



ADVANCED ELECTRONICS GROUP, INC. TEST REPORT

FOR THE

2.4 GHZ VIDEO/AUDIO TRANSMITTER, 2300TX750

FCC PART 90 SUBPART I

FCC PART 15 SUBPART B SECTIONS 15.107 & 15.109 CLASS B

COMPLIANCE

DATE OF ISSUE: JUNE 26, 2001

PREPARED FOR:

Advanced Electronics Group, Inc.
10524 South La Cienega Blvd.
Inglewood, CA 90304

PREPARED BY:

Joyce Walker
CKC Laboratories, Inc.
5473A Clouds Rest
Mariposa, CA 95338

Date of test: May 2- June 8, 2001

W.O. No.: 76731

Report No.: FC01-045

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CKC Laboratories, Inc. has received Certificates of Accreditation from the following agencies:

A2LA (USA); DATech (Germany); BSMI (Taiwan); Nemko (Norway); and GOST (Russia).

CKC Laboratories, Inc. has received test site Registration Acceptance from the following agencies:

FCC (USA); VCCI (Japan); and Industry Canada.

CKC Laboratories, Inc. has received Letters of Acceptance through an MRA for the following agencies:

ACA/NATA (Australia); SABS (South Africa); SWEDAC (Sweden); Radio Communications Agency (RA); HOKLAS (Hong Kong); Bakom (Swiss); BIPT (Belgium); Denmark Telestyrelsen; RvA (Netherlands); SEE (Luxembourg) SITTEL (Bolivia); and UKAS (UK).

ADMINISTRATIVE INFORMATION

DATE OF TEST: May 2- June 8, 2001

DATE OF RECEIPT: May 2, 2001

PURPOSE OF TEST: To demonstrate the compliance of the 2.4 GHz Video/Audio Transmitter, 2300TX750 with the requirements for FCC Part 90 Subpart I and FCC Part 15 Subpart B Sections 15.107 and 15.109 Class B devices.

TEST METHOD: ANSI C63.4 (1992)

MANUFACTURER: Advanced Electronics Group, Inc.
10524 South La Cienega Blvd.
Inglewood, CA 90304

REPRESENTATIVE: Richard Hirsch

TEST LOCATION: CKC Laboratories, Inc.
5473A Clouds Rest
Mariposa, CA 95338



SUMMARY OF RESULTS

As received, the Advanced Electronics Group, Inc. 2.4 GHz Video/Audio Transmitter, 2300TX750 was found to be fully compliant with the following standards and specifications:

United States

- FCC Part 15 Subpart B Section 15.107 and 15.109 Class B
- FCC Part 90 Subpart I
- ANSI C63.4 (1992) method

The results in this report apply only to the items tested, as identified herein.

MODIFICATIONS REQUIRED FOR COMPLIANCE

No modifications to the EUT were required to comply.

APPROVALS

QUALITY ASSURANCE:

Dennis Ward, Quality Manager

Chuck Kendall, EMC/Lab Manager

TEST PERSONNEL:

Randy Clark, EMC Engineer

Dustin Oaks, EMC Engineer/
Evaluation Engineer

Conan T. Boyle, EMC Engineer



EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT is a single channel (2.473 GHz) Video/Audio Transmitter. The EUT tested by CKC Laboratories was a production unit.

EQUIPMENT UNDER TEST

2.4 GHz Video/Audio Transmitter

Manuf: Advanced Electronics Group, Inc.
Model: 2300TX750
Serial: 001
FCC ID: ORG2300TX750 (Pending)

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Camera

Manuf: Advanced Electronics Group, Inc.
Model: WDSR-2005SC
Serial: N/A
FCC ID: DoC

Power Supply

Manuf: Advanced Electronics Group, Inc.
Model: 112104
Serial: 0049
FCC ID: DoC

TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.



2.1033(c)(3) USER'S MANUAL

The necessary information is contained in a separate document.

2.1033(c)(4) TYPE OF EMISSIONS

The emission designator is 65MO F8W.

2.1033(c)(5) FREQUENCY RANGE

The device operates at 2473 MHz $\pm$ 10 MHz.

2.1033(c)(6) OPERATING POWER

The EUT operates at a fixed power of 1.0 watts.

2.1033(c)(7) MAXIMUM POWER RATING AS DEFINED PER FCC PART 90.205(l)

Actual power rating as defined per FCC Part 90.205(l) is 5.0 watts.

2.1033(c)(8) DC VOLTAGES

The transmitter accepts 12 VDC input.

2.1033(c)(9) TUNE-UP PROCEDURE

This device does not have any tune up procedure, as it is configured at the factory to operate within the stated frequency and power limits.

2.1033(c)(10) SCHEMATICS AND CIRCUITRY DESCRIPTION

The necessary information is contained in a separate document.



2.1033(c)(11) LABEL AND PLACEMENT

The necessary information is contained in a separate document.

2.1033(c)(12) SUBMITTAL PHOTOS

The necessary information is contained in a separate document.

2.1033(c)(13) MODULATION INFORMATION

The necessary information is contained in a separate document.

2.1033(c)(14)/2.1046/90.205(l) - RF POWER OUTPUT

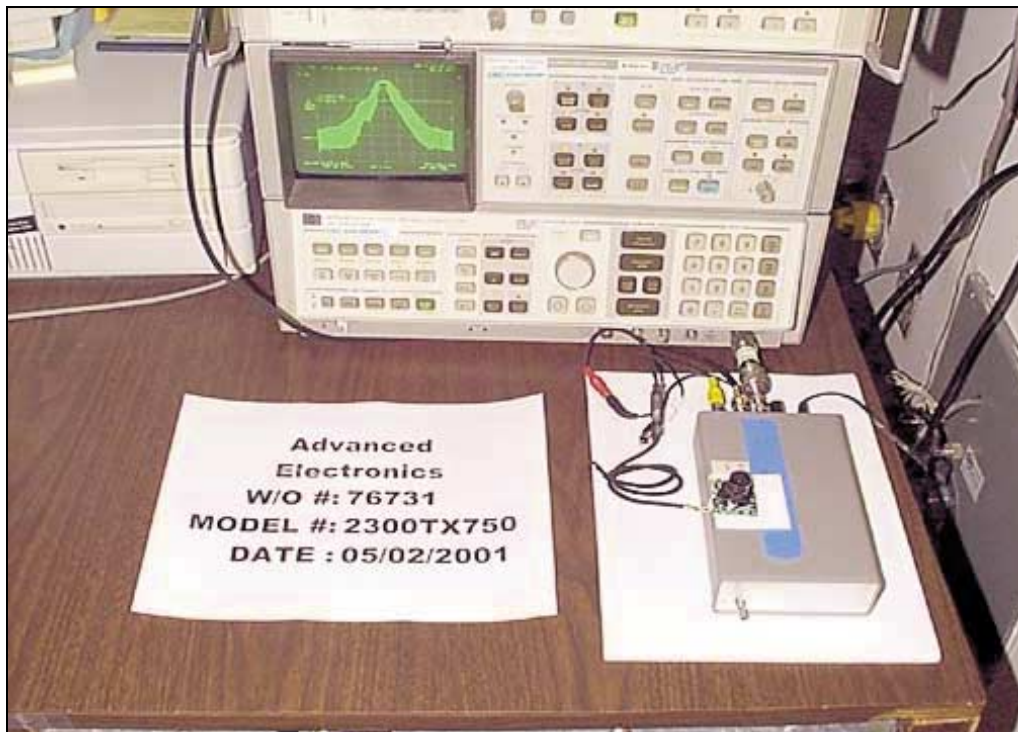
Test Conditions:

The HP-8566B Spectrum Analyzer was connected directly to the transmitter antenna terminal with an Andrews semi-rigid coaxial cable. Resolution bandwidth and video bandwidth were set to 3 MHz and the trace was set to max hold.

Test Equipment Used:

Web#	Lab	Equipment	Manufacturer	Model #	Serial #	Asset #	Cal Date	Cal Due
439	Barn	QP Adapter	HP	85650A	2811A01267	00478	11/03/00	11/3/01
472	Barn	S/A Display	HP	8566B	2403A08241	00489	11/3/00	11/3/01
502	Barn	Spectrum Analyzer	HP	8566B	2209A01404	00490	11/3/00	11/3/01
1105	Barn	Analyzer/Audio	HP	8903B	3011A09432	02338	10/09/00	10/9/01
1334	Barn	Attenuator	Pasternack	PE7014-40			03/29/01	3/29/02

SET-UP PHOTO



Direct Connect

Test Data:

WO 76731
 Customer Advanced Electronics Group
 Model 2300TX750

FCC Part 2.1046 / 90.205

RF Power Output
 Transmitter Operating on 2473MHz
 Transmitter Operating Unmodulated
 Measured from Antenna Terminal

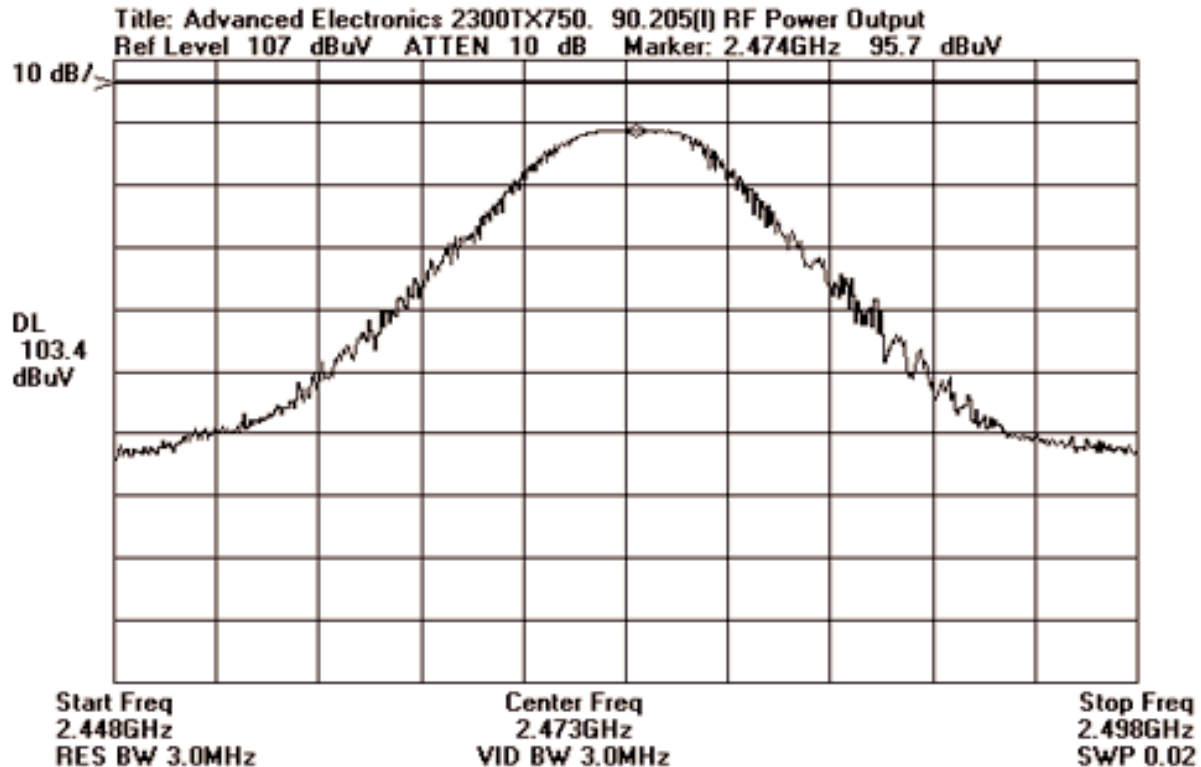
Corrected Reading (dBμV)	Amplitude in dBm	Amplitude in Watts	Spec Limit (Watts)	PASS or FAIL
135.8	28.8	0.76	5.0	PASS

Calculations

Power Output Calculations:

$$\text{dBm} = \text{dB}\mu\text{V} - 107$$

$$\text{Watts} = 10^{(\text{dBm}/10)/1000}$$





2.1033(c)(14)/2.1047(a) - MODULATION CHARACTERISTICS - AUDIO FREQUENCY RESPONSE

Not applicable to this unit.

2.1033(c)(14)/2.1047(b) MODULATION CHARACTERISTICS – Modulation Limiting Response

Not applicable to this unit.

2.1033(c)(14)/2.1049(i)/90.210 - OCCUPIED BANDWIDTH

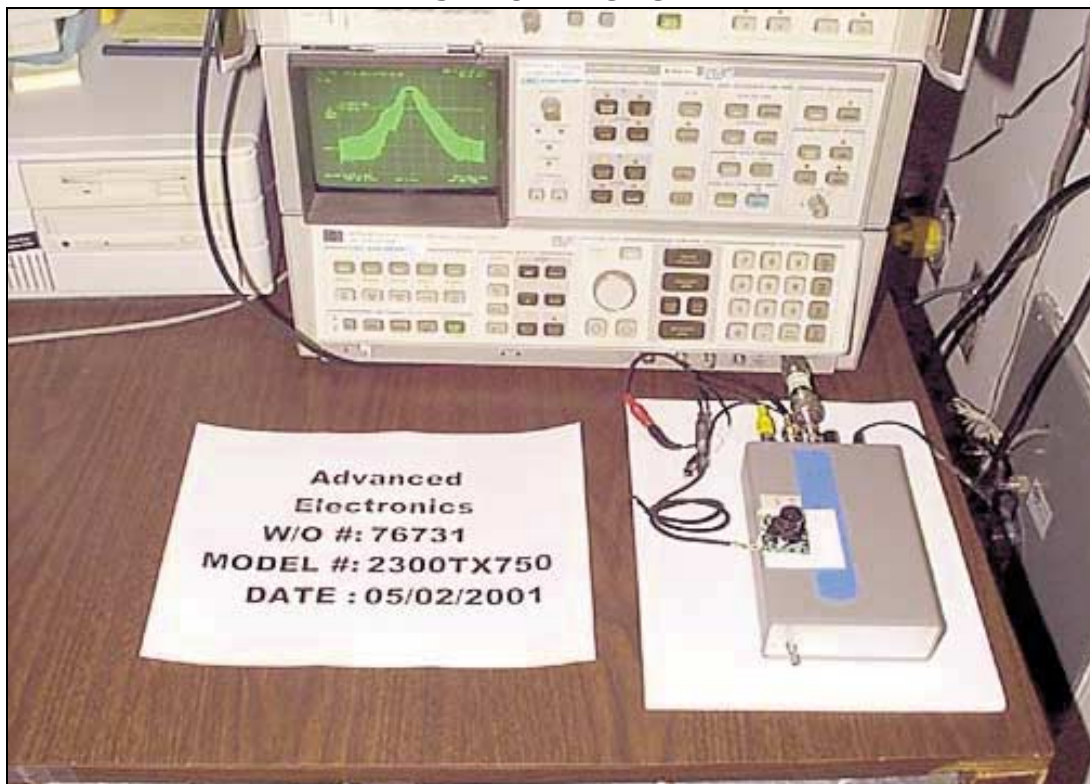
Test Conditions:

The HP-8566B Spectrum Analyzer was connected directly to the transmitter antenna terminal with an Andrews semi-rigid coaxial cable. Resolution bandwidth was set to 30 kHz, video bandwidth was set to 100 kHz and the trace was set to max hold.

Test Equipment Used:

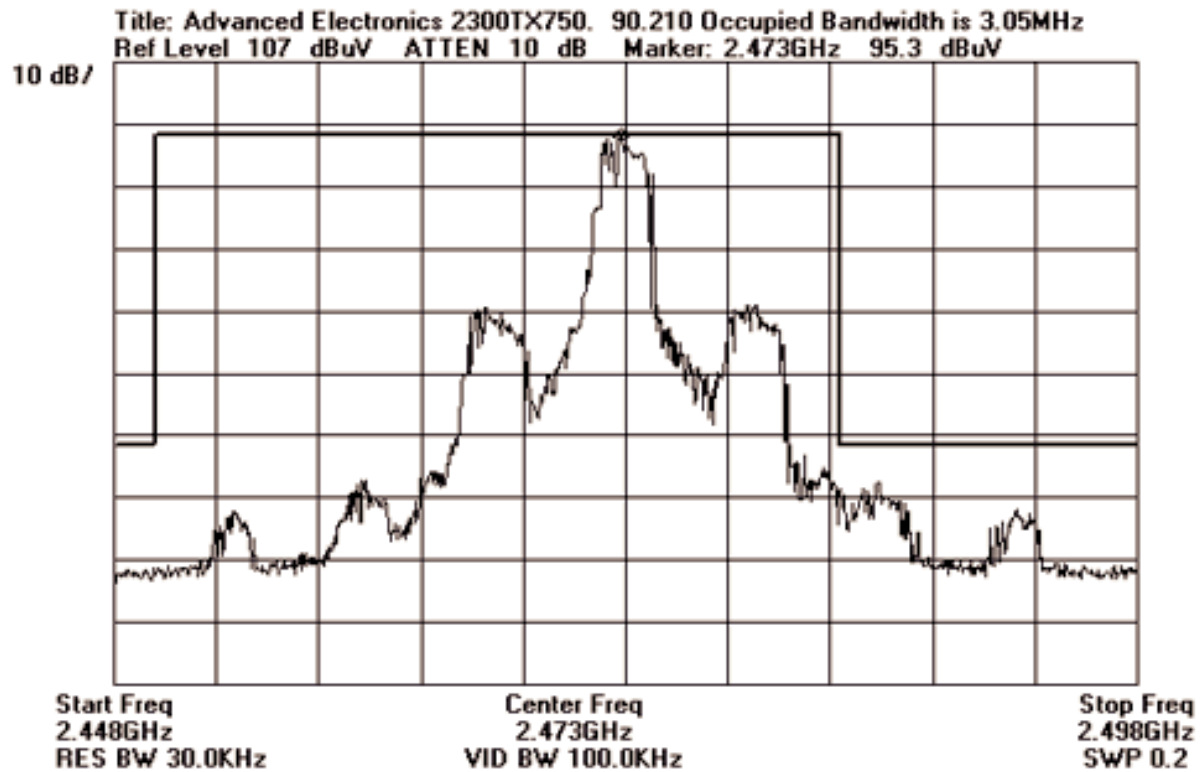
Web#	Lab	Equipment	Manufacturer	Model #	Serial #	Asset #	Cal Date	Cal Due
439	Barn	QP Adapter	HP	85650A	2811A01267	00478	11/03/00	11/3/01
472	Barn	S/A Display	HP	8566B	2403A08241	00489	11/3/00	11/3/01
502	Barn	Spectrum Analyzer	HP	8566B	2209A01404	00490	11/3/00	11/3/01
1105	Barn	Analyzer/Audio	HP	8903B	3011A09432	02338	10/09/00	10/9/01
1334	Barn	Attenuator	Pasternack	PE7014-40			03/29/01	3/29/02

SET-UP PHOTO

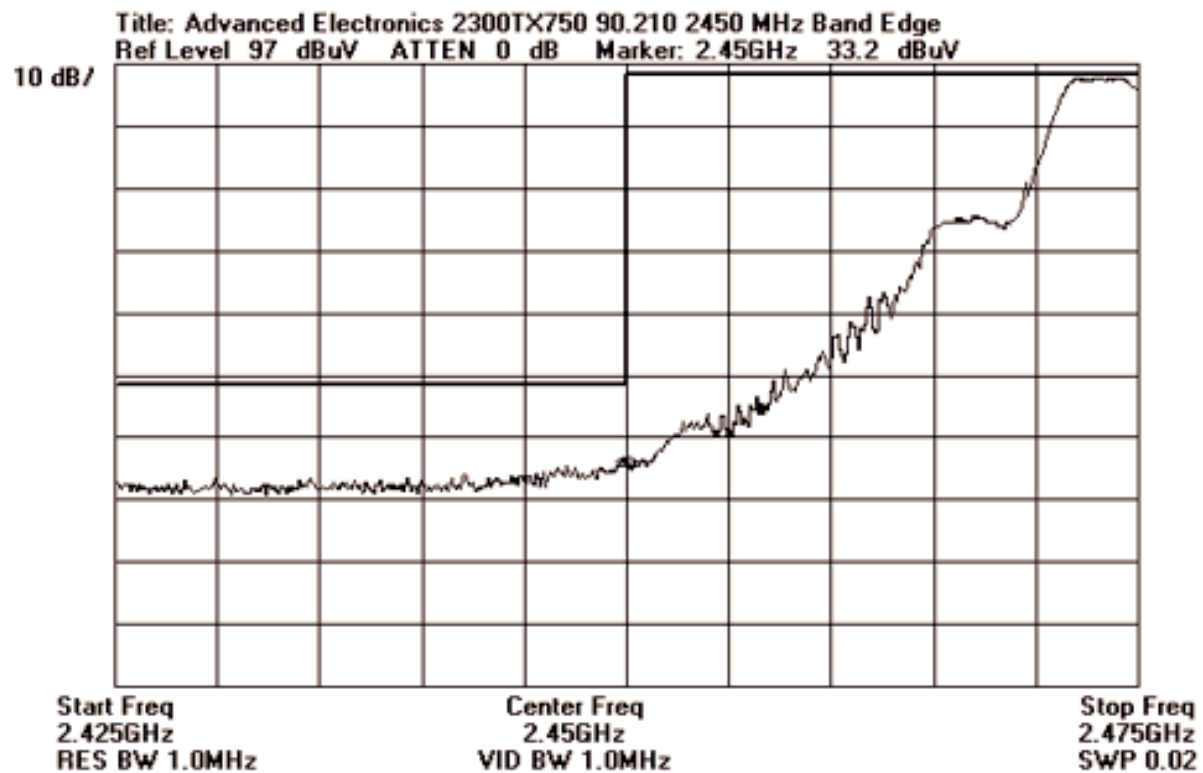


Direct Connect

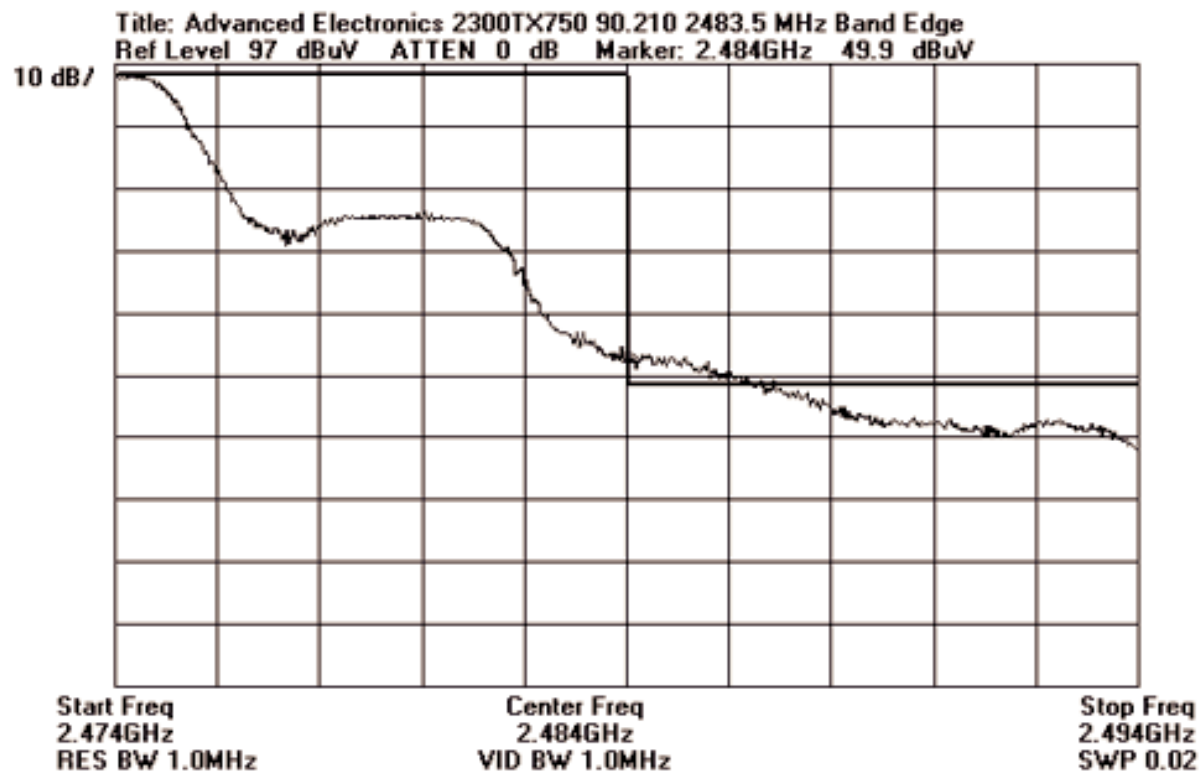
Occupied Bandwidth Plot



Band Edge Plot – Left Side of Mask



Band Edge Plot – Right Side of Mask



Notes: All readings over or near the limit line were averaged to ensure compliance. See Spurious Emissions data sheets in section 2.1033(c)(14)/2.1051/90.210.

2.1033(c)(14)/2.1051/90.210 - SPURIOUS EMISSIONS AT ANTENNA TERMINAL

Test Equipment Used:

Web#	Lab	Equipment	Manufacturer	Model #	Serial #	Asset #	Cal Date	Cal Due
439	Barn	QP Adapter	HP	85650A	2811A01267	00478	11/03/00	11/3/01
472	Barn	S/A Display	HP	8566B	2403A08241	00489	11/3/00	11/3/01
502	Barn	Spectrum Analyzer	HP	8566B	2209A01404	00490	11/3/00	11/3/01
1105	Barn	Analyzer/Audio	HP	8903B	3011A09432	02338	10/09/00	10/9/01
854	HF	2.4GHz Low Pass Filter	K&L Microwave, INC.	10L121-2200/T2400-0/0	1	01439	10/03/00	10/3/01
855	HF	2.4GHz High Pass Filter	K&L Microwave, INC	91H31-3000	00001	01440	10/03/00	10/3/01
1334	Barn	Attenuator	Pasternack	PE7014-40			03/29/01	3/29/02

ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE

TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1 GHz	26 GHz	1 MHz

SET-UP PHOTO



Direct Connect



Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Advanced Electronics**
 Specification: **90.210**
 Work Order #: **76731**
 Test Type: **Maximized Emissions**
 Equipment: **Transmitter**
 Manufacturer: **Advanced Electronics**
 Model: **2300TX750**
 S/N: **001**

Date: 06/04/2001
 Time: 09:28:33
 Sequence#: 4
 Tested By: Randal Clark

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Transmitter*	Advanced Electronics	2300TX750	001

Support Devices:

Function	Manufacturer	Model #	S/N
Camera	Advanced Electronics	WDSR-2005SC	N/A
Power Supply	Advanced Electronics	112104	0049

Test Conditions / Notes:

EUT is a transmitter operating on 2473 MHz. Transmitter is being modulated on the video signal by a camera adjacent to the transmitter and on the audio by a 1kHz tone. EUT is directly connected to spectrum analyzer. Frequency Range Tested 9kHz - 24 GHz.

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBμV	Pad dB	Filte dB	Filte dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	12366.200M	86.4	+0.0	+1.9	+0.0	+0.0	88.3	93.8	-5.5	None
2	2485.600M	36.3	+40.4	+0.0	+0.0	+0.0	76.7	85.8	-9.2	None
^	2485.600M	47.8	+40.4	+0.0	+0.0	+0.0	88.2	85.8	+2.4	None
4	2484.160M	30.7	+40.4	+0.0	+0.0	+0.0	71.1	85.8	-14.7	None
^	2484.160M	50.7	+40.4	+0.0	+0.0	+0.0	91.1	85.8	+5.3	None
6	17308.900M	60.4	+0.0	+17.8	+0.0	+0.0	78.2	93.8	-15.6	None
7	2487.280M	23.8	+40.4	+0.0	+0.0	+0.0	64.2	85.8	-21.6	None
^	2487.280M	43.8	+40.4	+0.0	+0.0	+0.0	84.2	85.8	-1.6	None
9	14835.600M	52.6	+0.0	+5.7	+0.0	+0.0	58.3	93.8	-35.5	None
10	7419.340M	49.1	+0.0	+4.8	+0.0	+0.0	53.9	93.8	-39.9	None
11	9891.529M	46.6	+0.0	+3.5	+0.0	+0.0	50.1	93.8	-43.7	None
12	4945.270M	44.0	+0.0	+0.8	+0.0	+0.0	44.8	93.8	-49.0	None

2.1033(c)(14)/2.1053/90.210 - FIELD STRENGTH OF SPURIOUS RADIATION

Test Equipment Used:

Web#	Lab	Equipment	Manufacturer	Model #	Serial #	Asset #	Cal Date	Cal Due
92	Barn	Bicon Antenna	A&H	SAS-200/542	156	00225	12/8/00	12/8/01
341	Barn	Log Antenna	A&H	SAS-200/510	154	01330	05/07/01	5/7/02
354	Barn	Magnetic Loop	EMCO	6502	1074	00226	5/31/2001	5/31/02
401	Barn	Preamp	HP	8447D	1937A02604	00099	03/29/01	3/29/02
439	Barn	QP Adapter	HP	85650A	2811A01267	00478	11/03/00	11/3/01
472	Barn	S/A Display	HP	8566B	2403A08241	00489	11/3/00	11/3/01
502	Barn	Spectrum Analyzer	HP	8566B	2209A01404	00490	11/3/00	11/3/01
765	Barn	Preamp	HP	8449B	3008A00301	02010	10/13/00	10/13/01
1105	Barn	Analyzer/Audio	HP	8903B	3011A09432	02338	10/09/00	10/9/01
690	HF	Cable #4 (50')	Andrew	FSJ1-50A	N/A	N/A	4/16/01	4/16/02
855	HF	2.4GHz High Pass Filter	K&L Microwave, INC	91H31-3000	00001	01440	10/03/00	10/3/01
1107	HF	Cable #7 (25')	Andrew	FSJ1-50A	N/A	N/A	4/16/01	4/16/02
737	HF	1-18GHz Horn Antenna	EMCO	3115	9307-4085	00656	2/28/01	2/28/02
691	HF	Cable #2 (2')	Andrew	FSJ1-50A	N/A	N/A	4/16/01	4/16/02

ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE

TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1 GHz	26 GHz	1 MHz

SET-UP PHOTOS



Radiated Emissions - Front View – Whip Antenna



Radiated Emissions - Back View - Whip Antenna

SET-UP PHOTOS



Radiated Emissions - Front View – Paddle Antenna



Radiated Emissions - Back View – Paddle Antenna



WO 76731
 Customer Advanced Electronics Group
 Model 2300TX750
 Antenna Whip Antenna

FCC Part 2.1053 / 90.210

Field strength of spurious radiation
 Transmitter Operating on 2473MHz
 These data represent the six highest readings.

Polarity	Frequency (MHz)	Corrected Reading (dBμV/m)	Test Distance (meters)	F/S in V/m	ERP (Watts)	Spec Limit (Watts)	PASS or FAIL
V	7417.0	64.3	3.0	0.0016	0.00000049	0.000048	PASS
V	4943.1	63.9	3.0	0.0016	0.00000045	0.000048	PASS
VA	2484.1	55.4	3.0	0.0006	0.00000006	0.000008	PASS
H	4944.9	59.0	3.0	0.0009	0.00000015	0.000048	PASS
H	7415.6	58.9	3.0	0.0009	0.00000014	0.000048	PASS
H	9888.4	57.1	3.0	0.0007	0.00000009	0.000048	PASS

Calculations

The data taken is relative to the radiated power of each spurious emission with reference to the peak power output of the transmitter.

Spurious Emissions within 250% removed from the authorized band must be attenuated by the lesser of
 $29 \cdot \text{LOG}(f_d^2/11)$ or 50dB (in this case, 50dB)

Spurs Limit in Watts:
 $10^{((135.8-107-50)/10)} = 0.007588 \text{ mW} = 7.6\mu\text{W}$

Spurious Emissions greater than 250% removed from the authorized band must be attenuated below the fundamental by

$43 + 10 \cdot \text{LOG}(P)$ where P is unmodulated power in Watts of the carrier.

Peak unmodulated power output is 135.8dBμV

$P \text{ (W)} = 10^{((135.8-107)/10)}/1000 = 0.7586 \text{ Watts}$

$43 + 10 \cdot \text{LOG}(0.758) = 42\text{dBc}$

Spurs Limit in Watts:
 $10^{((135.8-107-35)/10)} = 0.048 \text{ mW} = 48\mu\text{W}$

ERP Calculations

$EPR = (E_d)^2/30G$

$E = \text{V/m}$

$d = \text{Test Distance in meters}$

$G = \text{Gain of Antenna (numerical gain of a half wave dipole antenna 1.64 per 2.1053(a))}$



WO 76731
 Customer Advanced Electronics Group
 Model 2300TX750
 Antenna Paddle Antenna

FCC Part 2.1053 / 90.210

Field strength of spurious radiation
 Transmitter Operating on 2473MHz
 These data represent the six highest readings.

Polarity	Frequency (MHz)	Corrected Reading (dBμV/m)	Test Distance (meters)	F/S in V/m	ERP (Watts)	Spec Limit (Watts)	PASS or FAIL
VA	2486.1	62.7	3.0	0.0014	0.00000034	0.000008	PASS
V	7416.4	67.4	3.0	0.0023	0.00000101	0.000048	PASS
V	4945.1	65.8	3.0	0.0019	0.00000070	0.000048	PASS
VA	2487.3	56.0	3.0	0.0006	0.00000007	0.000008	PASS
H	7417.7	62.5	3.0	0.0013	0.00000033	0.000048	PASS
H	4945.6	61.7	3.0	0.0012	0.00000027	0.000048	PASS

Calculations

The data taken is relative to the radiated power of each spurious emission with reference to the peak power output of the transmitter.

Spurious Emissions within 250% removed from the authorized band must be attenuated by the lesser of
 $29 \cdot \text{LOG}(f_d^2/11)$ or 50dB (in this case, 50dB)

Spurs Limit in Watts:
 $10^{((135.8-107-50)/10)} = 0.007588 \text{ mW} = 7.6\mu\text{W}$

Spurious Emissions greater than 250% removed from the authorized band must be attenuated below the fundamental by

$43 + 10 \cdot \text{LOG}(P)$ where P is unmodulated power in Watts of the carrier.

Peak unmodulated power output is 135.8dBμV

$P \text{ (W)} = 10^{((135.8-107)/10)/1000} = 0.7586 \text{ Watts}$

$43 + 10 \cdot \text{LOG}(0.758) = 42\text{dBc}$

Spurs Limit in Watts:
 $10^{((135.8-107-35)/10)} = 0.048 \text{ mW} = 48\mu\text{W}$

ERP Calculations

$EPR = (E_d)^2/30G$

$E = \text{V/m}$

$d = \text{Test Distance in meters}$

$G = \text{Gain of Antenna (numerical gain of a half wave dipole antenna 1.64 per 2.1053(a))}$

2.1033(c)(14)/2.1055/90.213 - FREQUENCY STABILITY

Test Conditions:

EUT was placed inside a temperature chamber and the SA was connected directly to the antenna terminal.

Test Equipment Used:

Web#	Lab	Equipment	Manufacturer	Model #	Serial #	Asset #	Cal Date	Cal Due
472	Barn	S/A Display	HP	8566B	2403A08241	00489	11/3/00	11/3/01
502	Barn	Spectrum Analyzer	HP	8566B	2209A01404	00490	11/3/00	11/3/01
858	Barn	Temp Chamber	Thermotron	S-1.2 MiniMax	11899	01879	3/29/2001	3/29/02

SET-UP PHOTO



Test Data:

Ambient Frequency 2.472650 GHz

Temp C°	Voltage	750 Freq (GHz)	Deviation	% Error
-30	120 AC	2.472730	0.000130	0.005258
-20	120 AC	2.472700	0.000100	0.004044
-10	120 AC	2.472670	0.000070	0.002831
0	120 AC	2.472690	0.000090	0.003640
10	120 AC	2.472700	0.000100	0.004044
20	102 AC	2.472660	0.000060	0.002427
20	120 AC	2.472660	0.000060	0.002427
20	138 AC	2.472660	0.000060	0.002427
30	120 AC	2.472665	0.000065	0.002629
40	120 AC	2.472615	0.000015	0.000607
50	120 AC	2.472610	0.000010	0.000404



15.107 – AC CONDUCTED EMISSIONS

Test Equipment Used:

Web#	Lab	Equipment	Manufacturer	Model #	Serial #	Asset #	Cal Date	Cal Due
327	Barn	LISN's set	Solar	8028-50-TS-24-BNC	814493, 474	02056	5/22/01	5/22/02
439	Barn	QP Adapter	HP	85650A	2811A01267	00478	11/03/00	11/3/01
472	Barn	S/A Display	HP	8566B	2403A08241	00489	11/3/00	11/3/01
502	Barn	Spectrum Analyzer	HP	8566B	2209A01404	00490	11/3/00	11/3/01
1105	Barn	Analyzer/Audio	HP	8903B	3011A09432	02338	10/09/00	10/9/01

ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	450 kHz	30 MHz	9 kHz

SET-UP PHOTO



Mains Conducted – Front View



Mains Conducted – Side View



Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Advanced Electronics**
 Specification: **FCC 15.107 Class B**
 Work Order #: **76731**
 Test Type: **Conducted Emissions**
 Equipment: **Transmitter**
 Manufacturer: **Advanced Electronics**
 Model: **2300TX750**
 S/N: **001**

Date: 05/03/2001
 Time: 12:09:24
 Sequence#: 6
 Tested By: Randal Clark

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Transmitter*	Advanced Electronics	2300TX750	001

Support Devices:

Function	Manufacturer	Model #	S/N
Camera	Advanced Electronics	WDSR-2005SC	N/A
Power Supply	Advanced Electronics	112104	0049

Test Conditions / Notes:

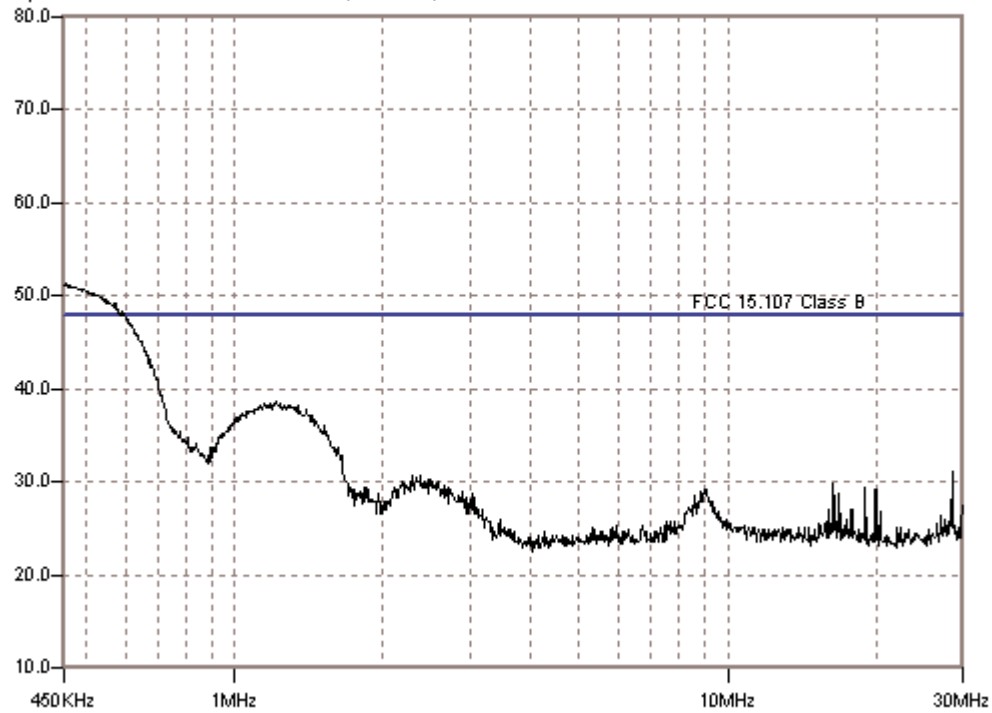
EUT is a transmitter operating on 2473 MHz. Transmitter is being modulated on the video signal by a camera adjacent to the transmitter and on the audio by a 1kHz tone. EUT is transmitting into a 50 Ohm Load.

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBμV	Cable LISN				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
			dB	dB	dB	dB					
1	1.214M	38.1	+0.1	+0.4			+0.0	38.6	48.0	-9.4	Black
2	1.179M	37.9	+0.1	+0.4			+0.0	38.4	48.0	-9.6	Black
3	1.150M	37.9	+0.1	+0.4			+0.0	38.4	48.0	-9.6	Black
4	1.343M	37.8	+0.1	+0.4			+0.0	38.3	48.0	-9.7	Black
5	1.125M	37.7	+0.1	+0.4			+0.0	38.2	48.0	-9.8	Black
6	1.092M	37.4	+0.1	+0.4			+0.0	37.9	48.0	-10.1	Black
7	1.401M	37.3	+0.1	+0.4			+0.0	37.8	48.0	-10.2	Black
8	1.353M	37.2	+0.1	+0.4			+0.0	37.7	48.0	-10.3	Black
9	1.434M	36.8	+0.1	+0.3			+0.0	37.2	48.0	-10.8	Black
10	1.017M	36.5	+0.1	+0.4			+0.0	37.0	48.0	-11.0	Black
11	1.003M	36.4	+0.1	+0.4			+0.0	36.9	48.0	-11.1	Black
12	1.458M	36.2	+0.1	+0.3			+0.0	36.6	48.0	-11.4	Black
13	1.525M	35.7	+0.1	+0.3			+0.0	36.1	48.0	-11.9	Black

14	1.515M	35.3	+0.1	+0.3	+0.0	35.7	48.0	-12.3	Black
15	774.290k	34.9	+0.1	+0.4	+0.0	35.4	48.0	-12.6	Black
16	948.137k	34.8	+0.1	+0.4	+0.0	35.3	48.0	-12.7	Black
17	804.379k	34.3	+0.1	+0.4	+0.0	34.8	48.0	-13.2	Black
18	835.304k	33.7	+0.1	+0.4	+0.0	34.2	48.0	-13.8	Black
19	453.343k Ave	13.1	+0.1	+0.5	+0.0	13.7	48.0	-34.3	Black
^	453.343k	50.7	+0.1	+0.5	+0.0	51.3	48.0	+3.3	Black
21	550.296k Ave	12.4	+0.1	+0.4	+0.0	12.9	48.0	-35.1	Black
^	550.296k	49.2	+0.1	+0.4	+0.0	49.7	48.0	+1.7	Black

CKC Laboratories, Inc. Date: 05/03/2001 Time: 12:03:43 PM W/O#: 76731
 FCC 15.107 Class B Test Lead: Black Sequence#: 6
 dBµV Advanced Electronics 2300TX750 powered by 120VAC60Hz.





Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Advanced Electronics**
 Specification: **FCC 15.107 Class B**
 Work Order #: **76731**
 Test Type: **Conducted Emissions**
 Equipment: **Transmitter**
 Manufacturer: **Advanced Electronics**
 Model: **2300TX750**
 S/N: **001**

Date: 06/29/2001
 Time: 9:20:13 AM
 Sequence#: 7
 Tested By: Randal Clark

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Transmitter*	Advanced Electronics	2300TX750	001

Support Devices:

Function	Manufacturer	Model #	S/N
Camera	Advanced Electronics	WDSR-2005SC	N/A
Power Supply	Advanced Electronics	112104	0049

Test Conditions / Notes:

EUT is a transmitter operating on 2473 MHz. Transmitter is being modulated on the video signal by a camera adjacent to the transmitter and on the audio by a 1kHz tone. EUT is transmitting into a 50 Ohm Load.

Measurement Data:

Reading listed by margin.

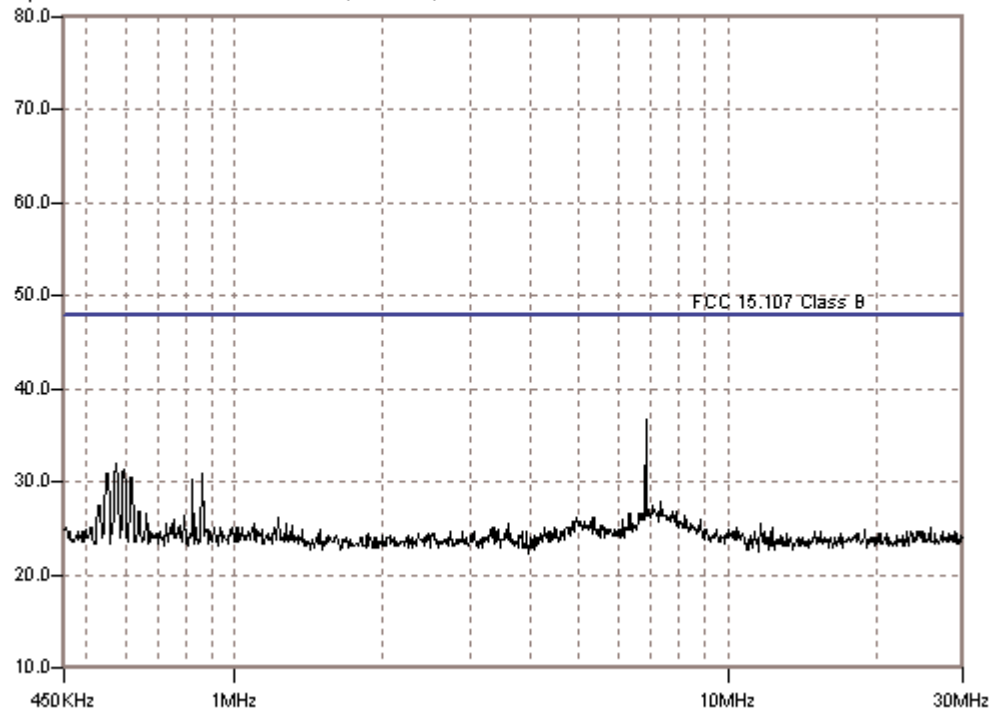
Test Lead: White

#	Freq MHz	Rdng dBμV	Cable		LISN		Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
			dB	dB	dB	dB					
1	6.854M	33.4	+0.2		+3.1		+0.0	36.7	48.0	-11.3	White
2	577.042k	31.3	+0.1		+0.6		+0.0	32.0	48.0	-16.0	White
3	598.772k	30.7	+0.1		+0.6		+0.0	31.4	48.0	-16.6	White
4	864.557k	30.3	+0.1		+0.6		+0.0	31.0	48.0	-17.0	White
5	550.296k	30.3	+0.1		+0.6		+0.0	31.0	48.0	-17.0	White
6	618.832k	29.8	+0.1		+0.6		+0.0	30.5	48.0	-17.5	White
7	821.931k	29.5	+0.1		+0.6		+0.0	30.2	48.0	-17.8	White
8	856.199k	28.7	+0.1		+0.6		+0.0	29.4	48.0	-18.6	White
9	7.345M	24.6	+0.2		+3.0		+0.0	27.8	48.0	-20.2	White
10	7.072M	24.0	+0.2		+3.3		+0.0	27.5	48.0	-20.5	White
11	530.237k	26.7	+0.1		+0.6		+0.0	27.4	48.0	-20.6	White
12	6.936M	23.5	+0.2		+3.3		+0.0	27.0	48.0	-21.0	White
13	7.768M	24.1	+0.2		+2.6		+0.0	26.9	48.0	-21.1	White

14	638.891k	26.2	+0.1	+0.6	+0.0	26.9	48.0	-21.1	White
15	7.864M	24.1	+0.2	+2.5	+0.0	26.8	48.0	-21.2	White
16	7.263M	23.5	+0.2	+3.1	+0.0	26.8	48.0	-21.2	White
17	6.745M	23.5	+0.2	+2.8	+0.0	26.5	48.0	-21.5	White
18	6.690M	23.6	+0.2	+2.7	+0.0	26.5	48.0	-21.5	White
19	6.608M	23.8	+0.2	+2.5	+0.0	26.5	48.0	-21.5	White
20	6.329M	24.5	+0.2	+1.8	+0.0	26.5	48.0	-21.5	White
21	662.293k	25.8	+0.1	+0.6	+0.0	26.5	48.0	-21.5	White
22	8.219M	24.1	+0.2	+2.1	+0.0	26.4	48.0	-21.6	White
23	794.350k	25.7	+0.1	+0.6	+0.0	26.4	48.0	-21.6	White
24	7.673M	23.4	+0.2	+2.7	+0.0	26.3	48.0	-21.7	White
25	4.930M	24.0	+0.2	+2.0	+0.0	26.2	48.0	-21.8	White
26	5.346M	24.2	+0.2	+1.7	+0.0	26.1	48.0	-21.9	White
27	1.225M	25.5	+0.1	+0.5	+0.0	26.1	48.0	-21.9	White
28	8.792M	24.6	+0.2	+1.2	+0.0	26.0	48.0	-22.0	White
29	6.158M	24.5	+0.2	+1.3	+0.0	26.0	48.0	-22.0	White
30	750.888k	25.2	+0.1	+0.6	+0.0	25.9	48.0	-22.1	White
31	8.041M	23.3	+0.2	+2.3	+0.0	25.8	48.0	-22.2	White
32	7.973M	23.2	+0.2	+2.4	+0.0	25.8	48.0	-22.2	White
33	5.121M	23.7	+0.2	+1.9	+0.0	25.8	48.0	-22.2	White
34	5.278M	23.8	+0.2	+1.7	+0.0	25.7	48.0	-22.3	White
35	4.875M	23.7	+0.1	+1.9	+0.0	25.7	48.0	-22.3	White
36	11.680M	24.9	+0.2	+0.5	+0.0	25.6	48.0	-22.4	White
37	6.417M	23.4	+0.2	+2.0	+0.0	25.6	48.0	-22.4	White
38	1.102M	24.9	+0.1	+0.6	+0.0	25.6	48.0	-22.4	White
39	8.396M	23.5	+0.2	+1.8	+0.0	25.5	48.0	-22.5	White

40	3.602M	24.9	+0.1	+0.5	+0.0	25.5	48.0	-22.5	White
41	1.269M	24.9	+0.1	+0.5	+0.0	25.5	48.0	-22.5	White
42	725.814k	24.8	+0.1	+0.6	+0.0	25.5	48.0	-22.5	White
43	6.103M	24.0	+0.2	+1.2	+0.0	25.4	48.0	-22.6	White
44	5.551M	23.8	+0.2	+1.4	+0.0	25.4	48.0	-22.6	White
45	8.464M	23.4	+0.2	+1.7	+0.0	25.3	48.0	-22.7	White
46	1.315M	24.7	+0.1	+0.5	+0.0	25.3	48.0	-22.7	White
47	774.290k	24.6	+0.1	+0.6	+0.0	25.3	48.0	-22.7	White
48	908.018k	24.5	+0.1	+0.6	+0.0	25.2	48.0	-22.8	White
49	834.468k	24.5	+0.1	+0.6	+0.0	25.2	48.0	-22.8	White
50	739.187k	24.5	+0.1	+0.6	+0.0	25.2	48.0	-22.8	White

CKC Laboratories, Inc. Date: 06/29/2001 Time: 9:20:13 AM WO#: 76731
 FCC 15.107 Class B Test Lead: White Sequence#: 7
 dBµV Advanced Electronics 2300TX750 powered by 120VAC60Hz.





15.109 – RADIATED EMISSIONS

Test Equipment Used:

Web#	Lab	Equipment	Manufacturer	Model #	Serial #	Asset #	Cal Date	Cal Due
92	Barn	Bicon Antenna	A&H	SAS-200/542	156	00225	12/8/00	12/8/01
341	Barn	Log Antenna	A&H	SAS-200/510	154	01330	05/07/01	5/7/02
401	Barn	Preamp	HP	8447D	1937A02604	00099	03/29/01	3/29/02
439	Barn	QP Adapter	HP	85650A	2811A01267	00478	11/03/00	11/3/01
472	Barn	S/A Display	HP	8566B	2403A08241	00489	11/3/00	11/3/01
502	Barn	Spectrum Analyzer	HP	8566B	2209A01404	00490	11/3/00	11/3/01
1105	Barn	Analyzer/Audio	HP	8903B	3011A09432	02338	10/09/00	10/9/01
854	HF	2.4GHz Low Pass Filter	K&L Microwave, INC.	10L121-2200/T2400-0/0	1	01439	10/03/00	10/3/01

ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1 GHz	26 GHz	1 MHz

SET-UP PHOTO



Radiated Emissions - Front View – Whip Antenna



Radiated Emissions - Back View – Whip Antenna

SET-UP PHOTOS



Radiated Emissions - Front View – Paddle Antenna



Radiated Emissions - Back View – Paddle Antenna



Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Advanced Electronics**
 Specification: **15.109 CLASS B**
 Work Order #: **76731**
 Test Type: **Maximized Emissions**
 Equipment: **Transmitter**
 Manufacturer: **Advanced Electronics**
 Model: **2300TX750**
 S/N: **001**

Date: 06/07/2001
 Time: 14:03:02
 Sequence#: 5
 Tested By: Dustin Oaks

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Transmitter*	Advanced Electronics	2300TX750	001

Support Devices:

Function	Manufacturer	Model #	S/N
Camera	Advanced Electronics	WDSR-2005SC	N/A
Power Supply	Advanced Electronics	112104	0049

Test Conditions / Notes:

EUT is a transmitter operating on 2473 MHz with the whip antenna. Transmitter is being modulated on the video signal by a camera adjacent to the transmitter and on the audio by a 1kHz tone. Frequency Range Tested: 9kHz – 26GHz.

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	Amp dB	Bicon dB	Log 1 dB	Cable dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	228.935M	47.2	-26.5	+16.6	+0.0	+3.0	+0.0	40.3	46.0	-5.7	Horiz
QP											
^	228.925M	48.0	-26.5	+16.6	+0.0	+3.0	+0.0	41.1	46.0	-4.9	Horiz
3	114.517M	45.7	-27.0	+13.7	+0.0	+2.1	+0.0	34.5	43.5	-9.0	Horiz
4	267.081M	42.4	-26.5	+17.9	+0.0	+3.2	+0.0	37.0	46.0	-9.0	Horiz
5	114.475M	45.7	-27.0	+13.7	+0.0	+2.1	+0.0	34.5	43.5	-9.0	Vert
6	247.971M	43.9	-26.6	+15.8	+0.0	+3.1	+0.0	36.2	46.0	-9.8	Horiz
7	238.466M	43.4	-26.6	+16.2	+0.0	+3.1	+0.0	36.1	46.0	-9.9	Horiz
8	257.498M	38.7	-26.5	+16.7	+0.0	+3.2	+0.0	32.1	46.0	-13.9	Horiz
9	267.073M	37.5	-26.5	+17.9	+0.0	+3.2	+0.0	32.1	46.0	-13.9	Vert
10	124.011M	39.7	-27.0	+14.4	+0.0	+2.3	+0.0	29.4	43.5	-14.1	Vert
11	228.921M	38.8	-26.5	+16.6	+0.0	+3.0	+0.0	31.9	46.0	-14.1	Vert
12	200.320M	34.9	-26.7	+17.9	+0.0	+2.9	+0.0	29.0	43.5	-14.5	Horiz

13	457.789M	37.3	-27.5	+0.0	+17.0	+4.6	+0.0	31.4	46.0	-14.6	Horiz
14	333.808M	34.8	-26.6	+0.0	+19.2	+3.8	+0.0	31.2	46.0	-14.8	Horiz
15	133.580M	39.2	-26.9	+13.7	+0.0	+2.3	+0.0	28.3	43.5	-15.2	Horiz
16	219.373M	37.1	-26.5	+17.0	+0.0	+3.0	+0.0	30.6	46.0	-15.4	Horiz
17	247.995M	38.3	-26.6	+15.8	+0.0	+3.1	+0.0	30.6	46.0	-15.4	Vert
18	324.278M	33.3	-26.6	+0.0	+19.8	+3.8	+0.0	30.3	46.0	-15.7	Horiz
19	305.217M	32.0	-26.5	+0.0	+21.0	+3.7	+0.0	30.2	46.0	-15.8	Horiz
20	314.747M	32.5	-26.6	+0.0	+20.4	+3.8	+0.0	30.1	46.0	-15.9	Horiz
21	343.338M	34.2	-26.7	+0.0	+18.7	+3.9	+0.0	30.1	46.0	-15.9	Horiz
22	333.792M	33.5	-26.6	+0.0	+19.2	+3.8	+0.0	29.9	46.0	-16.1	Vert
23	66.842M	40.6	-27.1	+8.6	+0.0	+1.6	+0.0	23.7	40.0	-16.3	Vert
24	343.328M	33.6	-26.7	+0.0	+18.7	+3.9	+0.0	29.5	46.0	-16.5	Vert
25	238.460M	36.7	-26.6	+16.2	+0.0	+3.1	+0.0	29.4	46.0	-16.6	Vert
26	591.322M	32.8	-27.9	+0.0	+19.2	+5.2	+0.0	29.3	46.0	-16.7	Horiz
27	276.617M	33.4	-26.4	+19.0	+0.0	+3.3	+0.0	29.3	46.0	-16.7	Horiz
28	133.569M	37.6	-26.9	+13.7	+0.0	+2.3	+0.0	26.7	43.5	-16.8	Vert
29	505.433M	34.3	-27.8	+0.0	+17.9	+4.7	+0.0	29.1	46.0	-16.9	Horiz
30	467.295M	34.9	-27.6	+0.0	+17.2	+4.6	+0.0	29.1	46.0	-16.9	Horiz
31	619.852M	31.8	-27.9	+0.0	+19.7	+5.4	+0.0	29.0	46.0	-17.0	Vert
32	324.259M	31.7	-26.6	+0.0	+19.8	+3.8	+0.0	28.7	46.0	-17.3	Vert
33	381.485M	34.9	-27.0	+0.0	+16.6	+4.0	+0.0	28.5	46.0	-17.5	Horiz
34	124.036M	36.0	-27.0	+14.4	+0.0	+2.3	+0.0	25.7	43.5	-17.8	Horiz
35	352.885M	32.7	-26.7	+0.0	+18.1	+3.9	+0.0	28.0	46.0	-18.0	Horiz
36	257.544M	34.5	-26.5	+16.7	+0.0	+3.2	+0.0	27.9	46.0	-18.1	Vert
37	286.147M	30.4	-26.4	+20.1	+0.0	+3.5	+0.0	27.6	46.0	-18.4	Vert
38	66.843M	38.4	-27.1	+8.6	+0.0	+1.6	+0.0	21.5	40.0	-18.5	Horiz

39	57.264M	36.5	-27.1	+10.3	+0.0	+1.5	+0.0	21.2	40.0	-18.8	Vert
40	352.881M	31.8	-26.7	+0.0	+18.1	+3.9	+0.0	27.1	46.0	-18.9	Vert
41	276.603M	30.8	-26.4	+19.0	+0.0	+3.3	+0.0	26.7	46.0	-19.3	Vert
42	429.160M	32.9	-27.3	+0.0	+16.4	+4.4	+0.0	26.4	46.0	-19.6	Horiz
43	85.919M	37.1	-27.1	+8.3	+0.0	+1.8	+0.0	20.1	40.0	-19.9	Horiz
44	171.711M	32.3	-26.8	+15.5	+0.0	+2.6	+0.0	23.6	43.5	-19.9	Horiz
45	57.301M	35.2	-27.1	+10.3	+0.0	+1.5	+0.0	19.9	40.0	-20.1	Horiz
46	143.114M	35.0	-26.9	+13.0	+0.0	+2.3	+0.0	23.4	43.5	-20.1	Vert
47	371.973M	31.5	-26.9	+0.0	+17.1	+4.0	+0.0	25.7	46.0	-20.3	Vert
48	486.365M	31.1	-27.7	+0.0	+17.5	+4.7	+0.0	25.6	46.0	-20.4	Horiz
49	476.830M	31.2	-27.7	+0.0	+17.4	+4.7	+0.0	25.6	46.0	-20.4	Horiz
50	391.014M	32.3	-27.0	+0.0	+16.1	+4.1	+0.0	25.5	46.0	-20.5	Horiz
51	400.552M	32.4	-27.1	+0.0	+15.7	+4.1	+0.0	25.1	46.0	-20.9	Horiz
52	362.420M	30.1	-26.8	+0.0	+17.6	+4.0	+0.0	24.9	46.0	-21.1	Horiz
53	162.181M	33.1	-26.8	+13.6	+0.0	+2.5	+0.0	22.4	43.5	-21.1	Horiz
54	219.391M	31.3	-26.5	+17.0	+0.0	+3.0	+0.0	24.8	46.0	-21.2	Vert
55	419.660M	31.3	-27.3	+0.0	+16.2	+4.3	+0.0	24.5	46.0	-21.5	Vert
56	410.086M	31.6	-27.2	+0.0	+15.9	+4.2	+0.0	24.5	46.0	-21.5	Vert
57	381.485M	30.8	-27.0	+0.0	+16.6	+4.0	+0.0	24.4	46.0	-21.6	Vert
58	362.411M	29.6	-26.8	+0.0	+17.6	+4.0	+0.0	24.4	46.0	-21.6	Vert
59	505.439M	29.4	-27.8	+0.0	+17.9	+4.7	+0.0	24.2	46.0	-21.8	Vert
60	429.146M	30.3	-27.3	+0.0	+16.4	+4.4	+0.0	23.8	46.0	-22.2	Vert



Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Advanced Electronics**
 Specification: **15.109 CLASS B**
 Work Order #: **76731**
 Test Type: **Maximized Emissions**
 Equipment: **Transmitter**
 Manufacturer: **Advanced Electronics**
 Model: **2300TX750**
 S/N: **001**

Date: 06/07/2001
 Time: 14:42:36
 Sequence#: 6
 Tested By: Dustin Oaks

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Transmitter*	Advanced Electronics	2300TX750	001

Support Devices:

Function	Manufacturer	Model #	S/N
Camera	Advanced Electronics	WDSR-2005SC	N/A
Power Supply	Advanced Electronics	112104	0049

Test Conditions / Notes:

EUT is a transmitter operating on 2473 MHz with the paddle antenna. Transmitter is being modulated on the video signal by a camera adjacent to the transmitter and on the audio by a 1kHz tone. Frequency Range Tested 9kHz - 26 GHz.

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	Amp dB	Bicon dB	Log 1 dB	Cable dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	248.011M	47.4	-26.6	+15.8	+0.0	+3.1	+0.0	39.7	46.0	-6.3	Horiz
	QP										
^	248.017M	48.7	-26.6	+15.8	+0.0	+3.1	+0.0	41.0	46.0	-5.0	Horiz
3	267.078M	43.7	-26.5	+17.9	+0.0	+3.2	+0.0	38.3	46.0	-7.7	Horiz
	QP										
^	267.082M	45.1	-26.5	+17.9	+0.0	+3.2	+0.0	39.7	46.0	-6.3	Horiz
5	257.551M	44.1	-26.5	+16.7	+0.0	+3.2	+0.0	37.5	46.0	-8.5	Horiz
6	114.471M	43.8	-27.0	+13.7	+0.0	+2.1	+0.0	32.6	43.5	-10.9	Vert
7	267.054M	39.4	-26.5	+17.9	+0.0	+3.2	+0.0	34.0	46.0	-12.0	Vert
8	238.482M	40.8	-26.6	+16.2	+0.0	+3.1	+0.0	33.5	46.0	-12.5	Horiz
9	457.778M	38.1	-27.5	+0.0	+17.0	+4.6	+0.0	32.2	46.0	-13.8	Horiz
10	114.509M	40.8	-27.0	+13.7	+0.0	+2.1	+0.0	29.6	43.5	-13.9	Horiz
11	228.929M	38.8	-26.5	+16.6	+0.0	+3.0	+0.0	31.9	46.0	-14.1	Horiz

12	124.011M	39.2	-27.0	+14.4	+0.0	+2.3	+0.0	28.9	43.5	-14.6	Vert
13	333.809M	34.1	-26.6	+0.0	+19.2	+3.8	+0.0	30.5	46.0	-15.5	Horiz
14	324.260M	31.9	-26.6	+0.0	+19.8	+3.8	+0.0	28.9	46.0	-17.1	Horiz
15	228.924M	33.8	-26.5	+16.6	+0.0	+3.0	+0.0	26.9	46.0	-19.1	Vert