Emissions
Test Report

EUT Name: TuneBase FM2

EUT Model: F8Z176

CFR Title 47 Part 15.239 : 2006

Prepared for:

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Report/Issue Date: 26 September 2007
Report Number: 30761735.001

Statement of Compliance

Manufacturer:	Belkin International, Inc. 501 West Walnut Street Compton, CA 90220 (310) 604-2484
Requester / Applicant:	Zaven Mangassarian
Name of Equipment:	TuneBase FM2
Model No.	F8Z176
Type of Equipment:	Information Technology Equipment (ITE)
Application of Regulations:	CFR Title 47 Part 15.239 : 2006
Test Dates:	23 July 2007 to 26 September 2007

Guidance Documents:

Emissions: FCC 47 CFR Part 15

Test Methods:

Emissions: ANSI C63.4:2003

The electromagnetic compatibility test and documented data described in this report has been performed and recorded by TUV Rheinland of North America, in accordance with the standards and procedures listed herein. As the responsible authorized agent of the EMC laboratory, I hereby declare that a sample of one, of the equipment described above, has been shown to be compliant with the EMC requirements of the stated regulations and standards based on these results. If any special accessories and/or modifications were required for compliance, they are listed in the Executive Summary of this report.

This report must not be used to claim product endorsement by NVLAP or any agency of the U.S. Government. This report contains data that are not covered by NVLAP accreditation. This report shall not be reproduced except in full, without the written authorization of the laboratory.

Jamshid Shelopal

NVLAP Signatory

26 September 2007

Date

1 Executive Summary

1.1 Scope

This report is intended to document the status of conformance with the requirements of the CFR Title 47 Part 15.239 : 2006 based on the results of testing performed on *23 July* 2007 through *26 September* 2007 on the *TuneBase FM2* Model No. *F8Z176* manufactured by Belkin International, Inc.. This report only applies to the specific samples tested under the stated test conditions. It is the responsibility of the manufacturer to assure that additional production units of this model are manufactured with identical or EMI equivalent electrical and mechanical components. This report is further intended to document changes and modifications to the EUT throughout its life cycle. All documentation will be included as a supplement.

1.2 Purpose

Testing was performed to evaluate the EMC performance of the EUT in accordance with the applicable requirements, procedures, and criteria defined in the application of regulations and application of standards listed in this report.

1.3 Summary of Test Results

Table 1 - Summary of Test Results

Emission	Test Method(s)	Test Parameters	Result
Transmitter Emissions	ANSI C63.4:2003, and CFR Title 47 Part 15.239	88 MHz to 108 MHz	Complied
Conducted Emissions	ANSI C63.4:2003, CFR Title 47 Part 15.207	150 kHz to 30 MHz	Na
OutBand Spurious Emission	ANSI C63.4:2003, CFR 47 Part 15.209	30 MHz to 1000MHz (Excepts the operating freq.)	Complied
Band Edge Compliance	ANSI C63.4:2003, CFR 47 Part 15.239 (c)	30 MHz to 1000MHz (Excepts the operating freq.)	Complied
Occupied Bandwidth	ANSI C63.4:2003, and CFR 47 Part 15.239 (a)	200kHz Bandwidth 26dB Bandwidth	Complied
Tune Range	KDB #388624	Tuned Freq. Range Manually between 88MHz and 108MHz	Complied
Voltage Variation	CFR 47 Part 15.31(e)	Transmitted Emission Bandedge	Complied

1.4 Special Accessories

No special accessories were necessary in order to achieve compliance.

1.5 Equipment Modifications

Add surface-mount ferrite bead on the (+) lead of the CLA power contact PCB.

2 Laboratory Information

2.1 Accreditations & Endorsements

2.1.1 US Federal Communications Commission

TUV Rheinland of North America at the 2305 Mission College, Santa Clara, CA 95054 address is accredited by the commission for performing testing services for the general public on a fee basis. This laboratory test facilities have been fully described in reports submitted to and accepted by the FCC (FRN # 0014391684). The laboratory scope of accreditation includes: Title 47 CFR Part 15, 18, and 90. The accreditation is updated every 3 years.

2.1.2 Industry Canada

TUV Rheinland of North America at the 2305 Mission College, Santa Clara, CA 95054 address is accredited by Industry Canada for performing testing services for the general public on a fee basis. This laboratory test facilities have been fully described in reports submitted to and accepted by Industry Canada (File Number IC 4453-1). This reference number is the indication to the Industry Canada Certification Officers that the site meets the requirements of RSS 212, Issue 1 (Provisional). The accreditation is updated every 3 years.

2.1.3 NIST / NVLAP

TUV Rheinland of North America is accredited by the National Voluntary Laboratory Accreditation Program, which is administered under the auspices of the National Institute of Standards and Technology. The laboratory has been assessed and accredited in accordance with ISO Guide 17025:1999 and ISO 9002 (Lab code 100411-0). The scope of laboratory accreditation includes emission and immunity testing. The accreditation is updated annually.

2.1.4 Japan - VCCI

The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) is a group that consists of Information Technology Equipment (ITE) manufacturers and EMC test laboratories. The purpose of the Council is to take voluntary control measures against electromagnetic interference from Information Technology Equipment, and thereby contribute to the development of a socially beneficial and responsible state of affairs in the realm of Information Technology Equipment in Japan. TUV Rheinland of North America at the 2305 Mission College, Santa Clara, CA 95054 address has been assessed and approved in accordance with the Regulations for Voluntary Control Measures. (Registration No. R-2366, C-2585, C-2586).

2.1.5 Acceptance By Mutual Recognition Arrangement

The United States has an established agreement with specific countries under the Asia Pacific Laboratory Accreditation Corporation (APLAC) Mutual Recognition Arrangement. Under this agreement, all TUV Rheinland of North America at the 2305 Mission College, Santa Clara, CA 95054 address test results and test reports within the scope of the laboratory NIST / NVLAP accreditation will be accepted by each member country.

2.2 Test Facilities

All of the test facilities are located at 1279 Quarry Lane, Pleasanton, California 94566, USA.

(2305 Mission College, Santa Clara, 95054, USA location is Pleasanton Annex)

2.2.1 Emission Test Facility

The Semi-Anachoic chamber and AC Line Conducted measurement facility used to collect the radiated and conducted data has been constructed in accordance with ANSI C63.7:1992. The site has been measured in accordance with and verified to comply with the theoretical normalized site attenuation requirements of ANSI C63.4:2003, at a test distance of 3 and 10 meters. This site has been described in reports dated May 12, 1997, submitted to the FCC, and accepted by letter dated June 25, 1997 (31040/SIT 1300F2). The site is listed with the FCC and accredited by NVLAP (code 100411-0). The 10m semi-anechoic chamber used to collect the radiated data has been verified to comply with the theoretical normalized site attenuation requirements of ANSI C63.4:2003, at a test distance of 3 meter and 10 meters. A report detailing this site can be obtained from TUV Rheinland of North America.

2.2.2 Immunity Test Facility

ESD, EFT, Surge, PQF: These tests are performed in an environmentally controlled room with a 3.7m x 4.8m x 3.175mm thick aluminum floor connected to PE ground. For ESD testing, tabletop equipment is placed on an insulated mat with a surface resistivity of 10^9 Ohms/square on a 1.6m x 0.8m x 0.8m high non-conductive table with a 3.175mm aluminum top (Horizontal Coupling Plane). The HCP is connected to the main ground plane via a low impedance ground strap through two 470 kΩ resistors. The Vertical Coupling Plane consists of an aluminum plate 50cm x 50cm x 3.175mm thick. The VCP is connected to the main ground plane via a low impedance ground strap through two 470 kΩ resistors. For each of the other tests, the HCP is removed.

RF Field Immunity testing is performed in a 7.3m x 4.3m x 4.1m anechoic chamber.

RF Conducted and Magnetic Field Immunity testing is performed on a 4.8m x 3.7m x 3.175mm thick aluminum ground plane.

All test areas allow a minimum distance of 1 meter from the EUT to walls or conducting objects.

2.3 Measurement Uncertainty

Two types of measurement uncertainty are expressed in this report, per *ISO Guide To The Expression Of Uncertainty In Measurement*, 1st addition, 1995.

The Combined Standard Uncertainty is the standard uncertainty of the result of a measurement when that result is obtained from the values of a number of other quantities, equal to the positive square root of a sum of terms, the terms being the variances or co-variances of these other quantities weighted according to how the measurement result varies with changes in these quantities. The term standard uncertainty is the result of a measurement expressed as a standard deviation.

The Expanded Uncertainty defines an interval about the result of a measurement that may be expected to encompass a large fraction of the distribution of values that could reasonably be attributed to the measurand. The fraction may be viewed as the coverage probability or level of confidence of the interval.

The test system for conducted emissions is defined as the LISN, spectrum analyzer, coaxial cables, and pads. The test system for radiated emissions is defined as the antenna, spectrum analyzer, pre-amplifier,

coaxial cables, and pads. The test system for radiated immunity is defined as the antenna, amplifier, cables, signal generator field probe and spectrum analyzer. The test system for conducted immunity is defined as the coupling/decoupling device, amplifier, cables, signal generator and spectrum analyzer. The test system for voltage variations and interruptions immunity is defined as the AC power source and the interruptions generator. The test system for electrical fast transient immunity is defined as the AC power output source and the fast transient generator. The test system for lightning surge immunity is defined as the AC power output source and the lightning surge generator. The test system for electrostatic discharge immunity is defined as the air and contact discharge generators. The test system for power frequency magnetic field immunity is defined as the AC voltage source. The test system for the damped oscillatory wave immunity is defined as the AC power output source and the oscillatory wave generator. The test system for harmonic current and voltage flicker test is defined as the AC power source and the detection devices. The conducted emissions test system has a combined standard uncertainty of ± 1.2 dB. The radiated emissions test system has a combined standard uncertainty of ± 1.6 dB. The radiated immunity test system has a combined standard uncertainty of ± 2.7 dB. The conducted immunity test system has a combined standard uncertainty of ± 1.5 dB. The voltage variations and interruptions immunity test system has a combined standard uncertainty of ± 4.3 dB. The electrical fast transients immunity test system has a combined standard uncertainty of ± 5.8 dB. The lightning surge immunity test system has a combined standard uncertainty of ± 8.0 dB. The electrostatic discharge immunity test system has a combined standard uncertainty of ± 4.1 dB. The power frequency magnetic field immunity test system has a combined standard uncertainty of ± 0.58 dB. The damped oscillatory wave immunity test system has a combined standard uncertainty of ± 8.7 dB. The harmonic current and voltage flicker test system has a combined standard uncertainty of ± 11.6 dB. The expanded uncertainty at a level of 95% confidence is obtained by multiplying the combined standard uncertainty by a coverage factor of 2. Compliance criteria are not based on measurement uncertainty.

2.4 Calibration Traceability

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Measurement method complies with ANSI/NCSL Z540-1-1994 and ISO Guide 17025:1999.

3 Product Information

3.1 Product Description

The TuneBase FM2 Transmitter is designed to transmit the IPod audio to one of the selected FM channels.

3.2 Unique Antenna Connector

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221.

3.2.1 Results

The antenna is permanently attached.

4 Emissions

4.1 Radiated Emissions (Fundamental and Spurious per CFR Title 47 Part 15.239)

Testing was performed in accordance with ANSI C63.4:2003, and CFR Title 47 Part 15.239. These test methods are listed under the laboratory's NVLAP Scope of Accreditation. This test measures the levels emanating from the EUT, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices.

4.1.1 Test Methodology

4.1.1.1 Preliminary Test

A test program that controls instrumentation and data logging was used to automate the preliminary RF emission test procedure. The frequency range of interest was divided into sub-ranges to yield a frequency resolution of approximately 300 kHz and provide a reading at each frequency for no more than 12° of turntable rotation. For each frequency sub-range the turntable was rotated 360° while peak emission data was recorded and plotted over the frequency range of interest in horizontal and vertical antenna polarization's.

Preliminary emission profile testing was performed inside the anechoic chamber. The EUT was placed on a 1.0m x 1.5m non-conductive table 80cm above the floor. The EUT was positioned as shown in the setup photographs. The receiving antenna was placed at a distance of 3m at a fixed height of 1m. Measurement equipment was located outside of the chamber. A video camera was placed inside the chamber to view the EUT.

4.1.1.2 Final Test

For each frequency measured, the peak emission was maximized by manipulating the receiving antenna from 1 to 4 meters above the ground plane and placing it at the position that produced the maximum signal strength reading. The turntable was then rotated through 360° while observing the peak signal and placing the EUT at the position that produced maximum radiation. The six highest emissions relative to the limit were measured unless such emissions were more than 20 dB below the limit. If less than six emissions are within 20 dB of the limit, than the noise level of the receiver is measured at frequencies where emissions are expected. Multiples of all oscillator and microprocessor frequencies were also checked.

Final testing was performed on an NSA compliant test site. The EUT was placed on a 1.0m x 1.5m non-conductive table 80cm above the ground plane. The placement of EUT and cables were the same as for preliminary testing and is shown in the setup photographs.

4.1.1.3 Deviations

There were no deviations from this test methodology.

4.1.2 Test Results

Section 4.1.2.1 lists the final measurement data under the worst case operating modes, configurations, and/or cable positions. It also reflects the results including any modifications and/or special accessories listed in Sections 1.4 and 1.5.

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

4.1.2.1 Final Data

The data recorded in this section contains the final results under the worst-case conditions and with any modifications or special accessories implemented as the manufacturer intends.

SOP 1 Radiated Emissions

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EUT Name	TuneBase FM2	**Date**	24 July 2007
EUT Model	F8Z176	**Temp / Hum in**	70°F / 39%rh
EUT Serial	Not Serialized (Sample #2)	**Temp / Hum out**	N/A
Standard	FCC 47 CFR Part 15	**Line AC / Freq**	13.8VDC
Deg/sweep	N/a	**RBW / VBW**	120kHz / 300kHz
Dist/Ant Used	3m / CBL6112B	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (m)	Table Pos (deg)	FIM Value (dBuV)	Corr'd Factor (dB)	E-Field Value (dBuV/m)	Fundamental Limit (dBuV/m)	Spec Margin (dB)
Fundamental CH 88.1: Peak Mesurements								
88.1	H	3.0	245	55.21	-22.46	32.75	67.96	-35.21
88.1	V	1.0	316	68.51	-22.46	46.05	67.96	-21.91
Fundamental CH 98.1: Peak Mesurements								
98.1	H	1.9	219	44.57	-20.55	24.02	67.96	-43.94
98.1	V	1.0	27	59.66	-20.55	39.11	67.96	-28.85
Fundamental CH 107.9: Peak Mesurements								
107.9	H	2.9	89	59.00	-19.40	39.60	67.96	-28.36
107.9	V	1.6	172	55.24	-19.40	35.84	67.96	-32.12
Fundamental CH 88.1: Average Mesurements								
88.1	H	3.0	245	55.14	-22.46	32.68	47.96	-15.28
88.1	V	1.0	316	68.41	-22.46	45.95	47.96	-2.01
Fundamental CH 98.1: Average Mesurements								
98.1	H	1.9	219	44.47	-20.55	23.92	47.96	-24.04
98.1	V	1.0	27	59.57	-20.55	39.02	47.96	-8.94
Fundamental CH 107.9: Average Mesurements								
107.9	H	2.9	89	58.44	-19.40	39.04	47.96	-8.92
107.9	V	1.6	172	55.15	-19.40	35.75	47.96	-12.21

Spec Margin = E-Field Value - Limit, E-Field Value = FIM Value + Corr'd Factor ± Uncertainty

Combined Standard Uncertainty $u_c(y)$ = ± 1.6dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Notes:
The TBFM2 was positioned in the X-Axis; EUT is in the upright position.

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EUT Name	TuneBase FM2	**Date**	24 July 2007
EUT Model	F8Z176	**Temp / Hum in**	70°F / 39%rh
EUT Serial	Not Serialized (Sample #2)	**Temp / Hum out**	N/A
Standard	FCC 47 CFR Part 15	**Line AC / Freq**	13.8VDC
Deg/sweep	N/a	**RBW / VBW**	120kHz / 300kHz
Dist/Ant Used	3m / CBL6112B	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (m)	Table Pos (deg)	FIM Value (dBuV)	Corr'd Factor (dB)	E-Field Value (dBuV/m)	Fundamental Limit (dBuV/m)	Spec Margin (dB)
Fundamental CH 88.1: Peak Mesurements								
88.1	H	3.4	325	67.48	-22.46	45.02	67.96	-22.94
88.1	V	3.0	62	61.41	-22.46	38.95	67.96	-29.01
Fundamental CH 98.1: Peak Mesurements								
98.1	H	3.2	125	65.61	-20.55	45.06	67.96	-22.90
98.1	V	2.9	57	58.01	-20.55	37.46	67.96	-30.50
Fundamental CH 107.9: Peak Mesurements								
107.9	H	2.9	254	64.32	-19.40	44.92	67.96	-23.04
107.9	V	2.9	358	62.10	-19.40	42.70	67.96	-25.26
Fundamental CH 88.1: Average Mesurements								
88.1	H	3.4	325	67.46	-22.46	45.00	47.96	-2.96
88.1	V	3.0	62	61.11	-22.46	38.65	47.96	-9.31
Fundamental CH 98.1: Average Mesurements								
98.1	H	3.2	125	65.56	-20.55	45.01	47.96	-2.95
98.1	V	2.9	57	57.81	-20.55	37.26	47.96	-10.40
Fundamental CH 107.9: Average Mesurements								
107.9	H	2.9	254	64.18	-19.40	44.78	47.96	-3.18
107.9	V	2.9	358	62.05	-19.40	42.65	47.96	-5.31

Spec Margin = E-Field Value - Limit, E-Field Value = FIM Value + Corr'd Factor ± Uncertainty

Combined Standard Uncertainty $u_c(y)$ = ± 1.6dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Notes:
The TBFM2 was positioned in the Y-Axis; EUT on its side.

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EUT Name	TuneBase FM2	**Date**	24 July 2007
EUT Model	F8Z176	**Temp / Hum in**	70°F / 39%rh
EUT Serial	Not Serialized (Sample #2)	**Temp / Hum out**	N/A
Standard	FCC 47 CFR Part 15	**Line AC / Freq**	13.8VDC
Deg/sweep	N/a	**RBW / VBW**	120kHz / 300kHz
Dist/Ant Used	3m / CBL6112B	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (m)	Table Pos (deg)	FIM Value (dBuV)	Corr'd Factor (dB)	E-Field Value (dBuV/m)	Fundamental Limit (dBuV/m)	Spec Margin (dB)
Fundamental CH 88.1: Peak Mesurements								
88.1	H	2.5	71	64.74	-22.46	42.28	67.96	-25.68
88.1	V	2.7	338	61.64	-22.46	39.18	67.96	-28.78
Fundamental CH 98.1: Peak Mesurements								
98.1	H	3.3	241	58.59	-20.55	38.04	67.96	-29.92
98.1	V	3.2	335	52.88	-20.55	32.33	67.96	-35.63
Fundamental CH 107.9: Peak Mesurements								
107.9	H	3.0	261	53.53	-19.40	34.13	67.96	-33.83
107.9	V	2.9	1	51.98	-19.40	32.58	67.96	-35.38
Fundamental CH 88.1: Average Mesurements								
88.1	H	2.5	71	64.66	-22.46	42.20	47.96	-5.76
88.1	V	2.7	338	61.62	-22.46	39.16	47.96	-8.8
Fundamental CH 98.1: Average Mesurements								
98.1	H	3.3	241	58.55	-20.55	38.00	47.96	-9.96
98.1	V	3.2	335	52.76	-20.55	32.21	47.96	-15.75
Fundamental CH 107.9: Average Mesurements								
107.9	H	3.0	261	53.51	-19.40	34.11	47.96	-13.85
107.9	V	2.9	1	51.92	-19.40	32.52	47.96	-15.44

Spec Margin = E-Field Value - Limit, E-Field Value = FIM Value + Corr'd Factor ± Uncertainty

Combined Standard Uncertainty $u_c(y)$ = ± 1.6dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Notes:
The TBFM2 was positioned in the Z-Axis; EUT is facing toward ceiling.

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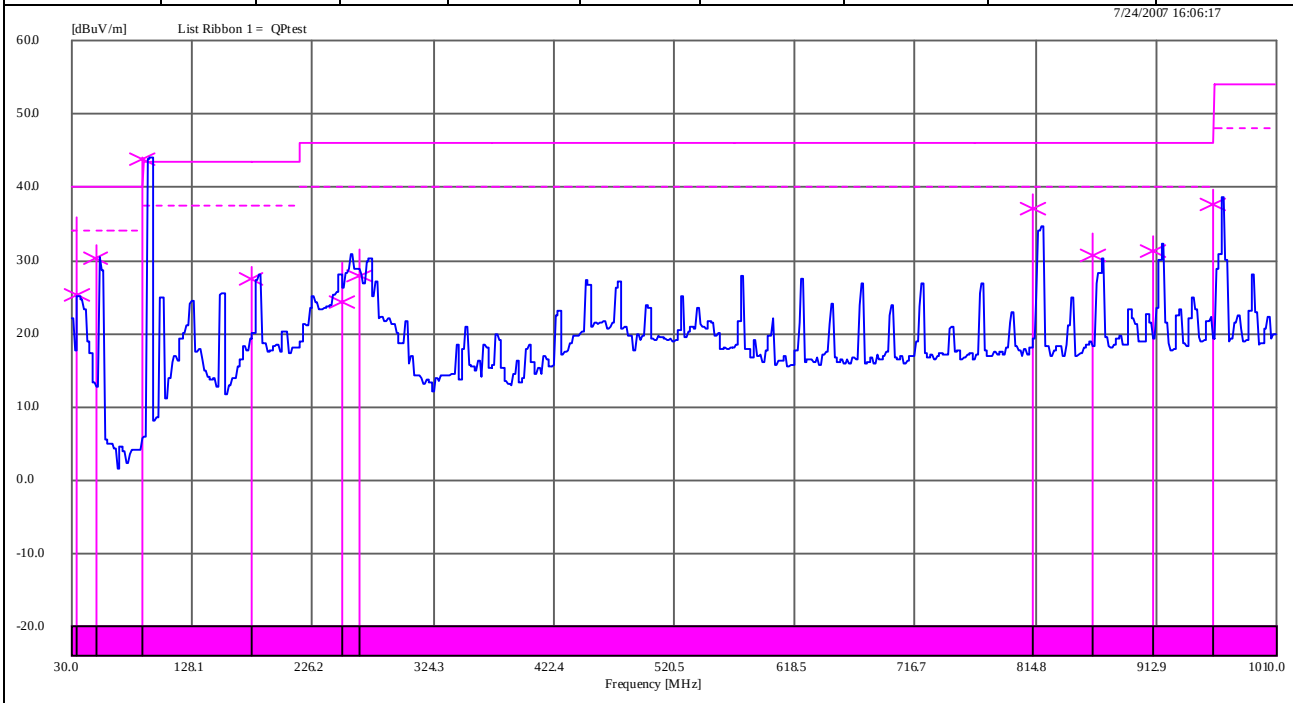
EUT Name	TuneBase FM2	**Date**	24 July 2007
EUT Model	F8Z176	**Temp / Hum in**	70°F / 39%rh
EUT Serial	Not Serialized	**Temp / Hum out**	N/A
Standard	FCC 47 CFR Part 15	**Line AC**	13.8VDC
Deg/sweep	N/a	**RBW / VBW**	120kHz / 300kHz
Dist/Ant Used	3m / CBL6112B	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (m)	Table Pos (deg)	Pk Input Value (dBuV)	QP Input Value (dBuV)	Corr'd Factor (dB)	QP E-Field Value (dBuV/m)	Spec Limit (dBuV/m)	Spec Margin (dB)
Fundamental CH 88.1 - Spurious Emissions									
33.89	V	3.4	201	50.91	40.24	-14.95	25.29	40.0	-14.71
49.18	V	1.0	154	54.84	52.97	-22.7	30.27	40.0	-9.73
176.19	V	1.0	348	50.31	48.77	-21.22	27.55	43.5	-15.95
250.40	H	1.0	219	47.36	41.83	-17.57	24.26	46.0	-21.74
264.29	H	1.0	112	48.43	44.91	-16.94	27.97	46.0	-18.03
811.64	V	1.2	347	48.04	46.15	-8.97	37.18	46.0	-8.82
860.80	V	1.0	346	41.93	38.96	-8.28	30.68	46.0	-15.32
910.00	V	1.0	189	41.17	39.11	-7.87	31.24	46.0	-14.76
959.22	V	1.0	158	46.48	44.58	-6.87	37.71	46.0	-8.29



Spec Margin = E-Field Value - Limit, E-Field Value = FIM Value + Corr'd Factor ± Uncertainty

Combined Standard Uncertainty $u_c(y)$ = ± 1.6dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Notes: The fundamental of the EUT was tested in all three planes and the Channel 88.1MHz was worst at the upright position.
TBFM2 was transmitting during the spurious emission scan.

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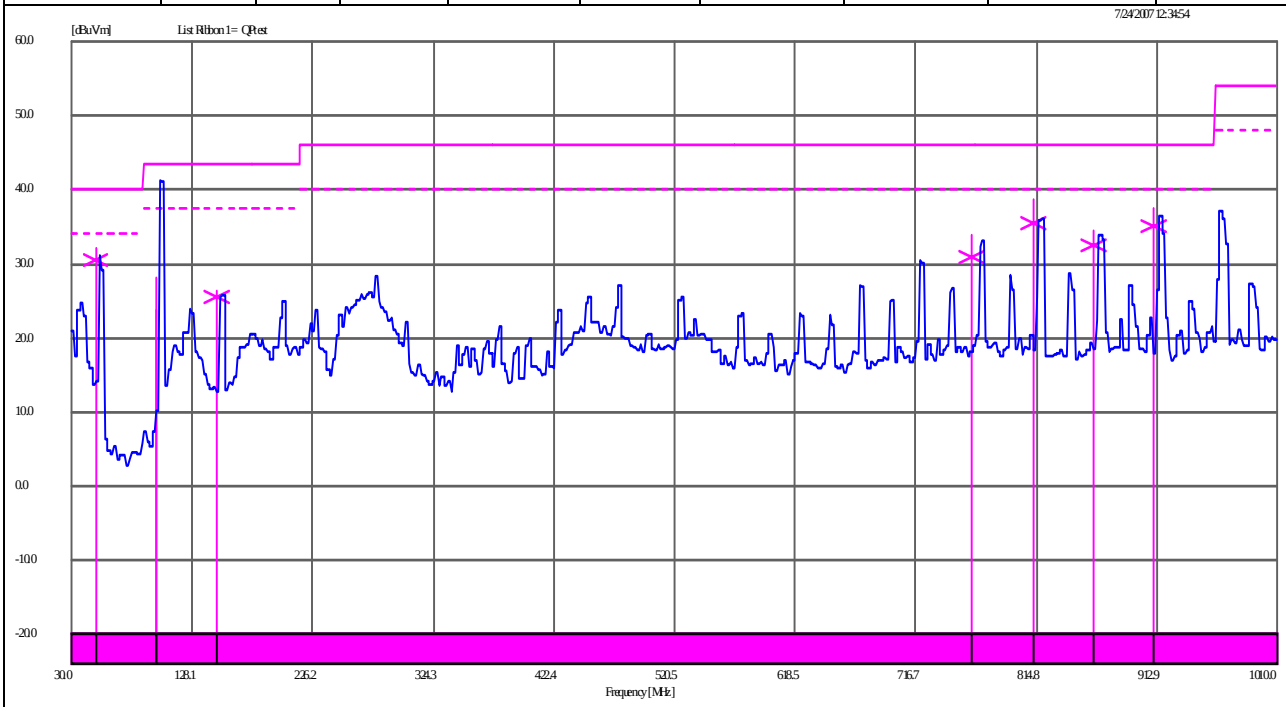
EUT Name	TuneBase FM2	**Date**	24 July 2007
EUT Model	F8Z176	**Temp / Hum in**	70°F / 39%rh
EUT Serial	Not Serialized	**Temp / Hum out**	N/A
Standard	FCC 47 CFR Part 15	**Line AC**	13.8VDC
Deg/sweep	N/a	**RBW / VBW**	120kHz / 300kHz
Dist/Ant Used	3m / CBL6112B	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (m)	Table Pos (deg)	Pk Input Value (dBuV)	QP Input Value (dBuV)	Corr'd Factor (dB)	QP E-Field Value (dBuV/m)	Spec Limit (dBuV/m)	Spec Margin (dB)
Fundamental CH 98.1 - Spurious Emissions									
49.19	V	1.1	216	54.89	53.26	-22.7	30.56	40.0	-9.44
98.37	H	3.2	99	48.66	48.14	-20.5	27.64	43.5	-15.86
98.39	V	1.0	137	44.3	43.41	-20.49	22.92	43.5	-20.58
147.57	V	1.0	101	46.64	45.71	-20.24	25.47	43.5	-18.03
762.44	H	1.0	342	43.72	40.65	-9.77	30.88	46.0	-15.12
811.60	H	1.0	173	47.6	44.39	-8.97	35.42	46.0	-10.58
860.91	H	1.0	196	42.79	40.85	-8.28	32.57	46.0	-13.43
910.03	H	1.0	183	45.42	42.99	-7.87	35.12	46.0	-10.88



Spec Margin = E-Field Value - Limit, E-Field Value = FIM Value + Corr'd Factor ± Uncertainty

Combined Standard Uncertainty $u_c(y)$ = ± 1.6dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Notes: The fundamental of the EUT was tested in all three planes and the Channel 98.1MHz was worst at the side position.
TBFM2 was transmitting during the spurious emission scan.

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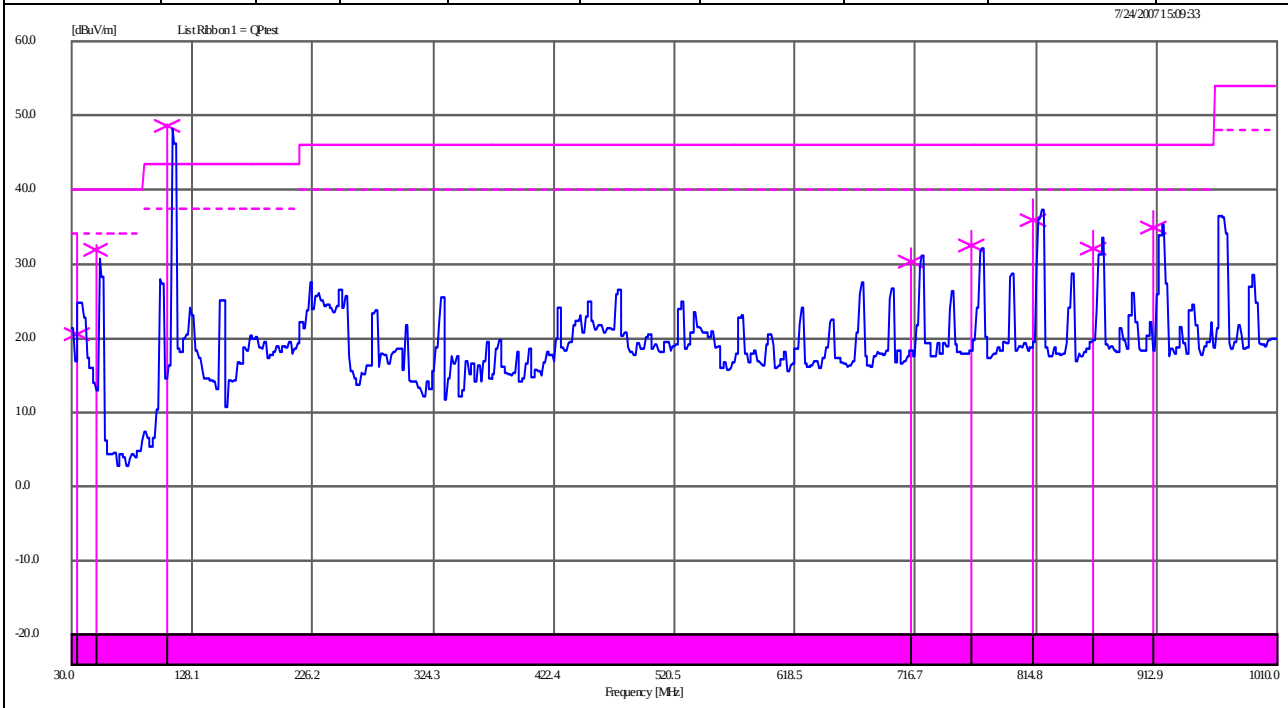
EUT Name	TuneBase FM2	**Date**	24 July 2007
EUT Model	F8Z176	**Temp / Hum in**	70°F / 39%rh
EUT Serial	Not Serialized	**Temp / Hum out**	N/A
Standard	FCC 47 CFR Part 15	**Line AC**	13.8VDC
Deg/sweep	N/a	**RBW / VBW**	120kHz / 300kHz
Dist/Ant Used	3m / CBL6112B	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (m)	Table Pos (deg)	Pk Input Value (dBuV)	QP Input Value (dBuV)	Corr'd Factor (dB)	QP E-Field Value (dBuV/m)	Spec Limit (dBuV/m)	Spec Margin (dB)
Fundamental CH 107.9 - Spurious Emissions									
33.60	V	3.7	97	48.99	35.40	-14.81	20.59	40.0	-19.41
49.19	V	1.0	144	55.21	54.60	-22.7	31.9	40.0	-8.1
713.32	H	1.0	357	42.40	40.60	-10.35	30.25	46.0	-15.75
762.46	H	1.0	348	44.32	42.25	-9.77	32.48	46.0	-13.52
811.65	H	1.0	357	47.67	44.93	-8.97	35.96	46.0	-10.04
860.90	H	1.1	189	42.79	40.34	-8.28	32.06	46.0	-13.94
910.03	H	1.0	191	44.88	42.76	-7.87	34.89	46.0	-11.11



Spec Margin = E-Field Value - Limit, E-Field Value = FIM Value + Corr'd Factor ± Uncertainty

Combined Standard Uncertainty $u_c(y)$ = ± 1.6dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Notes: The fundamental of the EUT was tested in all three planes and the Channel 107.9MHz was worst at the side position.
TBFM2 was transmitting during the spurious emission scan.

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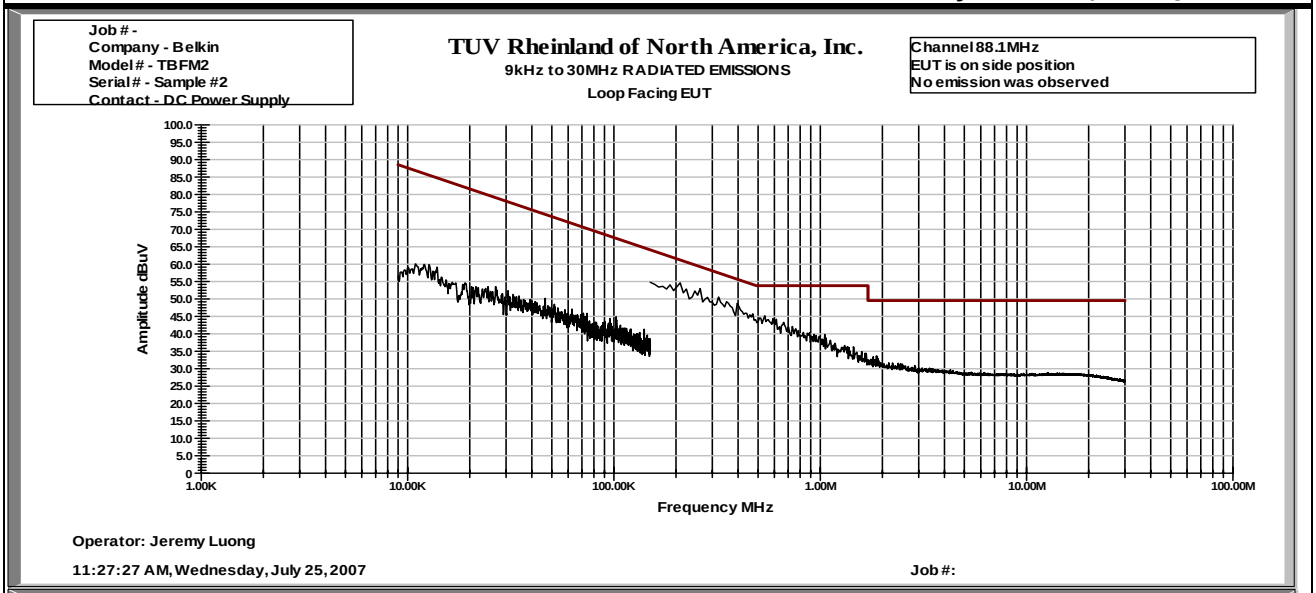
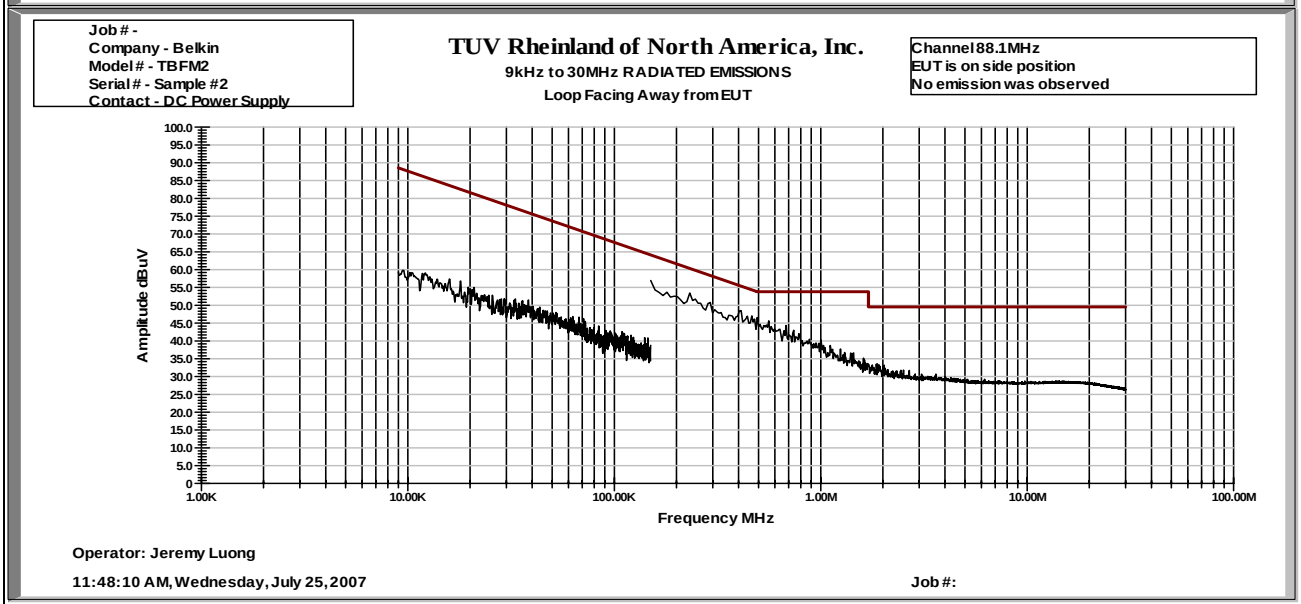
EUT Name	TuneBase FM2	**Date**	25 July 2007
EUT Model	F8Z176	**Temp / Hum in**	69°F / 38%rh
EUT Serial	Not Serialized	**Temp / Hum out**	N/A
Standard	FCC 47 CFR Part 15	**Line AC**	13.8VDC
Deg/sweep	N/a	**RBW / VBW**	See Note Below
Dist/Ant Used	3m / EMCO 6502	**Performed by**	Jeremy Luong





Notes: The fundamental 88.1MHz of the EUT was tested in all three planes and the side position was worst case. No emission was observed when the loop was facing TBFM2 and facing away.
Receiver Setting:
9kHz-150kHz Range - IFW (200Hz) / VBW (300Hz)
150kHz-30MHz Range – IFBW (10kHz) / VBW (30kHz)

SOP 1 Radiated Emissions

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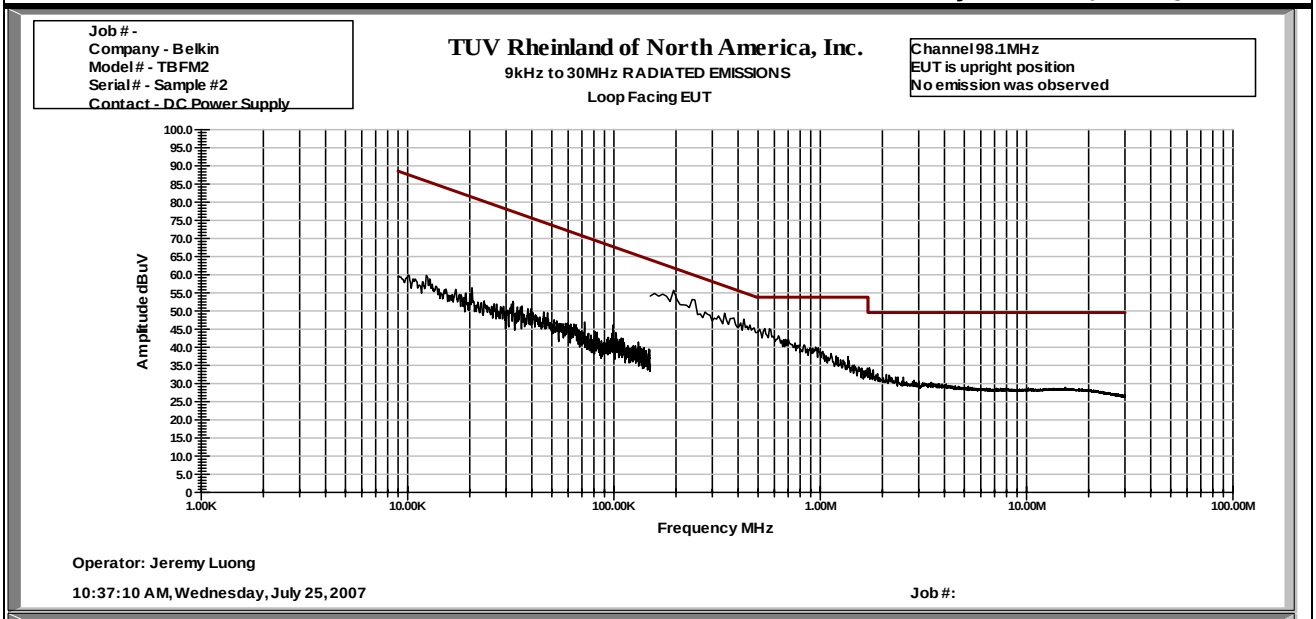
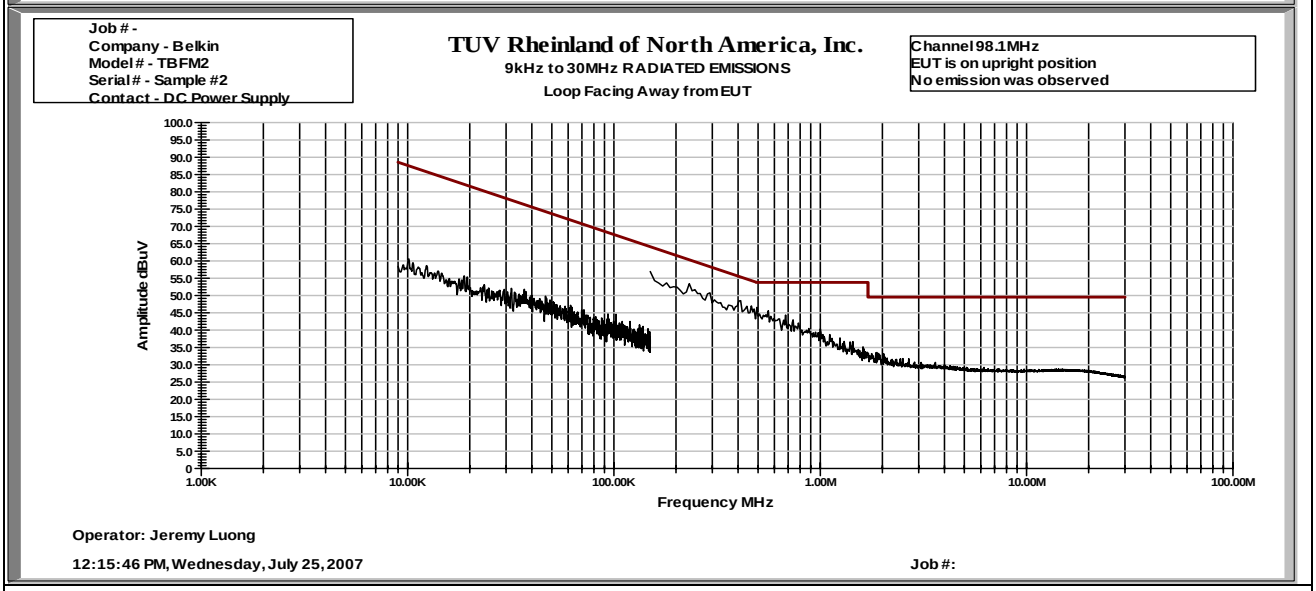
EUT Name	TuneBase FM2	**Date**	25 July 2007
EUT Model	F8Z176	**Temp / Hum in**	69°F / 38%rh
EUT Serial	Not Serialized	**Temp / Hum out**	N/A
Standard	FCC 47 CFR Part 15	**Line AC**	13.8VDC
Deg/sweep	N/a	**RBW / VBW**	See Note Below
Dist/Ant Used	3m / EMCO 6502	**Performed by**	Jeremy Luong





Notes: The fundamental 98.1MHz of the EUT was tested in all three planes and the upright position was worst case. No emission was observed when the loop was facing TBFM2 and facing away.
Receiver Setting:
9kHz-150kHz Range - IFW (200Hz) / VBW (300Hz)
150kHz-30MHz Range – IFBW (10kHz) / VBW (30kHz)

SOP 1 Radiated Emissions

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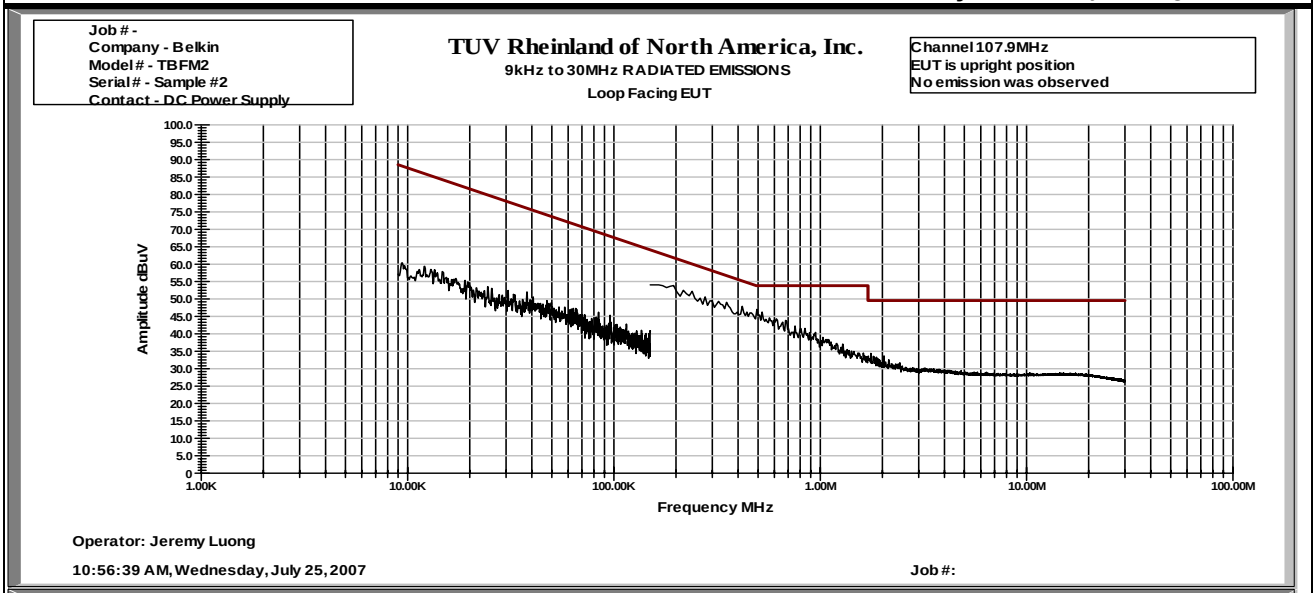
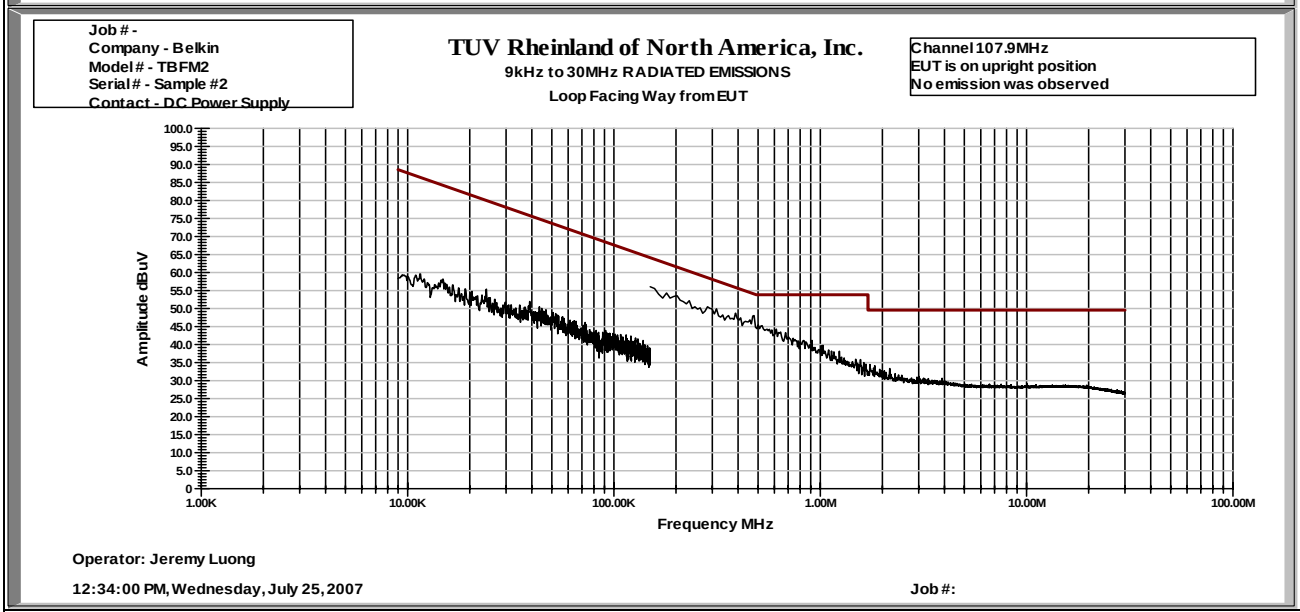
EUT Name	TuneBase FM2	**Date**	25 July 2007
EUT Model	F8Z176	**Temp / Hum in**	69°F / 38%rh
EUT Serial	Not Serialized	**Temp / Hum out**	N/A
Standard	FCC 47 CFR Part 15	**Line AC**	13.8VDC
Deg/sweep	N/a	**RBW / VBW**	See Note Below
Dist/Ant Used	3m / EMCO 6502	**Performed by**	Jeremy Luong





Notes: The fundamental 107.9MHz of the EUT was tested in all three planes and the upright position was worst case. No emission was observed when the loop was facing TBFM2 and facing away.
Receiver Setting:
9kHz-150kHz Range - IFW (200Hz) / VBW (300Hz)
150kHz-30MHz Range – IFBW (10kHz) / VBW (30kHz)

4.1.3 Sample Calculation

The field strength is calculated by subtracting the Amplifier Gain and adding the Cable Loss and Antenna Correction Factor to the measured reading. The basic equation is as follows:

Field Strength (dBμV/m) = FIM - AMP + CBL + ACF

Where: FIM = Field Intensity Meter (dBμV)
AMP = Amplifier Gain (dB)
CBL = Cable Loss (dB)
ACF = Antenna Correction Factor (dB/m)

$$\mu V/m = 10^{\frac{dB\mu V/m}{20}}$$

4.2 Conducted Emissions (CFR Title 47 Part 15)

Testing was performed in accordance with ANSI C63.4:2003, CFR Title 47 Part 15.207. These test methods are listed under the laboratory's NVLAP Scope of Accreditation.

This test measures the levels emanating from the EUT, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices.

4.2.1 Test Methodology

A test program that controls instrumentation and data logging was used to automate the AC Power Line Conducted emission test procedure. The frequency range of interest was divided into sub-ranges such as to yield a frequency resolution of 9 kHz. For each frequency sub-range, each phase and neutral of the AC power line were measured with respect to ground. Measurements were performed using a set of 50μH / 50Ω LISNs.

Testing is either performed in the semi anechoic chamber or on Lab 3. The setup photographs clearly identify which site was used. The vertical ground plane used in the anechoic chamber is a 2m x 2m Aluminum frame and is bonded to the horizontal ground plane.

In the case of tabletop equipment, the EUT is placed on a 1.0m x 1.5m non-conductive table 80cm above the ground plane and 40cm from a vertical ground reference plane. The rear of the EUT was positioned flush with the backside of the table and directly over the LISNs. The power and I/O cables were routed over the edge of the table and bundled approximately 40cm from the ground plane. Support equipment was powered from a separate LISN.

4.2.1.1 Deviations

There were no deviations from this test methodology.

4.2.2 Test Results

Since the TuneBase FM2 Transmitter is DC powered, AC conducted emission is not required.

4.2.2.1 Final Data

No data.

4.3 Band Edge Compliance

The setup was identical to radiated emissions. Intentional radiators operating under the alternative provisions to the general emission limits, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

4.3.1 Results

Section 4.1.2.1 lists the final measurement data under the worst case operating modes, configurations, and/or cable positions. It also reflects the results including any modifications and/or special accessories listed in Sections 1.4 and 1.5.

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

4.3.1.1 Final Data

The data recorded in this section contains the final results under the worst-case conditions and with any modifications or special accessories implemented as the manufacturer intends.

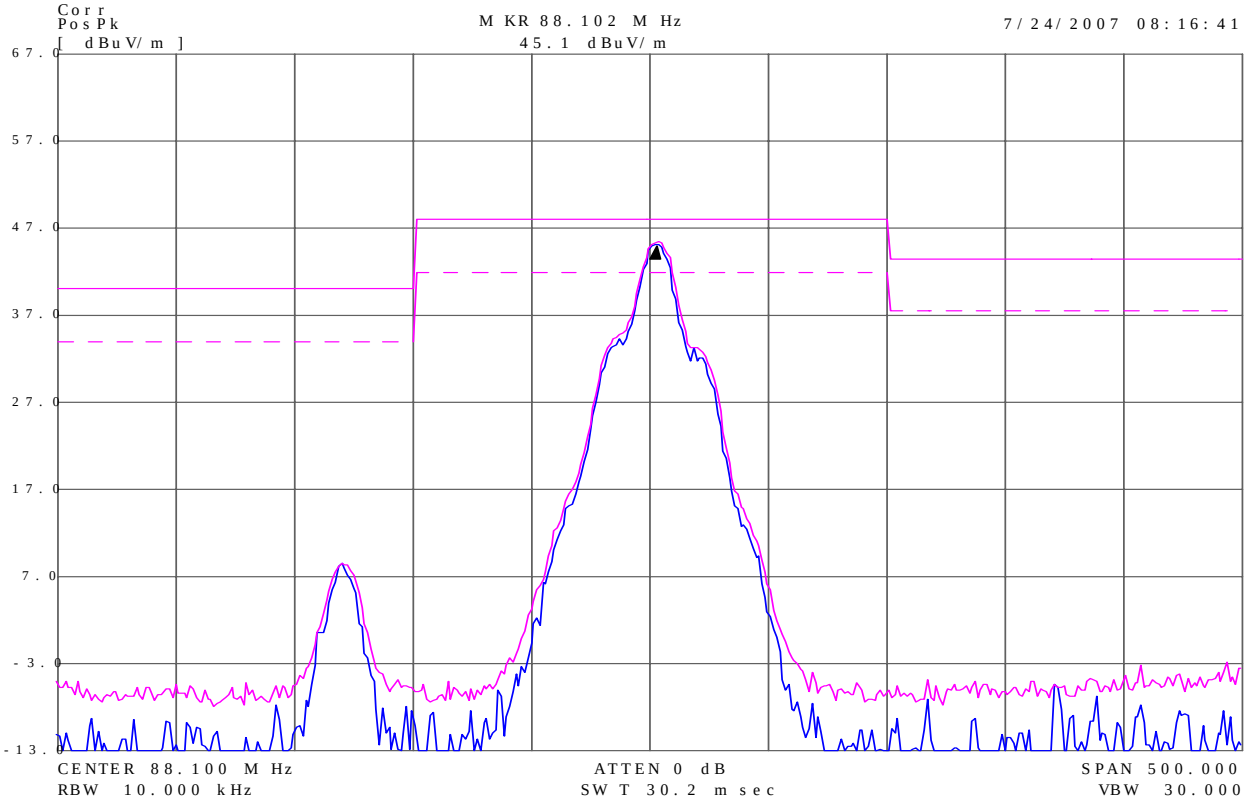


Figure 1 – Channel 88.1 Band edge Results for Horizontal

Note: The plot showed the corrected fundamental signal at the both sidebands of the 88.1MHz operating channel with TBFM2 positioned on its side (worst case).

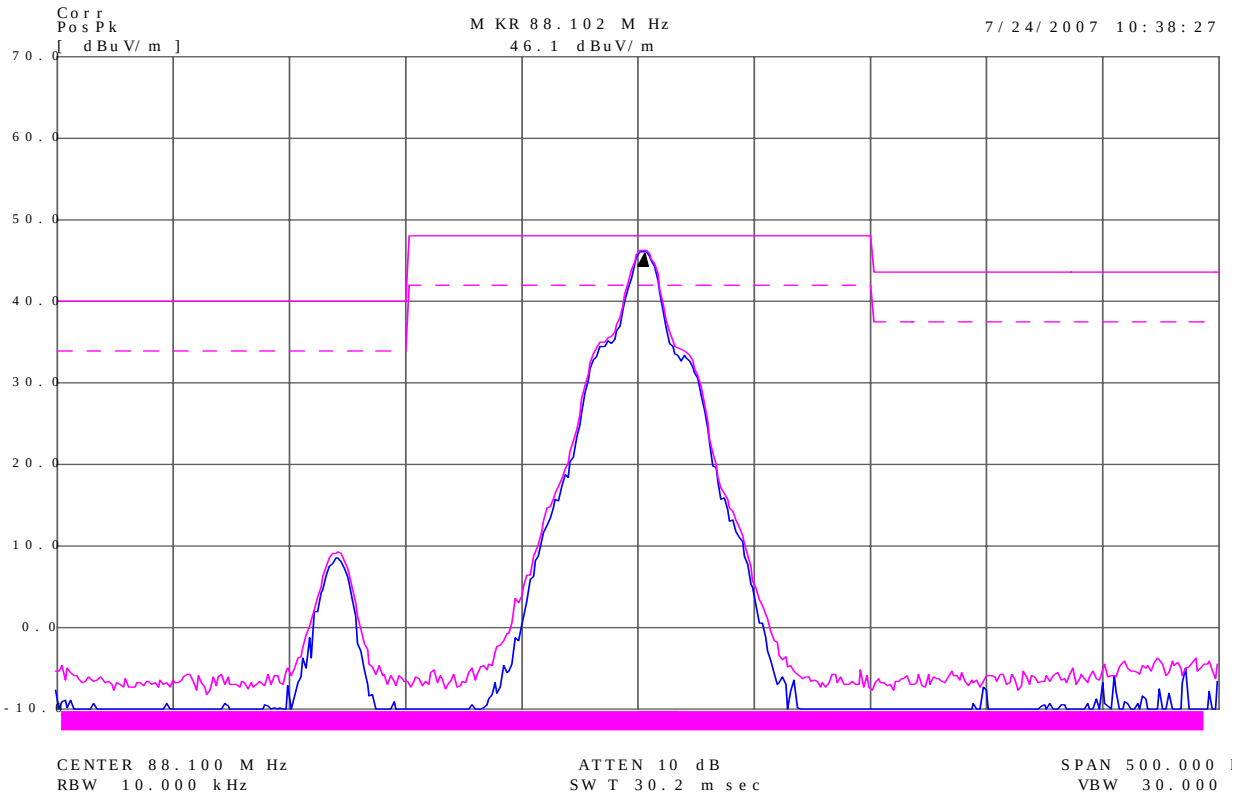


Figure 2 – Channel 88.1MHz Band edge Results for Vertical

Note: The plot showed the corrected fundamental signal at the both sidebands of the 88.1MHz operating channel with TBFM2 positioned on its upright (worst case).

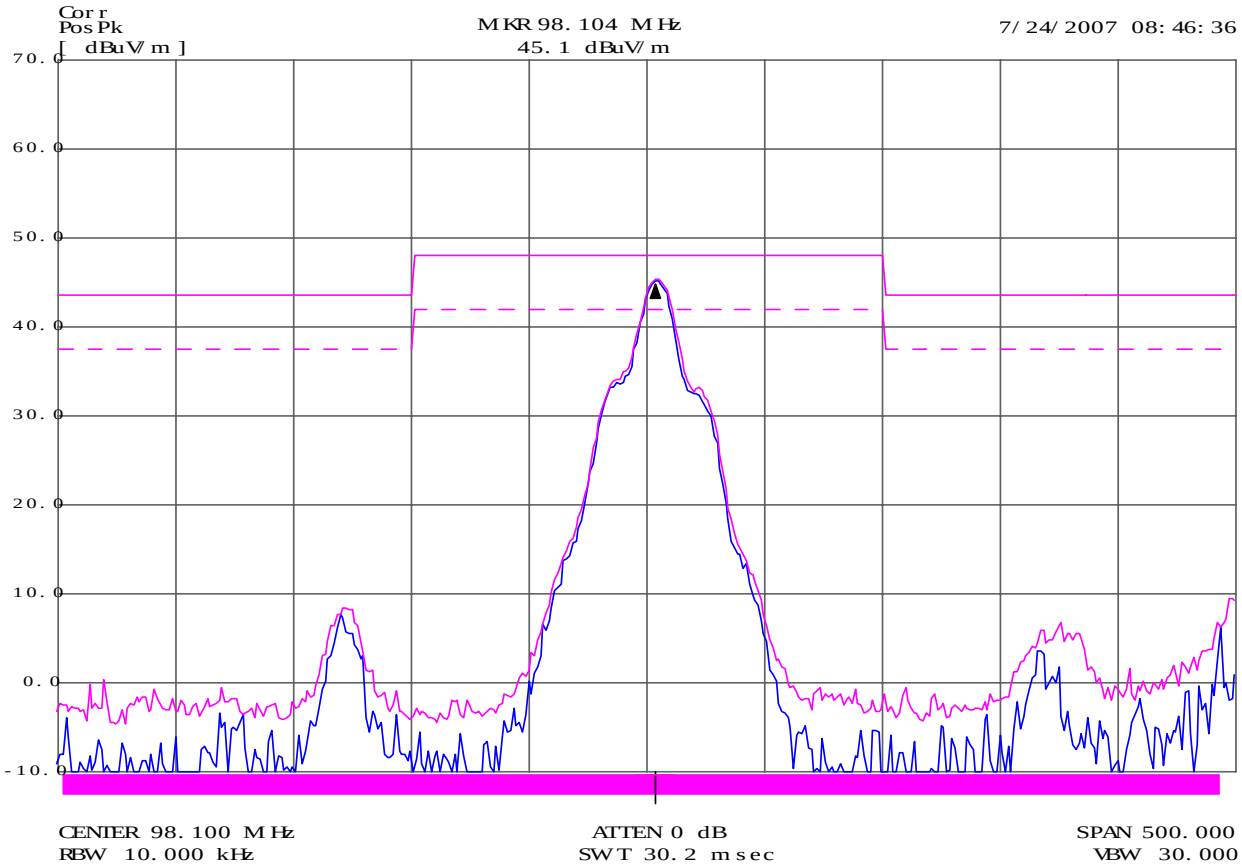


Figure 3 – Channel 98.1MHz Band edge Results for Horizontal

Note: The plot showed the corrected fundamental signal at the both sidebands of the 98.1MHz operating channel with TBFM2 positioned on its side (worst case).

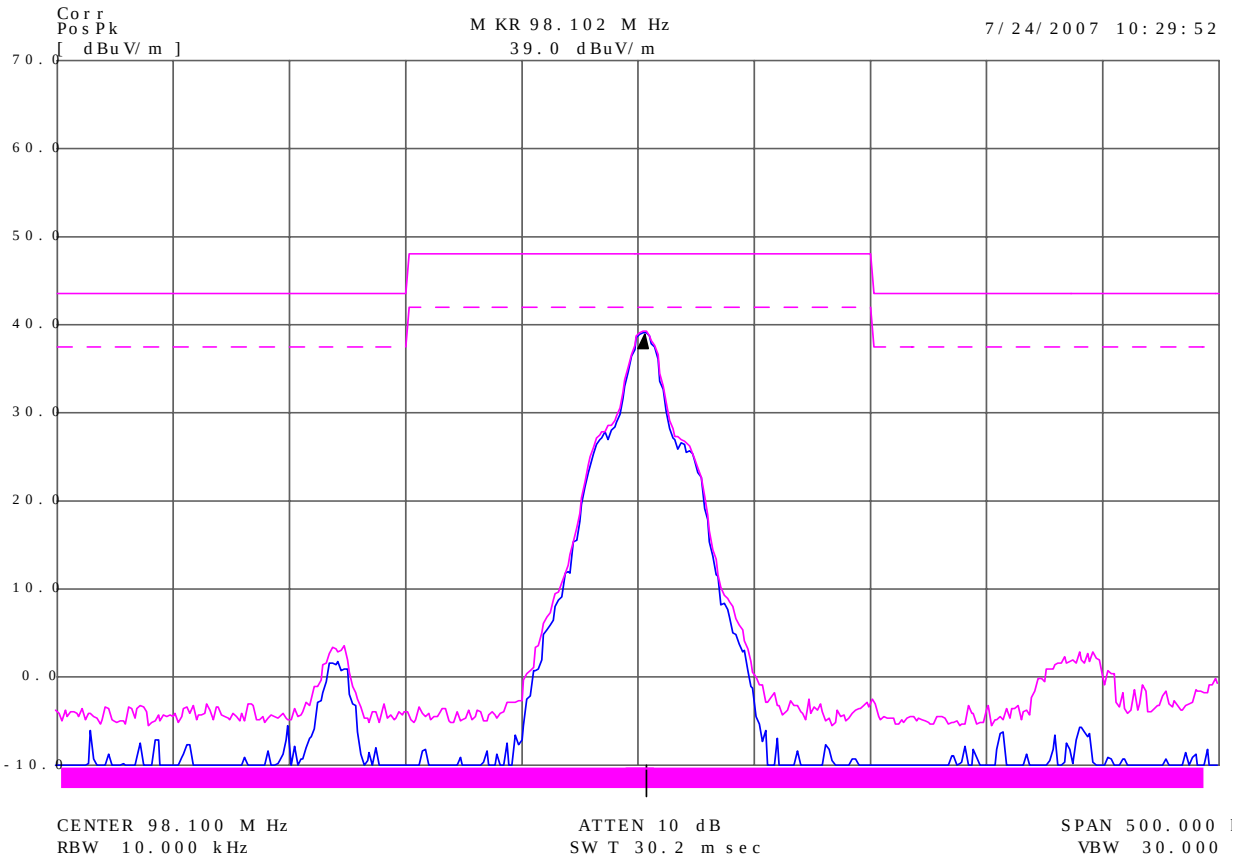


Figure 4 – Channel 98.1MHz Band edge Results for Vertical

Note: The plot showed the corrected fundamental signal at the both sidebands of the 98.1MHz operating channel with TBFM2 positioned on its upright (worst case).

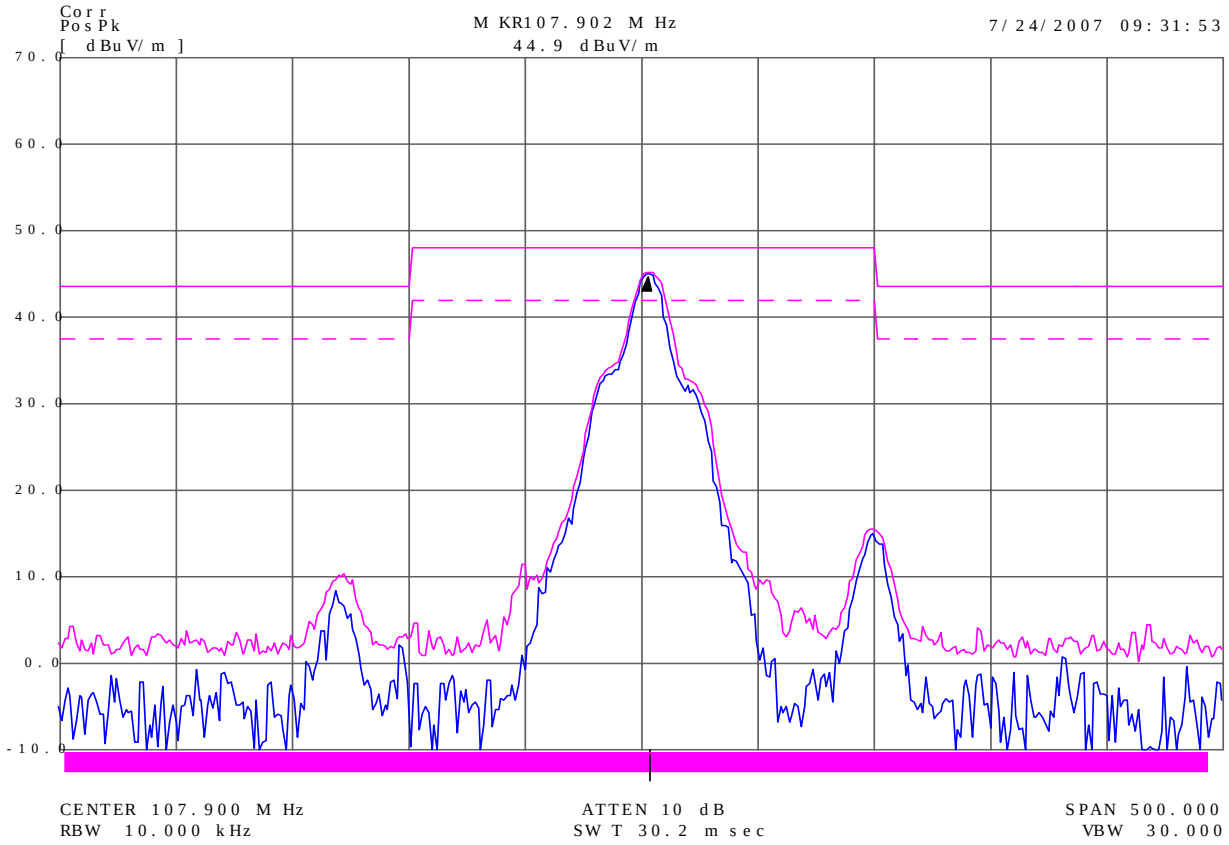


Figure 5 – Channel 107.9MHz Band edge Results for Horizontal

Note: The plot showed the corrected fundamental signal at the both sidebands of the 107.9MHz operating channel with TBFM2 positioned on its side (worst case).

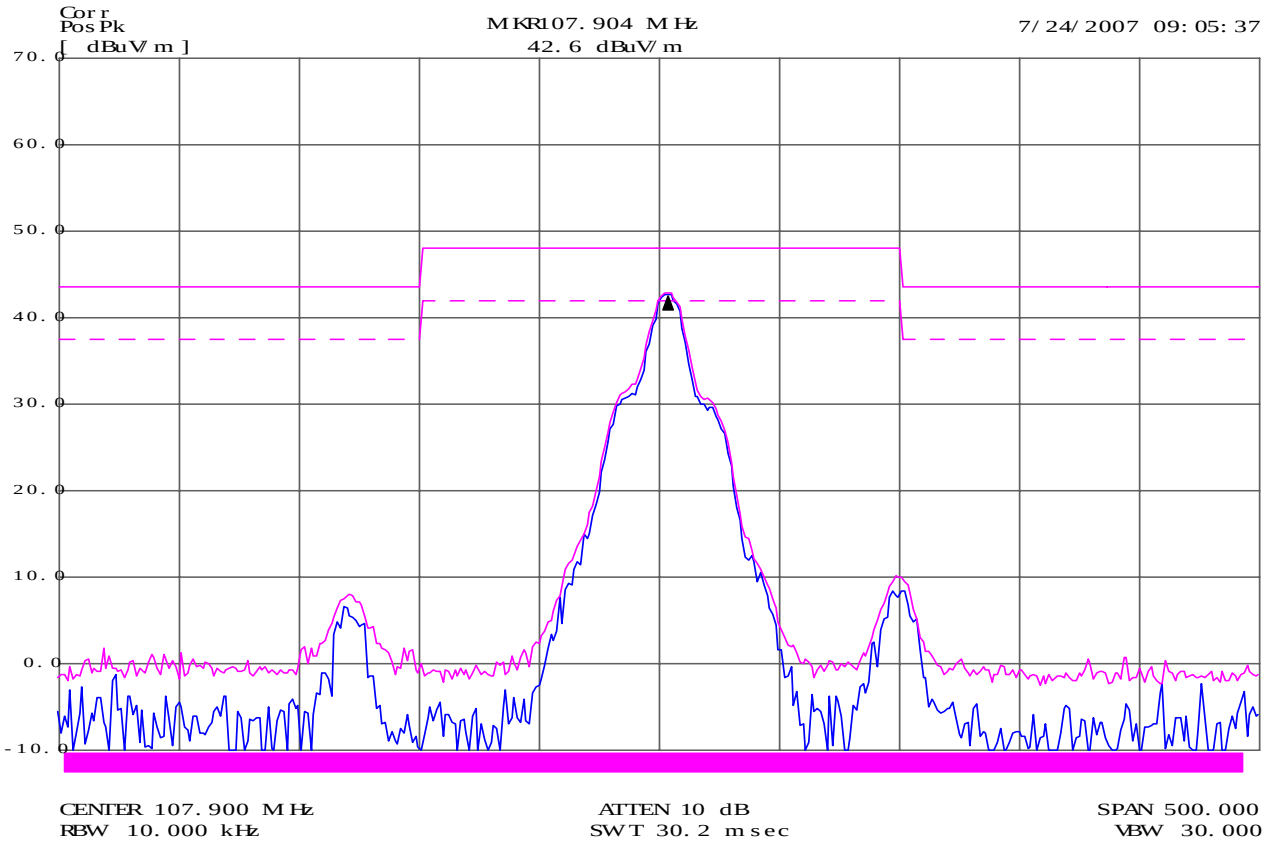


Figure 6 – Channel 107.9MHz Band edge Results for Vertical

Note: The plot showed the corrected fundamental signal at the both sidebands of the 107.9MHz operating channel with TBFM2 positioned on its side (worst case).

4.4 Occupied Bandwidth

The setup was identical to radiated emissions. Intentional radiators operating under the CFR Title 47 Part 15.239, must be designed to ensure that the 200kHz bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

Frequency (MHz)	26dB BW	Limit	Polarization	Results	Figure #
88.1	187.5 kHz	200kHz	Horizontal	Pass	7
88.1	187.5 kHz	200kHz	Vertical	Pass	8
98.1	180.0 kHz	200kHz	Horizontal	Pass	9
98.1	107.5 kHz	200kHz	Vertical	Pass	10
107.9	192.5 kHz	200kHz	Horizontal	Pass	11
107.9	145.0 kHz	200kHz	Vertical	Pass	12

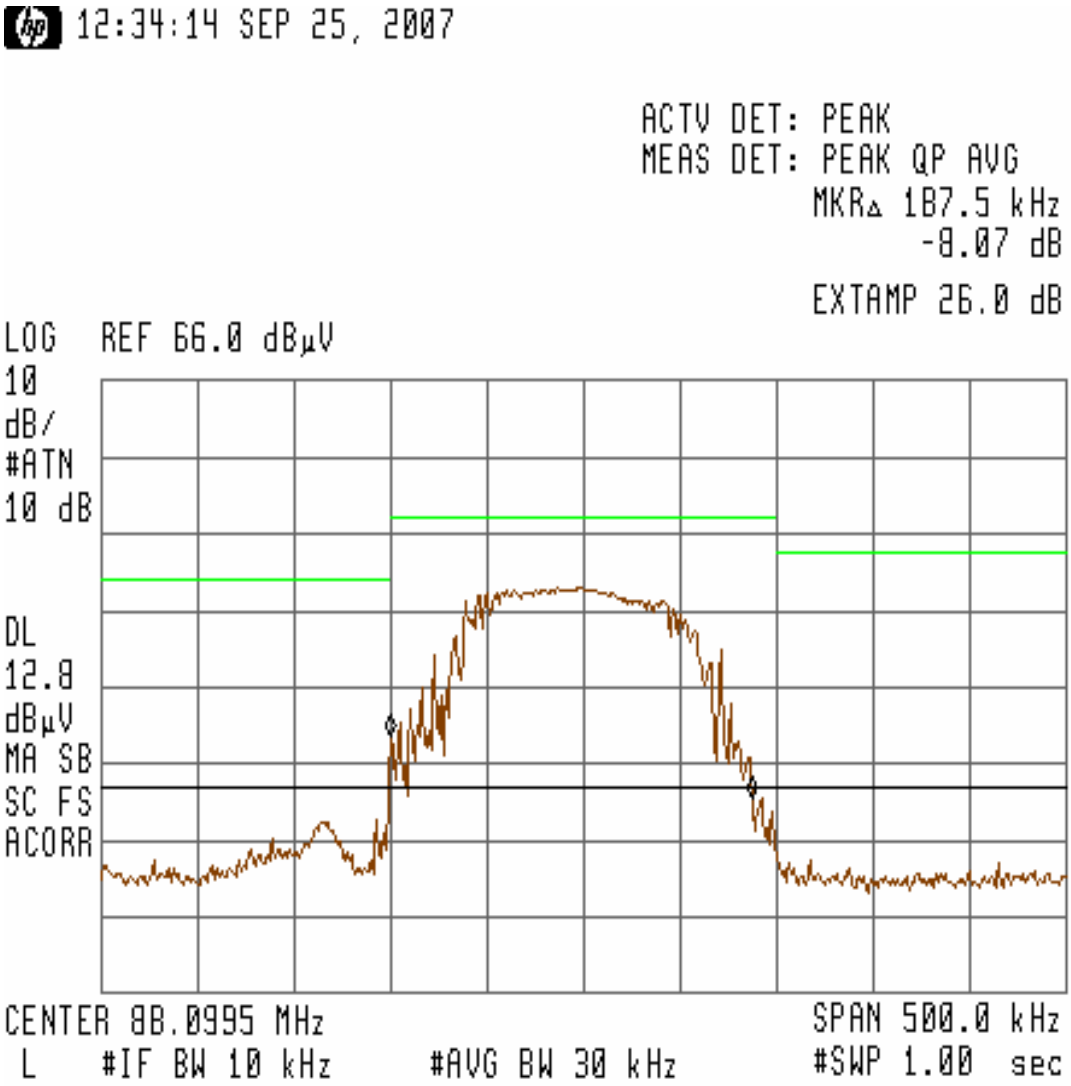


Figure 7 – Channel 88.1MHz (Horizontal), 26dB Bandwidth with 200 kHz Bandwidth Envelope

Note: (1) The TBFM2 was positioned on its side.

(2) The left marker on the Fig. 7 is at 88MHz

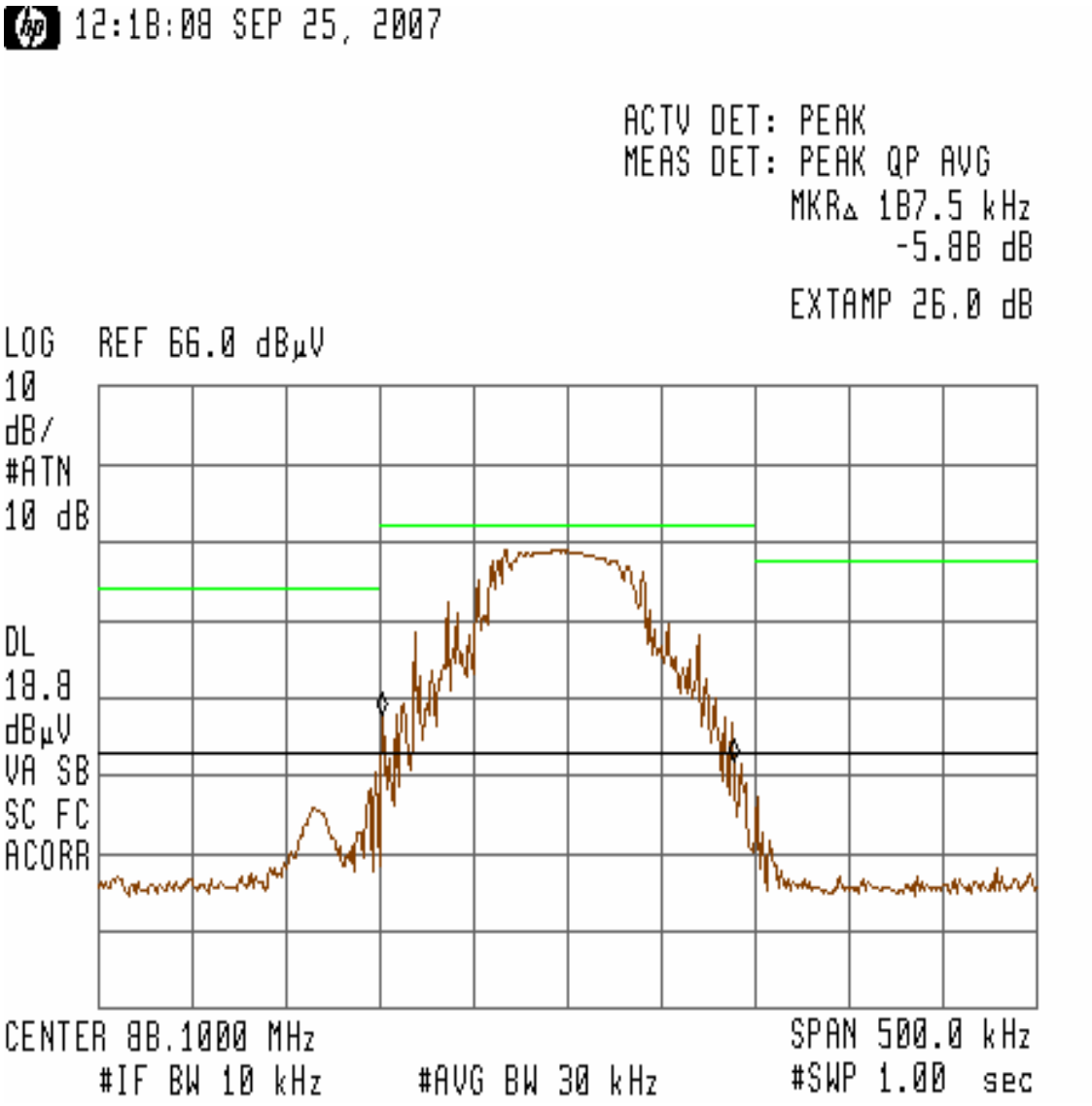


Figure 8 – Channel 88.1MHz (Vertical) – 26dB Bandwidth with 200 kHz Bandwidth Envelope

Note: (1) The TBFM2 was positioned on its upright.

(2) The left marker on the Fig. 8 is at 88.009MHz

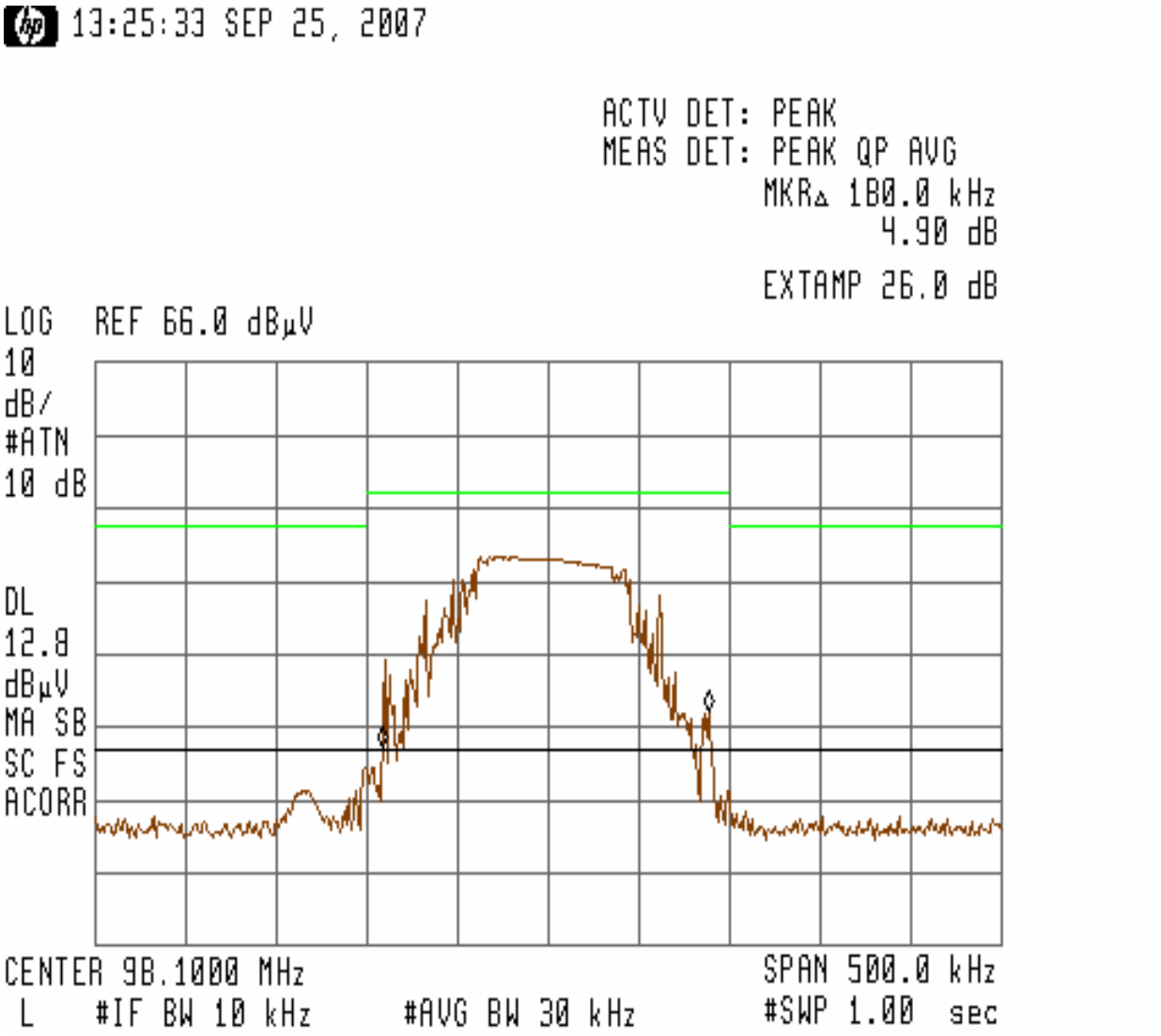


Figure 9 – Channel 98.1MHz (Horizontal) – 26dB Bandwidth with 200 kHz Bandwidth Envelope

Note: The TBFM2 was positioned on its side.

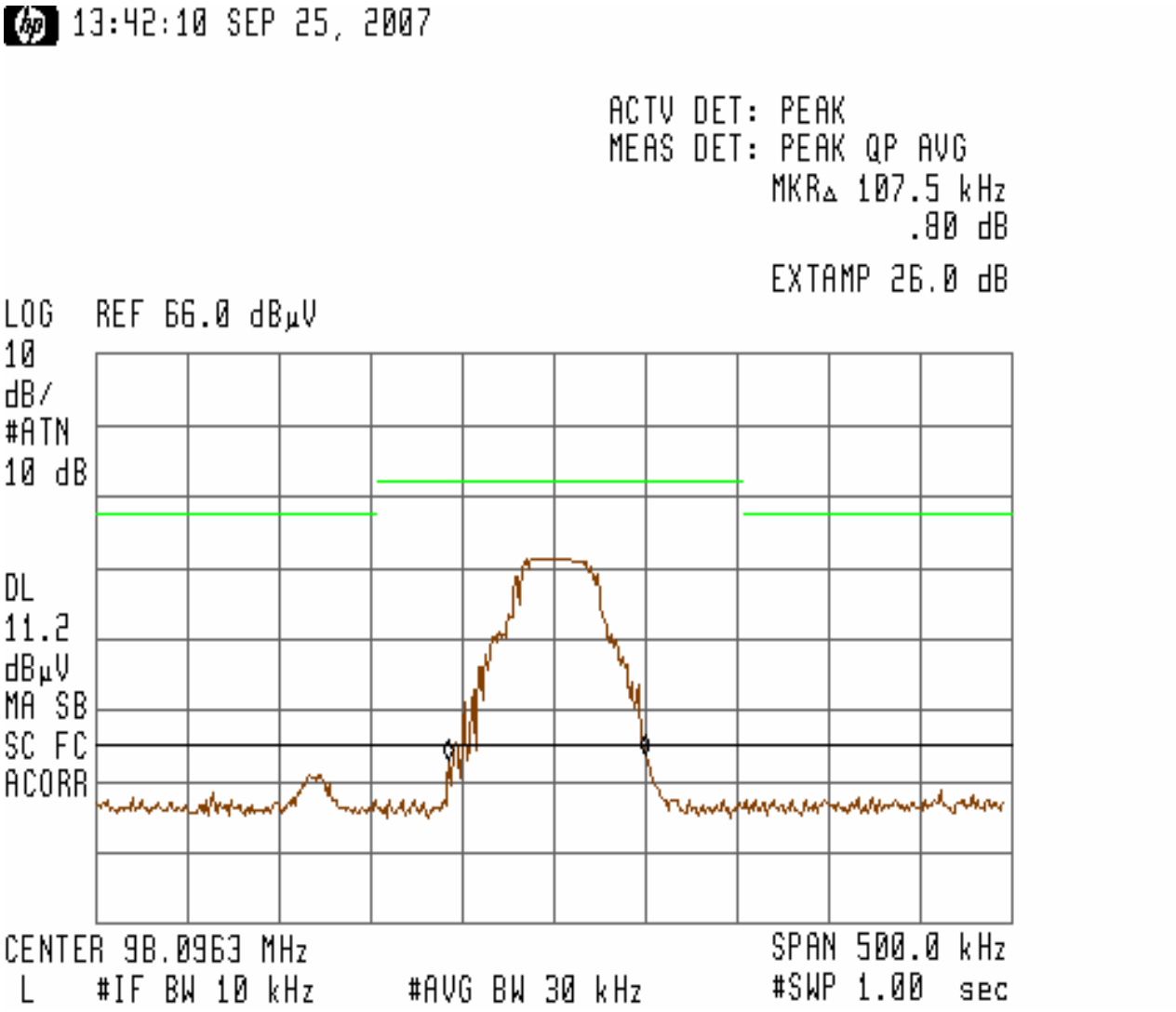


Figure 10 – Channel 98.1MHz (Vertical) – 26dB Bandwidth with 200 kHz Bandwidth Envelope

Note: The TBFM2 was positioned on its upright.

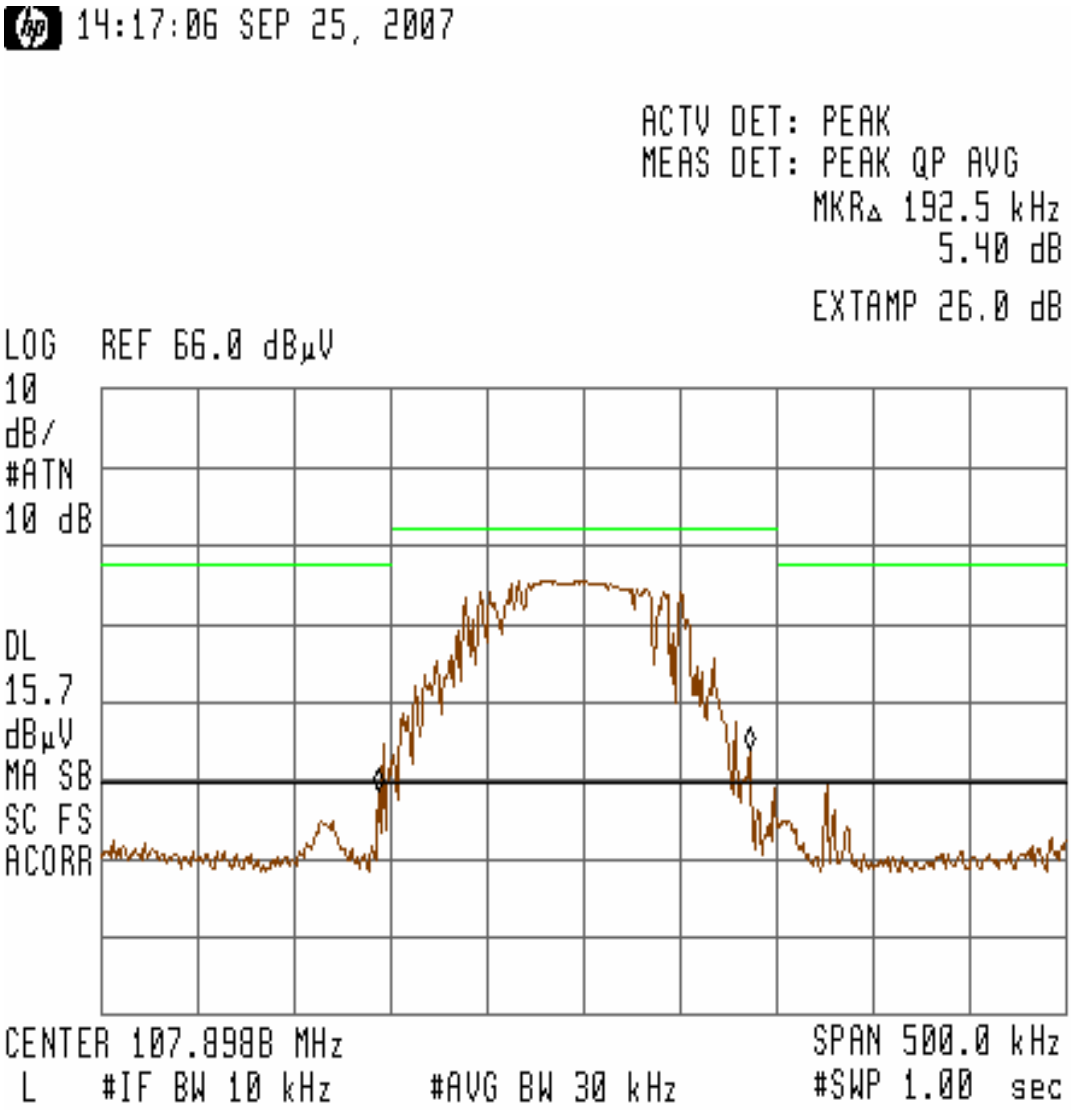


Figure 11 – Channel 107.9MHz (Horizontal) – 26dB Bandwidth with 200 kHz Bandwidth Envelope

Note: The TBFM2 was positioned on its side.

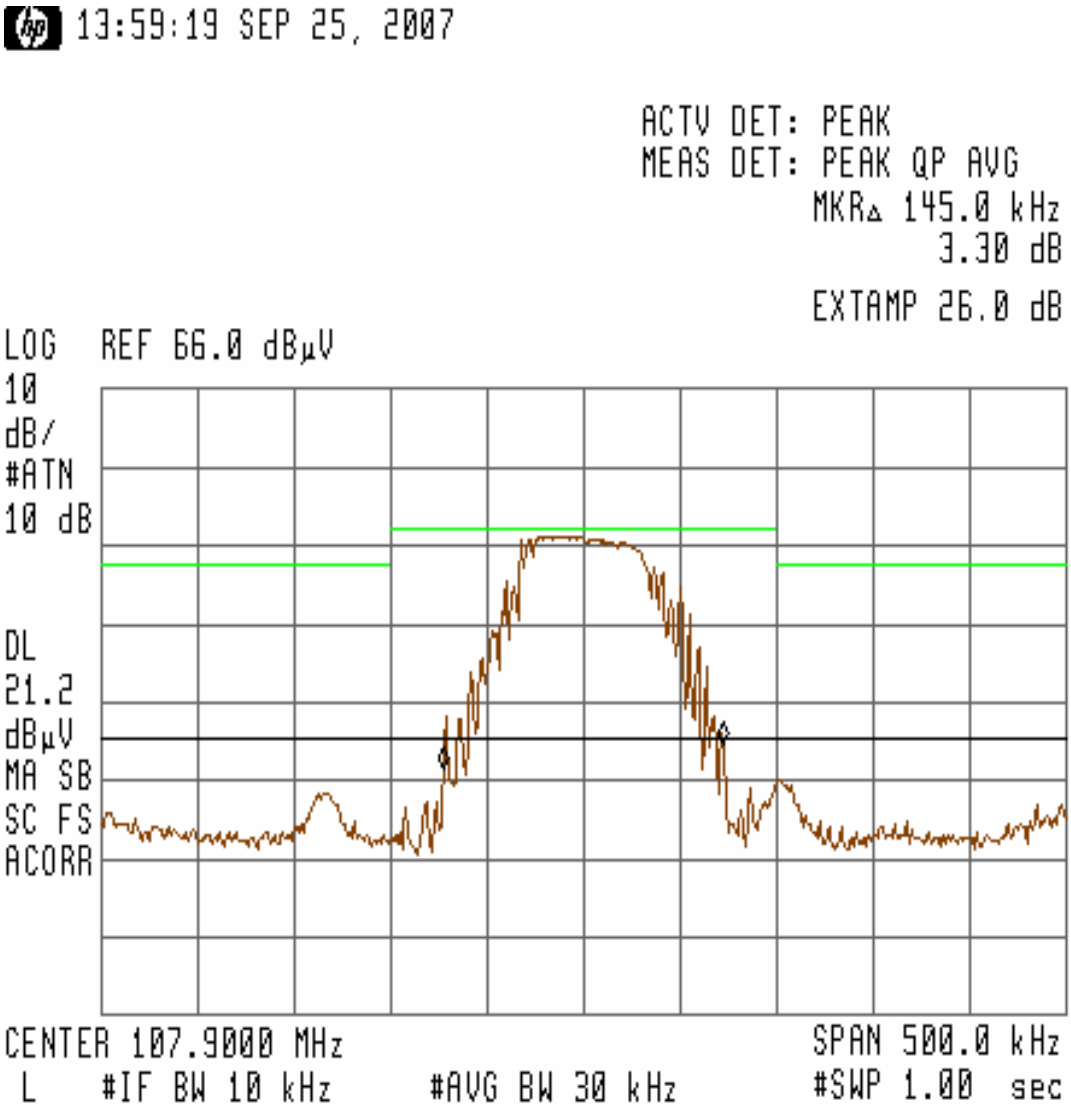


Figure 12 – Channel 107.9MHz (Vertical) – 26dB Bandwidth with 200 kHz Bandwidth Envelope

Note: The TBFM2 was positioned on its side.

4.5 Tunning Frequency

The setup was identical to radiated emissions. Intentional radiators operating under the CFR Title 47 Part 15.239 and KDB #388624 must be designed to ensure the operation to be within 88MHz to 108MHz.

The TBFM2 was manually tuned via the side buttons of transmitter, and the LCD display on the transmitter indicated that operational range is between 88.1MHz to 107.9MHz. The operating frequency was confirmed on the EMI receiver.

4.6 Operating Voltage Variation (CFR Title 47 Part 15.31e)

The setup was identical to radiated emissions. Intentional radiators operating under the CFR Title 47 Part 15.239, must be designed to ensure that the operating channel are within 88MHz to 108MHz; any sideband emission must be complied with spurious emission limit. Also, the transmitted power level of the emission must meet per requirement CFR Title 47 Part 15.239.

4.6.1

Section 4.1.2.1 lists the final measurement data under the worst case operating modes, configurations, and/or cable positions. It also reflects the results including any modifications and/or special accessories listed in Sections 1.4 and 1.5.

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

4.6.1.1 Final Data - BandEdge

The data recorded in this section contains the final results under the worst-case conditions and with any modifications or special accessories implemented as the manufacturer intends.

Ch. (MHz)	Input Voltage (DC)	Lower Freq. (MHz)	Lower Edge (dBuV)	Limit (dBuV)	Upper Freq. (MHz)	Upper Edge (dBuV)	Limit (dBuV)	Polarity	Results	Fig. #
88.1	11.73	88	26.00	40.0	88.2	27.81	43.5	Horz.	Pass	13
88.1	11.73	88	37.68	40.0	88.2	37.31	43.5	Vert.	Pass	14
88.1	15.87	88	25.31	40.0	88.2	26.56	43.5	Horz.	Pass	15
88.1	15.87	88	37.77	40.0	88.2	38.06	43.5	Vert.	Pass	16
98.1	11.73	98	28.74	43.5	98.2	29.88	43.5	Horz.	Pass	17
98.1	11.73	98	31.46	43.5	98.2	33.33	43.5	Vert.	Pass	18
98.1	15.87	98	28.23	43.5	98.2	28.86	43.5	Horz.	Pass	19
98.1	15.87	98	34.45	43.5	34.99	34.99	43.5	Vert.	Pass	20
107.9	11.73	107.8	31.11	43.5	108	31.95	43.5	Horz.	Pass	21
107.9	11.73	107.8	43.01	43.5	108	40.27	43.5	Vert.	Pass	22
107.9	15.87	107.8	37.12	43.5	108	34.67	43.5	Horz.	Pass	23
107.9	15.87	107.8	41.61	43.5	108	40.16	43.5	Vert.	Pass	24

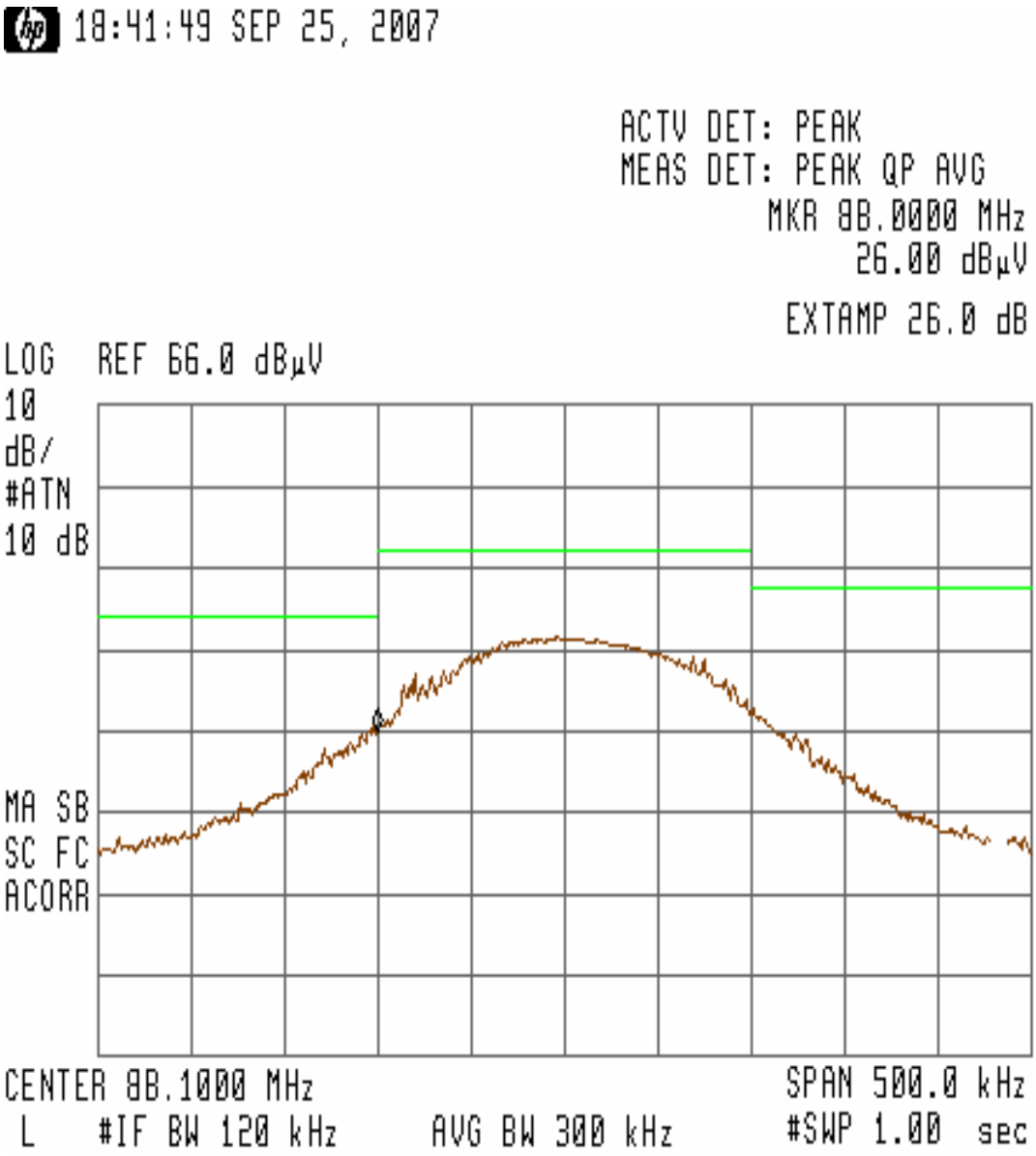


Figure 13 – Bandedge Measurement for Channel 88.1MHz (Horizontal) at 11.73VDC

Note: The TBFM2 was positioned on its side.

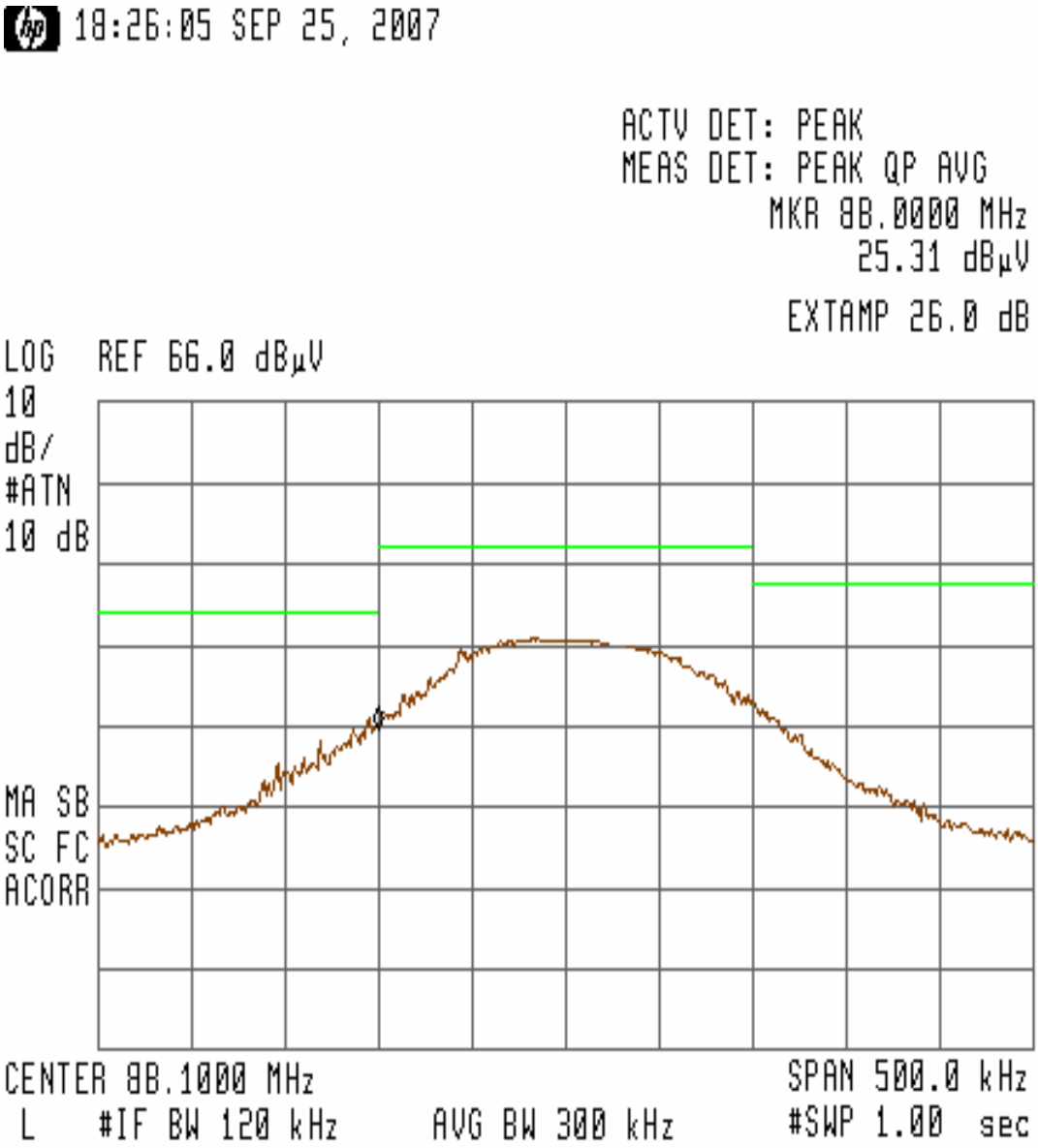


Figure 14 – Bandedge Measurement for Channel 88.1MHz (Horizontal) at 15.87VDC

Note: The TBFM2 was positioned on the Side position.

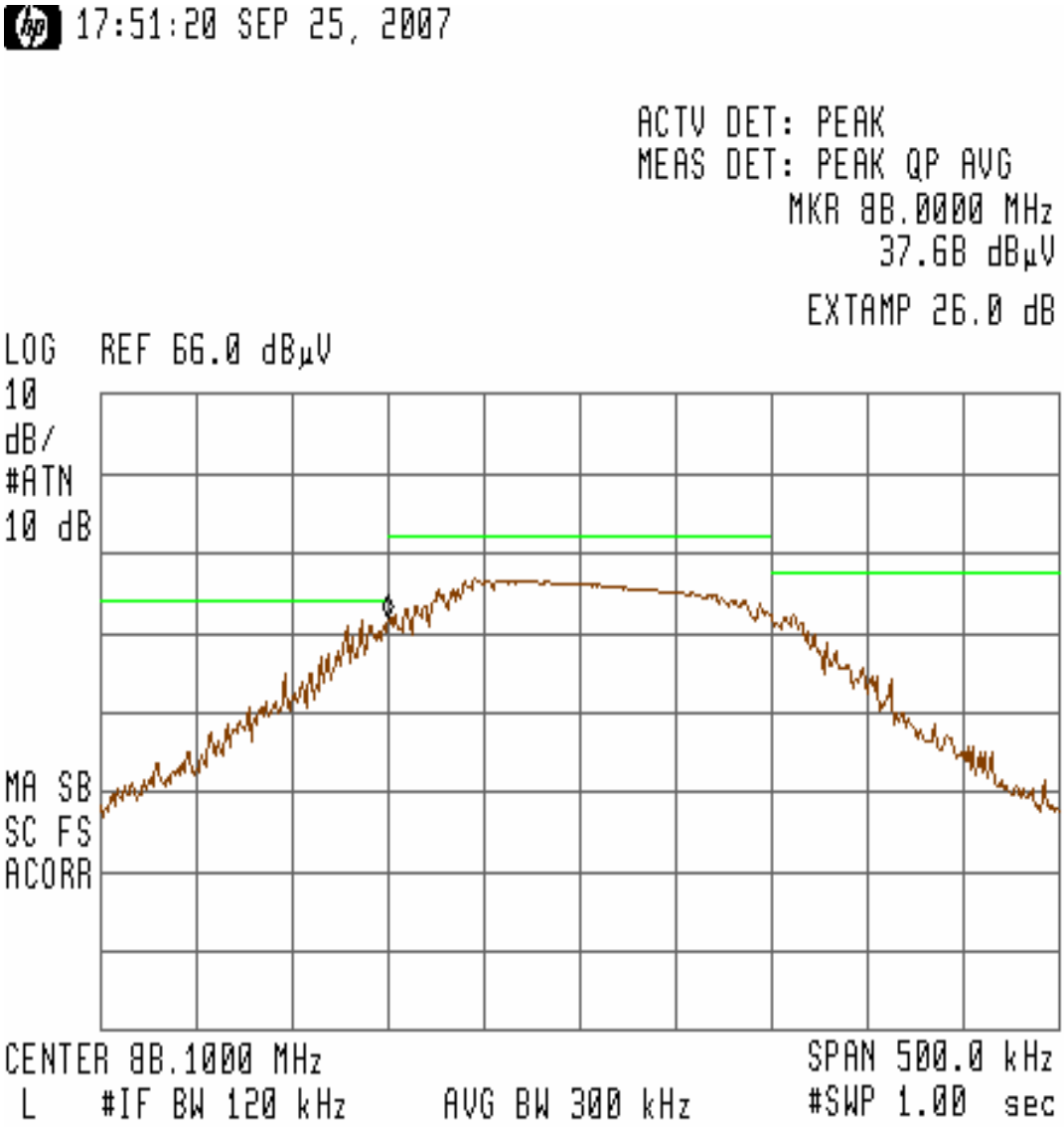


Figure 15 – Bandedge Measurement for Channel 88.1MHz (Vertical) at 11.73VDC

Note: The TBFM2 was positioned on the Upright position.

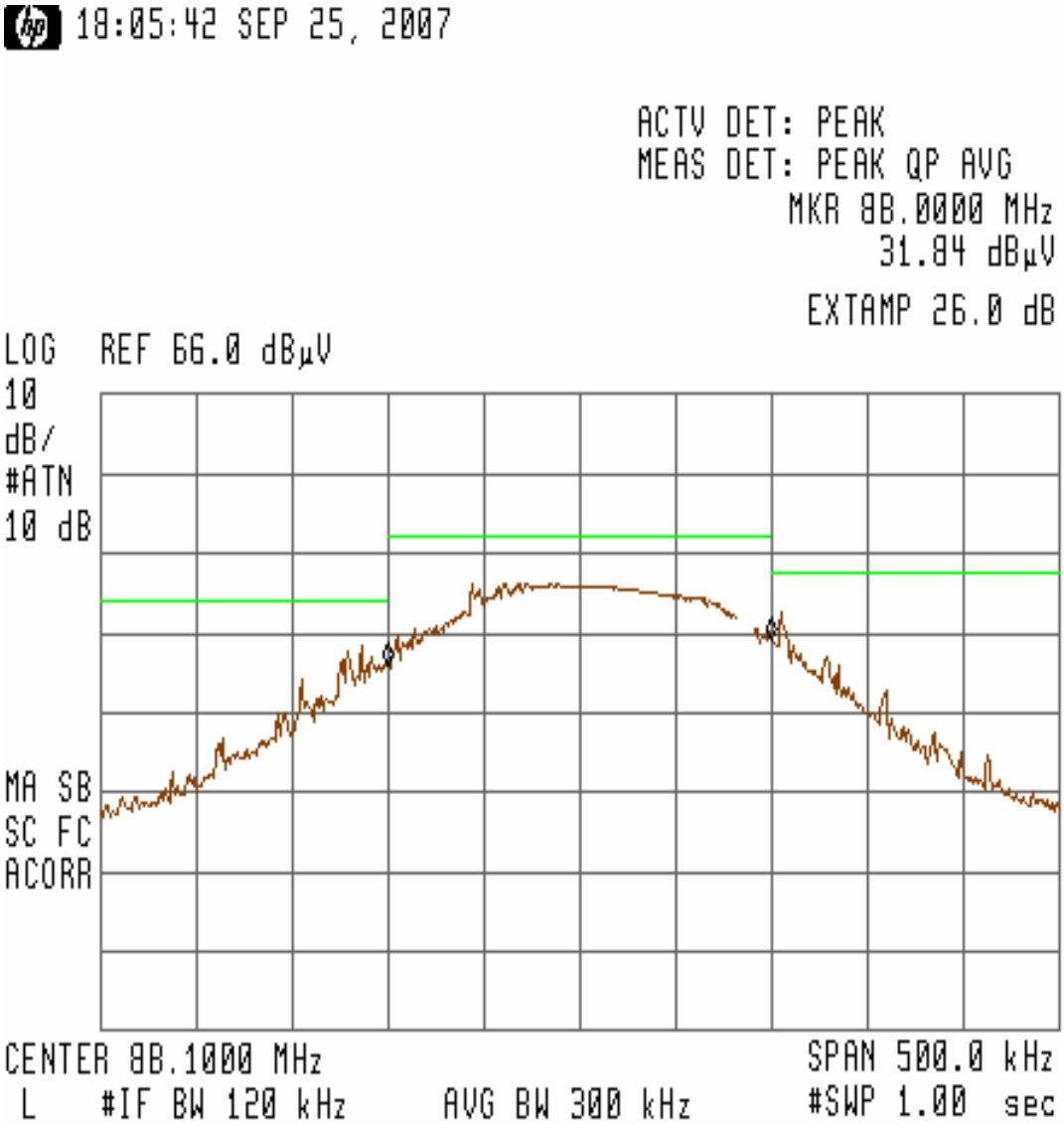


Figure 16 – Bandedge Measurement for Channel 88.1MHz (Vertical) at 15.87VDC

Note: The TBFM2 was positioned on the Upright position.

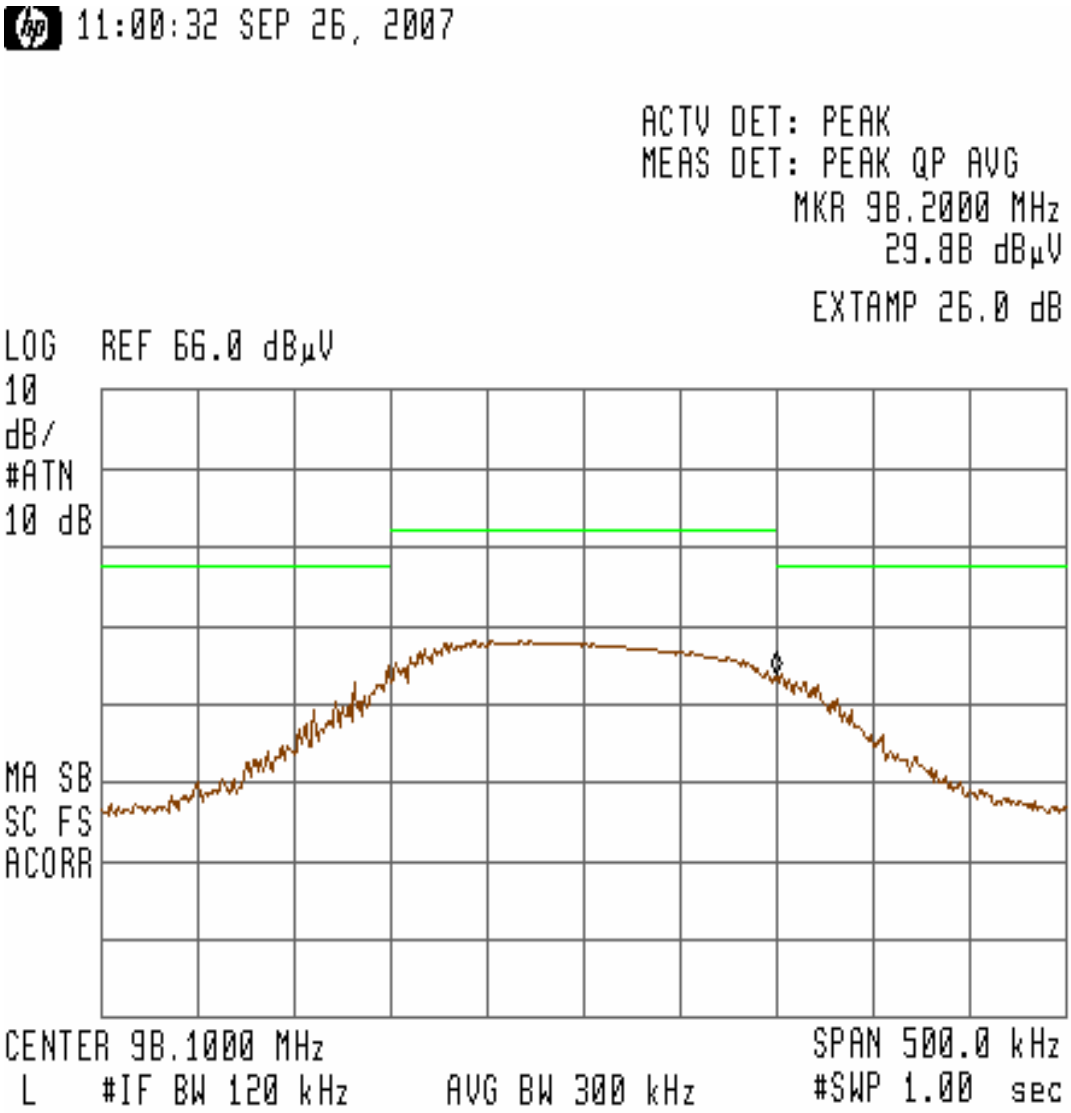


Figure 17 – Bandedge Measurement for Channel 98.1MHz (Horizontal) at 11.73VDC

Note: The TBFM2 was positioned on the Side position.

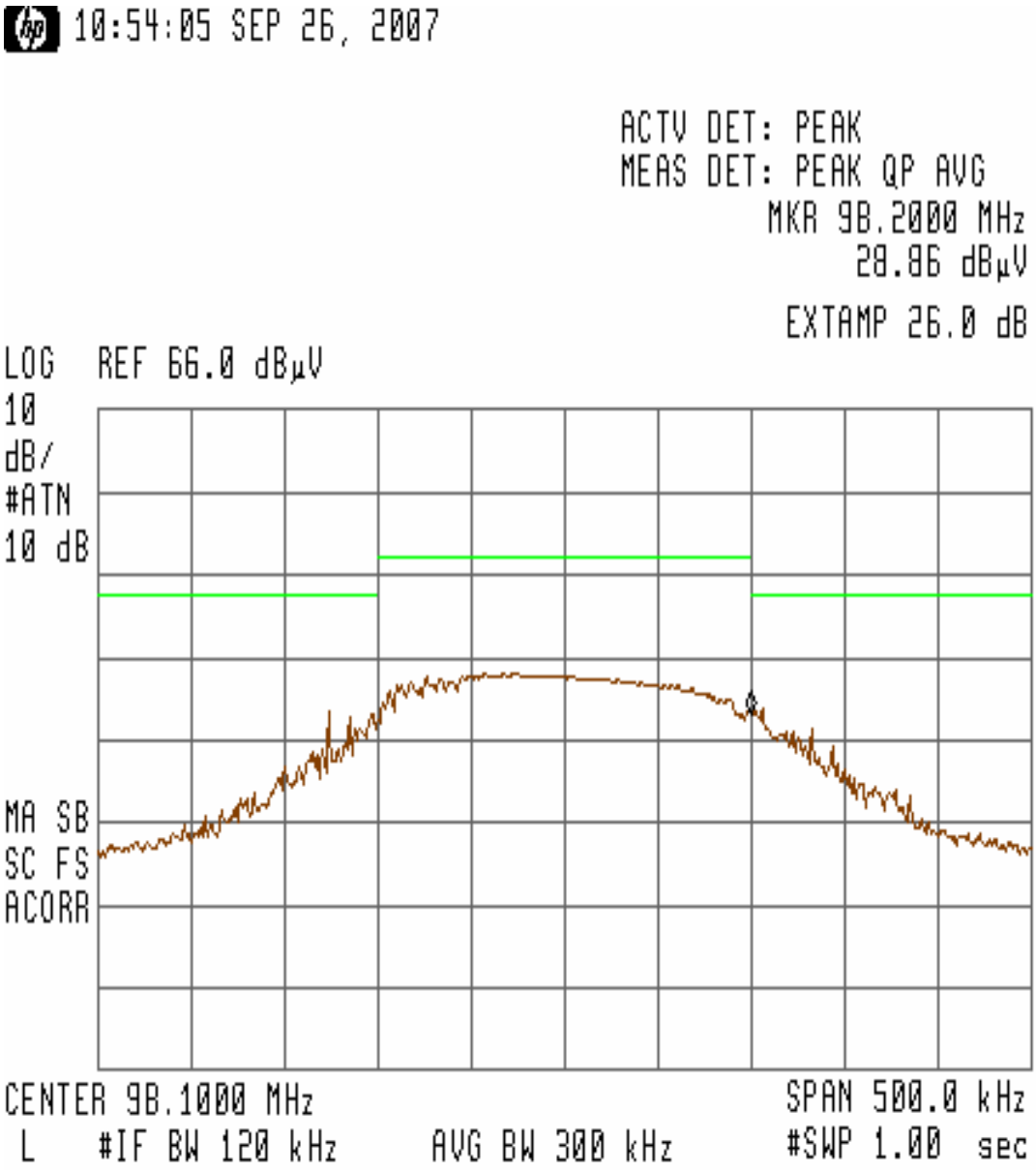


Figure 18 – Bandedge Measurement for Channel 98.1MHz (Horizontal) at 15.87VDC

Note: The TBFM2 was positioned on the Side position.

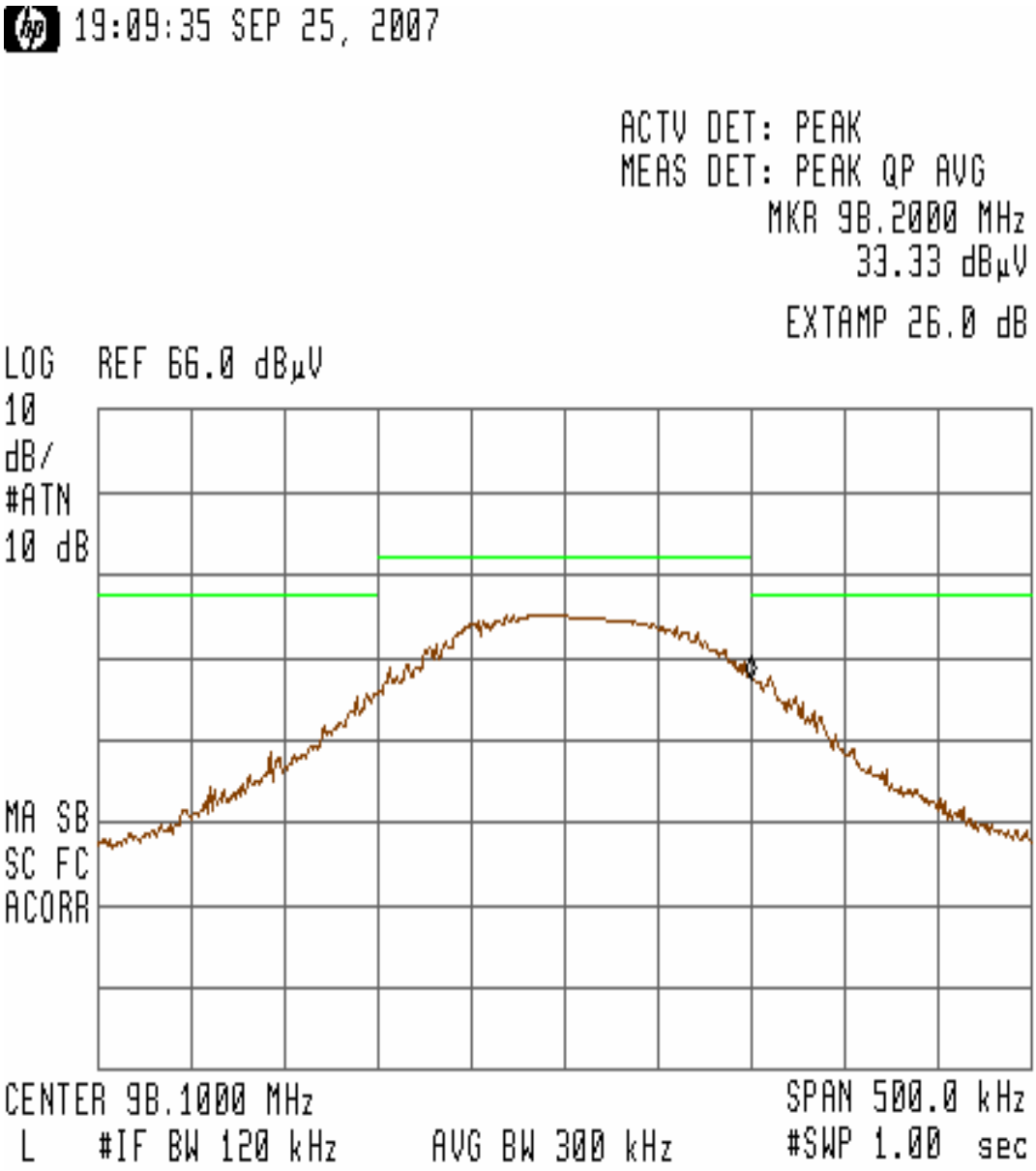


Figure 19 – Bandedge Measurement for Channel 98.1MHz (Vertical) at 11.73VDC

Note: The TBFM2 was positioned on the Upright position.

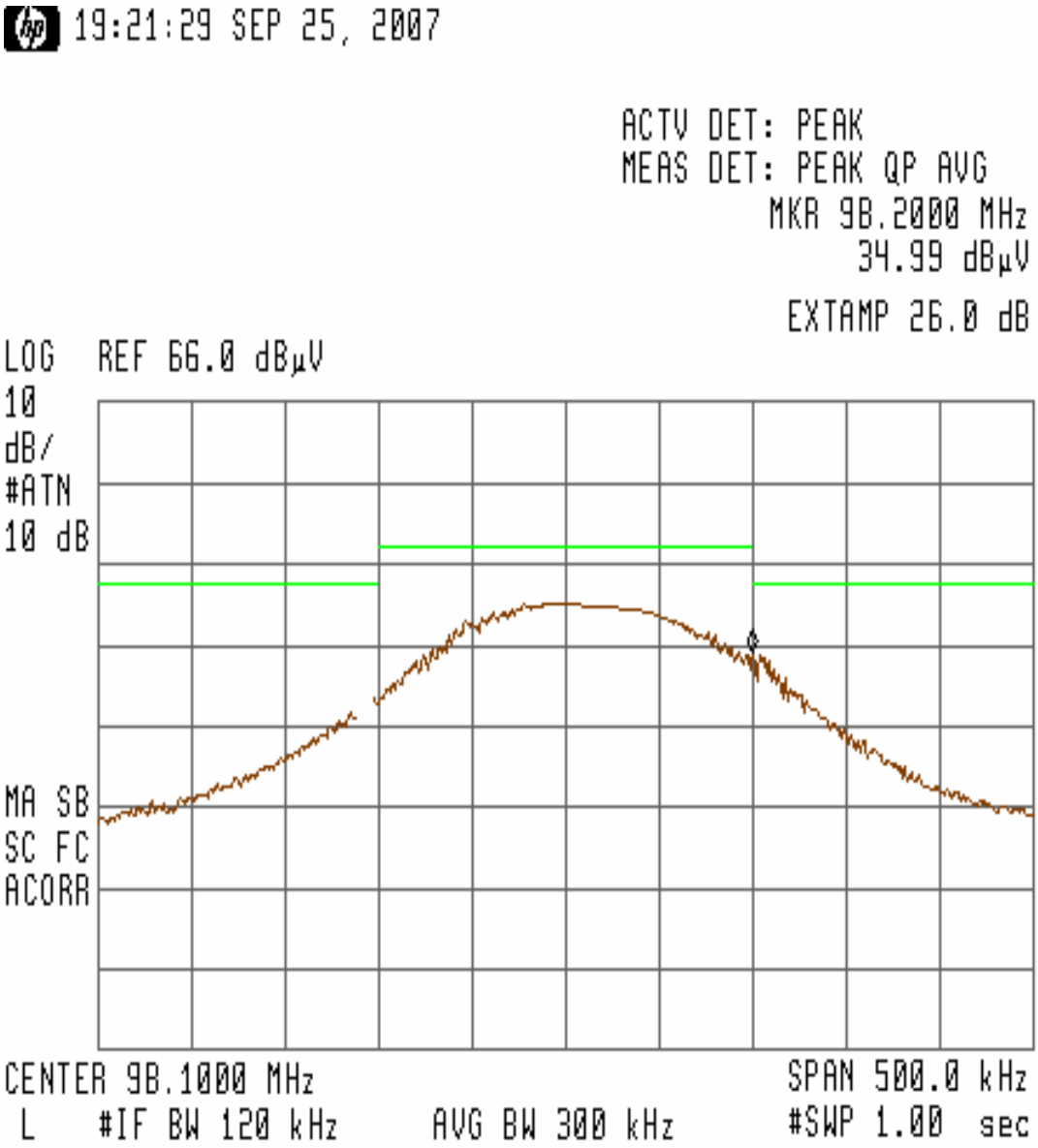


Figure 20 – Bandedge Measurement for Channel 98.1MHz (Vertical) at 15.87VDC

Note: The TBFM2 was positioned on the Upright position.

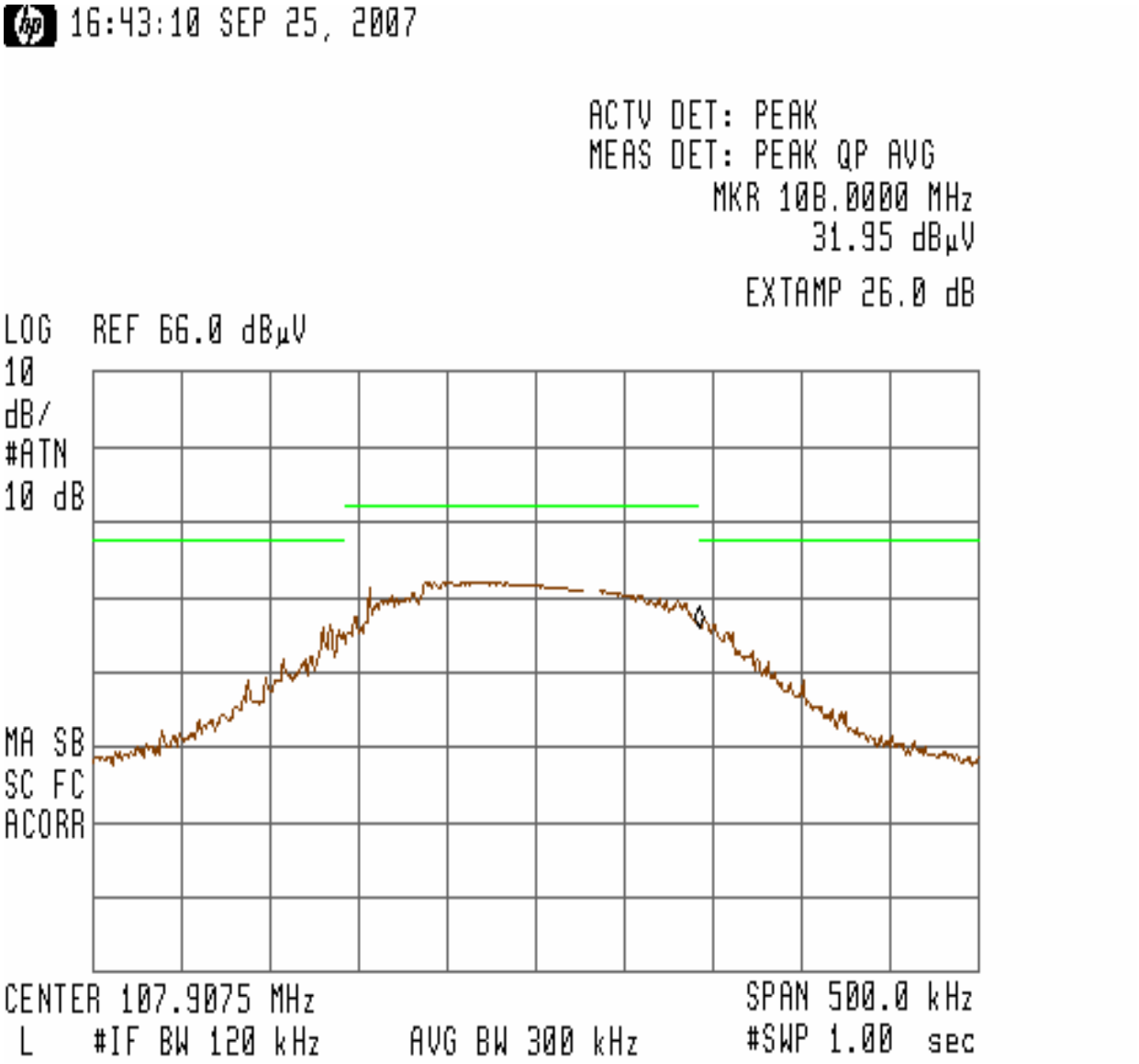


Figure 21 – Bandedge Measurement for Channel 107.9MHz (Horizontal) at 11.73VDC

Note: The TBFM2 was positioned on its side.

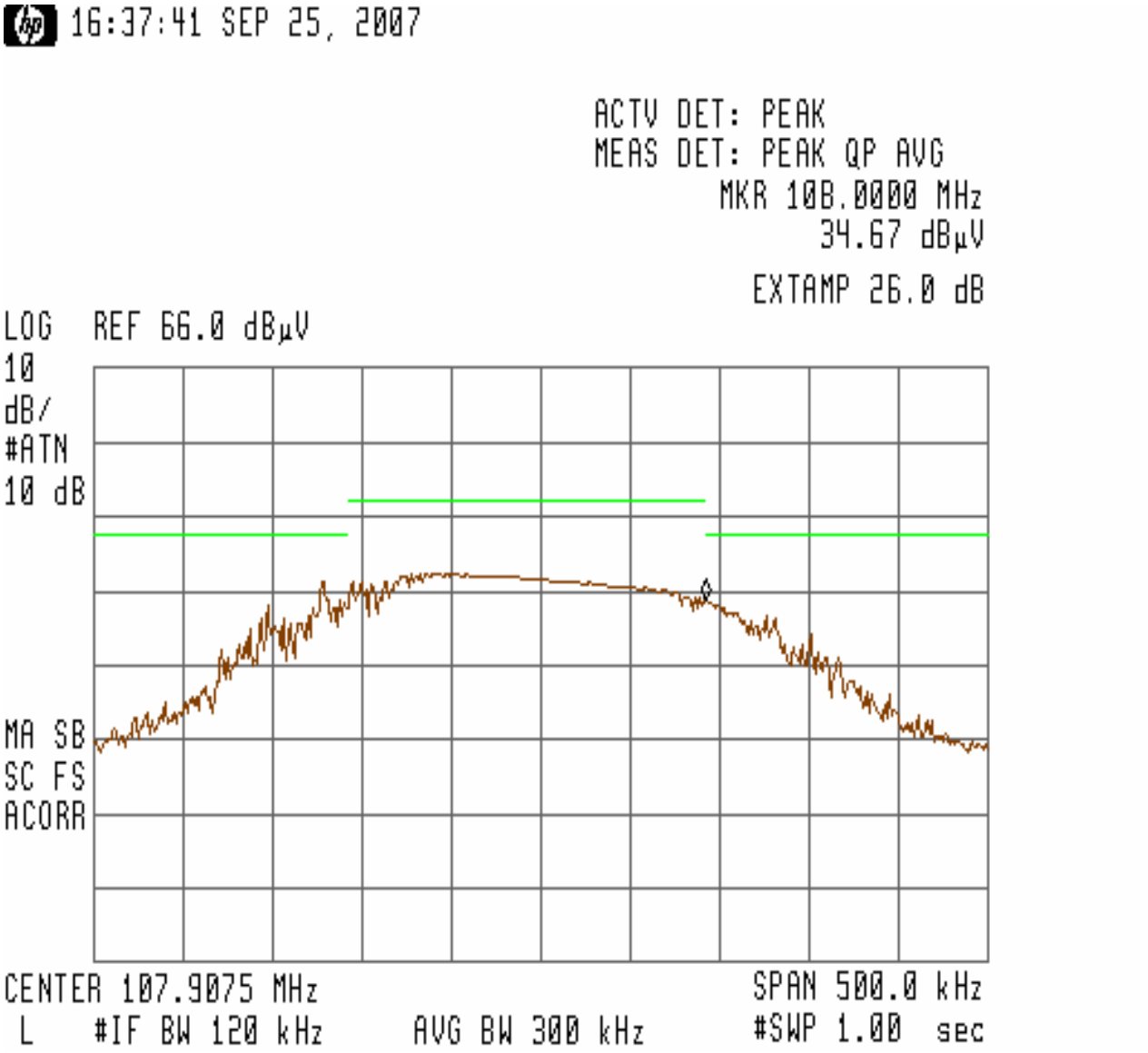


Figure 22 – Bandedge Measurement for Channel 107.9MHz (Horizontal) at 15.87VDC

Note: The TBFM2 was positioned on its side.

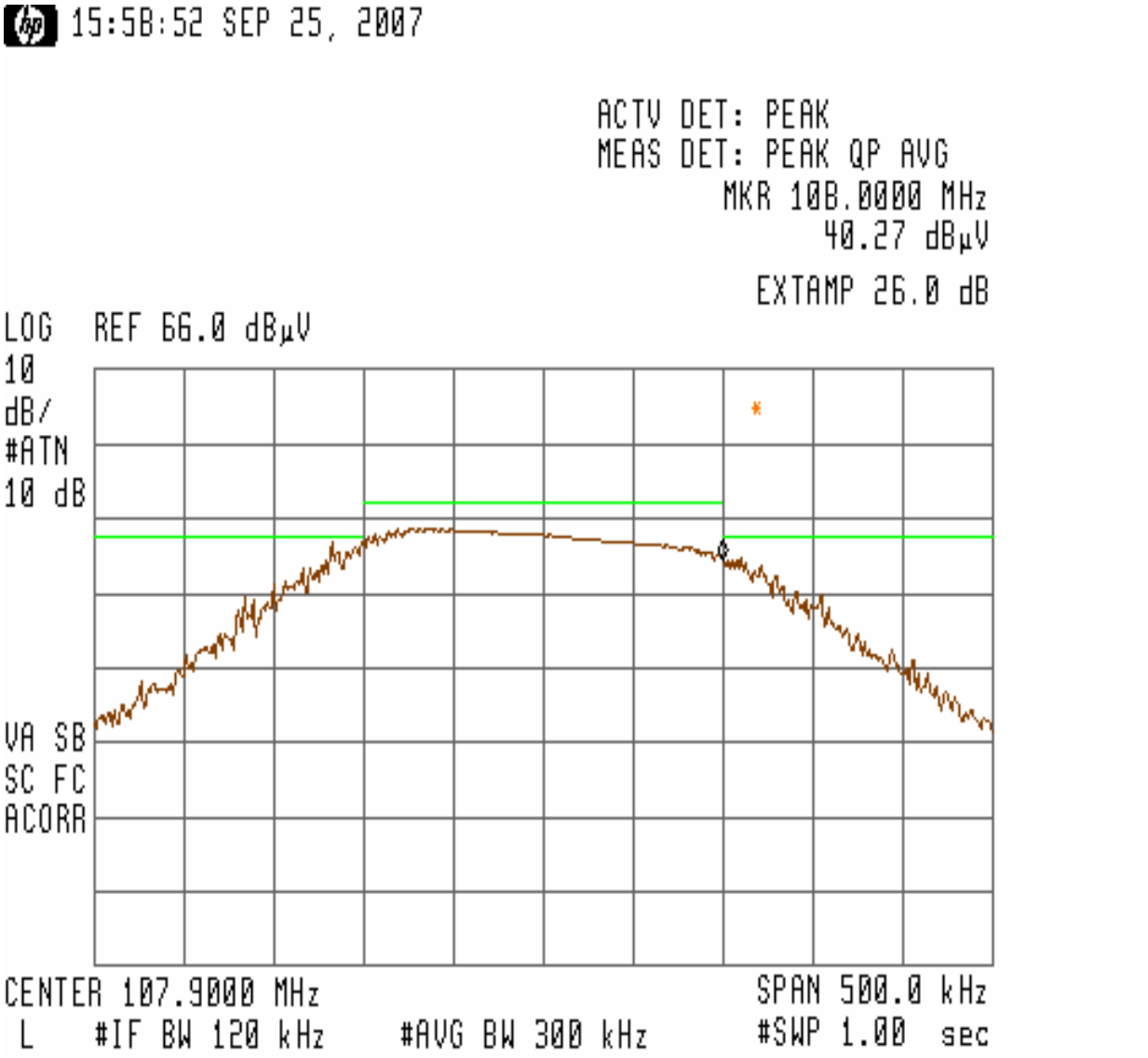


Figure 23 – Bandedge Measurement for Channel 107.9MHz (Vertical) at 11.73VDC

Note: The TBFM2 was positioned on its side.

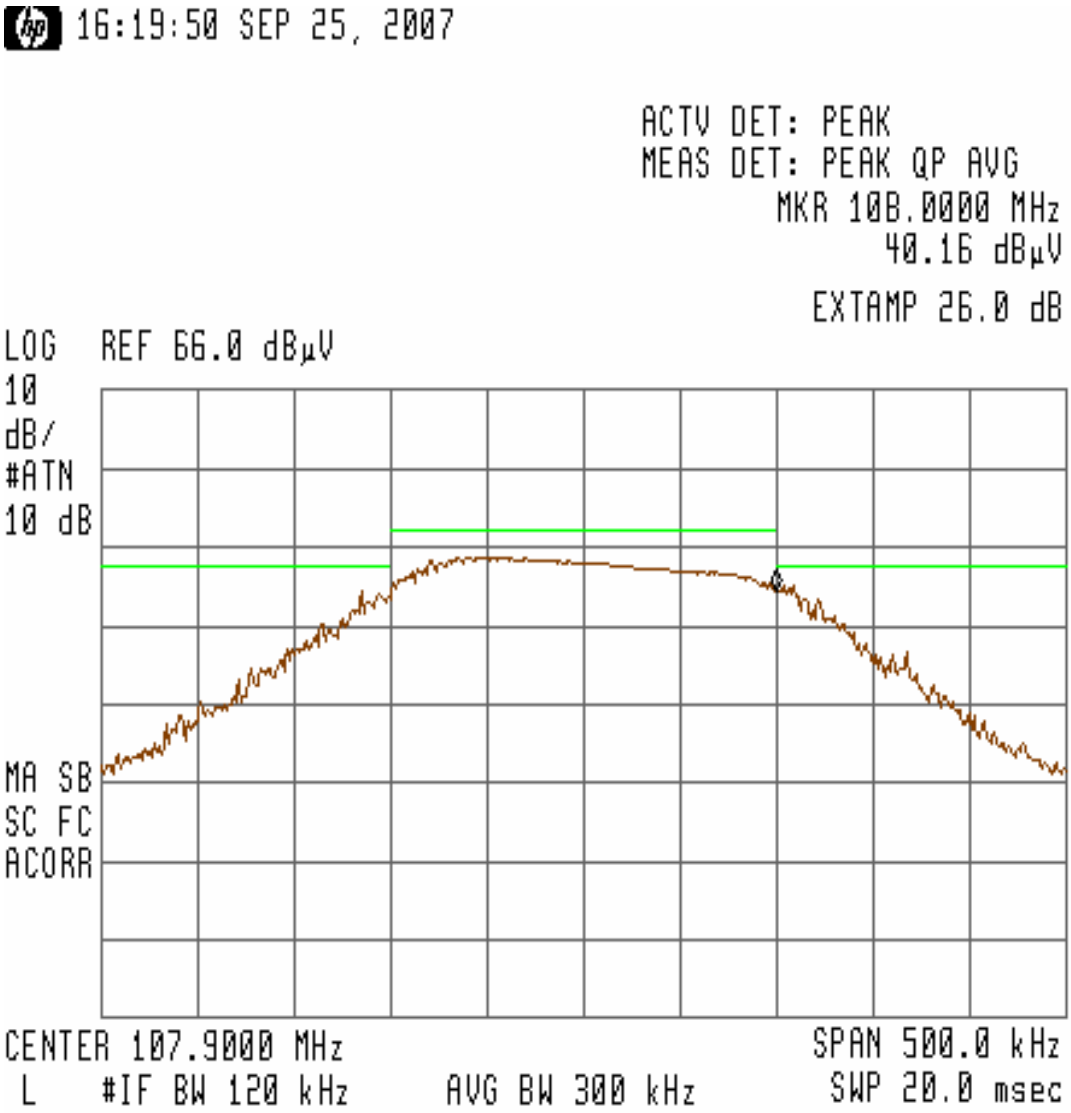


Figure 24 – Bandedge Measurement for Channel 107.9MHz (Vertical) at 15.87VDC

Note: The TBFM2 was positioned on its side.

4.6.1.2 Final Data – Transmitted Emission

The data recorded in this section contains the final results under the worst-case conditions and with any modifications or special accessories implemented as the manufacturer intends.

SOP 1 Radiated Emissions — Tracking # 30761735.001 Page 1 of 2

EUT Name	TuneBase FM2	**Date**	25 September 2007
EUT Model	F8Z176	**Temp / Hum in**	72°F / 42%rh
EUT Serial	Not Serialized (Sample #2)	**Temp / Hum out**	N/A
Standard	FCC 47 CFR Part 15	**Line AC / Freq**	11.73VDC
Deg/sweep	N/a	**RBW / VBW**	120kHz / 300kHz
Dist/Ant Used	3m / JB3	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (m)	Table Pos (deg)	FIM Value (dBuV)	Corr'd Factor (dB)	E-Field Value (dBuV/m)	Fundamental Limit (dBuV/m)	Spec Margin (dB)
Fundamental CH 88.1: Peak Mesurements								
88.1	H	2.49	299	51.97	-14.99	36.98	67.96	-30.98
88.1	V	1.13	79	58.53	-14.08	44.45	67.96	-23.51
Fundamental CH 98.1: Peak Mesurements								
98.1	H	3.2	154	46.91	-12.99	33.92	67.96	-34.04
98.1	V	1.0	42	53.15	-12.07	41.08	67.96	-26.88
Fundamental CH 107.9: Peak Mesurements								
107.9	H	1.0	146	49.57	-11.64	37.93	67.96	-30.03
107.9	V	1.0	53	55.32	-10.87	44.45	67.96	-23.51
Fundamental CH 88.1: Average Mesurements								
88.1	H	2.49	299	51.00	-14.99	36.01	47.96	-11.95
88.1	V	1.13	79	57.95	-14.08	43.87	47.96	-4.09
Fundamental CH 98.1: Average Mesurements								
98.1	H	3.2	154	46.04	-12.99	33.05	47.96	-14.91
98.1	V	1.0	42	52.69	-12.07	40.62	47.96	-7.34
Fundamental CH 107.9: Average Mesurements								
107.9	H	1.0	146	48.77	-11.64	37.13	47.96	-10.83
107.9	V	1.0	53	54.37	-10.87	43.5	47.96	-4.46

Spec Margin = E-Field Value - Limit, E-Field Value = FIM Value + Corr'd Factor ± Uncertainty,

Combined Standard Uncertainty $u_c(y)$ = ± 1.6dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Notes: EUT is powered by 85% of Rated 13.8VDC.

SOP 1 Radiated Emissions

Tracking # 30761735.001 Page 3 of 9

EUT Name	TuneBase FM2	**Date**	25 September 2007
EUT Model	F8Z176	**Temp / Hum in**	72°F / 42%rh
EUT Serial	Not Serialized (Sample #2)	**Temp / Hum out**	N/A
Standard	FCC 47 CFR Part 15	**Line AC / Freq**	15.87VDC
Deg/sweep	N/a	**RBW / VBW**	120kHz / 300kHz
Dist/Ant Used	3m / JB3	**Performed by**	Jeremy Luong

Emission Freq (MHz)	ANT Polar (H/V)	ANT Pos (m)	Table Pos (deg)	FIM Value (dBuV)	Corr'd Factor (dB)	E-Field Value (dBuV/m)	Fundamental Limit (dBuV/m)	Spec Margin (dB)
Fundamental CH 88.1: Peak Mesurements								
88.1	H	2.49	299	51.51	-14.99	36.52	67.96	-31.44
88.1	V	1.13	79	55.84	-14.08	41.76	67.96	-26.2
Fundamental CH 98.1: Peak Mesurements								
98.1	H	3.2	154	46.44	-12.99	33.45	67.96	-34.51
98.1	V	1.0	42	53.08	-12.07	41.01	67.96	-26.95
Fundamental CH 107.9: Peak Mesurements								
107.9	H	1.0	146	49.83	-11.64	38.19	67.96	-29.77
107.9	V	1.0	53	54.72	-10.87	43.85	67.96	-24.11
Fundamental CH 88.1: Average Mesurements								
88.1	H	2.49	299	50.86	-14.99	35.87	47.96	-12.09
88.1	V	1.13	79	55.09	-14.08	41.01	47.96	-6.95
Fundamental CH 98.1: Average Mesurements								
98.1	H	3.2	154	46.00	-12.99	33.01	47.96	-14.95
98.1	V	1.0	42	52.49	-12.07	40.42	47.96	-7.54
Fundamental CH 107.9: Average Mesurements								
107.9	H	1.0	146	48.89	-11.64	37.25	47.96	-10.71
107.9	V	1.0	53	53.82	-10.87	42.95	47.96	-5.01

Spec Margin = E-Field Value - Limit, E-Field Value = FIM Value + Corr'd Factor ± Uncertainty,

Combined Standard Uncertainty $u_c(y)$ = ± 1.6dB Expanded Uncertainty $U = ku_c(y)$ k = 2 for 95% confidence

Notes: EUT is powered by 115% of Rated 13.8VDC

5 Test Equipment Use List

DESCRIPTION	MODEL	SERIAL NUMBER	LAST CAL	CAL DUE DATE
RECEIVERS				
HP 8546A EMI Receiver (Receiver Section) 9Khz – 6.5Ghz	85462A	3325A00166	04/18/2006	04/18/2008
HP8546A EMI Receiver (RF Filter Section)	85460A	3330A00162	04/18/2006	04/18/2008
HP 8546A EMI Receiver (Receiver Section) 9Khz – 6.5Ghz	85462A	3942A00514	09/22/2006	09/22/2008
HP8546A EMI Receiver (RF Filter Section)	85460A	3704A00485	09/22/2006	09/22/2008
PREAMPS				
Amplifier Ant. Preamp, 0.3-1GHz	310N	185516	05/07/2006	05/07/2008
ANTENNAS				
EMCO Active Loop	6502	00062531	03/30/2006	03/30/2008
Schaffner Bilog (Emissions)	CBL6112B	2505	02/09/2006	02/09/2008
Sunol Science Bilog (Emission)	JB3	A102606	02/20/2007	02/20/2009
CHAMBER				
ETS 10-Meter Chamber	ETS-10M	120105	03/01/2007	03/01/2008
TDK 5-Meter Chamber	TDK-5M	110106	11/01/2006	11/01/2007
OTHER EQUIPMENT				
Davis Instr. Environment Meter	Perception II	PE61127A26	07/25/2007	07/25/2009
Fluke Digital Multimeter	Fluke 87	65170132	07/25/2006	07/25/2008

6 Setup Photo

Test Setup Photo : See Test Setup Document

EUT External Photo: See EUT External Photo Report

EUT Internal Photo: See EUT Internal Photo Report

7 Test Plan

7.1 *Introduction*

This manufacturer-supplied document provides a description of the Equipment Under Test (EUT), configuration(s), operating condition(s), and performance acceptance criteria. It is intended to provide the test laboratory with the essential information needed to perform the requested testing.

7.2 *Customer*

The information in the following tables is required, as it should appear in the final test report.

Table 2 – Customer Information

Company Name	Belkin International, Inc.
Company Logo	BELKIN.
Address 1	501 West Walnut Street
City	Compton, CA 90220
State	CA
Zip	84020
Phone	(310) 604-2484
Fax	(310) 604-2007

Table 3 – Technical Contact Information

Name	Zaven Mangassarian
E-mail	ZavenM@belkin.com
Phone	(310) 604-2484
Fax	(310) 604-2007

7.3 *Equipment Under Test (EUT)*

The information provided in the following table should be listed as it should appear in the final report. For those products that have only a model name, list the model number as *non-applicable* and vice-versa.

Table 4 – EUT Designation

Product Name	TuneBase FM2
Model Number	F8Z176
System Name	TuneBase FM Transmitter
Product Description	FM Radio transmitter for IPod

7.3.1 Product Specifications

The information provided in the following table should be listed as it should appear in the final report.

Table 5 – EUT Specifications

<table>
<tr><td>Size (in inches)</td><td>3.70"H x 4.51" W x 1.25"D</td></tr>
<tr><td>Weight (in pounds)</td><td>0.2Lbs.</td></tr>
<tr><td rowspan="5">Power Supply
(check all that apply)</td><td>Voltage Type: ☒ DC ☐ AC</td></tr>
<tr><td>Operating DC Voltage is 13.8V</td></tr>
<tr><td>Multiple Feeds ☐ Yes and how many ☒ No</td></tr>
<tr><td>Current (Min:) 0.6 (A)</td></tr>
<tr><td>Power Consumption (Min loaded) 8.28 (W)</td></tr>
<tr><td>Clock
Oscillator
Switching Power Supply
Operating Frequencies:</td><td><table><tr><th>Type</th><th>Frequency</th></tr><tr><td>crystal</td><td>32.7 68kHz</td></tr><tr><td></td><td></td></tr></table></td></tr>
<tr><td>Is the EUT a frame or a shelf product?
(Note: shelf = 36" or less)</td><td>☐ Table Top ☐ Rack mount ☐ Floor standing cabinet
☒ Other: Car-DC plug-in</td></tr>
</table>

7.3.2 Interface Specifications

Table 6 – Interface Specifications

Cabled with what type of cable?	Is the cable shielded?	Maximum potential length of the cable?	Metallic (M), Coax (C) or Fiber (F)?
NA	NA	NA	NA

Note: TuneBase FM2 plugs directly into the DC jack of any vehicle.

7.3.3 Configuration(s)

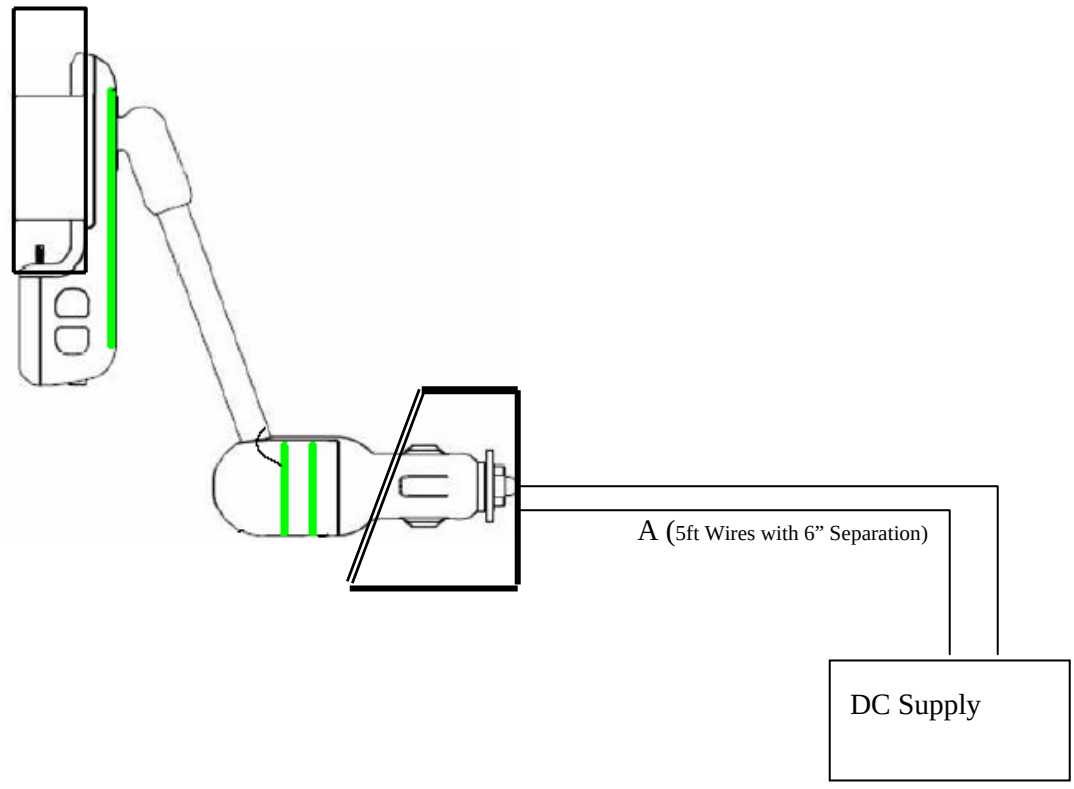


Figure 25 - Block Diagram of EUT Set-Up

Table 7 – Equipment Shown in Block Setup Diagram

Des.	Manufacturer	Model No.	Serial No.	Description
1	Belkin International, Inc.	F8Z176	Sample #2	FM Transmitter
2	Radio Shack	22-504	614111	DC Power Supply
3	Apple Computer	30GB	NA	Play MP3 Files
4	Hewlette Packard	6205C	2411A-10488	Use to provide 11.73VDC and 15.87VDC

Table 8 – Cables Shown in Block Diagram

Des.	Cable Name	Port Reference
A	22 AWG Wire	+/- DC Terminal

7.4 *Test Specifications*

The information provided in the following table should be provided as you would like the product to be evaluated if different from the requirements of the standard.

Table 9 – EUT Designation

Emissions and Immunity	
Standard	Requirement
CFR Title 47 Part 15.239 : 2006	All