

MEASUREMENT AND TECHNICAL REPORT

MICROTUNE INCORPORATED
6440 Lusk Boulevard, Suite D-251
San Diego, CA 92121

DATE: 30 January 2003

This Report Concerns:	Original Grant: X	Class II Change:
Equipment Type:	CableFree USB Master Class I, Model MT0760-UM1P	
Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?	Yes: Defer until:	No: X
Company Name agrees to notify the Commission by: of the intended date of announcement of the product so that the grant can be issued on that date.	N/A	
Transition Rules Request per 15.37?	Yes:	No: X*
(*) FCC Part 15, Paragraph(s) 15.247(a)(1), 15.247(a)(1)(ii), 15.247(b)(1), 15.247(c)		
Report Prepared by: TÜV AMERICA, INC 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 858 546 3999 Fax: 858 546 0364		

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1.0 GENERAL INFORMATION

1.1 Product Description

General Equipment Description -- NOTE: This information will be input into your test report as shown below.

EUT Description USB Host Bluetooth Class1 Dongle

EUT Name CableFree USB Master Class1

Model No.: MT0760-UM1P Serial No.: -CF

Product Options: with(-UM1P) and without (-UM1) plastic housing

Configurations to be tested: normal operation

Power Requirements

Regulations require testing to be performed at typical power ratings in the countries of intended use. (i.e., European power is typically 230 VAC 50 Hz or 400 VAC 50 Hz, single and three phase, respectively)

Voltage: 5DCV (If battery powered, make sure battery life is sufficient to complete testing.)

of Phases: --

Current (Amps/phase(max)): -- Current (Amps/phase(nominal)): --

Other --

Other Special Requirements

Test Firmware will be provided

Typical Installation and/or Operating Environment

(ie. Hospital, Small Business, Industrial/Factory, etc.)

--

EUT Power Cable

☐ Permanent OR ☒ Removable Length (in meters): 1.0

☐ Shielded OR ☐ Unshielded

☐ Not Applicable

EUT Interface Ports and Cables												
Interface			Shielding									
Type	Analog	Digital	Qty	Yes	No	Type	Termination	Connector Type	Port Termination	Length (in meters)	Removable	Permanent
EXAMPLE: RS232	☐	☒	2	☒	☐	Foil over braid	Coaxial	Metallized 9-pin D-Sub	Characteristic Impedance	6	☒	☐
--	☐	☐		☐	☐						☐	☐

EUT Software.

Revision Level: Ver 1.44

Description: --

Oscillator Frequencies			
Frequency	Derived Frequency	Component # / Location	Description of Use
24MHz	24MHz	Crystal Y1	System Clk and PLL reference
6MHz	6MHz	Crystal Y2	Clk for USB Host controller
2402~2480MHz	--	U1	TX/RX Carrier/LO

Power Supply			
Manufacturer	Model #	Serial #	Type
--			☐ Switched-mode: (Frequency) ☐ Linear ☐ Other:

Power Line Filters		
Manufacturer	Model #	Location in EUT
--		

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Critical EMI Components (Capacitors, ferrites, etc.)

Description	Manufacturer	Part # or Value	Qty	Component # / Location
--				

EMC Critical Detail -- Describe other EMC Design details used to reduce high frequency noise.
--

--

1.2 Related Submittal Grant

None

1.3 Tested System Details

The FCC ID's for all equipment, plus descriptions of all cables used in the tested system are:

None

1.4 Test Methodology

Purpose of Test: To demonstrate compliance with the following tests.

TEST	FCC CFR 47#	PASS/FAIL
Channel Separation	15.247(a)(1)	Pass
Number of Hopping Frequencies	15.247(a)(1)(ii)	Pass
Bandwidth	15.247(a)(1)(ii)	Pass
Time of Occupancy	15.247(a)(1)(ii)	Pass
Power Output	15.247(b)(1)	Pass
Radiated Spurious	15.247(c)	Pass
Band Edge Measurement	15.247	Pass

Both Conducted and Radiated testing were performed according to the procedures in FCC/ANSI C63.4 and CSA 108.8-M1983. Radiated testing was performed at an antenna-to-EUT distance of 3 meters (1 - 25 GHz).

1.5 Test Facility

The open area test site and conducted measurement data were tested by:

TÜV AMERICA, INC
10040 Mesa Rim Road
San Diego, CA 92121-2912
Phone: 858 546 3999
Fax: 858 546 0364

The Test Site Data and performance comply with ANSI C63.4 and are registered with the FCC, 7435 Oakland Mills Road, Columbia Maryland 21046. All Measurement Data is acquired according to the content of FCC Measurement Procedure and ANSI C63.4, unless supplemented with additional requirements as noted in the test report.

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2.0 SYSTEM TEST CONFIGURATION

2.1 Justification

The EUT was initially tested for FCC emissions in the normal operating mode as it will be used while in service.

2.2 EUT Exercise Software

None

2.3 Special Accessories

None

2.4 Equipment Modifications

None

2.5 Configuration of Test System

None

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3.0 CHANNEL SEPARATION EQUIPMENT/DATA
NUMBER OF HOPPING FREQUENCIES EQUIPMENT/DATA
BANDWIDTH EQUIPMENT/DATA
TIME OF OCCUPANCY EQUIPMENT/DATA
POWER OUTPUT EQUIPMENT/DATA
RADIATED SPURIOUS EQUIPMENT/DATA

See following page(s).

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Test Conditions: CHANNEL SEPARATION: FCC Part 15.247(a)(1)
 NUMBER OF HOPPING FREQUENCIES: FCC Part 15.247(a)(1)(ii)
 BANDWIDTH: FCC Part 15.247(a)(1)(ii)
 TIME OF OCCUPANCY: FCC Part 15.247(a)(1)(ii)
 POWER OUTPUT: FCC Part 15.247(b)(1)
 RADIATED SPURIOUS: FCC Part 15.247(c)

The following measurements were performed at the San Diego Testing Facility:

☐ - Test not applicable

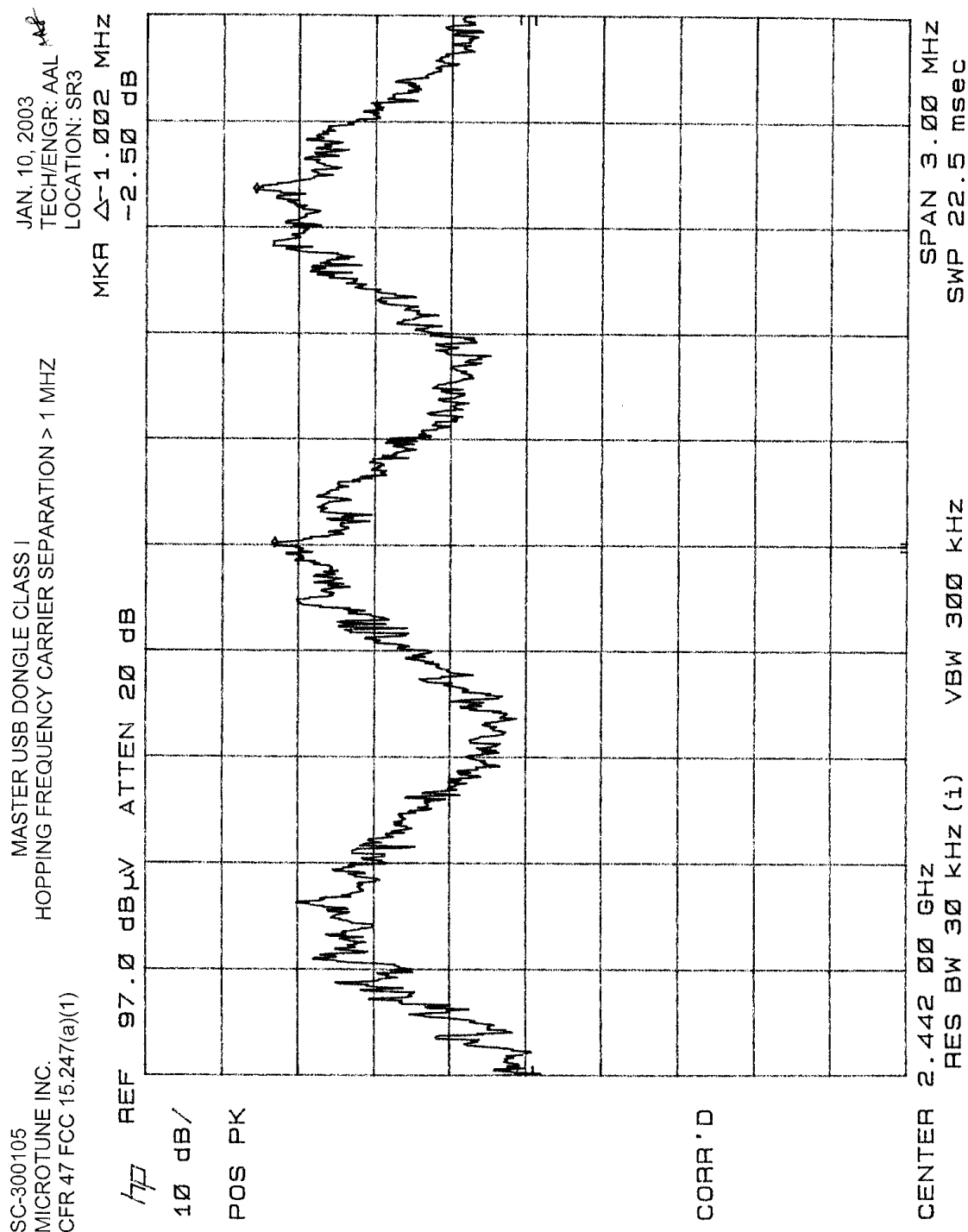
- - Roof (Small Open Area Test Site), 3 meters
- - Canyon #1 (10- and 30-Meter Open Area Test Site), Carroll Canyon, San Diego, 3 meters
- - TR2, Test Room

Test Equipment Used:

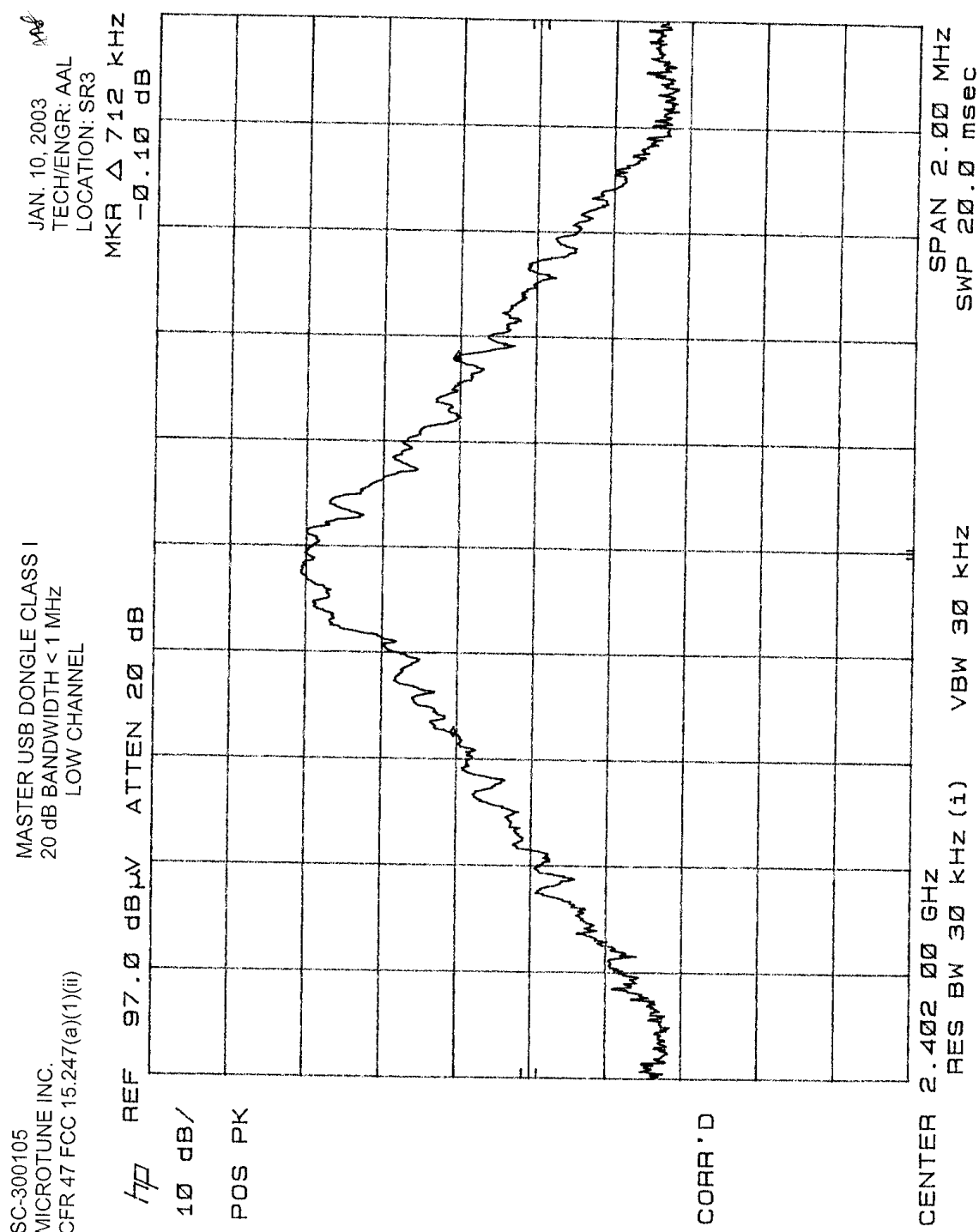
Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
HP8566B	823	Spectrum Analyzer	Hewlett Packard	2332A02751	08/02
HP85662A	822	Spectrum Analyzer Display	Hewlett Packard	2318A05571	08/02
HP8566B	720	Spectrum Analyzer	Hewlett Packard	2115A00842	09/02
HP85662A	721	Spectrum Analyzer Display	Hewlett Packard	2112A02185	09/02
HP8594E	6504	Spectrum Analyzer	Hewlett Packard	3303A00365	07/02
HP83640B	791	Sweep Signal Generator	Hewlett Packard	3844A00726	04/02
T30RC	6225	Environmental Chamber	Tenney Environmental	27244-02	04/02
3115	453	Horn Antenna	EMCO	9412-4364	12/02
3115	798	Horn Antenna	EMCO	9908-5927	05/02
LPB 2520/A	739	Log Periodic Antenna	Amplifier Research	1170	05/02
AMF-5D-010180-35-10P	719	PreAmplifier	Miteq	549460	01/02
Cable 1	731	30' Cable	United Microwave Prod	--	NCR*
Cable 2	755	10' Cable	United Microwave Prod	--	NCR*
Cable 3	756	10' Cable	United Microwave Prod	--	NCR*
Cable 4	657	3' Cable	United Microwave Prod	--	NCR*
ESVS30	6723	EMI Receiver	Rhode & Schwarz	830350/006	12/02
12A-18 115300	6377	Horn Antenna	MI Technologies	21554MB	NCR*
1197K	652	Harmonic Mixer	Hewlett Packard	3003A05400	NCR*

Remarks: One year calibration cycle for all test equipment and sites. (*) No Calibration Required.

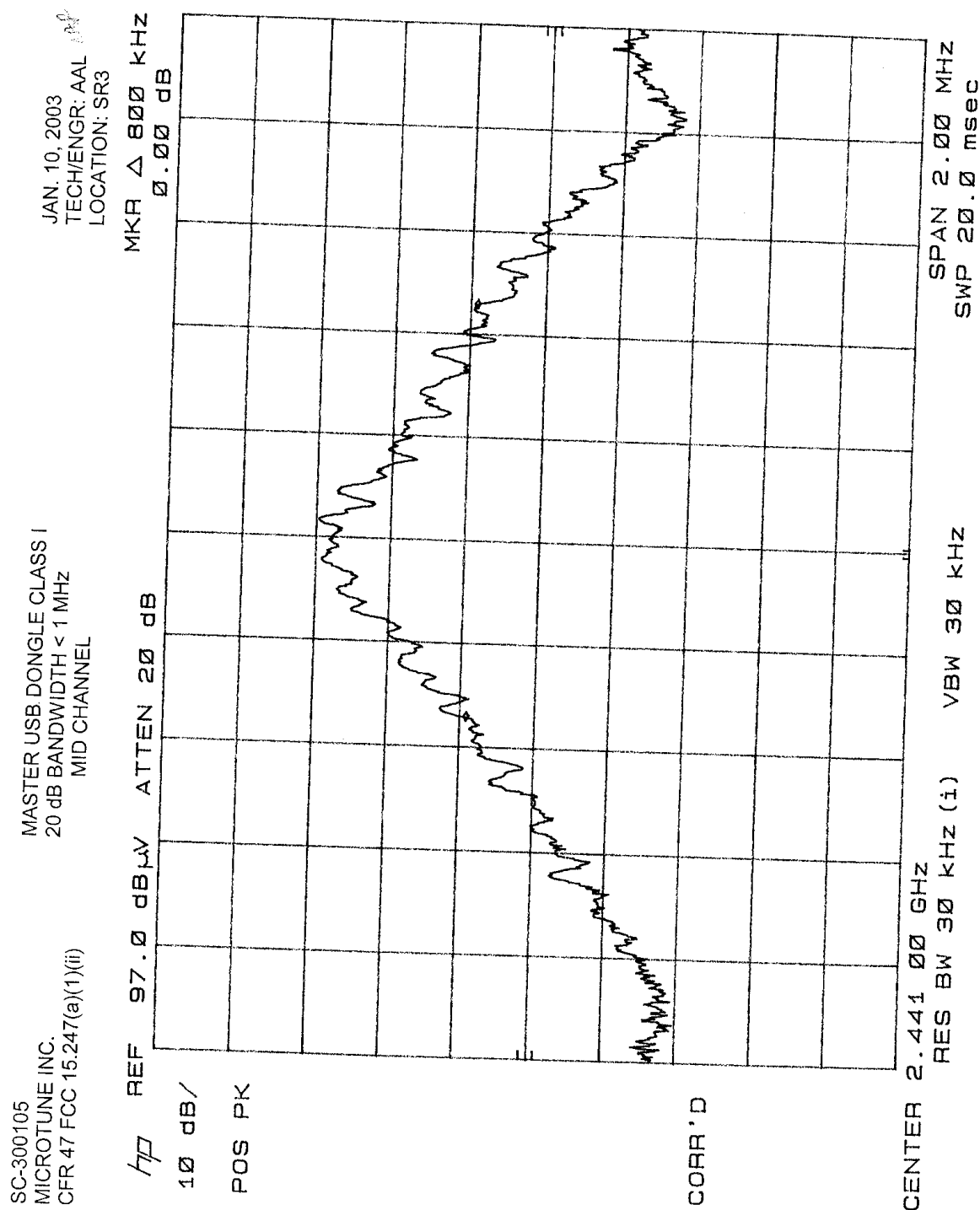
Report No. SC300105-03



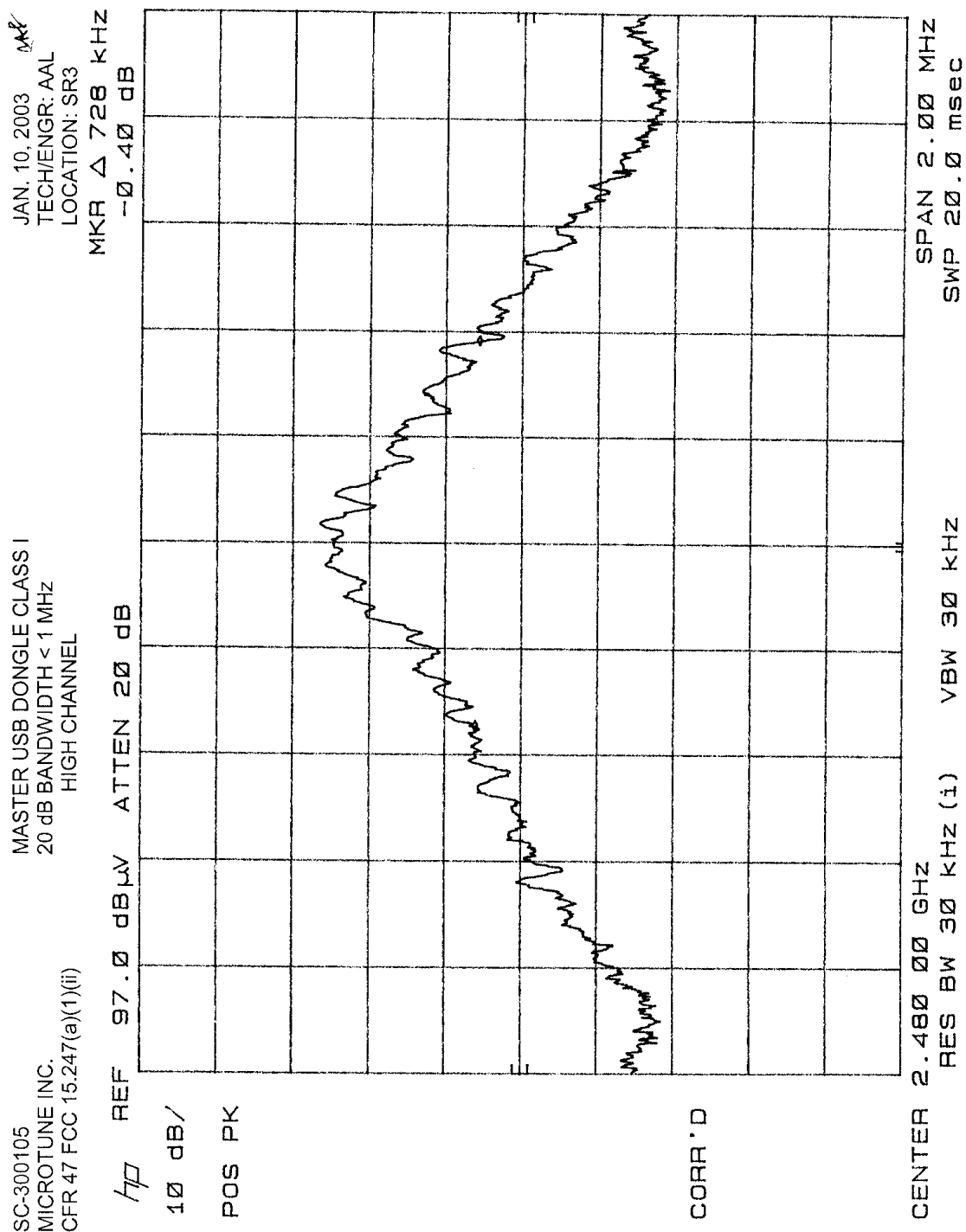
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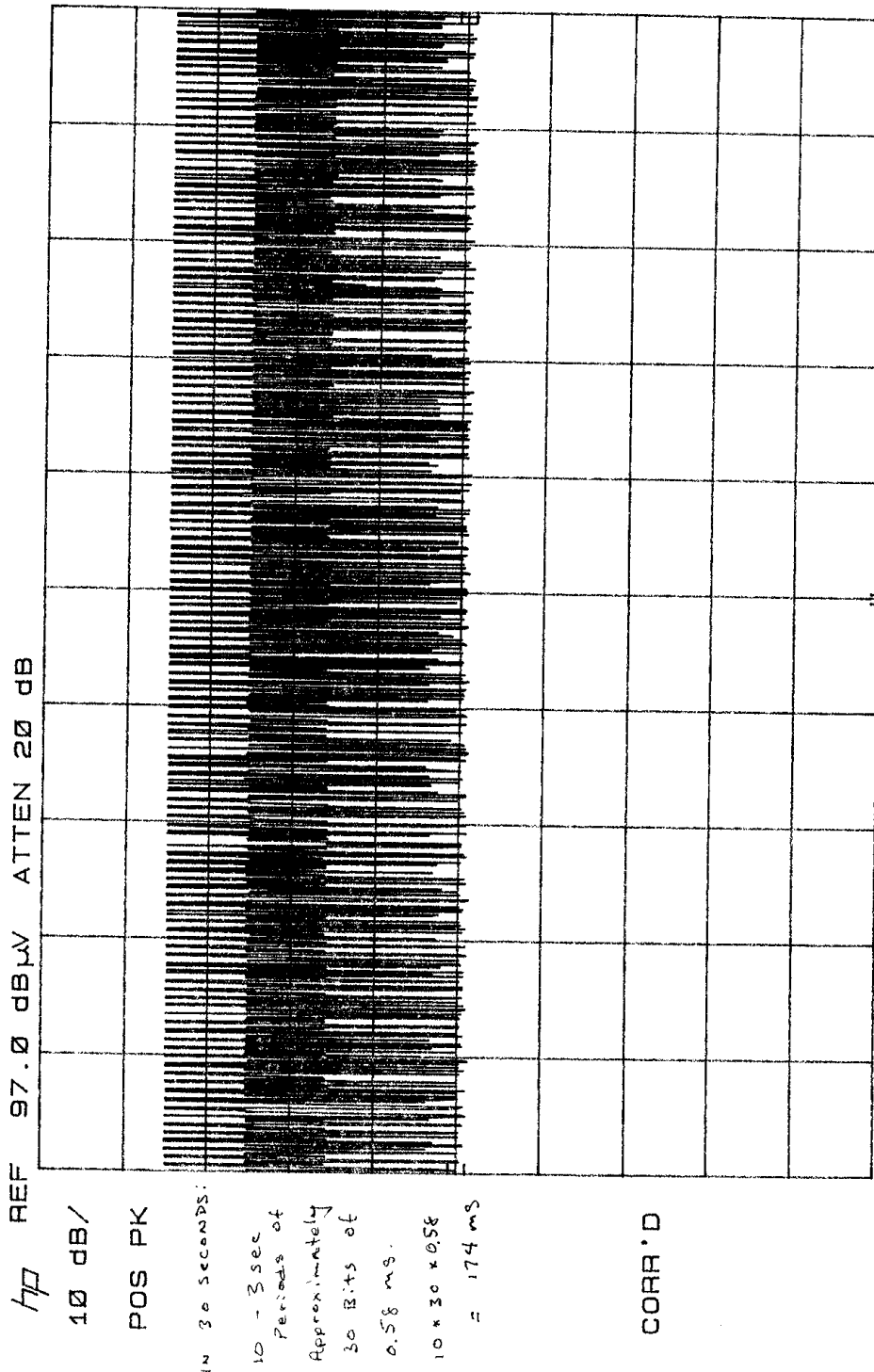


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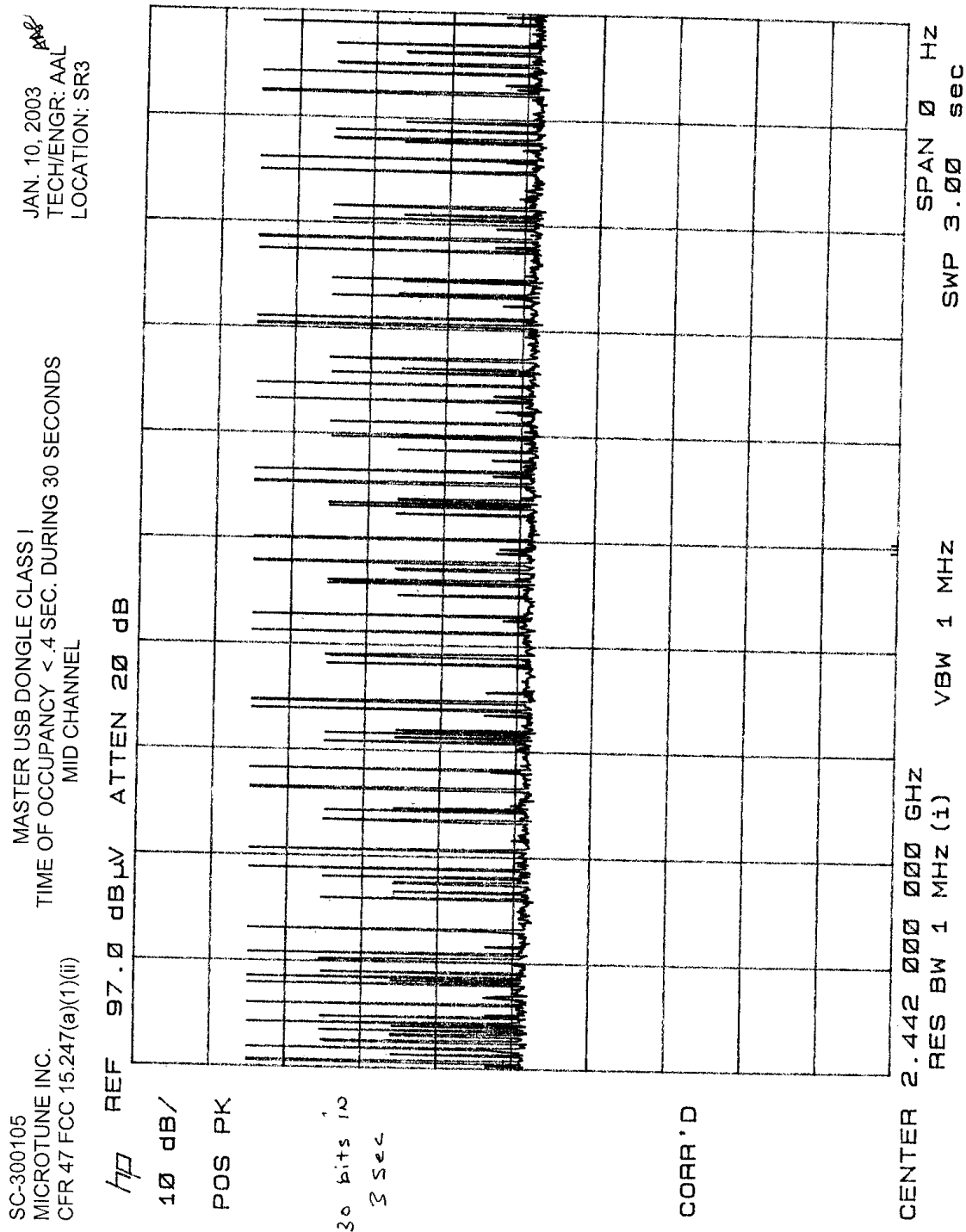
JAN. 10, 2003
TECH/ENGR: AAL
LOCATION: SR3

MASTER USB DONGLE CLASS I
TIME OF OCCUPANCY < .4 SEC. DURING 30 SECONDS
MID CHANNEL

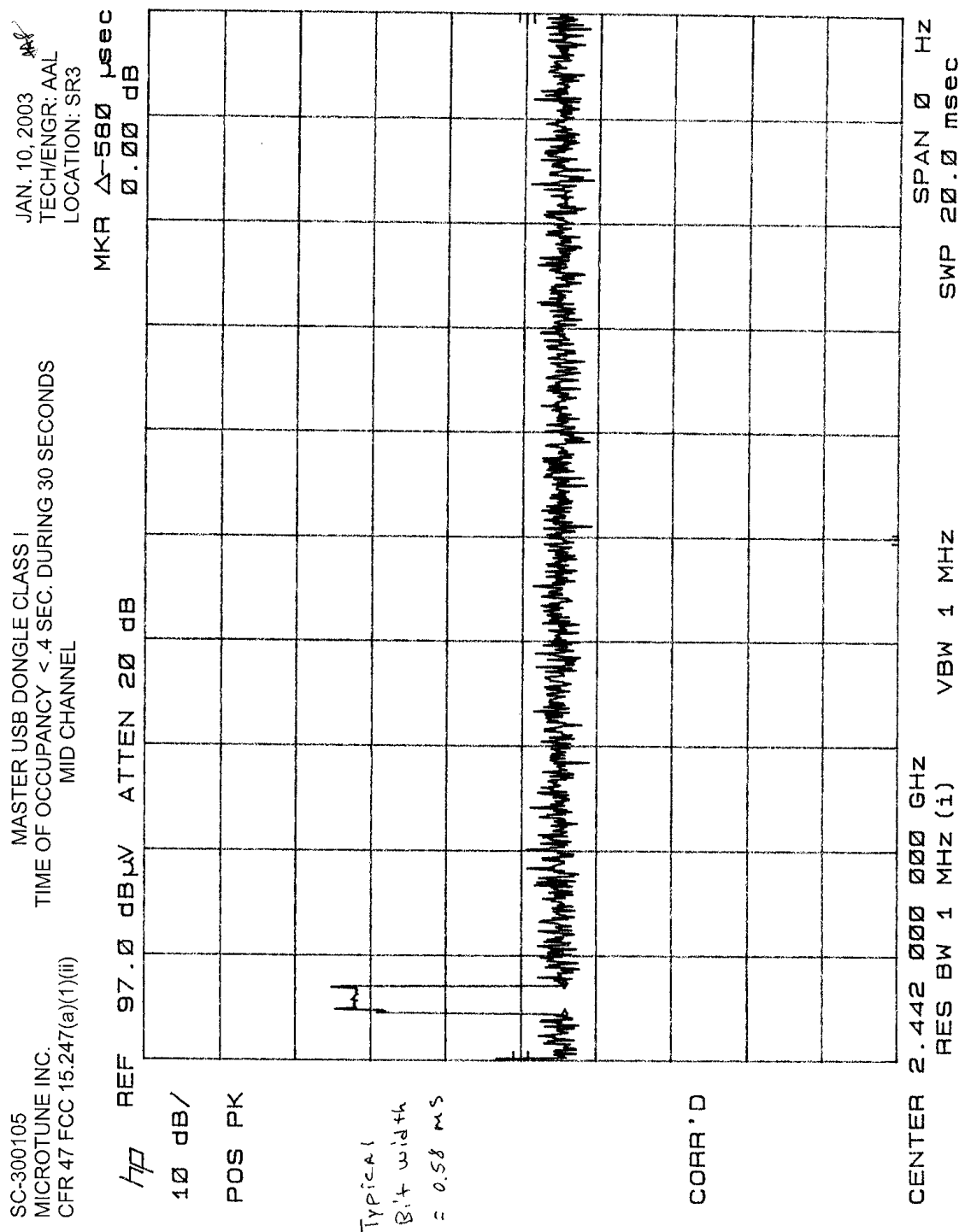
SC-300105
MICROTUNE INC.
CFR 47 FCC 15.247(a)(1)(ii)

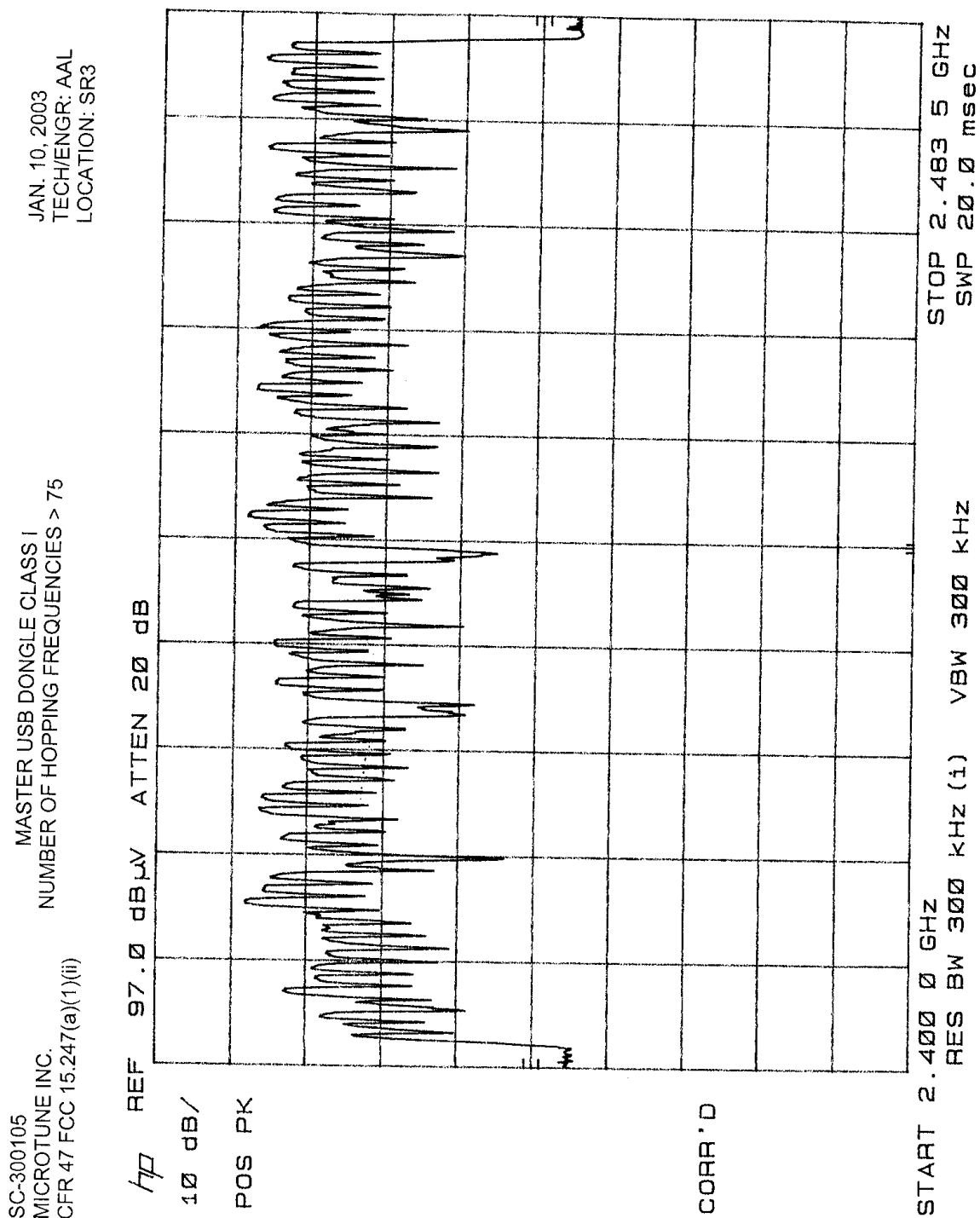


CENTER 2.442 000 000 GHZ
RES BW 1 MHz (i) VBW 1 MHz SWP 30.0 sec SPAN 0 Hz



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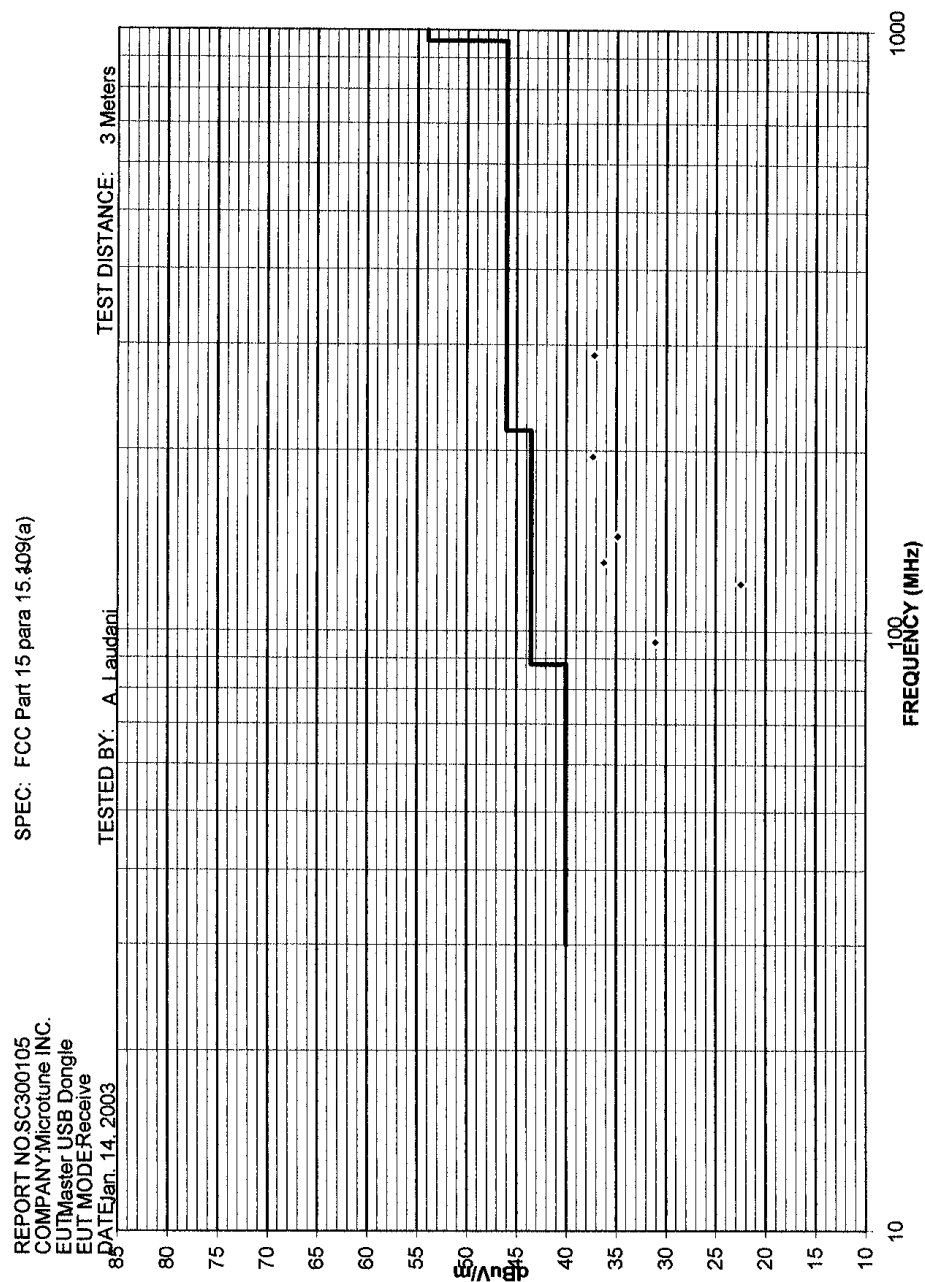


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15.247(b)(1) Power Output

11mW - with power amplifier

Frequency (MHz)	dBuV/m	dBm	mW	Limit
2402	105.37	10.14	10.33	1W
2441	104.34	9.11	8.15	1W
2480	104.41	9.18	8.28	1W



REPORT No: SC300105

SPEC: FCC Part 15 para 15.109(a)

CUSTOMER: Microtune INC.

TEST DIST: 3 Meters

E U T: Master USB Dongle

TEST SITE: 1

EUT MODE: Receive

BICONICAL: 739

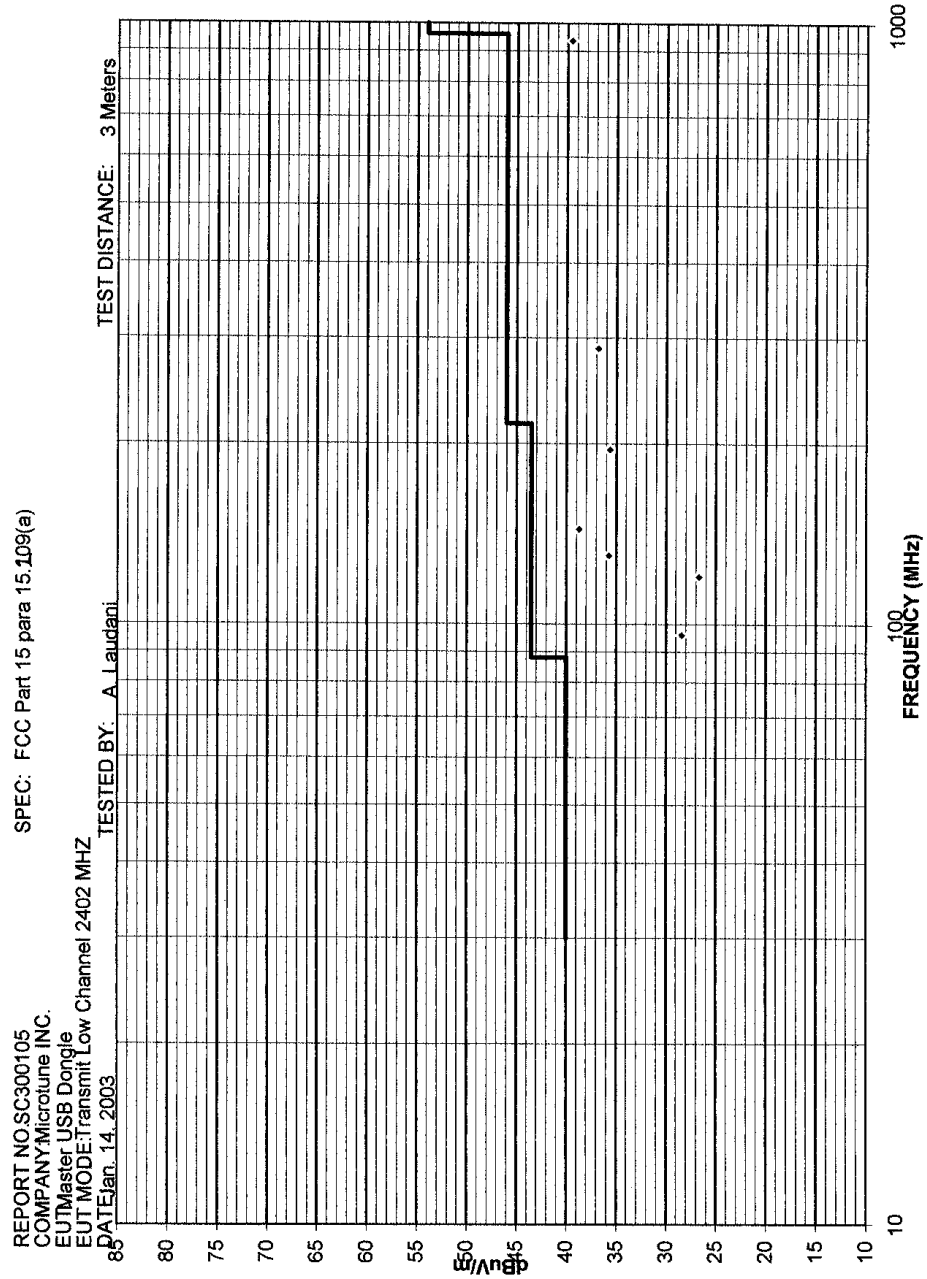
DATE: Jan. 14, 2003 TESTED BY: A. Laudani

LOG PERIODIC: 739

NOTES: Quasi-Peak with 120 KHz measurement bandwidth.

RCVR: 6732

[illegible]



REPORT No: SC300105

SPEC: FCC Part 15 para 15.109(a)

CUSTOMER: Microtune INC.

TEST DIST: 3 Meters

E U T: **Master USB Dongle**

TEST SITE: 1

EUT MODE: Transmit Low Channel 2402 MHZ

BICONICAL: 739

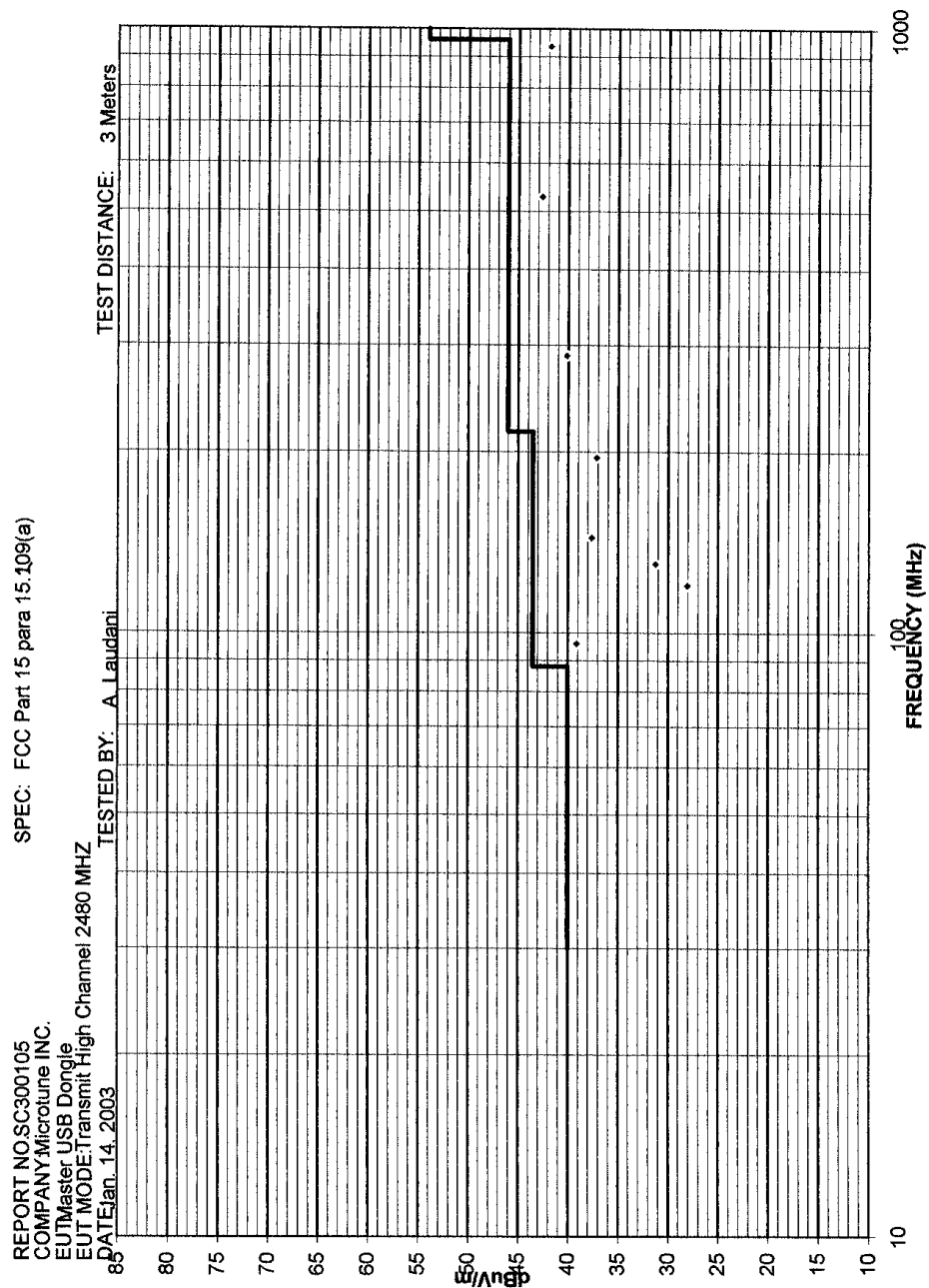
DATE: Jan. 14, 2003 TESTED BY: A. Laudani

LOG PERIODIC: 739

NOTES: Quasi-Peak with 120 KHz measurement bandwidth.

RCVR: 6732

[illegible]



REPORT No: SC300105

SPEC: FCC Part 15 para 15.109(a)

CUSTOMER: Microtune INC.

TEST DIST: 3 Meters

E U T: Master USB Dongle

TEST SITE: 1

EUT MODE: Transmit High Channel 2480 MHZ

BICONICAL: 739

DATE: Jan. 14, 2003 TESTED BY: A. Laudani *ML*

LOG PERIODIC: 739

NOTES: Quasi-Peak with 120 KHz measurement bandwidth.

RCVR: 6732

[illegible]

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4.0 ATTESTATION STATEMENT

GENERAL REMARKS:

SUMMARY:

All tests were performed per CFR 47, Part(s) 15.247(a)(1), 15.247(a)(1)(ii), 15.247(b)(1), 15.247(c)

■ - Performed

The Equipment Under Test

■ - **Fulfills** the requirements of CFR 47, Part(s) 15.247(a)(1), 15.247(a)(1)(ii), 15.247(b)(1), 15.247(c)

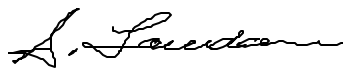
- TÜV AMERICA, INC. -

Responsible Engineer:



Jim Owen
(EMC Chief Engineer)

Responsible Engineer:



Alan Laudani
(EMC Engineer)