



EMC

TEST REPORT

REPORT NO. : F89032262A

MODEL NO. : T-8000U

DATE OF TEST : May 29, 2000

PREPARED FOR : AIPTEK INTERNATIONAL INC.

ADDRESS : 3F, NO. 5-1, INNOVATION RD. 1, SCIENCE-BASED
INDUSTRIAL PARK, HSIN-CHU, TAIWAN, R.O.C.

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION



No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung Tsuen,

Chiung Lin Hsiang, Hsin Chu Hsien, Taiwan, R.O.C.

This test report consists of 14 pages in total. It may be duplicated completely for legal use with the allowance of the applicant. It shall not be reproduced except in full, without the written approval of our laboratory. It should not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. government. The test result in the report only applies to the tested sample.



TABLE OF CONTENTS

1. CERTIFICATION	3
2. GENERAL INFORMATION	4
2.1 GENERAL DESCRIPTION OF EUT	4
2.2 DESCRIPTION OF SUPPORT UNITS	5
2.3 TEST METHODOLOGY AND CONFIGURATION	5
3. TEST INSTRUMENTS	6
3.1 TEST INSTRUMENTS (EMISSION)	6
3.2 LIMITS OF CONDUCTED AND RADIATED EMISSION.....	7
4. TEST RESULTS (EMISSION).....	8
4.1 RADIO DISTURBANCE	8
4.2 EUT OPERATION CONDITION.....	8
4.3 TEST DATA OF CONDUCTED EMISSION.....	9
4.4 TEST DATA OF RADIATED EMISSION.....	11
5. PHOTOGRAPHS OF THE TEST CONFIGURATION WITH MINIMUM MARGIN.....	13



1.

CERTIFICATION

Issue Date: June 7, 2000

Reference No.: 89052461

Product : TABLET
 Trade Name : AIPTEK
 Model No. : T-8000U, HyperPen 8000U, StartWriter 8000U
 Applicant : AIPTEK INTERNATIONAL INC.
 Standard : FCC Part 15, Subpart B, Class B
 ANSI C63.4-1992
 CISPR 22:1993 + A1:1995 + A2:1996, Class B

We hereby certify that one sample of the designation has been tested in our facility on May 29, 2000. The test record, data evaluation and Equipment Under Test (EUT) configurations represent herein are true and accurate representation of the measurements of the sample's EMC characteristics under the conditions herein specified.

The test results show that the EUT as described in this report is in compliance with the Class B limits of conducted and radiated emission of applicable standards

TESTED BY: Vic Chiu, DATE: June 7, 2000
 (Vic Chiu)

CHECKED BY: Rita Yi, DATE: June 7, 2000
 (Rita Yi)

APPROVED BY: Fred Chen, DATE: June 7, 2000
 (Fred Chen)

ADVANCE DATA TECHNOLOGY CORPORATION

NVLAP[®]
 Accredited Laboratory



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product : TABLET
Model No. : T-8000U
Power Supply : DC 5V (From PC)
Data Cable : Shielded USB Cable (1.8m)

Note: This report is prepared for Class II Permissive Change. The main change is:

- 1) The original sensor board which is made of membrane is now changed to PCB board and the layout is also changed.
- 2) The CPU packing type of the control board is also changed.

For more detailed features, please refer to User's Manual.

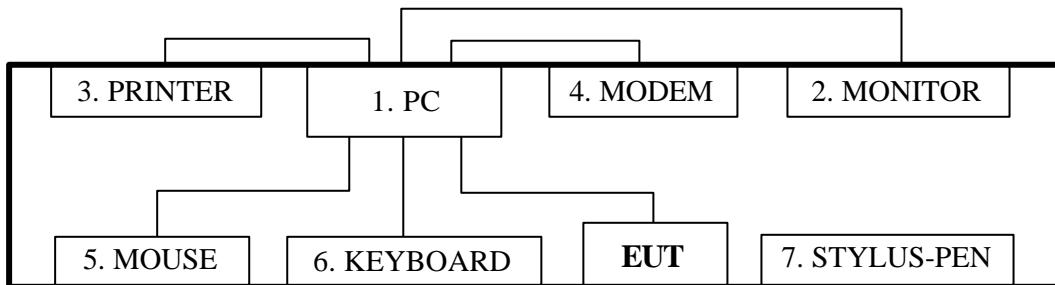


2.2 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories are used to form representative test configuration during the tests.

No	Product	Brand	Model No.	FCC ID	I/O Cable
1.	PERSONAL COMPUTER	IBM	2187-12W	FCC DoC	Nonshielded Power (1.8m)
2.	MONITOR	ADI	937G	BR8937G	Shielded Signal (1.5m) Nonshielded Power (1.8m)
3.	PRINTER	HP	C5844A	B94C2164X	Shielded Signal (1.0m) Nonshielded Power (1.8m)
4.	MODEM	ACEEX	1414	IFAXDM1414	Shielded Signal (1.0m) Nonshielded Power (2.1m)
5.	MOUSE	IBM	13H6690	DZL211029	Shielded Signal (1.5m)
6.	KEYBOARD	IBM	KB-7953	FCC DoC	Shielded Signal (1.4m)
7.	STYLUS-PEN	AIPTEK	Hyper Pen	NRQAHPPEN	NA

2.3 TEST METHODOLOGY AND CONFIGURATION



Both conducted and radiated testing were performed according to the procedures in ANSI C63.4:1992. Radiated testing was performed at an antenna to EUT distance of 10 m on an open area test site. Please refer to the photos of test configuration in Item 5.



3. TEST INSTRUMENTS

3.1 TEST INSTRUMENTS (EMISSION)

CONDUCTED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ Test Receiver	ESCS 30	847124/029	Oct. 6, 2000
ROHDE & SCHWARZ LISN	ESHS-Z5	848773/004	Oct. 8, 2000
KYORITSU LISN	KNW-407	8/1395/12	Aug. 02, 2000
Shielded Room	Con A	ADT-CA	N/A

Note: 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per NAMAS document NIS81.

2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

RADIATED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
HP Spectrum Analyzer	8594E	3710A04861	Sep. 9, 2000
ADVANTEST Spectrum Analyzer	R3271A	85060311	May 19, 2001
CHASE RF Pre_Amplifier	CPA9232	1001	Jan. 26, 2001
HP Pre_Amplifier	8449B	3008A01281	June 22, 2000
ROHDE & SCHWARZ Test Receiver	ESVS 10	846285/019	Aug. 17, 2000
CHASE Broadband Antenna	CBL6112B	2502	July 24, 2000
Schwarzbeck Horn_Antenna	BBHA9120-D1	D123	July 21, 2000
ROHDE & SCHWARZ Precision Dipole	HZ-12 (30~300MHz)	846932/0003	June 06, 2000
ROHDE & SCHWARZ Precision Dipole	HZ-13 (300~1000MHz)	846556/0007	June 17, 2000
EMCO Antenna Tower	2075-2	9712-2124	N/A
EMCO Turn Table	2081-1.53	9712-2030	N/A
CORCOM AC Filter	MRI2030	107/108	N/A
Open Field Test Site	Site A	ADT-RA	Oct. 03, 2000

Note: 1. The measurement uncertainty is less than +/- 3dB, which is calculated as per NAMAS document NIS81.

2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.



3.2 LIMITS OF CONDUCTED AND RADIATED EMISSION

LIMIT OF RADIATED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 10m)
	dBuV/m	dBuV/m
30 - 230	40	30
230 - 1000	47	37

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	uV/m	dBuV/m	uV/m	dBuV/m
Above 1000	300	49.5	500	54.0

Note: (1) The lower limit shall apply at the transition frequencies.

- (2) Emission level (dBuV/m) = 20 log Emission level (uV/m).
- (3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

LIMIT OF CONDUCTED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Note: (1) The lower limit shall apply at the transition frequencies.

- (2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz
- (3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



4. TEST RESULTS (EMISSION)

4.1 RADIO DISTURBANCE

Frequency Range : 0.15 - 30 MHz (Conducted Emission)
30 - 1000 MHz (Radiated Emission)
Input Voltage : DC 5V (From PC)
Temperature : 25 degree C
Relative Humidity : 65 percentage
Atmospheric Pressure : 982 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -2.5 dB at 0.192 MHz Minimum passing margin of radiated emission: -6.4 dB at 969.4 MHz

4.2 EUT OPERATION CONDITION

1. Turn on the power of all equipment.
2. PC runs a test program to enable all functions.



4.3 TEST DATA OF CONDUCTED EMISSION

EUT: TABELTMODEL: T-8000U6 dB Bandwidth: 9 kHzPHASE: LINE (L)

Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.192	0.1	54.0	52.2	54.1	52.3	64.8	54.8	-10.7	-2.5
0.306	0.1	48.2	-	48.3	-	61.5	51.5	-13.2	-
0.509	0.1	40.8	-	40.9	-	56.0	46.0	-15.1	-
0.610	0.1	40.2	-	40.3	-	56.0	46.0	-15.7	-
1.837	0.1	36.0	-	36.1	-	56.0	46.0	-19.9	-
14.093	0.5	35.5	-	36.0	-	60.0	50.0	-24.0	-

Remarks:

1. "*": Undetectable
2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
3. "-": The Quasi-peak emission level also meets average limit and measurement with the average detector is unnecessary.
4. The emission levels of other frequencies were very low against the limit.
5. Margin value = Emission level - Limit value
6. Emission Level = Correction Factor + Reading Value.



4.3 TEST DATA OF CONDUCTED EMISSION

EUT: TABELTMODEL: T-8000U6 dB Bandwidth: 9 kHzPHASE: NEUTRAL (N)

Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
		[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.192	0.1	53.1	-	53.2	-	64.8	54.8	-11.6	-
0.306	0.1	43.7	-	43.8	-	61.5	51.5	-17.7	-
0.509	0.1	42.3	-	42.4	-	56.0	46.0	-13.6	-
0.610	0.1	40.3	-	40.4	-	56.0	46.0	-15.6	-
1.837	0.1	34.5	-	34.6	-	56.0	46.0	-21.4	-
14.093	0.5	36.6	-	37.1	-	60.0	50.0	-22.9	-

Remarks:

1. "*": Undetectable
2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
3. "-": The Quasi-peak emission level also meets average limit and measurement with the average detector is unnecessary.
4. The emission levels of other frequencies were very low against the limit.
5. Margin value = Emission level - Limit value
6. Emission Level = Correction Factor + Reading Value.



4.4 TEST DATA OF RADIATED EMISSION

EUT: TABELTMODEL: T-8000UANT. POLARITY: HorizontalDETECTOR FUNCTION: Quasi-peak6 dB BANDWIDTH: 120 kHzFREQUENCY RANGE: 30-1000 MHzMEASURED DISTANCE: 10 M

Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height(cm)	Table Angle (°)
72.1	6.8	6.4	13.2	30.0	-16.8	400	20
79.3	8.7	8.0	16.4	30.0	-13.6	400	132
123.3	13.2	5.1	18.3	30.0	-11.7	400	199
159.8	11.7	9.6	21.3	30.0	-8.7	400	47
164.0	11.5	4.2	15.7	30.0	-14.3	400	135
193.7	11.1	3.6	14.7	30.0	-15.3	400	287
227.7	11.9	3.4	15.3	30.0	-14.7	400	238
448.4	20.7	5.2	25.9	37.0	-11.1	400	0
476.3	21.4	4.8	26.2	37.0	-10.8	357	221
517.0	22.5	5.7	28.2	37.0	-8.8	317	334

REMARKS:

1. Emission level (dBuV/m) = Correction Factor (dB) + Reading Value (dBuV).
2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value



4.4 TEST DATA OF RADIATED EMISSION

EUT: TABELTMODEL: T-8000UANT. POLARITY: VerticalDETECTOR FUNCTION: Quasi-peak6 dB BANDWIDTH: 120 kHzFREQUENCY RANGE: 30-1000 MHzMEASURED DISTANCE: 10 M

Frequency (MHz)	Correction Factor (dB)	Reading Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height(cm)	Table Angle (°)
72.0	6.8	10.2	17.0	30.0	-13.0	100	256
123.1	13.2	6.2	19.4	30.0	-10.6	100	146
135.0	12.6	4.0	16.6	30.0	-13.4	100	346
164.0	11.5	9.3	20.8	30.0	-9.2	100	0
169.8	11.3	4.0	15.3	30.0	-14.7	100	359
195.0	11.1	8.7	19.8	30.0	-10.2	100	254
229.3	12.1	4.7	16.8	30.0	-13.2	116	294
475.9	21.4	4.8	26.2	37.0	-10.8	164	221
515.9	22.4	6.0	28.4	37.0	-8.6	190	88
969.4	28.3	2.3	30.6	37.0	-6.4	348	189

REMARKS:

1. Emission level (dBuV/m) = Correction Factor (dB) + Reading Value (dBuV).
2. Correction Factor (dB) = Ant. Factor (dB)+Cable loss (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value



5. PHOTOGRAPHS OF THE TEST CONFIGURATION WITH MINIMUM MARGIN

CONDUCTED EMISSION TEST





RADIATED EMISSION TEST

