

FCC/IC TEST REPORT

For
Enuresis Solutions, LLC

DryBuddyFLEX Sensor
Model No.: DBFLS01

Test Report Number : ESTSZ130101205F



EST COMPLIANCE LABORATORY LIMITED
4/F, 7th Building, Xinyuan Industrial Park, Xinguang Road,
Xili, Nanshan District, Shenzhen 518055, China
Tel:+86-755-26648640 Fax:+86-755-26648637

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1 - GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Enuresis Solutions, LLC
Address of applicant: 51W, Fairmont Avenue, Savannah Georgia United States
Manufacturer: Shenzhen Poshton Technology Co., Ltd
Address of manufacturer: 3/F,BLDG9,Beifang Yongfa Technology Park,Chaoyang Rd,Yanchuan,Songgang,Bao'an,Shenzhen,China

General Description of E.U.T

EUT Description: DryBuddyFLEX Sensor

Trade Name:



Model No.: DBFLS01

The models of EUT are identical except appearance of equipment. Unless otherwise specified, all tests were performed on model **DBFLS01** to represent the other similar models.

Rating: DC 3V

Test Power Supply: DC 3V

Frequency: 433.92MHz

1.2 Test Standards

The following Declaration of Conformity report of EUT is prepared in accordance with

FCC Rules and Regulations Part 15 Subpart C: 2010

RSS-210: Issue 8, December 2010 RSS-GEN: Issue3, December 2010


The objective of the manufacturer is to demonstrate compliance with the described above standards.

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of EST COMPLIANCE LABORATORY LIMITED

Date of Test :

Jan. 08~23, 2013

Prepared by :



(Engineer: David He)

Reviewer :



(Project Manager: Ronnie Liu)

Approved & Authorized Signer :



(Manager: Alex Chen)

1.3 Test Summary

1.3.1 Test description

For the EUT described above. The standards used were FCC Part 15 Subpart C and RSS-210 for Emissions.

Table 1 : Tests Carried Out Under FCC Part 15 Subpart C and RSS-210

FCC Part 15 Subpart C	RSS-GEN, RSS-210	Test Items	Status
Section 15.207	7.2.2	Conduction Emission	×
Section 15.231(a)(1)	A1.1 .1	Manually Activated Transmitter	√
Section 15.231(c)	A1.1.3	Occupied Bandwidth	√
Section 15.35, 15.205, 15.209, 15.231(b)	A1.1.2	Radiated Emission	√

- √ Indicates that the test is applicable
 × Indicates that the test is not applicable

1.4 Test Methodology

All measurements contained in this report were conducted with 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.

The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

The maximum emission levels emanating from the device are compared to the FCC Part 15 Subpart C limits for radiation emissions and the measurement results contained in this test report show that EUT is to be technically compliant with FCC requirements.

1.5 Test Facility

All measurement required was performed at laboratory of Shenzhen Zhongjian Nanfang Testing Co., Ltd at 1st Floor, Block No. 2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

The test facility is recognized, certified, or accredited by the following organizations:

FCC – Registration No.: 817957

Shenzhen Zhongjian Nanfang Testing Co., Ltd, Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd Has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A.

The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

1.6 Test Equipment List and Details

Test equipments list of Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Equipment	Manufacturer	Model#	Serial #	Data of Cal.	Due Data
3m Semi-Anechoic Chamber	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	Aug. 09 2012	Aug. 09 2013
EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	June 16 2012	June 16 2013
Loop Antenna	ETS-Lindgren	6502	CCIS0004	June 09 2012	June 09 2013
BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	June 09 2012	June 09 2013
Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	June 09 2012	June 09 2013
EMI Test Software	AUDIX	E3	N/A	N/A	N/A
Coaxial Cable	CCIS	N/A	CCIS0016	Mar. 01 2012	Mar. 01 2013
Coaxial Cable	CCIS	N/A	CCIS0017	Mar. 01 2012	Mar. 01 2013
Coaxial cable	CCIS	N/A	CCIS0018	Mar. 01 2012	Mar. 01 2013
Coaxial Cable	CCIS	N/A	CCIS0019	Mar. 01 2012	Mar. 01 2013
Coaxial Cable	CCIS	N/A	CCIS0087	Mar. 01 2012	Mar. 01 2013
Amplifier(10KHz-1.3GHz)	HP	8447D	CCIS0003	Aug. 03 2012	Aug. 03 2013
Amplifier(1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	Aug. 05 2012	Aug. 05 2013
Spectrum analyzer	Rohde & Schwarz	FSP	CCIS0023	June 22 2012	June 22 2013
EMI Test Receiver	Rohde & Schwarz	ECSI	CCIS0002	June 16 2012	June 16 2013
Printer	Hp	HP LaserJet P1007	N/A	N/A	N/A
Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	June 09 2012	June 09 2013
EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	Apr 01 2012	Apr 01 2013
LISN	CHASE	MN2050D	CCIS0074	Apr 01 2012	Apr 01 2013
Coaxial Cable	CCIS	N/A	CCIS0086	Apr. 01 2012	Apr. 01 2013
Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	June 09 2012	June 09 2013

2 - Test Procedure

GENERAL: This report shall NOT be reproduced except in full without the written approval of EST COMPLIANCE LABORATORY LIMITED. The EUT was transmitting a test signal during the testing.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-2003 using a spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100KHz and the video bandwidth was 300KHz up to 1.0GHz and 1.0MHz with a video BW of 3.0MHz above 1.0GHz. The ambient temperature of the EUT was 74.3oF with a humidity of 69%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF = FS
33 20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

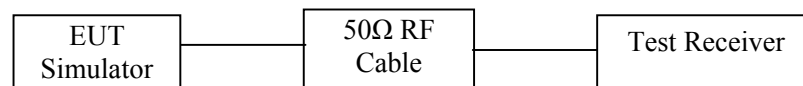
ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

3- Manually Activated Transmitter

3.1 Requirements (15.247(a)):

According to FCC §15.231(a)(1) and RSS-210 A1.1.1, A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

3.2 Test Setup

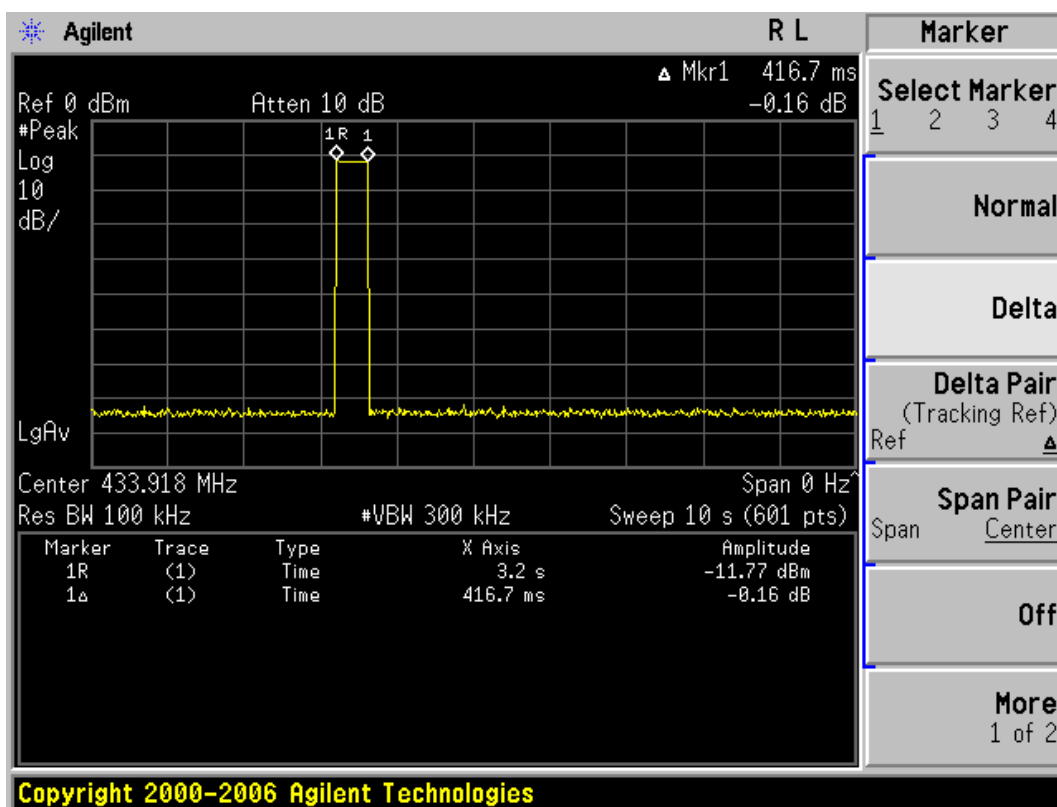


3.3 Test Data

Temperature (°C)	26
Humidity (%RH)	58
Barometric Pressure (mbar)	1001.1
EUT	DryBuddyFLEX Sensor
M/N	DBFLS01
Operating Mode	TX

Test data as follows

Transmitter time	Limit	Result
416.7ms	5s	Pass



4- Occupied bandwidth

4.1 Requirements:

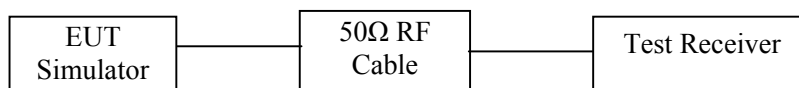
According to FCC Part 15 C, Section 15.231(c)

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

According to RSS 210 A1.1.3

For the purpose of Section A1.1, the 99% bandwidth shall be no wider than 0.25% of the centre frequency for devices operating between 70-900 MHz.

4.2 Test Setup

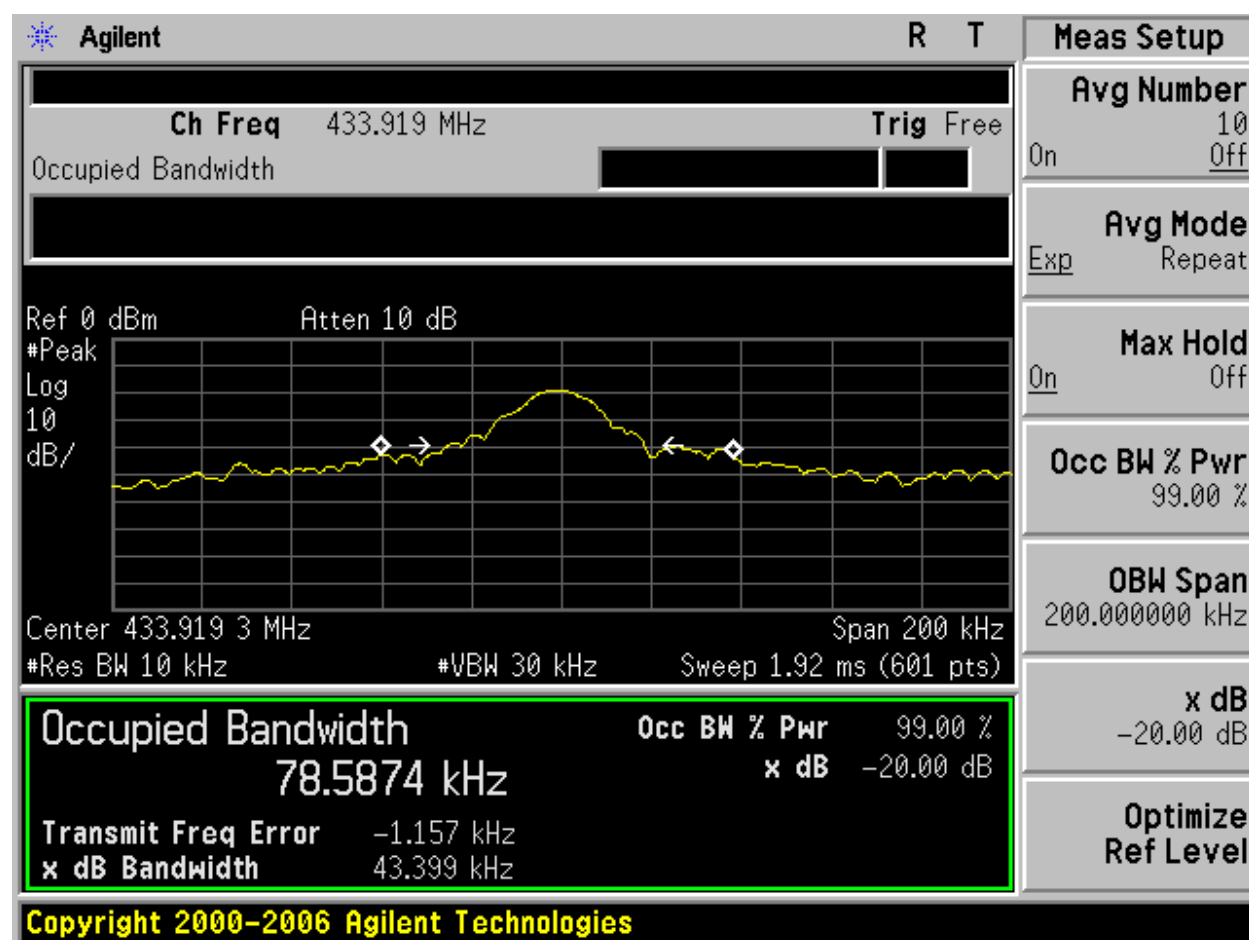


4.3 Test Data

Temperature (°C)	26
Humidity (%RH)	58
Barometric Pressure (mbar)	1001.1
EUT	DryBuddyFLEX Sensor
M/N	DBFLS01
Operating Mode	TX

Test data as follows

Occupied bandwidth		Limit	Test Result
20dB	99%	433.92*0.25%	
43.40kHz	78.59 kHz	1084.8kHz	Pass



5- Radiated Emission

5.1 Requirements:

According to FCC section 15.231(b) and RSS 210-A1.1.2, the field strength of emissions from intentional radiators operated under this Section shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (microvolts/meter)	Field Strength of Spurious Emissions (microvolts/meter)
40.66 - 40.70	2,250	225
70 - 130	1,250	125
130 - 174	1,250 to 3,750 **	125 to 375 **
174 - 260	3,750	375
260 - 470	3,750 to 12,500 **	375 to 1,250 **
Above 470	12,500	1,250

** linear interpolations

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 260-470 MHz, $\mu\text{V/m}$ at 3 meters = $41.6667(F) - 7083.3333$. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

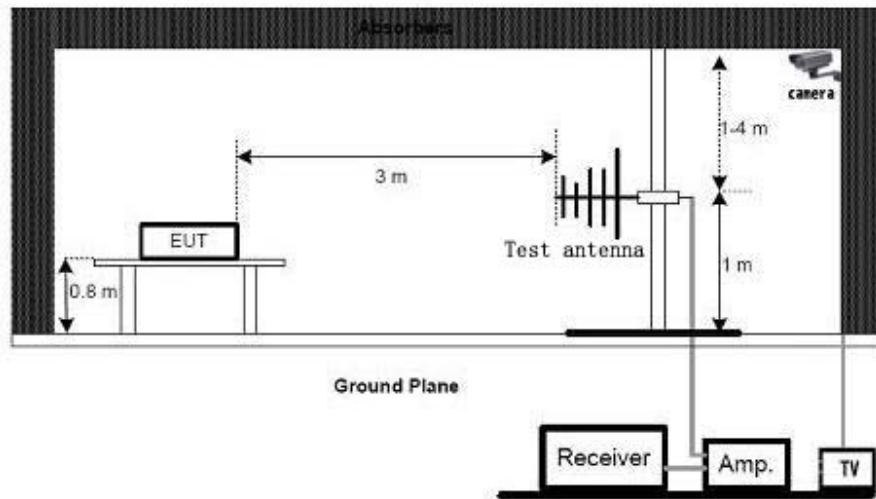
For this equipment that is working on 433.92MHz ,

Frequency	field strength of Fundamental		field strength of Spurious Emissions
	$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$	
433.92MHz	10996.7	80.8	60.8

According to 15.209(a) and RSS-Gen issue3, Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 - 0.490	$2400/F(\text{kHz})$	300
0.490 - 1.705	$24000/F(\text{kHz})$	30
1.705 - 30.0	30	30
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

5.2 Test Setup



The EUT is located in a 3m Semi-Anechoic Chamber, the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

For the Test Antenna: In the frequency range below 30MHz, Loop test Antenna (9kHz to 30MHz). In the frequency range above 30MHz, Bi-log Test Antenna (30 MHz to 1GH) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength, the azimuth range of turntable was 0° to 360° , the receive antenna has two polarizations horizontal and vertical. When doing measurements above 1GHz, the EUT was placed within the 3dB beam width range of the horn antenna, and the EUT was tested in orthogonal positions as recommended in ANSI C63.4 for Radiated Emissions and the worst-case data was presented.

5.3 Test Results

Pass.

5.4 Test Data

Temperature (°C)	26
Humidity (%RH)	58
Barometric Pressure (mbar)	1001.1
EUT	DryBuddyFLEX Sensor
M/N	DBFLS01
Operating Mode	TX

Test data from 9KHz~5GHz

Emissions attenuated more than 20 dB below the permissible value are not reported.

Emission Styles	Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Remark	Direction (H/V)
Fundamental	433.92	90.78	15.53	3.16	30.33	79.14	100.8	Peak	H
Spurious	651.94	51.15	18.65	3.87	30.58	43.09	80.8	Peak	H
Harmonics	867.84	37.51	20.78	4.01	30.22	32.08	80.8	Peak	H
Harmonics	1301.76	34.97	22.86	5.14	26.85	36.12	80.8	Peak	H
Fundamental	433.92	86.71	15.53	3.16	30.33	75.05	100.8	Peak	V
Spurious	651.94	53.80	18.65	3.87	30.58	45.74	80.8	Peak	V
Harmonics	867.84	36.87	20.78	4.01	30.22	31.44	80.8	Peak	V
Harmonics	1301.76	35.57	22.86	5.14	26.85	36.72	80.8	Peak	V

Emission Styles	Frequency (MHz)	Peak Level (dBuV)	AV Factor (dB/m)	AV Level (dBuV)	Limit Line (dBuV/m)	Remark	Direction (H/V)
Fundamental	433.92	79.14	-7.33	71.81	80.8	Average	H
Spurious	651.94	43.09	-7.33	35.76	60.8	Average	H
Harmonics	867.84	32.08	-7.33	24.75	60.8	Average	H
Harmonics	1301.76	36.12	-7.33	28.79	60.8	Average	H
Fundamental	433.92	75.05	-7.33	67.72	80.8	Average	V
Spurious	651.94	45.74	-7.33	38.41	60.8	Average	V
Harmonics	867.84	31.44	-7.33	24.11	60.8	Average	V
Harmonics	1301.76	36.72	-7.33	29.39	60.8	Average	V

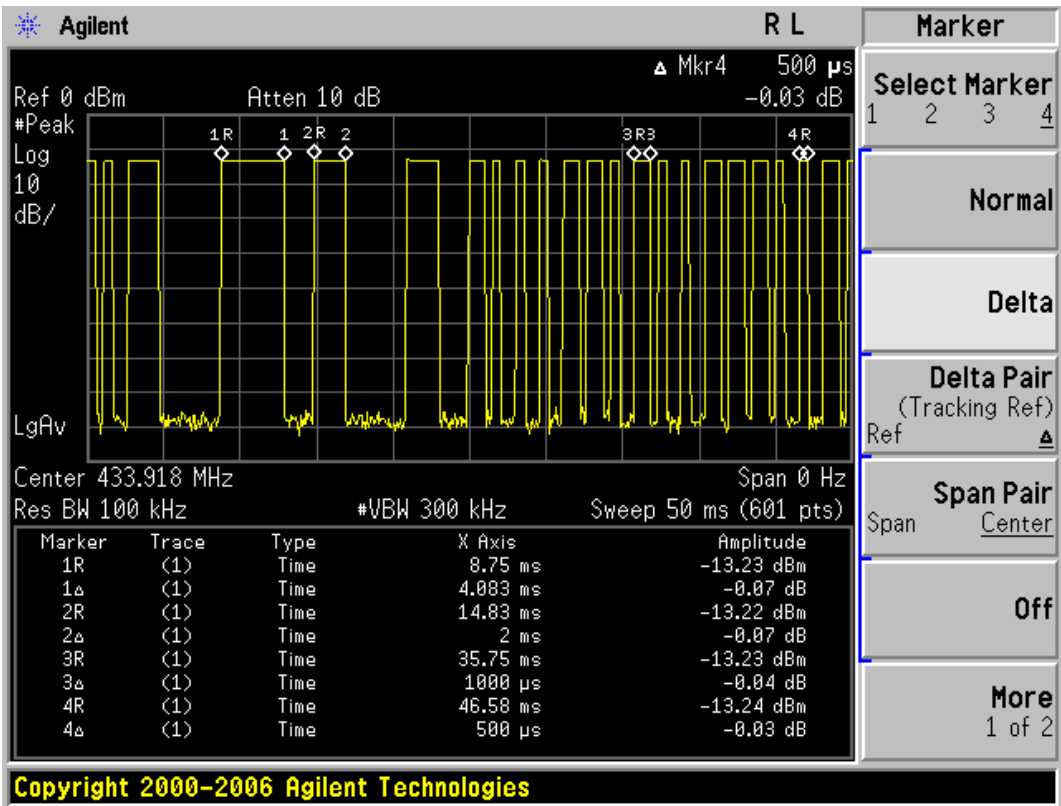
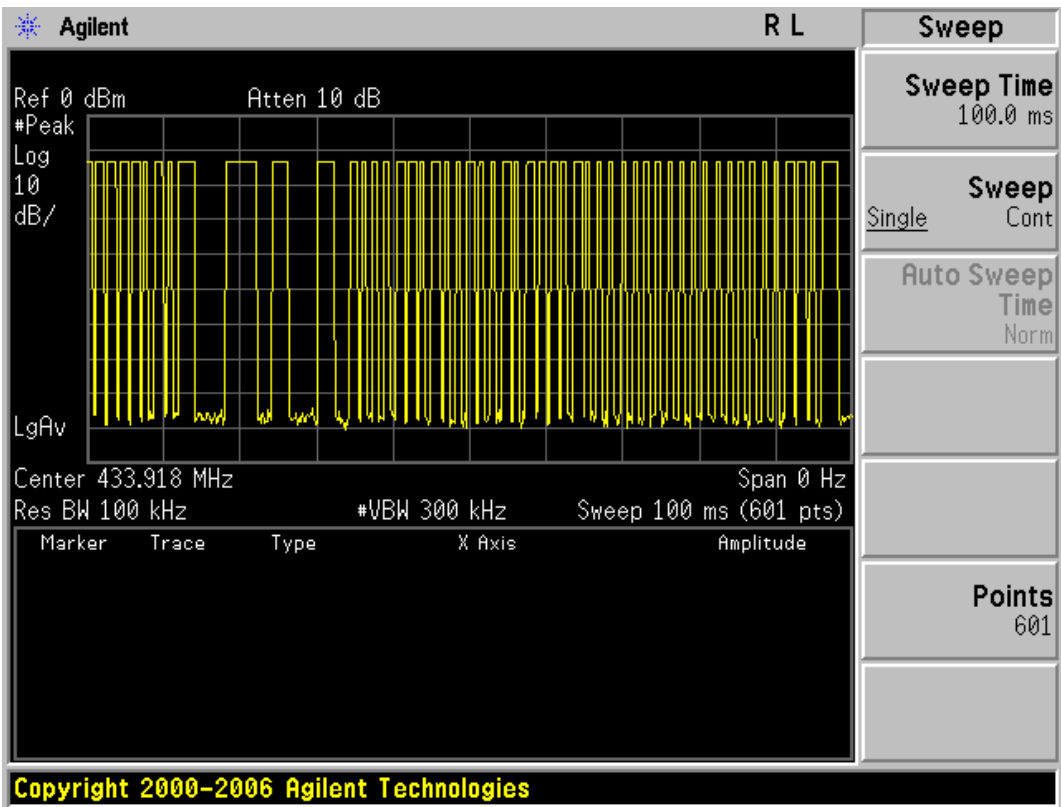
Note 1. $AV(dBuV/m) = Peak(dBuV/m) + AC\ Factor(dB)$

2. The duration of one cycle > 100ms

Duty Cycle = $(4.083 + 4 \times 2 + 16 \times 1 + 30 \times 0.5)ms / 100ms = 0.43$

AV Factor = $20 \times \log(Duty\ Cycle) = 20 \times \log 0.43 = -7.33$

(The Data of Duty Cycle See the follow page)



6 Antenna

6.1 Antenna requirement

FCC section 15.203, 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 Part 15C. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited

6.2 Antenna Type

Antenna is on the PCB. See the APPENDIX A-EUT Inside view.

Table2: The antenna gain

	Antenna gain(dBi)
Antenna	0