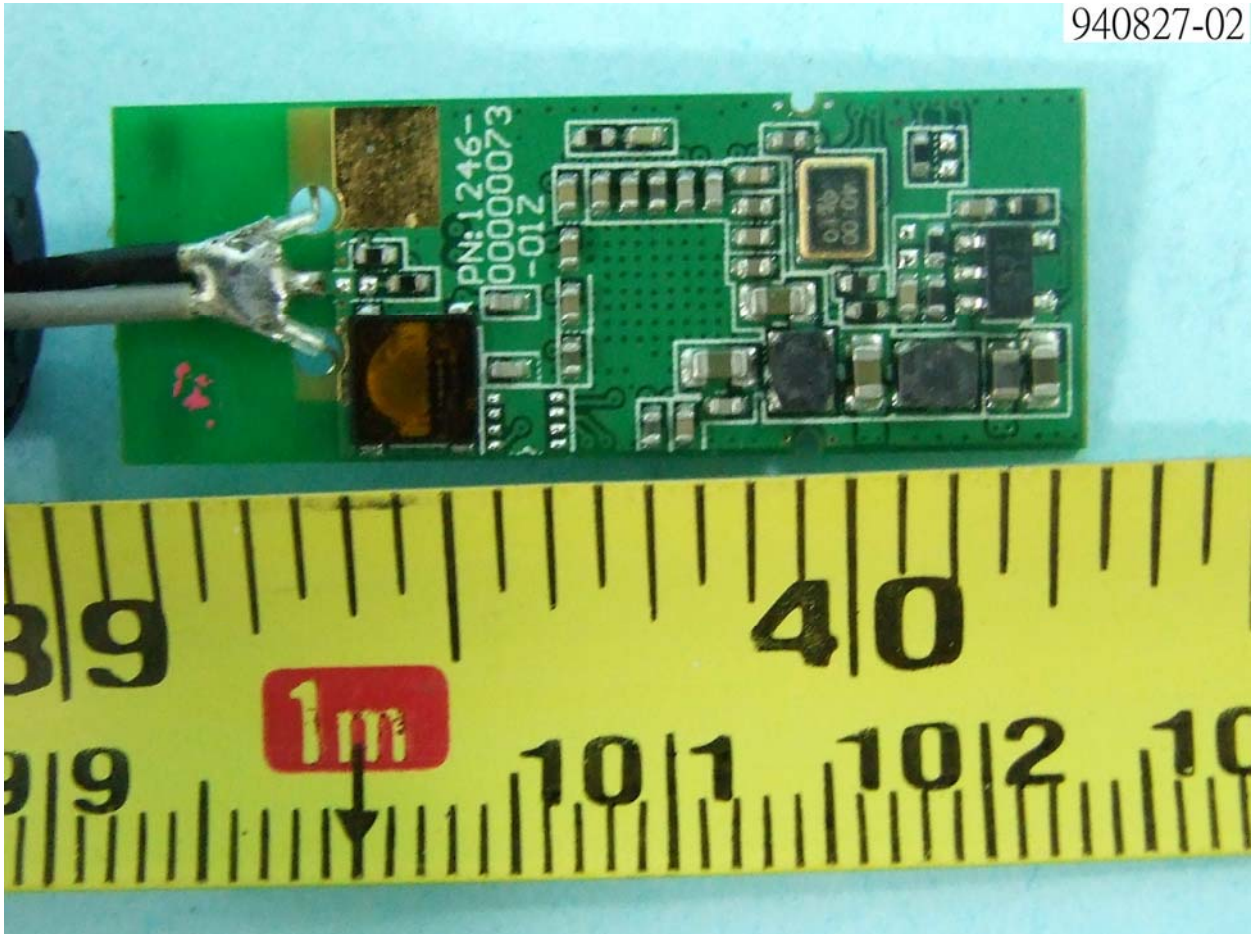
Appendix - Photo



Appendix - Photo



Appendix - Photo



Appendix - Photo

