Intertek ETL SEMKO

CERTIFICATE

of conformity

No. ETS-060240/00

Type of equipment: **Wireless Presenter With Laser Pointer**

Applicant: **ACCO BRANDS, INC**
333 Twin Dolphin Drive, Sixth Floor, Redwood Shores, CA94065, USA

Type designation: **33374**

Technical data: **3 Vdc, 50 mA**
Class 2 Laser Product

Standard(s) used for showing compliance with the essential requirements of the directive:

Standard(s):	*Test report(s):*	*Issued by:*	*Date(s):*
IEC 60825-1: 1993 + A1: 1997 + A2: 2001	ETS-060240	Intertek-Taiwan	April 6, 2006

The documents shall be read in conjunction with the full test report(s). No follow up or inspection service is implied in this document and no period of validity is applicable.

Taipei
April 6, 2006

Intertek Testing Services Taiwan Ltd.

SAMMY WU
SENIOR MANAGER
ETL SEMKO DIVISION

INTERTEK TESTING SERVICES TAIWAN LTD.

TEST REPORT

IEC 60825-1

Safety of laser products

Part 1: Equipment classification, requirements and user's guide

Section two: Manufacturing requirements

Report reference No. ..... :	ETS-060240
Tested by (printed name and signature) ..... :	Timothy Young
Approved by (printed name and signature) ..... :	Sammy Wu
Date of issue ..... :	April 6, 2006

This report is based on a blank test report that was prepared by SGS Fimko Ltd using information obtained from the TRF originator (see below)

CB Testing Laboratory name..... :	Intertek Testing Services Taiwan Ltd.
Address..... :	5F, No. 423, Ruiguang Rd., Neihu District, Taipei 114, Taiwan
Testing location..... :	CBTL ☒ SMT ☐ TMP ☐
Address..... :	Same as above

Applicant's name ..... :	ACCO BRANDS, INC
Address..... :	333 Twin Dolphin Drive, Sixth Floor, Redwood Shores, CA94065, USA

Test specification

Standard..... :	IEC 60825-1: 1993 + A1: 1997 + A2: 2001
Test procedure ..... :	N/A
Non-standard test method ..... :	N/A

Test Report Form No. ..... :	IEC60825_1C / 01-04
TRF originator ..... :	Underwriters Laboratories Inc.
Master TRF ..... :	Dated 2001-04

Test item description ..... :	Wireless Presenter With Laser Pointer
Trademark..... :	—
Model and/or type reference..... :	33374
Rating(s) ..... :	Input: 3 Vdc, 50mA
	Laser Class 2

Test item particulars	
Equipment mobility ..... :	Movable
Protection Class of equipment ..... :	Class III
Mass of equipment (kg) ..... :	< 0.5 kg
Classification of laser product	
Laser and/or LED product class of the equipment ..... :	1
Laser and/or LED class of the radiation employed ..... :	1
Maximum class of the embedded laser/LED (if an embedded laser/LED is employed) ..... :	N/A
Test case verdicts	
Test case does not apply to the test object ... :	N/A (Not applicable)
Test item does meet the requirement ..... :	P (Pass)
Test item does not meet the requirement ..... :	F (Fail)
Test item does not conducted ..... :	N/C (Not check)
Testing	
Date of receipt of test item ..... :	March 22, 2006
Date(s) of performance of test ..... :	March 22, 2006 - March 27, 2006

General remarks:

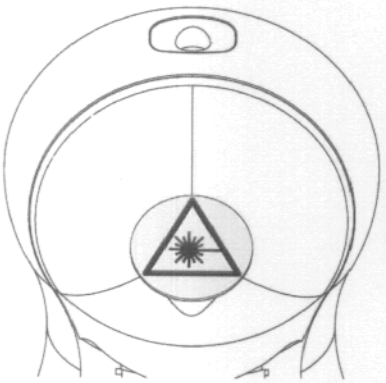
This test report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

This report shall not be reproduced except in full without the written approval of the testing laboratory.
The test results presented in this report relate only to the item(s) tested.
"(see remark #)" refers to a remark appended to the report.
"(see Annex #)" refers to an annex appended to the report.
Throughout this report a point is used as the decimal separator.
List of test equipment must be kept on file and available for review.

General product information:

This is a Wireless Presenter With Laser Pointer using 651-652 nm wavelength laser diode.
The Wireless Presenter With Laser Pointer mainly contains a 650-660 nm Laser Diode.

Copy of the Marking Plate and Warning Labels:



Summary of testing:

This equipment is a CLASS 2 LASER PRODUCT.
The mouse is Class 2 Laser Product during normal operation condition and single fault condition.

IEC 60825-1			
Cl.	Requirement – Test	Result – Remark	Verdict
4	**ENGINEERING SPECIFICATIONS**		
4.1	General remarks		N/A
4.1.1	Modification		N/A
4.2	Protective housing		N/A
4.2.1	General	Class 2 laser diode	N/A
4.2.2	Service		N/A
4.2.3	Removable laser system		N/A
4.3	Access panels and safety interlocks		N/A
4.3.1	Access panels of protective housing		N/A
	Product Class ..... :		—
	Accessible emission during removal of access panel..... :		N/A
	The access panel intended to be removed during maintenance or operation		N/A
	The removal of the panel gives access to laser radiation levels designated by "X" in the table		N/A
	Accessible emissions after removal ..... :		—
4.3.2	Deliberate override mechanism		N/A
4.4	Remote interlock connector		N/A
4.5	Key control		N/A
4.6	Laser radiation emission warning		N/A
4.6.1	Audible or visible warning		N/A
4.6.2	Operational control and laser aperture		N/A
4.6.3	Laser emission distributed through more than one output		N/A
4.7	Beam stop or attenuation		N/A
4.8	Controls		N/A
4.9	Viewing optics		N/A
	a) human access to laser radiation in excess of Class 1M prevented when the shutter is opened or attenuation varied		N/A
	b) opening of the shutter or variation of the attenuation prevented when exposure to laser radiation in excess of Class 1M is possible		N/A

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Cl.	Requirement – Test	Result – Remark	Verdict
4.10	Scanning safeguard		N/A
4.11	Alignment aids		N/A
4.12	Walk-in access		N/A
	a). Means provided so that any person inside the housing can prevent activation of a Class 3B or 4 laser hazard		N/A
	b). A warning device provides adequate warning of emission to any person within the housing		N/A
4.13	Environmental conditions		N/A
	- climatic conditions		P
	- vibration and shock		N/A
4.14	Protection against other hazards		N/C
4.14.1	Non-optical hazards		N/C
	- electrical hazards;		N/C
	- excessive temperature;		N/C
	- spread of fire from the equipment;		N/C
	- sound and ultrasonic;		N/C
	- harmful substances;		N/C
	- explosion;		N/C
4.14.2	Collateral radiation		N/A
5	**LABELLING**		P
5.1	General		P
	laser product class .....:	"CLASS 2 LASER PRODUCT" is provided at user manual	P
5.2	Class 1 explanatory label provided on the product		N/A
	Optional: Class 1 explanatory label provided in the user manual		N/A
	Class 1M explanatory label provided on the product		N/A
	Optional: Class 1M explanatory label provided in the user manual		N/A

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Cl.	Requirement – Test	Result – Remark	Verdict
5.3	Class 2 explanatory and warning label		P
	Class 2M explanatory and warning label		N/A
5.4	Class 3R explanatory and warning label		N/A
5.5	Class 3B explanatory and warning label		N/A
5.6	Class 4 explanatory and warning label		N/A
5.7	Aperture label .....:		N/A
5.8	Radiation output and standards information		N/A
	Maximum output of laser radiation .....:		—
	Pulse duration .....:		—
	Emitted wavelength(s) .....:		N/A
	The name and publication date of the standard .:		N/A
5.9	Labels for access panels		N/A
	RADIATION CLASS .....:		N/A
5.9.1	Labels for panels		N/A
	Warning used .....:	See page 3	—
5.9.2	Labels for safety interlocked panels		N/A
	Warning used .....:		—
5.10	Warning for invisible laser radiation .....:		N/A
5.11	Warning for visible laser radiation .....:		N/A
5.12	Warning for LED radiation .....:		N/A

6	**OTHER INFORMATIONAL REQUIREMENTS**		
6.1	Information for the user		N/C
	a) adequate instructions for proper assembly, maintenance and safe use		N/C
	b) warning for Class 1M and 2M		N/C
	c) laser beam parameters		N/C
	d) reproduction of labels		N/C
	e) location of laser apertures		N/C
	f) listing of controls, adjustment of procedures and warning statement		N/C
	g) information about laser energy source if not incorporated in the manual		N/C

IEC 60825-1			
Cl.	Requirement – Test	Result – Remark	Verdict
6.2	Purchasing and service information		N/C
	a). Safety classification of each laser product stated in descriptive material		N/C
	b). Adequate instructions for servicing available		N/C
7	**ADDITIONAL REQUIREMENTS FOR SPECIFIC LASER PRODUCTS**		
7.1	Medical laser products		N/A
	Class 3B and Class 4 medical laser products comply with IEC 60601-2-22		N/A
	Medical laser products provided with instructions for calibration of measurement system		N/A
7.2	Applicable other parts of the standard series IEC 60825		N/A
	IEC 60825-2 (OFCSs)		N/A
	IEC 60825-4 (guards)		N/A
	IEC/TR 60825-3 (laser shows)		N/A
	IEC/TR 60825-5 (manf.'s checklist)		N/A
	IEC/TS 60825-6 (visible info transmission)		N/A
	IEC/TS 60825-7 (non-visible info transmission)		N/A
	IEC 60825-8 (medical equipment)		N/A
	IEC/TR 60825-9 (incoherent MPEs)		N/A
8	**CLASSIFICATION**		
8.2	Description of laser classes	Considered as Class 2	P
8.3	Classification responsibilities		P
8.4	Classification rules	See below	P
8.4a	Radiation of a single wavelength	651-652 nm	P
8.4b	Radiation of multiple wavelengths		N/A
	1). Laser product emission two or more wavelengths in spectral regions shown as additive in Table 5 ..... :		N/A
	2). Laser product emission two or more wavelengths in spectral regions not shown as additive in Table 5 ..... :		N/A

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Cl.	Requirement – Test	Result – Remark	Verdict
8.4c	Radiation from extended sources		N/A
	Value of angular subtence α (mrad)..... :	$\alpha < \alpha_{min}$	—
8.4d	Non-circular and multiple sources		N/A
8.4e	Time basis		P
	i) 0.25s		N/A
	ii) 100s		P
	iii) 30000s		N/A
8.4f	Repetitively pulsed or modulated lasers	Not pulsed laser	N/A
	i) exposure from a single pulse not exceeding the AEL for a single pulse		N/A
	ii) average power for a pulse train		N/A
	iii) the average pulse energy from pulses within a pulse train not exceeding the AEL for a single pulse multiplied by the correction factor C_5		N/A
	AEL for continued operation used.....:		N/A
	Total-on-time-pulse (TOTP) method used.....:		N/A

9	**MEASUREMENTS FOR CLASSIFICATION**		
9.1	Tests	Tests were performed in such a way that maximum laser power was obtained under both normal operation and single fault conditions.	P
9.2	Test conditions per Clause 9.2 applied		P
	Measured laser radiation..... :	See Appendix 1	—
9.3	Measurement geometry	Condition 2 applies	P
	a) aperture diameter (mm). ..... :	50	P
	b) measurement distance (mm) ..... :	2000	P
	c) angle of acceptance γ ..... :		P
	i) photochemical limits... ..... :		N/A
	ii) all other limits..... :	100 mrad	P

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Supplementary information

	EQUIPMENT MANUFACTURE INFORMATION (DATA SHEET) ABOUT THE COMPONENT CONTAINING LASER		
	Manufacturer .....:	Arima	—
	Type designation .....:	Laser Module: APCD-650-06-C2-2	—
	Structure .....:	—	—
	Wavelength .....:	651-652 nm	—
	Output power (min. and max.) .....:	—	—
	Radiation .....:	Continuous	—
	Continuous .....:		—
	Pulsed .....:		—
	Pulse time .....:		—
	Pulse repetition frequency .....:		—
	Others .....:		—

	MEASUREMENT EQUIPMENT		
	Type of equipment.....:	List of measurement equipment available at the test laboratory	—
	Manufacturer .....:		—
	Type designation .....:		—
	Others .....:		—

	LEDs		
	Manufacturer .....:		—
	Type designation .....:		—
	Wavelength .....:		—
	Others .....:		—

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Appendix 1 Measurement of Laser Radiation

Details of measurement procedure and measurement results:

1. Correction factor of detector and lens:	1.00
2. Measured wavelength:	651-652 nm
3. Apparent source size	< 0.15 mm
4. α < 1.5 mrad	
5. The radiation is:	Continuous
6. Used time base:	100 s
7. α_{min} = 1.5 mrad	

Case A: Normal condition (LD continuously ON, set by the manufacturer):
$0.535 \times 10^{-3} \times 1 = 0.535$ mW

Case B: Single fault condition (Q2 Pin E-C short):
$0.537 \times 10^{-3} \times 1 = 0.537$ mW

Accessible Emission Limit for Class 1, AEL(1):
Where, T_2 = 10.0 s, hence, $t > T_2$

→ $Q_{AEL(1)} = 3.9 \times 10^{-4}$ W = 0.039 mW

Accessible Emission Limit for Class 2, AEL(2):

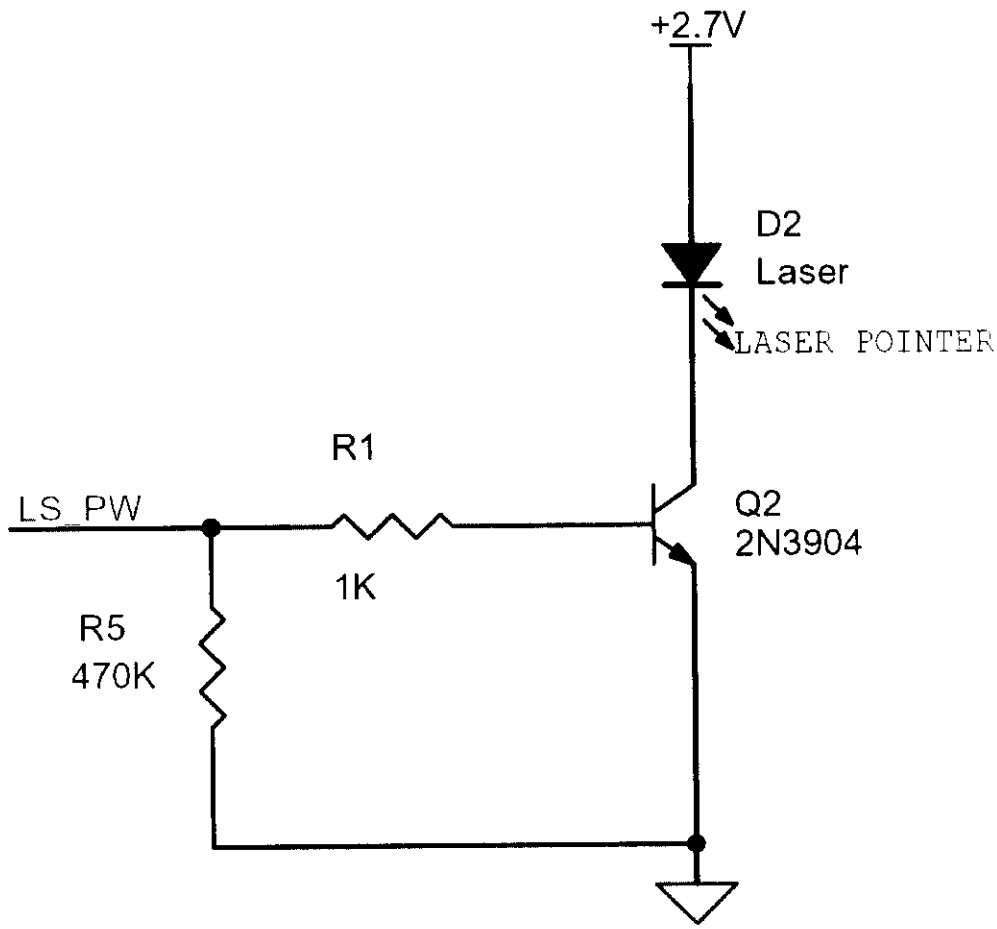
→ $Q_{AEL(2)} = C_6 \times 10^{-3}$ W

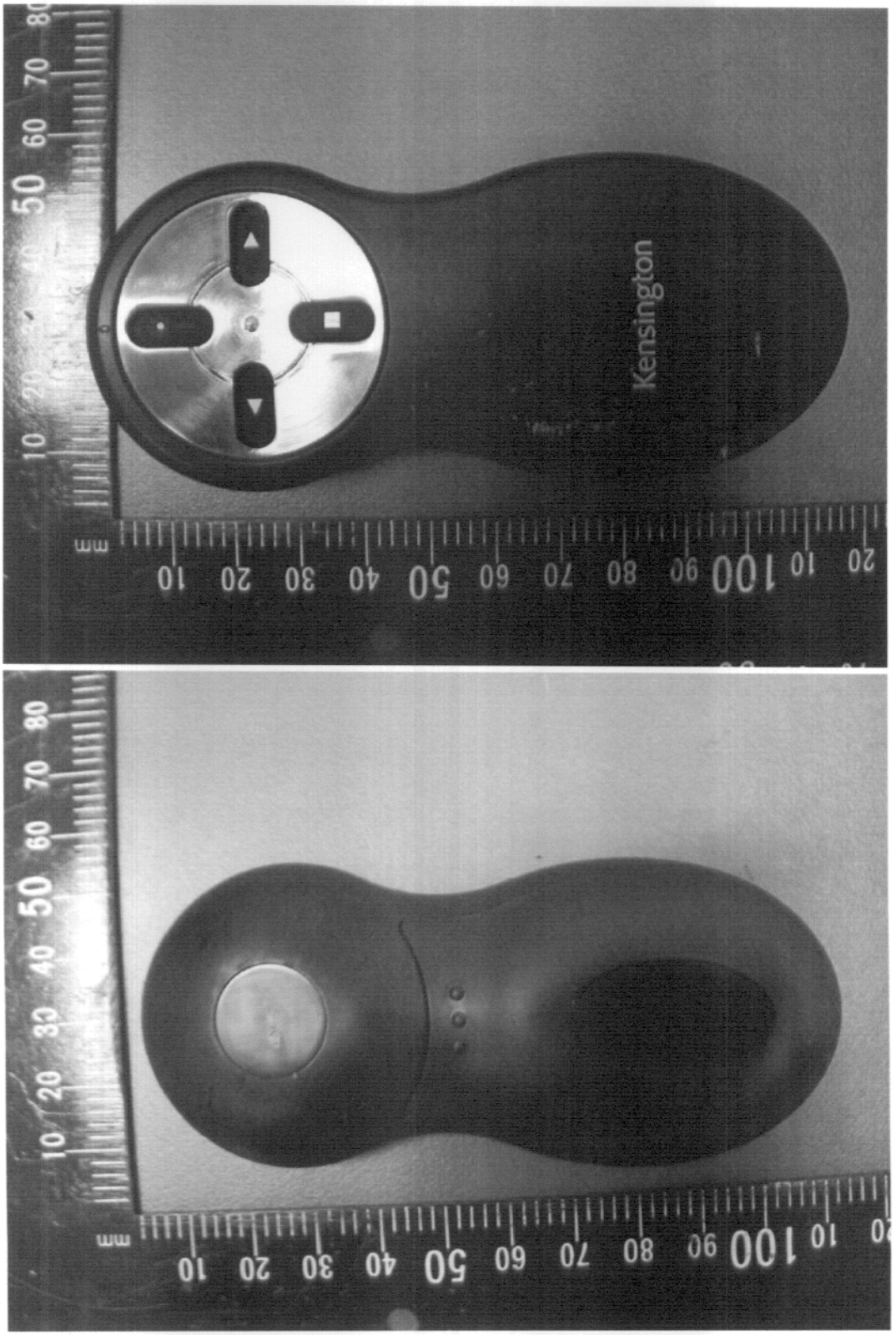
Where, $C_6 = 1$

So, $Q_{AEL(1)} = 1 \times 10^{-3} = 1$ mW

Conclusions:

Since the limit for Class 1 laser is exceeded but limit for Class 2 laser is not exceeded, so the Wireless Presenter With Laser Pointer can be classified as **CLASS 2 LASER PRODUCT.**


+2.7V
D2
Laser
LASER POINTER
R1
LS_PW
Q2
2N3904
1K
R5
470K


Kensington