

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
CERTIFICATION TO FCC PART 15 REQUIREMENTS**

for

UNINTENTIONAL RADIATOR

AUTO ALARM SYSTEM RECEIVER

MODEL: CS60A

FCC ID NO: H5OR32

REPORT NO: 01E9365

DATE: April 16, 2001

Prepared for

**ADVANCE SECURITY INC.
3F, 48, TA AN RD., HIS-CHIH CITY,
TAIPEI HSIEN, TAIWAN, R. O. C.**

Prepared by

**COMPLIANCE ENGINEERING SERVICES, INC.
NO. 199, CHUNG SHENG ROAD,
HSIN TIEN CITY, TAIPEI,
TAIWAN, R. O. C.**

d.b.a.

COMPLIANCE CERTIFICATION SERVICES



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TEST DATA

- Fundamental Frequency Plot
- Radiated Emission Data

Proposed FCC Label.....	Exhibit 1
Operational Description.....	Exhibit 2
User Manual.....	Attachment A
Block Diagram/Schematics.....	Attachment B

1. VERIFICATION OF COMPLIANCE

COMPANY NAME : ADVANCE SECURITY INC.
3F, 48, TA AN RD., HIS-CHIH CITY,
TAIPEI HSIEN, TAIWAN, R. O. C.

CONTACT PERSON: : MICHAEL CHEN / PRESIDENT

TELEPHONE NO.: : (886-2) 2643-8192

EUT DESCRIPTION : AUTO ALARM SYSTEM RECEIVER

MODEL NAME/NUMBER : CS60A

DATE TESTED : April 10, 2001

REPORT NUMBER : 01E9365

TYPE OF EQUIPMENT	SECURITY EQUIPMENT (UNINTENTIONAL RADIATOR)
EQUIPMENT TYPE	434 MHz SUPERREGENERATE RECEIVER
MEASUREMENT PROCEDURE	ANSI 63.4 / 1992
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15.109

The above equipment was tested by Compliance Engineering Services, Inc. for compliance with the requirements set forth in CFR 47, PART 15. This said equipment in the configuration described in this report shows that maximum emission levels emanating from equipment are within the compliance requirements.



RICK YEO / EMC MANAGER
COMPLIANCE ENGINEERING SERVICES, INC.

2. PRODUCT DESCRIPTION

ADVANCE SECURITY INC., Model CS60A is the receiving portion of a multi-purpose security device. The associated Transmitter is manufactured by ADVANCE SECURITY INC.. Model No: M3RF3, FCC ID: H5OT15

3. TEST FACILITY

The open area test sites and conducted measurement facilities used to collect the radiated data are located at No. 199, Chung Sheng Road, Hsin Tien City, Taipei, Taiwan R.O.C. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

The measuring instrument which was utilized in performing the tests documented herein has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment which is traceable to recognized national standards.

4. MEASUREMENT EQUIPMENT USED

Manufacturer	Model Number	Description	Cal Due Date
R&S	SMY 02	Signal Generator (9 KHz – 2.08 GHz)	11/2001
H.P.	8595EM	Spectrum Analyzer (9 KHz – 6.5 GHz)	01/2002
EMCO	3142	Antenna (30-2000 MHz)	06/2001
T.E.C.	PA-102	Preamplifier (0.1 - 2000 MHz)	05/2001
EMCO	3115	Antenna(1 – 18 GHz)	02/2002
MITEQ	NSP2600-44	Preamplifier (1 - 26.5 GHz)	02/2002

5. TEST CONFIGURATION

Set frequency generator to 434 MHz. EUT receiving transmission continuously. All the wires are placed on the turn table to their maximum length to simulate the worse emission conditions.

6. TESTS CONDUCTED

CFR 47, 15.109 RADIATED EMISSION TESTS	CONDUCTED AT 3 METERS
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7. RADIATED EMISSION TEST PROCEDURE

The EUT and all other support equipment are placed on a wooden table 80 cm above the ground screen. Antenna to EUT distance is 3 meters. During the test, the table is rotated 360 degrees to maximize emissions and the antenna is positioned from 1 to 4 meters above the ground screen to further maximize emissions. The antenna is polarized in both vertical and horizontal positions.

Monitor the frequency range of interest at a fixed antenna height and EUT azimuth. Frequency span should be small enough to easily differentiate between broadcast stations and intermittent ambients. Rotate EUT 360 degrees to maximize emissions received from EUT. If emission increases by more than 1 dB, or if another emission appears that is greater by 1 dB, return to azimuth where maximum occurred and perform additional cable manipulation to further maximize received emission.

Move antenna up and down to further maximize suspected highest amplitude signal. If emission increased by 1 dB or more, or if another emission appears that is greater by 1dB or more, return to antenna height where maximum signal was observed and manipulate cables to produce highest emissions, noting frequency and amplitude.

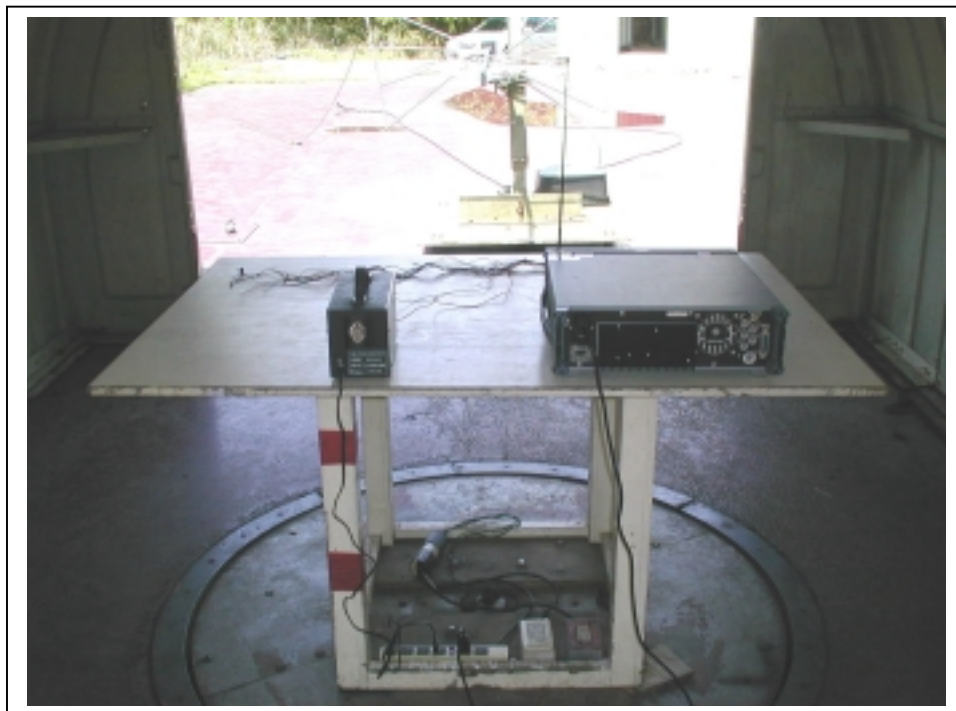
8. COHERENT TESTS

During Radiated Emission Tests, R&S signal generator model no: SMY 02 (9K – 2.08G Hz) was used to radiate unmodulated CW signal to EUT at 434 MHz. Please refer to radiated radiate emission plots and data for the highest readings.

9. EQUIPMENT MODIFICATIONS

To achieve compliance to FCC section 15.109, the following change(s) were made during compliance testing:

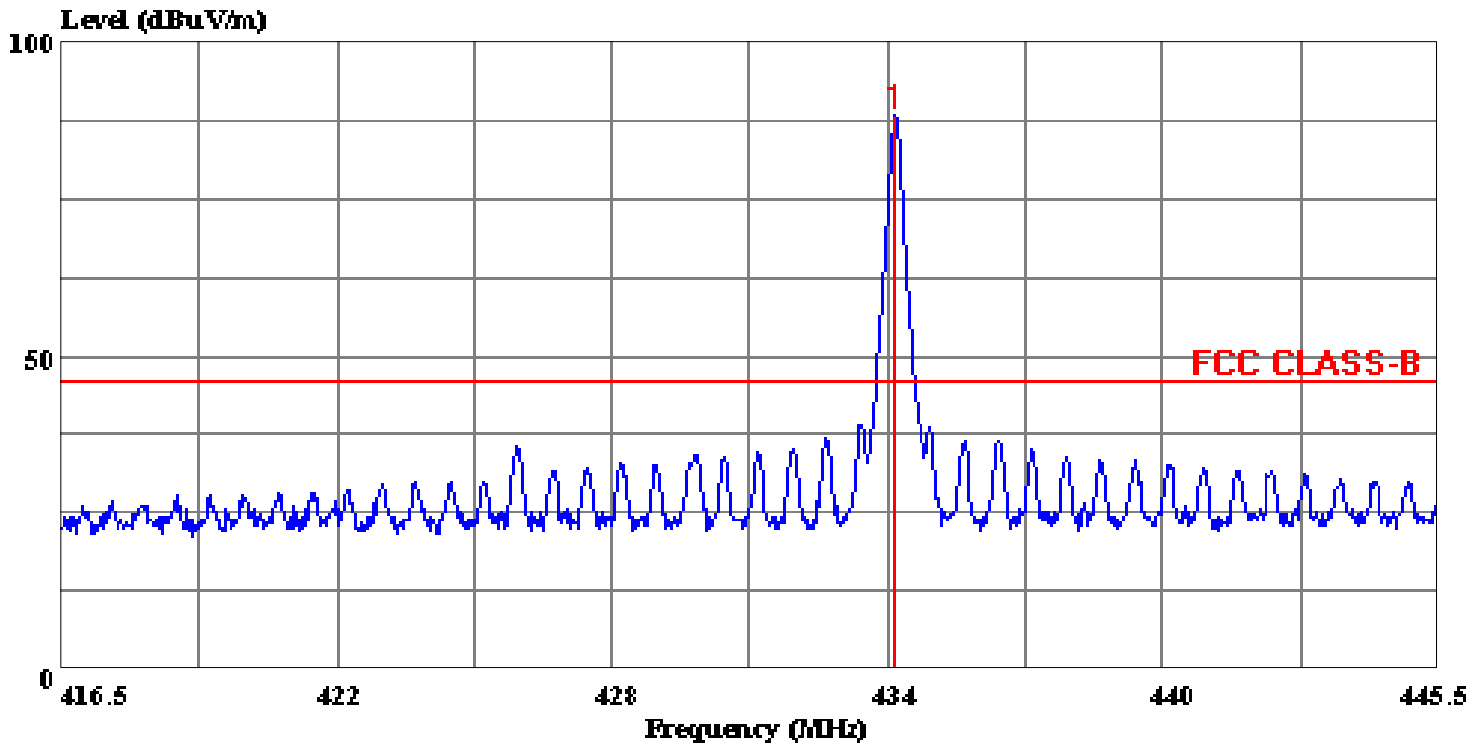
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10. TEST CONFIGURATION PHOTOS (Radiated Emission Test)

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Date: 2001-04-10 Time: 10:40:03



(CCS E-Site)

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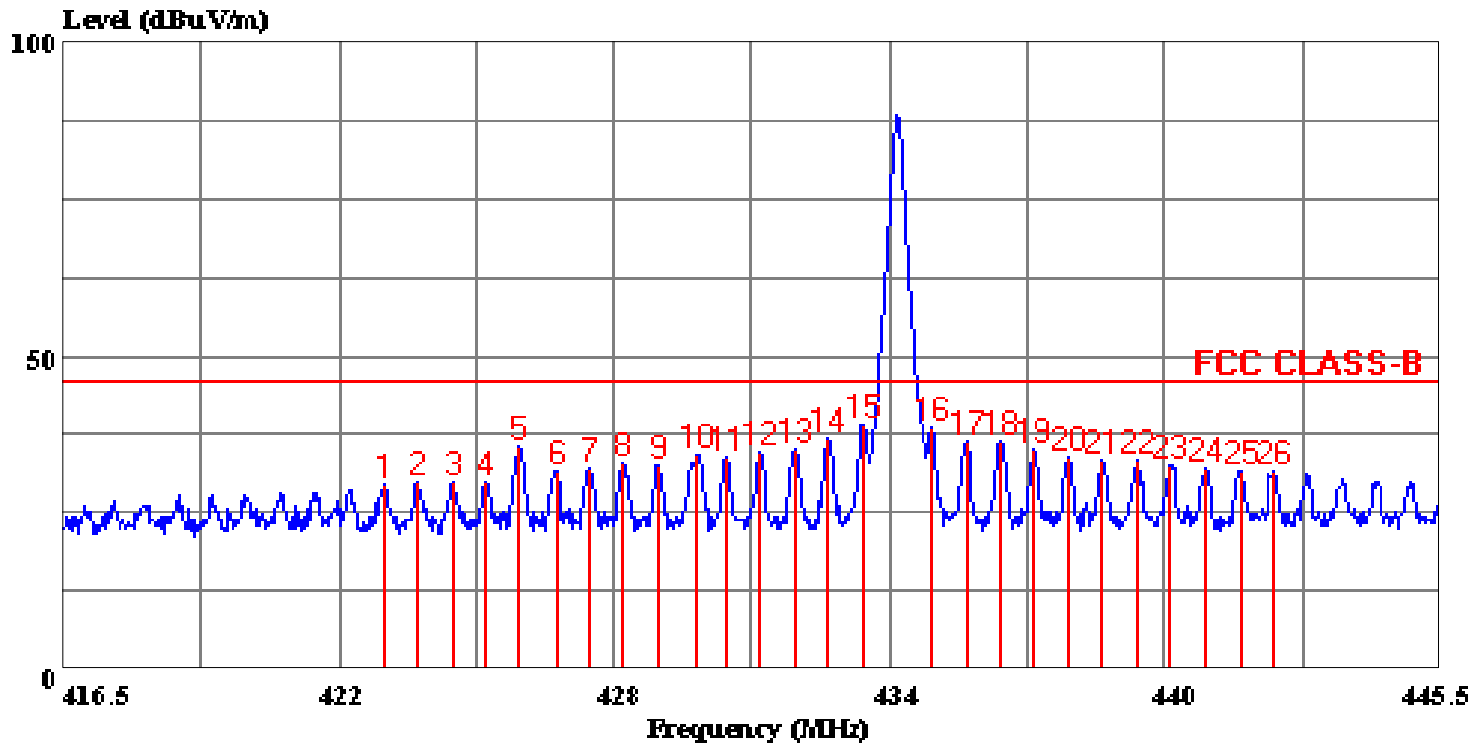
Condition: VERTICAL
Report No. : 01E9365
Test Engr. : BILL HUANG
Company : ADVANCE
EUT : CS60A
Test Config : EUT /DC POWER/S.G.
Type of Test: FCC 15.109
Mode of Op. : Receiver Mode

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	Freq	Level
	MHz	dBuV/m
1 *	434.067	88.18

Data#: 6 File#: 9364f.EMI

Date: 2001-04-10 Time: 10:48:39



(CCS E-Site)

Trace: 1

Ref Trace:

Condition: VERTICAL
Report No. : 01E9365
Test Engr. : BILL HUANG
Company : ADVANCE
EUT : CS60A
Test Config : EUT /DC POWER/S.G.
Type of Test: FCC 15.109
Mode of Op. : Receiver Mode

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CCS E-Site

Date: 2001-04-10 Time: 10:48:39

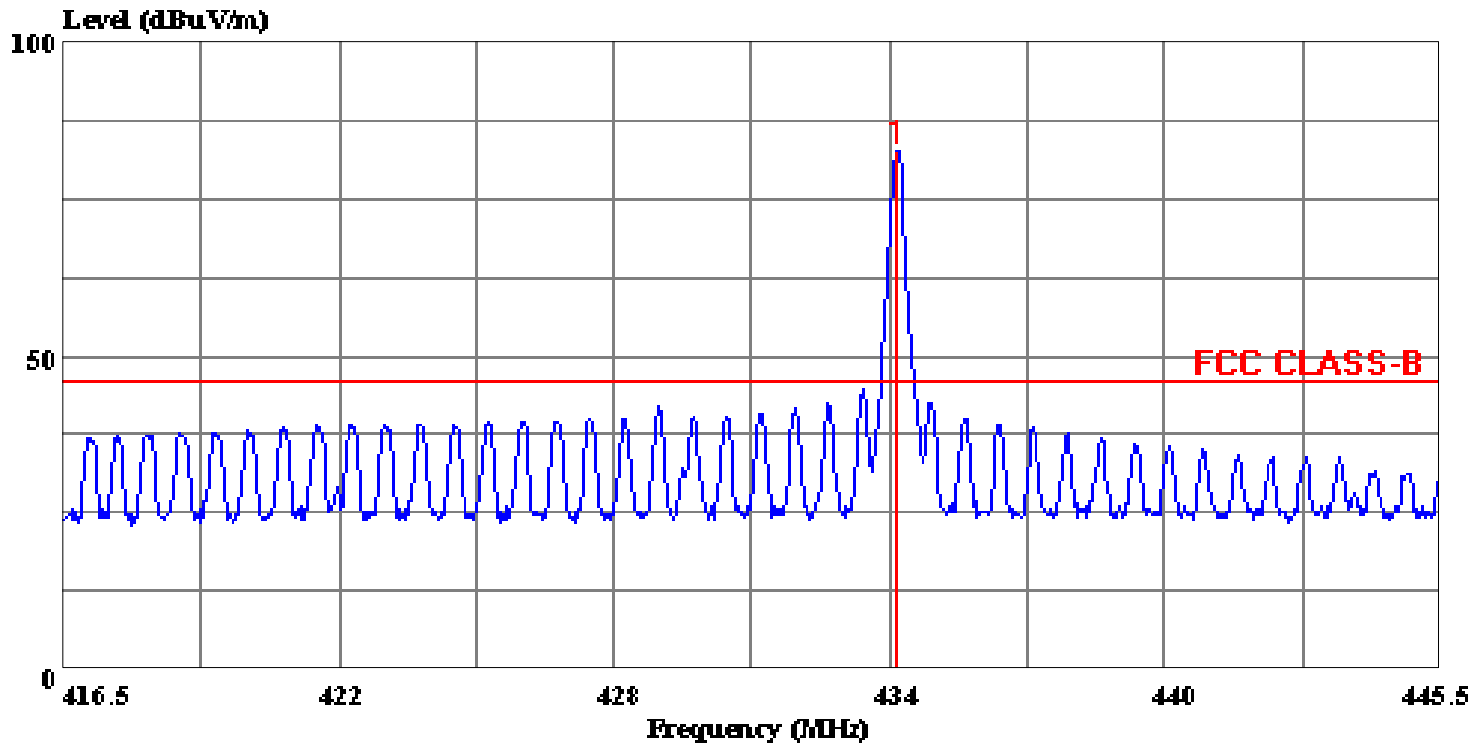
Condition: VERTICAL
Report No. : 01E9365
Test Engr. : BILL HUANG
Company : ADVANCE
EUT : CS60A
Test Config : EUT /DC POWER/S.G.
Type of Test: FCC 15.109
Mode of Op. : Receiver Mode

Page: 1

	Freq	Read Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	423.279	36.00	17.07	3.45	27.24	29.28	46.00	-16.72	Peak
2	423.946	36.40	17.09	3.45	27.24	29.70	46.00	-16.30	Peak
3	424.700	36.40	17.10	3.46	27.24	29.72	46.00	-16.28	Peak
4	425.396	36.70	17.12	3.46	27.23	30.05	46.00	-15.95	Peak
5	426.063	42.20	17.13	3.47	27.23	35.57	46.00	-10.43	Peak
6	426.875	38.40	17.15	3.47	27.22	31.81	46.00	-14.19	Peak
7	427.600	38.50	17.17	3.48	27.21	31.93	46.00	-14.07	Peak
8	428.296	39.60	17.18	3.48	27.20	33.06	46.00	-12.94	Peak
9	429.021	38.90	17.20	3.49	27.20	32.39	46.00	-13.61	Peak
10	429.862	40.80	17.22	3.49	27.19	34.32	46.00	-11.68	Peak
11	430.442	40.30	17.23	3.49	27.18	33.84	46.00	-12.16	Peak
12	431.167	41.00	17.25	3.50	27.18	34.57	46.00	-11.43	Peak
13	431.892	41.60	17.26	3.50	27.17	35.20	46.00	-10.80	Peak
14	432.617	43.10	17.28	3.51	27.16	36.72	46.00	-9.28	Peak
15	433.371	45.50	17.29	3.51	27.16	39.15	46.00	-6.85	Peak
16	434.763	44.90	17.32	3.52	27.14	38.61	46.00	-7.39	Peak
17	435.517	42.50	17.34	3.53	27.14	36.23	46.00	-9.77	Peak
18	436.242	42.70	17.36	3.53	27.13	36.46	46.00	-9.54	Peak
19	436.938	41.10	17.37	3.54	27.12	34.89	46.00	-11.11	Peak
20	437.692	40.10	17.39	3.54	27.12	33.92	46.00	-12.08	Peak
21	438.388	39.60	17.40	3.55	27.11	33.44	46.00	-12.56	Peak
22	439.113	39.40	17.42	3.55	27.10	33.27	46.00	-12.73	Peak
23	439.809	38.60	17.43	3.56	27.10	32.50	46.00	-13.50	Peak
24	440.563	38.00	17.45	3.56	27.09	31.92	46.00	-14.08	Peak
25	441.288	37.50	17.47	3.57	27.08	31.45	46.00	-14.55	Peak
26	441.984	37.50	17.48	3.57	27.08	31.48	46.00	-14.52	Peak

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(CCS E-Site)

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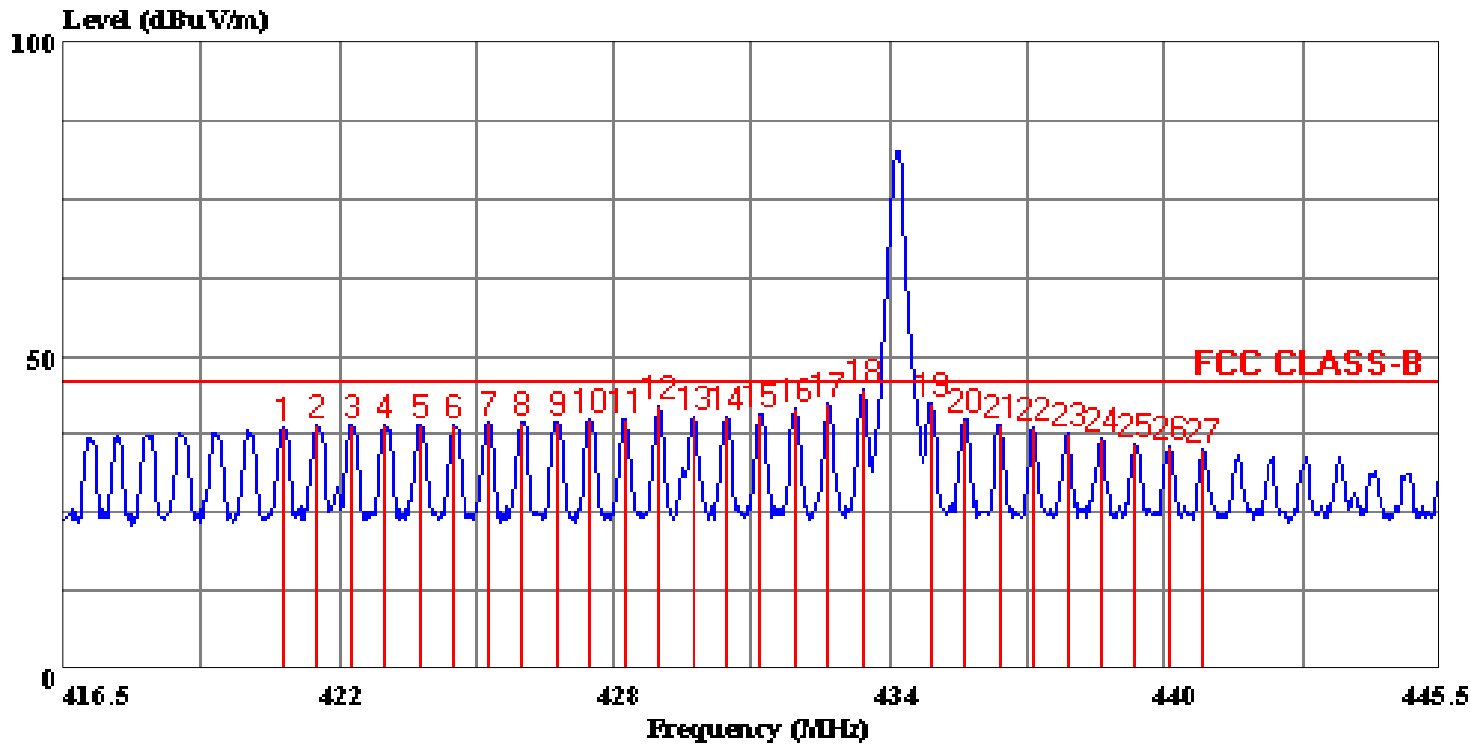
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Report No. : 01E9365
Test Engr. : BILL HUANG
Company : ADVANCE
EUT : CS60A
Test Config : EUT /DC POWER/S.G.
Type of Test: FCC 15.109
Mode of Op. : Receiver Mode

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	Freq	Level
	MHz	dBuV/m
1 *	434.045	82.68

Data#: 8 File#: 9364f.EMI

Date: 2001-04-10 Time: 10:56:31



(CCS E-Site)

Trace: 2

Ref Trace:

Condition: HORIZONTAL
Report No. : 01E9365
Test Engr. : BILL HUANG
Company : ADVANCE
EUT : CS60A
Test Config : EUT /DC POWER/S.G.
Type of Test: FCC 15.109
Mode of Op. : Receiver Mode

Data#: 8 File#: 9364f.EMI
CCS E-Site

Date: 2001-04-10 Time: 10:56:31

Condition: HORIZONTAL
Report No. : 01E9365
Test Engr. : BILL HUANG
Company : ADVANCE
EUT : CS60A
Test Config : EUT /DC POWER/S.G.
Type of Test: FCC 15.109
Mode of Op. : Receiver Mode

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	Freq	Read Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	421.111	45.10	17.03	3.43	27.24	38.32	46.00	-7.68	Peak
2	421.836	45.70	17.04	3.44	27.24	38.94	46.00	-7.06	Peak
3	422.561	45.50	17.06	3.44	27.24	38.76	46.00	-7.24	Peak
4	423.286	45.50	17.07	3.45	27.24	38.78	46.00	-7.22	Peak
5	424.040	45.60	17.09	3.45	27.24	38.90	46.00	-7.10	Peak
6	424.736	45.50	17.10	3.46	27.24	38.82	46.00	-7.18	Peak
7	425.432	46.00	17.12	3.46	27.23	39.35	46.00	-6.65	Peak
8	426.157	46.20	17.14	3.47	27.23	39.58	46.00	-6.42	Peak
9	426.882	46.20	17.15	3.47	27.22	39.61	46.00	-6.39	Peak
10	427.578	46.40	17.17	3.48	27.21	39.83	46.00	-6.17	Peak
11	428.332	46.30	17.18	3.48	27.20	39.76	46.00	-6.24	Peak
12	429.028	48.30	17.20	3.49	27.20	41.79	46.00	-4.21	Peak
13	429.753	46.60	17.21	3.49	27.19	40.11	46.00	-5.89	Peak
14	430.478	46.60	17.23	3.50	27.18	40.14	46.00	-5.86	Peak
15	431.174	47.20	17.25	3.50	27.18	40.77	46.00	-5.23	Peak
16	431.899	47.80	17.26	3.50	27.17	41.40	46.00	-4.60	Peak
17	432.624	48.60	17.28	3.51	27.16	42.22	46.00	-3.78	Peak
18	433.320	51.00	17.29	3.51	27.16	44.65	46.00	-1.35	Peak
19	434.770	48.70	17.32	3.52	27.14	42.41	46.00	-3.59	Peak
20	435.495	46.30	17.34	3.53	27.14	40.03	46.00	-5.97	Peak
21	436.220	45.20	17.36	3.53	27.13	38.96	46.00	-7.04	Peak
22	436.945	44.60	17.37	3.54	27.12	38.39	46.00	-7.61	Peak
23	437.641	43.80	17.39	3.54	27.12	37.61	46.00	-8.39	Peak
24	438.337	42.80	17.40	3.55	27.11	36.64	46.00	-9.36	Peak
25	439.062	41.90	17.42	3.55	27.10	35.77	46.00	-10.23	Peak
26	439.816	41.70	17.43	3.56	27.10	35.60	46.00	-10.40	Peak
27	440.512	41.00	17.45	3.56	27.09	34.92	46.00	-11.08	Peak

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CCS E-Site

Date: 2001-04-10 Time: 10:56:31

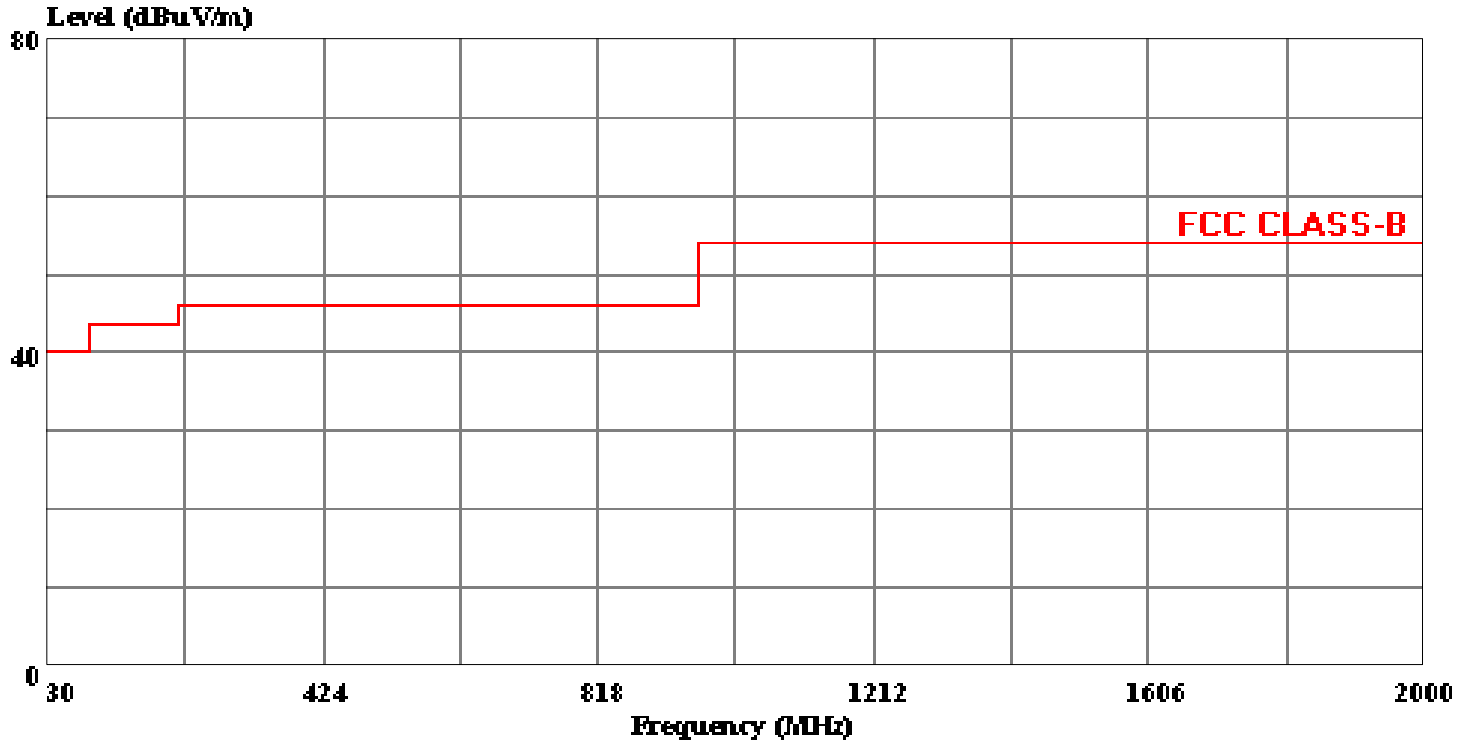
Condition: HORIZONTAL
Report No. : 01E9365
Test Engr. : BILL HUANG
Company : ADVANCE
EUT : CS60A
Test Config : EUT /DC POWER/S.G.
Type of Test: FCC 15.109
Mode of Op. : Six Highest Radiated Emission Readings

Page: 1

	Freq	Read Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	429.028	48.30	17.20	3.49	27.20	41.79	46.00	-4.21	Peak
2	431.174	47.20	17.25	3.50	27.18	40.77	46.00	-5.23	Peak
3	431.899	47.80	17.26	3.50	27.17	41.40	46.00	-4.60	Peak
4	432.624	48.60	17.28	3.51	27.16	42.22	46.00	-3.78	Peak
5	433.320	51.00	17.29	3.51	27.16	44.65	46.00	-1.35	Peak
6	434.770	48.70	17.32	3.52	27.14	42.41	46.00	-3.59	Peak

Data#: 17 File#: 9364f.EMI

Date: 2001-04-10 Time: 11:36:24



(CCS E-Site)

Trace:

Ref Trace:

Report No. : 01E9365
Test Engr. : BILL HUANG
Company : ADVANCE
EUT : CS60A
Test Config : EUT /DC POWER/S.G.
Type of Test: FCC 15.109
Mode of Op. : No other emissions were found within
: 20dB below the limits from 30-2000MHz.