ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
CERTIFICATION TO FCC PART 15 REQUIREMENTS

for

INTENTIONAL RADIATOR

UNIVERSA CELLULAR HANDS-FREE KIT

MODEL NO: Universal FM HFK

FCC ID NO: OSHPTIUNI8871065

REPORT NO: 01E9887

ISSUE DATE: January 04, 2002

Prepared for
Priority Tech., Inc.
46771 Frement 81 Rd.,
Frement, CA 94538

Prepared by
COMPLIANCE ENGINE ERING SERVICES, INC.
NO. 199, CHUNG SHENG ROAD,
HSIN TIEN CITY, TAIPEI,
TAIWAN, R. O. C.

d.b.a.
COMPLIANCE CERTIFICATION SERVICES

COMPLIANCE
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TEST DATA

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1. VERIFICATION OF COMPLIANCE

COMPANY NAME: Priority Tech., Inc.
46771 Frement 81 Rd., Frement, CA 94538

CONTACT PERSON: C.H. Pan

TELEPHONE NO.: 1-510-2267800

EUT DESCRIPTION: UNIVERSAL CELLULAR HANDS-FREE KIT

MODEL NAME/NUMBER: Universal FM HFK

FCC ID: OSHPTIUNI8871065

DATE TESTED: January 03, 2002

REPORT NUMBER: 01E9887

TYPE OF EQUIPMENT	FM WIRELESS UNIVERSAL HANDS FREE TO BE USED WITH CELL PHONE INSIDE A VEHICLE
EQUIPMENT TYPE	88.7MHJz &106.45MHz TRANSMITTER
MEASUREMENT PROCEDURE	ANSI C63.4 / 1992
LIMIT TYPE	CERTIFICATION
FCC RULE	CFR 47, PART 15

The above equipment was tested by Compliance Engineering Services, Inc. for compliance with the requirements set forth in the FCC CFR 47, PART 15. The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties. **Warning** : This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Engineering Services, Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Engineering Services, Inc. will constitute fraud and shall nullify the document.

Rick Yeo

RICK YEO / EMC MANAGER
COMPLIANCE ENGINEERING SERVICES, INC.

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2. Product Description

Fundamental Frequency	**88.7MHz & 106.45 MHz**
Power Source	**FROM VEHICLE DC**
Usage	**VEHICLE HANDS-FREE KIT**
Power Requirement	**12 VDC**
Antenna Requirement	**Permanently attached**

3. Test Facility

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

4. Measurement Standards

The site is constructed and calibrated in conformance with the requirements of ANSI C63.4/1992.

5. Test Methodology

For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 KHz, up to at least the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. (CFR 47 Section 15.33)

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6. Measurement Equipment Used

Manufacturer	Model Number	Description	Cal Due Date
ROHDE & SCHWARZ	DSAI-D 804.8932.52	EMI Test Display	10/2002
ROHDE & SCHWARZ	ESBI-RF/1005.4300.52	EMI Test RF Unit	10/2002
H.P.	8595EM	Spectrum Analyzer (9KHz – 6.5GHz)	01/2002
EMCO	3115	Antenna (1-18GHz)	02/2002
SCHWARZBECK	VULB 9160	Antenna (30-2000 MHz)	05/2002
H.P.	8447D	Amplifier	05/2002

7. RADIATED EMISSION LIMITS

GENERAL REQUIREMENTS	SECTION 15.209, 15.239

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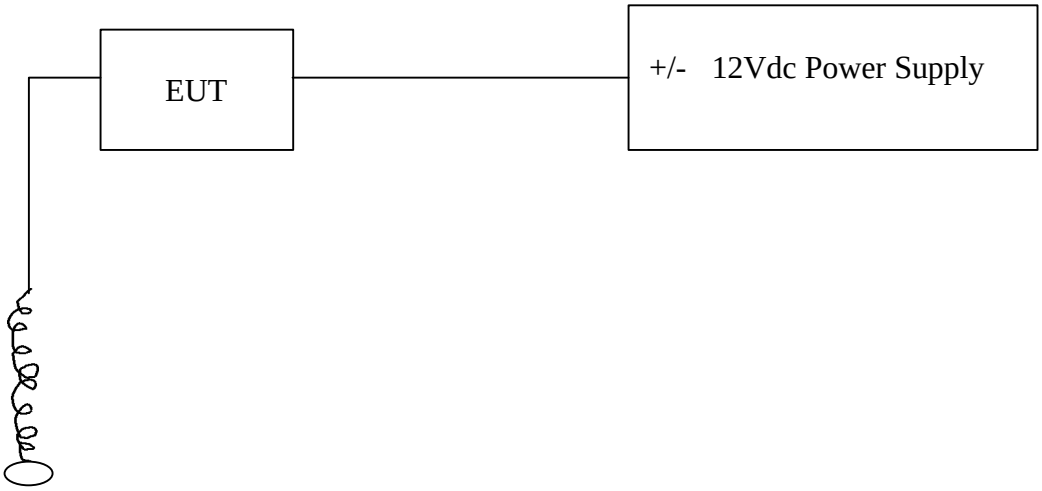
8. SYSTEM TEST CONFIGURATION

Used 12Vdc to activate the EUT.

Radiated Open Site Test Set-Up



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9. Test Procedure
Radiated Emissions, 15.209

Test Set-up for frequency range 30 – 1000 MHz

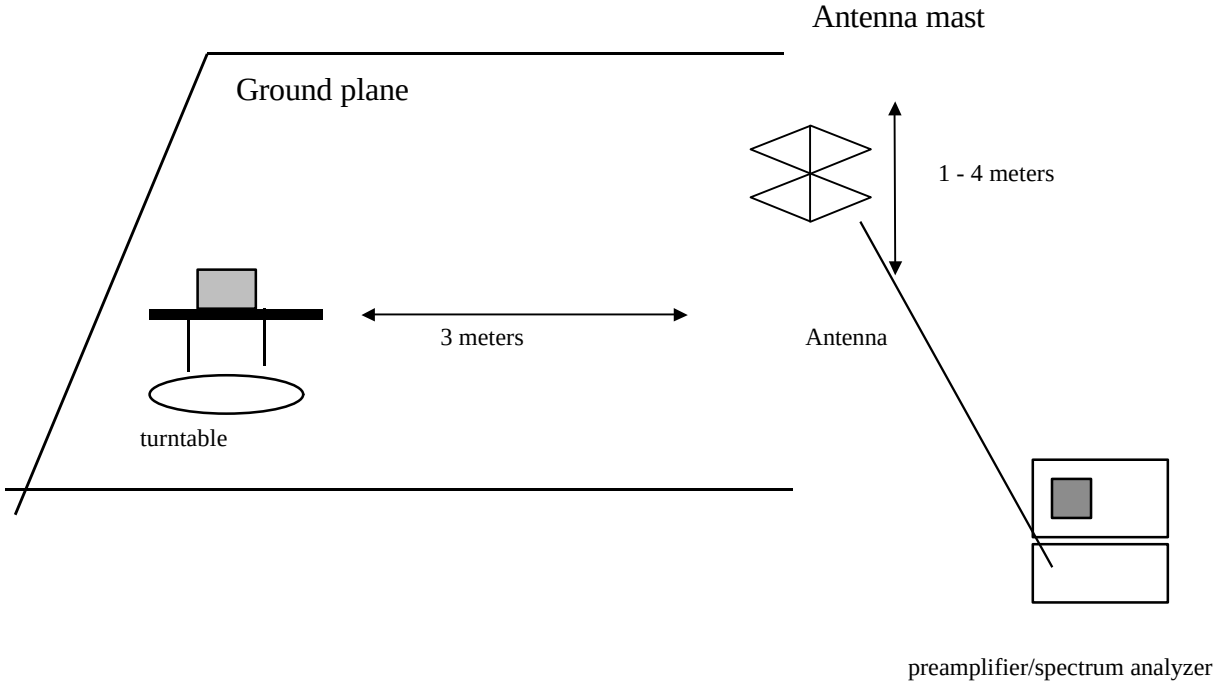

Fig. 1

1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3-meters from the EUT.

2. The turntable was slowly rotated to locate the direction of maximum emission. The EUT was moved throughout the.

3. Once maximum direction was determined, the search antenna was raised and lowered.The maximum readings so obtained are recorded in the data listed below.

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Radiated Emissions, 15.239(a) & 15.239(b), (c)

According to FCC 15.239(a), the EUT and accessories shall be placed on the 1 meter site in above configuration.

First, Connect 12Vdc + and – pins of battery to the power inputs of EUT by using the wires to active the continuous emissions.

Using a probe to detect the emission signal from the EUT and measure 88.7MHz EUT signal level on the screen of spectrum analyzer (HP 8595E) with RES BW=VID BW=1KHz and Span Size = 200kHz.

Apply a low frequency signal of signal generator to #5 and #7 pin of HEADER connector of EUT using 2 wires.

Turn on the signal generator. Set up 2.5 kHz as a modulation frequency and adjust the output amplitude value to get the modulated FM signal with about 200kHz deviation. (See attached plots).

Measure the band width of FM modulated signal on the level 20dB down below the original CW signal.

A plot of such combined signal pattern was made. (see attached)

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10. SETUP PHONES

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11. TEST RESULT

All emission were measured at 3 meters by using the following limits. Attached data sheet and plots show the passing radiation results to testing to 15.209 and 15.239.

The limit of any emissions in 80-108MHz shall not exceed 250uV (or 48 dBuV/m) at 3 meters.

The test is based on measurement instrumentation employing average detector, not Q-P detection.

The test block diagram is without FM modulation signal input (CW EUT emission signal test only) at 3 meters.

The radiation limit of any frequency outside of band follows 15.209.

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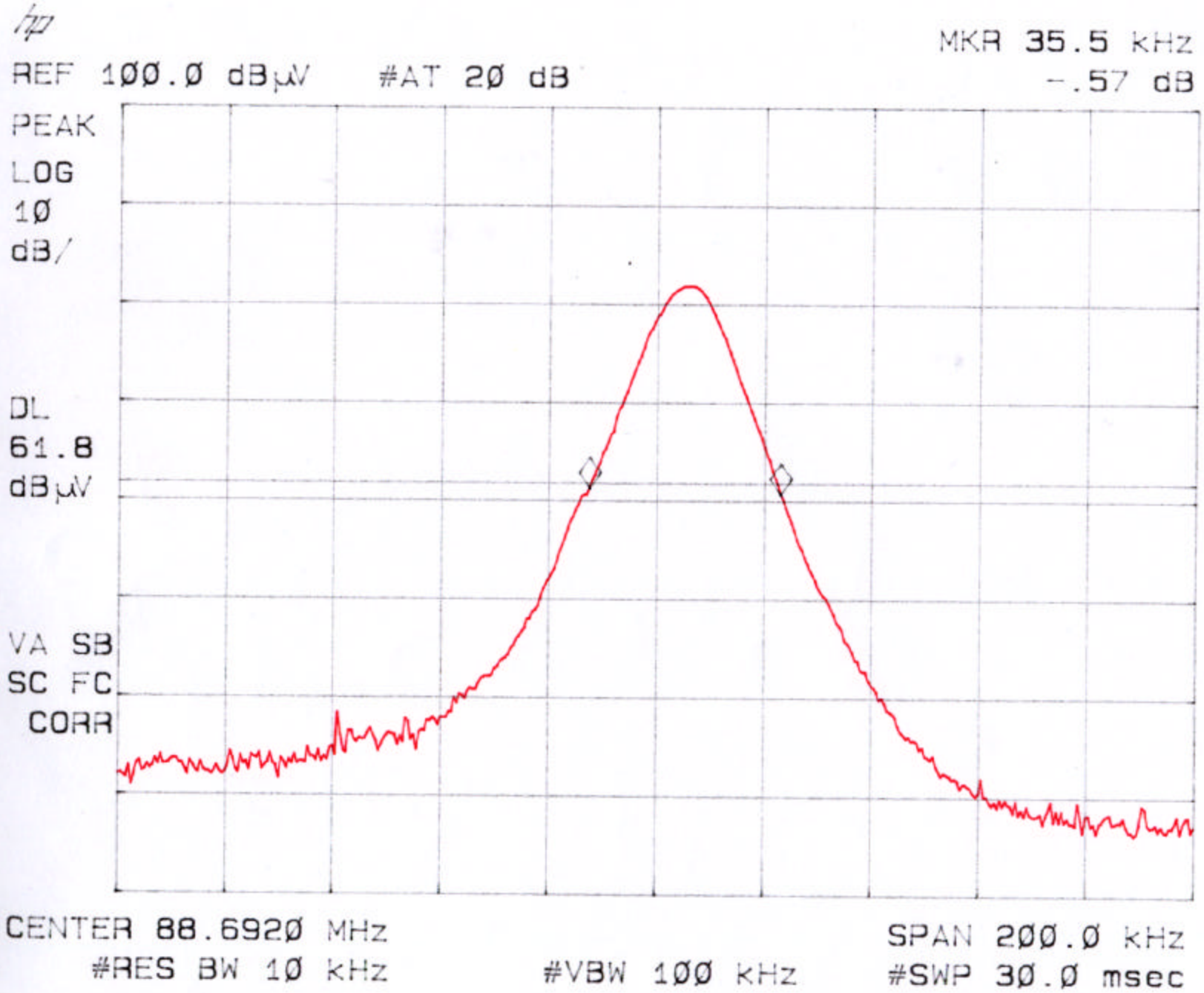
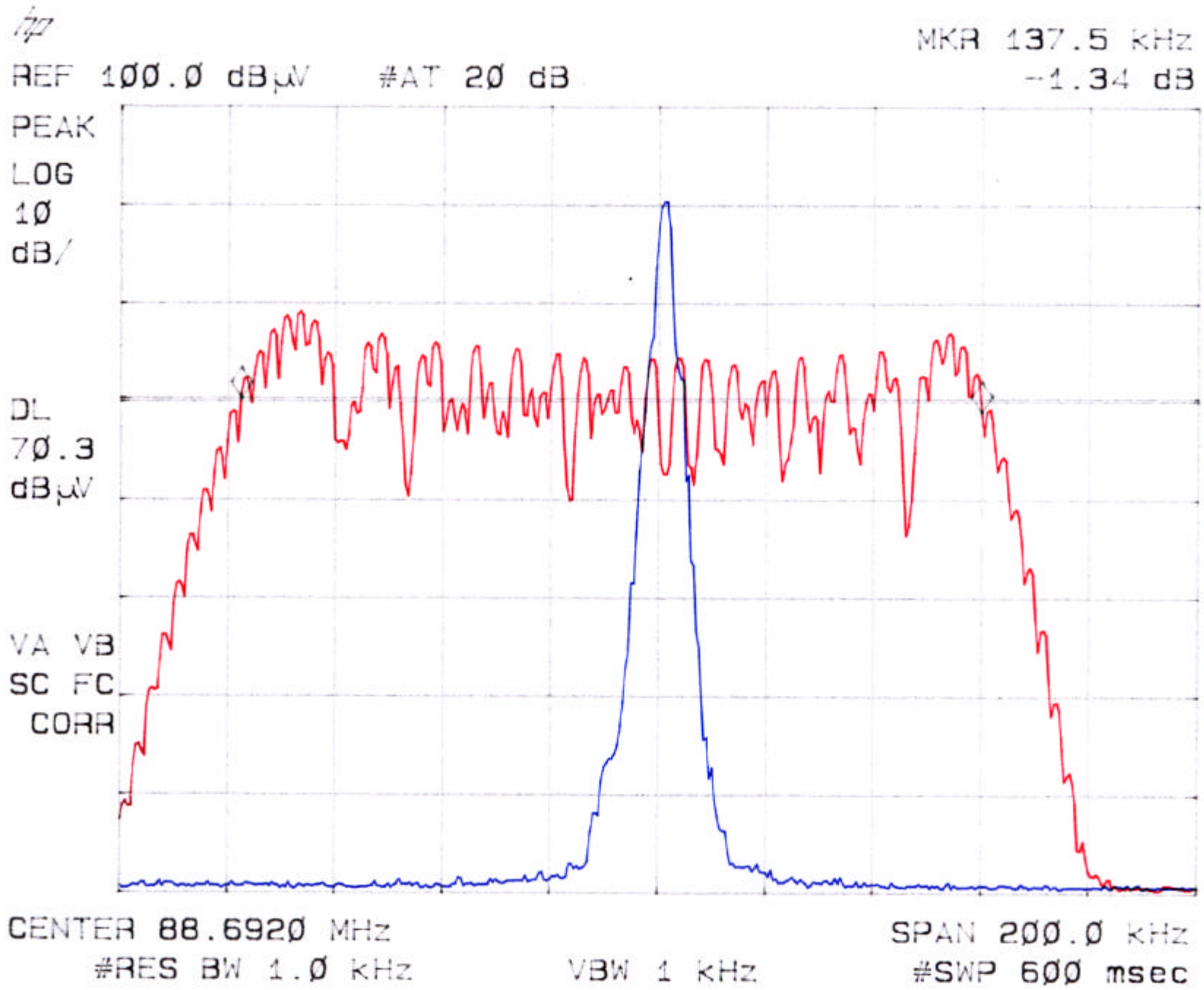
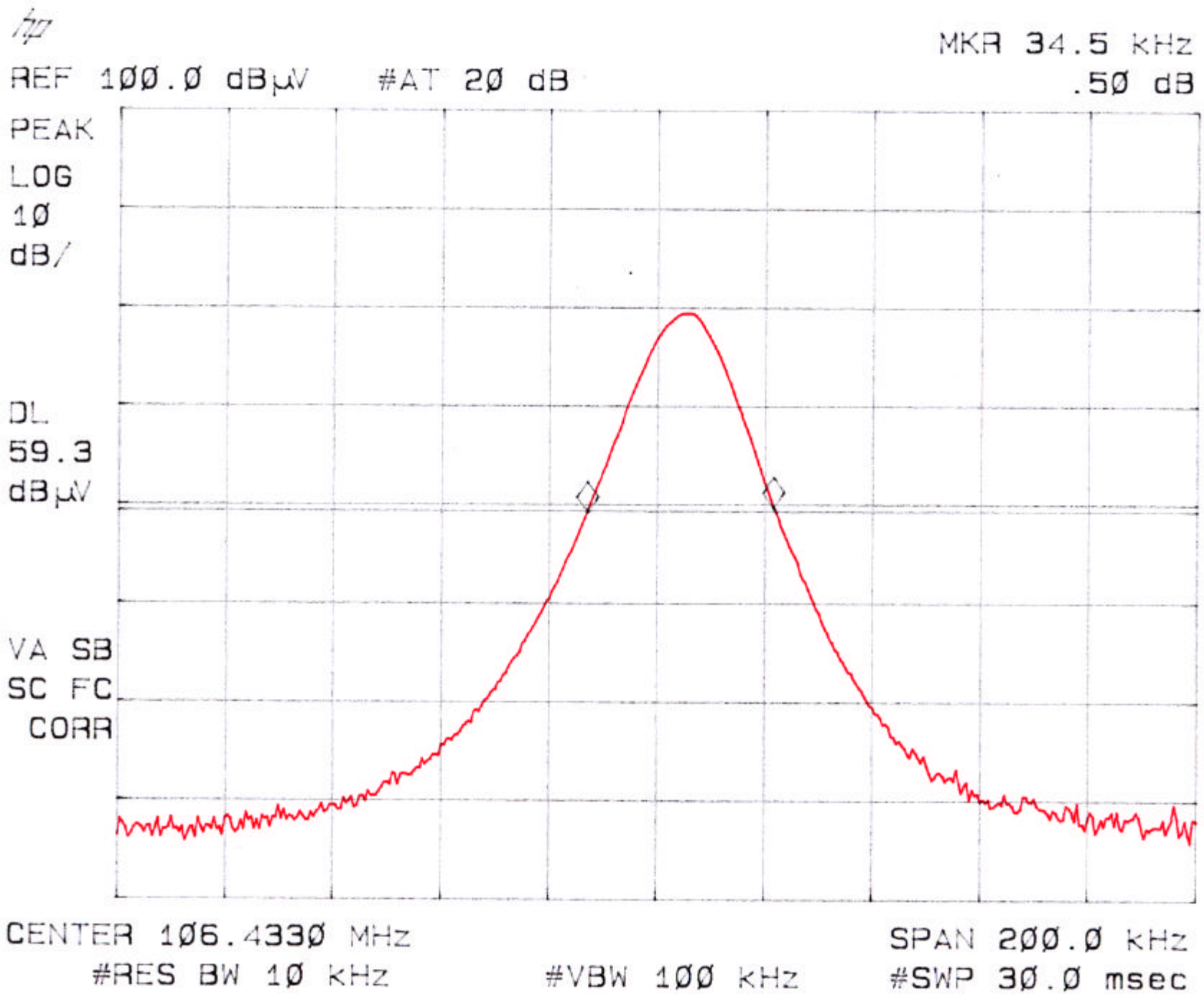
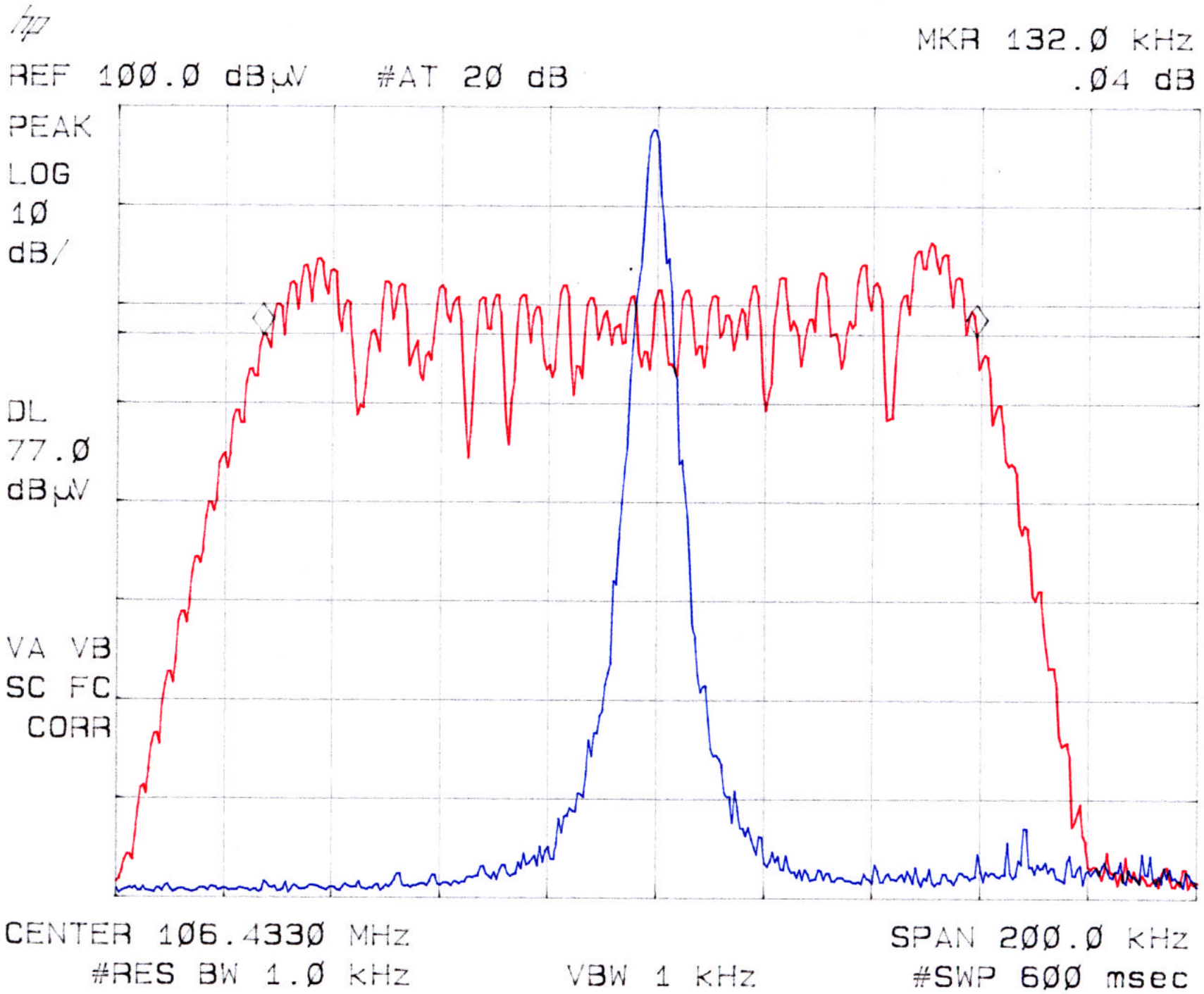

hp
MKR 35.5 kHz
REF 100.0 dBμV #AT 20 dB
-.57 dB
PEAK
LOG
10
dB/
DL
61.8
dBμV
VA SB
SC FC
CORR
CENTER 88.6920 MHz
SPAN 200.0 kHz
#RES BW 10 kHz
#VBW 100 kHz
#SWP 30.0 msec


MKR 137.5 kHz
REF 100.0 dBμV
#AT 20 dB
-1.34 dB
PEAK
LOG
10
dB/
DL
70.3
dBμV
VA VB
SC FC
CORR
CENTER 88.6920 MHz
SPAN 200.0 kHz
#RES BW 1.0 kHz
VBW 1 kHz
#SWP 600 msec


MKR 34.5 kHz
REF 100.0 dBμV
#AT 20 dB
.50 dB
PEAK
LOG
10
dB/
DL
59.3
dBμV
VA SB
SC FC
CORR
CENTER 106.4330 MHz
SPAN 200.0 kHz
#RES BW 10 kHz
#VBW 100 kHz
#SWP 30.0 msec


MKR 132.0 kHz
.04 dB
REF 100.0 dBμV
#AT 20 dB
PEAK
LOG
10
dB/
DL
77.0
dBμV
VA VB
SC FC
CORR
CENTER 106.4330 MHz
#RES BW 1.0 kHz
VBW 1 kHz
SPAN 200.0 kHz
#SWP 600 msec

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Data#: 4 File#: 9887g.emi Date: 2002-01-03 Time: 17:56:13
CCS D-Site

Condition: VERTICAL
Report No. : 01E9887
Test Engr. : JAMES LIAO
Company : Priority Tech., Inc.
EUT : Universal FM HFK
Test Config : EUT/ DC POWER
Type of Test: FCC 15.209
Mode of Op. : NORMAL MODE

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	35.411	36.51	-7.77	28.74	40.00	-11.26	Peak
2	53.119	46.28	-7.62	38.66	40.00	-1.34	QP
3	70.844	33.08	-9.26	23.82	40.00	-16.18	Peak
4	88.572	51.89	-10.65	41.24	43.50	-2.26	Peak
5	106.006	44.71	-8.84	35.87	43.50	-7.63	Peak
6	116.011	25.36	-7.81	17.55	43.50	-25.95	Peak

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Data#: 5 File#: 9887g.emi Date: 2002-01-03 Time: 18:12:55
CCS D-Site

Condition: HORIZONTAL
Report No. : 01E9887
Test Engr. : JAMES LIAO
Company : Priority Tech., Inc.
EUT : Universal FM HFK
Test Config : EUT/ DC POWER
Type of Test: FCC 15.209
Mode of Op. : NORMAL MODE

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	35.406	30.69	-7.87	22.82	40.00	-17.18	Peak
2	53.109	44.94	-7.58	37.37	40.00	-2.64	Peak
3	70.851	33.18	-9.22	23.96	40.00	-16.04	Peak
4	88.404	48.06	-10.68	37.38	43.50	-6.12	Peak
5	106.140	46.74	-8.90	37.84	43.50	-5.66	Peak
6	115.978	27.52	-7.90	19.62	43.50	-23.88	Peak