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Electro Magnetic Controlled Environment
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E. Chang

95270

To: Federal Communications Commission, Mr. Errol Chang

Date 13 SEPT 1999

RE: FCC ID: N3S2001B01, Correspondance Reference No. 9525, Dated 3 Sept 1999.

Dear Mr. Errol Chang,

This letter is intended to correct some erroneous data that you reviewed recently for FCC Part 15 Certification application for E-Codes FCC ID: N3S2001B01. Your letter stated that the second and third harmonics were measured as being larger than the fundamental and that this was unacceptable. We remeasured the first three harmonic signals including the fundamental and found that the fundamental (303.83 MHz) was the largest signal of all harmonics but was below the specification limit.

The second harmonic (607.68 MHz) fell coincident with the audio frequency of TV station channel 36. We looked at the signal inside of our shielded enclosure and found that at 1 meters distance, the signal was quite small, Figure 1, Second Harmonic. But because our shielded enclosure is not qualified for amplitude measurement, we went outside and reduced the bandwidth and span in order to see the 2nd harmonic through the channel 36 ambient. At a distance of 1/3 meters the 2nd harmonic was barely perceptible Figure 2. Signal outdoors. Next we actually measured the same signal with the Quasi - Peak detector and CISPR bandwidths at a distance of 1/3 meters Figure 3, Unit tested outdoors. The result of this shows that if the signal were at the same level as the ambient measured outdoors at a distance of 1/3 meters then its level would only be 23.1 dBuV/m, a level well below the fundamental and the specification limit.

The third harmonic was remeasured because the original measurement was of a nearby ambient signal. This signal was also well below the fundamental and the specification limit.

We appreciate your pointing out these discrepancies to us and feel that you will agree that based upon these new measurements the EUT is worthy of FCC Certification.

Thank you,
Acting on behalf of E-Code


Stephen A. Sawyer, NCE
President, EMCE Engineering, Inc.

SEP 21 12 56 PM '99
FCC LABORATORY

Phone
301-362-3025

From: OET <oetech@fccsun07w.fcc.gov>
To: jjc1@ecode-rfid.com <jjc1@ecode-rfid.com>
Date: Friday, September 03, 1999 1:34 PM
Subject: Denial of application

To: John Coulthard, E-Code
From: Errol Chang
echang@fcc.gov
FCC Application Processing Branch

Re: FCC ID N3S2001B01
Applicant: Addison Hi-Tech Incorporated
Correspondence Reference Number: 9525
731 Confirmation Number: EA95270
Date of Original E-Mail: 09/03/1999

The test report shows that the fundamental frequency of 303.83 MHz measured 30.60 dBuV/m, the first harmonic of 607.65 MHz measured 44.5 dBuV/m and the second harmonic of 911.48 MHz measured 41.1 dBuV/m, all measured at 3 meters. Pursuant to section 15.209 (c), the level of any unwanted emission must not exceed the level of the fundamental and, therefore, the application has been denied.

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 60 days of the original e-mail date may result in application dismissal pursuant to Section 2.917 (c) and forfeiture of the filing fee pursuant to section 1.1108.

DO NOT reply to this e-mail by using the Reply button. In order for your response to be processed expeditiously, you must upload your response via the Internet at www.fcc.gov, Electronic Filing, OET Equipment Authorization Electronic Filing. If the response is submitted through Add Attachments, in order to expedite processing, a message which informs the processing staff that a new exhibit has been submitted must also be submitted via Submit Correspondence. Also, please note that partial responses increase processing time and should not be submitted.

Any questions about the content of this correspondence should be directed to the e-mail address listed below the name of the sender.

EMCE ENGINEERING, INC.
 44370 S. GRIMMER BLVD
 FREMONT, CA 94538

FCC ID: N3S2001B01
 RE-measure on DATE: 11 SEPT 1999
 PAGE: 36

PERFORMED FOR: E-Code
 TEST SPECIMEN Mobile Identification Tx

MODEL NUMBER: None
 SERIAL NUMBER: None

LOCATION: VERTICAL POLARIZATION

FINAL FCC-B RADIATED RESULTS (Harmonics):

FREQUENCY MHz	ANALYZER READING dBuV	DC Duty Cycle dB	CF Ant-amp+AT+CL dB	CORRECT READING dBuV/m	SPEC LIMIT dBuV/m	MARGIN dB	HEIGHT Ant Ht cm	ANGLE Turntable Degrees
303.83	54.2	-8	-10.30	35.90	46	N/A	1500	0
607.68	52.4	-8	-21.30	23.10	46	22.90	1500	0
911.48	31.5	-8	3.80	27.30	54	26.70	1500	0
1215.30	21.4	-8	13.79	27.19	54	26.81	1500	0
1519.12	21.2	-8	13.93	27.13	54	26.87	1500	0
1820.45	27.5	-8	14.60	34.10	54	19.90	1500	0
2124.54	28.0	-8	12.94	32.94	54	21.06	1500	0
2455.00	28.4	-8	13.20	33.60	54	20.40	1500	0
2710.00	26.8	-8	13.06	31.86	54	22.14	1500	0
3010.00	27.3	-8	13.47	32.77	54	21.23	1500	0

Fundamental measures 6 dB larger than original measurement reported 30 July 1999.
 2nd harmonic doesn't exist above ambient background level.
 3rd harmonic is 6 dB lower because original measurement was on an ambient signal.

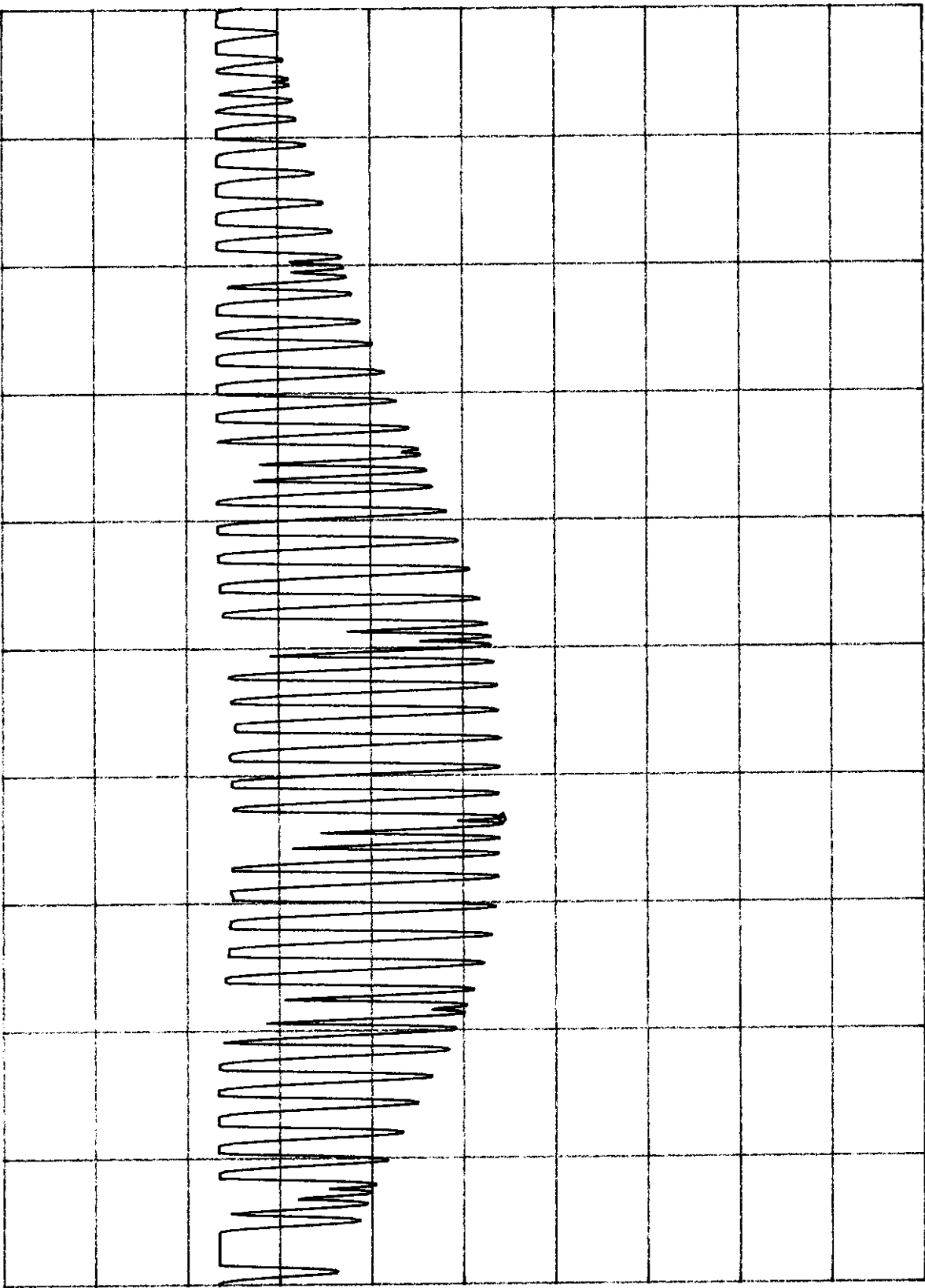
9/10/99 Measurement of Log Periodic Vert Pol
SAS-7-

HP REF 100.0 dBμV ATTN 10 dB

10 dB/

QRP - On
Dist = 3 mi
Preamp On
MKR 303.8652 MHz
54.20 dBμV

CORR'D



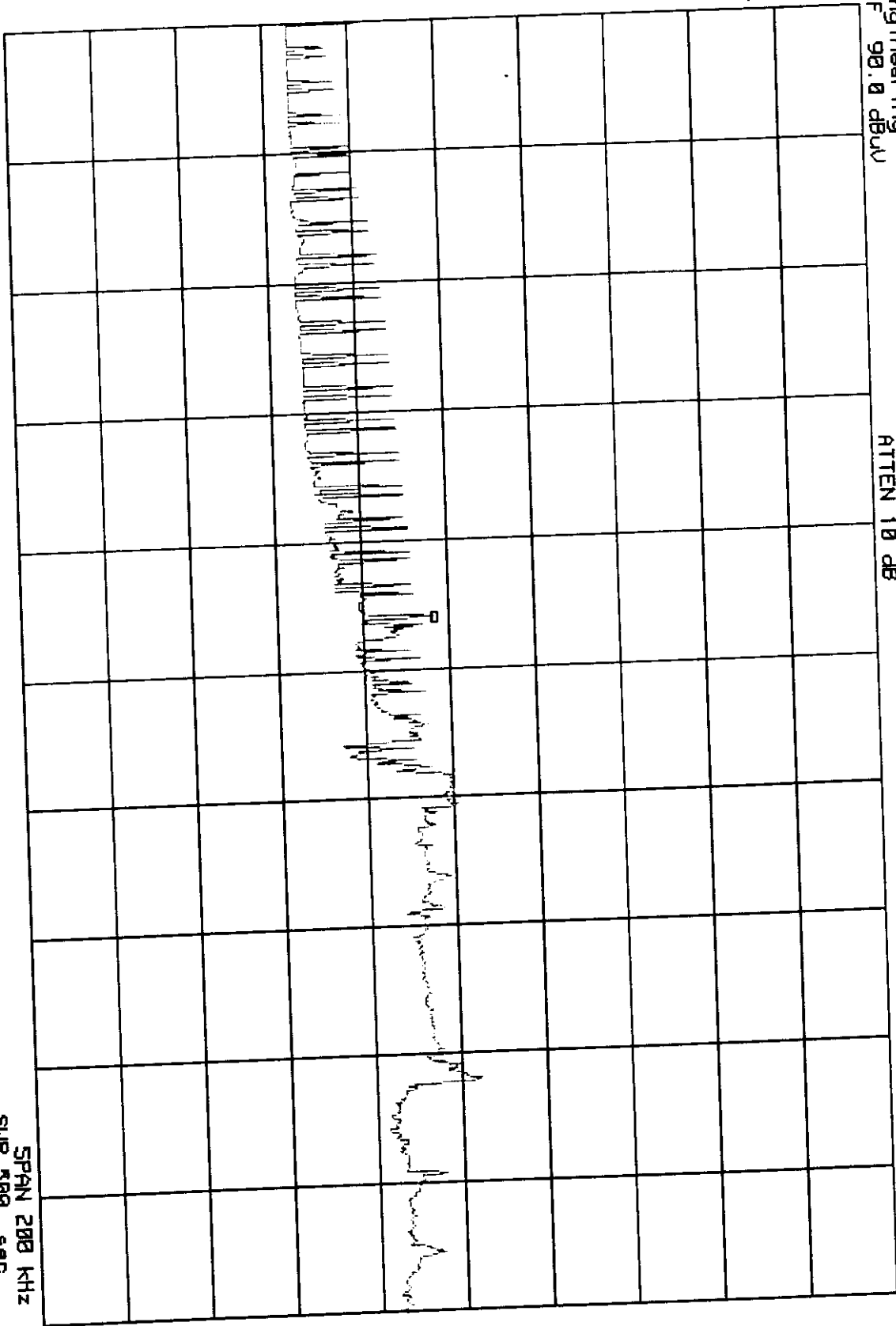
CENTER 303.8250 MHz
RES BW 1 MHz
VBW 1 MHz
SPAN 300.0 KHz
SWP 50 sec

EMCE Engineering
REF 90.0 dBu

DATE: 11 Sep 1999 @ 14:07:45
ATTEN 10 dB

MKR 607.678.6 MHz
38.00 dBu

10 dB/



CENTER 607.686 MHz
RES BW 1 MHz

UBW 1 MHz

SPAN 200 kHz
SWP 500 sec

FIGURE 1 2nd Harmonic

Tested inside Shielded enclosure @ d = 111 meter, QP Det - ON.

Bandwidth & Span reduced to try to see Signal in Ambient

HP REF 90.0 dBμV ATTEN 10 dB MKR 607.67854 MHz 43.40 dBμV

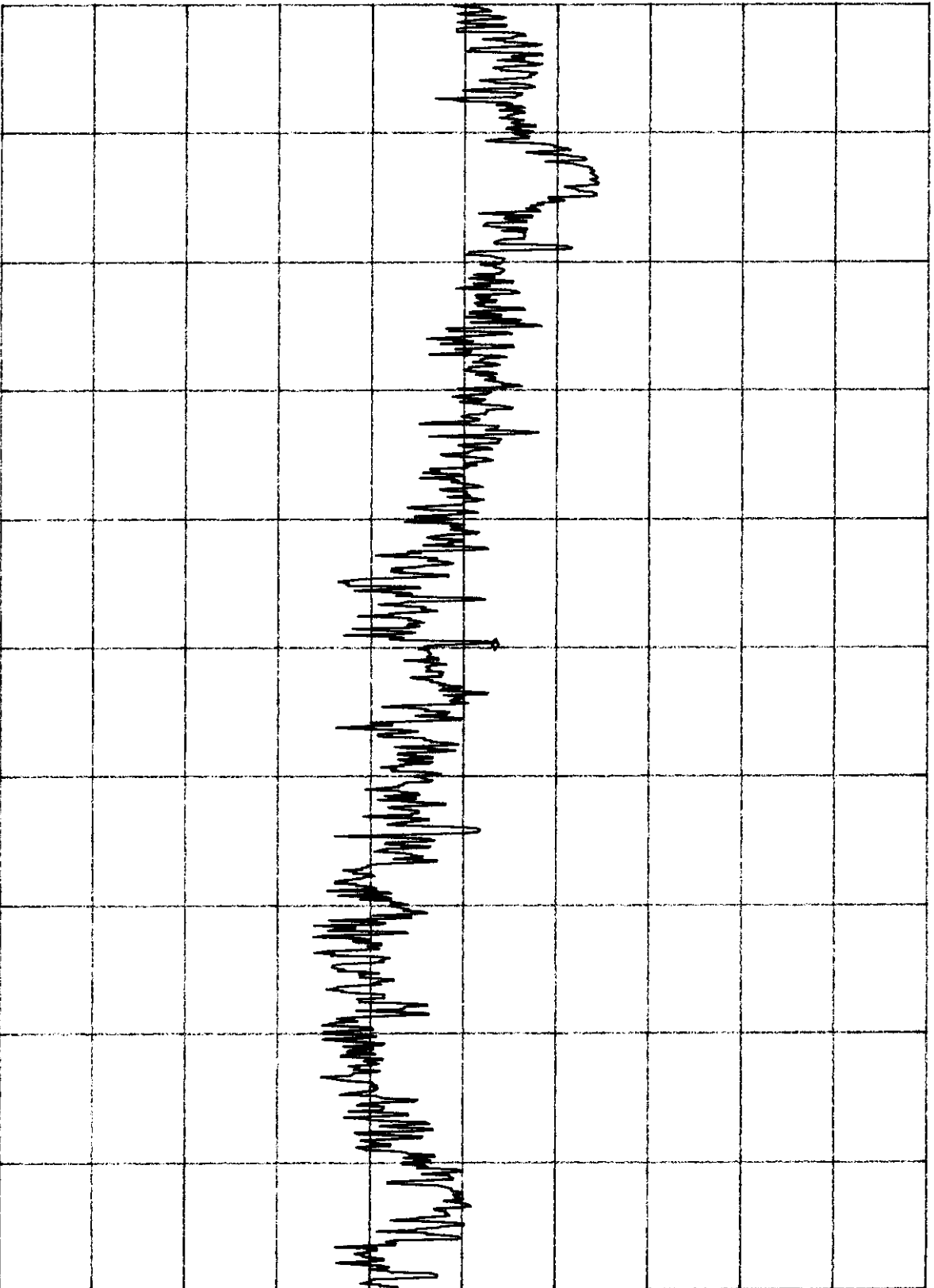
10 dB/

POS PK

Test Distance

= 0.33m

CORR'D



CENTER 607.67860 MHz SPAN 20.00 KHZ

RES BW 300 HZ VBW 300 HZ SWP 1.0 sec

Figure 2. Signal Outdoors with reduced BW & Span - Peak Detector

Measurement on 9/11/99 with log Pwr Antenna

$$D = 1/3 \text{ m}, DF = 20 \log(1/3) = -19 \text{ dB}$$

$$E = V + AF - DC - PA - DF = 52.4 + 20 - 8 - 28 - 19 = 17.4 \text{ dBuV/m}$$

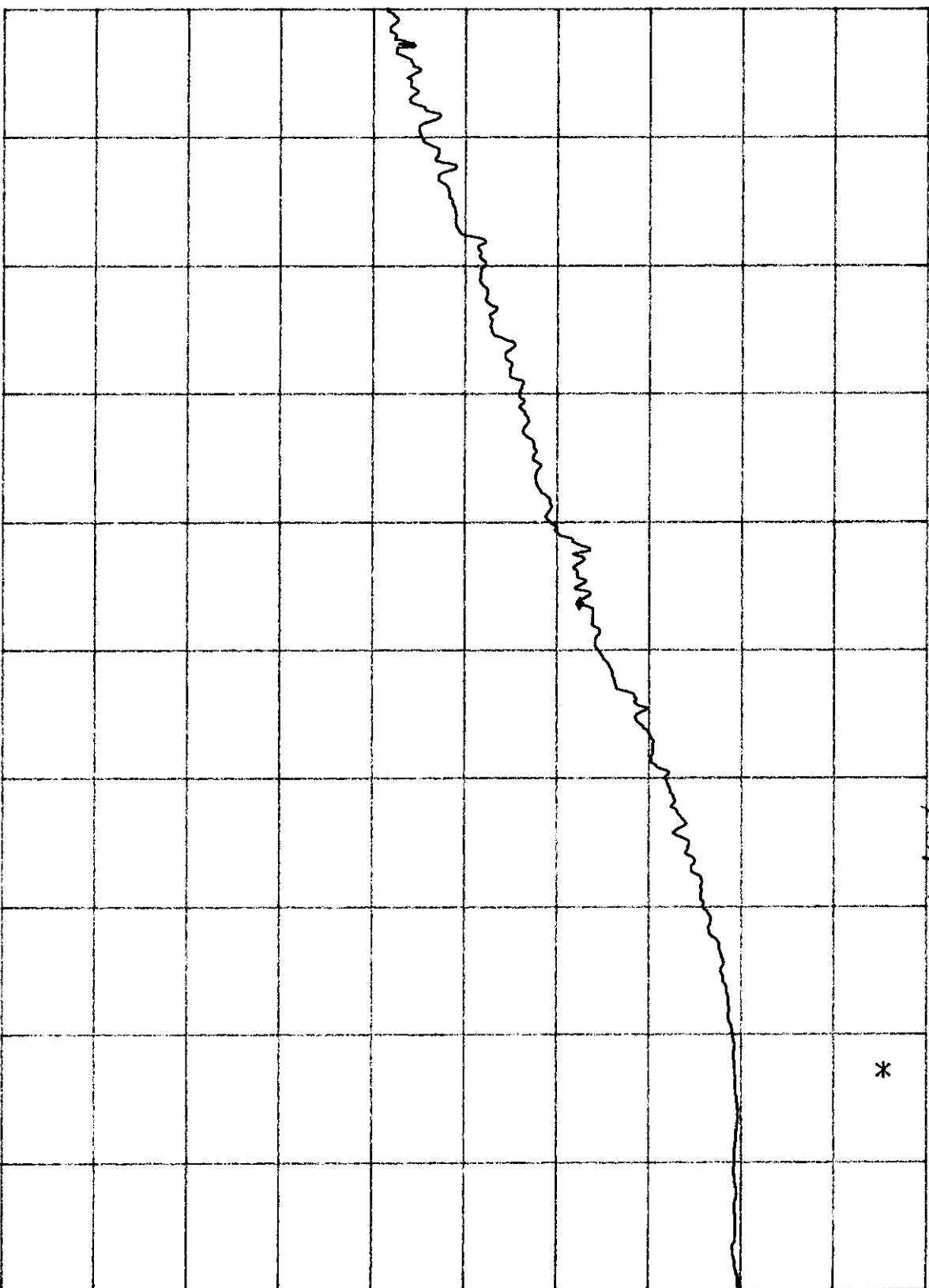
QRP Det ON
Preamp ON

HP REF 90.0 dBuV ATTEN 10 dB 52.40 dBuV

10 dB/

Note Test
Distance =
0.33 m

CORR'D



CENTER 607.6860 MHz

RES BW 1 MHz

VBW 1 MHz

SPAN 200.0 KHz
SWP 500 sec

Figure 3. Just tested Outdoors @ 1/3 m. QP Detector.

9/10/99 Kenneth is/109 Permittivity Vert Pol
S/S 7 3rd Harmonic

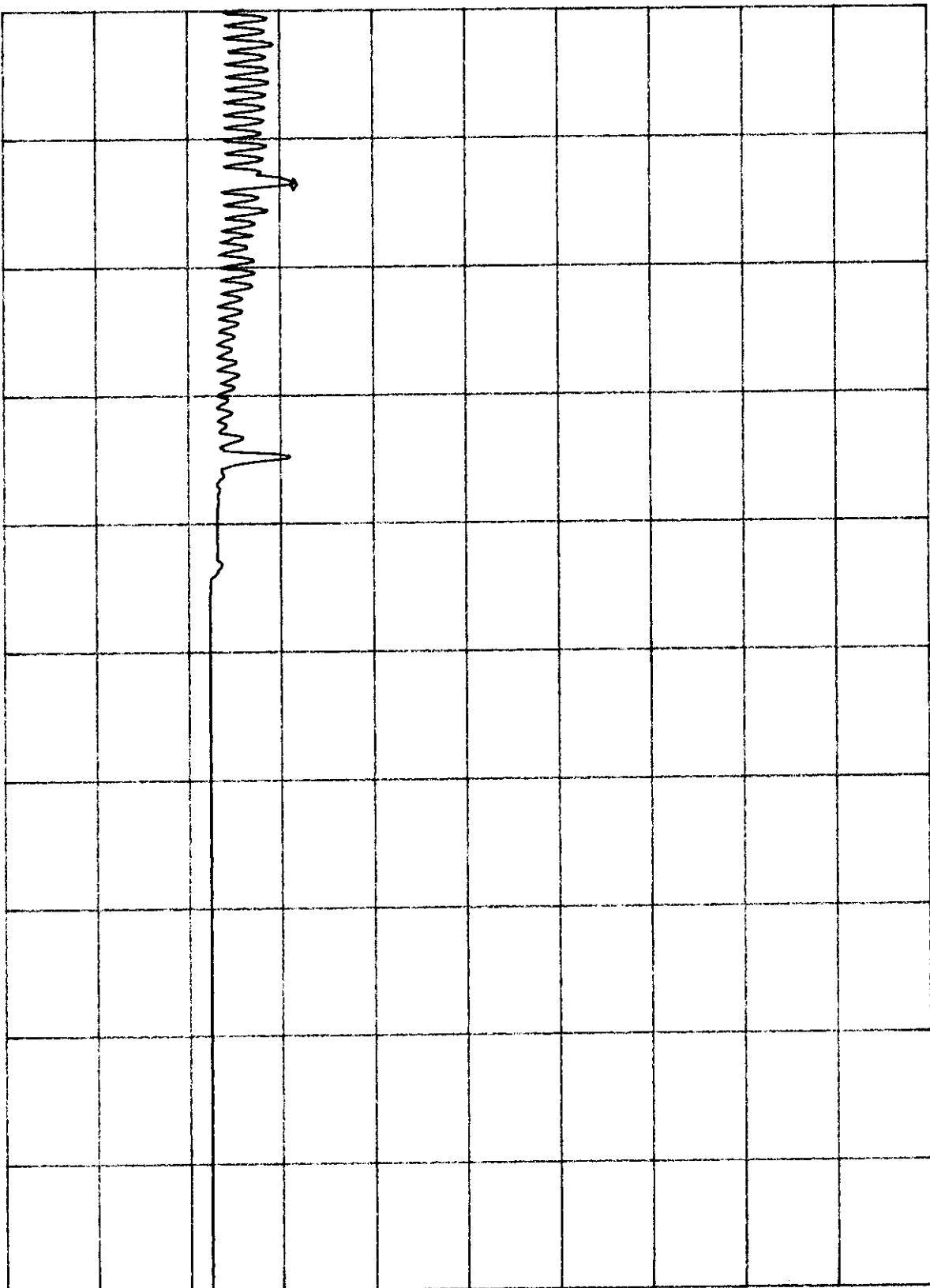
HP REF 100.0 dBμV ATTEN 10 dB

QRP Det - ON
TEST Dist = 3m
Meas = ON
MKR 911.4455 MHz
31.50 dBμV

10 dB/

POS PK

CORR'D



CENTER 911.5550 MHz

RES BW 1 MHz

VBW 1 MHz

SPAN 300.0 KHz
SWP 50 sec