



ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

Test Report No. : E051R-053

Applicant : ADVAN International Corp.

Address : 47456 Fremont Blvd. Fremont, CA 94538 U.S.A

Manufacturer : ADVAN International Corp.

Address : 47456 Fremont Blvd. Fremont, CA 94538 U.S.A

Type of Equipment : 19" Medical LCD Monitor

FCC ID : QVXAMM19TKS2HB

Model Name : 240-030-920

Multiple Model Name : SV-2, AMM19TKS2/HB

Serial number : N/A

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

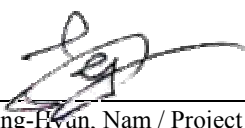
Date of Incoming : October 02, 2004

Date of Issuing : January 17, 2005

SUMMARY

The equipment complies with the requirements of **FCC CFR 47 PART 15 SUBPART B, Class B.**

This test report contains only the results 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.

Reviewed by: 
Seung-Hyun, Nam / Project Engineer
EMC Div.
ONETECH Corp.

Approved by: 
G. W. Lee / Chief Engineer
EMC Div.
ONETECH Corp.



CONTENTS

	Page
1. VERIFICATION OF COMPLIANCE	3
2. GENERAL INFORMATION.....	4
2.1 PRODUCT DESCRIPTION	4
2.2 MODEL DIFFERENCES:	4
2.3 RELATED SUBMITTAL(S) / GRANT(S)	4
2.4 TEST SYSTEM DETAILS	4
2.5 TEST METHODOLOGY	5
2.6 TEST FACILITY	5
3. SYSTEM TEST CONFIGURATION.....	6
3.1 JUSTIFICATION	6
3.2 MODE OF OPERATION DURING THE TEST	6
3.3 CABLE DESCRIPTION	6
3.4 NOISE SUPPRESSION PARTS ON CABLE	7
3.5 EQUIPMENT MODIFICATIONS	7
3.6 CONFIGURATION OF TEST SYSTEM	7
4. PRELIMINARY TEST	8
4.1 AC POWER LINE CONDUCTED EMISSION TEST	8
4.2 RADIATED EMISSION TEST	8
5. FINAL RESULT OF MEASUREMENT	9
5.1 CONDUCTED EMISSIONS TESTS	9
5.2 RADIATED EMISSION TEST	11
6. FIELD STRENGTH CALCULATION	12
7. LIST OF TEST EQUIPMENT.....	13

**1. VERIFICATION OF COMPLIANCE**

- APPLICANT : ADVAN International Corp.
- ADDRESS : 47456 Fremont Blvd. Fremont, CA 94538 U.S.A
- CONTACT PERSON : Mr. Dan Oh / General Manager
- TELEPHONE NO : +82-2-703-5197
- FCC ID : QVXAMM19TKS2HB
- MODEL NAME : 240-030-920
- SERIAL NUMBER : N/A
- DATE : January 17, 2005

DEVICE TYPE	Peripheral Device for Class B Computing Device - Unintentional Radiator
E.U.T. DESCRIPTION	19" Medical LCD Monitor
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4: 2001
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

- This device has shown compliance with the conducted emissions limits in 15.107 adopted under FCC 02-107 (ET Docket 98-80). The device may be marketed after July 11, 2005 affected by the 15.37(j) transition provisions.
- 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.



2. GENERAL INFORMATION

2.1 Product Description

The ADVAN International Corp., Model 240-030-920 (referred to as the EUT in this report) is a 19" Medical LCD Monitor that is an intelligent, microprocessor-based TFT-LCD monitor intended for use in Endoscope surgical applications. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Non-Metal
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	24.576MHz, 14.318MHz
ELECTRICAL RATING	DC15V, 3.6 A from AC/DC adapter
NUMBER OF LAYERS	Main Board: 6 Layers, Other Board: 2 Layers
EXTERNAL CONNECTOR	S-Video, Analog RGB In, DVI In, Composite Video In

2.2 Model Differences:

-. The difference(s) compared to the EUT is as follows:

	Model	Differences
Basic Model	240-030-920	-
Added Model	SV-2 AMM19TKS2/HB	Only type designation according to request by the buyer

2.3 Related Submittal(s) / Grant(s)

Original submittal only

2.4 Test System Details

Defined as equipment needed for correct operation of the EUT, but not considered as tested:

Model	Manufacturer	FCC ID	Description	Connected to
240-030-920	ADVAN International Corp.	QVXAMM19TKS2HB	19" Medical LCD Monitor (EUT)	PC
MW116	Ault	N/A	AC/DC Adapter	EUT
DHP	DELL Computer Corp.	DoC	PC	-
SK-8110	SILITEK	DoC	Keyboard	PC
M-S48a	Logitech	DoC	Mouse	PC
2225C	HP	DSI6XU2225	Printer	PC
GHV-S9990	GoldSatr	N/A	VCR	EUT



2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4: 2001. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.6 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-080 Korea. Description details of test facilities were submitted to the Commission on January 18, 2002. (Registration Number: 92819)



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 AD Board	DOOYANG	SYSTEM NO. 11A	N/A
Inverter Board	Green C & C Tech	GH096A 0424	N/A
Power Key Board	N/A	N/A	N/A
Sensor Board	FUJITSU DISPLAY	NE26809-B301	N/A
LCD Panel	FUJITSU DISPLAY	FLC48SXC8V	N/A

3.2 Mode of operation during the test

- The “H” characters are printed on the EUT until the screen is completely full. The investigated resolution mode of the EUT was at 1280 x 1024.

3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
19” Medical LCD Monitor (EUT)	N	Y	0.8 (P), 1.2 (D)
AC/DC Adapter	N	N	1.5 (P), 0.8 (D)
PC	N	-	1.5 (P), -
Keyboard	N/A	N	1.2 (D)
Mouse	N/A	N	1.2 (D)
Printer	N	Y	1.5(P), 1.5(D)
VCR	N	N	1.5(P), 1.2(D)

* The marked “(P)” means the Power Cable and “D” means the I/O Cable.

**3.4 Noise Suppression Parts on Cable**

	Ferrite Bead (Y/N)	Location	Metal Hood (Y/N)	Location
19" Medical LCD Monitor (EUT)	Y	BOTH END (DVI)	Y	BOTH END
AC/DC Adapter	N	N/A	Y	EUT END
PC	N	N/A	Y	BOTH END
Keyboard	N	N/A	Y	EUT END
Mouse	N	N/A	Y	EUT END
Printer	N	N/A	Y	BOTH END
VCR	N	N/A	Y	BOTH END

3.5 Equipment Modifications

To achieve compliance to CLASS B levels, the following change(s) was made by ONETECH Corp. during compliance testing:

“There were no Modified items during EMI test”

3.6 Configuration of Test System

Line Conducted Test : The EUT was connected to AC/DC adapter and the power line of the adapter was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4: 2001 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: 2001 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 3 meters open area test site.



4. PRELIMINARY TEST

4.1 AC Power line Conducted Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Resolution: 1280 x 1024 (Analog RGB)	X
Resolution: 1280 x 1024 (DVI)	

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Resolution: 1280 x 1024 (Analog RGB)	
Resolution: 1280 x 1024 (DVI)	X

**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 Emissions Tests

Humidity Level : 49 % Temperature: 20 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107 (a)
 Type of Test : Class B
 Result : PASSED BY -4.28 dB at 0.17 MHz under average mode

EUT : 19" Medical LCD Monitor Date: January 17, 2005
 Operating Condition : The "H" characters are printed on the monitor until the screen is completely full.
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

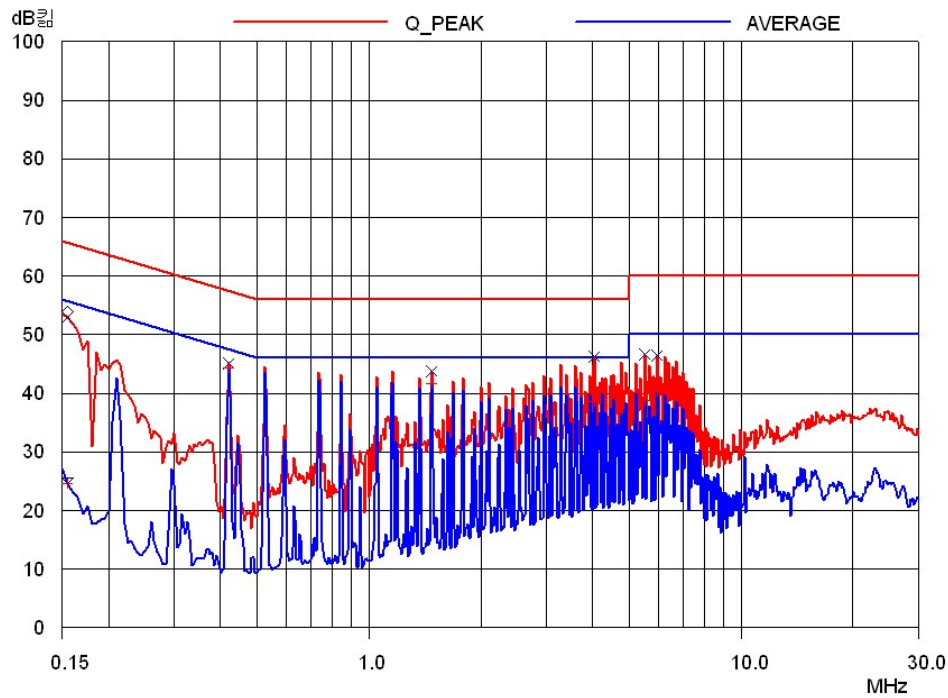
Frequency (MHz)	Line	Peak (dBuV)		Margin (dB)
		Emission level	Q.P Limits	
0.15	H	52.93	65.73	-12.80
0.42	H	45.12	57.45	-12.33
0.74	N	45.40	56.00	-10.60
1.47	H	43.70	56.00	-12.30
3.27	N	44.25	56.00	-11.75
4.00	H	46.21	56.00	-9.79
Frequency (MHz)	Line	Average (dBuV)		Margin (dB)
		Emission level	Limits	
0.74	N	41.72	46.00	-4.28
3.27	N	40.94	46.00	-5.06
4.00	H	38.62	46.00	-7.38

Line Conducted Emissions Tabulated Data

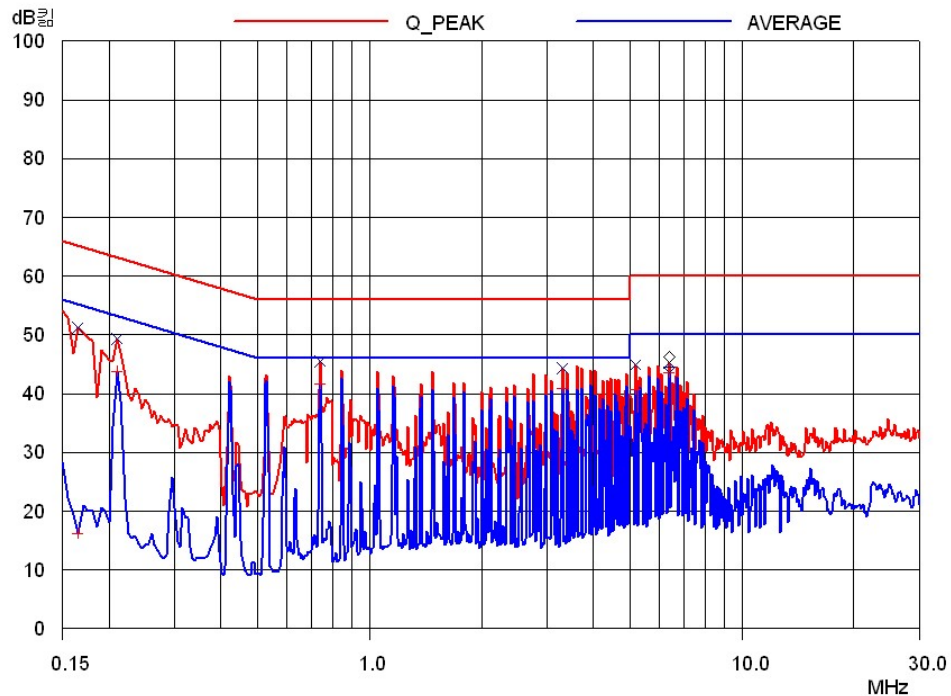
Remark : "H": Hot Line, "N": Neutral line

See next page for an overview sweep performed with peak and average detector.

Tested by: Hyun-Suck, Lee / Test Engineer



HOT LINE



NEUTRAL LINE

**5.2 Radiated Emission Test**

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

Humidity Level : 48 % Temperature: 17 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109 (a)
 Type of Test : CLASS B
 Result : PASSED BY -3.08 dB at 372.60 MHz

EUT : 19" Medical LCD Monitor Date: January 17, 2005
 Operating Condition : The "H" characters are printed on the monitor until the screen is completely full.
 Frequency range : 30MHz ~ 1000MHz
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
 Distance : 3 Meter

Radiated Emissions		Ant	Correction Factors		Total	FCC CLASS B	
Freq. (MHz)	Amp. (dBuV)	Pol.	Ant. (dBuV/m)	Cable (dB)	Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
64.80	25.40	V	5.90	1.40	32.70	40.00	-7.30
126.60	20.80	V	13.38	2.07	36.25	43.52	-7.27
183.20	19.20	H	15.15	2.30	36.65	43.52	-6.87
190.40	13.80	V	15.54	2.30	31.64	43.52	-11.88
270.40	22.40	H	17.48	2.68	42.56	46.02	-3.46
372.60	24.60	H	15.09	3.25	42.94	46.02	-3.08

Radiated Emissions Tabulated Data

Tested by: Hyun-Suck, Lee / Test Engineer



6. FIELD STRENGTH CALCULATION

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

+ Meter reading (dBuV)

+ Cable Loss (dB)

+ Antenna Factor (Loss) (dB/meter)

= Corrected Reading (dBuV/meter)

- Specification Limit (dBuV/meter)

= dB Relative to Spec (+/- dB)

**7. LIST OF TEST EQUIPMENT**

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVD	838453/018	MAR/04	12MONTH	■
2.	Test receiver	R/S	ESHS 10	834467/007	MAY/04	12MONTH	■
3.	Spectrum analyzer	HP	8566B	3407A08547	JUL/04	12MONTH	
4.	Spectrum analyzer	HP	8568B	3109A05456	JUL/04	12MONTH	■
5.	RF preselector	HP	85685A	3107A01264	APR/04	12MONTH	■
6.	Quasi-Peak Adapter	HP	85650A	3107A01542	JUL/04	12MONTH	■
7.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	VULB9163 166	FEB/04	12MONTH	
8.	Biconical antenna	EMCO	3104C	9109-4443	MAY/04	12MONTH	
		Schwarzbeck	VHA9103	91031852	JAN/04		■
9.	Log Periodic antenna	EMCO	3146	9109-3213	FEB/04	12MONTH	
				9109-3217	MAY/04		
		Schwarzbeck	9108-A(494)	62281001	JAN/04		■
10.	LISN	EMCO	3825/2	9109-1867	JUL/04	12MONTH	■
				9109-1869	OCT/04		■
11.	Position Controller	HD GmbH	HD100	N/A	N/A	N/A	■
12.	Turn Table	HD GmbH	DS420S	N/A	N/A	N/A	■
13.	Antenna Master	HD GmbH	MA240	N/A	N/A	N/A	■