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ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

Test report file number : E00DR-039

Applicant : AIRCODE CO., LTD.
Address : 4F, Seoul Guarantee Insurance B/D, 136-74 Younji-Dong, Jongro-Gu, Seoul, 110-737, Korea

Manufacturer : AIRCODE CO., LTD.
Address : 4F, Seoul Guarantee Insurance B/D, 136-74 Younji-Dong, Jongro-Gu, Seoul, 110-737, Korea

Type of Equipment : Multi Key Mouse Pad

FCC ID : PFEDIRECTPAD

Model / Type No. : Direct Pad

Serial number : N/A

Total page of Report : 13 pages (including this page)

Date of Incoming : December 14, 2000

Date of issuing : December 22, 2000

SUMMARY

The equipment complies with the regulation; FCC PART 15 CFR 47 SUBPART B Section 15.101.

This test report contains only the result of a single test of the sample supplied for the examination. It is not a general valid assessment of the features of the respective products of the mass-production.

Prepared by:

Y. K. Nam / Asst. Chief Engineer

Reviewed by:

S. S. Hong / Managing Director

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FCC-004 (Rev.0)

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(TEL: 82-31-746-8500 FAX: 82-31-746-8700)

EMC Testing Dept : 426-1 Daeangryong-Ri Chong-Myun Kwangju-Kun Kyunggi-Do 464-860 Korea (TEL: 82-31-765-8289 FAX: 82-31-766-2904)



ONETECH

Testing & Evaluation Lab.

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1. VERIFICATION OF COMPLIANCE

APPLICANT : AIRCODE CO., LTD.
 ADDRESS : 4F, Seoul Guarantee Insurance B/D, 136-74 Younji-Dong, Jongro-Gu, Seoul, 110-737, Korea
 CONTACT PERSON : Y. C. Jung / Manager
 TELEPHONE NO : 82-2-708-6055
 FCC ID : PFEDIRECTPAD
 MODEL NO/NAME : Direct Pad
 SERIAL NUMBER : N/A
 DATE : December 22, 2000

DEVICE TYPE	Peripheral Device for Class B Computing Device -Unintentional Radiator
E.U.T. DESCRIPTION	Multi Key Mouse Pad
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4/1992
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15 SECTION 15.101
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER OPEN AREA TEST SITE

The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

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2. GENERAL INFORMATION

2.1 Product Description

The AIRCODE CO., LTD., Model Direct Pad (referred to as the EUT in this report) is a Multi Key Mouse Pad which enables access to internet sites often visited by users using buttons attached to the EUT and access to mail service application shortly after E-mail reception is notified by the E-mail indicator. Product specification information described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	PLASTIC – Non coated
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	None
POWER REQUIREMENTS	DC 5V supplied from a PC
NUMBER OF LAYERS	1 LAYER
EXTERNAL CONNECTOR	RS-232C – 9Pin
BUTTON NUMBER	11 BUTTONS

Model Differences:

-. None

2.2 Related Submittal(s) / Grant(s)

Original submittal only.

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2.3 Test System Details

The model numbers for all the equipments which were used in the tested system is:

Model	Manufacturer	FCC ID	Description	Connected to
Direct Pad	AIRCODE CO., LTD.	PFEDIRECTPAD	Multi Key Mouse Pad (EUT)	PC
TC-PA1000	TAEIL	LIZ-TCPA1000	PC	-
AV-5T	KDS	EVOKD-1510T	MONITOR	PC
5530	BTC	DOC	KEYBOARD	PC
OK-720	A4-TECH	DOC	MOUSE	PC
2225C	HP	DSI6XU2225	PRINTER	PC

2.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4/1992. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.5 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-Kun, Kyunggi-Do 464-080 Korea. Description details of test facilities were submitted to the Commission on January 12, 1999. (Registration Number: 92819)

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3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
MAIN B/D	AIRCODE CO., LTD.	N/A	N/A

3.2 EUT exercise Software

After EUT was connected at Com1 port of the PC, under condition install mode and standby mode during the testing.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
Multi Key Mouse Pad (EUT)	N/A	N	1.0(D)
PC	N	N	1.5(P), 1.0(D)
MONITOR	N	Y	1.5(P), 1.8(D)
KEYBOARD	N/A	Y	1.2 (D)
MOUSE	N/A	Y	1.2(D)
PRINTER	N	Y	1.5(P), 1.2 (D)

* The marked "(P)" means the Power Cable, "(D)" means the Data Cable.

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3.4 Noise Suppression Parts on Cable

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
Multi Key Mouse Pad (EUT)	N	N/A	N	N/A
PC	-	-	-	-
MONITOR	Y	PC END	Y	PC END
KEYBOARD	N	N/A	Y	PC END
MOUSE	N	N/A	Y	PC END
PRINTER	N	N/A	Y	BOTH END

3.5 Equipment Modifications

None

3.6 Configuration of Test System

Line Conducted Test: EUT was connected at Com1 port of the PC and PC was connected to LISN, all supporting equipment were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4/1992 7.2.3 to determine the worse operating conditions.

Radiated Emission Test: Preliminary radiated emission test was conducted using the procedure in ANSI C63.4/1992 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 3 meters open area test site.

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4. PRELIMINARY TEST

4.1 Conducted Emission Test

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Install mode	
Standby mode	X

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worse operating condition (Please check one only)
Install mode	
Standby mode	X



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5. FINAL RESULT OF MEASUREMENT

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level.

5.1 Conducted Emission Test

Humidity Level : 48 % Temperature : 20 °
 Limits apply to : FCC CFR 47, PART 15, SUBPART B
 Type of Test : CLASS B
 Result : PASSED BY -12.67 dB at 13.21 MHz

EUT : Multi Key Mouse Pad

Date: December 15, 2000

Operating Condition : Standby mode

Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

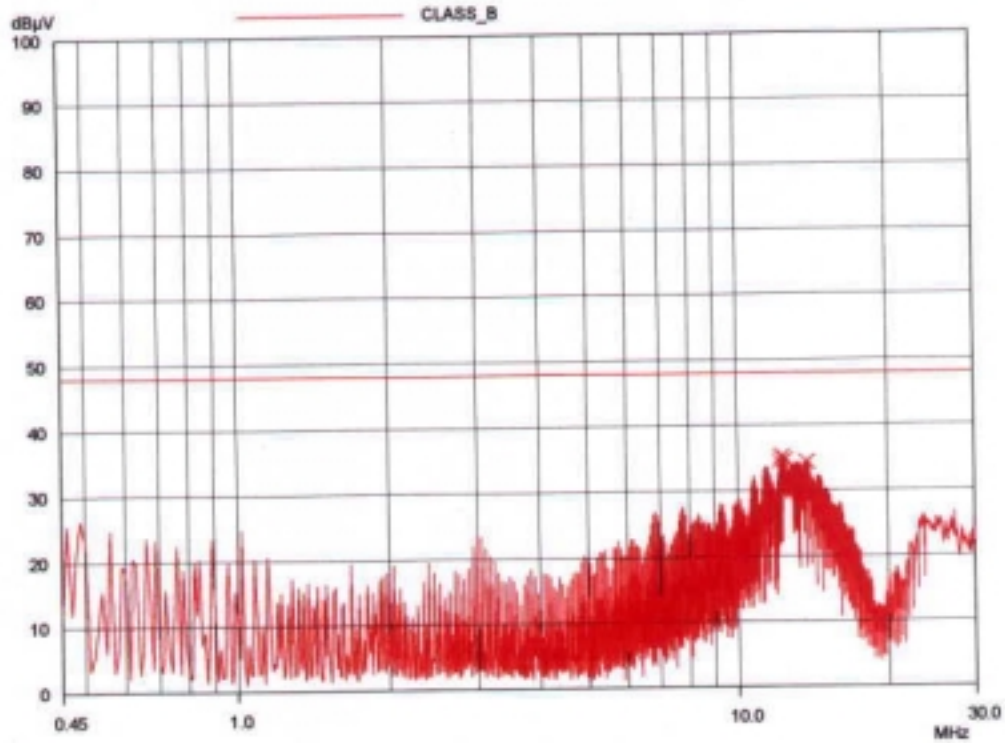
Power Line Conducted Emission			FCC CLASS B	
Frequency (MHz)	Amplitude (dBuV)	Conductor	Limit (dBuV)	Margin (dB)
9.30	28.75	NEUTRAL	48.00	-19.25
10.69	31.71	NEUTRAL	48.00	-16.29
12.19	34.82	NEUTRAL	48.00	-13.18
13.21	35.33	NEUTRAL	48.00	-12.67
27.31	30.92	NEUTRAL	48.00	-17.08
29.87	26.36	NEUTRAL	48.00	-21.64

Line Conducted Emission Tabulated Data

Measuring by: Young Min, Choi / Project Engineer



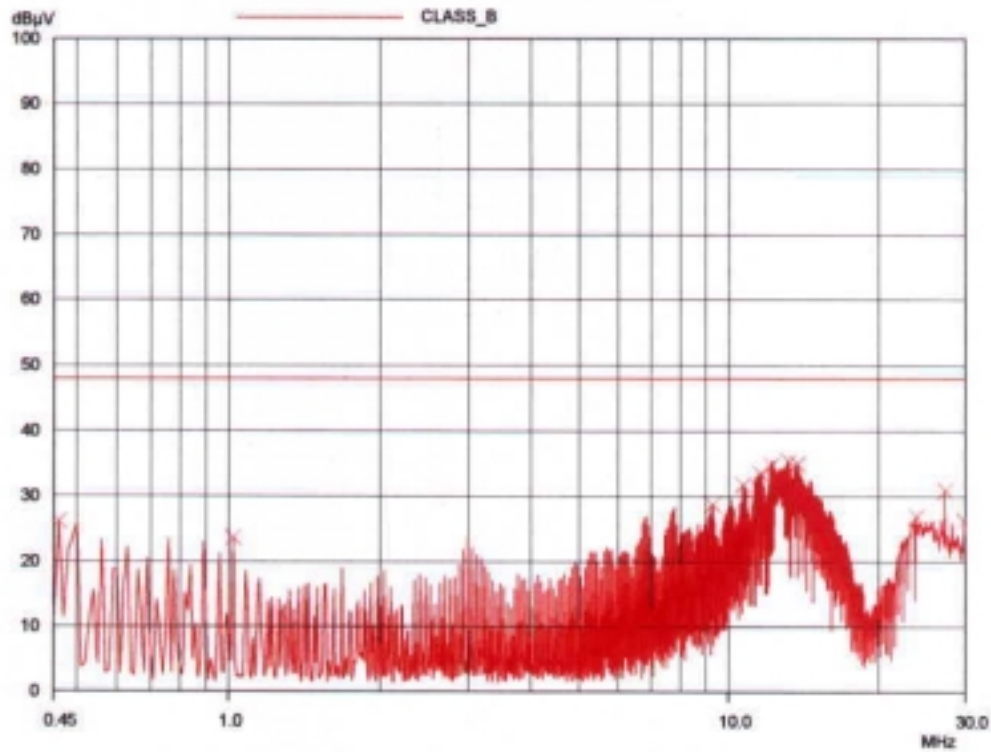
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HOT LINE



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NEUTRAL LINE

EMC Testing Dept : 426-1 Daeasang-Ri Chwol-Myun, Kwangju-Kun, Kyung-Do 464-860 Korea. (TEL: 82-31-765-8289 FAX: 82-31-766-2904)

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Measuring by: Young Min, Choi / Project Engineer

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6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

$$\begin{aligned}
 &+ \text{ Meter reading} && (\text{dBuV}) \\
 &+ \text{ Cable Loss} && (\text{dB}) \\
 &+ \text{ Antenna Factor (Loss)} && (\text{dB/meter}) \\
 &= \text{ Corrected Reading} && (\text{dBuV/meter}) \\
 &- \text{ Specification Limit} && (\text{dBuV/meter}) \\
 &= \text{ dB Relative to Spec} && (+/- \text{ dB})
 \end{aligned}$$

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7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVS 10	827864/005	SEP/00	12MONTH	■
2.	Test receiver	R/S	ESHS10	834467/007	APRIL/00	12MONTH	■
3.	Spectrum analyzer	HP	8568B	3026A0226	SEP/00	12MONTH	■
4.	RF preselector	HP	85685A	3107A01264	SEP/00	12MONTH	■
5.	Quasi-Peak Adapter	HP	85650A	3107A01542	SEP/00	12MONTH	■
6.	Dipole Antenna	EMCO	3121C	9107-745	JUN/00	12MONTH	
7.	Biconical antenna	EMCO	3104C	9109-4441 9109-4443 9109-4444	MAR/00	12MONTH	■
8.	Log Periodic antenna	EMCO	3146	9109-3213 9109-3214 9109-3217	MAR/00	12MONTH	■
9.	LISN	EMCO	3825/2	9109-1867 9109-1869	FEB/00	12MONTH	■
10.	RF Amplifier	HP	8447F	3113A04554	JUN/00	N/A	
11.	Spectrum Analyzer	HP	8591A	3131A02312	APR/00	12MONTH	
12.	Computer System	HP	98581C	98543A	N/A	N/A	■
	Hard disk drive		9153C	CMC762Z9153	N/A	N/A	■
13.	Plotter	HP	7475A	30052 22986	N/A	N/A	■
14.	Position Controller	EMCO	1090	9107-1038	N/A	N/A	■
15.	Turn Table	EMCO	1080-1.21	9109-1576	N/A	N/A	■
16.	Antenna Master	EMCO	1070-1	9109-1624	N/A	N/A	■