

*FCC PART 15, SUBPART B and SUBPART C
TEST REPORT*

for

SHOPPER CALL BOX

MODEL: CB440

Prepared for

INDYME SOLUTIONS, INC.
8295 AERO PLACE
SAN DIEGO, CA 92123

Prepared by: _____

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DATE: MARCH 17, 2011

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
PAGES	16	2	2	2	7	17	45

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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product endorsement by NVLAP, NIST or any other agency of the U.S. Government.

Device Tested: Shopper Call Box
Model: CB440

Product Description: See Expository Statement

Modifications: The EUT was not modified.

Manufacturer: Indyme Solutions, Inc.
9085 Aero Drive
San Diego, CA 92123

Test Date: March 7, 2011

Test Specifications: CFR Title 47, Part 15 Subpart C, Sections 15.205, 15.209 and 15.231

Test Procedure: ANSI C63.10: 2009

Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Radiated RF Emissions, 0.01 - 30MHz	Complies with the limits of CFR Title 47, Part 15, Subpart C, section 15.205 & 15.209
2	Radiated RF Emissions, 30 - 4000 MHz	Complies with the limits of CFR Title 47, Part 15, Subpart C, section 15.205 & 15.209
3	-20 dB Occupied Bandwidth of the Emission	Complies with the limits of CFR Title 47, Part 15, Subpart C, section 15.231 (c).
4	Peak Radiated EMI	Complies with the limits of CFR Title 47, Part 15, Subpart C, section 15.231 (b).

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Shopper Call Box Model: CB440. The EMI measurements were performed according to the measurement procedure described in ANSI C63.10. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the specification limits defined by CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209 and 15.231.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics 20621 Pascal Way, Lake Forest, California 92630.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Indyme Solutions, Inc.

Greg King Compliance Engineer

Compatible Electronics, Inc.

Joey Madlangbayan Test Engineer
Matt Harrison Test Technician
Josh Hansen Lab Manager
Jeff Klinger Director of Engineering

2.4 Date Test Sample was Received

The test sample was received on March 7, 2011.

2.5 Disposition of the Test Sample

The sample remains at Compatible Electronics as of March 17, 2011.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
CLA	Cigar Lighter Adaptor
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI Test Report.

SPEC	TITLE
CFR Title 47, Part 15	FCC Rules – Radio frequency devices (including digital devices)
ANSI C63.10 2009	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description Of Test Configuration - EMI

Setup and operation of the equipment under test.

Specifics of the EUT and Peripherals Tested

The Shopper Call Box Model: CB440 (EUT) was set up in a table top configuration. The transmit antenna of the EUT is a wire soldered to the PCB, which is contained inside the plastic housing. The EUT was explored in 3 orthogonal axes (X-axis, Y-axis and Z-axis).

The final test was performed in the worse case emission configuration.

The EUT was continuously transmitting throughout the tests.

The final data was taken in the mode described above in the X-axis configuration. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

There were no interconnecting cables.



5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT**5.1 EUT and Accessory List**

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIALNUMBER	FCC ID
SHOPPER CALL BOX (EUT)	INDYME SOLUTIONS, INC.	CB440	NONE	J69303MICA
12v Battery	N/A	N/A	N/A	N/A

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DATE	CALIBRATION DUE DATE
GENERAL TEST EQUIPMENT USED FOR ALL RF EMISSIONS TESTS					
Computer	Compatible Electronics	N/A	N/A	N/A	N/A
EMI Receiver	Rohde & Schwarz	ESIB40	100219	4/19/2010	4/19/2012
Monitor	ICS Advent	N/A	N/A	N/A	N/A
RF RADIATED EMISSIONS TEST EQUIPMENT					
CombyLog Antenna	Com-Power	AC-220	25857	5/6/2010	5/6/2011
Loop Antenna	Com-Power	AL-130	17085	1/26/2011	1/26/2012
Horn Antenna	Com-Power	AH-118	071250	10/1/2010	10/1/2011
Antenna Mast	Sunol Sciences Corporation	TWR 95-4	081309-3	N/A	N/A
Turntable	Sunol Sciences Corporation	FM2011VS	N/A	N/A	N/A
Mast and Turntable Controller	Sunol Sciences Corporation	SC104V	081309-1	N/A	N/A

6. TEST SITE DESCRIPTION**6.1 Test Facility Description**

Please refer to section 2.1 and 7.1 of this report for EMI test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was placed in the center of the table, in accordance with ANSI C63.10: 2009. The test site receive antenna distance was measured from the closest periphery of the EUT setup.

The EUT was not grounded.

7. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

7.1 RF Emissions**7.1.1 Conducted Emissions Test**

(This test was not performed.)

Test Results:

The EUT is battery powered; therefore this test was not performed.

7.1.2 Radiated Emissions (Spurious and Harmonics) Test

The receiver was used as a measuring meter. The receiver was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the receiver records the highest measured reading over all the sweeps.

The spurious emission frequencies above 1 GHz were investigated with the built-in average detector.

The harmonic emissions frequencies were investigated with the duty cycle correction factor.

The measurement bandwidths and transducers used for the radiated emissions (Spurious) tests were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
9 kHz to 150 kHz	200 Hz	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 1 GHz	120 kHz	CombiLog Antenna
1 GHz to 4 GHz	1 MHz	Horn Antenna

The Semi-Anechoic test site of Compatible Electronics, Inc, Lab P (Lake Forest), was used for all tests. This test sites are set up according to ANSI C63.10. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Final data was collected in the worst case configuration of the EUT. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The loop antenna was also rotated in the horizontal and vertical axis in order to ensure accurate results.

7.1.3 Radiated Emissions (Spurious and Harmonics) Test (Continued)

The EUT was continuously transmitting during the test. The EUT was tested at a 3-meter test distance to obtain the final test data. The final qualification data sheets are located in Appendix E.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and CFR Title 47, Part 15, Subpart C, sections 15.205, 15.209 and 15.231. There were no emissions found below 30MHz.

7.1.4 Peak radiated EMI

The EUT was tested at a 3-meter test distance to obtain the final test data. The final qualification data sheets are located in Appendix E. This data also shows compliance at the band edges.

Duty Cycle Correction Factor = -15.11dB

$$\delta(\text{dB}) = 20 \log \left[\sum (nt_1 + mt_2 + \dots + \xi t_x) / T \right]$$

where

n is the number of pulses of duration t_1

m is the number of pulses of duration t_2

ξ is the number of pulses of duration t_x

T is the period of the pulse train or 100 ms if the pulse train length is greater than 100 ms

$$1.03\text{ms} \times 17 = 17.51$$

$$100\text{ms} / 17.51 = .1751$$

$$20 \log (.1751) = -15.11 \text{ dB correction factor}$$

Test Results:

The EUT complies with Part 15, Subpart C, section 15.231.

7.1.5 Bandwidth of the Fundamental

The -20 dB bandwidth was checked using the EMI Receiver to see that the emissions were wholly within the 0.25% of the operating frequency centered on the fundamental frequency. The RBW was set to 10 kHz and the VBW was set to 30 kHz. A Plot of the -20 dB bandwidth is located in Appendix E.

Test Results:

The EUT complies with the requirements of CFR Title 47, Part 15, Subpart C, section 15.231 (c) for the -20 dB bandwidth of the fundamental. The EUT has a -20 dB bandwidth that lies wholly within the 0.25% of the operating frequency centered on the fundamental frequency.

8. CONCLUSIONS

The Shopper Call Box Model: CB440 meets all of the specification limits defined in CFR Title 47, Part 15, Subpart B for the digital portion; and the limits defined in Subpart C, sections 15.205, 15.209, and 15.231 for the transmitter portion.





APPENDIX A

LABORATORY RECOGNITIONS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

LABORATORY RECOGNITIONS

Compatible Electronics has the following agency accreditations:

National Voluntary Laboratory Accreditation Program - Lab Code: 200527-0

Voluntary Control Council for Interference - Registration Numbers: R-2848, C-3142, T-1450

Bureau of Standards and Metrology Inspection - Reference Number: SL2-IN-E-1031

Conformity Assessment Body for the EMC Directive Under the US/EU MRA Appointed by NIST

Compatible Electronics is recognized or on file with the following agencies:

Industry Canada
Site Number: 2154C-1



APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC 15.231 or FCC Class B specifications.

No modifications were made to the EUT.





APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Shopper Call Box
Model: CB440
S/N: None

Additional Model Numbers:

Client provided additional models not tested (unless otherwise noted) but covered by similarity are listed below.

According to the manufacturer, The only difference between the various models is, color or shape of the. below is a breakdown on the different models and how they are put together.

Information provided by the manufacturer:

- 1) PCA with battery holder and membrane switch
 - a. CB440 (*EUT*), CB443 – larger rounded plastic housing.
 - b. CB511, CB475 – rectangular housing, 2 button membrane
 - c. CB514 – rectangular housing, 5 button membrane
- 2) PCA with battery wires and membrane switch
 - a. CB442 – small rounded plastic housing (this product is essentially EOL and is only being maintained for service and support purposes)
- 3) PCA with battery holder and mechanical switches
 - a. CB460
- 4) PCA with battery wires and mechanical switches
 - a. CB442A

The only differences on the PCAs are the battery holder options and what type of switch is used. Otherwise the model numbers are housings, back plates, mounting styles, etc.



APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED TEST SITE

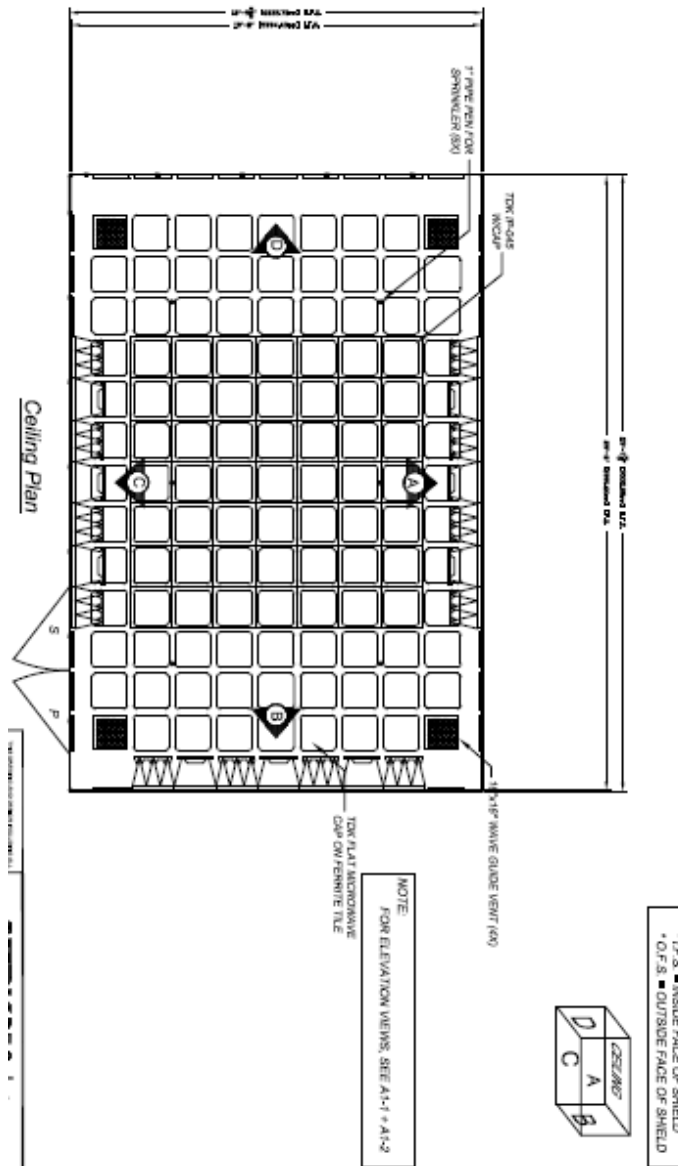


Figure 1 TDK FAC-3 test chamber

COM-POWER AC-220**LAB R - COMBYLOG ANTENNA****S/N: 25857****CALIBRATION DUE: MAY 06, 2011**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30.0	19.8	200.0	10.3
35.0	19.6	250.0	11.7
40.0	18.4	275.0	13.2
45.0	17.0	300.0	13.8
50.0	16.1	400.0	16.5
60.0	15.2	500.0	18.1
70.0	8.1	600.0	18.9
80.0	6.7	700.0	20.5
90.0	8.5	800.0	21.8
100.0	9.4	900.0	23.1
120.0	10.0	1000.0	24.0
125.0	11.1	1200.0	23.6
140.0	9.5	1400.0	25.1
150.0	9.3	1600.0	25.2
160.0	9.1	1800.0	27.9
175.0	9.4	2000.0	28.6
180.0	9.5		

COM-POWER AH-118**LAB R - HORN ANTENNA**

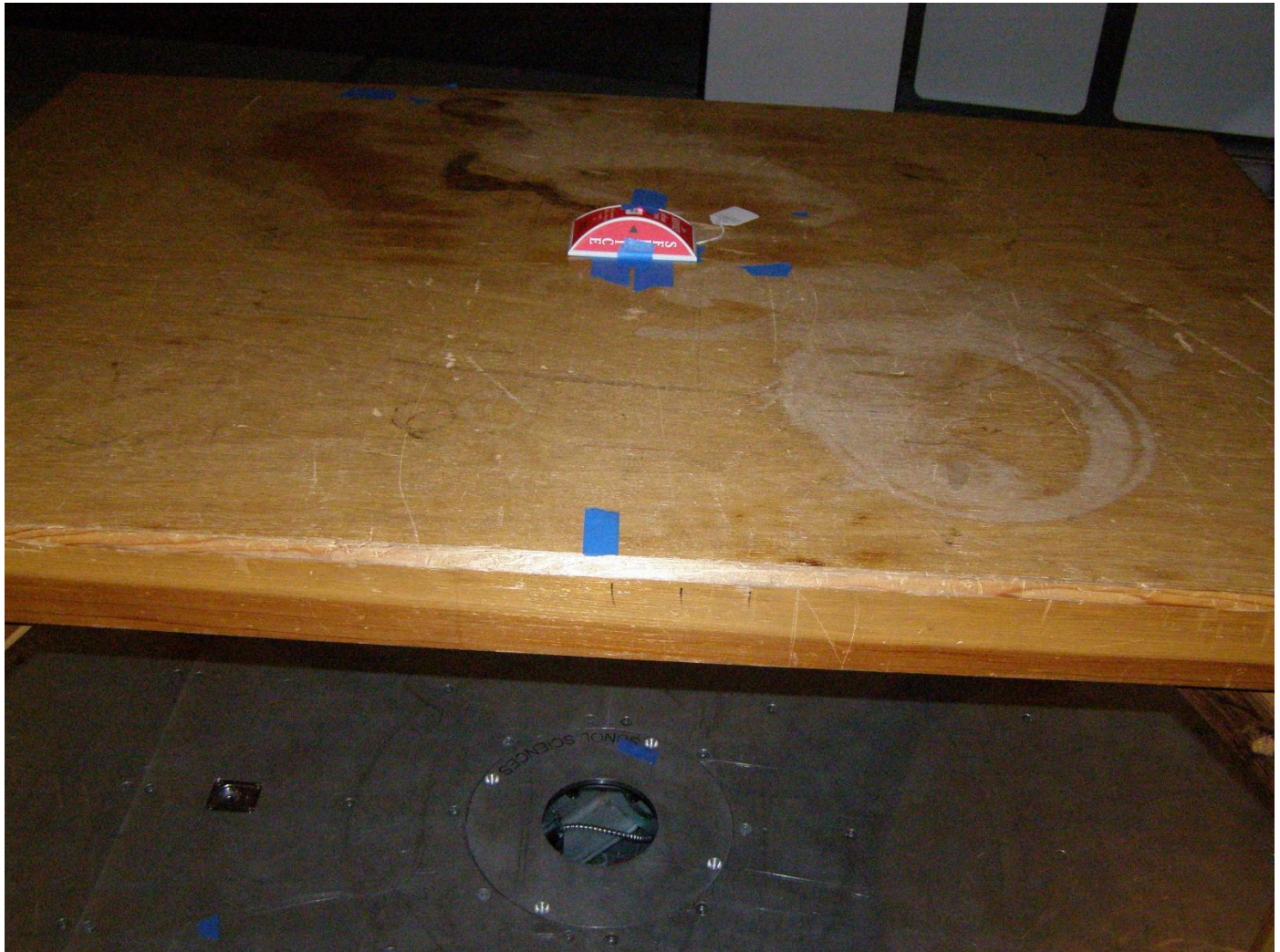
S/N: 071250

CALIBRATION DUE: OCTOBER 01, 2011

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.00	24.00	10.00	40.40
1.50	23.90	10.50	41.70
2.00	27.90	11.00	38.90
2.50	29.60	11.50	40.30
3.00	30.70	12.00	38.10
3.50	30.30	12.50	42.80
4.00	28.60	13.00	38.80
4.50	30.70	13.50	36.90
5.00	33.00	14.00	43.70
5.50	32.90	14.50	42.00
6.00	34.10	15.00	42.00
6.50	37.20	15.50	37.90
7.00	37.90	16.00	38.50
7.50	38.30	16.50	38.20
8.00	38.50	17.00	39.20
8.50	36.90	17.50	42.80
9.00	40.20	18.00	43.20
9.50	35.90		

COM-POWER AL-130**LOOP ANTENNA****S/N: 17085****CALIBRATION DATE: 1/26/2011**

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)	FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-41.14	10.36	0.8	-40.91	10.59
0.01	-40.98	10.52	0.9	-40.8	10.7
0.02	-40.87	10.63	1	-40.81	10.69
0.03	-40.13	11.37	2	-40.51	10.99
0.04	-40.42	11.08	3	-40.54	10.96
0.05	-41.06	10.44	4	-40.44	11.06
0.06	-41.07	10.43	5	-40.32	11.18
0.07	-41.12	10.38	6	-40.69	10.81
0.08	-41.03	10.47	7	-40.37	11.13
0.09	-41.04	10.46	8	-39.99	11.51
0.1	-41.26	10.24	9	-40.00	11.5
0.2	-41.23	10.27	10	-40.08	11.42
0.3	-41.26	10.24	15	-42.36	9.14
0.4	-41.14	10.36	20	-38.75	12.75
0.5	-41.24	10.26	25	-40.70	10.8
0.6	-41.22	10.28	30	-41.09	10.41
0.7	-41.12	10.38			



**VIEW 1
(X-AXIS)**

INDYME SOLUTIONS, INC.
SHOPPER CALL BOX
MODEL: CB440
FCC SUBPART B AND C – RADIATED SPURIOUS EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**



**VIEW 2
(X-AXIS)**

**INDYME SOLUTIONS, INC.
SHOPPER CALL BOX
MODEL: CB440
FCC SUBPART B AND C – RADIATED SPURIOUS EMISSIONS**

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

**Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500**

**Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600**

**Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700**

**Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400**



APPENDIX E

DATA SHEETS



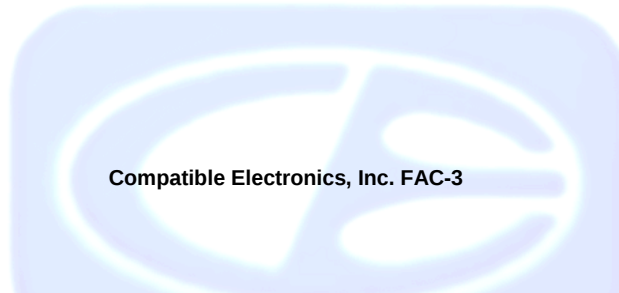
RADIATED EMISSIONS

SPURIOUS AND HARMONICS

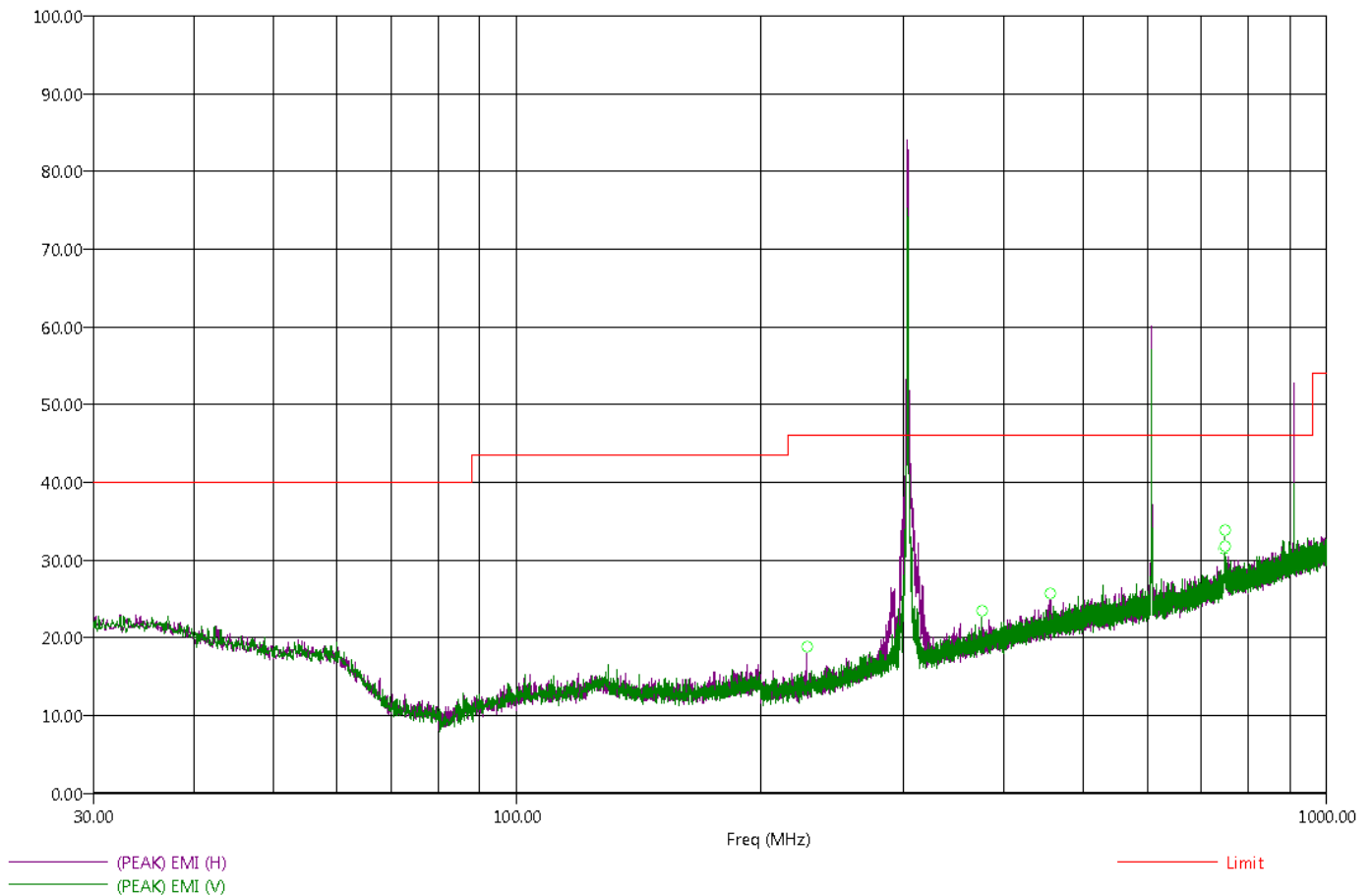
DATA SHEETS

Title: FCC 15.209
File: CB440 Radiated Pre-Scan 30-1000Mhz.set
Operator: Matt Harrison
EUT Type: CB440
EUT Condition: Continuously Transmitting
Comments: Worst Case Orientation: X
Temp: 66f
Hum: 47%

3/7/2011 8:54:16 AM
Sequence: Preliminary Scan



Electric Field Strength (dB μ V/m)



Title: FCC 15.209
File: CB440 Radiated Final 30-1000Mhz.set
Operator: Matt Harrison
EUT Type: CB440
EUT Condition: Continuously Transmitting
Comments: Worst Case Orientation: X
Temp: 66f
Hum: 47%

3/7/2011 9:27:50 AM
Sequence: Final Measurements



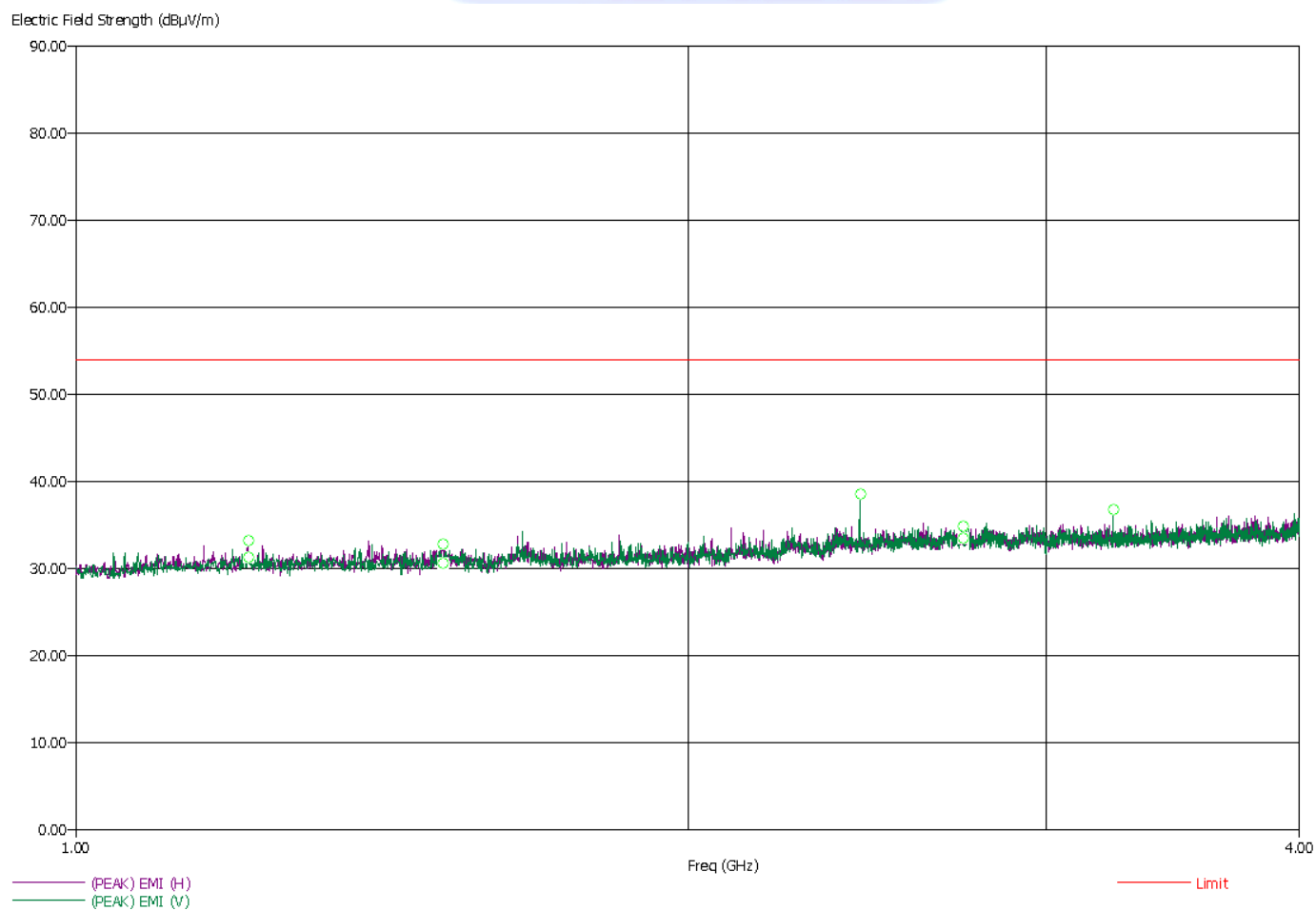
Compatible Electronics, Inc. FAC-3 (Lab R)

Freq (MHz)	(QP)Margin (dB)	(QP)EMI (dBμV/m)	(PEAK)EMI (dBμV/m)	Limit (dBμV/m)	Pol	Ttbl Agl (deg)	Twr Ht (cm)	Transducer (dB)	Cable (dB)
227.90	-25.62	20.38	23.26	46.00	H	227.50	134.50	11.12	1.67
375.30	-30.20	15.80	21.03	46.00	V	131.00	400.05	15.90	2.11
455.70	-20.30	25.70	29.31	46.00	H	28.50	210.98	17.44	2.44
746.70	-19.07	26.93	33.82	46.00	H	352.25	213.73	21.13	3.20
747.00	-18.70	27.30	35.05	46.00	V	257.00	199.40	21.13	3.20
748.10	-19.68	26.32	33.11	46.00	V	149.75	262.98	21.15	3.20

No emissions found between 10kHz to 227.9 MHz

Title: FCC 15.209
File: CB440 Radiated Pre-scan 1-4GHz.set
Operator: Matt Harrison
EUT Type: CB440
EUT Condition: Continuously Transmitting
Comments: Worst Case Orientation: X
Temp: 66f
Hum: 47%

3/7/2011 2:18:44 PM
Sequence: Preliminary Scan



Title: FCC 15.209
File: CB 440 Radiated Final 1-4GHz.set
Operator: Matt Harrison
EUT Type: CB440
EUT Condition: Continuously Transmitting
Comments: Worst Case Orientation: X
Temp: 66f
Hum: 47%

3/7/2011 3:01:01 PM
Sequence: Final Measurements



Compatible Electronics, Inc. FAC-3 (Lab R)

Freq(MHz)	(AVG) Margin(dB)	(AVG) EMI(dBµV/m)	(PEAK) EMI(dBµV/m)	Limit(dBµV/m)	Pol	Ttbl Agl(deg)	Twr Ht(cm)	Transducer(dB)	Cable(dB)	Preamp(dB)
3238.00	-25.43	28.55	40.87	53.98	V	71.25	195.82	30.51	7.71	26.15

No Emissions Found Above 3238.0 MHz

Harmonic Emissions

FCC 15.231

Indyme
Periodic Operation Device
Model: CB440

Duty Cycle CF: 15.11
Date: 03/07/11
Lab: R
Tested By: Matt Harrison

Freq. (MHz)	Level (dBuV)	Pol (V/H)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
607.6	60.23	V	74.93	-14.70	Peak	100	294.5	
607.6	45.12	V	54.93	-9.81	Avg	100	294.5	
911.4	46.94	V	74.93	-27.99	Peak	152.05	49.50	
911.4	31.83	V	54.93	-23.10	Avg	152.05	49.50	
1215.2	33.97	V	74.00	-40.03	Peak	217	109	In Restricted Band
1215.2	18.86	V	54.00	-35.14	Avg	217	109	In Restricted Band
1519	33.72	V	74.00	-40.28	Peak	207	24	In Restricted Band
1519	18.61	V	54.00	-35.39	Avg	207	24	In Restricted Band
1822.8		V	74.93	--	Peak			No Emissions Found
1822.8		V	54.93	--	Avg			No Emissions Found
2126.6		V	74.93	--	Peak			No Emissions Found
2126.6		V	54.93	--	Avg			No Emissions Found
2430.4		V	74.93	--	Peak			No Emissions Found
2430.4		V	54.93	--	Avg			No Emissions Found
2734.2	36.76	V	74.00	-37.24	Peak	325	0	In Restricted Band
2734.2	21.65	V	54.00	-32.35	Avg	325	0	In Restricted Band
3038.17		H	74.93	--	Peak			No Emissions Found
3038.17		H	54.93	--	Avg			No Emissions Found

Test
distance
3 meter

Harmonic Emissions

FCC 15.231

Indyme
Periodic Operation Device
Model: CB440

Duty Cycle CF: 15.11
Date: 03/07/11
Lab: R
Tested By: Matt Harrison

Freq. (MHz)	Level (dBuV)	Pol (V/H)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
607.6	66.23	H	74.93	-8.70	Peak	140	231.25	
607.6	51.12	H	54.93	-3.81	Avg	140	231.25	
911.4	55.81	H	74.93	-19.12	Peak	161.67	201.25	
911.4	40.70	H	54.93	-14.23	Avg	161.67	201.25	
1215.2	38.14	H	74.00	-35.86	Peak	134	163.75	In Restricted Band
1215.2	23.03	H	54.00	-30.97	Avg	134	163.75	In Restricted Band
1519	34.23	H	74.00	-39.77	Peak	162	179	In Restricted Band
1519	19.12	H	54.00	-34.88	Avg	162	179	In Restricted Band
1822.8		H	74.93	--	Peak			No Emissions Found
1822.8		H	54.93	--	Avg			No Emissions Found
2126.6		H	74.93	--	Peak			No Emissions Found
2126.6		H	54.93	--	Avg			No Emissions Found
2430.4		H	74.93	--	Peak			No Emissions Found
2430.4		H	54.93	--	Avg			No Emissions Found
2734.2	36.39	H	74.00	-37.61	Peak	196	214	In Restricted Band
2734.2	21.28	H	54.00	-32.72	Avg	196	214	In Restricted Band
3038.17		H	74.93	--	Peak			No Emissions Found
3038.17		H	54.93	--	Avg			No Emissions Found

Test
distance
3 meter



-20 dB BANDWIDTH

DATA SHEETS

Title: FCC 15.231
File: CB440 -20dB occupied Bandwidth
Operator: Matt Harrison
EUT Type: CB440
EUT Condition: Continuously Transmitting
Temp: 66f
Hum: 47%

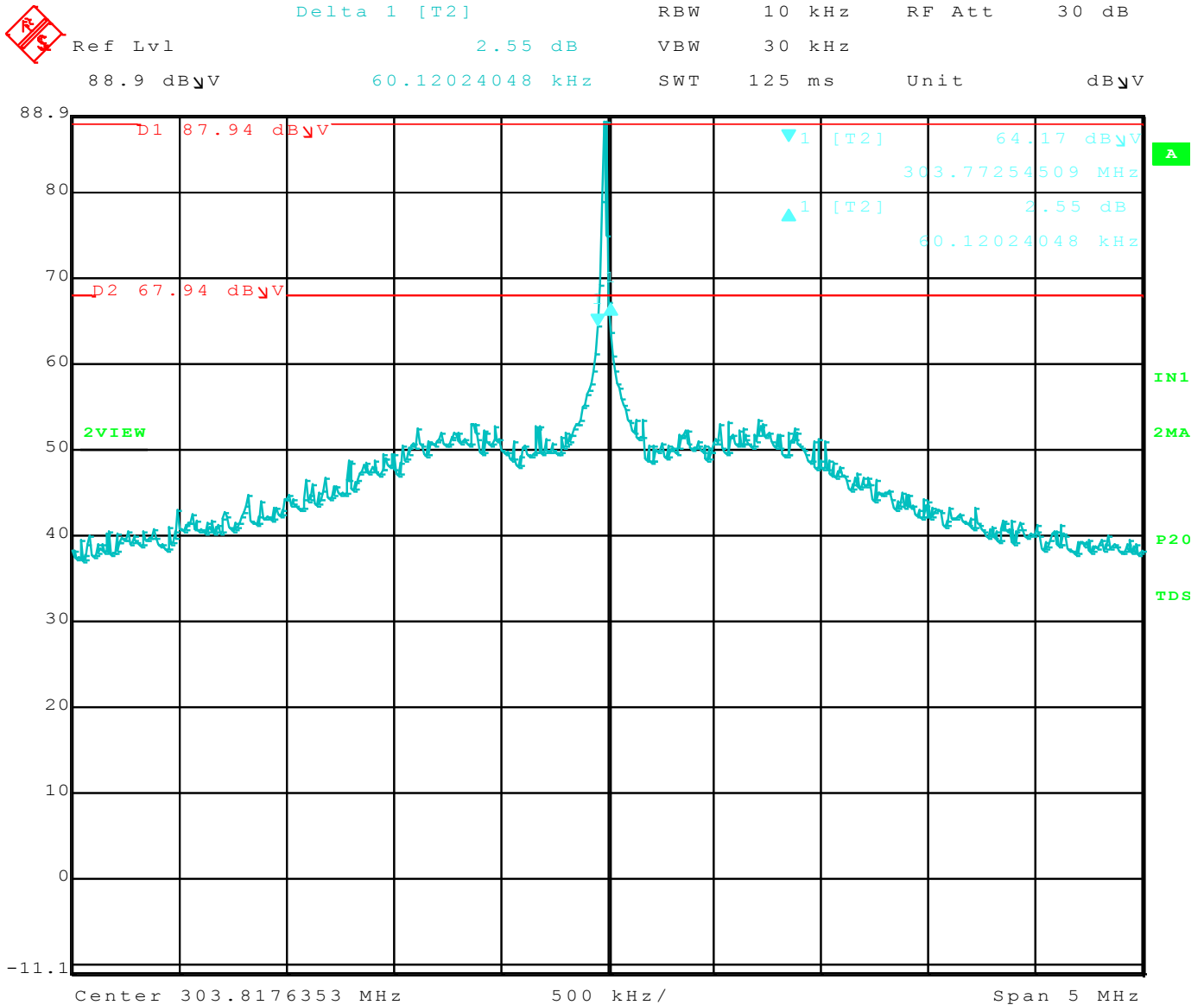
3/7/2011 8:54:16 AM



Compatible Electronics, Inc. FAC- 3 (LAB R)

Freq (MHz)	BW (kHz)	Limit (kHz)	Margin (kHz)
303.8	60.12	759.53	699.41

-20 dB Occupied Bandwidth Plot



Date: 7.MAR.2011 10:35:41

PEAK TRANSMIT EMI

DATA SHEETS

Title: FCC 15.231
File: CB440 Peak Transmit EMI
Operator: Matt Harrison
EUT Type: CB440
EUT Condition: Continuously Transmitting
Comments: Worst Case Orientation: X
Temp: 66f
Hum: 47%

3/7/2011 8:54:16 AM

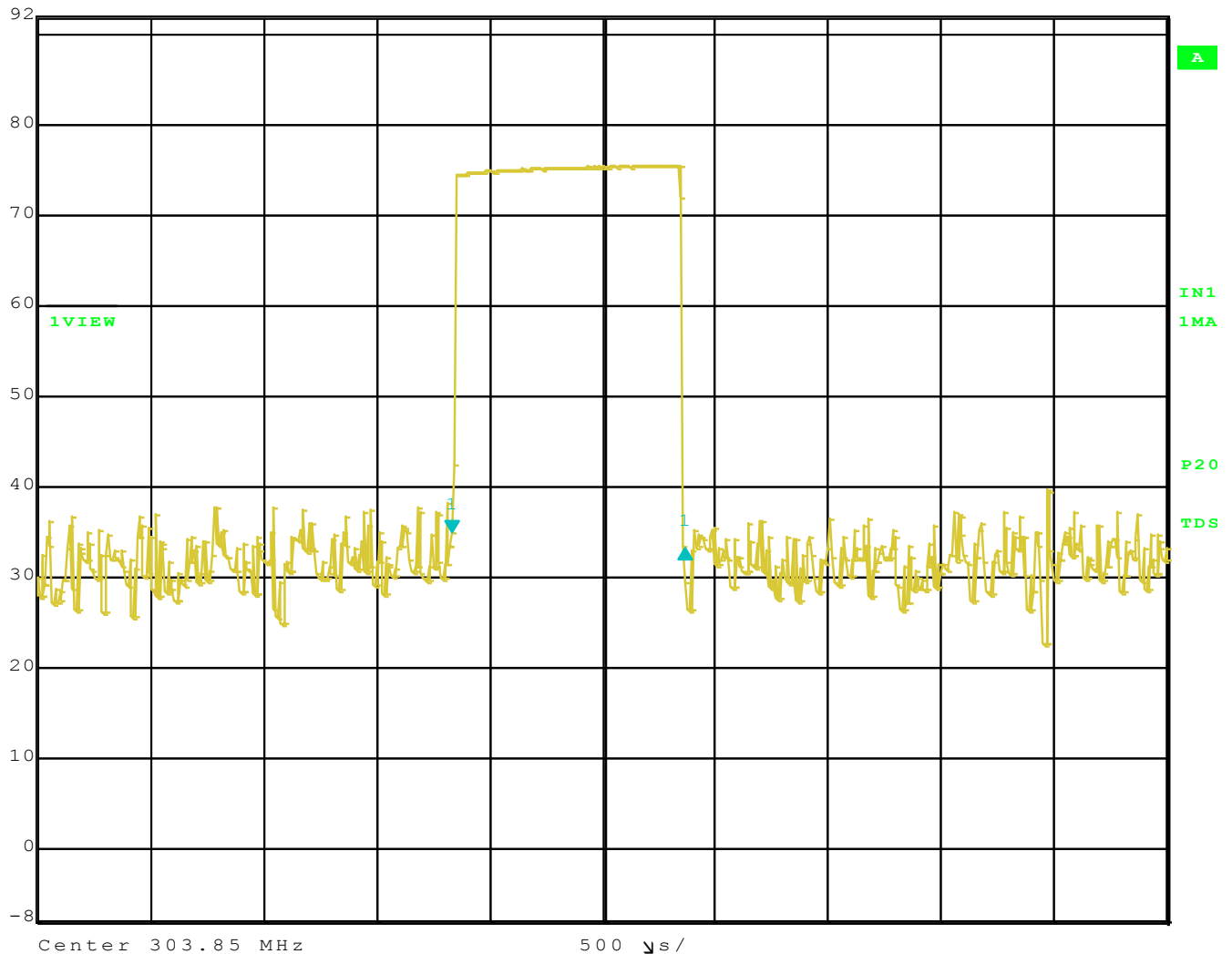


Freq (MHz)	Peak EMI (dB μ V/m)	Duty Cycle CF (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
303.8 (H)	88.81	73.70	74.93	-1.23
303.8 (V)	76.50	61.39	74.93	-13.54

Average Time of Occupancy



Delta 1 [T1] RBW 100 kHz RF Att 20 dB
Ref Lvl -1.63 dB VBW 300 kHz
92 dBμV 1.032064 ms SWT 5 ms Unit dBμV



Date: 8.FEB.2011 10:21:56

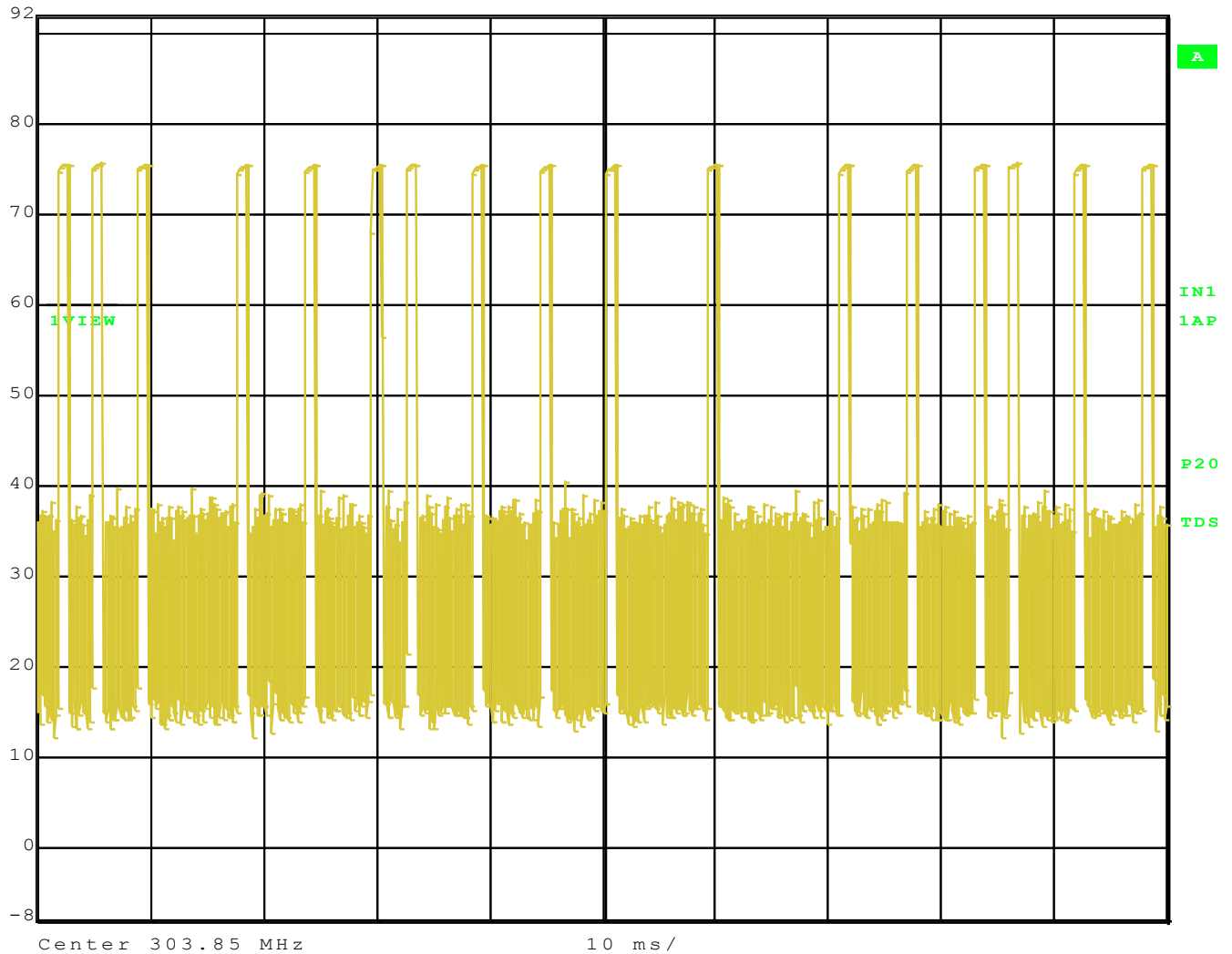
Time of Pulse = 1.032064 mS

Duty Cycle



Ref Lvl
92 dBμV

RBW 100 kHz RF Att 20 dB
VBW 300 kHz
SWT 100 ms Unit dBμV



Date: 8.FEB.2011 10:20:30

Number of Pulses in Worst Case 100 mS = 17
Duty Cycle = $1.032064 \text{ mS} \times 17 = 17.545088 \text{ mS} = 17.54\%$
The Peak to Average Duty Cycle Correction = 15.11

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

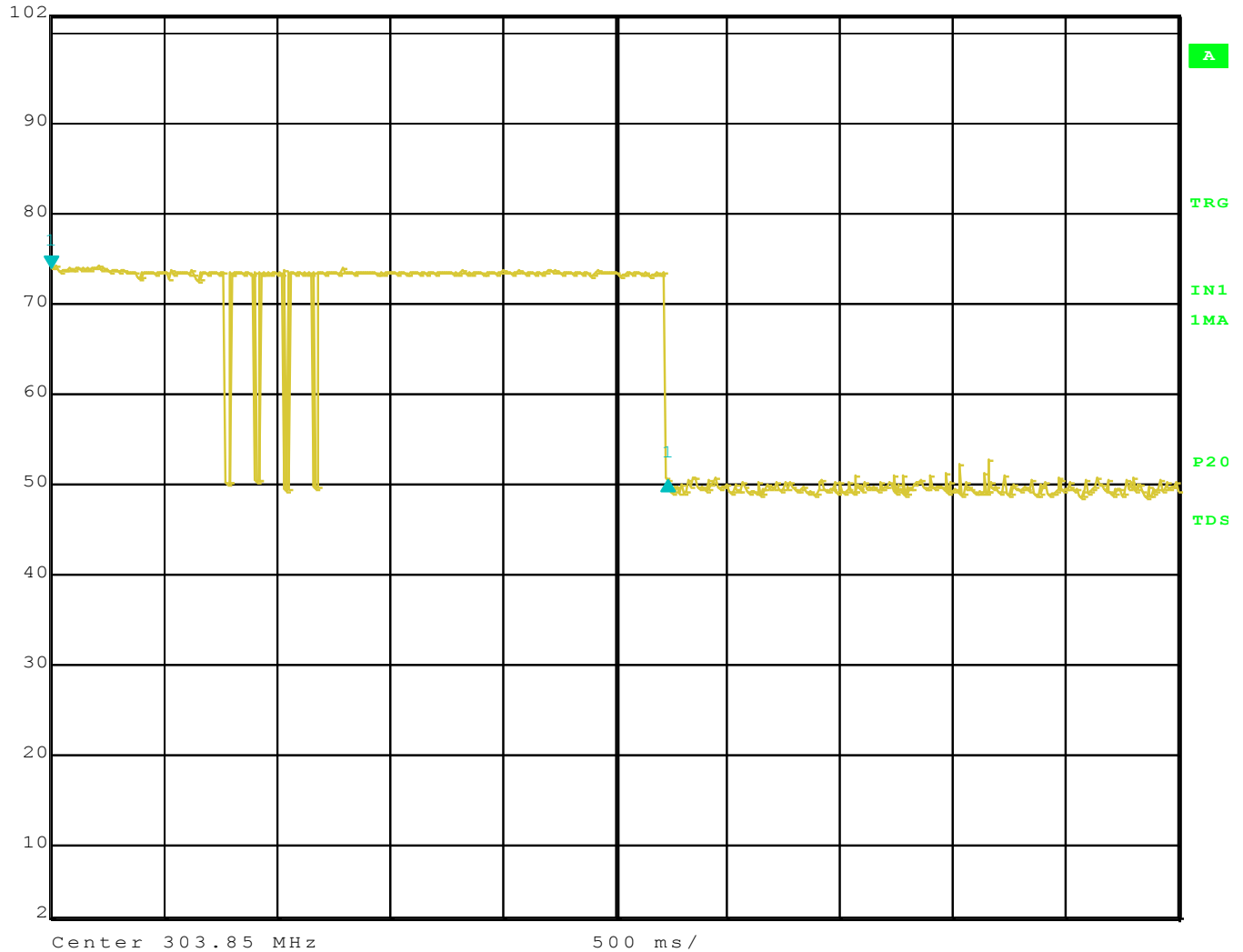
Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

Duration Time



Delta 1 [T1] RBW 100 kHz RF Att 30 dB
Ref Lvl -23.51 dB VBW 300 kHz
102 dBμV 2.735471 s SWT 5 s Unit dBμV



Date: 8.FEB.2011 15:19:42