



EMC

TEST REPORT

REPORT NO. : F88090261

MODEL NO. : T-20275S

DATE OF TEST : Sep. 7, 1999

MULTIPLE LISTING FOR:

MODEL: HyperPen 2000 BRAND: AIPTEK

MODEL: HyperPen 3000 BRAND: AIPTEK

PREPARED FOR : AIPTEK INTERNATIONAL INC.

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INDUSTRIAL PARK, HSIN-CHU, TAIWAN, R.O.C.

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION



Accredited Laboratory

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**1.****CERTIFICATION**

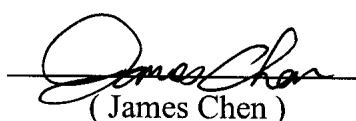
Issue Date: Sep. 27, 1999

Product : TABLET
Trade Name : AIPTEK
Model No. : T-20275S, HyperPen 2000, HyperPen 3000
Applicant : AIPTEK INTERNATIONAL INC.
Standard : FCC Part 15, Subpart B, Class B
ANSI C63.4-1992
CISPR 22:1993 + A1:1995 + A2:1996

We hereby certify that one sample of the designation has been tested in our facility from Sep. 7, 1999. 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:



, DATE: 9/27/99
(James Chen)

CHECKED BY:



, DATE: 9/27/99
(Rita Yi)

APPROVED BY:



, DATE: 9/27/99
(Stephen W.F. Chen)

ADVANCE DATA TECHNOLOGY CORPORATION**NVLAP**
Accredited Laboratory



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product : TABLET
Model No. : T-20275S
Power Supply : DC 5V (From PC)
Data Cable : Shielded RS232 Cable (1.8m)

Note: The EUT is a digitizing TABLET input device with RS232 connector. It has three model names which are identical to each other in all aspects except for their model names:

Model Name	Brand
T-20275S	AIPTEK
HyperPen 2000	AIPTEK
HyperPen 3000	AIPTEK

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

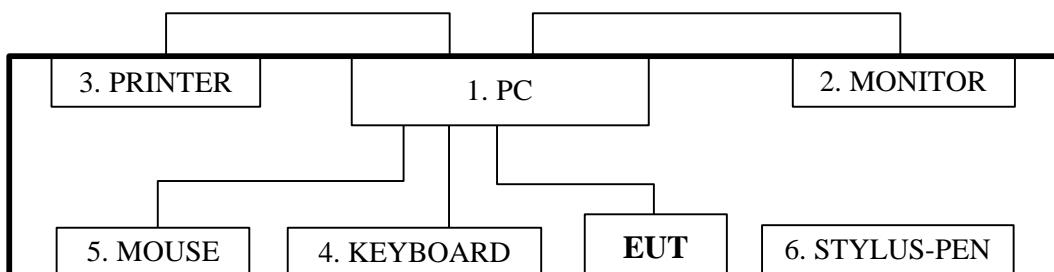


2.2 DESCRIPTION OF SUPPORT UNITS

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	2156-D1N	FCC DoC	Nonshielded Power (1.8m)
2.	MONITOR	ADI	937G	BR8937G	Shielded Signal (1.2m) Nonshielded Power (1.8m)
3.	PRINTER	HP	C2642A	B94C2642X	Shielded Signal (1.2m) Nonshielded Power (1.8m)
4.	KEYBOARD	FORWARD	FDA-104GA	F4ZDA-104	Shielded Signal (1.4m)
5.	MOUSE	LOGITECH	M-S34	DZL211029	Shielded Signal (1.8m)
6.	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	Nov. 13, 1999
ROHDE & SCHWARZ LISN	ESHS-Z5	848773/004	Nov. 11, 1999
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	8590L	3467U00646	Aug. 11, 2000
ADVANTEST Spectrum Analyzer	R3271A	85060311	May. 14, 2000
CHASE RF Pre_Amplifier	CPA9232	1010	Feb. 02, 2000
HP Pre_Amplifier	8449B	3008A01281	June 22, 2000
ROHDE & SCHWARZ Test Receiver	ESVS 10	84923/019	Jan. 12, 2000
CHASE Broadband Antenna	CBL6112B	2467	July 26, 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
CHANCE MOST Antenna Tower	AT-100	CM-A007	N/A
CHANCE MOST Turn Table	TC-008	CM-T007	N/A
CORCOM AC Filter	MRI2030	024/019	N/A
Open Field Test Site	Site B	ADT-RB	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 : 27 degree C
 Relative Humidity : 64 %
 Atmospheric Pressure : 982 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -12.7 dB at 0.349 MHz Minimum passing margin of radiated emission: -11.6 dB at 194.0 MHz (Antenna Polarity: Horizontal); 145.9 & 226.1 MHz (Antenna Polarity: Vertical)

4.2 EUT OPERATION CONDITION

1. Turn on the power of all equipment.
2. PC runs a test program to enable all functions.
3. PC sends "H" messages to printer, and the printer prints them on paper.
4. Repeat steps 3-4.



4.3 TEST DATA OF CONDUCTED EMISSION

EUT: TABLETMODEL: T-20275S6 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.
0.232	0.1	47.4	-	47.5	-	62.4	52.4	-14.9	-
0.349	0.2	46.1	-	46.3	-	59.0	49.0	-12.7	-
1.048	0.3	32.6	-	32.9	-	56.0	46.0	-23.1	-
4.880	0.5	27.5	-	28.0	-	56.0	46.0	-28.0	-
5.816	0.6	27.3	-	27.9	-	60.0	50.0	-32.1	-
16.000	1.1	34.5	-	35.6	-	60.0	50.0	-24.4	-

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: TABLETMODEL: T-20275S6 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.
0.232	0.1	45.4	-	45.5	-	62.4	52.4	-16.9	-
0.349	0.2	34.6	-	34.8	-	59.0	49.0	-24.2	-
1.048	0.3	33.7	-	34.0	-	56.0	46.0	-22.0	-
4.880	0.5	23.4	-	23.9	-	56.0	46.0	-32.1	-
5.816	0.6	27.6	-	28.2	-	60.0	50.0	-31.8	-
16.000	0.9	34.5	-	35.4	-	60.0	50.0	-24.6	-

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: TABLETMODEL: T-20275SANT. 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	Table Angle
44.2	11.4	5.3	16.7	30.0	-13.3	400	347
115.7	13.4	1.1	14.8	30.0	-15.2	400	308
148.8	12.5	3.4	15.9	30.0	-14.1	400	282
194.0	10.8	7.6	18.4	30.0	-11.6	400	240
217.0	11.4	4.8	16.2	30.0	-13.8	400	201
250.7	14.8	6.8	21.6	37.0	-15.4	400	158

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: TABLETMODEL: T-20275SANT. 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	Table Angle
42.5	12.1	3.5	15.6	30.0	-14.4	100	47
68.3	6.3	11.3	17.6	30.0	-12.4	100	124
145.9	12.6	5.8	18.4	30.0	-11.6	100	222
112.3	13.2	3.4	16.6	30.0	-13.4	100	266
226.1	12.1	6.3	18.4	30.0	-11.6	100	298
250.6	14.8	5.1	19.9	37.0	-17.1	100	337

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





6. ATTACHMENT 1 - TECHNICAL DESCRIPTION OF EUT

Specifications:

Active area (W x D)	2.75 x 2.0 in (69.85 x 50.8 mm)
Physical size (W x D x H)	121.23 x 124.88 x 10.5 mm
Power consumption	0.6 watts
Power supply	Keyboard power (DC 5 +/- 5% V regulated)
Weight	120 g (0.26lb)
Resolution	Max. 3048 lpi / 120lpmm
Accuracy (overall with pen)	0.42 mm
Maximum Pressure levels	512 levels
Maximum reading height	10 mm (0.4 in)
Communication interface	RS-232C Series
Connector	9-pin D-sub, female
Certification	FCC Class B, VCCI Class 2, CE (EMC)