



# ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION

**Test Report No.** : E055R-016

**Applicant** : Advanced Digital Chips Inc.  
**Address** : 4th Floor, Sam Kwang Bldg., 21-4, Samsung-2Dong, Kangnam-Ku, Seoul,  
135-508, Korea

**Manufacturer** : Advanced Digital Chips Inc.  
**Address** : 4th Floor, Sam Kwang Bldg., 21-4, Samsung-2Dong, Kangnam-Ku, Seoul,  
135-508, Korea

**Type of Equipment** : Display Capture Equipment

**FCC ID** : S9TADCGB0000R1

**Model Name** : Green Box

**Serial number** : N/A

**Total page of Report** : 11 pages (including this page)

**Date of Incoming** : March 28, 2005

**Date of Issuing** : May 06, 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.

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## 1. VERIFICATION OF COMPLIANCE

- APPLICANT : Advanced Digital Chips Inc.
- ADDRESS : 4th Floor, Sam Kwang Bldg., 21-4, Samsung-2Dong, Kangnam-Ku, Seoul, 135-508, Korea
- CONTACT PERSON : Mr. Hae-Seung, Ryu / Director
- TELEPHONE NO : +82-2-545-4898 (Ext. 255)
- FCC ID : S9TADCGB0000R1
- MODEL NAME : Green Box
- BRAND NAME : ADC
- SERIAL NUMBER : N/A
- DATE : May 06, 2005

DEVICE TYPE	Peripheral Device for Class B Computing Device - Unintentional Radiator
E.U.T. DESCRIPTION	Display Capture Equipment
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4: 2003
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 Advanced Digital Chips Inc., Model Green Box (referred to as the EUT in this report) is a Display Capture Equipment. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic
LIST OF EACH OSC. or CRY. FREQ.(FREQ.>=1MHz)	12 MHz, 14.318 MHz, 25.157 MHz and 27 MHz on the Main Board 12 MHz on the Sub Board.
NUMBER OF LAYERS	2 Layers: Sub Board, 4 Layers: Main Board
EXTERNAL CONNECTOR	PC In, Monitor Out, DC In

### 2.2 Model Differences

- None

### 2.3 Related Submittal(s) / Grant(s)

- Original submittal only

### 2.4 Test System Details

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

Model	Manufacturer	FCC ID	Description	Connected to
Green Box	Advanced Digital Chips Inc.	S9TADCGB0000R1	Display Capture Equipment (EUT)	PC / Monitor
DSA-0421S-12	DVE	N/A	Adaptor	EUT
GX240	DELL COMPUTER CORP.	DoC	PERSONAL COMPUTER	-
E551	DELL COMPUTER CORP.	DoC	MONITOR	EUT
SWW-23	N4 TECH	N/A	MOUSE	PC
SEM-DT35	SAMSUNG	N/A	KEYBOARD	PC
2225C	HP	DSI6XU2225	PRINTER	PC
020-0470	CARDINAL	GDE0196	MODEM	PC

### 2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4: 2003. Radiated testing was performed at a distance of 3 meters from the 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-Eup, Kwangju-City, Kyunggi-Do, 464-080, Korea. Description details of test facilities were submitted to the Commission on April 04, 2003. (Registration Number: 340658)

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FCC-003 (Rev.0)

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**EMC Testing Dept** : 426-1 Daessangryung-Ri, Chowol-Eup, Kwangju-City, Kyunggi-Do, 464-860, Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



### 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 Board	Advanced Digital Chips Inc.	Green Box_BF531	N/A
Sub Board	Advanced Digital Chips Inc.	ADC16S310	N/A

#### 3.2 EUT exercise Software

After connecting the EUT to a monitor, the EUT was operated with capture mode during the test.

#### 3.3 Cable Description

	Power Cord Shielded (Y/N)	I/O cable Shielded (Y/N)	Length (M)
Display Capture Equipment (EUT)	N	N/A	1.5(P), 1.2(D)
PERSONAL COMPUTER	N	-	1.8(P)
MONITOR	N	Y	1.5(P), 1.2(D)
MOUSE	N/A	N	1.2(D)
KEYBOARD	N/A	N	1.2(D)
PRINTER	N	Y	1.8(P), 1.2(D)
MODEM	N	Y	1.8(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
Display Capture Equipment (EUT)	Y	Adaptor END BOTH END	Y	EUT END BOTH END
PERSONAL COMPUTER	N/A	N/A	N/A	-
MONITOR	Y	BOTH END	Y	BOTH END
MOUSE	N	N/A	Y	PC END
KEYBOARD	N	N/A	Y	PC END
PRINTER	N	N/A	Y	BOTH END
MODEM	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 power of the EUT was supplied by AC/DC adapter and 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: 2003 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: 2003 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)
The Capture 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)
The Capture Mode	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 Emission Test

Humidity Level : 41 % Temperature: 22 °C  
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107 (a)  
 Type of Test : CLASS B  
 Result : PASSED BY -13.87 dB at 0.43 MHz

EUT : Display Capture Equipment Date: April 28, 2005  
 Operating Condition : The Capture Mode.  
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

Frequency (MHz)	Line	Peak (dBuV)		Margin (dB)
		Emission level	Q.P Limits	
0.37	N	38.24	58.39	-20.15
0.43	N	43.29	57.16	-13.87
0.62	H	40.55	56.00	-15.45
16.41	H	39.21	60.00	-20.79
20.52	N	36.69	60.00	-23.31
24.63	H	38.43	60.00	-21.57
Frequency (MHz)	Line	Average (dBuV)		Margin (dB)
		Emission level	Limits	
-				
-				

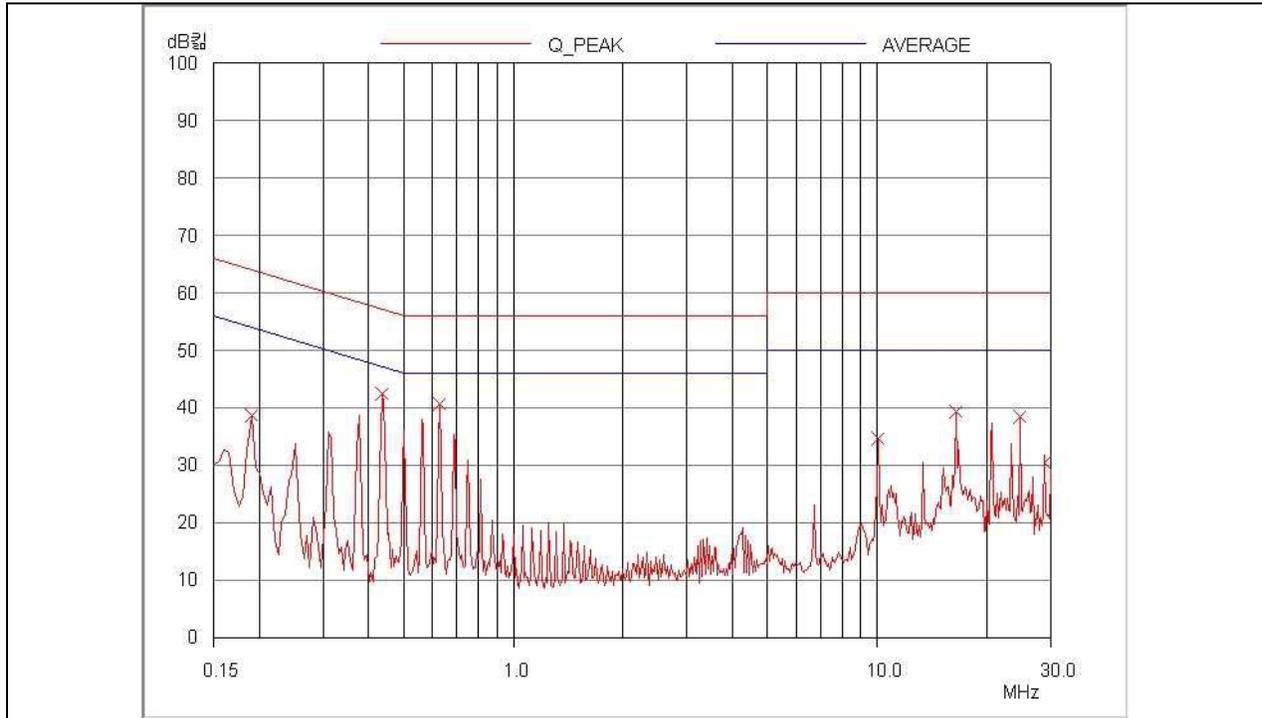
Line Conducted Emission Tabulated Data

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

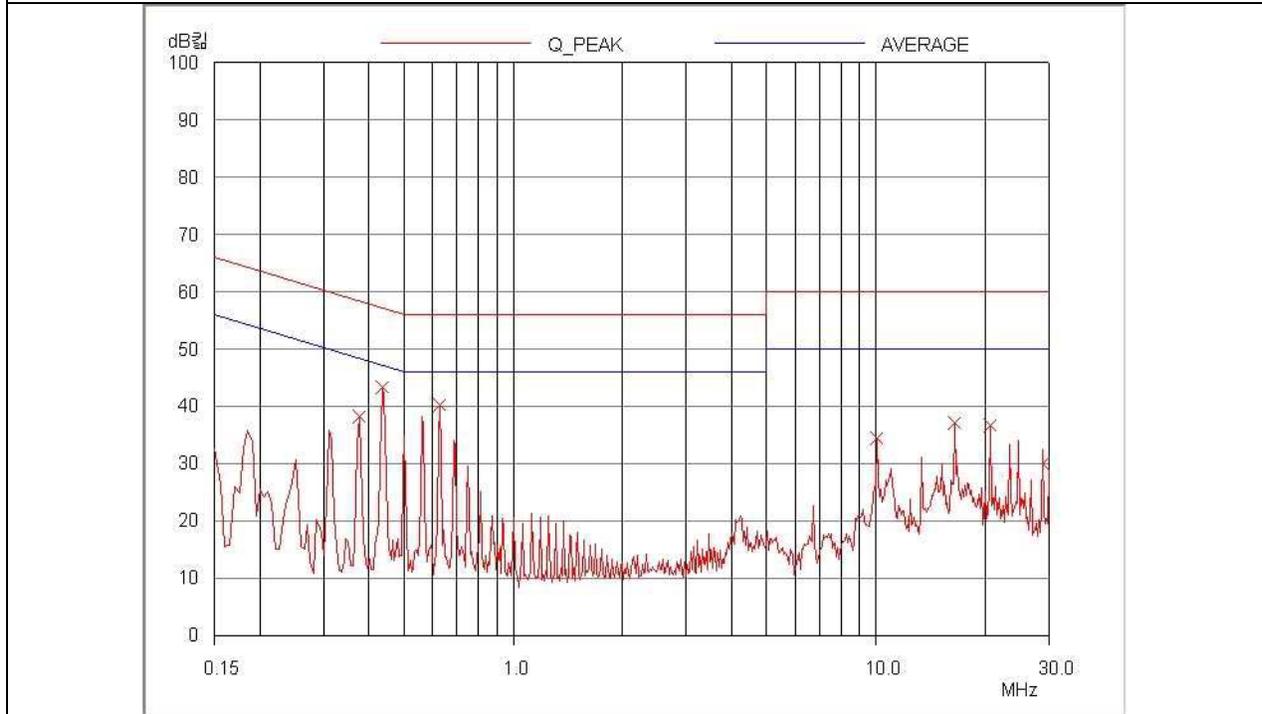
Average data was not measured, because Peak values were under the Average limit.

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

**Tested by: Eung-Chan, Kim / 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 : 39 % Temperature: 20 °C  
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109 (a)  
 Type of Test : CLASS B  
 Result : PASSED BY -5.85 dB at 393.00 MHz

EUT : Display Capture Equipment Date: April 13, 2005  
 Operating Condition : The Capture Mode  
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)  
 Frequency Range : 30 MHz – 1000 MHz  
 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)
47.00	16.10	V	11.68	1.62	29.40	40.00	-10.60
95.10	17.00	V	9.20	1.90	28.10	43.52	-15.42
234.00	15.60	H	16.72	3.14	35.46	46.02	-10.56
312.00	22.00	H	13.89	3.90	39.79	46.02	-6.23
393.00	20.50	H	15.30	4.37	40.17	46.02	-5.85
472.00	15.60	H	16.96	4.94	37.50	46.02	-8.52

Radiated Emissions Tabulated Data

**Tested by: Eung-Chan, Kim / 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)

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= 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	ESVS10	827864/005	DEC/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	MAR/05	12MONTH	■
5.	RF preselector	HP	85685A	3107A01264	MAR/05	12MONTH	■
6.	Quasi-Peak Adapter	HP	85650A	3107A01542	MAR/05	12MONTH	■
7.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	VULB9163 166	FEB/05	12MONTH	
8.	Biconical antenna	EMCO	3104C	9109-4443	MAY/04	12MONTH	
		Schwarzbeck	VHA9103	91031852	JAN/05		■
9.	Log Periodic antenna	EMCO	3146	9109-3213	FEB/05	12MONTH	
				9109-3217	MAY/04		
		Schwarzbeck	9108-A(494)	62281001	JAN/05		■
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	■