FCC PART 15, SUBPART C
TEST REPORT

for

TUNECAST

MODEL: F8V3080

Prepared for

BELKIN INTERNATIONAL, INC.
501 W. WALNUT STREET
COMPTON, CA 90220-5221

Prepared by:_____

JOSH HANSEN

Approved by:_____

JEFF KLINGER

COMPATIBLE ELECTRONICS INC.
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

DATE: December 6, 2008

	REPORT BODY	APPENDICES					TOTAL
		A	***B***	***C***	***D***	***E***	
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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:	TUNECAST Model: F8V3080 S/N: N/A
Product Description:	See Expository Statement
Modifications:	The EUT was not modified in order to meet the specifications.
Manufacturer:	Belkin International, inc. 501 W. Walnut Street Compton, CA 90220-5221
Test Dates:	November 4 and 5, 2008
Test Specifications:	CFR Title 47, Part 15 Subpart C, Sections 15.205, 15.209 and 15.239
Test Procedure:	ANSI C63.4: 2003
Test Deviations:	The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Radiated RF Emissions, 10 kHz – 1080 MHz	Complies with the limits of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209, 15.239 (b), and 15.239 (c).
2	-20 dB Bandwidth of the Fundamental	Complies with the limits of CFR Title 47, Part 15, Subpart C, section 15.239 (a).

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the TUNECAST Model: F8V3080. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4. 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 15.239.

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

Belkin International, inc.

Daniel Wesey Compliance Engineer

Compatible Electronics, Inc.

Josh Hansen	Test Technician
Joey Madlangbayan	Test Engineer
Jeff Klinger	Director of Engineering

2.4 Date Test Sample was Received

The test sample was received on November 4, 2008.

2.5 Disposition of the Test Sample

The sample has not yet been returned to Belkin International, Inc. as of December 6, 2008.

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
RBW	Resolution Bandwidth
VBW	Video Bandwidth

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 C63.4 2003	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 TUNECAST Model: F8V3080 (EUT) was connected to an MP3 player via the stereo phone plug connector. 12V DC was supplied via the EUT integral CLA (Cigar Lighter Adaptor), which was connected to a CLA socket receptacle, which in turn was connected to a 12 volt battery. The EUT was receiving audio from the MP3 player and transmitting the audio in the FM band, the MP3 player and the music being played was provided by the customer, the song was Linkin Park "Don't say" 0dB encoded (Max analog level was set). The EUT's transmit antenna was directly connected to the PCB of the EUT, and is mounted in the top cover.

The low, middle, and high channels were investigated.

The final data was taken in the mode above. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

Cable 1 This is a 1.2 meter cable connecting the Cigarette Lighter Adapter (CLA) (Battery receptacle) to the EUT. The cable has a CLA at the cigar lighter receptacle end and has a mini barrel type DC connector at the EUT end.

Cable 2 This is a 25 centimeter cable connecting the MP3 player to the EUT. The cable has a 1/8 inch stereo phone connector at the MP3 player end, and is hard wired into the EUT.

5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIALNUMBER	FCC ID
TUNECAST (EUT)	BELKIN INTERNATIONAL, INC.	F8V3080	N/A	**K7SF8V3080-B**
MP3 PLAYER	Apple	iPod A1136	JQ542XTQSZ9	N/A
12V BATTERY	GENERIC	N/A	N/A	N/A

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Computer	Compatible Electronics	NONE	NONE	N/A	N/A
EMI Receiver	Rohde & Schwarz	ESIB40	100219	4/11/2008	4/11/2010
Antenna, Active Loop	Com Power	AL-130	17085	8/1/08	8/1/09
Antenna, CombiLog	Com Power	AC-220	001	9/03/08	9/03/09
Mast, Antenna Positioner	Sunol Science Corporation	TWR 95-4	020808-3	N/A	N/A
Antenna Mast	Sunol Science Corporation	TWR 95-4	020808-3	N/A	N/A
Turntable	Sunol Science Corporation	FM 2001	N/A	N/A	N/A
Mast and Turntable Controller	Sunol Science Corporation	SC104V	020808-1	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, MP3 Player, and cigarette lighter receptacle were 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, and on the back edge of the table, in accordance with ANSI C63.4: 2003. The test site receive antenna distance was measured from the closest periphery of the EUT setup. Each accessory was placed 10cm to either side of the EUT. The 12 volt battery was placed on the ground, using an 80cm length of wire to connect to the cigarette lighter receptacle, which was mounted on the table.

The EUT and accessories were investigated for worst case placement; the above yielded the worst case configuration.

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

EUT is DC powered; therefore this test was not performed.

7.1.2 Radiated Emissions (Spurious and Harmonics) Test

The EMI receiver was used as a measuring meter. The EMI 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 frequencies above 1 GHz, below 30 MHz, and the fundamental for the low, middle, and high channels were investigated with the built in average detector. For spurious emissions below 1GHz and above 30MHz, a quasi-peak detector was used.

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 1000 MHz	120 kHz	CombiLog Antenna
1000-1080MHz	1 MHz	CombiLog Antenna

The Semi-Anechoic test site of Compatible Electronics, Inc, Lab P, was used for radiated emission testing. This test site is set up according to ANSI C63.4. 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. Data was collected in the worst case (highest emission) 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 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 15.239.

7.1.4 Peak radiated EMI

The EUT was tested at a 3-meter test distance to obtain the final test data. The EUT was maximized for cable placement as well as EUT position. The EUT was receiving a 0dB encoded file from the audio source. This file represents maximum audio input level. The resolution bandwidth was 100 kHz and video bandwidth 300 KHz. The final qualification data sheets are located in Appendix E. This data also shows compliance at the band edges.

Test Results:

The EUT complies with Part 15, Subpart C, section 15.239.

7.2 Bandwidth of the Fundamental

The -20 dB bandwidth was checked using the EMI Receiver to see that it was wholly within the 200 kHz band centered on the operating frequency. The RBW was set to 10 kHz and the VBW was set to 30 kHz, but no less than 3kHz RBW and 10kHz VBW. The low, middle, and high channels were investigated. Plots of the -20 dB bandwidth are located in Appendix E.

Test Results:

The EUT complies with the requirements of CFR Title 47, Part 15, Subpart C, section 15.239 (a) for the -20 dB bandwidth of the fundamental. The EUT has a -20 dB bandwidth that is wholly within the 200 kHz band centered on the operating frequency.

8. CONCLUSIONS

The TUNECAST Model: F8V3080 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 15.239 for the transmitter portion.

APPENDIX A

LABORATORY RECOGNITIONS

LABORATORY RECOGNITIONS

Compatible Electronics has the following agency accreditations:

National Voluntary Laboratory Accreditation Program - Lab Code: 200527-00

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 # 2154C-1

APPENDIX B

MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

No modifications were made to the EUT.

APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST	TUNECAST Model: F8V3080

There were no additional models covered under this report.

APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: PLOT MAP AND LAYOUT OF RADIATED TEST SITE

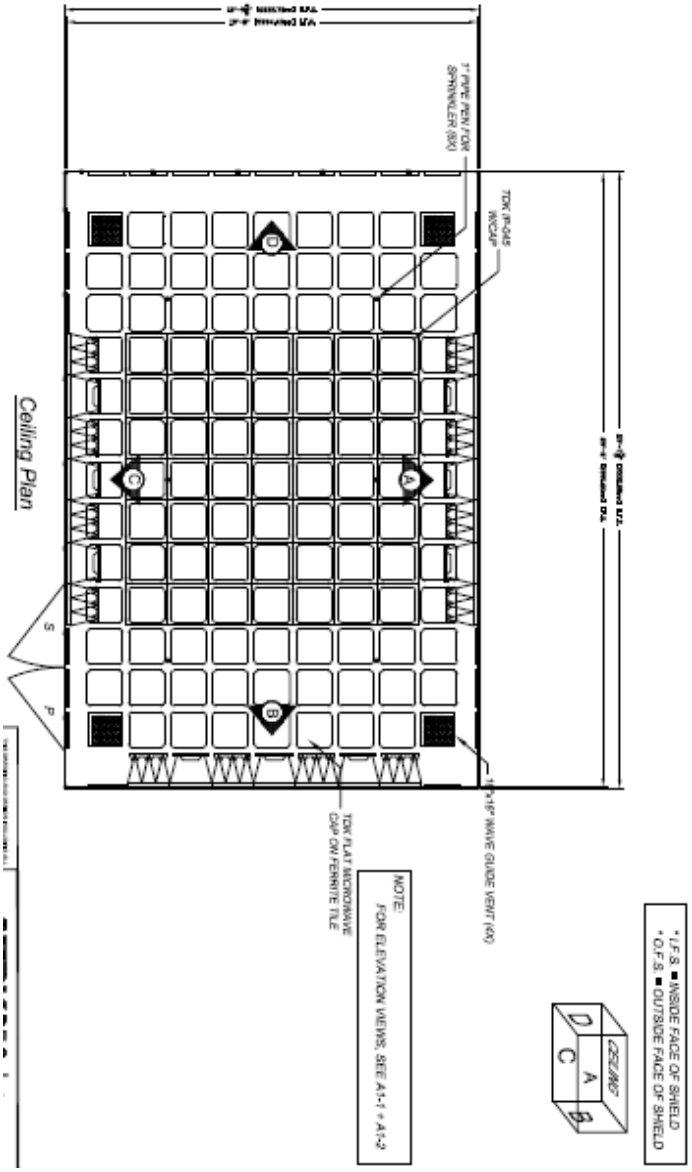


Figure 1TDK FAC-3 test chamber

COM-POWER AC-220

LAB P - COMBYLOG ANTENNA

S/N: 001

CALIBRATION DATE: SEPTEMBER 03, 2008

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30.0	20.6	300.0	14.9
40.0	19.8	400.0	16.5
50.0	19.0	500.0	18.5
60.0	13.8	700.0	21.1
70.0	9.6	1000.0	24.6
80.0	8.7	1300.0	24.9
100.0	11.6	1500.0	27.2
150.0	9.4	1700.0	27.2
200.0	10.8	2000.0	29.0
250.0	14.9		

COM-POWER AL-130

LOOP ANTENNA

S/N: 17085

CALIBRATION DATE: 8/1/08

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)	FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-43	8.5	0.8	-41.53	9.97
0.01	-41.93	9.57	0.9	-41.46	10.04
0.02	-41.29	10.21	1	-41.29	10.21
0.03	-40.73	10.77	2	-40.97	10.53
0.04	-41.03	10.47	3	-41.1	10.4
0.05	-42.37	9.13	4	-41.36	10.14
0.06	-41.6	9.9	5	-40.93	10.57
0.07	-41.96	9.54	6	-40.67	10.83
0.08	-42.1	9.4	7	-41.07	10.43
0.09	-41.83	9.67	8	-40.9	10.6
0.1	-41.83	9.67	9	-40.1	11.4
0.2	-44.46	7.04	10	-41.16	10.34
0.3	-41.73	9.77	15	-47.97	3.53
0.4	-41.8	9.7	20	-40.77	10.73
0.5	-41.8	9.7	25	-44.37	7.13
0.6	-41.33	10.17	30	-43.1	8.4
0.7	-41.36	10.14			

FRONT VIEW

BELKIN INTERNATIONAL, INC.
TUNECAST
MODEL: F8V3080
FCC SUBPART B AND C – RADIATED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

REAR VIEW

BELKIN INTERNATIONAL, INC.
TUNECAST
MODEL: F8V3080
FCC SUBPART B AND C – RADIATED EMISSIONS

PHOTOGRAPH SHOWING THE EUT CONFIGURATION FOR MAXIMUM EMISSIONS

APPENDIX E

DATA SHEETS

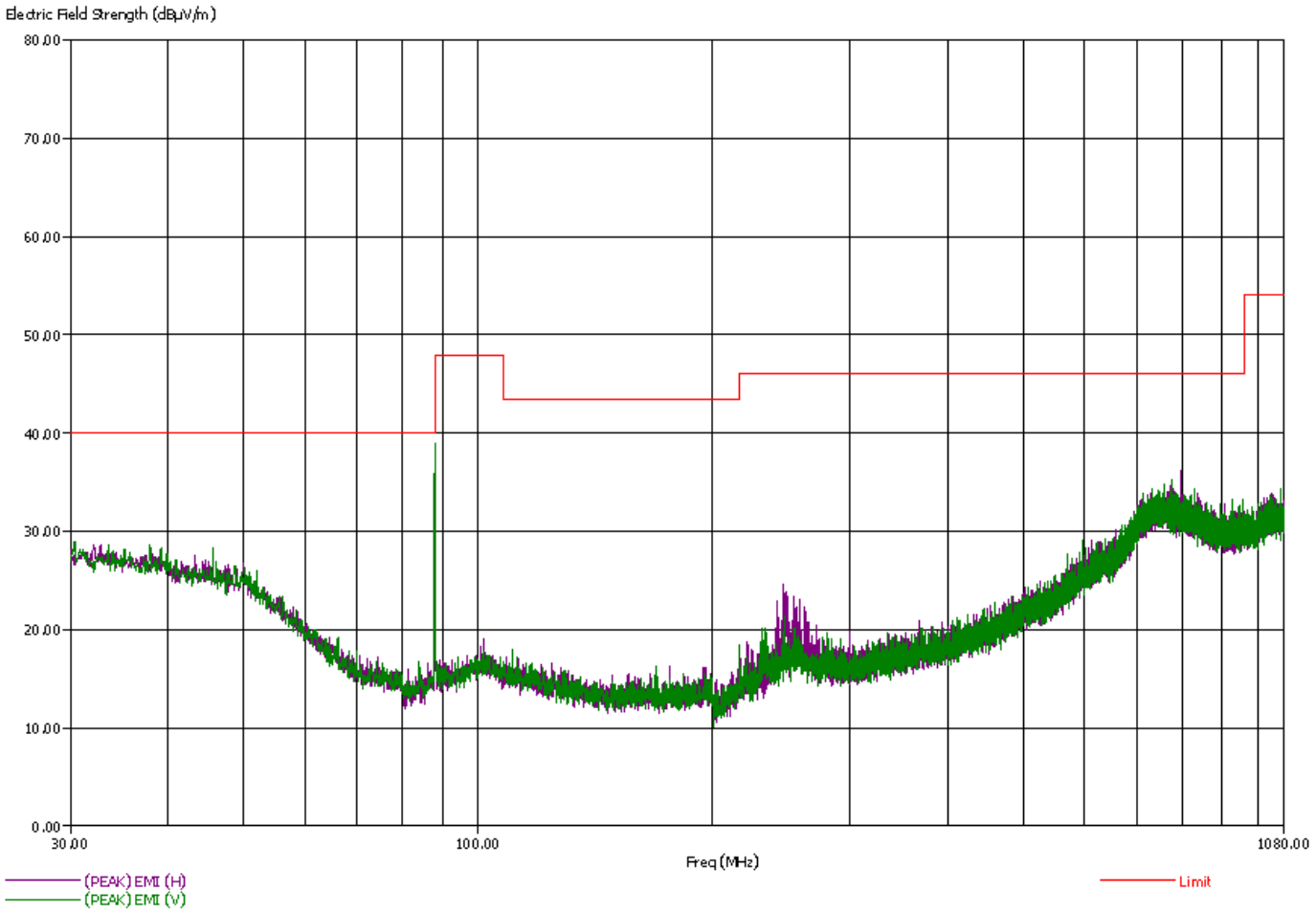
RADIATED EMISSIONS

SPURIOUS AND HARMONICS

DATA SHEETS

Title: FCC 15.239 11/4/2008 5:13:48 PM
File: Radiated Pre-scan 30-1000Mhz.set Sequence: Preliminary Scan
Operator: Josh Hansen
EUT Type: Tunecast F8VZ3080
EUT Condition: 88.1
Comments:
Temp: 70f
Hum: 33%

Compatible Electronics, Inc



Title: FCC 15.239 11/5/2008 5:00:00 PM
File: Radiated Final 30-2000Mhz.set Sequence: Final Measurements
Operator: Josh Hansen
EUT Type: Tunecast F8V3080
EUT Condition: 88.1
Comments:
Temp: 70f
Hum: 33%

Compatible Electronics, Inc

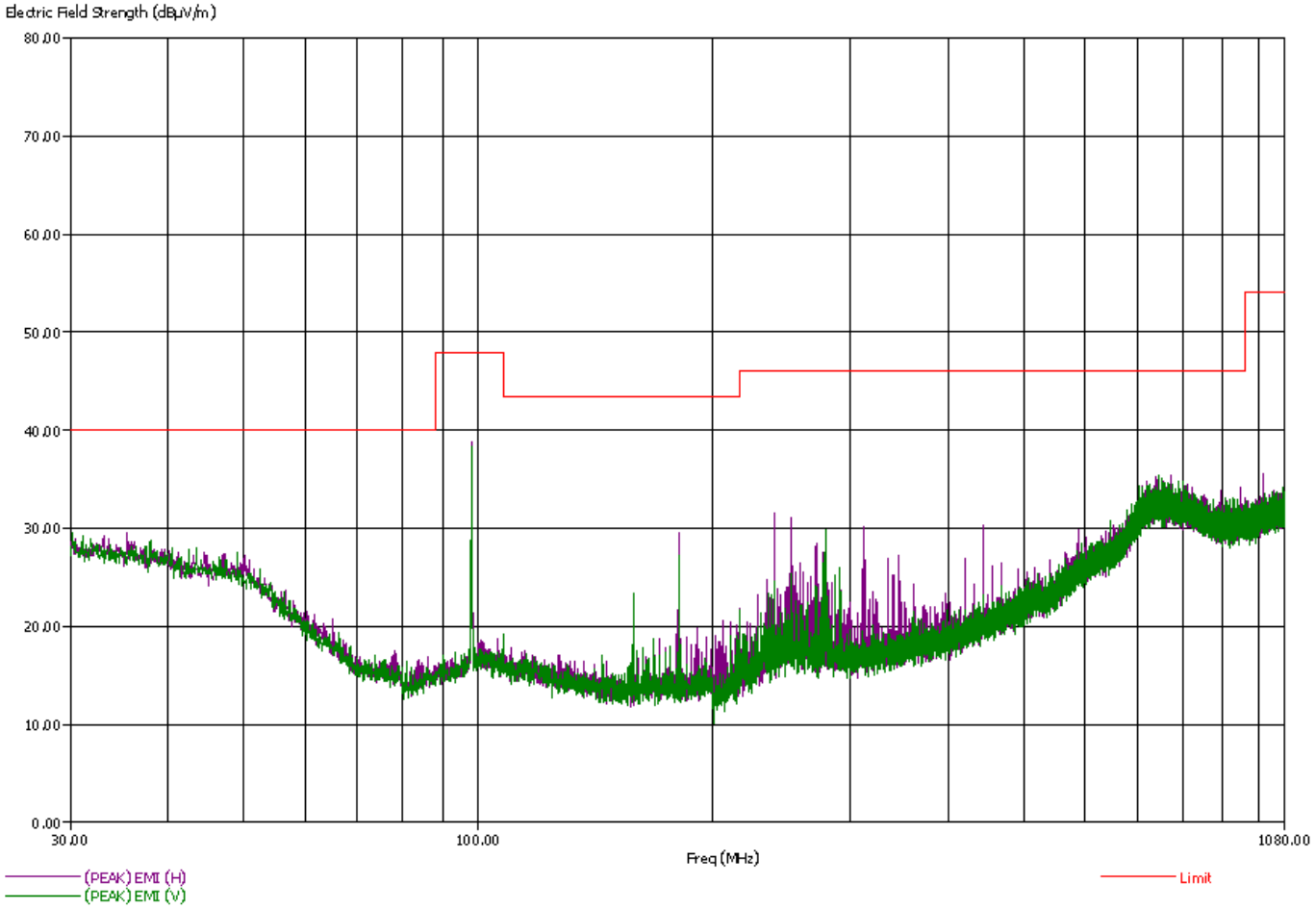
Freq (MHz)	(QP) Margin (dB)	(QP) EMI (dBµV/m)	(PEAK) EMI (dBµV/m)	Limit (dBµV/m)	Pol	Twr Ht (cm)	Ttbl Agl (deg)
32.20	-26.35	24.10	28.87	50.45	H	11.00	270.76
45.70	-27.71	22.74	28.30	50.45	V	137.75	206.52
246.80	-41.75	15.70	27.14	57.45	H	359.75	244.70
254.20	-41.65	15.80	23.41	57.45	H	328.75	174.64
774.80	-27.43	30.02	35.19	57.45	V	109.75	231.94

1

Title: FCC 15.239
File: Radiated Pre-scan 30-1000Mhz.set
Operator: Josh Hansen
EUT Type: Tunecast F8V3080
EUT Condition: 98.1
Comments:
Temp: 70f
Hum: 33%

11/5/2008 8:05:09 AM
Sequence: Preliminary Scan

Compatible Electronics, Inc



Title: FCC 15.239
File: Radiated Final 30-2000Mhz.set
Operator: Josh Hansen
EUT Type: Tunecast F8V3080
EUT Condition: 98.1
Comments:
Temp: 70f
Hum: 33%

11/5/2008 11:56:43 AM
Sequence: Final Measurements

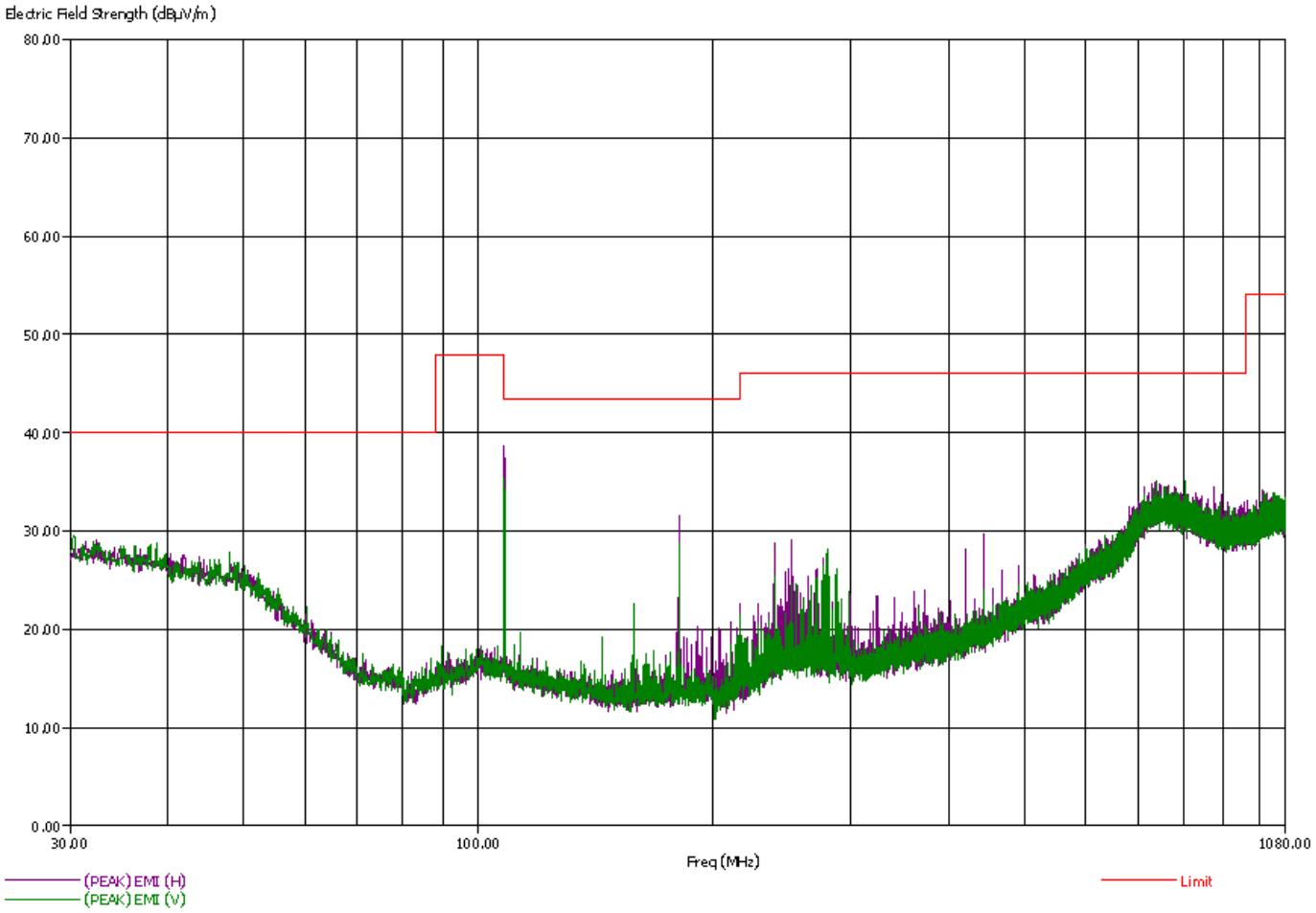
Compatible Electronics, Inc

Freq (MHz)	(QP) Margin (dB)	(QP) EMI (dBµV/m)	(PEAK) EMI (dBµV/m)	Limit (dBµV/m)	Pol	Twr Ht (cm)	Ttbl Agl (deg)
158.10	-28.40	22.05	24.98	50.45	V	286.75	166.52
180.70	-17.07	33.38	34.46	50.45	H	352.25	160.52
180.70	-23.22	27.23	29.15	50.45	V	347.25	156.88
240.10	-30.75	26.70	29.86	57.45	H	354.00	162.76
252.00	-30.36	27.09	36.33	57.45	H	6.50	151.05

Title: FCC 15.239
File: Radiated Pre-scan 30-1000Mhz.set
Operator: Josh Hansen
EUT Type: Tunecast F8V3080
EUT Condition: 107.9
Comments:
Temp: 70f
Hum: 33%

11/5/2008 8:27:54 AM
Sequence: Preliminary Scan

Compatible Electronics, Inc



Title: FCC 15.239
File: Radiated Final 30-2000Mhz.set
Operator: Josh Hansen
EUT Type: Tunecast F8V3080
EUT Condition: 107.9
Comments:
Temp: 70f
Hum: 33%

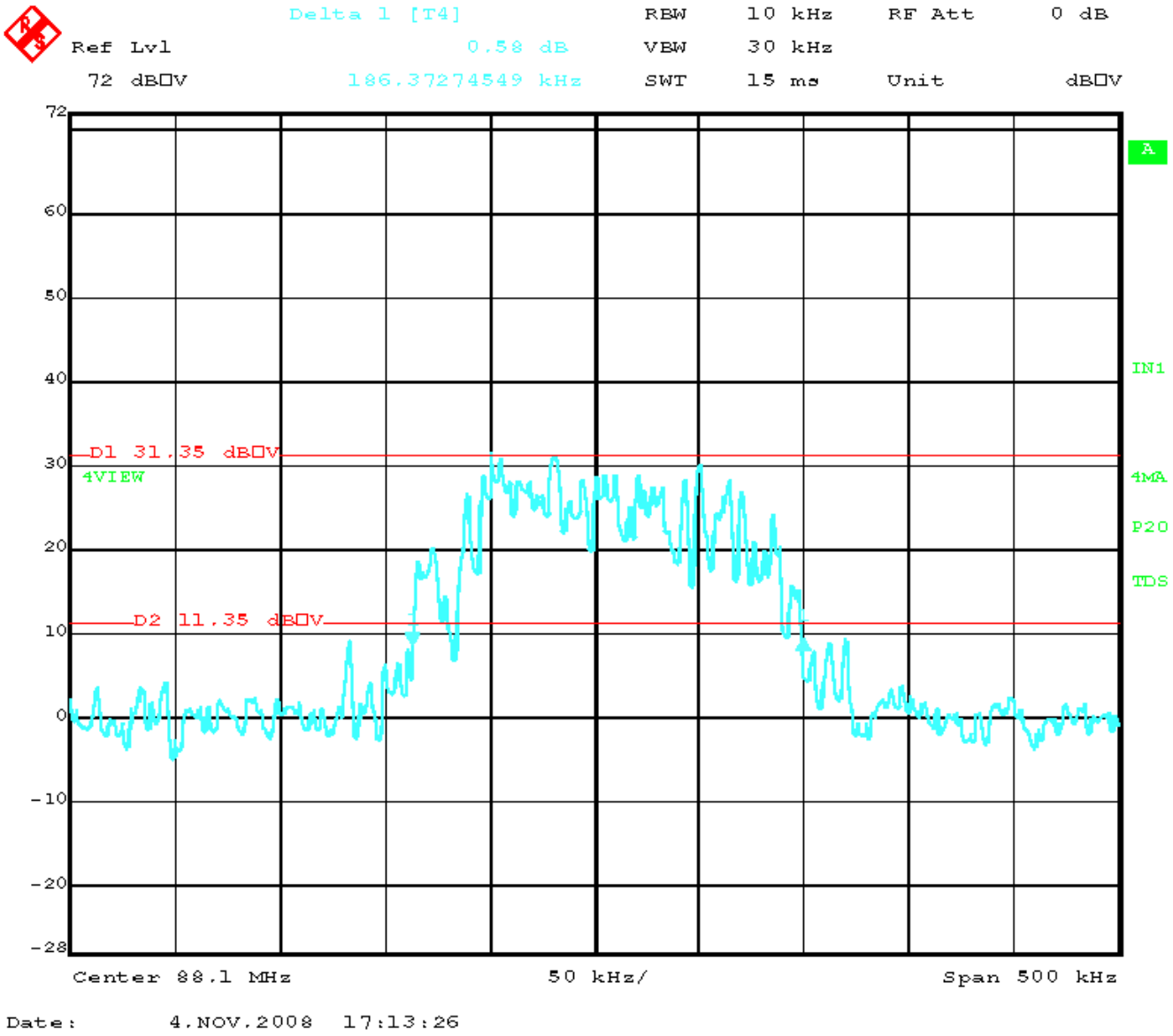
11/5/2008 12:30:38 PM
Sequence: Final Measurements

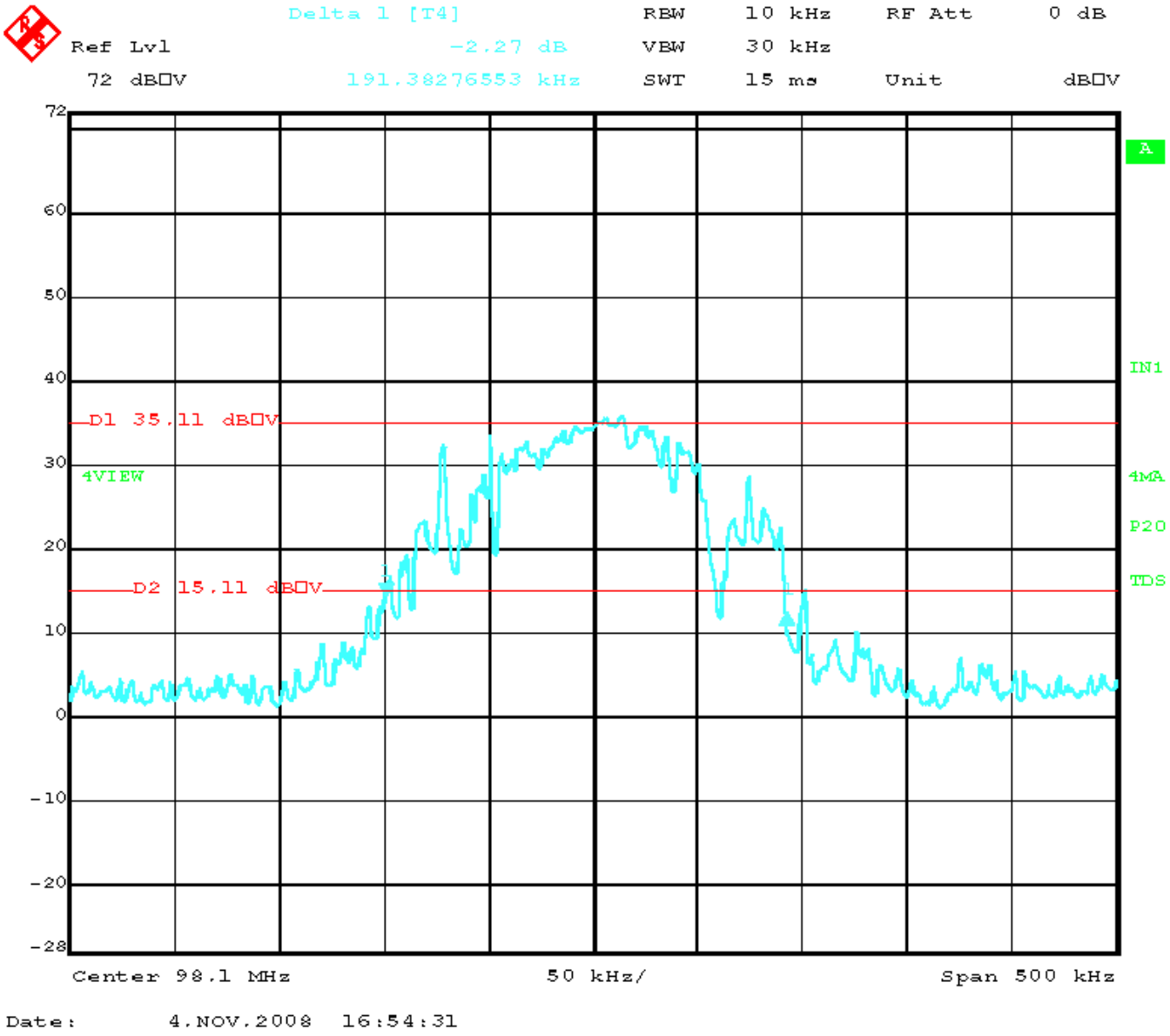
Compatible Electronics, Inc

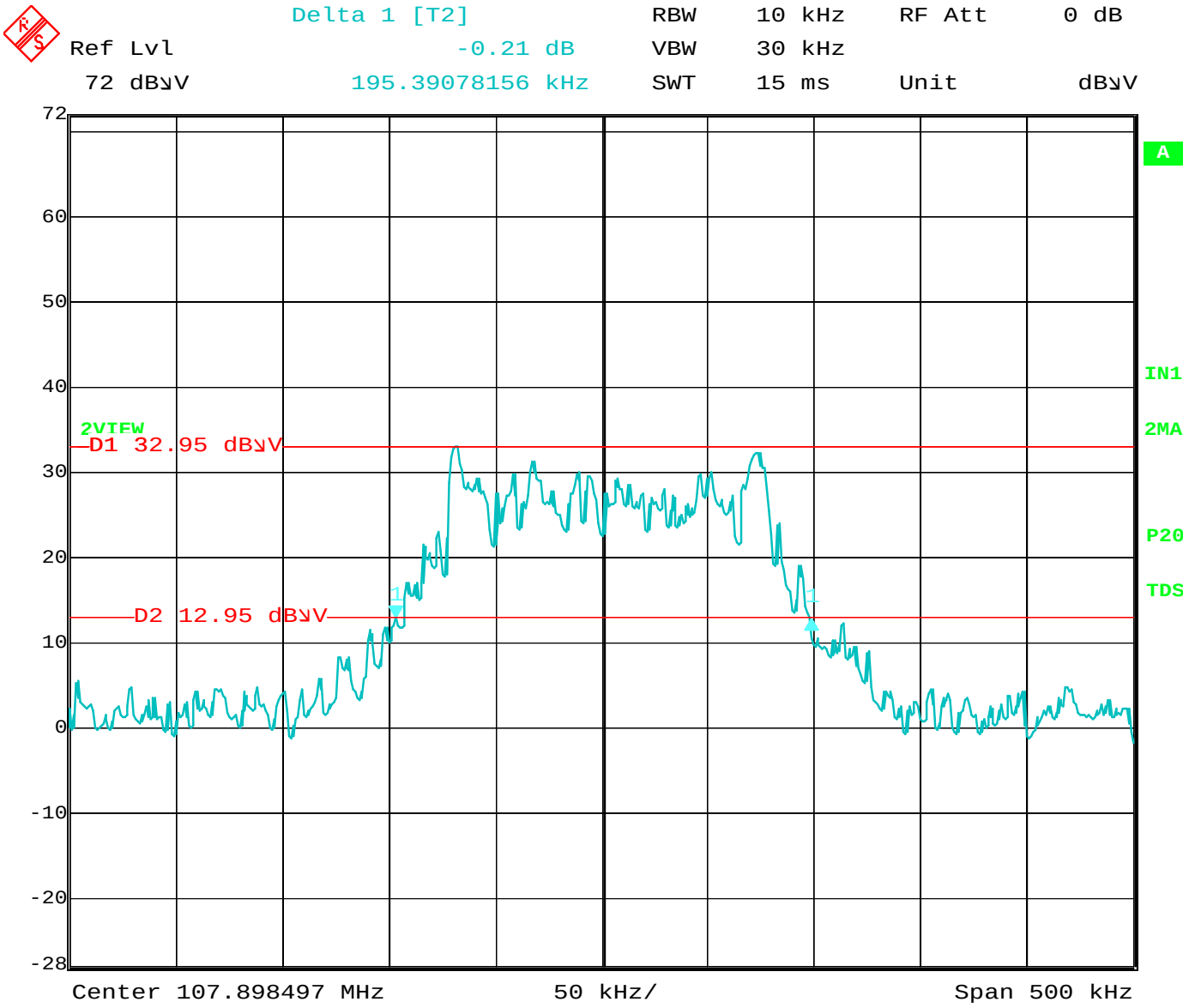
Freq (MHz)	(QP) Margin (dB)	(QP) EMI (dBµV/m)	(PEAK) EMI (dBµV/m)	Limit (dBµV/m)	Pol	Twr Ht (cm)	Ttbl Agl (deg)
180.60	-22.17	28.28	29.91	50.45	V	346.25	160.17
180.70	-18.16	32.29	33.30	50.45	H	0.00	183.23
240.10	-27.98	29.47	30.99	57.45	H	203.00	186.41
252.00	-35.99	21.46	27.36	57.45	H	12.50	157.64
280.80	-38.61	18.84	21.40	57.45	V	157.25	227.94

-20 dB BANDWIDTH

DATA SHEETS


Delta 1 [T4]
RBW 10 kHz
RF Att 0 dB
Ref Lvl
0.58 dB
VBW 30 kHz
72 dBµV
186.37274549 kHz
SWT 15 ms
Unit dBµV
72
60
50
40
30
20
10
0
-10
-20
-28
D1 31.35 dBµV
4VIEW
D2 11.35 dBµV
A
IN1
4MA
P20
TDS
Center 88.1 MHz
50 kHz/
Span 500 kHz
Date: 4.NOV.2008 17:13:26


Delta 1 [T4]
RBW 10 kHz
RF Att 0 dB
Ref Lvl
-2.27 dB
VBW 30 kHz
72 dBµV
191.38276553 kHz
SWT 15 ms
Unit dBµV
72
60
50
40
30
20
10
0
-10
-20
-28
D1 35.11 dBµV
D2 15.11 dBµV
4VIEW
A
IN1
4MA
P20
TDS
Center 98.1 MHz
50 kHz/
Span 500 kHz
Date: 4.NOV.2008 16:54:31



Date: 19.JAN.2009 10:16:03

PEAK TRANSMIT EMI and BAND EDGE

DATA SHEETS

Title: FCC 15.109
File: Final FCC 239 ERP.set
Operator: Josh Hansen
EUT Type: TuneCast F8V3080
EUT Condition:
Comments:
Temp: 70f
Hum: 35%

1/19/2009 10:12:09 AM
Sequence: Final Measurements

Compatible Electronics, Inc. FAC-3

Freq (MHz)	(AVG) Margin (dB)	(AVG) EMI (dBµV/m)	(PEAK) EMI (dBµV/m)	Limit (dBµV/m)	Pol	Ttbl Agl (deg)	Twr Ht (cm)
88.10	-16.24	31.72	33.63	47.96	H	331.25	372.52
88.10	-14.73	33.23	42.00	47.96	V	270.50	119.64
98.10	-12.04	35.92	39.57	47.96	H	171.75	343.29
98.10	-13.46	34.50	38.75	47.96	V	96.75	113.64
107.90	-12.30	35.66	38.94	47.96	H	179.00	190.64
107.90	-23.05	24.91	34.73	47.96	V	93.50	131.35