Compliance Test Report for FCC

Report Number		ESTF150302-001		
Applicant	Company name	Maverick Systems, INC.		
	Address	No.511 SeochoWorld Officetel, 1355-3, Seocho-Dong, Seocho-Gu, Seoul 137-862, Korea		
	Telephone	82-2-6283-7425		
Product	Product name	INTERNET STORAGE		
	Model No.	NasDisk-1000	Manufacturer	Maverick Systems, INC.
	Serial No.	NONE	Country of origin	Korea
Test date	2003-02-04 ~ 2003-02-05		Date of issue	2003-02-11
Testing location	ESTECH. Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea			
Standard	FCC PART 15 2002 , ANSI C 63.4 2001			
Test item	■ Conducted Emission	□ Class A ■ Class B	Test result	OK
	■ Radiated Emission	□ Class A ■ Class B	Test result	OK
Measurement facility registration number		94696		
Tested by	Senior Engineer J.M. Yang	(Signature)		
Reviewed by	Director T.K. Lee	(Signature)		
Abbreviation	OK, Pass = Passed, Fail = Failed, N/A = not applicable			

* Note

- This test report is not permitted to copy partly without our permission
- This test result is dependent on only equipment to be used
- This test result based on a single evaluation of one sample of the above mentioned

Contents

1. Laboratory Information

1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report.
ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.
ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

1.2 Test Lab.

Corporation Name : ESTECH Co. Ltd

Head Office : 3 rd Fl., Chungdam Bldg., 119-1 Chungdam-dong Kangnam-gu , Seoul, Korea
(Safety & Telecom. Test Lab)

EMC Test Lab : 58-1 Osan-Ri, GaNam-Myon, YeoJoo-Gun, KyungKi-Do, Korea
97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea

Branch Office : USA-ESTECH INC.
21801 Stevens Creek Blvd. Suite 2A Cupertino, CA95014

1.3 Official Qualification(s)

MIC : Granted Accreditation from Ministry of Information & Communication for EMC, Safety and Telecommunication
KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CENELEC requirements
FCC : Filed Laboratory at Federal Communications Commission
VCCI : Granted Accreditation from Voluntary Control Council for Interference from ITE

2. Description of EUT

2.1 Summary of Equipment Under Test

Product	: INTERNET STORAGE
Model Number	: NasDisk-1000
Serial Number	: NONE
Manufacturer	: Maverick Systems, INC.
Country of origin	: Korea
Rating	: Adapter (Input : 110V, 60Hz, Output : DC 12V)
Receipt Date	: 2003-02-04

2.2 General descriptions of EUT

- NasDisk can easily be connected to the Internet through broadband connection function such as ADSL or Cable Modem without getting assisted by network engineer and such easy-to-use features may be popular with small-scale office or home that is not networked. The service has built-in File Server and Internet (Web) Storage function inclusive of IP sharing and Mail Server through which NasDisk, a personal multi-purposes storage product, may be conveniently used anywhere and anytime you want to be connected.
- Specification
  1) CPU : 32bit RISC Type Processor (CPU Clock 100MHz, Bus Clock 50MHz)
  2) FLASH :4MB Flash
  3) MEMORY : 16MB SDRAM
  4) HARD DISK : 40 ~ 120GB(7200RPM) EIDE Type Hard Disk Drive
  5) INTERFACE : 10/100Base-TX Ethernet 3 Ports (WAN : 1Port, LAN : 2Ports)
  6) PROTOCOL : NetBEUI,TCP/IP,DHCP,NAT, WEB(HTTP),FTP,TELNET,SMTP,POP3
  7) SUPPOTED CLIENT : Windows 9X, Windows NT, Windows 2000, etc
  8) POWER : INPUT : 110 ~ 220VAC 50/60Hz, OUTPUT : 12VDC,3.5A

3. Test Standards

Test Standard : FCC PART 15 (2002)

This Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

Test Method : ANSI C 63.4 (2001)

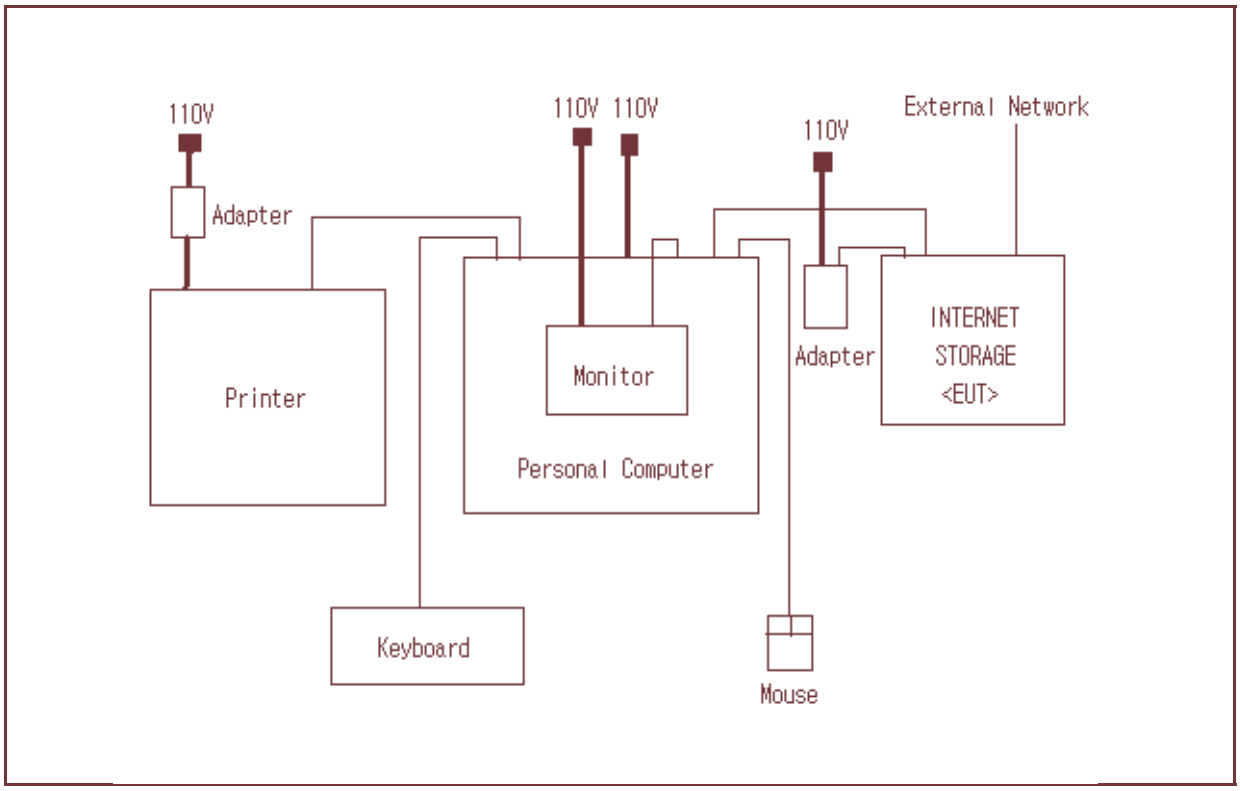
This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain decides that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment These method apply to the measurement of individual units or systems comprised of multiple units

4. Measurement Condition

4.1 EUT Operation.

* The EUT was in the following operation mode during all testing
* The operational conditions of the EUT was determined by the manufacturer according to the typical use of the EUT with respect to the expected hightest level of emission
* We test EUT by Reading/Writing "H" character and commanding external network ping

4.2 Configuration and Peripherals



4.3 EUT and Support equipment

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
INTERNET STORAGE	NasDisk-1000	NONE	Maverick Systems, INC.	EUT
Personal Computer	M6030	ERA00237	Samsung Electronics Co., Ltd.	-
Printer	C6414J	TH18M149P2	H.P	-
Monitor	D8897	CN11104168	H.P	-
Keyboard	SEM-DT35	18661447	Samsung Electro-Mechanics Ltd.	-
Mouse	X05-51692	6444127-10000	Microsoft	-
Adapter	C6409-60152	C1H14B	YOKOGAWA	-
Adapter	NE-012A	N02000912	BNP Electronics	-

4.4 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
INTERNET STORAGE	Ethernet	Personal Computer	10/100Base TX	2.0	N	-
INTERNET STORAGE	Ethernet	External Network	10/100Base TX	25.0	N	-
INTERNET STORAGE	Power	Adapter	Power	2.0	N	-
Personal Comput	Video	Monitor	Video	2.0	Y	-
Personal Comput	Parallel	Printer	Parallel	2.0	Y	-
Personal Comput	PS/2 Keyboard	Keyboard	PS/2 Keyboard	2.0	N	-
Personal Comput	PS/2 Mouse	Mouse	PS/2 Mouse	2.0	N	-
Printer	Power	Adapter	Power	2.0	N	-

5. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2002) & ANSI C 63.4 (2001). The test setup was made according to FCC Part 15 (2002) & ANSI C 63.4 (2001) on an open test site, which allows a 3m distance measurement. The EUT was placed in the center of wooden turntable. The height of this table was 0.8m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test set-up.

5.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Receiver	ESPC	Rohde & Schwarz	845296/021	2003.6.21
Spectrum Analyzer	R3261B	ADVANTEST	1720302	2004.2.7
LogBicon Antenna	VULB 9160	S/B	3107	2003.6.7
Turn Table	2087	EMCO	2129	-
Antenna Mast	2070-01	EMCO	9702-203	-
Amplifier	310N	Sonoma Instrument	185817	-
ANT Mast Controller	2090	EMCO	1535	-
Turn Table Controller	2090	EMCO	1535	-

5.2 Environmental Condition

Test Place : Open site(3m)
Temperature (°C) : 16 ℃
Humidity (%) : 45 %

5.3 Test data

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμV)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμV/m)	Result (dBμV/m)	Margin (dBμV/m)
30.35	16.40	V	1.0	12.25	0.9	40.0	29.53	-10.47
125.01	15.10	V	1.0	12.33	1.7	43.5	29.12	-14.38
150.00	18.00	V	1.0	13.90	1.9	43.5	33.78	-9.72
174.90	12.00	V	1.0	12.89	2.1	43.5	26.94	-16.56
200.00	17.80	V	1.0	10.38	2.2	43.5	30.36	-13.14
225.00	17.80	H	1.5	11.00	2.3	43.5	31.12	-12.38
250.03	23.80	H	1.3	11.92	2.4	46.0	38.09	-7.91
275.03	18.50	H	1.2	12.64	2.5	46.0	33.68	-12.32
300.00	23.00	H	1.0	13.19	2.7	46.0	38.89	-7.11
325.00	19.80	H	1.0	13.76	2.8	46.0	36.33	-9.67
350.00	23.40	H	1.0	14.24	2.9	46.0	40.56	-5.45
400.00	21.30	H	1.0	15.32	3.2	46.0	39.77	-6.23
450.00	22.00	H	1.0	16.36	3.3	46.0	41.71	-4.30
550.01	19.80	V	1.1	17.93	3.7	46.0	41.43	-4.57
575.01	19.40	V	1.1	18.51	3.8	46.0	41.73	-4.27
625.00	18.10	V	1.0	19.28	4.0	46.0	41.39	-4.61
675.00	14.70	H	1.0	19.86	4.2	46.0	38.71	-7.29
699.99	18.00	H	1.0	20.14	4.3	46.0	42.42	-3.58
750.00	17.00	H	1.0	21.20	4.4	46.0	42.61	-3.39
850.00	14.90	H	1.0	22.04	4.8	46.0	41.76	-4.25
950.00	13.00	V	1.1	23.42	5.0	46.0	41.45	-4.55
Remark	H : Horizontal, V : Vertical							

6. Measurement of conducted disturbance

The continuous disturbance voltage of AC Mains in the frequency from 0.15 to 30 MHz was measured in accordance to FCC Part 15 (2002) & ANSI C 63.4 (2001) The test setup was made according to FCC Part 15 (2002) & ANSI C 63.4 (2001) in a shielded. The EUT was placed on a non-conductive table at least 80 above the ground plan. A grounded vertical reference plane was positioned in a distance of 40cm from the EUT. The distance from the EUT to other metal surfaces was at least 0.8m. The EUT was only earthen by its power cord through the line impedance stabilizing network. The power cord has been bundled to a length of 1.0m. The test receiver with Quasi Peak detector complies with CISPR 16.

6.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	ESH3-Z5	Rohde & Schwarz	838979/010	2004. 2. 7
LISN	NNLA8120A	Schwarzbeck	NONE	2004. 2. 7
TEST Receive	ESPC	Rohde & Schwarz	845296/021	2003.6.21
Pulse Limiter	ESH3Z2	Rohde & Schwarz	NONE	2003.7.4

6.2 Environmental Condition

Test Place : Shield Room
Temperature (°C) : 18 ℃
Humidity (%) : 48 %

6.3 Test data

Frequency (MHz)	Correction Factor		Line (H/N)	Quasi-Peak			Average		
	Lisn (dB)	Cable (dB)		Limit (dBμV)	Reading (dBμV)	Result (dBμV)	Limit (dBμV)	Reading (dBμV)	Result (dBμV)
0.179	0.07	0.0	N	64.54	56.96	57.05	54.54	46.22	46.31
0.186	0.07	0.0	N	64.21	45.16	45.25	54.21		
0.240	0.07	0.1	N	62.10	50.64	50.77	52.10	40.19	40.32
0.300	0.07	0.1	N	60.24	45.39	45.56	50.24		
0.360	0.07	0.1	H	58.72	42.89	43.09	48.72		
0.480	0.07	0.2	H	56.34	31.62	31.88	46.34		
0.537	0.07	0.2	H	56.00	32.40	32.67	46.00		
0.781	0.09	0.2	H	56.00	32.85	33.14	46.00		
0.839	0.09	0.2	H	56.00	34.33	34.62	46.00		
1.374	0.10	0.2	H	56.00	32.42	32.75	46.00		
4.194	0.18	0.3	N	56.00	31.93	32.41	46.00		
4.614	0.19	0.3	N	56.00	32.13	32.62	46.00		
8.321	0.32	0.5	H	60.00	37.69	38.49	50.00		
12.102	0.47	0.7	N	60.00	36.14	37.29	50.00		
12.694	0.49	0.7	H	60.00	40.50	41.70	50.00		
14.080	0.56	0.8	N	60.00	43.56	44.89	50.00		
14.192	0.57	0.8	H	60.00	45.44	46.78	50.00		
15.994	0.63	0.8	N	60.00	45.45	46.88	50.00		
Remark	H : Hot Line, N : Neutral Line								

7. Photographs of test setup

7.1 Setup for Radiated Test : 30 ~ 1000 MHz

[Front]

[Rear]

7.2 Setup for Conducted Test : 0.15 ~ 30 MHz

[Front]

[Rear]

8. Photographs of EUT

[Front]

[Rear]

Appendix 1. Spectral diagram

*HOT

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ESTECH

HOT

EUT:	NasDisk-1000
Manuf:	Maverick Systems, INC.
Op Cond:	110V
Operator:	J.M Yang
Test Spec:	CLASS B
Comment:	
File:	011200_h.dat : Maverick Systems, INC.
Scan Settings:	(1 Range)

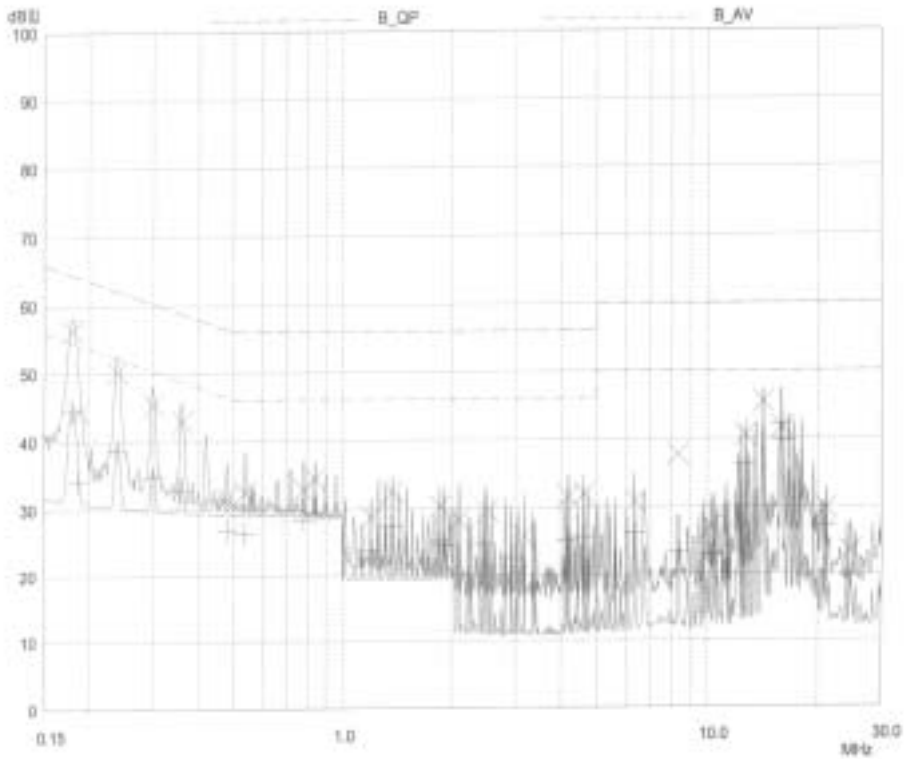
Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	OpRge
150kHz	30MHz	0.8%	10kHz	PK+AV	20msec	Auto	60dB

Final Measurement: X QP / + AV

Meas Time: 1sec

Subranges: 25

Acc Margin: 60 dB



*NETRUL

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ESTECH

NEUTRAL

EUT:	NeaDisk-1000
Manuf:	Maverick Systems, INC.
Op Cond:	110V
Operator:	J.M Yang
Test Spec:	CLASS B
Comment:	

File: 011200_n.dat : Maverick Systems, INC.

Scan Settings (1 Range)

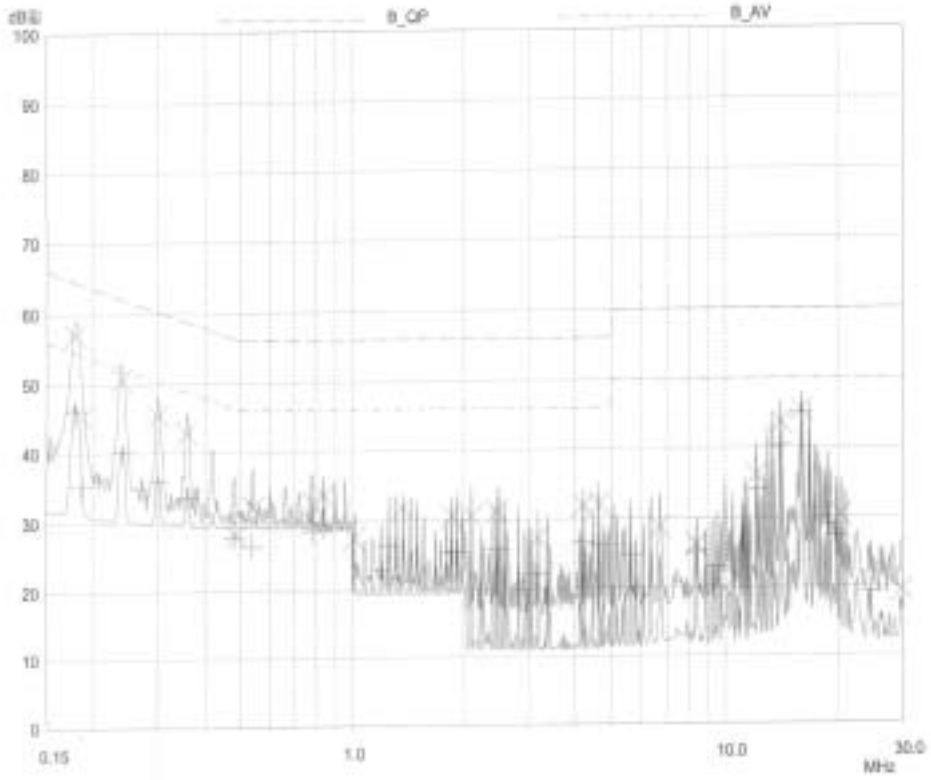
Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	OpRge
150kHz	30MHz	0.8%	10kHz	PK+AV	20msec	Auto	80dB

Final Measurement: X QP / + AV

Meas Time: 1sec

Subranges: 25

Acc Margin: 60 dB



Appendix 2. Phorographs of EUT in side PCB

Appendix 3. Block diagram of EUT